American Institute of Fishery Research Biologists

. . . BRIEFS . . .

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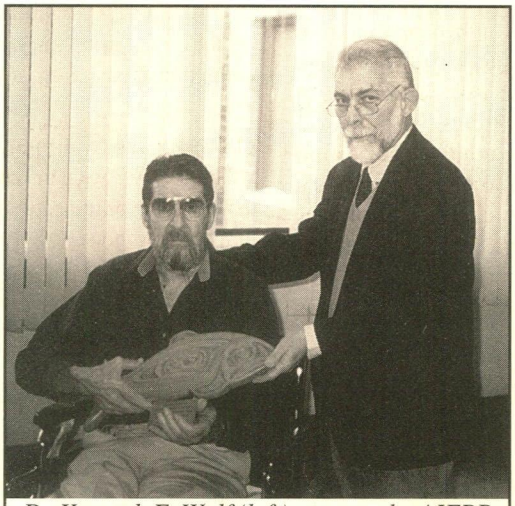
Dr. Kenneth E. Wolf:

Recipient of the AIFRB Outstanding Achievement Award – Individual

On January 5, 2001 Joe Rachlin, representing President Sakagawa, presented the AIFRB Outstanding Achievement Award – Individual to Dr. Kenneth E. Wolf at a ceremony held in Winchester, Virginia. In attendance were members of his family and friends along with colleagues from the Eastern Fish Disease Laboratory, including the current and past three directors. Everyone present was impressed with the honor we bestowed on Ken in recognition of his lifetime of achievement.



Dr Kenneth E. Wolf (left) accepts the AIFRB Outstanding Achievement Award – Individual, from Joe Rachlin at a ceremony January 5, 2001 in Winchester, Virginia.

Ken Wolf was a Senior Research Scientist at the National Fish Health Research Laboratory of the National Fisheries Center, Leetown, West Virginia, and had been engaged in fish health research since 1954. He served as Director of the Eastern Fish Disease Laboratory from 1972 to 1977. His major contributions have been in the areas of virology, fish tissue culture, and parasitology. He has published 129 papers in which he is senior author and 39 in which he is one of the co-authors. His definitive book: "Fish viruses and fish viral diseases" published in 1988 by Comstock Publishing Associates, a division of Cornell University Press, still remains the classic work in the field.

Ken developed methods of transmitting bacterial kidney disease experimentally, introduced a new medium for culturing the causative organisms and after screening in vitro, developed a more effective therapy for the infection with the antibiotic erythromycin.

In order to properly study the etiology and transmission of fish viral diseases, Ken entered the virgin territory of fish cell and tissue culture, and after developing appropriate techniques and medium, he and his coworkers in 1959, using primary cell cultures, isolated the first fish virus that caused infectious pancreatic necrosis (IPN) in juvenile trout. In 1959, he established the first continuously cultured fish cell culture named Rainbow Trout Gonad-2 or RTG-2. This line is still being used by researchers today, and is, along with the techniques developed by Ken, the main vehicle for the study of fish viral diseases. In addition, Ken also helped establish other fish cell lines and a frog cell line. These cell lines were seed for the seminal studies by Ken and coworkers for the study of viral hemorrhagic septicemia of trout in Europe, icosahedral cytoplasmic virus which causes hypertrophied lymphocystic cells in fish, and the viral causes of histopathological changes of lymphocystis disease of fish and the viral edema of tadpoles. Ken became the recognized authority in the field and many investigators came to know of his work through his definitive papers and book chapters and came to study under his direction. He has, in his career, deposited with the American Type Culture Collection three original cell lines from lower vertebrates, seven strains of IPN virus, and six additional viruses of fish or amphibian origin. In addition to this, Ken studied the Lake Andes NWR epizootic of duck plague and developed two rapid methods for isolation and concurrent identification of the causal herpes virus. A duck embryo cell line was introduced for this work. In the early 1970s Ken turned his attention to the study of whirling disease, an important protozoan disease of salmonids. He and his coworkers developed a fluorescent antibody test for positive serological diagnosis of whirling disease. He then turned his attention to solving the life cycle of the parasite *M. cerebralis*, causing the disease, showing that an aquatic oligochaete is a necessary host in the life cycle and in the development of infectivity. Ken and his team further demonstrated that young trout could be immunized against *Ichthyopthirius multifilis*, a ciliated protozoan that infects all species of freshwater fish.

For his many contributions to the specializations in fish health research and for his willingness to share that information with others, Dr. Wolf was awarded in 1981 the S.F. Snieszko distinguished service award of the American Fisheries Society. Ken is also the recipient of the Department of Interior's Meritorious Service Award, 1976 and the Distinguished Service Award in 1978. As a final cap to his research career, Ken and his coworker Maria Markiw published a singularly definitive and seminal paper "Biology Contravenes Taxonomy in the Myxozoa: New Discoveries Show Alternation of Invertebrates and Vertebrate Hosts" in Science Vol. 225, September 28, 1984, pp. 1449-1452. For many in the field, this work is considered as important as his earlier work in the study of viral diseases.

The AIFRB is a 501(c)(3) tax-exempt nonprofit organization (EIN 61-6050711).

DISTRICTS IN ACTION

Northern California District

Dinner Meeting held Thursday
February 22, 2001

Following a social hour and dinner at Captain Blyther's Restaurant in Benicia, CA, we were fortunate to have had fellow AIFRB member and California Department of Fish and Game (CDFG) Fisheries Biologist, Kathy Hieb, fit this evening into her busy schedule. Kathy was a co-author of the monumental *Report on the 1980 through 1995 Fish, Shrimp, and Crab Sampling in the San Francisco Estuary*. But that was not her subject. Kathy's talk was titled "Fish Communities of San Francisco Bay Tidal Marshes". She gave an overview of a recently completed CDFG tidal marsh study in San Pablo Bay, including fish sampling techniques and results from this and other marsh studies in San Francisco Bay.

The cost for dinner was $22 per person with special student rates available. Dinner included a selection from the following entrees: Chicken Supreme, Crab Cakes, Blackened Snapper, Seafood Pasta and Prime Rib.

We have made some strides in new membership. We want to involve more of the fisheries veterans in AIFRB northern district 'Event' and 'Special Projects' planning. We also want to provide a forum for interaction between the professional biologists and young biologists in our District.

Submitted by — Tom Keegan

AIFRB BOARD OF CONTROL ANNUAL MEETING

Phoenix, Arizona, August 18-19, 2001
All AIFRB members invited

The AIFRB Board of Control (BOC) meeting will be held in the Phoenix Crowne Plaza Hotel, Phoenix, Arizona on August 18 (Saturday, beginning at 8:00 am) and 19 (Sunday), 2001. The Crowne Plaza Hotel will also be the official American Fisheries Society hotel for its 131st Annual Meeting. That meeting begins on August 20 with Institute-sponsored symposia and a reception for AIFRB members and meeting participants.

CALL FOR NOMINATIONS:

Outstanding Achievement Awards — Individual and Group

We are soliciting nominations for the Outstanding Achievements Awards. This is your opportunity to provide nominations and to help AIFRB recognize the individuals and organizations that are making outstanding contributions to our science. Two awards are given for each year.

The Individual Achievement Award for 2002 will be given to an individual who has made significant contributions to the advancement of fishery science. This is the highest award for achievement. Criteria used to judge candidates include significance of publications, exceptional service to the profession, outstanding teaching or training of students, important discoveries or inventions, and significant contributions to the advancement of fishery science.

The Group Achievement Award for 2001 will be given to organizations with outstanding records of scientific contribution to fishery science or fishery resource policy. It is the Institute's highest award for achievement and recognition of organizations that nurture excellence in fishery science. The criteria used to judge candidates include sustained contribution of significant publications, exceptional service to the fishery profession, outstanding teaching or training programs, important discoveries or inventions, and significant contributions to the advancement of fishery science.

The nominating letter should include name, address, telephone number and email address of nominee, and a short resume of the nominee and a letter fully describing how the nominee meets the criteria. Please include your name, address, telephone number and email address.

Nominations for these two awards are due by June 1, 2001. Fishery scientists whose names were submitted and selected as runner-ups last year will also be considered. Submit nominations to: Dr. Linda Jones, Northwest Fisheries Science Center. For your information and help in considering nominees, attached are the lists of Individual Outstanding Achievement Awards 1979-2001 and Group Outstanding Achievement Awards 1982-2000.

If you have any questions, please contact myself, or committee members Jack Helle or Bill Taylor at Jack.Helle@noaa.gov or Taylorw@msu.edu.

Submitted by — Linda Jones
Deputy Science Director Northwest Fisheries Science Center
2725 Montlake Boulevard East, Seattle, WA 98112-2097
Email: Linda.Jones@noaa.gov

INDIVIDUAL OUTSTANDING ACHIEVEMENT AWARD:

1979, Elbert H. Ahlstrom; 1980, James E. Sykes; 1981, F. Heward Bell; 1982, Richard H. Stroud; 1983, Kenneth D. Carlander; 1984, David W. Schindler; 1985, Peter Larkin; 1986, William G. Gordon; 1987, William F. Royce; 1988, Reuben Lasker; 1991, Robert L. Burgner; 1992, William W. Fox; 1993, Arthur D. Hasler; 1994, William E. Ricker; 1995, Raymond J.H. Beverton; 1996, Reeve M. Bailey; 1997, William G. Pearcy; 1998, John H.S. Blaxter; 1999, Saul B. Saila; 2000, John R. Hunter; 2001, Kenneth E. Wolf.

GROUP OUTSTANDING ACHIEVEMENT AWARD:

1982, Canadian Journal of Fisheries and Aquatic Sciences; 1983, Great Lakes Sear Lamprey Control Program; 1984, Harvesting Technology Division, NMFS, Pascagoula, MS; 1985, Sport Fishing Institute; 1986, International Pacific Halibut Commission; 1988, Southwest Fisheries Center, NMFS, La Jolla, CA; 1992, Cooperative Fish & Wildlife Research Units Center & Related Coop Units; 1997, International North Pacific Fisheries Commission; 1998, The Illinois Natural History Survey; 1999, National Fish Health Research Laboratory, USGS, Kearneyville, WV; 2000, International Pacific Halibut Commission.

PREHISTORY – PEARCE REFLECTS: NEW NMFS SANTA CRUZ LAB

Editors Note: Prompted by the article in the Nov.-Dec. 2000 Briefs Jack Pearce had the following recollections.

Pearce wrote: *In the early '90s there was great local opposition to developing the 60 some acres of artichoke farmland, then owned by Wells Fargo Bank. A bank vice-president called me in Woods Hole, asking if he could come to visit the place I said, "Sure, come on." A few weeks later he said, "Would I come out to inform the local community and the 'opposition' about Woods Hole and how it had affected Cape Cod and SE Massachusetts, for the good". This started me on a real adventure, traveling to the area several times to give the communities lectures (sell-outs) at the Town Center Auditorium. These included the early history of Woods Hole, the research done here, and the influence of the science community on the ambience of the overall area, i.e. the MBL Forums, art, and leisure (for locals as well as tourists).*

My travels in these regards were published on in our local paper, The Enterprise. It is amazing how much of the early visions for Santa Cruz were realized in the final Long Marine Lab Complex, with state, federal and academic interests being met.

I always felt that my lectures on Woods Hole went a long way to break down the opposition to the building of the Long Marine Center, in fact, from the sound of it, a new National Center.

Editor's Note: Jack sent along the following article about the development of Santa Cruz:

California Cities Want to Emulate Scientific Center of Woods Hole

Santa Cruz Even Wants Village Character

(If they have Grimes, they have a character. –Ed.)

By Christopher L. Katon

The scientific research community in Woods Hole, recognized by many as the premier oceanographic research center in the world, is being used as a model community for two California cities. Santa Cruz and Monterey, which border Monterey Bay, are looking east toward Falmouth for advice on how to develop oceanographic research facilities that would serve as the Woods Hole of the West.

Dr. John B. Pearce, deputy director of the Northeast Marine Fisheries Laboratory in Woods Hole, recently visited Santa Cruz as part of ongoing communication between his lab and the California scientific community. On the outskirts of Santa Cruz, which is roughly the size of Hyannis, the Long Marine Laboratory is surrounded by a 65-acre parcel that the University of California at Santa Cruz would like to develop into a center matching the character and scientific importance of Woods Hole. According to Dr. Pearce, the University of California and Wells Fargo Bank, which owns the land, would like to expand the Long Marine lab by bringing in federal and state agencies, such as a division of the National Marine Fisheries Service, the National Oceanographic and Atmospheric Administration and a marine geology branch of the US Geological Services.

Woods Hole has the Woods Hole Oceanographic Institution, Marine Biological Laboratories, National Marine Fisheries Service, Northeast Fisheries Science Center, US Geological Services, Branch of Marine Geology and the Woods Hole Research Center. During his visit to Santa Cruz, Dr. Pearce showed a slide presentation of Woods Hole because the university would also like to build a model village similar to Woods Hole. The village would include a restaurant resembling the Captain Kidd, a drug store similar to the Woods Hole Pharmacy and a community church.

"While I was in California, I was asked if there could ever be a Woods Hole of the West," Dr. Pearce said. "I told them that as far as the character and charm of Woods Hole, I do not think it could ever be duplicated, but as far as the facilities go, I think that it is very possible.

"Personally, I just do not think that it is possible to up and build a community rather than have one develop through time," he said. "You just cannot take away the importance that Woods Hole began as a fishing village and transformed into a whaling village, before there was even rail travel established in the area. Then in the late 1800s, when railroads became established, the village turned into a recreational summer community." Dr. Pearce explained that the fisheries laboratory was formed shortly after the Civil War following a collapse in fish stocks along the Atlantic coast, and that the Marine Biological Laboratories, which began in 1888, and the Woods Hole Oceanographic Institution, which began in 1930, had a lot to do with the character of Woods Hole today.

"I basically told them that the evolution of Woods Hole was as much part of the mystique and character as the people that live here, which resulted in Woods Hole being a very special place," Dr. Pearce said.

Spent Millions

Like Santa Cruz, Monterey would also like to lay claim to the title of being known as the Woods Hole of the West. The city has already spent millions of dollars to attract research organizations. The Monterey Bay region has an abundance of marine-related institutions: Fleet Numerical Oceanography Center, Naval Research Laboratory-Monterey, Naval Postgraduate School Oceanography and Meteorology Departments, a branch of the Pacific Marine Geology and US Geologic Survey and the California Department of Fish and Game.

Other institutions in the Monterey area are the Hopkins Marine Station, Moss Landing Marine Laboratories, Institute of Marine Sciences at the University of California-Santa Cruz, Monterey Bay Aquarium Research Institute and the research division of the Monterey Bay Aquarium. These institutions employ more than 1,200 people and in 1994 had an annual budget of $77.2 million. In contrast, Woods Hole institutions employ upwards of 1,500 people and have an annual operating budget of $122 million.

More In Monterey

According to Dr. Pearce, "Although there are many more research facilities already in place in Monterey, they are running out of room and it is virtually impossible for them to expand." It is almost impossible to find 65-acres of developable land along the California coast like the one in Santa Cruz.

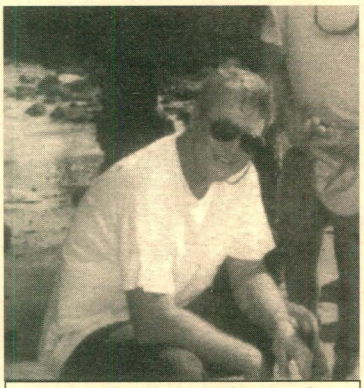
"However, no matter what happens, they can create a critical mass of scientists that is sufficiently large enough to include a wide variety of scientific teams. This would be similar to Woods Hole, because they will be able to bring all of their marine scientific data together in one place," he said.

The idea of building model scientific communities like Woods Hole is not new. "I first heard about the idea of building a Woods Hole of the West when I was in graduate school at the University of Washington in Seattle in the early 1960s," Dr. Pearce said. "Scientists at the University of Washington wanted to expand the Friday Harbor Laboratory on San Juan Island in Puget Sound and there was a debate then if someone should build a Woods Hole of the West," Dr. Pearce said. "For years, the great debate up and down the West Coast has been whether or not to build a Woods Hole of the West, but the development in the Monterey Bay area now is the closest thing that I have seen.

From — Falmouth Enterprise January 18, 1995

Jolley Heads one of World's Most Influential Fishing Organizations

The West Palm Beach Fishing Club was named by Marlin magazine (January 2001) as one of the world's nine most important sports fishing organizations. AIFRB member John Jolley is the current president of this old and prestigious organization. John encourages all AIFRB members to give back to the resource by volunteering their time and money. Setting an excellent example, Jolley recently made a generous donation to the AIFRB Founders Endowment Fund.



John Jolley, West Palm Beach Fishing Club, President

West Palm Beach Fishing Club

Like many early clubs, the West Palm Beach Fishing Club started out as a municipal-backed promotional organization. One of the club's first duties was to sponsor a fishing tournament that would not only attract tourists but would keep them around for a few weeks. That's how the world's oldest continuous billfish tournament, the annual Silver Sailfish Derby, began. Nonetheless, from the very beginning the West Palm Beach Fishing Club has weighed in on fishing issues.

In 1935, club members supported a bill to make largemouth bass a game fish in Florida. In 1937, the club lobbied for similar status for sailfish and for a law limiting catches to two per person. Around 1938, one of the club's charter boatmen coined the phrase, "Be a sportsman, release your fish!" Soon after, the West Palm Beach Fishing Club printed signs urging catch-and-release, and designed and distributed the first-ever sailfish release flag, which now is accepted the world over.

During its 66 years, the club campaigned to ban commercial fishing and spearfishing. It built the state's first artificial reef and helped sponsor the first in-depth billfish study, housing Florida's first East Coast marine research laboratory at its downtown clubhouse. Steeped in history, the simple cream- and blue-trimmed wooden clubhouse at 5th and Flagler is nothing special to look at, but this is the place where legends like Ted Williams, John Rybovich and Sam Snead used to drop by and swap fishing stories.

By — Jan Fogt
From — Marlin January 2001

Marlin's other eight important groups were: The Tuna Club, Avalon, CA; Balboa Angling Club, CA; Rod and Reel Club of Miami Beach, FL; International Women's Fishing Association; New Orlean Big Game Fishing Club; Big Game Fishing Club de France; Bay of Islands Swordfish Club of New Zealand; and the Club Nautico de San Juan (P.R.).

Ernest Hemingway presents his "Old Man and the Sea" Trophy to John Rybovich, who presided over the West Palm Beach Fishing Club off and on for 20 years. Hemingway donated the award for the Silver Sailfish Derby, one of the oldest billfish tournaments.

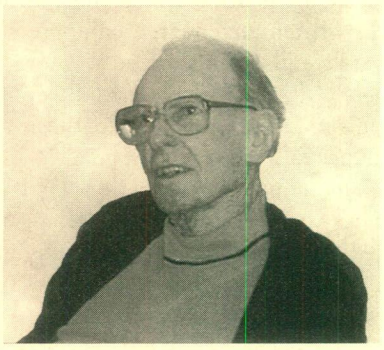
Losses and Memories

Recent Losses

Milo Bell
John Gilbert
Bob Rucker
Jim Wood
Fred Berry (not a member, but widely known, 24 January 2000)
William A. Dill
Don Johnson

WILLIAM A. DILL

International Scientist, Administrator, and World Fisheries Authority



William (Bill) A. Dill, born August 19, 1910 died on December 5, 2000 in Lewisburg, W.V. at the age of ninety. He was one of the last survivors of the fisheries scientists trained in the shadow of David Star Jordan at Stanford University.

Bill was an active fisheries scientist for the California Department of Fish and Game for seventeen years. He conducted hundreds of surveys on lakes and streams in the state producing and developing state policy and many scientific papers on California's inland fisheries. Mr. Dill became the Department's supervising fishery biologist and administered the program of research and management activities for the last several years he spent in state service.

Among the skills he honed while conducting his field surveys was fly-casting. Bill was an angler who could cast a dry-fly so realistically that it is said that swarms of ardent male flies would follow his back casts along the streams and rivers where he fished! One catch that was not reported occurred when he snagged his daughter's arm on a back cast that rolled several feet farther than expected.

In 1955 Bill joined The Fisheries Division of The Food and Agriculture Organization of The United Nations and soon became the Chief of the Inland Fisheries Resources Branch in Rome. During his seventeen years with FAO, Bill established worldwide programs for inland fisheries research and management. He authored over one hundred and fifty scientific papers and established the European Inland Fisheries Advisory Commission of which he was secretary for six years.

Among his other initiatives, he organized the world's first international fisheries meeting in Helsinki in 1956. *(Note: Several international fisheries meetings were held in the late nineteenth century. Editor)* His international work took him to sixty-seven countries, and he coordinated FAO's activities with over twelve other international agencies. Among his many noteworthy publications were the massive volumes on the fresh water fisheries of Europe and the "The History and Status of Introduced Fishes in California", 1971-1996, which he co-authored with Almo Cordone, as CF&G Fish Bulletin #176. Bill subsidized the $18,000 publishing costs from his own funds. There are many other innovative initiatives that were carried out by Bill Dill during his very productive lifetime that forever changed and advanced the practice of fisheries science and management on a worldwide basis. Mr. William A. Dill has earned his place in the halls of fisheries science!

Bill belonged to eight professional societies including the AFS and AIFRB. He was president of two angling clubs in California. Bill's collection of wine labels from all over the world represents most of the existing and past vintages. These labels were classified, mounted, and donated to U.C. Davis.

After retirement Bill was a sought-after consultant for UNDP, USAID, numerous countries, and private and government organizations.

Finally, even though Bill was a natural humorist with a wit as dry as his artificial flies, his commentaries both oral and written engendered an appreciation that Bill's talents as a scientist and a friend were not to be taken lightly.

William A. Dill personally contributed to and holds an undisputed place of honor for the implementation of fisheries science and management on a worldwide basis. His precise and monumental publications testify to that. But even more than that, it was an unparalleled privilege to have known Bill as a treasured friend and international colleague for all his professional life.

Bill was preceded in death by his beloved wife Gale on July 31, 1994. They are survived by two children, Nancy Kobel and William H. Tilson, Bill's brother Franklin Dill, and sister Frances Chamberlain, also, six grandchildren and seven great grandchildren.

Submitted by — Wm. Ellis Ripley, Carmel, California

DON JOHNSON

Don Johnson was born April 27, 1919 in Portland, Oregon. He attended Oregon State University where he studied fisheries. After WWII began, he joined the army and was sent back to Corvallis for engineer training. While there, he met Kathleen Moore and on January 2, 1944, they were married.

After the war, during which Don served in the Army Signal Corps in New Guinea, and the Philippines, he joined the staff of the Oregon Fish Commission, where he focused on salmon management. In the succeeding years, Don became Director of Research for the US Bureau of Commercial Fisheries in California and, finally in 1966 returned to the Pacific Northwest as the NW Regional Director of the National Marine Fisheries Service. During this time, he also served as Commissioner of US – Canada International Pacific Salmon Fisheries Commission before retiring in 1980.

Don was active in the United Methodist Church, both in Bellevue, OR at St. Peter's and in Belfair at North Mason, where he served on the Finance/Building Committees and was actively involved in the United Methodist Men and adult Sunday School classes.

He is survived by his wife, Kathleen, and three sons; Rod and wife, Polly (Luke and James), Steve and wife, Gwen (Matthew, Colin, and Holly), and Brian and wife, Robin (Marina) and other close members of the family.

Memorials may be made in honor of Don to the Building Fund of the North Mason United Methodist Church, or to a charity of your choice.

THE 106TH CONGRESS – HIDDEN TREASURES

RIDERS AFFECTING AQUATIC LIFE

Passed: Underwater Toxics

Congress passed another rider to slow the removal of highly toxic sediments from thousands of miles of rivers, lakes, and bays. The provision prevents EPA from issuing cleanup orders until a National Academy of Sciences study on dredging is completed and considered by EPA – a delay tactic often employed by industry to avoid costly cleanups. Particularly disturbing is the fact that the language in this rule is very similar to language proposed by General Electric, which is trying to avoid cleaning up some 200 miles of the Hudson and Housatonic Rivers, now saturated with the company's PCBs.

Defeated: Salmon

The defeat of this anti-salmon rule means the four controversial hydropower dams on the Snake River may yet be removed one day. This rule would have barred federal agencies from spending money to gather any information whatsoever on the effects of dam removal or how to do it. Because hydropower dams kill 80 to 95 percent of young migrating salmon and steelhead on the Snake River, keeping the structures in place could lead to the extinction of four species of fish.

From — Washington Watch: the Amicus Journal, Winter 2000

AN IMPORTANT REGIONAL MEETING

The Kentucky Department of Fish and Wildlife Resources will host the 55th Annual Southeastern Association of Fish and Wildlife Agencies (SEAFWA) Conference in Louisville, Kentucky on 13-17 October 2001.

Potentially free lodging for students as well as drastically reduced registration fees for students and first place and runner up awards for students in both oral and poster presentation categories will be available through the Southern Division AFS Student Affairs Committee.

For us to make this conference a true success we need not only your attendance, but also *your participation*! Participation will include oral presentations of peer-reviewed manuscripts or poster presentations on any fisheries related topic. Case history studies are highly encouraged. Accepted manuscripts, in addition to being orally presented, will be published as peer-reviewed articles in the Proceedings of SEAFWA that now has an ISBN number. The deadline for submitting one copy of your poster abstract or five copies of your completed manuscript to the Fisheries Associate Editor is May 1, 2001. Guidelines for authors can be obtained at the Kentucky AFS website (www.kfwis.state.ky.us/afs/kyafs.htm) or at the Kentucky Department of Fish and Wildlife Resources website (www.kdfwr.state.ky.us). Please include the title, author(s) names, and work address, telephone number, and email address of the contact author. Also, please indicate if presenting author is a student. Information on registration, hotels, activities, program, etc. can be found, as it becomes available, on the Department's website.

— Fisheries Associate Editor

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FDA SAYS MERCURY IN SOME FISH COULD HARM BABIES' BRAINS

(A REPRIEVE FOR SWORDFISH POPULATIONS?)

By Lauran Neergaard, AP Medical Writer

Pregnant women and those who might become pregnant should not eat four types of fish – shark, swordfish, king mackerel and tilefish – because they could contain enough mercury to hurt an unborn baby's developing brain, the government says. At the same time Friday, the Food and Drug Administration rejected calls to also put tuna on the do-not-eat list, saying the other four types of fish contain far more mercury that tuna does. Women who had swordfish for dinner last night shouldn't panic, stressed FDA food chief Joseph Levitt. The risk comes from mercury building up, not a single meal.

"It is not a one-dose problem. They should just simply stop eating it from this time forward," Levitt said. "We want to empower women to protect the health of their unborn child and the best way they can do that here is to avoid eating those four kinds of fish." Fish is widely considered part of a healthy diet; certain types contain high levels of heart-healthy fats. But different types of fish can harbor different amounts of mercury, an element found naturally in the environment and also a pollutant.

Pregnant women can safely eat up to 12 ounces of any other cooked fish a week – from canned tuna to shellfish to smaller ocean fish, the FDA said. Eat a variety, not just one type. Don't eat more than 12 ounces of fish a week on a regular basis and the amount of mercury absorbed won't be worrisome, the FDA said. When ingested in pregnancy, mercury can damage the central nervous system, leaving babies with slower cognitive development. Critics say up to 60,000 children a year may be affected. The FDA deems fish safe if they contain less that 1 part per million of methylmercury, the form that builds up in fish. The larger the fish, the more methylmercury, absorbed both from water and from eating smaller fish.

Consumer advocates have pushed the FDA to warn pregnant women about mercury since the early 1900s. "This is a significant potential health risk for the children of pregnant women. But it's easy to avoid," said Caroline Smith DeWaal of the Center for Science in the Public Interest. "FDA has taken an important public health step." But she was surprised the FDA left tuna steaks – those from large fish, not the canned tuna made from little fish with far, far less mercury – off the list, and urged the agency to reexamine that advice. If women binge on canned tuna during pregnancy, that could be a problem, too, contends Michael Bender of the Mercury Policy Project. Some states have urged pregnant women to limit canned tuna consumption to 7 ounces a week.

The National Fisheries Institute, a seafood industry trade group, questioned if the mercury levels in swordfish and the other species was really high enough to harm, saying it will review FDA records to see whether the warning was justified. FDA's Levitt refused to say how much mercury the agency has found in canned tuna. But he said levels in shark, swordfish, king mackerel and tilefish are three times higher than in fresh tuna. Even critics admit levels in tuna are far, far lower.

But what level mercury the FDA deems safe is under attack. A major scientific report last summer said the agency should follow Environmental Protection Agency safety standards that are four times stricter – a standard that critics contend do make tuna a concern. The FDA is considering whether to change its standard. "While I am disappointed that the agency has not yet updated their methylmercury action level, this consumer warning is a step in the right direction," said Sen. Patrick Leahy, D-VT, who had pushed for the warning.

While Friday's warning was aimed at pregnancy, the FDA says it is prudent for nursing mothers and young children not to eat the four mercury-high fish either.

The FDA's advice was for commercially caught fish. The Environmental Protection Agency had added advice Friday for pregnant women who eat fish their family and friends catch: Follow state warnings about fish from waters with high mercury levels. If your state doesn't issue such mercury warnings, limit locally caught fish to one 6-ounce meal a week as a precaution.

Associated Press, January 13, 2001, Saturday

Submitted by — Gary Sakagawa

TEXAS TURTLES SAFER FROM SHRIMPERS

By Johanna Congleton

Activists and sea turtles alike had cause to celebrate in August when the Texas Parks and Wildlife Commission approved new regulations that will prohibit shrimping during sea turtles' primary nesting season. In 1999, 450 threatened and endangered sea turtles were stranded on beaches off the Texas Coast. Most had died after becoming ensnared in shrimping nets, causing them to drown.

Victory

The south Texas coast will be closed to shrimping at least five nautical miles out from the shoreline from December 1st to July 15th. During this time of year, 88 percent of Texas' Kemp's ridley turtles – the most endangered sea turtles in the world – complete their nesting season on Padre Island. This small patch of land off the coast of Texas is the only place in the United States where ridleys still nest. The National Park Service has been working to increase the number of nesting females, but high shrimping traffic is undercutting such efforts.

In addition to the shrimping closure, Texas also placed new restrictions on the size and number per boat of shrimp nets, and will begin enforcing the use of Turtle Excluder Devices. The inexpensive TEDs prevent turtles from becoming caught in nets and drowning. A shrimp advisory committee will monitor and evaluate the program's success. Brian Sybert, the Sierra Club's natural resources director for the Lone Star (Texas) Chapter, has been appointed to the committee.

"The Club is now in a pretty powerful position," said Sybert. "We'll be working with scientists and the shrimping industry to try to get stronger regulations, including a year-round closure."

The Club, working in partnership with the Sea Turtle Restoration Project, originally pushed for a year-round shrimping closure 17 nautical miles from the Texas shore. The public comment period for the closure plan drew 6,000 letters – more than the commission has ever received. Ninety-six percent were in favor of a year-round closure.

Texas activists are not alone in their concern for the dwindling population of sea turtles. In October, the US Senate ratified an international sea turtle treaty for the Western Hemisphere, called the Inter-American Convention for the Protection and Conservation of Sea Turtles. The treaty requires the use of TEDs on all shrimp-trawling nets. It also protects nesting beaches, prohibits trade in sea turtles and products made from them, and calls for continued research and habitat conservation. Eight nations that are original signatories must ratify the treaty for it to become effective. When The Planet went to press, there were six.

From — The Planet: December 2000

ATLANTIC MARLIN – A MOVE IN THE RIGHT DIRECTION

At the annual meeting of the International Commission for Conservation of Atlantic Tunas (ICCAT), agreements were reached that could mean an end to the sharp decline of white marlin and the continuing depleted condition of blue marlin.

The 28 member nations agreed to reduce commercial landings of marlin by 50% for blues and 66% for white marlin. They plan to accomplish this by requiring the release of all marlin brought to the boat alive and prohibiting the sale of marlin taken from the north Atlantic.

This is a major step by an organization that until now considered marlin a bycatch of little interest. A recent stock assessment of marlin showing whites had declined to 15% of their sustainable yield added to the pressure to take action.

The agreement also calls for a total allowable landing of 250 blue and white marlin for US recreational anglers. This is in keeping with the recent estimated marlin landings by sport fishermen.

Additional management agreements call for ICCAT members to keep statistics on number and size of marlin catches through observer coverage and encourages member countries to conduct research on billfish and set minimum size requirements for recreational anglers although not necessarily the strict size requirements currently called for by US regulations.

From — International Angler 63(1): January – February 2001

'Freedom to Fish Act' Introduced in Congress

In response to a number of proposals to limit recreational fishing along America's oceans and coasts, the American Sportfishing Association took the lead in seeking help from Congressional leaders to protect America's anglers. As a result, Senator John Breaux (LA) and Kay Bailey Hutchison (TX) introduced the Freedom to Fish Act (S.3234).

Some environmentalists advocate a policy whereby 20% of US coastal waters should be delineated as marine protected areas in an effort to restore depressed fish stocks.

"While I support the goal of healthy marine fisheries," stated Senator Breaux, "I believe that restricting public access to those waters is not the appropriate vehicle for accomplishing that goal in most cases." The Freedom to Fish Act would establish guidelines and safeguards to preserve the public's right to use and enjoy these resources.

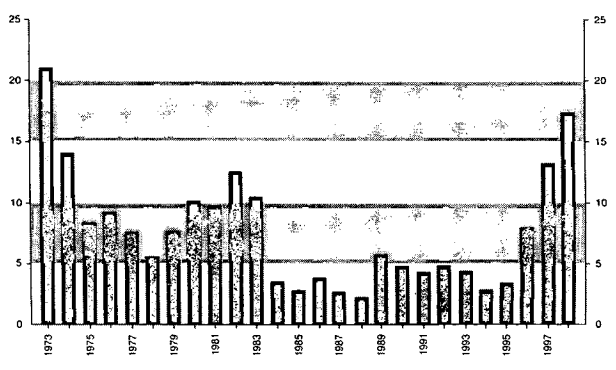
From — International Angler 63(1): January – February 2001

Neal Foster Recovering — Neal Foster, active Great Lakes District member is recovering from hip replacement surgery.
Neal's email address is nealfost@umi

Even Fish People Need Good News Now and Again

"GEORGES BANK"

Yellowtail Flounder



From—Health of the Oceans 2000, Center for Marine Conservation

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BRIEFS, the newsletter of the American Institute of Fishery Research Biologists, is published six times a year. It is intended to communicate the professional activities and accomplishments of the Institute, its District, and Members; the results of research; the effects of management; unusual biological events; matters affecting the profession; political problems; and other matters of importance to the fishery community. Comments and contributions should be sent to the Editor, Dr. Gene R. Huntsman, 205 Blades Road, Havelock NC 28532, susan.huntsman@noaa.gov Subscription $30 a year to Institutions and Non-Members. Officers-Gary Sakagawa, P.O. Box 271, La Jolla, CA 92038-0271, gary.sakagawa@noaa.gov -President; Barbara Warkentine, SUNY-Maritime College, Science Dept., 6 Pennyfield Ave., Fort Schuyler, Bronx, NY 10465-4198, synodus@aol.com; Allen Shimada, NMFS, Office of Science and Technology, 1315 East West Highway, Silver Spring, MD 20910, allen.shimada@noaa.gov -Treasurer. I S S N - 8755-0075

American Institute of Fishery Research Biologists

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VOL. 30, NO 2 MARCH, APRIL 2001

REPORT FROM THE PRESIDENT

March 2001 ~ By Gary Sakagawa

The following is a progress report of some of the accomplishments and tasks since the August 2000 BOC meeting in St. Louis.

Recognizing Excellence

Awards of excellence for 2000 that were approved at the BOC meeting have been awarded to recipients. My thanks to Mike Hinton, Jack Pierce and Joe Rachlin for doing the honors of presenting the awards. The 2000 award for Outstanding Achievement (individual) went to John Hunter. Mike presented that award to Hunter at a Southwest Fisheries Science Center, La Jolla ceremony on December 6.

Andrew Hendry was the recipient of the W.F. Thompson Award for 2000. (See article in Briefs, Nov. – Dec. 2000)

The 2001 award for Outstanding Achievement (individual) went to Kenneth Wolf. Joe traveled to Virginia to present that award on January 5. (See article in Briefs, Jan. – Feb. 2001)

Lights, Camera, Action

John Merriner is the caretaker of the Institute's Information Display that is used at fisheries meetings around the country. He up-dates the display regularly and is soliciting your input. He needs photos (with caption) for illustrating activities of the Institute and fishery science in-action. He wants to feature our members. This is your opportunity in contributing photos showing our members in-action. Gene Huntsman also is requesting that you send photos to him for use in Briefs.

Recruits, Delinquents and You

The Institute is losing active members faster than new members are being recruited. This is a crisis that the BOC needs to take the lead in correcting. We can start with taking the time to nominate qualified candidates (your colleagues) for membership; personally (required of District or Regional Directors) contacting members on the delinquency list and encouraging them to return to good standing; nominating qualified members for promotions. As a starter, each BOC member should set a goal of nominating five colleagues for membership this year. Some recruiting efforts being pursued by Districts include cash awards for best student papers presented at local meetings (used by Mike Hinton and Andy Jahn), cap and certificate for best Science Fair projects judged by District members (used by Dora Passino-Reader), and guest speakers from universities for District meetings (used by Mike, Dora and Bruce Miller). If you have successful recruitment techniques that worked for you, share them with the Board.

It's Time for Phoenix

Morris Southward is doing a super job in site preparation for the 2001 BOC meeting in Phoenix, AZ. He recently visited the meeting site and met with the organizers responsible for hosting the AFS meeting – AFS is providing free space for the BOC to hold its meeting. The BOC meeting will be held in the Phoenix Crowne Plaza Hotel on August 18 (Saturday, beginning at 8:00 am) and 19 (Sunday). BOC members are eligible to receive reimbursement for travel and hotel cost (not meals). I urge BOC members to pursue alternative sources of funding to attend the BOC meeting in order to reduce the drain on the Institute's treasury.

Amended (Aug. 19, 2000) Bylaws Available

All amendments to the Bylaws, up to August 19, 2000, have been incorporated in an amended Bylaws. Official copies have been prepared and deposited. In the past, amended Bylaws have been printed and distributed to members – most recently for amendments up to August 21, 1994. The cost has been significant. Members may request a copy of the changes.

Founders Fund

An endowment fund to honor the 26 founding members of the Institute has been established. A charter for the fund is being reviewed by the Capital Management Committee. General thinking is that the fund will be used for grants to advance fishery science. Contributions to this fund so far have been about $11,500. The names of contributors will be announced as soon as the charter is completed. A solicitation drive is also planned.

Mid-term BOC Meeting

A mid-term BOC meeting was held by conference call on March 8, Barbara Warkentine and Michelle DeLaFuente assisted in arranging this conference call.

The AIFRB is a 501(c)(3) tax-exempt nonprofit organization (EIN 61-6050711).

Slate for President-Elect Nominations

This task of developing a President-Elect slate for election is underway and behind schedule. I reviewed the status shortly after the St. Louis meeting and recently with Clark Hubbs and Jack Helle. Contacting of eligible candidates has been a slow process. Jack has follow-up assignments that are underway and should be completed this month (March). Once a slate is developed, we will be submitting the slate to the members for election of President-Elect, who will take office at the Phoenix meeting and be President after the meeting.

AIFRB Web Site: http://www.aifrb.org

The AIFRB web site is up and running thanks to the efforts of Mike Hinton. Board members are reminded that contributions to the web pages are being accepted. You should send contributions to Mike. District Directors are reminded that there is a page reserved for your District's news, activities, notices, etc. Use that page and not other sites for communicating District information. Send your contributions directly to Mike or better yet, designate a member to regularly review your page, up-date the information and work with Mike. All of us need to support this web site and make it the primary source for real-time information about the Districts and Parent unit.

District "EIN"

The Institute's Employee Identification Number for IRS tax exemption under a 501(c)(3) category has been made available to Districts for use. We were recently advised by our accountant that if we continue with this practice, all money transactions of the Districts must be incorporated and handled by the Parent account in order to stay within IRS requirements. An alternative would be for the Parent unit to apply for a Group status and to secure separate EIN's for Districts. In this way, the Districts would be covered by the blanket Parent exemption, can manage their own accounts locally and don't need to include their income and expenses in the parent unit books. We have decided to convert to this system and have applied for the Group status. Al Shimada estimates a need for separate EIN's for the Southern CA District, Northern CA District and NW WA District and will be contacting the District Directors. Any other Districts that require an EIN at this time or near future should contact Al. Al will file letters to secure District EIN's. A requirement for a District EIN is that if annual income exceeds $25,000, IRS reporting is required and must be filed by the District. District income will likely be below $25,000, so reporting should not be necessary.

Representative of Emeritus Members

Recruitment efforts have been underway to appoint a representative who would assist the Board with Emeritus Member concerns and involvement. This has been a much more difficult task than I imagined when the Board approved the assignment in St. Louis. I am finding that many Emeritus Members are into a new lifestyle that does not include active participation in fisheries or Institute matters. In short they are "retired" and prefer to watch from the sidelines. Nonetheless, I am pursuing the assignment and currently waiting a decision from a prospective candidate.

CALL FOR NOMINATIONS

The American Institute of Fishery Research Biologists (AIFRB) is announcing that nominations for the 2001 W.F. Thompson Award for the best student-published paper of 1999 are now being accepted.

REQUIREMENTS: A nominated paper must have been published in 1999 based upon research conducted by an undergraduate or graduate student who is the principal author, and concerned with the biology, ecology or management of a finfish or shellfish, or the community of which they are a part. The paper can be nominated for consideration by the student's professor or teacher, a colleague, or her/himself. A nomination must include a covering letter indicating the importance of the paper as well as six copies of each of the paper and the professional vitae of the author. Papers nominated are viewed and evaluated by teams of three to four readers. The winning paper will qualify for an award of US $1,000 and a well-executed framed certificate of award.

SUBMISSION: Nominations for papers published in 1999 should be sent to the chairman of the W.F. Thompson Award Committee.

Dr. Jack B. Pearce, c/o The Buzzards Bay Marine Lab, 54 Upland Road, Falmouth, MA 02540, USA.

ELIGIBILITY: Students resident outside the USA, as well as foreign students, are eligible. Papers must have been published in English.

QUESTIONS or comments should be forwarded to Dr. Pearce at the above address or at (508) 540-4572 or buzbay@cape.com

DEADLINE: All nominations must be received by 25, May 2001.

CALL FOR APPLICATIONS

American Institute of Fishery Research Biologists 2001 Research Assistance Award Program

The Research Assistance (RA) Award established in 1986 is offered annually to AIFRB graduate students and other Associate members to support travel expenses associated with professional development. The RA provides a maximum award of $350 towards the opportunity to present results of an original paper or research project of merit at scientific meetings, or to conduct research at distant study sites. All AIFRB Associate Members in good standing are eligible. An individual may receive two awards in a lifetime. Application packages must contain a research abstract, letter of support from the student's sponsor, and a 2-page curriculum vitae. Send AIFRB RA applications to: Dr. Jerald S. Ault, University of Miami RSMAS, 4600 Rickenbacker Causeway, Miami, FL 33149, ph: (305) 361-4884; fax: (305) 361-4791; ault@shark.rsmas.miami.edu. Deadline is 1700 EST on May 25, 2001.

INSTITUTE SPONSORS TWO SYMPOSIA

At AFS meetings in Phoenix

The AIFRB will sponsor two symposia at the American Fisheries Society Meetings in Phoenix AZ, August 19-23, 2001. Barry Costa-Pierce, Director for the Northeast Gulf of Mexico district, has arranged the symposium "Fisheries of the Southwest and Baja California. Papers included are:

1.) Review of Baja California Fisheries, O. Sosa-Nishizaki et al.; 2.) Current Status of the Fisheries of the Colorado River Delta and Upper Gulf of California, L.E. Calderon-Aguilera et al.; 3.) Tilapia as an Invasive Species in Southwest, Barry A. Costa-Pierce; 4.) Species diversity and fish larvae assemblages in the Gulf of California, Gerardo Aceves-Medina, Daniel Lluch-Belda, Paul E. Smith, S. Patricia A. Jiménez-Rosenberg, Ricardo J. Saldierna, A. Hinijosa-Medina y René Funes-Rodriguez; 5.) Artisanal Fisheries for Sharks and Rays in the Sea of Cortez, Hueter, R.E., G.M. Cailliet, F. Marquez-Farias, L. Castillo-Geniz, C. Villavicencio-Garayzar; 6.) The fisheries biology of the Salton Sea, California, Ralf Riedel, Lucy Helvenston and Barry A. Costa-Pierce; 7.) Age determination and growth of tilapia in a highly saline and eutrophic environment, Lucy Helvenston, R. Riedel, S. Hurlbert, J. Butler and B. Costa-Pierce.

Former Carolina District Director Douglas (I never met barbecue I didn't like) Vaughan along with Michael Prager and the peripatetic John Hoenig have arranged the eighth in a series of symposia on Quantitative methods in fishery science. Papers included are:

1] Biological reference points for Albemarle-Roanoke striped bass, J.T. Carmichael; 2] Dynamics of individual growth in a recovering population of lake trout, M.C. Fabrizio, R.M. Dorazio and S.T. Schram; 3] Using biotelemetry to determine total number marked in a closed population capture-recapture experiment, J. Hasbrouck, J. Carlon and R. Clark; 4] Revisiting superposed epoch analysis of Pacific mackerel recruitment in relationship to El NIÑO events, D. Hepworth, J.M. Hoenig and M.H. Prager; 5] Using telemetry methods to estimate natural and fishing mortality of striped bass in Lake Gaston, NC, J.E. Hightower, J.R. Jackson and K.H. Pollock; 6] Sensitivity of the assessment of weakfish, *Cynoscion regalis* (Sciaenidae), an Atlantic coastal migrant, to choice of VPA tuning indices, D.M. Kahn, D.S. Vaughan and M.R Gibson; 7] Diagnostics for multiyear tagging models – tests for lack of complete mixing and examination of patterns in residuals, R. Latour, J.M. Hoenig, J. Olney and K.H. Pollock; 8] Application of nonparametric discriminant and neural network methods to the problem of stock identification in winter flounder larvae collections, Ernesto Lorda and Saul Saila; 9] Estimating maturation parameters in the presence of fishing mortality on mature animals, K. Maki, J.M. Hoenig and J. Olney 10] A general likelihood based approach to integrating tag-return data with catch-at-age data for estimation of fishing and natural mortality and cohort sizes, K.H. Pollock and others; 11] An experiment and modeling approach to link fish behavior with their distribution in streams, B. Thompson, D. Hayes and D. Thomas; 12] Comparisons of telephone survey, intercept survey and logbook census methods for quantifying angler fishing effort and catch on for-hire boats in South Carolina, D. Van Voorhees, R. Dixon, T.R. Sminkey and W. Waltz; 13] Large river bed form as a predictor of benthic fish catch, M.L. Wildhaber, P.J. Lamberson and D.L. Galat; 14] Do more data and model complexity result in better estimates: the case of widow rockfish, E. Williams; 15] Using synoptic climatological classification to evaluate the effects of climate variability on fish populations, R. Wood and R.E. Davis.

MEMBERSHIP REPORT

Tom Lambert, Chair, Membership Committee, submitted the following report on changes in AIFRB membership during the period May 1, 2000 to April 30, 2001.

NEW ASSOCIATE - PROFESSIONAL: Michael J. Manka, Annette E. Henry, Diana Watters, Susan E. Ashcraft, Lourdes Rugge, Jon Amdur, Edward Basmadjian.

NEW ASSOCIATE - STUDENT: Stephen R. Hensler, Andrea M. Quattrini, Daniel P. Cartamil, Lucille L. Helventston, Peter Van Dusen, David Howe, Rebecca Jordan, Ken Cunningham, Okan Esturk, Hakan Calik, Somjintana Tungkawachara, Haian He, Justine Hoffman, Jacek Jaczynski.

PROMOTED TO MEMBER: Trent M. Sutton, Peter Vanriel, William L. Knotek, Kevin L. Pope, Thomas Baudanza, Alan Friedlander.

NEW MEMBER: Thomas P. Keegan, Robert G. Titus, Tammy J. Newcomb, Christopher Lowe, Andrew J. Brooks.

PROMOTED TO FELLOW: M. James Allen, Mark I. Farber, Richard B. Stone, Scott E. LaPatra, George H. Darcy, George R. Sedberry, Raymond M. Newman, Samuel P. Felton, Stephen M. Fried, Lawrence L. Moulton, Douglas C. Peterson, Randy E. Bailey, John Stephens, Pete Haaker, George Guillen, Katherine Myers, John Palmisano, John Cooper.

NEW FELLOWS: D. Allen Rutherford, Kathyrn Dickson, Bernard Megrey, Raymond Wilson.

EMERITUS: Hiroshi Kasahara, Billy S. Batts, Glenn A. Flittner, David T. Hoopes, Harold M. Tyus, Walter R. Courtenay, Jr., R. Walter Williams, John L. Baxter, Robert V. Miller, Julius Rockwell, John F. Roos.

Direct inquires on joining AIFRB or requests for promotion to: Membership Chair, Tom Lambert, 3162 Mariola Road, Sebastopol, CA 95472, (707) 829-7882, Fax (707) 829-8234, lambert5@pacbell.net

Mexican Longline Permits Pulled to Protect Fisheries

In an unexpectedly harsh ruling less than a week after Mexico's new President Vicente Fox took office in December, the Mexican Senate came down hard on longlining. Sportfishing interests said the decision may have saved Mexico's fisheries for generations to come.

Mexico's Attorney General for Natural Resources ruled in favor of the Mexican Billfish Foundation and began stripping the owners of 48 longliners of their permits to fish for swordfish. The permits had been issued under the terms of a "shark research project," a thinly veiled effort to capitalize commercially on swordfish and other species.

The bycatch included marlin, dorado, wahoo, etc., all species previously set aside for sportfishing. Mexico's largest sportfishing centers, Los Cabos and Mazatlan, were in especially grave danger, but other sportfishing centers throughout Mexico also were at risk

From: International Angler 63-2, March – April 2001

PANEK HAS TWO NEW (ONE OLD?) JOBS

Dr. Frank M. Panek was recently appointed as the Director, National Fish Health Research Laboratory at the Leetown Science Center in West Virginia. Frank, a long time member of AIFRB and past Director of the Capital District, will assume his new responsibilities with USGS/Biological Resources Division on April 23, 2001. In this role he replaces recently retired Dr. Emmett Shotts. Prior to this appointment he was a Fisheries Program Supervisor with the Northeast Region of the US Fish and Wildlife Service in Hadley, Massachusetts and also served as the Fish Health Coordinator in the Division of National Fish Hatcheries in Arlington, Virginia.

The National Fish Health Laboratory develops methods for detection, isolation and characterization of infectious disease agents of fishes, conducts investigations of disease process and defense mechanisms, and develops methods for the identification of effects of environmental stressors on fish health. Studies are conducted on pathogenesis of both infectious and non-infectious diseases. Molecular genetics methods, including the development and application of PCR techniques, are developed for identification of populations, strains and species of aquatic organisms.

In 1999, the laboratory received the AIFRB Outstanding Achievement Award-Group. This is the Institute's highest award for recognizing organizations that nurture excellence in fishery science, achieve excellence in research, and make significant contributions to the advancement of fishery science.

Frank can be reached at his new address at the National Fish Health Research Laboratory, 1700 Leetown Road, Kearneysville, West Virginia 25430 (tel: 304-724-4430).

Having returned to the Institute's Capital District, Dr. Panek has resumed the duties of District Director (new old job).

AIFRB REACHES OUT TO YOUTH

Two AIFRB districts, Northern California and South Central Great Lakes have recently exerted significant efforts in encouraging youth involvement in aquatic sciences. At regional AFS meetings Santa Rosa, CA, March 30-31, the AIFRB District under the leadership of Andy Jahn, Tom Keegan and Robert Blizard, sponsored both student paper and student poster award programs. District members served as judges.

The South Central Great Lakes District encouraged participation in aquatic sciences by youth by providing a special award at the 43rd Annual Southeastern Michigan Science Fair, held at Washtenaw Community College, Ann Arbor, MI, March 9-10, 2001. The special award consisted of a handsomely printed Certificate of Recognition by AIFRB-SCGLD and an AIFRB logo hat. AIFRB was listed as an awardee of special awards in the Science Fair booklet.

The three winning projects were as follows:

1. Junior Experimental Division, "The effect of type of freshwater environment on the number and diversity of macroinvertebrates", by Sara Klebanowski, Reading, MI, Owens High School.
2. Junior Experimental Division, "The effect of number of zebra mussels on turbidity of water", by Laura Marsh, Onstead, MI, Onstead Middle School.
3. Senior Division, "The effects of household detergents on the ecosystem", by Jenna Casey, Ann Arbor, MI, Huron High School. [Freshwater macrophytes were tested.]

The Senior Division winner had noted in her experiment log book that she initially designed her project to test aquarium fish but was informed by the Science Fair officials that projects could not be conducted with fish.

The three judges for AIFRB were Dora Passino-Reader, John R.P. French, III and Lance Cablk. French and Cablk received AIFRB logo hats for serving as judges for AIFRB

Submitted by – Dora Passino-Reader and Tom Keegan

AIFRB MEMBERS AT WORK: FISHING GROUNDS – A NEW BOOK

Fellow Matlock Coauthor of Fishing Grounds

Defining a New Era for American Fisheries Management
Susan Hanna, Richard Allen, Heather Blough, Suzanne Iudicello, Gary Matlock and Bonnie McCay

Fishing Grounds offers a comprehensive assessment of the legal, social, economic and biological context of marine fisheries management in the United States. Drawing on interviews with stakeholders from all sides of the issue the authors seek common ground and points of unresolved controversy among the diversity of interests and viewpoints involved. Chapters examine:

- History and background
- Status of marine fisheries
- Fishery productivity from biological, social and economic perspectives
- Ownership of fishery resources
- Management structures and incentives
- The roles of science and evaluation

Each chapter begins with legal, technical and conceptual background to help readers understand the sets of issues involved and follows that with a balance presentation of stakeholder views.

Fishing Grounds presents a useful overview of fisheries management options and positions regarding those options, providing valuable insight into the opinions and concerns of stakeholders and the sets of incentives to which those stakeholders respond.

Island Press – 256 pages – 2000
Tables, figures, index
Hardcover: $50.00 ISBN: 1-55963-803-6
Paperback: $27.00 ISBN: 1-55963-804-4

New Bill puts fish back in the Clean Water Act

The Fishable Waters Act (S.678), a bill that takes aim at America's four million surface acres of degraded aquatic habitat, was reintroduced in the United States Senate in early April by Senators "Kit" Bond (R-MO) and Blanche Lincoln (D-AR). A companion bill (H.R. 325) was reintroduced in the House of Representatives in January by Representative John Tanner (R-TN) and 15 bipartisan cosponsors.

The Fishable Waters Act creates voluntary, incentive-based partnerships aimed at restoring degraded watersheds and preserving fish habitat.

"The Fishable Waters Act will do for fisheries habitat what the Clean Water Act has accomplished for water quality," stated Norville Prosser, vice-president of the American Sportfishing Association. "Thirty years ago, the Clean Water Act promised Americans fishable and swimmable' waters. While water quality itself has improved significantly as a result of the Clean Water Act, aquatic habitat health has continued to lag far behind."

Congress is expected to hold hearings on the Fishable Waters Act on 2001 as soon as this summer. The progress of the legislation through both the Senate and the House of Representatives can be followed by going on-line to http://thomas.loc.gov/home/c107query.html and typing the number of either of the bills (H.R.325IH or S.678.IS) in the appropriate box.

From: New Bern NC Sun Journal, April 13, 2001

REPORT RECOMMENDS CREATION OF MARINE RESERVES

According to a new report issued by the National Research Council, a national system of marine protected areas is needed to overcome the shortcomings of conventional approaches to fisheries management. The report endorses the increased use of marine reserves – from which no fish or other living marine resources are removed – in concert with conventional management approaches for protecting ocean life.

Conventional approaches to fisheries management usually focus on individual species. Regulators typically place restrictions on fishermen limiting the number of days they are at sea, the type of gear they can use, and the amount and size of fish they can catch. Unfortunately, this strategy may actually ignore or exacerbate other problems within the ecosystem. For example, fishing vessels may tow gear that, while acceptable under the restrictions, actually damages critical habitats and unintentionally captures other sea life. In addition, it can be very difficult to accurately assess the abundance and health of individual fish stocks in order to create regulations for those individual stocks.

The report noted that the overall goal of marine management is to maintain the health of ecosystems in their entirety, beyond special protected areas, as well as within them. Conventional fishery regulations in open areas – as well as controls on damaging activities that have been poorly regulated in the past – will still be needed.

Copies of the report, "Marine Protected Areas: Tools for Sustaining Ocean Ecosystems," are available from National Academy Press at 202-334-3313 or 800-624-6242.

From: Marine Conservation News, Spring 2001

Lucky Break for Horseshoe Crabs

By Kim Todd

On February 5, the National Marine Fisheries Service banned horseshoe crab harvest near the mouth of Delaware Bay, an area crucial for animals coming to spawn on the bay's sandy beaches. The 1,500-square-mile Carl N. Schuster Jr. Horseshoe Crab Reserve, named after the noted horseshoe crab scientist, covers 30 nautical miles out to the ocean and stretches from south of Pecks Beach, NJ, to north of Ocean City, MD. The harvest ban took effect March 7.

While horseshoe crab meat isn't eaten by humans, fishermen use it as bait to lure more economically desirable creatures such as eel, catfish and whelk. The medical industry also uses them for testing in pharmaceuticals and suturing. The crabs fetch 75 cents to $1 each. Increasing harvest in recent years has led to fears that the population might crash, devastating not only the crabs, but the bay's entire ecosystem.

Horseshoe crabs come ashore on the beaches of Delaware Bay from late spring to early fall to mate and lay eggs. At the same time, other species are building nests, and hundreds of thousands of birds are migrating through, making the site the second largest staging area of the annual shorebird migration in North America.

The crab eggs provide vital food for sanderlings, plovers and sandpipers passing through. Once the crabs mature and head out to sea, they become an important part of the diet of sharks and juvenile loggerhead sea turtles. In turn, horseshoe crabs consume clams, mussels and sandworms. The establishment of the reserve recognizes both the crabs' important ecosystem role and the need to look at protection for different phases in its life cycle, according to Mike D'Amico, organizer for the Atlantic Coast Ecoregion.

The new "no harvest" zone is one of a series of victories for horseshoe crabs in recent years. A year ago, the Atlantic states came together and agreed to cut the horseshoe crab harvest by 25 percent. Until recently, Virginia hadn't signed on and fishermen were cruising off the Delaware and New Jersey coasts, catching horseshoe crabs and selling them in Virginia. But even this reluctant holdout agreed to adopt a lower catch limit last October.

Condensed from: The Planet, April 2001

Army Corps Found Guilty

When Donald C. Sweeney II accused his employer, the US Army Corps of Engineers, of manipulating study results to justify a $1.1 billion lock expansion on the Mississippi and Illinois Rivers, he was silenced and removed from the study. In December, his claims were validated by a Pentagon report, which also found that the Corps' industry ties created an agency-wide bias toward approving river construction projects. (See "Lay of the Land," July/August 2000.)

From: Sierra March-April 2001

Response to "First, Do No Harm"

By Howard Schuck –
Morality in handling of fish

Clarence Hickey's article is important. It will force some of us to recall procedures used for study of fish; and then assess (in hindsight perhaps more objectively) possible harms to the fish we were trying to help.

It seems useful to consider the harms as to: 1.) The individual fish we selected for study or special handling; 2.) The population of that species; 3.) The natural environment of that species; and 4.) Other species living in close conjunction.

Forced to recall earlier research operations, I remember one case of harm to the individual fish selected for study or special handling. New York State's Experimental Trout Stream Project operated from 1939 to 1942, and was terminated only because of the War. It was designed to learn about the life of wild brown trout in their natural environment.

One procedure was to tag each (legal-sized) trout captured in the annual inventories of the population. The purpose was to gain information on growth rate, perhaps survival rate, and perhaps estimation of the population and of course to track individuals within the 4 miles of stream. The method was the metal jaw-tag, adopted by our leaders after being described by Shetter (1936), and used widely in the USA for tagging of trout. Starting with the second year's inventory we began re-capturing fish. Almost immediately I began to feel uneasy about the appearance of the re-captures. There was damage to the mouthparts in proximity to the tag attached to and around the lower jawbone. In some cases the jawbone had been eroded away, perhaps by constant movement of a loose fitting tag. One extreme case was a jawbone cracked, perhaps from a too tight tag, allowing no room for the bone to grow (expand). Also on some fish the skin and some flesh had been eroded from the front of lower jaw and snout. Seemingly the fish had been rubbing on rocks at the bottom of the stream in an attempt to rid itself of the aggravating metal tag.

I started to wonder with so much time and effort being expended trying to get free of the tag, were they able to feed and thus grow as well as they did before being tagged? And as well as the rest of the population they were supposed to be a representative sample of? To test my suspicions I compared the condition (weights for a given length) of wild brown trout that had been tagged for 1 or 2 years with those which had never been tagged.

Two different length-weight relationships existed. For any given length, tagged fish were consistently lighter in weight than those never tagged. I concluded (Copeia, 1942 No. 1) that the jaw tag has a deleterious effect upon those fish it is placed upon. And therefore, such individuals cannot be considered as representative of the population after they are returned to it. Nor can they be used directly to measure growth. And the jaw tag probably destroyed the validity of trying to estimate survival rates or size of population by ratios of capture-mark-recapture techniques.

Sixty years later I am shaken by the magnitude of the physical harm and mental anguish we inflicted upon my revered brown trout, which at age 12 I had committed my life to. Even worse, as population analysts we had inadvertently destroyed the validity of using these selected samples to represent the total population of the stream. In confessing to this sin I find little solace in the fact that "everyone was doing it", or that individuals other than I had decided to use these destructive devices. As penance for my part in the crime I am pleased to realize it was I who exposed the harm of using these tags.

Trout research terminated because of the War, and I left New York State, hopeful but not optimistic that I had left the trout of New York in good hands.

I have one revelation of a Category Four Harm (impacting a co-lateral species living near the species being studied).

It was during a cruise of R/V Albatross III devoted to tagging small haddock on Georges Bank. On the last day of tagging (Sept. 10, 1950) just before a hurricane hit us we were making great progress and five people were tagging at once. However, we noticed that sharks were accompanying us as we chugged at trawl speed. Soon we realized they were now boldly at our port rail and were feasting on our tagged scrod haddock.

To "out fox" them we dropped the tags over the starboard rail, but a sub-set of sharks was soon there. The predation of our expensive tagged haddock became so great that something had to be done. As a first step I sat on the rail and with my personal .45 auto pistol tried to scare the nearest shark away each time a haddock was about to hit the water. This failed, so I began shooting at them. When my ammunition was expended I was reduced to jabbing sharks with a pike-pole. Then someone mentioned that the ship's regulation equipment included one (1) rifle (presumably for repelling boarders or putting down mutiny). I convinced a non-enthused captain to entrust me with this World War I govt. issue Springfield 30-06 and 60 rounds of ammunition. At the end of the day I had killed 55 white-tipped Sharks and wounded 13, mostly by rifle fire.

Our goal of 2500-tagged fish was not attained due to the large number eaten as they hit the water. But 1827 appeared to escape and it was the most successful haddock-tagging day in, to that point, history.

Over the 50 years since, I have occasionally felt a slight pang of environmental conscience. But at the time it seemed a reasonable decision by a resourceful, researcher totally dedicated to learning as much (and as quickly) as possible about his species. Today I suppose such drastic action might not be "gotten away with".

Editor's Note: Hickey and Schuck remind me that one of my great hopes is that Hell is not run by a fish.

Missing Member

Can anyone tell us the whereabouts of Lloyd Rothfus, Emeritus 84? His last known address was 115 Krestview Lane, Woodland, WA 98674-9695.

OUR SHORTEST FISHING SEASON?

Condensed from: Urgin' for Sturgeon
By A.C. McMullen

At 8:03 a.m., Todd Zellar stepped into his fishing shanty and spotted a huge silver shape with a dark gill gliding through the water underneath his fish shanty. The moment he was waiting for had come even before his gear was set up. Todd picked up his 30-pound spear and hurled it toward the fish.

At 8:35 a.m., Michigan's only fishing season for lake sturgeon was over.

Years ago, the season was determined by a number of days and not a number of fish. In 1997, Michigan's DNR determined the population of lake sturgeon had declined 66 percent over the past 25 years in northern Michigan's Black, Burt and Mullet Lakes. The act of fishing for the threatened species then became as threatened as the fish themselves.

Burt Lake and Mullet Lake were closed to sturgeon fishing altogether, but a band of dedicated sportsmen on Black Lake decided to fight for their sport and organized Sturgeon for Tomorrow. The group mobilizes sturgeon watch patrols to eliminate poaching, gives educational presentations, helps raise funds for sturgeon research, and works to re-establish the population of fish. Meanwhile, sportsmen on Black Lake retain a minimal season that preserves their 60-year old tradition. These fish are threatened, so why are any allowed to be taken at all?

"Survey numbers showed there was more mortality attributed to poaching than to sport fishing," says Brenda Archambo, president of Sturgeon for Tomorrow. "Why take the harvest away from legal anglers when poaching was the issue?"

Actually, according to the DNR, poaching isn't the only problem, Historically the species was overfished. Then construction of dams and silting of gravel bars in rivers compromised spawning habitat and interfered with the reproductive cycle – which is not especially prolific to begin with. Females do not spawn until they are between 20 and 30 years old, and then they may only spawn every seven years of their 80-year life span. Add poachers who typically do their dirty work during spawning season, and you have a clear recipe for disaster.

The complex problem required broad-based cooperation, and keeping the sturgeon season was seen as part of the equation.

"We felt that if the season were closed completely, it would be hard to get people to protect them and work on research," Archambo says. "If everything is taken from them, what are they working toward? At least we have a limited sport that we can also use as tool to recruit people to rehabilitate lake sturgeon. They're happy to be involved since their efforts and dues go into a program that is working to build a surplus so we can have a sport fishery," says the woman known locally as the "sturgeon general."

Sturgeon regulations allow for five fish per year to be taken through the ice from February 15 through 28. Special tags are issued at a drawing the night before the season opens: five tags for every fish available. If all five fish aren't taken on opening day, five new tagholders will be drawn for each remaining fish until five fish have been taken or until February 28. Becoming one of those privileged tag holders has become something of a sport in itself.

The quick success of this year's season has anglers buzzing about expanding the number of fish allowed to be taken. "Seems to be most of the fisherman have at least seen sturgeon, and several fishermen said they have seen three or four today," said Sgt. Greg Drogowski of the DNR. "It obviously looks good, but it's hard to say. Could be water clarity's really good on the lake so they're easy to see, or the fish are on the move today...it could be a lot of different things involved. It doesn't necessarily mean the population's higher. But it looks good anyhow; it's pretty encouraging.

Bringing back the Sturgeon

Sturgeon for Tomorrow is working with Central Michigan University and the DNR to conserve and rehabilitate existing sturgeon populations, and to reestablish those believed to have existed historically. This year, the group will continue to tag adult fish when they come upriver to spawn, and clip fin tissue in order to collect genetic information which will be used to study fish population dynamics.

"Another part of this year's study is Head Start," Archambo says. "We'll take some of the larvae to a hatchery until they reach stock-out size. What you are doing then is helping them along, not propagating them. It's best to let mother nature do what she was intended to do, but if we can help them along..." Archambo has been recognized with a special conservation award from Michigan United Conservation Clubs as "far and away the most influential voice for sturgeon in northern Michigan's Black Lake." The award praises her efforts to "promote a healthy and sustainable sturgeon fishery." The group's sturgeon guarding program received the Innovative Spirit Volunteer Service Award from Governor John Engler last year.

From: Northern Express Weekly, March 1, 2001
Submitted by – Bernard Skud and Ed Whitesel

Losses

Durbin C. Tabb
November 1, 1998

John Risley Gilbert ~

John Gilbert, AIFRB Member in 1959 and Emeritus since 1991, died April 27, 2000 in Seattle. Born in Astoria, Oregon in 1927, John came from pioneering Oregon families and was the son of DeWitt Gilbert, long time prominent editor of the trade journal Pacific Fisherman. The family moved to Seattle in 1928, where John attended schools and graduated from the University of Washington School of Fisheries.

John began working summers in Alaska while in college. After graduation, he joined the UW Fisheries Research Institute in a research program under Director WF Thompson to improve the basis for regulating salmon fisheries in the Bristol Bay region of Alaska. John played a significant role in developing the tower-counting method of assessing sockeye escapements, first on Wood River in the Nushagak District and later on the Kvichak River. He also developed the methodology for comparative annual assessments of sockeye salmon in the stream and lake beach spawning areas of the Nushagak and Kvichak river system, utilizing ground and aerial survey data. These methodologies developed in the 1950s were later adopted and applied to other river systems by management biologists of Alaska Department of Fish and Game when Alaska became a state.

In the early 1960s John was employed as a resource and industrial advocate for the Columbia River Packers Association. Subsequently he worked for Bumble Bee Seafoods, Castle & Cooke and Wards Cove Fisheries. He attended the Harvard Business School for senior management and became an executive of Columbia Wards Fisheries. Forty years in the Alaska seafood industry earned him the nickname "the voice of Bristol Bay." John participated for many years in international fisheries management as a US advisor to the International North Pacific Fisheries Commission and to the International Pacific Fisheries Commission. He was a strong supporter of Alaska salmon research and of efforts to preserve salmonid habitat.

John moved from Seattle to Port Ludlow in 1990 and spent much of his remaining years fishing with family and friends from his boat "Gorbuscha." He had a talent for making and keeping friends and was a devoted dog owner.

Submitted by – Robert Burgner

James W. Wood, 1925-98 ~

Jim Wood passed away suddenly on November 18th, 1998, after being diagnosed by NIH with Creutzfeldt-Jakob disease; Jim was 73.

Jim became a member of AIFRB in 1960, a Fellow in 1978 and Emeritus in 1991. Jim's specialty was fish pathology. He started with the Washington Dept. of Game, then was 10 years with Oregon Fish and Game, and then 25 years with the Washington Department of Fisheries. He published numerous fish disease articles and authored the State Hatchery Manual on "Diseases of Pacific Salmon, Their Prevention and Treatment". He updated that report on numerous occasions extending into retirement. He received the "S.F. Snieszko Distinguished Service Award" from AFS in 1985, and was recognized as a "Certified Scientist" by AFS.

James Wilford Wood was born and raised in Port Angeles, WA where he attended public school. Jim gained an early love for the coniferous forest belt and the peaks of the Cascades, and had a special love for the Olympic mountains, where he worked numerous summers for the National Park Service. He made a special effort to check out Mt. Angeles (6,454 ft) almost annually from age 3 to 73; those ascents often included his wife Doris and daughters Cathy and Mary Lynn.

Jim graduated from high school in 1942 and enrolled at the Drexel Institute of Technology in Philadelphia. He soon interrupted schooling by enlisting in the U.S. Navy in the V 12 officer program at MIT. Before long, along with others, he requested active duty and served in the submarine service on board the USS Clytie during WWII.

After discharge in 1946, Jim attended the University of Washington and enrolled in the College of Fisheries, receiving a BS in 1950 and an MS in 1954. It was during this period I met Jim, and I remember well the "BS" sessions held in his and Fred Holm's dorm room, in one of the temporary single level, multi-room dorms scattered across campus, with Jim and Fred's being just south of Frosh Pond on the path between Bagley (Chemistry) and Anderson (Forestry). Jim had remained in the Navy Reserve and was recalled during the Korean conflict. In 1952 he was released from active duty, returned to Oregon, and in 1953 married his life long friend, Doris Smith. Jim continued work with Oregon Fish and Game out of the Oakridge Lab from 1950 to 1960.

In 1960 Jim joined the Washington Dept. of Fisheries and completed 25 years with them as Fish Pathologist. On short term requests Jim also did disease consultation for the International Pacific Salmon Fisheries Commission in British Columbia, in Japan, and with the Peace Corps in Chile.

Many of us remember Jim as a serious worker, a good natured fun guy to be around, a dedicated husband, father and grandfather, with a green thumb that made everything grow in his garden. He had a special love for rhododendrons (and was active in the rhododendron society), with over 400 varieties in the beautiful park-like garden Jim and Doris maintained, and Jim knew each variety by their first name. We miss seeing Jim at our regional luncheons, but thanks for enriching our lives, Jim!

Submitted by Paul Olson

Editor's Note: Death notices and obituaries appear as they become available, sometimes much after the fact.

A prescription for reducing the damage caused by dams: New Report

There was a time when no achievement could evoke national pride like a major dam. More than 45,000 large dams (45 feet or higher) were built in the past century, supplying 19% of the world's energy and nurturing almost half the irrigated farmland. But in recent years, the environmental and social harm caused by large dams has become obvious. And as the need for water grows, dams could become a source of international strife.

Now a landmark study has analyzed the performance of large dams. Produced by the World Commission on Dams and unveiled by Nelson Mandela, the study found a landscape of "mostly negative" impacts.

"For the first time, dam builders, affected communities and environmentalists have endorsed a common policy for building and managing dams," said Deborah Moore, who spent 14 years at Environmental Defense protecting rivers. "Now, avoiding the negative environmental and social impacts of a dam is the priority."

As many as 80 million people have been displaced by dams worldwide. The projects have often been unprofitable, dogged by corruption or slow to deliver energy or water. In many poor countries, residents who lose their lands and livelihoods receive the fewest benefits from dams.

Dam building has also led to massive loss of wildlife habitat. Rotting vegetation trapped in reservoirs emits methane, contributing to global warming. Large dams have altered river flows downstream, killing plants and fish and causing some species to become extinct.

The final report suggests alternatives to dams such as water conservation, water trading and other market incentives. Also included is an "intact rivers" policy similar to the US Wild and Scenic Rivers Act, as well as provisions for environmental restoration and reparations to affected communities. The report could help resolve Western US water conflicts with its focus on constructive alternatives and on improving operations of existing dams.

Will the report actually improve how dams are managed? Environmental Defense is leading efforts to ensure adoption of the recommendations by the agencies that bankroll dams. The US Export-Import Bank has already incorporated the recommendations in its new draft environmental guidelines, and Environmental Defense is pressing the World Bank and lenders in Brazil, India and South Africa.

"For the first time, people agree that the environmental and human costs of big dams can outweigh their benefits," says Moore. "This is an opening to reform the entire decision-making process around development projects."

More on the web: www.environmentaldefense.org/more/10535.

From: Environmental Defense 32:2, March 2001

Are We in the Middle of a Major Climate Shift?

Yes, says Past-President Helle

By Bob Tkacz, laws for the SEA

Natural climatic cycles and ecological shifts have much more influence over the health of salmon and other marine populations than commercial fishing, two National Marine Fisheries Service scientists said last week. "I think we can point to the fact that these environmental changes are the main factor in forcing the ecosystem changes in the Gulf of Alaska," said Paul Anderson, a specialist in groundfish, shrimp and shellfish research for the agency. Salmon biologist Jack Helle added that it was "absolutely" the case that overfishing did not cause the crab and shrimp stock declines, which coincided with the last major ecological regime shift roughly 20 years ago. "From the mid-70s to the current time, I think the ocean environment has overridden a lot of things," Helle said at the Feb. 22 Legislative Fish Caucus meeting. "The trick is not to overfish when the environment is going down hill' for species already stressed by ecological changes. "The ocean regime shift of 1976" was largely responsible for the record salmon runs of the past two decades, Helle said. The current shift appears to be having significant impacts on various Pacific salmon stocks.

Helle defined a "regime shift" as a major change in climate, lower barometric pressure over a wide area and "generally more storms, more mix of ocean water and bringing up warmer water on coasts." Other planetary monitors, including the Aleutian Low Pressure Index, logged by American scientists, and the Atmospheric Circulation Index, which Russian scientists have recorded since the 1800s, also indicate that a major cyclical change is occurring, Helle said.

Increases in Chinook salmon returns on the California coast over the past five to six years, in contrast with a general assumption that "global warming was going to make southern salmon stocks disappear," could be a result of normal ecological cycles, Helle said.

Significant shifts in chum salmon returns around the Pacific have also been occurring in recent years. Helle said Japanese chum returns have dropped noticeably, and Canadian stocks also but to a lesser degree while Russian chum returns are growing. "I think this is a direct relationship in the decline in the numbers of Japanese chum out there and Bering Sea chum," Helle added. Asian chum run farther east than North American chum run westward, but the stocks do share the same mid-ocean pastures. "So they are competing for resources," Helle said. "This data clearly shows there is a carrying capacity problem. If somebody told me you could have too many salmon in the North Pacific, I wouldn't have believed it at all. Now I believe it." "Asian stocks are out there feeding with ours," he continued. "There's competition out there. It's an international issue."

From: Feb. 28 – WorldCatch News Network
Submitted by – Gary Sakagawa

Spring Chinook Run said to be Biggest in Decades ~ The Associated Press

Biologists attribute the abundance to two natural events, one in the Columbia River and the other in the ocean. Massive spring runoffs in 1998 and 1999 sent baby salmon barreling to sea, where they encountered some of the most biologically productive ocean conditions in more than a decade.

Portland – One of the driest winters in a century is threatening baby salmon and clouding hopes for future runs on the Columbia River. But the river is awash with returning fish, the biggest return run since counting began at the windows of the dams in 1938. Yesterday, the river opened for its first Chinook fishing in April since 1977.

Biologists predict a record return of 365,000 spring Chinook, a dramatic rebound from the all-time low of 10,200 fish in 1995.

Spring Chinook formed the river's mightiest run before dams were built. They still epitomize the heroism of the salmon – surging home from the sea, entering rushing snowmelt and runoff, struggling upriver through roaring rapids, and journeying hundreds of miles to spawn and die in quiet waters of mountain streams.

This forces the spring Chinook to evolve far greater reservoirs of fat and oil than other salmon species, a succulent benefit not lost on fishermen. Spring Chinook, when available, still command premium prices on fresh fish markets.

Biologists attribute the abundance to two natural events, one in the river and the other in the ocean. Massive spring runoffs in 1998 and 1999 sent baby salmon barreling to sea, where they encountered some of the most biologically productive ocean conditions in more than a decade.

"The stars just all came together," said Steve King, salmon fishery manager for the Oregon Department of Fish and Wildlife.

Biologists predict that among this year's rags-to-riches return will be 39,300 endangered Snake River wild Chinook. That would be twice the highest count recorded since the Snake River dam complex was completed in 1975. Wild fish, which must be released unharmed, are distinguished from hatchery fish by the presence of a small fin just in front of the tail. That fin is clipped off in hatcheries as a means of marking fish that are legal to keep.

As a young biologist in the 1970s, King worked on a state fish-checking team. He ruefully remembers the day near the end of March 1978 when his team had to tell thousands of anglers along the lower Columbia that their beloved traditional season was being closed to protect the dwindling run. "They were surprised," King said. "They wanted to know what the heck was wrong. We weren't sure ourselves."

In the years since, he said, scientists have pinned the crash on a number of factors, including the deadly combination of poor ocean conditions and construction of the Snake River dams and the John Day Dam. He and others are buoyed by the consequences of the two high-water springs coupled with the "huge boost from the ocean." King also credits other factors, including screens to protect fish from turbines at dams, habitat improvements and efforts to control predators. Those who experienced the closure of sport fishing in 1978 savor the promise of the coming weeks.

Biologists flying over the lower river the last weekend in March estimated that 4,000 people fished for salmon from boasts and beaches between Astoria and Bonneville Dam. They expect that number to more than double during April's peak returns. "This year and next could become the 'good ole days,'" King said. But with diminished flows, King said, future runs again could be at risk. So he's enjoying this part of his job while he can. "It's really great, 25 years after closing down the fishing, to be part of the team reopening it," King said.

From: Seattle Post-Intelligencer Monday, April 2, 2001
Submitted by – Bernard Skud

Editor's Query: What is the purpose and value of an adipose fin to the fish? As above, fish managers love to remove them. Consequence?

Final Notice - Outstanding Achievement Awards

This is your opportunity to provide nominations and help AIFRB recognize the individuals and organizations that are making outstanding contributions to our science. The Individual Achievement Award for 2002 is given to an individual who has made significant contributions to the advancement of fishery science. The group Achievement Award for 2001 is given to organizations with outstanding records of scientific contribution to fishery science or fishery resource policy. The criteria used to judge candidates include sustained contribution of significant publications, exceptional service of the fishery profession, outstanding teaching or training programs, important discoveries or inventions, and significant contributions to the advancement of fishery science.

The nominating letter should include name, address, telephone number and email address of nominee, and a short resume of the nominee and a letter fully describing how the nominee meets the criteria. Please include your name, address telephone number and email address.

Nominations are due by June 1, 2001. Fishery scientists whose names were submitted and selected as runner ups last year will also be considered. Submit nominations to: Dr. Linda Jones, Northwest Fisheries Science Center 2725 Montlake Blvd. East Seattle WA 98112-2097.

Log First, Ask For Data Later

Pacific Northwest environmentalists and independent scientists have long argued that new rules governing logging near salmon streams on private timberlands in Washington State are inadequate. It turns out that scientists within a key federal agency that signed off on the new regulations in 1999 raised concerns internally while the plan was being negotiated – and were ignored by their superiors.

According to documents made public in late January by a Seattle newspaper, scientists with the National Marine Fisheries Service, the agency charged with protecting salmon, told agency managers in late 1998 and early 1999 that the proposed rules were based on "thinly supported" scientific information. One researcher, Steve Morris, then chief of the fisheries service's regional Habitat Conservation Branch, complained after a September 1998 briefing "most of the Region's technical staff had not seen the proposal." Nonetheless, staff scientists were directed "to find evidence to support a conclusion that was already made," Morris wrote. Another researcher, after reviewing part of the plan, asked bluntly, "Where's the science?"

The forests and fish plan is intended to govern logging on 10 million acres of Washington forest for the next fifty years. In exchange for agreeing to the new rules, the timber industry was given an exemption for Endangered Species Act regulations that recently went into effect to protect the salmon.

The plan was worked out by timber industry representatives and state and federal officials away from the public eye – and without the involvement of environmentalists, who pulled out of the negotiations midstream, claiming that the only plan on the table was one proposed by logging interests.

The agreement called for a modest increase in forested buffers along fish-bearing streams, from a minimum of twenty-five feet to eighty feet (with cutting still allowed within them); restrictions on logging excessively steep slopes; and a requirement that timber companies repair deteriorating logging roads that wash sediment into salmon streams.

The main complaint about the plan is that it allows too much logging too near streams (among other things, trees along water ways keep water cool for eggs and fry, stabilize stream banks, attract bugs that salmon eat and filter out pollution). A growing body of scientific evidence suggests that salmon and steelhead require forested stream buffers of at least 250 feet – more than three times the width of the buffer zones in the forest and fish plan. One participant in the negotiations told *Forest Magazine* in late 1999 – several months after the plan was approved – that the reason the buffer zone protections aren't stronger is due to the financial concerns of the timber industry.

Defenders of the plan have argued that the rules can be tightened as new scientific evidence about the impact of logging on salmon comes in. Such assurances have not satisfied environmentalists and commercial fishing interests who have sued to nullify the agreement. So Becky Kelley of the Washington Environmental Council asks, "How could the National Marine Fisheries Service have signed off on this?"

From: Forest Magazine, March-April 2001

Lackey Honored by Colorado State

Dr.Robert Lackey, professor of fisheries and wildlife at Oregon State University, has been selected by the faculty of Colorado State University's College of Natural Resources as their 2001 Honor Alumnus. He received a PhD from CSU in 1971. His wife, Lana, is also a CSU alumnus, received a Bachelor of Science degree in 1969 with a major in Hearing and Speech Science.

Lackey is a fisheries scientist with the U.S. Environmental Protection Agency research laboratory in Corvallis, Oregon, as well as courtesy professor of fisheries science and adjunct professor of political science at Oregon State University.

His career has taken major turns at 10 year intervals. In the 1970s he was a tenured associate professor of fisheries science at Virginia Tech. In the 1980s he served a senior scientist with the National Acid Precipitation Assessment Program, a $100 million government-wide effort to determine the effects of acid rain throughout the nation. Through the 1990s he was Deputy Director of EPA's environmental research laboratory in Corvallis, a $40 million center focusing on national ecological science questions. As he begins his fourth career decade, he returns to his primary professional interest: natural resource ecology, especially Pacific salmon and the interface between science and public policy. He is currently special assistant for interagency salmon research at the Corvallis EPA lab.

A Canadian by birth, Dr. Lackey hold a Bachelor of Science degree in fisheries science from Humboldt State University, a Master of Science degree in zoology from the University of Maine, and a Doctor of Philosophy degree in fisheries and wildlife science from Colorado State University. He is a certified fisheries scientist and Fellow in the American Institute of Fishery Research Biologists. Throughout his career, he has maintained an active program of research and scholarly study, having authored 85 scientific journal articles, written a book on fisheries science, and edited three others.

He continues his career-long interest in higher education by regularly teaching a graduate course in ecological policy at Oregon State University. He has taught natural resource and environmental science courses at five North American universities. He was a 1999-2000 Fullbright Scholar at the University of Northern British Columbia where he taught integrated natural resource management and continued his research on the science/policy interface.

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American Institute of Fishery Research Biologists

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VOL. 30, NO 3 MAY, JUNE 2001

FREE BEER! FREE BEER! FREE BEER!

AIFRB Reception Phoenix AZ Sunday August 19, 2001, Phoenix Crowne Plaza Hotel

ALL MEMBERS INVITED

Whether you are in Phoenix in late August for the AFS meeting or are just there to enjoy the cool weather do not forget to attend the AIFRB reception to meet fellow and prospective members. District Director Morris Southward has been working very hard to provide the snacks and beverages while still cosseting the AIFRB budget. Reward yourself and Morris by attending.

PRESIDENT TIGHTENS FISCAL BELT

GARY SAKAGAWA

Since my announcement of projected budget deficits, Al Shimada received several receipts and up-dated his projected balance for the year. I used his projections to develop the following implementation plan for each of my five targeted areas for cut-backs:

1. Reduce postage cost for Briefs by applying for tax-exempt postage permit.

Application for permit has been initiated by John Merriner and procedures are in place. Shimada is working closely with Merriner.

2. Reduce the Research Assistance Awards budget cap from $3K to $1,050.

Guidelines have been provided to Jerry Ault.

3. Eliminate hosting of the AIFRB reception at the AFS meeting.

I received comments indicating that a reception at the Phoenix meeting could be made into a significant Board effort at recruiting new members and be especially useful for the District Directors from the southwest region. Taking the comments into consideration, I have asked Morris Southward to look into sponsoring the reception provided he can keep expenses to $200 (no room charges, cash bar, etc.). Southward is looking into this matter and is optimistic. (See above)

4. Eliminate coffee service for the BOC meeting.

Will be implemented. *(An electric cattle prod will be employed to energize the caffeine-deprived. –Ed.)*

5. Reduce BOC travel reimbursement from $550/member to $250/member.

Al Shimada's new revenue numbers, so far, indicate that we can afford to reimburse six (6) members at the $550/member rate.

6. Decommission Presidential Yacht

Immediately the presidential yacht M/V Fish Squeezer will be taken out of service. The oars were rotten anyhow.

2001 Membership Listing Available

An alphabetical listing of all AIFRB members as of May 2001 is available at the AIFRB website (http://www.aifrb.org) and as a hard copy. Hardcopy may be obtained from President Sakagawa by writing or calling to 858-546-7177. The listing provides membership status but not addresses so as not to become fodder for spam artists, marketers, etc.

Contact Dr. Gary Sakagawa, Senior Scientist for Highly Migratory Species, Southwest Fisheries Science Center, National Marine Fisheries Service, P.O. Box 271 (8604 La Jolla Shores Drive), La Jolla, CA 92038-0271; Phone: 858-546-7177; Fax: 858-546-5643; Email: Gary.Sakagawa@noaa.gov.

Northern California District Hungry for Knowledge and Pasta

On May 31, the Northern California District held their May dinner meeting with a social hour, dinner and seminar at The Italian Affair Restaurant, Santa Rosa, CA.

Patrick Higgins and Bill Kier lead a presentation/workshop of KRIS (Klamath Resource Information System), an exceptional database management system. KRIS is a fisheries and water quality database management system originally developed in the Klamath River Basin for the U.S. Fish and Wildlife Service. There are two parts to KRIS: (1) the KRIS database engine or "KRIS/DB", which requires no additional software and runs on any modestly-powered IBM-type personal computer [or Mac w/ Virtual PC] and (2) KRIS/Map which requires ArcView software. (The KRIS/Noyo advanced map projects further require the ArcView extensions Spatial Analyst and 3D Analyst.) KRIS has been selected by the California Resources Agency to support the three-year, $7 million North Coast Watershed Assessment Program which began in fall, 2000 and by the Sonoma County Water Agency to support its North Bay counties salmon and steelhead restoration plan initiative.

Submitted by: Tom Keegan

The AIFRB is a 501(c)(3) tax-exempt nonprofit organization (EIN 61-6050711).

Northern California AIFRB Student Paper Sessions at Cal-NEVA AFS Meetings A Success

The student paper and poster judging (sponsored by the Northern California AIFRB District) at the recent 35th Annual AFS Conference, Cal-NEVA Chapter was a success, made difficult only by the large number of very high-quality presentations. First place for oral presentations went to Kristina D. Louie of UCLA for her talk entitled "Genetic Variation in the Eastern Pacific Bay Pipefish, *Syngnathus leptorhynchus* (Gasterosteiformes: Syngnathidae)." Second prize went to Joaquin Feliciano of U.C. Davis for his talk entitled "A Test for Competitive Interactions between Steelhead Trout (*Onhorhynchus mykiss*) and California Roach (*Lavinia symmetricus*)." Honorable mentions went to Dani Evenson (Humboldt State University) and James A. Hobbs (U.C. Davis). A single prize for best student poster presentation went to Jeff Field from the Moss Landing Marine Laboratories for his poster entitled "Subtidal Fish Guilds and Associated Habitat Characteristics off Central California." Many thanks to all those who helped judge the talks and posters, but especially to Tom Keegan and Robert Blizard, whose organizing efforts were essential.

Submitted by: Andrew Jahn,
District Director Northern California

NEW ASSOCIATE MEMBER

Emily G. Wyro Northern California District

Ms. Wyro's listing arrived a little late for the more extensive listing of membership changes in Briefs, March-April.

Submitted by: Tom Lambert

A MEETING OF NOTE

THE FOURTH ANNUAL WETLANDS REGULATORY WORKSHOP

A closer look at contemporary wetland regulatory issues.

The Fourth Annual Wetlands Regulatory Workshop will be held from October 29-November 2, 2001 at the Holiday Inn on the Boardwalk in Atlantic City, New Jersey. The purpose of this workshop is to further investigate contemporary wetland regulatory issues that have been addressed in previous workshops. As always, the Workshop strives to increase dialogue and foster partnerships between federal, state and local regulatory agencies, non-governmental organizations and the regulated community.

The workshop will concentrate on the following topics: Definition of "Fill"; TMDL's and Wetland Protection; Isolated Waters (SWANCC Case); Functional and Biological Assessment Methods; Wetland Monitoring; New Nationwide Permits; State Wetland Programs; Development of State Wetland Programs; New Indicators for the 3 Parameters; Delineation and Identification Tools; Development of a New Manual; Mitigation "Success" Criteria/Ratios/Banking; and Regional General Permits.

Representatives from federal, state and local governments, academia, non-governmental organizations and the private sector are invited to submit abstracts. Abstracts may pertain to both tidal and non-tidal wetlands.

Contact: Ralph Spagnolo (3ES30)
U.S. Environmental Protection Agency, Region III
1650 Arch Street, Philadelphia, PA 19103-2029

AN AMAZING DISCOVERY

With the 1998 discovery of two coelacanths in its waters, interest in protecting Bunaken National Marine Park (Indonesia) has increased in recent years. The coelacanth is an extremely rare fish that shows remarkable similarity to a 400-million-year-old fossil, and its discovery makes it all the more urgent that conservation efforts in the region succeed.

In addition to its own work in Indonesia, World Wildlife Fund (WWF) recently provided an action grant to Dr. Mark Erdmann, who brought this coelacanth discovery to the world's attention. Erdmann is conducting a comprehensive assessment of the population size and distribution of what is being called the Indonesian coelacanth (the only other population of coelacanth know to western science was discovered off the eastern coast of South Africa in 1938). Armed with the new data on the coelacanth, WWF hopes to further safeguard the watery habitat of this "living fossil."

Meanwhile, the discovery of the coelacanth has spurred a wave of conservation activity around Bunaken. Under Erdmann's guidance local youths from the islands within the park have formed "Tim Raja Laut" ("Team King of the Sea") to work with local fishermen to monitor their catches for coelacanths and other endangered species.

This youth group has also been instrumental in identifying new turtle nesting beaches on the islands and reporting illegal and destructive fishing activities in the park. And village women who used to make a living selling black coral and other protected species are now producing embroidered coelacanth souvenirs for tourists.

From: Focus, May-June 2001

GUARDING UNDERWATER TREASURES IN THE DRY TORTUGAS

AIFRB Members at Work: Dr. Jerald Ault

By Jon Nordheimer

Dry Tortugas National Park, Fla. – Blue and lime green waters as far as the eye can see, brilliant in the strong spring sunshine, make this one of the most remote national parks in the continental United States. Lying some 70 miles west of Key West and twice as far from the Florida peninsula, Dry Tortugas National Park is part of the Tortugas Bank, where sharp coral reefs over centuries sliced through the keels of the Spanish gold fleet and other unlucky vessels, romantically linking the Tortugas to buried ships laden with riches. The real sunken treasure, however, has been the sea grass beds and majestic coral heads that serve as spawning grounds for some 250 species of fish. It is called Florida's Yellowstone, the last frontier of healthy shallow and deep reef habitats in the Florida Keys archipelago and one of the most fecund marine nurseries in the hemisphere.

Though commercial fishing has been banned in the park for years, these waters have drawn growing numbers of sports anglers who can venture far out to sea. Now, after 10 years of study and public comment – and to the anger of sports fishing groups – the federal and Florida governments are moving to impose total fishing bans on the western half of the park and on two larger areas of water to the north and south. Together, the three tracts cover about 200 square miles on the southern edge of the Gulf of Mexico, creating one of the nation's largest marine preserves. While the bans outside the national park will be fully adopted by July 1, the new interior secretary, Gale A. Norton, may take more time to review a portion of the plan that denies fishing to the public in 46 of the park's 100 square miles. Dick Ring, associate director of operations for the National Park Service, said the delay was not forced by pressure from the sports fishing industry to modify the ban inside the park. Rather, Mr. Ring said, Ms. Norton had asked for reviews of all major changes made by the Clinton administration before final approval was granted.

Marine biologists say the fishing bans are essential to protect the depleted fish stocks in the waters of South Florida and the Keys, and a touchstone for future preserves elsewhere in United States waters, The Florida Keys were designated a national marine sanctuary in 1990, but existing fishing regulations in the sanctuary are far less rigorous than the total bans that will be enforced in the "no-take" marine preserves.

"The world is hammering available food fish stocks," said AIFRB member Dr. Jerald S. Ault, a marine biologist at the University of Miami's Rosenstiel School of Marine and Atmospheric Science. "No-take zones in the Tortugas are an important step in preserving not only overfished species but also their natural habitats, which are increasingly under pressure from human intervention." Dr. Ault led a research team that conducted about 3,000 dives in the Dry Tortugas over the past two years in an attempt to take a census of marine life. He said the researchers found evidence that the number of important game and food fish species like grouper and snapper were declining. Moreover, the average body size of some species had dropped substantially by historic standards – a telltale sign, he said, that some species were being overfished before reaching peak reproduction years.

Mr. Ring said the ecosystem wide approach to protecting the Tortugas demonstrated how important the region was to Florida's waters. "Our protection is going to basically tell whether or not we still will have a fishery, commercial or sport, in the future," said Mr. Ring, who as a former superintendent of the Everglades and Dry Tortugas national parks was central to the plan's development.

But the plan for no-take zones has raised an outcry among recreational fishing groups. While they agree that fish stocks are thinning throughout the archipelago, they say the plan was based on faulty data and that sports fishers are being penalized for a problem created by commercial fishing fleets. Supporters of the plan cite as evidence of fishing pressures the increased number of recreational boats registered in the four southernmost Florida counties: 35,000 in 1972 and nearly 200,000 today.

But opponents say most of these boats are not large enough to make the long trip to the Dry Tortugas, especially in treacherous weather. "Recreational fishing takes at most 4 to 5 percent of the fish caught in the Tortugas," said Karl Wickstrom, publisher of Florida Sportsman, a magazine for anglers and boaters. "While they may sound good on paper, all the no-take zones will do is to make the commercial fleets redouble their efforts in surrounding waters." *(Wickstrom has been one of the most vocal and influential foes of marine reserves in the southeast. Ed.)* Some also scoff at plans for enforcing the new bans so far out at sea at a time when state and federal budgets are already strained by trying to catch drug runners and illegal immigrants. "It just might encourage poaching in the middle of the night by those who have no trouble breaking the law in broad daylight a quarter-mile out of port," said Andy Griffiths, who operates charter fishing boats in Key West.

Mr. Wickstrom, who has led fish conservation efforts like the 1995 ban on the use of commercial gill nets in Florida's coastal waters, noted that most fishermen were not averse to strengthening limits on the size and number of fish taken on an outing, but rebelled at being forced out of dropping a line in the water altogether – "especially when they believe these new restrictions are based more on theory than fact." In particular, he and others expressed skepticism over the reliability of research data showing sharp declines in Tortugas' fishing stocks.

The 3,000 dives made by Dr. Ault's team consisted of scuba-equipped researchers entering the water at different locations and recording all the fish sighted for 15 to 20 minutes within a 15-foot radius, from bottom to surface. Those numbers were compared with records of catches taken by charter boats in the past rather than previous scientific observation.

But critics of the research, which was decisive in developing the no-take areas, argued that the statistics were not comparable. The fish, especially target species like big groupers, tend to be shy and may actually hide from intruders splashing into their reef habitat for a brief census, the critics pointed out. Dr. Ault and others who helped draw up the no-take zones concede that some guesswork played heavily in the decision making, and that many mysteries of the deep remain, including spawning patterns in the Tortugas. But they say it is wiser to take steps now to avert a collapse of declining individual species rather than wait until scientists can conclusively counter every challenge to their data. "By that time it might be too late," said Robert Brock, supervisory marine biologist for the Dry Tortugas National Park and Everglades National Park.

The importance of the Dry Tortugas as spawning grounds extends far beyond its invisible boundaries. Strong currents converge dynamically on its southern flank where the relatively shallow shelf of the Gulf of Mexico plunges more than one mile into the underwater chasm of the Florida Straits. A deep canyon between here and Cuba funnels the powerful Gulf Stream northeastward toward the Atlantic. Eggs, larvae and juvenile fish caught by the currents drift downstream from the Tortugas to the Florida Keys and the marshy southern tip on mainland Florida 140 miles away, riding a natural conveyor belt out of the fish factory. "If the juvenile nursery in the Dry Tortugas is messed up it has an impact on everything downstream in the Keys and can mess up whole life cycles of organisms," Billy Causey, the sanctuary manager who has championed the no-take preserves, said on a recent wind-tossed crossing from the Key West to Fort Jefferson.

A decade of study and suggestions from a small army of federal and state managers, scientific research, private and commercial fishing interests went into planning for the preserves. The boundaries overlap federal and state waters overseen by several agencies as well as Gulf and South Atlantic fishery advisory councils, appointed boards representing commercial and recreational interests. Jurisdictional prerogatives were not so much in conflict as they were tangled and in need of separation before being reassembled into new cloth.

Dry Tortugas National Park was created in 1992 after 57 sleepy years as an isolated national monument designated to preserve Fort Jefferson, the largest brick military installation built in the 19th century. Set on Garden Island, the fort was used as a Union prison in the Civil War and later held Dr. Samuel Mudd and three others charged with crimes connected to the Lincoln assassination. The park consists of 6,000 watery acres and seven small islands with a combined land total of 104 acres; the largest is Loggerhead Key with its 144-year-old lighthouse, sitting on the southernmost outcropping of land in the continental United States. Its remoteness helped protect the fragile ecosystem. The introduction of fast-ferry day trips and air taxis from Key West, however, boosted tourism from 18,000 visitors in 1986 to 95,000 last year, park officials said, though most visitors set foot only on Garden Island. Overnight boaters are required to anchor within one nautical mile of the fort.

The two newly protected areas outside the park include a 96-square-mile tract to the northwest called Tortugas North. It contains a remarkable mass of hard and soft corals called Sherwood Forest, where growths shaped like giant lacquered mushrooms sway eerily in the filtered underwater sunlight. The other no-take tract is the 60-square-mile Tortugas South, home to swarming fish at Riley's Hump, a favorite site for commercial and sports fisherman.

Commercial fish traps are still permitted in the western part of the Tortugas Banks outside the no-take tracts. The traps are devices that recreational fishing interests claim are the real cause of fishing stock declines along with coth co nets. The traps are scheduled to be banned by 2007. "Reef fish are trap happy," said Mr. Causey, the sanctuary manager. "The more fish that get inside, the more fight to get inside. It's a real frenzy." The baited traps will continue to take a huge toll outside the no-take boundaries for the next six years, he noted, and no fish have the sense to resist leaving the new safe havens to follow the seductive scent of a possible meal.

From: www.nytimes.com/2001/06/12/science/12TORT.html

Submitted by: Gary Sakagawa

Gulf Sturgeon Ruling Gives a Boost to Critical Habitat Rules

Court Found that Congress Meant to Encourage Recovery

In 1991, the Fish and Wildlife Service listed the gulf sturgeon as threatened. In 1998, the agency announced that it would not designate critical habitat for the sturgeon, arguing that its own regulations require such designation only to stop "destruction or adverse modification" of habitat that would imperil "survival and recovery" of the species. Attorney Robert Wiygul filed suit on behalf of the Sierra Club, arguing that the Endangered Species Act quite clearly requires habitat protection to aid in the recovery of vanishing species as well as to stop their extinction.

The importance of this particular ruling – one that should have beneficial consequences elsewhere – comes in places where, for example, sturgeon no longer exist but could once again as conditions improve and the populations stabilize and begin to rebuild themselves.

"This decision basically says that for 15 years the Fish and Wildlife Service has been watering down the protections in the Endangered Species Act," according to Wiygul. "Some in Congress have criticized the ESA because not not enough species have been rescued. This case makes it clear that the ESA has never been given a chance."

From: In Brief, Spring 2001

Wise Use Movement, R.I.P.?

Friends in the White House, but few foot soldiers

Logging and mining magnates everywhere must have bowed their heads when People for the USA, one of the country's leading "wise-use" groups, bit the dust. Formed in 1988 to combat spotted-owl supporters in the Pacific Northwest, PFUSA (formerly People for the West) shut its doors in January, citing a decline in funding and membership. "The short answer is that we ran out of money," Executive Director Jeff Harris explained in a final column in the group's newsletter, but behind that reality is the undeniable fact that we were also losing our relevance."

Once the darlings of anti-environmental politicians and big business, the wise-users have fallen out of fashion. (The term "wise-use" implies a conservationist ethic, but actually unites promoters of logging, mining, motorized recreation, development and other damaging uses of public lands.) Early wise-use conferences were supported by Chevron, DuPont and Boise Cascade, but corporations are now more likely to fund think tanks and public-relations efforts, "At one time, the corporate groups thought they could pump money into 'grassroots' wise-use campaigns and get them to do the dirty work," says Emily Headen, director of the Clearinghouse for Environmental Advocacy and Research (CLEAR). But business interests quickly soured on the wise-use groups' overheated rhetoric (and sometimes aggressive tactics) and pulled their funding.

Still, it's not too soon to rejoice. Many of PFUSA's 30,000 members have already aligned themselves with other like-minded organizations, including the BlueRibbon Coalition and Frontiers of Freedom. Moreover, the dissolution of a single group – may not mean much for a "movement" that has never relied on membership numbers for its strength.

"Many of the wise-use groups are centered around one charismatic figure who writes for the local newspaper, sets up a Web site, and comes to all the meetings – yet they promote themselves as citizen-led counter efforts," says Susan Levitz, a Nevada County, California, resident who has tangled with wise-users in her efforts to protect the South Yuba River. "They don't have real members who pay real money; they're not accountable to anyone."

Like his father before him, George W. Bush has provided wise-use advocates a safe harbor within his administration. Interior Secretary Gale Norton's previous employer, the Mountain States Legal Foundation, has given free legal defense to wise-use groups. Another key cabinet member, Agriculture Secretary Ann Veneman, represented the Sierra Nevada Access and Multiple Use Stewardship Coalition in her private law practice. "With Gale Norton in office, the wise-use groups are probably feeling pretty optimistic," says CLEAR's Headen.

But the Bush administration and its supporters in Congress will need more than a few vocal malcontents to roll back conservation achievements like the wild-forest initiative – a policy that prohibits logging and road-building in 58 million acres of national forest. To repeal the policy, Bush would essentially have to repeat the lengthy process the Clinton administration went through to pass it. "That was the largest rule-making process in history: three years, 600 meetings and 1.6 million comments, 85 percent of which favored full protection of roadless areas," says Sean Cosgrove, the Sierra Club's forest-policy specialist. The public support shown throughout that process will also make Congress wary of challenging the plan. "Most members of Congress know that protection of wilderness areas is supported all across America," Cosgrove says. "They don't want to vote against that." As our elected officials have realized, environmentalists have the numbers to beat back any challenge from the wise-users. We just can't let them outshout us.

By Jennifer Hattam
From: Sierra, May-June 2001

Canadian Endangered Species

Once again, the proposed Canadian Species at Risk Act (Canada does not currently have an endangered species law) is under consideration. Canadian scientists who believe the Bill suffers from two fundamental flaws are circulating an open letter gathering signatures from both Canadian and U.S. scientists. Since a Canadian endangered species Act would also affect U.S. endangered species, the goal is to show Canadian and U.S. scientific support for a bill that is stronger. In particular, according to the organizers of the letter, the Bill would not ensure protection of endangered species' habitat and the decision of whether or not to list an endangered species would be based on policy, not on science. To learn more or to sign on to the letter, visit www.scientists4species.org

From: New Source Newsletter 73, Spring 2001

FISH FARMS - CONSERVATIONISTS REACH ACCORD

Aquaculture industry will develop plans to contain salmon, report escapes within 24 hours

By Susan Young — Of the NEWS Staff

HALLOWELL – After years of fighting in court and the political arena, the state's aquaculture industry and three conservation groups announced Thursday they have reached an agreement to reduce the number of farm-raised salmon that escape into Maine waters, potentially threatening wild fish.

Under the agreement, fish farms must develop plans to contain their fish, the plans must be made available to regulators, and farm practices will be audited annually by an independent expert. In addition, any escapes from fish pens must be reported to the state Department of Marine Resources within 24 hours under terms of the agreement. "For the first time, we have people who were adversaries sitting around the same table," said Sebastian Belle, executive director of the Maine Aquaculture Association. He formerly worked for the DMR where he said he witnessed the same groups at loggerheads.

Earlier this year, the conservation groups expressed outrage and called for a moratorium on new aquaculture sites after learning that it took the state seven weeks to alert federal authorities to the fact that 100,000 farmed fish escaped into Machias Bay during a storm. The groups, the Atlantic Salmon Federation, Trout Unlimited and the Conservation Law Foundation, worry that farmed salmon can expose wild fish to disease and could affect the genetic make-up of wild fish. The groups filed a lawsuit to compel the federal government to list the fish as an endangered species. Wild Atlantic salmon in eight Maine rivers were listed as an endangered species by the federal government last year. Five of the rivers are in Washington County, which is home to most of the state's commercial salmon farms. The National Marine Fisheries Service and U.S. Fish and Wildlife Service listed the threats posed to wild fish by salmon farms as one of the reasons for the listing decision.

After the federal listing, the conservation groups halted their lawsuit. However, the state filed suit early this year contesting the listing. Gov. Angus King long has argued that the endangered species listing is not warranted because there are no wild salmon in Maine due to more than 100 years of stocking non-native fish in the state's rivers. That suit was supported financially by the aquaculture industry as well as other businesses. Although both sides professed to be working together to improve conditions for wild salmon, Belle said Thursday that the agreement with conservation groups did not change the industry's support for lawsuit because he saw that as a separate issue. Concerns over the escape of farmed fish also has been heightened of late since three cases of a deadly salmon illness – infectious salmon anemia – have been found in Maine this year. Despite efforts to prevent the spread of the disease, which does not harm humans, it has made its way from Canada to Maine.

Despite these concerns and the listing, there is currently no state or federal requirement that fish escapes must be reported to the government. That would change under the terms of the new agreement. Industry and conservation officials also expressed the hope Thursday that their agreement may form the basis for any future regulations the federal fisheries agencies decide are necessary to help wild Atlantic salmon recover in Maine.

Dan Kimball, an Atlantic salmon recovery specialist with the U.S. Fish and Wildlife Service, said the agreement is "a great step forward" but leaves many important issues unaddressed. For example, federal regulators have expressed concern about the industry's continued use of European strains of salmon in its pens in Maine. This issue has not been addressed yet, said Trout Unlimited's Jeff Reardon, because the parties began with the issues that were easiest to address. They plan to continue working on tougher matters such as the use of European strains of fish. Kimball said he did not expect his agency to develop specific federal regulations on containment or other issues covered in the agreement. Instead, these issues will be addressed by putting conditions on the permits fish farms must obtain from the U.S. Army Corps of Engineers, he said.

At a press conference Thursday in Hallowell to announce the agreement, Des Fitzgerald, president of Atlantic Salmon of Maine, said the industry made a leap faith in negotiating and signing the agreement with its former adversaries. The other companies that signed the agreement are Heritage Salmon Inc. and Stolt Sea Farm Inc. He said the companies, which try to keep their practices secret from one another, took a risk in sharing information with each other and the conservation groups to develop fish containment standards. In addition, there is a risk that the plan they develop will become the basis of additional state and federal regulations. However, Fitzgerald said, this would be better than having rules developed by bureaucrats thrust upon them.

The Maine Aquaculture Association received a $500,000 grant from the National Fish and Wildlife Foundation that will be used to develop containment protocols and to study the feasibility of marking all farmed fish to distinguish them from their wild counterparts. While Maine seeks to resolve fish-containment problems, the issue is also a hot one internationally.

At their annual meeting in Spain next month, members of the North Atlantic Salmon Conservation Organization will discuss the development of a code of conduct for the aquaculture industry. Fish farmers in Europe, Canada and South America are keeping a close eye on what is happening in Maine, said Belle who will head to Spain next week.

From: Bangor Daily News, June 1, 2001
Submitted by: John Moring

Klamath Water Awarded to Wildlife

The Klamath basin was once an expansive wetland straddling the California/Oregon border, which has been called the "western Everglades." Today much of the water that supplies the basin has been shunted from wetlands to farms raising low-value crops, forcing several local species to the brink of extinction.

On April 4, Earthjustice won a major court order saying that the Bureau of Reclamation had violated the Endangered Species Act by diverting scarce water to irrigators at the expense of threatened coho salmon. The court ordered BuRec to stop making any more irrigation deliveries until it had completed a plan, in consultation with the National Marine Fisheries Service, to ensure that coho and their habitat would not be harmed by the irrigation deliveries.

Only a few days later, BuRec adopted such a plan, ensuring that its Klamath Project operations provided adequate water to endangered species including coho, the bald eagle and other species. Because the basin is experiencing a drought, little water was left for farms who immediately sued the government. Earthjustice promptly intervened in that lawsuit on behalf of a coalition of conservation groups and commercial fishermen to ensure that the needs to imperiled species are protected

From: In Brief, Spring 2001

CUBA: A WINDOW OPENS

Major program underway to save unparalleled ecosystems

Nourished by the waters of the Atlantic, the Caribbean and the Gulf of Mexico, Cuba is a biological crown jewel. Untouched by mass tourism, its coastal areas harbor vast riches. But now the race is on to develop Cuba. Hotels are sprouting on pristine beaches and tourism is expected to double within five years. The time to establish solid environmental management is now.

Since 1995, Environmental Defense (ED) worked with Cuba's leading environmental agencies to build a framework for coastal conservation. The effort culminated last December when 450 scientists from 25 countries gathered in Havana to hear presentations from Environmental Defense and others at the Cuban Marine Science Congress.

ED's efforts center on Cuba's magnificent shoreline and its extensive coral reefs. With its 4,200 islets and keys, Cuba is home to massive coral reef tracts. Coral reefs contain one-quarter of all marine species, many of which may have medical benefits. Reefs have been around for 225 million years, but if the present rate of destruction continues, 70 percent of the world's reefs could be dead within 40 years. Sedimentation, eutrophication from sewage and bleaching from global warming are the main culprits. In the Philippines, reefs are dynamited for their fish.

Cuba's reefs, on the other hand, are relatively untouched. ED scientist Dr. Ken Lindeman has been helping design marine reserves. Our goal is to improve habitat protection around coral reefs and reduce overfishing before it is too late.

U.S. Fishing Would Benefit

Prevailing ocean currents carry fish larvae from Cuba to Southeastern U.S. waters, so efforts in Cuba could aid overstressed U.S. fisheries like snapper, grouper and lobster. "Protecting Cuba's marine resources helps the entire region," says Lindeman, who is co-editing a major book, *Ecology of Marine Fishes of Cuba*, to be published by Smithsonian Press.

Cuban scientists are highly skilled but have limited tools to design large reserves. Even if they had the necessary boats, research organizations lack everything from fuel to modern computers to process data. A top scientist earns $18 a month.

Despite these problems, Cuba has a strong foundation for resource conservation in its new Law of the Environment, and Cuban officials have requested our help in guiding the law into practice. ED attorney Dan Whittle is researching rules and management plans that will protect marine reserves, and we are exploring conservation user fees to help fund environmental protection. "The trick is to manage resources successfully while allowing sustainable development," said Whittle. We are also helping cash-strapped universities build environmental education programs.

Cuba's late start in tourism may be a blessing. "This is an opportunity to avoid the problems that many countries, including the United States, have had in developing their coastal area," said Lindeman.

From: Environmental Defense 32(3), May 2001

Losses: Friends and Members

(While I usually list only the passing of AIFRB members, I will list others if I, a district director or other members believe the deceased to be well known to our membership. Ed.)

John E. Bardach – January 24, 2001

Aarne Lamsa – April 18, 2001

Long-time sea lamprey choker and Great Lakes Fishery Commission secretariat member, Aarne Lamsa passed away April 18, 2001. A memorial service was held on Saturday, April 21, at 1 p.m. at Calvary United Methodist Church, 1415 Miller (near Newport Road) Ann Arbor, MI. Aarne was 68 years old. He was cremated.

Submitted by: Dora Passino-Reader

Garth Murphy – May 5, 2001

Garth I. Murphy, 78; researcher helped save sardine population

By Jack Williams — Staff Writer

After several years of studying Pacific fisheries, Garth I. Murphy helped settle a prolonged controversy regarding the decline of Pacific sardine. In showing that commercial fishing was the most likely cause of the shrinking sardine population, his research at what today is UCSD's Scripps Institution of Oceanography led to statewide moratoriums on catching sardines and mackerel.

Dr. Murphy, who pioneered sardine population studies in the 1960s as the first full-time coordinator of California Cooperative Oceanic Fisheries Investigations, died Saturday at a skilled nursing facility in Woodland. He was 78. The cause of death was heart failure, said son-in-law Josh Fox.

From 1959 to 1965, Dr. Murphy coordinated California Cooperative Oceanic Fisheries Investigations, better known as CalCOFI, which works in conjunction with Scripps, the state Department of Fish and Game and the National Marine Fisheries Service. Its objective at the time was to reach a consensus on the cause of the decline in the California sardine population. "Cannery Row' is no more," proclaimed a CalCOFI report issued in 1963, referring to the demise of the expanse of cannerys along Ocean View Avenue in Monterey that John Steinbeck's 1945 novel had exclaimed.

Billions of pounds of sardines had been caught off California in the 1930s and 1940s, supporting a thriving cannery industry. At one time, sardines were caught in greater numbers than any fish in North America. But they practically vanished from the West Coast in the 1950s, putting thousands of cannery workers, fishermen and truckers out of work. A statewide ban on sardine fishing was imposed from 1967 to 1986, followed by resurgence in the sardine population.

Dr. Murphy was credited with writing the first systematic study of Pacific sardine population dynamics in 1966 by Arthur McEvoy, author of "The Fisherman's Problem: Ecology and Law in California Fisheries, 1850-1980." Dr. Murphy proposed what became known in fishery circles as "the great experiment" – a sardine fishery limited to 10,000 tons coupled with a 200,000-ton anchovy fishery, undertaken under close scientific observation. He issued the proposal after documenting a steep rise in the anchovy population, which coincided with the sardine decline. Anchovies are rivals of sardines in the same habitat.

Completing his doctoral dissertation on the population dynamics of the Pacific sardine, Dr. Murphy received a doctorate in oceanography in 1965. He then left Scripps to become a professor of oceanography at the University of Hawaii, but the impact of his work with CalCOFI was felt for years in the fishery industry. While based in Hawaii, he served from 1969 to 1971 as a consultant to the U.N. Food and Agriculture Organization.

In 1974, he left his professorship to become senior principal research scientist with the Commonwealth Scientific and Industrial Research Organization, a research arm of Australian fisheries. "He was somewhat of a legendary figure in Canberra fishery management circles at the time, with a type of guru status," said John Hampton, a principal fisheries scientist with Commonwealth. "I was always impressed by his sharpness of mind and learned a lot from him."

Before retiring in the early 1990s, he worked as a fisheries consultant for the Japanese government.

Dr. Murphy was born in Portland, Ore., and graduated from high school in Sacramento. He first came to Scripps in 1946 as a graduate student after earning a bachelor's degree at the University of California Berkeley. He earned a master's at Berkeley in 1948 and, before returning to Scripps, worked for the state Department of Fish and Game in fisheries research and management and as investigations coordinator for Pacific Ocean Fisheries.

Dr. Murphy, who was divorced three times, is survived by daughters Susan Jean Wilson of Hanalei, Hawaii, Jan Burns of Honolulu, Lauren Siegel of Austin, Texas, and Bettina Murphy of Albany; sons, Garth David of Baja California and Eric of Byron Bay, Australia; a sister, Nadine Vasquez of Sacramento; nine grandchildren; and several great-grandchildren.

From: San Diego Union Tribune, May 10, 2001

Submitted by: Bill Bayliff

Retirement Well earned – A legacy of Conservation
INTO THE WOODS

Forest Service Chief and AIFRB Member Michael Dombeck Leaves his desk job

By Phil McCombs — Washington Post Staff Writer

Saturday, April 21, 2001

I sit in happy meditation on my rock, pondering, while my line dries again, upon the ways of trout and men. "A Sand County Almanac," by Aldo Leopold (1949). Those last days in office, the Chief seemed a bit crazed – like a fish flopping in the bottom of a boat. The CBS crew overstayed. Reporters were coming at 20-minute intervals. The phone was nonstop – friends, colleagues, big-bucks offers to lobby. But the Chief, he just wanted to get the heck out of there and back into the woods. Preferably the old beloved deep and roadless woods of the whispering pines and hemlocks, where sun sparkles on teal blue lakes and dappled deer roam free. If any such woods remain.

In his four-year tenure as a chief of the U.S. Forest Service, Michael P. Dombeck tried to ensure they would. He moved to protect old-growth areas (now down to less than 5 percent of the 192 million acres of national forest), prohibited mining in spectacular areas of the Rocky Mountains, and halted road-building and most logging in one-third of the national forests (an area larger than Virginia and New York combined). Conservationists hailed him as revolutionary, a new Gifford Pinchot, the first chief in 1905, who'd urged "opposition to predatory wealth." Ecologist Tim Palmer called Dombeck's roadless policy "one of the most historic turning points ever for the agency."

Timber and mining interests, on the other hand, reviled Dombeck's policies, charging they would cost jobs and sap the economic vitality of whole regions. One timber-state senator called him "delusional."

Yet the Chief – a man with a deep personal distaste for confrontation – remained calm, never got personal, and held the course. People wondered how he did it – but the Chief had grown up happy in modest circumstances in the Wisconsin woods, been a fishing guide, could fell an oak and butcher a buck. This Washington stuff was water off a duck's back. A fisheries biologist, the Chief had risen through the ranks to head an agency whose 33,000 employees supervise 8 percent of the nation's land. With the election, however – and the Bush administration's new environmental priorities – it was time to leave. He figured why stick around and preside over the destruction of everything he'd fought for? In a farewell letter to his boss, new Agriculture Secretary Ann M. Veneman, the Chief pleaded: "Wilderness is a salve to the human spirit. ...Please remember that the decisions you make through your tenure will have implications that last many generations." And to his rangers: "Always remember the reason that you first became Forest Service employees. Continue to advocate and teach...conservation and restoration. Enjoy yourselves and have fun. Get out into the woods to hunt, fish, hike, and camp. "Take in the splendor of and old-growth forest, a prairie grassland, or jagged mountain. Follow your hearts and never allow your lives to be controlled by the desk-bound, those who equate a National Forest solely to board feet or barrels of oil." The Chief was talking to us all.

Where the Wild Things Are

You will find angling to be like the virtue of humility, which has a calmness of spirit and a world of other blessings attending upon it. "The Complete Angler," by Izaak Walton (1653). "Everybody likes trees," Mike says with a grin. "Some like 'em vertical some like 'em horizontal." With his flat Midwestern accent, he sounds like someone on "A Prairie Home Companion." It's the week after his March 31 retirement as chief, and Mike – lean guy whose eyeglasses give him a Harry Potter look – seems like a new man, clear-eyed, relaxed, chipper. He's out of the Washington meat grinder, the whipsaw of a hundred contentious hearings. "I can't believe how good I feel. I'm sort of unwinding and reconnecting." His first weekday off, he fished on the Potomac; caught zilch. Right now, he's saddling up the Explorer in front of his Vienna home. Strapping the canoe up top. Checking rod, reels and lures. Murphy, the black lab, jumps in back and then they're off. The sun is shining. There's a cool breeze, a blush of green in the woods.

To retire at 52! In the springtime! "I'm taking the summer off," he tells folks, "and working on my book. Then we'll see what's next. "The book – tough sledding for the inexpert reader – is on the history of America's public lands. Whoops-forgot Murph's leash. Back to the house. The door is locked. Mike waves through a window to Pat, his wife, who smiles wickedly and shouts, "How do you spell it?" He shouts, "You're the B-O-S-S," and she opens the door sweetly. Humor is one way to stay married 25 years. A shared love of nature helps, too. They met canoeing and fishing at the University of Wisconsin, kept it up as a family. Pat's a biologist. Daughter Mary is studying biology in college.

Mike's hero is Aldo Leopold, who joined the Forest service in 1909 and, in '49, repaired to his Wisconsin shack to write the conservationist classic "A Sand County Almanac." Mike was persuaded by Leopold's concept of a "land ethic" – that mankind is in an interdependent relationship with the land and it's creatures, and has obligations to them. "A land ethic of course cannot prevent the alteration, management and use of these 'resources,' "Leopold wrote, "but it does affirm their right to continued existence and, at least in spots, their continued existence in a natural state. In short, a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it." When Mike and Pat came to Washington in '87 – Mike had been named national fisheries program manger after a series of regional jobs – they never expected to stay so long, certainly not in a big metro area. He'd joined the Forest Service in Wisconsin in '78 as GS-6 fisheries biologist, and he and Pat had settled in a lovely place with 40 acres on a couple of lakes. But duty called. After he became chief, things got tough: The

service's benign "Smokey Bear" logo and motto of "Caring for the Land and Serving People" belie it's long-mandated mission of not only conserving resources but serving the nation's timbering and mining needs; political battles over that mission have intensified in ferocity as the conservation movement has grown. "I used to cringe when I'd pick up the newspaper – I'd be getting lambasted," Mike says.

His love of nature – and of his nature –loving family – kept him sane. Mike arose at 5 each morning in Vienna and walked with Murph in the wooded bottomlands of Difficult Run, an area surrounded by houses yet teeming with deer, fox, wood ducks, geese. On weekends he canoed and fished. Even in Washington, he learned, you can connect with the wild. "The largest proportion of people in an urban area don't get very far off the beaten path," he muses, driving again now toward Riverbend County Park on the Potomac north of Great Falls. "But people want to connect with nature, it's inherent." At Riverbend, the water is too high to put in, so Mike hikes north along the river toward one of the cherished "secret places," a pocket of old-growth forest. "Most people don't know about it... Oh, lookit, the Dutchman's breeches!" He stoops to a clutch of tiny pinkish flowers. Along the trail, the sunny patches seem sudden and warm. Currents of cool mist rise off the river. You can hear the rushing water. Murph trees a squirrel. "Hear the pileated woodpecker in the distance?" Mike says. "He's working his hammer!" He's like a kid, light and free. Hiking briskly, Mike talks of ecosystems and watersheds ("they absorb rain, reduce flooding, provide clean drinking water"), the characteristics of a fallen white oak ("woodpecker heaven"), the ways of the great gamey muskellunge (a giant so patient it can remain utterly still for 15 minutes stalking another fish, so tenacious in hooked battle that it often wins), and the evolution of our culture's understanding of the value of woodland from dollar-per-board-foot to unique recreational refuge – without which we might all go bonkers. He comes upon two ladies pondering a blossom and consulting their Field Guide to Wildflowers. "It's in the 'pink' family," he offers, even eager to educate. "Hence 'pinking shears.'" "Well, don't you dare pick it," one lady warns, "or I'll kill you." Mike chuckles, moves on. Stops suddenly. "If you look real close at these spring beauties," he whispers over some flowers, "you'll see an amazing pattern. God is in the details."

Little Shack in the Woods

The great, dark trees of the Big Woods stood all round the house, and beyond them were other trees and beyond them were more trees. As far as a man could go to the north in a day, or a week, or a whole month, there was nothing but woods. There were no roads. "Little House in the Big Woods," by Laura Ingalls Wilder (1932)

Mike has five older brothers and sisters and was the first in his family to be born in a hospital, the first to go to college. His parents were farmers in central Wisconsin, a couple of counties away from Leopold's shack.

The farm wasn't doing well, but the Dombecks had strong moral fiber and great love. Mike's dad loved nature, too, and often took the boy into the woods to hunt and fish. Mike always had a natural ebullience, his sister Dorothy recalls. When he was 5 or 6, they'd send him out for firewood and he'd return with an armload and shout, "Open the door, Ma, and let your son shine in!" When he was 9, his folks sold the farm and moved north with Mike and a brother (the others had already left) to open a country store near remote Moose Lake in the Chequamegon National Forest. The store was located near a bait shop and a scattering of modest houses in the woods, as Mike put it, "at the end of the road." There was a recreational boom on Wisconsin's lakes, and the Dombecks prospered. But Mike had been shaken by the move, a trauma he attributes to losing his "linkage to place" – an echo of Leopold's notion of the land as an essential part of the human community. "When you think of the evolution of the human species," Mike adds, "it's only in the last few generations where that linkage to place has become less secure." The farm and its woods had nourished his loving family, and – to the boy – had become part of it. He recovered, however, and came to love his new surroundings with equal passion. He became a creature of the forest. "We just spent a lot of time exploring through the woods, looking for a new fishing hole, looking for the elusive trophy buck. I remember grouse hunting was just fabulous. We were trapping in the winter, making maple syrup in the spring. Deer hunting. Picking mushrooms. Watching the spring flowers bloom." In winter, "I spent countless hours listening to the old-timers' stories about their experiences and the land, the woods, the logging, the massive rafts of logs being rafted down the rivers, the forest fires, clearing the land for farming.

Land and the people were both of importance. There was a fire tower behind the house, and Mike would climb 132 steps to take lunch to the old U.S. Forest Service ranger. "He'd point out the landmarks and the hills, smoke in the distance. He'd say, 'Oh, that's not a problem, that's just so-and-so burning brush.' He'd tell lots of stories about what the country was like. "It was just an expanse of green to the horizon. You could see the lakes, and on sunny days they were a brilliant blue."

In high school, his pal Jack Skille remembers, Mike was always the "serious" one. "Other kids were goofing off and playing ball, but Mike was mowing lawns and saving money and planning." When he was 15, he began working as a fishing guide for doctors, lawyers and businessmen who came in from the cities. He specialized in the muskie – a prize game fish that can grow to over 50 pounds – and was so good at it that, as he continued guiding through college and grad school (his dissertation was on muskies), he earned a moniker that sticks to this day. "Muskie Mike."

Guiding wasn't just about catching a fish, but about the interplay of man and nature. "These people from the cities loved being out there. They wanted to know about the birds and plants. The role of a good guide is education." He remains friends with some of those he guided as a youth. George C. Becker, 84, author of the encyclopedic "Fishes of Wisconsin" and one of Mike's college professors, recalls angling with him in Canada. "I was sitting right beside him in the canoe when

he caught two trophy muskies, and I wasn't getting anything. I thought, 'How in the heck is he doing this?' It was almost magic. I noticed no yank on his line, but he was extra sensitive." Becker also noticed Mike's intense affection for people, and its interplay with his love of nature. "He's the type of person who never really leaves you." They're still friends.

When he was 17 and his parents were thinking of selling the store and leaving, Mike bought – on his own – 40 acres and a shack on Moose Lake. Never again, if he could help it, would he undergo the trauma of leaving a beloved piece of nature. His parents moved, he went to college – but always returned to his cabin. "I can still picture the cabin," Skille says. "It was on a ridge above the lake, and you had to walk down a hillside through the hardwoods to get to the lake." Mike sold it years later, but still has the 40 acres. "There's always a special place in your heart like that," Mike says, "where you just feel good. You feel like you belong."

The Legend of Muskie Mike.

Occasionally, muskellunge consume small muskrats, ducks and shorebirds, shrews, chipmunks, gophers, frogs – "Fishes of Wisconsin," by George Becker (1983).

"The great watersheds and fisheries resources of our national forests never had a better friend in the chief's office than Mike Dombeck," Charles Gauvin, president of Trout Unlimited, said when Dombeck retired. Conservation author Todd Wilkinson, in his 1998 book, "Science Under Siege: The Politicians' War on Nature and Truth," called Dombeck's initiatives "reminiscent of Mikhail Gorbachev's reforms" in the former Soviet Union. Dombeck says he just tried his best to get the Forest Service "back to its conservation roots." His tactic was one of "respect". I always tried, if I had an issue for someone in Congress, to visit them personally to talk about it. To be a good neighbor and be respected by others, you've got to respect them – even if you're on different pages."

Community

"I asked him one time," his childhood pal Skille recalls, "I said, 'Mike, how do you deal with all those highfalutin people?' He said, 'You know, Jack, they're no different from you and me. They put their pants on one leg at a time.'" On business trips with public officials, Dombeck would sometimes revert to his fishing-guide persona, catching a nice mess of fish and cooking a "shore lunch" over an open fire. "Nothing tastes better than freshly caught fish – you fillet 'em and toss 'em into a bubbling hot pan of bacon grease with ashes and sticks sometimes floating in the grease and you cook 'em till they're just a beautiful golden brown."

Muskie Mike in Washington.

Of Agriculture Secretary Veneman – though he suspects she is less passionate about conservation than he would like – he says, "She's a wonderful lady. She has a tough job." On April 6, the National Wildlife Federation honored Dombeck and others with National Conservation Achievement Awards at a Washington dinner. "Mike Dombeck," citation read, "stands apart as a leader in improving the management of our nation's natural resources." As the Dombecks chatted with old friends, someone asked him what he planned to do now. "You haven't," he smile, "seen the last of me."

Life Giving

I ended up with forty acres; I ended up with a broken fiddle – And a broken laugh, and a thousand memories, and not a single regret. – "Spoon River Anthology," by Edgar Lee Masters (1915).

A final tale of the ways of nature and men:

There's a guy named Ed Rhodes who is driving happily around the Southwest in a motor home with his wife. Rhodes, 62, is a retired building contractor with four kids, nine grands and two greats.

In 1991, he was diagnosed with leukemia. In '93, he received a bone marrow transplant and was given a 20 percent chance to live. He recovered and was allowed to contact the anonymous donor whose marrow saved him. – Muskie Mike. They stayed in touch, became friends. When Mike took over the Forest Service and Rhodes called to congratulate him, the Chief said, "I'm not so sure. This is like taking a drink out of a fire hydrant." "I just think the world of him," Rhodes says. "Every day I thank him in my heart when I get out of bed. Now I'll have a chance to see my grandchildren graduate." Talk about a watershed.

From: Washington Post.com, April 20, 2001

Army Corps Must Shape Up

Efforts to remove four dams from Washington's lower Snake River got a boost in February when a federal court ruled that the structures' operation violates the Clean Water Act. When water is trapped behind a dam, it is heated by the sun for longer periods; once released, it increases the level of dissolved gas in the river. Both effects can be harmful or lethal to fish. The court ordered the U.S. Army Corps of Engineers to come up with a plan that protects the river's water quality as well as its salmon and steelhead trout.

From: Sierra, July-August 2001

IN THE RED

Bocaccio could become the first commercial marine fish protected under the Endangered Species Act, if a petition by The National Resources Defense Council (NRDC) and two other groups to list the fish as threatened is successful. Many studies show that the population of bocaccio has dropped to a mere 2 percent of its historic levels/ these fish are particularly vulnerable to overfishing, since it takes several years for them to reach sexual maturity. Most fish are caught too young to breed. "Many Pacific rockfish are in deep decline," says NRDC fisheries policy expert Karen Garrison. "Unless we preserve their habitat and numbers, more petitions will follow."

From: The Amicus Journal, Spring 2001

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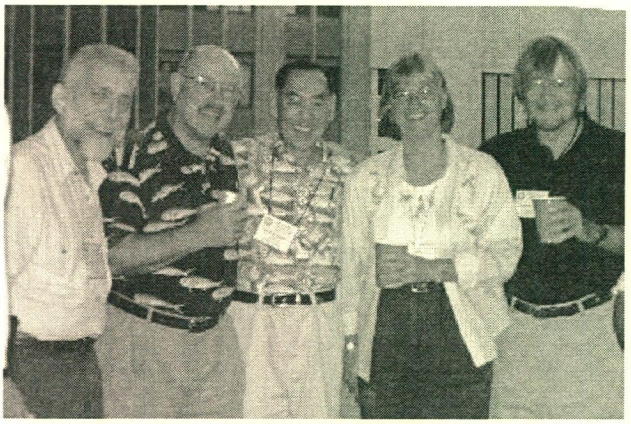
Board of Control meets in Phoenix

The 45th annual meeting of the AIFRB Board of Control was held at the Crown Plaza Hotel in Phoenix, Arizona on 18-19 August 2001. The meeting was scheduled so that it proceeded by two days the beginning of the technical sessions of the 2001 annual meeting of the American Fisheries Society (AFS).

Attending were: Gary Sakagawa, Clark Hubbs, Jack Helle, Barbara Warkentine, Allen Shimada, Thomas Lambert, Bruce Wing, Bruce Miller, Thomas Keegen for Andrew Jahn, Dora Passino-Reader, Joseph Rachlin, Jack Pearce, Frank Panek, Thomas Schmidt, G. Morris Southward and Richard A. Jacobson.

District Director Morris Southward was responsible for this year's meeting arrangements. He greatly acknowledged the assistance of the Arizona Fish and Game and Tom McMahon (AFS meeting coordinator) for their help in arranging for our meeting needs, reception requirements and program inclusion in the AFS meeting schedule. The BOC commended Director Southward for doing a terrific job as this year's AIFRB meeting coordinator.

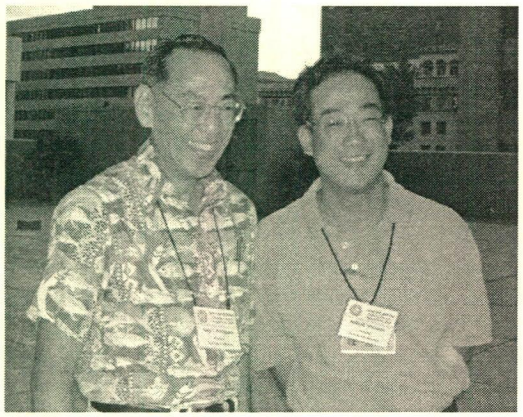


Board of Control members (left to right) Rachlin, Lambert, Sakagawa, Warkentine and Schmidt adjust attitudes as sun sets over Phoenix skyline.

Photo by: Joe Rachlin

Sakagawa Recounts Accomplishments

President Sakagawa reviewed progress towards fulfilling his goals as President of AIFRB. He has established the Founder's Fund, which will be used to support research projects through a peer reviewed grants program. New members have been encouraged to serve on committees. Committee membership has increased and members serve on committees on a rotational basis. The AIFRB web-page has been created thus increasing the visibility of the Institute to its members and potential new members. Financial support for districts to increase membership has been added to the budget. A procedures manual has been developed. The Institute is currently working to have a "stand alone" meeting in the year 2006 to celebrate its 50th Anniversary. This meeting will take place in Seattle, Washington, the site of its beginning. The Institute now enjoys full tax-exempt status.



President Sakagawa (left) and Treasurer Shimada reflect on a fulfilling year as AIFRB officers.

Photo by: Joe Rachlin

President Sakagawa stated in his report that one of his objectives was to establish policies that would help make the Institute run more smoothly. With the more extensive procedures manual, briefing book and careful tracking of committee membership and rotation cycles on these committees, President Sakagawa has clearly obtained this goal.

President Sakagawa expressed his sincere thanks to the BOC members and other volunteers for their support. His ability to accomplish the aforementioned goals would not have been possible without their help. President Sakagawa will continue to work with AIFRB to make it even stronger.

The AIFRB is a 501(c)(3) tax-exempt nonprofit organization (EIN 61-6050711).

Shimada Presents Mixed Financial Picture

Treasurer's Report
Statement of Cash Receipts and Cash Disbursements
FY 2000 and FY 2001

	8/9/99 to 8/31/00	9/1/01 to 8/1/01	Amount Difference
Cash Receipts			
AIFRB Cap Sales	12.00	216.00	204.00
Founders Fund	0.00	11,515.00	11,515.00
Member Dues	15,655.00	16,662.00	1,007.00
District Donation	0.00	100.00	100.00
Member List Rental	0.00	0.00	0.00
Transfer Funds (SSB/SQB)	4,137.08	4,910.00	772.92
Interest Income	103.79	84.47	-19.32
Total Cash Receipts	19,907.87	33,487.47	13,579.60
Cash Disbursements			
AIFRB Meeting Service	914.69	0.00	-914.69
AIFRB Reception	2,030.37	50.00	-1,980.37
AIFRB Awards			
Achievement Award Expense	160.00	525.69	365.69
Research Assistance Award	2,177.82	1,050.00	-1,127.82
W.F. Thompson Award/Expense	1,000.00	1,125.90	125.90
Bank Service Charge	100.64	65.55	-35.09
Board of Control	5,935.63	0.00	-5,935.63
Bounced Check	0.00	0.00	0.00
BRIEFS Newsletter	7,803.44	8,305.95	502.51
Collection	0.00	0.00	0.00
District Donation	0.00	100.00	100.00
District Recruitment	0.00	600.00	600.00
Foreign Check Collection	0.00	0.00	0.00
Honorarium	0.00	0.00	0.00
License Fees (www.aifrb.org)	95.00	280.00	185.00
Membership Expense	161.12	274.91	113.79
Other	0.00	0.00	0.00
President's Expense	119.60	0.00	-119.60
Pr-Prof-Conduct	0.00	0.00	0.00
Production Editor	0.00	0.00	0.00
Reimbursement (2001 Symposium)	0.00	1,000.00	1,000.00
Salmon Award Plaques	0.00	910.00	910.00
Secretary's Expense	67.35	134.90	67.55
Transfer Funds (BNK/SQB/FF)	637.08	11,515.00	10,877.92
Travel Display	0.00	35.41	35.41
Treasurer's Expense	4,056.64	1,829.66	-2,226.98
Total Cash Disbursements	25,259.38	27,802.97	2,543.59
Net Change	-5,351.51	5,684.50	11,036.01
Beginning Cash Balance	4,034.19	-1,317.32	-5,351.51
Estimated Cash at End of Year	-1,317.32	**4,367.18**	5,684.50

AIFRB Reception	-150.00
BOC Annual Meeting	0.00
BOC Travel	-3,300.00
Other Reimbursements	-85.00
	-3,535.00

MD Checking Minimum	-1,000.00
Prepaid Dues (x16)	-480.00
Jerry Ault (x7)	-220.00

Projected Dues Collection @	**0.00**
Projected Funds Year-end	**-$867.82**

Cash Reserve	**1,700.00**

At the close of the books, August 31, the total income was estimated to be $33,682.88 with a balance forward of $-1,317.32 for a total of $32,365.56. Total expenses were estimated to be $27,802.97. Estimated cash at the end of fiscal 2001 is therefore $4,556.29. Assets, in the Capital Account totaled $49,301.68 from various money market funds, stocks and mutual funds.

Treasurer Shimada, in reviewing the Capital Account, pointed out that due to the bear market that these holdings are down by 18.89%. He has considered moving funds from Eaton Vance Municipal Income Trust (EVN), which is down 16%, to the Federated Realty Investment Trust (FRT), which is up 9%. However, he along with the Committee members feels that it would be prudent to wait until the gain/loss situation breaks even or turns positive. Director Rachlin, a member of this committee, recommended that the Institute must keep a yield generating fun, like FRT, so that it can be tapped should the Institute need additional operating funds. He further suggested that when the market turns around and the other funds begin to generate gains, that some of these holdings be sold and invested in FRT, the revenue generating account.

The Founder's Fund was established shortly after the last BOC meeting. An initial donation, from an anonymous donor, of $10,000 kicked off this fund. Since then there has been additional donation totaling $1,500. This is a separate fund from the Capital Fund.

A ***motion*** by Director Rachlin to accept the Treasurer's report was **seconded** and unanimously **approved** by the BOC.

President Sakagawa indicated that there is a need to decrease expenses. It was suggested that we might be able to decrease some of the costs of BRIEFS by having members accept electronic copies as opposed to hard copy. Treasurer Shimada informed the BOC that we will be saving on costs for BRIEFS mailing by using our non-profit mailing status. It was also noted that the costs incurred for the BOC meeting will, in all likelihood, be going up. We have to keep this in mind given our fiscal situation and act accordingly. This year the Treasurer put a cap on reimbursement for BOC attendees.

Treasurer Shimada suggested that the BOC consider how a raise in dues might help the Institute overcome some of its fiscal shortfalls. He reported that the Institute would go from its current dues revenue of $18,100 to $21,200 if a $5 increase in dues was imposed and to $24, 300 if a $10 increase in dues was imposed. This is of course assuming that all members are in good standing. It was further reported that Emeritus members did not receive dues notice cards this year so contributions from them were down.

President Sakagawa informed the BOC that it is necessary for us to set out a draft-operating budget for 2002. This is critical given the Institute's shortfall in revenue.

Sakagawa will continue to have a mid-year conference call to discuss the state of the budget and to review AIFRB projects. The last mid-year conference discussed how best to adjust the budget to meet obligations. This year the Institute is also suffering fiscal difficulty. The BOC reviewed last year's allocations and made some recommendations for this year.

A ***motion*** by Director Panek to accept the budget allocation for line items of: 1) $200 for the 2001 AIFRB reception; 2) $500 for the 2002 AIFRB reception; 3) up to $500 for an ASIH symposium reception; 4) $1,050 for the Associate Research Awards; 5) $500 for the Thompson Award, and 6) that all other items to be decided at the mid-year meeting was **seconded** and unanimously **approved** by the BOC.

Portfolio Performance

Smith Barney - Captial Account

Symbol	Company	QTY	Price ($)	Market Value ($)	Total Cost ($)	Gain/Loss ($)	Gain/Loss	Yield	Income ($)
FRT	Federated Realty Investment Trust	200	21.27	4,254.00	3,899.24	354.76	9.10%	8.084%	376.00
AES	The AES Corp.	100	37.30	3,370.00	4,890.00	-1,160.00	-23.72%		
EVN	Eaton Vance Municipal Income Trust	1200	12.56	15,072.00	18,000.00	-2928.00	-16.27%	6.027%	908.40
WEINX	AIM Weingarten Fund Class A	935.676	14.76	13,810.58	19,995.86	-6,185.28	-30.93%	0.940%	13.09
MSCAX	Van Campen Asian Growth Class C	154.768	7.05	1,091.11	2,652.69	-1,561.58	-58.87%		
	CASH			11,343.99	11,343.99			3.560%	403.84
	Account Totals - 7/29/01			49,301.68	60,781.78	-11,480.10	-18.89%		1,701.33
Closed Transactions									
8/30/00	Franklin Tax Free - High Yield Income	701.639	10.54	7,395.28	5,932.03	1,463.25	24.67%		
1/3/01	MSDW Muni Income Trust II	1,500	9.75	14,432.01	14,816.50	-384.49	-2.60%		
	Total					1,078.76			
Cash Transfers - MD Checking Account									
8/30/00	Fiscal Year Opening Balance					-4,000.00			
7/9/01	Salmon Award Production					-910.00			
	Total					-4910.00			

Charles Schwaab - Founders Fund

Symbol	Company	QTY	Price ($)	Market Value ($)	Total Cost ($)	Gain/Loss ($)	Gain/Loss	Yield	Income ($)
AOL	AOL Time Warner	140	45.45	6,363.00	6,885.85	-522.85	-7.59%		
MSFT	Microsoft Corp.	35	66.19	2,316.65	1,876.20	440.45	23.48%		
ORCL	Oracle Corp.	100	18.08	1,808.00	2,998.70	-1,190.70	-39.71%		
	CASH			137.96	137.96				
	Account Totals - 7/29/01			10,625.61	11,898.71	-1,273.10	-10.70%		
Closed Transactions									
12/3/00	Microsoft	30	70.13	2,073.72	1,739.95	333.77	19.18%		

A Sharpened Axe for Delinquent Members

Treasurer Shimada reported that there are currently 140 delinquent members on the roles. This amounts to a revenue shortfall of $7,470. Twenty-six of these members are three years in arrears. A ***motion*** by Past-President Hubbs to remove from membership those individuals that are three years in arrears after District and/or Regional Directors contact them informing them that they must pay arrears dues by 31 October 2001 to remain as members was **seconded** and unanimously **approved** by the BOC. Past-President Hubbs informed the BOC that the percentage of delinquent membership in AIFRB parallels that of other societies. President Sakagawa charged all Directors with the task of maintaining contact with their members, seeing that they don't fall behind in their dues, encourage their promotion to advanced standing, and get them involved in local and/or national AIFRB activities.

The BOC discussed considering dropping from its roles members that are two years in arrears. A ***motion*** by Past-President Hubbs to remove from membership those individuals that are two years in arrears after District and/or Regional Directors contact them informing them that they must pay arrears dues by 31 October 2001 to remain as members was **seconded** and unanimously **approved** by the BOC. To support Hubbs' motion there was a ***motion*** by Director Rachlin to change Article II, Section 7 – Fees and Dues second paragraph **FROM** "Any member in arrears for two years for all or part of dues shall be notified of the delinquency and may be dropped from membership. A member in arrears for three years for all or part of dues shall be dropped from membership. Members who have been dropped may be reinstated upon payment of the admission fee and of dues for two years, which shall include the year in which reinstatement is granted." **TO** "Any member in arrears for two years for all or part of dues shall be dropped from membership. Members who have been dropped may be reinstated upon payment of the admission fee and of dues for two years, which shall include the year in which reinstatement is granted," was **seconded** and unanimously **approved** by the BOC.

Thompson Award to Terwilliger

This year there were 18 student-researched papers received for evaluation. While this was a strong response, Chair Pearce requested the BOC members encourage submission for this award. He would like the next award cycle to have twice the number of submissions. The 2001 Thompson Award was awarded to Mr. Mark R. Terwilliger, currently at Oregon State University, for his paper entitled "Age, growth, longevity and mortality of black cheek tonguefish, *Symphurus plagiusa* (Cynoglossidae: Pleuronectiformes), in Chesapeake Bay, Virginia." published in 1999 in Fish. Bull. 97:340-361. The award will be presented to Mr. Terwilliger by Director Miller. Membership Chair Lambert will prepare the certificate and Treasurer Shimada will issue the check. Chair Pearce acknowledged the support of the committee members and that of Michelle DeLaFuente.

Jack Pearce accepts from Gary Sakagawa the award tendered for Jack's dedicated performance in administering the W.F. Thompson Award as well as for a myriad of other services to the Institute.

Founders Fund Plan Gels

President Sakagawa and Treasurer Shimada presented a Prospectus for the AIFRB Founders Fund to the BOC. This fund was established to honor the 26 founding members of AIFRB. Its purpose is to generate sufficient funds to award grants to fishery research scientists to pursue research and prepare publishable manuscripts regarding reviews of contemporary topics, analyses of fishery policies, and/or analyses contributing to advancing fishery science. The Fund's Steering Committee will have control of grant sizes and frequency of awards. The BOC will have review oversight. The Capital Management Committee will monitor investments. Director Miller suggested that the companies that we invest in meet with AIFRB approval.

Prospectus for AIFRB Founders Fund

Revised draft – August 2, 2001

Description: The Fund is established to honor the 26 founding members of the American Institute of Fishery Research Biologists (AIFRB) and to recognize significant contributors to the Fund. The Fund shall accept donations of cash, stocks, bonds and other tangible assets from members and friends of the Institute according to IRS 501(c)(3) requirements. Contributions shall be invested for growth and income and treated as a permanent endowment with an initial target asset value of $100,000. The income, generated from the invested principal, will be used to achieve the Fund's objectives.

Objectives: Income from the Fund is to be distributed as grants to fishery research scientists to pursue research and prepare publishable manuscripts regarding reviews of contemporary topics, analysis of fishery policies, and analysis contributing to advancing fishery science.

Grants: Grant recipients will be selected through open solicitation of proposals. Judging and selection of recipients shall be by a peer committee of three members in good standing of the AIFRB and each holding the rank of Fellow or Member. Grants may be applied towards travel, living costs and if required, salary. Part of a grant may be reserved for page charges associated with publication of the product of the research in a recognized journal and a small honorarium to the hosting institution where the recipient's research is conducted. Grants would be made biannually or at some other regular schedule established by the Fund's Steering Committee.

Grants could be named for significant contributors to the Fund on a grant-by-grant basis. The Steering Committee may, however, decide to set aside a number of Grants with permanent names to recognize donors of their designees for substantial contributions.

Strategy: The Fund is to be managed by the AIFRB Treasurer for growth and income with oversight from the Capital Management Committee. Donations of negotiable securities, or other tangible assets, may be liquidated upon receipt and the cash proceeds invested in the Fund's portfolio.

The initial threshold for the Fund is $100,000; $125,000 by 2006 and $250,000 by 2010. The target goal is an asset value of $500,000 - $1,000,000. Upon achieving this goal, the Fund should be able to generate income of at least $30,000 annually for awarding grants biannually and have a modest surplus for reinvesting to buffer fluctuations in asset value.

A Steering Committee shall be established, consisting of the President, immediate Past-President, Treasurer, and two other AIFRB members appointed by the President and with staggered 2-year terms. This Committee shall be responsible for supervising solicitation efforts for the Fund, and supervising the Grant process (appointing and managing the Selection Committee). An Honorary Advisory Board may be established to assist the Steering Committee in the solicitation efforts.

Commencement of awarding of grants shall be decided by the Steering Committee but not sooner than when principal assets reach $100,000 (first target level). Initially, distributions from the Fund shall not exceed 5% for every $100,000 of principal. The Steering Committee may withdraw up to $500/ year for expenses to promote the Fund and for soliciting contributions.

(See Treasurer's Report for current status of Fund. – Ed.)

A ***motion*** by Director Pearce to accept the AIFRB Founder's Fund prospectus as presented, with minor editorial changes was **seconded** and unanimously **approved** by the BOC.

AIFRB Founding Members: Clinton E. Atkinson, F. Heward Bell, Kenneth D. Carlander, Fredrick Cleaver, Albert W. Collier, Henry A. Dunlop, Donald H. Fry, Jr., John B. Glude, Herbert W. Graham, J.A.R. Hamilton, John L. Hart, Clarence P. Idyll, Donald R. Johnson, John L. Kask, Karl F. Lagler, Donald L. McKernan, James W. Moffet, Edward C. Raney, Milner B. Schaeffer, Oscar E. Sette, William Smoker, Gerald B. Talbot, Albert L. Tester, William F. Thompson, Richard Van Cleve, Lionel A. Walford.

The 2001 Research Assistance Awards

The Research Assistance (RA) Award established in 1986 is offered annually to AIFRB graduate students and other Associate members to support travel expenses associated with professional development. The RA provides a maximum award of $350 towards the opportunity to present results of an original paper or research project of merit at scientific meetings, or to conduct research at distant study sites. All AIFRB Associate Members in good standing are eligible. An individual may receive two awards in a lifetime.

Three AIFRB associate members received $350 awards in 2001: **Carl R. Ruetz, III** of the University of Minnesota presented the paper entitled *"Top-down control in a detrital-based food web: fish, shredders, and leaf litter decay in a coldwater stream"* in June at the 49th Annual Meeting of the North American Benthological Society in LaCrosse, Wisconsin. **Rebecca C. Jordan** of the University of Massachusetts at Amherst will present the paper entitled *"Ultraviolet sensitivity enhances zooplanktivorous prey detection by Lake Malawi fish"* in August at the 131st Annual American Fisheries Society meeting in Phoenix, Arizona. **Daniel P. Cartamil** of California State University at Long Beach will present the paper entitled *"Diel movement patterns of the Hawaiian stingray, Dasyatis lata, in Kaneohe Bay, Hawaii"* in July at the joint American Society of Ichthyologists and Herpetologists/American Elasmobranch Society meeting at Penn State, Pennsylvania.

Jerald S. Ault

Bylaw Change Clarifies Role of Emeriti

Acting on the BOC request to clarify the status of Emeritus members and to investigate means to involve them more fully in the activities of AIFRB, Michael Hinton and Gene Huntsman proposed the following modification to the Bylaws as the minimum step that should be taken by the BOC at the August meeting. At that time we may present additional proposals. The change we propose ensures (1) that the conditions for granting Emeritus Status are clearly defined; (2) that when conditions are met without question, the granting is automatic, else the BOC makes the final decision; (3) that members retain rights and privileges of a regular member of the same rank, which makes it clear that they may be involved in activities of and hold office in the Institute; (4) that it is clear that only those fees and dues related to maintaining a regular membership are waived.

Motion: To change the title of Article II, Sec. 4, to read "Emeritus Status" and to change Article II, Sec 4, to read as follows:

"Any Fellow or Member may request Emeritus Status.

Any Fellow or Member who has obtained the age of 62 years or more, who has been a member in good standing for at least five years immediately prior to application, and who has retired from professional employment in fishery biology, shall on application to the Membership Committee be granted Emeritus Status at their current rank of Fellow or Member. In case all these requirements are not met, the Membership Committee shall consider any extenuating circumstances for or against granting Emeritus Status, and they shall present a recommendation to the Board of Control on the question of granting Emeritus Status. The Board of Control may grant Emeritus Status to any applicant by majority vote.

Those members granted Emeritus Status shall retain all rights and privileges accorded regular members of the same rank, except Members granted the status of Emeritus are not eligible for advancement in rank to Fellow. Those granted Emeritus Status shall not be required to pay fees or dues related to maintaining a regular membership."

After much discussion the BOC finally agreed to maintain the current dues structure, keeping Emeritus members as non-dues paying members. A ***motion*** by Director Hinton (as per his report) to change the title of Article II, Sec. 4 to read "Emeritus Status" and to change Article II, Sec. 4 as above was **seconded** and **unanomously** approved.

Emeriti Asked to Cough Up $$

Even though emeritus members of the AIFRB were not sent requests for contributions in lieu of dues this year, the Institute would benefit greatly from voluntary contributions from its retired members, Such contributions both offset the cost of producing and mailing BRIEFS and support the many programs of the Institute. The somewhat tender financial condition of the Institute in this time of a wobbly national economy makes support from our emeritus members especially important now. The officers of the Institute thank the emeriti who have already contributed (I am aware that Howard Schuck recently made a very generous contribution) and encourage those retirees with the wherewithal to provide additional funds for furthering the Institute's ambitious goals.

P.S. I am sure that the Treasurer would accept contributions from members who are still employed as well. – *The Editor*

NOAA Awards to Members

On May 10, 2001 in Silver Spring, MD, James M. Nance received the NOAA Best Practices Award, and Ronald Rinaldo was presented Hammer Award. Gary Matlock received both a Hammer Award and an Administrators Award.

Burger Solicits AIFRB Participation in World Fisheries Congress: BOC Accepts

I'm writing to ascertain whether you and/or AIFRB might be interested in helping out with the 4th World Fisheries Congress now being planned for Vancouver, BC in early May of 2004. I'm feeling folks out about their possible interest in serving on that meeting's Program Committee (or any other!), and in helping to plan the venue. Although the AFS International Fisheries Section, the AFS Canadian Aquatic Resources Section, and the AFS Society will be the chief organizers and major players in this, I think there could be additional great opportunities for partnering at some level between AFS and AIFRB, and perhaps in co-sponsoring a session or an event at the 2004 World Congress.

This is not a request for any funds or anything of that nature. It's simply to ask if you or an AIFRB member might be willing to serve on the Program Committee and/or to organize some type of session that AFS and AIFRB might wish to co-convene or co-sponsor. So far, I have organized the Congress's Executive Committee (myself, Fred Harris, Gus Rassam, Stan Moberly, and Max Stocker), the Local Arrangements planning (Bruce Ward), and the Congress's International Steering Committee (Bern Megrey and Max Stocker from the International Section, Bob Stickney representing our Fish Culture Section), Dale Burkett representing the AFS Administrators Section, Pamela Mace from our Marine Fisheries Section, and a host of international delegates from the Fisheries Society of the British Isles (Paul Hart or Enigo Everson), Dr. Mori from the Japanese Society, Glaister from Australia, and several other reps from other global fishery societies. This Steering Committee will convene their first meeting in Phoenix (most of Tuesday, August 22) to come up with the overall theme and how we want to structure this event. The models being considered are the Athens format (similar to AFS Parent Society meetings) and the Brisbane version (different plenary speaker each day, followed by supportive sessions addressing that day's theme). The Congress might feature more internationally renowned scientists coupled with policy and management strategies, rather than a bunch of concurrent sessions – but those aspects remain to be determined. In Beijing, the Chinese focused on sustainability, but it was overly commercial with heavy emphasis on the commercial aspects of using culture to feed the world. We have an opportunity now to get back to science, policy and management!!

Once the formatting and thematic issues and the focus are resolved by the Steering Committee, the Program Committee will be asked to bring the ideas to fruition. (As you no doubt know, AFS bid on and "won" the right to host the 4th Congress when Gus and I went to the 3rd Congress last November in Beijing.)

So Gary, this is a preliminary request for a show of interest by AIFRB. As a current AIFRB Fellow who can never get to your meetings, I would love to have AIFRB involvement. Could be a great opportunity for visibility, and perhaps a chance to attract new members for both AIFRB and AFS.

Let me know your thoughts,

Carl Burger,
President AFS
24 May 2001

The BOC Response:

Past-President Hubb's ***motion*** to have AIFRB participate in the World Fisheries Congress and that we contribute $1000 as a sponsor was **seconded** and unanimously-**approved** by the BOC.

AIFRB Website Available

The following are highlights of the development and status of the AIFRB website, www.aifrb.org.

During the year the hosting of the site was transferred from SCCWRP (Larry Cooper, Webmaster) to the IATTC. The site is updated regularly with information provided by the District Directors and Officers, but not all Directors have responded to requests for information from their regions. The site has contact points for all District Directors and Officers of AIFRB, as well as a list of members, Bylaws, and information on membership levels and joining the AIFRB.

I have requested BRIEFS be sent to me in web-ready format, by this version has not yet been received from Coastal Press, Inc. There still exists local sites for AIFRB Districts, which may be found during web searches. I understood from the discussions on this topic at the 2000 BOC meeting that such sites would no longer be maintained. Additional information to be added in the near term include descriptions of District boundaries, possibly linked to interactive maps; further details on the W.F. Thompson Award recently noted to me by W. Bayliff (F), and a link to the AIFRB/ASIH joint statement on the use of animals in research. Additional suggestions for content development and design consideration are welcome. As I will not be at the BOC meeting, I will at this point volunteer to continue the appointment as webmaster for the coming year, as it was never clear to me just what was the term of appointment for these positions.

Submitted by: Michael Hinton, Chair Web Site Committee and Webmaster

Committee and Regional Director Appointments

At the August BOC meeting President Sakagawa made the following appointments:

Regional Directors a) Bruce Wing – Alaska and Western Canada; b) Bruce Miller – NW States; c) G. Morris Southward – SW States and Mexico; d) Dora Passino-Reader – Central States and Middle Canada; e) Joseph Rachlin – NE States and East Canada; f) Thomas Schmidt – SE States and East Mexico

Officers and Directors a) Secretary – Barbara Warkentine; b) Treasurer – Allen Shimada; c) Membership Committee – Thomas Lambert (Chair), Richard Brodeur, Douglas Vaughan, and Barbara Warkentine; d) BRIEFS Editor – Gene Huntsman; e) Production Editor – John Merriner

President Sakagawa made the following committee appointments: a) AIFRB meeting (2002): Frank Panek; b) Capital Management: Charles (Pete) Cole (Chair), Joseph Rachlin, and William Wilson; c) Associate Research Award – Jerald Ault (Chair), Colleen Calwell, and Robert Stickney; d) W.F. Thompson Award – John (Jack) Pearce (Chair); e) Outstanding Achievement Award – Linda Jones (Chair), John (Jack) Helle, and William Taylor; f) Distinguished Service Award – Clark Hubbs (Chair), Charles (Pete) Cole, and Gary Sakagawa; g) Web-page – Michael Hinton, Joseph Rachlin, James Nance, and Kate Myers; h) Archives – Kate Myers

Four Districts Demonstrate Ambitious Programs in 2000-2001

Northwest Washington District

The NW Washington District held on 20 February 2001, the annual "AIFRB Ken Chew Multi-Course Chinese Dinner" at the China Harbor restaurant located on Lake Union in Seattle. The food was outstanding as ever, and this year we were privileged to listen to world famous shellfish scientist Dr. Ken Chew reminisce about his fisheries science career and how he came to be the awesome epicurean shellfish scientist he is today. Ken retired in 2001, although he was promptly hired back on the UW's 40% Work Option to continue to direct the Western Regional Aquaculture Consortium and to continue some duties as Associate Dean of the UW's College of Ocean and Fishery Sciences. The attendance of 123 people this year was the largest we have ever had at one of our AIFRB functions, and was fairly evenly divided between students, agency people, consultants, and academics. Special thanks go to Bud and Jeanne Burgner, Tom Rogers, Ken Adkins and Dave Armstrong for help with this special event.

For the upcoming 2001-2002 year, the NW Washington's District's goals are to increase district meetings to three times a year (autumn, winter, spring), and to increase membership from the agencies, academic, and private communities of fishery scientists in the district. Explorations have also begun about the logistics of the 2006 50th AIFRB Anniversary Annual Meeting to be held in Seattle, most likely at the Alaska Fishery Science Center at Sand Point.

Bruce S. Miller, District Director

Southern California District

The following are highlights of the status and activities Southern California District of the AIFRB during the period from August 2000 to July 2001.

Meetings of the District Membership: All meetings were held at the El Adobe Restaurant in San Juan Capistrano, CA. Each included a no-host cocktail bar, a short business meeting, dinner, and a presentation by an invited speaker. In general, meetings are well attended, with lowest attendance during summers, and those in attendance varying based on day of the week – which is varied to allow opportunity for participation by those with fixed evening schedules.

a. October 11, 2000: Ms. Robin Gartman (M), "San Diego's Ocean Monitoring Program". Attendance: 22

b. January 16, 2001: Dr. Kathy Dickson (F), "Swimming energetics and growth rates in juvenile scombrid fishes". Attendance: 28, incl. 14 guests.

c. April 19, 2001: Mr. Mark Helvey (M), "Essential Fish Habitat". Attendance: 23, incl. 7 guests.

d. July 17, 2001: Kurt Schaefer (M), "Movements, Behavior and Habitat Selection of Bigeye Tuna in the Eastern Equatorial Pacific, Ascertained through Archival Tags". Attendance: 14, incl. 4 guests.

District Awards made for presentations at the Southern California Academy of Sciences, May 2001:

a. Darin Topping, California State University Long Beach: Best Student Paper in Fisheries, $200: "Home range and spill over potential of kelp bass (Paralabrax clathratus) in Big Fisherman's Cove Marine Reserve, Santa Catalina Island, California".

b. Maelanie Galima, California State University Long Beach: Honorable Mention: "Endocrine response to stress in the jack mackerel: Potential relationship to growth".

c. Tiffany Royal, California State University Long Beach: Honorable Mention: "Routine and standard metabolic rates of the round stingray (Urolophus halleri)".

Financial Status: As of July 31, 2001, the District had $4,472.49 in a non-interest bearing, no charge, checking account.

Membership (reported subject to confirmation and reporting to the BOC by the Treasurer and the Chair of the Membership Committee)

a. Losses: There have been two documented resignations from AIFRB in the District, one due to retirement and lack of interest in continuing to participate in fisheries activities, and one due to a career change out of fisheries. In addition, it is anticipated that at least one delinquent (2-years) member will not renew, and several members that indicated intent to renew following contact last fall have not yet renewed, and it is anticipated that in these two instances they will not renew. Additional contact will be made asking them to confirm their intent to withdraw from membership to eliminate costs or to renew at this time.

b. Gains: There have been eight new members join AIFRB in the District. In addition, there have been three advancements in rank.

Upcoming District Sponsored Event – Southern California Fishery Research Forum, September 24, 2001, California State University Long Beach. Chair: Dr. John Hunter (F).

The Forum will put agency scientists and educators face-to-face in an exchange of information intended to make educators aware of the availability of research project support for their students. Students and faculty will gain from having access to research opportunities of import to the agencies and groups in the southern California region, and students in particular will gain form the opportunities to work with and develop professional contacts in the agencies. Agencies will gain as needed research (for which they lack sufficient resources to complete independently) are finally realized.

Michael Hinton, District Director

Northern California District

The current list for northern California includes 12 Emeritus and 41 dues-paying members. Overall, active participation in events was somewhat better than last year.

The Northern California District business meeting was attended on 14 October 2000 by Director Andy Jahn, Secretary/ Treasurer Tom Keegan, and past Directors Tom Moore and Brian Waters. Jahn reported the transactions at the 2000 BOC meeting, and the group then planned activities for the coming year. The District typically has a social banquet and three dinner meetings each year. At the dinner meetings, a speaker presents a topic of general interest to fisheries or fish habitat issues within the region. It was decided to solicit speakers on the topics exotic Spartina; bay-delta fish monitoring; ocean salmon project; San Francisco Airport impacts, mitigation,

and topics eventually were eventually covered, as well as a third topic, which concerned habitat and salmonid fishery description in north coast watersheds. The possibility of sponsoring a symposium at the Cal-Neva AFS meetings was discussed in general terms, and this thinking eventually led to a student paper judging, as described below. It was noted that the banquet site used for the past few years did not allow much mingling, and all attendees were tasked with finding a better venue. Finally, a special meeting was scheduled for the purpose of celebrating red abalone during a low tide in April. This event was eventually planned and announced, but was not attended.

At the first dinner meeting, on 16 November in San Rafael, Director Jahn gave a brief recap of the BOC meeting and announced the year's tentative agenda. Jon Amdur (Port of Oakland) and Brian Ross (EPA) presented an illustrated talk entitled "Ports, Harbors, Dredging, and Fisheries – Issues and Opportunities". ...Fourteen members and guests attended.

The Annual banquet was held in Oakland and attended by about 30 members and guests.

The second dinner meeting, on 22 February in Benicia, was attended by 34 members and guests. Kathy Hieb of California Fish and Game described the results of sampling in tidal marsh habitats fringing northern San Francisco Bay.

Both as a promotional event for the District, and to further the goals of AIFRB, student papers and posters were judged at the March Cal-Neva AFS meeting. Fifteen judges participated. Cash prizes were given for the two best papers and for the best poster. Fist place for oral presentations went to Kristina D. Louie of UCLA for her talk entitled "Genetic Variation in the Eastern Pacific Bay Pipefish, *Syngnathus leptorhynchus* (Gasterosteiformes: Syngnathidae)." The award to Ms. Louie was made without knowledge that the Southern California District had similarly awarded her for a previous presentation of the same talk. Second prize went to Joaquin Feliciano of U.C. Davis for his talk entitled "A Test for Competitive Interactions between Steelhead Trout (Onhorhynchus mykiss) and California Roach (*Lavinia symmetricus*)." Honorable mentions went to Dani Evenson and James A. Hobbs. The prize for best student poster presentation went to Jeff Field from the Moss Landing Marine Laboratories. Many thanks to all those who helped judge the talks and posters, but especially to Tom Keegan and Robert Blizard, whose organizing efforts were essential.

The third and final dinner meeting, held in Santa Rosa on 31 May, featured several speakers from Kier and Associates presenting a graphically rich data storage and retrieval system (see www.KRISWEB.com) that they have developed and used in several north coast watersheds, including the Klamath and Navarro Rivers.

During the year, the District obtained a tax identification number and participated in efforts to obtain a group exemption from the IRS. We opened a checking account in April, in which the District's funds were consolidated.

Andy Jahn, District Director

South Central Great Lakes District
Mid Year Meeting and Seminar

On Tuesday, March 31, 2001, the South Central Great Lakes District had a lunch meeting at the USGS Great Lakes Science Center, 1451 Green Road, Ann Arbor. The agenda included an update from the mid-year Board of Control meeting (March 8, 2001), discussion of AIFRB awards, update on winners of District sponsored certificates at SE Michigan Science Fair (March 9, 2001), and brainstorming for the next AIFRB South Central Great Lakes District event.

Following the AIFRB district meeting, Dr. Ed Rutherford, School of Natural Resources and Environment, University of Michigan, presented the following seminar at the USGS Great Lakes Science Center: "Ecological classification of fisheries habitat in Lake Michigan." The seminar was co-sponsored by the Great Lakes Science Center (USGS); the Great Lakes Environmental Research Laboratory (NOAA); and South Central Great Lakes District, AIFRB, which provided refreshments.

Special Awards at 43rd Southeastern Michigan Science Fair

The American Institute of Fishery Research Biologists, South Central Great Lakes District, provided a Special Award at the 43rd Annual Southeastern Michigan Science Fair, held at Washtenaw Community College, Ann Arbor, MI, March 9-10, 2001. The Special Award consisted of a handsomely printed Certificate of Recognition by AIFRB/SCGLD, and an AIFRB logo hat. AIFRB was listed as an awardee of Special Awards in the Science Fair booklet. The three winning projects were as follows:

1) Junior Experimental Division, "The effect of type of freshwater environment on the number and diversity of macroinvertebrates", by Sara Klebanowski, Reading, MI, Owens High School.

2) Junior Experimental Division, "The effect of number of zebra mussels on turbidity of water", by Laura Marsh, Onstead, MI, Onstead High School.

3) Senior Division, "The effects of household detergents on the ecosystem", by Jenna Casey, Ann Arbor, MI, Huron High School. (Freshwater macrophytes were tested.)

The Senior Division winner had noted in her experiment logbook that she initially designed her project to test aquarium fish but was informed by the Science Fair officials that projects could not be conducted with fish.

The three judges for AIFRB were Dr. Dora Passino-Reader, Mr. John R.P. French, III, and Mr. Lance Cablk. Mr. French and Mr. Cablk received AIFRB hats for serving as judges for AIFRB. The science fair also provided souvenir glasses, a tiepin, supper and snacks for all judges.

Other News

The SCGL District submitted several news items to the AIFRB Web site and to the AIFRB *BRIEFS*, some of which were published. The District website, using a university server, is maintained by Neal Foster.

The treasury balance is ca. $108.00, which includes a $100.00 loan from the personal purses of the officers. We sent $60.00 to the parent society for the sale of AIFRB hats. We received five AIFRB hats from the parent society to provide as awards at the 43rd SE Michigan Science Fair. Three hats

were given to the award recipients and two were given to the judges.

Objectives for 2000-2001 are as follows: 1) Continue co-sponsoring seminars with University of Michigan and seek co-sponsoring of seminars with Michigan State University, E. Lansing (younger scientists are thus reached on the campuses); 2) Increase visibility by our website; 3) Seek greater involvement of members; 4) Continue communication with fishery biologists, both members and non-members, by District Newsletter and Email and snail mail announcements; 5) Continue sending contributions to BRIEFS (and AIFRB web site) and encourage other members to send contributions; and 6) Continue announcing AIFRB awards and soliciting nominations for awards, especially Research Assistance Award.

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Dr. Neal Foster, Secretary-Treasurer, nealfost@umich.edu, Tel. (734) 663-0756

AIFRB Membership Committee Report – 2001

A Summary

Membership Committee: Tom Lambert – Chairperson, Richard Brodeur, Joe Margraf, Douglas S. Vaughan, and Barbara Warkentine

MEMBERSHIP SUMMARY 1979 TO 2001
(1979-80 may be imcomplete)

	NEW MEMBERSHIP				PROMOTIONS			
Year	Associate	Member	Fellow	Total	Member	Fellow	Emeritus	Total
1979	3(21%)	10	1	**14**	13	37	15	**65**
1980	13(22%)	29	7	**59**	4	11	4	**19**
1981	13(23%)	40	4	**57**	4	10	5	**19**
1982	31(69%)	12	2	**45**	2	3	2	**7**
1983	41(59%)	27	2	**70**	5	7	21	**33**
1984	47(67%)	19	4	**70**	6	13	18	**37**
1985	26(55%)	19	2	**47**	10	11	12	**33**
1986	23(53%)	19	1	**43**	3	2	8	**13**
1987	16(35%)	28	2	**46**	8	10	12	**30**
1988	20(56%)	15	1	**36**	8	8	19	**35**
1989	12(46%)	13	1	**26**	2	6	15	**23**
1990	18(69%)	7	1	**26**	8	21	14	**43**
1991	10(43%)	9	3	**23**	3	2	8	**13**
1992	9(50%)	7	2	**18**	1	2	5	**8**
1993	11(50%)	9	2	**22**	10	10	16	**36**
1994	20(49%)	17	4	**41**	16	26	10	**52**
1995	22(69%)	8	2	**32**	3	2	9	**14**
1996	20(45%)	19	5	**44**	4	2	18	**24**
1997	9	-	-	**9**	-	-	-	**-**
1998	16	10	5	**31**	3	4	10	**17**
1999	6	10	2	**18**	-	6	5	**11**
2000	14	4	1	**19**	5	13	6	**24**
2001	17	5	4	**26**	3	7	5	**15**

John Bardach, father of Hawaiian aquaculture, dies at 85

The marine scientist and author was also a leader in global aquaculture

By Helen Altonn
Star-Bulletin

Dr. John E. Bardach, 85, internationally renowned marine scientist, father of aquaculture in Hawaii and a leader in global aquaculture development, died Wednesday January 24, 2001. "He was a giant in the industry and he wrote the textbook that is considered the bible of aquaculturists throughout the world," said C. Richard Fassler, state economic development specialist. The Austrian-born scientist was a University of Michigan professor for 17 years before joining the University of Hawaii as Hawaii Institute of Marine Biology director in 1971. He served in that post until 1977. He became an East-West Center research associate in 1978, working in the Resource Systems Institute, serving as acting institute director, senior advisor to the center president and consultant on marine affairs. In 1990-1992 he was interim director of the center's Environment and Policy Institute. In 1993, he was named as the center's first Emeritus Senior Fellow in recognition of his international reputation and activities in his field.

"You can't overestimate his contribution to aquaculture," said E. Gordon Grau, Hawaii Sea Grant Program director and former Hawaii Institute of Marine Biology director. John Corbin, aquaculture manager in the state Department of Agriculture who was a student at Hawaii Institute of Marine Biology when Bardach was director, said, "He was an inspiration in terms of aquaculture and the potential, not only for Hawaii but for the world. "But the amazing thing about John not only was he a world expert in aquaculture, he was a world expert in several other fields that weren't even related – chemical sensing physiology and resource geography."

Bardach's interests ranged from sea to land, including Asian art and symphony music. "He spoke quite a few languages and always had a twinkle in his eye" said Fassler. "He had a wonderful sense of humor." He had appointments in the UH-Manoa geography and oceanography departments and was named the Spark Matsunaga Fellow in Living Marine Resources by the Hawaii Natural Energy Institute. He chaired the Pacific Science Association's task force on global environmental change and represented the U.S. National Academy of Sciences on the Council of the Pacific Science Association. He was a prolific author of articles and books on fisheries and aquaculture, marine resource management, global climate changes and other issues. His books included the text, "Aquaculture: The Farming and Husbandry of Freshwater and Marine Organisms," the award-winning "Harvest of the Sea," and the first book on "Sustainable Aquaculture."

He received a lifetime achievement award in 1998 from the Hawaii Aquaculture Association.

Bardach is survived by his sister, Helena Ripper, and nephew, Peter Ripper.

From: Honolulu Star-Bulletin Hawaii News, January 27, 2001
http://starbulletin.com/2002/01/27/news/story8.html

Two Imminent Meetings:

Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem

The FAO and Iceland are jointly organizing the Reykjavik, Iceland 1-4 October of this year. The conference is co-sponsored by Norway. This Inter-Governmental Conference is organized into Plenary Sessions (at the opening and at the end) and a Scientific Symposium between these. It attempts to bring together scientists, decision-and policy-makers in fisheries and ocean management, as well as environmentalists and industry representatives. The final session will be addressed by speakers at ministerial level, providing views on future needs and ways to ensure responsible fisheries in the marine ecosystem. While the Scientific Symposium is open to participation by scientists and experts in their individual capacity, the two Plenary Sessions will be Inter-Governmental Conferences with exclusive participation of representatives from the member States of FAO. Intergovernmental organizations and accredited NGOs can attend the Plenary Sessions as observers. Those participating in the Scientific Symposium in an individual capacity and not being part of national delegations can also attend the Plenary Sessions and the social programmes of the Conference. Individual scientists, industry representatives and others who wish to contribute to the Symposium are incited to register. During the Conference, those participating in the Symposium in their individual capacity are invited to take part in the Conference as observers. Even though there is no call for papers, (as all the overview papers have been commissioned) there will be ample time for discussions during the Symposium including the possibility for short (max 5 minutes) inputs. Also, a Poster Session is being organized for which presentations are being sought.

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Ed Note: This announcement arrived too late to be of much use for planning attendance but appeared worthy of inclusion in BRIEFS.

Also meeting:

Southeastern Association of Fish and Wildlife Agencies
October 13-17, 2001, Louisville, KY

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www.kfwis.state.ky.us/afs/kyafs.htm
Or www.kdfwr.state.ky.us
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Exotic fish species turns up a long way from home

By Nomee Landis — Staff writer

Biologists don't know how these foreigners found their way to North Carolina's coast. It is all a bit fishy. Perhaps as youngsters they hitched a ride in the belly of some ship. Or maybe a bored aquarium owner dumped them into the Atlantic in Florida and they just drifted north with the tropical Gulf Stream waters. However they arrived, one thing is certain: The lionfish, *Pterois volitans*, skulking around the carcasses of sunken ships off North Carolina's coast are a long way from their home waters in the South Pacific. How did they wind up swimming 30 or 40 miles off the Carolina coast, half a world away?

Paula Whitfield, a marine biologist with the National Oceanic and Atmospheric Administration in Beaufort, said she believes they were probably aquarium fish that were accidentally or purposefully released into the wild.

The fish have brown and white stripes and fins that resemble feathers. Stings from poisonous spines in their dorsal fins can seriously injure fish or fish lovers who get too close.

They are popular aquarium species because they are so pretty, Whitfield said.

Scuba divers first noticed the lionfish last summer (2000) on shipwrecks that are between 30 and 40 miles south of Beaufort Inlet, Whitfield said. Word about their presence is just getting out. They have been noted at four wreck sites and in one natural hard-bottom location, which is simply a natural rock outcropping of the continental shelf.

From: Fayetteville Online Local News, August 27, 2001

American Institute of Fishery Research Biologists

An association incorporated in 1956 to establish and maintain high professional standards of recognition of achievement and competence.

2002 Dues Notice

Dear Colleague:

Please return with annual dues as indicated: 2000, 2001, 2002, 2003, 2004

Professional Associate/Member/Fellow	$30.
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Out of the Can- Salmon Doomed?

Lackey, Passino-Reader, and Hilborn

Through several publications, especially "Defending Reality" (Fisheries, 26(6) 26-27), and talks, Fellow Robert Lackey has lifted the lid on a fervently fermenting controversy concerning expectations for the future of Pacific salmon populations. The AIFRB Board of Control believes this issue is so significant that they asked that Briefs include a discussion of the arguments. Following is a summary of Lackey's thesis, a brief rebuttal by Dora Passino-Reader, and informal comments by Ray Hilborn, Ed.

Restoring Wild Salmon to the Pacific Northwest: Chasing an Illusion?

Robert T. Lackey

Throughout the Pacific Northwest (northern California, Oregon, Idaho, Washington, and the Columbia Basin portion of British Columbia), many wild salmon stocks (a group of interbreeding individuals that is roughly equivalent to a "population") have declined and some have disappeared. Substantial efforts have been made to restore some runs of wild salmon, but few have shown much success.

Society's failure to restore wild salmon is a policy conundrum characterized by:

1. claims by a strong majority to be supportive of restoring wild salmon runs;
2. competing societal priorities which are at least partially mutually exclusive;
3. the region's rapidly growing human population and its pressure on all natural resources (including salmon and their habitats);
4. entrenched policy stances in the salmon restoration debate, usually supported by established bureaucracies;
5. society's expectation that experts should be able to solve the salmon problem by using a technological scheme and without massive cultural or economic sacrifices (*e.g.*, life style changes);
6. use of experts and scientific "facts" by political proponents to bolster their policy positions;
7. inability of salmon scientists to avoid being placed in particular policy or political camps; and
8. confusion in discussing policy options caused by couching policy preferences in scientific terms or imperatives rather than value-based criteria.

Even with definitive scientific knowledge, which will never be complete or certain, restoring most wild salmon runs in the Pacific Northwest to historic levels will be arduous and will entail substantial economic costs and social disruption required. Ultimate success cannot be assured. Given the appreciable costs and social dislocation, coupled with the dubious probability of success, candid public dialog is warranted to decide whether restoration of wild salmon is an appropriate, much less feasible, public policy objective. Provided with a genuine assessment of the necessary economic costs and social implications required for restoration, it is questionable whether a majority of the public would opt for the pervasive measures that appear necessary for restoring many runs of wild salmon.

Through the 21st century, I conclude that there will continue to be appreciable annual variation in the size of salmon runs, accompanied by the decadal trends in run size caused by periodic changes in climatic and oceanic conditions, but many, perhaps most, stocks of wild salmon in the Pacific Northwest likely will remain at their current low levels or continue to decline in spite of heroic, expensive, and socially turbulent attempts at restoration. Thus, it is likely that society is chasing the illusion that wild salmon runs can be restored to the Pacific Northwest without massive changes in the number and lifestyle of its human occupants, changes that society show little willingness to seriously consider, much less implement.

From: Lackey, Robert T. 2000. Restoring wild salmon to the Pacific Northwest: chasing an illusion? In: What We Don't Know about Pacific Northwest Fish Runs – An Inquiry into Decision-Making." Patricia Koss and Mike Katz, Editors, Portland State University, Portland, Oregon, pp. 91-143.

Available on the web:
www.epa.gov/wed/pages/staff/lackey/recntpub.htm

The AIFRB is a 501(c)(3) tax-exempt nonprofit organization (EIN 61-6050711).

Defending Whose Reality?

Dora Passino-Reader

In his controversial essay "Defending Reality" in the June 2001 issue of Fisheries, Robert Lackey defends a reality that he predicts for a time 100 years from now. By the year 2100, the human population of the Pacific Northwest will have increased from the current 14 million to a range of 40 to 100 million, while at the same time, the wild salmon will have been reduced to a few remnant stocks unable to sustain themselves without human assistance (hatcheries, etc.), according to his prediction.

My objection to his conclusion is the uncertainty of predicting outcomes 100 years in the future to the extent of calling them "Reality." The probability of a given status of wild salmon in the year 2100 is the product of the probabilities of all the factors or conditions that cause the status, i.e.,

$Px=P_1 * P_2 * ..... P_n$.

Where Px= the status of wild salmon and P_1, P_2,...P_n= each condition affecting Px. P_1, P_2, ...Pn include such factors as availability of suitable prey, predation pressure, influence of new invasive species, fishing pressure, hydrology of each tributary, ocean temperatures, climate change, pollution, diseases, riparian quality, physical modification of tributaries and coastal areas, and restoration and remediation efforts, etc. Generously, let's allow him the probability of predicting each of these causal factors with a certainty of 10% or 0.10. Given that the final probability is a product, we arrive at the probability of successfully predicting his reality as

$Px= 10^{-1} * 10^{-1} * 10^{-1} * .....$

$Px=10^{-n}$.

Given all the different conditions that affect wild salmon and that can change in the next 100 years, Px will be a VERY small number. It seems hyperbole to call $Px=10^{-n}$ "Reality." Granted, he is extrapolating from a downward trajectory that has occurred for at least the last 100 years. However, extrapolation is just that.

Lackey's second major point in the essay is that fishery scientists are perpetuating "the delusion that the Pacific Northwest will...support wild salmon in significant numbers" 100 years from now. Basically, fishery scientists should not give the public the hope that their efforts now or during the next 100 years will be successful in preserving or restoring successful wild salmon runs. He is "fascinated" by suggestions that he is too pessimistic. Basically, he is assigning fishery scientists the occupation of hospice workers. We are caring for a patient whose imminent death is certain. I think few fishery biologists would continue their work, nor would students be attracted to the field, if the work was, philosophically, hospice care for fish.

Dora Passino-Reader, Director, South Central Great Lakes District

Many fishery biologists work for agencies at the state or federal level. The mission statements of the agencies are "optimistic." For example, "The Fish and Wildlife Service's mission is, working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people." For the U.S. Geological Survey, "the Biological Resources Division (BRD) works with others to provide the scientific understanding and technologies to support the sound management and conservation of our Nation's biological resources." These mission statements garner support and provide a positive framework within which fishery biologists put forth their best efforts to accomplish goals such as preserving and restoring wild salmon in the Pacific Northwest. While being realistic about what we can accomplish for specific fish species or stocks in given areas in the present, fishery professionals can best serve the fishery resources and those who enjoy them when these professionals are working toward accomplishing goals for which they see success.

Lackey further claims that fishery researchers, working under cover of senior management, are addressing questions "often resulting in narrow, reductionist scientific information and assessments." On the contrary, fishery researchers are working together within their areas of expertise, to provide solutions based on defensible knowledge, rather than on extrapolations having low probabilities of "reality."

Ray Hilborn: Good (?) News for Biologists

I am reminded of the quote from, I believe, Conrad Lorenz "Prediction is always difficult, especially about the future". One only needs to look at well-known predictions about federal deficits and surpluses, or Paul Ehrlich's predictions "Famine 1975" to be quite modest in any predictions.

However dubious Lackey's numerical predictions are about the human population of the Pacific Northwest, it seems to me the key issues are:

1. what kind of land use is compatible with salmon and
2. how much of the land use that is compatible will be left

Clearly current trends are all bad – but I think one would need to look a lot more carefully at where human population is growing and where it is not.

Specifically regarding your comment

1. one could admit a lot of uncertainty in the annual rate of increase, but still end up with near certainty that the population of humans will be a lot higher in 100 years in the northwest
2. if you look empirically at where you find salmon biologists, there is a pretty strong negative correlation between salmon density and salmon biologists – Places like Bristol Bay that have millions of salmon have a handful of biologists, places like Puget Sound, Columbia River, Sacramento River that have a handful of fish, have hundreds of biologists. So even in Lackey's bleak future (for salmon) there would undoubtedly be lots of salmon biologists! (whether happy or not).

A Sampler on Marine Reserves

Marine reserves remain a controversial topic. It appears that the application of marine reserves to fisheries management is lagging far behind academic opinion on the value of reserves. Here is a collection of opinions about reserves that I hope you will find instructive Ed.

One Voice of Recreational Fishing

Overfishing No: Fishing Yes

An Editorial

Those few words could send our battle cry.

We must shout that simple message loud and clear, or we'll face massive recreational fishing bans.

The shutdowns are proposed by well-meaning but collectively cowardly folks spraying million of dollars all through society in the silliest of public relations campaigns. They can't muster the fortitude to stand up to longstanding large-volume commercial overfishing. SO their simplistic answer is to lock out everyone.

Blitz it is. We're getting hammered.

In the latest round of hoopla for Marine Protected Areas, fisheries managers are actually mulling proposals that would close many of our most treasured fishing grounds, as detailed by Editor Jeff Weakley in this issue's On the Conservation Front.

It's fisheries management at its worst.

There's absolutely no justification to ban family-level fishing in large areas of the ocean.

Non-commercial hook-and-line fishing under carefully imposed limits never depletes a population.

That's why personal angling is fostered in places like the Everglades and Yellowstone, places which, amazingly, are cited by the No-Fishing gang as examples purportedly supporting the sweeping prohibitions against everyone.

Sadly, the general media tends to fall for the No-Fishing sham because of a sweet environmental coating that mixes all fish catches together with an extinction-threat flavoring.

Still, let's be clear about our position. No one has fought overfishing harder than we have over the years. Most federal management was nothing but a cheerleading section for commercial excesses, and so we've said many times.

On the recreational side, we've favored stricter size and bag limits whenever appropriate. Changes are made continually. It's working.

Moreover, some federal laws actually have and are making a big difference, including a new ban on most long lining slaughters.

It's important to realize that many improvements were made under standard management systems after the draconian No-Fishing idea was first suggested, and rejected, in the mid 80s. It was a bad idea then. It is even worse now.

Some veteran biologists and managers privately agree that the MPAs are nonsense, for a combination of reasons. They cite a lack of good research and poorly conceived boundaries that do not cover a marine animal's life history movements and thus leave them prey to overfishing outside the limited walls. There are also many gross exaggerations and phony claims that go unchallenged.

But most opponents of the zones have been cowed into silence.

So, comrades, it's your job again. Just when you thought you had earned a furlough, you're needed at the front.

Sound that battle cry. They will hear you.

Karl Wickstrom
Publisher, Florida Sportsman and perennial foe of reserves
From: Florida Sportsman/August 2001

Scientific Consensus Statement on Marine Reserves and Marine Protected Areas (Abridged)

From the National Center for
Ecological Analysis and Synthesis
University of California
Santa Barbara, CA 93101-5504
http://www.nceas.ucsb.edu/

While Wickstrom notes that some scientists believe marine reserves are "nonsense", here is a statement signed by 161 prominent marine scientists. Ed.

The Context

An International team of scientists was convened at the National Center for Ecological Analysis and Synthesis (NCEAS) and charged with developing better scientific understanding of marine protected areas and marine reserves. Conclusions from the two-and-a-half-year efforts of this working group are *in press* in a special issue of the journal *Ecological Applications*. This Scientific Consensus Statement is based upon those results and other research already published elsewhere. The Statement is a joint effort of the NCEAS scientists and the academic scientists participating in a meeting on marine reserves convened by COMPASS (Communication Partnership for Science and the Sea). This Statement was drafted in response to repeated requests by many fishermen, marine resource managers, governmental officials, conservation activists, interested citizens and others for a succinct, non-technical but scientifically accurate summary of the current scientific knowledge about marine reserves.

New Approaches Are Needed:

The declining state of the oceans and the collapse of many fisheries have created a critical need for new and more effective management of marine biodiversity, populations of exploited species and overall health of the oceans. Marine reserves are a highly effective but under-appreciated and under-utilized tool that can help alleviate many of these problems. At present, less than 1% of United States territorial waters and less than 1% of the world's oceans are protected in reserves.

What are Marine Reserves?

Marine Reserves (MRVs) are areas of the sea completely protected from all extractive activities. Within a reserve, all biological resources are protected through prohibitions on fishing and the removal or disturbance of any living or non-living marine resource, except as necessary for monitoring or

research to evaluate reserve effectiveness. Marine reserves are sometimes called ecological reserves," "fully-protected marine reserves," or "no-take areas." **MRV**s are a special category of **Marine Protected Areas** (MPAs). MPAs are areas designated to enhance conservation of marine resources. The actual level of protection within MPAs varies considerably; most allow some extractive activities such as fishing, while prohibiting others such as drilling for oil or gas. A **Network of Marine Reserves** is a set of **MRV**s within a biogeographic region, connected by larval dispersal and juvenile or adult migration.

The Scientific Consensus

The first formal marine reserves were established more than two decades ago. Recent analyses of the changes occurring within these MRVs allow us to make the following conclusions:

Ecological effects *within* reserve boundaries: 1.) Reserves result in long-lasting and often rapid increases in the abundance, diversity and productivity of marine organisms; 2.) These changes are due to decreased mortality, decreased habitat destruction and to indirect ecosystems effects; 3.) Reserves reduce the probability of extinction for marine species resident within them; 4.) Increased reserve size results in increased benefits, but even small reserves have positive effects; 5.) Full protection (which usually requires adequate enforcement and public involvement) is critical to achieve this full range of benefits. Marine protected areas do not provide the same benefits as marine reserves.

Ecological effects *outside* reserve boundaries: 1.) In the few studies that have examined spillover effects, the size and abundance of exploited species increase in area adjacent to reserves; 2.) There is increasing evidence that reserves replenish populations regionally via larval export.

Ecological effects of reserve *networks*: 1.) There is increasing evidence that a network of reserves buffers against the vagaries of environmental variability and provides significantly greater protection for marine communities than a single reserve; 2.) An effective network needs to span large geographic distances and provide a stable platform for the long-term persistence of marine communities.

Analyses of the Best Available Evidence Lead Us to Conclude That:

Reserves conserve both fisheries and biodiversity; To meet goals for fisheries and biodiversity conservation, reserves must encompass the diversity of marine habitats; Reserves are the best way to protect resident species and provide heritage protection to important habitats; Reserves must be established and operated in the context of other management tools; Reserves need a dedicated program to monitor and evaluate their impacts both within and outside their boundaries; Reserves provide a critical benchmark for the evaluation of threats to ocean communities; Networks of reserves will be necessary for long-term fishery and conservation benefits; Existing scientific information justifies the immediate application of fully protected marine reserves as a central management tool.

This Scientific Consensus Statement is signed by 161 leading marine scientists and experts on marine reserves. Signatories all hold PhD. Degrees and are employed by academic institutions.

The 161 signatories include (for example):

Jane Lubchenko, Paul K. Dayton, Jenifer E. Dugan, Daniel Pauly, Callum M. Roberts, Andrew A. Rosenberg, Jerald S. Ault (AIFRB member), Felicia Coleman, Larry B. Crowder, Mark E. Hay, Jeremy B.C. Jackson, Les Kaufman, Christopher C. Koenig, John C. Ogden, Charles Henry Peterson, G. Carleton Ray, Yvonne Sadovy, Michael C. Whitlock

A Moderate Recreational Voice:

Comments on Tortugas Ecological (Marine) Reserve

By John Jolley

July 26, 2000

Mr. Billy Causey, Sanctuary Superintendent
Florida Keys National Marine Sanctuary
PO Box 500368
Marathon, FL, 33050-9924

Dear Superintendent Causey,

On behalf of one of the largest, oldest and most experienced fishing clubs in the United States, I write in support of the Tortugas Ecological Reserve. Because of the significantly increased pressure on most of the marine reef resources throughout the western North Atlantic and especially throughout Florida and the Bahamas, we believe this proposal is a good action and errs on the side of conservation. It contains scientifically supportable concepts. Furthermore, we encourage a complete ban on all fishing and other uses such as diving so that it is fair and enforceable. The general public might be more accepting of your proposal if all users are treated equally.

In future we also might support a careful policy that would allow for reevaluation of management and possibly increased limited uses if strictly regulated and enforced. For example, following a significant time of closure and evaluation (say 10 years) some diving and fishing might be resumed on a highly restricted basis allowing limited gear and bag limits and for some temporary or aperiodic basis (i.e. alternating years). Citizens, not just scientists, need to see for themselves how biodiversity and abundance can be positively influenced by closing significant marine areas. Such demonstrations might then influence a self-supporting mechanism for future (reasonable) sites elsewhere when science supports it.

Mr. Causey, the WPBFC has long remained a leader in conservation even when such issues became highly controversial. Our keen observations over the past six (6) decades of habitat destruction, pollution, over exploitation and failures in fisheries management have led us to embrace a philosophy of "concern for the resource first" when its biological health is in doubt. We believe this is currently the case with much of Florida's reef complex as elsewhere. Consequently, extraordinary measures seem required.

In conclusion, we agree with others that this project is only one (1) tool in fisheries management. But it should be started soon. We strongly support its implementation.

Please keep this institution informed of your progress and the future management of the Dry Tortugas.

Respectfully submitted,
John W. Jolley
President West Palm Beach Fishing Club (and AIFRB member. Ed.)

And from a head gone gray in support of reserves:

Panacea – No!
The Only Answer? – Sometimes!

Marine protected areas, marine reserves, marine refugia, no-fishing zones by any name are generating much discussion and surprisingly little action in the U.S. fisheries management arena. I say surprisingly because there are situations of depleted fish populations where we have known for almost two decades that there can be no restoration unless we close areas to fishing, and, essentially, make those closures permanent. To illustrate the inescapability of the need for reserves in some instances, let me present, briefly, the case of the speckled hind, Epinephelus drummondhayi, a formerly common (within the limits of its ecological role) grouper of mid-depths (40 to 100m) on the continental shelf of the southeastern U.S. This handsome species attained 30kg and was important to both commercial and recreational fisheries but is now so reduced that too few fish are sampled to allow calculations of the stock condition. Speckled hind share with several other groupers traits that preclude effective application of most common fishery management measures. These traits include:

1.) Ecological rarity. Although at one time prominent in the catch, speckled hind, the apex resident predator of mid-shelf reefs, was inherently less abundant than the many lower trophic-order species that co-occurred.

2.) Fisheries-vulnerable life history. Most groupers switch sex, and become males only late in life at large size. Thus F must be kept low enough to allow escapement of some reasonable fraction of the population to ages 10 or more. At the last calculation the speckled hind was limping along with only two percent of the male biomass that existed in the un-fished population. The percentage is almost certainly smaller now.

3.) Occurrence in a mixed-species fishery with full vulnerability to the gear. While the speckled hind has, as a practical matter, vanished as a contributor to the catch, the remnant individuals are surrounded by thousands of representatives of several score of other species that continue to support the hook-and-line reef fishery. Moreover, the experience of most fishers is that, as a high-order predator, the speckled hind may be more aggressive in feeding than most of its reef associates and be more likely to be taken than its numbers would suggest.

4.) Complete mortality of all fish caught. The depths at which specked hind live preclude successful release of undersize, oversize, or out-of-season fish because of gas-expansion trauma during capture.

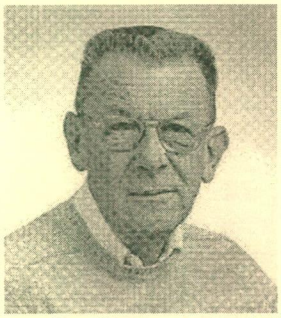
So girls and boys there is the ballpark. How do we play the game? How do we ensure that a sufficient (another long discussion!) number of fish live long enough to become males and allow adequate reproduction by the species? Forget bag limits, size limits, quotas and seasons (unless the speckled hind catch governs the fishery for all other species). What scheme other than closed areas obviates all the problems posed by the restrictions listed above? There is one, maybe two. The one, that chosen by default by the South Atlantic Fishery Management Council, is to abandon the species to oblivion. Though problems with speckled hind have been known since the late 1970s the Council has persisted, nonsensically, in assuming that a one fish bag limit was sufficient to achieve results required by the Fisheries and Conservation and Management Act and by its own rules. Almost no one catches one fish to begin with, and, were they to catch more than one, they could not successfully release the excess. The second scheme is novel, to my knowledge untried, liable to generate even more bellyaching than marine reserves, and is the brainchild of former Carolina District Director Robert Dixon. His solution: a maximum strength for fishing lines. Given the skill of fishers the strength couldn't be much – 4 kg? While the scheme certainly has the potential to release big fish and provide some of the benefits of marine reserves, I, for one, would rather forego the pleasure of selling this one to the operators of hydraulically-powered fishing reels and 5 kg sinkers.

Thus we have, in the case of the speckled hind, a logically powerful case that marine reserves may be the only route to successful management. An argument against this case is that the supposed benefits of reserves are hypothetical and based on untested assumptions, unlike common management tools. But look closely at those common management tools, size or bag limits, quotas, etc. Are many of them not also based on assumptions of equivalent fragilities? On estimates of natural mortality rates that are only slightly better than guesses, on stock-recruitment relationships that might have been created by Hans Christian Anderson? A strong argument can be made that use of marine reserves as a management tool requires fewer and lesser extreme flights of fancy than do conventional methods.

The real problem with use of marine reserves is that they are relatively new, and thus scary. Even usual allies in pursuit of stringent restrictions on fishing, the sport fishers, have been opponents or feeble supporters. But as illustrated above, there are problems in the management of fisheries that cannot be solved by conventional measures and must be addressed by the implementation of a reserve system. Biologists who fail to recognize that marine reserves are valid devices for solutions of many difficult fisheries management problems are overestimating the strengths of conventional means, are denying the complexity of the ecological and social systems in which they work, and are shortchanging their constituents. *Editor Huntsman.*

For any who would rather not see the Editor preempting space in Briefs, remember that Briefs is your publication and that I have never suppressed a reader-created submission.

Two Great Losses



George William "Bill" Klontz

March 24, 1929 – March 23, 2000

Dr. Bill Klontz, our mentor and dear friend, recently died due to complications of leukemia. He is survived by his wife Martha (affectionately known as "Aunt Martha" by Bill's students), his children Bill, Dani, and Mary, and hundreds of his students throughout the world.

Dr. Klontz received his graduate degree in immunology from the University of Washington and his doctorate of veterinary medicine from Washington State University. He was employed by the United States Fish and Wildlife Service under Dr. Robert Rucker at the laboratory then known as the Western Fish Disease Laboratory in Seattle, Washington. During his stint in Seattle, Bill conducted some of the first studies immunizing salmon. Also while in Seattle, Dr. Klontz spent significant time in the field at state salmon hatcheries with Jim Wood. Through these experiences Bill developed his philosophy of fish health management and disease prevention – a philosophy and approach which he passed on to his students right up to his death.

The Klontz family migrated to Texas A&M University in 1969 where Bill obtained a teaching and research post. Bill studied marine mammals and warm water fish culture. In 1972, he returned to his native Pacific Northwest to become the chair of the Fisheries Department at the University of Idaho. Bill taught undergraduate and graduate courses in fish culture, fish health, and wildlife diseases. Additionally, Bill traveled throughout the world to teach weeklong short courses on the principles of fish husbandry and health. Dr. Klontz was an electrifying lecturer that stimulated and engaged every individual in the classroom. It was this energy and inspiration that drew us to him and changed the courses of our lives. Regardless of whether you were the least of the hatchery crew, lowliest student, or the director of a research institute, Billy George (as he called himself) could "talk fish" with you. Bill was known for his "fishy" phrases. As practitioners, we have firmly imbedded in our minds "Believe what you see, don't see what you believe" – words of wisdom that will carry us well in all walks of life.

Dr. Klontz was an active member of the American Fisheries Society, Fish Health Section, and was president of the Section in 1979. Bill received the coveted S.F. Snieszko Distinguished Service Award in 1994 for his contributions to the Fish Health Section and to the fish health community. Bill was also a member of the European Association of Fish Pathologists and cherished very much the friendship and professional rapport he developed other years with his European colleagues.

Bill loved his students and he and Aunt Martha provided the care and nurturing often required by those in quest of truth and knowledge. The Klontz' door was always open, office or home, to students who wanted to talk shop or needed help with personal problems. We all were adopted children and upon receiving our graduate degrees, we became proud members of Klontz' Kookie Klan.

Though Bill has gone ahead to a place where gill disease is not a problem, he has left behind in each and every one who knew him a lasting impression. For many of us, it is a fire that burns bright and inspires us to pass his teachings along to others. We miss you Bill, but you always will be in our hearts and souls.

Kevin Amos

William E. Ricker

August 11, 1908 – September 8, 2001

William E. Ricker, died on Saturday, September 8, 2001 in Nanaimo, B.C. He was born on August 11, 1908 in Waterdown, Ontario and was educated at North Bay Collegiate, Victoria College, and the University of Toronto (B.A., 1930; M.A., 1931; Ph.D., 1936).

During his career, he was a field naturalist, limnologist, entomologist and fisheries biologist. His employment included the Fisheries Research Board of Canada (1931-37); International Pacific Salmon Commission (1938-39); Professor of Zoology at the University of Indiana (1939-50); at the Pacific Biological Station in Nanaimo, B.C., he served as the editor and Chief Scientist of the Fisheries Research Board of Canada (1950-73) and was Acting Chairman in Ottawa (1963-64). After his retirement in 1973, he was a contract scientist with the Canadian Department of Fish and Oceans (DFO) until 1995 and continued to conduct research in his office at the Nanaimo Station.

He authored over 200 research papers. His major works on fish population dynamics, particularly stock and recruitment studies and the "Ricker Curve", gained world-wide recognition and are widely used in both freshwater and marine studies. Some ideas for his population research were influenced by a 1916 paper by Theodore Baranov, a Russian Scientist. Self-taught in Russian, Ricker published over 100 translations and compiled a Russian Dictionary of terminology for fisheries and aquatic biology. His early research was on stoneflies and he identified dozens of new species. He began research on the declining weight of pink and coho salmon in the 1980s and with his last publication (1999) completed over 60 years of active research.

In recognition of his research, Ricker received some 40 awards: Three honorary degrees, A Member of the Order of Canada, Fellow of the Royal Society of Canada, President of the American Society of Limnology and Oceanography, the F.E.J. Frey Medal of the Canadian Society of Zoologists, Eminent Ecologist award from the Ecological Society of America, the Wildlife Society and others. The American Institute of Fishery Research Biologists (AIFRB) and American Fisheries Society (AFS) awards recognized his life time achievement. He joined AFS in 1930 and before his death, had the longest tenure of any current member. AFS honored him by creating a *William E. Ricker Resource Conservation Award.* In 1986, a new DFO research vessel was named *W.E. Ricker.* The looping driveway leading to the Pacific Biological Station also is known as the "Ricker Curve".

His personal life was as active and productive as his scientific career. He played bass viola in the Nanaimo Symphony Orchestra, and also played guitar, balalaika and violin. He was a member of the NY Explorer's Club. He had a life-long interest in astronomy and published a paper (1999) on cyrillids (fire-balls). Friends claim he recognized many birds by their call, could identify most plants on his frequent hikes, and could name the major constellations. A family member said he wasn't a very good golfer and only a mediocre fisherman. He published a collection of haiku and wrote poetry for his own enjoyment. A Sherlock Holmes fan, Ricker wrote Holmesian spoofs and won an award for one. He was active in Boy Scouts and frequently went skiing, hiking, and mountain climbing with his family.

Ricker's wife, Marion (56 years) died in 1991. His sons Karl, John, Eric, and Angus survive. Donations may be made to the Dr. William E. Ricker Scholarship Fund at Malaspina University or to the William E. and Marion T. Ricker Scholarship Fund at Nanaimo District Secondary School or to a charity of your choice.

Ricker was one of the world's best known fishery scientists and his contributions are regularly cited in current journals, a status that undoubtedly will continue. He was a modest, quiet person, every bit a gentleman, and will be missed by the scientific community and a wide circle of friends.

Most of this information was gleaned from articles in the Vancouver Sun and the Nanaimo News Bulletin that included input from Ricker's family and colleagues at the Pacific Biological Station. It was compiled by Past AIFRB President, Bernard E. Skud, who attended a "memorial gathering" on September 22, 2001 at the family home in Nanaimo. Skud has had periodic contact with Ricker since the early 50s and visited with him in April this year. More information on Ricker can be found at www.science.ca/scientists/Ricker/ricker.htm. A 26-minute videotape entitled *A Passion for Science – Bill Ricker. A Scientific Journey* can be purchased ($20 + S&H) from the American Fisheries Society Publication Unit at (412)741-5700.

Bernard Skud

Thanks to Bern and Kevin for these two well written obituaries. Ed.

D. Robert Lohn Named Fisheries Northwest Regional Administrator

Secretary of Commerce Don Evans has named D. Robert Lohn as the Northwest Regional Administrator for the National Marine Fisheries Service (NOAA Fisheries). Bob joins NOAA Fisheries from the Northwest Power Planning Council, where he has served since July 1999 as their Director of Fish and Wildlife. Bob's first-hand experience in addressing the issues facing Northwest fishery resources, hydropower facilities, and farmers will be a great asset for NOAA Fisheries.

Bob is an experienced manager who worked to develop and implement a program of more than $120 million per year for restoration of fish and wildlife in the Pacific Northwest. Bob knows the resource issues surrounding the Columbia River Basin fisheries and understands the importance of openly communication with his constituents. Bob also has experience in developing budget requirements and performance measures for fish and wildlife projects in the Northwest Region.

Prior to joining the Northwest Power Planning Council as Director of Fish and Wildlife, Bob managed the Fish and Wildlife Division of the Bonneville Power Administration from 1994 to 1999. From 1987 to 1994, he served as general counsel to the Northwest Power Planning Council. Bob has worked as a litigation attorney in California and was Director of the Office of Staff Attorneys for the U.S. Court of Appeals for the Ninth Circuit in San Francisco, California. Bob spent several years at the University of Georgia as a law professor and Rusk Fellow. Early in his legal career, he also served as general counsel to the Montana Governor's Office. Bob is a veteran of the U.S. Navy.

Bob completed his undergraduate degree at Harvard and his law degree from the University of Montana's School of Law.

An Important Meeting

Joint Meeting
Southern Division American Fisheries Society
10th Annual Meeting
Southeastern Fishes Council – 28th Annual Meeting
February 21-24, 2002, Doubletree Hotel, Little Rock, AR

Hosted by the Arkansas Chapter of the American Fisheries Society

The 10th annual Mid-year meeting of the Southern Division will be a celebration of the 50th Anniversary of the Southern Division of the American Fisheries Society.

Technical Committee meetings will be held on Thursday, February 21, followed by the EXCOM and Continuing Education Workshops on Friday, February 22. Technical sessions, symposia and posters will be on Saturday and run through noon Sunday, February 23 and 24.

The Southeastern Fishes Council will host a contributed paper session dedicated to non-game fauna and aquatic issues on Saturday, February 23, which will be followed by the SFC business meeting.

Contacts: Brian Wagner, General Chair, 877-847-2690 or bkwagner@agfc.state.ar.us

Michael Armstrong, Registration/Donations, 501-223-6372 or marmstrong@agfc.state.ar.us

Betty Crump, Program/Abstracts, 870-356-4186 or bcrump@fs.fed.us

April Layher, Publicity, 870-534-0011 or aolayher@agfc.state.ar.us

Mark Oliver, Local Arrangements, 870-425-7577

Three New Books of Consequence

The Everglades, Florida Bay, and Coral Reefs of the Florida Keys
An Ecosystem Sourcebook

Edited by
James W. Porter, Ph.D., University of Georgia, Athens, USA
Karen G. Porter, Ph.D., University of Georgia, Athens, USA

In one comprehensive volume, The Everglades, Florida Bay, and Coral Reefs of the Florida Keys: An Ecosystem Sourcebook:

- Documents ecological linkages between South Florida ecosystems extending from the Everglades to the coral reefs of the Florida Keys
- Examines the effects of human and natural disturbances that occur locally, regionally, and globally, putting them in the perspective of scale and relative importance
- Summarizes state-of-the-art research information critical to decision making for restoration, conservation, and management
- Presents a frank assessment of historical and contemporary changes to South Florida terrestrial and aquatic communities
- Provides a model for the study of land-water linkages from freshwater systems to coastal, estuarine, and marine environments
- Includes an example of an application of whole watershed monitoring and management in Jamaica

• Presents the stunning imagery of world-famous landscape photographer, Clyde Butcher

Catalog no. 2026
October 2001, c. 1,064 pp.
ISBN: 0-8493-2026-7
$199.95/ £134.00
CRC PRESS

Practical Genetics for Aquaculture

By C. Greg Lutz
Publication Date: November 2001

Practical Genetics for Aquaculture provides essential information for anyone involved in fish/invertebrate aquaculture. This book reviews fundamental theory and gives examples of practical applications for numerous aspects of genetic improvement.

• Chapters on genetic change for numerous traits and the resultant increased yields and profitability.
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This practical, user-friendly book is a vital source of commercially important information to the aquaculture community.

256 pp., 6 ¾ x 9 ¾, paperback
ISBN: 0-8523-8285-5
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Modelling and Quantitative Methods in Fisheries

Malcolm Haddon, University of Tasmania, Australia

Contents:

Fisheries, Population Dynamics, and Modelling: The Formulation of Fish Population Dynamics; Equilibrium V Non-Equilibrium; Characteristics of Mathematical Models; Types of Model Structure

Simple, Population Models: Introduction; Assumptions – Explicit and Implicit; Density – Independent Growth; Density-Dependent Models; Responses to Fishing Pressure; The Logistic Model in Fisheries; Age-Structured Models; Simple Yield-per-Recruit

Model Parameter Estimation: Models and Data; Least Squared Residuals; Non-Linear Estimation; Likelihood; Bayes' Theorem; Concluding Remarks

Computer Intensive Methods: Introduction; Resampling; Randomization Tests; Jackknife Methods; Bootstrapping Methods; Monte Carlo Methods; Relationships Between Methods; Computer Programming

Randomization Tests: Introduction; Hypothesis Testing; Randomization of Structured Data

Statistical Bootstrap Methods: The Jackknife and Pseudovalues; The Bootstrap; Bootstrap Statistics; Bootstrap Confidence Intervals; Concluding Remarks

Growth of Individuals: Growth in Size; Von Bertalanffy Growth Model; Alternatives to Von Bertalanffy; Comparing Growth Curves

Stock-Recruitment Relationships: Recruitment Overfishing; The Biology of Stock-Recruitment Relations; Beverton-Holt Recruitment Model; Ricker Model; Deriso's Generalized Model; Structure of Variation around Average Recruitment Curves; Errors in Measurement of Stock and Recruitment; Environmental Modification of Recruitment

Surplus Production Models: Stock Assessment Modelling Options; Equilibrium Methods; Surplus Production Models; Observation Error Estimates; Beyond Simple Models; Uncertainty of Parameter Estimates; Risk Assessment Projections; Practical Considerations

Age Structured Models

Catalog no. C1771
May 2001, c. 392 pp.
ISBN: 1-5848-8177-1
$69.95/ £29.99
Chapman & Hall/CRC
A CRC Company

America's Most Endangered Rivers - 2001

1. Missouri River (Midwest)

The Missouri River, #2 on last year's list, has been declared the #1 Most Endangered River of 2001 because of the operation of six federal dams has prevented the natural rise and fall of water levels to facilitate barges downstream from Sioux City, Iowa.

2. Canning River (Arctic National Wildlife Refuge, Alaska)

High energy prices have renewed the oil industry's determination to extend its reach from Alaska's Prudhoe Bay oil fields, across the Canning River, and into the Arctic National Wildlife Refuge to drill for crude oil and gas.

3. Eel River (California)

Once among California's most productive salmon rivers, the Eel River has been reduced to a trickle by a Pacific Gas & Electric-owned two-dam project built in 1908, which pipes the Eel's water through a mountain ridge to the Russian River where it is used by water consumers. Lack of water in the Eel River puts at risk three species of fish.

4. Hudson River (New York)

Over a thirty-year period, two General Electric Corporation plants released more than a million pounds of chemicals into New York's Hudson River.

5. Powder River (Wyoming and Montana)

The booming coal bed methane industry in the Powder River basin in Wyoming and Montana creates an unusual threat for western communities and rivers: the prospect of too much water. This form of energy development uses many shallow wells to tap natural gas deposits along coal aquifers,

and discharges large quantities of poor quality water before the methane can be extracted.

6. Mississippi River (Midwest)

The Mississippi was #8 on last year's list and has been moved up due to two flood control projects, the Yazoo Pump Project and the New Madrid Levee, proposed by the U.S. Army Corps of Engineers, that would destroy more than 200,000 acres of floodplain wetlands. These projects would also jeopardize the successful implementation of the Gulf Hypoxia Action Plan – a federal and state effort to reduce polluted runoff.

7. Tug Fork of the Big Sandy (West Virginia and Kentucky)

Last October, the bottom of a large coal slurry impoundment in Kentucky cracked, sending 250 million tons of slurry – a molasses-like combination of water, mud, and coal waste – surging through a mineshaft and eventually into the Tug Fork of the Big Sandy River.

8. Snoqualmie River (Washington)

The Snoqualmie River produces some to the largest salmon runs in the state of Washington, but its future is threatened by sprawl.

9. Animas River (Colorado and New Mexico)

The Animas River is one of the largest, and last free-flowing rivers of the Colorado Plateau, but is threatened by the Animas-La Plata (ALP) water project that would divert one quarter of the river's flow to a storage reservoir 500 feet uphill.

10. East Fork Lewis (Washington)

A proposed 4,000-ton a day gravel mine expansion along the East Fork of the Lewis River threatens crucial spawning habitat for three species of threatened salmon.

11. Paine Run (Virginia)

Paine Run in Virginia's Shenandoah National Park and other mountain streams and rivers throughout the Mid-Atlantic are being slowly killed by acid rain blowing in from old coal-fired power plants in the Ohio and Tennessee Valleys.

12. Hackensack River (New York and New Jersey)

The Hackensack River and the Meadowlands in New York and New Jersey face escalating development pressure that threatens to destroy a significant portion of the largest block of wetlands left in the region and increase the amount of pollution entering reservoirs that supply drinking water for one million people.

13. Catawba River (North and South Carolina)

The Catawba River suffers explosive urban growth along the Catawba River in North and South Carolina which threatens to overwhelm the river's capacity to provide drinking water, assimilate sewage, support wildlife, and serve the recreational needs of Charlotte and growing communities throughout the basin.

For more information on any and all of the rivers on this year's list, log on to www.americanrivers.org.

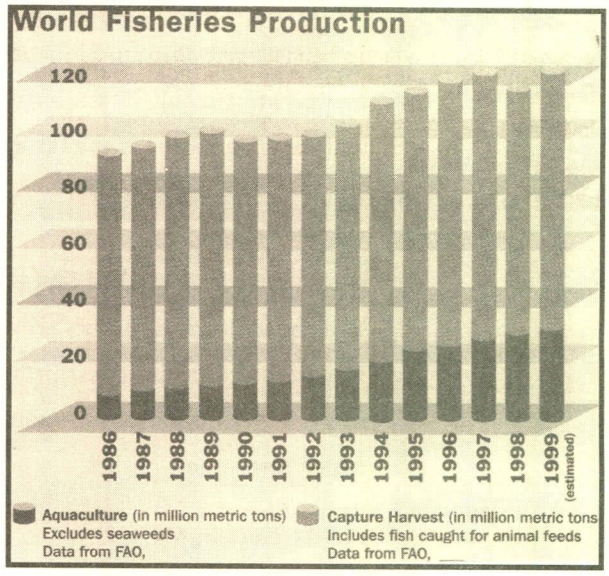
From: American Rivers, Spring/Summer 2001

Bring Back the Dead

Joining local environmental groups in the Mississippi Basin, the National Resources Defense Council (NRDC) is calling on Congress to fully fund a plan to restore the "dead zone" in the Gulf of Mexico. The Gulf is suffering from severe hypoxia – a lack of oxygen caused by excess nutrients flowing from large animal feedlots, farms, and industrial sources in the massive Mississippi drainage basin. Nancy Stoner, director of NRDC's Clean Water Project, says the plan "represents a real opportunity to restore wetlands and protect watershed health, drinking water, and fisheries in the Gulf." In 1999, the dead zone measured a record 7,728 square miles – about the size of New Jersey.

From: Amicus Journal, Summer 2001

World Fisheries Production



From: Marine Aquaculture in the United States: Report to the Pew Oceans Commission By Rebecca J. Goldburg, Matthew S. Elliott and Rosamond L. Naylor

Northern California District Plans November Blowout

Dinner Meeting, November 15, 2001, Ping's Mandarin Restaurant, San Rafael, CA

Dr. Luis Eduardo Calderon, of CICESE (Centro de Investigacion Cientifica y de Educacion Superior de Ensenada) will present an overview of the status of the commercially and recreationally important fisheries in the Mexican Pacific, focused on Baja California. He is currently publishing a paper on the "Influence of Oceanographic Processes on the Early Life Stages of the Blue Shrimp (Litopenaeus stylirostris) in the Upper Gulf of California." Dr. Calderon will also talk about Mexican and US relations relative to commercial fisheries (especially tuna) and problems associated with their international management.

Submitted by – Tom Keegan, District Director

Strong American Shad runs Reported in Chesapeake Bay Tributaries

Shad swam back to the Susquehanna River in record numbers this year, surpassing the previous high mark, which had been set just last year. Strong shad runs were also reported in Virginia and Maryland, marking a continued turnaround for a troubled species that was once the Bay's most valuable commercial catch. On the Susquehanna, a total of 193,574 American shad were passed over the Conowingo Dam during the spring spawning run, up from the previous record of 153,546 last year.

"We didn't see it coming, it was a pleasant surprise," said Richard St. Pierre, Susquehanna River Coordinator for the U.S. Fish and Wildlife Service. In the past, he noted, strong runs like last year's are usually followed by poor runs. He credited ideal spring weather with helping the shad run. "If we could have our way with the river each year, we would ask for this type of a season: a high flow burst in March and early April to bring the fish to the river, and then (it would) calm down and just let them go," St. Pierre said.

In other areas, the story was much the same. "I think things are really looking up," said Dale Weinrich, a fisheries biologist with the Maryland Department of Natural Resources. Although an estimate for the number of shad in Maryland's Upper Bay had not been completed Weinrich said the numbers appear strong. In a DNR pound net survey, Weinrich said 2,000 shad were caught in a single net. Before this year, he said the most that had been caught was 1,100 shad in three nets during the entire season. "I have never seen the numbers of shad that I've seen in the pound nets up there this year," he said.

On the Potomac, Jim Cummins, a biologist with the Interstate Commission on the Potomac River Basin, also reported a strong run. "I expect it to meet or exceed last year's levels, which were really good," he said.

The success in the Susquehanna is particularly significant because it was historically the largest spawning area for shad on the East Coast. Millions of shad used to return to the river to spawn each year, but for most of the past century, migration was blocked by four large hydroelectric dams. In 1991, a fish lift was built to carry shad and other migrating fish over the Conowingo Dam – the southernmost of the four dams, located just a dozen miles from the mouth of the river. Other lifts soon followed at the Holtwood and Safe Harbor dams upstream, and a fish ladder was completed last year at the final dam, at York Haven, which finally reopened the river.

But nowhere on the East Coast do shad have to pass so many large dams to get upstream. The number of migrating fish declines with each dam. After Conowingo, 109,976 fish were lifted over Holtwood, 89,816 were passed over Safe Harbor, and 16,200 swam past York Haven. Still, that was almost four times the number of shad that passed York Haven last year.

Shad are an anadromous fish, spending most of their lives migrating along the Atlantic Coast, but returning to their natal streams, starting at about age 4, to spawn. Because shad historically swam hundreds of miles up the Bay's tributary rivers, they are viewed as a species that links Chesapeake restoration efforts with citizens living throughout the watershed.

Shad restoration has focused on stocking hatchery-reared fish in rivers; constructing fish passages at dams and removing other barriers to migration; improving water quality; and restricting fishing pressure. Progress has been made on all fronts. Rivers are cleaner, shad fishing has been banned throughout the Bay, and the ocean shad fishery is being phased out. About 922 miles of historic spawning habitat has been opened through the construction of fish passages or the removal of blockages. Since 1986, nearly 320 million shad "fry" have been stocked throughout the watershed. This year, about 31 million larvae were stocked in Virginia, Maryland, and Pennsylvania. The hope is that stocking will build up the population to the point where natural reproduction from returning adults can eventually take over, eliminating the need for hatchery efforts.

With strong shad runs for the second straight year in much of the Bay, some biologists believe that that day may be getting closer. On the Potomac River, surveys looking for signs of reproduction were already finding "good numbers" of young fish, Cummins said.

"I think shad are going to make a quick recovery now," he predicted.

From: Bay Journal, September 2001

Virginica Buries Ariakensis in Head-to-Head Competition

Tests show that the foreign oyster, *Crassostrea ariakensis* dramatically outperforms the native *Crassostrea virginica* in its own habitat. When bags of each oyster are placed separately in the Chesapeake Bay, *ariakensis* grows up to twice the size of *virginica* in the same amount of time.

But that doesn't necessarily mean *virginica* would easily be brushed aside if *ariakensis* got loose in the Bay. When it comes to head-to-head competition, there is a preliminary indication that it is *virginica* that has the upper hand.

In tests conducted at the quarantined laboratory, Virginia Institute of Marine Science researchers placed tiny larvae from the two oysters on a series of 4-by-4 inch ceramic tiles, then watched them grow for 12 weeks. At the end of the experiment – the *virginica* oysters were larger, and their survival rate greater, than *ariakensis*.

"Very much to my surprise, it was the opposite of what I thought," said Mark Luckenbach, the scientist conducting the study. He cautioned that the conclusions were "very preliminary," and that the results so unexpected that he plans to repeat the experiment in the fall.

But Luckenbach said his tentative interpretation of the results is that *virginica* is a better reef-building oyster than *ariakensis*. In situations where the two oysters physically encountered each other, *virginica* responded by growing up, whereas *ariakensis* remained mostly flat.

"Where we were able to observe actual head-to-head, one-on-one competition between individual oysters of different species, neither won most of the time because of the short duration of the experiment," Luckenbach said. "But when one did win, it was almost always the *virginica*."

Little is known about the natural history of *ariakensis*.

Stan Allen, the VIMS scientist who has been leading much of the work on the species, has traveled to Japan and China to collect *ariakensis* specimens. On those trips, Allen said, he never found evidence of *ariakensis* building reefs – but much of their habitat was either inaccessible, or had been heavily impacted by humans. "when they've been collected, they've been scattered about," he said.

Historically, the ability of *virginica* to build reefs gave it many advantages for living in the Chesapeake. By forming high reefs, which sometimes broke the surface of the water, the oysters were able to outpace the natural rate of sedimentation covering river bottoms.

Also, by getting off the bottom – where oxygen levels were often low even before European settlement – the oysters were able to take advantage of better water quality. The reefs also provided three dimensional habitats that were used by a host of fish and other Bay species.

So, while *ariakensis* may grow well in aquaculture, it might make a poor replacement for the native oyster in the wild.

"Those that would hope *ariakensis* has some value in restoring the wild fishery would be pretty disappointed if that were the case," Luckenbach said.

On the other hand, he said it may also mean there would be less concern about its impact on *virginica* if it were to escape from aquaculture operations.

From: Bay Journal, September 2001

In My Humble (Biological) Opinion

Fisheries Service Undertakes High-Risk Gamble

In the opinion of most independent scientists, four dams on the lower Snake River in eastern Washington are all too likely to bring on the extinction of several of the last remaining populations of salmon in that river.

They, and a solid phalanx of environmentalists, fishing organizations, and the state of Oregon are pushing for breaching the dams, but the federal government it resisting.

Most recently, the National Marine Fisheries Service opined that it could save the salmon and the dams by adjusting dam operation, reducing the already very small harvest of the fish, restoring habitat, and reforming hatchery operations.

While the activities outlined in NMFS's biological opinion are necessary, they are not sufficient, in the opinion of the independent scientists. For that reason, Earth-justice attorneys Todd True and Steve Mashuda, joined by Dan Rohlf of Lewis and Clark Law School, have filed suit to challenge the opinion and its recommendations. Clients are the Northwest Energy Coalition, Idaho Salmon and Steelhead Unlimited, Friends of the Earth, National Wildlife Federation, Pacific Coast Federation of Fisherman's Associations, Sierra Club, Trout Unlimited, and American Rivers.

Meanwhile, in a case reported in the last *In Brief*, a court has ruled that the Corps of Engineers is in violation of the Clean Water Act in its operation of the same four dams. The court ordered the Corps to announce what it was going to do to rectify the situation and the Corps, under prodding, said it would do nothing since it did not agree with the court. The case continues.

From: In Brief, Summer 2001

Salmon Vanishing From Hundreds of Rivers

World Wildlife Fund (WWF) Urges Action Now to Save Wild Atlantic Salmon

Wild Atlantic salmon have vanished from at least 309 river systems in Europe and North America, according to a new WWF report.

WWF and the Atlantic Salmon Federation used the report's findings to urge countries participating in the June 4-8 conference of the North Atlantic Salmon Conservation Organization to take swift action – including more effective controls on industrial salmon farming, watershed management, and a moratorium on certain types of fishing – to ensure the salmon's survival.

The Status of Wild Atlantic Salmon: A River by River Assessment reports that among the 2,005 rivers historically nurturing this species on both sides of the Atlantic, the wild fish have disappeared from rivers in Germany, Switzerland, the Netherlands, Belgium, the Czech Republic, and Slovakia. Moreover, the species is on the brink of extinction in Estonia, Portugal, Poland, the United States, and parts of Canada.

Nearly 90 percent of the known healthy salmon populations exist in only four countries: Norway, Iceland, Ireland, and Scotland. And among those populations that exist outside the four countries, 85 percent are categorized as vulnerable, endangered, or critical.

Major threats to wild salmon include overfishing, which reduces stocks to below critical levels; dams and other obstructions that impede salmon migration; river engineering projects that degrade habitat and alter natural ecological processes; pollution from industry and agriculture; and industrial salmon farming, which results in the spread of diseases and erosion of the gene pool.

"For every wild salmon caught, one ton of industrially farmed salmon is produced, leading to the escapes of large numbers of farmed salmon that interbreed with wild salmon and produce offspring less suited to survive in the wild," said Thomas V. Grasso, World Wildlife Fund's director of marine conservation.

Without decisive preventative measures, the already precipitous decline of wild salmon will continue, WWF warns.

The impacts of industrial salmon farming – currently the most critical unresolved threat to wild salmon – and the commercial ocean harvesting of the species were among key issues addressed at the June conference.

To WWF's disappointment, the conference made little progress on how to deal with industrial salmon farms that operate in sensitive salmon habitats. There were some advances, however, toward limiting the impact of high seas fishing for salmon. Still, much remains to be done to protect salmon in US rivers, and WWF is calling for the elimination of high seas fisheries that threaten these endangered stocks.

From: Focus, September-October 2001 V.23(5)

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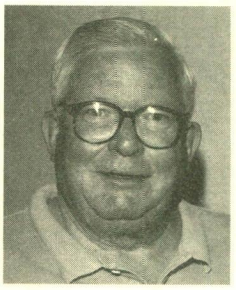
MARINE PROTECTED AREAS - A NEW WAY FORWARD OR ANOTHER MANAGEMENT GLITCH?



Jack Pearce

Although retired from NOAA/NMFS since 1995, I have remained involved with the several issues which bear upon the marine fisheries: 1) declining yields worldwide, 2) too many fishers pursuing too few fish and shellfish, 3) an ever growing market for seafoods, and 4) a seeming inability for scientists, managers, and politicians to do much to stop several downward trends. Concerns about these issues are no longer expressed solely in agency management memoranda and local newspapers; national journals of science, such as Science, regularly have articles expressing concern and outrage about the situation. Jackson, et. al (2001) recently wrote extensively on "historical overfishing and the recent collapse of coastal ecosystems". A few weeks later one of the nation's leading ecologists, S.L. Pimm (2001), and colleagues wrote "Can we Defy Nature's End?", in which they consider local and global extinctions, including damage to marine fish, which arise because of overfishing and other insults. They suggested that marine protected areas (MPAs) enhance biodiversity and fish stocks. This year (2001) I was asked by the American Institute of Fisheries Research Biologists (AIFRB) to report on the MPAs during its Annual Board Meeting in Phoenix.

It is almost a decade ago (1992) when I was invited to chair a special session on "marine habitats and their protection from degradation." This session became part of the proceedings of the annual meeting of the Natural Areas Association, held at the University of Maine, Bangor (Pearce, 1995). During the session, papers were given by state and Federal scientists which dealt with MPAs, marine reserves, and refuges. This was the first time that many, if not most, of the attendees had heard about marine protected areas. It was not to be the last! One presenter strongly believed that "his" reserves would protect a fishery, or marine mammals, or an entire habitat (Crosby and Beck, 1995). More recently, however, Robert Lackey (2001) suggested that many biologists he interviewed doubted that the wild Columbia River salmon could ever be saved, largely because of habitat failures, and managerial ineptitude.

Subsequently, there have been scores of journal and popularized articles about MPAs (See Dodd, 2001), all of which culminated in a recent volume entitled "Marine Protected Areas: Tools for Sustaining Ocean Ecosystems"(NRC, 2001). Written by the Committee on the Evaluation, Design, and Monitoring of Marine Reserves and Protected Areas in the United States, the book concludes that, relative to conventional management, "MPAs show promise". At the same time, limitations and controversies were recognized.

So, what is it that MPAs do? Basically, areas of varying sizes are set aside and closed to fishing or harvesting of other Living Marine Resources (LMRs). The MPAs then provide opportunities for reproduction, spawning, and recruitment of various LMRs. Moreover, the habitat of a MPA is not subjected to physical damages by fishing gear, or the noise, movements, and shadows resulting from docks, piers, vessel traffic, or transects. The MPAs in estuaries and coastal zones can preclude dredging, filling, dock construction, pollution, ocean mining, and other physical damages so common in many coastal areas. Such areas may then develop more robust stocks, capable of dissemination to other, unprotected, areas. Forage species, essential to fishes, other LMRs, and marine mammals, may grow and occur in far greater numbers, augmenting the diets of LMRs, and thus their growth and biomass. In many cases, the MPAs are designed to protect diversity and endangered species (Dodd, 2001).

The volume by the NRC (2001) provides abundant evidence that MPAs do provide for more robust populations of LMRs; certainly, photographs showing the differences in sea floors fished and not fished indicated conclusively that benthic forage species are much more robust and healthy in protected areas. These are often more diverse, populated by a greater range of taxa, than the areas fished. Evidence is increasing beyond mere intuition, that wetlands and coastal aquatic habitats subject to ecosystem planning and protection, i.e., the Multispecies Recovery Plan (MSRP), are more robust, and characterized by greater species diversity, sometimes including endangered species (Kloor, 1999).

MPAs (large quadrats, > $2Km^2$) formerly subject to heavy scallop dredging, then protected, show reestablishment of benthic fauna, with increased scallop populations (Veale, et. al, 2000). Such findings have led to planned MPA's for widely varying habitats, from the Petit Manan National Wildlife Refuge Complex off the Maine coast (USFWS, 2001) to the Dry Tortugas off Key West, Florida, the latter an 150 square mile MPA with no fishing. As such planning has proceeded, however, there has been

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evermore criticism of MPAs. Fisheries oriented internet "newsletters", now carry articles from newspapers as diverse as the Sacramento Bee and Bangor Daily News. Many are critical that the Federal agencies do not pinpoint where MPAs are to be located, but, rather, leave this to the states. Another concern is the establishment of "yet another bureaucracy"! Because MPAs may range from protecting a sunken transport or fishing vessel, to precluding overfishing or increasing diversity, sometimes over thousands of square kilometers, the goals of a MPA are often misunderstood.

The NRC's summary (NRC, 2001) says it best: "MPAs seem to some to be a tool to fence in the sea, closing out former users of the sea's resources (My paraphrase)"! This is not an exaggeration; numerous articles in the aforementioned newsletters and magazines, oriented towards fishers and other resource users, are blatant in their hyperbole and dislike of the scientist, manager, and environmentalist. One magazine title read, "ZONED TO EXTINCTION: Overzealous regulation may soon render commercial fishermen a dying breed." (Paige, 2001).

Such antagonisms have made, and will make it near impossible to implement new techniques to manage LMRs, mineral extraction, and other uses of the seas. For instance, in the same issue of the magazine carrying Paige's article, the title "Reef Madness: How Alabama fishermen are repopulating the sea" (Baily, 2001) appears. This article stresses how artificial reefs have increased the productivity of coastal seas. But, however, it also emphasized how Alabama's fishers keep the location of "their" reefs secret. A concluding remark says: "We've learned that the creation of artificial reefs increases the fish population but they too will be overfished unless we take the next step of creating some form of ownership of these resources", probably thru an "individual fishery quota system". I have always envisioned a public resource as just that, public. Fishers may be awarded a temporary individual quota, and users of the sea floor may be given permission to fish or mine, but not with a carte blanche permit, and without proper monitoring to ensure compliance with those guidelines which ensure stability of the resource in perpetuity.

Use of the protected marine area is, without doubt, the only way to preserve certain reefs, coral heads, and associated fauna. And these must be preserved. Reserves have been shown clearly to aid in the preservation of many tropical aquatic species; the Great Barrier Reefs of Australia come to mind in these regards, as well as the fringing reefs of Bermuda (see BBSR, 2001).

Areas closed to the harvesting of several marine species have been demonstrated "to grow" new spawning stock, and thus MPAs can be "rotated", as are many agrarian fields, grazing areas, and forests. One must, however, be cognizant of when to "turn on" a use, or "turn off" another use. Working scientists I have spoken with state that some four decades of resource assessments and research on individual species have yielded sufficient information and data to allow management by areas to begin.

It is not a lack of science and scientific data that prevents the first step; rather it is a lack of political will and, perhaps, timid souls at the management helm. We live in times when one's neck must be extended if ever we are to manage effectively, the largesse of the World's oceans. The MPAs have been demonstrated in many ways to work and their use must be initiated if we are to conserve groundfish stocks, as well as endangered species and diversity and habitat stability.

Finally, the MPAs may ultimately be linked to other schemes such as "corridors" (see Kaiser, 2001 and Hale, et. al, 2001) and artificial reefs or islands, new tools and pathways to provide "bridges" so that stock progeny and genes may disseminate or flow from one MPA to another, or from an MPA to an unmanaged area. Again, while controversial, these methods have been tested and found functional in breaking down barriers, natural and man made, to the dispersal of stocks and their progeny.

As for future research, the larger MPAs protected for long, sometimes very long, periods will allow us to assess change as it occurs with long-term cycles (millennia) and shorter-term, man-induced change. Recent research using mitochondrial and nuclear sequence data allows us to evolve hypotheses as to how common marine species (*Asterias forbesi* and *A. rubens*) evolved, sometimes in close juxtaposition (Wares, 2001). MPAs will be another "island tool" to aid in the verification of evolutionary change. They may also be the one best way to deal with marine pollution and physical degradation.

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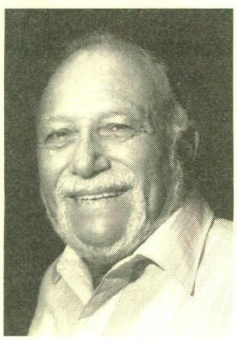
Ed. Note: According to a report of the World Commission of Environment and Development (as quoted in Quarterly Newsletter, Wilderness Society, Winter 2001-2002, N-1) 12 percent of an ecosystem needs protection to enable persistence in the face of disturbance. What is the current maximum protection of any marine ecosystem?

High Honors To a Brace of AIFRB Stalwarts

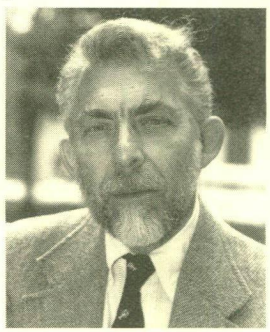
In October 2001, Dr. Joseph W. Rachlin was elected a fellow of the Linnaean Society of London. Founded in 1788 the Linnaean Society of London is a leading forum for contemporary discussions on genetics, natural history, systematics, biology and the history of plant and animal taxonomy. The world's oldest extant biological society, the Society takes its name from the Swedish naturalist Carl Linnaeus (1707-1778), whose botanical and zoological collections and library have been in their keeping since 1829, having been purchased from the executor of the Society's first President, Sir James Edward Smith (1759-1828).

Dr. Rachlin was for many years Treasurer of our Institute and is currently Director of the Keystone District.

Also in October, Dr. Sammy Ray, long time membership chair of the Institute was elected to the Texas Science Hall of Fame. He is to be inducted to the Hall January 21, 2002, in a ceremony in Austin. Artifacts and memorabilia associated with Dr. Ray's career will be displayed in the Hall of Fame Museum in Austin.



Dr. Sammy Ray chosen for Texas Science Hall of Fame



Dr. Joseph W. Rachlin elected to Linnaean Society

AIFRB Distinguished Service Award to Jack Pearce

At the August 2001 annual meeting of the Board of Control, President Gary Sakagawa was pleased to present to Dr. John (Jack) Pearce the Institute's Distinguished Service Award. Dr. Pearce was given this award in recognition of his continuous support and service to AIFRB.

Jack, who was elected to the rank of Fellow in 1975, is the current District Director for the New England District. He has performed the duties of this office since 1995. In addition to these responsibilities, Jack has Chaired the W.F. Thompson Award Committee since 1994. He also served as Chair of this committee during the 1978-1982 award cycle.

Dr. Pearce has over 100 peer-reviewed papers to his credit and continues his research interests on parasitic crabs. He is a Fellow of the American Association for the Advancement of Science, USEPA Distinguished Scientist, and a recipient of the U.S. Department of Commerce Gold Medal. From 1995 to 1999 Jack served as the Scientific Editor for "Fisheries Bulletin;" and since 1994 has been the North American Editor for the "Marine Pollution Bulletin."

AIFRB is honored to have such a dedicated and well-respected colleague among its ranks.

Caption: AIFRB President Gary Sakagawa presents a plaque symbolizing the Institute's Distinguished Service Award to Dr. Jack Pearce at the Board of Control meeting. August 2001, Phoenix, Arizona.

Readers Respond; Salmon Kaput!

Pacific Salmon; Pogo Was Right!

David Hoopes

One of the luncheon speakers at a recent workshop titled "Organizational Learning: Adaptive Management for Salmon Conservation" held here in the Seattle area was none other than the "infamous" Dr. Robert Lackey who entertained some 200 attendees with a condensation of his controversial article published in last summer's issue of Fisheries. Subsequently, Bob sent me the three brief articles from the September-October *Briefs*. While my earlier response to the editor of *Fisheries* in support of Bob's views was apparently rejected by the editor of that esteemed journal, I thought your publication might accept an addition to the "...fervently fermenting controversy."

Pogo was absolutely right! We have met the enemy and they is us! The current condition of Pacific salmon stocks has been exhaustively documented by such authors as Joseph E. Taylor, III, in his 1999 book titled "Making Salmon: An Environmental History of the Northwest Fisheries Crisis" and the 1999 Ecotrust book titles "Salmon Nation: People and Fish at the Edge." Perhaps Ms. Passino-Reader has been too engrossed in irrelevant probability exercises to have kept up with the recent literature on the subject. The distance between well-meaning "mission statements" and reality can be measured with relative ease. For example, Washington State estuaries form a vital habitat link in the life histories of many Pacific salmon stocks now listed as threatened. Today estuarine wetlands cover just 202,000 acres, down from approximately 750,000 acres under historical conditions – a 70 percent loss. This loss in wetland acreage can be attributed to diking, dredging, and filling to accommodate urban, industrial and agricultural uses. Losses of salmon habitat due to dams, irrigation withdrawals, siltation, riparian degradation and other activities associated with a burgeoning human population only adds to the decline.

It quickly becomes obvious that the Western mechanistic, reductionist scientific model of studying problems by breaking them down into their smallest component parts does not work when attempting to manage ecosystems. Even when we acknowledge the value of an "ecosystem" or "watershed" approach, we still all too often set as our goal the restoration of salmon stocks to "harvestable levels."

It is this "resources are here to be exploited for human use" attitude that permeates much of current society's view of the natural environment. We shall remain unable to protect or restore salmon, or anything else of environmental value for that matter, if we cannot shift our current paradigm from one of viewing the world as our personal "goodie box" to one of honoring the role of Earth as the provider of the natural gifts necessary for our well being . Moreover, we must accept the fact that humans are an integral part of the environment in which we find ourselves, not some estranged entity far removed from the effects of our actions.

We must learn to respect all elements of our environment, including ourselves, if we are to continue as a species. Nowhere is it written that the human race is destined to occupy this Earth forever. As Robert Michael Pyle so aptly proclaimed "Nature bats last."

If we are to be successful in restoring salmon, we must, as an entire society, initiate a basic shift in cosmology to effect the changes in human behavior required to preserve and maintain environmental integrity. More than just fishery biologists (one of which I have been for more than 40 years), it will require all segments of our society working together in concert to accomplish that task. Herein lies Bob Lackey's and my cause for concern . We simply do not see this shift in cosmology occurring in the foreseeable future. I fervently hope we are both wrong and will continue to work to prove to us so.

Lackey "Dead on Right"

Bill Wilson

Lackey's remarks are in my opinion, right on. I've lived in the Northwest my entire life. I've observed the developing issues in the Columbia River over the past three decades from afar (Alaska) and have not been caught up in the money-to-save-the-wild salmon frenzy that has occurred among consultants, agency biologists, and others in the region, and thus have (I believe) a viewpoint not tainted by self-interest. Lackey called for candid public dialogue on whether restoration of wild salmon is an appropriate and/or feasible public policy objective. May I be candid? I believe we have two choices: 1) Take out the dams (maybe all of them), undertake a massive remediation of these previously-dammed riverine habitats (I can imagine what exotic items are integrated into the sediment buildup behind each dam), and halt all harvest until a management objective (a sustainable run size for each surviving stock) is met; OR 2) kiss off the wild salmon and make the basin a put and take fishery. Let's face it – our efforts to save the wild salmon have failed. We've tried to get them upstream with ladders, we've tried to get their progeny downstream with a myriad of devices (bypasses, screening, barges), and we've tried to control predators. We thought hatcheries would be the savior – but bickering among professionals suggests that hatcheries cannot save "wild" fish – whatever wild fish are in the Columbia basin. We've employed nearly every available biologist generated by our nations' universities for decades to solve these problems, we've established dozens of councils, authorities, agencies, utility groups, whatever to plan a strategy for saving these fish. We've spent billions (?) of dollars on meetings, reviews, research, planning efforts, and engineering retrofits of dams. With all of this effort, over three decades now, I've seen no progress. I'd like to see a graph of dollars spent (or number of biologists employed) versus the number of returning wild salmon over the past 30 years. I don't have the data but suspect it is an inverse relationship with a very high level of correlation. The more we spend, the more biologists we employ, the more planning we do, all seem to generate fewer and fewer wild salmon. I think Lackey is dead on right – without a massive change in policy, we are chasing an illusion.

News Interviews & Writing Press Releases

How to interact with your "Public"

Tips given at a workshop, held by the San Diego Chapter of the Asian American Journalists Association at San Diego Mesa College

Tips for Giving News Interviews

Workshop given by Maya Nishikawa and Lee Ann Kim

1. Keep answers brief and to the point. Most sound bites are around 10 seconds long. Entire television stories usually are no longer than one and a half minutes, radio stories are even shorter.
2. Do not use jargon or technical language. Speak in terms anyone in the viewing public will understand.
3. Do not try to illustrate your point with long stories. If you'd like to use a short example that's OK. You can always give the reporter background afterwards, but make it clear whether your it's "on the record" or "off the record".
4. Try not to overload each answer with too many points. Try to have one or maybe two things you are trying to get across with each answer.
5. Look at the reporter or interviewer, not at the camera.
6. Speak in complete sentences. It may help to re-state part of the question in the answer.
7. Don't ask the interviewer for a detailed list of questions ahead of time. It's all right to ask what they want to talk about or may be asking you.
8. It's OK to offer suggestions about topics to discuss, but avoid telling the reporter and photographer how to cover your story.
9. Speak to the interviewer like you're having a conversation with a friend.
10. Relax, if the interview is taped, you can always re-state your answer. Smile! Things to remember: - Most news organizations are working on a deadline of that day. They cannot wait hours for an interview. -It's better to say something than nothing. -If you can't make a comment, find someone who can.

Eight Great Tips: Writing Your News Releases

Megan Richards and Faith Saculles
megan@scrippshealth.org
fsaculles@hotmail.com

1. Keep it to one page. If you must have more than one page, include all of your contact info on every page.
2. Put the bare necessities in the first paragraph. Each paragraph should be no more than three sentences.
3. "Brand" your news release. If you stick to the same style and format, the receiver will begin to recognize your unique brand.
4. A catchy headline is only good if it makes sense.
5. Make sure to highlight the visual and audio aspects of your event that appeal to particular media.
6. You can NEVER proofread a news release too much. Have a colleague proofread your release; a second set of eyes never hurts and will often save you from making embarrassing errors. (Use spell check!)
7. Don't follow up with a phone call too soon. Assignment editors aren't lying when they tell you they don't usually know what they're covering until the day of.
8. If you do follow up with a phone call, the first thing you should ask is, "Is this a good time?"

Submitted by – Gary Sakagawa

Seaman Publishes Reef Book

Artificial Reef Evaluation: With Application to Natural Marine Habit

Seaman, Jr.; William, University of Florida, Gainesville, Florida, USA

Beneath the coastal waters of the world lie thousands of artificial reefs. Some are old and retired freighters and ships that once plied the oceans of the world but now serve as habitats for marine life. Others are newer reefs that have been designed and built for specific applications. With the field of aquatic habitat technology continually growing, this book responds to the global need for a compendium of consistent and reliable practices with which to evaluate how well artificial reefs meet their objectives.

Artificial Reef Evaluation With Application to Natural Marine Habitats is a comprehensive guide to the methods used to document the performance of artificial reefs in coastal and oceanic waters. It is the first volume to combine the essential disciplines required for proper evaluation, including engineering, economics, biology, and statistics.

This work covers the design of reef studies, multi-disciplinary methods of investigation, data analysis, and examples of applying the methods to reefs built for different purposes. Further, the methods examined in this book apply to other benthic marine habitats, such as coral reefs or "live bottoms", thus expanding the book's relevance to a wider audience and enhancing research efforts in the field of artificial habitat technology.

Bill says the first printing is already sold out. Better hurry and get yours! Ed.

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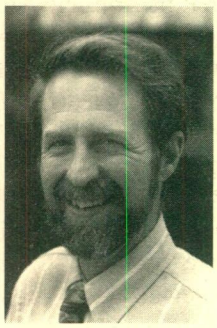
$84.95
Publication Date: March 23, 2000

The Canning River – Not Endangered?
Wilson Snipes at List!

Bill Wilson
Senior Fishery Biologist and Managing Director
LGL Alaska Research Associates, Inc.
Anchorage, Alaska

America's most endangered rivers – 2001. You have reprinted a list, produced by American Rivers, of their list of rivers in the United States that are, in their opinion, in dire need of protection or they will be destroyed (at least I assume this is their worry). I almost laughed when I read that the Canning River in northern Alaska is number 2 on this list! Is this a joke? I have conducted fishery and aquatic research in northern Alaska for over 27 years. I am very familiar with the status of the Canning River. I have been on the river, conducted research on the physical and biological processes in the river, and currently I am working on a project immediately adjacent to this river. I can assure you and all readers of *Briefs* and anyone else that the Canning River is not even remotely "endangered". The supposed reason for its listing by American Rivers is a perceived threat from the oil and gas industry. Well guess what? The oil and gas industry poses no threat to this river. There are no existing or planned facilities of any sort that would use the river's water, that would be built adjacent to this river, that would generate pollutants that might contact the river, that would create fishing pressure on fish resources of this river, or that would otherwise adversely affect the river. The Canning is in the Arctic National Wildlife Refuge. There are prospects for petroleum development in the Refuge, and presumably crude oil might some day be transported via pipeline across the Canning (to get to Prudhoe Bay, the start of the Trans Alaska Pipeline). While this may never occur, even if it does industry has developed technology and environmental protection programs that would almost negate any possibility of a spill in the Canning. And that development would be many, many years in the future. That's it – this is the total POSSIBLE effect of the oil and gas industry on the Canning. Recreational river rafters have a far more adverse impact on this river that the petroleum industry ever would have. Come on, putting the Canning River on this list is ludicrous! Its presence on the list renders unbelievable all of the other rivers similarly listed. Of what use is such a list, and, by the way, why publish it in *Briefs*?



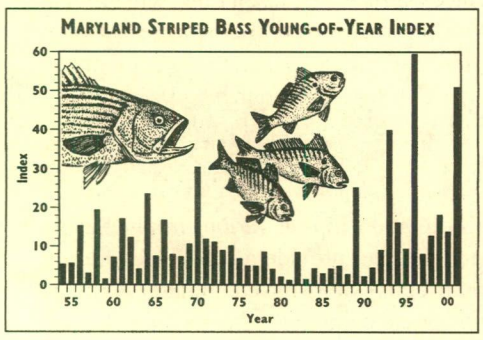
Bill Wilson

Bill asks why I publish the list of rivers in Briefs, but I have little doubt that Bill, perspicacious as he is, knows exactly why I publish the list. In case anyone else is unaware, I publish the list because 1) Rivers are important fish habitat; 2) The American Rivers listing, though, as most human products, imperfect, is generally closer to the mark than not and serves to inform readers of major environmental issues concerning fish; and 3) To generate reader response that will alert our membership to controversy concerning riverine habitats. I appreciate Bill taking the time to contribute in the last category. Editor.

Maryland striped bass index hits 2nd highest mark in 48 years

Maryland's juvenile striped bass index, historically the best predictor of future rockfish populations, reached its second highest mark in the 48 years the survey has been conducted. The 2001 index was 50.8, second only to the index of 59.3 in 1996, according to the Maryland Department of Natural Resources. The young-of-year index is the average number of juvenile fish collected in 100-foot seine net surveys at 22 sites that are sampled from July through September. During this year's survey, DNR biologists collected 6,699 young-of-year striped bass.

The Choptank River, with an index of 201.9, produced the highest index ever recorded for an individual river. The Nanticoke River produced an unusually high index of 40.1, marking the third consecutive year of above-average production. The Upper Bay index was 13.4, just above its long-term average. But the Potomac River index of 7.8 was its lowest in seven years.



Other observations made by biologists during the survey included healthy white perch production throughout the Bay, and the highest abundance of juvenile American shad ever measured in the Potomac River. The index reflects a continued, sustained comeback for striped bass, which only 16 years ago were so scarce that Maryland closed its waters to fishing, and other coastal states followed suit. Limited fishing seasons were opened in 1990, and by 1995 the stock was declared fully recovered. Today, striped bass numbers are so high that some fishermen complain they are eating too many blue crabs, while some scientists have expressed concerns that rockfish are running out of menhaden, one of their main sources of food. The Bay is the most important East Coast spawning area for rockfish.

From: Bay Journal, November 2001

Exotic Goby Discovered in Duluth Harbor

State fisheries biologists last month captured a new species of fish in Wisconsin in Duluth/Superior harbor that they suspect was a stowaway on a vessel from the St. Clair River, the connecting waterway between lakes Huron and Erie. The discovery of the tubenose goby (*Proterorhinus marmoratus*) represents its first occurrence outside of the Western Erie/St. Clair River area, according to Dennis Pratt, DNR fisheries biologist. It also adds to the growing list of non-native species inadvertently introduced by ships and vessels transporting cargo both globally and within the Great Lakes. "Duluth/Superior harbor is one of the largest shipping ports on the Great Lakes, and more than one-quarter of the fish species now found in the harbor are not native to Wisconsin," Pratt says. "Many of them were likely carried here in ballast water of ships, and that may be the case for the tubenose goby." Pratt and other fisheries biologists don't know what potential impacts the tubenose goby will have on the ecosystem, but they suspect it won't be as severe as its Eurasian cousin, the round goby (*Neogobius melanostomus*). "It's too early to speculate the potential impacts of this new fish in Wisconsin." Pratt says, noting that eventual impacts can vary substantially from area to area.

DNR fisheries biologists captured the single tubenose goby as they were completing standard survey work in the Duluth/ Superior harbor on the lower St. Louis River located on Western Lake Superior, Pratt says. The fish was bout 1 ¾ inches long and less than 1 year old. Biologists don't know whether the single specimen is the result of natural reproduction within the harbor or was an individual transported as a very young fish this summer directly from the lower Great Lakes, Pratt says.

The tubenose goby is a Eurasian fish species native to the Black and Caspian seas. It was first discovered in 1990 in Michigan waters of the St. Clair River, which connects Lakes Huron and Erie, and has since been found in northwestern Lake Erie, Pratt says. Michigan biologists have found that tubenose goby populations grew after their initial discovery, but today are still considered a rare species in the St. Clair River area. That pattern greatly contrasts that of the exotic round goby, which was discovered in Lake St. Clair during the same time period and has since expanded its range to all five of the Great Lakes, developing abundant populations at some locations. Biologists anticipate that the round goby may have serious impacts on native fish communities.

Iron County Miner
Hurley, Wise – October 25, 2001
Submitted by – Bernard Skud

Menhaden Board does not believe species is being over fished

The Atlantic menhaden spawning stock is currently considered healthy, although there has been a decline in recruitment (age-0, young menhaden) over the last 10 years. The overall spawning stock biomass (the total weight of mature fish in the population) is above the spawning stock biomass threshold and slightly below the spawning stock biomass target, but is expected to decline over the next few years unless the trend in recruitment is reversed. There has also been a general decline in the total stock size (numbers and biomass), concurrent with the decline in recruitment. Fishing mortality, or the rate at which menhaden are removed from the population by fishing activities, was estimated to be below its target level needed to protect the menhaden stock in 2000. The spawning stock biomass was well above its defined target level needed to maintain enough fish to provide for good reproduction. Therefore, the Atlantic menhaden stock is not over fished, and over fishing is not occurring. The information on poor recruitment is of concern, even though there are some signs of improving recruitment in the northern range of the species. It is believed that the poor recruitment is a result of poor survivorship of age-0 menhaden – potentially the result of predation, although the role of environmental conditions in menhaden recruitment is not precisely understood.

Over the past several years, state and federal fisheries management agencies have investigated multispecies or ecosystems approaches to fisheries management. The recent Chesapeake 2000 Agreement states that by 2004, the Bay Program will develop ecosystem-based multispecies management plans for targeted species. Several multispecies studies are under way along the Atlantic Coast and specifically in the Bay. One study, funded through he Chesapeake Bay Stock Assessment Committee, is the development of a multispecies assessment model focused on the relationship between Atlantic menhaden and its key predator species: striped bass, weakfish and bluefish. This multispecies model is a modification of the single species assessment method traditionally used to provide management advice for menhaden. Using this model, simulations and projections can be conducted to examine the effects of predation on population abundance and overall mortality of menhaden. This model, developed by Drs. Lance Garrison and Jason Link, will provide fishery managers with information on the balance between natural and fishing mortality, predation and the overall effects on population abundance of the Atlantic menhaden.

Also under way is the development of a Chesapeake Bay ecosystem model using the EcoPath with EcoSim modeling software, (noaa.chesapeakebay.net/ecopath). This approach is designed to quantify relationships at various trophic levels of the ecosystem and will also provide a tool for exploring policy options for an ecosystem-based management of fisheries. These activities and numerous others within the Bay, along the Atlantic Coast and nationally, are only the first steps in gaining a better understanding of the connectedness among species within an entire ecosystem.

Abridged from: Bay Journal, November 2001

Salmon Shocker

A surprise ruling from a federal judge in Eugene, Oregon, has put into jeopardy years of expensive, hard-fought work to restore salmon habitat in the Pacific Northwest. U.S. District Judge Michael Hogan sent shock waves through the salmon recovery community in September when he in effect stripped Endangered Species Act protection from Oregon coastal coho salmon. He ruled that the National Marine Fisheries Service erred by counting only wild fish and not the far more numerous hatchery-born coho when it listed the coho as a threatened species. In response, the Fisheries Service, the government agency in charge of salmon, immediately revoked federal protection for wild coho in dozens of coastal rivers up and down western Oregon. That lifted criminal and civil penalties for anyone caught killing or harming a wild coastal coho or its habitat.

The impact of the ruling could extend beyond coho because the Fisheries Service has rarely factored in hatchery-born salmon in its listing decisions. Two-dozen West Coast salmon and steelhead runs have been listed by the Fisheries Service in the past decade. Sensing an opportunity, an irrigators association in late September petitioned the Fisheries Service to remove from protective listings seven Northwest salmon and steelhead stocks – the first sign that Hogan's ruling could undermine a host of logging, agriculture, urban development and fishing restrictions aimed at restoring the region's once abundant salmon runs.

The ruling prompted a strong response from Oregon Governor John Kitzhaber, a driving force behind efforts to restore salmon habitat. "I am very concerned that there will be a call for increasing hatchery fish production to avoid [Endangered Species Act] listings, masking the underlying problems causing the degradation of watershed health," Kitzhaber said. Jim Lichatowich, author of the 1999 book Salmon Without Rivers: A History of the Pacific Salmon Crisis, agreed, saying that relying on hatcheries while at the same time damaging habitat "is what got us into the problem we're in today." In a letter to Commerce Secretary Donald Evans, Kitzhaber called on the government to appeal Hogan's ruling. As of early October, no decision had been made. Given the Bush administration's conservation record, environmentalists were skeptical that the Fisheries Service would mount a challenge – particularly since the agency missed the deadline for seeking an emergency halt to Hogan's order. "They're showing every sign that they will comply" with the order, said Tryg Sletteland of the Pacific Rivers Council.

A coalition of environmental and fishing groups is seeking to appeal the case, but first must be allowed to intervene by the courts. Their contention is that Hogan's order is at odds with the overarching goal of the Endangered Species Act to protect declining species. The act "protects and restores creatures in their natural habitats – in the wild," said Patti Goldman, an attorney with Earthjustice. "Any other interpretation would be like equating lions in zoos with lions on the Serengeti."

From: Forest Magazine, November/December 2001

Petition Filed to Protect the Atlantic White Marlin

The Biodiversity Legal Foundation of Louisville, Colorado, along with biologist James R. Chambers filed a formal petition with the National Marine Fisheries Service (NMFS) to list the Atlantic white marlin as threatened under the Endangered Species Act (ESA).

The white marlin is the smallest of the four marlin species. It travels over much of the North and South Atlantic Oceans, and is part of the $2.3 billion recreational billfish fishery along the Gulf and U.S. Atlantic coasts. To promote conservation, fishermen now voluntarily release virtually 99% of the billfish they catch. However, industrial-scale fishing vessels catch and kill large numbers of white marlin and other species that are too small to sell legally.

After 30 years of increasingly harmful overfishing, the populations of premier game fish in the Atlantic have all been driven to substantially low levels. The petitioners are asking the U.S. government to exert strong leadership both domestically and internationally.

Mortality must be reduced enough to allow the population to recover. Their spawning and feeding areas must be closed to commercial fishing. The NMFS has 90 days in which to make a preliminary ruling on whether the listing of the Atlantic white marlin by the ESA may occur.

From: International Angler, 63(6) November-December, 2001

Fisheries Service Plays Fast and Loose with Atlantic Sharks This SOFA is not for Sitting

As stocks of other fishes have declined, fishermen have turned to once-spurned species, notably sharks. But sharks, especially the larger species, grow slowly and reach sexual maturity relatively late. This renders them especially vulnerable to overfishing, since their reproductive rate is so slow. Indeed recent studies have reported that stocks of large coastal sharks off the coast of the southeastern United States have declined by as much as 85 percent in the last 25 years, which has led some scientists to recommend that the fishery be closed completely for 30 years to allow the species to recover.

The National Marine Fisheries Service did not go that far, but it did, in 1999, issue much-reduced quotas for these coastal sharks. The industry – in the person of the Southern Offshore Fishing Association, or SOFA – filed suit, hoping to return to the 1997 quotas. The Oceans Conservancy and the National Audubon Society tried to intervene but were not allowed to. So NMFS and SOFA negotiated themselves a cozy deal, whereby an outside, supposedly independent panel of scientists was to review the 1999 quotas. Rumor has it that the panel found the 1999 numbers defensible, but NMFS refuses to reveal the findings and is sticking with the higher 1997 quotas. Attorney Ansley Samson has filed suit against NMFS on behalf of the two organization mentioned above, to pry loose the documents, to force completion of an environmental impact statement, and, most important, to give the sharks a fighting chance.

From: In Brief, Autumn 2001

A Report for the Scientist and Lay Person

Released in November was the report "Understanding SPR and Its Use in U.S. Fishery Management," written by Graeme Parkes, Vice President and General Manager of MRAG Americas, Inc., in cooperation with and for The Ocean Conservancy.

Generally, Spawning Potential Ration (SPR) is used to describe a scientific approach for studying the effects of fishing on fish populations. SPR is one of many approaches used in the United States by scientists to generate advice for fishery managers.

This paper provides a description and critique of the use of SPR as a fishery management tool in the U.S. with the aim of informing and enhancing the decision-making process, particularly in fisheries where it is, or has been, used as the basis for setting biological reference points. The paper has been written to be readable and understandable by as wide an audience as possible, not just by technical specialists. It also aims to be technically accurate, with discussion and conclusions based on sound scientific theory and inference.

The report embodies 62 pages and several illustrations. For copies contact: The Ocean Conservancy

Southeast, Atlantic, and Gulf of Mexico Regional Office
449 Central Avenue
Suite 200
St. Petersburg, FL 33701
727.895.2188 Telephone
727.895.3248 Facsimile
www.oceanconservancy.org

River Budget: National priorities for local river conservation

Though the federal government entered into Fiscal Year 2002 on October 1st, planning for Fiscal Year 2003 federal spending has already begun. *River Budget: National Priorities for Local River Conservation* is published by American Rivers in order to reach out to Congressional, White House and federal agency decision-makers while they are in the budget-making process.

The River Budget summarizes where the people who work to save our country's rivers believe we can make the best investments of tax dollars to benefit our communities, wildlife and water quality. It makes recommendations to the federal government to fund programs that are successful in protecting and restoring rivers or have the potential to be successful if properly funded.

This year's River Budget lists 36 federally-funded programs that need their funding maintained or increased. These programs represent the diverse activities of federal agencies such as managing and allocating water resources, restoring rivers and improving stream flows, controlling floods, and administering grants to local communities working on rivers and watershed restoration. The government also funds programs to regulate the use of rivers such as the licensing of hydropower projects and the enforcement of Environmental Protection Agency's Clean Water Act.

Last year, 530 conservation, recreation, tribal groups and other organizations representing every state signed on their support to the River Budget FY'02. The hundreds of organizations that have signed on to distribute to congressional offices and the White House Office of Management and Budget in addition to policy makers around Washington D.C. American Rivers then works with grassroots groups and other national conservation organizations to lobby Congress and offer testimony during the federal appropriations process.

For Fiscal Year 2002, advocacy of River Budget programs helped to save several programs targeted for cuts in the Bush Administration budget. Notably, the essential water quality and streamgaging informational programs of the U.S. Geological Survey were restored by the congressional appropriations committees. American Rivers is also continuing to work with other conservation organizations to restore funding for several farm-related conservation programs.

To learn more about the River Budget or to find out how you can show support for the River Budget to your regional congressional representatives, visit www.americanrivers.org or contact Jamie Mierau at 877-347-7550 or jmierau@AmericanRivers.org.

From: American Rivers, XXVIII (8), Fall 2001

They needed 77,000 fish biologists!

On August 24, the Colorado Division of Wildlife filed suit against the Coors Brewing Co. after more than 50,000 fish were killed when Coors dumped 77,000 gallons of beer into Clear Creek near its Golden, Colo. brewery. Colorado state law values each fish at $35, for at total of $1.75 million. About a dozen species of fish were killed including several types of bass and suckers.

From: American Rivers, XXVIII (3), Fall 2001

Chinese misreporting masks decline in ocean resources

Scientist say global catches on the decrease

By Associated Press

Nov. 28 – *WorldCatch News Network* – Catches from the world's oceans are severely declining but the trend has been masked by China's practice of increasingly overreporting the amount of fish it lands each year, researchers say. A team of scientists based at the University of British Columbia at Vancouver found that global catches, which were thought to be increasing during the 1990s by 700 million pounds (315 million kilograms) of fish per year, actually have been decreasing by nearly 800 million pounds (360 million kilograms) of fish annually.

Just one entity, the Food and Agriculture Organization of the United Nations, compiles global fisheries statistics, but it relies on voluntary reporting of catches from countries to estimate the amount of fish the oceans hold. The new studies being announced Thursday in the journal Nature call into

question the veracity of FAO figures and it's reporting. "FAO must generally rely on the statistics provided by member countries, even if it is doubtful that these correspond to reality," authors Reg Watson and Daniel Pauly said.

Moreover, by subtracting just one fish from the equation, the abundant Peruvian anchoveta, which is used only for fish meal and whose population fluctuates due to El Nino, an even more striking decrease was apparent: 1 ½ billion pounds (.75 billion kilograms) a year less seafood available for human consumption.

"Misreporting by countries with large fisheries, combined with the large and widely fluctuating catch of species such as the Peruvian anchoveta, can cause globally spurious trends," Watson and Pauly said.

Since 1988, when the world's seafood supply peaked at 33 pounds (15 kilograms) a person each year, the combined effects of overfishing and increasing human populations have reduced the amount of fish and shellfish available on Earth to only about 25 pounds (11 kilograms) a person each year, according to the findings.

And this trend is projected to continue rapidly downward to less than 18 pounds (8 kilograms) a person each year by 2020.

Using statistics gathered by the FAO since 1950, the scientists created maps of world fisheries catches and then built a computer model to predict catch size in different ocean regions.

The model showed China's reported catches were unrealistically high when compared with catches from other ocean areas that have similar characteristics such as depth, temperature and biological productivity. The findings came as little surprise to Lee Alverson, a global fisheries consultant in Seattle who headed research for the National Marine Fisheries Service in the Northwest and Alaska from 1970 to 1980.

"It takes a lot of nerve to make the sort of accusation they did about China, but there were a lot of scientists who felt nervous about those numbers," Alverson said in an interview Tuesday. "If any of the nations are putting bogus numbers into the accounting process, then our ability to assess if overfishing is going on is in jeopardy."

Pauly said the world community must end overfishing if it is to meet future food demands.

The new studies, he said, are "dashing hopes that the sea can continue to meet our growing demand for fish."

Associated Press

Ichthyology's Golden Age

By Vince Magers

Two biologists peered down into the seine that was now writhing with fish pulled from the waters of the Big Niangua River. It was the summer of 1884 and they were standing in the headwaters of the river near Marshfield, Missouri.

The pair netted many smallish fish familiar to their trained eyes, but one, no longer than an index finger, held their attention with its unusual markings and bright flashes of color. Its distinguishing marks included a series of prominent dark brown cross bars running along its body. A narrow orange streak so perfectly tinged the edge of its dorsal fin that it might have been painted by an artist.

The scientists, Seth Meek and Charles Gilbert, had discovered a new species of fish. They named it *Etheostoma nianguae.* Today we know it as the Niangua darter, a now federally threatened fish found nowhere else but in streams in the Osage River basin. The pair's scientific expedition across the Ozarks that summer and other work vastly expanded our knowledge of the richly varied aquatic life in Missouri's streams.

Collaborating with them was David Starr Jordan, a colleague known as the father of American ichthyology. The three discovered and named as new species Missouri's sicklefin chub, Ozark shiner, Niangua darter, bluestripe darter and yoke darter. Between them they also had a hand in discovering another 20 or so new species that initially were found in other states but also lived in Missouri.

In addition, Meek collected dozens of types of fish around the state. Many were species already known to science, but his yeoman's work served to confirm their existence and, in part, their range in the state. This endeavor also helped establish another important fact: Missouri harbors one of the riches native fish faunas of any state.

While Gilbert and Jordan were far bigger names in scientific circles, Meek's work here stands out. He was "the single biggest contributor to knowledge of Missouri fishes before 1900," according to William L. Pflieger, retired Conservation Department ichthyologist and author of *The Fishes of Missouri.* Echoing that sentiment is Henry W. Robison, professor of biology at Southern Arkansas University and co-author of *Fishes of Arkansas.*

Seth Meek seemed destined to spend his life peering into the waters of one river or another. He was born in 1859 in Hicksville, a small town in far northwest Ohio. His birthplace falls squarely between the St. Joseph River and the northeasterly course of the Maumee River on its way to Lake Erie.

Rivers and the teeming life they sustain captivated him. He wasn't far into his studies at Indiana University when he became fascinated with ichthyology, the branch of zoology dealing with fish. It appears that it was at Indiana University where the lives of the three scientists converged. Meek and Gilbert were students there when Jordan served as head of the department of natural science.

Jordan was the dominant figure of his day in the study of fish. He was a large man best remembered for his intellect, drive and keen memory and for the sheer force of his personality. The New York native also possessed an uncanny knack for distinquishing similar looking species of fish. This talent was surely an advantage in the study of Missouri's many darters and other fish.

He was a prolific researcher, generating well over 600 publications—single scientific papers to weighty texts— about fish over the span of half a century. Scientific folklore has it that Jordan dictated from memory most of his two-volume *Guide to the Study of Fishes*—all while serving as president of Stanford University.

Jordan and Gilbert published a 1,000-page volume on the fish of North America. Jordan went on to co-author *The Fishes of North and Middle America*, which was based on his work and that of his many associates. This undertaking was so great that its 3,000 pages were published in a series of four volumes from 1896 to 1900.

Jordan had scores of students and scientific associates, including Meek, but Gilbert was for many years his chief collaborator. A native of Illinois, he complemented Jordan with his preciseness and critical thinking. In time, Jordan would entice Gilbert out west to Stanford University, where he would head up the zoology department.

After his work in Missouri, Meek took a position as professor of biology and geology at Arkansas Industrial University (University of Arkansas). He went on to become assistant curator of zoology at the Field Museum of Natural History in Chicago, a post he held until his death in 1914.

To truly appreciate their contributions, you must flip back the pages in the annals of history and science. Publication dates for their scientific papers place the three together or separately in Missouri from about 1884 to 1889. Settlers had by then spread over a large portion of the Missouri Ozarks, where the biologists did most of their research, but much of the region's wild quality remained intact. The researchers traveled across some of the state's most punishing terrain by horseback and with wagons laden with specimen jars and other equipment.

Then consider the scientific timeline. In 1884, Charles Darwin's *The Origin of Species* had been in print just 25 years and was clearly reshaping views of the natural world. Much of America's flora and fauna remained uncataloged, even though naturalists and scientists had toiled for decades naming and classifying everything from fish to finches.

That's one reason why the 25 years leading up to 1900 have been called the golden age of descriptive ichthyology in the United States. Scientists knew that multitudes of fish lived in rivers like the Gasconade and Niangua. But many of the individual species were yet to be discovered, named and classified. Jordan and his many followers dedicated themselves to closing the gap.

It was such work that brought Meek, Gilbert and Jordan to Missouri. They often would spend their summer breaks from the academic world engaged in field research for the United States Fish Commission or the U.S. National Museum. Gilbert and Meek, both then just in their mid 20s, ventured across southwest Missouri in the summer of 1884. During this trip they discovered the bluestripe darter and Niangua darter.

That same summer Meek and Jordan traveled north to study the 102 and Missouri rivers, Tabo Creek near Lexington and tributaries of the Lamine River. They netted a small minnow that was the abundant in the Missouri near St. Joseph. It was slender, with small eyes and sickle-shaped pectoral fins.

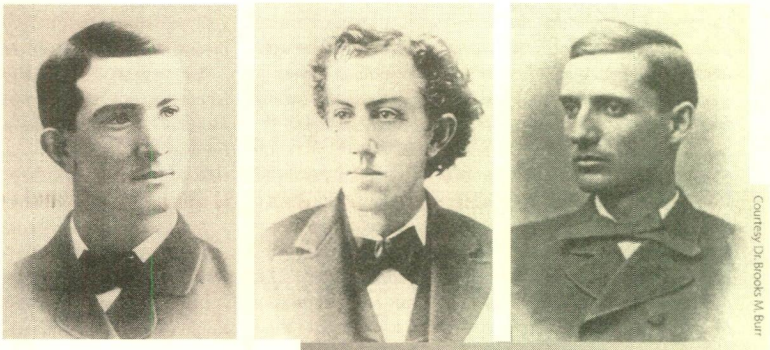
Jordan and Barton Warren Evermann, another of his colleagues, eventually determined it to be a new species. Their scientific name for it was *Macrhybopsis meeki* in honor of Meek, but the fish's anatomy inspired its common name, the sicklefin chub. Today, it is rare in the state and is a candidate for protection under the federal Endangered Species Act.

Meek returned with two students in July and August of 1889 to survey streams in Missouri and Arkansas. Meek's records provide a glimpse into their work and travels. In just 16 days on the Missouri leg of the trip, they collected fish in 18 streams across the basins of the Meramec, Gasconade, Osage, Neosho (a Kansas stream with Missouri tributaries) and White rivers.

Their zigzag route took them from St. Louis through or near St. James, Rolla, Dixon, Marshfield, Neosho and Springfield before their final stops on the Big Piney and North Fork rivers near Cabool. It was on this trip that they discovered the yoke darter in the James River and the Ozark shiner in the North Fork. Meek generously named the yoke darter *Etheostoma juliae* for Julia Gilbert, his colleague's wife.

Meek's records also provide a number of personal observations. He found the Niangua "quite remarkable for the bright colors of its minnows and darters." By contrast, he seemed disappointed after visiting the Big Piney near Cabool. "Fish are apparently scarce in this stream," he wrote in an account published in the Bulletin of the United States Fish Commission. "The scarcity is in some measure due to the presence of gristmills and sawmills, which discharge refuse into the stream, and to the use of dynamite (to kill fish)." He also reported that it was common near Newburg and Neosho for dynamite to be used in similar fashion.

Meek called attention to the rugged terrain and bluffs along the North Fork of the White River south of Cabool. "The country is also heavily timbered and as yet sparsely settled," his account reads. "The stream has a rocky bottom and flows with a considerable current."



Courtesy Dr. Brooks M. Burr

An esteemed trio of ichthyologists, Charles Gilbert, David Starr Jordan and Seth Meek (pictured left to right), traveled through Missouri cataloging fish. Their journey took them to the North Fork River (background).

Considerable current indeed. "These men were out seining in the White River basin before any dams were built so you can imagine the conditions," explains Henry Boison of Southern Arkansas University.

Meek, Gilbert and Jordan's accounts of their explorations of Missouri and Arkansas are in a sober and methodical scientific language. They convey little sense of the excitement and awe they must have felt. After all, these were accomplished scientists who lived to discover and push out the bounds of our knowledge of the watery world of darters and shiners.

And here was a place where every flash of color darting through a riffle held out the prospect of discovery and acclaim. That prospect drew Seth Meek to Missouri no less than three times and into Arkansas many more than that. And he must have been more than a little amazed at what he saw when he gazed into the water here. Why else would he have returned again and again?

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