



NEWSLETTER

of the Introduced Fish Section
American Fisheries Society

August 1993

Don Baltz, Editor

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PRESIDENT'S CORNER

On behalf of the membership, I want to thank Hiram Li for all that he has done for the IFS. Hiram has served as newsletter editor, president, and now past-president. He organized, conducted, and energized the lively debate-format IFS session at Rapid City. As always under his leadership, at the session the contention, conflict, and controversy over the role of introduced species was discussed with the greatest cordiality, civility, courtesy and good humor. Similarly, in the newsletter, he has been a continual source of new and provocative ideas that are so well presented that I almost regret that they are usually wrong. Hey, Hiram, do you really think that fish farmers grow tilapia because of some techno-economic-bank-swindling conspiracy!? Please!

I also want to thank Don Baltz for volunteering to take over the newsletter. This is the most important activity that the section has. I know of no other section newsletter that has as wide a diversity of opinion, ideas, and dialogue as ours - its almost like listening to a fishy version of all-night talk radio. But in order to maintain this exchange, the membership will have to continue making contributions. Please send your own news, data, and off-the-wall ideas to Don. You send them in, we'll print them.

Special Symposium: The IFS is one of the sponsors of the special symposium on the Uses and Effects of Cultured Fishes in Aquatic Ecosystems that will be held in Albuquerque on 12-17 March 94. A copy of the first call for papers is attached. I have agreed to be moderator of the session entitled Role of Exotic Species: Past and Future Uses in Fisheries Management.

Report about the AFS-EXCOM: A lot of the attention of the EXCOM has been on the advocacy initiative. This is moving forward rapidly and includes the enlargement of AFS staff, the hiring of a full-time development director (fund raiser) and staff, the establishment of the FAN (Fishery Action Network), and the expansion of AFS membership and influence with the FOF (Friends of Fisheries). At the spring EXCOM meeting in Washington, most attendees went to a lobbying seminar and then spent one day talking to congressmen, senators, and aides.

I missed the training session, but I knew enough to hand out Louisiana-Chapter AFS T-shirts to the Louisiana state delegation. By the end of the day we were so smooth that you could hardly tell the fish guys from the professional sleaze-balls, I mean lobbyists. Well, maybe you could, the fisheries guys expected some one else to buy them a drink instead of the other way around.

Despite the momentum of the advocacy initiative there is still considerable opinion that it is going too fast, that it is changing the character of the society (for the worse), and that it erodes our scientific credibility. As someone said: scientific credibility is like virginity, you can only sell it once.

There is a movement by some AFS members to slow down the initiative, and to take a more deliberate, long-term position on politically charged issues. At the AFS meeting in Portland there will be a vote on a proposed amendment to the AFS constitution. The amendment is entitled "Restriction of Advocacy". Proxies on this amendment were included in the AFS ballot. After 1 August, proxies should be sent directly to AFS headquarters.

In order for the restriction of advocacy amendment to pass, it will require a 2/3 vote. If you are voting on this issue, be sure to read the material carefully. At least one member has expressed dismay to me over how the "pro-con statements" on the back of the proposed amendment were worded. It seems that the con-advocacy statement gives the reasons why one should vote (yes) in support of the proposed amendment to restrict advocacy. Its a little like: I think I know what you believe I said, but what you heard was not what I meant.

For those interested in becoming more active in advocacy, the FAN is having a workshop on 29 Aug in Portland. Contact Dale Burkett, FAN Development Committee Chair. There is also something called the Special Legislative Committee, which you can learn more about from Jack Wingate. These guys keep sending me mail asking what positions the IFS supports. Any and all of them.

FROM THE EDITOR

This is my first newsletter and I have had to get it out hot on the heels of the last issue to announce this year's slate of IFS candidates. In doing so, I have exhausted all of the readily available materials that I had on hand. Therefore, your contributions will be needed for future issues. In particular, many items in the non-fisheries literature are relevant to IFS and could be abstracted or summarized. Newspaper clippings, announcements, recent articles, comments, etc. will be appreciated and accepted by FAX, phone, mail and e-mail. E-mail submission of correspondence is preferred because I can download it directly into a word-processor file. My e-mail address is OCDON@LSUVM.SNCC.LSU.EDU for Internet and OCDON@LSUVM for Bitnet.

Aquatic Biotechnology Workshop.....Correspondent: Don Baltz

A workshop is scheduled for August 18-20, 1993, in Minneapolis, Minnesota, to review performance standards for research on genetically modified fish, crustaceans, and molluscs. The standards are intended to help scientists to design ecological safety protocols for research conducted in various indoor and outdoor facilities such as tanks, raceways, and ponds. For more information contact: Ms. Marylin Cordle, U. S. Dept of Agriculture, Office of Agricultural Biotechnology, Room 1001 RPE, 14th & Independence Ave., S. W. Washington, D.C. (Phone 703-235-4419).

Aquatic Conservation NetworkCorrespondent: Anon

The ACN publishes a quarterly bulletin "Aquatic Survival" for aquarists dedicated to the preservation of aquatic life. The ACN has been established to foster increased involvement and cooperation by interested individuals, aquarists and scientists in the preservation, conservation and enhancement of aquatic life. Immediate objective include networking, captive breeding, and conservation. Membership is \$25 annually. For more information contact: The Aquatic Conservation Network, 540 Roosevelt Avenue, Ottawa, Ontario, Canada K2A 1Z8 (Phone 613-729-4670).

The Atlantic Verses by Salmon Rushdie.....Correspondent: Gary Larson

NEWS FROM CALIFORNIA.....Correspondent: Peter Moyle
The new worry in the San Francisco Bay estuary is the invasion of the European green crab, *Carcinus maenas*, a voracious molluscivore. There is considerable concern that its spread could affect the commercial harvest of shellfish in the state but there is also hope that it may control the recently invading Asiatic clam, *Potamocorbula amurensis*, which has been present at incredible densities in Suisun Bay for the past few years. The clam's filtering has been associated with some of the lowest phytoplankton and zooplankton levels ever recorded, with unknown consequences to larval fish that use the bay as a nursery area. The latest addition to the freshwater fish fauna is the brook stickleback, *Culea inconstans*, which is now fairly widely distributed in the Scott River, Siskiyou County, a tributary to the Klamath River. The stickleback is native to the midwestern USA and was presumably an aquarium introduction, although no-one seems to know. The latest extinction of a native fish in California was that of the High Rock Spring tui chub (*Gila bicolor* subsp.) which disappeared from its isolated Lassen County spring in 1989, following the introduction of *Tilapia mossambica* into the spring. I assume egg predation by the tilapia was the most likely cause of extinction.

Have you seen.....

Fishy Plugs: Peter Moyle's newest book...."Fish: an enthusiast's guide" just published by UC Press (a bargain @ \$25)? The cover features Nile perch devouring hapless haplochromines. Inside are some strong conservation messages. [I hope this unabashed plug is worth a free, autographed copy, shipped postpaid--ed.]

Foreign Invaders. 1993. Joel W. Hedgpeth. Science 261:34-35. Hedgpeth's view in a perspective in the July 2 issue is: "All things considered, man, whether by intent or inadvertence, is the principal agent responsible for introducing organisms of all sorts to North America and elsewhere. [material omitted--ed] Some of these introductions are pleasant reminders of faraway places, but many are detrimental to their new ecosystems. It is to be hoped that all our bays and estuaries will not become so much alike in their flora and fauna that there is no interest in traveling to see strange and interesting things.... But we must also hope that the bureaucrats do not spin a web of regulations more entangling than the ornithologist's mist nets and thereby defeat their own good intentions."

Ecological Roulette: The Global Transport of Nonindigenous Marine Organisms. 1993. James T. Carlton and Jonathan B. Geller. Science 261:78-82. In a report on invasions facilitated by ship ballast water, the authors note: "Transport of entire coastal planktonic assemblages across oceanic barriers to similar habitats renders bays, estuaries, and inland waters among the most threatened exosystems in the world. [material omitted--ed] Knowledge of species' natural geographic distributions is of paramount importance for interpreting patterns in ecology, evolution, and biogeography. Unfortunately, the systematics of most marine taxa are far from complete, and the discovery of previously unrecognized species in regions impacted by ballast water release (almost all coastal zones of the world) must now be viewed critically as potential invasions.... Conversely, for easily identified species, unrecognized historical transport may have led to false conclusions of natural cosmopolitanism. Thus, many introduced species may be cryptic, having invaded and gone unrecognized or been mistaken as native species. Both these situations confound our understanding of historical patterns of dispersal, gene flow, and speciation: geographic barriers to dispersal and gene flow are readily breached by ballast water transport. Similarly, we must now recognize that the composition of aquatic communities may be influenced by both recognized and cryptic invasions."

Interactions between stochastic and deterministic processes in stream fish community assembly. Elizabeth M. Strange, Peter B. Moyle & Theodore C. Foin
Environmental Biology of Fishes 36: 1-15, 1992.

Abstract. Numerous studies have attempted to determine whether stream fish communities are structured primarily by deterministic or stochastic processes. Previous work has assumed

along density-dependent processes of random variation in structure as a result of environmental stochasticity. In a 10-year study of a California stream, fish community structure changed under the influence of storm-induced high discharge events that impacted recruitment. Species' relative abundances were altered as pre-recruitment stream discharges differentially influenced year-class strength among species with contrasting life histories. Simulation of stream fish community assembly under flow-driven recruitment variation indicates that community structure will vary depending on how particular high-flow events affect species' relative abundances and ongoing density-dependent processes, including competition and predation. Results suggest that stream fish communities are likely to show alternate states rather than a single persistent equilibrium. However, community assembly will not be random but will depend on situation-specific interactions between density-independent and density-dependent processes. [This paper relates to introduced fishes because addition of the fall-spawning brown trout to the system apparently created a brown trout dominated alternate 'equilibrium' to the community otherwise dominated by spring-spawning native fishes--ed.]

Invasion resistance to introduced species by a native assemblage of California stream fishes. Donald M. Baltz and Peter B. Moyle. 1993. *Ecological Applications* 3(2): 246-255. Abstract. Assemblages of native stream fishes in California show a remarkable ability to resist invasion by introduced fishes as long as the streams are relatively undisturbed by human activity. Previous studies had indicated a high degree of spatial (microhabitat) segregation among the native fishes, which was confirmed by a principal components analysis of microhabitat use data from Deer Creek, a tributary of the Sacramento River. A null modelling study using the same data set was performed to see if competition was a major force structuring the assemblage, because theoretical studies had indicated that a competitively structured assemblage should be most able to resist invasions. The null models indicated that competition was not the major structuring force, so it is likely the assemblages are structured through a combination of morphological specialization (reflecting evolutionary history), predation, and some competition. The assemblages resist invasions through both environmental and biotic factors. Predation seems to be an especially important biotic factor.

Introduced Fishes in Marine Systems and Inland Seas. Donald M. Baltz. 1991. *Biological Conservation* 56: 151-177. Abstract. The number of introduced marine and estuarine fishes is small compared to that of freshwater introductions. Nevertheless, the number now exceeds 120 species and the list is growing. Many have been intentional introductions to enhance fisheries, but the majority are the unintentional result of canal construction and ballast-water transport. While ballast-water transport of fishes and other organisms is a 20th century phenomenon that deserves immediate attention, inadvertent introductions related to shipping have been occurring for centuries. They have obscured the biogeography of many fish and invertebrate species, and have profoundly affected the community structure of many coastal ecosystems. Most intentional introductions either did not establish populations, did not achieve their objectives, or had deleterious effects if the species became established. In several cases, introduced species have contributed to the extinction of native fishes, particularly endemic species.

Mussel-Watch

Recent Sea Grant Publications:

- Keillor, P. 1991. Sand filter intakes could safeguard vital water supply system from zebra mussels. University of Wisconsin Sea Grant Institute, 1800 University Avenue, Madison, Wisconsin 53705.
- MacNeill, D. B. Feb. 1992. Identification of juvenile *Dreissena polymorpha* and *mytilopsis leucophaeata*. New York Sea Grant Institute, Zebra Mussel Information Clearing House, 250 Hartwell Hall, SUNY College at Brockport, Brockport, New York 14420-2928.
- O'Neill, C. R., Jr. and D. B. MacNeill. November 1991. The zebra mussel (*Dreissena polymorpha*): An unwelcome North American invader. New York Sea Grant Institute, Zebra Mussel Information Clearing House, 250 Hartwell Hall, SUNY College at Brockport, Brockport, New York 14420-2928.

Uses and Effects of Cultured Fishes in Aquatic Ecosystems.....Correspondent: Terrence Tiersch

Special Symposium - First Call for Papers for "Uses and Effects of Cultured Fishes in Aquatic Ecosystems" in Albuquerque, New Mexico on March 12-17, 1994

This symposium is intended to examine the Roles of Hatcheries and Genetics in Fisheries Management and is supported by AFS Sections: Fish Culture, Fisheries Management, Genetics, Fisheries Administrators, Introduced Fish, Bioengineering, Physiology, and Early Life History. Others will participate & voiced support.

It will be an interactive symposium with contribution Sections adapting and modifying individual Section views on the uses and effects of hatchery products. Warm-up sessions will be held at the annual meeting in Portland, Oregon in the fall of 1993. This Symposium in Albuquerque will flesh out the debate. Papers will be published, and a follow-up facilitated workshop will be held in Halifax at the 1994 annual meeting.

Both solicited and contributed papers will be published in a special AFS publication. Papers will be solicited to fall in the following topics areas (Panels) and contributed paper authors should identify for which panel their contribution is intended. Manuscripts should accompany authors to the symposium. Alternate papers will be solicited or contributed to fill potential program gaps as: No Manuscript, No presentation!! Poster presentations are encouraged. Alternate papers will be published even if not orally presented.

We encourage experience papers (good, bad, and ugly) on uses and effects of cultured fishes and will solicit papers representing successes and failures. Cut the BULL and bring your NUMBERS and DATA. The goal of the symposium is to define existing appropriate uses and to suggest future improvements in cultured animals, especially the genetics aspects, to make them better tools for specific management uses. Bring Solutions not Problems, anyone can CARP.

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| Panel 1. | Fisheries Management Needs: Sport Fish Restoration & Enhancement Moderator: Administrators Section |
| Panel 2. | Fisheries Management Needs: Threatened & Endangered Species Moderator: Fish Culture Section |
| Panel 3. | Fisheries Restoration & Enhancement: Stocking Criteria & Goals Moderator: Physiology Section |
| Panel 4. | Fisheries Restoration & Enhancement: Genetic Criteria & Goals. Moderator: Genetics Section |
| Panel 5. | Fish Production to Meet Needs: Capabilities & Limitations. Moderator: Bioengineering Section |
| Panel 6. | Evaluation of Stocked Fish: In Hatcheries and in the Wild. Moderator: Fish Culture Section |
| Panel 7. | Role of Exotic Species: Past and Future Uses in Fisheries Management Moderator: Introduced Fish Section |
| Panel 8. | Hatcheries, Habitat, & Regulations. Past & Future Uses in Management Moderator: Fisheries Management Section |

Posters. Moderator, Early Life History Section???

- A. Stocking Successes: warm, cool, cold, anadromous, marine
- B. Stocking Failures: warm, cool, cold, anadromous, marine
- C. Federal, State, and Private Aquaculture
- D. Physical & Biological Considerations in Stocking
- E. Urban Fishing Needs
- F. Put & Take Fishing Needs
- G. Integrated Fisheries Management
- H. Society Life Style Changes Affecting Perceptions of Angling
- I. Genetic Gizmos: Marking, Ploidy Doubling, Gene Banking, etc.
- K. Warmwater Aquaculture
- L. Coolwater Aquaculture
- M. Coldwater Aquaculture

Abstracts should be submitted to:

Program Chairmen: Gary Carmichael & Vince Mudrak
213 Bryn Mawr Drive, SE
Albuquerque, New Mexico 87106

Abstract Deadline: December 15, 1994
Manuscript deadline: March 12, 1994

**Symposium
Chairman:** Delano Graff
Commonwealth of Pennsylvania
Pennsylvania Fish Commission
Bureau of Fisheries
450 Robinson Lane
Bellefonte, Pennsylvania 16823-9616
(814) 359-5154 FAX: 5153

ELECTION OF IFS OFFICERS

Candidates for President Elect

Kevin Hopkins

Kevin D. Hopkins is an Associate Professor of Aquaculture at the University of Hawaii at Hilo where he is responsible for the undergraduate aquaculture program. He is a life member of the American Fisheries Society (joined in 1970) and is a certified fisheries scientist. He is a longtime member of the Introduced Fish, Fish Culture, Education and International Fisheries Sections of the AFS. Kevin received a B.S. from the University of Oklahoma and completed three graduate degrees at Auburn (M.S., MBA, Ph.D.). He is primarily known for almost two decades of work on tilapia in the USA, SE Asia and the Middle East and thus, would bring a development perspective to section deliberations. He is the author or co-author of 15 papers in international journals and symposia proceedings, three book chapters, and nine miscellaneous published articles/reports.

Dennis R. Lassuy

B.S. Biology - University of Arizona - Marine intertidal ecology
M.S. Marine Biology - University of Guam - Ecology and feeding behavior of coral reef fish
Ph.D. Fisheries Science (minor, Marine Resource Management) - Oregon State University - Feeding behavior and nutrition in grazing stream fish

Prior Positions:

Legislative Assistant for Fisheries & Environment to Congressman Saxton (R, NJ) - House Merchant Marine & Fisheries Committee

Fish and Wildlife Biologist, USFWS, Ecological Services Field Office, Portland, OR - Endangered Species Biologist

Fish and Wildlife Biologist, USFWS, Fisheries Division, Arlington, VA - served as Chairman of International Introductions Policy Review Committee for Federal interagency Aquatic Nuisance Species Task Force

Current Position:

Congressional Liaison, USFWS, Washington, DC -issue areas include Endangered Species Act; Fisheries-relevant legislation, Marine Mammal Protection Act

Candidates for Secretary Treasurer

John Cassani

John holds a B. S. degree in Fisheries and Wildlife from Michigan State University and a M. S. in biology from Central Michigan University. The Lee County Hyacinth Control District, in Fort Myers, Florida, has employed John as Resource Manager since 1978. Service to AFS includes a current appointment to The Small Impoundments Committee (Southern Division) and chairman of the Grass Carp Committee (Introduced Fish Section). John has organized two symposia for the AFS annual meeting in the last four years and has authored more than 25 publications on a variety of topics. Other activities include technical consultation to various organizations on grass carp polyploid induction techniques in California, Florida, Alabama, Canada and New Zealand.

Laurence D. Zuckerman

Larry is an Aquatic Ecologist with the Environmental Services Section of the Kansas Department of Wildlife and Parks (KDWP) where his duties include the documentation of the spread of rudd, bighead carp, grass carp and other exotics, field research on native stream fish communities, the creation of a landscape level habitat model to predict changes in stream fish communities with improved agricultural practices, the review of sportfish stocking policies and Community Lakes Assistance Grants, Threatened & Endangered Species Permits and mitigation for rare fishes, fishkill investigations, Pesticide Use Task Force, and Strategic Planning. He has been a member of the IFS since its inception and of the parent society since 1975. Larry is also the Environmental Concerns Committee Chairperson and Resolutions Co-Chairperson for the Kansas Chapter of the AFS. Larry has been in Kansas for six years in his present position after living in the Colorado Rockies for eight years. There, he studied the impacts of introduced fishes on the native fish communities of the Upper Rio Grande and San Luis Closed Basin in a Ph. D. program at Colorado State University. The case study was published in the AFS' 1986 Fish Culture in Fish Management book. While in Colorado, Larry worked for the Colorado Division of Wildlife, USDA Rocky Mountain Forest and Range Experiment Station, and the U.S. Fish and Wildlife Service in research and resource management positions and completed environmental contract work for the Colorado Fishery and Wildlife Research Unit, the U.S. Army, the Northwest Colorado Wildlife Consortium, and Central Nebraska Public Power and Irrigation District. Work on the native cutthroat trout subspecies of the American West involved meristics and morphometrics, restoration of pure populations, and the elimination of introduced species. Larry received dual Master's degrees from Syracuse University (Zoology) and the State University of New York - College of Environmental Sciences and Forestry (Environmental and Forest Biology) in 1979. A B.S. in Biology (Marine Ecology) was awarded in 1976 from the State University of New York at Stony Brook.

1992-1993 IFS Officers

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Secretary-Treasurer: Alexander Zale, Oklahoma Cooperative Fish and Wildlife Research Unit, 404 Life Sciences West, Oklahoma State University, Stillwater OK 74078 [(405) 744-6342]

Past-President: Hiram W. Li, Oregon Cooperative Fisheries Research Unit, Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97331 [(503) 737-1963; FAX (503) 737-3590]