

Midyear Report to the AFS Governing Board, February, 2007

To: Dr. Mary Fabrizio, President, AFS

From: Joe Larscheid, President, Fisheries Management Section

Date: February 15, 2008

1. Motion Report

- (A) Recommended Motion: None
- (B) Minority View: None
- (C) Background for Motion: Not applicable

II. Activity Report

(A) Charge or Annual Program of Work: No specific charge or program of work defined.

(B) Summary of Outcomes and Accomplishments Organized by Focus Area in Strategic Plan with the appropriate goal, strategy, and target referenced.

Aquatic Stewardship

Strategy AS 2.3. FMS is a sponsor and provided \$2,000 to the Urban Fishing Symposium planned for the 2007 AFS annual meeting in San Francisco. Publication for this symposium is slated to be completed in 2008.

Strategy AS 2.3. FMS is a sponsor and provided \$5,000 to aid the publication “Biology and Management of Walleye and Sauger in North America”, a product of the Walleye Technical Committee (North Central Division)

Strategies AS 2.3 and AS 2.4. Other funding requests were handled by the Excom as per FMS operating procedures regarding requests of \$500 or less. The Equal opportunity section travel award is now a line item in FMS annual budget (\$500 annually). The FMS also provided \$500 to the National Fish Habitat Action Plan Workshop, and \$500 to support the Fisheries Database Summit II .

Goal AS 2.8. The FMS website now has a link to the results of a survey of state, federal, and provincial natural resource agencies that sought information in changes in fish culture and stocking practices over the past several decades. The project was headed by Randy Jackson (NY), and the information was published as part of the proceedings for the *Propagated Fishes in Resource Management symposium* (AFS Symposium 44). Substantial changes have occurred due to concern over fish genetics and biodiversity, and the Section wants people both inside out outside of AFS to know just how much the agencies have responded.

New links to our website include a “Products” link which include publications, essays, and other items of interest. Another link was created to allow people to join our

section online. This link was a result from our discussion regarding declining membership in our section. Webmaster Fred Janssen (TX) continues to do an outstanding job of keeping the website updated and fresh.

Membership Services Strategy MS 1.5. FMS recognized many volunteers during 2007.

- Hall of Excellence inductees (plaques will hang in the FMS Hall of Excellence at the Ak-sar-ben Aquarium in Gretna, NE)
 - **Hannibal Bolton** received the sections highest honor. Hannibal has an extensive background in fisheries management with 30+ yrs of service with the US Fish and Wildlife Service. He also has extensive experience with AFS, serving on a wide range of committees. Hannibal was present to receive the award.
 - **Dr. David Willis** was also inducted into the FMS Hall of Excellence. Dave has very broad experience in fisheries management and ecology, pond management, fisheries assessment, and fisheries education. Dave also has many editorial accomplishments, extensive service with AFS, and has greatly advanced fisheries management and education. Dave graciously accepted the award and thanked many previous colleagues and graduate students.
 - **Paul T. “Jack” Wingate** was also inducted into the FMS Hall of Excellence. Jack has a storied career with the Minnesota Department of Natural Resources spanning 25 years, and long-time service in AFS leadership roles.
- Conservation Achievement Awards.
 - **Southeast Aquatic Resource Partnership (SARP).** SARP was created in 2001 as a groundbreaking partnership of 13 states, 4 regional fishery commissions, many federal agencies, and numerous private organizations. Its Southeast Aquatic Habitat Plan to be completed in late 2007 should serve as a model for regional implementation of the National Fish Habitat Initiative.
- Award of Excellence
 - **James Cowan Jr.** James was recognized for his dedicated service to state, regional, and national fisheries management, including 15 years for the Gulf of Mexico Fishery Management Council and 10 years for the National Research Council Ocean Studies Board.
 - **Roy Williams.** Roy was recognized for his 39 years of marine fisheries management in Florida and his pioneering efforts in moving marine fisheries management from a reactive to a more proactive process.
- Award of Merit
 - **James Vincent and Paul Balkenbush** were presented an award of merit for the leadership of a contingent of Oklahoma Department of Wildlife Conservation employees, cooperators and volunteers to enhance a 2,800 foot portion of the lower Mountain Fork River through a hydraulically improved low-flow channel, enhanced stream habitat, two-acre wetland construction, and creation of a new 1,200 foot trout stream.

- **Forrest Bonney** was presented an award of merit for his 35 years of brook trout management in Maine including revamping regulations, authoring a species management plan, and publishing two books in 2006-2007 on this species for laymen and technical audiences.

Goal MS 2. FMS initiated an *ad hoc* committee to deal with an Assessment of Fish Aging Techniques. The goals of the committee include 1) a survey of state and Canadian provincial freshwater fish agencies on the use of fish aging structures; the survey will include queries on structures used for aging, the use of back-calculation of lengths from annuli, and assessment of precision and validation; 2) develop a literature review of fish aging techniques, precision, and validation; and 3) make recommendations for aging techniques. The committee chair is Mike Maceina (AL), and committee members include Jeff Boxrucker (OK), Dave Buckmeier (TX), Scott Gangl (WY), Dave Lucchesi (SD), Dan Isermann (MN), Randy Jackson (NY), and Pat Martinez (CO).

The following two products were produced from this committee and both were published in Fisheries (2007) Volume 32, Number 7. Both of these articles are also available for download from our website at <http://www.sdafs.org/fmsafs/products/products.htm>.

1) Earliest References to Age Determination of Fishes and Their Early Application to the Study of Fisheries

James R. Jackson, Department of Natural Resources, Cornell University

Abstract: Age data are routinely used in fish population studies today. While various works have touched upon aspects of the history of fish aging techniques, there does not appear to be a single source that attempts to summarize the earliest literature on age determination of fishes in a broad historical context. The Fisheries Management Section formed the *ad hoc* Assessment of Fish Aging Techniques Committee in 2006, with development of such a review as a goal. The earliest references to rings on the hard structures of fish by Leeuwenhoek and Hederström date to the seventeenth and eighteenth centuries. Scientific validation of annuli on the scales of fish did not take place until the late 1800s, with the work of Hintze and Hoffbauer. The work of Reibisch on otoliths and Heincke with other hard structures quickly followed. These later studies on fish aging techniques came at a time when large-scale studies of fish populations were gaining momentum. While the new aging methods were adopted rapidly by many fisheries workers, debates about their validity were not uncommon. A notable example took place between Hjort and Thompson, centering on Thompson's doubts concerning the validity of scale-based ages in Hjort's seminal 1914 paper.

2) Current Status and Review of Freshwater Fish Aging Procedures Used by State and Provincial Fisheries Agencies with Recommendations for Future Directions

Michael J. Maceina, Jeff Boxrucker, David L. Buckmeier, R. Scott Gangl, David O. Lucchesi, Daniel A. Isermann, James R. Jackson, and Patrick J. Martinez

Abstract: In 2006, the Fisheries Management Section of the American Fisheries Society formed the *ad hoc* Assessment of Fish Aging Techniques Committee to assess the current

status of aging freshwater fish in North America. For seven species groups that included black bass (*Micropterus* spp.), crappie/sunfish (*Pomoxis* spp./*Lepomis* spp.), catfish (*Ictaluridae*), morinids, percids, salmonids, and esocids, a survey of U.S. and Canadian fisheries agencies (N = 51 agencies responding) revealed that scales, otoliths, and spines were the most common structures used to age fish. Latitudinal clines existed for some of the structures that were examined, with scales typically used more in northern latitudes than otoliths. Many agencies conducted some validation of age estimation techniques and most assessed precision at least for some of the age samples collected. Providing personnel with training to age fish was common. Reasons for the structures used and the types of inferences and information generated from age data were reported. Scales were the most common structure used to age esocids, black bass, crappie/sunfish, and moronids, but only 27% of all respondents felt that scales accurately aged fish to the maximum age. Alternatively, most agencies felt that otoliths provided accurate estimates. From a review of published papers, otoliths were more accurate when compared to other aging structures and showed higher precision. Most agencies conducted back-calculation of lengths from annuli that provided additional information on growth, even though back-calculation procedures contain complex and inconsistent interpretation and computation issues. Currently, many studies are being conducted where known-age fish were chemically or physically marked, stocked, then recaptured after a number of years which can furnish data for age validation. Recommendations include the development of a known-age reference database to allow sharing of information, publication of validation studies, and careful considerations for conducting back-calculation of lengths from presumed annuli.

Goal MS 2. The first and second editions of *Inland Fisheries Management in North America*, edited by Chris Kohler and Wayne Hubert, were widely adopted as texts for introductory fisheries management courses at universities and became "best sellers" among the books published by the American Fisheries Society. The second edition was published in 1999 and is quickly becoming outdated, so plans are being laid to produce a third edition in the near future.

Substantial progress has been in the production of the third edition of *Inland Fisheries Management in North America*. In September 2006, Wayne Hubert and Michael Quist were approved by the sections to serve as co-editors of the project.

The co-editors began the project by assessing funding options. Options that were considered included grants and sponsorship from outside contributors, grants or loans from the AFS Publications revolving fund, and publication by the book publishing arm of the parent society. It was determined that the most risk free option and financially rewarding option for the sections was the publication of the book by the AFS publishing arm. At the 2007 Annual Meeting in San Francisco, the Fish Management and Education sections voted to contribute \$5,000 (\$5,000 per section) in support of the book.

The co-editors contacted potential lead authors soliciting their participation in the book project and a cadre of lead authors was identified. Lead authors were charged with the responsibility of identifying collaborating authors that would bring additional expertise and diversity to the effort. All chapter authors have been identified.

Currently, authors are submitting the first drafts to the co-editors for comment. The co-editors will then provide criticism for the authors to utilize in the writing of a second draft. Second drafts will be peer reviewed and comments by the co-editors will be

provided to facilitate the production of third drafts. It is anticipated that the third drafts will be assimilated into a complete manuscript of the book and submitted to the AFS Book Department by the end of 2008.

Goals MS 2, ITO 3, and ITO 4. The textbook “Standard Methods for Sampling North American Freshwater Fishes” (edited by Scott A. Bonar, Wayne Hubert and David Willis), is complete and will soon be released for publication.

Standardization in industry, medicine and science has led to great advances. However, despite its benefits, freshwater fish sampling is generally unstandardized, or at most standardized locally. Standardization across large regions would allow for measurement of large-scale effects of climate or geography on fish populations; larger sample sizes to evaluate management techniques; reliable means to document rare species; easier communication; and simpler data sharing. With increased interaction among fisheries professionals worldwide, reasons for wide-scale standardization are more compelling than ever. The Fish Management Section of the American Fisheries Society in collaboration with the U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, U.S. Bureau of Land Management, National Park Service, USGS Cooperative Research Units Program, National Fish and Wildlife Foundation, AFS Education and Computer User’s Sections, and Arizona Game and Fish Department is developing a book of standard sampling methods for North America. Almost 50 United States, Canadian and Mexican fish sampling experts are authors. *Standard Methods for Sampling North American Freshwater Fishes* describes standard methods to sample fish in specific environments so population indices can be more easily compared across regions and time. Environments include ponds, reservoirs, natural lakes, streams and rivers containing cold and warmwater fishes. This book provides rangewide and regional averages; calculated from over 4000 data sets from 42 states and provinces; of size structure, CPUE, growth, and condition for common fishes collected using methods discussed. Biologists can use these data to determine if fish from their waterbody are below, above, or at average for an index. These methods were reviewed by 54 representatives from 33 North American agencies and by biologists from seven European and one African countries. Final drafts were reviewed by an additional 36 sampling experts. These procedures will be useful to those hoping to benefit from standard sampling programs in their regions.

This book will also provide other information necessary to standard sampling programs such as how to convert nonstandard to standard data; statistical and database procedures for standard sampling, and methods to prevent transfer of invasive species while sampling.

This book is in its final draft and will then be published by the AFS Books program. It has generated a considerable amount of attention throughout North America and even Europe. Be on the lookout for its release!

Strategy MS 4.3. FMS made the annual \$500 contribution to the Equal Opportunity Section for their student travel support program a line item in our annual budget.

Information Transfer and Outreach

Strategies ITO 2.1, MS 4.6, AS 1.3. FMS continues to participate, in conjunction with the Fisheries Administrators Section (FAS), in an exchange program with the United Kingdom's Institute of Fisheries Management (IFM) involving our respective Section's Presidents. The basic approach is that each Society's President would attend the other's meeting in alternate years. AFS would be represented alternately, by the President of FAS then FMS. FAS president Gary Saul made the trip in 2005 and, FMS president Joe Larscheid made the trip in 2006, and Dave Burkett (FAS) made the trip in 2007. Ron Essig (FMS) will make the trip in 2008. The original proposal was to support this endeavor for two cycles, and then decide whether we could justify the continued expenditures.

(C) Recommendations or Suggestions for Future Consideration: None.

III. Financial Status (provided only to Society Financial Officer and will not be copied and distributed in the briefing book): Files will be sent via e-mail directly to the Society Financial Officer.