RYBA

Newsletter of the Minnesota Chapter of the American Fisheries Society

Year 1998 No. 3
September Issue

President's Message

by Bruce Vondracek

The annual AFS meeting is just around the corner, I hope that at least some of you will have a chance to attend. The program is extensive as usual. I plan to attend the Board of Governor's meeting on Saturday and at least part of Sunday. I will report the latest activities of the Society in the next newsletter.

Closer to home there are two items that should be of interest to everyone in the Chapter. First, and with potential long-term consequences, is ballot initiative #2 that will appear on the November ballot, asking the citizens of Minnesota to consider whether to make fishing and hunting 'a right' in the state constitution. In my opinion, the ballot initiative has consequences for how people will view not just fishing and hunting, but natural resources in general. Maybe more importantly, how the legislature will allocate money for natural resources may change subtlety. Land purchases, easements, and habitat rehabilitation targeted at fishing and hunting may have less support from the legislature. Even more broadly, many other species that have benefitted from efforts to enhance fishing and hunting may be affected as well. I ask each of you to consider this ballot initiative seriously, talk with your constituents, friends, and neighbors about your thoughts on this issue. The vote is likely to be rather close, especially since 2.5 million people now live in the seven county metropolitan area, many with only urban concerns. The Fish and Wildlife Legislative Alliance, of which the Chapter is a member, strongly supports passage of the ballot initiative.

The second issue is that the failed effort in the last legislature to double walleye stocking without any increase in the DNR budget that I discussed in the May Newsletter has not gone away. Although, we have not heard much about the issue recently, many of the candidates for governor have taken public stands on stocking. One current candidate, Doug Johnson, is a strong advocate for stocking. As I wrote in the May Newsletter increased stocking of walleye does not make biological sense in most of the lakes managed for walleye. So talk to your friends and neighbors about this issue as well and at least try to inform them about the biological and economic consequences.

Our next annual Chapter meeting will be in conjunction with the Iowa and Wisconsin chapters in LaCrosse, Wisconsin in early January. Plans are moving along nicely with able representation from Paul Radomski, our new president elect, and Neal Mundahl. Even though it may require extensive travel for some of you, I encourage you to make your plans to attend the meeting now. The meeting will allow all of us to get a broader perspective of management and research issues in the Tri-State area. Our Continuing Education Committee is planning a workshop on ethics at the meeting, I hope many of you can attend. I also encourage you to submit abstracts or requests for poster presentations on work you may just have completed or work you are exited about but have not yet completed. I would especially like to see presentations addressing some of the good work that is being done on management issues and not just on research topics which has been typical of late.

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Quote of the Issue

"A tendency to wander in some degree is the normal characteristic of man, as indeed of most animals, in sharp contrast to most plants" C.B. Davenport

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The Chapter publishes ***RYBA*** four times a year (Jan., May, Sept., and Nov.). Deadlines for article submission are: April 15, Aug. 15, Oct. 15, and Dec. 15. Necessary Burbot Legal Language: The views and opinions expressed herein are not necessarily those of the Minnesota Chapter. Printed on butchered trees.

Special acknowledgement should be given to Dennis Topp, River and Streams Committee Chair, for his follow-up after Paul Glander's departure from the Chapter insuring that the Chapter was represented at the State Water Planner's Conference in Crookston in late July in a workshop titled 'Rivers, Watersheds, and Fisheries'. Special thanks to Henry VanOffelen, Tim Schlagenhaft, Julie Westerlund, Jamie Wendel for their presentations at the conference. This is an important audience for us to communicate with and we should look for opportunities like this in the future.

Three products of the AFS Youth Education Committee that we in the

Chapter should be aware of, especially if you have contact with our younger constituents and partially funded by the Chapter. 1) a detailed report for funding sources titled 'A needs assessment of fisheries education materials for youth: Report to our sponsors', 2) a user-friendly guide for fisheries biologists and youth educators titled 'Educating youth about fish, fishing , and fisheries management issues: A guide to resources', and 3) an article for Fisheries titled 'A needs assessment of fisheries education materials for youth' to be published within the next few months. A copy of any of the products can be obtained from Linda Erickson-Eastwood a member of the Chapter and a member of the AFS Youth Education Committee.

Committee Reports

Continuing Education Committee - by Mark Hove and Laurie Sovell

Our next course will explore the interesting world of ethics. Lively discussions on this topic have recently arisen in Fisheries and at national society meetings. Last year the parent society revised its code of professional ethics [Fisheries 22(2)]. We are working to develop a thought-provoking, yet practical short course on ethics in fisheries management. The course will run a half or full day prior to the annual meeting next winter in La Crosse, WI. We plan to keep the course cost low to encourage participation from all three chapters attending the meeting. We will call a small group of our membership for input on our course outline but welcome input from everyone. Contact Mark Hove at 612.624.3019 or at Mark.Hove@fw.umn.edu, or Laurie Sovell at 612.296.8005 or 612.724.7256 with your suggestions.

Awards Committee - by Julie Westerlund

Regrettably, there were two spelling errors in the list of award recipients in the May 1998 issue of ***RYBA***. The recipient of the 1989 Award of Excellence was Dr. Calvin Fremling, and the 1993 Outgoing President was Virginia Snarski. I apologize for the mistake!

A more complete historical summary of AFS awards, going back past ten years, is in the works. Watch for it in the next issue of ***RYBA***. The awards committee is still soliciting nominations for Special Recognition Awards and The Award of Excellence. See the May ***RYBA*** for a full explanation of these awards, and send those nominations right away!

Newsletter Committee - by Paul Radomski

The Chapter website has now has previous newsletters posted in Portable Document Format (PDF). Download them and send copies to non-member colleagues!

Nomination Committee - by Melissa Drake

First and last call for nominations for Chapter Officers is now invited. The deadline for nominations is October 5. See form found in the back of this issue.

Student Committee - by Carl Ruetz

We are in the process of compiling a list of colleges and universities throughout Minnesota that offer programs in fisheries or aquatic biology. We will use this information to more widely advertise chapter meetings and travel scholarships in an attempt to increase student involvement. Faculty members interested in serving as a contact person for their institution should contact Carl Ruetz at (612) 624-3785 or crr@fw.umn.edu.

Division Technical Committees

Centrarchid Technical Committee by Mike McInerny

The Centrarchid Technical Committee (CTC) held its annual summer meeting on 20-21 July at Wyalusing State Park, just south of Prairie Du Chien, WI. A total of 25 people from eight states attended this meeting. Don Kline (IA) is the current chair of the committee. The meeting was informal and included several presentations of ongoing research, comparison of electrofishing equipment, and the usual business.

Jeff Kampa (WI) presented a paper on the effects of bluegill removal and walleye stocking on growth of stunted bluegill. He reported that bluegill growth improved after 70 to 80% of the bluegill biomass was removed. Walleye had no effect because the stockings did not work. He has not determined as of yet how long the improvements last.

Ron Marteney (KS) presented a paper on establishing emergent and submergent macrophytes in a 16-yr old Kansas impoundment. They were successful in establishing macrophytes, mostly a floating leaf pondweed. Plant establishment depended upon finding most favorable conditions that included wave breaks, protected areas, and exclusion of herbivores (primarily common carp and turtles). The most important factor was the exclusion of herbivores.

Mike McGhee (IA) reported on the establishment of physical habitat in an artificial impoundment before flooding. Unlike here in Minnesota, Iowa and other states build fishing lakes which require considerable forethought. He presented information on dimensions and placement of various types of underwater mounds, rock, and brush piles. Jetties should be built in conjunction with fish attractors and should also be built within 250 feet from parking; otherwise, people will not use them.

Don Kline (IA) presented the results of a statewide angler survey in Iowa. Iowa anglers prefer fishing for walleye, channel catfish, largemouth bass, and bluegill, but harvest more bluegill and crappie than any other sport fish. Bluegill and crappie account for about half of the total harvest in numbers. He also stated that the number of licensed anglers has decreased from 480,000 to 360,000 between 1981 and 1994 (similar trends have been observed in Illinois and Kansas). Most Iowa anglers are 30 to 49 years old and

80% of them are male. He also reported that the percentage of anglers 16 to 29 years old have decreased between 1981 and 1994, but was not sure if this reflects the age structure of the Iowa population. However, these results are creating concern in the Iowa Department of Natural Resources, and have led to increased efforts to attract young people and women to fishing.

I presented an update on my research project on trapnetting of black crappie. To date, trap net catch per lift weakly reflects population density, trap netting selects against black crappie < 150 mm, and trap net CPUE is quite variable among months and days and this variability is inconsistent among lakes.

Several people brought electrofishing boats with them. The diversity of boats was incredible. The states of Minnesota and Nebraska have either Smith-Root- or Coffelt-built boats, but other states build their own. Several states do not electrofish at night so their boats do not have lights. Other states use AC rather than pulsed-DC, so elaborate shocker boxes are not used. Don Kline showed the CTC a couple of easily built devices designed to determine the strength of the electrical field around the boat. I have copies of instructions on how to build these devices, if anyone is interested.

Several items were discussed in the business portion of the meeting. Dave Tunink (NE) will be the CTC chair in 1999 and Dan Stephenson (IL) will be the Chair in 2000. The CTC is looking to get involved in a proposed black bass symposium, and in a workshop on establishing macrophytes in aquatic systems. The CTC is also planning to develop posters (similar to the bluegill and largemouth bass posters already completed) on black crappie, white crappie, and smallmouth bass. The CTC decided to delay for one year poster development because another committee is developing one. The directory of centrarchid workers is nearly completed and should be out by the end of August 1998. The next meeting will be held in conjunction with the Midwest meeting in Cincinnati this December, but will be a two-hour business meeting. Next year's summer meeting will tentatively be held at Wyalusing State Park and around the same time.

I have several copies of "Centrarchid Grey Literature" which contains listings of state and provincial reports on centrarchid management and biology. Please contact me if you want a copy. If anyone has anything they would like the committee to address, please let me know.

Esocid Technical Committee by Rod Pierce

See next ***RYBA*** for summary of summer meeting and plans for winter's meeting.

Walleye Technical Committee by Ron Brooks

See next ***RYBA*** for summary of summer meeting and plans for winter's meeting.

Salmonid Technical Committee by Bill Thorn

The Salmonid Technical Committee met July 21-22, 1998 in La Crosse, Wisconsin. Seventeen members attended. The meeting consisted of some business reports, several chapter reports, and 12 presentations. During the business session, Kevin Kayle discussed the symposium we are sponsoring at the 1998 Midwest and Wildlife Session, and asked for submissions. Next, members again agreed to hold a summer meeting in 1999. The committee discussed the proposed Trout/Trout angler workshop, and decided that the chairman should get a steering committee and investigate revisiting the 1988 workshop in spring, 2000. The committee also reaffirmed the previous decision to host a symposium on "The future of trout management within the native range," and Mark Ebbers and Bill Thorn agreed to chair this effort. Bob DuBois of the Wisconsin DNR is now committee chair.

Below is a list of presentations:
Restoration of Rapid Creek - an urban trout program, Jack Erickson
Twin Cities Urban Trout Program, Kevin Bigalke
Green Bay Urban Trout Management, an Educational Display, Lee Meyers
Review of Hooking Mortality of Salmonids in Streams, Bob DuBois
Genetics and Wild Rainbow Trout in Missouri, Jeff Koppelman
Management for Large Brown Trout in SE Minnesota by Experimental Regulations - Sociology or Biology?, Mark Ebbers
Re-establishing Native Brook Trout Communities in Wisconsin, Ed Avery
An Angler Use and Preference Survey to Develop Trout Management Options in S.D., Jack Erickson
Large Woody Debris for Salmonids in the Midwest, Bob DuBois
Trout Movement in the Oconto River System of Wisconsin, Ross Langhurst
Land Use Changes in the Kickapoo River Valley of Wisconsin, Dave Vitrano
Brown Trout Population Fluctuations in Southeast Minnesota, Charles Anderson

Minutes of Chapter Meetings

Notes from Minnesota Chapter AFS
Excom meeting 12 May 1998
Meeting held in 224 Hodson Hall on the University of Minnesota Campus.

Meeting called to order at 10:07. Bruce Vondracek passed out an agenda to all attending: Laurie Sovell, Julie Westerlund, Steve Hirsch, Missy Drake, Mark Hove, Rick Brueswitz, Doug Kingsley, Paul Radomski, Carl Ruetz.

1. Annual Action Agenda items were reviewed and information about status was discussed. Action Agenda:
Item 1: Sponsor 1 or 2 continuing education workshops during the year (Goal A). Responsibility: Mark Hove and Laurie Sovell, Continuing Ed Committee Co-Chairs.
A successful workshop was held on 20-21 January, net proceeds at time of meeting $2,442.27; however, Laurie Sovell had additional checks to mail to Kevin.

Item 2: Organize a tri-state meeting (with Wisconsin and Iowa) and publicize it extensively an aggressively (Strategy

A.2). Responsibility: President-elect, 1999 Meeting Program Chair.
An organizational meeting will be held on 8 July in LaCrosse, WI. Neal Mundahl will represent the MN Chapter.

Paul Glander has resigned as President-Elect a new election of the two other candidates from previous election, Paul Radomski and Henry VanOffelen, is currently underway with the approval of the AFS Constitutional Consultant, Joe Margraf.

Item 3: Develop and publicize a position paper (Strategy C.1). Responsibility: Larry Kallemeyn and Tom Jones.
Larry and Tom continue to work on paper.

Item 4: Become more involved in the development of public policy affecting fish and fisheries (Goal D).
Responsibility: FWLA-Bruce Vondracek, President and Don Pereira, FAN-Fred Henson Fisheries Information Network chair, Roundtable-Mark Hove.
a) through membership in the Fish and Wildlife Legislative Alliance, Don Pereira and Bruce Vondracek represented the Chapter on 26 March and the Chapter was accepted as a full member with two representatives. FWLA: -Opposed to walleye stocking (will be an issue in next state election & next legislative session) -Undecided about use of underwater cameras -Firmly behind Teaming with Wildlife, the chapter endorsed Teaming with Wildlife in 1996 -Backing two LCMR proposals designed to educate youth concerning hunting, fishing, and trapping -Supports an effort to obtain General Funding for support service in the DNR rather than using dedicated game and fish funds
b) use the Fisheries Action Network to communicate scientifically-based information, Fred Henson will assume role as chair following successful completion of his thesis in the near future.
c) Participate in DNR Fishing Roundtable (Strategy D.4). Mark Hove reported that he participated in a Roundtable devoted to stocking issues on 2 May. The meeting was successful in that several issues were discussed and DNR will examine stocking effort and success on several lakes as requested by Dick Sternberg.

Item 5: Develop an article highlighting fisheries work and/or AFS in a high-profile popular press outlet, e.g., Outdoor Life authored by an AFS member. (Strategy C.6). Responsibility: Bruce Vondracek, President and ad hoc committee to include Neal Mundahl.
Several participants indicated that an article on Special Regulations would be timely and agreed to write an article. The team will be chaired by Missy Drake, assisted by Paul Radomski, Julie Westerlund. Tim Goeman and Pete Jacobson will be approached for further assistance.

Item 6: Plan and coordinate a Rivers, Watersheds, and Fisheries workshop for NW Minnesota in July 1998 (Goal D).
Responsibility: Dennis Topp, Rivers and Stream Representative.
Workshop was planned by Paul Glander to include four papers from MNAFS members, meeting will be held in Crookston. Future continuity will be provided by Dennis Topp.

Item 7: Restructure AFS display and place the AFS display in the DNR building at the State Fair (Strategy H.4).
Responsibility: Linda Bylander, Public Awareness Committee Chair.
Plans are underway to restructure display. The display is being restructured to simplify the wording and allow for fewer words with larger print.

Item 8: Publish this annual action agenda in the chapter newsletter and on the Chapter homepage (Strategy F.2).
Responsibility: Bruce Vondracek, President, Paul Radomski, ***RYBA*** Editor.
Published in May 1998 issue of ***RYBA***.

2. Assignments from the Annual Action Agenda: Related to the article on Special Regulations in a high-profile popular press outlet, e.g., Outdoor Life authored by a committee of MNAFS members (See item 5 above). The team will be chaired by Missy Drake, assisted by Paul Radomski, Julie Westerlund. Tim Goeman and Pete Jacobson will be approached for further assistance. Julie reports that Pete is willing to help.

3. Report on Chapter contribution to AFS Youth Ed Committee in 1996
Bruce reported that the AFS Youth Ed Committee partially funded by the Chapter has produced three products:
a) a detailed REPORT for funding sources titled 'A needs assessment of fisheries education materials for youth: Report to our sponsors',
b) a user-friendly GUIDE for fisheries biologists and youth educators titled 'Educating youth about fish, fishing, and fisheries management issues: A guide to resources'
c) an ARTICLE for Fisheries titled 'A needs assessment of fisheries education materials for youth' to be published within the next few months.
A copy of any of the products can be obtained from Linda Erickson-Eastwood of the MNDNR a member of the AFS Youth Ed Committee.

4. Other AFS news from AFS mid-year Governing Board meeting in Arizona.
The Parent Society finished 1997 with a budget surplus of $19.00 and is more financially stable than ever before: net assets have increased 89%, dedicated fund balances have increased 132% and contributions over $5,000 have increased 69% in the last four years. Electronic publishing will likely put journal publishing further behind schedule. Electronic publishing will save a projected $48,000 in paper costs. Continuing education and Certification Implementation Committees are not proceeding on schedule - Individuals can become certified without passing minimum requirements. AFS2000 has been re-juvenated. A firm is being solicited to help develop an annual giving campaign. Two major foundations have been approached. Reminder - Human use of fish policy has been completed, members must vote by 12 June.

5. Financial Report (submitted by Kevin Stauffer).

6. Report on Continuing Education Workshops; past and planned. Mark

Hove reiterated that the January workshop was a success and that planning was underway for a workshop on ethics will be held in conjunction with the next annual Chapter meeting to be held jointly with Wisconsin and Iowa. Mark brought up two issues that were discussed at length.
a) A primary reason for the success of the January workshop was the help received from the Natural Resources Conservation Society, who sent out flyers to their members and helped with the organization. Mark proposed that the Chapter split the profits with the NRCS 80:20. The participants felt this was equitable.
b) Format, topics, speakers for the Ethics Workshop were discussed, Mark and Laurie thanks those present for their thoughts and ideas.

7. Committee Reports

Awards- Julie Westerlund reported on the best paper at the last meeting and solicited nominations for the Special Recognition Award and the Award of Excellence.

Continuing Education- see above

Long Range Planning- Chair position open, committee members suggested contacting Greg Busaker

Membership- Doug Kingsley reported did not get as many new members this year, likely due to type of annual meeting. Membership renewal is slow, but expected; however, membership is currently at 217 if former members renew.

Fisheries Information Network- No report

Newsletter- May issue has been mailed with ballots for President-Elect.

Nominations- Missy is accepting nominations for the next election.

Procedure Manual- Slight changes in awards wording and changes in by-laws to cover situations such as recent resignation of President-elect are underway.

Public Awareness, Resolutions, and Rivers and Streams- No Report

Students- Carl Ruetz is developing list of all institutions with fisheries or aquatic programs to get more student participation at annual meetings.

8. Old Business

9. New Business
During a phone conference call with NCD Chapter presidents the suggestion to Bruce was made that our Chapter might want to approach Cabelas at their new store in Owatonna and ask to display information about the Chapter and AFS in general. Unanimous consent, Linda Bylander will be asked to follow through with this suggestion.

10. Adjourned at 12:36.

Upcoming Events

October 7-9, 1998. Minnesota GIS/LIS 8th Annual Conference and Workshop. Numerous workshops - one on watershed modeling. For more information see the conference website at: www.lmic.state.mn.us/gislis/gislis.htm

November 4-6, 1998. 2nd International Symposium in Fisheries Ecology: Essential Fish Habitat and Marine Reserves. Sarasota, Florida. Contact Chuck Jones, 850.644.2653, cjones@cpd.fsu.edu

November 10-13, 1998. 18th International Symposium of the North American Lake Management Society. Banff, Alberta. Contact: rzurawel@gpu.srv.ualberta.ca

November 21-22, 1998. Minnesota Audubon Council Fall Membership Meeting. College of St. Catherine, St. Paul. Contact the Council at 651.225.1830

December 6-9, 1998. 60th Midwest Fish and Wildlife Conference. Hyatt Regency, Cincinnati, OH. Contact Kevin Kayle 440.352.6100, kevin.kayle@dnr.state.oh.us

January 5-7, 1999. Minnesota Chapter Annual Meeting (to be held jointly with Wisconsin and Iowa Chapters). Yacht Club Resort, LaCrosse, Wisconsin.

July 12-16, 1999. 3rd International Symposium on Ecohydraulics. Salt Lake City, Utah. See www.conference.usu.edu/ecohydraulics for more information.

May 23-27, 1999. Wilderness Science in a Time of Change. Missoula, Montana. Contact Clare Kelly 888.254.2544, ckelly@selway.umt.edu

Contributions: Letters and Commentary

Status of Minnesota's Fisheries
by George W. Friedrich
Lake and streams in Minnesota have progressively been fished out both as to quantity and quality. Especially is this true of our better game fish. Now it is customary to state that if one wants really good fishing, he should go to the Canadian lakes. The eleven and more thousands of lakes in Minnesota are natural reservoirs of fish. No other state approximates Minnesota in number of lakes, and their innumerable inlets and bays are splendid spawning and feeding grounds for the finny inhabitants. Reports of huge catches in nearly all of these bodies of water by the early

residents are well authenticated. Apparently, one merely had to drop a hook, set a net or spear through a hole in the ice to be rewarded with a plentiful supply of game fish. Again as with game birds, the impact of civilization left our waters with a much reduced fish population. The fish resources can be measured by pounds per acre of water. Available estimates place the average amount for the state at about 75 pounds per acre. Doubtless, some lakes exceed this estimate by several hundred pounds and some contain considerably less. From reports of past decades, the average pounds per acre greatly exceeded the present estimated amount of 75 pounds. Clearly, it is the task of the present generation to increase the supply both in quantity and quality.

Concepts change from decade to decade in the evolving society. The removal of fish without thought as to replacement has necessitated not only the propagation of fish in hatcheries but also their propagation indirectly through improvement of their natural habitat. Now we are exploring the possibilities of farming the lakes, much as the agriculturist does when he plants his acres in the expectation of a definite yield. The principles and methods farmers employ are surprisingly similar to those that will bring about an increased fish yield in our lakes. Lakes are our untilled acres, acres that are capable of yielding great direct and indirect profits and their yield does not compete in the market with the produce from the farm.

The wealth of our lakes finds its way ultimately to nearly all of the residents of the state. Out-of-state tourists gladly spend money for meals, rents, gasoline, oil, and other necessities incidental to travel. Financial gain to the state is estimated to be from 70 to 130 million dollars a year. The rapid turn-over of the money spent by Minnesota citizens on fishing expeditions is large and stimulates all business. Profits in much larger amounts than have yet been made can be accumulated through proper handling of rough and commercial fish projects. Most of the gain that accrues from well managed fish resources lies not, however, in the monetary profits but rather in the mental and physical satisfactions engendered by those who fish for sport. Fishing brings about mental relaxation and restores vigor and poise to those who participate. Fishing and its attendant vacation joys probably stand at the top of the list of worthwhile forms of recreation. Wholesome outlooks and the attainment of happiness cannot be measured in monetary terms; yet, their benefits are invaluable.

Heated controversies often arise over whether or not seasons should be shortened; what the limit of the catch should be; how to combat the spread of carp; the question of commercial fishing of game fish; where to stake out spawning beds of nesting fish; the raising of fingerlings in club fish ponds; and the methods used in distributing fish fry. The reason for the conflicts is due largely to the difficulty in determining the facts. Farmers rarely differ in their estimate of the number of bushels of corn a given acre contains. They have the advantage of sight to aid them in forming their estimates. The fish crop in a lake is quite another matter. Because fish are not visible to the human eye in their natural habitat, the number per acre, the normal increase per year, the exact condition of the food supply of the young and the mature, their enemies, and the oxygen supply, are often difficult to determine. Needed research in these fields has been neglected. At present, a comprehensive, scientific survey of lakes is being carried on the greater knowledge of our fish resources can be confidently be anticipated. It is hoped that many more intensive studies will be make in the future. Until such time as problems of fish life can be solved on the basis of increased scientific research, reliance must be placed on the judgement of federal and state conservation officials, their experts, and informed laymen, for the formulation of laws to govern fishing properly.

(editor's note: The title was added. This piece was part of a publication by Mr. Friedrich titled 'The Study of Conservation' published by the Minnesota Department of Education and the Minnesota Department of Conservation in May, 1940. George Friedrich was a professor of biology and conservation at St. Cloud State Teacher College)

University of Minnesota Students Studying Trout
submitted by Marty Melchior

Here's a snapshot of what these folks are up to regarding the trout in Minnesota streams.

In 1996, Jennifer Hathaway began research on 22 wooded trout streams in southeastern Minnesota to learn how a trout stream and its riparian zone differ between areas where there has been trout habitat improvement (HI) compared to areas without. Are we managing for trout using HI to the exclusion of other plants and animals in riparian communities? Along the stream, Louisiana Waterthrushes, are indicators of undisturbed older wooded communities. Both trout and Louisiana Waterthrushes use forested areas with high quality streams and plentiful aquatic invertebrates for food. In addition, Louisiana Waterthrushes also need leaves from a stream to build a nest, and an eroded bank on which to place it. In southeast Minnesota, Louisiana Waterthrushes are found exclusively along small trout streams. From April through August, pairs of Louisiana Waterthrushes defend 500 m (1/3 mile) of stream, where they raise 1-4 young. Louisiana Waterthrushes are listed as a Minnesota Species of Special Concern. One part of Jennifer's study is to describe the habitat of Louisiana Waterthrushes and resolve whether trout HI would damage waterthrush populations. Jennifer has found that Louisiana Waterthrushes nest on eroding banks with a 60-80 degree slope and within 1-2 m of water. Because HI often changes the availability of these habitats, her study suggests intensive trout HI may negatively affect the Louisiana Waterthrush population in southeast Minnesota. More importantly, Jennifer's research shows how trout managers could avoid the problem, and

perhaps manage for both trout and Louisiana Waterthrushes.

Eric Merten is looking at the effects of logging practices on coldwater stream fish and habitat in northern Minnesota. The goal of this project is to help determine whether the current Minnesota guidelines for riparian logging are too stringent, just right, or not stringent enough to protect fish and fish habitat. A total of 24 forested plots have been chosen in two areas of Minnesota for study; each plot is about 12 acres and with a trout stream running through or along it. Of these plots, 18 are scheduled for logging by various means and the remaining 6 will remain as reference sites. Fish and habitat data were collected at all plots during summer 1997 (before logging) and will be collected again during summer 1998 (after logging). The fish are being surveyed by electroshocking to observe any changes in their size, abundance, or species composition while stream habitat data are being collected to monitor sediment, stream flow, and cover. All the data will be collected immediately upstream and downstream of each plot, allowing upstream-downstream comparisons that should cancel out any year effects. With all the above information, any immediate effects of logging should be observed.

Kristen Blann is working towards a Masters in Conservation Biology. Her primary research interest focuses on the intersection of human social and economic activity with ecology on a large scale. For her master's research, Kristen is investigating the relationship between watershed characteristics, stream habitat and stream fish communities. In particular, Kristen wants to find out what makes a healthy watershed for trout. Kristen's research combines DNR stream survey data with GIS (geographic information systems) data on land use, bedrock hydrogeology, wetlands, soils, and hydrography. Her study area focuses on the streams and rivers of southeastern Minnesota, primarily the Cannon, Zumbro, and Root River watersheds. Kristen's hope is that the analysis might yield a tool by which managers could more easily identify and classify streams according to their potential for maintenance, restoration, or protection of trout populations and other indicators of healthy aquatic communities. It could also be used to predict how land use changes or current trends might affect aquatic communities within a watershed.

Brian Nerbonne's research focuses on agricultural impacts on streams. Brian has been conducting research in the Whitewater River in Southeastern Minnesota, and is interested in comparing different agricultural practices and whether they effect streams differently. Specifically, Brian is comparing a suite of practices termed best management practices (BMP's) with conventional row crop agriculture. BMP's include different tillage schemes such as no-till or conservation till, as well as using buffer strips at field edges and along waterways. Brian is especially interested in the effects of different riparian buffers (trees, grass, or grazed grass). These practices have been purported to be beneficially to streams, but there is not much direct evidence whether they do or not. It is hoped that this research will help to maintain or improve the Whitewater and its fisheries resources by providing suggestions that will help to prevent excess sediments and nutrients from entering the stream.

Jerry Grant has been studying trout ecology in Valley Creek, Minnesota since 1992. He is currently completing his Ph.D. in Fisheries at the University of Minnesota. Jerry's research includes spawning behavior of brook and brown trout. Using underwater video cameras, Jerry documented spawning behavior of brook and brown trout and found they often hybridize in Valley Creek, which possibly contributed to the replacement of native brook trout by brown trout in this system. Jerry has also designed a method to measure the growth rate of trout and other fish from a small tissue sample taken with a biopsy needle. This method allows fisheries researchers to measure the growth rate of fish without the need to recapture them and does not harm the animal. By using underwater video and measuring growth rates, Jerry is gathering evidence in the field to test the hypotheses of Kurt Fausch, Robert Bachman and other trout ecologists. These hypotheses attempt to explain the distribution and behavior of trout as strategies which maximize their energy input, or simply the amount trout eat minus the energy they spend swimming.

PhD candidate and fisheries geneticist Bill Ardren is trying to find evidence of a genetic capacity for long-term sustainability in managed fish populations. Under the direction of Dr. Anne Kapuscinski, Bill's research focuses mainly on steelhead from Lake Superior's North Shore. Bill hopes to gain insight into how fisheries managers should set target levels of steelhead populations. Bill also works with populations in Washington State and British Columbia.

(Editor's note: this TU article was condensed by the editor)

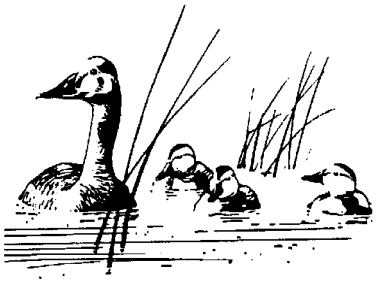
Interesting Articles and Publications

Visual Explanations: Images and Quantities, Evidence and Narrative. Edward R. Tufte. Graphics Press. ISBN 0-9613921-2-6. This is Dr. Tufte's third book in his series on information design. If you ever make a graphic or give a presentation, you must read this excellent book. As he notes, clear and precise visuals comes from clear and precise thinking. He provides details on the logic of displaying data. His exploration of the information used by the engineers to convince NASA officials not to launch the Space Shuttle Challenger on January 28, 1986, was fascinating.

Ecosystem Management for Sustainable Marine Fisheries. Ecological Applications Volume 8, No. 1, Supplement. A good collection of 20 papers evaluating fisheries management and solutions to achieve sustainability. I

enjoyed the papers on reserves.

Egg Size and Viability and Seasonal Offspring Production of Young Atlantic Cod. E. A. Trippel. Transactions of the American Fisheries Society 127(3):339-359. Strategies that do not allow for advanced matured fish in the population now look like risky fish management. Seems to me we attempted to argue that with some consultants recently without much luck. Now experimental science backs up common sense. Good paper.



Editorial

"What will become of us when we take a hand in our own creation--in trying to create the new man will we condemn the old?" -source unknown

The Future Rate Of Human Evolution: Consequences To Fish Management

Humanity needs to make a conscious decision on whether it should aggressively participate in the process of evolution involving our species. Natural selection and random mutation has worked well, but being human I am not satisfied with the progress recently. On the horizon lays the ability to tinker with the code which programs human development. Should we use the tools that will come available for some greater good? But perhaps it is a irrelevant question, since we are not very capable of self-control. We like to tinker when we can--curiosity and pragmatism seem to win. In addition, we tend to do that which is possible because we get societal gratification for doing the improbable.

Most of us have been active in the process of human evolution. We pick mates that have the characteristics we admire. We pass these traits to our children. This natural selection process slowly alters our species. So perhaps choosing genetic code to change is not that radical. It is just a matter of degree. And why should we not have a heavy hand in our evolution? What could we become if we used our evolved brains to improve our descendants? Imagine the good and the unfit changes we could produce. We could make evolution in our case progress instead of a series of mere surviving changes due to natural selection and random mutation.

Unfortunately we have severely hampered future evolution. Our inability to control our reproductive rate has lead to the likely demise of further speciation for humanoids. Isolation is a crucial factor in development of another species from one. Geographical isolation for long periods of time allow the principles of evolution to produce new species. On earth we are unlikely to produce another humanoid species--with 6 billion people isolation is now only a dream. A civil society that practices science constricts natural selection, and it does rightfully so. Evolution without genetic engineering has produced a wonderful species in humans, but we need to acknowledge that our shortcomings are significant.

Significant shortcomings include: inability to fully grasp complex thoughts and ideas, greed and laziness, irrationality, lack of compassion for other life forms critical to our survival, dependence on visual information, inability to grasp large numbers, lack of creativity, and fear of nonconforming.

Our shortcomings give us character and sometimes great amusement and fear. But with our current population size and our demands on the natural resources, our ability to quickly react and survive as a civilized species has been questioned. The passenger pigeon was once numerous. Evolution produced this wonderful bird with character but with vulnerabilities to a changing environment. Faced with extinction I think we would choose changing our genetic code, but we can not see the impending doom being brought on by our environmental destruction. Like a frog in a pot of gradually warming water, we do not sense the accumulated changes we are producing. It may be too late for civilization to reverse its actions once it recognizes its follies.

By increasing our talent through genetic alteration we may increase the likelihood of moving forward as a species or decreasing the likelihood of sliding to extinction. Laissez faire or passive DNA management might be ok for birds but what will natural selection and random mutation produce for us? Would engineered mutations be better than random mutations? Better seems like a poor word choice, but if we had clear objectives and measurable outcomes for our genetic tinkering we could apply scientific techniques to monitor and guide our work. I would rather have some control over this process and help shape a better future than leave it to the quirks and hangups of populace mankind so evident in this Western culture.

Of course the whole reason I am interested in this topic is my concern over the quality of fishing and the environment. I keep seeking the root causes of DNR failures. Whether we call what we practice 'ecosystem based management' or 'walleye-based management' (like it matters!) we will fail because we can not regulate an unwillingly public. I am biased but I don't think we should be so quick to blame government, for I have noticed that government can only give people what they want. Conflicting uses for our natural resources and different and changing values paralyzes the bureaucracy. Right now the public wants to destroy fish habitat and kill fish, and at the same time it demands high quality fishing. Evolution has produced in us the desire to prefer certain landscapes and aquascapes over others, and when that habitat is not available we readily alter our surroundings to suit our genetically controlled preferences. People alter lakes to create homogenous, low-diversity shorelines. Anglers want to catch fish

and be entertained; resort owners want to make more money for their own economic survival--don't restrict their sometimes greedy actions by talking about safe harvest levels. We should regulate the other guy. Evolution has produced a brain that is not capable of adding up small multiple impacts and a personality which is quick to blame something or someone for our unfortunate condition.

I conclude that fisheries management would be better off with active human DNA management for the purpose of increasing mental capacity. The objective of DNA management would be to improve the integrity, stability, and beauty of the human mind. The measure of success of any alteration would be determined from simple tests. The tests would be similar in logic to the Turing test in that if responses from a genetically engineered human on multiple life situations are indistinguishable from that of an intelligent and wise human being, then the alteration could be considered successful. Mucking around with genes responsible for physical appearance should be off limits. Vivid images are imagined when I think of what we would do to 'improve' our physical appearance--freakish and fadish human-like forms. The DNA management I am discussing is restricted to the genetic engineering of those 3000 plus genes responsible for the development of the brain.

Now this seems like a perfectly rational thing to do, at least to me. But my genetic code is a little different from most humans. I wouldn't possibly think of saying that my brain is superior to most, and no documented evidence exists to prove that my genetic code was derived by anything but purely natural causes (at least, that I am aware of).

Of Interest

A new 'Issues in Ecology' report is now available from the Ecological Society of America. Entitled "Nonpoint Pollution of Surface Waters with Phosphorus and Nitrogen", this 12-page report presents an in-depth look at the problems caused by urban and rural runoff and the possible solutions. Authored by Stephan Carpenter, et al., this report represents the consensus of a panel of scientific experts in a simple to understand way. [ESA NewSource]

Has Anyone Spotted The Elusive Silver Pike? A recent blurb in In-Fisherman magazine has spurred interest in the silver pike, presumably a color phase of the northern pike. I would appreciate it if anyone who has some personal experience with silvers, or even anecdotes, would contact me. A graduate student from West Virginia is interested in using genetic methods to study the phylogeny of Esocids and would like to include silver and normal northerns. Beyond information, we could really use some samples. Scales are sufficient (even old ones) if they were known to be taken from a silver. Silver pike are widespread but uncommon, and have always been reported in conjunction with normal northerns. They look essentially like a northern pike except for their silver to bluish coloring. At least two hypotheses could explain their presence. First, the coloring may be due to a rare recessive mutation in a gene that occasionally results in a homozygous (two copies of the mutant gene) individual (remember Genetics 101?). Alternatively, silvers could actually be a reproductively isolated "sub-species" that persists at low population levels. They do breed true, i.e., a cross between two silvers produced all silver offspring. This shows it is truly a genetic effect, however, it would occur under either of the above hypotheses. A normal x silver cross is said to produce "crappie-like" coloring, which is not seen in the wild - evidence for isolated populations? We'll get to the bottom of this with your help. Contact Loren Miller, Dept. Veterinary Pathobiology, University of Minnesota, 612.624.1271 or mille075@tc.umn.edu.

Polish Archives of Hydrobiology - Volume 45 issue 2 (July 1998). The issue, guest-edited by Richard H.K. Mann (U.K.), publishes selected proceedings of the VIth International Symposium on the Ecology of Fluvial Fishes, Lodz-Zakopane, Poland, 8-11 May, 1997.
1) Wolter, C., Vilcinskas, A. Fish community structure in lowland waterways: fundamental and applied aspects.
2) Formigo, N., Penczak, T. Fish stocks of the Ancora River, North Portugal: sampling, community and populations.
3) Elvira, B., Almodovar, A., Nicola, G.G. Fish communities of the middle-upper Tagus River (Central Spain): a story of river regulation and exotic introductions.
4) Berrie, A.D., McLeish, P., Mackey, A.P. Population structure, growth and biomass of brown trout, Salmo trutta, at three sites in the River Kennet, England.
5) Martin-Smith, K.M. Temporal variations in fish communities from the upper Segama River, Sabah, Malaysian Borneo.
6) Ponton, D., De Merona, B. Fish life-history tactics in a neotropical river with a highly stochastic hydrological regime: the Sinnamary River, French Guiana, South America.
7) Kafemann, R., Thiel, R., Finn, J.E., Neukamm, R. The role of fresh-water habitats for the reproduction of common bream Abramis brama (L.) in a brackish water system.
8) Przybylski, M., Borowska, A. Reproductive biology of Siberian sculpin, Cottus poecolopus.
9) Erkinaro, J., Shustov, Y., Niemela, E. Feeding strategies of Atlantic salmon Salmo salar parr occupying lacustrine and fluvial habitats in a subarctic river, Northern Finland.
10) Grzybkowska, M., Dukowska, M. Estimation of amounts of organic matter of different origin and its influence on the macrobenthic community in the Warta River below the dam reservoir, Poland.

The North American Benthological Society would like to announce a focus on Great Lakes Benthic Science at the May 25 - 28, 1999 meeting in Duluth MN. In addition to benthic invertebrate ecology, we are encouraging people working on other issues involving the benthic environment or aquatic invertebrates to plan on attending/presenting at the meeting. There will be both a plenary and a special sessions devoted to "Current Issues in Great Lakes Benthic Science". We are seeking speakers for a special session on topics including fate & transport of contaminants, biomonitoring, nutrient & carbon cycling in sediments & the water column, conserving/preserving regional habitats. This will be an excellent opportunity to see the latest research on the Great Lakes as well as meet the individuals involved. The North American Benthological Society wants to encourage information exchange across the range of aquatic sciences (ecology, chemistry, management, policy) and welcomes your involvement. For more information on attending or presenting, see our webpage at www.benthos.org or contact Andy Casper (casperaf@clarkson.edu or 315.268.3834)

The Society for Integrative and Comparative Biology (formerly American Society of Zoologists) will hold its annual meeting in Denver, 6-10 January. For those of you not familiar with this society, we are a diverse bunch, with several divisions (Division of Ecology and Evolution, Division of Animal Behavior, Division of Invertebrate Zoology, Division of Vertebrate Morphology, and Division of Systematics, Comparative Physiology & Biochemistry, to name a few). One of the fun things about the society is this diversity, and the interactions that result. In addition to contributed paper and poster sessions, this year's symposia include ones on: Evolutionary Origin of Feathers; Animal Consciousness--historical, empirical, and theoretical perspectives; Environmental Endocrine Disrupters--from genes to ecosystems; Starfish; and Comparative Vertebrate Reproduction. The meetings are not the cheapest meetings to attend, in part because they're always held in a nice hotel. However, in the past few years, we have covered housing expenses for just about every graduate student who has asked for it (as long as you are presenting a paper or poster). In return, we ask the student to serve a couple of sessions running the projectors, or other such duties. Usually, we can schedule the student into sessions s/he would want to attend anyway. To learn more about SICB, check out the web site: www.sicb.org

Public Review Draft Biological Data Profile of the Content Standard for Digital Geospatial Metadata--The Federal Geographic Data Committee (FGDC) is requesting public review and comments on the draft "Biological Data Profile" of the FGDC Content Standard for Digital Geospatial Metadata. The draft Biological Data Profile has been developed in conformance with version 2.0 of the FGDC Content Standard for Digital Geospatial Metadata. It is intended to enhance the applicability and use of this FGDC standard in documenting all types of biological data and is the primary metadata content standard to be used in the National Biological Information Infrastructure. The public review draft can be downloaded from the FGDC at: www.fgdc.gov/Standards/Status/sub5_2.html

The U.S. Forest Service and Trout Unlimited are embarking on a project to determine if native strains of Eastern brook trout inhabit the White Mountain National Forest. The practice of stocking trout from other watersheds was common during the settlement period of New Hampshire, and it is continued today by the New Hampshire Fish and Game with the stocking of hatchery-reared trout. DNA analysis will be done on the fish collected. This will provide information as to whether native strains of brook trout are still present. Seventy-three percent of NH resident anglers are interested in fishing for native or wild trout. Information from this project will be used to conserve native wild trout populations. For more information contact Kathy Starke, USFS, 603.447.4346.

News from Around the World Submitted by John Fields and others

ZEBRA MUSSELS CAN COLONIZE SAND AND MUD (press release) Researchers have found that zebra mussels have built colonies on the sandy and muddy bottom of Lake Erie,a habitat previously thought incapable of supporting the animals. Since their Great Lakes debut in the mid-1980s, researchers believed that these tiny freshwater bivalves could only colonize hard, underwater surfaces such as rocks, clams and runoff pipes. The new findings are reported in the journal Nature. "In terms of potential zebra mussel habitat, (a Lake Erie is wide open," said Paul Berkman, senior research associate at Ohio State University's Byrd Polar Research Institute.

"More than 90 percent of the Lake Erie floor is a soft substrate. This is a wake-up call. "We found that zebra mussels clearly colonize sand and muddy substrates in the lake," he said, adding that the densities of some zebra mussel colonies exceed 20,000 animals per square meter. Berkman and his colleagues studied 200 kilometers of the Lake Erie floor from the New York-Pennsylvania border to the lake's western basin. They determined that by 1995, zebra mussels covered about 2,000 square kilometers of the lake bed's soft sediment. "We do know that mussels colonize soft substrates and that they are doing this

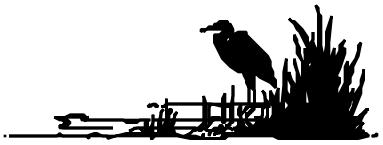
over a significant portion of the lake," Berkman said.

Researchers used side scan sonar (SSS), a device that sends out frequencies that can differentiate between hard and soft underwater surfaces. "Since the side scan sonar signal is strongly reflected by hard substrate and weakly reflected by soft substrate, we could profile the lake bottom to determine where the zebra mussels were located," Berkman said. The researchers then used an underwater video camera attached to a submersible remotely operated vehicle to take pictures of the suspect areas and discovered zebra mussels had colonized the soft sediment of the lake bed.

FOOLING WITH NATURE (PBS News Release)
In recent years, lower IQ, reduced fertility, genital deformities, and abnormalities within the immune system have all been suspected of being linked to synthetic chemicals in the environment. Scientists have found growing evidence that these chemicals, stored in our bodies, could threaten human health. "You are now carrying at least 500 measurable chemicals in your body," says World Wildlife Fund scientist Theo Colborn. "They were never in anyone's body before the 1920s."

In "Fooling with Nature," FRONTLINE and the Center for Investigative Reporting explored an alarming new theory being debated within the scientific community that challenges governments and the multibillion dollar chemical industry. The program included interviews with scientists, politicians, activists, and business officials, finding a variety of reactions to this theory. The theory, known as "the endocrine disruption hypothesis," was made prominent by the 1996 publication of Our Stolen Future, co-authored by Colborn. Of great concern are potential effects on the brain. "Fooling with Nature" explored the research of Joe and Sandra Jacobson, who found a permanent IQ deficit of up to six points in children exposed to environmental pollutants through their mothers' diet of fish from the Great Lakes, although they cannot say if endocrine disruption is the cause. But the threat remains. "Once the potential, the IQ potential, is shaved off a child, you can't put it back in," says Ludwig. "That's the key to this. That's why endocrine disruption is so important to understand."

POLLUTION 'DAMAGING' INTELLIGENCE (BBS news)
Pollution and poor land quality is said to be reducing the intelligence of millions of people throughout the world. Research by a scientist at London University, Dr Christopher Williams, has suggested pollutants such as lead affects the intelligence of one in 10 children in Britain, but up to 90% in some African countries. Dr Williams told BBC Radio that in considering the environment, a lot of attention was paid to cancer and respiratory disease "because you can put them under a microscope and see what's happening--you can't put an IQ loss under a microscope and see what's happening." Dr Williams' findings are derived from compiling hundreds of studies carried out in recent decades, which had not been put together. For example, in the US, 17% of children were said to have lead levels affecting their intelligence. A further study showed 5% of US babies had exposure to toxic PCBs that affected intelligence.



Chesapeake Bay. On June 2, federal and state officials held a news conference near Annapolis, MD, to report annual survey results for the Bay. Results including a 9% increase in acreage of underwater grasses, a 13-year high in dissolved oxygen concentrations, and a 13-year low in nitrogen pollutant levels. Managers attributed these gains to the low freshwater flow into the Bay in 1997. In late June, 1998, officials of the Chesapeake Bay Foundation announced a program "Covenant to Save Chesapeake Bay" setting goals for 2005 including 160,000 acres of underwater grasses, a tenfold increase in the Bay's oyster population, and reopening 1,500 miles of the drainage to migratory fish. The Foundation plans to spend $18.7 million for Bay restoration projects to achieve these and other objectives. [Assoc Press]

Antarctic Fishing. On June 1, delegates at the 22nd Antarctic Treaty Consultative Meeting in Tromso, Norway, were informed that Britain, France, and the United States are likely to deploy spy satellites to monitor illegal fishing in Antarctic waters. Scientists at the Meeting reported that illegal, unreported, and unregulated fisheries were taking about 115,000 metric tons annually from Antarctic waters. France and the United States were reported to have been holding private talks about satellite deployment. Patagonian toothfish are especially at risk, with Chilean, Argentine, Spanish, and Norwegian-flagged vessels landing their catch at African ports. [The Times (London)]

WA Salmon Management. In mid-June WA Dept. of Ecology officials pledged $4 million in grants under a new state watershed-planning law for river management and salmon protection projects in 22 WA communities. In mid-June 1998, the WA Contract Loggers Assoc, the Northwest Forestry Assoc, Skamania County, and two private landowners filed suit in Thurston County Superior Court challenging WA regulations restricting timber harvesting in riparian areas to protect steelhead trout. The lawsuit argues that the WA Forest Practices Board acted illegally in adopting emergency regulations to protect steelhead trout. [Assoc Press]

Salmon and Global Warming. On June 2, the Toronto Globe & Mail reported that an article in a forthcoming edition of the Canadian Journal of Fisheries and Aquatic Science by a British Columbia scientist uses a climate model to predict that salmon may not be able to inhabit the North Pacific by the year 2050 due to higher seawater temperatures. [Toronto Globe & Mail]

Aquatic Feeds Research. In late June, Hawaii's Oceanic Institute announced that it had received funding from the U.S. Dept. of Agriculture to develop a $3.2

million research and pilot aquatic feed factory on at the Univ. of HI-Hilo's agriculture farm in Panaewa. [Assoc Press]

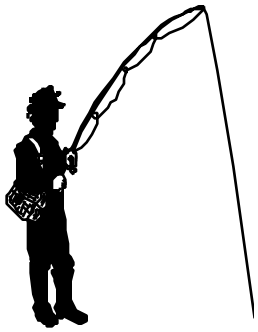
Competitive Bass Fishing. On June 25, officials of Operation Bass announced that the seven-event 1999 Wal-Mart FLW professional bass fishing tour would offer a record in cash prizes totaling more than $3.97 million, with the first place angler in the Tour Championship winning $250,000. [Operation Bass press release]

Fisherman on Wheaties Box. On June 18, bass fisherman Denny Brauer of Camdenton, MO, was announced as bass fishing's Wal-Mart FLW Tour's points champion and became the first angler to be featured on a Wheaties cereal box. [Dow Jones News]

Lacey Act Eel Prosecution. On June 17, the U.S. Attorney's Office (Norfolk, VA) announced the indictment of two NC men for illegally buying and selling juvenile eels (elvers) as part of an apparent eel-poaching ring in VA, ME, and NJ supplying overseas markets. Penalties could be as much as 20 years in prison and $1 million in fines. This is reported to be the first Lacey Act prosecution for elvers. [Assoc Press, The Virginian-Pilot]

WA Fisheries Turmoil. In mid-June WA Dept. of Fish and Wildlife Director Bern Shanks agreed to leave his position by September 1998, after months of turmoil including a projected budget shortfall expected to exceed $17 million by summer 1999 and termination of about 100 positions from the agency's payroll. In the interim, Shanks is working on a long-term funding study for the agency. [Assoc Press]

Gila Trout Introduction. On June 15, 1998, U.S. Forest Service managers announced that a planned reintroduction of endangered Gila trout into two streams on the Gila National Forest, NM, had been indefinitely postponed after surveys indicated more nonnative fish in the target streams than previously reported. [Assoc Press]



Bass Tournament Controversy. In early June, WI Dept. of Natural Resources (DNR) officials were investigating activities during the late May 1998 Red Man All-American Bass Fishing Tournament in La Crosse, where fishermen are alleged to have culled fish. Such culling, or releasing small fish after larger ones are caught, is contrary to provisions of the permit granted by the DNR for the tournament. [Assoc Press]

Fire Ants Kill Trout. On June 2, the TX Parks and Wildlife Dept. concluded that the consumption of toxic, dead male fire ants was responsible for killing at least 23,000 rainbow trout planted in the Guadalupe River. Some of the trout had as many as 500 ants in their stomachs. [Assoc Press, Houston Chronicle]

Barndoor Skate. On July 30, Dalhousie University scientists published research results in the journal Science indicating that the population of barndoor skates in the north Atlantic has been declining dramatically since the 1950s, and that this species may be nearing extinction. Concerns are that this decline may indicate the decline of other bottom-dwelling marine species in response to heavy fishing pressure. [Reuters]

Plastic Pellet Pollution. On July 14, scientists at Japan's National Institute of Health Science released results of a study of small plastic resin pellets on Japanese beaches. Reporting densities as high as 1,000 to 1,500 pellets per square meter, scientists expressed concern that such pellets might release hormone-disrupting substances or be swallowed by animals. [Dow Jones News]

Flounder Quota Court Action. In early June, NC officials and the NC Fisheries Association filed a motion in U.S. District Court (Norfolk, VA) to hold the U.S. Secretary of Commerce in contempt of court for making late changes in NC's summer flounder quota and imposing hardship to fishermen. After the NC quota was set at 3.04 million pounds in December 1997, the quota was twice adjusted in 1998, finally being reduced to 2.64 million pounds by Apr. 28, 1998. [Assoc Press]

NC Summer Flounder Quota Lawsuit. Aug. 11, was the deadline set by U.S. District Judge Robert Doumar for parties in the NC Fisheries Association's lawsuit against NMFS over summer flounder quotas to discuss settlement terms in this case. Discussions were to continue by conference call on Aug. 13. [Cateret County (NC) News-Times]

Excessive Summer Flounder Sport Catch? On Aug. 7, the NC Fisheries Association sent letters to the Secretary of Commerce and the Mid-Atlantic Fishery Management Council asking that the recreational harvest of summer flounder be halted along the Atlantic coast. The Association claims that NMFS data indicate the sport fishery is blatantly overfishing and has exceeded its target limits by a total of 7.8 million pounds in 1996 and 1997. [Assoc Press]

UK Quota-Hopping Measures. On July 30, British officials announced measures requiring foreign vessels registered to fly the British flag and harvest fish under the British quota to maintain economic links with British ports. The new requirements are designed to be compatible with EC law and would become effective Jan. 1, 1999. Under the new rule, vessels would have four options, including landing at least 50% of their catch in British ports, employing a crew with at least 50% British coastal residents, spending a certain amount on British goods and services, or some combination of these three. [Reuters]

Canadian Groundfish. On July 27, Canadian officials announced that families making more than C$40,000 combined annual income will be ineligible for the final cash payment plan under Canada's

Atlantic Groundfish Strategy, while those making less than C$26,000 will be eligible for the full payment. Details of a C$250 million license retirement plan have not yet been finalized. [Canadian Press]

Potlatch Pollution Lawsuit? In early August, a coalition of three environmental groups filed notice of intent to sue the U.S. Environmental Protection Agency (EPA) for its renewal of an effluent discharge permit for Potlatch Corp. at the confluence of the Clearwater and Snake Rivers, ID. These groups are concerned over the relevance of water quality to salmon and steelhead recovery and seek to have EPA address the threats to fish from impaired water quality. [Assoc Press]

Cattle Grazing Lawsuit Appeal. On July 22, the 9th U.S. Circuit Court of Appeals, by a 3-0 ruling, overturned a lower court ruling requiring OR ranchers grazing cattle on U.S. Forest Service lands to obtain a state permit under the Clean Water Act to regulate pollution from these cattle on salmon streams. The Appeals Court ruled that states could only require permits for point sources, not non-point agricultural sources. [Assoc Press]

Malathion Misuse? On July 28, U.S. Environmental Protection Agency officials announced that, on July 23, 1998, they asked agricultural officials in 7 southeastern states and Missouri to began sampling catfish at catfish farming operations in an investigation into possible misuse of the pesticide malathion. Four MS catfish farmers were reported to have admitted misusing malathion. Nearly 100 MS farm-raised catfish were sampled on July 30-31, 1998, and no malathion contamination was observed. [Assoc Press]

Catfish and Power Outages. On July 16, MS catfish farmers met with the MS Public Service Commission to register complaints about electric service disruptions, with special concern during warm weather when an extended loss of power to pond aerators could cause extensive loss of catfish. [Assoc Press]

Fish Poisoning Conflict. CA Dept. of Fish and Game officials announced that they are scheduled to begin planting between 700,000 and 900,000 rainbow trout in Lake Davis in Plumas County on July 9, 1998. More than a million rainbow trout are scheduled to be planted by mid-July, 1998. All fish in Lake Davis were poisoned in October 1997 to kill non-native and illegally introduced northern pike. However, persistence of traces of piperonyl butoxide from chemicals used to poison fish prevents the resumed use of lake water for local drinking water. [Assoc Press]

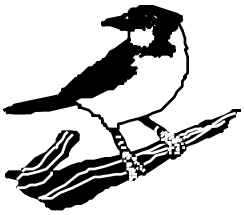
Westslope Cutthroat Trout Restoration. In mid-August, an agreement was reached among Earth Search Sciences Inc. (ESSI), MT Dept. of Fish, Wildlife, and Parks, Turner Enterprises, and NASA-MSU TechLink to conduct a restoration project for westslope cutthroat trout on 50 miles of the Cherry Creek drainage on Turner Enterprises' Flying D Ranch. The project will focus on removal of nonnative fish and reintroduction of genetically pure westslope cutthroat trout in this drainage above a 30-foot waterfall that isolates the drainage from natural immigration by nonnative fish. [ESSI press release]

Joint National Park Fishery Management. On Aug. 13, officials of Great Basin National Park joined the Interior Department, the state of NV, and Trout Unlimited in signing an agreement to manage coldwater fisheries and reintroduce native Bonneville cutthroat trout to additional park streams. Similar agreements have been signed for Yellowstone National Park and Great Smoky Mountains National Park in the past year. [Assoc Press]

VT Dam Agreement. On Aug. 13, an agreement was announced between the Central VT Public Service Corp., VT Agency of Natural Resources, VT Natural Resources Council, and Trout Unlimited to study the impacts of four dams on fish populations on the lower Lamoille River. The four dams are required to be relicensed by the Federal Energy Regulatory Commission. Close scrutiny will be directed at Peterson Dam, with dam removal under consideration. [Assoc Press]

Bull Trout. On Aug. 11, U.S. Fish and Wildlife Service officials declared an emergency listing of bull trout as an endangered species in the Jarbridge River drainage, NV and ID, to protect this population from habitat destruction by Elko County, NV, road construction activities. [Assoc Press]

Fishable Waters Act. On Aug. 6, a coalition of fishing, conservation, agriculture, and environmental groups have tentatively scheduled announcement and release of draft legislation for a "Fishable Waters Act" to address non-point source pollution and the 40% of U.S. waters that remain unfishable and/or unswimmable. [Bass Anglers Sportsman Society press release]



Cormorant Massacre. On July 29, NY Dept. of Environmental Conservation (DEC) officials discovered the carcasses of at least 850 federally protected double-breasted cormorants during a routine inspection of Little Galloo Island in Lake Ontario. The birds had been killed by shotgun. About 1,000 cormorants in the colony of about 6,000 birds have been killed in the past 2 months. DEC enforcement officials are conducting an investigation. Charter guides and fishing-dependent business owners in the area have been urging the U.S. Fish and Wildlife Service to reduce cormorant colony size, believing the fish-eating birds harm their livelihood. [Assoc Press]

Fishing License Revocations. In late July, the NM Dame and Fish Dept. ordered the revocation of hunting and fishing licenses for 31 individuals delinquent in their child support payments. These were the first

revocations under the authority of NM's 1995 Parental Responsibility Act. [Assoc Press]

Illegal Mussel Harvests. On July 24, U.S. Fish and Wildlife officials announced that a Japanese-owned TN company has been fined $1 million for knowingly buying freshwater mussel shells taken unlawfully from MI, OH, KY, and WV rivers and shipping them to Japan. This is the largest federal settlement for a criminal wildlife violation. The proceeds from this penalty will be paid to the National Fish and Wildlife Foundation, to establish a Freshwater Conservation Fund for protecting and restoring freshwater mussels. [Assoc Press, Fish and Wildlife Service press release]

Offshore Trawler Riots. On June 24, 1998, about 500 fishermen rioted, burning 8 trawlers and 3 warehouses in Gabion, near the port of Belawan in north Sumatra, Indonesia, and expressing frustration over local authorities' inability to keep large trawlers from encroaching on nearshore fishing areas. [Reuters, Asia One/Singapore Press]

Marine Bioluminescent Products. On June 22, officials of Prolume Ltd. (Pittsburgh, PA) demonstrated bioluminescent additives developed from jellyfish and shrimp enzymes at an exposition sponsored by the Institute of Food Technologists in Atlanta, GA. The company claimed to have cloned the genes for creating the luminescent proteins, and suggested they could be used, for example, to make glow-in-the-dark cosmetics, beverages, yogurt, and cake icing. Testing will be necessary to gain FDA approval for such products. The company is also developing a squirt gun that sprays bioluminescent water. [Reuters]

Sand Disposal Lawsuit. On June 19, Corps of Engineers officials agreed to a partial settlement of a March 1998 lawsuit filed by a coalition of environmental and fishing groups concerned with dumping of dredge spoils in Dungeness crab habitat off the mouth of the Columbia River. Under the agreement filed in U.S. District Court (Seattle, WA), the Corps will not dump dredge spoils in an eight-square mile area of prime Dungeness crab habitat, will stop dumping in a smaller area after Aug. 22, 1998, and will study the formation of sand mounds that create unexpected waves hazardous to fishing vessels. Additional court review will continue in July 1998 as the coalition seeks to overturn the 1997 dump site selection process alleged to have failed to consider how dumping might affect crabs. [Assoc Press]

Sustainable Fisheries Initiative. On June 12, President Clinton announced that he is proposing an additional $194 million over 5 years to reduce overfishing and protect essential fish habitat. Such funding would finance 3 state-of-the-art fishery research vessels, increase research and promote public-private partnerships to develop aquaculture, and help restore depleted fish stocks within 10 years. In addition, he proposed a ban on the sale or import of Atlantic swordfish less than 33 pounds. [White House press release]

Indian Clamming Rights. On June 11, a MA state appeals court reversed a lower court decision and ruled that members of the Mashpee Wampanoag tribe could not be prosecuted for subsistence clamming contrary to town ordinances prohibiting clamming on certain days. Aboriginal fishing rights were ruled to be valid under the 1749 Treaty of Falmouth. [Reuters]

ASCO Meeting. On June 8-12, the North Atlantic Salmon Conservation Organization met in Edinburgh, Scotland, and concluded an agreement to limit the West Greenland commercial fishery for Atlantic salmon to harvest for domestic consumption only for the remainder of 1998. In addition, Canada agreed to a one-year moratorium on its commercial salmon fishery in Labrador. NASCO also endorsed the Precautionary Approach to Atlantic salmon, wherein inadequate scientific information would not be used as justification for postponing or avoiding conservation and management actions. [NOAA press release, personal communication, Bangor Daily News]

EU Driftnet Ban. On June 8, the European Union agreed to a total ban on all driftnet fishing after 2001, with France and Italy voting against and Ireland abstaining. EU fisheries ministers suggested ways might be found to assist fishing communities adapt through retraining programs or decommissioning schemes for vessels. [Reuters, Assoc Press]

Driftnet Protest. On July 11, French fishermen blocked access to the Marseilles port in a protest against the EU ban on driftnets, scheduled to go into effect in 2002. [Reuters]

Red Snapper Prison Sentence. On June 8, a LA seafood company owner was sentenced to 18 months in federal prison and ordered to pay a fine of more than $27,000 for 1995 Lacey Act violations involving interstate commerce in out-of-season red snapper. [Assoc Press]

Big fish -- A fisherman on Lake Erie found a 250 pound, seven-foot four-inch lake sturgeon in August. The biggest sturgeon ever found in Lake Erie, reports Rodale Press. Ralph Lowman brought the fish ashore but members of the New York state conservation department were unable to revive the fish. The fish is thought to have been 120 years old and died of old age. Lake sturgeon are endangered in New York. [Environlink news]

Cutthroat preservation -- Oil giant Exxon is working in partnership with the Wyoming Game and Fish Department to construct a pond and related facilities that will assist efforts to stabilize the Colorado River cutthroat trout. Exxon has pledged $75,000 for a 1.2 acre, 22-foot deep pond on Exxon's property that will serve as a over-wintering habitat for the sensitive trout species. The entire project will be fenced to keep out grazing livestock, but allow access for deer, elk and other wildlife. Public use will be permitted, but fishing will be limited to catch and release using artificial flies and lures. [Environlink news]

Biotech Crops Produce Superweeds - Hybrid, transgenic weeds resist the herbicides that were designed to kill them.

Allison Snow, associate professor of plant biology at Ohio State told colleagues in Baltimore at the 1998 Ecological Society of America Annual Meeting Thursday transgenic crops - those that are engineered with specialized traits like herbicide resistance - can pass their traits on to nearby weeds via hybridization. Snow collaborated with Risoe National Laboratory in Denmark to find out whether this was the case for oilseed rape, the plant from which canola oil is derived. The study showed that the offspring of herbicide-resistant hybrids between transgenic oilseed rape and one of its weedy relatives reproduced as prolifically as unaltered weeds. [Environlink news]

Yellowstone Lake Fouled - Raw sewage that spilled into Yellowstone Lake twice in June has brought a citation from Wyoming state environmental officials down upon Yellowstone National Park. The spills violate state and federal water quality standards. The problem was triggered by a power outage in early June In early June that caused sewage pumps from hotels and lodges to shut down. About 150,000 gallons of raw sewage spilled into the lake. A similar spill at the end of June allowed about 70,000 more gallons of sewage into the lake. Michael Scott of the environmental group Greater Yellowstone Coalition Program said the group will file a lawsuit to force the Park to buy a new generator to back up the power system. [Environlink news]

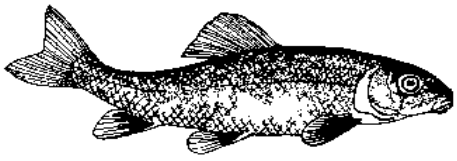
Watershed Management Tested In Tennessee - The Conasauga River near Chattanooga, Tennessee - one of the richest freshwater environments in the temperate world - will be one of the first tests of the U.S. Forest Service's new agenda of watershed management as a top priority. Agency officials confirmed that a broad-based initiative is in the works for the long-term future of the Conasauga ecosystem. Timber harvest proposals for the watershed have been put on hold. "We're cautiously optimistic," said Tom Hatley, a forester and environmental historian who directs the Southern Appalachian Forest Coalition. "Water quality could become the priority in this unique place, not just an afterthought. Done right, this initiative could become a model for watershed restoration in the Southeast and across the nation." [Environlink news]

Itch Is The Devil's Own - As the swimmers' itch season winds down at Devil's Lake in Wisconsin, an internationally renowned Bulgarian expert, Ivan Kanev, is helping state park officials learn how to prevent the scratching in coming years. Swimmers' itch, a skin irritation that can last a few days or weeks, is caused by a microscopic parasite that cycles through waterfowl and snails. The itch is a problem in many Wisconsin lakes; the season starts in mid-June on southern lakes and lasts about a month. Swimmers' itch has been a nuisance at Devil's Lake for 20 years, and there no cure, short of using chemicals the state bans because they kill other organisms in the water. Kanev, a professor of parasitology and former director of the Bulgarian Academy of Sciences' Institutes of Parasitology, has been in the United States since 1997, consulting with state and local agencies and groups on parasite problems. [Environlink news]

Great Lakes Still Bear Toxic Burden - The United States and Canada must renew their dedication and fulfill their commitments to restore and protect Great Lakes water quality, concludes the International Joint Commission in its Ninth Biennial Report on Great Lakes Water Quality issued today. The Commission has made 19 recommendations that present specific targets and deadlines. Recommendations cover initiating and completing remediation of contaminated sediment; reducing and eliminating sources of air pollution containing specific toxic and persistent toxic substances; reducing pollution to the Great Lakes from agricultural land; funding research about endocrine disruption in humans and wildlife; adopting a strategy relating to dioxins and furans; identifying and eliminating specific uses of mercury; developing a detailed program for the systematic destruction of PCBs; and monitoring of nuclear facilities and toxic chemicals used at nuclear facilities, as well as the effects of radioactive elements. [Environlink news]

Glenn Puts Aliens In Their Place - The interagency Aquatic Nuisance Species Task Force recognized Senator John Glenn for prevention and control of invasions of alien species. The award was given by Dr. D. James Baker, under secretary of commerce for oceans and atmosphere, and Jamie Rappaport Clark, director of the U.S.Fish and Wildlife Service, at a July 21 reception. "Senator Glenn has long recognized that invasive alien species such as the zebra mussel and sea lamprey can have a serious impact on our country," said Clark. Glenn worked to pass the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 to curtail the many aquatic nuisance species introduced by ballast water from incoming ships. "Thanks to Senator Glenn's efforts, all ships entering the St. Lawrence Seaway must now exchange their ballast water on the high seas," Clark said. "This greatly reduces the likelihood of another pest like the zebra mussel invading Toledo, Chicago, or Duluth." [Environlink news]

NH Bans Lead Sinkers - NH will band the use of lead sinkers and jigs in most freshwater lakes and ponds starting January 1, 2000. The ban was the result of studies on common loon mortalities. Loons have been known to pick up lead fishing sinkers and jigs from the bottom of lakes and ponds, and use them along with pebbles to grind up food. One recent study indicated that in 1997, 11 loons died of lead poisoning--about 2% of the state's 576 loons. NH is the first state in the country to enact such a ban. If found guilty of using a lead sinker or jig, anglers could face a violation and fine up to $250. For more information call 603.271.3212. [Atlantic International Chapter Newsletter]



On the Underside

submitted by Charles Anderson, Duluth Fisheries, and others

These quotes were taken from actual performance evaluations:
1. Since my last report, this employee has reached rock bottom and has started to dig.
2. His men would follow him anywhere, but only out of morbid curiosity.
3. I would not allow this employee to breed.
4. This associate is really not so much of a has-been, but more of a definitely won't be.
5. Works well when under constant supervision and cornered like a rat in a trap.
6. When she opens her mouth, it seems that this is only to change whichever foot was previously in there.
7. He would be out of his depth in a parking lot puddle.
8. This young lady has delusions of adequacy.
9. He sets low personal standards and then consistently fails to achieve them.
10. This employee is depriving a village somewhere of an idiot.
11. This employee should go far-and the sooner he starts, the better.

These are actual lines from military performance appraisals or Officer Efficiency Reports (OERs).
1. Not the sharpest knife in the drawer.
2. Got into the gene pool while the lifeguard wasn't watching.
3. A room temperature IQ.
4. Got a full 6-pack, but lacks the plastic thingy to hold it all together.
5. A gross ignoramus -- 144 times worse than an ordinary ignoramus.
6. A photographic memory but with the lens cover glued on.
7. A prime candidate for natural deselection.
8. Bright as Alaska in December.
9. One-celled organisms out score him in IQ tests.
10. Donated his body to science before he was done using it.
11. Fell out of the family tree.
12. Gates are down, the lights are flashing, but the train isn't coming.
13. Has two brains; one is lost and the other is out looking for it.
14. He's so dense, light bends around him.
15. If brains were taxed, he'd get a rebate.
16. If he were any more stupid, he'd have to be watered twice a week.
17. If you give him a penny for his thoughts, you'd get change.
18. If you stand close enough to him, you can hear the ocean.
19. It's hard to believe that he beat out 1,000,000 other sperm.
20. One neuron short of a synapse.
21. Some drink from the fountain of knowledge; he only gargled.
22. Takes him 1 1/2 hours to watch 60 minutes.
23. Wheel is turning, but the hamster is dead.

Deep Thoughts:
Depression is merely anger without enthusiasm.
If Barbie is so popular, why do you have to buy her friends?
Ambition is a poor excuse for not having enough sense to be lazy.
Beauty is in the eye of the beer holder.
What happens if you get scared half to death twice?
Shin: A device for finding furniture in the dark.
Join the Marines, meet interesting people, kill them.
For Sale: Parachute. Only used once, never opened, small stain.
Many people quit looking for work when they find a job.
Okay, so what's the speed of dark?

How to Write More Better
1. Avoid alliteration. Always.
2. Never use a long word when a diminutive one will do.
4. Employ the vernacular.
5. Eschew ampersands & abbreviations, etc.
6. Parenthetical remarks (however relevant) are unnecessary.
7. Remember to never split an infinitive.
8. Contractions aren't necessary.
9. Foreign words and phrases are not apropos.
10. One should never generalize.
11. Eliminate quotations. As Ralph Waldo Emerson said, "I hate quotations. Tell me what you know."
12. Comparisons are as bad as cliches.
13. Don't be redundant; don't use more words than necessary; it's highly superfluous.
14. Be more or less specific.
15. Understatement is always best.
16. One-word sentences? Eliminate.
17. Analogies in writing are like feathers on a snake.
18. The passive voice is to be avoided.
19. Go around the barn at high noon to avoid colloquialisms.
20. Even if a mixed metaphor sings, it should be derailed.
21. Who needs rhetorical questions?
22. Exaggeration is a billion times worse than understatement.
23. Don't never use a double negation.
24. capitalize every sentence and remember always end it with point
25. Do not put statements in the negative form.
26. Verbs have to agree with their subjects.
27. Proofread carefully to see if you words out.
28. If you reread your work, you can find on rereading a great deal of repetition can be avoided by rereading and editing.
29. A writer must not shift your point of view.
30. And don't start a sentence with a conjunction. (Remember, too, a preposition is a terrible word to end a sentence with.)
31. Don't overuse exclamation marks!!!
32. Place pronouns as close as possible, especially in long sentences, as of 10 or more words, to their antecedents.
33. Writing carefully, dangling participles must be avoided.
34. If any word is improper at the end of a sentence, a linking verb is.
35. Take the bull by the hand and avoid mixing metaphors.
36. Avoid trendy locutions that sound flaky.
37. Everyone should be careful to use a singular pronoun with singular nouns in their writing.
38. Always pick on the correct idiom.
39. The adverb always follows the verb.
40. Last but not least, avoid cliches like the plague; They're old hat; seek viable alternatives.

Tri-Chapter AFS Meeting
January 5-7, 1999
Yacht Club Resort
529 Park Plaza Drive
La Crosse, Wisconsin

Our next Chapter Annual Meeting will be a great event. Please plan on attending this unique Tri-Chapter AFS Meeting. Wisconsin, Minnesota, and Iowa Chapter members will meet in the backwaters of the Mississippi River for scientific presentations on fish and other aquatic resources. The Wisconsin Chapter celebrates its 28th Annual Meeting, and Minnesota its 32nd. About $45 will cover all breaks, social mixers, and the Wednesday evening banquet. Lodging reservations can be made at the Yacht Club ($62/double/night; 608.784.9500).

Tentative Schedule:

January 5th, 1999, Tuesday
Continuing Education Workshop - Ethics in Fisheries Management (look for details on registration soon)
Evening Registration and Social
6:00 - 12:00 pm social mixer with beer and snacks

January 6th, 1999, Wednesday
Yacht Club, La Crosse
8:00 - noon: Registration
8:00 - 12:00: Papers
12:00: lunch on your own
1:00 - 4:00: Papers
4:00 - 5:00: Chapter Business Meetings
5:00 - 7:00: Social mixer
6:30 - 8:00: Banquet with Presentation by Dr. Calvin Fremling

January 7th, 1999, Thursday
Yacht Club, La Crosse
8:00 - noon: Papers
12:00 - Lunch provided

Attention - First and Last Call for Papers

Titles and abstracts for the Tri-Chapter Meeting are now invited. The deadline for title submission is November 1st, and for abstracts it is December 1st. Titles and abstracts should be submitted electronically, either mailed on floppy disk or sent via e-mail. Files on floppy disk must be in ASCII, Word, or WordPerfect file format; e-mail submissions can be in those file formats for an attached file or placed in the body of the message. Abstracts, including the author and title lines, are to be no more than 250 words. Include at the top of the file the following information for both title and abstract submissions: author(s), institution, mailing address, phone number, e-mail address, who will present paper and if a student or not, and preference for oral or poster presentation. Persons submitting titles and abstracts will be notified of their receipt. Titles and abstracts should be sent to: Paul Radomski, Minnesota DNR, 1601 Minnesota Drive, Brainerd, MN 56401, email: paul.radomski@dnr.state.mn.us. Talks will be scheduled for 20 minutes (15 minute presentation with 5 minutes for questions). People with questions on title or abstract submission could contact Paul Radomski at 218.828.2246.

There are two ways to become a member: (1) fill out this form and send it in with seven dollars, or (2) join the American Fisheries Society and pay your Minnesota Chapter dues through them (the Chapter gets reimbursed).

1999 Dues Application

1999 Minnesota Chapter dues.....$7.00 _____

Total Enclosed..... _____

Send Check (pay to the order of: Minnesota Chapter AFS) and this form to:
Kevin Stauffer
DNR-Fisheries
2115 Birchmont Beach Rd NE
Bemidji, MN 56601

Name: _____
Address: _____
_____
_____
_____
Phone: _____
e-mail: _____ **(for email notices)**

Are you a member of AFS (parent society)?_____ yes _____ no. Membership Number_____
(AFS membership number is located on your *Fisheries* mailing label)
Affiliation: _____
(DNR, Federal Government, Academic, Tribal, or Private)
Check if you are a Student: _____
Check if you rather receive ***RYBA*** electronically:_____

To All Chapter AFS Members:
Nominations for 1999 Minnesota Chapter Officers

Please complete the following form and return it by mail if you wish to nominate candidates to serve as Chapter Officers in 1999. Nominations must be received by October 5, 1998. You may also call me at 612.772.7966.

Melissa Drake
Nominating Committee Chair
Minnesota DNR
1200 Warner Rd
St. Paul, MN 55106

President Elect:

name:_____	name:_____
telephone:_____	telephone:_____
affiliation:_____	affiliation:_____

Secretary Treasurer:

name:_____	name:_____
telephone:_____	telephone:_____
affiliation:_____	affiliation:_____

Executive Committee (Excom):

name:_____	name:_____
telephone:_____	telephone:_____
affiliation:_____	affiliation:_____

Minnesota Chapter Officers

President	Bruce Vondracek	bcv@finsandfur.fw.umn.edu	612.624.3421; fax 612.625.5299
President-elect	Paul Radomski	paul.radomski@dnr.state.mn.us	218.828.2246; fax 218.828.6022
Past President	Tim Goeman	tim.goeman@dnr.state.mn.us	218.828.2256
Secretary-Treasurer	Kevin Stauffer	kevin.stauffer@dnr.state.mn.us	218.755.3959

Excom Members

Minnesota DNR	Steve Hirsch	steve.hirsch@dnr.state.mn.us	651.296.0791
Federal	Ann Schneider	ann_schneider@mail.fws.gov	612.725.3596
Academic	Loren Miller	lmm@fw.umn.edu	612.624.1271
Open	Richard Brueswitz	rick.brueswitz@dnr.state.mn.us	218.927.3752

Committee Chairs

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Continuing Education	Mark Hove Laurie Sovell	Mark.Hove@fw.umn.edu laurie.sovell@pca.mn.state.us	612.624.3019 651.296.8005
Fisheries Information Network	Fred Henson	fred.henson@dnr.state.mn.us	320.839.2656
Long Range Planning	Open	---	---
Membership:	Doug Kingsley	doug.kingsley@dnr.state.mn.us	218.732.4153
Nominations	Melissa Drake	melissa.drake@dnr.state.mn.us	651.772.7966
Procedure Manual	Brad Parsons	fishgeek@runestone.net	612.634.4573
Public Awareness	Linda Bylander	linda.bylander@dnr.state.mn.us	218.828.6044
Resolutions	Todd Marwitz	todd.marwitz@dnr.state.mn.us	612.345.3365
Rivers and Streams NCD rep	Dennis Topp	ourfish@means.net	218.634.2522
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Internet

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North Central Division	http://www.fw.umn.edu/ncdafs
American Fisheries Society	http://www.fisheries.org

Minnesota Chapter AFS
Attn: Paul Radomski
1601 Minnesota Drive
Brainerd, MN 56401

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First and Last Call for Papers
Deadline is November 1st