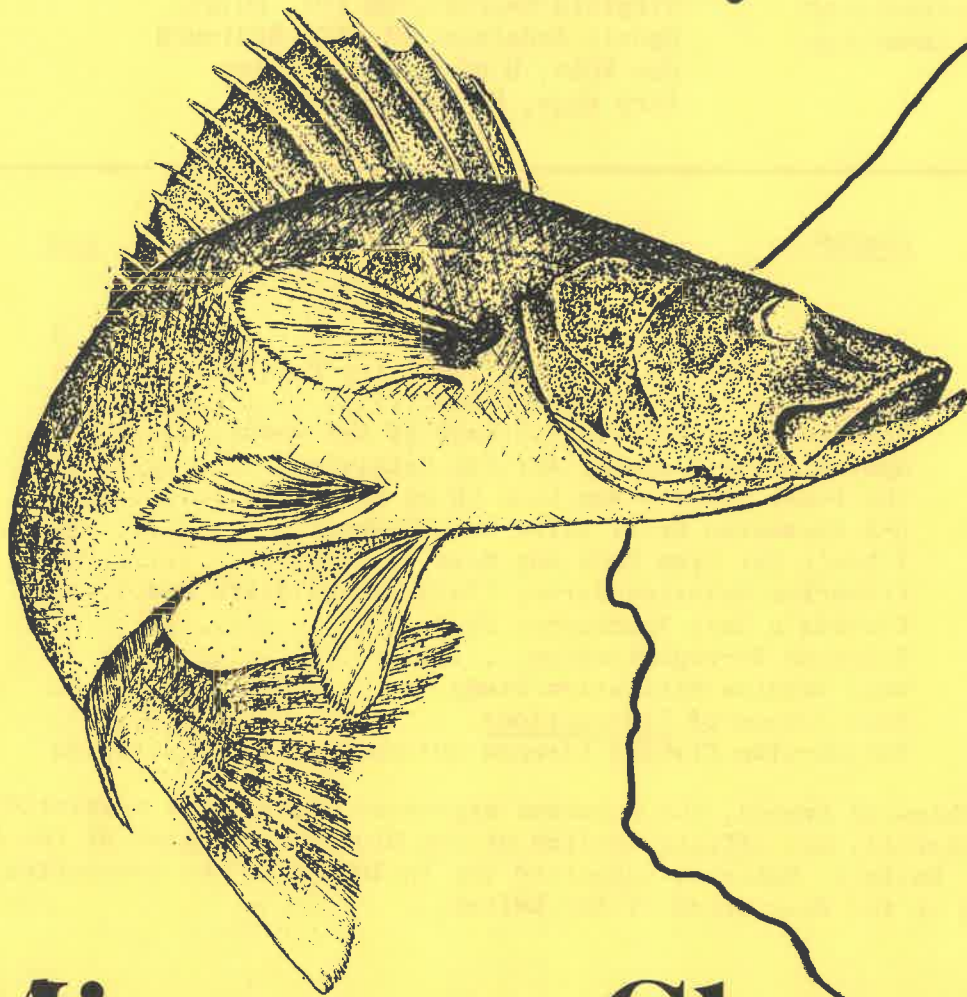


**American Fisheries
Society**



Minnesota Chapter

JANUARY '84

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AMERICAN FISHERIES SOCIETY



-- MINNESOTA CHAPTER --

President:	Dr. George Spangler, U of M, Twin Cities
President-Elect:	L. Howard McCormick, US EPA, Duluth
Immediate Past-President:	Dick Hassinger, MN DNR, St. Paul
Secretary-Treasurer:	Virginia Snarski, US EPA, Duluth
Executive Committee:	Dennis Anderson, MN DNR, Brainerd
	Jon Ross, U of M, Twin Cities
	Gary Wege, US FWS, St. Paul

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Unless otherwise stated, the opinions expressed within this newsletter are those of the author(s), not official policy of the Minnesota Chapter of the American Fisheries Society. Material submitted for inclusion in the newsletter is subject to editing at the discretion of the Editor.

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NEW YEARS' MESSAGE TO THE CHAPTER

This past year has been a particularly challenging one for fisheries professionals in our state. We have witnessed continuing emphasis upon the utilization of Minnesota's fisheries as an important aspect of recreation and tourism. Recreational fishing interests have organized themselves into the Minnesota Sportfishing Congress, a group that will lobby for recreational interests in a more unified voice than has been heard in the past. Food fish producers have raised the issue of who has the right to deny non-fishing consumers an opportunity to share in the bounty of edible fish from public waters. The legislature has confronted the most difficult fishery resource issue of our time and has made an explicit political allocation of Lake of the Woods walleye to the recreational industry. Federally, we have seen progress toward passage of a Dingell-Johnson expansion bill and a renewed commitment to the Cooperative Unit approach to fish and wildlife research.

Our membership has been active in seeking and resisting some of these changes. We have been heard individually and collectively by legislators, fishermen, sportsmen and agency administrators. We have accomplished much and are better prepared to deal with present and future challenges.

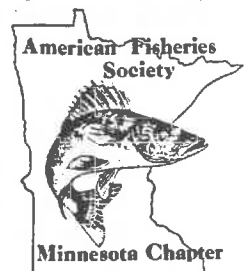
The key to our success lies in the professionalism that individual members carry to their workplaces. Fisheries professionals deal daily with issues that evoke strong emotional responses from citizens concerned with the welfare of our fisheries resources. The public frequently turns to trained professionals for solutions to situations that are perceived to be threatening to the resource. Often, these perceptions imply problems that may not exist, or may be poorly defined. One example of this is the irrational paranoia surrounding the use of gillnets in many of our public waters. The issue may really be a question of the incidental catch of non-target species, or it may be that gillnet regulations are difficult to enforce, or perhaps there is concern about the sizes of fish taken by whatever mesh size is being fished. No matter what the underlying issue, it deserves clarification, definition, and an objective approach to its solution.

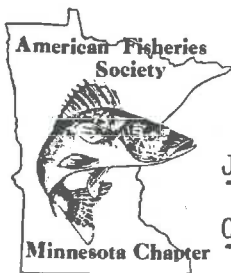
Development of professional objectivity does not require that we abandon our own emotions about important issues; it requires that we separate fact from opinion, excuses from reasons, and judgement from conclusions. When we are required to express professional opinions, it is expected that these are the culmination of our training, experience, and orderly examination of the issues. This objectivity is our single most important professional tool, and the climate is right for applying that objectivity to some difficult issues in fishery management.

The D-J expansion bill will need our support in the coming year. The promise of additional funding brings with it the challenge of creating useful management programs that will sustain productivity and rehabilitate degraded aquatic systems. We must seek to ensure that expenditure of tax funds and monies contributed to public resource agencies through voluntary programs are spent to cure fishery resource problems rather than to provide "symptomatic relief" that will be required forever. We must also help resource users to recognize the distinction between management programs that achieve specific objectives through manipulation, assessment and evaluation, and those conspicuous field activities that form only a small part of the management system. Too often fishermen interpret "fish stocking" or law enforcement as fishery management rather than unique tools for achieving management goals. Sometimes they are unable to discern the objectives at all. It is our responsibility to articulate the options clearly, to distinguish between activities and objectives and to provide the very best professional advice that can be brought to bear on critical fishery resource issues.

I am confident that our membership will accept this challenge, and I look forward to working with you during the coming year to ensure the continuing productivity of Minnesota's fishery resources.

George R. Spangler, President
Minnesota Chapter of the American Fisheries Society





Call for Papers

Joint Meeting of the Minnesota & Wisconsin
Chapters of the American Fisheries Society



Wisconsin



Where: University of Wisconsin-Superior
Superior, Wisconsin

When: Friday & Saturday, 16 & 17 March 1984

A banquet is planned for the evening of 16 March. Dr. Howard Tanner, former head of the Michigan Department of Natural Resources, will be the after dinner speaker.

Housing will be available at the University at a rate of \$7.00 per person.

Sessions Being Planned On---

1. General Session - open to any fisheries related topics.
(Friday Morning)
Session Chair - J. Howard McCormick
2. The Use of Special Regulations in Fish Management.
(Friday Afternoon)
Session Chair - Michael J. Talbot
Buffalo County Courthouse
Alma, WI 54610
(608-685-3763)
3. Exotics - Their Use and Misuse in Lakes and Streams.
(Saturday Morning)
Session Chair - T. F. Thuemler
Dr. Tanner's after dinner presentation will be a kick-off for this topic.

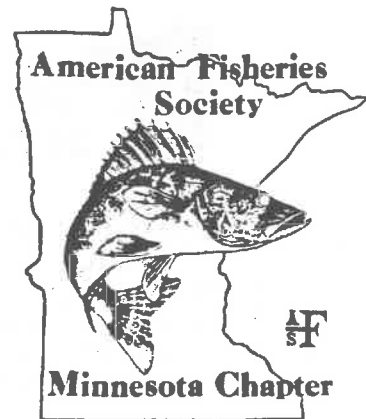
Workshops Being Planned On---

1. The Use of Micro-computers by Fish Managers and Scientists.
(Dr. George Spangler, University of Minnesota, Department of Entomology, Fisheries and Wildlife)
2. State of the Art in Fish Telemetry Studies.
(Jon Ross, University of Minnesota, Department of Ecology and Behavioral Biology)

Please submit a brief abstract if you would like to give a paper in any of the above sessions. A poster presentation could be used for either of the workshop sessions. Send your abstracts by 15 January 1984 to one of the following:

Thomas F. Thuemler
Wisconsin DNR
Box 16, Industrial Parkway
Marinette, WI 54143
(715-732-0101)

J. Howard McCormick
Environmental Research Lab-Duluth
6201 Congdon Blvd.
Duluth, MN 55804
(218-727-6692, x513)



CANDIDATES FOR PRESIDENT-ELECT

The Executive Committee of the Chapter has selected Robert Strand and Jack Wingate as this year's candidates for President-Elect. Following the Chapter Constitution, this year the President-Elect shall be elected from a State agency. Following is a brief background profile of the two candidates to assist you in making your decision as to whom to vote for at the March 16-17 Chapter meeting in Superior.

Executive Board: Although the Nominating Committee was not asked to select candidates for the three Executive Committee positions, three chapter members will also be elected to fill the 1982 board at our March meeting. The three members join the President, President-Elect, Immediate Past-President and the Secretary-Treasurer in directing the chapter's activities. The positions are as active and important as the incumbents wish to make them. Nominations will be taken at the meeting, so do some thinking ahead of time.



Robert F. Strand, Fisheries Research Biologist, Minnesota DNR, Bemidji.

Education & Professional Societies:

-B.S. from Bemidji State College (1965)

-American Fisheries Society since 1969.

Past and Present Fisheries Related Positions:

-Aquatic Biologist Aid (66-67) at Waterville, Minnesota.

-Aquatic Biologist I & II (67-70) at Waterville. Lake reclamation, lake surveys, and developed and promoted the use of under-ice horizontal scanning sonar for use by commercial and DNR fishery crews.

-Natural Resources Specialist III (70-present) at Bemidji.

- a/ 5-year investigation of 3 upper Mississippi River headwaters lakes (71-75),
- b/ determination of muskie spawning areas in Leech Lake by radio telemetry,
- c/ evaluation of effectiveness of sonar devices and graph recorders in angling,
- d/ special surveys of Leech Lake regarding controversies over walleye harvest,
- e/ Monitor gill net fishery of the Leech Lake Indian Band.

Future Aspirations:

-I'm well satisfied with my research work. I'm not opposed to promotion, but I'm not particularly ambitious either.

Actions:

-Would like to strengthen the Chapter as an effective spokesman for the professional fisheries community. I believe this is a real positive influence we can provide.

Past AFS Activities:

-Chairman of the Technical Program Steering Committee for the International Symposium on Muskellunge, April 4-6, 1984 (co-sponsored by the AFS and Muskies, Inc.).



STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

Jack (Paul J.) Wingate, Fisheries Research Supervisor, Minnesota DNR, Saint Paul.

Education & Professional Societies:

- B.S. from Ohio Wesleyan University ('64): Zoology.
- M.S. from University of South Dakota at Vermillion (68): Zoology.
- Four years of study at Southern Illinois Universty at Cabondale: Fisheries.

- American Fisheries Society since '71.
- American Society of Limnology and Oceanography.
- American Institute of Fisheries Research Biologists.
- Certified Fisheries Scientist.

Past & Present Fisheries Related Positions:

- '74-'82-Fisheries Biologist and Fisheries Research Biologist with the North Carolina Wildlife Resources Commission. Worked on environmental assesments and research on warm and cold-water fishes.
- '82-present-Fisheries Research Supervisor, Minnesota DNR, Saint Paul.

Aspirations:

- My goal is to maintain a good fisheries resarch unit within the Minnesota DNR, one that is widely accepted by the American fisheries profession.

Chapter Strengths and Weaknesses:

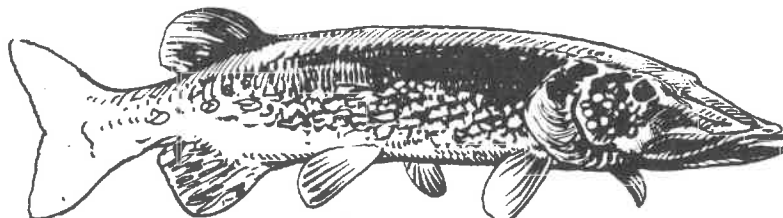
- One weakness is that not enough of our fisheries professionals want to belong to the AFS and that not enough attend the Chapter's annual meeting.
- One major strength is our annual meetings. They are good forums for the exchange of ideas between representatives of colleges, agencies, and private concerns in an informal setting. There is a lot to be gotten from such group meetings, and I think the Minnesota Chapter meetings provide a good forum.

Actions:

- I'd like to initiate more Chapter activity in State affairs and decisions, such as the Executive Committee's letter to the DNR regarding trout stocking in Lake of the Woods. The state Chapter is a good group to address many of the issues that face the State in managing the fisheries reource.
- I'd also like to have the Chapter get involved with promoting professionalism within the state's fisheries community. I don't know just what we could do, but I think it's an important goal.

Past AFS Activities:

- a/ Trout Committee; Southeastern Division ('80-'81).
- b/ Carp Committee; AFS National ('82).
- c/ Membership Committee; AFS National (82-present).
- d/ Professionalism Committee; AFS National (82-present).
- e/ Nominating Committee; Northcentral Division (83).
- f/ Chairman of the Membership Committee; North Central Division (83).





RAINBOW TROUT STOCKING IN LAKE OF THE WOODS

This summer the Executive Committee of the Chapter responded to concerns expressed by some of the membership about trout stocking in Lake of the Woods by writing to DNR Commissioner Joseph Alexander. Following is a copy of both the letter sent by President George Spangler and Commissioner Alexander's reply.

Mr. J. Alexander,
Commissioner of Natural Resources
Centennial Building
658 Cedar St.
St. Paul, MN 55155

August 12, 1983

Dear Commissioner Alexander:

On behalf of the Minnesota Chapter of the American Fisheries Society, the Executive Committee wishes to express our grave disappointment over the recent decision to allow planting of rainbow trout in Lake of the Woods.

We believe that such a planting is biologically unsound and managerially unwise. Because of the limnological characteristics of the lake, especially the warm summer temperatures at all depths in the south sector, we anticipate poor survival through the first summer and little or no carry-over to next year. We also expect that native predators, especially northern pike, will effectively negate the stocking. Since DNR biologists are aware of the slim probability of survival of these fish, any real or perceived failure of this planting will serve to undermine the credibility of the DNR. Permission to plant these trout implies DNR consent of the wastage of private funds contributed in good faith in an attempt to "improve" the fishery.

We strongly believe that the DNR has abdicated its responsibility to preserve and protect the resource base of Lake of the Woods. This is predominantly a percid community that utilizes tullibee to some extent as a forage base. In the unlikely event that rainbow trout do thrive and prosper in the lake, this could only occur at the expense of the native fish community. We question whether or not the advice of a special interest group, no matter how well-intended, should carry so much weight that the management agency would risk jeopardizing the long-term ability of public domain waters to produce walleyes or other native species. We remain convinced that special interest groups should not be allowed to set into motion processes which may, no matter how remote the chance, bring about biological changes in an otherwise productive fish community without public review of the proposal or a thorough environmental impact analysis.

The International ramifications of this act clearly contravene the spirit of cooperative advisement jointly accepted by all fishery management agencies in the Great Lakes region. It is reasonable to expect that the Minnesota DNR would provide ample opportunity for comment on this proposal by all agencies concerned with

perpetuation of such a valuable fisheries resource. It is especially embarrassing to recognize that the best opportunity for rainbow trout survival lies in the Canadian domain of the lake.

A final concern is that planting of exotic species has come to be regarded by the fisheries profession as an extremely high risk management option to be taken only as a measure of last resort when no other proven management technique will ensure sustained productivity of public waters. We are fully aware of the recent well-publicized fishery on exotic salmonids in Lake Michigan and applaud the resurrection of an important fishery in otherwise unproductive waters. However, the severely degraded fish community of Lake Michigan is a poor model for management of inland waters capable of sustained productivity of valued native species. In addition to the many biological uncertainties, this approach perpetuates the myth that our fisheries resources are essentially unlimited and that we can meet ever-increasing exploitation demands simply by stocking fish.

Please rest assured that, in spite of our criticism of your actions in the Lake of the Woods planting, we will support you and your staff in every way possible to assure the very best management for Minnesota's fisheries resources. Please do not hesitate to contact us if we can be of service.

Sincerely,



George R. Spangler/for the Executive Committee,
Minnesota Chapter of the American Fisheries Society

cc: American Fisheries Society
Northwestern Ontario Chapter
North Central Division
Northeastern Division



STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

BOX 12 , CENTENNIAL OFFICE BUILDING • ST. PAUL, MINNESOTA • 55155

DNR INFORMATION
(612) 296-6157

August 23, 1983

FILE NO. _____

Dr. George R. Spangler
President
Minnesota Chapter of the American Fisheries Society
Route 1, Box 5
Stacy, Minnesota 55079

Dear Dr. Spangler:

I appreciate your concerns regarding the recent plant of rainbow trout in Lake of the Woods by resort operators. The Fisheries Section has reviewed the limnological characteristics of the lake as well as the biological features of exotic fish stocking in Lake of the Woods. We agree with your assessment that summer temperatures could be marginal in Minnesota waters, that native predators could effectively prey on the exotic species and that the stocking probably could result in slim or small survival of the fish. The Department, however, did agree to allow the stocking in terms of the resort owners on Lake of the Woods feeling a strong need to offset what they perceive as a serious threat to their livelihood.

As you are aware, Ontario is contemplating some rather restrictive regulations concerning the use of their lands by nonresident sportsmen. These contemplated restrictions include daily user fees and substantial increases in the nonresident license fees for fishing. The resort operators and the local communities along the south shore of Lake of the Woods perceived this action as having a negative impact to their operations and felt that some action, however remote the chance of success, be taken to offset this and improve the tourist climate in Minnesota waters of Lake of the Woods. The resort operators, although, turned down in a request to have the Department stock exotic fish decided to proceed on their own. After a careful review of their proposals including corresponding with the provinces of Manitoba and Ontario, it was felt the species with least opportunity for major impacts was the rainbow trout. A review of the literature of percid communities did not reveal any major problems associated with the introduction of rainbow trout in such system.

We recognize, however, that the potential for a problem does exist. We do welcome your letter and thoughts concerning these types of introductions and would hope an organization such as yours would help to foster a better understanding of what impacts can result from such introductions. The fact that the resort operators and the general communities in Lake of the Woods area would accept the proposals of the private fish hatchery operator rather than the facts as presented by the Fisheries professionals suggest a need for education and better understanding of the dynamics of fish communities and the consequences from the introduction of exotic species.

I would suggest that your organization is a proper vehicle to provide such information to the user groups concerning fisheries resource management and an understanding of sound fisheries programs. I can assure you that the Fisheries Section would be more than willing to participate in a joint educational effort to increase the knowledge and understanding of the fish communities of Minnesota.

Thank you again for your letter and I appreciate your concerns.

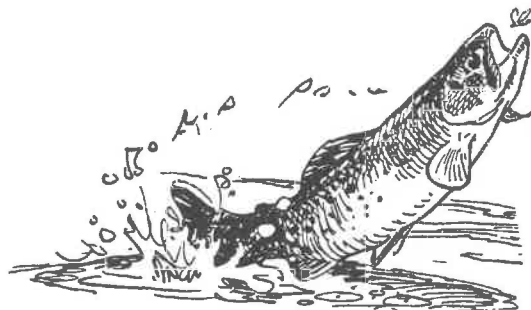
Yours truly,



Joseph N. Alexander
Commissioner

RLH:lj

cc: R. Hassinger, Fisheries Chief
American Fisheries Society, Northwestern Ontario Chapter, North Central
Division, Northeastern Division





SPORTFISHING CONGRESS ARTICLE CRITICIZED

November 30, 1983

Mr. James A. McCarthy
Rainy Lake International, Inc.
P.O. Box 164
Ranier, MN 56668

The article in the August '83 Chapter newsletter about the newly formed Minnesota Sportfishing Congress drew criticism this fall due to fact that the article strongly endorsed the organization. As the article was written by the president of the Congress this should not have suprised anyone. Please note that one of my purposes in producing the newsletter is to keep the Chapter membership informed of a range of events and changes which may affect our profession and the resource. Certainly the formation of the Congress was one of those events. Follow is President Spangler's response to a group that was upset by the article.

-MJV

Dear Mr. McCarthy:

Thank you for your enquiry of October 26 regarding the newsletter of the Minnesota Chapter of the American Fisheries Society. I have discussed the Minnesota Sportfishing Congress article with the newsletter editor, Mr. M. Vanderford, and several members of our Executive Committee. We would like you to know that the material appearing in the newsletter is not to be construed as an official AFS endorsement of the MSC, its activities or objectives, but is intended to inform our membership of current fisheries-related issues within the state. The solicitation of membership is clearly present in the article, by the hand of the article's author, Mr. Frank Schneider, and we agree that readers will not necessarily distinguish between Mr. Schneider's appeal for membership, and an official solicitation by our organization. This is purely unintentional on the part of the AFS or the newsletter editor. To prevent this kind of ambiguity in future issues, we intend to include a "standard disclaimer" on the title page, noting that opinions expressed within the newsletter are those of the authors, not official endorsements by the AFS. We will also attempt to provide, as we have in the past, the names and affiliations of contributors to the newsletter.

The broader issue of what should be included in the newsletter has been left to the discretion of the newsletter editor. We see no need to alter this policy, but in view of your apparent concern over the MSC article, we feel that it is appropriate to make this policy explicit. We also anticipate that the editor or other members of the Society will solicit articles for the newsletter from their associates. Please regard this communication as an open invitation to contribute newsworthy items to the newsletter.

Thank you for expressing your concern about our newsletter. I hope that the actions that I have outlined above will prevent any future misunderstanding about the Society's position or editorial policy.

Very truly yours,

George R. Spangler,
President, Minnesota Chapter of the
American Fisheries Society

cc: Mr. M. Vanderford
AFS Executive Committee



The Ivory Tower's New Look

It's not often that you get "that feeling" when talking with the new chief of a department or agency divisory. You know, that feeling that this fellow is really the right person for the job. Everything seems to click. There's the intelligence, ability and energy. There's the perceptiveness, sensitivity and honesty.

For the University of Minnesota's newly reorganized Department of Fisheries and Wildlife that right person seems to have risen to the call. That person is Dr. Ira R. Adelman, recently confirmed as the department head after serving as acting head for over a year.

The University of Minnesota has long been regarded as one of the top fisheries and wildlife schools in the region. However, within the university's internal structure there has also been some long standing headaches about administering the coalition of entomology, fisheries and wildlife disciplines (the old department) and about having fisheries and wildlife disciplines functioning within the College of Agriculture. As a result, the discipline of entomology and the disciplines of fisheries and wildlife were finally separated into distinct departments last year and simultaneously the Department of Fisheries and Wildlife was placed within the College of Forestry.

Dr. Adelman becomes the department head at a time of declining enrollments in his Department and a seemingly dismal future for fisheries and wildlife in general and fisheries and wildlife as a profession specifically. Despite this, Ira seems to be a real renaissance man. He

impresses one as being realistically confident in both the future prospects of his department and of fish and wildlife resources as a whole. This seems particularly impressive given that Ira is hardly new to either this region or the "U's" fisheries and wildlife program.

Dr. Adelman came to the "U" in 1964 as a graduate student after earning a BA in psychology from the University of Vermont. After receiving a Ph.D. in fisheries from the "U" in 1969 he served at the "U" as a research fellow till 1970, as a research associate from 1970-74, as an assistant professor from 1974-79, and as an associate professor from 1979 till the present.

Dr. Adelman has certainly had ample time to know the region's resource problems and the pitfalls associated with the University's bureaucracy. One would expect someone so long associated with the University and department's inner workings to be greatly sobered and somewhat drained of enthusiasm. In sharp contrast to this, Dr. Adelman impresses you with his well directed energy and enthusiasm for the department and the department's future.

When asked why he wanted to be Department Head, Ira responded that he felt his research work was becoming increasingly supervisory and advisory, providing ideas and procedures for research but not actually doing the "hands on" work. "I was reasonably good at this, so the next logical step was to try moving up from managing a research program to managing the department." Ira added, "We all probably think we can make contributions toward growth and improvements. I felt I could be a good administrative decision maker when the opportunity arose. I was pleased with the department administration under Milt Weller (Dept. Head 1973-82) under the difficult times we've recently experienced."

Dr. Ira R. Adelman
Department Head
Department of Fisheries & Wildlife
University of Minnesota



Direction for Department

Regarding the "U's" role and direction, Dr. Adelman related, "On a national basis our department is still relatively small. But I don't see our current size as an impediment to staying on the leading edge of new areas of importance."

"One of our major objectives is to develop and refine computer applications in teaching and research in both fisheries and wildlife. We emphasize use of computers with our own students and programs and strive to show others the value of computer applications for fish and wildlife resources. Our purpose is not to just deal with number crunching. The real value and opportunities lie with the scientific and resource/management applications."

"Another major objective is to provide students with a firm foundation in basic fisheries and wildlife ecology. We also have a strong emphasis on physiological ecology. Our graduate students must be able to bring the most current information and techniques to a resource agency that might employ them, for the benefit of the student, as a means of enhancing capabilities of the agency, and ultimately as a benefit to the resource itself."

"It is also our objective to attract more non-majors into the department's courses. The department needs to be more flexible in course offerings so that we can help develop a more environmentally conscious



citizen. We also need to develop more effective communicators in fisheries and wildlife. The department will have to be flexible to address newly emerging needs."

What Do you Tell Students?

I asked Ira what prospective students were told about their chances for a profession in the fisheries and wildlife. Ira responded, "We don't mislead students. We tell them that jobs are tough to obtain, but that jobs have always been scarce in this field. I counsel students to be the outstanding student, do the extra things like going to Itasca and working for the DNR in summer programs and to be persistent. I also tell them to think of the M.S. as the entry level degree in today's market."

"Actually, the kind of undergraduate experience the department provides is a good educational experience with broad applications. At the end of four years one of our students is in as good a position to go into any number of fields as any liberal arts major."

"Personally I'm optimistic. I think we're near the bottom. Public support for environmental issues makes it impossible for any administration to bury environmental programs. The wildlife check-offs being approved by states throughout the country is a good indication of the strong public support for environmental programs."

I also asked Ira if he saw within the department any evidence of the much ballyhooed decline in the caliber of students in America." The sample size I've seen is too small for making a valid judgement. What I do see, though, is cycles. There are periods of time when we have many outstanding students and periods when you just don't see that group of really good students. But it happens in cycles. I don't see any real trends."

The Future for the Fisheries and Wildlife Profession

In an address to the U of M's new Department of Fisheries & Wildlife on September 15, 1983, Dr. Adelman related a number of observations which I think are valuable to us all. Copies of the speech are available from the department (200 Hodson Hall, U of M, St. Paul, MN 55108), but I thought noting a few points here would be appropriate.

Ira noted that despite the fact that very few fish and wildlife professionals were amongst the environmental crusaders of the 60's and 70's, that the likes of Silent Spring and Earth Day have done infinite good for the fisheries and wildlife interests we hold most near and dear. He points out that the profession must adapt to the continuing environmental movement and take advantage of changes to enhance our opportunities and achieve our goals.

As an example, he points out that the evolution of the preservationists should not be mishandled by the fisheries and wildlife profession. Ira notes that preservationists share many more values with us than do developers and polluters. In addition they will not go away in the foreseeable future.

"We must begin to appreciate their perspective, to attempt to reach accommodations and compromise, to educate them to our perspective where possible and to reduce confrontation by working toward the shared goals. We must help show that the goals of the less extreme preservationists and the supporters of hunting and fishing are not incompatible."

Indeed, it is not often that you know right off that the right person has been given the job. But I think that just such a person has been selected to bridge Hodson Hall's ivory tower with the real world of Minnesota's fisheries and wildlife resource. The U of M's Department of Fisheries and Wildlife seems to be in good hands.



D-J EXPANSION STILL ALIVE BUT TEMPORARILY HIBERNATING

You are probably getting about as tired of reading these updates as I am tired of writing them. What we would really like to hear is that HR 2163 has passed, and that we can get on with spending the new money to hire people, start new projects, buy more access to fishing water and implement new and improved fishery management plans. Once again, to all of you who have written letters, licked stamps, talked to legislators or tackled manufacturers, contributed time or money, written articles, done news spots or in any other way helped - a big old THANK YOU!

It isn't time to clap and cheer wildly yet, but things are looking pretty good. HR 2163 - The Sport Fish Restoration and Boating Enhancement Act of 1983 - passed the House of Representatives, and more recently was approved by the Finance Committee of the Senate. The latter group made four significant changes: 1) The proposed excise tax on tackle boxes was reduced from 10% to 3%. And, would only be imposed on those that are intended for fishing use and not on those used for lunch boxes, sewing kits or tool boxes. It is up to IRS to interpret. 2) Certain electronic devices used mainly to locate fish will be taxed at 3% with a maximum of \$30 per device. Alright! 3) The point of collection for the D-J tax has been moved from the manufacturers to the wholesalers or last point of sale before retail. This should result in more D-J revenues because of the higher value of products at the wholesale point of sale. On the negative side, it will quadruple the number of people involved from about 400 to almost 1,600. On the other hand, moving the point of collection should take care of the import evasion problem that the tackle manufacturers complained about; and 4) The effective date of the bill has been moved to 1 October 1984 for most of the tax except for tackle boxes and fish locators which would take effect 1 October 1985.

The money available to enhance fishing and boating would increase from about \$30 million to almost \$90 million per year. What a deal. New programs. Revise old, shrinking ones. More jobs. It has been a long time coming.

The D-J Expansion Bill has now been incorporated into the Senate's Omnibus Reconciliation Act of 1983 (S. 2062). This broad scale budget bill reached the Senate floor just before their Christmas break, but time ran out before the bill was brought up for a vote. Fortunately, the current Congressional Session continues through 1984, so we don't have to start from scratch again. Supposing S. 2062 is approved by the full Senate when they re-convene in late January, the bill will go to a Conference Committee made up of senior members of the Senate Finance Committee and the House Ways and Means Committee for some compromise magic. This version then goes back to the full Senate and House for final approval before being shipped to President Reagan for his signature. If he doesn't sign it, he can write the next update.

Thanks again for all your help, patience and indulgence in this long arduous process of trying to improve fishing and boating in the United States. I hope my next communication on this D-J thing is tactile and gustatory; more simply, I'll shake your hand and tip a brew to you at the victory party.

Joe G. Dillard, Missouri Dept. of Conservation
Member, AFS D-J Expansion Committee

House passed version (7/12/83)

Senate Finance Committee Action (10/31/83)

- o Adds to D-J Fund
 - new items of terminal tackle (dropped out sonar devices) same except tackle boxes 3% vice 10% and put back in sonar devices designed for fish location
 - motorboat fuels tax receipts same
 - import duties on yachts, pleasure craft same
- o Coastal States to equitably allocate new funds between marine and freshwater projects same
- o Changes from 8% to 6% amount for administration same
- o States may use 10% of funds for 75% of cost of aquatic resource education. same
- o States required to use 10% of all funds for boating facilities same
- o Authorizes multi-year projects same
- o Delays time for payment of tax to the end of the following quarter similar; if a manufacturer is liable, delays time for payment if it is a company with receipts of less than \$100,000
- o No similar provision shifts the point for calculating and paying tax to the last sale before retail -- essentially from manufacturer to wholesaler
- o Adds to PR Fund cross bow arrows same
- o Includes tax treatment of Fish and Wildlife Foundation separated this provision from this bill



The action taken by the Senate Finance Committee will alter the amount of funds anticipated from this expansion bill.

Tackle boxes at 3% rather than 10%	minus approximately	\$2 m
Addition of sonar devices for fish location	plus approximately	\$1 m
Shift tax calculation to wholesale	<u>plus approximately</u>	<u>\$10 m</u>
Subtotal	plus approximately	\$9 m
Total amount estimated under House version (includes current receipts)		<u>\$83 m</u>
Total amount estimated under Senate Finance version		\$92 m



American Fisheries Society

ORGANIZED 1870 | INCORPORATED 1910

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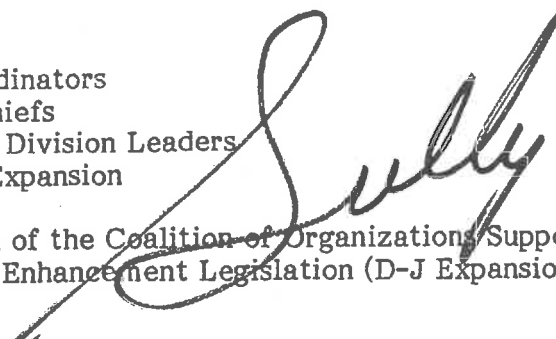
December 12, 1983

MEMORANDUM

TO: State D-J Expansion Coordinators
State Fisheries Agency Chiefs
AFS Chapter, Section and Division Leaders
Others Interested in D-J Expansion

FROM: Carl Sullivan, Cochairman of the Coalition of Organizations Supporting
Sport Fishing and Boating Enhancement Legislation (D-J Expansion)

RE: Status of Legislation



Representatives of organizations who are supporting D-J Expansion met on December 9 to hear reports from Senate and House staff leaders and to discuss strategy. Participating were representatives of:

National Marine Manufacturers Association
National Wildlife Federation
Fish and Wildlife Service
Atlantic States Marine Fisheries Commission
Trout Unlimited
Boat U.S.
Outboard Marine Corporation
National Boating Federation
American Recreation Coalition
National Association of State Boating Law Administrators
International Association of Fish and Wildlife Agencies
Boating Trade Association of Texas
Izaak Walton League of America
National Audubon Society
House Merchant Marine and Fisheries Committee
Senate Majority Leader's Office
American Fisheries Society

NOTE: The number and diversity of organizations attending this meeting demonstrates the breadth of the coalition which is supporting D-J expansion. Earlier conflicts and disagreements between factions has been replaced by a united front and a deep shared concern for the future of sport fishing and recreational boating resources.

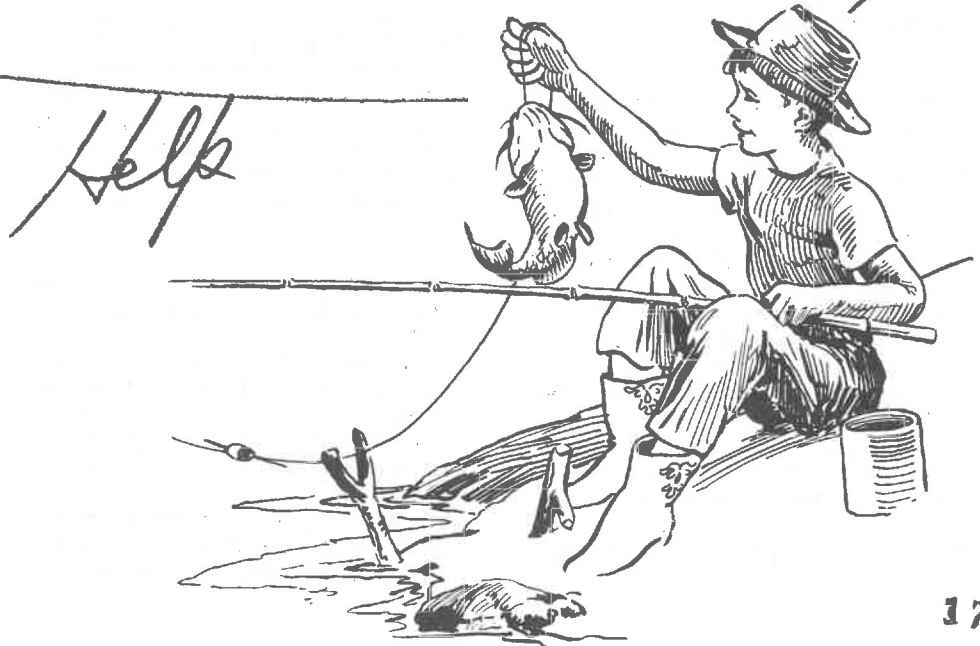
Jim Range, Council to Senator Howard Baker, Senate Majority Leader, (Jim is an attorney, a fisheries scientist, and a tireless advocate of D-J Expansion), began the meeting with a detailed explanation of the enormously complicated status of the bill in the Senate. (It has already passed the House). The complexities of the situation make it very difficult to explain, but the "bottom line" conditions are these:

1. The bill has strong support from throughout the nation and the Senate and no visible opposition.
2. It is believed that the President will sign the bill if passed.
3. Since the bill is a tax measure it has been incorporated into (and is actually a miniscule part of) the Senate Omnibus Reconciliation Bill of 1983 (S2062).
4. The Reconciliation Bill is a complex mixture of tax increases and budget reduction provisions with enormous partisan political implications. It can probably not pass until there is basic agreement on taxes and budget cuts between Senate and House leaders and the White House.
5. Conditions prevent the Senate from separate and "isolated" consideration of this bill for it is a revenue bill (the only House passed revenue bill now awaiting Senate action) and on the floor of the Senate would face unlimited efforts to attach many provincial and unrelated budget or tax amendments.
6. D-J expansion is caught in the biggest political question of 1984 that being taxes and deficits.
7. There is hope that if we persist the several "warring" factions in Congress, in recognition of the broad support for this legislation, will allow it to move on its own with a "gentlemen's agreement" not to use it as a political hostage or to allow it to be stymied by the tax/budget in-fighting.

WHAT WE MUST ALL DO NOW

Contact our two U.S. Senators while they are home for the holiday recess (they reconvene on January 23) and urge them to support the "Sport Fishing and Boating Enhancement Provisions of the Omnibus Reconciliation Bill of 1983 (S2062). Tell them that similar legislation has already been approved by the House and is awaiting a conference with the Senate.

Please don't fail our cause, we need an avalanche of calls, cards and letters.



I Don't Eat Craw Dads Any More

Sure signs of education
and progress

By John Klug

■ Old John Eb, as we called him, was often heard to say, "Big Crick was there b'fore the people." Guess I was thirty years old before I ever thought about what he meant.

Sunday, after milkin', church, and a few chores, was the one day a week that we kids got off from workin' on the farm. We'd keep our crick stuff down in the milkin' shed. Stuff like an old two-quart pot our mom had throw'd out cuz we'd cooked a groundhog in it. And one box of Morton salt, one old lace curtain, two broom handles, and a spool of wrappin' twine like they use to tie your packages down at the store. Not to mention the one can of precious fish hooks, the box of Diamond matches, and one kinda dull Barlow penknife.

Never 'member walkin' to the crick. We'd just take off a-runnin', trying to beat the Rentschler boys to the swimmin' hole. They'd most generally win, cuz they lived closer to the crick. But, heck, it didn't matter none, cuz we had the stuff to catch and fix them craw dads.

Jack and Bob Rentschler lived on the road side of the crick. We lived on the other side. Or, as my dad used to say, "the wrong side," cuz there weren't no bridge to get over to the road. We either had to go round the hill or drive the old Ford through the water when it was low enough. See, the Rentschlers had this hu-mungus truck patch and took their crop to market every Thursday. The patch was planted in this big bottom 'longside the crick.

Mrs. Rentschler was a school teacher, which is probably why Jack and Bob had to say "creek" rather than "crick" when she was close by. They went to the city school, and we went to the Big Crick schoolhouse. Guess we liked school better'n them, cuz we had more fun and was 'loud to say "crick" and "git." (Our teacher didn't say "crick," but she didn't say we couldn't.)

At school, us older boys hauled in the coal for the old pot belly, and the girls did the sweepin' and stuff like that. Never heard of school buses back then, but we didn't seem to mind walkin'. 'Sides, ya could git a good snowball battle goin' on the way home in the winter.

■ Still, I don't remember anything we

ever looked forward to more than Sunday on the crick. Maybe it was just the being free all day. Or maybe it was those craw dads.

Now them old bass in Big Crick wur smarter than sum others. Ya had to know what ya wur doin'. First off, the big ones always seemed to be close by the willer bushes. They specially liked to bite on helgramites or, when the locust wur in, they liked them purty good, too. Course, ya had to know how to sneak up on them helgramites and ketch 'em without gettin' bit.

Ever' so often, one of them fisher fellas from the city would be down on the crick. Boy, we'd never seen such fishin' stuff, 'cept maybe in the Sears Roebuck. Big high boots and this pole that ya could cast clean 'cross the crick. This here one fisher man hollered at us kids cuz ever' so often we'd quit fishin' and jump in the crick. He said we wus scarin' the fish. Heck, we always figured that ya had to wake 'em up 'fore they'd bite.

Now as for them craw dads. Ya take an ol' curtain and tie a broom stick to each end. Then you wade on up to them willer bushes and poke the end of them sticks 'neath 'em. That scares them craw dads smack inta yur curtain. Then ya pick up the poles and walk on up to the bank. (We'd always pick out the big-uns and throw the little-uns back in, fingerin' we'd ketch 'em agin when they got bigger.)

Ya always want to cook yur craw dads off in boiling water first. Then ya dump that water out and git fresh. When ya cook 'em a second time, watch fur 'em to turn pink. Then ya know they're done. Then ya drain 'em off and let 'em cool 'fore you go ta peel off the shells. There ain't no better eatin' anywhere in the world.

■ But I don't eat craw dads any more. And these days I say "creek" rather than "crick."

Big Creek is still there, of course, but it's bulging with new houses, all built in its natural flood plain. (Engineers have constructed five dams upstream to control flooding, dramatically affecting its flow.)

A few years back, someone had the idea that the creek should be stocked with trout. Consequently, the truck

comes several times a year with milk cans full of fish. The "sportsmen" wait patiently for their hatchery-grown prey to be deposited in this alien waterway. And, of course, the Big Creek schoolhouse has vanished.

They say the craw dads disappeared the year the city folks deposited their children's pet Easter ducks in the creek, where they multiplied and fed on the young craws.

Bass are still in the creek. But they are fewer and smaller. Some experts say that the trout fishermen who wade the shallow gravel beds destroy the bass spawning grounds.

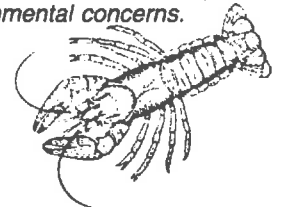
Speaking of wading, nobody goes in any more without shoes. Seems broken glass is everywhere, and the banks are covered with empty beer and pop cans.

I lost track of Bob Rentschler. But Jack lives in California and is a sales representative for Boeing. The bottom where their family grew food for half a century is now owned by a developer. He wants to build a golf course.

Most of my five brothers and five sisters have moved east. I am the only one of the family left on the creek.

And sometimes, just sometimes, I wish the educators of my later years had never taught me to say "creek" instead of "crick." Sometimes it seems like that's where it all started. Or maybe ended. □

■ John Klug lives in Wheeling, West Virginia, where he's active in Appalachian environmental concerns.



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NATIONAL WILDLIFE FEDERATION

10/28/83

Contact: Lani Sinclair



FISH AND GAME SALARIES LISTED IN NWF'S NEW 35-PAGE SURVEY

Salary ranges in the fish and wildlife profession are listed in a new 35-page National Wildlife Federation booklet, "A Survey of Compensation in the Fields of Fish and Wildlife Management." The 23rd annual survey includes the high, low and average fish and wildlife salaries in federal and state governments, and in colleges and universities.

The booklet was compiled "in the hope of improving the status of professionals in fish and wildlife work by improving their salaries," according to NWF Executive Vice President Jay D. Hair. "Data collected over the years on both federal and state pay levels have been useful in developing persuasive arguments for raising the lowest pay scales."

Listed in the survey are starting salaries for jobs as diverse as a research biologist in the U.S. Fish and Wildlife Service (\$13,000), an instructor in wildlife science at Louisiana State University (\$16,000), and an endangered species specialist in Arkansas (\$17,000). Top salaries for fish and wildlife administrators in state government range from \$25,000 to \$73,000. Top federal jobs pay up to \$63,000. Median salaries for the professionals are considerably lower, however.

"A Survey of Compensation in the Fields of Fish and Wildlife Management" is available for \$5 per copy, plus \$1.55 shipping charge, by writing to National Wildlife Federation, Salary Survey, 1412 16th St., NW, Washington, DC 20036.

#83093

FLORIDA'S BASS TOURNAMENT STUDY

Results from a recently completed study by the Florida Game and Fresh Water Fish Commission indicate that bass tournament fishing in Florida does not have an adverse impact on the state's fishery resources. Data for the report were collected from information received through the Commission's tournament permitting system.

The system was originally developed in 1975 to identify intensively fished areas and to determine if there was need to restrict or regulate bass tournaments. Major areas of concern included the possibility of overharvest or negative impact on fishery resources and potential conflicts with non-tournament fishermen.

Based on tournament catch statistics, it was concluded that previous concerns regarding the negative impact of fishing success for largemouth bass were unfounded. In all major tournament areas, catch rates have increased in the past five year period when compared with tournament statistics compiled prior to 1978. Most Florida tournament catch rates were within the usual 0.1 to 0.3 bass per hour national average and professional competitive fishermen as a group are, "little, if any, more successful than the average anglers."

Competitive fishing represents only a small part of total bass fishing pressure. Claims that tournaments have been responsible for overfishing in Florida appear unfounded. The Commission issued at least 586 permits for bass tournaments between 1975 and 1982 where either 50 or more fishermen were charged an entry fee of \$25 or more, 25 or more boats were used, or prizes exceeded \$1,000.

Fifty-eight percent of all permitted tournaments were held in three major areas of the state: the St. Johns River system including Rodman Reservoir, the Kissimmee Chain-of-Lakes, and Lake Okeechobee, according to Commission records. Lake Okeechobee had the highest catch rate at 0.4 bass per hour. The statewide tournament average was 0.27 fish per hour, or approximately one bass caught for every four hours of fishing. The Clermont chain in Lake County had the highest average weights of bass at 2.6 pounds per fish. Orange and Lochloosa Lakes, the Apalachicola River, and Lake Seminole followed with an average of 2.2 pounds. The largest "big bass" sizes, a category in most tournaments, were taken from Orange and Lochloosa Lakes. "Big bass" from tournaments on these lakes averaged 9.4 pounds. The Winter Haven chain ranked second at 8.4 pounds.

The report further stated that most tournaments were held in March, April and May. Relatively few major tournaments were held in July and August since water temperatures during summer months significantly reduce survival potential of released fish. Although not required by the Commission, tournament sponsors impose live release practices.

Because mortality estimates are subjectively biased and significant delayed mortality often occurs, accuracy of live release estimates is questionable, but ranges from 40 to 80 percent. However, the study concluded that, "Conscientious attempts at release programs had positive effects of recycling tournament-caught bass to other anglers."

Phil Chapman, who co-authored the report with Wes Fisk, added that competitive bass fishing's most significant influence may be on the social and economic aspects of the sport. He noted that, "Tournaments have done much to revitalize interest in bass fishing and have stimulated innovations in fishing tackle, boating and electronics industries."

ROTENONE RE-REGISTRATION

Federal Aid in Sport Fish Restoration Act (aka, Dingell-Johnson) administrative monies have been used sparingly in the past. In recent years the administrative monies, set at 8 percent (maximum) of the D-J fund, have been used to help underwrite the costs of the National Survey of Fishing, Hunting, and Wildlife Associated Recreation, the Denver Research Library and research on rotenone (for re-registration). The first two items are on-going projects, the third, rotenone re-registration, is drawing to an end.

The Federal Aid administrative fund expenditures by the Secretary of the Interior for rotenone research constitute an appropriate use for the benefit of all states. Without the Fish and Wildlife Service's (FWS) immediate commitment five years ago, use of rotenone by state fishery managers would be in jeopardy. Since the states are the primary users of rotenone and the profit from the sale of rotenone is relatively small, industry was unwilling to commit the funding levels necessary for its re-registration.

From the inception of this costly project, the objective has been to ensure that state fishery managers have use of a safe and effective piscicide with which to manage their fishery resources. As this project nears completion, the objective is very close to being realized. Current labeled uses of rotenone continue to be legal and, to date, research has indicated that rotenone used according to the label instructions is a safe product. Moreover, research effort provided the necessary data the Environmental Protection Agency (EPA) required to remove the threatened Rebuttable Presumption Against Registration status imposed upon rotenone several years ago. In addition, the completed research information should allow the Food and Drug Administration (FDA) to approve the human consumption of rotenone killed fish.

Costs to date for re-registration of rotenone are:

\$1,163,812	Federal Aid administrative funds extended to date
50,000	Private industry expenditure to date (approximate)
<u>700,000</u>	FWS Fishery Research funding
\$1,913,812	Total expenditures to date
325,000	Federal Aid administrative funds estimated for FY 84
<u>\$2,238,812</u>	Grand Total

It is fortunate that the FWS has an inhouse staff capable of undertaking the technical aspects of rotenone research. With the current attitude toward fishery research prevailing in the present FWS Directorate, it is highly unlikely such important work would be initiated. Fortunately, previous FWS Directors had the foresight to recognize the need, and the concomitant federal responsibility, for providing fishery managers with the tools they need to manage recreational fisheries. Dr. Fred Meyer, Director, National Fishery Research Laboratory, LaCrosse, Wisconsin, and his staff are responsible for skillfully coordinating the needed work with EPA, FDA, and the numerous contractors.

SFI Bulletin No. 347, August 1983



Research to save a legacy

From Minnesota Science

Times are tough for Minnesota farmers. Forced by the cost-price squeeze to make as much profit as possible from their land, they must make difficult decisions that affect both short-term objectives and longer-term considerations. Most are aware that growing the most profitable crop as cheaply as possible can be false economy when the crop or tillage system used results in soil erosion.

This is especially true in southeastern Minnesota, where soil type and topography have molded the agricultural profile. Dairy and the other livestock enterprises predominate in the rolling hills of Goodhue, Winona, Wabasha, Olmsted, Fillmore, and Houston Counties. Alfalfa, corn, and oats are stripcropped on the contour to reduce erosion. Chisel plowing has replaced moldboard plowing because it leaves more crop residue on the soil surface, increasing the water infiltration rate and reducing runoff.

Yet, all is not well. The annual average soil loss from the cultivated, loess-covered hills of the area is the highest in Minnesota, exceeding tolerable erosion limits in most instances. In some places, erosion has already diminished productivity. In others, the loess is still deep but is being lost at an alarming rate.

University of Minnesota soil scientists John Moncrief and Jim Swan are working with county extension agents and farmers in the area to find ways that conservation tillage methods can be used without sacrificing yield. They are

also cooperating with researchers at the University of Wisconsin experiment station at Lancaster, where soil type and topography are similar to southeastern Minnesota's. Much of what they are learning there and in research at Rosemount should help them find solutions to problems farmers sometimes encounter with reduced tillage systems.

The soil scientists are cooperating with 12 southeastern Minnesota farmers who are already using conservation tillage systems. These "tillage observers" are an integral part of their plan to increase farmer acceptance of these systems.

In Goodhue County, Moncrief and Swan are experimenting with no-till, ridge-plant, and chisel plow tillage systems at the Donald Nord farm.

Moncrief explains, "In tillage intensity, no-till is on the opposite end of the spectrum from moldboard plowing. It involves opening a slit in the soil, dropping in seed, and returning only when the crop is ready to be harvested.

"The ridge-plant system is a form of strip tillage involving tillage at planting and during cultivation. Seed is planted on a ridge built up the previous year. When the ridge is planted, the crop residue on the ridge is swept into the area between the rows. This results in large differences in soil physical properties within and between the rows; warmer and dryer within them and cooler and moister between. When the crop is about knee high, ridges are formed for next year's crop with a specially designed cultivator."



GREAT LAKES FISHERMAN/AUGUST 1982

..Whoever does not receive the Kingdom like a little child shall not enter it.

-Mark 10:15-

FREE TO A GOOD HOME (A puppy?)

Two sets of back issues of Transactions of the American Fisheries Society are available to an institution (or individual) who could really make good use of them. One set is continuous from Volume 95, Number 1 (Jan. 65) through Volume 104, Number 4 (Oct. 75). The other set is continuous from Volume 101, Number 4 (Oct. 72) through Volume 104, Number 4 (Oct. 75), plus all of Volume 109 (1980). Preference will be given to school libraries, but lacking any inquiries from such institutions the sets will be given to individuals on a first-come-first-serve basis. Call either John Quam or Michael Vanderford at 612/725-3280 or 725-3596.

NUMBER OF PAID FISHING LICENSE HOLDERS, LICENSE, SALES, AND COST TO FISHERMEN, FISCAL YEAR 1982

State	Paid Fishing License Holders ¹	Resident Fishing Licenses, Tags, Permits and Stamps Issued	Non-Resident Fishing Licenses, Tags, Permits and Stamps Issued	Total Fishing Licenses, Tags, Permits and Stamps Issued ²	Total Cost to Fishermen
Alabama	590,691	554,075	82,383	636,458	\$ 3,734,985.50
Alaska	243,699	213,871	143,671	357,542	3,541,518.00
Arizona	487,711	434,767	185,431	620,198	3,681,350.00
Arkansas	620,010	552,502	159,729	712,231	5,409,408.00
California	2,480,158	6,196,324	60,179	6,256,503	24,724,319.00
Colorado	740,605	587,833	251,072	838,905	6,180,855.00
Connecticut	216,271	217,047	3,507	220,554	829,694.00
Delaware	16,690	18,354	3,010	21,364	88,976.60
Florida	675,541	523,530	163,298	686,828	4,584,081.00
Georgia	641,865	762,035	33,055	795,090	4,637,423.45
Hawaii	8,277	8,327	164	8,491	51,657.49
Idaho	408,220	282,105	145,722	427,827	3,442,718.00
Illinois	893,314	970,392	48,303	1,018,695	5,602,000.00
Indiana	691,156	655,632	100,052	755,684	4,452,588.00
Iowa	485,818	471,940	45,290	517,230	2,928,639.00
Kansas	330,384	296,798	46,948	343,746	2,398,019.00
Kentucky	638,243	551,412	130,229	681,641	3,986,308.25
Louisiana	509,901	462,036	53,253	515,289	1,158,960.00
Maine	238,629	162,000	77,676	239,676	2,511,658.00
Maryland	125,235	173,626	15,779	189,405	1,132,217.78
Massachusetts	197,101	214,214	6,076	220,290	2,100,565.25
Michigan	1,376,317	1,349,998	205,734	1,555,732	11,515,579.82
Minnesota	1,677,611	940,274	305,180	1,245,454	9,598,867.00
Mississippi	403,120	351,811	51,309	403,120	2,671,704.00
Missouri	941,943	1,464,246	171,389	1,635,635	6,566,431.00
Montana	347,876	451,845	337,244	789,089	4,549,964.00
Nebraska	239,283	251,616	26,738	278,354	1,935,446.00
Nevada	175,456	101,832	68,477	170,309	1,611,008.00
New Hampshire	139,432	96,481	43,530	140,011	1,677,264.50
New Jersey	200,727	312,635	7,992	320,627	2,240,180.00
New Mexico	249,675	175,239	89,814	265,053	2,444,504.50
New York	977,093	945,345	97,033	1,042,378	6,170,171.00
North Carolina	475,032	513,221	71,161	584,382	4,302,939.50
North Dakota	179,180	156,091	24,281	180,372	703,729.00
Ohio	1,136,708	1,068,396	68,312	1,136,708	8,161,876.00
Oklahoma	634,740	507,030	123,074	630,104	4,759,622.31
Oregon	690,720	814,486	208,524	1,023,010	7,527,617.00
Pennsylvania	1,092,949	1,026,174	66,775	1,092,949	9,629,785.00
Rhode Island	29,066	27,973	1,802	29,775	187,723.00
South Carolina	414,341	375,927	62,518	438,445	3,038,145.75
South Dakota	198,323	212,105	73,431	285,536	1,435,698.00
Tennessee	734,941	721,466	159,965	881,431	4,792,315.00
Texas	1,909,503	1,798,056	111,447	1,909,503	9,252,699.62
Utah	431,204	318,112	147,441	465,553	4,430,316.00
Vermont	138,965	107,348	56,631	163,979	1,029,098.00
Virginia	585,962	755,181	87,687	842,868	4,341,056.00
Washington	887,030	1,057,372	118,075	1,175,447	7,936,845.00
West Virginia	298,740	545,205	58,427	603,632	2,329,473.50
Wisconsin	1,504,290	1,209,631	394,962	1,604,593	12,322,926.00
Wyoming	271,580	142,192	145,895	288,087	2,606,473.50
TOTALS³	29,581,326	32,106,108	5,139,675	37,245,783	\$226,947,399

¹A paid license holder is one individual regardless of the number of licenses he may purchase. Data certified by state fish and game departments.

²Period covered not identical to period covered by certification for all states.

³Persons who fished in more than one state are counted in each state where they fished.