

NEWSLETTER

NORTHWESTERN ONTARIO CHAPTER
of the
American Fisheries Society

Pre-Conference Update

The 7th Annual Meeting of the
NW Ontario Chapter AFS

October 28 - 30, 1987,

Memory Lodge, Thunder Bay, Ontario

P. Ryan OMNR
Quetico-Mille Lacs FAU
435 James St. S.
Thunder Bay, Ont. P7C 5G6



Vol. 7

No. 2

NEWSLETTER

American Fisheries Society
Northwestern Ontario Chapter



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|-----------------------|--------------------------------|
| President..... | Phil Ryan, 435 James St. S. |
| President-Elect..... | Tom Mosindy |
| Past-President..... | Rick Borecky |
| Secretary-Treasurer.. | Arnold Laine, 435 James St. S. |

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Pre-Registration Form for the AFS Conference
Application for Membership
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Presidents Report

The chapter is alive and well. Tom Mosindy has the planning of the annual chapter meeting well in hand and we can look forward to a very interesting group of speakers.

I attended the meeting of the Lake Superior Advisory Committee in May, hosted by the Ontario Ministry of Natural Resources. At the meeting, the Lake Superior Plan was reviewed and commented on by the different interest groups present. A few issues were discussed. Mr Ron Gerow of the Thunder Bay Commercial Fishermens Association noted the need for more research on the lake. Representatives from the OFAH and the Thunder Bay Salmon Association expressed concern about the transport of log booms from Marathon to Thunder Bay and the tending of commercial nets. Strategies for dealing with Lake Superior management issues will be dealt with in the management plans of the OMNR administrative districts involved. Chairman R. Thomson indicated that he would contact the Ministry of the Environment regarding the log booming issue in order to obtain a response for the next meeting. I noted the chapter's interest in this issue and offered the chapter's congratulations on completion of the plan. This meeting also provided the opportunity for me to make an initial contact with many of the interest groups that Tom planned to invite to attend the pacific salmon session at the annual meeting.

The NWO-AFS was formally invited to comment upon a proposal from the Thunder Bay Harbour Commission for further development in the harbour. Specifically they propose to dredge a deep-water channel in the north part of the harbour. The disposal of the dredge materials is the primary issue of concern. They wish to use them to create new industrial land with dock facilities in what is currently marsh habitat. I have undertaken to review the proposal and provide comments by August 5, on behalf of the chapter.

I have just had the opportunity to read the "Chinook Salmon Stocking Feasibility Study" which was commissioned by the Thunder Bay Salmon Association. It is apparent that there is not much information available about salmon in Lake Superior and the operation of small hatcheries for salmon. The authors have done a good job in assembling the limited material and designing the fish rearing facility. Congratulations are in order for the Salmon Association and the persons responsible for producing this study (authors A.J. Dextrase, G.E Morgan, D.M. Reid, K.D. Trimble and study advisor Dr. W. Momot). It seems that our session on salmon for the annual meeting is very timely in the light of the interest shown by the public and fisheries managers.

Our Secretary-Treasurer would like me to remind people about their membership dues. Those people who are two years behind will be dropped from the chapter if membership is not renewed in the near future. Membership is \$10 for non-parent society members and \$5 for those who hold membership in the American Fisheries Society.

I would again like to draw your attention to the fine work of Jill Entwistle as our newsletter editor.

Phil Ryan

SEE YOU AT MEMORY LODGE!

A tentative outline of events has been drawn up for this year's annual conference/meeting which is scheduled for October 28 - 30th at Memory Lodge, located south of Thunder Bay off of Hwy. 61. As in the past, we are fortunate in having attracted a top-notch group of speakers from both within the Chapter and outside our area.

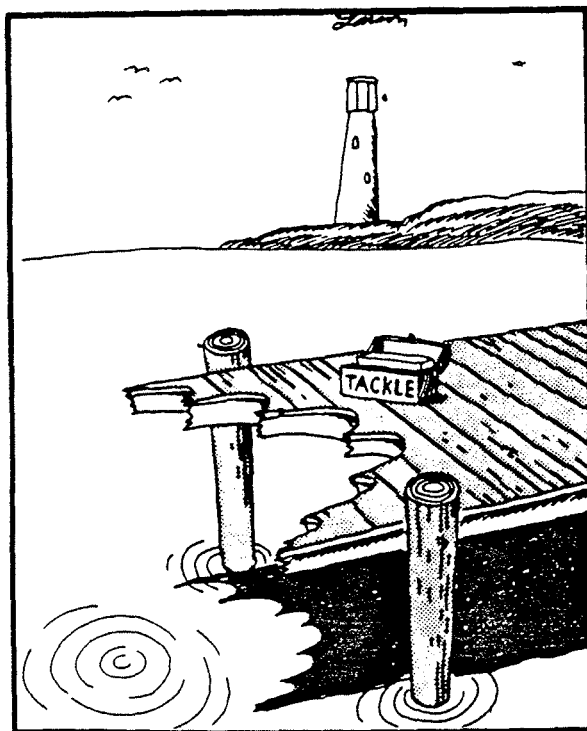
Two formal sessions are planned for this year's conference: 1) the introduction of exotic salmonids into the Great Lakes, notably Lake Superior; and 2) the role of prey fish in determining community structure. While these two topics might initially appear unrelated, it is hoped that the presentations and ensuing discussions will stimulate a search for common ground between them. The role of prey fish in determining community structure is too often overlooked in our attempts to manage for terminal predators within aquatic ecosystems.

Since a major reason for moving our annual conference/meeting away from Quetico Centre to a location closer to Thunder Bay was to involve greater participation from the Lakehead University student body and other interest groups, arrangements will be made to provide transportation to those wishing to attend. The annual business meeting and election of executive officers has been scheduled for the afternoon of October 29th and will be followed by a banquet/social at the Lodge. Members are asked to come to the meeting with some idea of candidates who might wish to stand for election to the positions of president-elect, secretary-treasurer, and newsletter editor within the chapter. We will also be looking for suggested topics and/or strategies with which to approach an annual meeting in 1988. Since our business meeting is the only opportunity for us to get together during the year and insure the continued viability of our organization, come prepared to voice your opinions, shoulder some responsibility, and participate as an active member.

I should stress that this schedule for the upcoming conference/meeting is tentative and I would welcome any comments or proposals for the addition of new topics and/or speakers to the agenda.

Please take advantage of the attached form (see back of this issue) to pre-register by August 15. This will allow us to finalize arrangements for what promises to be a successful meeting.

Tom Mosindy
President-elect



TENTATIVE SCHEDULE OF EVENTS:
THE 7TH ANNUAL CONFERENCE/MEETING.
OF THE NW ONTARIO CHAPTER AFS
OCTOBER 28 - 30, 1987, MEMORY LODGE, THUNDER BAY, ONTARIO

Wednesday, October 28th

1100 - 1300 hours

Late morning arrival and check-in at Memory Lodge.

- Lunch -

13:30

President's welcome and introduction to conference.
Phil Ryan

1400 -1700 hours

1) The introduction of exotic salmonids in the Great Lakes.
(Lake Superior)

Brief history of salmonid introductions into Lake Superior.

Current distribution and status of exotic salmonids along
the Ontario shore, L. Superior.

Biology of pink salmon in L. Superior and the other Great
Lakes. Dr. Tony Kwain - Fish. Res., MNR

- Coffee -

Inferences from a bioenergetic modelling approach to chinook
salmon in Lake Superior. G. Morgan - L. Superior F.A.U.

Species interactions and diet of introduced salmonids in
western L. Superior.

Dr. M. McDonald - Univ. of Minnesota, Duluth

1700

- End of formal program -

2000 Slide presentations:

A) A winter in the life of Squeers Lake.
Phil Ryan

B) The pelicans of Lake of the Woods.
Val Macins

Thursday, October 29th

900 - 1200 hours Exotic salmonids in the Great Lakes
(continued)

Chinook salmon introductions into Thunder
Bay, L. Superior: A program evaluation.
Wayne McCallum - Lake Superior FAU

Chinook and Atlantic salmon stocking in western Lake
Superior. John Spurrier - Minn. D.N.R.

- Coffee -

User group concerns regarding the introduction of exotic
salmonids into Lake Superior:

- 1) Sport fishery: OFAH / Thunder Bay Salmon Association
- 2) Commercial fishery: Comm. Fishing Industry
Representatives

- Open Forum -

1200 - Lunch -

1300 - 1500 hours

2) The role of prey fish in determining community structure

The influence of prey fish populations on water quality.
Ken Nicholls - MOE, Toronto

Yellow perch in two different boreal percid lakes.
Bev Ritchie - Lake Nipigon FAU

- Coffee -

1500 Annual NW Ontario Chapter Business Meeting and election of executive officers.

1830 - Banquet and Social -

Friday, October 30th

900 - 1200 hours Prey fish and community structure (continued)

Changes in the prey fish community of Lake Simcoe.
P. Waring - MNR, Kenora

Relationships between terminal predator abundance and prey fish populations in Henderson Lake, Ontario.
K. Trimble, Walleye Res. Unit, MNR

- Coffee -

Changes in prey fish populations in relation to community structure in L. Ontario. Bill Dentry, Lake Ontario FAU

Lake trout in Squeers Lake, Ontario.
Helen Ball, Lakehead Univ.

Northern pike in a small oligotrophic lake.
Arne Laine - Quetico Mille Lacs, FAU, Thunder Bay.

- Closing remarks -

1200 - Lunch -

Abstract of talk to be presented at the upcoming conference

Abstract

Nicholls, K.H. and D.A. Hurley. 1987. Recent changes in the phytoplankton of the Bay of Quinte: the relative importance of fish and phosphorus. *Can. J. Fish. Aquat. Sci.* 44:000-000.

The effects of eutrophication control in the Bay of Quinte of Lake Ontario, by a 50% reduction in phosphorus loading from municipal wastewater treatment plants in late 1977, have been examined as part of "Project Quinte" begun in 1972. In the years immediately following the reduced phosphorus loading, major declines in phytoplankton biomass were observed in the highly eutrophic upper bay. During recent years (1982-1985), average May-October phytoplankton biomass increased to levels approaching those of the pre-phosphorus control period, but decreased again during 1986. No major shifts in phytoplankton composition have occurred; domination by the diatoms Melosira and Stephanodiscus spp. and the blue-green algae Anabaena and Aphanizomenon spp. has continued. Although N-to-P ratios have increased significantly from an average of 11.0 during the pre-P control period to 17-19 during 1985-1986 in the upper bay, no decrease has occurred in the proportion of the total phytoplankton contributed by N-fixing blue-green algae.

Phosphorus loading and phosphorus concentrations in the upper Bay of Quinte have remained low, relative to the pre-1978 values. No significant correlations existed between total P and total phytoplankton biomass at the upper and middle bay sampling stations either before or after phosphorus loading reductions, in part because the

phytoplankton was often N-limited before 1978. Highly significant positive correlation coefficients ($r = 0.90-0.96$) were found for phytoplankton-planktivorous fish relationships during both pre- and post phosphorus removal periods. Coincident with phosphorus loading controls in 1977 was a die-off of white perch (Morone americana) in the Bay of Quinte followed immediately by several strong walleye (Stizostedion vetreum) year classes, which have apparently since kept white perch numbers low. Between 1981 and 1985, alewife (Alosa pseudoharengus) numbers increased dramatically, but declined again in 1986. It is hypothesized that the combined densities of small sized white perch and alewife have contributed to altered grazing rates on phytoplankton by zooplankton and/or zoobenthos and have been an important influence on phytoplankton biomass in the upper Bay of Quinte during the period 1972-1986.

PARENT SOCIETY NEWS : Notes From the AFS Diary

December 12, 1986

Ice anglers tend to catch almost twice as many fish per day of fishing as do anglers during the rest of the year. So says a recent Sea Grant release received from the University of Wisconsin. An ice fishing booklet is available for one dollar from Sea Grant Communications, 1800 University Avenue, Madison, WI 53705.

January 9, 1987

U.S. seafood consumption is booming . USDA Aquaculture coordinator Bille Hougart testified in a recent congressional hearing that per capita seafood consumption increased by 6.6% between 1984 and 1985. We now consume 14.5 lbs of seafood (that's 35 lbs. live -weight), an increase of 11 lbs per capita since 1975. Hougart cited that most of the increased consumption is coming from imports and that the United States has a real opportunity to become self-sufficient by increasing aquaculture and domestic commercial fisheries. AFS also has an opportunity, if we wish, to become more involved in this cultural and commercial fisheries industry expansion. How do you feel about it ?

January 16, 1987

1. Minutes of the Northwestern Ontario Chapter's annual meeting have been received and show the chapter to be in good condition with 102 members. As might be expected the percentage of non Parent Society members is quite high. **INFORMATION ABOUT JOINING THE PARENT SOCIETY IS INCLUDED AT THE BACK OF THIS NEWSLETTER.**

2. AFS will present three continuing education workshops at the 1987 annual meeting in Winston-Salem, NC. The dates are September 12 and 13 and the subjects are: (1) Using Computer Spreadsheets in Fisheries; (2) The Public Dimension of Fisheries Management; and (3) Community Dynamics - Analysis and Management. Each workshop will require 16 contact hours of instruction and each will earn 1.6 Continuing Education Units. A descriptive brochure is available.

February 27, 1987

"Catch and Release Fishing -- A Decade of Experience " is the subject of a September 30 - October 1, national symposium at Humboldt State University in Arcata, California. Speakers from the U.S. and Canada will present new techniques, results , and problems from a variety of fresh- and salt-water experiences. The sponsor is California Cooperative Fishery Research Unit, Humboldt

Notes From the AFS Diary Con't

Stat University, Arcata, California 95521, (707) 826-3268. Proceedings will be published. Arcata is 270 miles north of San Francisco in the heart of redwood country. The symposium will coincide with the peak run of salmon and steelhead.

Sounds like a must !

March 6, 1987

Stumped on spelling the names of fishes? Many of us are ! Jerry Loving from Software Source visited us recently to ask if he might use our list of common and scientific names of fishes as a basis for a software package that would enhance computer-based word processing programs. If you needed to know the common or scientific name, the family or order, or the distribution code for a particular fish, you'd punch a key to call up the program, which would appear as a window superimposed on your word processing screen. You'd enter the common name, for example, and the rest of the fields would fill in from the stored memory. The program has the potential to be expanded to include life histories, food habits, habitat relationships, taxonomic information, distribution maps, and, if we get into compact disc technology, even pictures! Sounds kind of neat. We suggested Jerry develop a proposal and we put him in contact with the Computer User Section librarian.

BERRY'S WORLD



PARENT SOCIETY NEWS :
NOTES FROM THE NORTH CENTRAL DIVISION
(The Mainstream - May,1987, Volume 5, No. 1)

Con't.

Common Names on Computer Base

A software program to present AFS Special Publication 12 Common and scientific names of fishes as a window during word processing will be available soon. See note on this in AFS Diary items. Expected price is \$100.00 with a \$10.00 discount to AFS members.

Scientific/Technical Writing : A Workshop Sponsored by the Minnesota Chapter

In 1987, The Minnesota Chapter is hosting a 4-day workshop on technical and scientific report writing. The workshop will cover techniques for organizing, outlining, presenting data and writing effective sentences. This will be a practical, hands on workshop. All participants must have a paper/report to write and should expect to finish the paper during the 4-day workshop.

John Munroe, a professional writer, will teach the workshop. Dr. Munroe has taught at UCLA, serves as a consultant and conducts technical/scientific writing workshops for a variety of organizations. He has conducted a workshop for the California Nevada Chapter of The American Fisheries Society for the last five years which have been well received.

WHEN: July 27th-30th, 1987

WHERE: St. Cloud State University, St. Cloud, MN

HOW MANY: 15 min. - 20 max.

HOW MUCH: 150.00 - 175.00

ADDITIONAL INFORMATION: Don Shreiner, Area Fisheries Supervisor,
Route 3 Box 1A , Glenwood, MN 56334 (612) 634-4573

PARENT SOCIETY NEWS :
NOTES FROM THE NORTH CENTRAL DIVISION
(The Mainstream - May,1987, Volume 5, No. 1)

Early Death Takes One of Our Own

For reasons that we may never know, our good friend and respected colleague, Steve Serns, Wisconsin DNR, took his own life in early January.

Steve, along with Dennis Schupp of the Minnesota DNR and Peter Colby of the Ontario Ministry of Natural Resources, had become a triumvirate of authority on walleye management for the entire country.

Following is some background information on Steve from material supplied by Steve's co-workers. Following this are comments provided by Steve's close associate, Dennis Schupp. Hopefully this will help us keep our own careers and lives in proper perspective.

- MJV -

STEVE L. SERNS

Steve L. Serns, a AFS Certified Fisheries Scientist and AFS member since 1977, died January 10, 1987, at the age of 39. His untimely, tragic death is a great loss to his family and to all in the fisheries profession.

Steve was born in 1947 and grew up in Jefferson and Woodruff, Wisconsin. He attended Wisconsin State University, Whitewater from 1965-1967 then obtained his B.S. in 1970 and his M.S. in 1972 from Texas A&M University. While in graduate school, he conducted research on bluegill age and growth in Texas, completed a seasonal creel census for the Wisconsin DNR, and conducted fish population and creel studies on seven private lakes for the Dairyman's Country Club, Boulder Junction, Wisconsin. While working at Dairyman's, Steve met Susan, his future wife.

From August 1972 until his death, Steve was employed by the Wisconsin Department of Natural Resources, first in Madison from 1972 - 1975 as an aquatic biologist, then as a fisheries research biologist in Woodruff. During the past seven years, Steve was supervisor in charge of the Northern Highland Fishery Research Study Area.

Although Steve's research involved many fish species including largemouth bass, lake trout, and muskellunge, he is best known for his research on walleye and smallmouth bass in Escanaba and Nebish Lakes which are part of the Northern Highland Research Area. Steve was considered a "walleye expert" and his development of the walleye fingerling index became known as the "Serns Index".

In addition to AFS membership and certification, Steve was a member of the American Institute of Fishery Research Biologists. He served on a number of AFS committees from 1981-1985, and in 1986 was elected secretary-treasurer of the Fisheries Management Section of the AFS. He also received a number of awards including Best Paper Award in 1982 at the Wisconsin Chapter of the AFS meeting and also the Wisconsin Bureau of Research Award for Excellence in Research in 1983.

Steve had a love for his work and was willing to put everything he had into it. He was an excellent communicator of research results; during his relatively short career of 15 years, he presented papers or chaired discussion workshops on 13 occasions at symposiums, special seminars, and at AFS Midwest and National meetings. In addition he authored or co-authored 42 technical papers and publications. Steve was truly a dedicated professional and a talented scientist.

Professionally, Steve will be remembered for his many contributions to fishery science. He will also be remembered by his many friends and co-workers for his willingness to go the "second mile" in helping others by providing information or in volunteering his expertise in any way he could. Despite Steve's many accomplishments, he was a very humble person. He was embarrassed when he was called a "walleye expert" or when reference was made to the "Serns Index"; he preferred to be known as "one of the boys".

To know Steve was a privilege and pleasure. His life was an encouragement and his accomplishments a challenge to many others.

To his wife Susan and his daughter Stacey, we offer our sincere sympathy.

A Steven L. Serns memorial fund has been established. Its use is yet to be determined, but will be in the fisheries profession. Those who wish to contribute may contact Lyle Christenson, Wisconsin DNR, 3911 Fish Hatchery Road, Fitchburg, Wisconsin, 53711.

PARENT SOCIETY NEWS :
NOTES FROM THE NORTH CENTRAL DIVISION
(The Mainstream - May,1987, Volume 5, No. 1)
Con't.

(Serns, continued)

Comment from a Friend

Steve Serns reach extended well beyond the borders of Wisconsin. Howard Snow and Jim Kempinger have depicted many of the highlights of his valuable life and career. My perspective is mainly personal but is one of many from neighboring states and provinces that could be written.

Steve's path first crossed mine when I served as a referee for one of his published papers. I was so excited by the value and quality of the work that I called Steve. We arranged to meet at a half-way point for each of us, Howard Snow's office in Spooner, Wisconsin, to talk about his paper and other mutual interests. This first professional contact led to a relationship that ultimately ripened to friendship.

Steve's companionship was eventually shared with me on long drives to meetings, on fishing excursions and during relaxed evenings after a day afield. Along with Peter Colby and Phil Ryan of Ontario we co-authored a paper that was accepted for publication little more than a month after Steve's untimely death. It was during these periods that Steve's true measure as a warm and sensitive human being surfaced. Steve's Wisconsin colleagues have rightly described his humble nature. His remarkable accomplishments during his brief career were not ego-driven but rather a result of a commitment to excellence.

Like so many whose lives Steve touched, his loss is more than I wished to bear; but I'll cherish the privilege of having known him as a respected colleague and a valued friend.

Dennis H. Schupp
Minnesota Department of Natural Resources
March 1987



Steve Serns 1947 - 1987

49th Midwest Fish & Wildlife Conference

Make plans to attend the 49th Midwest Fish and Wildlife Conference, December 5-9, 1987, Marc Plaza Hotel, Milwaukee, Wisconsin. The North-Central Division of the American Fisheries Society will hold its annual meeting at the conference, and all state chapter members are urged to participate.

The theme of this year's conference will be "Ecological thinking in fish and wildlife management: a tribute to Aldo Leopold," and a wide range of talks that deal with ecosystem-level approaches to management are planned. The following "fish" workshops, symposia, and special and general paper sessions will be held:

Workshops

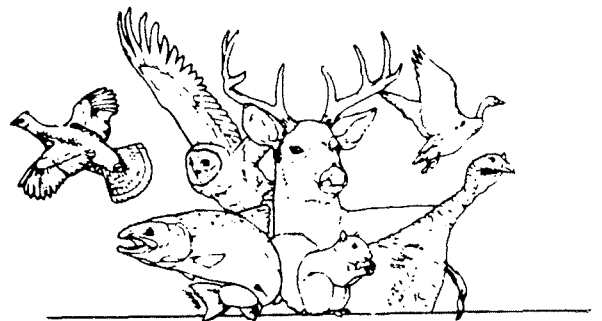
Fisheries Genetics: Techniques, Issues, and Research Priorities
Computer Technology Review, Demonstrations, and Software Exchange
For Fish and Wildlife Management

Symposium

Biology and Management of Coregonid Fishes in the Great Lakes Region

Special Sessions

Ecological Approaches to Fish and Wildlife Management
Rehabilitating Macrophytes for Fish and Wildlife Habitat
The Role of Crayfish in Aquatic Ecosystems
Urban Fish and Wildlife Management
Food-Chain Manipulation in Aquatic Systems
Human Dimensions in Fish and Wildlife Management
Impacts of Agricultural Land-Use on Streams and their Biota
Biology of Native Lampreys



General Sessions

Fish Culture and Early Life History
Lake and Reservoir Fisheries Biology
River Fisheries Biology
Trout and Salmon Biology

There will also be a variety of "wildlife" sessions, technical committee and working-group meetings, and, of course, social functions.

A mailing in October to NCD-AFS members will describe the conference in more detail. In the meantime, for more information, contact:

John Lyons
Program Chair - Fish
49th Midwest Fish and Wildlife Conference
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711 USA
(608) 275-3223

ANIMAL CRACKERS

by Roger Bollen



CHAPTER NEWS AND CONTRIBUTIONS

Lakehead University : Projects, People and Papers.

Projects: There is a continuation of research on the effects of exploitation on crayfish populations. (NSERC)

New Project : Fisheries survey of the Kaministiquia River. This is a joint MNR/MOE project . We look forward to an update on progress in the next edition.

People: Several graduate students are in the process of completing M.Sc. thesis projects.

- B. Wisendon* - Recovery of walleye in Henderson Lake
- K. Trimble* - Yellow perch in Henderson Lake
- H. Ball* - Squeers Lake lake trout
- A. Laine* - Squeers Lake northern pike
- G. Morgan* - Population Ecology of Crayfish.
- S. Maxwell* - Is continuing research on crayfish ecology.

Papers Published:

Momot, W.T. 1986. Production and exploitation of crayfish in northern climates. In. Jamieson, G. & N. Bourne (Eds.) . 1986. North Pacific Workshop on stock assessment and management of invertebrates. Special Publication Canadian Journal of Fisheries and Aquatic Science 92: 154 - 67.

Momot, W.T. and M.G. Leering. 1986. Agressive interaction between Pacifasticus leniusculus and Orconectes virilis under laboratory conditions. Proceedings of the 6th International Crayfish Symposium Freshwater Crayfish (6) : 87 - 94. University of Lund, Sweden.

Papers to look for:

The proposed *guide to the fish fauna of the Thunder Bay Region* is slowly progressing - A complete draft may be available by this autumn! Connie Hartviksen and Dr. Walter Momot are preparing this guide.

Look for a variety of other papers, book chapters, and so on from the Lakehead Biology Dept. in 1987/88 - A busy and productive year is anticipated!

Chapter News and Contributions Con't

Walleye Research Unit :

News from The Unit - This promises to be another busy year for the unit , both in the field and in the office. This will be the second field season that a *slot-size harvest* is being carried out on the walleye in Savanne Lake.

An average of about 1.8 kg ha⁻¹ yr⁻¹ of walleye was removed from 1980 through to 1985, a level approximating the estimated summer production of adults. This figure is very close to the yield of 1.78 kg ha⁻¹yr⁻¹ recommended for a sport fishery by SPOF Working Group No. 12.

For the next four or five years, 2.5 kg ha⁻¹yr⁻¹ will be removed, and a slot of 45-55 cm will be protected.

Most of the walleye removed from Savanne Lake are being used by Thunder Bay and Nipigon Districts for introductions into other waterbodies.

A publication is being prepared which summarizes the results of the exploitation phase 1980 - 1985.

.....

Research on the development of a *Quality Fishing Index* for walleye angling fisheries is also producing some interesting results. Kevin Roberts has compiled and summarized data from about 239 creel census reports. Out of these, data from 96 reports was used. Plots of Q.F.I. against fishing effort indicate that walleye quality fishing decreases as effort approaches 10 man hours per hectare per year.

Kevin Trimble was hired through money made available by the new fishing licence. His main responsibility will be to bring information up to date for the *Walleye Synopsis*. He will also help out in the field where he will carry out population estimates in Ice Lake.

The Unit has been cooperating with Minnesota D.N.R. to put together a *walleye bibliography*. This publication should be ready sometime in May, 1987.

Contributed by Nic Baccante.

WALLEYE WORKSHOP UPDATE

In February, a committee was established to organize a walleye workshop for MNR in the North Central Region. The committee members are: Ed Iwachewski (chairman), Nic Baccante, Tim Riordan, Phil Ryan and Karen Roche (resource person). The workshop date has been tentatively set for January, 1988.

This workshop is intended to improve information exchange between Districts, research units, assessment units, and Regional office. Emphasis will be placed on sampling methods, analyses and reporting. Some of the topics currently under consideration are: developing data sets to investigate water chemistry and community characteristics in lakes with walleye introductions; determining sample sizes necessary for age, length, and weight analysis; developing standardized reporting procedures; determining hooking mortalities; investigating slot size management; and, using available computer programs.

The workshop will include presentations from various speakers on their areas of expertise followed by "hands-on" data analysis using the techniques presented. Guests from outside the NCR will be speaking on topics such as volunteer angler diaries and alternate management programs.

At present the Regional office is collecting and compiling data on the lake characteristics and age, length and weight data from walleye lakes in Northern Ontario. New programs have been developed to store this information on the VAX computer using the Datatrieve program. Databases already compiled by the Quetico-Mille Lacs Fisheries Assessment Unit and the Walleye Research Unit will be used also.

The contents and results from this workshop will be prepared in a technical report edited by Jim Atkinson, Regional Fisheries Biologist, NCR and Cheryl Lewis, Provincial Warmwater Biologist.

Karen Roche

What Was That Again?

THE INCREASED RIGOR OF SCIENTIFIC investigation is resulting in a tougher look at the imprecise or dissembling phrases often found in research papers. Someone who had come across one too many of them compiled this list of research definitions, copied from the *Natural Hazards Observer*, a newsletter published by the University of Colorado.

It has long been known - I haven't bothered to look up the reference.

Of great theoretical and practical importance - Interesting to me.

Though it has not been possible to provide definite answers - The ex-

periment didn't work out, but I need the publicity.

Typical results are shown - The best results are shown.

Presumably over longer times - I did not take the time to find out.

The most reliable results are Smith's - He was a student of mine.

It is believed that - I think.

It is generally believed that - A couple of other folks think so too.

Thanks are due to Joe Glotz for help with the experiments and to Jane Jones for valuable discussions - Glotz did the work and Jones explained to me what it meant. ■

RAINY RIVER DIOXIN STUDIES

Since the United States Environmental Protection Agency found 2,3,7,8-TCDD (dioxin) in five samples of Rainy River fish in 1985, the Minnesota Pollution Control Agency (MPCA) and the Ontario Ministry of the Environment (MOE) have been investigating the extent of dioxin contamination and the potential sources of contamination to the river.

The term dioxin refers to a group of 75 related chemical compounds or congeners known as polychlorinated dibenzo-p-dioxins (PCDDs). These compounds are not intentionally made for any purpose. They are unavoidable by-products created in the manufacture of some pesticides, or as a result of incomplete combustion of mixtures containing chlorine atoms and organic compounds. PCDDs are composed of two benzene rings connected to each other by a pair of oxygen atoms. The 75 PCDDs differ only by the number and position of the chlorine atoms attached to the benzene rings. The most toxic form of dioxin, 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), contains four chlorine atoms which are arranged at the 2,3,7, and 8 positions (lateral positions). Once in the environment, dioxin is very persistent and can bioaccumulate in fish.

In the fall of 1985, approximately 175 fish were collected from the Rainy River system by the Minnesota Department of Natural Resources, MPCA, and the Ontario Ministry of Natural Resources (Fort Frances District) staff. Of 42 walleye, white sucker, sturgeon and northern pike, which have been analyzed to date from four sites between Rainy Lake and Lake of the Woods, 2,3,7,8-TCDD has been detected in 11 fish at levels from 1 to 9 ppt. These concentrations are all below the Health and Welfare Canada consumption objective for fish which is 20 ppt. In addition, the municipal drinking water supplies for the Towns of Fort Frances, Emo and Rainy River have all tested negative for 2,3,7,8-TCDD.

The source(s) of dioxin to the Rainy River is/are still unknown. Investigations to date have discounted runoff from herbicide applications, atmospheric transport and known waste disposal sites on the Ontario side of the river. Both Boise Cascade mills, which were found to contain 2,3,7,8-TCDD in sludge samples, and possible past illegal disposal of herbicides in the watershed are potential sources of contamination which are being investigated further. In addition, 2,3,7,8-TCDD analyses of final effluent samples from the Boise Cascade Fort Frances mill and samples of sludge and leachate from two Boise Cascade Canada waste disposal sites were negative.

The following summarizes pertinent monitoring programs which were carried out during the summer of 1986 by the Ministry of the Environment.

- 1) Additional samples of adult northern pike and walleye were collected from Rainy Lake at Brule Narrows and Stanjikoming Bay. These additional samples will complement the extensive fish collection made in October, 1985 and should provide an adequate data base for assessing dioxin levels in sport fish from Rainy Lake, the Rainy River and Four Mile Bay on Lake of the Woods.
- 2) Spottail shiners and young of the year yellow perch were collected for dioxin analyses from six locations between Rainy Lake and Lake of the Woods. The sampling sites were:
 - a) Rainy Lake at Brule Narrows
 - b) Rainy Lake at Stanjikoming Bay
 - c) Rainy River near Fort Frances municipal water intake
 - d) Rainy River below Fort Frances
 - e) Rainy River at Long Sault Rapids
 - f) Lake of the Woods at Four Mile Bay

Young fish, from which age determination can be made easily and which have a limited geographical range, have been found to provide good scientific data for determining contaminant (dioxin) uptake as a function of time and location.

- 3) To measure potential sources of dioxin to the Rainy River, uncontaminated freshwater clams (Elliptio complanatus), were caged for a 3-week period at 34 locations between Rainy Lake and Lake of the Woods. Clams are filter feeders and, therefore, are excellent indicators of the biological availability of contaminants in the water column.
- 4) Suspended sediment samples were collected for dioxin analyses from three locations in the Rainy River and from the final effluent of both Boise Cascade mills. Suspended sediments are collected with a field centrifuge sampler which separates the particulate from the aqueous portion of the water sample. Because many contaminants such as dioxin adsorb to the fine particulate found in the water column, suspended sediment testing can be more sensitive than conventional water or effluent testing.

Analytical results for the above programs are expected to be available by the summer of 1987.

In addition to the above monitoring programs, the United States Environmental Protection Agency and the pulp and paper industry are conducting an intensive in-mill sampling program designed to pinpoint the source(s) of dioxin in pulp and paper mills. Five representative mills in the United States and one in Canada have been selected for monitoring. The Boise Cascade International Falls mill was sampled in June, 1986 while the Fort Frances mill will be sampled in the near future. Initial results of the monitoring program are expected by the summer of 1987.

On October 29, 1986, a public meeting was held in Fort Frances concerning the finding of dioxin in the Rainy River. The meeting was requested by the Mayor of Fort Frances. Representatives from the Ministry of the Environment, Health and Welfare Canada and Environment Canada were present to address public concerns related to the Rainy River dioxin issue.

Contributed by.... Dave Hollinger



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"You should never eat more than four carp a month, or one box of lawn and garden bags."

CHINOOK SALMON IN THUNDER BAY

Chinook salmon were first introduced into Lake Superior in 1874 by the state of Michigan. This was followed by an 1875 plant in Minnesota. There were few survivors and little follow-up observations on early salmon plants. Chinook salmon were not planted extensively in Lake Superior until 1966 when the Michigan DNR started a chinook stocking program. By 1977 both Wisconsin and Minnesota had also initiated stocking programs. The three state agencies have annually planted between 250,000 and 1.3 million chinook salmon in Lake Superior over the last 10 years.

Although the Province of Ontario has never stocked chinook salmon in Lake Superior, strays from American plants have developed naturalized spawning runs in some of the larger rivers on the Ontario side of the lake. The most notable of these runs is in the Michipicoten River near Wawa, Ont. Catch rates for chinook salmon in Michipicoten Bay during the summer of 1986 were among the highest reported from the Great Lakes (Wawa District creel census). Anglers at the west end of the Ontario waters of Lake Superior (Thunder Bay) recently expressed an increased demand for salmon angling at open houses last spring and through the formation of the Thunder Bay Salmon Association. The Association has grown to over 1500 members since its inception in September 1986. This increased demand for salmon angling can not be met with current chinook salmon population levels in the Thunder Bay area. Many anglers fish salmon elsewhere in Lake Superior (Wawa and Minnesota) or in Lake Michigan.

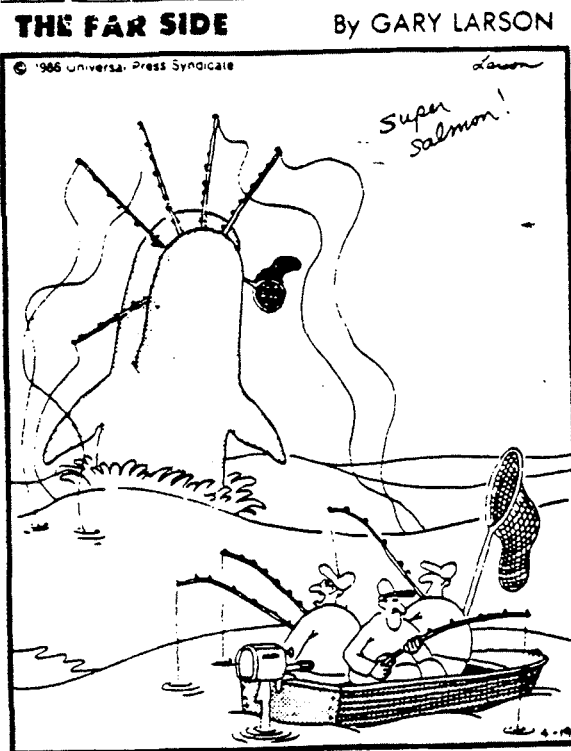
Present hatchery space and funding of the OMNR is committed to raising lake trout for rehabilitation purposes in Lake Superior. However, the OMNR will provide funding for organized groups to raise chinook salmon for release into Lake Superior under the auspices of CFIP and CFEP. The Thunder Bay Salmon Association wishes to build a community chinook salmon hatchery in the summer of 1987, raise salmon in the fall of 1987, and release chinook smolts in the spring of 1988 provided it receives Ministry approval and CFEP funding. The OMNR asked the Thunder Bay Salmon Association to prepare a feasibility study dealing with all aspects of a hatchery operation in the area as well as the potential biological and socio-economic impacts of a chinook salmon introduction in Thunder Bay. The Association completed this study under the supervision of Dr. Walter Momot (Lakehead University) and the cooperation of the Lake Superior Fisheries Unit (OMNR).

The feasibility study identified a number of potential biological impacts of a chinook salmon introduction. Foremost is the competition that would take place between chinook salmon and lake trout for the smelt forage base. Fluctuations in smelt abundance in Lake Superior are poorly understood and the amount of forage available for top predators is unknown. Another concern dealt with in the study was the possible effects of chinook runs on native salmonids using streams. It is unlikely that the proposed stocking level (100,000 smolts) will have any serious detrimental impacts on native fishes. Success of salmon plants, native salmonid populations, and forage fish abundance should be closely monitored if the proposed introduction occurs. A well developed chinook salmon fishery will bring positive economic and social benefits to the Thunder Bay area. A proposed hatchery site is at the base of Kakabeka Falls on Hydro property where a good flow of groundwater enters the

river. The initial pitfall of a suitable egg source was overcome when Wawa District and the local Rod and Gun Club gave the Association permission to collect eggs from chinook salmon in the Michipicoten River.

The Thunder Bay Salmon association must now submit its CFEP application. If approval is granted, the Association is well organized and will get things rolling immediately. It has been very encouraging to see the OMNR, Lakehead University and the angling public working together on a progressive fisheries management issue.

Contributed by....Al Dextrase



"Oooooo weeeee! ... I wonder what they were using."

Chapter News and Contributions Con't

The 1987 Lake Superior Trout Hunt

The 1987 Lake Superior Trout Hunt, an annual fishing derby and fundraiser sponsored by the Shuniah Township Volunteer Firefighters, was held on June 6 & 7 near Thunder Bay. The derby has categories for lake trout, brook trout, rainbow trout, and salmon caught in Lake Superior, and the selection of "good" prizes attracts a large number of participating anglers.

The Lake Superior Fisheries Unit (LSFU) has sampled fish at each Trout Hunt since 1980 as part of the unit's sport fishery monitoring program. Thanks to the cooperation of the Trout Hunt organizers, all fish entered in the Trout Hunt are passed through a LSFU sampling station, allowing the unit to collect a large number of samples at a low cost.

This year, fair weather prevailed on Lake Superior and anglers entered over 1750 fish (a record number). The LSFU crew sampled 1344 lake trout, 38 rainbow trout, 1 Atlantic salmon, 19 chinook salmon, 2 pink salmon, 1 coho salmon, 21 brook trout and 1 lake whitefish. In response to a request from James Selgeby (U.S. Fish and Wildlife Service) who is examining predator food data for the Great Lakes Fishery Commission's Lake Superior Technical Committee, we also collected stomachs from most of the salmon, brook and rainbow trout.

A preliminary summary of the data for Inner Thunder Bay (Management Zone 1) indicated that this year's catch was very similar to the results from the 1986 Trout Hunt. Most of the lake trout entered in the derby were again caught in Zone 1, and approximately 95% of the trout were natives in both 1986 and 1987. This is very similar to the 1986 and 1987 LSFU Thunder Bay Winter Creel Surveys where the native trout component was 99%. This year the lamprey wounding rate was 2.2 wounds per 100 fish - similar to previous Trout Hunts, and well below the lamprey control program target wounding rate of 5 or less wounds per 100 fish. The mean fork length increased very slightly to 50 cm.

Further details can be obtained in the LSFU Quik Report "Lake Superior Trout Hunt 1987". The LSFU will also be monitoring the catch at the Rossport Fish Derby (July 4 & 5) and the Wawa Derby (August 21-23).

Gord Johnson

REMEDIAL ACTION PLANS FOR AREAS OF CONCERN IN LAKE SUPERIOR

The Great Lakes Water Quality Board, the principal advisor to the International Joint Commission (IJC) on Great Lakes water quality issues, has identified 42 Areas of Concern (AOC) in the Great Lakes Basin. Each of these areas has undergone environmental degradation caused by a variety of pollutant sources and are in need of remedial action to restore their utility, for example as municipal and industrial water supplies, for recreation, or simply to support aquatic life. The four AOC identified in the Canadian portion of Lake Superior are Thunder Bay, Nipigon Bay, Jackfish Bay and Peninsula Harbour.

The Province of Ontario is currently committed to prepare Remedial Action Plans (RAP) for the AOC in Lake Superior by the year 1990. Each RAP will emphasize an ecosystem approach and should identify specific measures necessary to control existing sources of pollution, abate environmental contamination already present and restore beneficial uses.

The Lake Superior Fisheries Unit was commissioned to address the fisheries component for each of the four RAPs in Lake Superior. Initially, deficiencies in fisheries data for the AOC were identified and field studies were proposed to provide necessary information required for the RAPs.

The Kaministikwia River was identified as the principal aquatic system in Thunder Bay on which fisheries information was lacking. The Ministry of The Environment commissioned the LSFU to complete a habitat description and fisheries inventory of the river and major tributaries during the summer and fall of 1987. The primary objective of this study is to predict the river's fisheries potential following the implementation of pollution abatement measures on the lower portion of the river. Dr. Walter Momot of Lakehead University is acting as principal investigator and scientific advisor for the project.

Fisheries guidelines developed by the Habitat Advisory Board have identified near shore areas as vital to fisheries interests within the AOC. Documentation on such areas in Lake Superior is minimal, therefore the plans will stress the importance of near shore areas to the aquatic ecosystem and the need for additional information. Marshes will be highlighted in the plans for proposed remedial actions, as they represent the greatest potential for fisheries enhancement within inshore areas, and therefore will play an important role in meeting fisheries objectives within each AOC.

Contributed by.... Ken Cullis

Chapter News and Contributions Con't

Computer Confusion

The AFS has a section for computer users (AFCUS) of which I am a member. In the recent newsletter they listed an inventory of MS-DOS (IBM or compatible computer) software that can be obtained through the section. There are a great many useful software programs available at the cost of a diskette and mailing. I recommend membership to any serious computer users.

I have some good news for those users who are in need of some "quick and dirty" analysis software. Two years ago I wrote an article recommending Daniel Pauly's book to our membership. I recently obtained a copy of a software package for MS-DOS machines entitled "ELEFAN" for electronic length frequency analysis (Brey and Pauly 1986). The software deals with some of the methods of analysis described in Pauly's book such as analysis of fish length data at a number of levels. For example, a length composition can be analysed as a "catch curve" in order to estimate Z/K for the population. If the K is known from the von Bertalanffy growth model, the Z/K can be decomposed to give the estimate "Z" or instantaneous mortality rate for the population. This is just the tip of the iceberg, the software provides the capability to fit growth curves from size and age data and from growth increments such as observed from tagged and recaptured fish.

The original goal of this software was to provide growth model fits for length composition data in which year classes were clearly recognizable as modes in the length distribution. This is not really appropriate for our situation but the other features such as the simplicity of calculating the "length-converted catch curve" make this a valuable addition to any software library.

For those of you interested in a very efficient and inexpensive stats package, I can heartily recommend "STATISTIX" which is available for the Apple II, IIe and MS-DOS machines. You don't want to invest in putting large data bases into this package, but its just the ticket for small data sets and ad hoc analyses.

If you are getting into things in a big way, the corporate software strategy developed by the Ontario Ministry of Natural Resources is the way to go. A number of creel survey designs can be analysed with the "Creesys" package which is available to run on the Apple IIe and MS-DOS machines. Creesys is written as an application of the popular dBase software. Apple II users find that the disk swapping is somewhat onerous for the Apple 2 and recommend the use of a hard disk unit.

Many of our members have heard of a software application called "FISHNET" which is being developed by the Ontario Ministry of Natural Resources. This package is intended to handle fish catch records and fish attributes (data for individual fish). It is written in the dBase3 and the RSI programming languages, hence the user must have purchased each of these software packages. It is not officially released at present, but promises to be a product of the same quality as Creesys.

I felt as though I was liberated after starting to use MS-DOS software such as dBase3+ and RSI. I haven't used Lotus 1-2-3 yet, but spreadsheet programs have great general utility and the newsletter from the AFS Computer User Section has numerous applications of this software for population analysis.

It is evident that most fisheries professionals are working in the IBM ie MS-DOS environment. This equipment is going to be around for a long time. I heartily recommend that an MS-DOS computer be the first choice for those buying a single computer or that such a machine be considered a necessary component in any larger system.

Phil Ryan

Product Information and References

AFS Computer Users Section (AFCUS) membership available through the parent society.

CREESYS and FISHNET - software developed by the Ontario Ministry of Natural Resources for data entry/analysis of creel survey and fish population sampling surveys, respectively. Development and distribution by Dr. Nigel Lester, OMNR, Fisheries Research Station, Maple, Ontario.

dBase - data base management software. Buy the dBase3+ version which has very friendly "pull-down" menu features which allow the beginner to do almost anything that he wants without learning the dBase language.

ELEFAN - a software package for MS-DOS machines which focusses on analysis of length composition data. It can estimate parameters of the von Bertalanffy growth model from size at age, length modes in the length composition and from growth increment data, or combinations of these. Recruitment patterns are described, and gear selectivity is estimated if natural mortality rate is known. Brey and Pauly (1986) document the software but for additional information, read Pauly (1984).

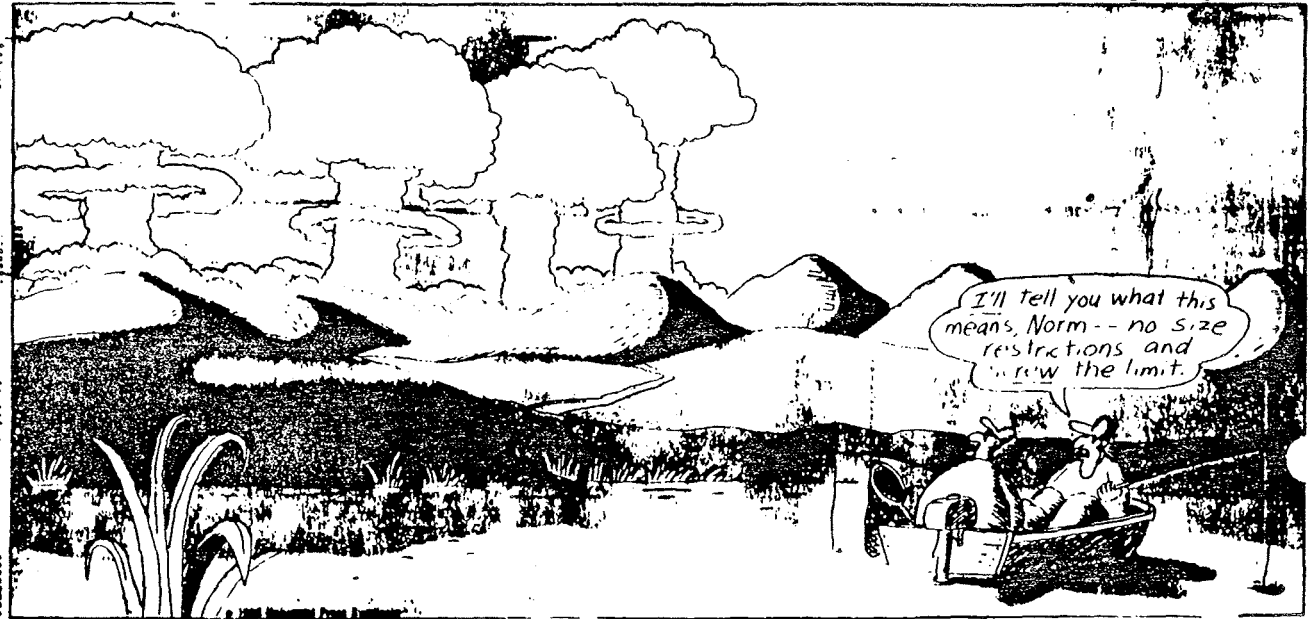
Pauly, D. 1984. Fish population dynamics in tropical waters: a manual for use with programmable calculators. ICLARM Studies and Reviews 8, 325 p. (NB available through AFS at discount).

Brey, T. and D. Pauly. 1986. Electronic length frequency analysis. A revised and expanded user's guide to ELEFAN 0,1 and 2. Institut fur Meereskunde, Abt. Meresbotanik, Dusternbrooker Weg 20, D-2300 Kiel, F.R.G. 49p. (write to this address or contact me).

LOTUS 1-2-3 - an MS-DOS spreadsheet package.

RS1 - a scientific database and analysis software package. The help menus and screen prompts allow the new user to build efficiency very quickly. My favourite aspect of the package is the graphics whcih are very simple and friendly, but have a wide variety of options. This package provides a good but limited range of statistical analyses (its not equivalent to SAS, SPSS etc) which meet most users needs.

STATISTIX - a statistical analysis package for the Apple II and MS-DOS computers (N.H. Analytical Systems, 801 W. Iowa Ave., St. Paul, Minnesota 55117 approximately \$85).



Fisheries Planning..... The Future ????

Thanks to all the contributors !

Phil Ryan
Al Dextrase
Dave Hollinger
Karen Roche
Dr. Walter Momot

Gord Johnson
Tom Mosindy
Ken Cullis
Nic Baccante

FINAL CALL FOR PAPERS
FOR THE 2ND ANNUAL MEETING OF THE
MID-CANADA CHAPTER
OF THE
AMERICAN FISHERIES
SOCIETY

IN ASSOCIATION WITH THE PLAINS AQUATIC RESEARCH CENTER, THE
MID-CANADA CHAPTER OF AFS WILL BE HOLDING A ONE DAY SESSION OF
CONTRIBUTED PAPERS WITH THE THEME " THE CONTRIBUTION OF RESEARCH TO
FISHERIES MANAGEMENT".

TIME: AUGUST 27, 1987

PLACE: THE FRESHWATER INSTITUTE IN WINNIPEG.

TITLES AND ABSTRACTS FOR ORAL PRESENTATIONS IN THIS BROAD AREA
SHOULD BE SUBMITTED TO:

W.G. FRANZIN
DEPT. OF FISHERIES AND OCEANS
501 UNIVERSITY CRES.
WINNIPEG, MB R3T 2N6

BY JULY 15, 1987.

PLEASE INDICATE WHAT AUDIO-VISUAL AIDS WILL BE REQUIRED.
STUDENT PAPERS ARE WELCOME.

REGISTRATION FOR ATTENDEES WILL BE \$5.00 AND WILL INCLUDE PROGRAM
AND ABSTRACTS AND A DRAW FOR AN AS YET UNKNOWN DOOR PRIZE. A SOCIAL
EVENING IS PLANNED FOR THE EVENING OF AUGUST 26.

A SHORT BUSINESS MEETING FOR AFS MEMBERS WILL FOLLOW IMMEDIATELY
AFTER THE END OF THE SCIENTIFIC PROGRAM ON AUGUST 26.

REGISTRATION FOR THE PARC SYMPOSIUM IS \$60.00 AND INCLUDES PROGRAM
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TELEPHONE: (807) 468-9841



The Northwestern Ontario Chapter of the A.F.S. has been active for over five years promoting the transfer of fisheries science among fisheries workers throughout Northwestern Ontario. It is the first entirely Canadian chapter of this international organization whose main objective is the promotion of scientific research and enlightened management of aquatic resources.

The Chapter publishes three Newsletters annually. It also hosts several lectures on various fisheries related topics and conducts an annual business meeting and conference.

Inquiries about the chapter and its activities should be directed to Phil Ryan, President, c/o Ontario Ministry of Natural Resources, P.O. Box 5000, Thunder Bay, Ontario, P7C 5G6, or telephone (807) 475-1659.

MEMBERSHIP IN THE NORTHWESTERN ONTARIO CHAPTER OF THE AMERICAN FISHERIES SOCIETY IS AVAILABLE FOR AN ANNUAL FEE OF \$5.00.

ALL PROSPECTIVE MEMBERS SHOULD COMPLETE THE FOLLOWING AND MAIL IT ALONG WITH THEIR DUES TO:

Arnie Laine
Secretary-Treasurer
Northwestern Ontario Chapter
c/o Ontario Ministry of Natural Resources
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| | |
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