



# NORTHWESTERN ONTARIO CHAPTER

NEWSLETTER VOLUME 15, NUMBER 1 APRIL 1994

## President's Message

Happy New Year and all the best to you and your families!

The American Fisheries Society is about volunteers. The one basic question most volunteers ask is "What's in it for me?" As you may already realize or will find out as you read this newsletter, the NWO Chapter has an ambitious agenda for the coming year. It will take a number of people and hard work to move the yard sticks on these initiatives. If we can get at least one of these programmes off the ground and move ahead in the planning stages on at least one other, then I feel that the question asked will have been answered with another step towards promoting professionalism and awareness in fisheries management.

I realize that some of you who receive this newsletter will already be among the converted, so please pass on a copy of this newsletter to some of your colleagues or others you feel may be interested in fisheries management.

Our Chapter's annual business meeting was held in Thunder Bay this past October. The minutes of the meeting are included in this newsletter. I would like to extend my congratulations to the new chapter executive: Mike Fruetel (President-Elect), Paul MacMahon (Vice President), Leona Wilson (Secretary/Treasurer), Michael Bozek (Newsletter Editor), and Domonique Houstoun (Assistant Newsletter Editor).

You may notice 3 new positions on the executive committee our Vice President, Newsletter Editor and Assistant Newsletter Editor. These positions were approved and amendments were made to the chapter by-laws in the interest of continuity in conducting chapter business.

I would like to extend appreciation on behalf of the chapter to Past President Kim Armstrong for keeping the Chapter going over the past year. we couldn't have done it without you Kim.

We have our 2 standing committees that are carrying on with their responsibilities they are: Membership Committee (Kim Armstrong, Chair), Fund Raising Committee (Susan Mann, Chair).

Michael Bozek and Domonique Houstoun have taken on a big task with this newsletter. It's the thread that holds us together. Please help them out with any articles, updates or interesting bits of information that you want to share with other chapter members.

A number of new chapter initiatives arose over the past year:

- Proposed development of chapter sponsored workshops on Fisheries Management Principles.
- Proposed development of a Mine Closure Workshop for government agencies,
- Proposed establishment of a fisheries research unit associated with Lakehead

University, and initiating a student grant program based on paper submissions for attending parent society or divisional meetings.

I would like to thank all the presenters and attenders of the business meeting and the presentation of contributed papers that followed. I believe the main goals of the workshop were achieved: an exchange of science and ideas that help build stronger ties with other AFS chapter members. ( continued p. 2)

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**President's Message Cont'd**

The next conference is set for November and the conference theme will be Native Issues and Fisheries Management. I encourage all members to attend and to inform others you know would be interested, including conservation officers, tourist outfitters, anglers etc. More details will follow in the next newsletter.

Our Chapter has 25 dedicated members. 50% are also members of the Parent Society. Our goal of changing the Society name to better reflect the membership will only be recognized if we show our support by having our members belong to the Parent Society.

Exciting new developments occurred at the Parent Society Meeting in Portland, Oregon this past August. Due to the efforts of the Canadian Aquatic Resources Section (CARS), including in part the efforts of Terry Marshall and Bev Ritchie, the AFS has provided funding for an Executive Director position in Canada. The position will serve as an official presence for AFS in Canada and will provide a mechanism for tackling environmental concerns and issues. This will hopefully serve as one high profile reason for joining the Parent Society and CARS.

If you know of anyone who is interested in joining our chapter, there is a membership application attached to the back of the newsletter. Also, if you have yet to submit your dues for the upcoming year, please do so now.

Finally, I hope that all members had a Merry Christmas and I wish you success with your endeavours in the New Year.

Dana Kinsman

**NEWS FROM NORTHWESTERN ONTARIO**

**Squeers Lake Winter Fishery**

The Quetico-Mille Lacs FAU will be conducting its 10th annual experimental winter fishery on Squeers Lake this year. The fishery was designed to determine the maximum allowable harvest of lake trout from Squeers Lake. Squeers Lake is 384 ha in size and is home to a high density population of lake trout. Other species in the lake include northern pike, white sucker, burbot, yellow perch and a variety of small fish species. High productivity for lake trout is attributed to the absence of herring or whitefish which are important members of the food chain in 'typical' piscivorous populations. Lake trout in Squeers Lake grow significantly slower than the provincial average, and typically reach 40 cm (fork length) in 8 or 9 years. Trout longer than 50 cm are rare. The average size of fish harvested by anglers is about 36 cm. The age of harvested fish ranges from 4 to 25 years.

The lake was made a sanctuary during 1979 because the estimated winter harvest exceeded the maximum allowable yield as predicted by the MEI (0.5 kg/ha). Intensive study of the lake by a Lakehead University graduate student between 1984 and 1986 suggested that the potential yield for lake trout was actually between 2 and 4 kg/ha. An experimental winter fishery began in 1985 to specifically control the harvest at a predetermined level. Annual harvest from 1989 to 1993 has been between 2 and 2.5 kg/ha or 1386 to 1973 fish. Annual effort has increased from 4.7 to 36.8 rod hours per ha. Each fall, between 1000 and 1500 lake trout are marked (clipped or tagged) on the spawning shoals. This allows us to estimate the adult population size and exploitation rates, while monitoring the effect of the winter fishery.

Mike Fructel

**Summary of data collected from the experimental winter fisheries conducted on Squeers Lake from 1985 to 1993.**

Year	Rodhrs /ha	Trout Kept	Trout Released	kg /ha	Mean Length (mm)	Exploitation Rate(%)
85	4.7	405	171	0.58	377	4.4
86	14.0	735	205	0.99	361	5.9
87	17.7	1073	252	1.67	367	7.3
88	22.8	1130	226	1.52	353	6.3
89	20.6	1485	346	2.15	358	8.4
90	17.1	1386	477	1.93	368	11.0
91	31.2	1630	462	2.40	364	14.7
92	33.9	1533	392	2.50 <sup>1</sup>	358	16.4
93	37.2	1973	555	2.43	348	23.3

<sup>1</sup> Includes 0.4 kg/ha harvested by gill nets during the summer. Quetico-Mille Lacs FAU activities.

**NEWS FROM NORTHWESTERN ONTARIO**

**Quetico -Mille Lacs Fisheries  
Assesment Unit**

During the 1993/94 fiscal year, the QMLFAU conducted field work on Squeers Lake, Bernadine Lake, and Lac des Mille Lacs. The focus of the field program was on gear standardization efforts being undertaken by the provincial FAU network. Spring Littoral Index Netting (SLIN) was conducted on Squeers Lake during May and August to index the relative abundance of lake trout. A total of 9 lakes across the province were studied by 6 FAU's using this method. Further testing to calibrate population density from mark recapture studies with gill net CUE's will be done in the up coming season. The Near Shore Community Index Netting (NSCIN) program was done on Bernadine Lake and Lac des Mille Lacs. The program was developed by the Lake Simcoe FAU as a means of indexing the relative abundance of nearshore species, and involves random trap netting in August/September. Data from Bernadine Lake was used to calculate population estimates for walleye and pike. The Lac des Mille Lacs program was part of a study, to compare gill net and trap net catches on Lac des Mille Lacs and the French River. The results will be used to develop provincial netting standards for walleye as part of the Percid Synthesis Working Group 1 mandate.

Mike Fructel

**Lake of the Woods Fisheries  
Assessment Unit**

The Lake of the Woods Fisheries Assessment Unit (LWFAU) located in Kenora monitors the Lake of the Woods fishery and ecosystem, providing vital information to support both local and provincial fisheries management. The LWFAU is currently involved in a

number of program initiatives which highlight the value of a trend-thru-time monitoring approach in addressing current fisheries issues.

The LWFAU is just completing an ambitious two-year creel survey project of all angling activity in Ontario waters of Lake of the Woods during both winter and open water seasons. The Unit is committed to conducting these surveys for two consecutive years in every five. Biological and socioeconomic information from these surveys plays an important role in supporting local fisheries initiatives such as the recently announced Conservation Fishing Regulations for Border Waters, Inland Lakes. Recent winter creels have provided new information on the Sabaskong Bay crappie fishery and on the population dynamics of black crappie at the northern limits of their range. Winter angling for black crappies in Sabaskong Bay first began in the early 1960s and has continued to grow in popularity. This species is not native to Lake of the Woods but was introduced during the 1930s on the US side of the lake. We currently estimate that this fishery is the largest of its kind in the province, involving over 58,000 angler-hrs. and a harvest of 27,000 kg during the winter alone.

The Lake of the Woods FAU continues to follow changes in the Shoal Lake fishery which was grossly overfished during the 1960s to late 1970s. Walleye are just beginning to show signs of natural recovery although they have been protected by a fisheries closure since 1983. Interestingly enough, other species such as northern pike, smallmouth bass, and lake whitefish have rebounded more quickly and currently dominate the resident fish community. Concurrent changes in growth, maturity rates, and in prey fish composition have been documented. Long term data from LWFAU studies on this

lake are being summarized to provide insights into walleye community dynamics for the provincial Percid Synthesis.

We are currently working with MNR District staff and Minnesota DNR on a lake sturgeon management plan for the border waters which are shared by the two neighbouring jurisdictions. This builds upon results and recommendations from a three-year joint study on sturgeon in the Rainy River - Lake of the Woods which was completed by the LWFAU and Minnesota DNR in 1990. The working group is examining a number of outstanding issues including allocation, the impact of water levels and flow on spawning success, the role of closed seasons, habitat rehabilitation, fishing quotas, and various size regulations in bolstering sturgeon populations in this area. Lake sturgeon have played an important role in area fisheries in the past and they are capable of recovery based on our recent studies.

Tom Mosindy

**LUMNAR Muskellunge Project**

"What the heck is the LUMNAR muskellunge project?" you ask. Well let me explain! In 1990 and 1991 there was a dramatic increase in the number of muskie anglers flogging the waters of Lac Seul and taking home 40-pound and larger wall hangers. Subsequent media hype in popular American magazines such as the In-Fisherman taunted Lac Seul as "...the last remaining bastion of sport fish on the Canadian Shield." Well this scenario was sounding too much like the Wabigoon Lake experience, so in spring of 1992 the Sioux Lookout District of the Ministry of Natural Resources (MNR) implemented a catch and release regulation for Lac Seul muskellunge. The objec-

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tive of this regulation was to preserve the trophy potential of the lake while a study was conducted to provide baseline information on an otherwise unknown muskellunge population. In the spring of 1993, Lakehead University and the MNR (Sioux Lookout District) began a joint research project to begin studying Lac Seul muskellunge. Thus was born the LUMNAR (Lakehead University and MNR) muskellunge project. The information gained from this project will be used to develop a Lac Seul muskellunge management strategy.

The LUMNAR muskellunge project is a two-year venture during which Lakehead University masters student, Robert Grabowski, will collect muskie growth, population, spawning, and nursery habitat data. Muskies Incorporated and Muskies Canada (Ottawa Chapter) have also provided financial support for this project.

The first of two field seasons was completed in 1993. The field activities consisted of spring trapnetting, summer sampling of young-of-the-year (YOY) and their habitat, electrofishing for juvenile and adult fish, and fall radio-tagging of adult fish. The YOY work resulted in the capture of thirteen (13) fish from eight different locations. YOY were caught during August and ranged from 72 to 107 mm. total length.

A total of eleven (11) juvenile and adult muskie were caught, sampled and in most cases released. Juvenile and adult fish were obtained by trapnetting (4 fish), electrofishing (1 fish), angling (5 fish) and seizure of illegally retained fish (1 fish). Four of the five fish caught by angling (2 male and 2 female) were implanted with a transmitter. The fish were located 24-72 hours later in areas away from their capture sites.

The telemetry work is important as it

will help us locate known spawning sites in the spring of 1994. Lac Seul is a reservoir that generally fluctuates 1.7-2.5 m. annually. Water levels are lowest March 31 and rise throughout the spring, summer, and fall. During the spawning season much of the summer and fall littoral zone is "high and dry" and there are very few vegetated areas that would seem suitable for spawning muskellunge. Consequently, we cannot be certain we located any muskie spawning sites in 1993.

While the results of the 1993 field season are modest, they are important. We learned a great deal about where muskie could be found and the most effective capture techniques. I am confident the lessons learned during the 1993 field season combined with this spring's telemetry work will lead to much greater success in the 1994 field season.

If you would like to know more about this project call Paul MacMahon (Sioux Lookout District Biologist) at 807-737-1140 or Dr. Walter Momot at 807-343-8277.

Paul MacMahon

**Science and Technology  
Development Unit  
Northeast Region**

**Montreal River Walleye**

The Montreal River walleye habitat use study is nearing completion. The study was initiated following a mine tailings spill in the river near Matachewan. The field work has been completed and the information is now being digitized into a GIS for spatial analyses. In conjunction with the habitat study, cooperative research with Dr. Michael Fox of Trent University assessed the patterns of habitat use by young-of-the-year walleye, the impact of the mine tailings spill on the

survival walleye eggs, and the growth, condition and habitat selection of walleye. An additional aspect was to study the differences, if any, between littoral zone fish community ecology of areas impacted by the spill and non-impacted areas.

**Sturgeon Ecology**

Field studies on the ecology of juvenile sturgeon have been completed by Dr. Andrew Rossiter at the University of Guelph, in collaboration with Kapuskasing MNR staff and Northeast Science and Technology. Quantitative sampling of fish and habitat occurred in an attempt to identify those features favoured by sturgeon. This included the invertebrate population to determine prey electivity by sturgeon and other species found in the same areas. A number of sturgeon were kept for energetic analyses. With the field work being completed in the 1993 season, various reports will be available midway through 1994.

Kim Armstrong

**What's the Walleye Unit Up To?**

With the start of the Provincial Walleye Synthesis last year, the Walleye Unit has been very busy and taken a leadership role. Nick Baccante is a member of two working groups, the Harvest Control and the Population and Yield Groups. Peter Colby is on the Steering Committee for the Synthesis, and also a member of the Introductions and Removals Working Group.

We are constantly updating the Walleye Bibliography, which should be ready some time this year. Jim Reckahn, Maple, is co-ordinating this effort, which he hopes to have in a draft form before he retires.

**NEWS FROM NORTHWESTERN ONTARIO**

Nick Baccante is working with representatives from Midwest States to submit a position paper on Special Populations, prepared for the NCD of the AFS, to the Parent Society to adopt as Policy. If adopted, this will help managers scoping out a plan of action when considering the implementation of special fishery regulations.

Recent papers may be of interest are as follows:

Baccante, D. Assessing catch inequality in walleye angling fisheries. Submitted to NAJFM.

Colby, P. J. and H. Lehtonen. Suggested causes for the collapse of zander (*Stizostedion lucioperca*) populations in northern and central Finland through comparisons with North American walleye (*Stizostedion vitreum*). In Preparation.

Colby et al. Walleye rehabilitation guidelines for the Great Lakes area. Prepared for the GLFC. In Preparation.

Nick Baccante

**Northwestern Ontario Chapter of the American Fisheries Society Student Travel Award**

Recent support for more student involvement in the American Fisheries Society at regional and national levels (e.g., Skinner Award, North Central AFS Student Travel Award, Students' Corner in Fisheries) shows the commitment that AFS is making toward involving students as full members of the society. Unfortunately, travel to American Fisheries Society functions can be costly endeavours for students, which can prohibit participation in these functions. Recognizing this, the Northwestern Chapter of the American Fisheries

Society has agreed to contribute \$100.00 annually to help send a student to a professional AFS meeting (national or regional). The student must pursue additional funding from other sources of course, and there are other options available. Walter Momot, John Gunn and Michael Bozek have agreed to criteria for selecting a student to receive allocating the Northwestern Ontario Chapter AFS Student Travel Award. The award presentation will be rotated between Lakehead University and Laurentian University on a yearly basis. Lakehead University will issue the first award in 1994.

Michael Bozek

**Percid Community Synthesis**

The Percid Community Synthesis is a MNR initiative designed to bring together knowledge about fish communities dominated by walleye, and to focus that knowledge on improved management of those communities and their habitats. This is the second such synthesis to be undertaken by MNR; it follows the Lake Trout Community Synthesis begun in 1987. The Percid Community Synthesis was framed around management issues and information needs identified by managers in two scoping sessions. Seven working groups have been charged with examining those information needs and management issues:

1. **Diagnostic Tools And Data/Assessment Standards.** Chaired by Kim Armstrong.
2. **Walleye Population And Yield Characteristics.** Chaired by Sandra Orsatti.
3. **Harvest Controls.** Chaired by Bev Ritchie.
4. **Physical And Chemical Alterations.** Chaired by Barry Corbett.

5. **Walleye Stocking.** Chaired by Steve Kerr.

6. **Introductions And Removals.** Chaired by George Duckworth.

7. **Life History Strategies.** Chaired by Bryan Henderson.

The Synthesis is coordinated by Cheryl Lewis (Aquatic Ecosystems Branch). Additional coordination and support are provided by Mike Jones, Peter Colby and Nigel Lester in Research, Science and Technology Branch; Bob Korver, Pat Dimond and Charlie Olver in Aquatic Ecosystems Branch; and Marion Danials and Trish Chen of the Ontario Fisheries Information System (OFIS). Committee members from Northwestern Ontario who are involved include: Mike Fruetel, Terry Marshall, Nick Baccante, Rob Kushneriuk, Raul MacMahon, Rick Salmon, Evan Armstrong, Peter Colby, Roger Leith, Tom Mosindy, Randy Wepruk, Michael Bozek, Neville Ward, Barry Corbett and Bev Ritchie. The synthesis will generate a variety of products, including technical reports from working groups, policy recommendations, a diagnostic tool for walleye managers and a management support system that will allow managers to simulate the expected consequences of a variety of possible management actions. Questions about the Synthesis should be direct to Cheryl Lewis at (613) 476-3255.

**Fish Habitat Comparative Aquatic Effects Research Program**

The Fish Habitat Comparative Aquatic Effects Fish Habitat Research Program at the Centre for Northern Forest Ecosystem Research has several research projects under way. One project is the development and testing of a GIS data based model that incorporates surficial geologic deposits, base geologic depos-

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its, topography, and level of timber harvesting activity in watersheds to predict the presence or absence of brook trout (*Salvelinus fontinalis*) in streams across the province of Ontario and to assess broad-scale effects of past timber harvesting activity. Pending successful development and full validation, area fish biologists may be able to use the model during the timber management planning (TMP) process in order to apply provincial guidelines in order to protect brook trout. Chris Picard (M.Sc. Lakehead University) is nearing completion of the first phase of model development (i.e., use on first and second order streams in the Thunder Bay area). His research shows that the presence and absence of brook trout in headwater streams across the Thunder Bay Plains and Nipigon Plains ecoregions in Ontario appear to be significantly related to surficial geologic deposits occurring within their watersheds. Further validation of the model will continue.

Another project involves quantifying the effects of sediment on survival-to-emergence of lake trout. Such information is necessary in order to predict consequences of timber management activities in forested watersheds of Northwestern Ontario. Lake trout in small, inland, lakes use shallow, nearshore areas for spawning, thus making them vulnerable to transported sediment from land-use activities. Survival-to-emergence of lake trout has been evaluated two years by placing eggs in thirty-one different test substrate compositions. Five different measures of substrate composition that quantify fine sediment will be tested in developing the best model for predicting survival-to-emergence of lake trout.

Michael Bozek

**NEWS FROM LAKEHEAD UNIVERSITY**

**Research at LU**

Graduate student research projects include:

**Christina Schumann-** The effects of pulp and paper mill effluent on steroid biosynthesis in fathead minnows (*Pimephales promelas*). Sponsored by the Centre for Northern Studies. Supervisors: Dr. W. Momot (biology) and Dr. T. Garver (chemistry).

**Rob Grabowski-** A study of the muskellunge in Lac Seul, Ontario. Supervisor: Dr. W. Momot.

**Chris Picard-** Predicting the distribution of Brook Trout in Northwestern Ontario using a geofisheries model. Supervisors: Dr. W. Momot and Dr. M. Bozek.

**Jim Kristmanson-** The evaluation of methods used to evaluate CPUE as a measure of the walleye population of Bay of Quinte, Lake Ontario. Supervisor: Dr. W. Momot.

**Ken MacIntosh.** Evaluation of factors influencing index gill netting in three proximal lake trout lakes. Supervisor: Dr. M. Bozek.

Honours student research projects:

**Robyn Ryannen-**The distribution of *Orconectes virilis* in the Neebing river. Supervisor: Dr. W. Momot.

**Cheryl Zawacki-**The distribution of *Orconectes rusticus* in the Neebing River. Supervisor: Dr. W. Momot.

**Publications:**

Momot, W. 1994. Redefining the Role of Crayfish in Aquatic Ecosystems. Critical Reviews in Fisheries Science CRC Press. (in Press)

Stephenson, S. A. 1994. Sibley Fishes. Centre for Northern Ecosystem Research. Occasional Papers No. 15 128p.

Stephenson, S. A. and W. T. Momot. Atlas of the Distribution of Fish within the Canadian Tributaries of Lake Superior. (Paper In Review)

Stephenson, S. A. and W. T. Momot. 1994. Isostatic rebound and its effects on fish colonization and distribution in the western Lake Superior basin. Submitted to Can. J. Zool. 74:

Stephenson, S. A. and W. T. Momot. Distribution and Occurrence of the Johnny darter (*Etheostoma nigrum*) in the Western Lake Superior Basin and Southern Manitoba. (Manuscript)

Walter Momot

**Fisheries Curriculum**

Here in Northwestern Ontario, the experiences and needs of resource managers are unlike that in other areas of the province, or country. Lakehead University has an excellent opportunity to provide northern students with specific education and training related to northern resource management issues.

Unfortunately, despite the clear needs of students, Lakehead University may not be offering all of the educational needs required by students to become highly competitive in seeking fisheries-related jobs. For instance, Lakehead University does not offer a basic limnology course in the Department of Biology because it has not provided funding for a professor to fill that slot. Ironically, despite that shortcoming, Lakehead University just began advertising for a professor in the faculty of forestry to teach a fisheries course, while

**NEWS FROM LAKEHEAD UNIVERSITY**

it already has a fisheries professor in the department of biology! Such a course could easily be cross-listed between departments and a limnology professor hired. Clearly the resources of the university can be better spent by better planning, particularly in these times of fiscal constraint.

As a professional fisheries organization, we have both an opportunity and an obligation to work with Lakehead University in developing relevant curriculum and programs that fit the needs of future fisheries resource managers. This includes curriculum in BSc and MSc degrees and a continuing education program. Fortunately, the core of a fisheries program presently exists at Lakehead and with guidance and planning, an excellent fisheries program in the north can be built. I am interested in forming a committee that will review the present program, assess the educational needs of university students heading into the job market and compare that with the present curriculum offered to students attending Lakehead University. The overall committee goal would be to present recommendations for the development of a solid fisheries program at Lakehead University recommended by the American Fisheries Society. These recommendations would be presented directly to the president of the University with the goal of implantation.

Michael Bozek

Salmon ?

The Thunder Bay Salmon Association has requested Lakehead University to perform a second feasibility study in the form of a literature review. The Thunder Bay Salmon Association (TBSA) would like to research the possibility of switching the salmon species it is stocking in Lake Superior. They want to know if they could achieve higher return rates by stocking a different species.

A team of three individuals (Domonique Houstoun, Chris Picard and Valarie Sinderly have accepted the opportunity to work with the Salmon Association for this cause. We are searching the literature for information on Atlantic, chinook and coho salmon. We are searching the literature on the biological and socio-economic impacts of continuing with the chinook salmon program in Thunder Bay or switching to an alternative salmon species.

If you have any information regarding this topic that you feel could be helpful . Please Forward to: Chris Picard, CNFER, Lakehead University Campus, 955 Oliver Road, Thunder Bay, Ontario P7B 5E1 Phone (807)-343-4034 Fax # (807) 343-4001.

Domonique Houstoun

**WISDOM: PERSPECTIVES OF A FISHERY BIOLOGIST  
TOWARD EDUCATION**

**Eggs, Apples and Fish - A  
Biologist's Opinion**

Tim Goeman  
Minnesota Department  
of Natural Resources  
AFS Illinois Chapter Newsletter  
Volume 7, Number 1 May 10 1993.

The fisheries manager watches the irate resort owner drive away from his office. The last two hours have not been pleasant. The resorter wanted walleye stocked in his lake. The manager's best efforts at explaining adequate natural reproduction, exploitation, harvest, year class variability, and recruitment seemed to fall on deaf ears. Finally, the resorter stormed out with a threat of going to the Governor. The manager wondered at the lack of progress fisheries professionals have made in communicating sound fisheries principles to the fishing public.

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The manager's best efforts at explaining adequate natural reproduction, exploitation, harvest, year class variability, and recruitment seemed to fall on deaf ears.

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Meanwhile, in a separate building only 100 yards away, the assistant fisheries manager has begun his fourth hatchery tour of the afternoon for school children. The batteries of eggs always intrigue the wide-eyed youngsters. The egg-take has been good this year. The hatchery is running at near-full capacity. Soon, millions of fry will emerge.

These scenarios are guaranteed to continue until fisheries professionals begin realistically assessing the long-term costs of the way we do business. What has the fisheries manager really com-

municated to his clientele when the most significant public relations effort of the year is the hatchery tour? The message conveyed is 1) that fish come from hatcheries, 2) that habitat degradation is so severe that naturally spawning populations are inadequate or no longer exist, and 3) that the long-term health of the fishery resource depends on hatchery technology. Fisheries professionals are quick to pontificate about the value of habitat protection, watershed management, and preserving genetic integrity of fish stocks. But when was the last time a school group was guided on a tour that emphasized habitat and the importance of this ecological component?

It's so easy to give a hatchery tour. It's convenient for everyone. It always gets rave reviews and it helps give fisheries program some visibility. The long-term costs, however, reach far beyond the mere dollars and cents of a cost/benefit analysis. I am convinced the real cost shows up year later when the child has taken ownership of his parent's resort, a poor year of fishing starts cutting into his profits, and he remembers his third grade field trip of years earlier. Is it really so amazing that the resorter will not believe the fishery manager's reasoning for not stocking fish?

Well-managed hatchery and stocking programs do have a place in fisheries management, but only as they fit within a sound ecological plan that has fully considered the long-term integrity of the resource. Hatchery and stocking programs are not an excuse for habitat loss and poor fisheries management. Such programs merely serve as treatments for symptoms rather than remedies for the real problems.

At least three times during my short fisheries career of about 15 years, Leopold's land ethic has emerged in an effort to give new life to natural resource management. One reason his thoughts are still valid today is that most people are urban dwellers with little practical appreciation for natural and wild processes. The fact is, for most people, eggs come from the dairy case, apples from the produce aisle, and fish from the hatchery. The fisheries manager can change some this thinking, if we change the way we do business.



# AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER

## NEWS FROM CARS

### CARS Update

The Canadian Aquatic Resources Section (CARS) continues to be very active and has defined a very ambitious work schedule for 1994. Activities can be grouped into six major themes.

#### 1. Canadian Office Proposal and Plans

The Director of Development is continuing to work with CARS to outline a program of work for a Canadian Office and to identify possible funding sources in Canada. A proposal for \$50K has been submitted to Environment Canada's Partnership Fund and a response is anticipated soon. The possible sharing of office space and services with the Rawson Academy is no longer an option, as they are closing their Ottawa office. Preliminary discussions of this nature have been held with other organizations in Ottawa and Toronto.

#### 2. Canadian Content in AFS Activities

CARS is examining various ways of increasing the visibility of Canadian issues and concerns within AFS. The Section has organized a symposium on Sustainable Fisheries for the Halifax Annual Meeting, to examine Canadian fisheries management issues through case studies. We are also supporting other symposia, in addition to a Canadian Legislative workshop. Members are urged to submit articles on Canadian issues and concerns to *Fisheries* for publication.

#### 3. Linkages with other Organizations

It is important that we strengthen links between AFS/CARS and government departments, private sector groups, and environmental groups in Canada. CARS has joined the Canadian Environmental Network (CEN) and is now listed in the *Green List* of environmental organizations. Preliminary contacts have been made with: Wildlife Habitat Canada, the Canadian Nature Federation, Ocean Voice, and the National Round Table on the Environment and the Economy.

#### 4. Ongoing Activities

CARS has provided financial support for two recent initiatives: the development of a Watershed Report Card, and a 1st Nations Fisheries Workshop entitled 'Joint Management: Integrating Traditional Values with Contemporary Science' held in Richmond, B.C. Previously initiated activities include development of a Wetlands Policy Statement, a Discussion Paper on the Fisheries Resource Conservation Council, production of a book of fish songs and poems, and a process for developing and reviewing CARS policy and position statements. A review of west coast salmonid issues and a review of Canada's support for international Fisheries and Oceans development activities are new initiatives.

#### 5. AFS Raffle

The estimated profit from the CARS-run raffle in 1993 was \$8500(US). CARS again receives the raffle profits in 1994, and would appreciate help from anyone willing to solicit prizes.

#### 6. Canadian Certification Standards

The results of a survey of fisheries programs at Canadian universities and colleges will soon be written up for publication in *Fisheries*. A brochure on fisheries programs in Canada may also be produced. Development of Canadian certification standards will follow.

**RESULTS OF THE 1993 SURVEY OF CARS AND CANADIAN MEMBERS OF AFS**

Brian Nakashima: Literal Zone,  
Canadian Aquatic Resources Section  
Newsletter, Volume 2 Number 2 Oct. 1993.

**Introduction**

The CARS Membership Committee was charged with the task of surveying attitudes of 207 CARS members and 316 other Canadian members of AFS who have not joined CARS. A questionnaire was mailed in May 1993. The return rate of the questionnaires was 30% (51% for CARS members, 18% for non-CARS Canadian Members of AFS) Of the 56 non-CARS respondents, 28 intend to join CARS, 17 do not, and 6 had no opinion. Seven of the 17 would be interested in joining CARS if a Canadian office were established, if dues were lower, and if CARS were more prominent. One of the main reasons for not joining CARS was that members had joined AFS to be in other Sections or in chapters in which they were more involved.

**Profile of Respondents**

If the responses are representative of CARS members, then half the membership have been AFS members for less than ten years. Ontario has the largest number of CARS members and Quebec and the Territories the least (Fig. 1). This is similar to the Relatively higher number of CARS members from the Prairie provinces (Alberta, Saskatchewan, Manitoba). The dominant professional affiliation is with government (Fig 2) Answers to the question on research discipline indicate that most respondents work in freshwater environments. Similar to AFS membership in general, the marine environment is poorly represented. Considering the strong emphasis in marine fisheries along our coasts, this is an obvious area where CARS must concentrate future membership drives.

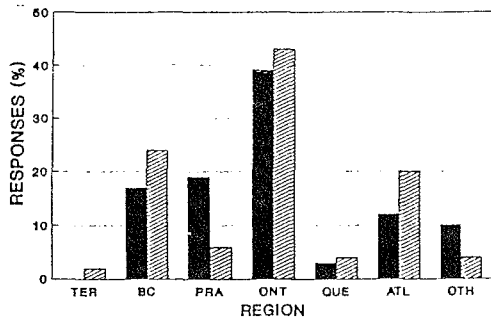


Fig. 1. Regional distribution of CARS (solid) and Non-CARS (hatched) members.

**Goals and Objectives of CARS**

Respondents were asked to rate the importance of five objectives. Both CARS and non-CARS respondents considered the promotion of conservation, development, and wise use of fisheries resources as being the most importance objective, fol-

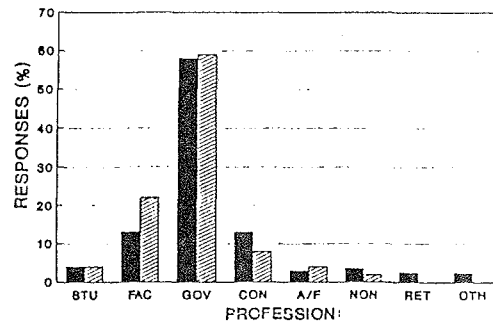


Fig. 2. Professional affiliation of CARS (solid) and non-CARS (hatched) members ( STU-student, FAC-faculty, GOV-government, CON-consultant, A/F-aquaculture/ fishing, NON-non-fisheries., RET-retired, OTH-others).

lowed closely by the dissemination of scientific, technical, and other information about fisheries science and practice. Respondents clearly felt that the priority for dissemination of information should be towards CARS members, and not the general public. This feeling was also evident in the response to questions concerning the initiative to advertise in the Canadian Sportfishing Magazine. Respondents who were against the initiative, and even some who supported it, felt that CARS should concentrate on articles to inform fisheries professionals instead of special interests groups or the general public. Objectives related to the development of fisheries education, received less support, but were considered important by over 50% of respondents. These results are similar to the 1989 survey ( MacDonal and Marshall 1990). CARS members tended to more strongly endorse the three initiatives aimed at strengthening the profession.

The 1989 survey indicated five of seven areas where AFS should have more involvement in Canada ( MacDonal and Marshall 1990). In the 1993 survey, the same five areas were identified as areas CARS should be involved. Respondents indicated that CARS should be involved in commenting on Canadian aquatic environmental issues, influencing policy development and decision making (in the areas of resource management, sport fishing and commercial fishing), and in-

## **AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER**

fluencing native fishing policy and decision-making. In the 1993 survey, respondents clearly indicated that they did not want CARS involved in mediating conflicts between conflicts between fishery resource user groups or in international fishing conflicts.

The 1993 survey asked respondents to determine if CARS should become more involved in eleven initiatives.

### Summary

The survey results indicated that CARS and non-CARS members who responded endorse similar initiatives to those observed in the 1989 survey. Support for CARS initiatives should come from the Parent Society and possibly from corporate sponsors. CARS should meet with other AFS groups or with Canadian societies such as CCFR or CSEB. Members do not support a fee increase at this time but do support a two-tier fee structure for student and regular members. Members are unwilling to increase dues to pay for ads in user-specific publications. The majority of members feel the name of the Parent Society impedes support for initiatives in Canada and endorse further attempts at a name change. The most encouraging aspect of the survey was the 28 of 51 non CARS respondents who indicated they intend to join CARS. Comments by non-CARS respondents also indicate that CARS and what it stands for is relatively unknown to many AFS members. If CARS is unknown within AFS then we will have a much tougher job publishing CARS outside of AFS.

The CARS Membership Committee accumulated the results of this survey.

Editors Note: This is only some highlights of this report  
Please contact Brain Nakashima or the CARS Membership  
Committee Members for further information..

## RESOURCES

### BOOKS

#### Bibliography of Bibliographies

Nick Baccante of the Walleye Research Unit in Thunder Bay has just recently finished compiling a "bibliography of fisheries bibliographies" (and there are more than a couple... simply amazing!). If anyone is interested in receiving a copy, please contact him at (807) 475-1636. Also, if anyone has any additional bibliographies not listed in this document, Nick would like to add additional bibliographies to this listing (and his collection). Please send along an extra copy to him if you have one available.

#### Reviews in Fisheries Science

Edited by Robert R. Stickney,  
University of Washington, Seattle

Reviews in Fisheries Science provides an important forum for the publication of up-to-date reviews historical articles, and original research covering the broad range of subject areas in fisheries science.

These areas include management, aquaculture, taxonomy, behaviour, stock identification, genetics, nutrition and physiology. Issues concerning finfish and aquatic invertebrates prized for their importance, their value as indicators of environmental health, or their natural beauty are addressed.

First issue: March, 1993. Subscription Rate per 4 Issue Volume: Individual, \$79.95; AFS Member, \$39.00; Institutional/Foreign, \$195.00. Available from Lewis Publishers/ CRC Press, Inc., 2000 Corporate Blvd., NW, Boca Raton, FL 33431 (800) 272-7737 or (407) 994-

#### Inland Fisheries Management Textbook

Edited by Christopher Kohler  
and Wayne Hubert

The AFS textbook, Inland Fisheries Management in North America, is available from the AFS office in Bethesda, MD. The 600 page book is a college level and professional text authored by 35 educators and fisheries management professionals. Containing 23 chapters, the book provides a description of the conceptual basis and current management practices being applied to freshwater and anadromous fisheries in North America with a focus on the decision-making process. Both sport and commercial fisheries are discussed: sport fishery management is emphasized.

The cost of the book is \$33.00 for AFS members and \$41.00 for Non-members. Orders can be placed through the AFS office, 5410 Grosvenor Lane, Suite 110, Bethesda MD, 20814-2199 or by calling (301) 897-8616 or FAS (301) 897-8096.

### COMPUTERS

#### SAMCALC: A Computer Program for Fish Culturists

Researchers at the San Marcos National Fish Hatchery and Technology Center in Texas have released a computer program designed to help fish culturists with calculations used in fish transport, chemical treatments length-weight relations, injections, and oxygen solubility. The program, called SAMCALC, also has several statistical modules, including a contingency table, analysis of variance, and experimental design.

The program is written in Quick BA-

SIC 4.0, compiled in Microsoft BASIC 7.1, and is designed to be run on an IBM compatible computer with at least 220 kilobytes of free memory after loading the disk operating system and any other resident programs. For more information (San Marcos Information Leaflet # 92-03), Contact: Joe N. Fries, San Marcos Fish Hatchery and Technology Center, 500 East Mccarty Lane, San Marcos, TX 78666, (512) 353-0011.

#### American Fisheries Society Is Online On Compuserve Are You ?

The American Fisheries Society is online with its own section on the Earth Forum on Compuserve. Join us by taking advantage of a free signup package which includes \$15.00 worth of free connect time. To join call 1-800-848-8199, select voice mail option to speak with an operator, ask for representative 190 to request the free CIS subscription, courtesy of Earth Forum.

Take advantage of the ability to talk to AFS members anywhere at low cost. In your signup package you will get information on a local phone number for access and instructions for signing up. Once you get online type GO EARTH., at any prompt. Joe Reynolds, the system Administrator, will be happy to answer any questions you may have.

# AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER

## CALENDAR

**March 27-30--Second International Conference on Ground Water Ecology.** Atlanta Hilton and Towers. Atlanta, Georgia. Contact Michael C. Fink, American Water Resources Association, 5410 Grosvenor Lane, Suite 220, Bethesda, MD 20814-2192, 301/493-8600.

**April 10-12--Fourth Symposium on Environmental Toxicology and Risk Assessment: Transboundary Issues in Pollution.** Montreal, Quebec. Contact Dorothy Savini, American Society for Testing and Materials, 1916 Race St., Philadelphia, PA 19103-1187, 215/299-2617.

**April 10-15--International Assoc. of Astacology 10th Symposium.** Ramada Grand Hotel. Adelaide, South Australia. Contact Michael C. Geddes, Department of Zoology, The Univ. of Adelaide, GPO Box 498, Adelaide, South Australia 5001, Australia. 011/61-8228-5934; Fax: 011/61-8112-5817

**April 11-15--International Symposium and Workshop on Stock Assessment in Inland Fisheries.** University of Hull, Hull, United Kingdom. Contact I.G. Cowx, University of Hull, International Fisheries Institute, Hull, HU6 7RX, UK.

**April 13-15--New York Natural History Conference III.** New York State Museum, Albany, NY. Contact Lorinda Leonardi, New York State Museum, 3132 Cultural Education Center, Albany, NY 12230. 518/474-5812; Fax: 518/473-8496.

**April 17-20--Symposium on Responses to Changing Multiple-use Demands: New Directions for Water Resources Planning and Management.** Sheraton Music City Hotel. Nashville, Tennessee. Contact Michael C. Fink, American Water Resources Assoc., 5410 Grosvenor Lane, Suite 220, Bethesda, MD 20814-2192. 301/493-8600.

**May 1-4-50th Annual Northeast Fish and Wildlife Conference.** Annual Meeting of the AFS Northeastern Division. Sheraton-Burlington Hotel and Conference Center. Burlington, Vermont. Contact Jon Anderson, Vermont Department of Fish and Wildlife, 111 West St., Essex Junction, VT 05452. 802/878-1564.

**May 16-19-Ecosystem Management Strategies for the Lake Superior Region-A conference applicable to the Great Lakes Region.** University of Minnesota, Continuing Education & Extension, Duluth Minnesota. For more info call: (218)726-6819

**May 19-20- "Wild Trout and Planted Trout: Balancing the Scale" Workshop.** Stouffer Concourse Hotel, Denver, Colorado. Contact Bill Bradshaw, Wyoming Game and Fish Department, 5400 Bishop Blvd., Cheyenne, WY 82006, 307/777-4559.

**May 23-25-Evolution & The Aquatic Ecosystem: Defining Unique Units in Population Conservation.** Doubletree Inn, Monterey, CA. Contact Christine Gan or Cindy Carpanzano (510)-642-7525; Fax (510) 643-5035.

**June 18-23- Annual Meeting of the AFS Western Division.** Flagstaff, Arizona. Contact Randy Bailey, 3050 Meadow Creek Rd., Lincoln, CA 95648. 916/645-1235; Fax 916/645-1316.

**June 26-28-18th Annual Larval Fish Conference. Huntsman Marine Science Centre, St. Andrews.** New Brunswick. Sponsored by the AFS Early Life History Section. Contact Mathew Litvak, Conference Chair. Huntsman Marine Science Centre. St. Andrews. NB E0G 2X0. 506/529-1200; Fax 506/529-1212.

**July 16-21- High Performance Fish-An International Symposium on All Aspects of Fish Physiology.** University of British Columbia, Vancouver, British Columbia. Sponsored by the AFS Physiology Section. Contact Don MacKinlay, Fisheries and Oceans Canada. 555 W. Hastings St. Vancouver, BC V6B 5G3. 604/666-3520.

**August 1994 The 124th AFS Annual Meeting, "Managing Now for the 21st Century: Food, Recreation, Diversity."** Sheraton Hotel and World Trade Centre, Halifax, Nova Scotia. Contact Paul Brouha, AFS, 5410 Grosvenor Lane, Suite 110; Bethesda, MD 20814-2199, 301/897-8616; Fax 301/ 897-8096.

**Sept. 6-9 1994 Trout Unlimited's "1994 International Trout Stream Habitat Improvement Workshop".** Marlborough Inn in Calgary, Alberta, Canada. Contact: Garry Szab, Trout Unlimited Canada, Co-Chairman Ph. (403) 221-8365 Fax (403) 221-8368 or Lorne Fitch, Alberta Fish & Wildlife Service Co-Chairman Ph. (403) 381-5281 Fax (403) 381-5723.

**Nov. 1994-Annual Meeting of the Northwestern Ontario Chapter of the American Fisheries Society-Thunder Bay, Ontario.** Dates and location to be finalized. Contact Mike Fructel (807) 475-1660 (W) or 345-1837 (H)

# AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER

## MINUTES OF THE NORTHWESTERN ONTARIO CHAPTER OF THE AMERICAN FISHERIES SOCIETY BUSINESS MEETING

October 7, 1993

NORTHWESTER MOTEL, THUNDER BAY, ONTARIO

### Members Present:

K. Armstrong, J. Black, M. Bozek, M. Fructel, R. Hill, D. Houstoun, D. Kinsman, S. Mann, T. Marshall, P. MacMahon, W. Momot, C. Picard, D. McLeod, G. Arnett, A. Dextrase, A. Laine, N. Ward, B. Culligan, L. Melnyk-Ferguson, L. Wilson

1. **Call to Order:** A motion was put forth to call to order the meeting of the Northwestern Ontario Chapter of the American Fisheries Society on October 7, 1993 in the conference room at the Norwester Motel, Thunder Bay, Ontario, *by Paul MacMahon, seconded by Jeff Black.*

### 2. Additions to the Agenda:

- a) Advanced Biology and Ecology course
- b) CNN - North American Fisheries series
- c) Discussion of Strategic Planning Committee

*Motion by Terry Marshall, seconded by Walter Momot.*

### 3. Introductions of Guests and Executive Committee:

The executive committee included: Kim Armstrong, President; Dana Kinsman, President-Elect; Leona Wilson, Secretary-Treasurer; Michael Bozek, Newsletter Editor. Guests present were Arnie Laine and Al Dextrase.

4. **Approval of Previous Minutes:** A motion was put forth to approve the minutes from the April 28, 1993 chapter meeting in Thunder Bay, with the following changes: N.C. Division (AFS ) will not fund the entire cost of the student travel to the Midwest conference.

*Motion by Daryl McLeod, seconded by Al Dextrase.*

### 5. President's Remarks:

Kim Armstrong received a request from the N.C. Division (AFS) regarding support for a debate series. As President he agreed to support the debate.

A request was made from CARS. They had a complaint regarding a lack of support from the parent society and their unwillingness to change the name of the society to include the Canadian component.

In order to continue to send the President-Elect to the parent society meetings the chapter will have to generate new funds. It is noted that the membership has been dwindling and that there is an untapped market in North Bay, S.S.M. etc. that should be explored.

Annual meetings are important and speakers should prepare summaries of the speeches so they can be distributed with the newsletter.

Regarding advocacy; it was suggested that AFS will not be advocates to issues unless the entire membership is in favour.

### 6. Parent Society Meeting in Portland, Oregon:

Dana Kinsman, President-Elect, attended the meeting. She extends her thanks to Terry Marshall and Don MacDonald for preparing and updating her prior to the meeting. A proposal was put forward (by CARS) suggesting that an Assistant Executive Director be appointed for Canada to act as an official presence for AFS and to perform similar duties that the Executive Director in the U.S. performs. This was accepted and limited funds would be provided (\$30,000) per year to initiate a part-time position for 2 years. There was some concern with the workload that would be expected for one person. Money is trying to be collected by a Development Committee to establish a full time person and additional staff on a full time basis (\$130,000). The target date is some time in June 1994. Money raised by the CARS raffle went back to the Parent Society with the approval from the Canadian AFS. The advocacy issue was discussed in depth. The next Parent Society meeting is scheduled for August 21-25 in Halifax with the theme 'Managing Now for the 21st Century'.

## **AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER**

### **7 Committee Reports:**

**Membership:** Kim Armstrong reported that the N.W. Ont. Chapter has developed a brochure to aid in the recruit of new members. A copy of the brochure was circulated for review. Al Dextrase suggests putting the Vice-President's address on the brochure as it will remain the same for three years. Terry Marshall suggest that information that will date the brochures be eliminated. A stamp could be used to put in the current President and Sec/Treas. names and addresses. Chris Picard suggested that a brief history of the chapter be included in the brochure so individuals will know what AFS has been a part of and what contribution AFS has previously made.

**8. Treasurer's Report:** Dana Kinsman gave the financial status of the Chapter. The final balance in the chequing account was \$287.76 and the final balance in the savings account is \$4683.09.

*Motion by Al Dextrase and seconded by Gray Arnett.*

### **9. Old Business:**

**Executive Committee Changes:** Our amendment changes were accepted by the parent society. Membership all in favour of the change.

**Student Grant Criteria:** Walter Momot and Michael Bozek are still looking into sending a graduate student to the 1995 parent society meeting. There was also a discussion to develop a Co-op program with MNR/Lakehead University similar to the one with MNR/ Laurentian University. Walter stated that the idea is still alive but he hasn't heard anything lately from the MNR.

ACTION: AFS should write another letter to the MNR.

### **10. Installation of President for September 93 - September 94:**

Kim Armstrong recognized Dana Kinsman as President from President-Elect. Congratulations Dana!!!!

### **11. Elections for President-Elect, Vice-President, Secretary/Treasurer, Newsletter Editor, and Assistant Newsletter Editor:**

**President-Elect:** *Walter Momot nominated Mike Fruetel, seconded by Sue Mann. Move to close nominations made by Paul MacMahon, seconded by Michael Bozek. Mike Fruetel was made President-Elect by default.*

**Vice-President:** *Gray Arnett nominated Paul MacMahon, seconded by Sue Mann. Arnie Laine nominated Domonique Houstoun, seconded by Al Dextrase. Move to close nominations made by Chris Picard, seconded by Kim Armstrong. Paul MacMahon was made Vice-President by a majority.*

**Secretary-Treasurer:** *Arnie Laine nominated Leona Wilson, seconded by Dana Kinsman. Move to close nominations made by Sue Mann, seconded by Kim Armstrong. Leona Wilson was made Secretary-Treasurer by default.*

**Newsletter Editor:** *Dana Kinsman nominated Michael Bozek, seconded by Mike Fruetel. Rachel Hill nominated Domonique Houstoun, seconded by Walter Momot. Move to close nominations was made by Kim Armstrong, seconded by Dana Kinsman. Michael Bozek was made Newsletter Editor by a majority.*

**Assistant Newsletter Editor:** *Rachel Hill nominated Domonique Houstoun, seconded by Arnie Laine. Move to close nominations was made by Paul MacMahon, seconded by Walter Momot. Domonique Houstoun was made Assistant Newsletter Editor.*

**Membership Committee:** Kim Armstrong, Domonique Houstoun, Darryl McLeod

**Fund-raising Committee:** Susan Mann, Rachel Hill

## AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER

### 12. New Business:

a) Mine closures and fish habitat - Arnie Laine proposes a workshop to give area bio's some background on the issues. This would be a co-operative effort between MNR and MOE. It was suggested that AFS sponsor the seminar as a non-government event and perhaps industry could be invited.

ACTION: Executive committee to organize the mine closure workshop.

b) Fluvial geomorphology course - Kim suggested that AFS sponsor this course in order to raise funds for the chapter and to increase the group's profile. There is the potential for workshops outside of the annual meeting. It was also suggested that a co-sponsorship with Lakehead University would lower costs. Instream flow incremental measurement was also suggested as a potential topic.

ACTION: Executive committee to pursue geomorphology course.

c) Advanced biology/ecology course (continuing education) - Is there a need for this type of course similar to the advanced forestry program?

ACTION: Mike, Kim, Walter, Arnie, Terry, and Bev to look into the feasibility of such a program at a reasonable cost.

d) CNN and North American Fisheries - There is a 6 part series being shown on the plight of the N.A. Fisheries on October 25 and also in the October issue of 'Fisheries'.

ACTION: Mike to tape and make available to chapter members.

e) Call for resolutions

Michael Bozek moves that a letter be written to CARS to commend the effort in trying to get a Canadian AFS office. A copy of that letter is also to go to the AFS ex comm and other Canadian chapters.

ACTION: Dana Kinsman to compose and send letter.

f) Strategic Planning Committee

Terry Marshall is the only Canadian member on the long range planning committee. He brought some questions for the chapter that the committee wants answered:

1. What do you see as the 3 top challenges in your job today? - professionalism - rewards in proportion to ability
  - lack of training and continuing education due to \$ and time constraints
  - building support from the public
2. What product/program/service/publication do you really need that you don't have? Regardless of who provides it..
  - GIS - adapting new technology for fisheries applications
  - products to enhance continuing education i.e. videos
  - listing of databases
  - mgmt. tech. book
3. What do you see as AFS's primary strengths?
  - commitment to aquatic resources
  - primary source of info. - journals
  - advanced fisheries professionalism

Weaknesses?

- ineffectiveness in Canada
- attempt to keep everyone under the umbrella - too big



## **AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER**

- problems with generalizations of info. and specialization
- 4. What do you see as the primary role of AFS?
  - to speak for the profession
  - advocacy of fisheries and environmental issues
  - conservation of aquatic resources
  - promote and educate

- 5. What are the major benefits that you receive from AFS? What are some that you would like?
  - publications and workshops
  - information dissemination

- consolidation and focus on Canadian issues
- computerized software

### NEXT ANNUAL MEETING

Theme: aboriginal fisheries issues-stressing joint management

Date: late October or early November

Place: to be announced later

Program: Michael Fruetel

13. Adjournment:

Susan Mann moved to adjourn the meeting, seconded by Domonique Houstoun.

## 1993 NWO AFS Annual Meeting

### Abstracts

#### Walleye Slot-Size Experimental Management Study (Lac Seul)

Paul MacMahon

Ontario Ministry of Natural Resources  
P. O. Box 309, Prince Street  
Sioux Lookout District, Ontario  
P8T 1A6

Lac Seul is a large lake (150,000 ha) that supports a type-15 fish community. The lake has been managed as a high quality walleye and pike fishery. Since the mid-1980's walleye have been over harvested by about 130% of the potential yield. In 1989, a walleye slot-sized regulation was introduced which prohibited anglers to retain fish between 46 and 53 cm total length (slot-size walleye represent about 50% of the population's reproductive potential). The objective of the slot-size regulation was to:

- Direct the walleye harvest to the presumably most abundant pre-slot size fish,
- Improve the long-term angling quality (in terms of catch (CUE) but not necessarily harvest),
- Increase the relative abundance of mature walleye to enhance recruitment, and
- Maintain a stable fish community.

A 10-year experimental management study was initiated in 1988 to evaluate the effectiveness of the walleye slot-size regulation. To date index gill netting and creel survey data were collected in Wapese Bay, Vaughan Lake (both sub-basins of Lac Seul) and in the whole of Lac Seul in the following years.

Creel surveys indicate the slot-size regulation was successful in directing the walleye harvest to pre-slot size fish. Prior to the 1989 slot-size regulation about 60% of the walleye harvested were below slot-size, about 30% were slot-sized fish and 10% were above the slot. In contrast, of walleye harvested between 1989 and 1992 about 85% were below the slot, 3% were slot-sized and 12% were above the slot. Angling quality

measured in CUE improved following introduction of the slot-size regulation. CUE's ranged from 0.96 to 1.77 (mean 1.33, n=6) prior to 1989 while CUE's ranged from 1.23 to 2.51 between 1989 and 1992 (mean=1.72, n=6).

Index netting was conducted during 1988, 1989, and 1990. The size distribution of walleye remained relatively stable during the period. It is too soon for the index netting data to reveal much about the effect the slot-size may have on the size distribution of the walleye population. Walleye 46 to 53 cm in total length had only been protected for 1 full season before 1990. Further, the progeny of the slot-size spawners would be young-of-the-year fish and not vulnerable to index netting gear for another 3 to 4 years. A continuation of this study will be necessary to fully evaluate the effectiveness of this slot-size regulation in managing Lac Seul walleye.

#### Wave Height Prediction on Ontario Lakes

Robert Kushnerick  
Centre for Northern Forest  
Ecosystem Research  
Lakehead University  
955 Oliver Road  
Thunder Bay, Ontario  
P7B 5E1

Wind generated waves determine both the thermal structure of lakes, and the shear velocity of water along the substrate. This scouring action indirectly affects the substrate composition, macrophyte cover, and, if sediments are placed into suspension, the lake optical characteristics. As well, waves are a lurking hazard to recreational boaters, and the onset of waves may trigger feeding episodes among fish. Using empirically derived equations from the U.S. Army Corp of Engineers, hourly weather data from Environment

Canada, and bit-mapped bathymetric maps, a simulation model of wave heights was created. Average wave heights from winds of a specific direction and intensity over a specified time interval could be determined. These data may be applied within predictive models to locate spawning substrates, macrophyte beds, or as boater informational pamphlets.

#### Macrophyte mapping through image analysis of aerial photographs and use of these data in defining a Trophic State Index for lakes of northern Ontario

Terry Marshall  
CNFER, Lakehead University  
955 Oliver Road  
Thunder Bay, Ont.  
P7B 5E1

Distributional maps of aquatic vegetation are commonly produced from aerial photographs using visual interpretive techniques. Image analysis represents an alternative technique through which this process can be automated, using readily available computer hardware and software. The photographs are first digitized, and the system trained to recognize a set of spectral patterns or 'signatures' which are unique for particular macrophyte species or groups. All pixels which comprise the image are then classified on the basis of their conformance with these signature values; this results in a map or GIS overlay of aquatic plant distribution. The boundaries of plant beds can be defined with precision using this method, which contributes to a more accurate estimation of total plant cover and production. Submersed species proved most difficult to classify, especially in shallow lakes where highly reflective substrates confounded the signature selection process. In contrast, classification to the species level is feasible for some

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floating-leaved and emergent forms, and the further partitioning into density classes may also be possible. However, at this level of detail, spectral signatures may not be transportable over space or time. A detriment to the approach is the steep learning curve associated with image analysis software. Nevertheless, once versed in its operation, vegetation maps can often be produced with more accuracy and efficiency than with the visual interpretive method.

This information was used to develop a Trophic State Index (TSI) for lakes of northern Ontario. The relationships between Secchi disk transparency, total phosphorus, and chlorophyll *a* concentration were examined for lakes of this region and found to differ substantially from those reported for many continental and global lake sets, with less chlorophyll *a* and more light attenuation per unit of phosphorus. TSI equations of Carlson (1977) were modified to reflect these differences, which would allow their application across lakes of the Laurentian Precambrian Shield. Water colour greatly influenced Secchi disk depth in these lakes, and a corrective term was added to the equations to account for this. The abundance of aquatic macrophytes explained a significant amount of the variance in the chlorophyll - phosphorus relationship. The addition of a macrophyte term, in addition to water colour, also improved the Secchi depth - chlorophyll *a* relationship. The superior performance of these TSI models was confirmed using total standing stock of benthos as a response variable.

**Endangered Suckers and "Trash" Brook Trout: Different Geographic Perspectives on Fish Community Value.**

Michael A. Bozek  
Centre for Northern Forest  
Ecosystem Research  
Lakehead University  
955 Oliver Road  
Thunder Bay, Ontario  
P7E 3E6

Unique assemblages of fish endemic to various geographic regions of North America can have widely different regional acceptance among people and often have significant local value and appeal. Transfers of species beyond their native watersheds has blurred some of these historical regional differences and have widened the gap between views of healthy endemic fish communities and introduced (i.e., stocked) fish communities. Nowhere is this more apparent than in the Colorado River which has one of the highest degrees of endemism in fish among North American Rivers. However, from headwaters to the mouth, species transfers have greatly affected the biodiversity of that system at tremendous cost to the native fauna and transformed this system into one dominated by introduced fish. In eastern North America, brook trout are cherished but have become problematic in some of their introduced habitats in Colorado River (and in other systems in western North America) headwater streams. Brook trout may develop high density, small-sized populations and displace native cutthroat trout that can grow larger and are more well-adapted to these environments. Other native species, such as razorback suckers, bonytail chubs, humpback chubs, and Colorado River squawfish, were historically used by native communities and commercially fished by European settlers. These fish and many others are now rare and endangered due to habi-

tat modifications and species interactions with introduced centrachids, ictalurids, percids, clupeids, and others. Using the example of the changes and problems in the Colorado River, management agencies in Canada need to develop long-range policies dealing with species introductions, as they have with protecting fish habitat before more problems develop.

**Detour Road Lakes Walleye Slot Limit Study**

Kim Armstrong  
OMNR, Box 227  
Cochrane, ONT  
P0L 1C0

Over-exploitation of newly accessed lakes has been a concern for some time. Fisheries in this situation typically provide excellent angling quality in the early years. Soon a decline in quality is evident which then persists for many years as relatively low angling pressure can keep it suppressed. In 1981, studies were initiated in a series of lakes along the proposed route of a new gold mine access road. In an attempt to avoid the typical scenario a protected slot limit for walleye was proposed and implemented in 1984 just after completion of road construction. Three lakes received a 43-60 cm protected slot limit for walleye, while two other lakes in the set remained as reference lakes. The study lakes are found on the Claybelt north of Cochrane and are relatively small, 150-360 ha, containing a simple fish community of walleye, northern pike, lake whitefish, and yellow perch.

Trap netting exercises were performed every other year beginning in 1981 and ending in 1991. A road side creel survey was completed in 1983 then annual roving creel surveys were completed from 1984 to 1991. Five criteria were established to evaluate success of the

**1993 NWO AFS Annual Meeting Abstracts ( Cont'd)**

program. It was hypothesised that a protected slot limit would: sustain angling yields; maintain catch rates; maintain healthy population structure; keep healthy population numbers; and increase the proportion of trophy sized fish (i.e. greater than 60 cm).

While not all analyses are complete, it does not appear that the protected slot size limit was successful in achieving a positive result with respect to the evaluation criteria. Repeated recruitment failure appears to have been the overriding factor, masking any impact the slot limit may have had.

**AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER**

**MEMBERSHIP INFORMATION**

The Northwestern Ontario Chapter of the American Fisheries Society is a Scientific and professional, non-profit organization composed of persons interested in the conservation and enhancement of fisheries resources. The purpose of the Chapter is to : advance the conservation, development and wise use of fisheries resources: gather and disseminate information on fisheries science and management: and promote and evaluate the educational, scientific, and technical aspects of the fisheries profession.

Our Chapter has been active for over 10 years, drawing together fisheries workers with a common purpose. The Chapter publishes two newsletters annually, and hosts an annual business meeting and conference.

Inquires about the chapter and its activities should be directed to: Dana Kinsman, MNR, Leslie Frost Natural Resource Centre, R. R. #2, Mindon, Ontario K0M 2K0.

Please mail the following membership application with dues enclosed to:

Kim Armstrong  
Membership Committee Chair  
AFS Northwestern Ontario Chapter  
C/O Ontario Ministry of Natural Resources  
P O. Box 227  
Cochrane, Ontario  
P0L 1C0

Membership dues are \$10.00 annually (\$5.00 for AFS Parent Society Members)

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**NWO-AFS Membership Application Form**

**NAME** \_\_\_\_\_  
**ADDRESS** \_\_\_\_\_  
**CITY/TOWN** \_\_\_\_\_  
**POSTAL CODE** \_\_\_\_\_ **PHONE** \_\_\_\_\_  
**AFFILIATION** \_\_\_\_\_

# **AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER**

## **Northwestern Ontario Chapter Opinion Survey on Parent Society Membership**

Name: (optional)

Occupation: (Please fill in)

1. Are you a Parent Society Member?
2. If yes, do you intend on continuing your Membership with the Parent Society in the future ?
3. If not, why?
4. If not, do you intend on joining the Parent Society in the future?
5. Do you know the benefits of being a Parent Society Member?
6. Have you been a Parent Society Member in the Past?
7. What would you like to see accomplished by the AFS in Canada?

Thank you for your input. Results will be summarized in the next newsletter. Please return to D. Houstoun, 32 N. Empress Ave., Thunder Bay , Ontario P7A 6B9 by May 14, 1994.