NEWSLETTER OF THE

Minnesota Chapter of the American Fisheries Society

Year 1997 No. 3
September Issue

President's Message

Tim Goeman, MN Chapter AFS President

Society News from the Annual Meeting

The Annual Meeting in Monterey, CA clearly demonstrated these are exciting and fast-changing times in the life of AFS. What is more, the MN Chapter is in the midst of much of what AFS is doing on a continent-wide and world wide scale. From the Annual Business Meeting: Carl Burger was elected as 2nd VP of the Society and will begin moving through the ranks toward his presidency. A revised draft version of the position statement on the "Human Use of Fish" will be mailed to all Society members within the next few months. This will happen after the special task force completes the revision and the Governing Board approves this draft for distribution to the membership. A mail ballot will be included with the draft statement, so make sure you vote on the adoption (or rejection) of this important position statement. Two resolutions were passed at the business meeting: Support for continued transfer of motorboat and small engine fuel tax funds from the Highway Trust Fund to the Aquatic Resources Trust Fund, and Support for congressional funding for the Environmental Protection Agency's Clean Water Program (Section 314).

The MN Chapter financially supported a special symposium at the Annual Meeting organized by students and faculty of the U of M called "Human Interactions with Aquatic Organisms: Philosophy, Values, and Social Change". The symposium was well-attended, represented balanced views of an important and timely issue, and will serve to further our understanding of a topic that has only recently been considered by fisheries professionals.

In other AFS news, there are plans to provide AFS journals online by January 1999, pending a favorable economic analysis of this venture. If you have an opinion on this topic (paper vs electronic format, both available, would you pay more, etc.), contact the journals department in Bethesda.

The recent Annual Meeting included one of the best plenary sessions I have ever attended. For example, Roy Hemmingway (an attorney) clearly explained to an auditorium filled with fisheries professionals why decision-makers do not listen to fisheries professionals:

1. Scientists conclusions change over time (one department advocates snag removal from rivers while another (or the same agency) restores habitat with woody debris).
2. Policy-makers perceive that scientists are without a constituency. It is not enough to merely represent the truth, since that is not the way to win elections.
3. Decision-makers cannot evaluate probability and risk assessment.
4. Decision-makers are not judges--they do not have the time to weigh all the issues. That means scientists must get to the heart of an issue quickly.
5. Scientist are perceived as feathering their own nests--stumping for support for their own programs.

What are Hemmingway's recommended solutions so we can make science count in the political process?

1. Present science as a learning process.
2. Scientists must present evidence, not philosophy or judgements. "Just the facts, ma'am."
3. Acquaint decision-makers with the laws of probability and risk assessment.
4. Translate your technical terms into

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

INSIDE

Quote of the Issue

"Human beings are perhaps never more frightening than when they are convinced beyond a doubt that they are right." Sir Laurens van der Post, South African Author

"For there is a great deal more value in having things corrected than there is in never stating them; the road to truth lies much through argument." F.E.J. Fry, Fisheries Scientist.

understandable language...talk plain.
5. You are in competition with many other issues and concerns. Be a salesman for your cause.
6. Admit when you are wrong. This will actually improve your credibility, since everybody is wrong now and then.

Some of you are probably disillusioned with the entire political process and would just rather go "count fish" and forget the rest of the story. But if we are to make fisheries science count for anything, we must become an effective contributor to the political process, because this system is here to stay. AFS can and does play a major role in helping fisheries professionals be heard in the political process.

Committee Reports

Membership Committee - by Doug Kingsley
Letters were sent in mid-July to 54 people listed on my membership records as not having paid 1997 dues for the Minnesota Chapter. Unfortunately, I didn't get an updated list of those who might have paid their dues through the parent society since April 1 before I did that. I found out in short order that there are several who have, and to those of you I apologize. I've since received an updated list of members who paid dues to the parent society through the end of July, and updated my records with those and others who paid dues following my reminder. The two digit number listed behind your name on the newsletter mailing label should be the year that you last paid dues, according to my (now updated) records. If you have a 95 or 96 behind your name I would encourage you to please pay 97 dues either to the parent society or to Treasurer Kevin Stauffer. Those addresses are listed elsewhere in the newsletter. Remember, dues are $7 annually, and it would help if you could fill out an information form to make sure we have the correct address, affiliation, etc. If you feel there is an error with our records, please contact me and we'll try to get it straightened out. If your membership isn't renewed soon, we will be forced to drop you from our membership rolls and mailing list for the Chapter's newsletter.

On another note, I received one of my notification letters back because of an insufficient address. If anyone has a correct address for John Finn (of Cass Lake?), please let me know. Thanks for your help and patience as I try to get our membership records up to date.

Student Committee - by Bill Ardren
Several University of Minnesota fisheries students have received awards over the past year. Loren Miller's paper "Genetic Effective Population Size of a Northern Pike Population" was voted best student paper at the 1996 national meeting in Dearborn, MI. A number of students have received scholarships to attend the 1997 national meeting in Monterey, CA. Lori Sovell and Susan Solarz received 1997 Skinner memorial awards and Julia Frost received an honorable mention (covers her registration at the annual meeting). Karen Mumford was awarded with the J. Frances Allen scholarship.

Tickets sales form the Chapter's raffle helped 12 students attend the 1996 annual chapter meeting in Fargo, ND. Thanks to Henry VanOffelen and all who bought tickets.

Eight students are attending the national meeting in Monterey. With financial assistance from the Minnesota, Florida, Georgia, and Nevada/California chapters, University of Minnesota students J. A. Frost, F. G. Henson, L. M. Maher, K. G. Mumford, E. C. Merten, P. J. Rivers, L. A. Sovell, and S. L. Solarz have organized a symposium entitled, "Human Interactions with Aquatic Organisms: Philosophy, Values, and Social Change." If you are attending the national meeting please support our students and attend. The symposium will be held Colton I, II, III (Monterey Convention Center), Tuesday 8/26/97.

Finally, I'm hoping to increase student involvement from colleges and universities outside of the University of Minnesota. Please send me suggestions of university or college contacts. If you are a student and want to know more about AFS please contact me.

Resolutions Committee - by Wayne Barstad
Human Use Of Fish And Other Living Aquatic Resources--An AFS Position Statement

For several years now, members of the American Fisheries Society have been working on a human use of fish position statement. A draft, published in the February 1996 issue of *Fisheries*, was tabled at the annual meeting in Dearborn, Michigan, and a task force was set up to re-draft the statement. The task force will be completing its work and a symposium will be held during the 1997 annual meeting in Monterey, California, and the statement should go before the full membership for a vote sometime in 1998.

I encourage all Minnesota Chapter members to become familiar with the issues and concerns embodied in the human use position statement. The discussion within the society has been extremely contentious and complex, and has touched on many subjects of concern to AFS members, including the morality of fishing, animal rights, human cultural diversity, and fish stocking. The debate on human use of fish and other aquatic resources will continue within the AFS and within the larger societal context. It is important that the AFS produce a comprehensive statement that addresses the complete spectrum of human uses.

For more information, see the original draft in Fisheries or find it on the AFS site on the World Wide Web. Also see "An Argument in Defense of Fishing" *(Fisheries*, July 1996), "Argument in defense of fishing should be primarily morally and ethically based" (*Fisheries*, December 1996), "What Do We Believe" by Charles Coutant and "People Are the Customer, Not Fish" (*Fisheries*, January 1997), "Advocacy Guidelines" (*Fisheries*, February 1997), and "Human use of fishes discussion continues" and

"Suggestions for improving AFS position statement process-contact author about use" (*Fisheries*, May 1997).

Continuing Education Committee - by Mark Hove and Laurie Sovell

There was a great deal of interest in the GPS/GIS workshop held this spring. Through Deserae Bushong's efforts, an extra day was made available to accommodate fourteen additional participants. Some of the topics covered included: how the global positioning system works, mission planning, and pre- & post- data processing. There was also a field laboratory that included displaying data onto various computer maps.

Our next course will cover topics related to stream restoration. Fisheries biologists play an increasingly important role in stream restoration. Stream restoration requires not only biological expertise, but knowledge of instream physical processes, upland conditions, and hydrology.

The Continuing Education Committee is offering a winter, 1998 workshop to explore issues related to stream restoration and watershed management. Topics will likely include: riparian management alternatives, stream channel systems and sediment dynamics, the use of instream flow models in restoration, and the influence of landuse practices on aquatic communities and water quality. We will also hear from watershed managers who will discuss projects in forested, agricultural, and urban systems throughout Minnesota. To promote dialogue among disciplines involved in successful stream restoration, the workshop will be held in conjunction with the annual meeting of the Minnesota Chapter of the Soil and Water Conservation Society. The two-day course is tentatively scheduled to be held January 21-22, 1998 at the University of Minnesota St. Paul campus, and will cost between $150-170. A detailed announcement will be distributed this fall. For more information contact Mark Hove at (phone) 612/624-3019, (email) mh@fw.umn.edu; or Laurie Sovell at (phone) 612/724-7256, (email) laurie.sovell@dnr.state.mn.us.

Nominations Committee - by Melissa Drake

Please nominate yourself or someone you respect to be a Chapter Officer. The form is in this newsletter. Mail it to me by October 1st. The Excom will review the nominations and approve candidates for the ballot at the October Excom meeting.

Newsletter Committee - by Paul Radomski

The Chapter could save money in printing and mailing costs if at least 80 people were to get the newsletter by email or through the Chapter home page. This number is needed to break even with our current distribution system which uses a nonprofit bulk mailing permit and a current mailing of about 240 newsletters per issue. We can not use this process for mailings with less than 200 pieces, thus any reduction below 200 pieces has to be substantial enough to warrant a change in our distribution process. I would encourage people with access to email and the internet to request to get their Chapter newsletter electronically and save some Chapter and Natural resources. After compiling a list of people who wish to receive the newsletter electronically, the Chapter will make a decision on how to proceed by the Annual Meeting. I am hopeful we can get more than 80 people to volunteer for this.

If you would like to receive the newsletter by email or via the internet (you would receive an email message that the latest newsletter has been posted on the web), please contact me by email. My internet address is:

radomski@brainerd.net

In the subject block enter "Chapter Newsletter", and in the text block enter if you would like to receive the newsletter as email (as an attachment) or notification that the newsletter has just been posted on the Chapter WWW Page.

T-Shirt Committee (an adhoc revenue-focused committee) - by Henry VanOffelen

This year the Chapter sponsored fish t-shirts which were sold at the DNR nature store at the Minnesota state fair. One of these was a new walleye shirt designed specifically for Minnesota and the State Fair. This shirt has a walleye on the front with a banner below proclaiming "Minnesota State Fish" and includes the logo of the Minnesota Chapter and of the Parent Society. Bluegill, Brook trout, and black crappie designs were also available at the fair. About $3.50 from each shirt sale is expected to be returned to the Minnesota Chapter. Shirts are also for sale to Chapter members. Please use the order form is this newsletter to get your quality Chapter t-shirts.

Division Technical Committees

1997 midyear Centrarchid Technical Committee Meeting by Mike McInerny

Members of the Centrarchid Technical Committee (CTC) of the North Central Division (NCD) met on 29 July in La Crosse, WI. This meeting was held concurrently with the Salmonid and Walleye technical committees. About 25 people from at least seven states attended the CTC meeting. Topics discussed included developing posters, angler effects on crappie and bluegill populations, and developing videos and a directory of fisheries people working on centrarchids. Also, five papers were presented.

The CTC decided to develop posters on bluegill and largemouth bass, similar to the one on walleye developed by the Walleye Technical Committee. These posters are intended to be used for education. Pete Jacobson (MN) and Brad Parsons (MN) will write the text on biology, habitat, distribution, and management of bluegill and Dan Stevenson (IL) and Steve Fischer (MO) will do the same for the largemouth bass poster. In-Fisherman will print the posters and will fund the whole thing. The posters should be completed by the

Midwest meeting in Milwaukee.

Five papers were presented at the meeting. Brad Parsons (MN) presented a paper on exploitation of bluegill and black crappie in four northern Minnesota lakes. He showed that exploitation was a function of several factors, including year-class strengths, growth, and angler expectations. Don Kline (IA) presented a paper on 45 years of fish management in Lake Geode, Iowa, and Larry Mitzner (IA) presented data on the changes in relative weight and other indices of several centrarchids in response to changes in the fish community in Lake Geode. Both demonstrated the value of long term data sets, and that many research findings based on three of four years of data could lead to erroneous management decisions. Tim Spier (IL) presented a paper on hybridization of black crappie and white crappies, influence of turbidity on these two species, and factors affecting stunting of crappies in Illinois lakes. The rate of hybridization differed among lakes, but reasons for these differences could not be determined. He also stated that both species were unaffected by turbidity. Jake Allman (MO) presented some information on a lake managed with an 8-in length limit and an 8-fish bag limit on bluegill. He stated that the length limit was successful in providing large bluegill for anglers in this heavily fished lake.

Earlier this year, CTC representatives were asked to obtain any data on angler effects on bluegill and crappie populations. I compiled these data on crappies and Julie Claussen (IL) is compiling data on bluegill. Julie was unable to attend the meeting so we did not get an update on bluegills. Data on angler effects on crappie populations is scarce. In Minnesota lakes, crappie are less sought after than other sport fish and fishing pressure is relatively lower, consequently, annual exploitation was relatively low (1 to 28%). However, in Indiana and Missouri reservoirs, annual exploitation was 46 to 89%. Crappies are more popular and angling pressure considerably greater in these water bodies than in the Minnesota lakes.

Several other topics were discussed and news items were presented. Melissa Drake (MN) is making progress in compiling gray literature on centrarchids within the NCD. Julie Claussen (IL) suggested that the CTC develop a directory of centrarchid biologists and managers, and the CTC decided to pursue this. The CTC also discussed videoing some of our meetings and pass on the highlights to other interested people. Dave Philipp (IL) informed the CTC that the Illinois Natural History Survey will be doing a study determining factors affecting size structure of bluegill populations in Illinois lakes. The CTC also decided to hold the next summer meeting at Wyasuling State Park, south of Prairie Du Chien, WI, where it had been held several other times.

If anyone has any topics, concerns, or information on centrarchids that you want to share with the CTC or have the CTC address, please let me know.

Salmonid Technical Committee Meeting by Bill Thorn

The Salmonid Technical Committee (STC) of the North Central Division of the American Fisheries Society met July 29, 1997 in La Crosse, Wisconsin. Eight members attended representing Illinois (1), Michigan (1), Minnesota (3), and Wisconsin (3). Members still supported the idea of sponsoring symposia at the Midwest Fish and Wildlife Conference. Three are planned with the first held this fall in Milwaukee. Most of the meeting was devoted to informal reports of ongoing projects in the three states. Some common topics were brook trout genetics and restoration, brown trout strain evaluations, and management classifications.

A large discussion centered on a proposed followup to the 1988 Trout and Trout Angler Workshop. Members thought this was worth pursuing and a representative from each of the three states will investigate agency interest and support.

The STC is planning to meet in Milwaukee at the 1997 Fish and Wildlife Conference where we are sponsoring a symposium on anadromous salmonids in the Great Lakes. This effort has been organized by Don Schreiner. At this meeting we hope to know about the feasibility of the revisiting the Trout and Trout Angler Workshop. Members also suggested a mid-summer meeting with solicited presentations, and this will be pursued.

Esocid Technical Committee by Dave Neuswanger

After a brief introduction by Committee Chair, Terry Margenau (Wisconsin DNR), Dennis Schupp (Minnesota DNR) made an excellent presentation on the trophic relationships of northern pike in Minnesota lakes. Dennis manages an extensive database which includes information from approximately 8,300 surveys on 4,000 lakes over a period of several decades. He used ANOVA to examine interactions among variables which may influence northern pike relative abundance and size structure. Dennis stated, "These observations allow us to identify testable hypotheses" and do not necessarily imply that we now understand cause-effect relationships. A few of the most notable observations/hypotheses are listed below:

•The variables most positively associated with northern pike abundance in Minnesota lakes were water clarity and littoral area.

•There was a strong negative association between the mean weight of pike and their CPUE in standard, multiple-mesh-size gillnets. Dennis hypothesized that the common situation of overabundant small pike may be caused by excessive angler exploitation of adult pike and the presumed concomitant decrease in cannibalism. Would higher length limits help?

•The mean weight of northern pike in gillnet samples was highest in lakes which contained lots of *small* yellow perch and cisco. He hypothesized that these prey species may exhibit a "recruitment response" as their largest, oldest individuals are preyed upon selectively by large pike.

•In lakes <650 acres, there was a highly negative association between northern pike CPUE and walleye CPUE, and the mean size of walleye in gillnet samples increased as pike CPUE increased, suggesting that pike may be capable of impacting walleye recruitment in small lakes. When other interactions were considered, it seemed that yellow perch could "buffer" against the negative effect of northern pike on walleye CPUE. Likely effects of basin morphometry, productivity, and substrate composition (particularly spawning habitat) were acknowledged and were not cleanly separated from fish population interactions for purposes of analysis.

•As yellow perch CPUE and mean size increased in gillnet samples, mean size of bluegill also increased. This observation seemed most pronounced as lake size and productivity increased. (A study in Michigan found that yellow perch ate lots of juvenile bluegill during mid winter under ice cover.)

This presentation generated some interesting discussion, wherein Joe Larcheid (Iowa DNR) spoke of a lake where crappie ate 85% of 2-inch walleye within 24 hours of the time of stocking. Jerry Younk (Minnesota DNR) knew of a similar situation. Dennis Schupp concurred that high crappie population density might negatively affect walleye recruitment. Minnesota will continue to net a group of "core" lakes in order to monitor these complex fish community interactions over time.

Dennis Anderson (Minnesota DNR) presented an interesting case history of 850-acre Horseshoe Lake. DNR biologists felt that anglers desired more northern pike in this recruitment-limited system, so they decided to experiment by stocking "winter-rescued" pike and evaluating fish community response. Thousands of young northern pike (10-16") were stocked in 1969, 1973, and 1979. Gillnet CPUE of northern pike increased significantly after these stockings, but there were adverse side effects. Gillnet CPUE for yellow perch declined precipitously after 1969 and remained low for decades. According to Dennis, stocked pike preyed heavily upon perch at a pre-adult size (4-6"), ultimately leading to the perch population decline. (Large adult perch present at the time of supplemental pike stocking eventually disappeared without replacement.) Gillnet CPUE for walleye also declined following the pike stockings; and walleye growth rate declined, presumably in response to decreased availability of yellow perch as prey. Gillnet CPUE for bluegill increased, and their growth rate declined. Nice-sized crappie were present in low numbers throughout the evaluation period. Dennis concluded that the addition of winter-rescued northern pike to this lake upset the ecosystem in many ways which were not positive.

Dennis Anderson's presentation generated some open discussion of northern pike management in general. Rod Pierce (Minnesota DNR) briefly described the ongoing management of 300-acre Medicine Lake, where a 22- to 30-inch slot length limit on northern pike in a centrarchid-dominated fish community has resulted in a remarkable increase in catches of pike >30 inches. Regulation compliance was good due to the support of a cooperative resort owner. Tim Goemen (Minnesota DNR) mentioned that Minnesota now has *maximum* length limits for northern pike (20, 22, and 24 inches) on several lakes. Their intent is to determine whether increased numbers of large pike will result in sufficient cannibalism to control numbers of "hammer-handle" pike.

Prior to breaking for lunch, NCD President Don Pereira (Minnesota DNR) updated the committee on Division and Society events and issues. The North Central Division has made approximately $2,000 already this year by sponsoring continuing education workshops, so we have contributed $2,500 to the Bethesda office project, and plan to do so again next year. A Division-sponsored Fish Genetics Workshop scheduled to serve 50 participants in LaCrosse, Wisconsin next week should generate even more income. There have been numerous discussions about the structure and function of the AFS home office. There was general agreement that computer resources were in desperate need of upgrading or replacement, so the Executive Board decided to use some AFS2000 funds *now* in order to maintain vital operations. This expenditure is consistent with the intended use of those funds to help the home office function effectively and efficiently.

Treaty biologist Ruth King (Wisconsin DNR) kicked off an afternoon session on monitoring the harvest of muskellunge. Ruth summarized the difficulties involved in monitoring harvest with on-site creel surveys as follows: 1) muskellunge are caught at a much lower rate than most other species; and 2) so few muskellunge are kept that the probability of creel clerk contact with a harvested fish is very low. Wisconsin DNR has examined muskellunge harvest based upon their on-site creel surveys (40 hours/week, stratified-random, daytime) at 33 treaty lakes where the primary objective was to monitor walleye harvest. Between 1990 and 1997, muskie fishing comprised 20% of all angler effort on the study lakes. Average catch rate for muskellunge was one fish per 27 hours of muskie angling effort, and mean specific harvest rate was one fish per 385 hours. Most fish caught were <40 inches long, and 80% of all legal fish were released; but more than half of the 94 harvested fish documented by creel clerks were <40 inches long.

Jerry Younk summarized Project Muskie Angler Diary (1986-1989). After a trial year in 1986, 63% of voluntary participants (<100 annually) responded to Jerry by submitting diary records of their muskie fishing trips. The 128 anglers who participated in the project during 1987-1989 reported fishing 56,068 hours during 4,912 trips, 94% of which were to Minnesota waters. Effort and catch peaked in July. Three anglers accounted for 23% of the reported catches. Mean specific catch rate by participants was one fish per 67 hours in waters with self-sustaining muskellunge populations and one fish per 20 hours in waters dependent upon stocking. The average size of fish caught and released was 34 inches, and over 98% of all fish caught were released. The average Minnesota

muskie angler spent $23.81 per daily trip, travelling an average distance of 61 miles to fish.

Steve Newman (Wisconsin DNR) reported the results of mandatory harvest registration for muskellunge and other species at 293-acre Escanaba Lake in the Northern Highlands Experimental Management Area. Escanaba Lake has been managed and monitored since 1956 with no size limits, no bag limits, and no closed season for any species of fish. Approximately 20 muskellunge were harvested annually, with a mean annual exploitation rate estimated at .23 between 1956 and 1996. Harvested males averaged 31.8 inches long and confirmed females averaged 34.1 inches. (Some larger fish were not dissected due to angler plans to have the fish mounted.) Many of the muskellunge harvested were caught by walleye anglers. On average during the past ten years, anglers have fished 10 hours/acre/year specifically for muskellunge. Mean specific catch and harvest rates for muskellunge of all sizes have averaged one fish per 25 hours and 200 hours, respectively.

ETC Chair Terry Margenau reported on plans for the Muskellunge Management Symposium to be held as a special session of the Midwest Fish and Wildlife Conference in Milwaukee next December. To date, 11 papers have been accepted for presentation between 1:00 and 5:15 p.m. on the first day (Monday) of the conference. Terry has asked all authors to submit by July 31 draft papers for publication in a future issue of the North American Journal of Fish Management.

Terry distributed and briefly discussed Dr. John Casselman's report on the status of the Muskellunge Scale Exchange Program, which most participants will be starting in August.

Terry reported that Wayne Stancil (USFWS) has completed assembly of our esocid "grey literature" library. Documents are now available from the Fish and Wildlife Reference Service.

Steve AveLallemant (Wisconsin DNR) reported on the status of the Esocid Angling Regulations Synopsis. Steve obtained responses from 30 of 35 agencies queried. Committee members reviewed and unanimously approved the format Steve developed to present the information. It was agreed that all contributors should be afforded the opportunity for a final review before the document is printed. Steve will contact Steve Budnik of Muskies, Inc. in order to determine if they are interested in funding publication and printing costs. Steve will likely suggest to Muskies, Inc. that we split 50/50 any proceeds from the sale of the Synopsis which exceed their publication and printing costs. Steve will suggest to Muskies, Inc. that 500 copies of the Synopsis be printed for our committee to distribute free to professionals, plus whatever number they think they can sell to interested anglers at whatever price they think is reasonable.

We next discussed final production and distribution of the document prepared by Dave Clapp entitled "The Introductory, Maintenance, and Restoration Stocking of Esocids" which summarizes the results of our 1996 Summer Meeting. Committee members reviewed their respective input and noted a couple errors which will be corrected prior to publication. It was agreed that each person who summarized program material for another state or province should contact that entity and ask if the information presented on their behalf is accurate and acceptable for release. Such individuals are to notify Dave Clapp by September 1 of any corrections.

While time is short, we agreed that we would try to have both the above referenced publications completed and available for sale at the annual meeting of Muskies, Inc. In Springfield, Missouri in late October. Dave Neuswanger agreed to handle local distribution.

Dennis Scholl conducted a successful raffle of several fine muskie lures donated by Pete Maina, Bruce Shumway, and Joe Bucher, plus a half gallon of pure maple syrup donated by Richard Day. This fun activity netted the committee $145.

Chair-Elect Rod Pierce closed the meeting by establishing that our next Summer Meeting will be held July 21-22 in LaCrosse, Wisconsin. Rod plans to invite participants from Canada and would like to develop the program around a theme of regulation case histories. The meeting ended at 11:00 a.m. with the acclimation of Joel Klammer (Nebraska GPC) as new Chair-Elect.

Walleye Technical Committee Summer Meeting

The following presentations were made in LaCrosse on July 29, 1997.

Modelling regional angler dynamics: do anglers control spatial variability in walleye population? Doug Beard, WI DNR, Madison, and Steve Carpenter, UW, Madison.

Walleye spawning marsh restoration on the Winnebago system. Kendall Kamke, WI DNR, Oshkosh.

Factors affecting recruitment of walleye in Escanaba Lake, WI: 1958-1995. Michael Hansen, UW-Stevens Point, and Steven Newman, WI DNR, Woodruff.

Fate of stocked saugeyes in Ohio reservoirs. Deb Walters, Ohio Division of Wildlife, Xenia, and Rick Silk, Ohio State University, Columbus.

Sauger in the Illinois River. Ron Brooks and Roy Heidinger, Cooperative Fisheries Research Lab, Southern Illinois University, Carbondale.

Genetic characteristics of walleye in the Mobile Drainage. Neil Billington, Cooperative Fisheries Research Lab, Southern Illinois University, and Michael Maceina, Auburn University, AL.

15-inch walleye length limits in Nebraska. Daryl Bauer, Nebraska Game and Parks Commission, Lincoln.

Non-compliance and angler reporting bias with walleye size limit regulations in Alberta. Michael Sullivan, Alberta Natural Resources Service, Edmonton.

A philosophical discussion of walleye

regulations - when to use what, and why. Tim Goeman, MN DNR, Brainerd.

Minutes of Chapter Meetings

ExCom Meeting - May 13, 1997
Present: Goeman, Gran, Close, Drake, Braun, Glander, Negus, Vondracek, Hove, Kingsley, Radomski, Barstad, Ardren, Johannes, Stauffer, Sovell
Absent: Reed, Schneider, Kallemeyn, VanOffelen, Parsons, Mundahl

Meeting was called to order at 10:00 by Tim Goeman, President.
Following introductory comments, the first order of business addressed was the Action Agenda as presented by Goeman.

Meeting Agenda Item No. 1 - Adopt/edit the Annual Action Agenda (AA) for 1997.

AA Item 1 - Sponsor 1 or 2 continuing education workshops during the year. Hove gave an update on past workshop and future direction of the Continuing Ed committee. The GIS/GPS workshop given this past March was very successful. Because of interest from members, the workshop was expanded from 1 session to 2 sessions. A total of 29 people participated in the workshop. Profits have not been tallied yet, but will probably be lower that past workshops because of the cost involved in having a private consultant give the workshop. Hove indicated that the committee would continue to put on one workshop per year unless other volunteers come forward to help in this effort. The July issue of Fisheries will offer a list of continuing education courses that are planned for the upcoming year. Because of publication deadlines, the MN Chapter will not be able to have our next workshop published in this issue. We will continue to post notices in Chapter newsletter and on the WWW home page.

In a survey of members at the 1996 Chapter meeting indicated the most interest in the following workshop topics: watershed/stream restoration, environmental ethics, creel/recreational use surveys, and computer applications in fisheries. Vondracek suggested that a watershed topic be chosen for the next workshop. Discussion was moved to cover Item 9 of the Action Agenda (Plan and coordinate a "rivers, watersheds, and fisheries" workshop in NW Minnesota in 1998). Glander reported that a meeting of local water planners, sponsored by BWSR, will be held in Crookston in 1998 and will focus on Red River issues. This would be a good opportunity to hold a workshop that might attract people outside of the AFS Chapter. Glander will pursue more information and coordinate with Hove. Close offered to explore potential of putting together a workshop on environmental ethics.

AA Item 2 - Organize a low-cost annual meeting. Vondracek reported on potential costs of holding the next annual meeting at Camp Ripley. Cost for renting classroom, theater and barracks for lodging would cost approximately $1,000. The facilities would accommodate about 180 people and should be sufficient even if we get a larger attendance than normal. Food would have to be catered in. Estimated cost for a two day meeting would be around $50/person. Tentative dates would be the last week in February. ** A vote was taken on whether we should proceed with the meeting arrangements at Camp Ripley. Vote was unanimous in favor of proceeding - Vondracek will pursue lease agreement for the facilities. Also discussed possibilities for 1999 annual meeting. It was agreed to contact Iowa and Wisconsin on the potential of holding a joint meeting with these two chapters.

AA Item 3 - Develop and publicize a position paper on fish stocking. Kallemeyn has been working on this paper and is looking for additional help and/or contributors. After discussion on the intent of this position paper, it was agreed that we should target the lay audience and specifically youth through the Minn Aqua program. Suggested outlets included outdoor writers and publications, sport fishing group newsletters, and other special interest groups. Target for release is one year from now. ExCom and committee chairs will review draft. Potentially would publish final draft in Chapter newsletter before distributing to outside groups.

AA Item 4 - Legislative Activities. Goeman suggested that we need to develop a systematic approach for legislative initiatives. During discussion several ideas were considered. Ideas included hiring a lobbyist, combining efforts with other special interest groups and take advantage of lobbyists they are using, and addressing issues through the FWLA. Also discussed the possibility of having a suite of position papers that could be used and modified to address legislative issues. Position papers from the parent Society could be modified for our purposes. Goeman and Reed will pursue these ideas and report back.

AA Item 5 - Encourage agency administrators to participate in Chapter activities. Goeman will contact agency administrators and other staff to invite them to attend annual meetings and join as Chapter members. Membership Chair (Kingsley) will be contacting delinquent members in effort to get their membership current. Goeman will request AFS Chapter representation at next Fishing Roundtable. If invited, it is suggested that a non-DNR member be chosen to represent the Chapter.

AA Item 6 - Sponsor publication of an article highlighting AFS in high-profile popular press outlet. Discussion focused on best way to approach this item. Story ideas could be anything that highlights fisheries profession, success stories, etc. Notice will be published in Fisheries to solicit articles from fisheries professionals. Need to find proper outlet for this type of story. Braun suggested that query letters be sent to magazines and other publications to see if they have interest in this type of article. Goeman will pursue these suggestions and report back.

AA Item 7 - Publish Action Agenda in Chapter newsletter. Action Agenda was published in May 1997 issue. Action

Agenda will also be posted on the Internet home page.

AA Item 8 - Investigate possibility of providing an AFS display at MN State Fair. Braun reported that an application has been submitted to the State Fair. Space is limited and it is not likely that we would get space this year. DNR building would have space, group agreed to move ahead with this option. T-shirt sales at the DNR Nature Store at the State Fair was also discussed. Agreement was reached that we should move ahead with T-shirt sales. Goeman will check out details, negotiate profit split, and make final arrangements.

AA Item 9 - covered earlier.

AA Item 10 - Request DNR to consider a policy change regarding funding annual meeting expenses for DNR employees. Goeman has sent two letters to DNR F&W administration. No reply has been received. Cost estimate will be provided to DNR so expenses can be incorporated in budget preparation. Looks promising at this point. May need to provide cost estimates to DNR on an annual basis early in the budget process.

Meeting Agenda No. 2 - Assignments from the Annual Action Agenda. No new assignments were made, but interested persons are encouraged to volunteer.

Meeting Agenda No. 3 - Report on President's Activity. Goeman has made contacts concerning the fishing license fee increase over the last several months. Will be attending the parent Society meeting in Monterey this year. He has been making contacts in search of product donations to be raffled at the Monterey meeting. InFisherman was contacted and provided sets of videos and print for this raffle.

Meeting Agenda No. 4 - Chapter contribution to AFS Youth Ed. Committee. A contribution of $200 was given in 1996 by the Chapter to the AFS Youth Education Committee.

Meeting Agenda No. 5 - Chapter Abstract Book. Vondracek reported that sales of the abstract book have not gone very well. Only a few books and <10 disk copies have been sold. It was agreed to keep this project alive for another year and see how it goes. Some abstracts did not get in and efforts will be made to correct this. It was agreed that the Student Chair will retain the responsibility of compiling abstracts and update index annually. Bill Ardren will draft a newsletter article to publicize the abstract book and submit it to Radomski.

Meeting Agenda No. 6 - Financial Report from past joint Chapter Meeting. VanOffelen was not able to attend meeting. Goeman distributed Treasurer's Report. Income from annual meeting was $4541.00 and expenses were $4890.64, for a net loss of $349.64.

Meeting Agenda No. 7 - Report on GPS/GIS Continuing Ed Workshop (covered earlier)

Old Business - none

New Business:
- Resolution Committee Chair (Barstad) initiated discussion on a proposed resolution that he had received from a Chapter member. Barstad had circulated the proposed resolution and background information to ExCom prior to the meeting. The resolution focuses on data privacy issues with the MNDNR - Section of Fisheries. After discussion, a motion was made and seconded to have Barstad respond to the Chapter member that it is the opinion of the ExCom that this is an internal agency matter and is not an issue in which the Chapter should be involved. The motion passed with a unanimous vote.
- Discussion was initiated on the appropriateness of some articles that have been published in the Chapter newsletter. Concerns were brought forward which were based on some complaints that have been received regarding a particular satire article. It was noted that the newsletter has a broader readership than the MN Chapter. Radomski responded that he has received both compliments and complaints on these articles.
- Student Committee Co-Chair, Ardren, stated that more effort is needed to recruit new student members. Some attempts have been made, but have been marginally successful. Low-cost meetings will help attract student members.
- Goeman reported on response letters he has received from U.S. Congress members on the Teaming with Wildlife legislation. In general the letters have indicated that MN legislators are not supportive of this initiative. Reason - constitutes a new tax in a time of budget reductions and down-sizing of government.
- Goeman initiated discussion on AFS Chapter brochures that are ready to be printed. It was decided that we would check into the cost and then determine how many will be printed. Initially we would spend $200-300 and then see what the demand for these brochures will be.
- Radomski reported on the potential of distributing the Chapter newsletter via E-mail. Analysis of cost showed that we would need about 80 members to break even on this venture. Radomski will solicit opinions through the newsletter.

Next meeting will be in Fall 1997
Meeting Adjourned

Upcoming Events

September 24, 1997. Forested Riparian Areas: functions, values, and management considerations. Grand Rapids, Minnesota. Contact Mary Ann Hellman 612.624.7222.

September 28-30, 1997. Canadian Society of Environmental Biologists 37th Annual Meeting. Edmonton, Alberta, Canada. Contact Scott McKenzie at 403.483.3499

October 14-17, 1997. The First North American Symposium on Small Format Aerial Photography. American Society for Photogrammetry and Remote Sensing. Grand Rapids, Minnesota. Contact Bill Befort 218.327.4449.

November 12-15, 1997. Ecological Restoration and Regional Conservation

Strategies: International Conference of the Society of Ecological Restoration. Ft. Lauderdale, Florida. Contact George Gann 305.247.1132.

December 3-6, 1997. North American Lake Management Society 1997 International Symposium. Contact Tom Conry 817.776.1441.

December 6-10, 1997. The 59th Midwest Fish and Wildlife Conference. Milwaukee, Wisconsin. Contact Robert Dumke 608.266.8170.

January 6-8, 1998. Wisconsin Chapter of the AFS: Large River Management. Eau Claire. Contact Don Fago 608.221.6366.

February 24-26, 1998. Minnesota Chapter Annual Meeting. Camp Ripley. Contact Bruce Vondracek 612.624.3421.

March 17-21, 1998. Applications of Landscape Ecology in Natural Resource Management: 13th Annual U.S. Landscape Ecology Meeting. East Lansing, Michigan. Contact Bill Talyor 517.355.1810.

June 7 - 12, 1998. The Land-Water Interface: Science for a Sustainable Biosphere. American Society of Limnology and Oceanography and Ecological Society of America. St. Louis. Contact ASLO at 1.800.929.ASLO.

June 23-28, 1998. First International Ictalurid Symposium: Catfish 2000. Davenport, Iowa. Contact Steve Eder (eder@mail.conservation.state.mo.us).

August 2-6, 1998. Ecological Society of America Annual Meeting. Baltimore, Maryland. Contact Fred Wagner 801.797.2555.

Contributions: Letters and Commentary

Comments to "Less is More at Mille Lacs"
by Dennis Schupp

An Op-Ed article by George Spangler published in the Minneapolis Star-Tribune on April 6, 1997 was reprinted in the May Issue of the Minnesota AFS Chapter newsletter. While I can find some things in Dr. Spangler's article with which I can agree, I can also find much with which to disagree.

Dr. Spangler implied that Minnesota's recreational walleye fisheries, including Mille Lacs, are showing signs of overfishing. I wonder what evidence he has for that. He describes as a reasonable management target an exploitation rate of 24% for Mille Lacs because of "the need to improve the quality (size and age structure) of the stock", implying directly that Mille Lacs has been overfished. Our best estimates of rate of exploitation at Mille Lacs are an average of 21% over the last 14 years.

Our explicit goal for the Mille Lacs walleye population at the beginning of litigation for the 1837 treaty was to maintain the size and age structure we had observed over the past 14 years, a desirable condition. The oldest walleye taken in our annual gillnetting ranges from 17-22 years at Mille Lacs. There is no trend in numbers of 5 lb+ (> 24") walleye harvested by angling or in gill net catches. The mean annual catch (kept+ released) of walleye 5 lbs or larger has increased since 1985, but release rates by anglers have increased from 16% for 1984-86 to nearly 60% for 1995-96. In short, more large walleye are being caught now than 10 years ago and yet there is no evidence of a decline in numbers nor has the kill increased. This hardly strikes me as conditions that I would expect from an over-exploited population.

Furthermore, I would challenge Dr. Spangler or anyone else to find five walleye populations across North America with a better size and age structure than the Mille Lacs population given the following conditions:

1. the population must have been exploited by angling for at least 20 years;
2. the population is self-sustaining - no stocking;
3. the growth rate of the population is similar to that of Mille Lacs - that is it takes about four years for a walleye to reach 14 inches and about seven years for all females to become sexually mature.

In his article, Dr. Spangler uses the phrase "occasional overfishing" in relation to recreational fisheries. I understand the concepts of recruitment overfishing and growth overfishing; I do not understand what he means by occasional overfishing. The phrase strikes me as a nebulous concept without objective definition that can be used to cover anything one wishes.

Given the moderate rate of exploitation and the high abundance of large, old walleye in the population there is no convincing evidence that Mille Lacs walleye needed any regulation beyond standard statewide rules. The difference, as a result of the 1837 treaty litigation, is the addition of a gill-net fishery that does not depend on a walleye's inclination to bite a baited hook. The court decision has forced a move to active management to try to maintain the size and age structure. The experiment will be interesting on its own merit but was not needed because of overfishing by anglers.

Mille Lacs Rejoinder
by George Spangler

I thank newsletter Editor Paul Radomski for providing an opportunity to respond to Denny Schupp's concerns.

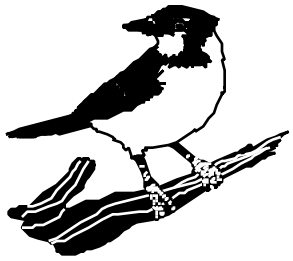
First, a matter of clarification. The meaning of over-fishing, or over-exploitation is a term that is almost always dependent upon context. Thus, the discerning fishery biologist will always want to know whether its use is intended to imply any of a number of more precise or restrictive senses, such as growth

overfishing or recruitment overfishing. Nevertheless, the notion of overfishing as a too-intensive removal of fish is broadly understood by society as a whole, and it is likely to be used in that sense forever. In my treaty fishery opinion essay, the context of usage was set in the preceding paragraph where it was noted that (walleye) management targets had been exceeded by 10-15 percent in some Wisconsin lakes. Clearly, had these events been repeated annually for even a few years, the populations enduring such extractions would have been substantially altered as a consequence. The characterization of the Wisconsin events as "occasional overfishing" was intended to disabuse the reader of any notion that these exploitation levels had persisted while at the same time acknowledging that even a single season might inflict substantial reductions on the fishable stock. Anyone seeking a clearer definition of the term would do well to read Tim Smith's ICES chapter in Scaling Fisheries, where he recounts such debates dating to C.G.J. Petersen's 1903 paper.

Characterizing Minnesota's recreational fisheries as overly intensive (including Mille Lacs) has been a regular feature of the Minnesota Fishing Roundtable discussions of the past few years and the scientific literature since the Percis Symposium. Most notably, intensification of Minnesota fisheries is documented in the Olson and Cunningham paper of 1989 (NAJFMgt 9(3):287) in which they reviewed the entries to the big fish contest at Fuller's Tackle Shop in Park Rapids since 1915. The third sentence of their abstract is worth repeating, "Under increased exploitation, declining trends in number of large-size entries and mean weight of total entries indicated the development of less desirable size structure for most sport-fish species." Biologists are unlikely to be alarmed at any fishery "showing signs" of overfishing (accelerated growth rates, increased variability of year-class strength, reduced adult age structure, etc.), but they would be derelict in their duty not to devise management mechanisms to reduce future impacts of increasingly intensive fisheries.

The Minnesota DNR can be justly proud, as Denny points out in his commentary, that the Mille Lacs fishery is not in a conspicuous trend of decline. But it is equally important to recognize that the 14 years cited constitute less than a quarter of the period which could be meaningfully interpreted in a time series analysis. Historical analysis of Lake Huron fisheries reveals a serious degradation of the fisheries before the close of the last century, no matter how attractive the yields of the 1930s may appear to a contemporary fisheries manager. Indirect controls such as the promotion of the catch and release ethic, and size limit adjustments are laudable steps in the direction of slowing any further decline in quality, but it is broadly accepted among stock assessment biologists (see July 25/97 Science) that direct controls on exploitation will eventually have to be imposed on our most important fisheries (globally), just as they have been necessary in wildlife management.

In respect to the treaty fishing issues at Mille Lacs, who can be displeased at the prospect of achieving more responsive control over exploitation in the interests of all participants in the fishery? --- George Spangler, Aug. 1997.



Fisheries Information Network

By Jeff Reed

All seems pretty quiet on the fisheries front. However, there are a couple of issues that are currently smoldering and could turn into brush fires at any moment. The ruling on the appeal of the Mille Lacs Treaty is due at anytime; I'm sure we'll all hear about that when it comes down.

Something that we, as a Chapter have addresses is the topic of fishing tournaments. With the increase in the number of large, big money tournaments that have popped up recently there has been what seems a renewal of anti-tournament rhetoric in the press lately. The DNR has taken steps to rewrite some rules governing the granting of permits for tournaments. For more information please contact Steve Hirsch (612.296.0791).

Just a personal observation, but did you ever notice that these big tournaments are almost held exclusively on bodies of water that are outstanding fisheries and the winner is always touted as a great fisherman? Wouldn't an angler that can catch a limit of nice fish on a mediocre lake actually be a better angler? Think about it.

More on the Conservation Reserve Program. In the spring enrollment for CRP, Minnesota was one of the biggest losers in the nation. Even highly erodible land in the southeast was left out of the program. There will be another enrollment this fall and hopefully more of the sensitive riparian areas in our state will be included.

Could the near collapse of the yellow perch population in Lake Michigan spell added pressure for Minnesota waters? As you may know the perch population in Lake Michigan is in serious trouble and the surrounding states have taken drastic action to protect remaining stocks. Wisconsin's harvest model recommended a total allowable harvest of 0 pounds. There is a ban on commercial fishing throughout the lake and daily bag limits for anglers have also been reduced. For those displaced cheeseheads that remember the tradition of the Friday night perch fry, you know how popular perch are. (For those not fortunante enough to be displaced cheeseheads, in terms of tradition, perch rank only behind the World Champion Green Bay Packers and bratwurst to Wisconsinites.) It will be interesting to see if more Wisconsin license plates are seen traveling the roads near Winnie, Leech and other perch hot spots this winter!

Interesting Articles and Publications

A Critique for Ecology. 1991. R.H. Peters. Cambridge University Press. ISBN 0-521-39588-7. While I was reading this book, I had the same feeling I had in college when reading Green's book (Sampling Design and Statistical Methods for Environmental Biologists) after collecting my masters project data. That is a queasy feeling--with the thought that someone should have told me about this book a lot earlier.

Human Alteration of the Global Nitrogen Cycle: Causes and Consequences. Issues in Ecology No. 1. This easy to read 14 page article focuses on how humans have doubled the rate of nitrogen entering the land nitrogen cycle and its effects.

Libraries and Lakes. 1996. W. T. Edmondson. LakeLine 16(4). If you have small children you should read Dr. Edmondson recall his youth and the importance of books.

Superior Fisheries: Highlights of Lake Superior Fisheries Management Activities. No. 2, July 1997. A neat 2 page newsletter put out by the Lake Superior Area Fisheries Office.

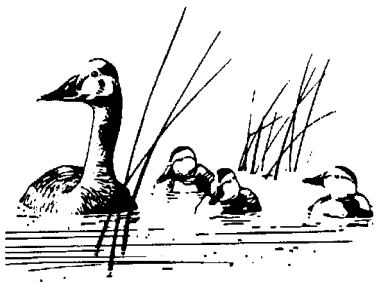
The Ecological Detective: Confronting Models with Data. 1997. R. Hilborn and M. Mangel. Princeton University Press. ISBN 0-691-03497-4. A good discussion on how models fit into the scientific method and introduction to maximum likelihood methods and Bayesian analysis.

4 papers on Recruitment Paradigms for Fish Stocks in the Canadian Journal of Fisheries and Aquatic Sciences. Papers by D.J. Gilbert, R.A. Myers, R.I.C.C. Francis, and R. Hilborn. CJFAS 54(4).

Submitted by Don Pereira:
The value of the World's ecosystem services and natural capital. 1997. R Costanza, R d'Arge, R de Groot, S Farber, M Grasso, B Hannon, K Limburg, S Naeem, R V O'Neill, J Paruelo, R G Raskin, P Sutton & M van den Belt. Nature 387, 253 (1997)

Abstract: The services of ecological systems and the natural capital stocks that produce them are critical to the functioning of the Earths life-support system. They contribute to human welfare, both directly and indirectly, and therefore represent part of the total economic value of the planet. The authors have estimated the current economic value of 17 ecosystem services for 16 biomes, based on published studies and a few original calculations. For the entire biosphere, the value (most of which is outside the market) is estimated to be in the range of US$16--54 trillion (1012) per year, with an average of US$33 trillion per year. Because of the nature of the uncertainties, this must be considered a minimum estimate. Global gross national product total is around US$18 trillion per year.

Pimm's review:
ECONOMICS What is the annual value of the Earth's 'ecosystem services'? Attempting such a valuation not only requires huge amounts of data, and making many assumptions, but will be highly contentious. Nonetheless, such a study has been carried out. The estimate is that the value of such services amounts to at least the global gross national product, and probably exceeds it considerably. The analysis will be of great use in informing debates about why, and when, ecosystems should be protected. Stuart L. Pimm. The value of everything. Nature 387, 231-232 (1997)



Editorial

The field biologist mouthpiece was broken from hyperextension, it should be fixed and recalibrated for the next newsletter.

Of Interest

NCD Awards
The North Central Division of the AFS is soliciting nominees for the three awards given annually. These awards are the Most Active Chapter Award, the Meritorious Service Award, and the Fisheries Excellence Award. You may submit nomination materials to and receive information from Doug Austen, Illinois DNR, 217.785.5935.

Student Travel Grant Program -- Students Take Note!
The North Central Division once again allocated $1400 to support the Student Travel Grant Program. The purpose of the program is to provide funding to facilitate student travel to the annual NCD meeting held in conjunction with the Midwest Fish and Wildlife Conference. The program is designed to assist students who might not otherwise be able to attend the meeting.

The North Central Division will fund 14 grants--one grant per chapter. One hundred dollars is provided per each selected student. In addition, the student's chapter contributes $100, for a net award of $200. Minnesota students should send a letter to Tim Goeman, president of the Minnesota Chapter, which includes: your name, addresses, school, degree, a short description of current studies or research, reasons why you wish to attend this meeting (e.g. paper presentation, sub-unit business, applicable technical papers to your work), and reasons why monetary assistance is needed. Deadline is October 1, 1997.

Abstracts of the Current Fisheries Research in Minnesota for FREE!!!!!! - William Ardren (Student Chair), Gerold Grant and Bruce

Vondracek.
The Minnesota Chapter of the AFS has recently compiled a collection of abstracts from fisheries researchers throughout the state. The 1997 Abstract Book includes 93 abstracts on subjects such as aging, behavior, bioenergetics, competitive interactions, conservation, creel surveys, genetics, human dimensions, physiology, plant/animal interactions, population dynamics, sampling techniques, and watershed studies. We believe this book fills a needed role in providing a comprehensive listing of ongoing fisheries research in Minnesota. The book can be obtained for free in MS Word or Wordperfect format over the www(http://www.fw.umn.edu/mnafs /abstract.html) or by e-mail. To obtain a copy by e-mail, please contact Bruce Vondracek (bcv@fw.umn.edu) or Jerry Grant (jcg@fw.umn.edu) and specify MS Word or Word Perfect format and operating platform. Disk and hard copies can also be mailed to you at cost. To obtain a copy through mail, please send a check payable to MN AFS to Bruce Vondracek, Department of Fisheries and Wildlife, University of Minnesota, 200 Hodson Hall, 1980 Folwell Ave., St. Paul, MN 55108. Please include $1.50 for each disk copy (specify format and platform) and $12 for a spirle bound printed version. Provided adequate levels of interest, we plan to update the abstract list every two years.

Efforts to Establish an AFS Watershed Section (from Water Quality Matters, AFS Water Quality Section). Paolo Ferreri at the Pennsylvania State University is spearheading an initiative to establish a new AFS section on Watersheds. The general purpose of the proposed Watersheds Section is to encourage the exchange of information pertinent to watershed-based fisheries management among members of the section, the Society, and interested individuals. If you wish to know the latest news about this initiative contact Paolo Ferreri at 814.863.2095.

Shoreland Property Owners Guide Available
This new 23-page manual is written for lake associations and individuals who want to learn how to best manage their property. It includes: how to organize a lake association, understanding watersheds, BMP, exotic species, wastewater treatment, fish consumption advisories, etc. It is available for $40 from the Minnesota Extension Service, 2305 E 5th St, Duluth, MN 55812, 218.726.7512.

Southern Illinois University Student Subunit
Current fisheries research activities include:
Lennie Pitcher - comparison of IBI and other diversity measures in the Big Muddy River
Tim Spier - crappie ecology and genetics
Joe Hennessy - culture of hybrid sunfish and black crappie for human consumption
Kip Runyon - effects of hatchery effluents on stream quality
Ed Wetzel - largemouth bass nutrition and aquaculture waste effluents
Dan Isermann - walleye stocking
Brian Sloss - percid phylogeny
Greg Moyer - genetic variation of *Perca*

Exotic Species Web Site
This site offers science-based information on zebra mussels and other nonindigenous species. It also contains a comprehensive collection of research publications and education materials produced by Sea Grant programs across the county. The address is: www.ansc.purdue.edu/sgnis.

Freshwater Foundation Newsletters
The National Water Quality News and the Aquatic Nuisance Species Digest are new quarterly newsletters providing current information on water quality and exotics. The foundation is non-profit, and its mission is to pursue the sustainable use of freshwater resources. You can contact them at 612.471.9773.

Minnesota Fishing Tournament Issues (compiled from DNR sources and Outdoor News articles). Several high-profile fishing contests have anglers and fisheries professionals debating the benefits and shortcomings of tournaments. Social and political questions are the main focus of these discussions. The events are as follows:

1. Forest Wood Open - June 1997
Erwin Jacobs, an influential man of wealth, gets approval from the governor for an off-site weigh-in at Mall of America, which precedes a permit application to the DNR. Operation Bass proposes contest rules to reduce the number of fish involved in the off-site weighin. DNR adds stipulations to permit on fish handling and transportation. Days after the tournament, 15 dead bass were found dead at the release site (a minimum mortality rate of 22%)

2. Chevy-Silverado - August 1997
DNR is pressured to delay implementation of experimental regulations on Chisago-South Lindstrom Lakes or write a rule to allow tournament anglers to possess fish outside of the experimental regulation. Event organizers also request off-site weigh-in. After discussions, the tournament organizer agreed to switch to another lake. DNR is pressured to allow off-site weigh-in. DNR adds conditions to the permit, which includes a bag limit reduction and handling and transport requirements.

3. In-Fisherman Walleye Championship - September 1998 Event
Duluth Chamber of Commerce sends a request to governor for a variance on the walleye possession limit in order to host this tournament on the St. Louis River (2 walleye bag limit exists; request variance for 5 walleye bag limit). Governor asks DNR to find out if a variance could be granted. Lawyers say no. Governor directs DNR to amend rules to allow variances. DNR publishes request for comments on a proposed rule which would allow variances. Tim Goeman, MN Chapter of the AFS President, sends letter to DNR on behalf of the Chapter strongly opposing any such rule change. The Chapter outlines several reasons which include: it would establish a poor precedent which would allow exemptions for special interest groups; exemptions which are viewed as inequitable by other anglers may lead to increases in noncompliance; the allocation of

Minnesota's natural resources would be more politicized; and it would increase conflict between tournament and nontournament anglers. DNR also received other letters opposed to the proposed rule. Thereafter, tournament organizers change mind and say they can reconfigure the event to work within the two-fish limit.

ASLO/ESA Joint Meeting

The American Society of Limnology and Oceanography and the Ecological Society of America will have a joint meeting in 1998, titled The Land-Water Interface: Science for a Sustainable Biosphere

June 7 - 12, 1998
St. Louis, Missouri
Abstract Deadline: January 5, 1998

For meeting information, contact:
5400 Bosque Blvd., Suite 680
Waco, TX 76710-4446
Phone: 1-800-929-ASLO
Fax: 1-817-776-3767
E-mail: business@aslo.org
WWW: http://www.aslo.org/

This meeting will focus on research at the land-water interface of both fresh-and salt-water systems with a goal of strengthening connections between research and management. To foster group interactions and discussion, the format will be different from the norm. A full day of plenary addresses will be followed by three days of concurrent sessions, each beginning with a plenary address and followed by panel discussions and synthesis. There will be no more than six concurrent sessions. Poster presentations will be on view throughout the meeting with formal poster sessions after the concurrent oral sessions. Contributions from all areas of terrestrial and aquatic science are welcomed, but topics dealing with the land-water interface will have priority for oral presentation.

Plenaries
JoAnn M. Burkholder, North Carolina State University. The Land-Water Interface: Aquatic Ecosystems in the Increasingly Urbanized Coastal Setting

Theo Colborn, World Wildlife Fund
Aquatic Ecosystems: Harbingers of Endocrine Disruption

Jane Lubchenco, Oregon State University
Science and Society: A New Social Contract

David Pimentel, Cornell University
Water Resources, Agriculture, and Ecological Systems

Sandra L. Postel, Global Water Policy Project. Water and Sustainability: The Challenges Ahead

Robert J. Naiman, University of Washington. Fresh Water and Ecosystems: A Future Perspective

Garth W. Redfield, South Florida Water Management District Ecological Science, Land-Water Interactions and Aquatic Ecosystem
Management

Ivan Valiela, Boston University
Integrating Ecosystem Concepts across Terrestrial, Marine and Freshwater Systems: New Paradigms for Sustainability

Special Sessions:
Aquatic Ecosystems in the Urban Landscape: Into the Foreseeable Future Autotrophic and Heterotrophic Basis for Freshwater and Marine Food Webs; Ecosystem Impacts from Harmful Algal Blooms; Fisheries Ecology: From Lakes to Oceans; Global-Scale Effects of Hydrological Alterations: What We Know and What We Need to Know; Limitation of Primary Production Across Ecosystems; Resource Ratio Approaches to Understanding Ecological Processes in Freshwater, Marine and Terrestrial Systems; Science-Management Connections at the Land-Water Interface

Conservation Ecology

Conservation Ecology, a publication of the Ecological Society of America, published its first issue on June 15, 1997. Conservation Ecology is an electronic, peer-reviewed, scientific journal. There is no charge for subscription. The journal will cover a range of topics including the ecological bases for: 1) the conservation of ecosystems, landscapes, species, populations and genetic diversity, 2) the restoration of ecosystems and habitats, and 3) the management of resources. In addition to insightful papers by such authors as Simon Levin, Steven Carpenter, Don Ludwig, and Carl Folke, the inaugural issue also includes a thought-provoking series on the subject of science, policy, and advocacy.

Conservation Ecology seeks to tighten the link between research and policy development. To that end, we are dedicated to rapid publication of research results in the widely accessible medium of the Internet. The journal solicits comments on published articles and will link those accepted directly to the article in question. We will also conduct on-line public forums, or conferences, on key topics.

Manuscripts are now being accepted for consideration by Conservation Ecology. For more information regarding subscriptions and article submissions visit the Conservation Ecology website at: http://www.consecol.org.

News from Around the World Submitted by Gene Buck and others

Pacific Gas & Electric Co. officials reached a $14 million settlement with the CA Attorney General concerning alleged incomplete and misleading PG&E data involving fish larvae mortality by their Diablo Canyon plant's water cooling system. Of the settlement, $3.7 million will be used for environmental protection and enhancement in the Morro Bay area, and $2.5 million will fund San Jose State Univ.'s mussel watch program. [Assoc Press]

Carbon Monoxide in Tuna? Japanese Health and Welfare Ministry officials announced that they had begun an inquiry into the alleged injection of carbon monoxide into frozen imported raw tuna to redden its flesh, thus potentially deceiving consumers as to its freshness. [Dow Jones News]

Canadian Atlantic Groundfish. Canada opened the season for a limited cod fishery off Newfoundland. This is the first commercial cod fishery in 4 years in this region. About 5,500 fishermen will harvest a 16,000 ton quota. [Assoc Press]

Ms. Frizzle Award. Scholastic, Inc., announced that a third grade teacher from Portland, OR, was the recipient of the Ms. Frizzle Award for creative excellence in science teaching for a project entitled "Salmon in the Sink." Students will work with the OR Dept. of Fish and Wildlife to build a simulated river ecosystem and raise salmon fry for release. [Scholastic, Inc. press release]

Shasta Dam Temperature Control. Interior Secretary Bruce Babbitt dedicated an $80 million structure at Shasta Dam to permit better temperature control of water released from the dam to benefit chinook salmon downstream. Funds for the structure were provided by the federal government, water users, and the state of CA. [Reuters]

Tribes Abandon Salmon Policy Review Process. The Yakama, Warm Springs, Umatilla, and Nez Perce Tribes announced that they no longer would participate in the executive committee formed to consider dispute resolution concerning federal salmon restoration policy. The Tribes expressed concerns that federal policy decisions appeared to give limited consideration to the tribes' position on the issues. [Assoc Press]

Irrigation Project Blocked. NMFS ordered the Army Corps of Engineers to deny a permit for the withdrawal of as much as 196 million gallons of water daily from John Day Reservoir for a consortium of farming families developing a 20,000-acre potato and vegetable operation near Boardman, OR. This was the first major irrigation project limited by a 1995 NMFS policy of "no net loss of water" to protect threatened and endangered salmon. [Assoc Press, NMFS press release]

Fishing Industry Subsidies. At the conclusion of a two-day workshop on policy recommendations to ensure sustainable fisheries, the World Wide Fund for Nature and the United Nations Environment Program jointly called for a reduction of more than $50 billion in subsidies estimated to be expended by nations worldwide annually in excess of fish harvest revenues. The organizations cited this as a major stimulus in encouraging uncontrolled overcompetitive fishing that depletes fish stocks. [Dow Jones News, Assoc Press]

Fish as Pollutants. The WA state Pollution Control Hearings Board declared Atlantic salmon escaping from fish farms to be a "living pollutant" to be regulated similarly to sewage and industrial waste. The Board scheduled a 5-day hearing in Olympia to consider whether escaped salmon harm native fish and, if so, what options might be considered. [Assoc Press]

Greenback Cutthroat Trout Restoration. Interior Secretary Bruce Babbitt announced a $97,000 grant under the "Bring Back the Natives" program to the Uncompaghre-Gunnison National Forest, CO, for fish passage work on Beaver Creek to aid recovery of native greenback cutthroat trout. [Assoc Press]

CITES Proposal - Sturgeons. The delegates to the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) conference in Zimbabwe adopted a joint German and U.S. proposal to list all sturgeons on CITES Appendix II. [Reuters]

Canadian DFO Controversy. The Canadian Journal of Fisheries and Aquatic Sciences has published a controversial 12-page paper by 3 Canadian scientists outlining alleged problems within Canada's Dept. of Fisheries and Oceans (DFO) on management of Atlantic cod and Pacific salmon. DFO officials deny article contents and accuse the authors of selective use of material. An article in the July 1997 issue of Canadian Geographic is reported to allege that the DFO intervened to prevent Atlantic cod from being considered for listing as an endangered species. [Assoc Press]

NATURES Project. This summer, a collaborative NATURES (NATUral Rearing Enhancement System) project by Long Live the Kings, NMFS, WA state Dept. of Fish and Wildlife, and the Weyerhaeuser Co. released 100,000 juvenile fall chinook salmon in several batches in southwest WA. These fish were specially reared to test if hatchery salmon can be produced with wild-like fish characteristics capable of increasing their survival rate. [Dow Jones News]

Salmon Aquaculture Report. The Sierra Legal Defense Fund on behalf of the David Suzuki Foundation, the Friends of Clayoquot Sound and Greenpeace, is scheduled to release a report entitled "Containing Disaster: Global Lessons on Salmon Aquaculture" that discusses negative aspects of salmon farming. [Sierra Club Legal Defense Fund press release]

Salmon Tracking. In a recent issue of Nature, Dartmouth College (NH) scientists reported that salmon could be matched to their spawning drainage by comparing the unique strontium isotope composition "signatures" of fish and drainage water. [Assoc Press]

Bull Trout. In late June 1997, the governors of MT and ID, representatives of Native American tribes, and officials of Washington Water Power signed an agreement to coordinate the development of a unified bull trout recovery effort with

WA Water Power's hydropower project relicensing on the Lower Clark Fork River. Public hearings were scheduled on the U.S. Fish and Wildlife Service's proposed listing Klamath River bull trout as endangered and Columbia River bull trout as threatened under the Endangered Species Act. The alliance for the Wild Rockies and Friends of the Wild Swan filed a motion for summary judgment in U.S. District court asking to rule that there was not enough evidence to separate bull trout into five distinct populations. The groups hope to protect all bull trout rather than two populations proposed for endangered species act listing. [Assoc Press, WWP press release]

Alien Ocean Premiere. A 30-minute documentary, Alien Ocean, on the problem of alien species introductions into U.S. harbors, bays, and estuaries produced by the MD Sea Grant Program premiered at the National Aquarium in Baltimore. [MD Sea Grant Program press release]

Native Yellowstone Fish. The National Park Service released an assessment of obstacles to restoration of westslope cutthroat trout and FLUVIAL ARCTIC graying to Yellowstone National Park habitat. Major obstacles, particularly competition from introduced rainbow, brown, and brook trout, preclude immediate progress, with gradual replacement of exotic fish in selected park waters proposed. The preferred alternative for action is to undertake suppression of non-native fish. [Assoc Press]

Hatchery Impacts. The Independent Scientific Review Panel reported 35 recommendations to the Northwest Power Planning Council (NPPC) after reviewing fish and wildlife projects proposed for FY1998 funding, including one recommendation that the Council not approve funding for new fish hatcheries in the Columbia River basin until the impact of such facilities on wild fish and river ecology is better understood. Other recommendations concerned measures addressing juvenile salmon migration and resident fish. [NPPC Congressional Update]

Catfish and Dioxin. EPA issued a nationwide dioxin order based concerns that certain animal feeds were contaminated with trace amounts of dioxin after 2 feed mills in Arkansas reportedly used some dioxin-contaminated anti-caking agent in formulating soybean-based catfish food. As much as 40% of all catfish feed may have been contaminated. Under the order, shipment of catfish products was to have been banned after July 13 unless the products could be certified as not being tainted. However, suspended this order for catfish as FDA officials and catfish farmers began negotiating on an appropriate testing program for catfish and catfish products. A nationwide FDA survey found dioxin levels ranging from 1.32 to 3.48 parts per trillion in six of 19 catfish fillets tested; the maximum FDA limit for dioxin is one part per trillion. On July 11, 1997, the U.S. Food and Drug Administration (FDA) and the catfish farming industry concluded an agreement for an industry-wide catfish sampling and dioxin level testing program. On July 15, 1997, a multi-state testing program for catfish began, with funding provided by an association of catfish farmers, processors, and feed manufacturers. On July 16, 1997, FDA issued a 4-page order limiting catfish shipments from MS and other states where these fish may have been fed the contaminated feed, effective midnight July 20. On July 17, 1997, FDA officials announced that they would change the sampling and testing program for catfish, effective July 20, to determine when feed should be halted for catfish to assure acceptable dioxin levels. [Assoc Press, Reuters, Dow Jones News, The Catfish Institute press release]

BC Salmon Aquaculture. The BC Salmon Farmers Assoc. petitioned the Advertising Standards Council of BC to consider whether an ad place by the David Suzuki Foundation in the June 24, 1997, issue of the Times Colonist might contravene the Canadian Code of Advertising Standards. The ad, headlined "Is Your Fish Dinner Laced With Drugs?", alleges that antibiotics used in BC salmon farming lead to the development of antibiotic-resistent microbes. An independent 8-month study, the BC Salmon Aquaculture Review, was scheduled to be presented to the provincial Cabinet. [Sierra Club Legal Defense Fund press release, BC Salmon Farmers Assoc. press release]

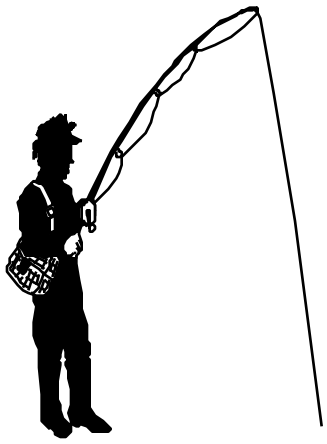
Walden Pond Fishing? In mid-July 1997, representatives of People for the Ethical Treatment of Animals (PETA) submitted a petition to MA Governor William F. Weld, calling for a ban on fishing at Walden Pond, northwest of Boston, as part of a PETA nationwide campaign that will ask parks to ban fishing. [Assoc Press]

Whirling Disease. MT's Whirling Disease Task Force received a report that whirling disease had been detected in an additional MT river drainage (Yellowstone River) and recommended that MT ban or place more stringent limits on rainbow trout fishing in waters infected by whirling disease. Mt's Fish, Wildlife, and Parks Commission will receive a detailed report from the Task Force on Aug. 8, 1997, and will consider Task Force recommendations. [Assoc Press]

Research Fish Kill? NMFS captured a large school of redfish by purse seine between East and West Ship Islands on MS's Gulf Coast as part of a research program tagging redfish to estimate the species' population. Later, recreational charter boats reported between 500 and 1,000 dead redfish in the area. NMFS scientists believe the mortality occurred when redfish were held for a long period of time in the purse seine. [Assoc Press]

Farmed Salmon Escape. This summer 5 or 6 Atlantic salmon net pens became caught and tore open during a move to avoid a Heterosigma algae bloom, releasing an estimated 300,000 Atlantic salmon into Puget Sound, near Manchester, WA. [Assoc Press]

Fish Advisory Data. This summer the U.S. Environmental Protection Agency released its 1996 summary of state-issued fish consumption advisories, reporting that official advisories increased 26% over 1995, due largely to better monitoring and reporting. Advisories were in effect for about 5% of the nation's total river miles and 15% of the nation's total lake area. Five contaminants -- mercury, polychlorinated biphenyls, chlordane, dioxins, and DDT -- were responsible for almost 95% of the 1996 fish consumption advisories. [EPA press release]



Edwards Dam Removal. This summer the Federal Energy Regulatory Commission released a final environmental impact statement, recommending complete removal of Edwards Dam on the Kennebec River, ME. This is the first time that FERC has recommended removal of an operating dam. Edwards Manufacturing Co. and the City of Augusta, ME, sought a 40-year operating license from FERC for the dam. Installation of a fish passage system at the dam would be 1.7 times more expensive than retiring and removing the dam. [American Rivers press release, Assoc Press]

PARIS - France on Thursday imposed an open-ended ban on fishing and swimming around the La Hague nuclear reprocessing plant on the Cherbourg peninsula because of fears about radioactive pollution. Environment Minister Dominique Voynet told reporters she would not wait for the completion of a state study of possible health risks from nuclear waste dumped into the English Channel to put a stop to fishing and recreational activities in the area. The Greenpeace environmental group says it has found radioactivity levels exceeding European Union limits in waste spewing from a La Hague discharge pipe into the English Channel. It said it also found high radioactivity levels in sediment on the channel bottom near the plant, which is run by state nuclear company Cogema. A study by French scientists made public in January found a concentration of leukemia cases in patients under 25 years old and living within 35 km (20 miles) of La Hague. [Reuters]

ANCHORAGE - A hunting and fishing dispute between rural Alaskans and urbanites could be ended by changing the state constitution and federal and state laws, a panel said. The seven-member panel appointed by Gov. Tony Knowles released its plan to solve Alaska's problem with "subsistence:" traditional harvests of fish, game and wild plants for personal use. Federal law mandates a subsistence preference for rural residents, but Alaska's constitution forbids giving different fishing and hunting rights to residents of different regions. Most of Alaska's rural population is native, while most of its city-dwellers are white. The federal law was established under provisions of the 1980 Alaska National Interest Lands Conservation Act, which set up vast expanses of national parks, wildlife refuges and wilderness areas. But a 1989 Alaska Supreme Court decision, issued after urban sport hunters filed suit, scrapped the state's rural preference as a violation of the state constitution. Since then, efforts to change the Alaska constitution to conform to federal law have stalled, and the federal government plans to take over management of fish and game on federal lands and waters in Alaska in October. [Reuters]

ALBANY, N.Y. - The state of New York sued the Environmental Protection Agency Friday, claiming the federal agency failed to address the root of the state's acid rain problem. State attorney general Dennis Vacco, who filed the lawsuit in a U.S.district court in Albany, said the EPA was instructed by Congress to develop so-called "deposition standards" to regulate emissions from Midwestern factories and had failed to do so. Vacco said an estimated 10 percent of the 2,800 lakes and streams in New York's lush Adirondack region were devoid of fish life as a result of acid rain and an additional 40 percent would become acidic if additional emission reductions were not implemented. An EPA spokesman said the agency could not comment on the lawsuit until its lawyers reviewed the case. Environmentalists applauded the precedent-setting lawsuit, but Jeff Jones of the Albany-based Environmental Advocates organisation criticised state officials for implying that New York's acid rain problem was solely caused by other states. "It's not just a Midwest problem," Jones said. "New York has some old power plants that either need to be shut down or brought up to emission standardslike new power sources." [Reuters]

Researchers Use New Device To Control Zebra Mussels In Water Intake Pipes
ATHENS, Ohio -- Researchers at Ohio University have invented a mechanical device that controls zebra mussels by lowering the oxygen level in water. In field tests of the apparatus at a water treatment facility in Cleveland, the scientists found that zebra mussels were unable to attach to pipes in this oxygen-controlled environment.

The White House has begun a project, conceived by Vice President Al Gore, to present a complete report on the health of the nation's ecosystems. Under contract to the federal government, the Heinz Center for Science, Economics, and the Environment will use a diverse group of scientists and engineers to complete the report in 18 months. This first study will focus on marine and coastal ecosystems, forests, and croplands. The $500,000 cost will be covered by a variety of federal agencies. The plan is to follow this with additional studies examining other ecosystems until a thorough overview of the nation's ecosystems is completed, hopefully by 2001. [ESA]

The EPA is establishing a 26-state task

force to address the growing problem of an oxygen depleted "dead zone" in the Gulf of Mexico. Caused largely by nitrogen fertilizer use in the Mississippi River watershed, the "dead zone" has spread nearly 7,000 square miles each summer since 1993. Large amounts of nitrogen in the agricultural runoff result in excessive algae, whose growth and decay cause the oxygen poor conditions in the Gulf. The EPA acknowledged the seriousness of the dead zone's impact and made a pledged to stem its spread in 1995 after the Earthjustice Legal Defense Fund noted that agricultural runoff into the Mississippi River was violating water-pollution standards. [ESA]

A new study by the Commission for Environmental Cooperation (CEC), a trinational environmental agency established under the North American Free Trade Agreement, reports that "Ontario is the third-biggest polluter in North America behind Texas and Tennessee" and that overall Canada is a "major-league polluter." Using 1994 data, the study found that Canadian facilities discharge more pollution per site than U.S. facilities. Paul Muldoon of the Canadian Environmental Law Association said the study "debunks the myth that Canadian environmental law is stronger than that of the U.S." Other environmental groups also criticized the Canadian government's environmental policies and predicted that Canada will continue to experience severe pollution problems. Ontario Environment Minister Norm Stirling argued that the study used three-year-old data and does not reflect recent progress. [ESA]

Recently, Interior Secretary Bruce Babbitt announced that the Clinton Administration would start working with Congress to rewrite the Endangered Species Act. Last authorized for 5 years in 1987, no rewrite bill has been passed since then, though many have been proposed. Babbitt noted that the Administration avoided rewriting the bill to have time to study whether the law was working for both endangered species and landowners. Though several administrative changes have been made in the last 5 years, reauthorization of the bill may help protect the changes from being rewritten by a future administration. Babbitt's plan, which will make the law more flexible, will seek to protect the species by preserving places where they live, rather than concentrating on the plants and animals themselves. This new strategy will allow for some "carefully controlled development on habitats where all development is now prohibited." [ESA]

A recent report from the General Accounting Office says that the Forest Service is wasting as much as $100 million a year because of faulty decision-making processes. According to the report, the agency has sometimes conflicting priorities that include logging, recreation, and protecting wildlife. The GAO report says that the Service needs to work with Congress to develop "the agency's long-term goals." The report concludes that, while the Forest Service has shifted its priorities from consumption to conservation recently, Congress "has never explicitly accepted this shift." [ESA]

BLM FRAUD: Public Employees for Environmental Responsibility released a report today outlining the fiscal and ecological problems associated with the Bureau of Land Management's Public Domain forestry program. The report, Land of No Return $, shows that monetary losses from the program are less than the BLM's forest management budget. Jeff Debonis, PEER Executive Director, states, "It is mind boggling that the BLM can lose money while selling a public commodity. Any business that operated this way would be in Chapter 11 or under indictment for fraud." [Greenlines]

WILSON'S MOVES ILLEGAL: A state appeals court ruled that CA Gov. Pete Wilson's decree allowing officials to suspend the state Endangered Species Act during floods and other disasters was illegal, according to an AP article. Wilson's waiver would have affected 30 animals and over 120 plants that are listed as endangered by the state of California. Wilson's decree,in effect through the year 2000, could have proved devastating for many endangered species as local officials could have allowed the killing of otherwise protected species. Some of the activities allowed under the waiver included construction of roads, levees, and dams, and the alteration of streambeds. [Greenlines]

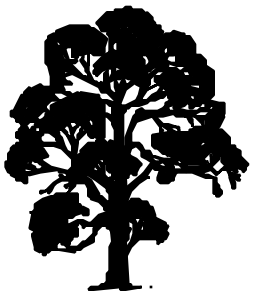
GRAZING GUIDELINES: The Bureau of Land Management is proposing new federal guidelines and grazing standards for Oregon in order to make sure rivers meet state water quality standards and provide endangered species habitat, according to an AP article. Oregon's plans focus on natural processes and native grasses. Tim Lillebo of the Oregon Natural Resources Council, however, is looking for a stronger commitment to bringing about conditions that will support fish and wildlife. "To me, you've got to have salmon and steelhead and bull trout present in their natural habitat, not say, 'We lost those a while back, but we're getting some of the grasses and bushes to grow back,'" Lillebo said. [Greenlines]

SILVERY MINNOW SUIT: Forest Guardians and Defenders of Wildlife have sued to force the designation of critical habitat for the silvery minnow, listed as endangered by USFWS in 1994, says an AP story. The suit says that designation of critical habitat for the Rio Grande's last native minnow is overdue and "dramatize[s] the problems with endangered fish in New Mexico, which has no law setting minimum stream flows." The suit was triggered by irrigation diversions that left parts of the Rio Grande dry last year killing 1,000 silvery minnows. Federal agencies are consulting to find ways to lessen the impact on the minnow. [Greenlines]

FROG HARM: Stocking Sierra Nevada lakes with hatchery trout could cause the ESA listing of the mountain yellow-legged frog, reports Greenwire from the L.A. Times. The frogs were once found in half of Sierra Nevada lakes but now exist in only 3%, which some biologists attribute to the "voracious" introduced trout. [Greenlines]

LAKE DRAINING CRAZY?: An Arizona Daily Star editorial questions

whether ornot the Sierra Club's contention that Lake Powell should be drained is so crazy. Citing figures showing that enough water to supply both Phoenix and Tucson was lost in one year from evaporation, Jack Schmidt, a Utah State University geographer said, "The value of the lost water will become too high to lose. Even the water development community will say this. So this isn't just some environmentalist wacko posture." Editorialist Mark Murro suggests that "the water establishment itself will contemplate draining Lake Powell." [Greenlines]



Life Damned on the Waterfront? Fewer plant species live along the banks of Swedish rivers dammed for hydroelectric power than alongside neighboring free-flowing rivers. The findings, reported in a recent issue of Science, are likely to fuel debate on licenses for new dams, and have stirred calls for restoring the natural habitats of rivers. Although ecologists have long known that dam construction and altered water levels can wreak havoc on bank communities, they have been divided over just how well plant populations recover and reestablish themselves alongside new, regulated waterways. Ecologist Christer Nilsson and colleagues at Ume[a] University in Sweden set out to answer this question by studying the vegetation at almost 90 sites alongside hydroelectric power "schemes"--each of which can incorporate a number of dams and reservoirs. The team compared both the simple number of species and an index of species richness, which compensates for differences of riverside habitat and sediment characteristics. Half the samples were at main storage reservoirs, where water levels can vary substantially over a year, and half were alongside smaller dammed reservoirs, downriver, which directly feed the hydroelectric turbines and show much less variation in water level. The team found about one-third fewer species around storage reservoirs than at comparable undisturbed sites; the index of species richness was half as great for these sites. At impoundment sites, the richness index was comparable to that at control sites, but 15% fewer species were crammed into the much narrower band of habitat than in natural rivers. Some ecologists suggest that this impoverishment in riverside plant life might significantly harm the aquatic ecosystems that depend on this vegetation as a food source. "We're just beginning to get some glimmers of the effects on biodiversity of changes in these habitats," says ecologist Stuart Pimm of the University of Tennessee, Knoxville. "These changes are likely to lead to higher local extinction rates for some species." The findings are also likely to fuel debate on the relicensing of Swedish hydroelectric schemes. Concerns about their environmental impact have already led to proposals for a 5% increase in flow through the schemes, but Nilsson says, "For the same reduction in generating capacity, it would make more sense to close down one in 20 schemes and restore their original river courses." Such an idea holds appeal elsewhere, too. Says river ecologist Jack Stanford of the University of Montana's Flathead Lake Biological Station in Polson, "It's becoming increasingly clear that we have to restore some of the natural attributes of river systems."

Exotic Snail And Trematode Affecting Endangered Fish-by Pam Fuller, Tom Brandt.

Tom Brandt of the National Fish Hatchery and Technology Center (USGS/BRD) in San Marcos, Texas has recently discovered that an introduced snail, the red-rimmed melania *Melanoides tuberculata*, and its introduced trematode, as yet unnamed, may be affecting survival of the federally endangered fountain darter *Etheostoma fonticola.* At least three populations of this snail and trematode are known in Central Texas: one in the San Antonio River in San Antonio, another in the Comal River (entire 2 mile length), and the third in the upper 2-3 miles of the San Marcos River. The fountain darter only occurs in the Comal and San Marcos rivers and the trematode has only been found in the fountain darters in the Comal River. The San Antonio and Comal rivers have yellow-crowned night-heron rookeries associated with them while the San Marcos River does not. The adult stage of the trematode (fluke) lives in the intestines of the night-heron. The fluke lays eggs in the intestine which passes in the bird's feces into the river. The eggs hatch and the resulting larvae enter snails. After an appropriate time in the snails, a different larval form leaves the snails and enters the gills of fishes. When an infested fish is eaten by a night-heron, another larval form that developed in the fish develops into a fluke in the bird and the cycle begins again. It appears that the green throat darter *E. lepidum* and the fountain darter are not normal hosts for the trematode since most larvae found on the gills are encysted and dead. Low levels of infection in fountain darters were first found on fish collected during the summer of 1995. By October of 1996, the fish were exhibiting high levels of infections, 50--100 cysts per gill arch. One greenthroat darter was collected with 160 cysts on a single gill arch! Researchers at the San Marcos NFHTC and Southwest Texas State University will sample the Comal and San Marcos rivers monthly to monitor the parasite. Robin Overstreet, Gulf Coast Research Laboratory, Ocean Springs, MS, is in the process of naming the trematode. Harold Murray, Trinity University, San Antonio, TX, is studying the relationships among the snail, trematode, various fishes, and various birds. [Texas Chapter Newsletter]

A Report from Montana: Another Exotic Snail - New Zealand mudsnail *Potamopyrgus antipodarum* (Gray) Description - Also known as *Potamopyrgus jenkinsi* (Smith). An elongate Hydrobiidae in running waters reaching about 5 mm in length with a solid shell. It has basic horn color of our pulmonates, but has an operculum and it is much more solid. They are live-bearing parthenogenetic species that are essentially all female. An introduced species so far known only in the Madison River, Montana above Hebgen Lake. This

population was discovered in the summer of 1995, but the very large population already present must mean that the introduction was a few years old at that time. It is native of New Zealand, but long established in Australia and Europe. This species has been known in North America since 1987 in the Snake River between Shoshone Falls and the C.J. Strike Dam. It is reported to pass through the digestive tracks of fish alive and then give birth! Population levels may exceed 100,000 per square meter, which should be nearly a solid layer of the snails! It occupies wide microhabitat conditions and tolerates some pollution. In the Madison River, it is most abundant in shoreline areas in moderate current on solid substrates. Overhanging grasses might be covered nearly solid with the snails. Lower densities occur on rocks in the mid channel and upon silty sand bars. I did not find any live specimens in thick silt or mud. It seems probable that this species will spread to the upper parts of the Snake River, but it was not found there in 1995. Its spread is unpredictable until its environmental needs are better known. Substantial impacts on the native Madison River invertebrates and then fish and birds seem likely, but cannot be well predicted. Common pulmonate snails were abundant in 1995. The only native prosobranch in the river, Valvata humeralis is already very rare. [Texas Chapter Newsletter]

El Nino. This summer the Peruvian government reinstated a coastwide ban on anchovy fishing, based on lowered harvests related to El Nino conditions. Also, Chilean officials projected a significant increase in anchovy harvest due to displacement of anchovy southward from Peru by warmer El Nino currents. [Dow Jones News, Dow Jones News]

Wild Coho Salmon. This summer the NMFS published interim regulations for protecting wild coho salmon in northern CA and southwestern OR. Prohibitions against incidental take would be waived in OR for salmon hatcheries, ocean harvest and freshwater sport fishing for other species, habitat improvement projects, and research as long as they comply with the provisions of OR's coho salmon restoration plan. However, cattle grazing and logging activities that harm salmon could be punished with fines as high as $100,000 plus a year in jail. In CA, the waiver from regulations would apply only to ocean fishing and some research. These regulations took effect on Aug. 15, 1997, with comments will be accepted through Sept. 15, 1997.

This summer the Port of Seattle commissioners voted 3-2 to spend as much as $300,000 for feasibility and environmental studies to create an artificial salmon stream and spawning area in downtown Seattle, WA, for shared educational and conservation objectives. Private funding is expected to cover construction costs. [Assoc Press]

Salmon Pigment Lawsuit. In early August 1997, Igene Biotechnology Inc. (Columbia, MD) filed a lawsuit in U.S. District Court against Archer-Daniels-Midland Co. (ADM, Decatur, IL), alleging that ADM stole secrets, valued at $100 million, about a unique Igene process for producing astaxanthin, a natural pigment additive that gives farm-raised salmon pinker flesh. An Igene employee was arrested in July and charged with theft of trade secrets. Then, ADM filed a patent infringement lawsuit against Igene over the same technology. [Dow Jones News, Wall Street Journal, Reuters]

Fish-Eating Birds. This summer the Senate Committee on Appropriations reported H.R. 2107, FY1998 appropriations for the Dept. of the Interior, containing language direction the U.S. Fish and Wildlife Service to complete all action on a double-crested cormorant depredation order by fall 1997, and to join USDA's Animal and Plant Health Inspection Service in evaluating and implementing population management strategies for fish-eating bird species. [S.Rept. 105-56]

Chesapeake Bay - Researchers were working on Monday to learn what triggered a micro-organism that killed thousands of fish in a tributary to the Chesapeake Bay, the nation's largest estuary that has undergone years of clean-up efforts. The fish kill -- the first major one in the East Coast bay since 1989 -- apparently ended on Sunday after a five-day run at the mouth of a Maryland river that killed an estimated 10,000 to 15,000 fish, Liz Kalinowski, spokeswoman for the Maryland Department of Natural Resources, said on Monday. The apparent culprit was Pfiesteria, or a micro-organism like it, which produced ugly lesions in fish, including Atlantic menhaden and croakers, before killing them.

Maryland's U.S. senators toured the stricken area of the Pocomoke River by boat on Monday and asked the Centers for Disease Control and National Institutes of Health to help determine whether the fish kill was linked to complaints of nausea and flu-like symptoms among Pocomoke fishermen.

A key question is what activated the micro-organism that may otherwise have been dormant for years, Kalinowski said.

"We probably have other agents at work in addition to a potentially toxic micro-organism, so that means that we need to continue to look for bacteria, any other types of influences on the water that might be setting up the stage for a potentially toxic situation, and that would also include looking closely at runoff pollution," she said.

The state has been monitoring lesions in Pocomoke fish this summer and sent water samples to an expert at North Carolina State University for testing. Expert JoAnne Burkholder, said in a letter 60 to 70 percent of the lesions appeared consistent with Pfiesteria-like organisms, but the remaining 30 to 40 percent were not. "Thus, I believe that your ongoing sampling effort is of great value to determine the 'full picture' of causes of fish disease/death in the Pocomoke," Burkholder wrote to officials. [Reuters]

Researcher Calls For More Careful Use Of Biological Controls - Using introduced plants or animals to attack undesirable species, though a valuable tool for

agriculture and conservation, can cause widespread damage to native organisms. Too little attention is paid to that potential "dark side" when biological-control projects are approved in the United States, says an authority on plant-insect interactions at the University of California, Davis.

Donald R. Strong, a UC Davis professor of evolution and ecology, examines new evidence of "biocontrol gone haywire" in the Aug. 22 issue of the journal Science. Strong reviews a report in the same issue from the University of Nebraska, Lincoln, that a Eurasian weevil widely released in the United States and Canada has sometimes reduced its target population -- non-native thistle plants that overrun livestock grazing areas -- but also turned its appetite to five native thistle species. Some of the native plants' seed production has been cut by 86 percent, dramatically hurting the plant's ability to reproduce. The weevil also appears to be pushing aside native picture-wing flies, which normally feed on the native thistles' flower heads. And the weevil's distribution has expanded substantially, both naturally and through introductions that continue today. Since it was first released in 1968, the Eurasian weevil has been found in 24 states from California to New Jersey, and every Canadian province except Alberta.

Strong writes that the collateral attacks should come as no surprise: They have occurred in similar biocontrol projects, and there was evidence before the weevil releases began that the Eurasian bugs would like North American cuisine. Carefully planned biological control, Strong writes, can provide great economic benefit, reduce the use of chemical pesticides, and even protect native species against non-native predators or competitors. However, he said in an interview, too few biocontrol projects get the requisite care. "This is a huge policy issue for the United States," Strong said. "There's tremendous pressure from the agriculture industry -- and the industries that supply agricultural biological controls -- to find new agents, release them, and then go find more, without adequate study of their effects.

"It is important for us to start a broad public discussion about the conservation and environmental issues surrounding biological control." In the Science article, Strong says it's essential to establish experimentally that the proposed control agent has an extremely limited "host range" -- that its food preferences will keep it focused on its intended target, not native species. "Biological control is an important arrow in the quiver of pest management, perhaps the only arrow in some cases of pests of grave concern," Strong writes in conclusion. "However, willy-nilly biological control without regard for environmental costs" can clearly have serious consequences.

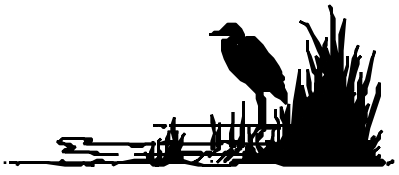
VANCOUVER, British Columbia (ENS) - Fisheries conservationists are bitterly disappointed following a meeting in late August with senior federal fisheries officials on the survival of the coho salmon. The conservationists are accusing the Canada Department of Fisheries and Oceans (DFO) of failing to provide scientific data to support its continuing Juan de Fuca commercial fisheries openings. During the two-hour meeting with concerned conservationists from leading environmental groups fisheries officials were unable or unwilling to provide any scientific justification for fishing plans that will allow up to 340,000 imperiled coho to die in South Coast salmon fisheries this year. Already more than 100,000 coho have died in South Coast fisheries in 1997.

The meeting was ordered by Fisheries Minister David Anderson in the wake of growing alarm among B.C. environmental groups over a coho fishing plan that DFO's own biologists say will likely push several coho runs into extinction. Among the voices that have joined the protest against DFO's coho fisheries are conservationist and broadcaster David Suzuki, the Fraser River Coalition, Greenpeace Canada, thc Sierra Club of B.C., Save our Fish Foundation, Speak for the Salmon, the Steelhead Society of B.C. (Selective Fishery Initiative) and the Western Canada Wilderness Committee. At the meeting, Paul Sprout, DFO's Director of Pacific Region Operations, continued to claim that there is scientific justification for its coho plan, although he said he did not know whether he was allowed to release the data supporting that justification. The environmental coalition asked for - but did not receive - the Pacific Stock Assessment Review Committee's recommendations upon which this year's salmon fishing plans are based. This report has been kept from public scrutiny for more than four months. On June 27, Canada's Department of Fisheries and Oceans (DFO) issued a statement on conservation measures for coho salmon in 1997. It promised "strict" conservation measures in commercial and recreational fisheries for southern British Columbia. For 1997, the DFO stated, the proportion of the adult coho population caught in all fisheries in southern B.C. will be reduced from 60% to between 20 and 25%. This reduction "will sustain wild coho populations and result in higher returns to coho streams," the agency assured the public.

But many fisheries experts and marine conservations, including those at this meeting, are not reassured. They doubt the DFO knows the total population of coho, so they question any percentage of that total. Ken Wilson, DFO's senior Fraser River coho biologist - now on leave after a dispute with DFO managers over the coho crisis - said the only option left to DFO is to shut down all the fisheries that produce coho mortalities this year. "DFO doesn't know what it's doing, and they won't admit that they don't know what they're doing," Wilson said when contacted by the concerned conservationists after their meeting with the DFO officials. "The sad truth is that this year, conservation means no coho fishing, period," said Wilson. Earlier this year, Wilson warned DFO that its fishing plans would leave several Thompson River coho populations "on the verge of extinction." In federal court last week, Ron Kadowaki, DFO's senior Pacific Region coho biologist, testified that DFO's cscapement targets for Thompson River coho are based on improper data

models. DFO's own Pacific Stock Assessment Review Committee concluded earlier this year that South Coast coho are in such bad shape that even if no coho were killed in any fisheries this year, several runs would likely fail to return to their home rivers in numbers sufficient to ensure their continued survival. At the meeting, DFO's Paul Sprout, admitted that, in spite of a monitoring program, a catch-and-release rule in the Fraser River recreational fishery, and other recent measures, the "total allowable mortality" of South Coast coho in the South Coast's various commercial and recreational fisheries remains unchanged: it is still between 270,000 and 340,000 fish. Sprout also admitted that South Coast coho populations are "at the bottom of the trough." Sprout continued to insist that 340,000 coho amounts to an exploitation rate of 25 per cent, but Wilson said, "They have no way of knowing that. Even if it were only 25 per cent, it would not be all right. But it could be 60 percent. DFO doesn't know how many coho there are left." The worst of the various commercial fisheries that result in coho "bycatch" is the Juan de Fuca seine fishery. Seiners continued to fish sockeye in Juan de Fuca this week in an unnecessary "fish war" strategy, and more than 1,000 coho have been killed in the Juan de Fuca fishery so far.

DFO intends to allow the Juan de Fuca seiners to continue fishing for low-value pink and chum salmon in the coming weeks, officially permitting the seiners to kill up to 63,000 coho in the process. In Johnstone Straits, where seiners are making an extra effort to save coho in their sockeye fisheries, DFO intends to allow seiners to kill up to 20,000 coho. To date, 100,000 South Coast coho have been killed. Troll fisheries for Chinook and sockeye have resulted in 34,000 coho mortalities, sports fisheries for Chinook in Juan de Fuca and Vancouver Island's West Coast have produced 66,000 coho mortalities, and 1,000 coho have been taken in aboriginal fisheries. "I've had phone calls from dedicated salmon enhancement volunteers wondering whether their efforts are in vain," said Craig Orr, Coordinator of the Steelhead Society's Selective Fishing Initiative. "They want to know if the coho they are putting into streams are going to return. That's really a question better put to our Fisheries Minister," Orr said. "The worst coho kill is yet to come," lamented Paul George of the Western Canada Wilderness Committee, "when they open fisheries for pink salmon in the coming weeks in areas of high coho concentrations. And what is the excess for condemning a number of these high-value sports fish runs to extinction through by-catch? A fish worth only a few cents per pound? It's hard to believe that the commercial fleet has that much political power and DFO has so little sense." The DFO admits that, "Despite the implementation of significant conservation measures in 1995 and 1996, marine survival, escapement and catch levels for wild coho populations on the south coast of British Columbia declined sharply in 1996. Returns were particularly low for east coast of Vancouver Island and Thompson River stocks. This downward trend in production of wild and enhanced coho stocks in southern British Columbia is largely the result of poor marine survival and changing ocean conditions," the DFO stated in June. The management program to be implemented in 1997 is considered by DFO to be a "short term measure designed to protect the overall productive potential of wild coho stocks." The DFO promised "a renewed commitment to a long term program to rebuild the coho resource in British Columbia." [ENS]



NATIONAL PARKS. Thus far this year, there has been a 5% increase in visitors to national parks despite a doubling of fees at many popular sites and the introduction of fees at sites that were previously free. The highest admission fees are $8 per person to visit Mount St. Helens and $20 per carload at Yellowstone, Yosemite, and Grand Canyon National Parks, while most other parks charge lower fees, such as $3 a day in the Sandia Mountains and $6 per carload at Arapaho National Forest. This year, revenues from the user fees will bring $3.8 million to the Bureau of Land Management, $13 million to the Forest Service, and $2.5 million to the Fish and Wildlife Service. Many visitors say they don't mind paying for admission since revenues from the fees go to park maintenance. Opponents of the fees criticize the government's decision to charge admission for recreational use of federal lands when activities such as logging, grazing, and mining are still heavily subsidized. [ESA]

CANADA-- Recent budget cuts in Canadian federal and provincial governments may be threatening environmental protection efforts. Funding for environmental programs has been severely cut in the past five years as governments have been battling large budget deficits. Environment Canada, the federal environment ministry, had its budget cut by 30%, from $730 million CAD in 1994-95 to $503 million CAD in 1997-98, forcing a 25% workforce layoff and a reduction of offices from 72 to 17. The Ontario Ministry of the Environment and Energy also suffered a drop in budget from $390 million in 1993-94 to $150 million in 1997-98, and the Ontario Ministry of Natural Resources has lost more than 20% of its budget and 40% of its staff in the last two years. Environmentalists say that the budget cuts have weakened environmental monitoring and enforcement, though Ontario Environment Minister Norm Sterling says that environmental conditions are improving. Concern for these cuts is mounting as a recent study reported that "Ontario is the third-biggestpolluter in North America." [ESA]

KAMPALA, Uganda (ENS) - Aquatic Unlimited, an American company, has presented its environmental impact assessment draft report to the government of Uganda, recommending the spraying of quickly proliferating water hyacinth with herbicides. But the report has raised doubts and fears of the damaging effects of the herbicides amongst environmentalists, scientists, and the

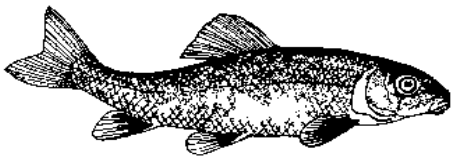
general public. A native plant of South America, water hyacinth, was imported into and is a major weed species in 53 countries. Its growth rate is among the highest of any plant - populations can double in as little as 12 days by sending off short runner stems which develop new plants. It can also reproduce by seed.

Millions of dollars are spent annually around the world to control this attractive-looking but devastating aquatic weed.In Uganda, Aquatic Unlimited wants to use Weedar 64 2,4-dichlorophenoxyacetic acid (2,4-D) and Rodeo (Glyphosate) to kill the water hyacinth. Since February, experiments have been conducted in a water pond at Kajjansi and at Wazimenya Bay, in Mukono; both locations are within 50 miles of Uganda's capital city, Kampala. According to the 850 page environmental impact report, the herbicide has been proved to have "no serious effects" on the environment or people. The report says that the two herbicides have a "very low toxicity" which does not pose any threat to animals or plants in the waters to be sprayed. Some people have concerns about the use of 2,4-D. Aquatic Unlimited denies that the use of 2,4-D poses a potential threat to the human nervous system. Instead, the company argues that serious effects could only arise when the herbicide is taken in large quantities.

The report does not, however, guarantee that the spray of the water hyacinth will completely eliminate the weed. Instead it is merely a regulatory measure to reduce it to a "controllable level." The report warns that the exposure of broad leafed plants such as beans, cassava, sweet potatoes, soya beans, potatoes and bananas to Weedar 64 (2,4-D) could have very serious side effects. Sources of water for domestic use in Gaba, Entebbe and Jinja could also be affected, the report acknowledges and promises that chemical treatment will be conducted with water use restrictions in mind. The report says that glyphosate, one of the proposed chemicals to be sprayed, is practically non-toxic to mammals following acute oral or dermal exposures. Glyphosate is incompletely absorbed following oral administration, and the glyphosate that is absorbed is rapidly excreted (almost entirely in the urine) as unmetabolised glyphosate, the report states.

Many Ugandans find the results of the report difficult to believe, and many want to see more experiments carried out before large scale applications of herbicides are made. [ENS]

CHARLESTON - The South Carolina Supreme Court has ruled that an Edisto Island, South Carolina fish farm cannot release water to the wild until a court appeal over a virus that infects shrimp is settled. The state of South Carolina had appealed a circuit court injunction handed down July 17 and won a temporary stay. The injunction involves a legal dispute over shrimp viruses the at 140-acre Edisto Seafarms. The South Carolinaia Department of Natural Resources has directed the fish farm to destroy about 4.5 million shrimp, decontaminate three quarantine facilities, not release water from the farm and not import more shrimp. Edisto Seafarms appealed to the Circuit Court, which ruled that it did not have to destroy any more shrimp or decontaminate two more quarantine facilities that had not tested positive for a virus. In fact, the farm could begin releasing the water into the wild, the court ruled, unless the state got a stay from the South Carolina State Supreme Court. The state did. "This is a very serious matter," Mary Pope Waring, a Department of Natural Resources board member, told reporters. "Our entire board and department are very concerned about the circuit court decision. The shrimp industry is important to thousands of residents, and it should not be put at risk by introducing taura syndrome virus to local waters." Taura is a virus that can kill shrimp, and reportedly also does harm people. The attorney for Edisto Seafarms has argued in court that taura has not been identified in South Carolina waters. [ENS]



On the Underside

submitted by Charles Anderson and Frank Swendsen

In a recent contest, The Washington Post asked readers to dream up new elements for the Periodic Table. Among the best of the batch:

Limbaughium Lb
The heaviest known element. It possesses an ever-expanding mass. Very white. Acidic. Emits heat but no light. Instantly polarizes all elements that come in contact with it. Repels protons and electrons; attracts only morons.

Billclintium Bc
With a slick appearance and slimy texture, this element undergoes a series of interesting changes when in hot water.

Canadium Eh
Similar to Americium, but a little denser. Much more rigid. Often called Boron.

Innofensium Pc
Precisely equal numbers of electrons, protons, neutrons, leptons, quarks. Completely inert, utterly useless, but smells like a rose.

Newtium
Extreme irritant. Carries a strong negative charge. Does not possess magnetic properties. Can be purchased cheaply.

Quaylium Vp
Einsteinium it ain't.

Budweisium Ps
Has no taste or smell; is often indistinguishable from water.

Cabmium Cb
Found in abundance, except when needed. Exists in two states, in motion and at

rest. When in motion, it cannot be stopped, no matter what you do. Cabmium has a charge associated with it. The charge is variable, and scientists have not determined the formula for calculating it.

Politicium Po
Contains a great deal of gas. Similar to radon in that it can reach lethal concentrations in the House.

Congress Cg
Atomic number 525. Can never be found in a solution.

Snot Sn
Bonds forever with corduroy.

From "Roots": New Element Discovered
The heaviest element known to science was recently discovered by investigators at a major university. The element, tentatively named administratium, has no protons or electrons and thus has an atomic number of 0. However, it does have one neutron, 125 assistant neutrons, 75 vice neutrons, and 111 assistant vice neutrons, which gives it an atomic mass of 312. These 312 particles are held together by a force that involves the continuous exchange of mason-like particles called morons.

Since it has no electrons, adminstratium is inert. However, it can be detected chemically as it impedes every reaction it comes in contact with. According to the discoverers, a minute amount of administratium causes one reaction to take over four days to complete when it would have normally occurred in less than one second.

Administratium has a normal half-life of approximately three years, at which time it does not decay, but instead undergoes a reorganization in which assistant neutrons, vice neutrons, and assistant vice neutrons exchange places.

Some studies have shown that the atomic mass actually increases after each reorganization. Research at other labs indicates that administratium occurs naturally in the atmosphere. It tends to concentrate at certain points such as government agencies, large corporations, and universities. Ot can actually be found in the newest, best appointed and best maintained buildings.

Scientists point out that administratium is know to be toxic at any level of concentration and can easily destroy any productive reaction where it is allowed to accumulate. Attempts are being made to determine how administratium can be controlled to prevent irreversible damage, but results to date are not promising.

Bumper Stickers:
I love cats...they taste just like chicken.
Out of my mind. Back in five minutes.
Cover me, I'm changing lanes.
As long as there are tests, there will be prayer in public schools.
Laugh alone and the world thinks you're an idiot.
Sometimes I wake up grumpy; other times I let her sleep.
I want to die in my sleep like grandma...not screaming and yelling like the passengers in his car!
Montana --- At least our cows are sane.
I didn't fight my way to the top of the food chain to be a vegetarian.
Your kid may be an honor student but you're an IDIOT!
Friends don't let Friends drive Naked.
I took an IQ test and the results were negative.
If we aren't supposed to eat animals, why are they made of meat.
Time is the best teacher--unfortunately it kills all its students.
Warning: Dates in Calendar are closer than they appear.
Always remember you're unique, just like everyone else.
I souport publik edekasion
There are 3 kinds of people: those who can count and those who can't.

Research Definitions (from the Texas Chapter Newsletter):
"It has long been known..." - I haven't bothered to look up the original reference.

"Of great theoretical and practical importance" - interesting to me.

"While it has not been possible to provide definite answers to these questions..." - the experiments didn't work, but I figured I could get publicity out of it.

"Three of the samples were chosen for detailed study" - the results on the others didn't make sense and were ignored.

"Accidentally stained during mounting" - accidentally dropped on the floor.

"Typical results are shown" - the best results are shown.

"Presumably at longer times..." - I didn't take the time to find out.

"These results will be reported at a later date" - I might get around to this sometime.

"The most reliable values are those of Jones" - he was a student of mine

"It is believed that ..." - I think.

"It is generally believed that ..." - a couple of other guys think so too.

"It might be argued that ..." - I have such a good answer for this objection that I shall now raise it.

"It is clear that much additional work will be required before a complete understanding..." - I don't understand it.

"Correct within an order of magnitude" - wrong.

"It is hoped that this work will stimulate further work..." - this paper is not very good, but neither are any others on this miserable subject.

1998 ANNUAL MEETING ANNOUNCEMENT

Mark your calendar! A very early alert to the upcoming annual MN Chapter meeting. The meeting is planned for Tuesday-Thursday, 24-26 February at Camp Ripley. Please note that this meeting will be very inexpensive. Two nights accommodation and 5 meals (includes the mixer and banquet) will only cost about $40.

Registration will begin on the afternoon of the 24th followed by a mixer. Wednesday and Thursday morning will be devoted to paper and poster presentations. Because of the accommodations we will not have concurrent sessions, so you will not have to be torn between two or three presentations. The paper/poster session on Wednesday will be followed by a banquet.

FIRST CALL FOR PAPERS AND POSTERS

The Annual Meeting will be held February 24-26, 1998, at Camp Ripley. Abstracts for poster and paper sessions are herewithin invited.

They should be sent to: Bruce Vondracek, Minnesota Cooperative Fish and Wildlife Research Unit, Department of Fisheries and Wildlife, University of Minnesota, 1980 Folwell Avenue, St. Paul, MN 55108-6124, e-mail: bcv@finsandfur.fw.umn.edu

Deadline for receipt of abstracts is December 15, 1997.

Abstracts should be submitted electronically, either mailed on floppy disk or sent via e-mail.

Abstracts, including the author and title lines, are to be no more than 250 words. They can be submitted on a 3.5" floppy disk (preferably formatted for DOS), or by electronic mail to Bruce Vondracek. They must be submitted in ASCII, WORD, or WORDPERFECT format. Include at the top of the file the following information: author to contact, institution, mailing address, phone numbers, e-mail address, who will present paper and if a student or not, and preference for oral or poster presentation.

Persons submitting abstracts will be notified by Bruce Vondracek of their receipt. And additional information will follow. People with questions on abstract submission should contact Bruce Vondracek at 612.624.8748.

To All Minnesota Chapter AFS Members:
Nominations for 1998 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 1998. Nominations must be received by October 1, 1997. You may also contact me by telephone at 612.772.7966.

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

President Elect:

name _____
telephone _____

name _____
telephone _____

Secretary-Treasurer:

name _____
telephone _____

name _____
telephone _____

Executive Committee (Excom):

name _____
telephone _____

name _____
telephone _____

Committee Chairs:

name _____
telephone _____

name _____
telephone _____

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).

1997 Dues Application

1997 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: _____
Fax: _____
e-mail: _____

Are you a member of AFS?_____ yes _____ no. Membership Number_____
(AFS membership number is located on your Fisheries mailing label)
Affiliation: _____
(DNR, Federal Government, Academic, Tribal, or Private)
Job Title: _____
Year Joined AFS: _____
Year Joined MN AFS: _____
Check if you are a Student: _____
Check if you don't want to be in the Chapter Directory: _____

T-SHIRT SALE ORDER FORM

The remaining stock of t-shirts are now on sale for the great price of $10 each. Walleye, bluegill, black crappie, and brook trout designs are available. Send check to Henry Van Offelen (paid to the order of Minnesota Chapter of the AFS) at:

Henry Van Offelen
DNR Fisheries
P.O. Box 138
1200 Minnesota Ave. S.
Aitkin, MN 56431

Item	Number	Kind (Walleye, Bluegill, Crappie, Brook Trout)	Size(S,M,L)	Total
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2.				
			Grand Total:	

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American Fisheries Society WWW page:
http://www.esd.ornl.gov/AFS

North Central Division of the AFS WWW page:
http://www.fw.umn.edu/ncdafs

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