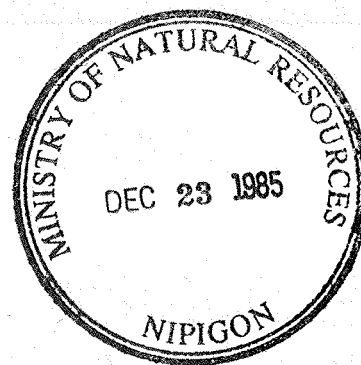


NEWSLETTER

NORTHWESTERN ONTARIO CHAPTER
of the
American Fisheries Society

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Vol. 6 No. 1

American Fisheries Society Northwestern Ontario Chapter



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President-Elect.....
Past-President.....
Secretary-Treasurer..

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PRESIDENT'S REPORT

This past year, the Northwestern Ontario Chapter celebrated its first half-decade of existence. The last five years have seen the chapter grow and develop into a going concern. May I extend sincere appreciation, on behalf of the chapter executive, to all those who have contributed to this endeavour over the years. Our annual conference this year, 'Management of Oligotrophic Lakes', was, as usual, well attended and provided a useful forum for the exchange of information between all participants. I would especially like to thank Neville Ward, Brian Krishka, and Tom Mosindy for their assistance in organizing this year's conference.

Our chapter remains solvent, with about \$1700.00 in our bank account after payment of this year's conference expenses. These funds may be used to subsidize some chapter activities this winter. I would appreciate receiving suggestions from the membership for potential activities over the next few months.

A resolution was passed at the annual business meeting to increase the dues of those who do not belong to the parent society from \$5 to \$10 per year. This amendment to our chapter by-laws (Section 9) requires a two-thirds ratification vote. Members are requested to examine the proposed amendment and submit their ballots to Brian Krishka, Secretary-Treasurer. The ballot is enclosed at the back of this newsletter. The results will be presented in the next newsletter.

A recommendation was also produced at the annual meeting for the creation of two additional membership categories; the first being: a chapter associate - open to individuals who

are not parent society members but could vote on non-parent society issues and the other, a chapter affiliate - open to groups and organizations, but having no voting rights. This recommendation has been submitted to the parent society for comment.

The proceedings from our 1984 conference, "Walleye and Tourism - Future Management Strategies" are now available at \$5.00 per copy. Please contact Nic Baccante at the: Walleye Unit, Box 5000, Thunder Bay, Ontario, P7C 5G6, (telephone 807-475-1639).

After considerable debate at the business meeting, our theme for next year's conference is "The Future of Inland Commercial Fisheries". This years program chairman is Phil Ryan. Please contact Phil if you have any comments or suggestions concerning potential speakers. We expect to invite participants from the industry, both producers and processors, as well as, government and interested public groups. Further details will be provided in the next newsletter.



NORTHWESTERN ONTARIO CHAPTER
AMERICAN FISHERIES SOCIETY

Minutes of the Annual Business Meeting

The annual business meeting was held September 19th and 20th, 1985 at Quetico Centre. President Neville Ward chaired the meeting and greeted attendees. The quorum was waived and Secretary-treasurer Brian Krishka read the minutes of the previous business meeting. Tom Maher motioned to accept the minutes as read (seconded by Bev Ritchie).

Brian Krishka read the 1984-85 Financial Statement which listed total assets of \$1,177.84 as of September 17th, 1985. Phil Ryan motioned to accept the financial statement (seconded by Val Macins). The membership report was also read and the Chapter had 111 members with 9 members lost and 10 new members.

There was no old business therefore Neville Ward carried on with new business by asking for nominations for the executive committee. Tom Mosindy was nominated for president-elect but declined. He agreed to continue on as Newsletter editor for another year. Phil Ryan was also nominated for president-elect and won by acclamation. Brian Krishka agreed to continue as secretary-treasurer for another term. Regional Newsletter representatives will be:

Ken Cullis - North Central Region MNR
Dave Payne - Northern Region MNR
Marcel Pellegrini - Northeastern Region MNR
Mark Sobchuk - Northwestern Region MNR
Jill Entwistle - Lakehead Region Conservation Authority
Jake Vander Wal - Ministry of the Environment
Walter Momot - Lakehead University

Doug Howell indicated that the Fisheries Habitat Guidelines written by John Allin (MNR Fisheries Branch) are being revised and suggested that the Chapter be involved in the review process. It was suggested that a Fisheries Habitat Review Committee be struck to provide this input. Rick Borecky will request an opportunity to review the documents which should be complete by late December. Ed Iwachewski volunteered to be on the Review Committee and others will be appointed from the membership in the near future.

Neville Ward discussed a review of the By-laws to increase membership dues to \$10 for non-parent society members. It was recommended that the following types of membership be approved by the parent society for this Chapter:

- 1) Chapter associate membership
 - open to individuals
 - able to vote on non-parent society issues
 - may not hold Chapter office
 - may chair or serve on Chapter committees

- 2) Chapter affiliate membership
 - open to groups and organizations
 - no voting rights

Hal Schraeder outlined his proposed Issues Response System (vol.5 no.3 of Newsletter). A change was suggested such that the executive committee (instead of the president) should decide whether an issue is worth pursuing and how. Hal motioned to accept the ammended IRS as a formal method for dealing with issues (seconded by Walter Momot). The motion was passed unanimously.

The following topics were suggested and discussed for the 1985-86 annual conference theme:

- 1) Commercial fishing
- 2) Nongame and underutilized species
- 3) Stock rehabilitation strategies and evaluation
- 4) Introductions and exotic species
- 5) Contributed papers session

Tom Maher motioned that next year's theme would be the future of inland commercial fisheries (seconded by Ross Chessell). The motion was adopted by majority vote (19 for, 1 against).

Rick Borecky presented Neville Ward with the Past-President's Certificate in appreciation of a job well done.

There was a general concern among those members attending the business meeting that the turnout for this meeting was poor and that all members should make a greater effort to attend future meetings.

Tom Maher motioned to adjourn the meeting (seconded by John Tost).

Membership Report

111 members as of September 19, 1985

- 58 Chapter members
- 33 Parent Society members
- 10 new members
- 9 members lost

RECENT investigations in the Bahamas have revealed algae living at record depths of 660 and 810 feet.—*Captain's Log*.

1984-85 Financial Statement

Balance on hand Sept. 17, 1984

\$359.96

Assets

1984 Conference	11,817.10	
Chapter dues	430.00	
Photo sales	146.46	
Sales (hats, shirts)	227.00	
Interest/dividends	20.57	
	<hr/>	
	\$12,641.13	12,641.13
		<hr/>
		\$13,001.09

Liabilities

1984 Conference expenses (less deposit)	11,150.15	
1985 Conference deposit	845.00	
Past-president certificates (2)	53.83	
Photo and slide reprints	261.77	
Books	22.50	
Service charges, Credit Union dues	4.00	
Other (dues refund, LLBO permit)	20.00	
	<hr/>	
	\$12,357.25	12,357.25
		<hr/>

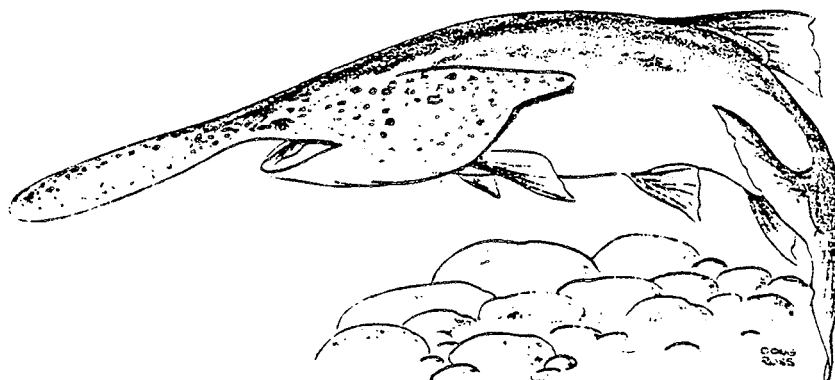
Balance on hand Sept. 17, 1985

643.84

26 hats @ \$6.00 each	156.00
25 shirts @ \$12.00 each	300.00
39 crests @ \$2.00 each	78.00
	<hr/>

Total Assets

\$1,177.84



**DEVELOPING THE PROGRAM FOR THE 1986 MEETING
CONFERENCE - WORKSHOP**

The chapter resolved at our Quetico conference in September to address the future of commercial fisheries in northwestern Ontario as the theme for the 1986 MCW. In addition, the chapter members considered the invitation of people from the industry and other vested interests in the resource. I think that we all recognize the benefits of the commercial fishing industry as an important part of the economy and a service which provides fish to non-anglers. We may not usually recognize, however, that commercial fisheries have the capability of providing regular information on the status of fish populations - effectively monitoring themselves and perhaps the status of other species which are shared with the sport industry. In addition, commercial fisheries are the most efficient way of harvesting many species or size classes of some species.

Until recently, the key factors affecting development and continuance of commercial fisheries have been the accessibility of the resource (rail, road, float plane) and how transport costs dictate the economic return. At our 1984 conference, Walter Momot outlined the choices that are going to have to be made as sport fishing effort increases in northwestern Ontario in terms of aesthetic values (eg. solitude), size versus numbers of fish in the creel, and cost of value return on fishing time. We are going to have to address the inevitable competition for the resource between the angling populace, commercial tourist facilities and commercial fishermen. Resource allocation decisions do not have to unnecessarily favour one group over the other. A commercial fishery can co-exist with a sport fishery if the combined harvests do not overtax the resource. However, if size and abundance of particular species (i.e., "quality" of fishing) are being marketed by the tourism industry or is desired by the sport fishing populace, a real or perceived conflict of interest may be occurring. In such situations, there may be latitude to divert some of the commercial effort to other species which are not as available or desirable to the sport fishery (i.e. whitefish or lower valued fish such as suckers, burbot and lake herring). The incidental harvest of other species may be minimized if the fishery uses impounding gear or operates when a target

species or a group are spatially segregated from other species during spawning or because of temperature or other environmental factors.

Allocation decisions and general stock management require information on the status of the resource. As we approach the MSY of the resource, we require greater detail in information concerning the status of the resource in order to prevent overharvest. We might similarly consider that we require more information for management of multi-species fisheries or more complex fish communities, and for situations where other factors such as water level regulation, pollution, diversions, and species introductions are additional forces shaping the nature of the fish associations and conceivably affecting the resilience of the resource.

Do we have the capability to monitor this closely? Commercial fisheries are capable of monitoring themselves to a large degree if catch and effort data are faithfully reported. Usually, only the marketed harvest of valued species is reported for most fisheries. If other species are consistently present in the catch, we have lost information the the relative abundance of the target species over time as a simple application, or the ability to use catch-effort models to assess the productive capacity of the resource. It is easy to understand why good effort data is not available for many fisheries. The value of the effort data is low until a history of catch and effort data is obtained for a waterbody. If the reliability of effort data is suspect, it is probably better to not have it, rather than have unqualified data residing in files to trip up future analysts. CPUE data may have very little meaning in a fishery which targets on spawning fish where the movement and concentration of fish is strongly affected by weather. Effort data may be useless if the fishery changes over time in terms of gear, the temporal and spatial distribution of effort, and/or the target species as affected by market prices.

It would appear that while effort data has great potential value, it cannot be obtained in many fisheries or may represent a liability if inaccurate. The status of fish stocks, in these instances, can then be inferred only from a

monitoring of the biological characteristics of the landed catch. We are directed towards using indices which describe the relative "health" of the stock over time which are principally the simple age-based indices (i.e. mean age, mortality rate, mean age of maturity and growth rate) in relation to success in obtaining an MEI-based quota. The interpretation of the status of the resource is made through examination of trends over time and with models such as Abrossov's model (mean age: mean age of maturity), Colby and Nepszy's (1981) crisis curve (mean age) and comparative surveys of mortality rates (lake trout - Healy, 1978).

The extremely slow growth and great ages exhibited by fish from unexploited populations in this area create difficulties in the aging of fish. The ages of mature fish are generally underestimated by scales and possibly fin rays, and the reliability of other aging tissues is uncertain unless validated. Underaging of old fish would seriously bias interpretations of the status of stocks by the aforementioned indices. Bias would be greatest in the early stages of a fishery when large numbers of old fish are being harvested. The initial fishing-up period, as interpreted from age composition data, would not be accurately described. We could conclude that a stock had reached some stage of equilibrium with fishing and be ready to accommodate an increase in quota, while in reality it is still in the fishing-up stage.

As we progress to more labour intensive approaches in fish population monitoring, in the absence of accurate, voluntarily reported effort data, short term (1-2 year duration) marking experiments offer the greatest return of information. The suggested time period is based on minimizing bias from tag loss. The information return can include identification of stocks and their range, fishing mortality (and natural by subtraction), exploitation rates, catchability and stock size.

In sport fisheries we rely on very crude methods (seasons and bag limits) for the regulation of effort, harvest and the protection of the brood stock. Commercial fisheries are primarily regulated by quotas. These are established on the basis of patterns in harvest levels and composition for homogenous sets of lakes. The most useful of these approaches incorporate the MEI (Ryder, 1965) for yield prediction, with a partitioning of predicted

composition following Adams and Olver (1977) as further refined by Anon (1983). These are only starting points in the process of the establishment and maintenance of commercial fisheries. Kerr (1977) found that yields from walleye populations in some oligotrophic lakes in northwestern Ontario were not sustained over time in contrast to harvests from mesotrophic lakes. It becomes apparent that we should consider local factors such as the suitability of the environment for the species present and behavioral patterns in the performance of the resource which we may not understand but may only anticipate.

A considerable fraction of the available aquatic resource in this area is under-utilized because of the difficulty of access, cost of transportation and the size of the resource. Small lakes or river systems may not be able to support regularly operating fisheries but may be economically feasible to exploit on a pulse-fishing basis. Operational aspects of pulse-fishing have been evaluated on northern Manitoba lakes by Lysack (1982) and he has conducted the ground work to address the key questions for subsequent surveys which is how much time does it take these populations to recover, allowing the next harvest? The experimental harvest of Henderson Lake and monitoring of the subsequent recovery as a joint project of Lakehead University and OMNR's Walleye Research Unit is a local pulse-fishing study which is now giving some indication of the recovery time in such experiments. It is desirable to evaluate pulse-fishing as a strategy which provides additional economic benefit from the resource and through increasing the available resource base, it may provide a way out of some allocation problems.

The Time Angle

Our fish resources are renewable in contrast to other activities such as mining, and their value should be considered over longer periods of time. A minimum period would be a generation time (mean age to maturity) for the key species in a lake - perhaps 5 to 10 years for most species in this area. With uncontrolled exploitation and no

reproduction, we would exhaust all of the year classes in a lake in that period. The period over which investments made by a commercial fisherman or tourist facility are amortised is perhaps a measure of a resource user generation time (5 to 25 years?). In contrast to this, resource managers probably have shorter generation times (in terms of residency and responsibility). Managers need to get out and get information now. It will only become valuable in terms of time series in a minimum of 1/2 of the generation time for the species under consideration. We are normally forced to "fight fires" rather than prepare for the future by establishing and implementing monitoring programs.

Commercial and other fish monitoring programs yield huge amounts of what may be intractable data if processing and summary are not considered in advance. Data may not be interpretable if sampling programs are incompletely documented and staff turnover occurs (management generation time). Catch sampling may be omitted for these reasons or because of the cost and difficulty of fish aging analysis.

The following list is a distillation of topic titles and areas within them that I feel are important to our conference theme. At the end of the newsletter, there is a duplication of this list which I ask you to use as a ballot. Please rank the priority of these topics together with rank and speaker. I encourage you to get your responses in quickly for insertion into the next newsletter, but I would be happy to hear from you at any time.

P. Ryan

November 21, 1985

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TOPICS FOR CONSIDERATION

(1) Historical perspective

- "those who fail to learn the lessons of history are doomed to repeat them"

(2) Regional perspective

- (a) - what are the important fisheries and their status
- (b) - the nature of the fishing industry in this area
 - special problems affecting fisheries in this area (transport, storage, markets, mercury, Traienophorus sp.)

(3) Contaminants: mercury and others

- (a) - industrial pollution of the English-Wabigoon River system.
 - history of the problem
 - review of studies, major findings and strategies for recovery (2 speakers?)
- (b) - the provincial and federal monitoring programs
 - nature and extent of monitoring
 - are regional patterns emerging?
 - are there any time series trends?
- (c) - other contaminants
 - are other metals of concern from smelter operations (as in Flin Flon) or natural sources?
 - are pesticides, herbicides an issue?
 - recall recent findings (newspaper) or dioxin in Rainy River

(4) The biology and ecology of the major fish species supporting commercial fisheries in NWO

- (a) - lake whitefish
- (b) - walleye
- (c) - northern pike
- (d) - lake trout
- (e) - sauger

(5) Studies and case histories of fisheries

- (a) Shoal Lake revisited
- (b) Lac Seul
- (c) Saskatchewan perspective with focus on Peter Pond system
- (d) Minnesota perspective - the Red Lakes
- (e) fall whitefish fisheries
- (f) pulse-fishing in northern Manitoba
- (g) the West Indian Lake study in northern Manitoba

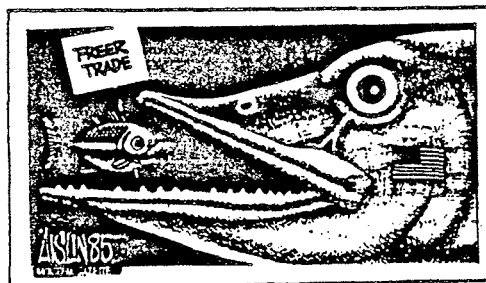
(6) Fish management techniques

- (a) definition of quotas
- (b) using multi-year catch data without effort (age-sex-maturity data)
- (c) catch-effort with or without age structure
- (d) short term marking experiments
- (e) gear selectivity models and data adjustment

(7) Resource allocation strategies

- eg. Lake of the Woods, Lac Seul, Rainy, border lakes

(8) Evening workshop demonstrating calculator and computer software



PARENT SOCIETY NEWSNotes from the AFS Diary:

(excerpts from weekly reports to the AFS Executive Committee EXCOM, including Chapter Presidents, from the office of the Director, Carl Sullivan).

TOTAL AFS MEMBERSHIP STOOD AT 8,159 on 30 September. By broad, general categories, our enrollment is as follows:

Individual Members (except Students)	6,117
Student Members.....	793
Business Members	56
Agency Members	51
Library Members	1,142

THE LARGEST AFS SECTION is now the Fisheries Management Section, having barely surpassed the Fish Culture Section. The following membership table does not include the Computer Users Section which has only recently been formed and has not yet been a part of the Society's dues billing system. Nonetheless, approximately 150 members have already indicated an interest in joining the computer group.

Fisheries Management Section	1,006
Fish Culture Section.....	977
Water Quality Section.....	522
Marine Fisheries Section	478
Fish Health Section.....	474
Early Life History Section.....	362
Fishery Educators Section.....	267
Bio-Engineering Section.....	264
Introduced Fish Section	193
Fisheries Administrators Section	177
Fisheries Economics Section.....	136
TOTAL	4,856

THE AFS NORTH CENTRAL DIVISION ANNUAL MEETING will be at the Amway Grand Plaza Hotel in Grand Rapids, Michigan, from December 15-18, 1985. As usual, the Division meeting will be a part of the annual Midwest Fish and Wildlife Conference. For program or arrangements information call the Michigan DNR, (616) 456-5071.

15TH AFS ANNUAL MEETING

THE SUN MAY NOT ALWAYS SHINE IN SUN VALLEY, BUT THE PEOPLE DO. That was the consensus of the 651 AFS and 205 IAFWA members and about 100 spouses who splashed through the September 9-12, annual meeting. Despite the continuously dripping, overcast skies, Arrangements Committee chairman Jim Keating and his tireless Idahoan hosts never lost their good humor or their enthusiasm. Furthermore, they established a new record of resourcefulness by adjusting for every blow the weatherman had to offer. The barbecue and other outdoor social activities were moved indoors, the opening night mixer was moved under a tent, and the 2nd annual spawning run ignored the weather. On behalf of every AFS participant I want to express profound gratitude to the Idaho crew for their warm and genuine hospitality. I also express great admiration for the indomitable determination which they displayed in making the conference a resounding success.

It is quite probable that Program Chairman Bob

White's outstanding program was helped by the inclement weather. I don't mean to imply that Idaho's fabulous scenery and fishing could have seriously reduced meeting attendance, but there were a few times when the size of the crowd was helped by the severity of the weather outside. This seemed particularly evident during the annual business meeting, which was probably the largest in the Society's history.

During this well-attended 115th annual meeting Johanna Reinhart of Ottawa, Ontario, succeeded Bill Platts as the Society's President, thus becoming only the third female president in AFS history. Member response to her confident and stimulating inaugural address was enthusiastic and spontaneous. Without question, the Society is excited by its recent achievements and by the opportunities which lie ahead. Volunteerism is running at an all-time high and the Society's leaders will be severely challenged to keep pace with the members' desire for involvement.

THE SOCIETY'S COLLECTION OF BOUND JOURNAL COPIES has been brought up to date with receipt of bound copies of the last 3 volumes of TRANSACTIONS, all volumes to date (4) of NAJFM, 8 volumes of FISHERIES, and the last 3 volumes of the AFS DIARY. The bound volumes are handsomely and professionally done. For members who might wish to have their private collections bound, the cost of the first 4 volumes of NAJFM is \$99.00, the cost of 8 volumes of FISHERIES is \$152.00, and the cost of each volume of TRANSACTIONS is \$33.00. If there were sufficient interest there would be a quantity discount.

KENNETH H. LOFTUS, recently retired from a long and varied career with the Ontario Ministry of Natural Resources, was unanimously elected as an Honorary Member of the American Fisheries Society.

TORONTO, ONTARIO was the unanimous EXCOM choice for the site of the 1988 annual meeting. Time and Place chairman Don Duff reported that an excellent proposal had been received and that AFS would again be meeting jointly with the International Association of Fish and Wildlife Agencies.

FINAL AND ACCEPTABLE RESOLUTION OF THE GARRISON DIVERSION STALEMATE is the goal of a joint effort by the Upper Missouri River AFS Chapter working in concert with the North Dakota Chapter of The Wildlife Society. It had been hoped that the final report of the Garrison Commission would settle the issue, but pro-development forces are still at work and an acceptable compromise is still being sought. The Wildlife Society Chapter's plan seems to provide such a compromise and it has won many advocates. The Upper Missouri River AFS Chapter continues to press the issue through letters to Congress and state leaders.

Strategies for Riparian Area Management

Gordon N. Haugen
Environmental Concerns Committee

Members are encouraged to comment on the following draft policy statement. Comments should be addressed to Carl Sullivan at AFS headquarters.—The Editor.

Issue Definition

"Riparian" comes from the Latin word *riparious*, which means "bank [of stream]." "Riparian ecosystems" are the complex assemblage of organisms and their environment existing adjacent to and near flowing water. K. L. Ewing (1978) stated that riparian ecosystems have two essential characteristics: (1) laterally flowing water that rises and falls at least once within a growing season, and (2) a high degree of connectedness with other ecosystems. The first characteristic is related to the fact that the riparian area is in juxtaposition to the stream. The second characteristic relates to the fact that the riparian area is mainly linear in shape. Having a high ratio of perimeter to the surface area means that the streamside zone will interact extensively with adjacent ecosystems. Because of the same ratio, riparian ecosystems along streams form buffers between the stream and the adjacent ecosystem, which may be forest, agriculture, urban areas, etc., and these buffers can help control non-point source pollution. Although riparian areas in different environments/regimes have different characteristics, they all share common functional traits. We therefore, are defining riparian areas as geographically delineated areas with distinctive vegetative, fishery, and other resource values comprising both the aquatic and riparian ecosystems, and providing both the structural and nonstructural fisheries habitat components (i.e., streambank vegetation, channel structure, and water quality) required to sustain productive fishery resources.

More than a century of human use and development of the land along streams has brought about many changes. Throughout North America, many streams no longer retain their once-productive characteristics; consequently, they now support reduced fish populations. Domestic livestock grazing within riparian areas and its resulting impacts on fisheries habitat throughout North America is well-documented in the literature. Livestock grazing is one of the multiple uses of the riparian area rangelands; however, years of improper grazing have contributed greatly to the poor condition of North America's public and private riparian area rangelands. Other activities that impact fisheries habitat in riparian areas are timber harvest, mineral and oil exploration, agriculture, urban development, and road construction. The Western Division of the American Fisheries Society addressed these uses in its 1981 and 1984 riparian area position publications. If these competing uses are allowed to continue without sufficient management constraints to protect the integrity of riparian habitat, adverse impacts will continue to occur on North America's fisheries resources.

Research has shown that degraded riparian area fisheries habitat can be re-established, but social, political, and economic considerations often prevent this course of action. Today's land and fisheries managers must not only manage existing resources properly, but also must correct past mistakes.

Course of Action Policy

It is the policy of the American Fisheries Society (AFS) to aggressively foster an increased awareness of riparian area fisheries habitat values and encourage active management for these values by state, federal, provincial, and local agencies. The AFS supports close coordination and cooperation among these agencies in managing and improving riparian areas on state, federal, provincial, and private lands in North America. The AFS strongly urges that all land management agencies declare, as a matter of policy, that riparian areas be recognized as distinctive habitat, and that they be declared areas of critical environmental concern. The AFS also urges that riparian areas be managed with state-of-the-art management practices, and that management prescriptions be vigorously enforced to protect fisheries and other resource values for the benefit of all users.

Since adequate streamflow is essential to the vegetative communities within riparian areas, the AFS strongly urges that state, federal, and provincial agencies legally recognize minimum instream flows as a beneficial public use so that riparian areas can be maintained and protected. These agencies should identify and quantify riparian area resources and instream flows in the development of land and water management plans and recognize the linkages between riparian ecosystem management with upland conservation practices that must be considered in watershed programs. The AFS encourages ongoing and future research and management on riparian area habitats relative to livestock grazing, mining, energy exploration and development, water storage, irrigation use, timber harvest, road construction, and other land uses that may affect riparian areas. Scientific studies and inventories can provide the basis for restoration, maintenance, and protection of riparian area fish habitats. Therefore, the AFS strongly recommends that all land managers actively work to determine and implement state-of-the-art management practices for riparian areas.

Action Plan


The AFS will work with all riparian area users and managers to improve riparian area management. This will, in turn, provide the riparian area fisheries habitat components (i.e., streambank vegetation, channel structure, and water quality) required to maintain self-sustaining productive populations of fish for recreational and commercial users. The following actions will be taken by the AFS to increase the

awareness of fisheries habitat management required within riparian areas:

1. Foster cooperative relationships among land management agencies and private landowners responsible for riparian area management throughout North America.
2. Cooperate with public and private land managers in the planning and management of riparian areas to meet state, federal, and provincial land management agency mandates.
3. Request that riparian areas receive special consideration as distinct habitats in the planning and management of state, federal, and provincial lands.
4. Request that land managers working with appropriate subunits of the AFS, develop best management practices for managing riparian areas, and update these practices as new research and management information becomes available.
5. Work for improved legislative and congressional appropriations for restoration and rehabilitation of riparian areas on public and private lands.
6. Work towards obtaining a better balance of expertise on land management advisory boards.
7. Emphasize coordination with the Bureau of Land Management, and state and provincial divisions that are responsible for the management of riparian areas. Con-

tinue to work with the U.S. Forest Service to encourage adherence to riparian area policies and management prescriptions.

8. Work towards amending the Federal Land Management Policy Act and the National Forest Management Act to include additional direction on riparian area administration if the present management direction and policies are determined inadequate by AFS Divisions and Chapters in addressing progressive riparian area management.
9. Continue AFS Division and Chapter involvement in achieving state riparian tax incentive legislation.
10. Insist that riparian area management prescriptions are adhered to by state, federal, and provincial land management agencies and that they be monitored for effectiveness.

The AFS is dedicated to addressing these action items to insure that the integrity of riparian areas is maintained in order to enhance the quality and quantity of fisheries resources across North America. 

Literature Cited

- Ewing, K. L. 1978. Riparian ecosystems: conservation of their unique characteristics. *In* R. R. Johnson and J. E. McCormick, eds. Strategies for protection and management of floodplain wetlands and other riparian ecosystems. Gen. Tech. Report WO-12. U.S. Forest Service, Washington, D.C.

A SYMPOSIUM ON FRESHWATER WETLANDS AND WILDLIFE will be held in Charleston, South Carolina on March 24-27, 1986. In addition to contributed papers and posters there will be special sessions on (1) biogeochemical processes in freshwater wetlands, (2) limits on wetland ecosystem processes, (3) linkages between wetlands and wildlife, and (4) views on wetland management. Registration fees, including banquet and symposium volume, are \$110.00 in advance and \$145.00 at the door, with advance student registration set at \$65.00. For information write Dr. Rebecca Sharitz, Freshwater Wetlands and Wildlife Symposium, Savannah River Ecology Lab, Drawer E, Aiken, SC 29802, telephone (803) 725-2472.

CHAPTER NEWSLakehead UniversityI. New or Continuing Research Projects

Mr. Kevin Trimble is completing an M.Sc. project on the ecological role of yellow perch in Henderson Lake.

Mr. Arnold Laine is completing an M.Sc. project on the ecology of northern pike in Squeers Lake.

Ms. Helen Ball is completing an M.Sc. project on the ecology of lake trout in Squeers Lake.

Mr. George Morgan is completing an M.Sc. project on modelling the population dynamics of Orconectes virilis in two small lakes near Thunder Bay.

Mr. Brian Wisenden is initiating a study on crayfish in two small Ontario lakes.

Ms. Sabine Maxwell is initiating a study on crayfish in two small Ontario lakes.

Connie Hartvikson is working on the fish distribution of the fish fauna in the Thunder Bay area.

Mr. Alan Dextrase is nearing completion of his study of swim-bladder nematodes in lake whitefish.

II. Thesis completed

Armstrong, K.B. 1985. The biology and histopathology of Proteocephalus ambloplitis Leidy 1887 (Cestoda: Proteocephalidae) infesting walleye and yellow perch in Lake of the Woods, Ontario (Dr. M. Lankester, Supervisor)

Reid, D. M. 1985. Effects of episodic removal scheme on a walleye population (Dr. W. Momot, Supervisor).

Ritchie, B. 1985. Comparison of the yellow perch populations in Henderson Lake and Savanne Lake, Ontario (Dr. W. Momot, Supervisor).

III. Papers Pulished

Black, G. A. and M. W. Lankester. 1984. Distribution and Biology of swimbladder nematodes, Cystidicola spp. (Habronematoidae) in Charr, Salvelinus spp.. In: Biology of Arctic Charr. L. Johnson and B. Burns (Eds). Univ. of Manitoba Press, Winnipeg, Manitoba.

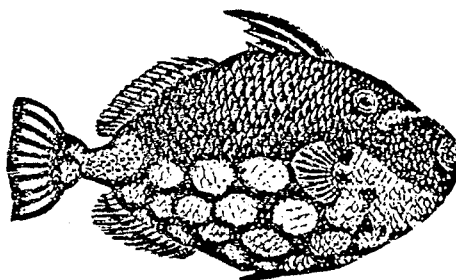
Momot, W. T. 1985. Production and Exploitation of crayfish in northern climates. Can. J. Aquat. Sci. and Fisheries. (In Press).

IV. Other News

Dr. George Ozburn and his co-workers, Mr. Al Smith and Dr. Donald Orr have obtained a large MOE grant to set up an aquatic toxicology center at Lakehead University and continue their work on aquatic toxicants at Lakehead.

The Department of Biology is acquiring a Wet Lab Facility for aquatic studies. This facility should be operational by 1986 and will provide aquarium/wet lab space for Dr. Momot, Dr. Lankester, and Dr. Hōbe to hold fish and aquatic invertebrates for experimental purposes.

Finally we wish to gratefully acknowledge our colleagues at the MNR who have over the past year assisted us with financial, moral and scientific support for student projects, but especially Mr. Val Macins, Mr. Phil Ryan and Dr. P. J. Colby.



POACHERS COOKING UP FISHY WINS

Enclosed are two newspaper articles I recently cut out from Toronto dailies: 'Poachers cooking up fish wins' (Globe and Mail, 1985.11.25) and 'Poachers could be winning contests with trophy-sized fish from hatchery' (Toronto Star, 1985.11.25). I thought you might consider these articles for our chapter newsletter. Scott Watson, as a chapter member, deserves our attention to the problem he has described at the Dorion FCS.

It is inconscionable that poachers would not only steal fish from a hatchery but that they would then enter them in derbies in the hope of claiming prizes later. While talking to Scott at our recent conference I learned that he has considered the use of guard dogs to protect his brood stocks. I have recently spoken with Russell McMullin, supervisor of the Metropolitan Toronto Region CA's Glen Haffy hatchery, and he has indicated that he has used dogs to deter poaching with much success. The dogs he uses are not vicious and are leashed to overhead cables to restrict their patrolling to the immediate vicinity of brood ponds and runways. He believes that it is important to enclose the sensitive areas with chain link fence as well. The Glen Haffy site is not open to the public but he sees no reason why the proper dogs (noisy ones) could not be used at a site open to the public. Some private hatchery owners have resorted to cross dogs to protect their interests. These dogs roam freely inside buildings after hours and do attack intruders.

Perhaps other chapter members know of alternative methods that Scott might consider in dealing with this problem .

Hal Schraeder

Poachers could be winning contests with trophy-sized fish from hatchery

Dorion (CP) - Trophy-sized fish are being stolen from one of Ontario's largest fish hatcheries and the ministry of natural resources suspects the poachers are entering them in local fishing tournaments.

The Dorion Fish Culture Station, 70 kilometres (43 miles) northeast of Thunder Bay, was robbed of 42 lake trout brood stock last year - a loss in production of about two million eggs over the fishes' lifetime. The centre fell 100,000 eggs short of its 1985 target.

"Most of the break-ins seem to coincide with derbies," said station manager Scott Watson. "That connection cannot be overlooked.

"Not only are we being ripped off, but so are the derbies."

Although the 1985 losses won't be known until the fish are counted during the fall spawning period, Watson said fishing line and lures have been found in the compound throughout the year.

Watson said stolen lake trout, weighing up to 6 kilograms (14 pounds), and brook trout, as big as 1 kg (3 lbs.) were large enough to win some fishing contests.

The lake trout are especially crucial to the success of the ministry's stock program because they are the only brood in captivity originating from Lake Superior. The ministry has raised the fish from eggs for the last five years and they are expected to begin reproducing for the first time next fall.

"We feel these fish are genetically suitable for restocking in Lake Superior," said Watson. "It's important we protect them because it takes so long to raise them."

The hatchery - which produces 50 per cent of the ministry's lake trout eggs and about 75 per cent of the brook trout eggs - currently puts its entire annual production of 1.2 million lake trout into Lake Superior.

Ministry officials are considering marking the fish in a manner that cannot be detected by the poachers, then monitoring fish entered into tournaments.

Watson said they may spike the fishes' diet with the antibiotic tetracycline, which has no effect on the fish except to make their scales florescent under ultraviolet light.

Many of the thefts occur at the ministry's substation,

located two kilometres (one mile) from the main hatchery. The substation is unmanned, except for some daily visits by the staff.

"We thought we could protect the substation - a roofed structure - with chain-link fence all around," said Watson.

"However, the poachers cut through the four-metre (13 feet high) fence during the Nipigon Fall Fishing event last Labor Day weekend.

AGE AND GROWTH STUDIES SUMMARIZED

An International Symposium on the Age and Growth of Fish was held in Des Moines, Iowa, June 9-12, 1985. The Symposium was co-sponsored by the Sport Fishery Research Foundation, the Iowa Conservation Commission, and Iowa State University. The time was opportune to consider the significant advances since the first "International Symposium on the Ageing of Fish," was held at Reading, England, July, 1973. You might say that "age tells all." Thus, many people recognized this as an appropriate time to examine aging methodology, validation studies, and new procedures for measurement of daily growth. Studies were reported on freshwater and marine fishes, including sharks, which have cartilaginous rather than a bony skeleton, and fish from diverse environments—ranging from tropical marine habitats to southern reservoirs that are thermally enriched from power plant effluents.

The symposium showed that fishery biology has found many uses for information on age of fish: description of longevity, age at maturity, age at which fish migrate to the sea and the age when fish are recruited to the fishery. Information on age and length at capture provides a growth history, and data on age composition of the catch is used for development of catch curves from which annual mortality rates are calculated. The age composition of a fish population provides two of the three major rate functions that are needed to measure production of a fish population—growth, mortality and recruitment.

Studies were reported that show the age of fish determined by inferences from length-frequency distributions, interpretation of marks on hard parts of fish scales, otoliths, spines, vertebrae, and other bones, and by recapture of marked fish. Historical perspectives indicate aging of fish from annular marks on their scales at least since 1898. Although scales and other hard parts of many species of marine and freshwater fishes are now routinely examined, methodologies have not, with few exceptions, been standardized, and biologists have sometimes underestimated the complexities of the process.

Annuli on the hard parts do provide a history of growth, but several persons reported that marks that indicated annual growth are often difficult to observe, sometimes they are not laid down every year, and sometimes the structure itself is altered with age in a manner that eliminates earlier annuli. As a consequence of these problems, errors in age determination have sometimes resulted in over-exploitation of commercial fish stocks. Recent studies now show that maximum ages of some marine fish, determined by otoliths, are 2 to 5 times older than previously reported from scale studies.

Findings such as these have spurred more studies to determine the accuracy of the methods. Several validation studies were reported using recapture of fish having tetracycline marks on a skeletal component that can be visualized with fluorescent light. The study of fish growth was given considerable mathematical and theoretical consideration, including new interpretations of the well-known von Bertalanffy growth function.

The most recent developments in the field include: improvements in computerized measurement of annuli, use of a computerized system with a video camera to scan zonations in skeletal structures of fish, biochemical methods (RNA-DNA ratios and amino acid uptake by scales) for determination of short-term fish growth, and the use of otolith microstructure to study daily growth of larval fish. Otolith microstructure provided the largest cluster of studies and they were mainly focused on study of daily growth increments, to determine hatching date and for the study of the influences of environment variables on growth and survival of larval fishes.

Proceedings of the symposium, to be published by the Iowa State University Press in 1986, will include most of the presentations made at the meeting. In the meanwhile, copies of the 101 page program, containing abstracts of all papers presented at the symposium, are available for \$5.00, including postage. To obtain a copy, send check or purchase order to "Age and Growth Symposium," c/o Robert C. Summerfelt, Department of Animal Ecology, Iowa State University, Ames, Iowa 50011.

RED LAKE DISTRICT

This summer, utilizing a 204 helicopter (wasn't too busy fighting fires), two permanent lands technicians, Connie Buck and Doug Unsworth, teamed up with two F and W contract staff, Cobey Langill and Rick Maw, to survey 50 lakes ranging in size from 2,340 hectare Mike's Lake in the far north to an 8.5 hectare unnamed lake that Boise Cascade plans to dredge. These lake surveys were supported by funding from the Ontario Youth and Special Employment Programs as well. Half of the surveyed lakes, most of them smaller than 100 hectares, contained walleye. This supports the position that small lakes should be flagged in the timber management planning process as an area of concern.

This past summer also saw one of the most northerly creel surveys conducted in the Province. Claire Deanglis and Bev Bates spent the summer camped on an island on Nungesser Lake about 70 miles north of Red Lake. They interviewed about 700 anglers staying at one of four commercial establishments on the lake and sampled 865 angler-caught walleye. Claire and Wayne Simkin, presently on a special employment program, are busy sectioning fin rays and aging these fish. Bev Bates, with the assistance of CREESYS and Jim Atkinson's Apple III in Thunder Bay, is preparing the creel survey report.

The special employment program, with the Red Lake District Lions Club as a sponsor, has enabled the District to hire four people for three months this fall. Besides allowing the District to age 1,000 fish, prescribe 100 timber reserves for areas of concern, recommend a slot length limit for Woman Lake walleye, finish 50 lake survey maps and complete reports on the 1984 Chukuni River walleye tagging and Longlegged Lake creel survey, these four people (Claire, Cobey, Wayne and Vic Fazekas) are expanding their fish and Wildlife experience and hopefully their career aspirations.

The Lions Club has agreed to continue their SEP sponsorship for another three months. This time we hope to evaluate logging effects on caribou migrations and analyze in graphical form, fisheries data for the upcoming public review of the District's Fisheries Management Plan.

Neville Ward

CONFERENCE CONTENT BALLOT

Please indicate agreement or disagreement by checking off or crossing out topics respectively. Please suggest speakers on this sheet and append additional notes developing any of these areas. I would like to hear of suggestions for other topics and content.

Initial Proposals

1. History of commercial fisheries

2. Regional perspective

(a) What are the important fisheries?

What state are they in?

(b) What is the nature of the industry in this area?

What are the special problems affecting fisheries here?

3. Contaminants: mercury and others

(a) The English-Wabigoon System

(b) Provincial and Federal contaminant monitoring programs

(c) Other contaminants

4. The biology and ecology of the major commercial species

(a) lake whitefish

(b) walleye

(c) northern pike

(d) lake trout

(e) sauger

5. Studies and case histories

(a) Shoal Lake

(b) Lac Seul

(c) Saskatchewan perspective with focus on Peter Pond system problems

(d) Minnesota perspective - the Red lakes

(e) Fall whitefish fisheries

(f) Pulse-fishing in northern Manitoba lakes

(g) West Indian Lake Study (Manitoba)

6. Pertinent fish management techniques and models

- (a) Definition of quotas
- (b) Using multi-year catch data without effort (size, sex, age, maturity)
- (c) Catch-effort data with/without age structure...
- (d) Short term marking experiments
- (e) Gear selectivity models and data adjustment

7. Resource allocation strategies

eg. Lake of the Woods, Lac Seul, Rainy Lake, border lakes

8. Evening workshops (drop-in) demonstrating programmable calculator applications and computer software

NB Please let me know how to contact you!

NAME _____ TELEPHONE _____

PLEASE FORWARD TO: PHIL RYAN,
 MINISTRY OF NATURAL RESOURCES,
 P.O. BOX 5000,
 ONTARIO GOVERNMENT BUILDING,
 THUNDER BAY, ONTARIO.
 P7C 5G6

Ballot To Amend Membership Dues

Northwestern Ontario Chapter - American Fisheries Society

Resolved, That, the following be added to Section 9 of the Chapter By-laws regarding Registration and Membership Dues:

Annual Chapter dues, for non-parent society members, are set at \$10.00, payable September 1 of each year.

Vote to : ACCEPT (YES) ☐ REJECT (NO) ☐
amendment.

Please mark appropriate box with an X and mail to:

Brian Krishka
Productivity Unit
Box 2089
Thunder Bay, Ontario
P7B 5E7

Contributors.

The newsletter editor wishes to thank the following people whose contributions and efforts have made this issue possible:

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