

Mainstream

Fall 2003, Volume 20(2)

Dakota - Illinois - Indiana - Iowa - Kansas - Michigan - Mid-Canada -
Minnesota - Missouri - Nebraska - Northwestern Ontario - Ohio -
Southern Ontario - Wisconsin

North Central Division
of the
American Fisheries Society



President's Message

By Steve Fischer

Welcome to the 134th year of AFS! For those of you in attendance at the 133rd Annual AFS Meeting in Quebec (what an awesome experience!), the North Central Division (NCD) was well recognized: 1) the WI Chapter members were out in force providing cow pies (the chocolate variety!), souvenir cheese wedges, and lighted beer glass necklaces in an attempt to promote the '04 Annual Meeting to be held next August in Madison; 2) **Randy Schultz** (IA) and **Tom Boland** (IA) received 'AFS Distinguished Service Awards' for their hard work with last winters Midwest Fisheries Conference; 3) the MN Chapter shared the 'Most Active AFS Chapter Award' – in fact, this is the second year in a row they have won the award – congrats! (check out the MN Chapter website for a list of awesome accomplishments ...

<http://www.fw.umn.edu/mnafsf/> ; and 4) **Ira Adelman** (MN) and **Chris Kohler** (IL) were installed as AFS President and AFS First Vice President, respectively (Ira's theme for this year will be 'Science to Influence Outcomes'). By the way, you might want to ask Ira about his 'groupies' from Ohio State University!

In a continued effort by the NCD to recruit new members, or even old members who left, into AFS, I've proposed the following plan for 2003-2004: When you recruit a new AFS parent society member ('Young Professional' or 'Regular'), the NCD will reimburse both you and the new member 50% of your 2004 annual dues --- basically you get half-price membership for 1 year! All we need is documentation that a new member joined and that you were listed as the recruiter. The only catch ... this offer has a budget cap of \$2000 and is restricted to within the NCD! What a great opportunity to develop

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Quote of the Issue:

"The power of accurate observation is frequently called cynicism by those who don't have it."

George Bernard Shaw

This is newsletter is published twice a year. Deadlines for submission are April and September 1st. The views and opinions expressed herein are not necessarily those of the NCD. From the website:

<http://www.fw.umn.edu/ncdafs>

Editor: Paul Radomski

PLEASE VOTE!



a strong cohort of 'young professionals' and regain members from the Canadian Chapters!

Speaking of developing strong cohorts, I urge each of you that plan to attend the Midwest Fish & Wildlife Conference to sign-up for the student - mentor activities for the meeting. The planning committee has come up with a cool plan ... check it out ...

<http://www.midwest2003.com/activities/MSRegis.html>

. As for the remainder of the 2003-04 Plan of Work, it will be detailed in a related article within this issue. If you have any questions, concerns, or issues for the NCD, please do not hesitate to contact either Mike Brown or myself (contact info listed on back page). Thanks for your time and I look forward to meeting you either in Kansas City for the Midwest or at your Chapter Meetings this winter!



2003 – 2004 Plan of Work North Central Division – American Fisheries Society

The proposed '03 – '04 Work Plan will focus on three main areas – students, advocacy and Canadian membership. I would like to highlight a few of these thoughts:

Students: A few of us (Tom Lauer [Ball State], Casey Schoenebeck [NCD Student Affairs Chair], and myself) met during the Midwest Fish Conference last year to discuss developing a 'Student Conclave' within the NCD. I discovered during my visits to several Chapter meetings that support and interest exist for such a function. However, our only hurdle was assistance to develop the event. Therefore, I talked with Vince Travnichek (MO) about some options at this year's Midwest and was pleased to see they had a fantastic program geared for students. In addition, Tom Lauer is making plans to develop a 'Student Meeting' within the '04 Midwest to be held in Indianapolis. Finally, we still have not eliminated the possibility of hosting a 'mini' conclave next spring here in Missouri (time and place to be determined). If anyone, particularly students, have an interest in assisting with any of these functions, please contact either Casey or myself. One last comment to the students ... please take advantage of the student travel grants for the Midwest and then sign-up for the Student – Mentor functions!

Advocacy: A voice with solid science is what will bring AFS to the forefront on aquatic issues. I urge all Chapters to continue / expand efforts to provide sound science for local, state / provincial, regional and national decision-makers. Likewise, if there are

issues germane to the NCD, please let us know and we'll act accordingly. All this meshes well with President Adelman's theme of 'Science to Influence Outcomes'.

Canadian Membership: How do we recruit new members (student and professionals) or even regain those that left during the last decade? I don't have any answers other than the incentive plan stated in my "President's message". I do know that we desperately need your/their assistance on many issues. What can the NCD and AFS do to assist with Canadian issues? Sponsor 'A Day at Parliament'? I'll take any feedback on this!

Finally, with tightened out-of-state/province travel budgets faced by all, effective communication between Chapters, Tech Committees, and AFS membership will be key. One of the primary roles of the Division is to facilitate or provide assistance with information transfer between units. Just let us know how we can help.

In keeping with the AFS Strategic Plan, the NCD will focus efforts in the broad categories of Membership Services, Information Transfer and Outreach, and Aquatic Stewardship.

Membership Services:

1. The NCD will participate in the Midwest Fish & Wildlife Conference to be held 7-10 December in Kansas City, Missouri. *(Meets AFS Strategic Plan Subgoal MS 2 – Science-based Information)*
2. The NCD will support the WI Chapter as it makes final preparations to host the 134th Annual Meeting of AFS in Madison on 21-26 August 2004. *(Meets AFS Strategic Plan Subgoal MS 2 – Science-based Information)*
3. The NCD will continue the electronic publication of the Mainstream and notify members electronically when a new edition has been published. *(Meets AFS Strategic Plan Subgoal MS 3 – Electronic Services and ITO 4 – Electronic Information Network)*
4. The NCD will actively recruit new members to the Parent Society. *(Meets AFS Strategic Plan Subgoal MS 4 – Diversity and MS 1 – Professional Development)*
5. The NCD will continue to support the Hutton Junior Fisheries Program. *(Meets AFS Strategic Plan Subgoal MS 4 - Diversity)*
6. The NCD will continue to support student travel to the Midwest Fish & Wildlife Conference with matching travel grants to each Chapter. *(Meets AFS Strategic Plan Subgoal MS 1 – Professional Development and MS 4 - Diversity)*
7. The NCD will continue to sponsor continuing education opportunities for professional development. *(Meets AFS Strategic Plan Subgoal MS 1 – Professional Development; Subgoal ITO 1 – Professional Services)*

Information Transfer and Outreach:

1. The NCD will assist its' technical committees with publishing articles in scientific journals and developing posters promoting aquatic stewardship. *(Meets AFS Strategic Plan Subgoal ITO 2 - Visibility)*

Aquatic Stewardship:

1. The NCD will support the development and implementation of the North American Fisheries Action Plan. *(Meets AFS Strategic Plan Subgoal AS 3 – Local and Global Leadership)*

2. The NCD will support the implementation of the Fisheries Conservation Foundation. *(Meets AFS Strategic Plan Subgoal AS – Aquatic Stewardship, ITO 2 – Visibility, ITO 3 – Collaboration, and ITO 5 – Public Policy)*

3. The NCD will be actively involved in serving as stewards of aquatic resources. *(Meets AFS Strategic Plan Subgoal AS – Aquatic Stewardship and ITO 5 – Public Policy).*

Committee Reports

Awards

By Mike Brown

Division Awards Nominations

The North Central Division of the American Fisheries Society is soliciting nominees within the Division for the Most Active Chapter Award, the Meritorious Service Award, and the Fisheries Excellence Award. Forms to be completed for each award are available in a pdf format at <http://www.fw.umn.edu/ncdafs/awards.html> . Nominations can also be made in a letter format, but must include the information as outlined in the award descriptions that follow.

Most Active Chapter

This award will be given to the North Central Division Chapter that has carried out the most active program of enhancing professionalism and fisheries science, relative to its size and the geographic distribution of its membership. Most often, members will nominate their own chapter. Nomination materials should include the number of members, names of officers, number and type of meetings, special activities, recruitment activities, and a brief (one page) description of what makes this chapter an active and important contributor to the NCD, AFS, and fisheries profession. Additional materials of support may also be included.

Fisheries Excellence

This award will be given to a North Central Division member who has made an outstanding contribution to the fisheries profession. This contribution may be a single activity or a collection of achievements over the individual's career. Former Division

members may be nominated if most of their work occurred while they were NCD members. Nominations should include the names and signatures of at least two nominators, a brief (one page) biographical sketch of the nominee, a brief (one page) narrative of significant contributions made by the nominee, and copies of any additional materials to support the application.

Meritorious Service Award

This award will recognize extraordinary service to the AFS by a NCD member. Nominations may be based on a single outstanding achievement or a variety of service activities, and may include the Chapter, Division, Section or Parent Society level. In the nomination, evidence must be presented that this service has gone beyond the routine and that it has made a genuine and lasting contribution to the betterment of the Society. Nominations should include the names and signatures of at least two nominators, a brief (one page) biographical sketch, a brief (one page) narrative of significant contributions made by the nominee, and copies of any additional materials to support the application.

We encourage you to take this opportunity to honor chapters and individuals who have made outstanding contributions to aquatic resources. Nomination materials for 2003 should be sent to Mike Brown, Department of Wildlife and Fisheries Sciences, Box 2140B NPB 138, South Dakota State University, Brookings, SD 57007-1696, or by email to: Michael_Brown@sdstate.edu. Nominations must be received by October 31, 2003 to receive consideration.

Continuing Education

By Trent Sutton (IN)

Continuing Education Workshop: Effective Educational Web Design

On Sunday, 07 December 2004, Jennifer Foltz will conduct a continuing education workshop to provide current and future fisheries and other natural resources professionals (university and college professors, instructors, biologists, and students) with training in webpage construction for effective communication. Specifically, the workshop will provide instruction on how to effectively construct a web site for educational and research purposes. Participants will understand and be able to implement the following objectives by the end of the course: the web site purpose and its target audience, the purpose of a planned web site architecture and navigation, general knowledge about visual layout and design, introduction to html and photo editing software, and knowledge of American Disabilities Act web compliance guidelines (a short syllabus is provided below). The workshop registration fee is \$100 and all participants will be required to bring their own laptop computer. The minimum number of participants required to hold the course is 20, with a maximum enrollment set at 40 individuals. For additional information, please contact: Trent M. Sutton, Purdue University, Department of Forestry and Natural Resources, West Lafayette, IN 47909; Phone: 765-496-6266; e-mail: tsutton@fnr.purdue.edu

Syllabus:

8:00 – 9:00 am	Uses of web pages in education and research communication
9:00 – 10:00 am	Web site architecture and navigation
10:00 – 10:15 am	Break
10:15 -11:15 am	Web site architecture and navigation continued
11:15 am. – 12:00 pm.	Basic design and color theory
12:00 -1:00 pm.	Lunch
1:00 - 3:00 pm.	Web site visual layout and technology implementation
3:00 - 3:15 pm.	Break
3:15 - 4:00 pm.	Software tools
4:00 – 5:00 pm.	Building example site and worksheets

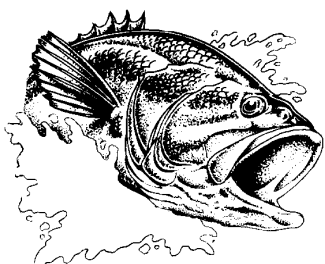
Student Affairs

By Casey Schoenebeck

The Student-Mentor function is taking place at this years Midwest Fish and Wildlife Conference which requires both students and professionals to register on the MFWFC website so they can be paired based on interests. Please sign up at

<http://www.midwest2003.com/activities/MSRegis.html> .

This website enables students, mentors, and employers with job openings to register information about themselves or their positions to help us pair students and mentors and to get job information to the students. By registering, mentors agree to meet with their paired student and treat them to at least one meal anytime during the conference. The Midwest Fish and Wildlife Conference Committee has agreed to reimburse mentors up to \$10. Students and mentors are expected to meet on Monday morning and can make additional meeting and meal arrangements at that time. All students and registered mentors or employers are also invited to a social on Monday evening that will include beverages, snacks, and a projection TV showing the Monday Night Football game between St. Louis and Cleveland.

**Centrarchid Technical Committee**

By Ed Braun (IN)

Chair Ed Braun opened the 9th CTC mid-year meeting on July 29, 2003.

Five presentations were made: Evaluation of limited aquatic vegetation restoration in two small Iowa lakes upon removal of grass carp, Kay Hill, IA DNR; Update on the development of Minnesota's bluegill regulation toolbox, Cindy Tomcko, MN DNR; IDNR permits for aquatic plant control: summary of more restrictive plant removal regulations, Ed Braun, IN DNR; Bluegill growth indices update – a request for data to develop standard relative growth indices for bluegill, Keith Hurley, NE GPC; and Estimating crappie population size, mortality, exploitation, trap-net catchability and temporal variation of catch, Mike McInerney, MN DNR.

The business meeting was conducted on July 30, 2003 with 10 members in attendance.

Black bass database: Fisheries departments for all 50 states were contacted. Surveys were returned from 42 states, which will be compiled and published by Craig Paukert and Mike McInerney.

Lepomis symposium update: Manuscripts have been reviewed and have return dates in August. The symposium will be published in the North American Journal of Fisheries Management (NAJFM).

CTC webpage: The committee webpage is accessed through the division webpage. Keith Hurley agreed to post CTC reports and other pertinent material on the webpage. Thank you, Keith!

Nominations: Eric Weimer, committee representative of the North/South Dakota student chapter, will chair the committee when Ed Braun steps down at the Midwest meeting.



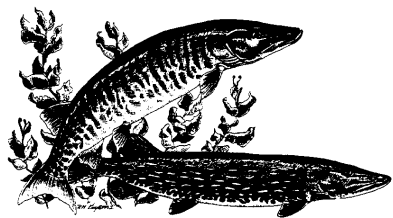
NEW BUSINESS:

Posters: Because of the popularity of the largemouth bass and bluegill posters, committee members will gauge interest in purchasing reprinted posters by aquatic education departments of the states in the North Central division, rather than creating new crappie and smallmouth bass posters. Mike McInerney will contact Steve Fischer who handled the original production of these posters for advice. Thanks Mike.

Midwest Fish and Wildlife conference: The 2004 conference will take place in Kansas City this year. The deadline for paper submission has been extended and committee reps. should encourage people to submit. Joe Bonneau will reserve a meeting room. Thanks Joe.

Updates on states' centrarchid management/research: NE – Bluegill grow well in the Sandhill Lakes, but do best when shad are absent. Shad are apparently the main beneficiaries of automatic feeding programs, based on surveys using rotenone-laced feed. WI – The state is starting to standardize lake surveys. In regard to bluegill regulations, Wisconsin has a 20 bag aggregate limit for bluegill and other sunfish, yellow perch, and crappies. SD/ND – 45 bluegill > 200mm were tagged. In winter these

bluegill were usually tracked in 5-8 ft. water, in heavy vegetation. In summer they were in open water, where zooplankton densities were high. IA – There is an ongoing study of the relationship of bluegill and largemouth bass to lake characteristics and water quality. In regard to renovations, most had a poor cost/benefit ratio and were not used in IA's lakes. MO – A study of bluegill management documented that only 1/3 of MO's lakes produced 8" bluegills. These lakes were characterized by a lack of shad and carp, abundant largemouth bass (> 120 LMB/electrofishing hr.), a watershed ratio of < 20:1, and abundant aquatic vegetation, i.e., vegetation had not been decimated by grass or common carp. Most of the high quality lakes had a surprisingly high biomass of bluegill, going against the commonly accepted idea that only low-density bluegill populations were of high quality. Lakes with 8" bluegills present were the only lakes where regulations (5 bag, 9" limit; 5 bag, 8" limit, C&R) could be used. It would be difficult to tell if regulations were effective, as regulations were only applied to high quality bluegill populations. Bluegill regulations were evaluated by sampling large bluegill, best done at night by electroshocking during the first peak of spawning; sampling later spawnings did not produce large bluegill. C&R lakes had high fishing pressures, > 200 hrs/acre and tended to attract fly fisherman and older anglers. MO has tried to restore aquatic vegetation by killing grass carp and replacing curly-leaf pondweed and southern naiad with water lily and spatterdock. IN – The 18", 2 largemouth bass bag study field work has been completed. In 1 lake where fishing pressure increased from 20 to 200 hrs/acre when a public access was added, most anglers practiced catch and release. Bass anglers encouraged any angler who attempted to keep a bass to release it resulting in negligible harvest. A quality bass population has been maintained, and bluegill size structure was improving.



Esocid Technical Committee

By Daniel Isermann (SD)

The Esocid Technical Committee held their summer meeting at Kemp Natural Resources station near Woodruff, WI during July 9-11th, 2003. The theme of the meeting centered around the assessment and protection of esocid habitat and we heard many interesting talks concerning habitat-related efforts from committee members. Additionally, Anna Sugden-Newbery and Greg Sass from the Center for Limnology, University of Wisconsin Madison, were kind enough to present their findings concerning the importance of woody debris and lakeshore development to fish communities in Wisconsin lakes. Center for Limnology personnel also took us on a tour of Red Rock Lake where some of the research took place. Much of the discussion during the business meeting centered around the upcoming Musky Symposium to be held in Indiana during September 2004. Parties interested in presenting information at the 2004 symposium should contact Daniel Isermann at dan.isermann@dnr.state.oh.us or by phone at 440-352-4194. Steve

Pallo, Illinois Department of Natural Resources, was elected as incoming chair of the committee to be installed at the business meeting to be held at the Midwest Fish and Wildlife Conference this December. Tim Simonson, Wisconsin Department of Natural Resources was elected as chair-elect. Anyone interested in committee activities should contact Daniel Isermann.



Genetics and Biodiversity Technical Committee

By Brian Sloss (WI)

We are looking to re-invigorate this technical committee and would like to remind or inform fellow members of the NCD that we are here for your technical and not-so-technical inquiries regarding genetics and biodiversity issues. Among the items we can assist other committees and state/local chapters with are workshops, technical consultation and potential cooperative work. The Genetics and Biodiversity Technical Committee is made up of individuals with a wide-array of technical and professional expertise, predominately in the areas of genetics and conservation but also including systems-based ecologists with a focus/interest in biodiversity-related items. We will attempt to have an informal gathering at this year's Midwest Fish and Wildlife conference in Kansas City. Any interested members, regardless of background or their preconceived 'qualifications' for this group are welcome to attend and participate in discussing the future directions of the committee. For questions about this technical committee, please contact Brian L. Sloss (brian.sloss@uwsp.edu), Wisconsin Cooperative Fisheries Research Unit, USGS-BRD, University of Wisconsin-Stevens Point, Stevens Point, WI 54481; 715-346-3522.



Ictalurid Technical Committee

By Greg Pitchford (MO)

There will be a full-day Catfish Management and Ecology symposium sponsored by the North Central Division's Ictalurid Technical Committee at the 2003 Midwest Fish and Wildlife Conference in Kansas City, Missouri this 9 December. Not only do we have speakers from many of the Midwestern states, but also some special invited guests from the Southern Division AFS will be presenting. There will also be some catfish-related door prizes that have been donated by the catfish angling industry.

An Ictalurid Technical Committee business meeting will be held at the conference, so State Representatives please plan on attending or send an informed delegate to update us on your state's catfish who, where and whats.

Iowa DNR staff hosted the NCD Ictalurid Technical Committee's Age and Growth Workshop at Lake Rathbun Hatchery in June. Dave Buckmeier (TX Parks and Wildlife Department) and Earl Buckner (MO Department of Conservation) led the workshop, which was a good mix of lecture and hands on activities. Thirty-five participants from ten different agencies spent two days learning how to extract and process pectoral spines, otoliths and vertebrae. Topics such as annuli identification, personnel training and quality control were also discussed. Everyone agreed the workshop was a success. Many thanks to Iowa DNR staff for their hospitality. If you have questions about the workshop, contact Greg Pitchford at 660-646-6122.



Rivers and Streams Technical Committee

By Paul Kanehl (WI)

Our scheduled spring meeting in March in Rock Island, IL had to be canceled due to poor attendance most likely due to shortfalls in state budgets and restrictions on out-of-state travel. We are still planning on having our winter meeting, which coincides with the Midwest Fish and Wildlife Conference to be held in Kansas City, MO, on December 7-10, 2003. We are currently working on several projects, which include:

1. Sponsoring a symposium entitled "Ribbons of Life in the Heartland: Riparian Ecosystems in Transition" to be held at the Midwest Fish and Wildlife Conference in Kansas City, MO.
2. Compiling a Who's Who list of biologists from the various states in the North Central Division for a variety of categories related to rivers and streams.

3. Currently working on a paper entitled: A Survey of Stream Habitat Assessment and Remediation: Programs and Practices in the AFS North Central Division.
4. In the process of putting together a symposium entitled: Dam Removal and Fish Passage: Restoration of Aquatic Ecosystems. This symposium will be held in conjunction with the AFS 134th Annual Meeting to be held in Madison, WI on August 22-26, 2004. Please see the announcement for the 1st Call for Papers for this symposium in this issue of Mainstream.

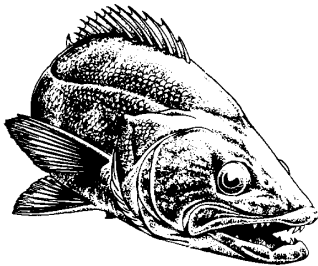
Please check out our website at <http://www.fw.umn.edu/ncdafs> under NCD Committees for all the latest news, Committee officers, and current Chapter Representatives.



Salmonid Technical Committee

By Mark Ebbers (MN)

Interested persons should contact Mark, mark.ebbers@dnr.state.mn.us



Walleye Technical Committee

By Tim Banek (MO)

The summer meeting of the Walleye Technical Committee (WTC) was held at Wausau, WI. Highlights of the technical portion of the meeting were seven presentations from representative of various states and provinces on size-based walleye regulations. Three additional papers concerning stocking evaluations, hybridization, and angler use surveys were also presented.

The meeting was a great success and the hospitality, accommodations, meals, and activities planned by Steve Gilbert and the Wisconsin DNR staff were super.

All those that have an interest in *Stizostedion* sp. are welcome to join us at the winter meeting of the WTC that will be held in conjunction with the 64th Midwest Fish and Wildlife Conference in Kansas City, MO. The WTC meeting is scheduled for Sunday, December 7. For further information, contact Tim Banek, Tim.Banek@mdc.mo.gov.

2003 Summer WTC Meeting Minutes**By Patrick Schmalz, for Donna Hanen Muhm, Secretary**

Chair Tim Banek opened the business meeting of the Walleye Technical Committee at approximately 8:10 P.M. on July 25, 2003 with 33 members in attendance.

Minutes from the 2002 winter meeting: Tim Banek, chair (MO). Minutes from the 2002 winter meeting were approved as published in the Mainstream (John Pitlo moved, Steve Hewett second). Chair Banek read portions of the minutes related to the walleye synopsis.

Financial report: Donna Muhm, secretary (IA). Balance as of November 1, 2002 was \$7,319.38. Interest disbursements from December 1, 2002 through May 31, 2003 totaled \$79.89, and Symposium manual sales were \$620.00. This leaves a balance as of May 31, 2003 of \$8,019.27. Thanks to Don Kline (IA) for this information.

Walleye Management Symposium module publication: Tim Goeman (MN) - handout. A handout from Symposium Editor Tim Goeman was distributed. As of the end of June, 2003, 186 copies of the symposium had been sold at \$10 per copy (\$1,860 in gross sales). A total of 495 copies were ordered, so a healthy quantity is still available. They are housed at the MN-DNR office in Grand Rapids. It does not appear that the WTC has been billed for the reprints (estimated \$1,200 - \$1,400). Sales have slowed considerably. Tim Goeman suggested that at some point the WTC consider methods for distributing the surplus reprints and terminate the project.

Walleye Synopsis Update: Nick Baccante. Nick discussed background behind and development of a walleye/sauger literature synopsis while he worked with the Walleye Unit, so there is a substantial start to such a synopsis (up to 1996). He stressed that this is a large undertaking and that no one will be able to do this off the corner of their desk. He clarified that FAO does not hold the copyright, so there is no need to be concerned about infringement. FAO just happened to have the money at the time to publish the synopsis.



Nick stated that the WTC simply needs to develop a strategy and suggested that the work not be divided among agencies and that a graduate student not be used. Instead he suggested using retired fisheries professionals. In addition, he recommended that a template be developed that describes what needs to be extracted from a publication for the synopsis.

Funding issues were discussed. It was noted that the importance of this work should be impressed upon agencies and that funding it would be beneficial. Alternative sources of funding include AFS and Sea Grant. Nick felt that the cost may not be as high as perhaps anticipated (retired folks may well enjoy working on the project). He also

suggested that the WTC focus on making the synopsis available via the web rather than printing to avoid publishing cost.

Nick offered to provide direction to the project and his previously developed literature synopsis. Finally, Nick recommended that the synopsis be a 'living document' whereby authors or agencies can update as they publish materials.

There was discussion about the potential cost. It was felt that hiring retired fisheries professionals would be cheaper than agencies doing the work. A very rough cost estimate of \$10,000 to \$20,000 was provided as a reference for those contacting potential contractors. Mike Sullivan felt that cost may not be a huge issue to agencies that replied they used the synopsis in the survey.

Neil Billington offered to work with Brian Sloss (UWSP – WI Coop Fish Unit) on the genetics portion of the synopsis. In addition, Neil expressed his support for a web-based synopsis to facilitate fast and easy updates. Finally, Neil suggested that sauger be included in the synopsis.

The group felt that most of the work would be in developing the strategy and template. Once established, a commitment from authors of papers would be necessary to submit the completed template and keep the synopsis updated. No one would have time to assume the workload of adding new publications to the synopsis.

John Pitlo suggested that we simply approach a retired fisheries professional about doing the project. Nick Baccante offered to assist with the template. Discussion led to the determination that the individual must have access to online library searches and abstract services. Nick felt that getting any money at all together could get a lot of work done.



Chair Banek identified the subcommittee (John Pitlo, Steve Newman, Jim Breck, Jeff Hendrickson) and asked for a strategy and decisions to be made on how to proceed.

Steve Hewett moved that the subcommittee contact 3 retired fisheries professionals (Dr. Robert Summerfelt (IA), James Schneider (MI), and Dennis Schupp (MN) to inquire about their interest and potential costs associated with creating the synopsis. Jeff Reed seconded the motion. The motion was passed.

John Pitlo moved that the state representatives on the WTC approach their state's fish chiefs and state AFS chapters for support (\$\$) for the synopsis. Neil Billington seconded the motion. The motion passed.

Neil Billington moved that the synopsis be published as a .pdf file. Dave Luchessi seconded the motion. The motion passed.

Neil Billington offered to have an update on progress toward the genetics portion of the synopsis in a year.

It was determined that John Pitlo will contact Dr. Summerfelt about his interest. Tim Banek will contact Jim Breck (Schneider). Jeff Reed will contact Schupp.

Chair Banek requested clear direction for the synopsis by the winter meeting.

NEW BUSINESS:

2003 Midwest Fish and Wildlife Conference: December 7-10, 2003. Kansas City, MO. The winter WTC meeting will be held on Sunday afternoon, December 7.

2004 Chair/Chair-elect: Chair Banek noted that the WTC had departed from the procedures that are set and were a year behind schedule in finding a new chair and chair-elect. Chair Banek asked for nominations. John Pitlo nominated Jeff Reed (MN) for chair-elect. Nick Baccante nominated Mike Sullivan (AB) for chair (2004). Both accepted nominations.

Thanks were expressed to Steve Gilbert (WI) and others for the planning and execution of the summer meeting. Per usual, well done, Steve!

Steve Gilbert moved that the WTC approve up to \$1,000 to assist the WTC chair travel to the WTC meetings (if needed) that was seconded by Jeff Reed. The motion passed.

Adjournment: John Pitlo made a motion for adjournment that was seconded by Jeff Hendrickson. Meeting was adjourned at 9:35 A.M.



Upcoming Events

Dec 7-10, 2003. 64th Midwest Fish and Wildlife Conference. Crown Center Westin, Kansas City, MO. See <http://www.midwest2003.com>.

May 2-6, 2004. 4th World Fisheries Congress, Vancouver, British Columbia, Canada. The Theme of the 4th Congress is: "Reconciling Fisheries with Conservation: The Challenge of Managing Aquatic Ecosystems". An international array of prestigious fisheries scientists will be giving keynote addresses, and chairing program sessions. In addition, the program contains over 40 sessions that address the most pressing issues in fisheries management in both freshwater and marine ecosystems, along with a special forum for interested industry representatives and non-governmental organizations. The details of the program and venue are provided as they become available on the web page <http://www.worldfisheries2004.org> .

An expression of interest form is included on the web page to ensure you are kept current on all future announcements. We will periodically provide you with an update notice concerning any news and pertinent deadlines related to the Congress.

We will also be calling on all of the Chapters, Sections, and Divisions of the American Fisheries Society to ask assistance in putting on the Congress to ensure the international family of fisheries professionals that visit North America will experience a World Class event. This event will likely be an once-in-a-lifetime event for most of us, so please put these dates on your calendar and make plans to attend now. Contact fish2004@advance-group.com , 800-555-1099.

Aug 21–26, 2004. AFS 134th Annual Meeting, Madison, WI. Contact Betsy Fritz, bfritz@fisheries.org , 301-897-8616 x212

SYMPOSIUM: DAM REMOVAL AND FISH PASSAGE: RESTORATION OF AQUATIC ECOSYSTEMS

AMERICAN FISHERIES SOCIETY - 134TH ANNUAL MEETING

1st CALL FOR PAPERS

SPONSORED BY AFS NCD RIVERS AND STREAMS TECHNICAL COMMITTEE

This symposium will explore dam removal and fish passage techniques as tools for the restoration of aquatic ecosystems in North America. Three main themes will be presented including dam removal issues in the Midwest, fish passage issues throughout North America, and dam removal issues outside of the Midwest. The scope of the symposium will be broad and encompass physical, biological, engineering, and social aspects of both dam removal and fish passage. Particularly encouraged are presentations dealing with efforts to restore streams or rivers after dam removal; fish passage issues including various designs, structures, and effectiveness studies; engineering aspects of dam removals and fish passage designs; and social/community issues associated with dam removal and fish passage.

Some tentative topics so far include:

Impacts of dam removal on stream habitat and stream fish and invertebrate assemblages.

Updates on dam removal efforts particularly in the last 5 years.

Dam removal efforts and related issues (i.e. safety issues, community issues).

Water quality and sediment issues associated with dam removals.

Engineering aspects of dam removal and fish passage.

Fish passage designs, structures, issues, and costs (particularly nature-like bypasses).

Alternatives to fish passage structures (e.g., capture and transport, use of locks).

Fish passage at large navigation dams.

If you are interested in making a presentation at this symposium, or would like further information, please contact: Paul Kanehl, Wisconsin Department of Natural Resources, 1350 Femrite Drive, Monona, WI 53716; 608-221-6332, Fax: 608-221-6353, e-mail: Paul.Kanehl@dnr.state.wi.us . Please circulate this announcement among interested colleagues!

Other Fisheries Events:

A good source of these happenings is: <http://www.fisheries.org/Calendar.shtml>

Chapter Reports

Dakota Chapter by Steven Krentz

This year's annual Dakota Chapter meeting was held in Mandan, ND as a joint meeting with the North Dakota Chapter of the Wildlife Society. Several keynote speakers were invited to discuss "Contemporary Issues Affecting Fish and Wildlife in the Dakotas". This session was well received and provided excellent insight from South and North Dakota and Tribal representatives on the resource management challenges, current and future.

The business meeting provided several discussion points including the development of a memorial in honor of Dr. James C. Schmulbach, who passed away this last year, the organization of a South Dakota State University Subunit chapter for students, election of next year's officers, and reports from the various standing committee and NCD Tech Committee Representatives.



Incoming officers include: Wayne Stancill who will take the presidential reins in October at the next EXCOM meeting along with Scott Elstad as president-elect, Brian Blackwell as vice-president, and Jason Sorensen as Secretary/Treasurer.

This year, in an attempt to provide our message to more potential members, the Chapter under the guidance of Mike Barnes, developed an outreach poster outlining the benefits and advantages of joining the American Fisheries Society.

The Chapter assisted with sponsorship and participated with the annual Black Hills All American Fishing Derby during June. This event has been well attended and well organized to promote fishing, having fun, and aquatic resources.

Illinois Chapter by Bob Schanzle
The Illinois Chapter of the American Fisheries Society –
1963 and Today by Rod Horner



Al Lopinot, Chief Fishery Biologist of the Illinois Department of Conservation, wrote a letter in 1962 to all Illinois fishery workers known to him, suggesting that a meeting take place to form a local chapter of the American Fisheries Society. The first organizational meeting of the Illinois Chapter took place February 28-March 1, 1963 in Carbondale, Illinois, hosted by Southern Illinois University's Department of Fisheries. For several years, biologists and scientists of the Illinois Department of Conservation, Illinois Natural History Survey, Southern Illinois University, Illinois State University and



Photo 1. The chapter's first officers. Left to right: William Starrett, vice president; Al Lopinot, president; Leo Rock, secretary-treasurer.

private companies interested in aquaculture had been meeting informally. Their purpose was to share information on their programs, report on research and management, and exchange views. Lopinot and George Bennett of the Illinois Natural History Survey put together the first program of scientific papers to be presented. Forty-seven people were in attendance, and voted in favor of the formation of a new state chapter. The officers elected were Al Lopinot, president, Dr. Bill Starrett, vice president, and Leo Rock, secretary/treasurer. The Illinois Chapter was formally recognized by the American Fisheries Society March 5, 1963, the same day as the Idaho Chapter, making us the third and fourth state chapters to be formed, after the Portland Chapter (1962) and the Missouri Chapter (February, 1963).

Although the number of members and the attendance at the annual meeting has more than doubled, the original purpose for which the Chapter was formed remains unchanged. That is the sharing of information among people interested in fisheries science. Over the years, the Illinois Chapter has begun to take a more proactive stance on fisheries issues, maintaining a seat on the board of the Illinois Environmental Council and speaking out in position papers on important fisheries issues of the day. One important change that has taken place is the formation of the student subunits at the University of Illinois and Southern Illinois University. These subunits are an important investment in the future and inject needed vitality and enthusiasm into the organization of today. The annual meeting gives many of these students their first opportunity to present a scientific paper to an audience of fisheries professionals. The number of professional people working in the field of fisheries science continues to grow and their need for the forum provided by the Illinois Chapter of the American Fisheries Society remains undiminished.



Photo 2. Chapter officers, March 2003, the Chapter's 40th anniversary. Left to right: Dave Bergerhouse, past president; Bob Schanzle, president-elect; Gary Lutterbie, president; Bruce Lippincott, secretary-treasurer; Steve Pallo, secretary-treasurer elect.

Indiana Chapter by Kent Hanauer

IAFS held a fall business meeting on September 5. We installed a new Chapter President, Kent Hanauer, and President-Elect, Trent Sutton. Dave Kittaka remains the Chapter Secretary-Treasurer for a second term. The Chapter presented Past-President, Jim Luttrell, with a certificate of appreciation for his service to the Chapter. Our next meeting will be in early March most likely in the Lafayette/West Lafayette area with the topic Multiple Sampling Efforts on Aquatic Resources and a technical paper session.



Michigan Chapter by Jay Wesley

The Michigan Chapter of the American Fisheries Society held its annual business and technical meeting on Thursday March 6th at the Kellogg Center on the campus of Michigan State University in East Lansing. Kurt Newman, Chapter President, welcomed more than 80 members and guests.



Highlights of this year's business meeting included the presentation of awards and installation of new officers. Ellie Koon was presented with the Chapter's Award of Excellence for her years of dedicated service to the chapter. Richard Schorfhaar was recognized for his outstanding professional achievement in the field of fisheries with the Justin W. Leonard Award. The Hazard Award for excellence in student research was presented to Todd Wills (Michigan State University). The Student Travel Grant to the Michigan annual meeting was awarded to Dan Armichardy (Northern Michigan University) and Brad Thompson (Michigan State University) received the Student Travel Grant to the Parent Society annual meeting. The 2002 NCD-AFS Fisheries Excellence Award was presented to John Hnath for his years of contributions to the fish health field. Jay Wesley was installed as the new President, and Jessica Mistak was inducted as President-Elect for 2003.

The technical session began with the theme of "Fish Health in Michigan". Gary Whelan gave presentations on Michigan's experience with whirling disease and the emergence and spread of largemouth bass virus. Martha Wolgamood presented information on Early Mortality Syndrome, and Dr. Mohamed Faisal discussed implications of fish disease on fish populations. The session continued with six general technical presentations along with six technical posters that were on display during lunch and breaks. The best student paper was awarded to Dan O'Keefe (Central Michigan University) who gave a presentation on river redhorse in Michigan.

The chapter has been advocating for aquatic habitat protection. A resolution passed supporting the authority of the Michigan Department of Natural Resources to establish a system of designated Natural Rivers to provide the protection and reasonable use of important rivers under provisions of Natural Rivers Part 305 of the Michigan Natural Resources and Environmental Protection Act 1994 PA 451. Following the lead of the Parent Society, a letter was written to the Environmental Protection Agency in regards to a decision to draft new regulations under the Clean Water Act that would redefine waterways covered in the act. The chapter also took a position against a bill that would relax regulations regarding beach maintenance and dredging within Michigan's Great Lakes coastal wetlands and bottomlands.

Doug Workman has been very busy updating the chapter's web site and organizing continuing education classes. A basic/intermediate GIS course designed for professionals in the fisheries and aquatics fields was provided in August. A second course is being offered in September on the statistical aspects of sampling freshwater fish populations and habitats.

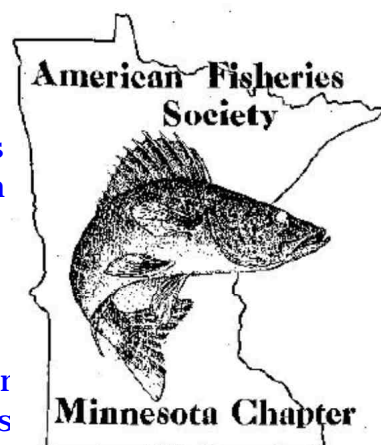
For more details, please visit the MI-AFS website:

http://www.fw.msu.edu/orgs/mi_afs/index.html

Minnesota Chapter by John Hiebert

We were involved this spring legislative season in writing letters opposing the inter basin transfer of water to Devil's Lake and in support the enlargement of the CREP program include the Mississippi River in the SE and the Red River.

Chapter members were active judging aquatic biology projects at the local and state science fairs. The Chapter sponsors awards at each of the regional fairs and two award for the state science fairs. Four chapter members were also Hutton mentors this year.



I attended the Parent Society annual meeting in Quebec and the Chapter received the most Active Chapter Award for the second straight year, we shared it this year with the Cal-Neva Chapter. Also at the meeting, Chapter member Julie Zimmerman was runner up for the J. Francis Allen Award (she is a Ph.D. student of Bruce Vondracek's) and Ira Adelman was installed as president of the Parent Society.

The MNAFS Annual Meeting is tentatively scheduled for March 15-17, 2004 in St. Cloud and we are planning on holding a joint meeting with the newly formed Minnesota Chapter of the Society of Conservation Biology.

Shannon Fisher contacted me having the Chapter co-sponsor a Shallow Lakes Forum. It would be sponsored by a variety of groups including MNAFS, DNR, MLA and others. I am attending a planning meeting in September and the meeting is tentatively scheduled for the 31st of March and the 1st of April in Mankato. It will discuss management of shallow lakes and increasing development pressure on these lakes as more traditional recreational lakes become fully developed.

We have held two continuing education workshops. The first in May put on by Dave Fulton was related to Human Dimensions in Fisheries Biology and the second course held the last week of August, covered the topic of Stream Assessment and Monitoring. Two more courses will be offered this year: a stream rehabilitation course in September, while we are planning a spatial statistics class for this winter.

Southern Ontario Chapter

The Chapter sponsored a fully searchable database for all Ontario freshwater fishes including introduced, extirpated and extinct species. Containing current information pertaining to life history, habitat, size and age, distribution, status and reproduction for



149 species, 3 subspecies and 2 established hybrids. Includes photographs, range maps, notes, references, glossary of terms and related web links. Check it out at: <http://www.afs-soc.org/fishdb/index.htm>

Wisconsin Chapter by Phil Moy

Much of the activity of the Wisconsin will be devoted to the 2004 AFS meeting, which will be held in Madison next August. The Chapter, WI DNR and Trout Unlimited sponsored travel for six planning committee members to attend the AFS meeting in Quebec. For more information about the meeting contact Phil Moy, General Chair at pmoy@uwc.edu or Bruce Vondracek, Program Chair at bcv@fw.umn.edu.



Our next chapter meeting will be held jointly with the Michigan Chapter in Menominee-Marinette. The dates and theme for the meeting have yet to be confirmed. I would like to encourage greater chapter participation by more university and other non-DNR members in chapter activities.

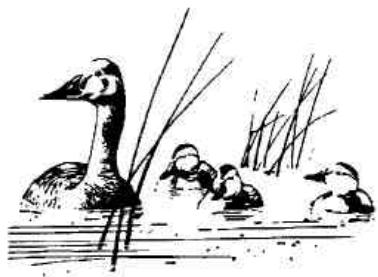


Contributions

You are invited to submit articles, editorial replies, notes, pictures, etc. for this space.

Illinois Chapter Issues Challenge

At the August 9, 2003 AFS Governing Board meeting in Quebec City, past president Carl Burger, head of the executive committee for the 2004 World Fisheries Congress in Vancouver, British Columbia, noted that there is a need for contributions to support attendance at the Congress by international scientists who lack financial support. The executive committee of the Illinois Chapter has authorized a contribution of **\$500.00** to be used for this purpose, and wishes to challenge the other North Central Division chapters to match, or better, its donation. At this crucial time for international fisheries, let's all pitch in to ensure that key individuals have a seat at the table! Contributions may be sent directly to the American Fisheries Society.



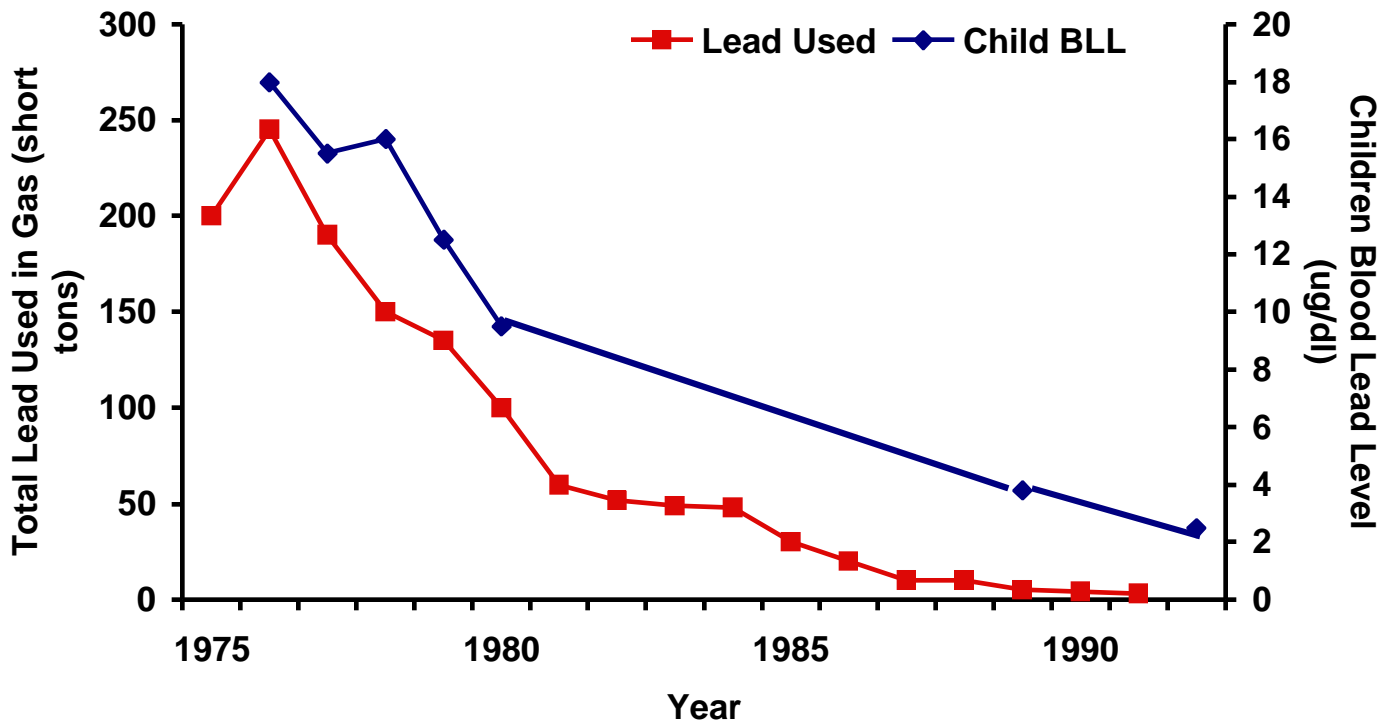
Against the Current (Editorial)

Business Feeds Us Lead, and 'No Lead'-ership from Fisheries Agencies

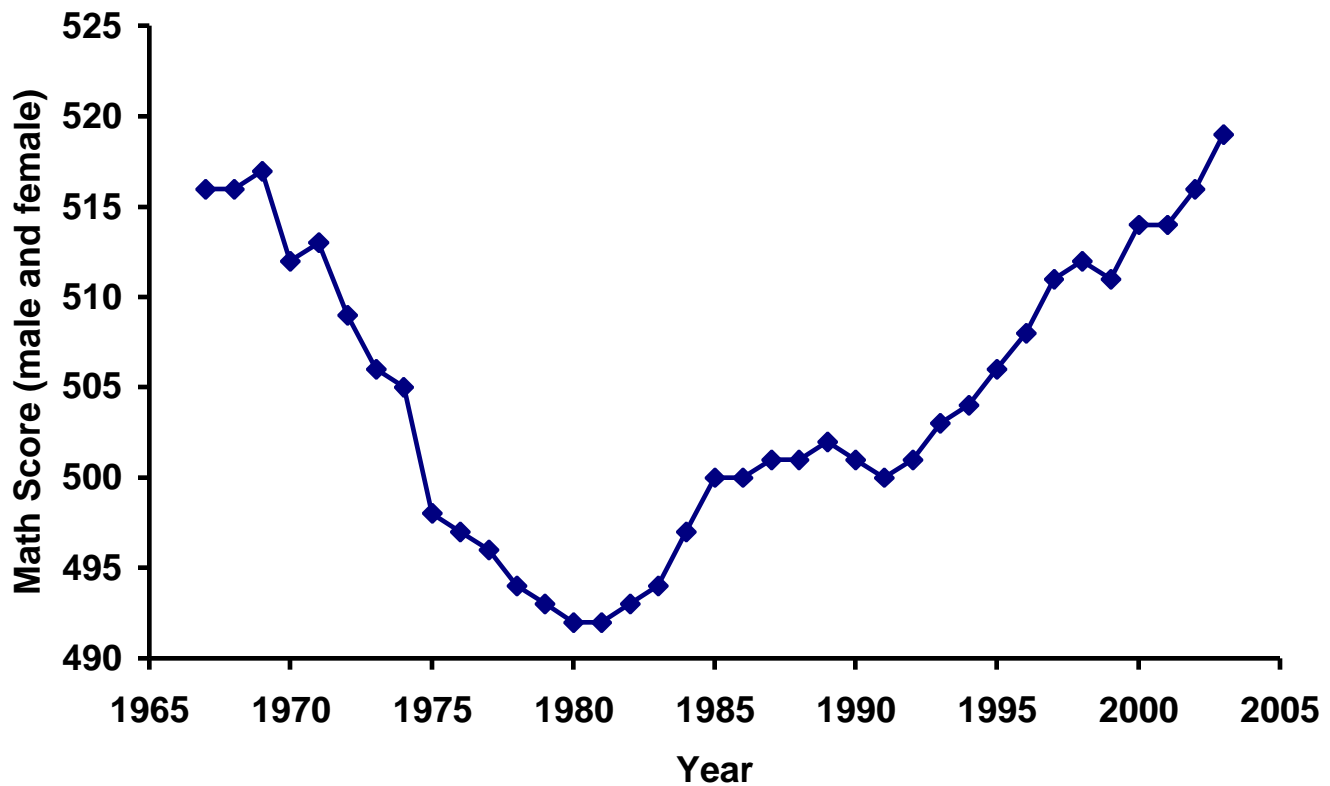
Several people have heard me say, "I am a half-wit but I would have been a genius except for lead in my childhood environment." I do believe this. Lead has been feed to us by business for a profit, with business leaders apparently ignoring the negative consequences with wishful thinking or malice¹. Lead in fishing tackle may not be as notorious as lead added to gas and paint, which I'll talk about first, but one needs to ask when lead tackle will be outlawed in the U.S. and Canada like what happened to lead shotgun pellets for waterfowl hunting.

Metallic lead is odorless and tasteless, and it does not dissolve in water. Most lead compounds are inorganic, however lead combined with other compounds can have different characteristics from that of metallic lead. Alkyl-lead compounds are mostly the result of mankind (combining an organic molecule to a lead atom produces these compounds). The most common alkyl-lead compound is tetraethyl lead ($\text{Pb}(\text{C}_2\text{H}_5)_4$), which is used as an anti-knocking agent in gasoline. The internal combustion engine produces lead halides when using gas with tetraethyl lead added, which leads to airborne lead particles. U.S. began phasing lead out of gasoline in the 1970's (the 1990 Clean Air Act Amendments prohibit the use of leaded gasoline for on-road auto use). There is a strong relationship between the amount of lead used in gasoline and children's blood-lead levels².

A high percentage of very young children were exposed to potentially dangerous levels of lead prior to the 1980's. Data gathered between 1976 and 1980 revealed that 88.2 percent of children between the ages of one and five had blood lead levels which have been shown to have adverse health effects. Subsequent data gathered between 1988 and 1991 found that only 8.9 percent of children had hazardous levels of lead in their blood. This dramatic decrease has been attributed primarily to the removal of lead from gasoline and from soldered food and soft drink cans. Other contributing factors have been the ban on leaded paint for residential use in 1978, the ban on lead in solder for household plumbing, and the ongoing screening of children for lead exposure. Deteriorating lead-based paint in older homes and lead-contaminated dust (from migration of lead from the soil to interior household dust) are the primary source of lead exposure for children in the United States today.



Average SAT Scores of Entering College Classes, 1967–2003



The National Health and Nutrition Examination Surveys (NHANES), conducted by the Centers for Disease Control (CDC) National Center for Health Statistics, have been tracking blood lead levels (BLLs) in the United States since the 1970's. Special attention is given to BLLs ≥ 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$). Many studies point to a link between BLLs ≥ 10 $\mu\text{g}/\text{dL}$ and harmful health effects, in particular learning disabilities and behavior problems.

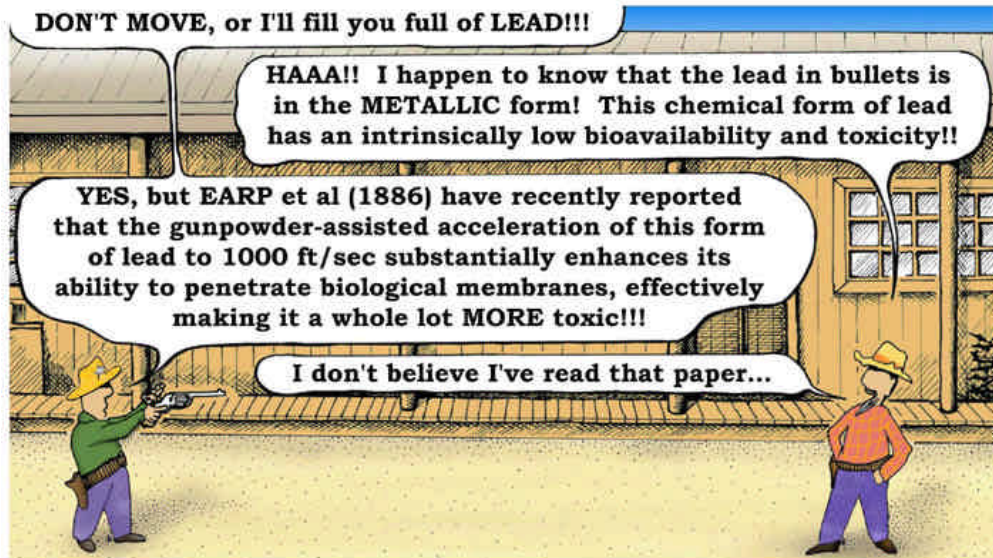
Is it any coincidence that SAT scores have been increasing since the early 1980s, after declining through the 1970's? I entered college in 1979 when a cohort of lead-produced simpletons began hitting the books.

Industry Denial and Corruption

The negative consequences of lead exposure were known by the early 1900's. Yet beginning in the 1920's the Lead Industries Association and the executives of lead-producing businesses extensively promoted the use of lead, often using children in their ads³.

In a fascinating article in *The Nation*, Jamie Lincoln Kitman reports on the history of lead added gas and the corrupt business leaders behind the poisoning of our planet and its citizens⁴. In a drive for profit, 68 million U.S. children had toxic exposures from leaded gas from 1927 to 1987, resulting in reduced IQ, behavioral and learning difficulties and hyperactivity. Seven million tons of lead now exists in the soil, air, water and animals in the U.S. The EPA estimated that this pollution cost the U.S. billions each year. According to Kitman, you can thank the rich executives of General Motors, Du Pont and Standard Oil (Exxon) for the stupidification of Americans. Government was slow to respond—it too corrupted by corporate money. Safer antiknock additives were known and available but business leaders influenced government regulators to not pursue them, and with the help of business, government covered this fact up and helped spread the use of leaded gas to other countries (some which continue to burn leaded gas to fuel the profit needs of the rich). The World Bank estimated that the U.S. saved money in its conversion from lead added gas to unleaded due to reduced health costs (5000/year died annually from lead-related heart disease), fuel efficiency, and engine maintenance (no-lead fuel can increase engine life by as much as 150% over leaded gas).

Global phase-out of leaded gas is likely years off. Evidently, more poisonous profit yet needs to be made for several U.S. companies. Octel Corp., a Delaware company, is the world's leading producer of tetraethyl lead. Ethyl Corp., a Virginia company, also is a leading global supplier of petroleum additives. Tetraethyl lead provides strong cash flow for Ethyl. I guess executives from both companies believe their own marketing, which touts the benefits of lead.

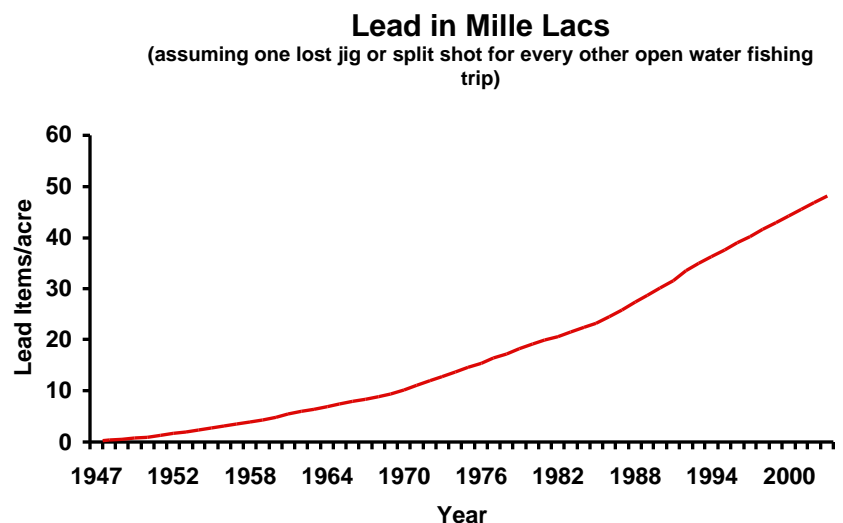


ENVIRONMENTAL SCIENTISTS IN THE WILD WEST

Are there parallels between the paint-gas industries and the fishing tackle industry in profiting off the toxic spread of lead in the environment? Metallic lead is less dangerous to us, but the widespread distribution of lead by anglers has an environmental impact.

More than 2,700 tons of lead sinkers are sold in the U.S. annually and 400-550 tons in Canada. Accidental sinker loss results in a substantial amount of lead deposition in wetland environments^{5,6}.

How much lead is accumulating on the bottom of our lakes and streams? The statistics of lead sinker and jig loss in Minnesota are not common. Assuming that an average walleye angler might lose one sinker or jig every other fishing trip produces a staggering number of lead items on the bottom of our lakes. To the left is a calculation of potential lead items in Mille Lacs, a popular walleye lake in Minnesota (132,516 acres), with this assumption and knowledge of fishing pressure through time. It is likely however that lead items are concentrated in the shallow, rocky areas of the lake where anglers are more likely to lose tackle. Shallow, rocky areas in Mille Lacs may constitute about 10% of the bottom, so that the densities of lead items could be much higher in these high bioavailability areas.



Lead and Loons

Lead sinkers and jigs are killing loons and other animals in Minnesota and elsewhere^{7,8,9}. Almost half of the 600 dead or dying loons examined by the Wildlife Clinic at Tufts University School of Veterinary Medicine suffered from lead poisoning from eating lead fishing tackle. Loons consume lead tackle while they are picking up grit for digestive purposes. Lead from fishing tackle is the culprit in loon lead poisoning. Toxic levels of lead were found in every loon that had eaten lead tackle. In Canada, adult loon mortality from sinker ingestion was estimated to be about 30%¹⁰. About 17% of adult loon deaths in Minnesota could be traced to lead poisoning from fishing tackle¹¹.

Sportfishing Industry Mobilizes

Just because loons are dying from lead poisoning is no reason to ban lead tackle according to the American Sportfishing Association (ASA)¹². The ASA argues that the self-sustainability of loon populations are not, at this time, threatened by lead tackle. ASA agrees that loons are dying from lead poisoning, but they note that loon populations are holding steady. Thus, why worry.

Vern Wagner, Minnesota B.A.S.S. Federation, noted in a recent Outdoor News article that “fishermen and women who have spent thousands of hours on the lakes of Minnesota have never encountered a dead loon”, and concluded that lead fishing tackle is likely a small factor in mortality. I suspect that many people have not encountered dead great blue herons along shore either, yet they must be dying from natural or manmade causes or herons would be covering the planet by now. Just because somebody doesn’t notice it doesn’t mean that it doesn’t happen.

The ASA, in contrasting lead shot and lead sinkers, states “it is not predetermined that any lead fishing sinkers will be left in the water, although it is likely that some will be lost over the course of a season.” The ASA recently killed lead fishing sinker legislation in Minnesota, with the help of Cabela’s, Normark/Rapala Corp, Water Gremlin Co., Lindy Legendary Fishing Tackle, Northland Tackle, and Do-It Corp. The proposed legislation would have prohibited the use of tackle containing lead weighing an ounce or less.

Government Responses

In 1994, the EPA proposed a ban on the manufacture, sale, and use of lead fishing tackle. The Agency found that even a single lead sinker can produce lethal lead poisoning and in sensitive species even individual mortalities can have population-level effects. No actions were taken on the EPA’s proposed ruling.

New Hampshire, Maine, and New York have restrictions on lead tackle. In 2000, New Hampshire became the first state to ban lead sinkers and jigs to protect common loons

and other diving birds. The law bans the use of lead sinkers 1 ounce or less and jigs less than 1 inch long on freshwater lakes and ponds. In 2002, Maine enacted a similar law. New York State recently passed legislation that will prohibit the sale of certain lead sinkers. Beginning in May 2004, the sale of lead fishing sinkers (including "split shot") weighing one-half ounce or less will not be permitted. Canada has prohibited the use of lead tackle on all National Parks and National Wildlife Areas. Only non-toxic alternatives to lead are allowed for fishing in Yellowstone National Park.

In Minnesota, the Department of Natural Resources (DNR) Fisheries Director recently cited the ASA arguments related to no apparent loon population consequence as reason not to pursue lead tackle legislation. Mark Holsten, DNR Deputy Commission, stated at the Minnesota 2003 Fall Fisheries Managers Conference that lead in fishing tackle will someday not exist, but that he would not put in the effort necessary to realize that day any time soon.

The Parallels

Like child lead poisoning, wildlife poisoning will continue until the corporate executives of these lead-producing industries have the foresight to divert their lead profits to investments that produce less poisonous products. Like the antiknock issue, there are alternatives to lead in fishing tackle. Steel, tungsten, bismuth and other nonpoisonous alternatives for sinkers and jigs could be used.

"Voluntary efforts just aren't enough," said Ken Finch, of the Minnesota Audubon Society, in a recent Duluth News Tribune article by John Myers in reference to the conversion of lead tackle to alternative. However, that is exactly what Minnesota is hoping will make a difference. It is a start.

Minnesota's multimillion-dollar fishing tackle industry is profiting from lead, and they may not bear any of the environmental costs like the gas additive and paint manufacturing industry. Minnesota government will likely be ineffective at regulating this industry for some time much like the agencies responsible for clean air with leaded gasoline issue. I suspect most states will not enact legislation banning lead fishing tackle for sometime. When the environment comes up against profit, it is seldom that profit loses.

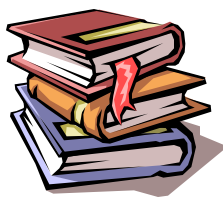
What is your state or province doing to understand lead fishing tackle? Are we directly or indirectly complicit in the poisoning of our lakes and streams? Would it be best that the federal government act to ban lead in some fishing tackle to address the industry want of consistent regulations?



References:

- 1 - Deceit and Denial: The Deadly Politics of Industrial Pollution, by Gerald Markowitz and David Rosner, (Berkeley: University of California Press/Milbank Fund, 2002, ISBN: 0520217497)
- 2 – USEPA. Great Lakes Binational Toxics Strategy. U.S. challenge on alkyl-lead: report on use of alkyl-lead in automotive gasoline.
- 3 – <http://www.cincinnatichildrens.org/research/project/enviro/hazard/lead/lead-advertising/default.htm>
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- 5 – USEPA 1994. Lead Fishing Sinkers: Response to Citizens' Petition and Proposed Ban, Proposed Rule. U.S. Environmental Protection Agency, Washington, DC.
- 6 – Scheuhammer, A. M. and S. L. Norris. 1995. A Review of the Environmental Impacts of Lead Shotshell Ammunition and Lead Fishing Weights in Canada. Canadian Wildlife Service, Ottawa, ON.
- 7 – Lead Toxicosis from Ingested Fishing Sinkers in Adult Common Loons (*Gavia immer*) in New England. M. Pokras. 1992. Journal of Zoo and Wildlife Medicine 23(1):92-97.
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<http://www.tufts.edu/vet/loons/loon.html>
- 9 – Sanborn, W. 2002. Lead poisoning of North American wildlife from lead shot and lead fishing tackle. HawkWatch International, Inc., Salt Lake City, Utah.
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- 11 – Ensor, K. L., D. D. Helwig, and L. C. Wemmer. 1992. Mercury and Lead in Minnesota Common Loons (*Gavia immer*). Water Quality Division, Minnesota Pollution Control Agency, St. Paul, MN.
- 12 – http://www.asafishing.org/content/govtaffairs/gais_lead.cfm

These comments represent the views of the editor (Paul Radomski) and not necessarily those of the NCD-AFS Governing Board or the membership.



Interesting Publications

Hilborn, R. 2002. **The dark side of reference points.** Bulletin of Marine Science 70(2):403-408.

Recreational Fisheries: Ecological, Economic, and Social Evaluation. 2002. T.J. Pitcher and C. Hollingworth, editors. Blackwell Publishing. ISBN: 0632063912
Recreational fisheries represent a worldwide multi-billion dollar industry. This book illustrates how costs and benefits of recreational fishing are evaluated at regional, national and international levels, using surveys from four continents and appropriate supporting material.

NEW HEINZ CENTER REPORT ON DAM REMOVAL RESEARCH (submitted by Ed Braun)

From The H. John Heinz III Center for Science, Economics and the Environment:
The Heinz Center has released its latest report, Dam Removal Research: Status and Prospects. This new book offers expert insights into the many aspects of a decision on whether or not to remove a dam. In the spring of 2002, The Heinz Center released Dam Removal: Science and Decision Making.

The Heinz Center held a workshop in October 2002 for more than thirty dam removal specialists, ranging from physical and social scientists and legal experts to decision makers and managers. The focus was on science and the state of knowledge available to decision makers, rather than on whether a particular dam should be removed or not. Experts presented papers on such topics as social perspectives on dam removal, the economic aspects of small dam removal, environmental considerations, and legal and regulatory requirements. Besides these individually authored chapters, Dam Removal Research: Status and Prospect, edited by William L. Graf, includes a summary of the workshop discussions.

To obtain a free copy of Dam Removal Research: Status and Prospects, contact Judy Goss at 202-737-6307. The report is also available as a PDF file at <http://www.heinzctr.org>.

William L. Graf, editor, Dam Removal Research: Status and Prospects.
Washington, DC: The H. John Heinz III Center for Science, Economics and the Environment. xii + 152 pages, illustrated. ISBN 0-9717592-4-3.

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Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Cnidaria and Ctenophora, Second Edition. Stephen D. Cairns et al.

The purpose of this volume (an update to the first edition and now with a CD-ROM) is to provide a checklist of species and to recommend selected common names for North American Cnidaria and Ctenophora, thereby achieving uniformity and avoiding confusion in the nomenclature of their common names. In addition to stabilizing common name nomenclature, this list will heighten public awareness of the diversity and wide distribution of cnidarians in North America, help identify taxonomic groups in need of systematic revision, and serve as a preliminary guide to the literature required for the identification of species. This text lists more than 1,300 taxa of jellyfishes, hydroids, corals, anemones, and comb jellies and sets the standard for vernacular names of the more widely known species. This book also includes an index, extensive references and bibliography, and annotated changes from the first edition. Special Publication 28. 115 pp., + 32 color photographs, paper, March 2003, Book and companion CD: Stock number 510.28P, ISBN 1-888569-39-5, List Price: \$39, AFS Member Price: \$27

Strategies for Restoring River Ecosystems: Sources of Variability and Uncertainty in Natural and Managed Systems. Robert C. Wissmar and Peter A. Bisson, editors

Fisheries and natural resource managers and policymakers need more efficient procedures for identifying sources of variability in ecosystems (natural and managed) and assessing uncertainties of managing and making decisions for developing and implementing river restoration strategies. This book seeks to integrate perspectives on variability of physical and biological functions and concepts of uncertainty in natural and managed systems, into strategies for renewing and conserving river ecosystems. The book explores approaches to understanding and communicating the processes contributing to the variability of different types of river systems, and to assessing major sources of uncertainty in natural and managed river ecosystems. 276 pp., paper. Stock Number: 550.44, List Price: \$69, AFS Member Price: \$48, ISBN 1-888569-46-8

A Guide to Sampling Freshwater Mussel Populations. David L. Strayer and David R. Smith

Assessing mussel populations accurately and efficiently requires knowledge of both statistical principles and mussel biology. The purpose of this guide is to provide practical advice to environmental professionals to help them choose sound designs and methods for assessing freshwater mussel populations. The authors critically review sampling

designs and methods that might be useful for sampling freshwater mussel populations and offer exemplary designs to meet several common objectives. The guide is largely compiled from published works, although some new, unpublished material is included, and brings together into a coherent, compact form the information needed to design mussel surveys and assessments. AFS Monograph 8. 110 pp., paper, June 2003, Stock Number: 520.08, List Price: \$55, AFS Member Price: \$38, ISBN 1-888569-50-6

Mysteries from the Yukon: The Adventures of a Junior Biologist. Lawrence S. Buklis

Flowing through the heart of Alaska, the Yukon River is the scene for stories of mystery and adventure. Searching for lost gold from the Klondike, chasing thieves in a blinding snowstorm, plunging through raging waters on a hydropower project gone wrong-- three fast-paced adventures await readers in grades 5 through 9. Mystery and adventure of another kind await as well. Have you ever dreamed of working in the great outdoors? To call it your job to work in places others can only hope to visit? Have you wanted to discover how natural systems work, to explore frontiers still to be found? Through the experiences of a fishery biologist and his family on the legendary Yukon, these adventures help feed the dream: could this be me? 217 pp., paper, June 2003. Stock Number: 550.46, List Price: \$21, AFS Member Price: \$15, ISBN 1-888569-52-2



Division Business Stuff

Candidates for North Central Division Office 2003-2004 First Vice-President

Candidates:

Brad Parsons
Mark Porath

Brad Parsons

Brad is a Fisheries Research Scientist with the Minnesota Department of Natural Resources in Glenwood, and has been since 1987. His current projects include a shallow lake biomanipulation project, a 50-lake walleye stocking evaluation, recruitment dynamics of black crappie and yellow perch, and writing the largemouth and smallmouth bass chapters for Fishes of Minnesota. Previous projects have included stress responses and overwinter survival of walleye fingerlings, sampling techniques, centrarchid population dynamics and exploitation, and predator-prey relationships.

Brad is a Certified Fisheries Scientist, and has been an AFS member since 1985. He received a BS from the University of Wisconsin-Stevens Point in Water Resources and Biology in 1984, and an MS from the University of Wyoming in zoology and physiology in 1986. His service to the Parent Society has included the Most Active Chapter Committee (1995-97), serving as an Associate Editor for the North American Journal of Fisheries Management (2000-present), and the current AFS Strategic Plan Revision Committee. Division activities include serving as chair of the presentation awards at the Midwest Fisheries Conference (2002) and providing comments on a use of fishes position statement. A member of the Minnesota Chapter since 1987, Brad has served as newsletter editor (1988-1993), Procedures Manual chair (1995-1998) and Chapter President in the 2000-01 year. He is also a member of the AFS Early Life History Section, and the NCD walleye and centrarchid technical committees.

“Nearly all my recent projects have involved close working relationships with others, from our management biologist and hatcheries, to the division of wildlife, to universities in four states, other state DNR’s, and tribal resource agencies. These collaborations could never have succeeded without a commitment to communication and cooperation. I believe these things apply just as strongly to the North Central Division. Most of the excellent activities our Chapters undertake started as one person’s simple idea, but really took off when the idea was communicated, and other Chapter members cooperated to see it through. A primary role for our Division should be to increase communication among Chapters, so that the successful projects developed in one Chapter can be more easily implemented by another. Two examples are the Missouri Chapter’s disabled angler equipment library, or the Minnesota Chapter’s awards to students with outstanding aquatic projects at the state Science Fair. We all have limited time, but all Chapters want projects that define our commitment to the resource and the future. More communication can only help us to succeed, but keep from reinventing the wheel, and avoiding pitfalls others have faced. These same principals apply to our excellent Technical Committees.”

“In the 1998 NCD member survey, the single most important reason people selected for membership in AFS was to promote increased national, regional, statewide, or province wide public awareness of fisheries issues. There are some big ones out there. I envision the Division working with the Wildlife Society and other groups to promote scientific, ecologically sound resolutions and policies dealing with the Missouri River water wars, the proposed lock and dam expansion on the Mississippi River, and Asian carp. I would also encourage Chapters to stay in touch with the Division officers when writing letters or resolutions on more local issues. There may be another Chapter dealing with something similar, with a perspective that may strengthen your stand. The Division can act as a liaison in these situations to help keep us from missing some opportunities.”

“Finally, I would like to explore ways to revitalize the Salmonid and Great Lakes Technical Committees, perhaps through cooperation with the International Association of Great Lakes Research or the Great Lakes Fish Commission. Cooperation with the

Canadian Aquatic Resources Section may also help determine ways the Division can support, revitalize, and benefit our three Canadian Chapters.”

Mark Porath

When Chris asked me to be a candidate, I was both flattered and a bit overwhelmed at the prospect of serving. Leading the NCD is both an active and important role for the diverse membership of AFS. Many of the issues concerning the continued wise stewardship of our aquatic resources are central to our employed positions and professional responsibilities. The varied perspectives and backgrounds of the individuals and groups driving policy and legislation on these issues, requires an enhanced level of partnership and professionalism to be effective in implementing beneficial programs. Being active in AFS prepares individuals to fully participate and be at the forefront of making these positive changes for the benefit of our aquatic resources.

My educational background includes a B. S. in Biological Sciences and a M. S. in Fisheries from the University of Nebraska. As a Fish & Wildlife Specialist for the Arizona Game and Fish Department, most of my work involved partnering with other federal and state agencies as well as private interests to implement projects aimed at protecting, enhancing and preserving unique aquatic resources. The diversity of these activities ranged from establishing refugia for endangered species, determining hybridization rates of Apache trout, to evaluating seasonal movements of catfish populations in the middle Gila River. Currently employed by the Nebraska Game and Parks Commission, most of my responsibilities include using applied management to improve recreational angling opportunities, conducting research on predator-prey interactions, providing technical assistance to private individuals and other agencies, and coordinating aquatic rehabilitation and restoration projects.

I've been fortunate enough to be a member of both the Nebraska and Arizona-New Mexico chapters during this last decade, and served terms as President and Past-President of the Nebraska Chapter. As a CFP, I enjoy the peer-review publication process and the many continuing education opportunities that being active in the NCD provides, most recently with the emerging Ictalurid Technical Committee. Involvement with AFS at the division and chapter levels has been extremely beneficial to me, providing an invaluable source of professionals from which to gather information, guidance, viewpoints and experiences.

It is important that AFS continues to serve as the professional framework and primary source for science based information used to shape public policy and legislation to properly steward our aquatic natural resources into the next century. The role of the NCD in this mission is to provide for professional development of its members through attendance and participation at professional and technical meetings, as well as providing opportunities for continuing education and information exchange. The ultimate benefactor of our professional involvement is the resource.

Election Ballot

North Central Division American Fisheries Society 2003-2004 Officers

Please vote for one candidate for each office. Ballots must be received no later than November 15, 2003.

Send ballot to:

Steve Fischer
1012 Coho Ct
Columbia, MO 65203

email: sfischer@hach.com

Fax: 573-447-1163 (same as phone)

You may also vote by e-mailing your choices to Steve Fischer at:
sfischer@hach.com

First Vice-President – vote for one:

Brad Parsons _____

Mark Porath _____

Secretary – Treasure – vote for one:

Donald R. Kline _____

Write-in Candidates (please include name and office):

The Midwest Fisheries Conference Minutes by Don Kline

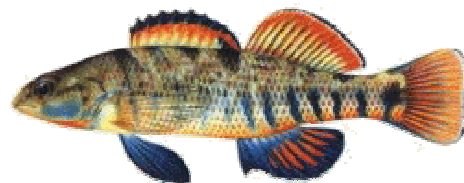
The Midwest Fisheries Conference was called to order at 4:15 pm on December 4, 2002 at Bettendorf, Iowa by President Chris Guy. Steve Fischer – President Elect, Don Kline – Secretary/treasurer, and Tim Goeman Past President were in attendance.

President Guy welcomed the members of the North Central Division of the American Fisheries Society to this 64th meeting. He noted that it is the first time in anyone's memory that we have not held a joint Fish and Wildlife Midwest. NCD Past Presidents Dave Willis, Tim Tripplet, Dave Phillips, Jack Wingate, Bill Franzin, Fred Harris – AFS President, Ira Adleman – AFS President Elect and Gus Rassam – AFS Executive Director were introduced.

It was determined that a Quorum was present.

Fred Harris said he two points of emphasis. One is membership. AFS needs to recruit and retain its members. New members will gain from the association with professional fisheries people and the Society gains diversity. We lose the perspective and talent when a current member does not renew. AFS is looking at adding the young professional membership to bridge the gap between college and first working experience. Two is the 4th World Fisheries Congress to be held in British Colombia in 2004. This will be a great opportunity to attend a meeting where global issues are discussed. The chance to network with worldwide fisheries professionals and pick up new ideas is a once in a lifetime opportunity.

Gus Rassam gave some information about the Society. The time and energy put into the Society's financial health is paying off as the Society on solid footing. The Society is ready to do some new things for the membership. Publication of books has doubled this year. The big sellers have been "Fishes of Alaska" and 2nd ed. "Fish Hatchery Managers Handbook". There were 1600 people at the Annual meeting in Baltimore. AFS cosponsored meetings with EPA – effects of fish contaminants on health, and NOAA and USGS on the effect of fisheries on benthic habitat. AFS is expanding their scope and providing AFS members' opportunities to interacting with other natural resource disciplines. The Hutton program is a mentoring program the brings AFS members together with high school students – especially women and minorities – to attract them to the profession and give them a taste of what fisheries is all about. The program is in its second year and has doubled in size to 53 students. Thanks to the NCD who gave financial assistance and provided work places for the students. Please provide feedback to us on new ideas or how you think we are doing.



The minutes of the 2001 were published on the NCD web page. A motion was made and seconded to approve the minutes as published. Motion carried by voice vote.

The Treasures' report was given by Don Kline. The NCD has a balance on hand of \$68,409.38 as of November 18, 2002. The Technical Committees combined funds are

\$26,848.49 consisting of Walleye - \$6055.10, Esocid - \$716.22, Centrarchid - \$454.09, Rivers & Streams - \$1,749.66, Salmonid - \$7,376.79, and Ictaluid - \$10,496.63. The NCD has \$41,560.89. Most of the money is in a money market fund and interest is earned each month and applied to the NCD account or Technical Committees.

The proposed budget that was adopted at the last meeting projected income of \$15,000.00 and expenditures of \$17,000.00. The actual 2002 income has been \$21,899.39 with expenses of \$7533.00 as of November 18, 2002. Our largest income is from the AFS dues rebate (\$8383.80) in which we received \$7.60 per member (1,103). We have taken in \$2,739.00 in book sales. The Technical Committees have sent in \$1,133.00 to be added to their accounts. We have taken in \$7,710.00 in registrations for this meeting. There were two contributions to the Joan Duffy scholarship award totaling \$800.00. Several expense categories have no expense items, but money will be spent after this meeting for awards and meeting expenses. The EXCOM travel expense has been \$1,697.55. The Technical Committees have expended \$804.00 out of available funds. We have made contributions to the Hutton Jr. Fisheries program - \$3,000.00, AFS Annual Meeting - \$1,000.00 and DC Booth sculpture - \$1,000.00. We purchased Quicken 2002 to update our book keeping.

President Guy discussed the 2002-2003 Plan of Work for the North Central Division. Membership Services: A big component of this year has been putting together the Midwest Fisheries Conference. This conference is a onetime event because no Midwest Fish & Wildlife Conference was undertaken this year. Next year, the Midwest F & W Conference will be hosted by Missouri in Kansas City. The publication of Mainstream will continue via electronic mail. Work will continue on identifying Chapter members who are not AFS members and developing a plan to recruit them. We will continue to support the Junior Fisheries Biologist Program. The Joan Duffy travel grant program will continue. Information Transfer & Outreach: We will assist our Technical Committees with publishing articles or developing posters promoting aquatic stewardship. Aquatic Stewardship: The NCD will support the 4th World Fisheries Congress to be held in Vancouver, British Columbia in 2004. We will support the development and implementation of the North American Fisheries Plan.

Motion to accept the Plan of Action was made by Bill Franzen and seconded by Tim Goeman. Motion carried by voice vote.

The proposed 2002-2003 Budget was discussed by President Guy. Income is projected to be \$21,750.00 from AFS dues, interest on money market funds, book sales, Midwest Fisheries Conference, and Technical Committee income. Expenses are projected to be \$26,100.00 through Governing board travel, certificates, Midwest Fisheries Conference, Joan Duffy travel award, Technical Committee expenses, membership recruitment, Hutton Jr. Fisheries, 4th World Fisheries Congress. The membership recruitment award will be \$2,500.00 to the Chapter who recruits the most new members to full AFS status. An equitable way to determine the winner will be by comparing the Chapters on current membership numbers. The Hutton Jr. Fisheries mentor program contribution should continue for another year. We should support the 4th World Fisheries Congress with

\$5,000.00 to help bring the meeting within our reach. We will get a lot of recognition for the North Central Division.

Motion was made by Jim Tripplet and seconded by Ed Peters to adopt the budget for 2002-2003. Motion carried by voice vote.

The Ictalurid Committee has been operating as an ad hoc committee for several years now. There has been continued interest in accepting them as a full standing technical committee. They have presented a set of by laws outlining the Duties of the Chair, Chair-elect, Secretary, and committee members. Motion was made by Greg Pitchford and seconded by Dave Phillips to make the Ictalurid Technical Committee a full standing committee. Motion carried by voice vote.

Procedural Manual and bylaw changes are in the works. We want to combine the Web Page and Newsletter Committees into a Communications Committee. Several other small changes will be proposed for the next meeting.

Action items from the floor:

Edward Brown moved that the Reservoir Technical Committee be removed from the NCD. Dave Willis seconded. Discussion followed with a question about what does it cost to leave it alone. It seems appropriate to disband something that is not functioning. Motion carried by voice vote.



Sustaining and Special Committee reports:

The EXCOM Committee sent out a letter supporting the USF&W ban on black carp importation and expansion,

Steve Fischer sent a letter on behalf of the NCD in support of the Nebraska Cooperative Unit .

The Auditing Committee found that the books are in order.

The Student Affairs and Membership Committees were mentioned as needing an overhaul because of inactivity.

Awards by President elect Steve Fischer:

1. Most Active Chapter award to co-winners Missouri and Minnesota.
2. No nominations were made for Meritorious Service Award.
3. The Fisheries Excellence award was presented to John Nagh for his long career dealing with fish health in Michigan and NCD.
4. The Joan Duffy Student travel awards were presented to Clint Kowalik, Robert Bringolf, Timothy Strakosh, Diane Kisner and Jennifer Guyot.

The Nominating Committee report was made by Tim Goeman. Don Kline was reelected to Secretary/Treasurer. Mike Brown was elected 1st Vice President.

Technical and Ad hoc Committee reports.

The Walleye Technical Committee has published their recent symposium.

The Guidelines for Use of Fish in Research, AFS ad hoc Committee has put out a draft report. The NCD ad hoc Committee to review the draft felt that the report should be supported.

Chapter Reports:

The Chapter reports are included in the Governing Board Briefing Book. President Guy stated that he is impressed with the broad scope of activities being undertaken by the NCD Chapters. We need to work on getting the Canadian Chapters more involved.



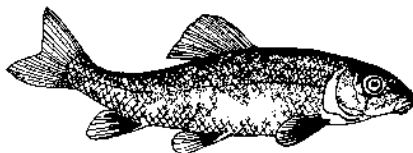
Work will continue on the NCD Strategic Plan.

Special recognition was made to Sue O'laughlin and Ruthann Stacy both from Iowa, who worked to get this meeting under way and served at the reception table.

Tim Goeman was presented with the Past President's award. He was also recognized for his work on getting the registration organized for this meeting.

Randy Schultz – Program Chair and Tom Boland – Meeting Arrangement Chair were acknowledged for their outstanding contribution to the NCD in getting this meeting organized and carrying it through to completion.

Meeting adjourned at 5:45 pm.



On the Underside

By Charles Anderson

From: Charles Anderson
To: Paul Radomski
Subject: This is interesting. Maybe Underside material.

Tihs is rlealy so ture!!!!

The paomnnehil pweor of the hmuan mnid.

Aoccdrnig to a rscheearch at Cmabrigde Uinervtisy, it deosn't mtttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be at the rghit pclae. The rset can be a total mses and you can sitll raed it wouthit porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe. amzanig huh?

From: Paul Radomski
 To: Charles Anderson
 Subject: Re: This is interesting. Maybe Underside material.

Tkhans! Tihs is excnellet Udnersdie mtaireal.

tkae crae,
 Pual.

Contacts

Division Officers (end of term is August 2004)

President	Steven Fischer	573-447-1163	SFischer@hach.com
President-Elect	Michael Brown	605-688-6121	michael_brown@sdstate.edu
First Vice-President	<i>to be determined</i>		
Sec.-Treasurer	Don Kline	319-694-2430	don.kline@dnr.state.ia.us
Past President	Christopher Guy	406-994-3491	cguy@montana.edu

Standing Committees Chairs

Archives	Mark Flammang	mark.flammang@dnr.state.ia.us
Auditing	John Lott	john.lott@state.sd.us
Awards	Michael Brown	Michael_Brown@sdstate.edu
Continuing Education	Trent Sutton	tsutton@fnr.purdue.edu
Membership	Mark Pegg	markpegg@staff.uiuc.edu
Newsletter Editor	Paul Radomski	paul.radomski@dnr.state.mn.us
Nominating	Joe Larscheid	joe.larscheid@dnr.state.ia.us
Publications	<i>inactive</i>	
Resolution	David Lonzarich	lonzard@uwec.edu
Student Affairs	Casey Schoenebeck	casey.w.schoenebeck@uwsp.edu

Technical Committee Chairs

Centrarchid	Ed Braun	ebraun@dnr.state.in.us
Esocid	Daniel Iserman	diserman@hotmail.com
Fish Culture	<i>inactive</i>	
Genetics and Biodiversity	Brian Sloss	brian.sloss@uwsp.edu

Great Lakes
Ictalurid
Reservoir
Rivers and Streams
Salmonid
Walleye

inactive
Greg Pitchford
inactive
Rob Pulliam
Mark Ebbers
Tim Banek

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Chapter Presidents and Websites

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Kansas
Michigan
Mid-Canada
Minnesota
Missouri
Nebraska
NW Ontario
Ohio
S. Ontario
Wisconsin

Steve Krentz
Bob Schanzle
Ken Hanauer

Bill Stark
Jay Wesley

John Hiebert
Harold Kearns
Rob Hofpar

Scott Hale
Dave Green
Phil Moy

<http://dakotaafs.sdstate.org/>
<http://131.230.57.1/IAFS/>
<http://www.bsu.edu/csh/bio/inafs/>

<http://www.ksu.edu/kscfwru/ksafs/>
http://www.fw.msu.edu/orgs/mi_afs/

<http://www.fw.umn.edu/mnafs/>
<http://www.moafs.org/>
<http://www.nebraskaafs.org/>

<http://www.biosci.ohio-state.edu/~ocafs/>
<http://www.afs-soc.org/>
<http://www.fisheries.org/wiafs/>



Websites:

Parent Society Main Website
North Central Division
Walleye Tech. Comm.
Ontario's Freshwater Fisheries
Life History Database

<http://www.fisheries.org>
<http://www.fw.umn.edu/ncdafs>
http://ws3.coopfish.siu.edu/walleye_tech

<http://www.afs-soc.org/fishdb/home.htm>

