

**American Fisheries  
Society**



**Northwestern Ontario  
Chapter**

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## AMERICAN FISHERIES SOCIETY

## \*\*\* NORTHWESTERN ONTARIO CHAPTER \*\*\*

President: Terry Marshall, Box 2089, MNR, Thunder Bay.  
 President-Elect: Chris Brousseau, Box 5000, MNR, Thunder Bay.  
 Past-President: Dr. Walter Momot, Lakehead University, Thunder Bay.  
 Secretary/Treasurer: Dominic Baccante, Box 5000, MNR, Thunder Bay.

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## ANNOUNCEMENTS

### 1. Chapter Meetings

Our next Chapter meeting will take place towards the end of November. Announcements will be sent out specifying time, place, and the topic of the meeting.

### 2. North Central Division - AFS

Meets in St. Paul, Minnesota. This year marks the 25th anniversary of the Division. It is part of the 42nd Midwest Fish and Wildlife Conference to be held at the St. Paul Radisson December 7-10, 1980. There are special sessions planned on Boreal Lake Management and Ecology, Management of Winterkill lakes, Urban Fish Management and Water Uses, Allocation and Management. Perhaps a "Car and Hotel Room Pool" can be formed for those members wishing to attend the Conference. This should be discussed at the next Chapter meeting.

## PROGRAM UPDATES

### 1. Ministry of Natural Resources

#### New Fisheries Assessment Unit for NWO

The Quetico-Lac des Mille Lacs Fisheries Assessment Unit got under way recently with biologist Phil Ryan (AFS member) hired to coordinate the Unit's activities. The new Unit will be responsible for 14 "type" lakes between Thunder Bay and Fort Frances. Major fish species in the lakes consist of various combinations of lake trout, walleye, northern pike, whitefish, yellow perch and small-mouth bass.

The basic role of the Assessment Unit is to monitor and assess the response of fish communities to various stresses and levels of stress. The primary components to be monitored are the users of the resource, the fish community, the habitat, and the resource harvest. It is intended that these components be monitored on a long-term basis to develop trend-through-time data which is necessary for effective management.



## 2. *Ministry of the Environment*

As part of the Acid Precipitation in Ontario Study (A.P.I.O.S.), staff from the Ministry of the Environment in Thunder Bay are conducting a regional lake sampling program to determine lakes which may be sensitive to acid precipitation. Study lakes from the Atikokan, Thunder Bay and Kenora/Vermilion Bay areas were selected to be representative of the major bedrock types.

Composite water samples from each lake are routinely analysed for selected chemical parameters at the M.O.E. Regional Laboratory, in Thunder Bay.

Preliminary findings indicate that of 180 lakes sampled, approximately 70% are sensitive as evidenced by total inflection point alkalinities of 15mg/l or less.

Bulk precipitation monitoring sites have been established at Dorion, Ear Falls, Lac Lac Croix, Kawene, Pickle Lake and Nakina, while an event precipitation sampler will be installed at a site located east of Atikokan.

## 3. *Lakehead University*

### Biology Department Activities

The biology department conducts research in three broad areas of aquatic biology: fish parasitology, fish production and water pollution. This past summer we initiated a study on Henderson Lake in cooperation with the Walleye Research Unit of the Ministry of Natural Resources and funded through a subvention grant from the Department of Fisheries and Oceans.

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Mr. Chris Nunan, in conjunction with this study, is conducting an M.Sc. research project entitled "The response of walleye, *Stizostedion v. vitreum*, to overharvest in Henderson Lake, Ontario. Ms. D. Cavner, funded by a NSERC scholarship, is conducting an M.Sc. research project entitled "Annual production of *Hyallolela azteca* in a senescent marl lake. Dr. Momot is continuing his study on the long-term response of crayfish to overharvest. Ms. Karen Roche is a new graduate student who will initiate a project in fish toxicology. Mr. Geoff Black is doing a study with Dr. Lankester on the parasite fauna of the deepwater sculpin.

Two students have completed their M.Sc. degrees this past year. Their topics were:

G. A. Black. 1980. Migration and development of *Cystidicola* spp. in their definitive hosts and the population biology of *C. cristivomeri* White, 1941 in *Salvelinus* spp.  
Supervised by M. Lankester

T. E. Mosindy. 1980. The ecology of northern pike, *Esox lucius*, in Savanne Lake, Ontario  
Supervised by W. Momot.

*Recent Publications in Fisheries (1979-1980).*

Lankester, M.W. and J.D. Smith. 1980. Host specificity and distribution of the swim-bladder nematodes, *Cytidicola farionis* and *C. cristivomeri* in salmonid fishes of Ontario. *Can. J. Zool.* 58(7): 1298-1305.

Eddy, S.F. and M.W. Lankester. 1978. Feeding and migratory habits of Arctic char, *Salvelinus alpinus*, indicated by the presence of the swimbladder nematode *Cystidicola cristivomeri* White. *Can. J. Zool.* 56(1): 1488-1491.

Gowing, H. and W.T. Momot. 1979. Impact of brook trout, *Salvelinus fontinalis*, predation on the crayfish, *Orconectis virilis*, in three Michigan Lakes. *J. Fish. Res. Board Can.* 36(10): 1191-1196.

Smith, A.D., D.E. Orr and G.W. Ozburn. 1979. Toxicity and bioaccumulation of Trichlorobenzene to flagfish and rainbow trout. *Ont. Min. Environment Publ.* 70077-003-21. 31 p.

Smith, A.D., T.J. Griffith, D.E. Orr and G.W. Ozburn. 1980. Assimilation efficiency and clearance of Trichlorobenzenes in rainbow trout. *ASTM Spec. Tech. Publ.* 707: 216-223.

## FEATURE ARTICLES

### Review of 1979 Chapter Activities

The year 1979 saw the formation of the Northwestern Ontario Chapter of the American Fisheries Society. This Newsletter, being the first one, offers a good opportunity to briefly review last year's lectures and events.

It all began on Thursday, February 27, 1979, at 8:00 PM in the Main Building of Lakehead University, where Dr. Henry Regier, University of Toronto, was on hand to discuss recent rehabilitation studies being carried out on the Great Lakes. At the same time, Dick Ryder and Walter Momot (Ministry of Natural Resources, Fisheries Research Scientist and Lakehead University, Biology Professor, respectively), urged attendants to join and form the Chapter. A follow-up meeting was held on March 27 to appoint committee members and discuss various business, followed by a public lecture by Jack Vallentyne (Environment Canada, Canadian Centre for Inland Waters, Burlington, Ont.) on the Great Lakes ecosystem. Dr. Vallentyne explained effectively the concept of carrying capacity of a biological system by forcing into himself a good quantity of a popular beverage. (No. Not Coke!)

The next public lecture featured Mr. Bob Hartley, Chairman of the Lakehead Region Conservation Authority, who highlighted the major changes which would occur on the Neebing and McIntyre Rivers as a result of a project to control local floods. This lecture generated particular interest to the members, since it involves our immediate area. (See article on river diversion).

Dr. Momot provided the entertainment for the next lecture on December 4, 1979, by speaking on "The influence of basin morphometry and allochthonous input on crayfish production". Dr. Momot condensed results from many years of work into a one hour lecture, and captured everybody's interest. Following the lecture, there was a tour of the biology department's wet labs.

The first lecture of 1980 was held on January 24th where Dr. Doug Dodge (Ministry of Natural Resources, Fisheries Branch, Toronto) spoke on "Stream Habitat Rehabilitation". The lecture was especially informative with regard to Provincial and Federal Water acts, and it was further enhanced by a colorful slide show.

On February 20, John Parks (Ministry of the Environment, Water Scientist) provided some insights and background to the provincial water quality monitoring program, using local projects as examples.

On the 29th of the same month, a well-known production biologist, Dr. Thomas Waters (University of Minnesota at St. Paul) provided detailed figures on trout and amphipod production in Valley Creek, Minnesota. Dr. Waters hopes to make regular trips to the Superior North Shore to look at benthic production in our streams.

The "popular" topic of acid rain was the subject of the next public lecture held on March 26, 1980. This time there were two speakers, Dr. Diane Malley (Freshwater Institute, Winnipeg), and Norman Yan (Ministry of the Environment, Limnology and Toxicity Section, Toronto). Dr. Malley provided experimental data generated

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at the Experimental Lakes Area, a federally run, large scale project in Northwestern Ontario. Mr. Yan complimented the first speaker by describing actual changes taking place in the Sudbury area as a result of acid rain.

A successful first year of operation was brought to a close on May 15, 1980. Along with the end-of-the-year business, future plans were also discussed in a friendly and "sober" atmosphere.

Nick Baccante

NWO Chapter Encourages Study on River Diversion

The Neebing and McIntyre Rivers flow through the heart of the City of Thunder Bay. Over the years urban and industrial development have taken their toll of fish habitat, but the two rivers still provide excellent rainbow trout fisheries. Citizen concerns over periodic nuisance flooding and potential major flood damages led to the Lakehead Region Conservation Authority proposing a diversion and channelization scheme which would result in a new common river mouth for the two rivers.

Following a presentation of the biological consequences of the Neebing-McIntyre Diversion by L.R.C.A. Chairman, Bob Hartley, in October, 1979, it was the general consensus of the Executive Committee of the Chapter that the baseline project environmental impact data were inadequate and the resulting conclusions, speculative. To voice our concerns, the Chapter wrote a letter to the Lakehead Region Conservation Authority, City Council, and the news media. The letter pointed out that there should be an extensive monitoring program to determine the actual effects on the aquatic community during, and after the diversion. In addition, if it was found that the diversion had a significant effect on the fishery, then a comprehensive rehabilitation program should be considered.

As a result of our input, we are pleased to say that the Conservation Authority in conjunction with the Ontario Ministry of Natural Resources carried out a population study of young-of-the-year (YOY) rainbow trout in the two rivers this past summer. The Cloud River was also surveyed as a control study to account for natural fluctuations in the YOY population. This study will continue over a long-term and thus reveal trends in the YOY rainbow trout population. This will enable fisheries biologists to determine at least to some extent, the impact, if any, that the Neebing-McIntyre Diversion will have on the rainbow trout fisheries.

Chris Brousseau



Salary Survey for Fisheries Biologists

For all of you who are not members of the Parent Society, and do not subscribe to *FISHERIES*, the May-June 1980 issue of this informative magazine carried the results of an interesting salaries survey. The report, written by Carl Sullivan (AFS Executive Director) and Toni Brome (AFS Secretary), summarized the results of two surveys undertaken in 1977 and 1979, showing differences in fisheries biologist salaries and other employment data among states and provinces.

Canadian salaries were not adjusted. All salaries for the U.S. were adjusted according to cost-of-living expenses, although this method is not entirely accurate. The educational index for both the U.S. and Canada was developed by giving a value of 2 for B.Sc. degrees, 3 for M.Sc.'s, and 4 for Ph.D.'s and then averaging them. The survey results have been reproduced on page 7.

All the data reported here are accurate as of June 30, 1979.

Anyway you look at it, fisheries biologists still earn less than many professionals, such as engineers, chemists, etc., and in many cases they also earn less than trade and industrial workers.

Nick Baccante

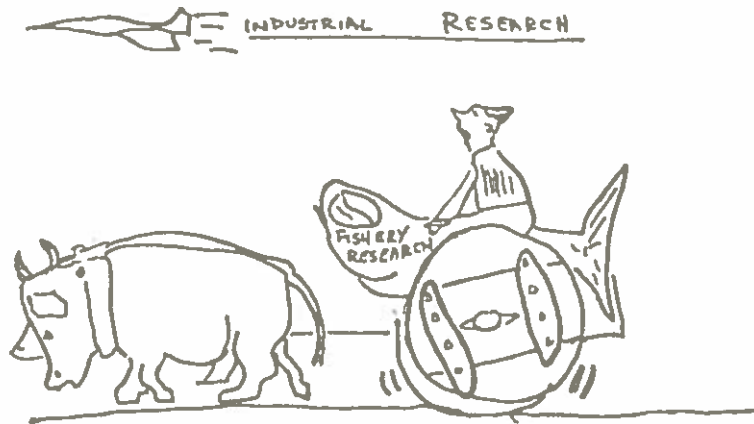


Table 1 Starting and top salaries as of June 30, 1979, for State fisheries biologists

State	Starting salary	Top salary
Alabama	\$14,698	\$27,500*
Alaska	21,576	52,152
Arizona	13,500	26,998
Arkansas	9,282	24,544
California	11,844	31,296
Colorado	13,500	30,500*
Connecticut	11,355	23,172
Delaware	10,500	26,613
Florida	10,105	28,500*
Georgia	10,944	32,796
Hawaii	10,344	27,500*
Idaho	13,416	32,500*
Illinois	13,740	31,140
Indiana	12,500	26,104
Iowa	11,466	25,500*
Kansas	10,644	24,816
Kentucky	10,344	30,216
Louisiana	11,652	24,828
Maine	9,506	32,500*
Maryland	9,651	33,076
Massachusetts	11,755	25,500*
Michigan	14,073	35,058
Minnesota	12,173	33,500*
Mississippi	12,192	23,500*
Missouri	12,500	34,860
Montana	15,206	26,084
Nebraska	10,644	23,640
Nevada	11,059	23,596
New Hampshire	11,206	24,044
New Jersey	11,933	28,935
New Mexico	11,496	25,068
New York	11,250	33,500*
North Carolina	12,276	27,060
North Dakota	11,928	27,324
Ohio	11,544	23,500*
Oklahoma	10,638	25,049
Oregon	14,148	34,104
Pennsylvania	12,147	26,500*
Rhode Island	11,742	24,500*
South Carolina	12,331	35,500*
South Dakota	13,318	29,121
Tennessee	11,520	25,896
Texas	12,816	29,200
Utah	11,412	32,500*
Vermont	12,500	22,100
Virginia	10,512	32,500*
Washington	11,892	33,500*
West Virginia	10,788	28,620
Wisconsin	13,465	37,243
Wyoming	11,500	34,860
Averages	\$12,054	\$29,172

\*Approximate

Table 2 Average fisheries biologist salaries (in ascending order of 1979 figures) paid by the States as of June 30, 1979 and 1977

1979 Rank	State	Average adjusted salary 1979	Average adjusted salary 1977	1977 Rank	Cost of living adjustment factor used*
50	Hawaii	\$11,655	\$11,250	49	1.43
49	Massachusetts	12,489	12,358	39	1.23
48	Nebraska	12,668	11,506	47	1.09
47	Arkansas	12,823	10,685	50	1.00
46	Kansas	12,844	11,557	45	1.09
45	New Hampshire	13,057	11,403	48	1.14
44	Connecticut	13,201	12,904	35	1.18
43	Florida	13,339	12,268	40	1.04
42	Rhode Island	13,462	11,535	46	1.18
41	Vermont	13,596	12,368	38	1.14
40	Ohio	13,966	13,156	34	1.07
39	South Dakota	14,015	11,883	43	1.10
38	Nevada	14,566	13,787	27	1.13
37	Mississippi	14,583	12,500	37	1.00
36	Indiana	15,239	13,325	33	1.10
35	Maine	15,309	12,170	41	1.16
34	Kentucky	15,325	15,200	11	1.04
33	New Jersey	15,339	13,559	29	1.11
32	Virginia	15,540	11,623	44	1.08
31	Iowa	15,840	13,558	30	1.09
30	North Dakota	15,848	13,712	28	1.12
29	Minnesota	15,860	15,131	12	1.12
28	Georgia	15,957	13,889	26	1.04
27	Wisconsin	15,998	14,486	21	1.10
26	Wyoming	16,039	12,865	36	1.10
25	Montana	16,053	15,000	15	1.10
24	South Carolina	16,057	14,563	20	1.03
23	Washington	16,122	13,441	32	1.19
22	Missouri	16,355	14,926	17	1.07
21	Texas	16,453	16,939	4	1.00
20	North Carolina	16,509	15,071	13	1.06
19	West Virginia	16,559	13,447	31	1.05
18	Illinois	16,622	14,795	18	1.10
17	New York	16,674	14,318	22	1.12
16	Louisiana	16,698	14,582	19	1.00
15	Arizona	16,702	15,463	9	1.08
14	Pennsylvania	16,720	15,215	10	1.11
13	Tennessee	16,914	15,063	14	1.01
12	Oklahoma	17,033	12,016	42	1.08
11	Oregon	17,242	16,697	5	1.17
10	Alaska	17,322	15,842	6	1.79
9	Delaware	17,791	16,469	8	1.08
8	California	17,900	17,048	3	1.15
7	Idaho	18,007	14,129	24	1.10
6	Maryland	18,024	14,969	16	1.04
5	New Mexico	18,963	13,942	25	1.04
4	Utah	19,015	14,262	23	1.08
3	Alabama	19,235	16,214	7	1.02
2	Michigan	20,138	17,212	2	1.11
1	Colorado	21,527	18,695	1	1.09

\*Adjusted average salaries were calculated by dividing average salaries by the appropriate adjustment factor

Table 3 Fisheries biologists employed by the States, and the educational index. States listed in order of number of biologists employed in 1979

State	Number of degreed fisheries biologists		Educational index	
	1979	1977	1979	1977
Alaska	276	165	2.24	2.26
California	250	253	2.31	2.30
Washington	138	99	2.35	2.31
Oregon	126	140	2.27	2.69
Florida	107	89	2.24	2.32
Texas	107	*	2.15	*
Wisconsin	102**	82	2.53	2.20
New York	77	71	2.42	2.35
South Carolina	77**	62	2.66	2.71
Michigan	75	86	2.60	2.41
Louisiana	62	49	2.42	2.46
Wyoming	59	55	2.34	2.38
Maine	54	47	2.44	2.36
Massachusetts	54	40	2.20	2.33
Minnesota	48	43	2.13	2.09
Missouri	47	34	3.00	3.00
Virginia	46	44	2.67	2.63
Iowa	45	36	2.27	2.67
North Carolina	45	40	2.45	2.44
Maryland	44	36	2.27	2.25
Georgia	42	42	2.57	2.38
Montana	38	25	2.95	2.92
Illinois	37	31	2.43	2.32
Ohio	36	26	2.17	2.19
Kansas	33	33	2.24	2.24
Arkansas	30	27	2.20	2.15
Colorado	28	41	2.75	2.44
Utah	28**	31	2.69	2.77
Idaho	26	24	2.65	2.58
Nebraska	26	24	2.23	2.29
Alabama	25	26	2.76	2.77
Nevada	25	38	2.00	2.00
Indiana	19	19	2.32	2.32
New Jersey	19	20	2.21	2.35
Pennsylvania	19	18	2.59	2.50
West Virginia	17	21	2.94	2.86
Kentucky	16	13	2.50	2.38
Hawaii	15	16	2.27	2.25
Oklahoma	15	22	2.67	2.41
Arizona	13	10	2.33	2.40
New Hampshire	13	8	2.48	2.38
Rhode Island	13	9	2.62	2.78
Connecticut	12	11	2.58	2.55
Mississippi	12	11	2.58	2.40
South Dakota	12	14	2.50	2.57
Tennessee	12	14	2.92	2.93
New Mexico	9	10	2.33	2.20
North Dakota	8	7	2.63	2.57
Delaware	6	6	2.50	2.50
Vermont	6	5	2.17	2.20

\*Information not available

\*\*New data: Wisconsin 116, South Carolina 87, Utah 39

Table 3 Fisheries biologist salary and employment data for selected U.S. Government agencies. (Salaries as of June 30, 1979, not adjusted for cost-of-living differences.)

Agency	Average salary		Number of degreed fisheries biologists		Educational index	
	1979	1977	1979	1977	1979	1977
National Marine Fisheries Service	\$26,733	\$24,142	523	513	2.60	2.58
Soil Conservation Service	23,771	*	96	*	2.47	*
Tennessee Valley Authority	23,555	19,630	55	50	2.84	2.90
Fish and Wildlife Service	21,956	19,158	657	597	2.55	2.46
Bureau of Land Management	20,383	18,824	47	37	2.43	2.62
Environmental Protection Agency	20,125	*	8	*	2.75	*
Forest Service	18,505	19,888	98	49	2.53	2.61
Water and Power Resources Service (formerly Bureau of Reclamation)	17,700	*	5	*	3.00	*

\*Information not available

Table 4. Average fisheries biologist salary (in Canadian dollars) and employment data for Canadian provinces. (Salaries not adjusted for cost-of-living differences.)

Province	Average salary		Number of degreed fisheries biologists		Educational index	
	1979	1977	1979	1977	1979	1977
New Brunswick	\$19,714	\$15,071	9	7	2.00	2.14
Saskatchewan	21,206	20,929	17	14	2.71	2.93
Nova Scotia	21,500	18,500	1	1	3.00	3.00
British Columbia	22,985	23,395	32	23	2.66	2.78
Manitoba	22,917	19,833	12	15	2.75	2.80
Newfoundland	24,009	21,583	53	36	3.11	3.20
Prince Edward Island	23,000	16,500	2	5	2.50	2.40
Alberta	23,773	20,682	22	22	2.73	2.82
Northwest Territories	28,500	24,500	9	1	3.11	3.00
Ontario	*	20,070	*	127	*	*
Quebec	*	22,500	*	6	*	2.83

\*Information not available

### NORTH CENTRAL DIVISION NEWS

The North Central Division is celebrating its 25th anniversary at the Midwest Conference in St. Paul. Special commemorative activities planned are:

1. Anniversary luncheon at annual meeting - address by Shelby D. Gerking (founding father).
2. Special history research and written by Mercer Patriarche (Michigan).
3. Anniversary article in *FISHERIES*.
4. Special souvenir for North Central Division members.
5. Special recognition in Midwest program brochure.
6. Special Newsletter cover.

Division Officers for 1980-81 are:

Arden Trandahl (South Dakota) - President  
Herb Lawler (Manitoba) - President-Elect  
Don Duerre (North Dakota) - Secretary/Treasurer

### PARENT SOCIETY NEWS

The 110th AFS Annual Meeting was held in Louisville, Kentucky on September 22-24, 1980, with four of our members attending the event. A highlight of the meeting saw the formation of two new sections - The Exotic Fish Section and the Fisheries Management Section. In addition, a new fisheries journal entitled the "North American Journal of Fisheries Management" was authorized. The new journal will be published quarterly beginning in 1980 at a subscription rate of \$10.00 per year.

Dick Ryder was installed as AFS President for 1980-81 at the Business Meeting on September 23rd. At this time, Dick announced the creation of two new Sessional Committees of particular interest to members of our Chapter - The Acid Precipitation Committee and the Native Peoples' Fisheries Committee. (We will say more of these in a later Newsletter.)

We are very fortunate to have an AFS President as a Chapter member. Dick has assured us that when possible, he will attend all Chapter meetings.

Other AFS Officers for 1980-81 are:

President-Elect - John Magnuson  
First Vice-President - William M. Lewis  
Second Vice-President - Janice S. Hughes

JOB OPENINGS/VACANCIES

Job ads have been released for two Senior Technicians for the Quetico-Lac des Milles Lacs Assessment Unit in Thunder Bay. Contact the personnel officer in any Ministry of Natural Resources office for details.

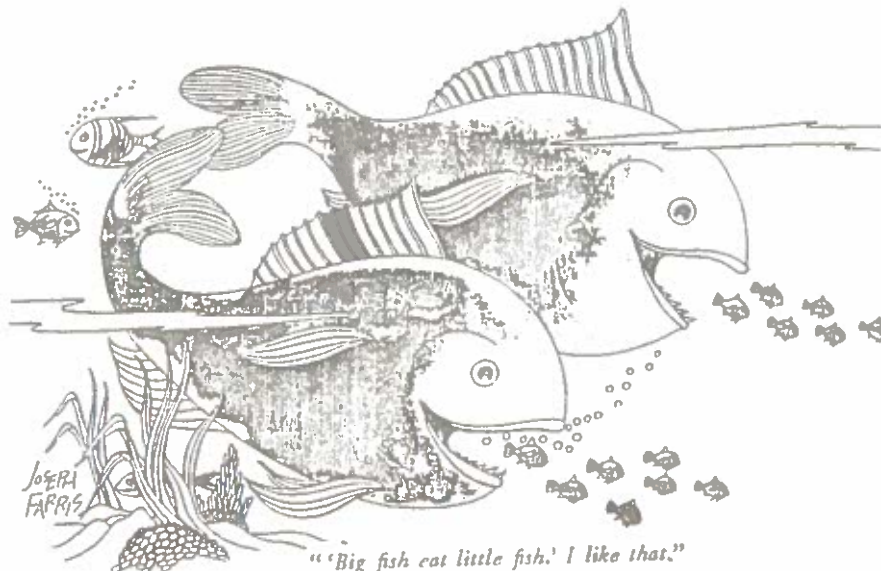
NEW APPOINTMENTS/PERSONNEL CHANGES

James A. Murphy, M.Sc. Lakehead University, has accepted a contract biologist position with the Northwestern Region of the Ministry of the Environment beginning October 20, 1980.

Phil Ryan has recently been appointed unit biologist for the Quetico-Lac des Milles Lacs Assessment Unit based out of the Ministry of Natural Resources District Office in Thunder Bay.

ANNOUNCEMENT OF UPCOMING MEETINGS

1. The Hazardous Chemical Safety Seminar and Workshop  
Nov. 20-21, 1980 - Winnipeg.  
(For more information call Ms. Carol Morris, J. T. Baker Chemical Co. - (201) 454-2500.
2. Midwest Fish and Wildlife Conference  
Dec. 7-10, 1980 - St. Paul, Minnesota.
3. The Crustacean Society/Canadian Society of Zoologists  
The American Society of Zoologists and the American Society of Limnology & Oceanography are holding a joint meeting in Seattle, Washington in December.
4. Canadian Conference for Fisheries Research  
Jan. 5, 6, and 7, 1981 - Montreal
5. 3rd Annual Canadian Chapter, S.I.L. Meeting  
Jan. 7, 1981 - Montreal



LETTERS, COMMENTS, EDITORIALS

Contributors to this issue of the Newsletter were:

Walter Momot - Lakehead University  
Dorothy Cavner - Lakehead University  
Nick Baccante - Ministry of Natural Resources  
Paul Harvey - Ministry of Natural Resources  
Jake Vander Wal - Ministry of the Environment  
Chris Brousseau - Ministry of Natural Resources  
Terry Marshall - Ministry of Natural Resources  
Barb Pike - Ministry of Natural Resources

THIS IS YOUR NEWSLETTER!!! If you have comments, suggestions, complaints, articles, cartoons, let us know. Send them to any of the above. Let us know what you like or dislike about any aspect of this enterprise.

NOTE: Packages emitting strange noises, odors, or radiation will be discarded!!! Unopened!!!

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