36th Annual

NORTHEAST FISH AND WILDLIFE CONFERENCE

FISHERIES ABSTRACTS

Host

New York Department of Environmental Conservation

April 27—30, 1980

The Nevele Country Club

Ellenville, New York

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sites, distribution patterns and occurrence in New Jersey coastal habitats are discussed for each important species.

3. Larval Fish Dynamics: The Ichthyoplankton Community off the Northeast Coast of the United States in 1978. Cynthia Jones, National Marine Fisheries Service, Northeast Fisheries Center, Narragansett, Rhode Island, and Wallace Smith, National Marine Fisheries Service, Northeast Fisheries Center, Sandy Hook.

Little is known of interrelationships among species of larval fish in the ocean. Recent studies have suggested that predator-prey relationships have a significant impact on species composition of commercially important fish stocks. The role of early development stages of fish, with respect to species shifts in abundance, has been given increasing attention. As part of the National Marine Fisheries Service MARMAP (Marine Resources Monitoring and Prediction) program, studies of larval fish dynamics are being studied in an effort to understand better the process of recruitment. Initial analysis of the interrelationships of the larval fish community is presented for the 1978 ichthyoplankton surveys covering the area from the Bay of Fundy to Cape Hatteras.

4. Current Exploitation of the Redfish, Sebastes marinus (L.), in the Gulf of Maine with Special Reference to the 1971 Year Class. Ralph K. Mayo, National Marine Fisheries Service, Northeast Fisheries Center, Woods Hole, Massachusetts.

The redfish, Sebastes marinus (L.), fishery of the Gulf of Maine-Georges Bank region (ICNAF Subarea 5) is reviewed and an assessment of the current status of the stock is presented. Total annual commercial landings of approximately 13,000 to 14,000 metric tons in 1977 and 1978 were considerably below the peak annual yield of about 60,000 metric tons, but are close to the estimated MSY as determined by general production model analyses. However, the level of effort expended during recent years is two to three times higher than the level corresponding to estimated MSY. Standardized effort calculations indicate that real effort has substantially increased since the middle 1960s due, in part, to a major shift in the size composition of the redfish fleet towards larger more efficient vessels.

Von Bertalanffy growth parameters are estimated and utilized in a yield per recruit analysis. Assuming a natural instantaneous mortality rate (M) of 0.10, maximum yield per recruit is achieved at a value of F in excess of 1.00 at an age at recruitment of between nine and 10 years. The $F_{0.1}$ levels, however, are generally in the range of 0.10 to 0.20, depending on the age at recruitment.

Recruitment to the redfish fishery in this region has been extremely variable over the last two decades, and the fishery is becoming increasingly dependent on one or two dominant year classes. Between 1964 and 1978, only the 1971 year class appeared in the population in significant quantities. This year class began to account for a considerable portion of the landings in 1976 and 1977 and, by 1978, had become fully recruited to the fishery at an age when these fish were just beginning to mature.

Changes in stream flow alter the depth and velocity, and in some cases the amount of light. Measurements of the physical habitat permit assessment of how changes in flow may affect trout habitat. In one stream, proposed increases in summer flow would be detrimental, while relatively low winter flow would benefit juvenile and adult trout but be detrimental to the young.

2. Engineering and Biological Problems in Instream Flow Studies in the Susquehanna River. Donald R. Jackson, Susquehanna River Basin Commission, Harrisburg, Pennsylvania.

The Susquehanna River Basin Commission has been working with state and Federal fishery agencies to develop methodology leading to basinwide instream flow criteria. These are intended to address two problems: (1) the level of flow at which future consumptive users will be required to provide makeup water; (2) the level of flow that should be considered as an instream flow demand in the same fashion that out-of-stream diversions are considered. This instream flow demand would be incorporated in Commission management programs.

In developing this study, a number of problems at the interface between hydraulic engineering and biology must be addressed including: (1) incremental effect of consumptive losses on fish population; (2) allowable population recovery time following low flow events; (3) procedures for generalizing site specific information to obtain basinwide information; (4) selection of locations for site intensive study; (5) incorporation of depth, velocity, temperature and water quality parameters in the analysis; (6) habitat modeling versus population modeling and (7) decision criteria. Proposals for treating these problems are presented. A simulation model which uses incremental methodology developed by the Cooperative Instream Flow Service Group (IFG) will be discussed.

3. The New York Reservoir Releases Program - The Delaware River Experience. J. Douglas Sheppard, Bureau of Environmental Protection, New York State Department of Environmental Conservation, Albany, New York.

Within the Catskill Mountains lie a number of streams renowned internationally for their trout fisheries...Rondout, Esopus, Schoharie, Neversink, Willowemoc, Beaver Kill and Delaware. With construction of reservoirs in the Catskills for water supplies and power, several of these streams fell on hard times. In 1977, an experimental three-year reservoir releases program was initiated in the Upper Delaware River Basin by the New York Department of Environmental Conservation in conjunction with New York City, the Delaware River Basin Commission and the Delaware River Master. The program objective was to develop an optimal series of continuous reservoir releases from three New York City reservoirs (Cannonsville, Pepacton and Neversink) to restore and enhance downstream aquatic ecosystems for designated distances without adversely impacting the water supply of the City of New York or the fisheries in the respective reservoirs. During the experimental period, daily reservoir discharges have been increased as follows:

inputs for stage-specific habitat reduction or enlargement. Essentially, the model is one of space limitation.

Included in the dynamics are spawning success, fry survival, juvenile development, and adult survival and fecundity.

Sample simulations demonstrate differential sensitivities to both timing and magnitude of low flow episodes. Efficacy of the model is limited by necessary simplifications and absence of critical data.

POWER PLANT EFFECTS

Chairman: W. Leigh Bridges, Director, Division of Marine Fisheries, Department of Fisheries, Wildlife and Recreational Vehicles, Boston, Massachusetts

1. Fish Egg and Larval Entrainment Mortalities at a Fossil Fuel Generating Station. C. Cooper Sheehan and W. Stephen Collings, Massachusetts Division of Marine Fisheries, Sandwich, Massachusetts.

Sampling techniques utilized to obtain egg and larval entrainment mortalities at a fossil fuel generating plant located on the Cape Cod Canal, Massachusetts are reviewed. Total egg and larval entrainment mortalities for eleven and two species respectively are discussed. Effect of mechanical damage on entrainment mortality of Ammodytes spp. and Myoxocephalus spp. larvae will be discussed and compared with studies conducted at Millstone Point Nuclear Power Plant.

2. Anomalous Variability in Fish Impingement Patterns and its Ecological Significance at the Indian Point Electric Generating Site. Deborah N. Wallace, New York State Power Authority, New York, New York.

Daily fish impingement collections have been sorted and counted at the Indian Point Electric Generating Site since 1972. Collection data for the 1974-1987 period were analyzed for seasonal patterns in total collection, in fish collected per unit volume flow and in collection diversity. Striking qualitative and quantitative differences were identified in impingement patterns between one-plant and two-plant operation as follows: (1) two-plant operation enhanced seasonal and month-to-month variability of total collection and collection rate per unit volume flow, (2) species diversity, especially of peak collections, during two-plant operation was markedly reduced, (3) winter collection rate during one-plant operation depended more on fish abundance than on flow rate whereas volume flow rate was nearly the sole determinant of winter collection rate during two-plant operation.

Turbulence, size and location of the intake zone of influence are discussed as contributors to the difference between one-plant and two-plant operation. Behavioral implications of these contributors are also discussed in relation to extreme patchiness of habitat utilization, seasonality of utilization of particular habitat, turbulence and disorientation and species differences in reaction to turbulence.

inversely with all three factors, and that the low levels of abundance of tomcod during the period 1973 to 1978 could be attributed to the higher than average early spring water temperatures and the steady increase in power plant withdrawal flows during this period.

5. The Equivalent Adults Model: A General Model for Fisheries Impact Analysis
Thomas J. Horst, Stone and Webster Engineering Corporation, Boston, Massachusetts.

In 1975, I published a general model for the assessment of power station exploitation on fisheries resources. This is simple in mathematical structure, has minimal data requirements and has become known as the "equivalent adult model." The model has seen extensive use and misuse in the field of impact assessment and has been discussed in a number of publications.

The purpose of this paper is to examine the model assumptions which are all testable. I will present a protocol for use of the model. Emphasis will focus on its strengths and limitations for the assessment problem. The paper addresses comments, pro and con, which have been published concerning the utility of the model for impact assessment. I will also discuss situations in which the model should not be used.

The model enables the translation of exploitation on early life stages, eggs and larvae, into adult stock. Once the loss is in terms of adult fish, the magnitude of loss can be compared with exploitation experience on the stock.

These observations indicate that the chronic problem of year class failure may not be due to a lack of successful settlement of the planktonic larvae but rather, to heavy losses to predators following settlement. In addition, the occurrence of "gregarious setting" is indicated, similar to that observed in European and American oysters.

3. Creel Census of the Summer Flounder, Paralichthys dentatus, Sportfishery in Great Bay, New Jersey. Patrick J. Festa, Bureau of Fisheries, New York State Department of Environmental Conservation, Albany, New York

Catch per effort statistics are provided for the sportfishery on summer flounder, Paralichthys dentatus (Linnaeus) in Great Bay, New Jersey, for the period 1967 through 1977. Seasonal averages ranged from a low of 0.26 summer flounder per completed angler trip in 1970 to a high of 3.81 summer flounder per trip in 1975. Sources of variability of in-season catch rates are discussed. Dependence of the fishery on two-year-old fish is documented. Estimates of harvest by the sportfishery range from 34 to 45 percent for the newly recruited age group. Total harvest estimates for the summer months ranged from 7,811 individuals weighing 13.8 thousand pounds in 1970 to 169,095 individuals weighing 113.6 thousand pounds in 1975. Length-frequency distributions are provided for the ten study years. The occurrence of other species in the catch of interviewed anglers is reported. Management actions should be aimed at reducing harvest of two-year-old fish.

4. The First Massachusetts Inshore Trawl Survey - Arnold B. Howe, Donald B. MacIsaac, Bruce T. Estrella, and Frank J. Germano, Jr., Division of Marine Fisheries, Massachusetts Department of Fisheries, Wildlife and Recreational Vehicles, Sandwich, Massachusetts.

The Massachusetts Division of Marine Fisheries began a bottom trawl survey program in 1978 to monitor relative abundance of fish stocks in state territorial waters. Research trawl gear is specified. Daytime sampling was undertaken by a chartered commercial fishing vessel according to modified random stratified sampling design and standardized survey procedures. Ninety-five stations were completed in three-week spring and autumn cruises (sampling intensity of 1 station/22 sq.n.mi.). Relative abundance indices (stratified mean catch in kilograms and number per tow) served to describe seasonal abundance and distribution of 27 predominant finfish and shellfish species. Greatest biomass generally occurred in depths less than 37 m. Inshore strata sets south and east of Cape Cod exhibited more seasonal variation in catch parameters than those of the inner Gulf of Maine. The importance of the inshore study area as a nursery ground for valuable commercial and recreational species was quantitatively described. Prominent information reported includes the observation of large numbers of 0-group Atlantic herring, late-spawned Atlantic cod and longfin squid, prerecruit data, and for a number of species, tentative indications of differential distribution of age-groups, seasonal variation in availability to trawl gear, and changes in fish distribution apparently related to seasonal change in bottom water temperature.

7. The Status of Marine Fishery Resources of the Northeastern United States. M. M. McBride and B.E. Brown, National Marine Fisheries Service, Woods Hole Laboratory, Woods Hole, Massachusetts.

During the last 25 years, the fishery resource of the waters off the coast of the Northeastern United States have undergone large increases in fishing mortality. During this time, total resource abundance declined and the annual harvest exceeded the total productivity. Since 1975, the trend has been reversed, overall fishing effort has declined, the stocks have begun to recover and are now approaching levels that existed prior to entry of the distant water fleets. This paper reviews the recent history and current status of fisheries for 28 commercially or otherwise important species in the Northwest Atlantic plus total finfish and squid. Current estimates of biological conditions that reflect production potential i.e., growth, age range in fished population, geographical distribution and stock breakdown, recruitment, maturity, fishing mortality, abundance, maximum sustainable yield and by-catch, are presented in table form. A brief synopsis of the conditions surrounding the fishery for each species is also presented.

FRESHWATER FISHERIES MANAGEMENT

Chairman: A. Bruce Pyle, Chief, Bureau of Fisheries, New Jersey Department of Environmental Protection, Trenton, New Jersey

1. Classification by Resource Category: Pennsylvania's Approach to Trout Management in the 1980s. Delano R. Graff and Richard A. Snyder, Division of Fisheries, Pennsylvania Fish Commission, Bellefonte, Pennsylvania

Trout fishing is an important part of sportfishing in Pennsylvania. Recent surveys indicate that as many as 70 percent of the state's licensed anglers fish for trout at least once a year. The Fish Commission has never had sufficient staff to compile a basic inventory of trout waters. In 1976, a statewide inventory of trout waters was initiated.

The resource inventory of trout waters includes evaluation of social, physical, chemical, and biological characteristics. All staff involved in the resource inventory have been subjected to in-service training and provided with a methods manual to assure that all data are collected in a uniform manner. All the information is then subjected to cluster analysis (CLUSTAN) to identify fishery resource classes or categories based on similarities in key characteristics. Management strategies will be developed for resource categories. The result should be a resource/resource-user oriented trout management policy which will have a factual basis for management through stocking or with no stocking and for appropriate application of special regulations.

New York State residents represented 96.4 percent of the anglers interviewed. Resident anglers originated from Jefferson (31.3 percent), Onondaga (21.4 percent), and Monroe (22.0 percent) Counties. Most anglers sought smallmouth bass (52.0 percent) and yellow perch (13.8 percent). A large percentage (19.2) indicated no species preference, while 3 percent actively sought trout and/or salmon.

A total of 11 species were creeled with smallmouth bass, yellow perch, and rock bass totalling 98.1 percent of the creel. Total harvest was estimated at 394,525 fish with 183,323 smallmouth bass, 107,753 yellow perch, and 95,688 rock bass creeled. Harvest was 56 percent of the total catch (702,502 fish).

Despite restrictive fishing regulations on smallmouth bass (minimum size 305 mm - five fish daily creel limit), catch rates (no./hr.) of legal bass averaged 0.474 in the boat fishery with overall catches as high as 1.432 fish/hour. Catch rates of smallmouth bass were similar to those reported in a 1966 creel census of this fishery, indicating the stability and continued high quality of the bass sport fishery within the eastern basin.

5. The New York City Urban Fishing Program. Robert E. Lange, Bureau of Fisheries, New York State Department of Environmental Conservation, Stony Brook, Long Island, New York.

As part of an experimental effort to improve recreational fishing opportunities for New York's urban residents, the Department of Environmental Conservation, in cooperation with Sea Grant, conducted a prototype urban fishing program in New York City during 1978 and 1979. The principal objectives of the program were to stimulate fishing activity among urban residents, and to demonstrate the need for such a program in recreational planning at local levels. Suitable urban waters were identified, and fish from these waters were screened for toxic substances. Major activities included intensive stocking of bullheads purchased with Dingell-Johnson funds in six ponds within New York City parks, and a series of educational programs, such as workshops for recreation leaders, and fishing clinics. An angler survey was carried out to estimate fishing pressure generated by the program and to characterize the angling population. A special effort was made to assess angler perceptions of the environmental quality of the ponds, since this may be a major limiting factor in angler participation. In 1978, an estimated 8,384 angler trips were generated, while in 1979 this figure dropped to 7,341. This decrease may have been related to a 33 percent reduction in the 1979 stockings due to increased costs. The future of the program will depend upon securing local funding.

6. Effects of Stocking Hatchery Brown Trout on a Wild Brown Trout Population. Robert A. Bachman, Mark Hersh, Greg Pierce and Robert L. Butler, Biology Department, The Pennsylvania State University, University Park, Pennsylvania.

Hatchery-reared brown trout were stocked in a central Pennsylvania limestone stream containing a population of free-ranging, unconstrained wild brown trout. The subsequent behavior of hatchery and wild trout was observed and recorded from blinds constructed on towers along the stream.

ANADROMOUS FISHERIES

Chairman: Steven Rideout, Project Leader, Connecticut River Anadromous Fish Restoration Program, U.S. Fish and Wildlife Service, Hadley, Massachusetts

1. Age and Growth of Larval and Juvenile American Shad (Alosa sapidissima) Utilizing Daily Growth Increments of Otoliths. Robert P. Jacobs and Victor A. Crecco, Marine Region, Connecticut Department of Environmental Protection, Waterford, Connecticut.

Ages of preserved larval and juvenile Connecticut River shad (Alosa sapidissima) were determined by counting daily growth rings on the sagitta. Two sagittae were removed from each larva with a fine dissecting needle, placed in immersion oil, and read under a binocular microscope at 1000X. Juvenile otoliths were removed with a fine forceps, etched for one minute in one percent HCL, and allowed to clear for 3-5 days in immersion oil before being aged at 430X. Multiple counts were made on each pair of otoliths by 1-3 biologists until a consensus was attained. Agreement was generally high, especially for larvae and small juveniles. Age in days was determined assuming that the first ring had been formed at hatching.

Larval growth in length (mm) was well approximated by the Gompertz growth function ($L_t = L_{oe}^{k(1-e^{-at})}$). Age-length data for Connecticut River larvae closely mimicked those of known-age larvae (Maxfield, 1954). Growth in length was nearly exponential during the first two weeks. then decayed slowly with increasing age. A Gompertz function was also found to furnish an adequate representation of juvenile growth in length. Age of juveniles greater than 75 mm (fork length) became more variable, presumably due to one or more of the following reasons: 1) differential immigration of juveniles to the estuary whereupon a new, accelerated growth phase may have occurred due to alterations in zooplankton type and abundance, 2) immigration of juveniles from above the Holyoke dam that may have had a different growth rate than those spawned below, 3) inherent difficulties in deciphering the daily rings of older fish. Results of our study suggest that age determination of larvae and juveniles using otoliths can serve a useful purpose in growth, mortality, and stock-recruitment studies.

2. Simulation Studies on the Effects of Year Class Fluctuations on Yield with Reference to American Shad. Victor A. Crecco, Marine Region, Connecticut Department of Environmental Protection, Waterford, Connecticut.

A simulation model depicting population dynamics of American shad (Alosa sapidissima) runs in the Connecticut River is developed. It is an age-structured, stochastic model with abundance, growth, mortality and catchability employed as input parameters whose values are calibrated to published data, 1966-1977. Virgin recruitment is represented by a three-parameter spawner-recruit function with the constants (a, Pr, y) treated

The Chesapeake and Delaware (C&D) Canal has been reported to be one of the most important striped bass spawning grounds in the world. Although substantial spawning occurs in the Canal, recent studies indicate deepening of the Canal to sea level in 1934 may have had deleterious effects on the upper Chesapeake Bay population. The origin of the striped bass which utilize the Canal is unknown but upper Chesapeake Bay and to a lesser extent Delaware Bay are the probable sources.

Ichthyoplankton and hydrological studies conducted during 1973-1977 and reevaluation of previous investigations indicate most of the eggs and larvae present in the Canal are rapidly transported to the Delaware River where survival is apparently much lower than in upper Chesapeake Bay. Flushing action results from the Canal's net eastward flow. Enlargement of the Canal to a 35-foot controlling depth, completed in 1975, increased the eastward flow and may have increased losses to the Delaware River as indicated by the eastward displacement of the area of maximum egg abundance. Further modifications to the Canal such as the proposed enlargement to a 55-foot controlling depth will undoubtedly increase the flushing rate to the Delaware and decrease the reproductive potential of upper Chesapeake Bay striped bass.

5. Comparative Survival and Yield of Atlantic Salmon Progeny from Wild Hatchery Return and Artificially Reconditioned Kelt Parents. R. W. Gray, Freshwater and Anadromous Fish Division, Department of Fisheries and Oceans, Halifax, Nova Scotia.

Studies on reconditioning Atlantic salmon kelts in captivity have been carried out since 1971 to develop a technique to recycle scarce salmon broodstock strains required for salmon enhancement projects in the Maritime Region. Results of these preliminary experiments have been reported by others. This paper presents data on the survival of different juvenile stages of reconditioned kelt progeny in comparison to wild and hatchery-return progeny reared in two federal hatcheries in Nova Scotia. Results of tagging experiments designed to assess the contribution of reconditioned kelt, wild and hatchery return progeny released as smolts to commercial fisheries in Greenland and Canada, sport fisheries and the spawning escapement are presented. Comparative data on survival and contribution level are evaluated to determine the effectiveness of reconditioning Atlantic salmon kelts in captivity to provide additional broodstock where specific genetic broodstrains are required for salmon restoration but are not available in the wild.

6. Distribution and Some Life History Aspects of the Shortnose Sturgeon (Acipenser brevirostrum) in the Upper Hudson River Estuary. Anthony W. Pekovitch, Minnesota Power and Light Company, Duluth, Minnesota.

Distribution and spawning activity of the endangered shortnose sturgeon in the upper Hudson River estuary were investigated during the spring of 1979. An integrated program was jointly developed by William Dovel and Hazleton Environmental Sciences after it was determined that both would be studying the shortnose sturgeon during 1979. This cooperative venture was in innovative approach which consolidated a riverwide research effort (Dovel) and a

TUESDAY AFTERNOON SESSIONS

MARINE FISHERIES

Chairman: Charles F. Cole, Department of Forestry and Wildlife Management, University of Massachusetts, Amherst, Massachusetts

1. Environmental Acceptability of Artificial Fishing Reefs Constructed of Coal-Fired Power Plant Waste Material: Bioassay Results.
Christopher F. Smith, New York Sea Grant Extension Program, Riverhead, Long Island, New York and Peter M. J. Woodhead, Marine Sciences Research Center, State University of New York, Stony Brook, Long Island, New York.

Utilization of America's coal reserves is one strategy that might curtail import of foreign oil. Coal used as fuel for steam electric generating stations may be particularly effective as an oil substitute in the Northeastern United States. Use of coal for this purpose has caused concern about methods for disposing of large volumes of waste material that will result from the coal combustion process. This waste material will be composed primarily of fly ash and scrubber sludge.

In recent years an interdisciplinary program has been investigating the environmental acceptability for ocean disposal of stabilized blocks of waste fly ash and scrubber sludge. Bioassay evaluations of the toxicity of stabilized block material have been conducted in the field and in the laboratory on a variety of organisms. Fish eggs and larvae, sand shrimp and unicellular algae have been exposed to a series of concentrations of elutriates of a number of stabilized coal waste mixtures. Studies in the field have included colonization assessments and monitoring of metal uptake of attached organisms. Bioassay results to date indicate no toxic effect of stabilized coal waste material.

2. Eighty Miles of Fishery Resources Saved in Long Island's Coastal Waters: An EIS Success Story. Stephen H. Taub and Noreen K. Clough, Office of Environmental Coordination, U.S. Fish and Wildlife Service, Washington, D.C.

A feature of the 1979 regulations to implement the National Environmental Policy Act is the President's Council on Environmental Quality (CEQ) Referral process. This allows Executive Departments -- prohibited from bringing litigation against one another -- a means of resolution of environmental issues through third party (CEQ) arbitration. Referrals to the Council are made for major, national issues with significant environmental consequences, after all other direct agency-to-agency attempts have failed.

This paper explains the CEQ referral process and summarizes the progress of a referral by the Interior Department of the Department of Army's beach erosion control and hurricane protection project on Long Island, New York.

conducted according to the Pennsylvania Department of Environmental Resources, Bureau of Forestry's "Best Management Practices" designed to control nonpoint pollution, including stream temperature increases. A second watershed has received a clearcut-harvest-herbicide treatment designed to determine the maximum response of the water resources to devegetation. The third watershed is used as an undisturbed control.

The clearcut-herbicide treatment caused average daily maximum temperatures to increase from 3°F during March (41° to 44°F) and November (47°F to 50°F) to 19°F (60° to 79°F) during June. Although maximum temperature increases were highest during the summer months, increases in April (9°F, 48° to 57°F) and September (12°F, 56° to 68°F) were measured. Maximum daily stream temperatures above 85°F have been measured frequently; temperatures above 70°F for 12 or more hours per day were common. Diurnal temperature fluctuations increased 20°F when compared with the control watershed. Maximum temperature increases were measured from the headwaters to the mouth of the watershed. Average daily minimum temperatures showed a variable response to treatment decreasing by 6°F in November and increasing by 5°F during June. In contrast to the clearcut-herbicide treatment, average daily maximum stream temperatures on the commercial clearcut watershed increased from 1 to 4°F and never exceeded 73°F. Diurnal temperature fluctuations increased slightly from 5°F on the control to 8°F on the treated watershed. The potential effects of the extreme increases in the temperature regime of the streams on the clearcut-herbicided watershed are appreciable. The maximum temperatures of this stream frequently exceed lethal limits of brook trout and other cold-water organisms. The slight increase in temperature of the stream draining the commercial clearcut does not represent a threat to the aquatic community and may, in fact, be beneficial to the aquatic organisms by stimulating an increase in primary production.

2. Associations of Fish Species in the Delaware, Susquehanna and Ohio River Drainages of Pennsylvania. Richard E. Strauss, Department of Biology, the Pennsylvania State University, University Park, Pennsylvania.

Pairwise co-occurrences of 61 species of fish at 1213 collection localities were evaluated for each of the three major river basins of Pennsylvania. Statistically significant non-random patterns of association were identified by cluster analysis in conjunction with a randomization test. Several species pairs maintain patterns of strong association within different drainages regardless of the presence of absence of associated species. Congruence of some other species pairs varies among drainages and may be affected by co-occurrences of associated species. At least two significantly associated groups of fishes were found within each drainage, one of headwater species and one of moderate-gradient stream fishes. The species compositions of the two types of associations vary somewhat among drainages due to species replacement. Although statistical significance may not correspond to biological significance, groups of significantly associated species represent reasonable entities within which to further examine ecological relationships.

The Lamar Fish Cultural Development Center is directed toward developing and testing intensive culture techniques for American shad and coolwater species of fish such as walleye. American shad restoration to the large rivers of the Eastern United States, especially the Susquehanna River, is a high priority of the U.S. Fish and Wildlife Service. Because of the walleye's importance as a food and sport fish, intensive rearing techniques could have great application in providing fish for an economical and efficient production program.

It has been found that American shad fry start well on live food and convert easily to dry food at about one inch in size when reared under intensive condition. Later, however, chronic mortalities can plague production efforts. At this time the cause(s) of the mortalities are not known. Tests directed at determining hauling techniques for the highly sensitive fingerling shad have shown that they can be loaded, transported and unloaded without injury but specialized equipment and techniques are necessary.

Using intensive culture techniques, newly hatched walleye have been reared successfully (near 50 percent survival) for the first three weeks of age. This compares favorably with earlier efforts that were less than half as successful. Converting walleye fry from live to artificial food has been completed with even more encouraging results. In 1978, the highest test survival of intensively reared fish during conversion was 12 percent. The highest survival for this year was nearly 62 percent. The results of this work reveal that walleye can be raised successfully using techniques similar to those employed for trout and salmon.

3. Private Hatchery Certification in the Northeastern United States: Regulation and Compliance. John H. Schachte, Jr., Bureau of Fisheries, New York State Department of Environmental Conservation, Rome, New York.

Many states including some in the Northeast, are presently enacting stringent fish disease import laws. Presently, few states, including New York, provide a private fish hatchery disease certification as a matter of policy. Those doing interstate business have relied upon personnel of the U.S. Fish and Wildlife Service to provide this service. This agency has recently stated its intent to withdraw from private hatchery certification. The net result of this action will force the private fish farmer in this region of the country into non-compliance with regulations governing interstate sale and transport of fish.

Alternatives may become available in the future including regional fish disease certification provided by private or academic laboratories, regional certification by the Fish and Wildlife Service through formal cooperative agreements with the states and, finally, state fish disease certifications. Some or all of these alternatives may be on a fee basis. This paper describes these options in detail and the advantages and disadvantages of each.

April 30, 1980

WEDNESDAY MORNING SESSIONS

MARINE FISHERIES

Chairman: Richard Schaeffer, Chief, State-Federal Division, National Marine Fisheries Service, Washington, D.C.

1. A Comparative Study of the Size and Age Composition and Growth Rate of Weakfish Populations in Delaware Bay. Richard J. Seagraves, College of Marine Studies, University of Delaware, Newark, Delaware.

Annual U. S. Fishery Statistics compiling the total Atlantic Coast commercial catch of weakfish, C. regalis, indicate that the relative abundance of this species has varied widely since the years following World War II. Similarly the abundance of this species in Delaware Bay, upon which a substantial recreational fishery depends, has shown marked fluctuations. Recent trends in this fishery indicate an increase in numbers of fish taken per angler and size of individual fish.

A comparative study of size and age composition and growth rate of weakfish in Delaware Bay was undertaken to identify changes in growth parameters of the population in this area for three separate periods: 1952-56; 1966-71; and 1979. Observed increases in the number of age classes present and growth rate of all age groups in 1979 support the postulate that several subgroups, each with different growth rates, exist for C. regalis along its range. Growth curves for each period in Delaware Bay and other geographical locations are compared.

2. A Preliminary Stock Assessment of the Little Skate, Raja erinacea (Mitchell), in the Northwest Atlantic. Gordon Waring, National Marine Fisheries Service, Woods Hole Laboratory, Woods Hole, Massachusetts.

Population dynamics of the little skate (Raja erinacea, Mitchell), with secondary analysis of other skate species were investigated utilizing the Northeast Fisheries Center's, Woods Hole, Massachusetts, research and commercial vessels data base. For R. erinacea eight age groups were observed in the population. Back-calculated total lengths (mm) at age are: I-160, II-253, III-322, IV-378, V-416, VI-453, VII-477, VIII-505. The von Bertalanffy growth equation determined for the R. erinacea population between Georges Bank and Cape Hatteras, North Carolina, is:

$$l_t = 42.7\ (1-e^{-0.3518\ (t\ +\ 0.4486)})$$

The overall length-weight relationship for R. erinacea (total length is cm, total weight is kg) is:

$$\text{Log}_{10}\ W = -2.641\ \ t\ 3.129\ \log_{10}\ L$$

The annual mortality rate for this species is 51 percent. Maximum yield-per-recruit occurs when age of entry is four and the instantaneous rate of fishing

Back-calculation of length at age was made by measuring the greatest distance to each annulus from the center of the otolith. Otolith size (OS, ocular micrometer units), showed high correlation (r=0.86) with fork length, (FL, cm). Regression of these dimensions yielded the equation $\ln FL = 0.97 + 0.982 \ln OS$. Growth of 10 cm per year was observed for the first four years, after which growth slowed. The average female matured at six years (55-60 cm) and thereafter grew more slowly than males. By seven to eight years (65-70 cm) fifty percent of the males had matured. Von Bertalanffy growth formulae computed from these data were for females $L_t = 81(1-e^{-0.21(t-0.20)})$ and $L_t = 111\ (1-e^{-0.13(t-0.17)})$ for males.

5. The American Lobster and the Pot Fishery in Inshore Waters off the South Shore of Long Island, New York. Philip T. Briggs and Frederick M. Mushacke, Division of Marine Resources, New York State Department of Environmental Conservation, Stony Brook, Long Island, New York.

Carapace length for male American lobsters (Homarus americanus) from the inshore waters off the south shore of Long Island ranged from 36 to 165 millimeters and averaged 83. Most were mature by the time carapace length reached 56 to 60 millimeters. Carapace length for females from the area ranged from 19 to 155 millimeters and averaged 84. About half were mature at a carapace length of about 90 millimeters and all larger than 100 were mature. Cull rates were generally about 10 percent for legal size lobsters. Sex ratios approximated a one to one ratio. A length-weight relationship of $\log W = -3.2736 + 3.0989 \log L$ was derived. More parasites indicative of lobsters having spent time in offshore waters were found than those indicative of lobsters having spent time in inshore waters. The great importance of the black sea bass (Centropristis striata) and the Jonah crab (Cancer borealis) to the pot fishery is discussed.

6. The Importance of Absolute and Relative Abundance of Food on Foraging Strategy and Switch Feeding in Apeltes quadracus. Stephen J. Souza, Marine Research Laboratory, University of Connecticut, Noank, Connecticut

Switch feeding, the disproportionate utilization of a densely abundant food item, was studied in Apeltes quadracus (Mitchill), the four-spined stickleback. Over a two-year period, seasonal variations in diet were examined. Emphasis was placed on changes in selectivity, foraging strategy and prey utilization in relation to changes in the absolute and relative abundance of the prey resource suite. The predator was found to use harpacticoid copepods as the dietary mainstay. However, the degree of predation on this food item and on alternate food items varied with season, with types of alternate prey consumed reflecting seasonal changes in foraging strategy. The primary factor controlling the foraging strategy of A. quadracus was the absolute abundance of available food resources. However, during periods of ample food supply, the relative abundance of the various prey items determined their selection and importance in the diet of the predator. The data indicate that A. quadracus is a switch feeder in the spring and summer months, disproportionately intensifying its predation on that prey item of greatest density. In the winter months, as the prey resource suite becomes more depauperate, A. quadracus resorts to a less selective, more opportunistic mode of predation.

Five existing data bases, including original data collected by the authors, were examined for the existence of water analyses from the same or nearby locations separated by at least one year. Analyses involving known or suspected influence of acid mine drainage were omitted. Of a total of 983 analysis reports which were usable, there were 314 cases with two or more such points. Of these, 107 or 34 percent showed a decrease in pH, alkalinity, or both. Average decrease in pH was 0.4 units with a maximum case of 1.3 units. Average decrease in alkalinity was 15.1 mg/l (as $CaCO_3$) with a maximum case of 105 mg/l. The average time span between earliest and latest sample was 8.5 years.

Although the majority of the decreases occurred in streams on the relatively insoluble rocks of the Allegheny Plateau, there were also many cases in the ridge-and-valley province and other regions. Many of these decreases are to pH levels considered marginal for growth and reproduction of trout and other fishes.

Seventy-one of the 107 analyses showing decreased pH or alkalinity included fish collection data. In 41 of these cases (58 percent) the number of fish species present decreased as well. Studies are continuing in order to document the nature and magnitude of such decreases.

3. Acidity Status of Lakes in the Adirondack Region of New York in Relation to Fish Resources. Martin Pfeiffer and Patrick Festa, Bureau of Fisheries, New York State Department of Environmental Conservation, Albany, New York.

Many surface waters in the Adirondack Mountain region of New York State have low alkalinities due to carbonate poor geology. This condition makes these waters particularly sensitive to the high acid ion deposition associated with the region's airshed.

Since 1975, pH and alkalinity measurements have been made on (≈) 750 ponded waters throughout the Adirondack region to determine the scope of water quality impacts associated with acid ion deposition and to provide a baseline inventory for indexing future measurements. The present condition of surface waters is described on the basis of summertime one-meter depth of measurements obtained with a pH meter under air - CO_2 - equilibrium conditions. Comparisons of pre-1975 and post-1975 acidities are made where data points from comparable methodologies exist. Relationships between meter pH, colorametric pH, alkalinity, conductivity, lake surface area, lake surface elevation and geographical location are discussed. Changes in fish species composition and sportfishery yields observed in waters exhibiting increased acidity are reviewed.

4. A Review of Acid Pond Liming in New York. Leigh M. Blake, Bureau of Fisheries, New York State Department of Environmental Conservation, Watertown, New York.

Use of lime to neutralize acid conditions in ponds has been an accepted management tool for twenty years in New York. This paper reviews the various pond treatments considering changes in pH, alkalinity, fish populations

Very dramatic increases in salmonid numbers and sportfishing harvest have occurred and appear to be partly due to the decline in the lamprey/salmonid ratio. Some data substantiate this contention. Survival of coho salmon between ages I+ and II+ increased approximately 1,000 percent from 1969-72 to 1973-78. Survival of brown trout between ages II and III increased about 600 percent from 1975-76 to 1977-78. Age III+ chinook were virtually non-existent in the period 1972-74 but became substantial portions of the chinook population from 1975-1978. The most dramatic and tangible change occurred in the growth rates of coho and chinook salmon where II+ coho and I+, II+, and III+ chinook increased in weight at each age by 120 percent, 62 percent, 89 percent and 67 percent respectively.

7. The Potential Eel Fishery of Lake Champlain. George W. LaBar and Douglas E. Facey, School of Natural Resources, University of Vermont, Burlington, Vermont.

There has been a recent resurgence of interest in commercially fishing for the American eel, undoubtedly due in part to the decline of other more traditional inland fish stocks, as well as the fact that fishermen are selling eels for more than $1.00 per pound, live weight. Lake Champlain appears to have a substantial eel population as evidenced by the fact that the Canadian fishery on the Richelieu River, the outlet from the lake, took more than 90,000 pounds of eels in 1979. Population estimates in in-shore areas by mark and recapture methods also indicate substantial numbers of eels. In this paper, we discuss the ecological role of Lake Champlain eels, the potential fishery, and the possible conflicts caused by initiation of a fishery.

CONTAMINANTS

Chairman: David Lipske, Department of Environmental Protection, Trenton, New Jersey

1. Preliminary Protocol Development of In Vitro Evaluation of Potentially Toxic and Hazardous Materials in the Marine Environment. Holly B. Groelle and Charles A. Willingham, William F. Clapp Laboratories of Battelle Columbus Laboratories, Duxbury, Massachusetts, and Raymond F. Mortan III, Center for Environmental and Estuarine Studies, Frostburg State College Campus, Frostburg, Maryland.

Surface sediment from New Haven Harbor (Connecticut) shown in prior *in vivo* bioassays to be toxic, were examined in *in vitro* studies for sublethal effects.

Organic extracts of the test sediment and control sediment were used to determine mutagenic and cytotoxic responses. The Ames' *Salmonella*/microsomal assay was utilized in mutagenic studies which showed the New Haven Harbor sediment to produce mutation in tester strains TA-1538 and TA-100, indicating frameshift and base pair substitutions, respectively.

4. Chemical Contaminants in New York State Fish: Trends During the 1970s. Roger Armstrong, Ronald Sloan and Edward Horn, Bureau of Environmental Protection, New York State Department of Environmental Conservation, Albany, New York.

Trends during the past decade in the known principal chemical contaminants (DDT, mercury, PCB, mirex) present in fish from New York State waters have been deduced from data generated primarily by New York State Department of Environmental Conservation laboratories.

Total DDT levels in edible portions of fish from virtually all New York waterways have declined dramatically during the 1970s, corresponding to an average environmental half-life of about 2.5 years for this banned insecticide. Much less pronounced but definite decreases in mercury levels are also apparent in equivalent sets of fish from most of the state's lakes and rivers. On the average, mercury concentrations are declining with a 10-15 year half-life, although significantly faster declines characterize fish from Onondaga Lake, where industrial mercury discharges were substantially reduced in the early 1970s. On the other hand, equivalent fish from several large Adirondack lakes show sizeable mercury increases since 1970, a counter trend that may be correlated with acid precipitation.

PCB levels in fish from many of New York's waterways appear to have declined significantly since 1975, with higher-chlorinated Aroclors (e.g. Aroclor 1254) decreasing with an average half-life of three years. Fish contaminated with less highly chlorinated Aroclors (e.g. Aroclor (1016) seem to be displaying more rapid declines. Definite PCB decreases began to appear in Lake Ontario fish in 1978. Mirex contamination of Lake Ontario and St. Lawrence River fish still averages above the FDA action level for this contaminant in nearly all mature game fish.

The various contaminant trends are thought to have significant implications to both fisheries management and to the formulation of future health advisory statements.

5. Declining Levels of PCB in Hudson River Fish: Prospects for Recovery of the Fishery. Ronald Sloan, Roger Armstrong and Edward G. Horn, Bureau of Environmental Protection, New York State Department of Environmental Conservation, Albany, New York.

A major DEC monitoring project begun in 1976 has involved the examination of PCB residues in Hudson River fish. The major sources of PCB contamination in this riverine/estuarine system were the General Electric Company facilities at Fort Edward and Hudson Falls. From Fort Edward to Troy, PCB residues in standard fillets, regardless of species, have been (pre-1976) and remain well above the FDA tolerance levels of five ppm, temporary and two ppm, proposed. From Troy to New York City, PCB concentrations in some species are less than the acceptable FDA limits. Specifically, these species include American shad, Atlantic tomcod, blueclaw crab and for the most part, alewife and blueback herrring. Additionally, larger individuals of the American eel in uncontaminated tributaries are within acceptable FDA limits. Aspects of their life history and physiology provides contaminant protection to at least part of this important segment of the fish resource.

analysis of 26 trout revealed 87 percent of the contents to be of terrestiral origin. Trout must have received most of their metals content via the water route since a contaminated food source was not available.

7. The Functional Relationship Between Mercury Concentration and Age in Fish
Scott Quinn and Jay Bloomfield, Bureau of Water Resources, New York State Department of Environmental Conservation, Albany, New York.

From 1969 to 1976, over 3,500 fish from New York State lakes and streams were collected and analyzed for mercury content by New York State. Less than 10 percent of these fish had mercury levels above 1.0 mg Hg/kg body weight, the present United States Food and Drug Administration (FDA) "actionable level" for commercially caught fish.

Most of the fish containing mercury in excess of the FDA level were from three lakes: Onondaga Lake, Stillwater Reservoir and Cranberry Lake; the former having been contaminated with mercury from a chlor-alkali plant.

Recent investigations (1977-80) on the mercury problem in Cranberry Lake (St. Lawrence County, New York) have evidenced some interesting relationships concerning mercury accumulation in fish. Mercury accumulation rates were calculated for smallmouth bass (Micropterus dolomieui) of a given age class, as follows:

$$\alpha = Hg/A$$

where, α is the accumulation rate (mg Hg/kg-yr) and A is the fish's age (years). Accumulation rates for Cranberry Lake fish range from 0.21 mg Hg/kg-yr for smallmouth bass, 0.12 for yellow perch (Perca flavescens) and brook trout (Salvelinus fontinalis), 0.09 for rock bass (Ambloplites rupestris), 0.08 for golden shiner (Notemigonus crysoleucas) to 0.05 for white sucker (Catostomus commersoni). Onondaga Lake fish ranged from 0.51 mg Hg/kg-yr for walleye (Stizostedion vitreum) to 0.04 for alewife (Alosa pseudoharengus). Splake (Salvelinus fontinalis x Salvelinus namaycush) from Stillwater Reservoir had an accumulation rate of 0.42 mg Hg/kg-yr.

Since the mercury accumulation rate (α, mg Hg/kg-yr) tends to damp out the actual trend in mercury accumulation from year to year, an instantaneous mercury uptake rate for a given age class of fish can be calculated assuming the following functional form between mercury content (Hg, in mg/kg body weight) and age (A, in years):

$$Hg = \beta_0 A^{\beta_1}$$

Hence, an instantaneous rate (in mg Hg/kg-yr) between two year classes can be calculated, as follows:

$$\alpha_I \Big|_{A_1}^{A_2} = \beta_0 \left[A_2^{\beta_1 - 1} - A_1^{\beta_1 - 1}\right]$$

one of six major species. The major species were black sea bass (Centropristis striata) and summer flounder (Paralichthys dentatus) caught by bottom fishing in summer and fall; bluefish (Pomatomus saltatrix) caught by trolling and chumming in summer and fall; silver hake (Merluccius bilinearis) and red hake (Urophycis chuss) caught by bottom fishing in winter and spring; and Atlantic mackerel (Scomber scombrus) caught by jigging in the spring.

3. An On-Site, 120-Day, Continuous-Flow Biomonitoring Study of a Power Plant Effluent. Robert F. Denoncourt, York College of Pennsylvania, York, Pennsylvania; William F. Skinner, Pennsylvania Power and Light Company, Allentown, Pennsylvania and Blaine D. Snyder, Biological Consultant, York, Pennsylvania.

A sample of 300 fathead minnow and 300 bluegill were maintained in continuous-flow waters associated with the Montour Steam Electric Station, Washingtonville, Pennsylvania. Some 100 specimens of each species were observed in each of untreated and undiluted effluent and control waters for 120 days, mixed waters for 90 days. Data were analyzed for a series of 30-day studies and cumulative effects to 120 days. Accounting for removal of 10 specimens used in bioaccumulation each 30 days and artifact mortalities, biological mortalities in experimental and control were similar within any 30-day period or cumulative time to 129 days. Because of differences in behavioral responses in the experimental tanks, fathead minnow are recommended over bluegill for long-term studies.

4. Life History Theory and Size Regulations for St. Lawrence River Northern Pike. Dennis J. Dunning, New York State Power Authority, New York, New York and Quentin Ross, Texas Instruments Incorporated, Buchanan, New York.

Current population theory indicates that reducing the number of older age classes in a species exhibiting a time lag in reproduction reduces the stability of the population. The recently adopted 660 mm minimum size limit for the St. Lawrence River northern pike sport fishery concentrates the fishing pressure on the females and older age groups. In order to decrease the fishing pressure on older females and to guard against inadvertently decreasing the stability of the northern pike population, the daily harvest of pike 660 mm or greater in length should be regulated. This would allow the trophy fishery to remain viable, distribute the fishing pressure between both sexes in the smaller age groups and decrease the chance of destabilizing the population.

5. Recent Trends in the Sport Fishery of the Lower Susquehanna River below Conowingo Dam in Reference to the American Shad. E. Terry Euston and Paul G. Heisey, Radiation Management Corporation, Muddy Run Ecological Laboratory, Drumore, Pennsylvania.

Several investigations of the sport fishery of the lower Susquehanna occurred from the mid 1950's through 1970, within the context of examining the feasibility of fish passage at Conowingo Dam. All confirmed the importance of the American shad as a major stimulus to the fishery and established baseline conditions. Recent results of a limited creel census in the Conowingo Dam tailrace and operation of a Collection facility at the dam suggest a decrease in shad abundance since the 1970 survey.

included using different temperatures to incubate the eggs. Optimum temperature for incubating, hatching and survival to metamorphosis was found to be between 6° and 8°C. Larvae were initially fed on live food: rotifers (Brachionus plicatilis) and brine shrimp (Artemia salina). They were then gradually weaned off live food to either frozen adult Artemia or prepared diets. Out of approximately 5,000 embryos produced, over 300 larvae were on-grown and are presently being used in growth experiments. Preparations are being made for the 1979-80 season, the main objective being to identify a set of hatchery conditions/requirements whereby winter flounder could be reliably and efficiently mass produced and used either for conservation or commercial fish farming purposes.

8. Redetermination of the Dietary Riboflavin Requirement of the Rainbow Trout (Salmo gairderi), and the Lenticular Cataract Associated with Riboflavin Deficiency. Steven G. Hughes, New York Cooperative Fishery Research Unit, Cornell University, Ithaca, New York.

Riboflavin functions as an enzyme cofactor and a hydrogen carrier in the microsomal electron transport chains of all organisms. However, the dietary requirement of riboflavin for trout was distinctly higher than that of any other experimental animal. The requirement of 20 mg/kg of diet published by the National Research Council was as much as 10 times greater than expected levels.

Experiments were conducted in the summer of 1979 to determine if this requirement was in error. Main criteria used for determination of the requirement were growth, feed conversion, and amount of the vitamin necessary to get maximal activity of the riboflavin dependent enzyme erythrocyte glutathione reductase.

Results show that the previously publised riboflavin requirement was far too high and the requirement of rainbow trout lies between 1 and 3 mg/kg of diet.

The cataract (lens opacity) which results from riboflavin deficiency is unique in its histopathogenesis. Its location in the posterior subcapsular portion of the lens makes its differentiation from the other nutritionally induced cataracts relatively simple with the usage of a slip-lamp biomicroscope or by using histological sections of the lens.

9. Water Reuse Aquaculture Systems in Two Solar Greenhouses in Northern Vermont. Barry A. Pierce, Cate Farm, Goddard College, Plainfield, Vermont.

Small scale aquaculture systems serve the dual functions of winter food production and thermal storage in passive solar greenhouses in north central Vermont, one of the coldest, cloudiest regions in the continental U.S.A. Each system is designed with low-cost materials, minimal labor and solar technologies applicable to the economics of coldwater fisheries in New England. In a hybrid solar greenhouse having both active and passive collectors, two upwelling biological filters with gravel substrate planted with hydroponic vegetables serve to remove ammonia and nitrate wastes from a polyculture of rainbow trout (Salmo gairdneri) and carp (Cyprinus carpio) in a 4920 liter recycled septic tank. Productivities, energy flow and economics of this system are discussed in detail.

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Practical Fisheries Managemenent: More with Less in the 1980's

Proceedings of the 1st Annual Workshop of the
New York Chapter American Fisheries Society

July 14 – 16, 1980
Cazenovia, N.Y.

Steven Gloss and Bruce Shupp
Editors

Presented by: New York Chapter
American Fisheries Society

The Chapter gratefully acknowledges financial support from:
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GOAL

To increase capability of fisheries biologists to formulate efficient management strategies under the fiscal constraints of the 1980's.

OBJECTIVES

- Expose attendees to new and emerging fisheries assessment and interpretive methods for immediate and long–term application.
- Review selected fisheries management strategies and the effects of their implementation.
- Illustrate selected methods for evaluating management actions compatible with social needs and fiscal resources.
- Provide attendees the opportunity to apply elements of the workshop to management strategy formulation based on an assigned fisheries problem.

Workshop Committee

Bruce Shupp, Chairman
*John Forney
Steve Gloss
Dave Green
Gene Lane
Art Newell
John Nickum
Al Schiavone
Doug Sheppard
Larry Skinner

* The committee wishes to acknowledge the effort of Dr. Forney for his preparation of the workshop problem.

The Workshop Committee would like to thank Alice Klock for her assistance with the workshop and typing of manuscripts.

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KEYNOTE ADDRESS

MORE WITH LESS IN THE 80's

Herbert E. Doig
Assistant Commissioner for Natural Resources
New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

There are few opportunities that challenge an administrator's creativity more than to stand before his colleagues and espouse philosophy and reality. I consider today's address an exciting opportunity to express my views on some issues and share insights on others. Please don't receive what I have to say personally even though its meaning may strike close to home for I speak to you from an administrator's perspective and there is no intent toward malice.

The challenges for the 80's and their realities face resource scientists generally and are not simply New York problems. The issues must be addressed in varying degrees by all fisheries biologists and there must be a common thread in the response.

To facilitate better understanding, I have classified the issues into four categories; fiscal, managerial, political and philosophical and will organize my thoughts in that order. The outcome, hopefully, will set the stage for indepth discussion on the other stimulating subjects on the program.

FISCAL

There is tremendous pressure on government and educational institutions to cut expenditures while maintaining services. Laws are passed mandating programs without fiscal resources to implement them. There is severe competition for public dollars that are available and fisheries programs do not effectively compete with programs designated to improve the economic, physical and psychological well-being of the people. There is little new money available from traditional sources and none predicted for the near term. At the same time the value of the dollar is decreasing; 14 percent last year, 100 percent over the past decade. There is little optimism that this trend will be reversed.

New taxes are not popular and there is a public upwelling of opposition even to hold the current tax line. In response, there are initiatives to cut those taxes that exist, even in the area of licensing where each year demand for reducing the age to qualify for a free license to hunt and fish increases and special interest groups, especially the handicapped, look for special consideration -- and legislators are responding. Even organized sportsmen, as their representatives get older, have changed their attitudes which have historically been in staunch opposition to the "free" concept.

Even though programs are cut, staff positions lost and research dollars greatly reduced, there is organized constituent opposition to

license fee increases. Administrators face a tough battle to overcome this resistance brought about by loss of credibility in government and established institutions. Then, too, the intangible benefits of environmental protection, public opportunity and often research, viewed by you as high priority, are difficult to sell.

The consequence of these realities are that resources will go undeveloped and we must all find ways to accomplish our objectives more cheaply. Efficiency becomes important and great diligence must be exercised to maintain a focus on effectiveness. Some programs, even though known to be worthwhile, must be dropped if a standard of quality is to be maintained on those that remain. And most important, you as scientists must face that most difficult of issue -- what level of reliability in data collection can we afford, or perhaps more importantly, can we not afford.

MANAGERIAL

The managerial realities facing program leaders are often more harsh than outright lack of money. The frustration of knowing that funds are there, but unavailable to you, has been felt by all. Even though legislative appropriations are made, there is no assurance that those moneys will be released to spend. There continues to be budget control by people external to the immediate institution or agency. People, not trained in resources management, are making judgments on whether your programs should be funded or not. Even when this hurdle is surmounted, the bureaucratic process often takes months to clear expenditures. Don't be deceived into thinking that such delays are not by design.

Resource professionals have long been advocates for environmental impact review, but now with tough laws requiring careful analysis, demands on your time have magnified. The public process, too, causes considerable delay in getting the job done, often to the point of losing an entire year while costs are escalating.

There is frequently uncertainty of executive and legislative intent on important issues and fisheries scientists are reluctant to be out front without clear mandates. Often opportunities are lost and poor direction is given when there is failure to recognize the importance of timing on resource program implementation.

Staff ceilings, often not based on fiscal limitations inhibit progress on programs. They will continue however as an added measure of control exerted by higher authorities. Mandated energy efficiencies also not necessarily related to availability of funds will affect ability to perform.

More recently, antagonistic interests are turning to legal solutions to resource problems. One has only to look at the Indian decisions affecting fisheries on the West coast and the State of Michigan to be shaken by this reality. It is becoming progressively more important for biologists to become expert in preparing testimony and knowing when and how to express themselves on management issues.

Planning continues as a critical element in program development but resource professionals must stubbornly restrict inventories to "need to know" rather than "nice to know" information. Agency research support will also assume this posture as we seek answers to real problems and have fewer resources for pure research.

Biologists then must become effective managers of money and people and be expected to establish priorities based on rational criteria -- and then use the criteria in decision making.

POLITICAL

Traditionally legislators have maintained control over fish and wildlife authorities. That interest waned during the 1960's and early 1970's when laws were passed giving these authorities to resource agencies. We are now witnessing a return by legislators to the former philosophy. Constituencies are supporting this trend having lost confidence in governmental agencies. These same constituencies are becoming involved in partisan politics, a move that spells trouble for future resource managers and their programs.

Sensitivity in recent elections has caused legislators to shy away from issues where there is conflict. Such timidness to face tough issues causes inaction on matters of critical importance. There is also a growing tendency for legislative staffs to assume the role of expert and make technical judgments without adequate communication or understanding. Scientists have contributed to this problem by their reluctance to express opinions on issues without adequate data which often will never exist. Without professional response, others less capable will make decisions and become "expert."

Legislators have a tendency to become preoccupied with peripheral issues that interfere with progressive management or consume inordinate amounts of professional time to place these issues into proper perspective.

With more open government and higher visability of environmental issues, public perception of the fisheries profession, government agencies, colleges and universities becomes key to the credibility of program goals. Negativism toward environmental regulation can taint the good being done by resource professionals working in the same agency. Occasionally you will be asked to lay your professionalism on the line if responsible management is to survive and some of you will yield to the temptation of greater rewards.

PHILOSOPHICAL

Many of the philosophies of the past are being challenged and biologists must shake traditional labels and view fisheries in a broader context. People no longer accept trout management as the dominant program in fisheries. Hatcheries must also be viewed in a different light with propagation integrated with management programs and made responsive to them if an ecosystem approach to resource management is to be achieved. Program emphasis must shift to development of underutilized species and woo public sentiment and gain support politically through programs that benefit the urban masses.

While "quality" fisheries have an important place in the total spectrum of agency programs, biologists must resist the tendency to be

the judge of what is best for the fishing public. People want to be a part of decision making and you must let them. New avenues must be found for public participation that are meaningful and productive.

As hinted at before, biologists never seem to have enough data to permit them to draw a conclusion. Those days are behind us. You must step forward and express your professional opinion. Take the risk for who is better qualified than you to prognosticate about fishery matters?

To summarize, these realities are certainly not all inclusive nor are they presented in exhaustive detail, but they give some insight into the problems you face today and can expect to face in the future. They can be discouraging but need not be devastating. There is an effective response. I urge you to take the offensive and project yourselves as the experts that you are.

You should evaluate the things you do from the point of view of the user and gain his confidence and, therefore, his support.

Develop a needs list, prioritize it and implement programs that are responsive to the most important needs. Identify potentials that are unfulfilled and talk about them. Sell people on your philosophy and convince them that they can't afford to be without the benefits you can provide.

Build a data base upon which sound resource decisions can be made, but don't be hesitant to assert your knowledge. You know more about fisheries management than the other guy and more importantly, he knows you do.

Become managers of your business as well as your resources. Talk about your programs in terms of economic impact. Make tough decisions based on objective analysis.

Involve the public in decision making in a meaningful way and find ways they can contribute to resource protection and management. Be a servant to the public but serve as an advisor as well as a responsive employee.

Use the "system" for all it's worth and challenge it when it is wrong. Never become a slave to a system.

Be judicious in your written and oral expression and back your decisions with reliable data. Don't be reluctant to make tough, unpopular decisions if you feel they are right. You owe it to your public to do so. And be humble, admit when you are wrong and build upon your newly gained knowledge. What you do and how the public and your colleagues interpret what you do may be quite different, but stand by your convictions and press aggressively ahead in the best interest of fisheries management.

In conclusion, I have attempted to be provocative in my presentation and hope to have stimulated thought and created an atmosphere for personal and professional self-analysis. Your response will illustrate how successful I have been.

LAKE SURVEY FOR PRACTICAL MANAGEMENT

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The objective of most routine fishery surveys is to assess species and size composition of the fish community and compare relative abundance of stocks over time or between lakes. Stock abundance and size composition is the minimum information needed for intelligent management of a fishery. As most biologists have discovered even these simple parameters are difficult to estimate in sampling with selected gear from populations which are mobile and usually aggregated.

The catch is seldom representative of the population. Small fish are usually not fully retained by the gear while the probability of capturing larger fish may depend on their distribution and behavior. Escapement of small fish through the cod-end of a trawl or car of a trapnet is the most obvious form of selection and methods of assessing mesh selection have been reviewed by Pope (1966). Distribution of fish, their size, sex and even genetic strain (Flick and Webster 1962) can affect vulnerability to capture. Gear selection caused by differences in distribution and behavior of fish are difficult to quantify.

A qualitative indication of the magnitude of size selection can often be obtained by comparing length distributions of catches in different gear. If length distributions are similar, estimates of growth and mortality from the catch may not be seriously biased (Ricker 1969). But overall size selectivity of gear can only be evaluated quantitatively by fishing populations with known length distributions. The usual procedures is to release marked fish and to compare the number released and recaptured by length classes (Lagler 1971). Experiments designed to evaluate gear selection have shown that trapnets tend to select the larger fish over the entire size range of the population (Latta 1959) and large mesh gillnets are much more efficient than small mesh nets (Hamley 1975).

Evaluation of gear selectivity is expensive, but failure to quantify size selection can be equally costly. A selective curve for variable mesh gillnets fished in Oneida Lake suggests a 24 cm yellow perch is about 30 percent more vulnerable to capture than a 22 cm perch. When the catch in experimental gangs of gillnets are used as an index of abundance, changes in average length of the population over time can cause serious errors in estimates of abundance unless the selectivity of the gear is known.

Our perception of the species composition of a fish community depends on the gear fished because of differences in vulnerability of species to capture. A combination of gillnets fished offshore and trapnets set in shallow water are often employed in surveys and the pooled catch may adequately portray relative abundance of larger fish (Powell et al. 1971; Yeh 1977). With the addition of shore seining and trawling to sample smaller fish a reasonably complete list of species can be compiled.

Unfortunately rank abundance of species in each gear is usually different and there is no general procedure for combining catches to derive a quantitative estimate of species composition.

Catch per unit effort (CPUE) is often the only measure of species abundance available to managers. Assuming identical gear is fished and vulnerability of fish to capture does not change over time, CPUE is a useful but often imprecise index of abundance. CPUE is imprecise because fish are usually aggregated. Consequently, the number of fish taken in most net lifts is low with a few lifts yielding large catches - usually on Friday afternoon. In more formal terminology, catches follow a negative binomial distribution which shows a skewed rather than normal frequency distribution (Taylor 1953). To increase precision of estimates when sampling from a negative binomial distribution, the usual recommendation is to increase the number of samples while keeping the size of sampling units as small as possible (Lambou 1963). Following this logic, the mean catch in 10 250-foot gillnets should provide a more precise estimate of relative abundance than the catch in 5 500-foot nets although the amount of gear fished is the same.

Indices of abundance in small inland lakes are frequently based on 10 or fewer gillnet or trapnet catches and confidence intervals on small samples are broad (Moyle and Lound 1960). With 10 sets each year a biologist would probably detect a two-fold difference in abundance but finer differences are likely to be obscured by inherent variability in catches. However, a small number of sets may be adequate to detect trends in abundance over a period of years. Trends over time are useful in analyses of past management successes and failures but the population may be near extinction before a clear trend is evident.

Management techniques should be tailored to survey capabilities. Management for optimum sustained yield may be a worthy goal but money and manpower are seldom available to estimate vital statistics needed to define optimum yield. Management to maintain community stability or predator-prey balance which can be based on limited information on size and species composition of populations is more constant with levels of information normally generated through surveys.

Literature Cited

Flick, W. A. and D. A. Webster. 1962. Problems in sampling wild and domestic stocks of brook trout (*Salvelinus fontinalis*). Trans. Am. Fish. Soc. 91(2):140-144.

Hamley, J. M. 1975. Review of gillnet selectivity. J. Fish. Res. Board Can. 32(11):1943-1969.

Lagler, K. F. 1971. Capture, sampling and examination of fishes. *In* Methods for assessment of fish production in fresh waters. W. E. Ricker (ed.), Blackwell, Oxford.

Lambou, V. W. 1963. Application of distribution of fishes in Lake Bistineau to design of sampling programs. Prog. Fish-Cult. 25:79-87.

Latta, W. C. 1959. Significance of trap-net selectivity in estimating fish population statistics. Pap. Mich. Acad. Sci. 44:123-138.

Moyle, J. B. and R. Lound. 1960. Confidence limits associated with means and medians of series of net catches. Trans. Am. Fish. Soc. 89(1):53-58.

Pope, J. A. 1966. Manual of methods for fish stock assessment. Part III. Selectivity of fishing gear. FAO Fish. Tech. Paper No. 41. 50 p.

Powell, T. G., D. C. Bowden, and H. K. Hagen. 1971. Evaluation of five types of fishing gear in Boyd Reservoir, Colorado. *In* G. E. Hall (ed.) Reservoir fisheries and limnology. Am. Fish. Soc., Spec. Publ. 8.

Ricker, W. E. 1969. Effects of size-selective mortality and sampling bias on estimates of growth, mortality, production and yield. J. Fish. Res. Board Can. 26(3):479-541.

Taylor, C. C. 1953. Nature of variability in trawl catches. U.S. Fish Wildl. Serv., Fish. Bull. 54:145-166.

Yeh, C. F. 1977. Relative selectivity of fishing gear used in a large reservoir in Texas. Trans. Am. Fish. Soc. 106(4):309-313.

STREAM SURVEYS FOR PRACTICAL FISH MANAGEMENT

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Historical

Stream surveys became important soon after the 1870's when fish culture agencies were authorized by law in the federal government, followed by many states. Several eastern states (notably Connecticut and Massachusetts) had organized programs before this, but the creation of the American Fish Culturists Association (now the American Fisheries Society) in 1870 served to focus attention on the perceived need for fish culture and management.

An early survey of tributaries to the Columbia River was reported on in 1898. The objective was to identify a site suitable for a salmon hatchery, and the survey concentrated on physical characteristics of the site and the abundance of the salmon runs. It was reasoned that if salmon were using the stream for spawning, the stream was bound to be suitable for a hatchery - one of the first recorded instances of using a fish species as an environmental indicator (Smith 1898).

It is difficult to date the modern concept of the term "fish management" since it has been a dynamic and changing concept since agencies were organized. But certainly by the late 1920's and early 1930's, stream surveys were being conducted for the purpose of developing a rationale for stocking programs, still an important aspect of management. The New York State surveys from 1927-1940, under the direction of Emmeline Moore, are outstanding examples of detailed biological surveys of watersheds conducted during this period. And, incidentally, these summer surveys trained a large number of scientists (now mostly retired) who filled many important management and scientific positions in our profession.

Here let me inject a strong personal bias concerning the value of these surveys. The New York surveys, as those in Massachusetts, New Hampshire, Maine and Connecticut to name only a few, became valuable and historical bases of information only after they were published in considerable detail. In terms of our workshop theme today, it is difficult to imagine an administrator making a pitch for publishing basic stream survey data now.

To return to the historical account, by the 1940's and 1950's many published stream surveys were available, as were detailed instructions for data collecting, field methods, and management guides (Davis 1938; Lagler 1952; Rounsefell and Everhart 1953). In view of this wealth of information available, someone might question the need for this workshop.

Modern Stream Surveys

The suggested contents given to me for this segment of the workshop are so inclusive and diverse, that I am tempted to ignore them completely

and let the organizers present their suggestions personally. Instead, let me outline my ideas for the bare bones of a stream fisheries survey for decision makers, assuming that current information sources are poor or at least out-of-date, and that the agency is short of operating funds. I do not think that stream fishery surveys suffer much under fiscal constraints; it is more likely that "as the level of funding for a survey increases, planners add more items of peripheral value." In some strange way this philosophy gives the survey an ecological flavor, and thus increases our scientific prestige. Can it be that we really do not believe that fish managers are scientists?

Certain assumptions are necessary as to the objectives of the survey as I envision it:

1) Public opinion poles on management options are not included. These are certainly important, but fishery managers are seldom capable of handling such an assignment.

2) The manager is reasonably familiar with the hydrology, meterology and geology of the area, or at the least, can read and interpret available information concerning his area.

3) The manager is also reasonably familiar with environmental problems arising from cultural and industrial impacts on water quality.

You might challenge this approach as leaving out most management problems, but it does permit one to look at the stream single-mindedly as to its ability to produce crops of fish or recreational opportunity based only on the species composition of the naturally-reproducing fish populations. This becomes the single most important objective of the survey.

Techniques for estimating fish populations must vary with local conditions. In Pennsylvania, we have found electrofishing with the Zippen (1958) method to give good results in small to medium-sized streams. Mark-and-recapture methods are not very useful for small, delicate minnows and darters where handling mortality is high. Rotenone sampling is quick and efficient, but spectators are likely to question why it is necessary for biologists (for the cause of science) to kill that 5-pound brown trout they have been catching and releasing for the past several years.

The fish population data should be manipulated to include the number, weight, and the annual production of each species encountered (Allen 1950; Neess and Dugdale 1959). A judicious selection of streams in a region, and a scatter of upstream-downstream stations in several watersheds will soon amass a data base that is representative of larger regions. Once this level of information is available in a file or computer, surveys of additional streams or stations need not be so detailed. Over the years, a manager should build up and maintain an inventory file of the waters in his area as complete as time and resources permit. My plea would be to emphasize the dynamics of the fish populations, and resist all suggestions of making this data base descriptive of the entire aquatic ecosystem.

You will note that I have omitted data on benthos, water quality, stream order, minimum flows, and a host of other physical and biological parameters often encountered in stream surveys. I have not said anything also about frequency of field data, standardized forms, report writing,

or handling data. In my opinion, these items are not important so long as the system is reasonably consistent throughout the agency and the necessary information can be readily extracted from the file or computer.

Now that the survey data are available, how does the manager use it? A common solution is to ignore the biological data and superimpose a put-and-take trout stocking program on the fish population, with no necessity or expectation of survival of the stocked trout beyond the immediate fishing period. No management decision is necessary for this option.

However, if managers wish to use the native populations and their productive capability to best advantage, decisions should be consistent with the biological data. Many warm-water streams support large populations of minnows, suckers and darters but few game or panfishes. Often the best solution is an impoundment that will favor game and panfishes, with or without control of the native fish populations. At this point the use of the biological data comes to an end, and many other factors enter the decision making process. My only comment to managers at this point is, "Good Luck, you will need it."

Literature Cited

Allen, K. R. 1950. The computation of production in fish populations. New Zealand Science Review 8:89.

Davis, H. S. 1938. Instructions for conducting stream and lake surveys. U.S. Dept. Commerce, Bur. Fish. Circ. 26. 55 p.

Lagler, K. F. 1952. Freshwater fishery biology. Wm. C. Brown Co., Dubuque, Iowa 421 p.

Neess, J. and R. C. Dugdale. 1959. Computation of production for populations of aquatic midge larvae. Ecology 40:425-430.

Rounsefell, G. A. and W. H. Everhart. 1953. Fishery science, its methods and applications. John Wiley & Sons, New York 444 p.

Smith, H. M. 1898. Report of the Division of Scientific Inquiry, p. xci-cxxiv, *In* Rept. U.S. Comm. Fish and Fisheries (1897). 171 p.

Zippin, C. 1958. The removal method of population estimation. J. Wildl. Manage. 22(1):82-90.

THE MORPHOEDAPHIC INDEX - A SYSTEMS APPROACH TO THE ESTIMATION OF FISH YIELD

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Almost all fishery problems require a qualitative knowledge of the fish species involved and a quantitative assessment of their standing stocks and replacement rates. Without this fundamental knowledge of a fish community, management is futile and allocation of the resource senseless.

The morphoedaphic index

$$\left(\text{MEI} - \frac{\text{Total Dissolved Solids}}{\text{Mean Depth}}\right),$$

is a simple method for rapid estimation of potential yield from a multi-species fish community (Ryder 1965). The concepts on which this index is based are fundamental to aquatic ecosystems and should be recognized as basic system properties (Ryder 1978; Ryder et al. 1974).

An open system consists of driving and state variables which control the inputs and outputs as well as the transfer coefficients among system components. The sun "drives" an ecosystem by providing energy inputs. Nutrient additions from the lithosphere supply the necessary materials and the morph of the system (basin) circumscribes the boundaries and regulates the flow pattern. In an aquatic ecosystem the outputs constitute the various biota which have diverse transfer coefficients and turnover rates.

By measuring fish yield we are selecting that portion of total fish production that goes to man. With moderately intensive to intensive fishing pressure, yield should retain a roughly constant proportionality to total production. The remaining fish production expressed as growth, natural mortality or sexual products is fed back into the system and buffers environmental variability by providing a nutrient sink or biotic "reservoir."

All of these concepts are inherent within the structure of the MEI. The denominator of the expression, mean depth, relates to the inverse of energy input (i.e. deep lakes receive less energy per unit surface area on a volumetric basis--all things being equal). Mean depth, of course, also relates to the morphometric constraint on the system to channel energy and nutrients. Additionally, the hypolimnion or monimolimnion of deep lakes serve as nutrient sinks, withdrawing nutrients from the biotic system either temporarily or permanently. The numerator of the MEI, total dissolved solids or some other nutrient correlate such as phosphorus, provides an estimation of material input to the system. In the morphoedaphic expression

$$\left(Y = K\sqrt{\frac{N}{\bar{z}}}\right),$$

the biotic output is included (Y) which in the present context is fish yield usually expressed as kilograms per hectare per year. Application of the MEI on a regional basis usually presumes that climatic effects on the ecosystem or subsystems (discrete lakes) are constant and that a specific set of criteria for use are met. For example, a lake which is inordinately turbid because of inorganic colloidal clays should not be grouped with relatively clear lakes in a comparative set unless the effect of the limnological anomaly is first assessed and quantified. Alternately, a separate set of lakes with high colloidal clay measurements may be classed together for estimating potential yield values which may be depressed because of this factor. Lakes with high organic turbidity, however, should be classed with clear lakes in using the index to determine fish yield. In this case, the turbidity is a result of inherent high productivity and should of itself, be strongly correlated with potential fish yield.

Some caveats should be observed in the application of the MEI. The index is best suited as an indication of first approximation fish yield. It will provide rigorous, timely estimates of about a factor of two variance. Standing stocks of natural fish communities may fluctuate within a wider variance than a factor of two, and culturally stressed systems almost invariably do. Once the MEI-yield relationship is determined on a regional basis for a group of lakes in a comparative study, then it is important to fine-tune the first estimates through use of one or more of the many fishery tools available. Plotting the regression of MEI vs yield for a regional suite of lakes is often informative. Quite often the most useful information is obtained from those points that deviate furthest from the regression line. Usually these lakes have one or more limnological anomalies that become obvious upon closer examination of the data. Quantitative correction for the anomaly will usually bring the deviant lake back to the regression line.

It is normally desirable to check first approximation yield estimates made with the MEI, with other systemic-type estimates that employ discrete data sets. One such approach is that of Sheldon et al. (1972) which allows the use of data obtained at other trophic levels to be related to fish yield. Essentially, the proposition equates particle density of organisms at different trophic levels on an order of magnitude basis. Consequently, if a good estimate of standing stocks of zooplankton (for example) is available, it may be related through one order of magnitude to provide an estimate of forage fish standing stocks or through two orders of magnitude to estimate predator species. These estimates are again of first approximation, but by the time three such approximations have been made a reasonably confident expression of potential fish yield will have been obtained.

Multispecies fisheries in inland lakes comprise only a part of a complex interrelated biotic community. Generally, the fishes occupying the top two trophic levels, dampen oscillations at lower trophic levels and thereby retain the biota in a relatively predictable steady-state. Inappropriate harvest ratios tend to cause the biotic community to oscillate and in extreme instances a departure from steady-state occurs and the fishery becomes unpredictable in terms of expected total yield

and species composition of yield. Unpredictable yields usually create both economic and social havoc in the cultural system. This phenomenon may be avoided by first utilizing previous yield estimates to set a conservative quota on total yield. In addition, harvest proportionality of the different species entering the catch should be retained relative to the ratios of their individual turnover rates. This may be accomplished by assessing total mortality for the fish community and establishing individual ratios by multiplying species mortality by the biomass entering the fishery and expressing it as a percentage of community mortality. Levels of harvest for each species may then be established on the basis of this percentage and an additional total yield is obtained from yet another discrete set of data by plugging the result into a Gulland yield equation (Ryder and Henderson 1975).

The establishment of quotas should never be axiomatic and feed-back information from the fishery should always be used for fine tuning. For example, if a single species produces an exceptionally large year class that survives to catchable size, normal proportions among species will be upset. In these instances quota adjustments should be made allowing for greater harvest of the disproportionately large recruitment to catch of the single species, thereby restoring the community back towards its state of greatest stability.

In conclusion, the estimate of potential sustained fish yield from a body of water without substantially altering community composition is one of the most important assessments made by a fisheries manager and precedes the logical second step which involves the regulation and allocation of available fisheries.

Literature Cited

Ryder, R. A. 1965. A method for estimating the potential fish production of north-temperate lakes. Trans. Am. Fish. Soc. 94(3):214-218.

Ryder, R. A. 1978. Fish yield assessment of large lakes and reservoirs - a prelude to management, p. 403-423, *In* S. D. Gerking (ed.), Ecology of freshwater fish production. Chap. 16, Blackwell Sci. Publ., Oxford, U.K.

Ryder, R. A., S. R. Kerr, K. H. Loftus, and H. A. Regier. 1974. The morphoedaphic index, a fish yield estimator--review and evaluation. J. Fish. Res. Board Can. 31:663-688.

Ryder, R. A. and H. F. Henderson. 1975. Estimates of potential fish yield for the Nasser Reservoir, Arab Republic of Egypt. J. Fish. Res. Board Can. 32:2137-2151.

Sheldon, R. W., A. Prakash, and W. H. Sutcliffe, Jr. 1972. The size distribution of particles in the ocean. Limnol. Oceanogr. 17(3): 327-340.

Related Reading

Jenkins, R. M. 1967. The influence of some environmental factors on standing crop and harvest of fishes in U.S. reservoirs, p. 298-321, *In* Proc. Reservoir Fish. Symp., Southern Div. Am. Fish. Soc.

Jenkins, R. M. and D. J. Morais. 1971. Reservoir sport fishing effort and harvest in relation to environmental variables. Am. Fish. Soc. Spec. Publ. No. 8: 371-384.

Kerr, S. R. and R. A. Ryder. 1977. Niche theory and percid community structure. J. Fish. Res. Board Can. 34:1952-1958.

Melack, J. M. 1976. Primary productivity and fish yields in tropical lakes. Trans. Am. Fish. Soc. 105:575-580.

Matuszek, J. E. 1978. Empirical predictions of fish yields of large North American lakes. Trans. Am. Fish. Soc. 107:385-394.

Oglesby, R. T. 1977. Relationships of fish yield to lake phytoplankton standing crop, production, and morphoedaphic factors. J. Fish. Res. Board Can. 34:2271-2279.

Regier, H. A. and H. F. Henderson. 1973. Towards a broad ecological model of fish communities and fisheries. Trans. Am. Fish. Soc. 102(1):56-72.

ESTIMATING FISH CROPS, HARVEST, AND PREDATOR-PREY RELATIONS IN RESERVOIRS

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There are about 1,500 reservoirs larger than 200 hectares in the United States, totalling 4 million hectares at mean pool levels. Their area exceeds that of natural lakes in the nation (excluding the Laurentian Great Lakes and lakes in Alaska) and they receive nearly one-third of the total freshwater fishing pressure (about 200 million fisherman-days per year).

A major aim of the U.S. Fish and Wildlife Service's reservoir research program has been to develop methods for predicting the effects of water development projects on fishery resources. For the past 15 years we have been compiling and analyzing available information on the biological, physical, and chemical characteristics of impoundments, most of which has been collected by other State and Federal agencies. The goal has been to identify significant relations between both fish standing crop and harvest, and such variables as reservoir area, age, mean and maximum depth, water level fluctuation, outlet depth, thermocline depth, length of growing season, total dissolved solids, shore development, and water exchange rate. Progress in relating key environmental factors to production in U.S. reservoirs through correlation and regression analyses has been recorded in a series of papers (list of references attached).

Data on reservoir fish standing crop based on recovery of fish after application of rotenone in measured coves or open-water areas enclosed by small-mesh block-nets are now available from 230 U.S. reservoirs. Most of the reservoirs in the sample are south of 40°N Lat. and east of 100°W Long., where this sampling technique is most commonly used. Over 2,000 individual samples, representing instantaneous crop measures in areas of 0.2 to 4.0 hectares are included in the data base.

Our most recent correlation analyses of fish crop versus 11 environmental variables have consistently showed that total dissolved solids (residue on evaporation at 180°C) is the most important independent variable. Although the highly significant positive correlations (R^2 = 0.63 to 0.81) of total dissolved solids to crop do not explain the nature of causal connections, it serves as a useful predictor of fish biomass.

Predatory fishes (black basses; crappies; white bass, striped bass; catfishes; walleye, pikes; and others) make up 70% of the average sport fish harvest from U.S. reservoirs, and are therefore of primary concern to fishery managers. Management goals have been directed toward improving the variety and harvest of predators through introductions of both predator and prey species.

To aid in evaluating the introductions, we have developed an 'available

prey-predator' (AP/P) ratio, based on cove samples, which describes the adequacy of the prey crop to sustain the existing predator crop. This description allows the fishery manager to estimate the additional biomass of predators that could be supported, or conversely, the loss of predators due to natural mortality resulting from an inadequate prey base. Analyses of data from many southern U.S. reservoirs indicate that predator crops tend to overshoot food resources when reservoir environments are perturbed (e.g., by high water levels), but return to equilibrium conditions within one year under more stable conditions. Prey crops, however, decline more slowly, requiring up to 4 years to return to a minimum stable level.

Periodic sampling during the growing season can provide surplus production estimates that fishery managers can use to determine optimum harvest regulations, stocking needs, and the range of production values to be expected under various environmental conditions in reservoirs. The predictions and hypotheses derived from fishery and environmental data collected for U.S. reservoirs are intended to serve as indexes to average biotic conditions, and to help identify stressed fish communities. If the predictions of crop and production in reservoirs are also applicable to natural lakes, the utility of the technique could be greatly expanded.

An optimum sport fish crop is defined as one which includes a variety of species as well as above average biomass. In the U.S., black basses, walleye, pikes, or trout are important components of such populations, overriding in angling importance, for example, high crops of catfishes, sunfishes or perch. Analyses of reservoir crop data revealed that optimum sport fish crops occur in waters that meet three criteria; they are moderately hard (TDS, 100-350 ppm), ionic concentrations of carbonate-bicarbonate exceed those of sulphate-chloride, and the mean annual suspended sediment load (a corollary of turbidity) of inflowing streams is less than 2,000 ppm. U.S. geographic areas in which reservoirs meet all three criteria are positively related to those States with highest sales of non-resident (out-of-State) fishing license sales -- a reasonable indicator of angling excellence.

Conversely, probable areas of above average total standing crops and relatively high crops of coarse fish in reservoirs have been identified as those with TDS content greater than 120 ppm and a mean suspended sediment load in inflowing streams greater than 2,000 ppm. Most of the coarse fishes are considered undesirable by U.S. sport fishery managers. Problem fishes include carp, suckers, drum, and large shad which occur most abundantly in waters of the midwest, the Great Plains, and the Desert Southwest.

Fishery managers ordinarily undertake one specific action in altering lake habitat or manipulating a fish population to improve sport fish harvest, but successful results are usually attained only when a number of actions (controlled and uncontrolled) occur concurrently. If the effects on harvest of varying a number of environmental variables can be predicted with a reasonable degree of accuracy, assessment of specific management techniques should be greatly improved.

Correlation analyses of 11 environmental variables versus sport fish harvest and angler effort estimates on 285 reservoirs identified highly

significant negative relationships between reservoir area and harvest and effort; between reservoir age and total harvest and catch-rate; and positive effects of length of growing season and TDS on effort and harvest. A regression of surface area on total harvest, log (harvest in kg) = 1.7768 + 0.7855 area (in ha), explained 53% of the variability in harvest.

As more is learned about reservoir ecosystems, various plans are being developed for operating reservoirs to enhance production. Probably reservoirs will be regulated more and more for greater sport fish yields in coming years. The possibilities are exciting, and challenging opportunities lie ahead for the biologists involved.

References

Jenkins, R. M. 1968. The influence of some environmental factors on standing crop and harvest of fishes in U.S. reservoirs. p. 298-321 *In* Reservoir fishery resources symposium, Southern Division, Am. Fish. Soc.

Jenkins, R. M. 1970. The influence of engineering design and operation and other environmental factors on reservoir fishery resources. Water Res. Bull. 6(1):110-119.

Jenkins, R. M. and D. I. Morais. 1971. Reservoir sport fishing effort and harvest in relation to environmental variables. p. 371-384 *In* G. E. Hall (ed.) Reservoir fisheries and limnology. Am. Fish. Soc. Spec. Publ. No. 8.

Jenkins, R. M. 1974. Reservoir management prognosis: Migraines or miracles. Proc. Annu. Conf. Southeast. Assoc. Game and Fish Comm. 27:374-385.

Jenkins, R. M. 1976. Prediction of fish production in Oklahoma reservoirs on the basis of environmental variables. Annu. Okla. Acad. Sci. No. 5 (1974):11-20.

Jenkins, R. M. 1977. Prediction of fish biomass, harvest and prey-predator relations in reservoirs. p. 282-293, *In* Webb Van Winkle (ed.) Proceedings of a Conference on Assessing Effects of Power-Plant Induced Mortality on Fish Populations. Pergamon Press, New York.

Jenkins, R. M. and D. I. Morais. 1978. Prey-predator relations in the predator-stocking-evaluation reservoirs. Proc. Annu. Conf. Southeast. Assoc. Fish Wildl. Agencies 30(1976):141-157.

Leidy, G. R. and R. M. Jenkins. 1977. The development of fishery compartments and population rate coefficients for use in reservoir ecosystem modelling. U.S. Army Engineers Waterways Experiment Station Contract Report Y-77-1. 228 p. (Available from the Waterways Experiment Station, Vicksburg, Miss.)

PROOF OF THE PUDDING,
A COLLECTION OF ANNOTATED CREEL SURVEY RECIPES

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Why Collect --

The tongue-in-cheek title, "Proof of the Pudding," broadly describes the "why" of obtaining creel survey information. Creel survey information, properly focused as to the "whys, whats, hows and the pocket book" is the fishery manager's best friend. It not only provides essential bottom-line evidence of the efficacy of any given (existing or experimental) fish management regime, but it serves as a two-way communication conduit between the angler and the professional fishery manager. In many situations, the experienced long-term angler is already aware of just how "bad" things really are -- as compared to the "good ole days" -- and is often correct!

Discussion Points --

1. Evaluate specific management program changes (regulations, fish community manipulation, habitat modification, etc.).
2. Evaluate effects of contaminants and other environmental insults (fishery closures, harvest restrictions, etc.).
3. Use an adjunct to fish sampling and/or tagging studies for evaluating population dynamics (Availability Index, etc.).
4. A learning process (selling yourself and learning from the angler).
5. Selling fish management recommendations to administrators and non-technical associates (Commissioners, enforcement officers, etc.).

What to Collect (preparing the menu) --

"What" to collect depends primarily on your specific objectives. Here, the key words are "Perspective, Discrimination and Planning." The recipes and menu may be as sophisticated and expensive as a dinner at a four-star restaurant staffed by Cordon Bleu alumni or as simple and satisfying as Mom's country ham and grits (or perhaps brown bread and baked beans for this audience).

In any event, cardinal rules to be followed in creel survey data collections are -- limit objectives to bare bone essentials -- keep the design as simple as necessary to accommodate required objectives -- and standardize design to facilitate comparison with data collected at other times and places. Collection of extraneous data is an expensive luxury that siphons money better used for other fishery management objectives.

Discussion Points --

1. Know your resource to properly identify and integrate creel survey needs -- statewide, regional and site specific --

   a. Resource inventory [acres (hectares) and fish standing crop estimates by species and habitat (a wild but educated guess is better than none at all)].
   b. Fishing pressure estimates (existing; potential) and angler preference.
2. Significance and management application of commonly and not-so-commonly used creel statistics.
   a. Total pressure and harvest.
   b. Catch/harvest rates (different, you know).
   c. Quality Indices -- catch and/or harvest -- (of growing significance).
   d. Number of individuals vs number of trips.
   e. Expert vs "average joe" angler.
   f. Angler preference.

How to Prepare (cooking for the occasion) --

As with any great chef, a good survey designer must be imaginative and a born improvisor. After identifying the nature and theme of the occasion, the first step undertaken should be a painstaking review of all pertinent literature sources and a concurrent inventory of available equipment and supplies necessary to identify and prepare an appropriate survey regime.

Discussion Points --

1. Survey informational sources -- (literature and institutional).
2. Length of survey period required -- short time (put & take trout) -- long term (regulation changes, etc.).
3. General statewide surveys -- (telephone surveys, questionnaires, casual field contacts by enforcement officers).
4. Voluntary [post card mailing, mail box on site, log books (individuals and/or clubs), etc.] vs creel clerk collected data.
5. Fishing tournaments.

EVALUATING ANGLER DEMANDS AND PREFERENCES

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Fishery management has, in recent years, focused on the importance of social, economic and biological factors in planning and management of fishery resources. However, the need for better social and behavioral information about recreational fishermen has been recognized as one of the major deficiencies in optimum yield management. A review of existing outdoor recreation and fishery research literature indicates that an overall model must be formulated so that the identification and importance of angler preferences, satisfactions, motivations and other characteristics of recreational fishermen can be better understood.

A conceptual model has been suggested by Hendee (1974) and Driver (1976) which has been referred to as the "multiple-satisfactions" approach to resource management. The concept is that:

> "recreation resources offer people the opportunity for a range of experiences which, in turn, give rise to various human satisfactions. These multiple satisfactions may then lead to benefits - the ultimate goal of recreation-resource management. The nature of recreational experiences, and thus the satisfactions and benefits that follow, can be shaped by management of the surrounding physical, biological and social conditions."
> (Hendee 1974:106)

Thus, it would seem that the most direct products of recreational fisheries management are not only fish (a reasonable probability of catching one or more fish is a definite requirement) but also the fishing experiences which produce human satisfactions and benefits. The overall quality of a fishing experience is determined by the extent to which an angler experiences the mix of satisfactions desired (e.g., relaxation, companionship, catch, enjoying nature) and is not hindered by the dissatisfying experiences (e.g., restrictive regulations, user conflicts, poor catch).

Angler surveys have been conducted by numerous agencies to attempt to obtain the following types of information: (1) what anglers say they want (attitudes and preferences); (2) what anglers think is true (beliefs); (3) what anglers say they do (behavior and participation); (4) what anglers claim they would participate in at some time or place (demand); (5) who the anglers are (characteristics and attributes); (6) why anglers claim they go fishing (motivations); and (7) what anglers claim they receive from their fishing experiences (satisfactions and benefits). Often, the differences in these types of information are overlooked and inadvertently the wrong conclusions can be drawn or inappropriate management plans may be formulated.

Dawson and Wilkins (1980) have suggested that researchers and managers need to view these types of information as five general considerations:

(1) information on the motivations and expectations of anglers as to why they engage in a particular type of fishing will help managers to (a) meet angler expectations (e.g., by managing a fishery to produce a certain number or size of fish), (b) redirect angler expectations (e.g., through the dissemination of information on different or "under-utilized" species that could provide an experience similar to the species originally sought), or (c) change angler expectations (e.g., through information and education programs on the need for a particular regulation);

(2) knowledge about angler satisfactions and benefits allow the manager to determine (a) what satisfying experiences are inherent in a given situation and how they compare to the present or potential dissatisfying experiences, (b) the disparity or similarity between the angler's motives for fishing and his satisfactions, and (c) the need to minimize the negative impacts that potential management plans or regulations may have on angler satisfactions;

(3) information on the various types of anglers who use a given fishery will aid the manager in deciding how potential management plans or regulations will favor or unfairly impact the various types of anglers who have been generalized by Bryan (1976 and 1979) as (a) the "occasional" angler with novice ability and only casual interest, (b) the "generalist" angler who wants to catch some fish by any appropriate and legal methods, (c) the "tackle-species specialist" angler who specializes in certain fishing methods and species, and (d) the "method-species-setting specialist" angler who specializes in certain fishing methods and species in particular environmental settings;

(4) the preferences of recreational fishermen for various fish species, angling methods and fishing regulations need to be known so that managers can develop plans and regulations which take both the anglers preferences and the characteristics of the fishery resource into account (e.g., conflicts between various competing groups of fishermen and between the anglers and the fishery managers can be avoided or minimized if some consideration is given to all parties involved); and

(5) demographic-economic profiles of anglers need to be constructed along with traditional catch and effort data, so that managers have some idea about the composition and characteristics of their various constituencies so that (a) information on residency, origin-destination and angler financial resources can aid predictions concerning the impacts of gas shortages or economic fluctuations on the use of the fishery resources and (b) information and education programs on important fishery issues can be effectively and efficiently directed to the appropriate publics.

Surveys of anglers, when properly planned and conducted, can provide some of the various kinds of information listed above that will help fishery managers to develop management plans that reflect the values of their constituents. While biological research information tells a fishery manager about the present resource situation and his professional training tells him what could (or might) be done to alter or maintain that situation, only the public through direct (e.g., public hearings) or indirect (e.g., legislation) means can indicate what should be done with that resource.

The use of surveys, particularly mail questionnaires, in obtaining

social and human behavior information for fishery conservation and management has increased tremendously in recent years (Hendee and Bryan 1978; Ditton 1977; Potter et al. 1973). The majority of these surveys have been conducted with the aid of social scientists or good references regarding correct survey design and implementation (e.g., Dillman 1978; Warwick and Lininger 1975; Potter et al. 1972). However, it must be stressed that the survey process needs to be properly planned, designed and conducted with attention given to the correct procedures for sampling, question design, wording and layout, follow-up reminder letters, and numerous other factors that are prerequisite to reliable information that provides the needed data for sound fishery management decisions.

Literature Cited

Bryan, H. 1976. The sociology of fishing: a review and critique. p. 83-92, *In* H. Clepper (ed.), Marine recreational fisheries. Sport Fishing Institute, Washington, DC.

Bryan, H. 1979. Conflict in the great outdoors: toward understanding and managing for diverse sportsmen preferences. Sociological Study No. 4, Bureau Public Administration, Univ. of Alabama. 98 p.

Dawson, C. P. and B. T. Wilkins. 1980. Social considerations associated with marine recreational fisheries management. Mar. Fish. Rev. 42(12):12-17.

Dillman, D. A. 1978. Mail and telephone surveys: the total design method. John Wiley and Sons, N.Y. 325 p.

Ditton, R. B. 1977. Human perspectives in optimum sustainable yield fisheries management. p. 29-41, *In* H. Clepper (ed.), Marine recreational fisheries 2. Sport Fishing Institute, Washington, DC.

Driver, B. L. 1976. Toward a better understanding of the social benefits of outdoor recreation participation. p. 163-169, *In* Proc. Southern States Rec. Research Applications Workshop. USDA, For. Serv. Gen. Tech. Rep. SE-9, Southeastern Forest Exp. Sta., Asheville, N.C.

Hendee, J. C. 1974. A multiple-satisfaction approach to game management. Wildl. Soc. Bull. 2(3):104-113.

Hendee, J. C. and H. Bryan. 1978. Social benefits of fish and wildlife conservation. Proc. Western Assoc. Fish & Wildl. Agencies (58):234-254.

Potter, D. R., K. M. Sharpe, J. C. Hendee and R. N. Clark. 1972. Questionnaires for research: an annotated bibliography on design, construction and use. USDA Forest Service Research Paper PNW-140, Pacific Northwest Forest and Range Exp. Sta., Portland, Oregon 80 p.

Potter, D. R., K. M. Sharpe and J. C. Hendee. 1973. Human behavior aspects of fish and wildlife conservation: an annotated bibliography. USDA Forest Service Gen. Tech. Rep. PNW-4, Pacific Northwest Forest and Range Exp. Sta., Portland, Oregon 288 p.

Warwick, D. P. and C. A. Lininger. 1975. The sample survey: theory and practice. McGraw-Hill Book Co., N.Y. 344 p.

MORE WITH LESS IN THE 1980's: STANDARD TECHNIQUES

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A fishery is the complex interactions within and between the populations of fish being harvested, the populations of fishermen, and the environments of each. A vast number of physical, chemical, biological, sociological, and economical interactions determine the production of a particular fish species, but many are difficult, impossible, or impractical for the present day fishery manager to measure. We are increasingly confronted with situations involving conflict between competing uses of aquatic resources where quick decisions are required. When faced with a choice of making quick decisions or having the decisions made without our input, we must clearly choose to participate. Thus, we rely heavily on judgement based on past experiences which include not only field experience but research and familiarity with the literature. The most sophisticated data analysis is no substitute for the properly motivated and dedicated fishery manager.

I propose in the time alloted to me to offer some possible short cuts to fishery management decisions, but with the definite understanding that everything proposed has in one way or another depended on long term experience and/or research results. Most of these will be indices and predict trends rather than long term efforts at collecting data for actual population estimates in every situation we may encounter. Perhaps one of the real rewards from this workshop might be the pooling of other indices from other states or even those used successfully in different regions of New York.

Working on a long term, intensive study of Maine brook trout populations in small ponds we observed that when the trout above and below six inches were about equally represented we could expect to sustain the fishery at a level satisfactory to the fishermen for both size and catch with a 5-fish limit. Thus a quick check with a trap net could provide information helpful in maintaining a healthy population.

From long experience with lake inventory and lake trout management we began to observe that our best lake trout populations and our best success with maintenance stocking was in the lakes that had a rolling bottom topography. A study of the fathograms from lake inventory easily indicates the character and suitability of the bottom.

Operation of a year around counting weir on the Narraguagus River in Maine gave us the opportunity to confirm population information from standardized electro-fishing gear to obtain an index of young Atlantic salmon and a prediction of smolt migration. For several years we correlated the size of the smolt migration with the index obtained from once-through standard sampling on the nursery areas in the upper river. We concluded that it was much less demanding and less damaging to the populations

than attempting an actual mark and recapture with the extra handling and trauma for the young fish. Sampling was standard for area, habitat conditions, electro-fishing gear, and continuity of the biologist in charge.

Simple stocking programs can be developed from long term research projects. Colorado high country lakes are stocked in July with fingerling trout based on three levels of fishing pressure and the elevation of the lake. Three easily interpreted regression lines with elevation above mean sea level on the x-axis and number per acre on the y-axis and labeled heavy, moderate, and light fishing pressure determine the number to stock. A lake at 9,000 feet with moderate fishing pressure would receive 175 fingerling trout per acre. The correlation between productivity, population dynamics, and elevation was determined by the research.

As energy and economic problems force likely changes in the behavior of fishermen we may be forced to place more emphasis on stocking programs in less than quality trout habitat near urban areas. Michigan has described a program in which 2,500 large trout (10-inch average) are stocked in a 5-mile stretch of stream which provides quality trout habitat only in the months of April, May, and June and then deteriorates in July and August with no possible chance of survival of the stocked fish. During April and May anglers are restricted to flies-only and no fish in possession. In June spinning lures may be used, and there is a 2-fish limit. In July and August the limit is raised to five fish and bait may be used. Sixty-four percent of the fishing took place in April and May. A total of 5,706 trout were caught or about 2-1/2 times per trout stocked. Fishermen traveled an average of 50 miles. Total benefits for the program were estimated at $37,000 or just about 10 times the total expenses of $3,708 for the trout and the creel census time. Programs such as this may be popular enough to furnish the dollars necessary to provide the resources to manage and also take some of the pressure off the regional biologist.

Many of you are familiar with the long term research which Dr. John Forney has conducted on the Oneida Lake walleye management in cooperation with the New York State Department of Environmental Conservation. One of the primary conclusions of this research indicates that the primary goal of management should be to minimize the fluctuation in walleye biomass by restricting and relaxing angling regulations. Biomass for the adult stock can be estimated from the catch per unit of effort by trapnets set by the Oneida Lake Hatchery to obtain the eggs necessary to carry out that operation. Contribution of walleye fry classes to the adult stock can be predicted from the catch of yearling walleye in trawls. From the estimated biomass of adult and sub-adult contributions to the adult stock, legal length limits are recommended at 12 inches, 15 inches, or greater than 15 inches. Opportunities may exist at Chautauqua Lake where muskellunge are trapnetted annually for fish culture operations, and a creel census is operated, both providing catch per unit of effort data.

We must also be considering measurements of productivity that may not be as precise and accurate as necessary on which to base management recommendations but with refinement may do the job. Professor Oglesby

of our Department has provided the following observations as a result of his work. In a very general (global) sense fish yields from lakes and impoundments have been shown to be a function of primary productivity and/or the standing crop of phytoplankton measured as chlorophyll concentration. Others have demonstrated correlations of yield with morphoedaphic factors. Whatever the correlate, functions developed for a wide variety of lentic waters usually take an exponential form. Most of these models are simple and fairly robust but are not precise when used as predictive tools for a particular body of water. Opportunities to develop useful fish yield models for New York appear good. However, more research is necessary before indices like the morphoedaphic index, for example, is likely to be precise and accurate enough.

Mr. Larry Nashett, Conservation Biologist with DEC, has provided me with some information from the research he has been conducting to test the possibility of using the mean summer concentration of Chlorophyll "A". Larry's research has as a primary goal to explain as much of the among-lake variation in growth of largemouth bass (*Micropterus salmoides*) as possible by the use of a few easily measured variables. One interesting part of his data collection was the use of highly motivated anglers to take weekly Secchi disc readings. Their readings were reasonably complete and compared favorably with Larry's own data sets. Chlorophyll concentration is highly correlated with phytoplankton biomass, and the Secchi disc readings were translated into Chlorophyll A estimates. Unfortunately the chlorophyll estimates and the growth of the bass in the eleven study lakes were not as well correlated as we would hope. The potential utility of these kinds of associations would justify continuing research programs.

One of the values of the workshop may be that it will encourage all of us to begin thinking about "more with less" and perhaps we can start a listing of methods based on experience and research that will reduce the resources now necessary to make many management decisions.

References

Brylinsky, M. and K. H. Mann. 1973. An analysis of factors governing productivity in lakes and reservoirs. Limnol. Oceanogr. 18:1-14.

Carl, L. M., J. R. Ryckman, and W. C. Latta. 1976. Management of trout fishing in a metropolitan area. Fishery Division, Michigan Dep. Nat. Res., Res. Rep. No. 1836. 29 p.

Everhart, W. H. and W. D. Youngs. 1980. Principles of fishery science. 2nd Ed. Cornell Univ. Press, Ithaca, N.Y., USA 388 p.

Forney, J. L. 1979. Oneida Lake walleye stock assessment and population projections, 1979-1982. Mimeographed report. 19 p.

Jenkins, R. M. 1977. Prediction of fish biomass, harvest and prey-predator relations in reservoirs. *In* W. Van Winkle (ed.), Proceedings of the conference on assessing the effects of power-plant induced mortality on fish populations. Pergamon Press, New York, N.Y.

Matuszek, J. E. 1978. Empirical predictions of fish yields of large North American lakes. Trans. Am. Fish. Soc. 107(3):385-394.

McConnell, W. J., S. Lewis, and J. E. Olson. 1977. Gross photosynthesis as an estimator of potential fish production. Trans. Am. Fish. Soc. 106(5):417-423.

Oglesby, R. T. and W. R. Schaffner. 1975. The response of lakes to phosphorus. p. 25-57, *In* K. S. Porter (ed.), Nitrogen and phosphorus-food production, waste and the environment. Ann Arbor Sci. Publ.

Oglesby, R. T. 1977. Relationships of fish yield to lake phytoplankton standing crop, production, and morphoedaphic factors. J. Fish. Res. Board Can. 34(12):2271-2279.

Strickland, J. D. and T. R. Parsons. 1972. A practical handbook of seawater analysis. 2nd Ed. Fish. Res. Board Can., Bull. No. 167.

PROPORTIONAL STOCK DENSITY (PSD) AND RELATIVE WEIGHT (W_r): INTERPRETIVE INDICES FOR FISH POPULATIONS AND COMMUNITIES

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INTRODUCTION

A challenge of the 1980's is to develop better fishery management systems--systems that provide more favorable outputs and benefits from aquatic habitats in proportion to available agency resources. The best system, in my opinion, will define goals and objectives based on a concept of optimum sustained yield (Anderson 1974a, 1975a; Roedel 1975; Nielsen 1976). The most effective system will successfully integrate and apply ecological concepts, socioeconomic perspectives, and research and management philosophy and techniques in the development of management plans and programs. A key element for fishery managers is to develop models of what is good or satisfactory for both fish and fishing. The most effective managers will develop approaches to make and evaluate management decisions on the basis of relatively few data that can be collected at low cost. The purpose of this paper is to present information on structural indices that I believe may facilitate progress and effectiveness in fishery management.

The indices are based on analyses of length-frequency and length-weight data. These indices are proposed as an alternative to biomass models. Models of biomass that have application to fish population and community assessment and management decisions were developed by Swingle (1950); more recently Jenkins and Morais (1978) developed an approach to model the biomass relations between prey and predators.

The interpretive indices have evolved and developed from data collected and ideas stimulated by many individuals, including state and federal research and management biologists, and several graduate students. The primary organization that promoted this evolution is the Central States Pond Management Work Group, organized in 1972. Although the models are based on largemouth bass and bluegill populations in small impoundments, I believe that these approaches and perspectives have a much broader application.

PRODUCTION AND POPULATION STRUCTURE

The level of fishery outputs or benefits that can be derived from self-sustaining populations depends on production, i.e., tissue elaboration. Given that migration can be ignored, it is annual production that limits potential sustained harvest. The amount of this potential is determined by rates of reproduction, growth, and mortality (Anderson 1974b).

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Density-independent factors such as habitat and water quality characteristics, and density dependent factors that are significant from a production problem standpoint, have an adverse impact on rates of reproduction, growth, or mortality. These rates, which determine annual production, also determine the length-frequency distribution and standing crop of a population at any particular time. Any factor that has an adverse effect on production is reflected by standing crop and length-frequency characteristics. Of these two important structural characteristics of a population, length-frequency data can be collected most economically.

LENGTH-FREQUENCY INDICES

The procedure for analysis of length-frequency data involves defining minimum stock lengths and quality lengths for particular species (Table 1). Stock length is a size at or near which fish often reach

Table 1. Proposed minimum stock and quality total lengths for selected species.

Species	Stock length (in)	Stock length (cm)	Quality length (in)	Quality length (cm)	References[a]
Largemouth bass	8	20	12	30	Anderson (1977)
Smallmouth bass	7	18	11	28	Anderson & Weithman (1978)
Walleye	10	25	15	38	Anderson & Weithman (1978)
Northern pike	14	35	21	53	Anderson & Weithman (1978)
Muskellunge	17	43	26	66	Anderson & Weithman (1978)
Flathead catfish	11	28	16	41	
Channel catfish	11	28	16	41	
Landlocked salmon	9	23	14	36	L. Weiss-Glanz[b]
Lake trout	12	30	18	46	
Rainbow trout	8	20	13	33	A. Weithman[b]
Brown trout	8	20	13	33	
Brook trout(streams)	5	13	8	20	
Brook trout(lakes)	8	20	12	30	L. Weiss-Glanz[b]
Bluegill	3	8	6	15	Anderson (1977)
Redear sunfish	5	13	7	18	Gabelhouse (1978)
Yellow perch	5	13	8	20	Anderson & Weithman (1978)
White perch	5	13	8	20	L. Weiss-Glanz[b]
Black crappie	5	13	8	20	
White crappie	5	13	8	20	
White bass	6	15	9	23	
Yellow bass	5	13	8	20	
Pumpkinseed	3	8	6	15	
Black bullhead	6	13	9	20	
Yellow bullhead	6	13	9	20	
Gizzard shad	7	18	11	28	B. Schonhoff[b]
Carp	11	28	16	41	
Freshwater drum	8	20	12	30	

[a]Stock and quality lengths of species for which no reference is shown are tentatively inferred from growth and population characteristics of the species concerned.

[b]Personal communication.

maturity; such a length is usually within a range of 20 to 26% of the world record length (Anderson and Weithman 1978). Quality length for sport fishes is a size that most anglers like to catch; such a length is usually within a range 36 to 41% of the world record length. In populations of stunted fish, few individuals reach the minimum quality length.

The index of Proportional Stock Density (PSD) is expressed as the percentage of the stock that is of quality size:

$$PSD\ (\%) = \frac{\text{number} \geq \text{quality size} \times 100}{\text{number} \geq \text{stock size}}$$

When the quality of fish and fishing is a concern of fishery managers, fish of a "memorable" size, e.g., largemouth bass longer than 15 inches, may be important to management objectives. Relative Stock Density (RSD) is the percentage of any defined size group in the stocks. For example:

$$RSD_{15}\ (\%) = \frac{\text{number of fish} \geq 15 \text{ inches} \times 100}{\text{number} \geq \text{stock size}}$$

A satisfactory rate of reproduction is needed to sustain a favorable structure of fish populations and adult stocks. Anderson and Weithman (1978) defined the rate of reproduction as the number of age-I fish produced per unit area per year. Determining this rate is difficult, expensive, and impractical for management purposes. Reynolds and Babb (1978) proposed a convenient index for evaluating reproductive success--the Young Adult Ratio (YAR). In their analyses of bass populations in autumn, the ratio was calculated as number age 0/number ≥ age III, or number ≤ 6 inches/number ≥ 12 inches.

INDEX OF CONDITION

Relative Weight (W_r) is an index of condition, proposed by Wege and Anderson (1978), that compares the actual weight (W) with a standard weight (W_s) for fish of the same length (multiplication by 100 eliminate decimals): $W_r = (W/W_s) \times 100$. The length-weight relationship proposed as a standard for largemouth bass (Table 2) is based on extensive data tabulated by Carlander (1977). An empirical approach is probably the best first step toward developing a working standard. An alternative approach may be that of basing the standard on length-weight relations of balanced populations that exhibit no production problems. The ideal standard weight for a species would produce an average W_r of 100 for fish of all lengths, over most of the native range of the species, given no production problems and habitats with no significant environmental problems. My hope is that, with an ideal standard, two fish with the same W_r would reflect relative bioenergetic equivalence.

INTERPRETATION OF INDICES AND PRODUCTION PROBLEMS

The existing age structure and density of any population at a given time reflect rates of reproduction and mortality experienced by the year classes present. Individual growth rates and density determine length frequency. Data from selected populations, calculated models, and intuition regarding largemouth bass populations provide a basis for

Table 2. Proposed working standard length-weight equations for selected species. Total length is in millimeters and weight is in grams.

Species	Equation	Reference
Largemouth bass	$\log W_s = -5.316 + 3.191 \log L$	Wege & Anderson (1978)
Smallmouth bass	$\log W_s = -4.983 + 3.055 \log L$	Wege[a]
Channel catfish	$\log W_s = -5.649 + 3.243 \log L$	Wege[a]
Rainbow trout	$\log W_s = -5.194 + 3.098 \log L$	Weithman[a]
Bluegill	$\log W_s = -5.374 + 3.316 \log L$	Hillman[a]
White crappie	$\log W_s = -5.102 + 3.112 \log L$	Wege[a]
Black crappie	$\log W_s = -4.914 + 3.052 \log L$	Wege[a]
Gizzard shad	$\log W_s = -5.376 + 3.147 \log L$	Schonhoff[a]
White sucker	$\log W_s = -5.070 + 3.060 \log L$	See[a]

[a]Personal communication.

interpreting index values and production problems.

A balanced or good bass population with no significant production problems often exhibits a stable age distribution, moderate rates of annual mortality and reproduction, and average or better growth rates. Structural indices may show mid-range values of PSD from 40 to 70% and RSD_{15} values from 10 to 25%; YAR values may be between 1 and 10 (Anderson 1975b; Reynolds and Babb 1978). Growth rates, plotted in the form of annual length increment as a function of length, will show a negative trend with increasing length. However, the increment of all lengths is satisfactory, i.e., average or above for the climatic conditions. A plot of W_r as a function of length will show little or no trend for fish 8 to 15 inches long, and the average for these sizes will be 100 ± 5. Good or balanced bluegill populations associated with good bass populations will have a PSD of 20 to 60%, and RSD_8 values of 5 to 20% (Novinger and Legler 1978; Philip Hillman, Univ. of Missouri, Pers. Comm.).

Populations with variable or excessive rates of reproduction and variable, indeterminate, or high mortality rates of stock-size bass will usually have PSD values of less than 20% and RSD_{15} values at or near 0%; YAR values will often be >10. Growth rates of stock size bass will be less than satisfactory. Values of W_r may range from 75 to 90 and decrease with increasing length. The PSD of associated bluegill populations may vary over time and reach values >80%.

Populations with low or no annual reproduction and low or indeterminate rates of mortality, of quality-size bass will exhibit PSD values >80% and possible RSD_{15} values of over 40%. Growth rate of the quality-size bass is rapid for their length; W_r values for these fish may exceed 110. Smaller stock-size bass may have low W_r values and slower than desirable growth rates because bluegill reproduction is inadequate. Bluegill PSD with such bass populations is normally less than 20% and RSD_8 values are at or near 0%.

The structure of a fish community of predator and prey, i.e., game and panfish species, can be plotted on a tick-tack-toe graph with PSD of the panfish-prey component plotted as the dependent variable (Anderson 1977). The existing structure relative to management objectives can be plotted, and can provide a basis for management decisions.

APPLICATION OF INDEX VALUES TO MANAGEMENT DECISIONS

Fish populations and communities with index values outside desirable ranges for mangement objectives are good candidates for manipulation. Appropriate management options in waters with no significant environmental problems may include the following: renovation and restocking; chemical or mechanical thinning of problem species and sizes; corrective stocking; or appropriate regulations to adjust predator density, biomass, and length-frequency distribution.

DISCUSSION

Length-frequency and length-weight indices for largemouth bass and bluegill populations appear to provide a practical approach for stock assessment. Given the guidelines for defining minimum stock and quality lengths and for developing standard weights, index values for populations with production problems will fall outside desirable ranges. The desirable ranges that have been modeled for bass, bluegill, and coolwater fish populations are not intended to be recipes to be applied without testing and deliberation. What should be developed and applied by research and management biologists is the approach to defining what is good and developing objective ranges. Following Swingle (1950), populations within objective ranges could be defined as balanced populations.

I hope that individuals and agencies will be consistent in defining minimum stock and quality lengths for each species. This consistency will allow direct comparison of index values for various populations. There will certainly be variations in objective ranges of PSD and RSD to meet management objectives in various waters and states. However, populations with similar structures in different locations should always produce the same index values.

I have a similar hope for the development of standard weights. I am not now sure whether an ideal standard can be developed for any or many species. On the basis of data that I have seen to date, however, I am gaining confidence in the proposed largemouth bass standard weight. It is probably fortuitous that a first attempt at an empirical approach resulted in a working standard. Application of the same approach to bluegill and gizzard shad data was not equally successful (Legler 1977; B. Schonhoff, Univ. of Missouri, Pers. Comm.). Future research and coordination and cooperation will be needed to develop good and widely accepted length-weight relationships as standards.

The emphasis in this paper has been on what to measure. When and how to sample fish communities to estimate PSD and W_r are further important questions. For largemouth bass, electrofishing at night in the spring before spawning or in the late summer or fall may produce good estimates of PSD (Reynolds and Simpson 1978) and W_r. For bluegills the best period

for evaluating W_r may be in June and July (Legler 1977; Philip Hillman, Univ. of Missouri, Pers. Comm.). An important question is the accuracy of PSD as measured by angler catch (not harvest) data. Preliminary information indicates a general 1:1 relation for largemouth bass between electrofishing PSD in the spring and those based on angler catch over the fishing season (G. D. Novinger, Missouri Dept. of Conservation, Pers. Comm.). This relation does not hold for bluegills, because anglers catch few fish in the 3- and 4-inch classes. Angler catch and actual PSD values for bluegill populations agree only when actual PSD is near 0 or 100%. If relations between angler PSD and RSD values can be demonstrated or developed, angler catch data may provide the best and least expensive method of monitoring length-frequency indices.

I am obviously optimistic about the potential value to management of these structural indices. My enthusiasm is based on the fact that the data needed to calculate and estimate index values are relatively easy to collect, at relatively low cost. The index values have an ecological basis that can reflect production problems and unsatisfactory rates of reproduction, growth, or mortality. But the primary reason for my confidence is that the index values are dependent on numbers, sizes, and kinds of fish present in any water. These characteristics of fish populations and communities are important to anglers and directly influence the quality of fishing. Therefore, the index values should be related to socioeconomic values and benefits.

I hope that these indices will play a part in the development of more effective fishery management systems in the 1980's. More effective systems, programs, and plans will sustain and improve the quality of fishing as perceived by anglers.

Literature Cited

Anderson, R. O. 1974a. Problems and solutions, goals and objectives of fishery management. Proc. Southeast. Assoc. Game Fish Comm. 27(1973):391-401.

Anderson, R. O. 1974b. Influence of mortality rate on production and potential sustained harvest of largemouth bass populations. p. 18-28, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Anderson, R. O. 1975a. Optimum sustainable yield in inland recreational fisheries management. p. 29-39, *In* P. Roedel (ed.) Optimum sustainable yield as a concept in fisheries management. Am. Fish. Soc., Spec. Publ. 9.

Anderson, R. O. 1975b. Factors influencing the quality of largemouth bass fishing. p. 183-194, *In* R. H. Stroud and H. Clepper (eds.) Black bass biology and management. Sport Fishing Institute, Washington, D.C.

Anderson, R. O. 1977. Management of small warm water impoundments. Fisheries 1(6):5-7, 26-28.

Anderson, R. O. and A. S. Weithman. 1978. The concept of balance for coolwater fish populations. p. 371-381, *In* R. L. Kendall (ed.) Selected coolwater fishes of North America. Am. Fish. Soc., Spec. Publ. 11.

Carlander, K. D. 1977. Handbook of freshwater fishery biology. Volume 2. Iowa State Univ. Press, Ames. 431 p.

Gabelhouse, D. W. 1978. Redear sunfish for small impoundments? p. 109-123, *In* G. D. Novinger and J. G. Dillard (eds.) New approaches to the management of small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 5.

Jenkins, R. M. and D. I. Morais. 1978. Prey-predator relations in the predator-stocking-evaluation reservoirs. Proc. Southeast. Assoc. Fish Wildl. Agencies 30(1976):141-157.

Legler, R. E. 1977. New indices of well-being for bluegills. M.S. thesis, Univ. of Missouri, Columbia 56 p.

Nielsen, L. A. 1976. The evolution of fishery management philosophy. Mar. Fish. Rev. 38(12):15-23.

Novinger, G. D. and R. E. Legler. 1978. Bluegill population structure and dynamics. p. 37-49, *In* G. D. Novinger and J. G. Dillard (eds.) New approaches to the management of small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 5.

Reynolds, J. B. and L. R. Babb. 1978. Structure and dynamics of largemouth bass populations. p. 50-61, *In* G. D. Novinger and J. G. Dillard (eds.) New approaches to the mangement of small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 5.

Reynolds, J. B. and D. E. Simpson. 1978. Evaluation of fish sampling methods and rotenone census. p. 11-24, *In* G. D. Novinger and J. G. Dillard (eds.) New approaches to the management of small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 5.

Roedel, P. M. 1975. A summary and critique of the symposium on optimum sustainable yield. p. 79-89, *In* P. M. Roedel (ed.) Optimum sustainable yield as a concept in fisheries management. Am. Fish. Soc., Spec. Publ. 9.

Swingle, H. S. 1950. Relationships and dynamics of balanced and unbalanced fish populations. Auburn Univ. Agric. Exp. Stn. Bull. 274. 74 p.

Wege, G. J. and R. O. Anderson. 1978. Relative Weight (W_r): a new index of condition for largemouth bass. p. 79-91, *In* G. D. Novinger and J. G. Dillard (eds.) New approaches to the management of small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 5.

SALMONID STOCKING

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Michigan's Trout Program

Trout Only Lakes: Approximately 100 lakes are kept free of competing species through chemical reclamation and rough fish barriers. They are stocked annually with trout fingerlings, usually brook trout. Sparse stocking (40 to 50 fingerlings per acre) gives best survival and growth. One hundred fish per acre is a more common stocking rate. Lakes produce 10 to 30 pounds per acre per year.

Two-Story Trout Lakes: Yearling trout (approximately 10 per pound), stocked sparsely in large oligotrophic lakes containing other species, provide good trout fishing for sizable fish. In large lakes (thousands of acres), only 2 to 5 fish per acre are stocked to be harvested at 1 to 2 pounds each.

Great Lakes: An appropriate mix of coho, chinook, steelhead, lake trout, brown trout, and Atlantic salmon are stocked in the Great Lakes or their tributaries at a time and size that best matches the natural life cycle. Abundant alewife forage has provided excellent survival and growth and excellent fishing.

Top Quality Trout Streams: These streams have self-sustaining trout populations and are not stocked. Michigan has no put-and-take (catchable) trout stocking programs.

Second Quality Trout Streams: These are typically larger streams where recruitment is limited or streams having borderline trout habitat. On some, reproduction is simply augmented by fingerling or yearling stocking. Excellent results on borderline streams (or on streams entirely lacking trout) have been obtained through chemical reclamation and restocking brown or rainbow trout fingerlings. Chemical reclamation eliminates severe competition for invertebrates, thus trout food flourishes after treatment. These treatments are characterized by exceptional trout production, survival, and growth. Insect hatches dramatically improve which enhances trout angling.

Keys to Good Management

1. Know Your Product: Knowing fish and how to manipulate fish populations to provide fishing opportunity is the easiest part of fisheries management.

2. Know Your Customer: Make it your business to know why fishermen fish -- understand your fishermen. Beware of public opinion polls. It is a rare fisherman that clearly understands what motivates him to fish. Don't expect the average fisherman to be able to tell you. Be a fisherman yourself. Fishing, like hunting, is an age olf food gathering endeavor. Important facets of it are preparation, searching, capture, display, sharing, cooking, eating, and telling the story of the capture.

3. Variety Enhances Angler Satisfaction: Anglers are always looking for new and exciting experiences. Travel has universal appeal. People hate reruns on T.V. Predictable, consistent fishing results are boring. Example: Roadside fish-out ponds.

4. Challenge is Important: Satisfaction in goal achievement is in proportion to its difficulty. Angling quality is inversely related to average catch rate. Example: Brown trout vs smelt.

5. A key motivation in fishing are the occasional good days afield. It is the memorable, highly successful outings that keep fishermen coming back. In that regard, average CPE can be deceptive because it is a conglomerate of good, bad and average days. Take care not to eliminate the opportunity for the outstanding, memorable outing. (Don't make bag limits too low or eliminate big fish opportunities altogether.)

6. Keep regulations to the absolute minimum needed to provide the desired opportunities. Keep management as natural as possible; don't unnecessarily strangle our few remaining freedoms.

7. Avoid CPE as a management goal. Instead, treat CPE as a fairly predictable, but rarely controllable, parameter. On public waters, anglers determine how much fishing pressure will be exerted. They establish their own balance between fishing effort and available fish. This balance is amazingly consistent for a given type of fishery so long as catch is measured in pounds, not numbers of fish. Example: the mean catch (in pounds) of brown trout per angler day from accessible public waters will not vary much nationwide. Even less variability will be noted for a particular region or state.

8. Anglers are happy with fewer pounds of trout than warmwater fish. Average CPE for trout is 1/4 pound per angler day vs 1 pound for warmwater fish. Thus, given the same yield per acre, a water will support 3 to 5 times as much angling use under trout management than it will under warmwater management.

9. Trout are lower on the food chain than warmwater gamefish. Therefore, expect higher yields per acre from trout. Combine this with No. 8 above.

10. Fisheries managers tend to be pessimistic about what habitat will support trout. If food is abundant (or competition eliminated) salmonids can take a lot of other adversities.

11. Competition, not predation, is the key controlling factor in salmonid stocking success.

12. Food availability (closely tied to competition - No. 11 above) is the key to good growth and survival of salmonids.

13. Beware of assuming a forage fish is needed to produce large trout. Food availability is the key and forcing trout to a fish diet causes them to ascend one level in the food chain. Dramatic loss in production will result.

14. Planting Date: Trout should be stocked to take advantage of highs in food availability, coincident with good growing temperatures. Late fall is a poor time to stock trout in northern latitudes.

15. Trout Strain: Wild trout strains generally succeed better in wild conditions.

16. Trout Size: Stock the size that produces the desired results cheapest.

17. Regulations: Use them to maximize benefits produced from trout stocking. They can allow stocked trout to realize their growth potential before harvest or they can be used to build up trout standing crop in desired size categories.

18. Efficiency in Trout Stocking: Stock sparsely. Trout growth and survival will increase to accommodate the reduced stocking rate. Pounds harvested will remain approximately the same under a wide range of stocking rates. Identify weak programs and have the courage to bail out. Pull up the weeds.

Management Evaluation

In measuring benefits, cost per pound in the creel is much better than cost per fish, but cost per angler day is even better. Best are analyses that show cost of management compared with value of angler days produced. Determine not what fishermen spend, but what they would be willing to spend if we were perfect horse traders (see Talhelm). Don't fear economic analyses. Those that have been done all show big profits from fisheries management.

In evaluating a trout planting program, stock several marked year classes in succession and then survey (or creel census) for one season rather than stock one marked year class and run several surveys (or censuses). You get much more data, much cheaper.

Besides searching conventional literature in problem solving, review agency guidelines and seek direct advice via telephone from knowledgeable experts. What is the value of a Fisheries Society if we can't call on one another in times of need?

References

Borgeson, David P. 1977. Michigan fish stocking guidelines. Mich. Dep. Nat. Res., Fish. Div. 31 p.

Borgeson, David P. 1977. The anatomy of wild trout fishing. p. 61-66, *In* Proceedings of a National Symposium on Wild Trout Management. San Jose Hyatt House, San Jose, California, February 3, 1977.

Borgeson, David P. 1980. Trout management in Michigan. TROUT 21(1):38-46.

Engstrom-Heg, R. 1979. A philosophy of trout stream management in New York. N.Y.S. Dept. Environmental Conservation, Albany, N.Y. June 30, 1979. 24 p.

May, R. H. 1980. The semantics of modern trout management - an angler view. Presented to a Symposium on Special Angling Regulations sponsored by the Colorado-Wyoming Chapter of the American Fisheries Society, Fort Collins, Colorado, February 28, 1980. 10 p.

Other Selected References*

Anonymous. 1964. Research in Colorado. R. W. Gregory and W. C. Nelson (eds.). Ann. Rept. No. 1.

Boles, H. D. and D. P. Borgeson. 1966. Experimental brown trout management in Lower Sardine Lake, California. Calif. Fish and Game. 52(3) [in press].

Boles, H. D., F. A. Meyer, and D. P. Borgeson. 1964. Packer Lake experimental trout management. Calif. Dept. Fish and Game, Inland Fish. Admin. Rept. No. 64-12. Mimeo. 9 p.

Burdick, M. E. and E. L. Cooper. 1956. Growth rate, survival, and harvest of fingerling rainbow trout planted in Weber Lake, Wisconsin. J. Wildl. Manage. 20(3):233-239.

Butler, R. L. and D. P. Borgeson. 1965. California's "catchable" trout fisheries. Calif. Dept. Fish and Game, Fish Bull. 127. 47 p.

Cunningham, A. G. 1935. Remarkable productivity of Lake Dauphin. Trans. Am. Fish. Soc. 65:275-276.

Curtis, B. 1941. Creel counts in California. Calif. Fish and Game. 27:185-189.

Dietsch, E. and R. W. Gross. 1961. A new day for Greenwood Lake. N.Y. State Conservationist, Aug.-Sept.

Dymond, J. R. 1930. A possible critical factor affecting the production of trout in some British Columbia lakes. Trans. Am. Fish. Soc. 60:247-249.

Eipper, A. W. 1964. Growth, mortality rates, and standing crops of trout in New York farm ponds. Cornell Univ. Agric. Exp. Sta., Mem. 388, 67 p.

Eipper, A. W. and H. A. Regier. 1962. Fish management in New York farm ponds. Cornell Ext. Bull. 1089. 40 p.

Eschmeyer, W. R. 1938. Experimental management of a group of small Michigan lakes. Trans. Am. Fish. Soc. 67:120-129.

Flick, W. A. and D. A. Webster. 1964. Comparative first year survival and production in wild and domestic strains of brook trout, *Salvelinus fontinalis*. Trans. Am. Fish. Soc. 93(1):58-69.

Foerster, R. E. 1944. The relation of lake population density to size of young sockeye salmon (*Oncorhynchus nerka*). J. Fish. Res. Board Can. 6:267-280.

*From: "Trout Lake Management"

Grahame, A. 1961. The Hopatcong story. Outdoor Life. Aug.

Green, C. W. 1952. Results from stocking brook trout of wild and hatchery strains at Stillwater Pond. Trans. Am. Fish. Soc. 81:43-52.

Green, D. M. 1964. A comparison of stamina of brook trout from wild and domestic parents. Trans. Am. Fish. Soc. 93(1):96-100.

Harkness, W. J. K. 1941. Catches of speckled trout from the plantings of hatchery-raised fish in private waters of Ontario. Trans. Am. Fish. Soc. 70:410-413.

Hartman, W. L. 1957. Finger Lakes rainbows, Part III. N.Y. State Conservationist. June-July.

Jenkins, R. M. 1965. Bibliography on reservoir fishery biology in North America. U.S. Fish and Wildl. Serv., Res. Rept. 68. 57 p.

Jeppson, P. 1963. Pend Oreille Lake kokanee. Idaho Wildl. Rev. 16(3).

Larkin, P. A. and S. B. Smith. 1954. Some effects of introduction of the redside shiner on the Kamloops trout in Paul Lake, British Columbia. Trans. Am. Fish. Soc. 83:161-175.

Mottley, C. McC. 1940. The production of rainbow trout at Paul Lake, British Columbia. Trans. Am. Fish. Soc. 69:187-191.

Odum, E. P. 1953. Fundamentals of ecology. W. B. Saunders Co., Philadelphia. 384 p.

Ricker, W. E. and J. Gottschalk. 1941. An experiment in removing coarse fish from a lake. Trans. Am. Fish. Soc. 70:382-390.

Rounsefell, G. A. 1938a. Experimental management of a group of small Michigan lakes. Trans. Am. Fish. Soc. 67:120-129.

Rounsefell, G. A. 1938b. The significance of fish population studies in lake management. Third No. Am. Wildl. Conf. p. 458-468.

Swingle, H. S. 1950. Relationships and dynamics of balanced and unbalanced fish populations. Ala. Poly. Inst., Agric. Exp. Sta., Bull. 274. 74 p.

Wales, J. H. 1946. Castle Lake trout investigation. First phase: Interrelationships of four species. Calif. Fish and Game. 32(3): 109-143.

Wales, J. H. 1947. Castle Lake trout investigation. 1946 catch and chemical removal of all fish. Calif. Fish and Game. 33(4):267-286.

Wales, J. H. and D. P. Borgeson. 1961. Castle Lake investigation. Third phase: rainbow trout. Calif. Fish and Game. 47(4):399-414.

Webster, D. A. 1957. Finger Lakes rainbows, Part IV. N.Y. State Conservationist. Aug.-Sept.

Zilliox, R. G. and M. Pfeiffer. 1956. Restoration of brook trout fishing in a chain of connected waters. N.Y. Fish Game J. 3(2).

DEVELOPMENT AND EVALUATION OF FISH MANAGEMENT STRATEGIES THROUGH ANALYSIS OF ZOOPLANKTON COMMUNITY STRUCTURE AND MEASURES OF LAKE PRODUCTIVITY

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The development and evaluation of fish management strategies through analysis of zooplankton and fish communities in relation to lake productivity represents a more holistic approach to fishery management than proportional stock density (PSD) or predator-prey ratios. The biological community-lake productivity approach is based on the assumption that a lake's physical and chemical characteristics limit biological production and the dynamics of fish communities influence the structure of zooplankton communities through selective predation. Through knowledge of fish community structure, the composition and size structure of zooplankton, and the trophic nature of a lake, it may be possible to identify functional relations between fish communities among lakes in a fixed regional setting.

The Indian River Lakes of northern New York State are geologically and geographically similar, but differ both in trophic character and in the dynamics of their fish communities. The lake complex consists of 18 natural lakes ranging in size from 33 to 3,340 hectares and are represented on a trophic continuum of oligotrophic to eutrophic. The fish communities of these lakes generally consist of walleye, northern pike, large- and smallmouth bass, yellow perch, black crappie, pumpkinseed, bluegill, rock bass and brown bullhead. Data on lake chemistry, plant pigments, phosphorus and fish-zooplankton communities have been collected from representative lakes.

Ryder (1965) and Ryder et al. (1974) used the morphoedaphic index as a measure of lake productivity and found a relationship between lake productivity, fish and plankton production. Further, Fee (1979) found evidence in Canadian lakes for the relationship between the ratio of sediment-water interface to epilimnetic volume and primary production. The relationship of Fee's index to zooplankton biomass and the catches of fish in experimental gillnets indicates Indian River Lakes with high productivity indices generally support larger zooplankton and fish populations. The more productive lakes also support larger populations of planktivorous fish, primarily yellow perch and black crappies.

Studies of size selective predation by planktivorous fish and their influence on the density and species composition of zooplankton populations have been reported by several workers during the past two decades (Gerking 1962; Brooks and Dodson 1965; Galbraith 1967; Hutchinson 1971; Nilsson and Pejler 1973). These studies have established that larger planktivorous fish feed on large zooplanktors, and if present in significant numbers, they can effectively eliminate the larger species of zooplankton. However, none of these studies have examined relationships between fish and zooplankton community structure and measures of lake productivity.

The major fish management problem in the Indian River Lakes has been the decline of walleye populations in eutrophic and mesoeutrophic lakes following the introduction of black crappie. Consequently, fish communities in these lakes are largely dominated by panfish species. Re-establishment of walleye population through fry and fingerling stockings is being evaluated in lakes representing a range of productivities and fish and zooplankton communities. Initial results of the fingerling study suggest survival may be significant in lakes supporting a high biomass of large daphnid species and low population of planktivorous fish species. Survival in productive lakes with large populations of planktivores has been minimal. The results of the fry stockings are expected to be similar. An additional study to evaluate the effects of tiger muskellunge stockings in a fish community dominated by planktivores is underway.

Galbraith (1975) used the abundance of large *Daphnia* in small Michigan lakes as an index of rainbow trout stocking success and fishing quality. While the fish communities of the Indian River Lakes are more complex, it may be possible to develop criteria based on characteristics of fish and zooplankton communities and a measure of lake productivity to group lakes with common management problems and identify effective management strategies.

Literature Cited

Brooks, J. L. and S. I. Dodson. 1965. Predation, body size, and composition of plankton. Science 150:28-35.

Fee, E. J. 1979. A relation between lake morphometry and primary productivity and its use in interpreting whole-lake eutrophication experiments. Limnol. Oceanogr. 24(3):401-416.

Galbraith, M. G., Jr. 1967. Size-selective predation on *Daphnia* by rainbow trout and yellow perch. Trans. Am. Fish. Soc. 96:1-10.

Galbraith, M. G., Jr. 1975. The use of large *Daphnia* as indices of fishing quality for rainbow trout in small lakes. Mich. Dept. Nat. Res., Fish Res. Rep. 1827. 14 p.

Gerking, S. D. 1962. Production and food utilization in a population of bluegill sunfish. Ecol. Monogr. 32:31-78.

Hutchinson, B. P. 1971. The effect of fish predation on the zooplankton of ten Adirondack lakes, with particular reference to the alewife, *Alosa pseudoharengus*. Trans. Am. Fish. Soc. 100:325-335.

Nilsson, N. A. and B. Pejler. 1973. On the relation between fish fauna and zooplankton composition in north Swedish lakes. Rep. Inst. Freshw. Res., Drottningholm, No. 53:51-77.

Ryder, R. A. 1965. A method for estimating potential fish production of north-temperate lakes. Trans. Am. Fish. Soc. 94:214-218.

Ryder, R. A., et al. 1974. The morphoedaphic index, a fish yield estimator - review and evaluation. J. Fish. Res. Board Can. 31:663-688.

THE ROLE OF LENGTH LIMITS IN ECOLOGICAL MANAGEMENT

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INTRODUCTION

The objective of this paper is to build a conceptual framework that answers the question, "Why length limits?" It is my personal perspective as a scientist and an angler that length limits in the 1980's will have an important role in ecological management.

I define ecological management as manipulations that use the workings of nature to achieve benefits desired by society. Manipulations in management programs that are successful will be efficient and effective.

The efficiencies of concern are economic, ecological, and physiological. Benefit/cost ratios reflect economic efficiency. Satisfactory ecological and physiological efficiencies will result in products of interest in proportion to the productivity of systems.

Program effectiveness is just as important as program efficiency. Effectiveness should be evaluated in terms of the programs impact on the quality of the experience as perceived by anglers. An important question not often asked in a traditional creel census is, "How would you rate your fishing success today?" Effective use of regulations should reduce the percentage of poor responses and increase the number and percentage of fair, good, or excellent responses.

ROLE OF REGULATIONS

The original conceptual role of seasons and size limits was to promote the success of reproduction, to insure species survival and perpetuate fishing opportunities. Minimum size limits of 9 or 10 inches on largemouth bass were set to protect young females so that they could spawn at least once. Elimination of seasons and size limits in the 1950's represented progress in fishery management because it greatly lengthened the fishing season. Lack of protection did not lead to extinction of populations; however, it has not sustained or improved angler success.

Another role of length limits has been to achieve the goal of maximum sustained yield (MSY), i.e., harvest. Most fishery scientists have been taught how to calculate critical size, the minimum and optimum size to harvest, to achieve MSY. In theory, this concept of critical size is attractive. As a practice in setting regulations, however, results have sometimes been discouraging (Anderson 1978).

A relatively new role for regulations is that of preventing overharvest of predators (e.g., largemouth bass) to sustain predation on

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panfish (e.g., bluegills). This is a good example of ecological management. It should be much more efficient and effective to manipulate bluegill density with a predator than by periodic chemical or mechanical methods.

Given my tendency to over-generalize, I suggest that, without adequate predation, all panfish species have the reproductive potential to generate excessive recruits to the stocks. This leads to production problems of boom-and-bust reproductive patterns, high natural mortality of the largest fish, and less than satisfactory growth rates. These production problems are reflected by low values of Proportional Stock Density (PSD) and Relative Weight (W_r). I firmly believe that frequently the problem of such structures is not too many panfish, but the lack of adequate or effective predation.

APPLICATION OF STRUCTURAL INDICES

How can fish management biologists best recognize stocks of game fish, such as walleye, northern pike, smallmouth bass, or perhaps lake trout that are relatively low or depleted, and probably less than 50% of carrying capacity--i.e., the theoretical level of biomass to achieve MSY? Based on my perspective of the structure and dynamics of fish communities, I suggest that such depleted stocks should be evident in the structure and dynamics of the panfish-prey component of the fish community. Candidate populations obviously vary between lakes, but along with bluegill would logically include yellow perch, black and white crappie, white or yellow bass, white perch, pumpkinseed, black or yellow bullhead, white sucker, gizzard shad, carp, freshwater drum, and perhaps even alewives and smelt. If stock and quality sizes were defined and working standard weights were available for all these species, I would expect values of PSD and W_r to be low when stocks of the game fish are low. Another indication of depleted game fish stocks may be the occurrence of fish of quality size with W_r values well over 100. If such structures are evident in a fish community, an experimental length limit should be an important option.

In largemouth bass populations, it is not uncommon to find lakes where stocks are high but the quality is low, e.g., PSD < 20%, RSD_{15} = 0%; W_r < 90. In such lakes the PSD of the bluegill population is often well above 60%. I suspect other fish communities may exhibit structures indicative of excessive predator density. Such fish communities are also prime candidates for manipulation with experimental length limits.

WHY LENGTH LIMITS?

A number of experimental efforts have been made in Missouri to prevent overharvest of largemouth bass when new or reclaimed impoundments were opened to fishing (Ming 1974; Redmond 1974). The only tactic that was judged successful and practical involved minimum length limits. A good part of the reason they were successful in Missouri is that the limits were accepted and supported by anglers. A concept of catch and release for largemouth bass had been promoted in the state for several years.

WHAT LENGTH LIMITS?

Minimum length limits of 12 or 14 inches for largemouth bass have been applied most frequently on public lakes in Missouri and other midwestern states. There is also current research on a 15-inch length limit on several large reservoirs in Missouri, Kansas, and Illinois. An 18-inch size limit is under study at Ridge Lake, Illinois. I have projected that an 18-inch length limit would be applicable when bass recruitment rates are as low as six per acre per year in a reservoir of average productivity (Anderson 1974).

In general, I recommend a high length limit as a first step toward rebuilding depleted stocks when density, biomass, and recruitment rate of game fish are low. The length limit should call for release of all fish shorter than a designated quality size.

The consistent result of applying 12- and 14-inch minimum length limits for largemouth bass on small impoundments has been a buildup of stock density (Rasmussen and Michaelson 1974; Hickman and Congdon 1974; Farabee 1974; Johnson and Anderson 1974). However, this desirable outcome must be tempered by the result that bass harvest has normally declined and relatively few fish have reached legal size. Problems include slow growth and high natural mortality (M. Colvin, Missouri Dept. of Conservation, Pers. Comm.). Associated structural index values are low PSD, RSD_{15}, and W_r of bass.

A new approach to manipulate this structure was initiated in 1974 at Philips Lake (Anderson 1976). A slot-length limit was initiated to protect largemouth bass 12.0 to 15.0 inches long. The RSD and W_r indices both improved to within objective ranges in two growing seasons; much improved bass structure and good bluegill structure were sustained in Philips Lake through 1979. Positive results are also being recorded on several other lakes in the Midwest (S. Eder, Missouri Dept. of Conservation; D. Gabelhouse, Kansas Fish and Game; P. Paladine, Illinois Dept. of Conservation, Pers. Comms.). However, the results in small private impoundments have not been consistent (G. Novinger, Missouri Dept. of Conservation, Pers. Comm.).

I believe that a general recommendation that applies when stocks and recruitment rate of game fish are too high, is the implementation of a slot-length limit that protects some portion of the quality-size fish. I believe this recommendation holds promise in management to improve the quality of fishing for walleye, northern pike, smallmouth bass, and even rainbow and brook trout in streams.

DISCUSSION

These proposed experimental regulations will require a change in the objective of uniform statewide fishing regulations. Although touted widely and often for decades, not much art or science is required to meet this management objective. If some flexibility in the objective of uniformity is not achieved, I foresee only limited progress in the management of recreational fisheries in the 1980's.

Implementing an experimental regulation on a public lake or stream involves much more than putting words on paper and printing signs. Much groundwork needs to be covered within the agency, with the local judiciary, and the public. In any new management effort, both research and management

should be involved. Many state agencies do not have an identified fishery research section. I view the workings of the Central States Pond Management Work Group and the Reservoir Committee of the Southeastern Association of Fish and Wildlife Agencies as models for coordinated and cooperative efforts between individuals with research and management responsibilities. The concept of regional work groups might be encouraged by the forthcoming Fishery Management Section of the American Fisheries Society.

If regulations that manipulate the structure of fish populations and communities are to improve the quality of fishing, several prerequisites must be met. The selected waters should have no significant environmental problems. Good fish populations with no production problems require good habitat and water quality. However, I cannot define all of the aspects of "good" in aquatic habitats; important water quality criteria are much better defined.

If catch-and-release fishing involving minimum or slot-length limits is to work, mortality rates must be altered. If a majority of fish caught and released die from hooking mortality, not much improvement will be accomplished. Some species are not as easy to unhook and release as are largemouth bass. If a slot-length limit is imposed but total effort and catch are low, or if the majority of the stock surplus is caught and released, little increase in mortality and reduction in stock density will result.

A major prerequisite for success is acceptance and support by the public. Some anglers will have difficulty changing 180 degress, to "keep the small ones and put back the big ones." Catch and release and fishing quality are phrases that are seen with increasing regularity in outdoor magazines. Organized angler groups such as Bass Anglers Sportmans Society, Muskies Incorporated, and California Trout Incorporated, are preaching the gospel of catch and release or effective regulations. As Ed Zern (1971) stated so aptly, there can be no quality fishing without quality anglers.

With my eternal optimism and based on my perspectives as a scientist and an angler, I say with confidence that the good old days of bass fishing are ahead of us, at least in Missouri. I know there is room for improvement for other species in many lakes and streams as well. Recognizing this opportunity will be a major challenge during the 1980's.

Literature Cited

Anderson, R. O. 1974. Problems and solutions, goals and objectives of fishery management. Proc. Southeast. Assoc. Game Fish Comm. 27(1973):391-401.

Anderson, R. O. 1977. Management of small warm water impoundments. Fisheries 1(6):5-7, 26-28.

Anderson, R. O. and A. S. Weithman. 1978. The concept of balance for coolwater fish populations. p. 371-381, *In* R. L. Kendall (ed.) Selected coolwater fishes of North America. Am. Fish. Soc., Spec. Publ. 11.

Farabee, G. B. 1974. Effects of a 12-inch length limit on largemouth bass and bluegill populations in two northeast Missouri lakes, p. 95-99, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Hickman, G. D. and J. C. Congdon. 1914. Effects of length limits on fish populations on five north Missouri lakes. p. 84-94, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Johnson, D. L. and R. O. Anderson. 1974. Evaluation of a 12-inch length limit on largemouth bass in Philips Lake, 1966-1973. p. 106-113, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Ming, A. 1974. Regulation of largemouth bass harvest with a quota. p. 39-53, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Rasmussen, J. L. and S. M. Michaelson. 1974. Attempts to prevent largemouth bass overharvest in three northwest Missouri lakes. p. 69-83, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Redmond, L. C. 1974. Prevention of overharvest of largemouth bass in Missouri impoundments. p. 54-68, *In* J. L. Funk (ed.) Symposium on overharvest and management of largemouth bass in small impoundments. North Central Div., Am. Fish. Soc., Spec. Publ. 3.

Zern, E. 1971. Aim for quality. p. 431-435, *In* Sport fishing USA. U.S. Fish and Wildlife Service, Washington, D.C.

TROPHY ANGLING - ONE FISH MANAGEMENT OPTION

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Philosophy and Objectives

Trophy angling conjures up different dreams by different anglers. To one it may mean waiting in an ice-spearing shack on Lake Winnebago for that 150-year old, 200-pound lake sturgeon to appear in the hole, meanwhile passing up all of the small 40 to 60 pounders (Probst and Cooper 1955). Another angler may have visions of returning from a trolling cruise in the Bahamas with 10 "sails" flying from the mast, the epitome of his prowess and sportsmanship in big-game fishing. I think that these examples are outside the frame of reference for this workshop, but they have as an underlying objective the concept of improving fishing by decreasing exploitation. Or, as Chet Davis put it to a group of sportsmen in Hickory, North Carolina on 30 October 1962, "Good fishing comes from the catching, not the killing. The trout is too splendid a fish to be caught only one time" (Davis 1963).

Two aspects of this philosophy are usually confused when trying to measure success of such a management program. One concerns the permissible exploitation of the fish population within its productive capability. Involved here are questions of size limits, bag limits, fishing seasons, supplemental stocking and many others, all based on the dynamics of the fish population. The other concerns the permissible constraints on the angler's behavior, which often takes the form of imposing a higher level of altruism or controlling man's animal instinct to kill and eat every fish he catches. Involved here are questions of permissible fishing methods (fly fishing, spin fishing, bait fishing, or spearing), fishing for fun, not meat, fish refuges, and others. An historical approach to this is the attempt to educate anglers to a socially-acceptable peck order of fishing methods such as one in which dry-fly fishing with a #32 fly and one horse hair as a tippet is the pinnacle of sportsmanship.

With this sketchy look at the philosophy and objectives of trophy angling, what are some examples, and can we make judgments of their success or failure? These examples shed some light on the responses of the fish populations, but I have little confidence in judging the acceptability of social changes by different angling groups.

Examples

Published evaluations of trophy angling regulations are not numerous, and understandably are limited to those species which are favored game fishes and are thought to be easily exploited. The largemouth bass, smallmouth bass and stream trouts fall into this category. Let me present a few of these, realizing that you might select different ones to more closely match conditions in your area.

A Largemouth Bass Experiment

Pony Express Lake in Missouri is a fertile lake of 240 acres, 30 feet deep. It has a mixed warm-water fish population dominated by largemouth bass and other centrarchids. Previous to 1966, under regulations of no length limit on largemouth bass and a creel limit of 10 bass, most bass being harvested were yearlings 5- to 8-inches long in September. Also, under this heavy exploitation the loss of predatory control of the other sunfishes was resulting in overpopulation by these panfishes. (Incidentally, in the published report, I did not detect any great educational program or human desire expressed to release these fish after the stimulating battle with a 6-inch largemouth.)

In 1966, a 12-inch minimum size limit was imposed on largemouth bass; a trophy fish for this lake. By 1969, the catch of 12-inch bass had increased 7 fold; and there was sufficient stock-piling of 10-11-inch bass to regain predator control of the sunfishes (Ming and McDannold 1975). Although this experiment was considered to be a success, the authors cite other instances where improved bass populations did not occur under imposition of higher size limits.

A Smallmouth Bass Experiment

Four, infertile, bog-water lakes in Michigan's Upper Peninsula contained slowly-growing smallmouth bass populations which were virtually unexploited at the beginning of a test period. Under special trophy-angling regulations of artificial lures only and an 18-inch minimum size limit (equivalent to a 10-year-old bass) the percentage of trophy fish in the best lake decreased from 26 to 3 in only a 3-year period. There was also a large decrease in 15- to 17-inch bass, which was speculatively attributed to either hooking mortality or poaching brought about by the increased interest in fishing these experimental lakes. Whether you judge this a success or failure, it does demonstrate that stock-piling of large fish can occur in a population, and that these top-heavy populations can be easily exploited (Clady, Campbell and Cooper 1975).

Trout Examples

Let me cite a personal experience with brook and brown trout in the Au Sable River in Michigan which indicates species differences in exploitation rate, and the potential value of trophy size limits as angling regulations. The Au Sable River is a large, fertile stream supporting fast-growing populations of both brook and brown trout. For many years prior to 1949, the size limit on trout was 7 inches, and it was difficult to find a brook trout larger than this in the stream.

In 1949, a test area was established with a flies-only restriction and a 10-inch minimum size limit; a creel census and electrofishing samples subsequently compared this area with similar areas remaining under the 7-inch, no lure restrictions. By 1953, brook trout were stock-piling up to the 10-inch limit (second summer fish) but were rapidly exploited over this limit. Brown trout exploitation, however, was little different in the two areas, and brown trout up to 24 inches were still taken in the unrestricted water (Shetter, Whalls and Corbett 1954).

I would be remiss if I did not mention Fisheries Paradise on Spring Creek in Pennsylvania. This program began in 1934 as a trophy-angling and stream improvement experiment, with a one fish limit and fly fishing only. To help ensure public acceptance, 12,000 or more big trout were stocked annually at intervals throughout the season on this one-mile stretch of stream. In 1962, this "Fish-for-Fun at Paradise" program was changed to a no-kill, year-round open season, with continued stocking of large trout at intervals. In the first year after these new regulations 14,662 anglers practiced their fly-fishing skills at the project, with some new patterns such as the "bread-fly" showing great promise as trout killers (Trembley 1963).

Let me close with a recent unpublished report from Roger Kerr on a Wisconsin DNR Fish-for-Fun project. Castle Rock Creek, in the fertile, coulee country of southwest Wisconsin has a 2.4-mile, no-kill test area. There is very little natural reproduction of brown trout here, and the population is maintained by stocking 2,000 to 3,000 fingerlings annually. Since the beginning of the no-kill provision in 1977 the number of brown trout 13 inches and larger has increased dramatically; 11 per mile in 1976 before no-kill, 98 per mile in 1979. Trout larger than 15 inches in the fall of 1979 were 31 per mile. Certainly this program did stockpile brown trout from a fingerling planting program (Kerr 1980).

Literature Cited

Clady, M. D., D. E. Campbell, and G. P. Cooper. 1975. Effects of trophy angling on unexploited populations of smallmouth bass. p. 425-429, *In* H. Clepper (ed.), Black bass biology and management. Sport Fishing Institute Symposium, Washington, D.C. 534 p.

Davis, C. S. 1963. One answer to better trout fishing...limit your kill. Trout 4(4):6-7.

Kerr, R. A. 1980 MS. Brown trout population data and the Castle Rock Creek Fish-for-Fun Area. Wisconsin Dept. Nat. Res., Madison. 5 p.

Ming, A. and W. E. McDannold. 1975. Effect of length limit on an overharvested largemouth bass population. p. 416-424, *In* H. Clepper (ed.), Black bass biology and management. Sport Fishing Institute Symposium, Washington, D.C. 534 p.

Probst, R. T. and E. L. Cooper. 1955. Age, growth, and production of the lake sturgeon (*Acipenser fulvescens*) in the Lake Winnebago region, Wisconsin. Trans. Am. Fish. Soc. 84(1954):207-227.

Shetter, D. S., M. J. Whalls and O. M. Corbett. 1954. The effect of changed angling regulations on a trout population of the Au Sable River. Trans. North Am. Wildl. Conf. 19:222-238.

Trembley, G. L. 1963. Paradise - lost or regained? Trout 4(4)8-9.

HABITAT MANIPULATION AS A FISHERIES MANAGEMENT ALTERNATIVE

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Fishery biologists often consider only two broad options when considering management of recreational fisheries: stocking and angling regulations. However, a third very useful management option involves the application of habitat manipulation techniques. Habitat manipulation is usually regarded as an approach to special or problem waters and not as a management alternative which has broad application. This may be true to an extent, but in fact the waters requiring the most intensive management efforts are those with "special" problems. In some geographical areas these waters comprise sizeable groups: e.g. eutrophic or hypereutrophic lakes. Many lakes and streams in and around urban areas have deteriorated habitat as a result of man's activities and are presently incapable of sustaining sport fisheries. These systems may offer great potential for implementation of both habitat restoration and improvement techniques in a setting with high social and political visibility.

The history of habitat manipulation designed to enhance recreational fisheries dates back at least 50 years, when the stream improvement projects carried out by the WPA and CCC in the 1930's represented the first widespread application of such techniques (Hubbs et al. 1932). Lake improvement projects were initiated during the same period (Hubbs and Eschmeyer 1938). The general idea of habitat manipulation and many of the basic techniques have been around for some time. However much of the data regarding the success of these projects and refinement of techniques have occurred only recently. There are, in addition, new and worthwhile reasons for continued advocacy of habitat manipulation as a management technique.

Decreases in the quantity and quality of aquatic resources is a problem nationwide. Lakes and streams continue to suffer the ill effects of eutrophication, channelization, pollutants, etc. Habitat improvement and/or restoration can provide a means of combating these declines and encourage enhancement rather than deterioration of the resource necessary to support sport fishing. Secondly, the participation of the angling public as well as other conservation minded individuals in projects designed to improve aquatic habitats provides program support, educational opportunities, and encourages increased use in recreational fishing. The presumed trend toward increasing utilization of recreational resources in reasonable proximity to urban areas further suggests that habitat manipulation ought to play a larger role in fisheries management decisions of the future. Providing recreational fishing opportunities not only closer to home, but for the growing segment of our population in urban areas may be a critical aspect of maintaining the base of bio-political support necessary to insure a sound future for sport fishing. Recent

demonstrations of innovative techniques combined with established practices offer the fishery biologist a suite of options for considering habitat manipulation as a management alternative.

Habitat manipulation can be divided into two broad areas: 1) Improvement/Enhancement and 2) Restoration/Maintenance. Each of these can be applied to both lakes and streams. An example of Improvement/Enhancement would be the installation structures in lakes (artificial reefs) to increase the spatial heterogeneity of the habitat in order to support greater standing stocks of fishes or concentrate those already present to enhance availability to anglers. An example of restoration or maintenance is the practice of liming lakes or streams adversely affected by acid precipitation or hypolimnetic aeration of lakes undergoing cultural eutrophication. The approaches and techniques available to fishery managers for habitat manipulation are both numerous and diverse (Tables 1 and 2).

Table 1. Examples of habitat manipulation for streams.

Technique	Purpose	Enhancement	Restoration
Fencing	protects banks, riparian vegetation, streambed		X
Riparian Planting	cover, bank stability	X	X
Wing Deflectors	increase meandering and scouring of fines	X	X
Bank Covers	shade and cover refugia	X	X
Low Barriers	pool diggers, small runs upstream	X	X
Rock Revetment	reduce bank erosion, provide cover		X
Submerged Shelters	cover-refugia, resting microhabitat	X	X
Artificial Spawning Beds	enhance reproduction	X	X
Desiltation-Sorting	flush sediment from previously existing spawning areas		X
Fertilization	increase benthic productivity - fish food	X	
Limestone Cribs	buffer acidity, increase alkalinity		X

Perhaps the best known example of trout stream improvement work is Lawrence Creek, Wisconsin (Hunt 1971, 1974, 1976). Habitat improvement structures constructed according to the procedures of White and Brynildson (1967) resulted in significant increases in the number and biomass of brook

Table 2. Examples of habitat manipulation for lakes.

Technique	Purpose	Enhancement	Restoration
Waste Water Treatment	reduce eutrophication		X
Dredging-Deepening	increase habitat - reduce nutrient regeneration		X
Biotic Harvesting	vegetation control		X
Chemical Treatment	vegetation control		X
Water Level Fluctuation	spawning control, vegetation enhancement	X	
Aeration and/or Circulation	improve thermal and oxygen conditions		X
Structures - Artificial Reefs	increase shelter-cover habitat, concentrate fish	X	
Liming	reduce acidity, increase buffering capacity, provide refugia		X

trout (*Salvelinus fontinalis*) in a 0.7 km improved reach of stream compared to control sections. This low gradient shallow stream did not attain its maximum response to the placement of improvement structures until at least 6 years after the improvements. Hunt (1976) suggests that the economics of management evaluation might be improved if a delay period of 3-4 years is considered. Careful planning and placement of stream improvement structures have shown that they can have beneficial effects for 10-12 yrs or longer (Gard 1972). The feasibility of such improvement structures remaining effective for 20-30 yrs is dependent on many factors, but each additional year of life increases the cost/benefit ratio of such management techniques. There are considerations mentioned earlier in this summary about the non-economic benefits of these kinds of projects which need to be considered as well. Hunt (1971) mentions additional reasons for other than simple economic appraisals. What, for example is the relative value of catching a wild trout as opposed to a hatchery trout, or the merits of utilizing and enhancing the inherent productivity of stream systems resulting from habitat improvements, or the fact that stocking does nothing to guard against deteriorating habitat whereas stream improvements clearly do?

Recent habitat manipulation (other than nutrient abatement) in lakes has revolved around two basic concepts: artificial reefs and aeration/circulation. The latter is employed primarily in instances where oxygen or thermal conditions in stratified lakes decrease available habitat for salmonids, sometimes to the point of exclusion, or segregate these predators from their forage (Lorenzen and Fast 1977). Hypolimnetic aeration or oxygenation techniques have generally been more successful

than circulation techniques. The former involves injecting oxygen or air into the hypolimnion which has undergone oxygen depletion but represents the only thermally suitable habitat for salmonids in a given lake. This can be done by either pumping air/oxygen directly into the hypolimnion or by withdrawing hypolimnetic water, aerating, and reinjecting it into the hypolimnion. Each of these approaches must be done so as not to disrupt thermal stratification and create water temperatures too warm for salmonids. One successful application of these techniques was reported by Overholtz et al. (1977) wherein a eutrophic warm water quarry lake in Ohio was modified to sustain a two-story fishery with rainbow trout (*Salmo gairdneri*).

Prince and Maughan (1978) have reviewed much of the biology and economics of artificial reefs in freshwater environments. It is quite clear that they have the potential to increase the production of fish food organisms, increase the concentration of fishes in a specific area, and particularly to improve the catch rate and harvest by anglers. Artificial reefs varying in size from a few square meters to several hundred and constructed of materials such as old automobile tires, discarded Christmas trees or other brush, wooden stakes, etc., have increased catch rates from slightly to several fold in a variety of lakes. Petit (1972) reported increases in crappie (*Pomoxis annularis* and *P. nigromaculatus*) catches from 1.8 to 6.6 fish per hour when comparing "stake beds" to natural cover areas. Economic conditions and other considerations again are improved by the provision of volunteer labor and donated materials in regard to these projects.

Literature Cited and Selected References

Dunst, R. C. et al. 1974. Survey of lake rehabilitation techniques and experiences. Tech. Bull. 75, Wisc. Dept. Nat. Res. 179 p.

Gard, R. 1972. Persistence of headwater check dams in a trout stream. J. Wildl. Manage. 36(4):1363-1367.

Hubbs, C. L. and R. W. Eschmeyer. 1938. The improvement of lakes for fishing: a method of fish management. Bull. No. 2, Inst. Fish. Res., Univ. Mich. 233 p.

Hubbs, C. L., J. R. Greeley, and C. M. Tarzwell. 1932. Methods for the improvement of Michigan trout streams. Bull. No. 1, Inst. Fish. Res., Univ. Mich. 54 p.

Hunt, R. L. 1971. Responses of a brook trout population to habitat development in Lawrence Creek. Tech. Bull. 48, Wisc. Dept. Nat. Res. 35 p.

Hunt, R. L. 1974. Annual production of brook trout in Lawrence Creek during eleven successive years. Tech. Bull. 82, Wisc. Dept. Nat. Res. 28 p.

Hunt, R. L. 1976. A long term evaluation of trout habitat development and its relation to improving management-related research. Trans. Am. Fish. Soc. 105(3):361-364.

Johnson, D. L. and R. A. Stein (eds.). 1979. Response of fish to habitat structure in standing water. Spec. Publ. 6, North Central Div., Am. Fish. Soc. 77 p.

Lorenzen, M. and A. Fast. 1977. A guide to aeration/circulation techniques for lake management. USEPA Ecol. Res. Series EPA-600/3-77-004. 126 p.

Overholtz, W. J., A. W. Fast, R. A. Tubb, and R. Miller. 1977. Hypolimnion oxygenation and its effects on the depth distribution of rainbow trout (*Salmo gairdneri*) and gizzard shad (*Dorosoma cepedianum*). Trans. Am. Fish. Soc. 106(4):371-375.

Petit, G. D. 1972. Stake beds as crappie concentrators. Proc. 26th Annu. Conf. S.E. Assoc. Game and Fish Comm. 401-406.

Prince, E. D. and O. E. Maughan. 1978. Freshwater artificial reefs: biology and economics. Fisheries 3(1):5-9.

Prince, E. D., O. E. Maughan, and P. Brouha. 1977. How to build a fresh-water artificial reef. 2nd Ed. Va. Polytech. Inst. and St. Univ., Blacksburg, VA. Sea Grant Extension Publ. VPI-S6-77-02. 16 p.

Vogele, L. E. and W. C. Rainwater. 1975. Use of brush shelters as cover by spawning black basses (*Micropterus*) in Bull Shoals reservoir. Trans. Am. Fish. Soc. 104(2):264-269.

White, R. J. and O. M. Brynildson. 1967. Guidelines for management of trout stream habitat in Wisconsin. Tech. Bull. 39, Wisc. Dept. Nat. Res. 65 p.

WRAP-UP AND SUMMARY

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I think we've had an exceptional opportunity today to hear fisheries management strategies and problems addressed from pretty widespread perspectives--from ergodicity to tic-tac-toe graphs--in one workshop. The impressive thing was that I believe all of us can gain from what we've heard today. The day's speakers stayed, for the most part, right on the workshop theme of fisheries management. The tone for the day was very appropriately established by the keynote speaker. I have no reason to flatter Herb Doig, since I'm one of the minority here who doesn't work for him, but that was one of the best keynote speeches you're going to hear. It set the stage for the workshop, identified problems, posed the challenges for fisheries management in the '80s and told us to plan before we act.

Certainly there was much of value in the sessions on lake and stream surveys. I know I profited from hearing and having some of my fisheries management staff hear Dr. Forney's presentation. Again, planning was stressed, but the neat thing for me was the emphasis place on recognizing gear selectivity, limitations in sampling and that replication--a number of small samples rather than one big one--reduces variability and increases precision of sampling. When I tell one of my staff that four 250' gill net sets are better than one 1,000' set, I won't have to worry about the inevitable questions: "Where's your data?" "What's your reference for that?" All I have to say is, "You heard it from John Forney!" He's kind of the E. F. Hutton of the fisheries profession so I know they were listening.

Stream surveys, ah yes, a somewhat different perspective, look at the nongame species and provide a written record--a sort of narrative report of everything you found. Dr. Cooper also admonished us to brush up on our fish identification and record all species sampled. If you'd gone to Penn State, as Bruce Shupp and I did, you wouldn't have been surprised. You'd have expected that from a fellow who asked as a test question: What species of fish is pictured on the cover of your textbook? It was a lookdown--and no, Ed, before you ask, I don't recall the scientific name but I assume you can't catch them on a single strand of horse hair and a size 32 dry fly.

It was fun for all of us, I think, to move into the sessions on predicting potential yield. Jenkins and Ryder (or, north of the border, Ryder and Jenkins) are pretty impressive names and the subject with which they deal is important and intellectually challenging. I can recall, as a graduate student, having to read a paper published about 1965 or so on something called the Morpho-Edaphic Index. I had a pretty good grasp of what was significant in the fisheries world then--all grad students do--and I was sure I'd never hear of this theory again. Now

I find mention of 137 references to MEI and I'm sure that's a conservative estimate. As for Bob Jenkins, he had some pretty solid stuff for all of us to consider, but the highlight had to be that shot of 400 biologists getting ready to rotenone a cove. All he needed to complete the scene was some orange jump suits and Ray Scott.

Bob Martin and Chad Dawson both directed our attention to an important aspect of fishery management that we too often forget, the experience we're providing for the angler. In fact Bob Martin's enthusiasm for creel census data makes it seem as if one way to save money in the '80s would be to quit buying all those gill nets and electrofishers and start ordering some clipboards and creel survey forms. Since I'm a little conservative I'll stay with my nets and electrofishing gear in addition to creel census forms.

Dr. Everhart addressed standard techniques, but the most valuable message in his presentation had to be that to do any interpretation of what your data means, we'd better begin to look at things in a broad--forgive me--a "holistic" approach (not so very different from the message implicit in the presentation by Richard Ryder and Bob Jenkins). The "more for less" theme was best addressed when Dr. Everhart advised us to profit from experience, look for indicators, develop little shortcuts. That's good advice. The more time I spend around folks who have had rather long experience in fisheries the more I am impressed with how many good ideas and very practical suggestions are available but never published.

This has to have been a memorable day for those of you who haven't had the privilege, previously, of listening to Dr. Anderson. Dick Anderson came in with PSD, tic-tac-toe, and size limits. I think all of us were stunned to hear the world's leading evangelist for size limits--a guy who's out making converts on about the same scale as Billy Graham--slip up and say a 12" size limit is no better than no size limit! Is nothing sacred? Management in the '80s is going to require innovations and certainly PSD is an attractive approach to establishing management goals. I know it's going to be tough to sell policymaking groups and sportsmen on an idea that rests on interpretation of "tic-tac-toe," but it ought to be fun trying. All we need is Dick Anderson's unbridled enthusiasm and commitment to "do better."

Wasn't it great to hear Dave Borgeson talk about Michigan's progress and to indicate that his attitudes on angling quality have been "fire hardened." Anyone who has read the publication of Cal Trout's Symposium on Wild Trout Management knows he's not kidding about "fire hardened." Dave had a great presentation with lots of good ideas, but, you know, I've been to Michigan and he left one thing out: unbelievable luck! Hell, <u>everything</u> works in Michigan from salmon to bluegills.

Al Schiavone's presentation seems to represent a genuine start on doing more with less in the '80s. A practical approach which sort of draws from MEI, TDS, and even Dr. Everhart's advice to look for shortcuts or indicators. He even worked in public involvement through volunteer help. I for one will be waiting for Al's final publication to see how things work out.

Dr. Gloss was last to speak but Steve certainly caught our attention. Despite the fact that no formal award will be given, he was clearly the hands-down winner for the best joke of the workshop. Long after we have forgotten some of the technical details of habitat manipulation projects discussed we'll remember the introductory statement.

That's it. From a technical and practical viewpoint, this has been an outstanding workshop. The New York Chapter is to be commended and as a member of the Professional Society--you're all members of AFS, aren't you?-- I'm doubly impressed that Richard Ryder participated in this workshop. In addition to his scientific/technical responsibilities, he's incoming President of the American Fisheries Society. When someone with that demand on time and energy participates in an AFS Chapter Workshop, I think it speaks very highly of the quality of the workshop and of the commitment the Professional Society leadership has to serving the members.

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RICHARD H. STROUD
PRESIDENT 1979-1980

CARL R. SULLIVAN
EXECUTIVE DIRECTOR

ROBERT L. KENDALL
EDITOR

To: AFS Executive Committee

From: Mary R. Frye

Subject: 1980 Spring Meeting of the EXCOM

Date: January 17, 1980

The 1980 spring meeting of the AFS Executive Committee will be held at the Hyatt Regency Hotel in Knoxville, Tennessee on Wednesday and Thursday, March 12-13. The EXCOM meeting will follow the AFS Southern Division's Warmwater Streams Symposium scheduled for March 9-11 at the University of Tennessee in Knoxville. For those of you who plan to attend the Symposium, the Hyatt Regency is about two miles from the University Campus.

Please make your reservations with this office through Mrs. Rosalie Ryan if you have not already done so. We will provide the hotel with a list of those who plan to attend. They will confirm your reservations directly. No deposit is necessary -- all charges payable individually upon departure.

Room rates are as follows:

$35.00 single $42.00 double or twin
(Rates quoted do not include the current 9% state and local tax).

To set up your reservations we will need to have the following information:

1. Do you plan to attend the Executive Committee Meeting. Yes_____ No_____

2. Time of arrival_____

3. Planned date of departure _____

4. Do you plan to share a room? If so, with whom _____

5. Will you be attending the Warmwater Streams Symposium? _____

An early reply will be appreciated as the hotel is holding a block of rooms and it is necessary that we confirm our needs within the next two weeks.

REMINDER! Executive Committee reports are due in this office by February 1 (with copy to Mr. Stroud at the Sport Fishing Institute) to allow time for duplicating and distributing to members of the Executive Committee well ahead of the meeting date.

MRF/rr

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January 24, 1980

Ms. Mary R. Fry
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Bethesda, MD 20014

Dear Mary,

Enclosed is the New York Chapter's report for 1979. I am sorry that it does not contain the 1980 officers. Unfortunately, they will not be elected until the deadline for filing this report. They will, however, be in the report of our Secretary-Treasurer on the Chapter's annual business meeting.

Sincerely,

Philip T. Briggs, President
New York Chapter
American Fisheries Society

PTB:jsr
Enclosure

REPORT TO THE EXECUTIVE COMMITTEE, AMERICAN FISHERIES SOCIETY

FROM THE NEW YORK CHAPTER FOR 1979

The New York Chapter of the American Fisheries Society has remained strong through the year. Our membership now stands at 283. We have firmed up plans for our first annual workshop. It is titled: "Practical Fisheries Management: More with Less in the 1980's." This workshop will be held July 14-16, 1980 at the Cazenovia College Convention Center, Cazenovia, New York. At our 1979 annual meeting, we developed a procedure for Chapter position statements (copy attached). The New York Chapter issued two such statements in 1979: one to the New York State Department of Environmental Conservation on proposed classifications and standards of water quality and purity, the other to the New York State Legislature on coastal zone management. Copies of both statements are enclosed.

Since our annual business meeting is on February 1, 1980, it is not possible to report on that meeting here. Hopefully, the incoming president will be able to attend the Society's Executive Committee in March and give an oral or typed report to the Committee on the New York Chapter's business meeting.

Philip T. Briggs, President
New York Chapter
American Fisheries Society

NEW YORK STATE CHAPTER OF THE AMERICAN FISHERIES SOCIETY
TESTIMONY TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION HEARINGS ON PROPOSED CLASSIFICATIONS AND
STANDARDS OF WATER QUALITY AND PURITY

The American Fisheries Society (AFS) was organized in 1870. The Society has at present approximately 8000 members. Its objectives are conservation, development and wise use of recreational and commercial fisheries, promotion of fisheries science and research, and dissemination of knowledge about fish, fisheries and related subjects. The 283 members of the New York State Chapter of the AFS (NYSAFS) represent a diverse mixture of fisheries management, propagation and research biologists, limnologists, aquatic ecologists, marine scientists and students affiliated with academic institutions, government agencies, industry or aquatic consulting firms. Concern for the quality of New York waters is implicit throughout the Chapter membership; therefore, the NYSAFS finds it necessary to comment on the Proposed Classification and Standards of Quality and Purity for New York Waters.

Quality of our waters reflects the quality of our environment, and ultimately the quality of human life. Toxic substances in New York waters and their aquatic food chains have been identified as direct threats to health. However, the Chapter is not qualified to address health related issues and will confine its comments to the impact of toxicants on the fish and the fishery.

A fishery is the complex of interactions within and between populations of fish being harvested, the populations of fishermen and the environments of each. A population of fish is not considered a fishery until harvested for some type of human use; i.e. recreation or food. Pursuit of fish for these uses constitutes a significant industry in New York, resulting in both enjoyable use of leisure time and revenue to the State's economy. Although fish may be affected directly by toxicants, lower trophic organisms (their food) may be even more sensitive to these toxicants. Therefore, it is necessary to establish standards and criteria which not only protect the fish but additionally their food organisms.

National Oceanographic and Atmospheric Administration (1977) estimated the value of New York saltwater commercial finfish landings (paid to fishermen) at $30.6 million in 1977. The National Marine Fisheries Service (1978) estimated 2.5 million saltwater anglers fished New York waters in 1973-74. The U. S. Fish and Wildlife Service (USFWS 1977) estimated U. S. saltwater anglers fished an average of 12.7 days each and made expenditures averaging $16.65/day in 1975. Multiplying these average days and expenditures by New York's 2.5 million saltwater anglers and expanding for inflation at 8 percent per year 1975-1978, results in estimated total annual expenditures for saltwater recreational angling in New York of $600.7 million.

In addition, there are approximately 800,000 licensed freshwater anglers in New York (Department of Environmental Conservation unpublished data 1978). The USFWS (1970) estimated there are 0.63 unlicensed anglers to every licensed angler; therefore, approximately 1.3 million anglers fish New York freshwater annually. Brown (1976a) estimated each freshwater angler fished an average of 17.8 days annually in 1973. USFWS (1977) estimated the average daily expenditure of warmwater and coldwater anglers at $9.76 in 1975. Expanding by 8 percent inflation over the period 1975-1978 and multiplying by the number of mandays expended by anglers on New York freshwater results in an estimated annual expenditure of $284.6 million.

Combined saltwater commercial fishing and saltwater and freshwater recreational angler expenditures amount to $915.9 million annually. Therefore, first generation expenditures on New York fisheries alone represent almost a one billion dollar industry—a vital segment of the New York economy.

Effects of toxic substances and changes in ambient physical parameters on growth, survival and reproductive capability of fish and other aquatic fauna have been well documented in literature. The impact of DDT on reproductive success of lake trout in Lake George, New York is an excellent example of the effect of a contaminant on perpetuation of a desirable species (Burdick et al, 1964).

Accumulation of toxic substances in fish flesh and ensuing regulations or warnings promulgated to safeguard human health have also had profound

impact on fisheries. Brown (1976) estimated that the possession ban on certain species and sizes of salmonids in Lake Ontario and its tributaries caused a 70 percent drop in angling use in the Salmon River, one of New York's most popular trout and salmon fishing tributaries. Closure of the Upper Hudson River from Fort Edward to Troy in 1975 because of PCB contamination restricts enhancement of the fishery in that section of the Hudson in the near future. In the lower Hudson, commercial fisheries for American eel, striped bass and several other species have been closed due to PCB contamination. Mercury contamination of Onondaga Lake, Syracuse, New York resulted in prohibition of angling in a once intensely used fishery in a major urban area. Following a 1977 ban on consumption of fish in a 100-mile section of the South Fork of the Shenandoah River, Virginia due to mercury contamination, angling use declined 72 percent from 1975 levels (Martin, 1978). A ban on fishing was also imposed on Lake St. Clair, Michigan in 1970 because of mercury contamination. It was estimated that the closure resulted in $3.3 million loss in gross business revenue to Michigan (Martin, 1978).

The need to protect the fishery, therefore, is not only based on preservation of healthy aquatic ecosystems which reflect the quality of life but also on the importance of the fishery to the economy of New York State as has been previously outlined. It is with these factors in mind that the Chapter supports those standards and criteria based on scientifically supported data which identify a need for further regulation in order to protect a fishery. PCB, Mirex and Mercury have had demonstrated adverse effects on fisheries of New York State and their discharge should be more strictly controlled. The other proposed standards and criteria have to be judged on their scientific merit. For these other standards and criteria a review panel of experts in Aquatic Toxicology and Environmental Chemistry from academia, industry and government is recommended to determine what standards and criteria are adequate and can be successfully implemented.

Additionally, the Chapter recommends that the Congress of the United States and the Legislature of New York State appropriate adequate funding for both field and laboratory aquatic toxicity tests, as well as developing economical treatment technology. The results of appropriate studies could then be used to set standards and criteria where adequate data and/or adequate treatment technology does not presently exist.

LITERATURE CITED

Brown, T. L. 1967a. The 1973 Statewide Angler Study. DEC Spec. Report, NYS Bureau of Fisheries, 50 Wolf Road, Albany, New York 12233. 117 p. mimeo.

Brown, T. L. 1976b. After the Ban. Coastlines Vol. 7(6), November-December, 1976. NYS Sea Grant Institute, Cornell University, Ithaca, New York.

Burdick, G. E., E. J. Harris, H. J. Dean, T. M. Walker, J. Skea and D. Colby 1964. The accumulation of DDT in lake trout and the effect on reproduction. Trans. Amer. Fish. Soc. 93. 127-136.

Martin, Robert G. 1978. Impacts of Aquatic Contaminants on Angling. SFI Bulletin 293. Page 1-3. Washington, D.C. 20005. April, 1978.

NOAA 1977. Fred Blossom, Patchogue, Long Island, New York. personal communication.

NMFS 1978. Current Statistics. No. 7500. NOAA, Washington, D.C.

USFWS 1972. 1970. National Survey of Hunting and Fishing. USDI, FSFW, Washington, D.C.

USFWS 1977. 1975 National Survey of Hunting, Fishing and Wildlife—Associated Recreation. USFWS. Washington, D.C.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

ENVIRONMENTAL CONCERNS COMMITTEE

STATEMENT

The American Fisheries Society is the oldest registered professional society in the United States. Historically, its members have been leaders in developing methods and programs to protect, enhance, and manage the use of aquatic resources. The New York State Chapter is proud to be an active member of the Society, and we wish to express our strong professional recommendations on the proposed coastal zone management legislation that will so vitally affect New York's Great Lakes and Atlantic Ocean shoreline and aquatic resources.

We strongly believe in the need for multiple use management of these valuable coastal resources. Such management must include provisions for protection of critical habitat, opportunity for enhancement of the resource, and development for the public economic and recreational benefit of those coastal areas which can be developed without destroying or degrading critical shoreline resources.

We recognize that the New York State Department of Environmental Conservation is mandated by law to protect and manage natural resources of the state, including the critical coastal zones. To this end, this Department has developed methodology and expertise necessary for the proper management of natural resources.

The Department of Environmental Conservation is recognized as being a leader throughout this country and worldwide in sound environmental management.

We believe that the Department of Environmental Conservation should be designated the lead agency responsible for administration of all funds and programs that relate to coastal zone natural resources. To have another state department sharing or controlling coastal zone management will cause expensive duplication of effort, because the Department of Environmental Conservation will still be required to administer its other coastal zone requirements. In addition to the unwarranted additional cost, such a system would be cumbersome, chaotic, and potentially destructive of the very resource which is supposed to be protected. We would advocate that New York legislators carefully consider the long-term effects of this aspect of the proposed legislation implementing coastal zone management.

Therefore, New York Chapter of the American Fisheries Society strongly urges the legislature to designate the New York State Department of Environmental Conservation as the agency responsible for funding and administration of New York's coastal zone management program.

By - James

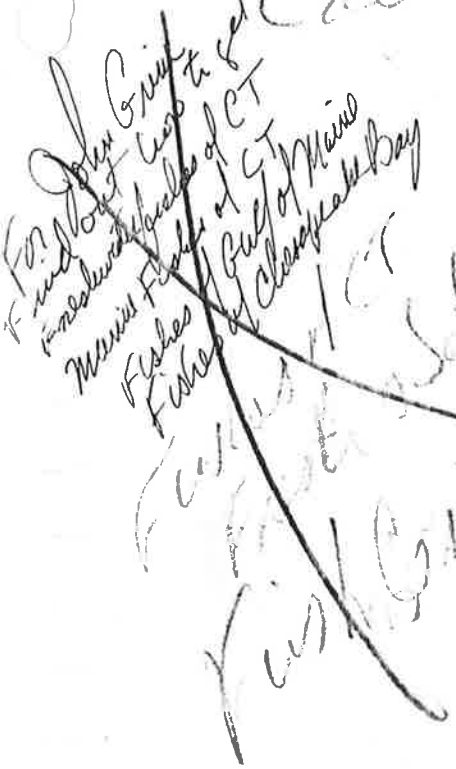
6
The executive committee of the Chapter shall consist of the President, vice president, Secretary-treasurer, the immediate past president and Chairman of the Program Committee. The executive committee is authorized to act for the Chapter between meetings and to perform appropriate duties and functions.

Phone

P.T.B. OK
Jerry OK
Call Bruce Shupp about 8:00 PM Tues Nite
John Grim OK
Steve Gloss OK to phone

Get for me

For John Grim
Find out how to get
Freshwater fishes of CT
Marine Fishes of CT
Fishes of Gulf of Maine
Fishes of Chesapeake Bay



Fishes of CT
Fishes of Salt
Fish Gulf Nile

Does not like "Chaotic"

Phone to Jim C.
tell him GO!

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY
Environmental Concerns Committee
8314 Fish Hatchery Rd.
Rome, N.Y. 13440

November 15, 1979

Mr. Phillip T. Briggs, President
New York Chapter, American Fisheries Society
Building 40, State University of New York
Stony Brook, N.Y. 11794

Dear Phil:

Enclosed is a draft statement which has been accepted by the Environmental Concerns Committee (copies of approval attached). You'll note that Tom Joliff includes several reasons for issuing the statement, as well as conditions for accepting other solutions. I agree with his reasoning, and I do feel that the draft statement makes reference to the need for natural resource agency administration to reduce duplication of effort in management.

Please discuss this with the Executive Committee as per our constitution. If the committee feels the statement is justified, I think Bill Pearce will be a good one to present it, as he will be attending the hearing anyway. We should shoot for the last week of November to have it to him, ready to go. If you and the committee change the statement, please send me a copy. Thanks very much!

Sincerely,

James R. Colquhoun

James R. Colquhoun, Chairman
Environmental Concerns Committee

JRC:mr
Enclosures

RECEIVED NOV 19 1979

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

ENVIRONMENTAL CONCERNS COMMITTEE

STATEMENT

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Therefore, New York Chapter of the American Fisheries Society strongly urges the legislature to designate the New York State Department of Environmental Conservation as the agency responsible for funding and administration of New York's coastal zone management program.

Promotes the Conservation, Development and Wise Utilization of the Fisheries

American Fisheries Society
ORGANIZED 1870 | INCORPORATED 1910

RICHARD H. STROUD
PRESIDENT 1979-1980

CARL R. SULLIVAN
EXECUTIVE DIRECTOR

ROBERT L. KENDALL
EDITOR

January 10, 1980

Philip T. Briggs, President
New York Chapter, AFS
N.Y. State Dept. of Environ.
Conservation
SUNY, Bldg. 40
Stony Brook, NY 11790

Dear Phil:

As President of an AFS Chapter you fill a very important leadership role within the Society. For this reason I am writing to ask your help in the Society's "all- out" initiative to achieve a major expansion of the Dingell-Johnson Federal Aid to Fish Restoration Act.

Our D-J Expansion Bill (S.1631 in the Senate and H.R.6074 in the House) is easily the most important recreational fisheries legislation ever introduced. In trying to pass it we are confronted with major opposition from the boat and motor industry. They are very well funded and determined to avoid having to provide support for state recreational fisheries programs. We think them shortsighted because their sales are directly dependent on the quality of sportfishing.

Now is the time when we need your help and that of all your Chapter members. We need each of you to write D-J support letters to all members of the U.S. Congress from your geographical area. Individual letters are tremendously important and will be vital to our effort. Every Senator and Congressman is important, but those listed on the attached page are particularly influential in the beginning.

Please don't fail us for if we professionals in the field don't write, then who will?

Sincerely,

Carl R. Sullivan
Executive Director

CRS/twb
Enclosures

P.S. Please forward the enclosed copies of this letter to the President-Elect and the Secretary-Treasurer of your Chapter.

Copies sent to Officers and Trustees

5410 GROSVENOR LANE • BETHESDA, MARYLAND 20014 • (301) 897-8616
EDITORIAL OFFICE • P. O. BOX 1150, COLUMBIA, MARYLAND 21044 • (301) 596-3458

SENATORS AND CONGRESSMEN PARTICULARLY IMPORTANT TO DINGELL-JOHNSON EXPANSION LEGISLATION

SENATE (S.1631)

ENVIRONMENT AND PUBLIC WORKS COMMITTEE

U.S. Senate, Washington, DC 20510-Room 4202 DSOB - Phone: 224-6176

DEMOCRATS

Jennings Randolph (WV) Chairman
Edmund Muskie (ME)
Mike Gravel (AL)
Lloyd Bentzen (TX
Quentin Burdick (ND)
John Culver (IA)
Gary Hart (CO)
Daniel Moynihan (NY)

REPUBLICANS

Robert Stafford (VT)
Howard Baker, Jr. (TN)

REPUBLICANS (continued)

Pete Domenici (NM)
John Chafee (RI)
Alan Simpson (WY)
Larry Pressler (SD)

SUBCOMMITTEE FOR RESOURCE PROTECTION - Room 4204 DSOB - Phone 224-2513

DEMOCRATS: John Culver, Chairman; Edmund Muskie, Mike Gravel; Gary Hart
REPUBLICANS: Howard Baker; John Chafee; Larry Pressler
MAJOR PROF. STAFF MEMBER: George Jacobson
MINORITY PROF. STAFF MEMBER: Jim Range

HOUSE (H.R.6074)

MERCHANT MARINE AND FISHERIES COMMITTEE

U.S. House of Rep., Wash., DC 20515
Room: 1334 LHOB - Phone: 225-4047

DEMOCRATS

John Murphy (NY) Chairman
Thomas Ashley (OH)
John Dingell (MI)
Walter Jones (NC)
Mario Biaggi (NY)
* Glenn Anderson (CA)
* E. de la Garza (TX)
* John Breaux (LA)
* Gerry Studds (MA)
* David Bowen (MS)
Carroll Hubbard, Jr. (KY)
* Don Bonker (WA)
* Les AuCoin (OR)
* Norman D'Amours (NH)
* James Oberstar (MN)
* William Hughes (NJ)
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* David Bonior (MI)
* Daniel Akaka (HI)
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* Joe Wyatt (TX)
* Michael Lowry (WA)
* Earl Hutto (FL)
* Edward Stack (FL)
* Brian Donnelly (MA)

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Gene Snyder (KY)
* Edwin Forsythe (NJ)
David Treen (LA)
* Joel Prichard (WA)
* Don Young (AK)
* Robert Bauman (MD)
Norman Lent (NY)
* David Emery (ME)
Robert Dornan (CA)
* Thomas Evans, Jr. (DE)
*Paul Trible, Jr. (VA)
* Robert Davis (MI)
* William Carney (NY)
* Melvin Evans, (V.I.)

WAYS AND MEANS COMMITTEE

U.S. House of Rep., Wash., DC 20515
Room 1102 LHOB - Phone: 225-3625

DEMOCRATS

Al Ullman (OR)
*Dan Rostenkowski (IL)
Charles Vanik (OH)
James Corman (CA)
Sam Gibbons (FL)
J. Pickle (TX)
Charles Rangel (NY)
William Cotter (CT)
*Fortney Stark (CA)
James Jones (OK)
Andrew Jacobs, Jr. (IN)
Abner Mikva (IL)
Joseph Fisher (VA)
Harold Ford (TN)
*Ken Holland (SC)
William Brodhead (MI)
Ed Jenkins (GA)
Richard Gephardt (MO)
*Raymond Lederer (PA)
Thomas Downey (NY)
Cecil Heftel (HI)
*Wyche Fowler, Jr. (GA)
*Frank Guarini (NJ)
James Shannon (MA)

REPUBLICANS

Barber Conable, Jr., (NY)
*John Duncan (TN)
Bill Archer (TX)
*Guy Vander Jagt (MI)
Philip Crane (IL)
Bill Frenzel (MN)
James Martin (NC)
L. (Skip) Bafalis (FL)
*Richard Schulze (PA)
Willis Gradison, Jr. (OH)
John Rousselot (CA)
W. Henson Moore (LA)

SUBCOMMITTEE FOR FISHERIES AND WILDLIFE CONSERVATION AND THE ENVIRONMENT

Room 3574 House Annex II-Phone: 225-7307
3rd and D Sts., SW, Wash., D.C.

NOTE: Members of this subcommittee are indicated in the above list by an asterisk before their names. Congressman John Breaux is Chairman.

SUBCOMMITTEE FOR SELECT REVENUE MEASURES

Room 1031 LHOB, Phone: 225-9710, Washington, DC 20515

NOTE: Members of this subcommittee are indicated in the above list by an asterisk before their names. Congressman Dan Rostenkowski is Chairman.

The AFS Diary

VOL. 6 NO. 2

A WEEKLY REPORT TO THE EXECUTIVE COMMITTEE
FROM THE OFFICE OF THE DIRECTOR

JANUARY 11, 1980

DECEMBER NEW MEMBERS TOTALED 92, almost equaling the highest December figure ever. Total new members recruitment in 1979 were 903. Since 633 members failed to renew for 1979, the net yearly gain was 270 members. The last four-year recruitment record follows:

	1976	1977	1978	1979
January	89	124	228	113
February	97	103	151	96
March	83	99	129	106
April	75	68	91	77
May	54	49	89	43
June	60	49	52	44
July	55	40	63	55
August	35	51	64	63
September	78	84	87	62
October	90	101	88	80
November	68	85	70	72
December	58	93	71	92
	842	946	1,183	903

DAVID H. WALLACE, AFS 1st Vice President, was stricken by a fatal heart attack on Saturday, January 5 and was buried on Tuesday, January 8. He was 63 years of age. Dave was an extremely capable professional and a warm compassionate friend. Though he cannot be replaced the voting members of the AFS Executive Committee must now choose a substitute to serve in his stead until annual elections are held.

THE EPA RED BOOK REVIEW AND ITS WATER QUALITY IMPLICATIONS is the subject of an AFS presentation to be made to the annual meeting of the Association of Metropolitan Sewage Agencies in New Orleans. The Association asked AFS for the presentation and Barber (a member of the Review Steering Committee and co-editor) agreed to represent us. His expenses will be primarily covered by the NMFS office of Habitat Protection where he is employed.

THE NORTH CENTRAL DIVISION PUBLICATION #6, entitled, "Response of Fish to Habitat Structure in Standing Water" is now available from Division Secretary Don Duerre, Route 1, Box 56, Dickinson, ND, 58601, at a cost of $4.00 per copy. The publication is the proceedings of a symposium held during the 40th Annual Midwest Fish and Wildlife Conference, Columbus, Ohio, December 1978.

8,500 COPIES OF THE NEW AFS MEMBERSHIP DIRECTORY have been received with approximately 7,800 to be mailed immediately to AFS members of record.

RETIRED MEMBERS WILLIS KING AND LYNN HUTCHENS are helping us search for up to 12 experienced AFS members interested in accepting long or short term assignment in Egypt to work on a new warm water aquaculture initiative in that country.

AFS SECTION MEMBERSHIPS FOR 1980 totalled 1,660 as of December 31. When we consider that as of that date only 51.8% of AFS members had renewed for 1980 we can see that the Sections have been given a giant membership assist from the parent society handling of their dues billing. A breakdown of Section Memberships to date follows:

Fish Culture Section	7[illegible]
Water Quality Section	4[illegible]
Fish Health Section	259
Fisheries Educators Section	145
Fisheries Administrators Section	123
Total	1,660

SEVEN ADDITIONAL D-J EXPANSION SPONSORS (H.R. 6074) have "surfaced" in recent days with the number of sponsors in the House now standing at 10. Additional support is anticipated between now and Jan. 22 when Congress reconvenes. Formal endorsement has also been received from the 30,000 member National Wild Turkey Federation headquartered in South Carolina but with chapters in 32 states.

AFS WATER QUALITY LITERATURE CITATIONS in the U.S. Federal Register have been pointed out to us by Nuclear Regulatory Commission biologist Clarence Hickey who writes, "although this is only one among many such occurrences, it is nice to see the products of AFS labors being used in management of our aquatic resources."

THE MINNESOTA CHAPTER OF AFS uses a varie[illegible] of items from the AFS Diary to add "fille[illegible] to their Chapter Newsletter. This seems like a good plan and I commend it to all Chapter Presidents. How about forwarding a copy of your Diary to your Newsletter Editor?

COMMITTEE ON PROFESSIONAL CERTIFICATION ISSUES

INTERIM REPORT
January 25, 1980

The Committee has interchanged a great deal of information, opinions and views of outsiders. We will have to consider a number of discussion items before a final report is appropriate. Considering the diversity of backgrounds, ages and disciplinary division, a surprising degree of unanimity of opinion among the Committee members participating has been evidenced.

At present the following issues or items of opinion have emerged as representing views of varying proportions of the Committee.

1. Lack of certification should not prevent employment of qualified persons.

2. Certification should be only a one-time thing.

3. Certification by category of Fish Disease Scientists and Aquatic Toxicologists is mandatory now and should be formalized.

4. The parent society must be the exclusive certifier.

5. Discipline certification should involve screening by appropriate Society sections.

6. Prospects should perhaps be sponsored by other certified members.

7. Fish Disease Specialist certification is a license to practice. This probably should not be true of less demanding disciplines

such as Administrator, Culturist or Manager if indeed this approach is used.

8. Discipline certificates should be limited to a well-defined few.

9. Certification will be more important in the future.

10. Certified Scientist should be a sign of recognition, not a license to practice.

11. Goals should not be part of the certification requirement.

12. A minority feels that the fisheries scientist certificate is of little or no value other than as a wall decoration.

13. We are probably not ready to push for recognition from employers of the value of certification; however this does not mean that the certified scientist should not make the fullest use of it if he thinks it may help him.

14. A tiered approach with varying levels of certification may be of value. This appeals to some as a goal system to encourage getting something more valuable or difficult to obtain.

15. Constant escalation of certification requirements as in the Wildlife Society program may not be in our best interest.

16. The certification fee should not be excessive.

These will be discussed, added to, subtracted from and refined before final report recommendations are made.

(Certification Committee)

David W. McDaniel
Patrick P. Parrish
Arden J. Trandahl
Ronald W. Goede
Philip T. Briggs

W. Donald Baker
Richard Anderson
Robert W. Wiley
Richard A. Tubb
George J. Eicher,
Chairman

New York State College of Agriculture and Life Sciences
a Statutory College of the State University
Cornell University

Department of Natural Resources
Fernow Hall, Ithaca, N. Y. 14853

Fishery Science
Forest Science
Wildlife Science
Natural Resources
Environmental Conservation

20 March 1980

Mr. John S. Grim
Kerr Road, R.D. #3
Rhinebeck, New York 12572

Dear John:

I have a telephone message indicating that Jim Haynes called asking me to send you an estimate of my expenses incurred as program committee chairman for the New York Chapter during 1979. Undoubtedly the location of program committee meetings and Chapter executive committee meetings would have considerable influence on the expenses incurred by any individual. During 1979 there were three Chapter executive committee meetings exclusive of the one held at Bergamo and I conducted three program committee meetings as well. I was also involved in a fourth trip to Albany which was a joint trip dealing with our program preparation and dissemination and also working on the Northeast Division Program Committee. All of the meetings, with the exception of one program committee meeting, were held in Albany. A single program committee meeting was held in Ithaca. Again expenses would vary depending upon the preference of individuals for extending their traveling work days or staying overnight and traveling on a second day. I generally chose to extend the work and travel days for the Albany meetings rather than staying overnight so that my expenses were primarily for meals and driving. As a rule this involved 7-1/2 to 8 hours of driving per day and dependent upon the length of the individual meetings these work days varied from 10 to 16 hours in length. I would estimate my expenses then as follows:

Per diem less lodging - 6 trips to Albany at $14.00 per trip	$84.00
Mileage charge - 6 trips to Albany, 330 miles/trip at $.17/mile - $55.10/trip	330.60

Please recognize that I was fortunate enough to have the flexibility of the Cooperative Research Unit operating budget to utilize federal or state vehicles for this travel and to be reimbursed for meal expenses. I therefore do not have to personally pay any of the expenses associated directly with being Program Committee Chairman. If I may provide additional information regarding the activities I have described please feel free to contact me.

Another important consideration in the activities of the program committee chairman is that of secretarial help. I was again fortunate in having available a very competent and willing secretary to assist with matters of correspondence, preparation of the program and abstracts, etc. The lack of such a person or

having to send out all the correspondence and materials associated with this position would dramatically increase the burden on the program committee chairman.

I had intended to write to you soon, John, anyway to inform you that I was able to represent the New York Chapter at the Parent Society Executive Committee Meeting held March 12 and 13 in Knoxville, Tennessee, following the Warmwater Stream Symposium. New York was one of only three chapters submitting a written report to the Executive Committee. I was able to verbally highlight the report and further call attention to our workshop at Cazenovia College this summer. Dick Stroud was very complimentary about our annual meeting as well as the exemplary position of the New York Chapter among AFS chapters. Certainly we should be proud of our present position and continue striving to even further improve our activities and professionalism. I had tried to reach you by telephone prior to going to Knoxville to see if there were any specific matters you wished to have brought up at the Executive Meeting but was unable to talk to you. The meeting lasted a day and a half and covered a wide variety of topics of immediate and potential interest to our Chapter. I would be happy to report on the activities of the Parent Executive Committee at the first Chapter Executive Committee meeting this year if you wish. I will make one comment at this time which relates to the activities of the Professional Certification Issues committee, chaired by George Eicher. I have appended a copy of the committee's written report to this letter for your information. I think you will agree with me that although there are a number of worthwhile issues being addressed by the committee at the national level, there does not appear to be any particular effort being made to revitalize or improve the degree of utilization of the certification process by fishery professionals. Unfortunately, George Eicher was not in attendance at the Executive Committee meeting although at least one member of his committee was there. I did not feel that the concern or activity at the national level was commensurate with the effort we have exhibited in the New York Chapter. It was obvious to me that we need to continue a strong and active effort with the parent society if we are hopeful of resolving the certification issues of concern to our Chapter members.

Sincerely,

Steve

Steven P. Gloss
Acting Leader
New York Cooperative
Fishery Research Unit

SPG:ak
Enclosure

xc: Jim Haynes
--> Larry Skinner

NEW YORK CHAPTER

MEMBERSHIP DIRECTORY 1980 - 1981

EFFECTIVE APRIL 1, 1981

AMERICAN FISHERIES SOCIETY

1981 OFFICERS-NEW YORK STATE CHAPTER AMERICAN FISHERIES SOCIETY

PRESIDENT

JOSEPH W. GORSUCH.

PRESIDENT-ELECT

STEVEN P. GLOSS

SECRETARY-TREASURER

LAWRENCE C. SKINNER

Elected at the Annual Meeting of the New York Chapter on February 13, 1981. The annual meeting was held at Bergamo East, Chaminade Road, Marcy, New York. February 13-14 1981.

1981

EXECUTIVE COMMITTEE AND STANDING COMMITTEE

CHAIRMEN

Executive Committee

President	Joseph W. Gorsuch
President-Elect	Steven P. Gloss
Secretary-Treasurer	Lawrence C. Skinner
Past-President	John S. Grim

Standing Committee

Audit	Ned Holmes
Environmental Concerns	Dennis Dunning
Membership	Steven P. Gloss
Nominating	John S. Grim
Program	Lawrence E. Strait
Professional Standards	James Winter
Resolutions	Carl C. Widmer

Special Committee

Brochure	Carol Schleifer
New Initiatives	Robert E. Foley
Newsletter	Daniel Richardson
Publicity	Daniel Richardson
Time and Place	Steven P. Gloss
Water Quality	Gary Neudefer
Work Shop	William J. Abraham

MEMBERSHIP LISTING

The names of paid up members on December 31, 1980 are listed alphabetically. The last name appears first on the first line on the left hand side, followed by the first name and initial. Immediately below the name is the member's affiliation; either his school, if a faculty member, or student, or the name of his employer. If a student, an S will appear in parenthesis.

The members home address, is printed in the second column. If no home address is given, the employer's address will be used. In the third column, one or two telephone numbers will be found. The number on the first line is the home telephone number, the number on the second line is the business phone number.

In the fourth column, a coded number(s) represents the major field of interest of the member.

Interpretation of Codes Used in Column 4

1. Administration/Communication/Legislation
2. Aquaculture
3. Aquatic biology, ecology, taxonomy (freshwater)
4. Benthic Organisms
5. Fish behavior
6. Fish biology - freshwater species
7. Fish biology - marine species
8. Fisheries management (population dynamics, habitat improvement, etc.)
9. Health-medicine, aquatic animals
10. Research in Fisheries
11. Toxicology-Water Quality - all phases

This directory also includes the names of 28 new members that joined the New York Chapter in 1981.

NAME	ADDRESS	TELEPHONE	INTEREST
Abraham, William J. NYS DEC	8913 Strutt Street Wayland, NY 14572	716-728-5067 716-226-2466	8
Alevras, Ronald A. LMS Engineers	21 Grand Street Tappan, NY 10983	914-359-9147 914-735-8300	8,11
Arvidson, Larry G. LMS Engineers	RD #1, Box 244C, 23St. James St. Rosendale, NY 12472	914-658-9823 914-565-2444	1,4
Atz, James W. Am. Musem Nat. Hist.	106 Bayview Avenue Port Washington, NY 11050	516-767-3367 212-873-1300	9
Baker, Howard C. Union College	RR 1, Box 20 Clintondale, NY 12515	914-883-6461	3
Baldigo, Barry P. SUNY-Syracuse Univ. (S)	9172 Sulphur Springs Rd. Lee Center, NY 13363	315-446-2752	6
Beebe, C. Allen, Jr. Texas Instruments, Inc.	75 St. James Street Kingston, NY 12401	914-338-5684 914-737-3081	3,6
Bell, Trudy Cornell University (S)	119 Clover Lane Ithaca, NY 14850	607-273-0765	3
Best, Mary Ichthyological Assoc.	Box 128 Stamford, NY 12167	607-652-2852 607-652-3563	
Bimber, David L. Great Lakes Research (S)	800 Ivydale Ann Arbor, MI 48103	313-996-5861 313-763-4730	3
Blake, Leigh M. NYS DEC	P.O. Box 122 Felts Mills, NY 13638	315-773-5811 315-782-0100 (X-311)	
Boenig, Robert W. SUNY-Fredonia	7 University Park Fredonia, NY 14063	716-673-1164 716-673-3375	3
Bonomo, Mike LMS Engineers	2915 Otis Avenue Bronx, NY 10465	212-792-4227 914-735-8300 (X-291)	7
Borko, Martin Orange Co. Com. College	Biology Department Middleton, NY 10940	914-343-1121 (X-211)	3
Brady, Laura	Box 26, Lisle Road Owego, NY 13827	607-684-4166	3
Brand, James S. NYS DEC	NYS Fish Hatchery Chateaugay, NY 12920	518-497-6151 518-497-6151	2

NAME	ADDRESS	TELEPHONE	INTEREST
Colesante, Richard T. NYS DEC	118 Mill Street Constantia, NY 13044	315-623-9475 315-623-7311	2,6
Colquhoun, James R. NYS DEC	33 Philmore Drive Rome, NY 13440	315-336-0234 315-337-0910	3,9,11
Coonradt, Stephen NYS Power Authority	36 Grove Street Middleburgh, NY 12122	518-827-5526 607-588-6061	8,11
Cooper, Alexander L. NYS DEC - (Retired)	1011 Garson Avenue Rochester, NY 14609	716-288-6860	11
Coughlan, David Cornell University (S)	1015 Dryden Road., Apt. 3 Ithaca, NY 14853	607-273-4447 607-256-2151	11
Coutu, D. James NYS DEC	232 Winslow Street Watertown, NY 13601	315-788-3837 315-782-0100 (X-261)	8
Creech, Cliff NYS DEC	648 Old Stage Road Groton, NY 13073	607-898-3965 607-753-3095	6
Culligan, William J. NYS DEC	RD #1, 510 Peru Road Groton, NY 13073	607-898-3331 607-753-3095	8
Culp, Terry R. Ichthyological Assoc., Inc.	P.O. Box 2 Stamford, NY 12167	607-652-3408 607-652-3563	3,8
Dakin, David D. Rochester G&E	21 Rustic Street Rochester, NY 14609	716-342-1181 716-546-2700 (X-2742)	11
Dale, George Fordham University	Bio. Dept. Fordham University Bronx, NY 10458	212-933-2233 (X-623)	3
Daley, Martin W. Central Hudson G&E	17 Orchard Street Rhinebeck, NY 12572	914-876-4422 914-452-2000 (X-5461)	11
Dean, Howard J. NYS DEC - (Retired)	9241 Main Street Westernville, NY 13486	315-827-4606 315-337-0910	10,11
DeFino, Terry H. H. Lehman College	217 W. 238 Street Bronx, NY 10463	212-548-7134 212-965-8239	6
Dembeck, John F. LMS Engineers	116 Schunnemunk Road Highland Mills, NY 10930	914-928-2963 914-735-8300	5,11
Demers, J. Eddy LMS Engineers	15 Sunset Road Newburgh, NY 12550	914-565-6167 914-565-2444	2
DePace, Russell A. Texas Instruments, Inc.	88 B Heritage Hills Somer, NY 10689	914-277-5421 914-277-5421	6,11

NAME	ADDRESS	TELEPHONE	INTEREST
Flack, Frank M. SUNY-Syracuse (S)	432 Westcott Street Syracuse, NY 13210	315-475-2838 315-473-8834	2
Flick, William Cornell University	Paul Smiths, NY 12970	518-327-3529 518-327-3534	7
Foley, Robert E. NYS DEC	3 Frasier Avenue Johnstown, NY 12095	518-762-1114 518-773-7318	9,11
Forest, Herman S. SUNY-Geneseo	19 Genesee Park Blvd. Rochester, NY 14611	716-436-3836 716-245-5279	3,6
Fox, Richard NYS DEC	59 N. Morris Avenue Farmingville, NY 11738	516-698-3452 516-751-7900	7
Forney, John Cornell University	Cornell Univ. Biol. Field St, RD#1 Bridgeport, NY 13030	315-633-8243	3,8
Fraser, Douglas R. Siena College	Dept. Biology, Siena College Loudonville, NY 12211	518-872-2024 518-783-2451	3
Freidmann, Bruce R. Texas Instruments, Inc.	38 Ondaora Park Highland Falls, NY 10928	914-446-4874 914-757-3081	2
Frost, Elaine L. Ecological Analyst, Inc.	Box 91, RD #4, Orrs Mills Rd. New Windsor, NY 12550	914-534-7029 914-429-8133	11
Gaillard, Ethel M. Ecological Analysts	RD #1 Box 59B Wallkill, NY 12589	914-895-2970 914-429-8133	11
Galati, Joseph SUNY-ERC-Fredonia (S)	30 Catlin Jamestown, NY 14701	716-483-1368 716-673-3374	5
Gall, Wayne K. Erie Co. Dept. Envir. Plan.	21 N. Aurora Street Lancaster, NY 14086	716-683-1822 716-846-7472	3,4
Gann, Michael C. NYS DEC	RD #1 Box 153 Rosendale, NY 12472	914-658-8704 914-255-5453	8
Garrell, Martin H. Adelphi University	RR #1, Box 105B Manituck, NY 11952	516-298-5095 516-294-8700	11
George, Carl Union College	RD #4, Wagner Road Glenville, NY 12302	518-393-0629 518-370-6243	8,9
George, Elinor	163 Lakehill Road Burnt Hills, NY 12027		3,9
Gerinain, David NYS Education Department	508 Kenwood Avenue Delmar, NY 12054	518-439-6021	3
Gesl, David W. SUNY Brockport (S)	16 Layton Avenue Buffalo, NY 14226	716-836-0542 716-395-3148	6

NAME	ADDRESS	TELEPHONE	INTEREST
Hasse, Jack NYS DEC	207 Genesee Street Utia, NY 13501	315-797-6120	5,8
Haynes, James M. SUNY-Brockport	43 Spring Street Brockport, NY 14420	716-637-6376 716-395-2785	3,6
Heacox, Cecil E. Self-Employed	Tower Hill Wassaic, NY 12592	914-677-5659 914-677-5659	1
Heicher, David W. US Army Engineers	60 Hunt Avenue Hamburg, NY 14075	716-649-4682 716-876-5454 (X-2307)	3,4
Herman, Lloyd Roswel Pk Mem. Inst.	1049 S. Campbell Blvd. N. Tonawanda, NY 14120	716-688-7386 716-845-3350	3,6
Hoff, Thomas B. Ecological Analysts, Inc.	R.D. #2, Goshen Turnpike Middletown, NY 10940	914-692-6706	5,6, 7,9
Holden, Timothy E. Ichthylogical Assoc., Inc	301 N. Cass Street Middletown, DE 19709	302-378-4536 302-378-8877	2,3
Holmes, Edward NYS DEC	High Acres Hemlock, NY 14466	716-346-5761 716-226-2466	8
Holsapple, John G. NY Power Pool	PO Box 146 New Baltimore, NY 12124	518-756-9783 518-381-2122	11
Homa, John Jr. Ichthyological Assoc. Inc.	48 Teeter Road Ithaca, NY 14850	607-272-3778 607-257-7121	10,11
Hughes, Steven G. Cornell University (S)	700 Warren Rd., Apt 24-1E Ithaca, NY 14850	607-257-3229 607-256-2151	2,9
Hulbert, Philip J. NYS DEC	RD #1, Box 69 East Meredith, NY 13757	607-278-5490 607-652-7364	6,11
Insalaco, Sam O.H. Materials	213 Third Street Findley, Ohio 45840	419-423-5953	11
Isaacson, Peter A. NYS Dept. Public Service	50 Fleming Road Rensselaerville, NY 12147	518-797-5196 518-474-5363	3,11
Iwan, Gerald R. Union Carbide Corp.	40 S. Highland Ave. Apt. 17 Ossining, NY 10562	914-941-3058 914-789-2571	8,11
Jahncke, Michael Cornell University (S)	2048 E. Shore Drive Lancing, NY 14882	607-535-4476 607-256-2151	2
Johnson, Emily Z. SUNY-Syracuse (S)	Columbia Gardens, Apt. 117 Cohoes, NY 12047	518-235-7231	3,8
Johnson, Jim NYS DEC	Columbia Gardens, Apt. 117 Cohoes, NY 12047	518-235-7231 518-457-6178	3,6

NAME	ADDRESS	TELEPHONE	INTEREST
Laspina, Mary E. Fire Island Natl. Seashore	2 Dietz Street Central Islip, NY 11722	516-234-8423 516-661-2556	7
Lawrence, W. Mason Self-Employed	40 Albin Road Delmar, NY 12054	518-439-1964 518-439-1964	1,8
Leibovitz, Louis Cornell University	940 E. State Street Ithaca, NY 14850	607-273-1328 607-256-5440	9
Lichorat, Robert SUC-ERC, Fredonia	63 East 7th Street Dunkirk,NY 14048	716-366-8979 716-673-3375	5
Locicero, Felix U.S. EPA	21-09A 46 Street Astoria, NY 11105	212-RA8-5482	
Loeb, Howard A. NYS DEC	180 Georgetown Court Voorheesville, NY 12186	518-765-4935 518-457-5420	6
London, Mark D. Public Service E & G	107 West Shore Road Denville, NJ 07834	201-625-1367 201-430-8036	11
Long, John J. Long & Reiger, Inc.	1953 Balmer Road Ransomville, NY 14131	716-791-3711 716-692-0616	6
Mach, Carl SUNY-Syracuse (S)	610 East Raynor Syracuse, NY 13210	315-474-2760	3
Macy, Zachary S. Peace Copr. Ecuador	9 Millford Drive Locust Valley, NY 11560	516-676-2826 315-472-1724	2
Makarewicz, Joseph C. SUNY-Brockport	205 Darla Drive Brockport, NY 14420	716-637-9542 716-395-2476	3,11
Malucci, Dennis Bio Systems Research	112 Marjorie Drive Kenmere, NY 14223	716-835-2329	
Marascalchi, Daniel J. SUNY-Oswego (S)	315 W. Lind Road Syracuse, NY 13219	315-468-6554 315-487-4111 (X-215)	3
Marean, James B. NYS Elec & Gas	11 Tafford Road Binghamton, NY 13901	315-638-8283 607-729-2557	6
Markello, Samuel J. Bio Systems Research	4049 N. Boston Road Eden, NY 14057	716-648-6120 716-631-9538	6
Marra, John D. SUNY Brockport	47 Hometown Apartments Brockport, NY 14420	716-637-2913	3
Marscher, William R. Liberty Mutual Ins.	7 Knollwood Road New Hartford, NY 13413	315-797-0626 315-797-2900	5

NAME	ADDRESS	TELEPHONE	INTEREST
Myers, Robert E. US Soil Conservation	RD #2, New Boston Road Chittenango, NY 13037	315-687-9432 315-423-5494	8
Nasca, Jack A. Bio Systems Research, Inc.	50 North Drive Eggertsville, NY 14226	716-832-5824 716-631-9538	
Nemecek, Russell John Terrestrial Enr. Spec. Inc.	Village Blvd. North, Apt. 424 Baldwinsville, NY 13027	315-635-3684 315-695-7228	3,7
Neth, Paul C. NYS DEC	RD #5, Juniper Drive Ballston Spa, NY 12020	518-885-7792 518-457-5698	1,8
Nettles, David C. SUNY-Brockport (S)	1397 Lake Road Hamlin, NY 14464	716-964-3019	3
Neudefer, Gary NYS DEC	45 Norman Road Rochester, NY 14623	716-424-4962 716-226-2466	11
Newell, Arthur J. NYS DEC	69-50 136th Street Flushing, NY 11376	212-63-0191 212-488-2758	6,8
Nichols, Kenneth B. Retired	114 Seaman Avenue Caston, NY 12033	518-732-7000	2
Nickum, John G. Iowa University	2515 Beverly Road, Woodview Add. Ames, Iowa 50010		6,8
O'Connor, Joel S. US Dept. Commerce, NOAA	139 Wilderness Road St. James, NY 11780	516-584-5088 516-751-7002	7,11
O'Connor, Susan, Ph.D. LMS Engineers	Box 461, Jones Road Warwick, NY 10990	914-986-6161 914-735-8300	11
O'Grady, Dean P. SUNY Syracuse	B 18 Apt. #8, Slocum Heights Syracuse, NY 13210	315-445-1729	3
Olney, Louis G. Morrisville Ag. Tech. Col.	Rock Road, Box 152 A Morrisville, NY 13405	315-684-3448 315-684-7987	3,6
Osterberg, Donald M. SUNY-Potsdam	20 Grove Street Potsdam, NY 13676	315-265-8971 315-268-2985	9
Otis, Maurice B. NYS DEC	PO Box 243 Saranac Lake, NY 12983	518-891-1009 518-891-1370	8
Padilla, Miguel Manhattan College (S)	15 Marble Hill Avenue Bronx, NY 10463	212-562-5394	2,3
Panek, Frank M. NYS DEC	102 Village Mall Drive, Apt. 13 Carthage, NY 13619	315-493-1791 315-782-0100	8

NAME	ADDRESS	TELEPHONE	INTEREST
Rachlin, Joseph W. Dr. Lehman College	0-85 Morlot Avenue Fairlawn, NJ 07410	201-791-5165 212-960-8239	9
Radle, Edward W. NYS DEC	RD #9, Plank Road Clifton Park, NY 12065	518-371-7519 518-457-6178	11
Raney, Edward C. Ichthyological Assoc.	301 Forest Drive Ithaca, NY 14850	607-257-7121 607-257-4757	3
Reece, Elizabeth A. Eastman Kodak Company	510-4 Pondview Heights Rochester, NY 14612	716-225-4900 716-726-2705	3,11
Reilly, Patti Long Island Univ. (S)	37-41 81 Street Jackson Heights, NY 11372	212-424-8675	
Richardson, Daniel Comm. Aquaculture	993 Manitou Road Hilton, NY 14468	716-392-9236 716-392-9236	10,11
Ringler, Neil H. Ph.D. SUNY-Syracuse	18 Getman Drive Baldwinsville, NY 13027	315-638-8218 315-473-8619	3
Ripley, Wm. Ellis UN Development Program	35-24 164th Street Flushing, NY 11358	212-961-8528 212-754-4805	8
Rivlin, Ken Fordham University (S)	2840 Sedgewick Avenue Bronx, NY 10468	212-543-1258 212-960-8237	3
Roberts, Ron Ecological Analysts, Inc.	P.O. Box 371 Staatsburg, NY 12580	914-889-4947 914-452-2000 (X-305)	11
Robins, Jeffrey NYS DEC	31 Pomeroy Street Cortland, NY 13045	607-753-3095	8
Ross, Joseph M. Parks Dept.-NYC (S)	3972 Knox Place Bronx, NY 10476	212-231-1553 212-699-6733	3
Rough, Gaylord E. Alfred University	88 South Main Street Alfred, NY 14802	607-587-9161 607-871-2205	3,6
Russell, Michael R. SUNY-Fredonia	151 West Third Street Oil City, PA 16301	814-676-5981	3
Samaritan, Jeanette M. Fordham University (S)	305 Nyac Avenue Pelham, NY 10803	914-738-3470	3
SanTapaga, Robert V. SUNY-Syracuse (S)	150 Acacia Avenue Staten Island, NY 10308	212-984-7499	3,6
Santoro, Edward D. U.S. EPA	122 Wood Street Garfield, NJ 07026	201-478-5622 212-264-1302	3,6

NAME	ADDRESS	TELEPHONE	INTEREST
Skinner, Lawrence C. NYS DEC	Box 81, Route 43 West Sand Lake, NY 12196	518-674-2793 518-457-6179	3,11
Sleeper, Scott L. SUNY-Syracuse (S)	Hunters Creek Road Holland, NY 14080	315-478-9082	11
Sloan, Ron NYS DEC	50 Wolf Road Albany, NY 12233	518-785-9291 518-457-1769	11
Sloyka, James SUNY-Syracuse (S)	440 Wilkinson Street Syracuse, NY 13204	315-479-9070	6
Smith, C. Lavett AM. Museum Nat. History	312 Anderson Avenue Closter, NJ 07624	201-768-2173 212-873-5252	3
Smith, Dave NYS DEC	19 Slater Avenue Saranac Lake, NY 12893	518-891-0287 518-891-1370	
Smith, Martin A. Jr. NYS DEC	Cedars Avenue Stockdale, NY 14546	716-538-6388	2
Soeder, Kenneth SUNY - Syracuse (S)	6 Pearl Crest Court Pearl River, NY 10965	914-735-8743	3
Sohacki, Leonard P. SUNY-Oneonta	RD #2, Box 61 Cooperstown, NY 13326	607-547-9254 607-431-3703	3
Spagnoli, John J. NYS DEC	115 Elmhurst Drive Orchard Park, NY 14127	716-662-0885 716-842-5824	11
Spateholts, Robert Cornell University	Little Moose Lodge Adir. League Club Old Forge, NY 13420	315-369-6781 315-369-6781	8
Spencer, Selden J. SUNY-New Paltz	55 DuBois Road New Paltz, NY 12561	914-255-5077 914-257-2541	3,7
Spodaryk, Joseph G. NYS DEC	P.O. Box 584 Broadalbin, NY 12025	518-883-5620 518-773-7318	11
Spotila, James R. SUC-Buffalo	Dept. Biol-SUC, 1300 Elmwood Ave. Buffalo, NY 14150	716-836-3059 716-878-6409 or 716-878-6410	3,9
Stagg, Michael Cornell University (S)	230 Sapsucker Woods Road Ithaca, NY 14850	607-257-2618 607-256-5469	3
Stillman, Loretta Amer. Museum Nat. History	101 Perry Street New York, NY 10014	212-242-1486 212-TR3-1300 (x-388)	6
Stone, Udell B. Retired, NYS DEC	303 Troy Road Rochester, NY 14618	716-244-7503	8

NAME	ADDRESS	TELEPHONE	INTEREST
Webster, Dwight A. Cornell University	62 Burdick Hill Road Ithaca, NY 14850	607-277-5109 607-256-6578	6,8
Wedge, Leslie R. NYS DEC	RD #1 Homer, NY 13077	607-749-3292 607-753-3095	8
Weeks, Hal Cornell University (S)	Sec. Ecol. Systmat., Cornell Univ. Ithaca, NY 14853	607-257-0644 607-256-3013	8
Welch, Timothy J. Cornell University (S)	94 East Squire Drive., Apt. 5 Rochester, NY 14623	716-442-9677	8
Wenger, Mark ERC-SUC-Fredonia	844 Central Avenue Dunkirk, NY 14048	716-366-4051 716-672-3375	5
Werner, Robert G. SUNY-Syracuse	RD #3, Tracy Drive Skaneateles, NY 13152	315-673-4272 315-473-8849	6
White, Edward V. Retired NYS DEC	260 Mill Creek Drive Southold, NY 11971	516-765-9224	
Wich, Kenneth NYS DEC	22 Washington Avenue Coxsackie, NY 12051	518-731-8353 518-457-5690	1
Widmer, Carl C. NYS DEC	RD #2 Naples, NY 14512	716-374-5048 716-226-2466	8
Wilson, Douglas R. NYS DEC	61 E. Church Street Adams, NY 13605	315-232-2176 315-782-0100 (X-271)	
Winter, Jim SUNY-Fredonia	247 West Main Street Fredonia, NY 14063	716-672-2665 716-673-3374	3,8
Witman, David C. Texas Instruments, Inc.	64 Wheatstone Circle Fairport, NY 14450	914-266-5694 914-737-3081	3
Wood, Kenneth G. Self-Employed	RD #1, Arkwright Road Fredonia, NY 14063		
Young, Byron H. NYS DEC	RT. #1, Box 3J Middle Island, NY 11953	516-924-4608 516-751-8200	6,7
Zacchea, Donald NYS DEC	Building 40, SUNY Stony Brook, NY 11794	516-751-7900	7
Zawacki, Chester S. NYS DEC	Building 40, SUNY Stony Brook, NY 11794	516-751-7900	7
Ziolkowski, Bernard J. SUNY Syracuse	5827 Thompson Road Dewitt, NY 13214	315-446-2041	8
Zuckerman, Lawrence US Dept. Agriculture	CSU-Dept. Fish & Wildlife Fort Collins, Colorado 80523	303-482-2744 303-491-5320	3,6

Section 4 - Officers

The officers of the Chapter shall consist of a President, President-Elect, Secretary-Treasurer and Secretary-Treasurer-Elect.

The President-Elect and the Secretary-Treasurer-Elect shall be elected at the annual meeting. The Secretary-Treasurer shall hold office for two years, but the term of the other officers shall be one year. The Secretary-Treasurer-Elect shall be elected in alternate years. In case of a vacated position, the Executive Committee shall appoint a qualified replacement to fill an unexpired term. The incumbent (not newly elected) President-Elect and Secretary-Treasurer-Elect shall succeed to the office of President and Secretary-Treasurer, respectively, at the expiration of the terms of those officers.

In the event of a cancellation of an annual meeting at which election of officers was scheduled, the officers and the members of any committee shall continue to serve until the next scheduled meeting.

Section 5 - Duties of Officers

The President to the Chapter shall preside at all meetings, serve as Chairman at the Executive Committee, represent the Chapter on the Northeast Division Executive Committee and in the American Fisheries Society, make appointments and perform other duties and functions as are authourized and necessary. The Chapter shall reimburse the President of the Chapter, or an alternate designated by the President, for registration fees and housing expenses at the annual meeting of the American Fisheries Society.

The President-Elect shall be Chairman of the Membership Committee and member of the Program Committee, and shall assume the duties of the President if the latter is unable to act.

The Secretary-Treasurer shall keep the official records of the Chapter, collect and be custodian of registration fees, dues and any funds which may be allotted to the Chapter. The Secretary-Treasurer shall disburse funds as may be authorized by the Executive Committee or the membership, submit a record of receipts and disbursements at the annual meeting, and perform such duties as may be requested by the Executive Director of the American Fisheries Society and officers of the Northeast Division.

The Secretary-Treasurer-Elect shall aid the Secretary-Treasurer in his duties and act at the direction of the Secretary-Treasurer and the President.

Section 6 - Executive Committee

The Executive Committee shall consist of the Chapter officers (President, President-Elect, Secretary-Treasurer, Secretary-Treasurer-Elect) and the immediate Past-President. The Chairmen of standing committees and ad hoc committees shall be non-voting members of the Executive Committee. The Executive Committee is authorized to act for the Chapter between meetings and to perform appropriate duties and functions.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

1980 ANNUAL MEETING - BERGAMO EAST, MARCY, NEW YORK

ABSTRACTS

FEBRUARY 1-2, 1980

Abstracts of Papers Presented at the 1980 Annual Meeting
of the New York Chapter of the American Fisheries Society
February 1 and 2, 1980, Bergamo East, Marcy, N.Y.

Friday, February 1

9:30 Production, growth and summer-to-autumn survival of juvenile steelhead trout in four Salmon River tributaries. J. H. Johnson, New York State Department of Environmental Conservation.*

Biological characteristics of wild juvenile steelhead trout (*Salmo gairdneri*) populations were examined from Orwell, Pekin, Trout and John O'Hara Brooks of the Salmon River drainage in Oswego County, New York. The study was carried out generally from June through October during 1977-1979. Production estimates were obtained on all streams in 1977 and also on Orwell Brook in 1978. In 1977, production of subyearling steelhead from June through October was greatest in Trout and Orwell Brooks (range 0.52-2.74 g/m^2). Production of subyearling steelhead in Orwell Brook was lower in 1978 than in 1977 (2.00-1.15 g/m^2); this possibly being the result of reduced stream discharges which eliminated extensive gravel areas in the spring of 1978. Production of yearling steelhead was highest in Trout Brook with production in the other streams being similar. The growth of subyearling steelhead among the streams was similar in 1977. The growth of subyearling steelhead in Orwell Brook was greater in 1977 than in 1978-79. Considerable differences were observed in the growth of yearling steelhead between stream systems; yearling steelhead in the Orwell-Pekin system were significantly larger each month than those collected from the Trout-John O'Hara system. Summer-to-autumn survival of subyearling steelhead in New York is slightly less than observed in Michigan. Survival of subyearling steelhead in Orwell Brook was considerably higher in 1978 than in 1977. Survival of wild yearling steelhead in New York is much higher than that reported in Michigan.

9:45 Biomicroscopic and histologic observations of the eye pathologies resultant from riboflavin deficiency in the rainbow trout (*Salmo gairdneri*). S. G. Hughes, New York Cooperative Fishery Research Unit.

Ocular abnormalities, including cataracts, have become a serious problem in fish hatcheries in this country and around the world. Though there are many causes of sight loss in cultured salmonids, there are five which have their basis in nutritional deficiencies. Eye maladies due to deficiencies in vitamin A, thiamin (vitamin B_1), zinc and sulfur amino acids have been characterized by other workers while the lenticular and corneal abnormalities of fish due to riboflavin (vitamin B_2) deficiency have only received superficial work prior to this study.

The corneal abnormalities include a clouding of the normally transparent structure, loss of epithelia, hyperplasia and thickening of the endothelium and stroma, and vascularization of the normally avascular tissue. The lens is afflicted by a hypertrophy of the lens fibers of the posterior subcapsular cortex and a liquefaction of the proteins within these fibers. These characteristics are completely different from the syndromes presented by the other nutritional eye diseases and serve to set the riboflavin deficiency lenticular cataract and corneal opacity in a position of being a specific indicator of riboflavin deficiency or some interruption of the riboflavin metabolism of the eye of the fish.

*Affiliation of senior author only.

Friday, February 1 (contd)

10:00 Preliminary observations on the effects of a gradually increasing photoperiod and temperature regime on the spawning time of the walleye. M. L. Jahncke, New York Cooperative Fishery Research Unit.

Preliminary studies utilizing a gradually increasing photoperiod and temperature regime conducted in Nov. 1978-Jan. 1979, at NYCFRU, Cornell University, resulted in adult male walleye (*Stizostedion vitreum vitreum*), with free flowing milt on Jan. 15, 1979. In Jan. 1971, adult walleye were obtained under the ice from the Mississippi River by James L. Brauhn. Three gravid females were injected with 1 ml of carp pituitary extract and transferred into 60°F water. Within 24 hours one of the females had eggs running freely from the vent.

Photoperiod has been considered the dominant factor influencing the spawning time of salmonids, whereas, in the Percidae family photoperiod and temperature are more interdependent. Adult male walleye from Oneida Lake can be sexually ripe, characterized by free flowing milt, in late November, while the females may require a minimum winter temperature to reach the final sexual maturation stage. Controlled reproduction at different times of the year is a central problem in aquaculture. The manipulation of the spawning time of walleye has direct application in their intensive culture.

10:15 The effect of removing spawning adults on growth in a white sucker, *Catostomus commersoni*, population. M. A. Hartle, Department of Natural Resources, Cornell University.

Sexually mature white suckers, *Catostomus commersoni*, were trapped and removed from a sucker population during the spring spawning run in an effort to enhance the growth of resident trout species. A comparison of growth increment before and after sucker removal was carried out for the remaining juvenile and nonspawning suckers. White sucker growth was evaluated to detect intraspecific changes occurring following density reduction. Growth analysis was accomplished by back calculation of lengths with the use of scale measurements. Only fish whose scale age could be verified by fin ray analysis were used in the comparison. Compensatory changes which may occur in the sucker population following removal will be discussed.

10:30 Female mimicry as an alternative reproductive strategy in bluegill sunfish (*Lepomis macrochirus*). Wallace Dominey, Neurobiology and Behavior, Cornell University.

The mating system of the bluegill sunfish (*Lepomis macrochirus*) is characterized by male-male competition. Rather than constructing and defending nests, some small, sexually mature males adopt female mimicry as a reproductive strategy. Using otoliths for ageing, these small males are shown to be obligate female mimics, never reaching nesting male size. Because individuals are limited to a single strategy, selection can act independently on the practitioners of the two strategies, possibly resulting in a genetically maintained polymorphism. The stereotyped differences between female mimic and nesting male growth patterns suggest genetic influence.

Friday, February 1 (contd)

10:45 Food habits and feeding chronology of the redfin pickerel, *Esox americanus americanus*, in Woodbury Creek, New York. Chang-hwa Chang, The American Museum of Natural History.

Food habits and feeding chronology studies were conducted on 213 specimens of the redfin pickerel. Analysis of food habits revealed that as the pickerel grow there is a progressive increase in prey size from plankton, small crustaceans and immature insects, to larger insect nymphs, crayfish and fishes. As fish grow there is a decrease in the number of food items consumed and and increase in the size of the items swallowed. Redfins longer than 105 mm TL examined during October fed mainly after dawn and in late afternoon, while the redfin less than 105 mm TL fed intensively in mid-afternoon and just after sunset. The temporal separation of different feeding peaks apparently prevent frequent contacts and reduce cannibalism. Cannibalism appears to be the population controlling factor, since very few other predacious fish are present in the same habitat. Eastern mudminnows, tessellated darters, and young redfins were the most common forage species. The feeding regimen of the redfin in Woodbury Creek appeared to be dependent upon the abundance and microhabitats of the prey, feeding time of the day, accessibility and preference of the prey, and catching and swallowing abilities of the predator, as well as the size and behavior patterns of the prey and predator.

11:00 Some aspects of the distribution and comparative ecology of three species of *Etheostoma* in the Allegheny River system. R. J. Nemecek, St. Bonaventure University.

Three species of darters, *Etheostoma variatum, E. caeruleum,* and *E. zonale*, were studied in the Allegheny River drainage of western New York. *E. caeruleum* was found to have the most extensive distribution and ascends the upstream portions of the larger creeks and tributaries to a greater extent than either *E. variatum* or *E. zonale*.

Preferences for current velocities, substrate composition, water depth, vegetative covering, and temperature were found to vary among the three species. Lengths of spawning seasons were seen to overlap one another, but there appeared to be little competition for spawning habitat. Seasonal and daily feeding habits varied significantly and reduced competition. In general, a sufficient amount of resource partitioning was found to exist and allow these three sympatric species to coexist in the riffle habitat.

11:15 Size-selective predation on *Daphnia pulex* by yellow perch fry in Oneida Lake. Michael J. Hansen and David H. Wahl, New York Cooperative Fishery Research Unit.

The length distributions of *Daphnia pulex* in yellow perch, *Perca flavescens*, fry stomachs and in simultaneously collected plankton samples were compared for evidence of size-selective predation. On fifteen of eighteen sample dates, perch fry selected *D. pulex* that were significantly smaller than those in the plankton samples. On one of the three remaining dates, perch fry

Friday, February 1 (contd)

fed on *D. pulex* that were significantly larger than those in plankton samples. No evidence of diurnal fluctuations in size-selection or perch fry movements immediately prior to capture was detected. A linear relationship between perch length and mean length of *D. pulex* consumed was demonstrated, whereby perch select smaller *D. pulex* than they are capable of consuming from a given population. The results of laboratory feeding experiments contradicted the results of the field study, in that perch fry selected large *D. pulex* over small *D. pulex*. Experience, degree of satiation, schooling interactions, and optimal foraging density are discussed as possible mechanisms for the discrepancy between the two phases of the study. Some historical aspects of the zooplankton community in Oneida Lake are also discussed.

11:30 Role of young yellow perch in regulating population dynamics of *Daphnia pulex* in Oneida Lake, New York. E. L. Mills and J. L. Forney, Department of Natural Resources, Cornell University.

The response of a population of *Daphnia pulex* to fluctuations in abundance of young (age 0) yellow perch (*Perca flavescens*) was examined in Oneida Lake, New York, 1975-78. Comparison of seasonal trends in abundance of *D. pulex* and age 0 yellow perch suggested predation by the latter regulated the seasonal pattern of *Daphnia* biomass. Populations of *D. pulex* could tolerate predation by 10 kg of young perch·ha^{-1} but reproduction could not compensate for predation when perch biomass exceeded 20-40 kg·ha^{-1}. The number of *D. pulex* consumed by young perch seldom exceeded 6-10% of the daphnid standing crop, but the number consumed represented about half to one-third of the mortality and 50 to 90% of the daily production of *D. pulex* in 1975 and 1977 when *Daphnia* populations collapsed in early summer. Our studies suggest that young-of-the-year planktivorous fish can have a significant impact on zooplankton population dynamics and their role in governing the structure and function of these organisms warrants further attention.

11:45 The 1978 status of bass fishing tournaments in the United States: A survey of state management agencies. Bruce Shupp, New York State Department of Environmental Conservation.

A 10 question, questionnaire was sent to all 50 state fishery chiefs in an attempt to put black bass (*Micropterus sp.*) tournaments into perspective concerning: scope, magnitude and frequency of tournament activity in the U.S.; policies and regulations promulgated; fishery agency tournament involvement; use of tournament data and/or fish; tournament repercussions and opinion of the agencies toward bass tournaments. Forty-nine states responded and indicated that bass tournaments had spread from their 1967 origin in southern U.S. to 44 states by 1978. Southern states still lead in number of tournaments and waters involved with north-central, western and northeastern states following respectively. Official competitive fishing policies have been developed by 15 states and 14 states regulate tournaments in varying ways. These regulations will be reviewed. Fishery management agencies are involved with tournaments, to some degree, in all 44 tournament

Friday, February 1 (contd)

states. Type and frequency of involvement and the use of data and/or tournament fish is tabulated and discussed. Frequency of positive and negative tournament impacts was estimated. Thirty-one states (74%) have not documented any biological problems directly associated with tournaments. However 50% of the states identified social conflicts with non-tournament anglers resulting from tournaments. Thirty-seven states (84%) said bass tournaments have either had no significant impact on fisheries or fishery programs or they had a positive effect. Discussion centers on social implications of competitive fishing.

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Saturday, February 2

9:00 Aspects of the life history of a freshwater *Fundulus heteroclitus* population in the Bronx River, New York. Jeanette M. Samaritan and Robert E. Schmidt, Fordham University.

A freshwater population of the mummichog, *Fundulus heteroclitus*, was collected during summer and autumn seasons from the Bronx River, New York. Other occurrences in freshwater of this common estuarine cyprinodontid have been noted in Pennsylvania, New Hampshire and Canada. In the Bronx River, this species is a significant part of the fauna, and is one of the few species found throughout the river system. Specimens were examined to determine the growth, diet and associated parasites of the species. It appears that this freshwater population does not differ from its brackish water counterparts with respect to growth and food preference.

9:15 Status of the bitterling (*Rhodeus sericeus*) in southern New York. Robert E. Schmidt, Fordham University.

An extant population of the bitterling, *Rhodeus sericeus*, is reported from the Bronx River, New York. Populations previously reported from the Sawmill River are probably extinct. The bitterling is limited to a stretch of river 1.2 km long in Bronxville, Westchester County. The distribution is correlated with, and probably depends upon, the distribution of (unidentified) freshwater mussels due to the bitterling's unusual method of reproduction.

Limited information of the natural history of this species indicates that the Bronx River population differs in age structure and feeding habits from the original European populations. The presence of the bitterling makes the Bronx River unique in North America and the river probably deserves more attention than it has received in the past.

Saturday, February 2 (contd)

9:30 New approaches to comparative food habit studies. George Dale, Fordham University.

Two food habit techniques are described. One, a volumetric estimation technique, avoids certain artifacts of other methods by calculating a "fraction-of-full-stomach" value for each food category. The second is an analytical approach, using the $\hat{C}\lambda$ overlap statistic, for testing the possibility that the food preferences of two similar species are essentially identical, differing more as a result of collection distinction than species distinction. These techniques were used to study the food habits of West Indian cardinalfishes (Apogonidae).

9:45 Diet overlap in two sympatric dace *Rhinichthys atratulus* and *R. cataractae*. A. Pappantoniou and G. Dale, Fordham University.

Feeding habits of the longnose dace, *R. cataractae* and the blacknose dace, *R. atratulus* are well known. Little is known about overlap of their feeding habits. Dace were collected from two separate sites on the Waccabuc River, Westchester County, New York on three separate occasions from August-October 1979. Three collections were from a site where blacknose and longnose dace co-exist. Three collections were from a site that only longnose dace inhabited. Specimens were preserved in the field. Stomachs were removed and the fullness of each stomach estimated. Stomach contents were analyzed and the percent that each food category contributed to the total volume of the stomach contents was estimated. Using the overlap formula

$$\hat{C}\lambda = \frac{2 \sum_{i=1}^{S} X_i Y_i}{\sum_{i=1}^{S} X_i^2 \sum_{i=1}^{S} Y_i^2}$$

diet overlap between species-within collection and within species-between collections was calculated. The value $\hat{C}\lambda$ can range from 0-1 with ≥ 0.6 considered indicative of overlap. The within species-between collection overlap for *R. atratulus* was 0.4345; that for *R. cataractae* was 0.6125. The average $\hat{C}\lambda$ between species-within collection, 0.6297, indicates substantial overlap in the diet of the two species where they coexist, attributable to relative non-selectivity of diet in both species. The lower within species-between collection overlap for both species indicates that diet is more collection-dependent than species-dependent. This conclusion is supported by a calculation of the within-site overlap for *R. cataractae*. Values of 0.6587 and 0.8146 were obtained.

Saturday, February 2 (contd)

10:00 Comparison of growth and survival between domestic, hybrid, and wild strain brook trout under hatchery conditions. Fred G. Joost, Department of Natural Resources, Cornell University.

In 1979, the Brandon Hatchery conducted studies to compare the growth and survival rates of various strains of brook trout. These strains were comprised of two Canadian wild strains, the Assinica and the Temiscamie; two F_1 hybrids, the Assinica X Domestic, and the Domestic X Temiscamie, and one Domestic group of Nashua Hatchery origin.

Each was raised and held under similar conditions for a period of twenty-eight weeks from swim-up. Survival and length and weight data were taken on each group at two-week intervals.

Findings indicated comparable growth rates between the domestic and hybrid groups. Wild strains showed slower growth rates, and had a lower condition factor throughout the study period.

10:15 Giant brown trout in New York State. M. Garrell, L. Strait, and J. Schachte, Adelphi University.

Among the giant salmonids indigenous to Western Europe is *Salmo trutta lacustris* (Ger. *Seeforelle*), from the subalpine region. In its native habitat this fish frequently reaches 20 kg in weight, and specimens of 30 kg have been documented. In 1979 we began an experiment on the propagation of *Seeforellen* within the New York State hatchery system. Eggs were obtained from Grubmühl, Bavaria, in January and were cultured in the Rome hatchery; fry were released last fall in Mountain Lake in the hope of obtaining sufficient eggs to begin a limited stocking program around 1983. We will relate some of our experiences with these fish and will discuss the potential of giant salmonids for future programs.

10:45 Predicting brown trout growth from stream temperature. Richard J. Preall and Neil H. Ringler, SUNY College of Environmental Science and Forestry, Syracuse University.

A model and computer program has been developed that simulates maximum brown trout growth under a varying temperature regime. The model is based on recent research by J. M. Elliott relating growth to ration size, water temperature and body weight; it is applicable to trout weighing between 5 and 300 grams and for temperatures between 3.8 and 21.7°C. Daily growth is simulated by subtracting fecal, urine and respiratory energy losses from the daily energy ration.

Observed growth of brown trout in six central New York streams is being compared to the maximum predicted by the model. From June through November 1979 each stream was electrofished monthly and mean stream temperatures were derived from maximum-minimum thermometer readings. Growth was estimated by successively weighing scale-sampled trout. Deviations of observed from predicted growth rates are being analyzed relative to fish population density and to the physical and chemical characteristics of the streams. The approach provides a means of evaluating the contribution of temperature to trout growth and may prove useful as a future management tool.

Saturday, February 2 (contd)

11:00 Life history phenomena and size regulations for St. Lawrence River northern pike. Dennis J. Dunning*, Bio Systems Research Inc., and Quentin Ross, Texas Instruments, Inc.

Current population theory indicates that reducing the number of older age classes in a species exhibiting a time lag in reproduction reduces the stability of the population. The recently adopted 660 mm minimum size limit for the St. Lawrence River northern pike sport fishery concentrates the fishing pressure on the females and older age groups. In order to decrease the fishing pressure on older females and to guard against inadvertently decreasing the stability of the northern pike population, the daily harvest of pike 660 mm or greater in length should be regulated. This would allow the trophy fishery to remain viable, distribute the fishing pressure between both sexes in the smaller age groups and decrease the chance of destabilizing the population.

*Present address: Power Authority State of New York, 10 Columbus Circle, New York, NY 10019

11:15 The distribution of Mirex within the edible tissues of Lake Ontario salmon with respect to species, sex, and season. Samuel E. Insalaco and Joseph C. Makarewicz, New York State Health Department.

A statistical analysis of the tissue distribution of Mirex in coho (*Oncorhynchus kisutch*) and chinook (*O. tshawytscha*) salmon from Lake Ontario suggests that the greatest factor affecting Mirex concentration is weight. Differences attributed to species, sex, and season appear as a function of the direct weight change and show very similar seasonal and sexual trends in both species. Differences in tissue group means were as high as 54% and suggest that whole fillet analyses may be misrepresentative of concentration in the other edible tissues.

11:30 Observations on the exposure of blacknose dace to ammonia under field and laboratory conditions. Edward J. Kuzia, J. G. Spodaryk, R. E. Foley, T. L. Preddice, and R. W. Karcher, Jr., New York State Department of Environmental Conservation.

Blacknose dace (*Rhinichthys atratulus*) were exposed in a field bioassay in Mathew Creek, Johnstown, N.Y. The upper drainage of this creek, historically a trout stream, no longer supports a balanced aquatic community. It originates from springs about 300 m from a municipal landfill. These springs have abnormally high ammonia levels which progressively decreases downstream. Duplicate test cages containing blacknose dace (BND) (N=12) were placed at five of six stations to measure 4 day acute toxicity and observe pathological changes at periods to 14 days. Mean un-ionized ammonia concentrations during the exposure period ranged from 0.018 downstream to 0.37 mg NH_3 l^{-1} at the uppermost station. Mortality occurred only at the two stations (4 and 5) closest to the springs with 8.3% and 75% mortality respectively. Histopathological examination of fish exposed

Saturday, February 2 (contd)

for up to 14 days at stations 3-5 revealed alteration of gill tissue. No other toxicants were found in the stream system at concentrations known to be lethal or to produce similar gill pathology. Elevated ammonia concentrations of the stream are suggested as a cause of the absence of salmonids from the upper part of Mathew Creek. Laboratory exposures of BND for 14 days at similar concentrations elicited similar gill pathology. The ability to elicit like responses in gill tissue under field and laboratory conditions supports the hypothesis that results derived in the laboratory for ammonia can be applied to environmental situations of similar chemistry.

11:45 Effects of Endrin used as an orchard rodenticide on the aquatic ecosystem. James R. Colquhoun, Howard J. Dean, and John Symula, New York State Department of Environmental Conservation.

When apple orchard owners in the lower Hudson Valley were given permission to use Endrin to control pine voles, NYSDEC Bureau of Environmental Protection monitored its effect on the aquatic ecosystem. Two of the three studied stream systems were severely affected by these treatments. Lethal levels of Endrin were detected in water samples in these two streams. These levels were accompanied by accumulation in sediment and stream biota. Caged fish and wild fish were killed as a result of the treatment. In another larger treated stream which was studied, none of these adverse effects were detected. Aquatic insect populations were sampled and did not seem to be severely affected by the Endrin treatments.

CALL FOR PAPERS

The annual meeting of the New York Chapter of the American Fisheries Society will be held February 13-14, 1981 at Bergamo/East, Chaminade Road, Marcy, N.Y. You are encouraged to submit an abstract and title of a technical paper to be considered by the Program Committee for presentation at the annual meeting. This meeting offers a fine opportunity to present results of research and management investigation in a constructive and professional atmosphere. Presentation of papers cannot exceed 15 minutes. The only acceptable audio visual materials will be 2 x 2 slides. These limitations will be strictly enforced at the meeting. Please note that a best student paper award will be presented by the Chapter again this year. Material attached to this notice provides detailed information about the award.

INSTRUCTIONS TO AUTHORS

Authors are requested to submit a detailed and informative abstract of their contribution on the enclosed form (less than 250 words):

1) A form is attached for submission of titles and abstracts for contributed papers. These should be typed in the allotted spaces which have been designed for direct printing. Use additional forms if more than one paper is submitted.
2) In addition, please submit a 1 or 2 page summary of your paper for use by the program committee in screening the papers to be presented at the meeting; only the abstract will be printed.
3) Please follow the instructions on the attached announcements for submitting papers to be considered for the best student paper award, as well as forwarding the above information to the chairman of the Program Committee.
4) Send your completed abstract and summary forms before December 12, 1980 to: Dr. James M. Haynes, NYAFS Program Chairman
   Department of Biological Sciences
   State University College
   Brockport, New York 14420
5) Authors will be notified of acceptance of papers by January 12, 1981.
6) _____ Please check here if your paper is to be considered for the best student paper award. Be sure you have also completed the application form for this award and forwarded it to Mr. Robert Foley.

Program Committee:

Bill Eustance
Bob Foley
Steve Gloss
Joe Gorsuch
James Haynes

ANNOUNCEMENT OF BEST STUDENT PAPER AWARD

The New York State Chapter of the American Fisheries Society will present an award for the most outstanding paper delivered by a student at the 1981 meeting. The winner shall receive in addition to a $50.00 cash award an appropriate certificate commemorating his award.

Each paper will be judged on: (a) presentation, including strict adherence to time schedule and the stimulation and handling of questions; (b) quality and significance of research and interpretation of data; (c) quality, effectiveness, appropriateness and utilization of illustrative materials. (A sample rating schedule is enclosed.)

The recipient must be the equivalent of a full-time student who is devoting his or her major efforts to a formal program of studies or have defended his or her thesis or dissertation within the 12 months preceding the annual meeting at which the paper is delivered. The paper must be based on investigations performed while the author was a student. A paper will not be considered as a student paper if it has a joint author, unless the joint author is another student. The student's major professor or department chairperson must certify that these criteria have been met.

If you wish to be considered for this award at the 1981 meeting of the N.Y.S. Chapter of the A.F.S., please complete the required information and send to: Bob Foley, Hale Creek Field Station, 7235 Steele Ave. Ext., Gloversville, N. Y. 12078, by the Call for Papers deadline.

- -

Please type or print:

Name _____ Date _____

Title of paper: _____

Mailing address: _____

I am/was a full-time student in the following department:

_____

_____

At the time of the presentation of the paper, I will be a full-time student or will have defended a thesis or dissertation within the past 12 months. I will be the first author and will present the paper. I have read the accompanying description of the Best Student Award criteria.

Signed: _____

I certify that the person above meets the criteria for the Best Student Paper Award as described above.

Date _____ Signed: _____
(Major Professor or Department Chairperson)

Title _____

Address _____

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

abstract

Author

Title

Abstract

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

N E W S L E T T E R

October 1980

Water Quality Standards Being Updated

An advisory task force on water quality standards has just issued their proposed revisions of the Department's water quality standards (Parts 700, 701, 702 and 704 of 6 NYCRR). Significant changes include:

1 - Revision of definition for a standard to be a designated best use and a narrative and/or numerical water quality limit; a new term, "water quality limit", to mean a realistic attainable narrative and/or numerical statement reflecting criteria balanced by principles of acceptable risk and socio-economic factors; and criteria being narrative and/or numerical values based on scientifically defensible values but which must consider analytical detection limits and variations in natural or background values.

Redefinition of fishing for the purposes of this regulation is also included, i.e. meaning "...any manner of taking of fish for subsequent use. Such uses include, but are not limited to, bait, consumption, stocking, propagation, research, ornament and display".

2 - Creation of specific criteria for effluent mixing zones.

3 - Creation of a clause for variance from a criteria or water quality limit. Such variance is subject to strict procedural and burden of proof criteria.

4 - Elimination of Class II in marine waters since it is not protective of the aquatic resources and the Department has upgraded all Class II waters to a more protective classes of SD or I.

5 - Establishes principles upon which water quality limits and criteria will be developed.

6 - Recognition of non-point sources of water pollution.

Public meetings are being held at four locations in mid-October, 1980. Copies of the proposal are available from:

Mr. Gerald P. Brezner
N.Y.S. Dept. of Environmental Conservation
Bureau of Standards and Compliance
Room 513
50 Wolf Road
Albany, New York 12233

1981 NYAFS ANNUAL MEETING PROGRAM

The success of last year's spirited panel discussion on licensing marine anglers prompted the 1981 Program Committee to invite a distinguished panel to discuss "Environmental Contaminants and the Great Lakes Fisheries". Panelists include Dr. Roger Armstrong, NSF Visiting Scientist to NYSDEC and Professor of Chemistry, Russell Sage College, who will discuss current contaminant levels and trends in Great Lakes fishes; Mr. Wayne Harris, Lawyer and Sportsman, who will discuss the contaminants problem from a lay-environmentalist perspective; Dr. Nancy Kim, NY Department of Health, who will discuss the risks of Great Lakes fish consumption to humans; Mr. William Pearce, Head NYSDEC Great Lakes Salmonid Program, who will discuss contaminants from a fishery management perspective; and Mr. Curt Hutchinson, Manager, Environmental Services, Union Carbide Corporation, has been invited to present a chemical industry viewpoint of Great Lakes fishery contaminants. Dr. Steven Gloss, NY Cooperative Fishery Unit Leader, will moderate the panel. An excellent analysis of the Great Lakes contaminants problem-one of critical importance to New York - is anticipated.

The 1981 Evening Program will focus on "Professional Certification: Benefits and Costs." Mr. Carl Sullivan, Executive Director of AFS, has been invited to present an overview of the benefits/drawbacks of professional certification. Mr. Dennis Anderson, President of the AFS Fish Health Section, has been invited to discuss the successes and problems associated with the FHS certification program. The opinions of these nationally known fishery professionals will be of great interest to all professional fishery biologists in New York.

The 1981 Program committee looks forward to bringing these outstanding speakers to you and urges all NY Chapter members and other interested persons to come to the annual meeting at Bergamo.

See you in February!

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

May 6, 1981

Mr. Lawrence C. Skinner
Box 81
West Sand Lake, N.Y. 12196

Dear Larry:

Enclosed in this box are 188 NY Chapter AFS Membership Directories. A second box contains the same amount. I will retain the originals, and have more directories printed if the need arises. Please see that Carl Sullivan (or Toni Brome) Executive Office AFS, the National AFS President, Dick Ryder, and the new NE Division AFS President, Lee Bridges receive copies.

Sincerely,

Joseph W. Gorsuch

Joseph W. Gorsuch
President, NY Chapter AFS

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

To: The Membership

Re: 1981 N.Y. Chapter AFS Committees

Your committee chairpersons for the current fiscal year are listed below. Should you wish to contribute information that would benefit the chapter, please contact the appropriate chairperson.

Executive Committee

President	Joseph W. Gorsuch
President-Elect	Steven P. Gloss
Secretary-Treasurer	Lawrence C. Skinner
Past President	John S. Grim

Standing Committees

Audit	Ned Holmes
Environmental Concerns	Dennis Dunning
Membership	Steven P. Gloss
Nominating	John S. Grim
Program	Lawrence E. Strait
Professional Standards	James Winter
Resolutions	Carl C. Widmer

Special Committees

Brochure	Carol Schleifer
New Initiatives	Robert E. Foley
Newsletter	Daniel Richardson
Publicity	Daniel Richardson
Time and Place	Steven P. Gloss
Water Quality	Gary Neuderfer
Work Shop	William J. Abraham

Joseph W. Gorsuch
President, N.Y. Chapter AFS

Chickatawbut Hill

Blue Hills Reservation
Box 408
Milton, MA 02186

Tel. 696-0920

JAN 14 1980

January 11, 1980

Mr. Lawrence C. Skinner
NYS DEC, Room 526
50 Wolf Rd.
Albany, NY 12233

Dear Larry:

Congratulations! This is to officially inform you that you have been nominated again for Secretary-Treasurer Elect, of the New York Chapter, American Fisheries Society. The elections will be held during the business meeting, at the annual convention, February 1-2 at the Bergamo East.

It is important that you write a short paragraph to summarize your present status and qualifications for the position. This will be helpful to new members to vote more objectively at the business meeting. Please keep your statements brief, 4 or 5 sentences, and send them as soon as possible to the Co-Chairperson of the Nominations Committee, Mr. Howard Loeb, NYS DEC, 50 Wolf Rd., Albany, NY 12233. We must set a post-mark deadline date at January 26, 1980.

Thankyou for your interest and continued dedication to the Society, and best of luck in February!

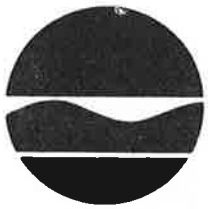
Sincerely,

Laurie A. Sutherland

Laurie A. Sutherland
Chairperson

New York State Department of Environmental Conservation

Finfish and Crustaceans Unit
Building 40, SUNY
Stony Brook, New York 11794



Robert F. Flacke
Commissioner

December 21, 1980

Mr. Larry Skinner
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233

Dear Larry,

Circumstances beyond my control prevented me from making the Ithaca Executive Committee meeting. I am enclosing with this note, about 350 copies of the biographies of nominees to go out in the next Chapter mailing.

Sincerely,

Philip T. Briggs
Associate Aquatic Biologist (Marine)

PTB:jsr
Enclosures
cc: John Grim

New York State Department of Environmental Conservation
Two World Trade Center, Rm 6126, New York, N.Y. 10047

Robert F. Flacke
Commissioner

Terry Agriss
Regional Director

December 27, 1979

Mr. William Pearce
Box 316
Cape Vincent, N.Y. 13618

Dear Bill,

I'm sorry that I am so late with this. I started a new job and I totally forgot about this until I reached the bottom of the file pile.

Here is my understanding of how the legislature and the Assembly Environmental Conservation Committee work. Many bills are drafted and pre-filed in late fall before the legislative session. The Assembly speaker determines which committees will get which bills. Each committee then examines the bills and each week throughout the session holds a meeting to vote on certain bills. These weekly meetings are open to the public, however, we can only find out one week in advance which bills will be acted on in that week. As you know some bills get out of committee and on to the Assembly floor and some don't. New bills may be submitted and sent to the Environmental Conservation Committee throughout the session.

The Assembly Science and Technology staff provides assistance to Assemblymen in drafting bills and also the technical expertise to explain bills to them.

The Chapter could obtain bills and comment directly to the committee (I have sent for this years pre-filing) or get in the process earlier and serve a function similar to the Science and Technology staff. The latter is what Bruce Shupp would like to do, however, I found it difficult to set up channels to do this.

I hope this was still helpful.

Sincerely,

Art

Arthur J. Newell

AJN:cd
Attachment

Guidelines for NYS AFS Chapter

Review of NYS Legislation

I. Each spring and summer the Legislative Actions Committee (LAC) will review chapter membership to develop or revise a list of people with expertise in diverse areas which will be presented to the President and the Executive Committee for their approval. The President will appoint members from the list to review and comment on Legislation.

II. Each fall or early winter the LAC will obtain a list of the bills before the Assembly Environmental Conservation Committee (AECC) for the year's legislative session.

III. At the end of its term the LAC will review the bills and forward to the new President those bills which the LAC believes the chapter may want to provide input.

IV. The new President will make the final determination of which bills will be reviewed and will forward each of them to an individual from the list of experts for their review and comment.

V. If the reviewer comments on a bill he will send it to the new President who will then draft a statement.

VI. The new President will circulate the draft statement among the five past presidents and if the decision is made by the incumbent and the past presidents that the chapter will provide input to the bill a final statement will be prepared pending the chapter's position, recommendations, etc. on the bill. The statement will then be sent to the chairman of the AECC.

VII. Following item III the new President will appoint a new LAC that will obtain from the AECC any new bills presented during the legislative session and forward to the new President those which the chapter may want to provide input to if time permits. Subsequent to this the new LAC will begin work on item I.

NOTES:

1. Since new officers and committees usually assume their responsibilities around the start of the legislative session an alternative to a portion of the guidelines could expedite the process: the LAC could be appointed at the end of the legislative session and serve its term until the end of the following session.

2. This entire process provides for chapter input to legislation only after bills are drafted and not during the bill drafting stage.

TUESDAY, JANUARY 15, 1980

11:00 A.M.--ENVIRONMENTAL CONSERVATION (Hinchey) Room 623 LOB

Assembly Print:
3000-A

HINCHEY--

An act to amend the environmental conservation law, in relation to metering of water supplied in cities with a population of one million or more.

3296-A

YEVOLI--

An act to amend the environmental conservation law, in relation to empowering the department of environmental conservation to establish rules and regulations in regard to the operation of gill and trammel nets and to establish a daily bag limit for recreational anglers.

314

CONNELLY--

An act to amend the environmental conservation law, in relation to disposal of deer killed by motor vehicle collision.

39

KOPPELL, HINCHEY, FERRIS--

An act to amend the executive law, in relation to providing for the establishment of a state civilian conservation corps.

3960

KOPPELL--

An act to amend the navigation law, in relation to mandating marinas to be equipped with pump out station facilities.

3961

KOPPELL, HINCHEY, GRANNIS--

An act to amend the environmental conservation law, in relation to environmental management councils in the city of New York.

4363-A

KIDDER--

An act to amend the environmental conservation law, in relation to permitting property owners to retain dead carcasses taken under a damage permit.

Rec'd as amended 2-1-80 LCS

New York Chapter American Fisheries Society

Financial Report, February 1, 1980

(As of January 27, 1980)

	Chapter Accounts				
	Postal Fund	Checking Acct.	Savings Acct.	Workshop Fund	Total
Balance: January 23, 1979	$ 9.92	$ 264.50	$ 3900.00	$ -0-	$ 4174.42
Receipts:					
Return of check #22 (J. Gorsuch)		30.00			
Transfer of acct. to L. Skinner		232.53			
Bergamo meeting receipts		254.00			
1978 Dues (2)		4.00			
1979 Dues (102)		204.00			
1980 Dues (63)		126.00			
Bulk rate refund		9.92			
Transfer from savings acct.		100.00			
Postage stamps	75.00				
Interest (State Bk of Albany)			177.42		
Sale of one film			182.00	382.09	
Workshop expenditure transfer				~~467.69~~	
Subtotal	75.00	960.45	359.42	382.09 467.69	

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

1980 ANNUAL MEETING - BERGAMO EAST, MARCY, NEW YORK

ABSTRACTS

FEBRUARY 1-2, 1980

Abstracts of Papers Presented at the 1980 Annual Meeting
of the New York Chapter of the American Fisheries Society
February 1 and 2, 1980, Bergamo East, Marcy, N.Y.

Friday, February 1

9:30 Production, growth and summer-to-autumn survival of juvenile steelhead trout in four Salmon River tributaries. J. H. Johnson, New York State Department of Environmental Conservation.*

Biological characteristics of wild juvenile steelhead trout (*Salmo gairdneri*) populations were examined from Orwell, Pekin, Trout and John O'Hara Brooks of the Salmon River drainage in Oswego County, New York. The study was carried out generally from June through October during 1977-1979. Production estimates were obtained on all streams in 1977 and also on Orwell Brook in 1978. In 1977, production of subyearling steelhead from June through October was greatest in Trout and Orwell Brooks (range 0.52-2.74 g/m^2). Production of subyearling steelhead in Orwell Brook was lower in 1978 than in 1977 (2.00-1.15 g/m^2); this possibly being the result of reduced stream discharges which eliminated extensive gravel areas in the spring of 1978. Production of yearling steelhead was highest in Trout Brook with production in the other streams being similar. The growth of subyearling steelhead among the streams was similar in 1977. The growth of subyearling steelhead in Orwell Brook was greater in 1977 than in 1978-79. Considerable differences were observed in the growth of yearling steelhead between stream systems; yearling steelhead in the Orwell-Pekin system were significantly larger each month than those collected from the Trout-John O'Hara system. Summer-to-autumn survival of subyearling steelhead in New York is slightly less than observed in Michigan. Survival of subyearling steelhead in Orwell Brook was considerably higher in 1978 than in 1977. Survival of wild yearling steelhead in New York is much higher than that reported in Michigan.

9:45 Biomicroscopic and histologic observations of the eye pathologies resultant from riboflavin deficiency in the rainbow trout (*Salmo gairdneri*). S. G. Hughes, New York Cooperative Fishery Research Unit.

Ocular abnormalities, including cataracts, have become a serious problem in fish hatcheries in this country and around the world. Though there are many causes of sight loss in cultured salmonids, there are five which have their basis in nutritional deficiencies. Eye maladies due to deficiencies in vitamin A, thiamin (vitamin B_1), zinc and sulfur amino acids have been characterized by other workers while the lenticular and corneal abnormalities of fish due to riboflavin (vitamin B_2) deficiency have only received superficial work prior to this study.

The corneal abnormalities include a clouding of the normally transparent structure, loss of epithelia, hyperplasia and thickening of the endothelium and stroma, and vascularization of the normally avascular tissue. The lens is afflicted by a hypertrophy of the lens fibers of the posterior subcapsular cortex and a liquefaction of the proteins within these fibers. These characteristics are completely different from the syndromes presented by the other nutritional eye diseases and serve to set the riboflavin deficiency lenticular cataract and corneal opacity in a position of being a specific indicator of riboflavin deficiency or some interruption of the riboflavin metabolism of the eye of the fish.

*Affiliation of senior author only.

Friday, February 1 (contd)

10:45 Food habits and feeding chronology of the redfin pickerel, *Esox americanus americanus*, in Woodbury Creek, New York. Chang-hwa Chang, The American Museum of Natural History.

Food habits and feeding chronology studies were conducted on 213 specimens of the redfin pickerel. Analysis of food habits revealed that as the pickerel grow there is a progressive increase in prey size from plankton, small crustaceans and immature insects, to larger insect nymphs, crayfish and fishes. As fish grow there is a decrease in the number of food items consumed and and increase in the size of the items swallowed. Redfins longer than 105 mm TL examined during October fed mainly after dawn and in late afternoon, while the redfin less than 105 mm TL fed intensively in mid-afternoon and just after sunset. The temporal separation of different feeding peaks apparently prevent frequent contacts and reduce cannibalism. Cannibalism appears to be the population controlling factor, since very few other predacious fish are present in the same habitat. Eastern mudminnows, tessellated darters, and young redfins were the most common forage species. The feeding regimen of the redfin in Woodbury Creek appeared to be dependent upon the abundance and microhabitats of the prey, feeding time of the day, accessibility and preference of the prey, and catching and swallowing abilities of the predator, as well as the size and behavior patterns of the prey and predator.

11:00 Some aspects of the distribution and comparative ecology of three species of *Etheostoma* in the Allegheny River system. R. J. Nemecek, St. Bonaventure University.

Three species of darters, *Etheostoma variatum, E. caeruleum,* and *E. zonale,* were studied in the Allegheny River drainage of western New York. *E. caeruleum* was found to have the most extensive distribution and ascends the upstream portions of the larger creeks and tributaries to a greater extent than either *E. variatum* or *E. zonale*.

Preferences for current velocities, substrate composition, water depth, vegetative covering, and temperature were found to vary among the three species. Lengths of spawning seasons were seen to overlap one another, but there appeared to be little competition for spawning habitat. Seasonal and daily feeding habits varied significantly and reduced competition. In general, a sufficient amount of resource partitioning was found to exist and allow these three sympatric species to coexist in the riffle habitat.

11:15 Size-selective predation on *Daphnia pulex* by yellow perch fry in Oneida Lake. Michael J. Hansen and David H. Wahl, New York Cooperative Fishery Research Unit.

The length distributions of *Daphnia pulex* in yellow perch, *Perca flavescens*, fry stomachs and in simultaneously collected plankton samples were compared for evidence of size-selective predation. On fifteen of eighteen sample dates, perch fry selected *D. pulex* that were significantly smaller than those in the plankton samples. On one of the three remaining dates, perch fry

Friday, February 1 (contd)

states. Type and frequency of involvement and the use of data and/or tournament fish is tabulated and discussed. Frequency of positive and negative tournament impacts was estimated. Thirty-one states (74%) have not documented any biological problems directly associated with tournaments. However 50% of the states identified social conflicts with non-tournament anglers resulting from tournaments. Thirty-seven states (84%) said bass tournaments have either had no significant impact on fisheries or fishery programs or they had a positive effect. Discussion centers on social implications of competitive fishing.

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Saturday, February 2

9:00 Aspects of the life history of a freshwater *Fundulus heteroclitus* population in the Bronx River, New York. Jeanette M. Samaritan and Robert E. Schmidt, Fordham University.

A freshwater population of the mummichog, *Fundulus heteroclitus*, was collected during summer and autumn seasons from the Bronx River, New York. Other occurrences in freshwater of this common estuarine cyprinodontid have been noted in Pennsylvania, New Hampshire and Canada. In the Bronx River, this species is a significant part of the fauna, and is one of the few species found throughout the river system. Specimens were examined to determine the growth, diet and associated parasites of the species. It appears that this freshwater population does not differ from its brackish water counterparts with respect to growth and food preference.

9:15 Status of the bitterling (*Rhodeus sericeus*) in southern New York. Robert E. Schmidt, Fordham University.

An extant population of the bitterling, *Rhodeus sericeus*, is reported from the Bronx River, New York. Populations previously reported from the Sawmill River are probably extinct. The bitterling is limited to a stretch of river 1.2 km long in Bronxville, Westchester County. The distribution is correlated with, and probably depends upon, the distribution of (unidentified) freshwater mussels due to the bitterling's unusual method of reproduction.

Limited information of the natural history of this species indicates that the Bronx River population differs in age structure and feeding habits from the original European populations. The presence of the bitterling makes the Bronx River unique in North America and the river probably deserves more attention than it has received in the past.

Saturday, February 2 (contd)

10:00 Comparison of growth and survival between domestic, hybrid, and wild strain brook trout under hatchery conditions. Fred G. Joost, Department of Natural Resources, Cornell University.

In 1979, the Brandon Hatchery conducted studies to compare the growth and survival rates of various strains of brook trout. These strains were comprised of two Canadian wild strains, the Assinica and the Temiscamie; two F_1 hybrids, the Assinica X Domestic, and the Domestic X Temiscamie, and one Domestic group of Nashua Hatchery origin.

Each was raised and held under similar conditions for a period of twenty-eight weeks from swim-up. Survival and length and weight data were taken on each group at two-week intervals.

Findings indicated comparable growth rates between the domestic and hybrid groups. Wild strains showed slower growth rates, and had a lower condition factor throughout the study period.

10:15 Giant brown trout in New York State. M. Garrell, L. Strait, and J. Schachte, Adelphi University.

Among the giant salmonids indigenous to Western Europe is *Salmo trutta lacustris* (Ger. *Seeforelle*), from the subalpine region. In its native habitat this fish frequently reaches 20 kg in weight, and specimens of 30 kg have been documented. In 1979 we began an experiment on the propagation of *Seeforellen* within the New York State hatchery system. Eggs were obtained from Grubmühl, Bavaria, in January and were cultured in the Rome hatchery; fry were released last fall in Mountain Lake in the hope of obtaining sufficient eggs to begin a limited stocking program around 1983. We will relate some of our experiences with these fish and will discuss the potential of giant salmonids for future programs.

10:45 Predicting brown trout growth from stream temperature. Richard J. Preall and Neil H. Ringler, SUNY College of Environmental Science and Forestry, Syracuse University.

A model and computer program has been developed that simulates maximum brown trout growth under a varying temperature regime. The model is based on recent research by J. M. Elliott relating growth to ration size, water temperature and body weight; it is applicable to trout weighing between 5 and 300 grams and for temperatures between 3.8 and 21.7°C. Daily growth is simulated by subtracting fecal, urine and respiratory energy losses from the daily energy ration.

Observed growth of brown trout in six central New York streams is being compared to the maximum predicted by the model. From June through November 1979 each stream was electrofished monthly and mean stream temperatures were derived from maximum-minimum thermometer readings. Growth was estimated by successively weighing scale-sampled trout. Deviations of observed from predicted growth rates are being analyzed relative to fish population density and to the physical and chemical characteristics of the streams. The approach provides a means of evaluating the contribution of temperature to trout growth and may prove useful as a future management tool.

Saturday, February 2 (contd)

for up to 14 days at stations 3-5 revealed alteration of gill tissue. No other toxicants were found in the stream system at concentrations known to be lethal or to produce similar gill pathology. Elevated ammonia concentrations of the stream are suggested as a cause of the absence of salmonids from the upper part of Mathew Creek. Laboratory exposures of BND for 14 days at similar concentrations elicited similar gill pathology. The ability to elicit like responses in gill tissue under field and laboratory conditions supports the hypothesis that results derived in the laboratory for ammonia can be applied to environmental situations of similar chemistry.

11:45 Effects of Endrin used as an orchard rodenticide on the aquatic ecosystem. James R. Colquhoun, Howard J. Dean, and John Symula, New York State Department of Environmental Conservation.

When apple orchard owners in the lower Hudson Valley were given permission to use Endrin to control pine voles, NYSDEC Bureau of Environmental Protection monitored its effect on the aquatic ecosystem. Two of the three studied stream systems were severely affected by these treatments. Lethal levels of Endrin were detected in water samples in these two streams. These levels were accompanied by accumulation in sediment and stream biota. Caged fish and wild fish were killed as a result of the treatment. In another larger treated stream which was studied, none of these adverse effects were detected. Aquatic insect populations were sampled and did not seem to be severely affected by the Endrin treatments.

New York Chapter - American Fisheries Society

PROPOSED RESOLUTION TO EXPAND THE DINGELL-JOHNSON PROGRAM

WHEREAS, Dingell-Johnson Federal Aid to Fisheries legislation, approved by the U.S. Congress in 1950, levies a 10% excise tax on most fishing tackle items; and

WHEREAS, the 266 million dollars collected to date has greatly improved fishing opportunities and knowledge of fisheries resources by providing funding for; 38,000 acres of new fishing waters; renovation of thousands of acres of substandard waters; 3,210 water recreational access sites; 643 fisheries research projects and thousands of technical fisheries reports; and

WHEREAS, the fishing tackle industry was instrumental in the original passage of the Dingell-Johnson legislation which it continues to support; and

WHEREAS, states have voiced a very critical need for greatly increased fisheries management and research funding; and

WHEREAS, the recreational boat and motor industry with annual new unit sales volume in excess of 2 billion dollars is exempt from the excise tax despite the fact that these Dingell-Johnson expenditures have vastly improved boating opportunity and boating sales; and

WHEREAS, it has long been established that fishing is the primary use of recreational boating equipment; and

WHEREAS, the use of boats and motors greatly increases the vulnerability of fisheries resources to fishermen exploitation thereby increasing the need for expanding and protecting those resources;

NOW THEREFORE BE IT RESOLVED, that the New York Chapter of the American Fisheries Society assembled in Marcy, New York, February 1, 1980 urges that the U.S. Congress amend and expand the Dingell-Johnson Act to require a 3 percent federal manufacturer's excise tax on all new recreational boats (except sailboats, kayaks, and hydroplanes which are 25 feet or less in length), all outboard motors and all boat trailers with the resulting funds to be administered under the same terms and by the same US Fish and Wildlife Service organizations as administers the present programs, and that copies of this resolution be provided to all U.S. senators and congressmen representing New York State. (Reference Senate 1631, H.R.6074)

What is Happening? PEF/EnCon January 31, 1980

On January 30, 1980, our Personnel Department informed Mike Keenan, our duly elected PEF/ENCON Executive Board Member, that his request for a room for a general meeting was denied since "New York State has been officially notified by Public Employees' Federation that Michael Keenan no longer represents PEF." He has not received from PEF any notification of this, let alone even the semblance of due process.

As shocking as this is, it is only the start. John Kraemer, PEF's President, has decreed that Dave Greene & Jim Moran are to become the only recognized PEF/ENCON representatives. Any PEF/ENCON steward who does not accept the authority of this junta is, in the words of Dave Greene, "to be fired."

Our Department is one of four presently under attack for its independence of thought and open dissemination of information. There will be more unless we stop it now.

Can this be done?

As you are aware, Mike Keenan was elected unanimously by PEF/ENCON delegates, (that you elected) at last October's convention as outlined in PEF's By-laws & Constitution. This document states under the Member's Bill of Rights that each "constituency, be it regional, departmental, local unit, title group, or sub-division thereof, shall have the sole right to determine its leadership." This includes both the Executive Board members as well as stewards.

The only way to remove Mike Keenan constitutionally, is a recall petition signed by 60% of ENCON's membership. This has not been done, nor attempted. The By-laws further state that as a PEF Executive Board member, Mike serves on our labor/management committee. He is now being denied this recognition. The Bill of Rights section also protects our right to active and open discussion of Union affairs and protects our freedom of speech.

John Kraemer has violated all of these sections by this attack upon PEF/ENCON. He has disenfranchised you from determining your own representatives, and plans to replace us with his own apologists who will protect his interest and not our own.

Why has this happened?

Mike Keenan, with the support of PEF/ENCON stewards and members, has represented ENCON's viewpoint and consistently spoken out against various abuses and neglects by PEF which were not in our self-interest. He fought against the raising of our dues a year ago; the original PEF By-laws (which, by the way, would have legitimatized Kraemer's present action); the eventual secret contract bargaining; the contract and the manipulative methods used to gain ratification; and lately, Kraemer's various violations of PEF's By-laws, of which the above is only this week's. His loyalty has been to the membership and not Kraemer's "leadership." He has resisted various offers, made to get his acquiescence and to vote against your interest.

He has also kept us informed on both Statewide & Department issues. We were informed about the proposed PEF By-laws and the terms of the initialed contract, when Kraemer for his own selfish reasons, was still trying to keep them secret from the membership.

On the Department level, we have dealt with management openly to the membership, and started towards achieving a number of items of interest to us, (e.g. safety-health committee, technician grade-19 positions, improved job posting, etc). We have done this with minimal support from PEF, but now we are faced with their interference.

What Can We Do to Protect Ourselves

We must keep PEF/ENCON together. We shall not resign, but shall continue to serve you as we have in the past. But we need your support now more than ever!

John Kramer and his unquestioning supporters, must be stopped from their unconstitutional acts. All of the PEF/ENCON Stewards have been threatened with an ouster similar to Mike's. We will be circulating petitions of support for Mike, as well as ourselves. Please sign these!

Further PEF/ENCON must go to court to defend our right of self-determination. Violations of the PEF Constitution can be stopped by the New York State Supreme Court.

Already, a PEF delegate from Mental Hygiene has gone this route on another issue. We, and those similarly affected, must do the same. For this reason, we are starting the PEF/ENCON Defense Fund. We request your generous contribution. It is for your own good, and hopefully will yield more benefit, than your present dues do. Legal costs will be expensive, but the law is our only recourse to protect our rights.

"All that is necessary for the triumph of evil is that good men do nothing."

Edmund Burke

PEF/ENCON Stewards

FEB 1 1980

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

ENVIRONMENTAL CONCERNS COMMITTEE

STATEMENT

The American Fisheries Society is the oldest registered professional society in the United States. Historically, its members have been leaders in developing methods and programs to protect, enhance, and manage the use of aquatic resources. The New York State Chapter is proud to be an active member of the Society, and we wish to express our strong professional recommendations on the proposed coastal zone management legislation that will so vitally affect New York's Great Lakes and Atlantic Ocean shoreline and aquatic resources.

We strongly believe in the need for multiple use management of these valuable coastal resources. Such management must include provisions for protection of critical habitat, opportunity for enhancement of the resource, and development for the public economic and recreational benefit of those coastal areas which can be developed without destroying or degrading critical shoreline resources.

We recognize that the New York State Department of Environmental Conservation is mandated by law to protect and manage natural resources of the state, including the critical coastal zones. To this end, this Department has developed methodology and expertise necessary for the proper management of natural resources.

The Department of Environmental Conservation is recognized as being a leader throughout this country and worldwide in sound environmental management.

We believe that the Department of Environmental Conservation should be designated the lead agency responsible for administration of all funds and programs that relate to coastal zone natural resources. To have another state department sharing or controlling coastal zone management will cause expensive duplication of effort, because the Department of Environmental Conservation will still be required to administer its other coastal zone requirements. In addition to the unwarranted additional cost, such a system would be cumbersome, chaotic, and potentially destructive of the very resource which is supposed to be protected. We would advocate that New York legislators carefully consider the long-term effects of this aspect of the proposed legislation implementing coastal zone management.

Therefore, New York Chapter of the American Fisheries Society strongly urges the legislature to designate the New York State Department of Environmental Conservation as the agency responsible for funding and administration of New York's coastal zone management program.

NEW YORK STATE CHAPTER OF THE AMERICAN FISHERIES SOCIETY
TESTIMONY TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION HEARINGS ON PROPOSED CLASSIFICATIONS AND
STANDARDS OF WATER QUALITY AND PURITY

The American Fisheries Society (AFS) was organized in 1870. The Society has at present approximately 8000 members. Its objectives are conservation, development and wise use of recreational and commercial fisheries, promotion of fisheries science and research, and dissemination of knowledge about fish, fisheries and related subjects. The 283 members of the New York State Chapter of the AFS (NYSAFS) represent a diverse mixture of fisheries management, propagation and research biologists, limnologists, aquatic ecologists, marine scientists and students affiliated with academic institutions, government agencies, industry or aquatic consulting firms. Concern for the quality of New York waters is implicit throughout the Chapter membership; therefore, the NYSAFS finds it necessary to comment on the Proposed Classification and Standards of Quality and Purity for New York Waters.

Quality of our waters reflects the quality of our environment, and ultimately the quality of human life. Toxic substances in New York waters and their aquatic food chains have been identified as direct threats to health. However, the Chapter is not qualified to address health related issues and will confine its comments to the impact of toxicants on the fish and the fishery.

A fishery is the complex of interactions within and between populations of fish being harvested, the populations of fishermen and the environments of each. A population of fish is not considered a fishery until harvested for some type of human use; i.e. recreation or food. Pursuit of fish for these uses constitutes a significant industry in New York, resulting in both enjoyable use of leisure time and revenue to the State's economy. Although fish may be affected directly by toxicants, lower trophic organisms (their food) may be even more sensitive to these toxicants. Therefore, it is necessary to establish standards and criteria which not only protect the fish but additionally their food organisms.

National Oceanographic and Atmospheric Administration (1977) estimated the value of New York saltwater commercial finfish landings (paid to fishermen) at $30.6 million in 1977. The National Marine Fisheries Service (1978) estimated 2.5 million saltwater anglers fished New York waters in 1973-74. The U. S. Fish and Wildlife Service (USFWS 1977) estimated U. S. saltwater anglers fished an average of 12.7 days each and made expenditures averaging $16.65/day in 1975. Multiplying these average days and expenditures by New York's 2.5 million saltwater anglers and expanding for inflation at 8 percent per year 1975-1978, results in estimated total annual expenditures for saltwater recreational angling in New York of $600.7 million.

In addition, there are approximately 800,000 licensed freshwater anglers in New York (Department of Environmental Conservation unpublished data 1978). The USFWS (1970) estimated there are 0.63 unlicensed anglers to every licensed angler; therefore, approximately 1.3 million anglers fish New York freshwater annually. Brown (1976a) estimated each freshwater angler fished an average of 17.8 days annually in 1973. USFWS (1977) estimated the average daily expenditure of warmwater and coldwater anglers at $9.76 in 1975. Expanding by 8 percent inflation over the period 1975-1978 and multiplying by the number of mandays expended by anglers on New York freshwater results in an estimated annual expenditure of $234.6 million.

Combined saltwater commercial fishing and saltwater and freshwater recreational angler expenditures amount to $915.9 million annually. Therefore, first generation expenditures on New York fisheries alone represent almost a one billion dollar industry—a vital segment of the New York economy.

Effects of toxic substances and changes in ambient physical parameters on growth, survival and reproductive capability of fish and other aquatic fauna have been well documented in literature. The impact of DDT on reproductive success of lake trout in Lake George, New York is an excellent example of the effect of a contaminant on perpetuation of a desirable species (Burdick et al, 1964).

Accumulation of toxic substances in fish flesh and ensuing regulations or warnings promulgated to safeguard human health have also had profound

impact on fisheries. Brown (1976) estimated that the possession ban on certain species and sizes of salmonids in Lake Ontario and its tributaries caused a 70 percent drop in angling use in the Salmon River, one of New York's most popular trout and salmon fishing tributaries. Closure of the Upper Hudson River from Fort Edward to Troy in 1975 because of PCB contamination restricts enhancement of the fishery in that section of the Hudson in the near future. In the lower Hudson, commercial fisheries for American eel, striped bass and several other species have been closed due to PCB contamination. Mercury contamination of Onondaga Lake, Syracuse, New York resulted in prohibition of angling in a once intensely used fishery in a major urban area. Following a 1977 ban on consumption of fish in a 100-mile section of the South Fork of the Shenandoah River, Virginia due to mercury contamination, angling use declined 77 percent from 1975 levels (Martin, 1978). A ban on fishing was also imposed on Lake St. Clair, Michigan in 1970 because of mercury contamination. It was estimated that the closure resulted in $3.3 million loss in gross business revenue to Michigan (Martin, 1978).

The need to protect the fishery, therefore, is not only based on preservation of healthy aquatic ecosystems which reflect the quality of life but also on the importance of the fishery to the economy of New York State as has been previously outlined. It is with these factors in mind that the Chapter supports those standards and criteria based on scientifically supported data which identify a need for further regulation in order to protect a fishery. PCB, Mirex and Mercury have had demonstrated adverse effects on fisheries of New York State and their discharge should be more strictly controlled. The other proposed standards and criteria have to be judged on their scientific merit. For these other standards and criteria a review panel of experts in Aquatic Toxicology and Environmental Chemistry from academia, industry and government is recommended to determine what standards and criteria are adequate and can be successfully implemented.

Additionally, the Chapter recommends that the Congress of the United States and the Legislature of New York State appropriate adequate funding for both field and laboratory aquatic toxicity tests, as well as developing economical treatment technology. The results of appropriate studies could then be used to set standards and criteria where adequate data and/or adequate treatment technology does not presently exist.

LITERATURE CITED

Brown, T. L. 1967a. The 1973 Statewide Angler Study. DEC Spec. Report, NYS Bureau of Fisheries, 50 Wolf Road, Albany, New York 12233. 117 p. mimeo.

Brown, T. L. 1976b. After the Ban. Coastlines Vol. 7(6), November-December, 1976. NYS Sea Grant Institute, Cornell University, Ithaca, New York.

Burdick, G. E., E. J. Harris, H. J. Dean, T. M. Walker, J. Skea and D. Colby 1964. The accumulation of DDT in lake trout and the effect on reproduction. Trans. Amer. Fish. Soc. 93. 127-136.

Martin, Robert G. 1978. Impacts of Aquatic Contaminants on Angling. SFI Bulletin 293. Page 1-3. Washington, D.C. 20005. April, 1978.

NOAA 1977. Fred Blossom, Patchogue, Long Island, New York. personal communication.

NMFS 1978. Current Statistics. No. 7500. NOAA, Washington, D.C.

USFWS 1972. 1970. National Survey of Hunting and Fishing. USDI, FSFW, Washington, D.C.

USFWS 1977. 1975 National Survey of Hunting, Fishing and Wildlife—Associated Recreation. USFWS. Washington, D.C.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

Membership Committee Report

Date: February 1, 1980

As of December 31, 1979, there were 283 paid up members in the New York Chapter of the American Fisheries Society. That figure compares with 258 for 1978 and 109 for 1977.

Of these 283 members, 84 were associated with the NYS Dept. of Environmental Conservation (or recently retired therefrom), 69 were from industry, 55 were faculty members of an educational institution, 40 were students, 21 were from state or federal agencies excluding NYSDEC, and 14 were from a wide variety of associations.

It is felt that the increase in membership this year is primarily the result of efforts expended by last year's membership committee. The efforts of the 1979 committee will be realized later in the 1980 year.

As a matter of curiosity, the chairman of the committee this year made a time and motion study of his activities and also attempted to keep tract of expenditures. This may be of use to future committee chairmen or other members of the executive committee.m The summary of both records are as follows:

Time spent in the listed activities

Travel	9.0 hrs
Committee meetings	6.0
Contacts with chapter officers & other members of the committee	5.0
Preparing mailings (lists & letters)	5.5
Correspondence	1.0
Preparing Directory	18.5
Record keeping, etc.	5.5
Total	50.5

Expenses

Phone calls	78.75
Postage	5.21
Mileage (@ .20)	72.00
Total	155.96

Membership Committee Report, Cont'd

Based on the experience of this past year, a proposed calendar schedule is submitted to be evaluated by the next membership committee chairman, if he so desires. The activities of the last two membership committees were a great help, and the following calender is reflective of what has been learned to date.

Proposed Membership Committee Calendar of Activities

Feb 2 - 10 Select committee members. It is suggested that a number of persons be selected to act as contact personnel. They should be scattered throughout the state and include representatives of colleges, DEC and industries.

Feb 10 - Send out letter to the previous year's members who have not renewed.
Have several committee members review latest AFS membership directory. List those not on the 1979 NYS Chapt. directory. Send them an application.

Mar 10 - Send second letter to 1979 members who have not renewed their membership.

Mar 15 - Make up lists of organizations and individuals previously not contacted. Send applications. Have committee members contact colleagues and others. Invite them to join (this is the advantage in having a large committee).

April 1 - Send letter to educational institutions of the state

April 15 - Send 3rd letter to delinquent members from previous year.

May 30 - Have committee members contact remaining delinquent members near them. Make a note as to who has moved and who are not going to rejoin.

Nov 1 - Start working on Directory. A word processor is available at the NYS Library through chapter member Joe Pickett and Tom Davies of the State Library. The present Directory is on tape there and needs only to be amended with the year-end information.

Dec 31 - Jan 5 - Finish the Directory work and turn over the end product to Tom Davies. When the new Directory is listed, proof it and give to the Sec-Treas.

Jan - See if the Sec Treas needs any help at Annual meeting.

Membership Committee Report Cont'd

The members of my committee this year were:

Howard C. Baker
Fred Joost
Charles McCarthy
Joseph F. Pickett, Sr.
Neil Ringler
John Spagnoli

Respectfully submitted,

John Grim

John Grim, Chairman

ENVIRO CONTROL, INC.

One Central Plaza
11300 Rockville Pike
Rockville, Maryland 20852
Telephone: 301-468-2500

DATE: January 28, 1980

TO: Bill Ewell

FROM: R. E. Tucker RET

SUBJ: SETAC Brochure

Please see the attached which are suggested changes to the AIBS approach for the SETAC brochure.

Please read the various approaches and make your suggestions known to Don Beem on or before Wednesday, January 30. The final brochure will be constructed from the combined comments. I will work with Don Beem in this effort.

/im

Att.

P.S. I have already forwarded your comments (that you dictated over the phone) to Don Beem.

Ida

Bill Ewell's suggested changes to Rich Kimerle's draft:

ABOUT SETAC

The Society of Environmental Toxicology and Chemistry (SETAC) is a new professional society designed to promote a multidisciplinary study of our environment and the impact we have on it.

FOUNDING

By 1979, it had become increasingly evident that environmental hazard assessment could not be adequately sustained by any single scientific discipline--a multidiscipline approach would be required if chemical, physical, and biological information is to be integrated into an accurate and reasonable assessment. A survey of scientists involved in environmental toxicology and chemistry proved that this attitude is strongly supported. The survey also indicated support for a professional society which would support this multidisciplinary effort. Sponsors of this survey have acted to establish a new society committed to this objective. A Constitution and By-Laws were prepared and the Society of Environmental Toxicology and Chemistry became incorporated November 28, 1979.

Final Sentence:

If you are interested in becoming a member of this Society, please submit the attached membership form for review.

Richard E. Tucker's Suggestions

Panel 1

FOUNDING OF SETAC

Organization of the Society of Environmental Toxicology and Chemistry was started in 1978 by a group of industrial, academic, and governmental scientists seeking a forum for the interdisciplinary approach to evaluating the environmental risk of chemicals.

The Society's intent and purpose received additional focus from an overwhelming response to a letter survey to scientists and managers concerned with environmental chemical safety and use.

In 1979, the founders of SETAC approved a Constitution and By-Laws and incorporated the Society.

GOALS AND BENEFITS

SETAC is a non-profit professional society established for the purpose of:

- Promoting research, education and training in environmental toxicology and chemistry.
- Promoting the systematic application of environmental toxicology and chemistry into the science of evaluating the hazards of chemicals.
- Participating in the scientific interpretation of issues concerned with hazard assessment and risk analysis.
- Supporting the development of ecologically acceptable practices and principles.
- Providing a forum (meetings and publications) for communication among professionals in government, business, academia, and in other segments of society involved in the use, protection, and management of our environment.

During 1980, SETAC plans to provide a quarterly newsletter that will highlight national and international environmental legislation and scientific developments. A professional journal is being planned for 1981.

Panel 2

GOVERNMENT

SETAC affairs are managed by a Board of Directors elected by the voting membership to represent government, business, and academia as equally as possible.

An Executive Committee, composed of the President, Vice-President, and Secretary Treasurer, Executive Director (ex-officio) and one other Board member, carry out the Board's policies and duties. Day-to-day operations are conducted by the Executive Director.

MEMBERSHIP

Types of membership available in SETAC are:

Member - Must share in the stated goals of the Society, have have experience and education in environmental toxicology and/or chemistry, and pay dues.

- May vote, hold office, publish in and receive Society publications, and participate in Society functions.

Associate Member

- Must share in the stated goals of the Society, by preparing for a career in environmental toxicology or chemistry, and pay dues.
- May publish in and receive Society publications, and participate in Society functions.
- May apply for membership status when qualified.

Emeritus Member

- Must share the stated purpose of the Society and have been recognized for service to the Society and in the field.
- Must be a member in good standing for 3 years, be nominated by the Membership Committee, and elected by the Board of Directors.

Panel 2 (cont.)

Membership (cont.)

Sustaining Member

- Must share the stated purpose of the Society and belong to a "for profit" organization.
- May receive all general membership correspondence including publications.
- May express opinions and concerns to the Society via the Board of Directors.

Affiliate Member

- Must share the stated purpose of the Society and belong to a "not for profit" organization.
- May receive all general membership correspondence including publications.
- May express opinions and concerns to the Society via the Board of Directors.

Panel 3

ANNUAL MEETING

SETAC's First Annual Meeting will be held November 23-24, 1980, in Washington, D.C. The two-day symposia will focus on environmental hazard assessment of chemicals. The general outline of the presentations is as follows:

Monday, November 24, 1980: Plenary Session including:

AM
- o President's Address. Dr. Eugene Kenaga will present an overview of the role of SETAC and Chemical Hazard Assessment in Today's Society.
- o Keynote Speaker. Speaker and topic to be announced.
- o Three sub-keynote speakers to address:
  - -Environmental toxicology
  - -Environmental chemistry
  - -Chemical hazard assessment

PM
- o Three platform presentations on:
  - -Environmental toxicology
  - -Physical/chemical properties affecting chemical fate
  - -Environmental processes affecting chemical fate

Tuesday, November 25, 1980

AM
- o Two platform presentations on:
  - -Estimating environmental concentration of chemicals.
  - -Environmental toxicology
- o Concurrent Poster Sessions illustrating technical papers in the fields of:
  - -Environmental toxicology
  - -Environmental chemistry
  - -Chemical hazard assessment.

PM
- o Plenary Session On:
  - -Chemical hazard assessment: The Integration of Environmental Toxicology and Chemistry Disciplines.

To apply for membership in the Society of Environmental Toxicology and Chemistry, please complete the attached membership form and submit it to the Society for review by the Membership Committee.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY
New York State Department of Environmental Conservation
Building 40, State University of New York
Stony Brook, New York 11794

January 10, 1980

Dear

There will be a brief, but important, meeting of the Executive Committee of the New York Chapter of the American Fisheries Society prior to the Annual Meeting at Bergamo East. This meeting will be held at 9:00 PM the evening of January 31, 1980 at Bergamo. The exact room will be posted at the registration desk. Please plan to attend as the order of business of the business meeting will be discussed. If you cannot make it, please have a member of your committee attend.

Sincerely,

Philip T. Briggs, President
New York Chapter
American Fisheries Society

PTB:jsr

Tentative Agenda For Annual Business Meeting

New York Chapter - American Fisheries Society

TO BE DISCUSSED AT EXECUTIVE COMMITTEE MEETING

1. Call to Order (Sec.-Treas. starts counting to see if we have quorum)

2. Appoint two Sergeants-at-Arms.

3. Determination of Quorum (Pres. asks Sec. Treas.: "Do we have quorum?" Sec.-Treas. answers - answer better be "Yes" or we are in trouble.)

4. President's remarks.

5. Minutes of last meeting.

6. Introduction of Guests and Visitors (AFS and Division officers and other prominent people if present)

   6A. Allow time for any AFS or Division Officer to address Meeting.

7. Report of Secretary-Treasurer.

8. Report of Chapter Committees (Order to be determined in Executive Committee meeting except that the last two must be, in order, Resolutions and Nominating)

9. Report of Resolutions Committee.

   9A. Vote on resolutions if any.

10. Report of Nominating Committee

    10A. Additional nominations from floor

    10B. Election of New Officers

11. Old Business

12. New Business

13. Announcement of Election Results

14. Installation of New Officers

15. Remarks by New President

16. Adjourn

New York State College of Agriculture and Life Sciences
a Statutory College of the State University
Cornell University

Department of Natural Resources
Fernow Hall, Ithaca, N. Y. 14853

Fishery Science
Forest Science
Wildlife Science
Natural Resources
Environmental Conservation

15 January 1980

MEMO TO: William Eustance
Al Schiavone

FROM: Steve Gloss Steve

SUBJECT: Providing transportation at NYCAFS meeting

You have probably received copies of the program for the Bergamo meeting by now. I would like to ask you to assist with transportation needs of panelists and evening speakers before, during and after the meeting if possible. This conceivably could involve trips to and from Syracuse airport on Thursday evening, Friday, and Saturday. I only have one travel schedule to date: arrival 9:25 AM, Friday and departure 3:25 PM Saturday.

Please let me know as soon as possible if you will be unable to provide transportation during any, or all, of this time so that I may make alternative arrangements. If I do not hear from you I will assume you can do it and contact you the week of the meeting with a schedule. Thanks for your cooperation in this matter.

SG:ak

xc: P. Briggs
L. Skinner
B. Shupp

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

March 18, 1980

Fellow Fisheries Professionals:

You are cordially invited to participate in the New York AFS Chapter's -- "Practical Fisheries Management: More With Less in the 1980's" -- workshop to be held at Cazenovia College, Cazenovia, New York, July 14-16, 1980.

Registration will take place 12:00 Noon to 9:00 P.M. July 14 in the Dining Hall Lobby. Room assignments and additional information will be available at registration.

Enclosed are a workshop brochure and registration form, workshop agenda, Cazenovia College information and general travel directions. If additional information is desired, please contact me.

Registrations are steadily arriving so act promptly. The caliber of our speakers and appropriate subject material should insure an informative and productive experience. The intimacy of the College and opportunity to socialize with speakers and attendees will also be rewarding and enjoyable.

See you in July.

Sincerely,

Bruce D. Shupp
Workshop Chairman
NYS Department of Environmental Conservation
Bureau of Fisheries, Room 518
50 Wolf Road
Albany, NY 12233
(518) 457-1750

Enclosures

First Annual New York AFS Chapter Meeting

Practical Fisheries Management: More With Less in the 1980s

July 14-16, 1980

WORKSHOP STRUCTURE AND FORMAT

- Registration limited to first 150 applicants.
- Invited speakers will cover agenda topics in full day session (July 15).
- Lab sessions will follow in the morning of July 16.
- There will be six 1½ hour lab sessions with 25 participants each. A workshop committee member will observe each Lab, but the group will elect its leader from among attendees.

A fictitious fishery management problem will be prepared, complete with objectives, data and costs, by the workshop committee. Each Lab session will prepare management and evaluation strategies based on techniques presented the prior day.

Following the Lab sessions, all participants rejoin and invited speakers will form a panel. They will then be presented the same problems to solve in front of the full audience. Lab session leaders can, if they choose, debate the panel's rationale compared to their group's. The individual learning experience should be maximized by each person relating his chosen rationale to that debated on the floor.

Publication of Proceedings:

Each speaker will be asked to prepare a maximum 1,000-word summary of their subject material along with a bibliography of pertinent material. Each attendee will receive a copy of the proceedings. The summaries and bibliography will be a valuable fish management handbook.

For more information contact:

Bruce D. Shupp, Chairman
New York AFS Chapter Workshop Committee
NYSDEC, Bureau of Fisheries
Room 518, 50 Wolf Road
Albany, NY 12233
(518)-457-1750 office
(518)-494-3850 residence

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

TO: The Membership:

RE: 1980 NY Chapter AFS Committees

Your committee chairmen for the current fiscal year are listed below. Should you have information that could benefit the chapter or which the chapter should be aware of, please contact the appropriate committee chairperson.

Executive Committee

President	John Grim
Vice-President	Joseph Gorsuch
Secretary-Treasurer	Lawrence Skinner
Past President	Philip Briggs
Program Chairman	James Haynes

Standing Committees

Audit	Thomas Pelchar
Environmental Concerns	William Perrotte
Membership	Joseph Gorsuch
Nominating	Philip Briggs
Program	James Haynes
Professional Standards and Certification	Jim Winter
Resolutions	William Flick

Special Committees

Brochure	Carol Schleifer
Finance	Peter J. Hart
Legislative Actions	Edward Radle
New Initiatives	Thomas Hoff
Newsletter	Scott Quinn
Water Quality	Edward Kuzia
Work Shop	Bruce Shupp

Larry Skinner

Lawrence C. Skinner
Secretary-Treasurer

Minutes of the Annual Meeting
February 1, 1980

A quorum of 95 of 284 members being present, President Philip Briggs called the business meeting to order at 4 PM in the chapel at Bergamo/East, Marcy, New York.

In the President's address to the membership Phil Briggs extended thanks to the various members of the Executive Committee and other committee members instrumental in guiding and operating Chapter functions.

We were honored by the presence of several distinguished guests.

Richard Stroud - President, American Fisheries Society
William Flick - President-elect, NE Division AFS
Carl George - Secretary-Treasurer, NE Division AFS

Stroud noted

1) The parent society is developing a new publication designed for fisheries management papers
) A new Marine Fisheries Section is being formed and
) The Georgia Chapter is being formed and will petition the parent society for recognition.

e secretaries and treasurers reports were distributed prior to the meeting. S o comments were received on the reports, they were accepted. Auditing C ee representative Bruce Friedman having thoroughly inspected the Chapter's ac announced the records were in order. Ending balances were: checking ac $19.43; Savings account, $4159.42; Postal Fund, $8.25; total, $4187.10.

Duttweiler's Publicity Committee indicated the chapter has received wid tribution of announcements and news than during previous years. Close con th the media and interested individuals will promote familiarity with the r.

ter Quality committee, chaired by Ed Kuzia, finalized and submitted the approved resolution supporting revisions in water quality standards and proposed by the NYS Department of Environmental Conservation. He noted partment had subsequently withdrawn the proposal based on strong indus d public opposition and lack of an environmental impact statement.

shop Committee headed by Bruce Shupp is proceeding well. First announ of the July 14-16, 1980 workshop entitled "Practical Fisheries Manage ore with less in the 1980's" were mailed January 22, 1980 to all NE Divi bers. Two additional mailings with more details are planned for March a

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JOHN GRIM - Nominating Committee Candidate for President

John is a native of Wisconsin who now lives in Rhinebeck, New York. He was born on August 8, 1922. He is President of Northeastern Biologists, Inc.; a consultant firm that has done work on the Hudson River and is now engaged in aquacultural research. After service in World War II, he graduated with a B.S. in Wildlife Management from Cornell in 1948. He has done post-graduate work at Cornell and Dutchess Community College. He worked for the New York State Department of Conservation (the forerunner of the N.Y.S.D.E.C.) from 1948 through 1956. He left the Department in 1957 to begin his consulting firm. John is currently Vice President and Chairman of the membership committee of the New York Chapter of the American Fisheries Society. He is also a member of the Fish Health, Fish Culture and Water Quality Sections of the A.F.S. Other societies to which he belongs are: The National Shellfisheries Association, World Mariculture Society, American Littoral Society and the American Society for Testing and Materials.

JOHN SCHACHTE - Nominating Committee Candidate for Vice President

John is a native of Charleston, South Carolina who now lives in Rome. He was born August 5, 1940. He received his B.S. in Biology from Clemsen in 1963. After serving as a Captain in the Army (Artillery Officer) from 1964 through 1969, where he served in Viet Nam, John received his M.S. in Fish Pathology from Auburn in 1972 and his Ph.D. in Fish Pathology from Auburn in 1976. He joined the New York State Department of Environmental Conservation in 1976. He is an Associate Fish Pathologist at the Rome laboratory. A chapter member since 1976, he is also a member of the Fish Health Section of the AFS. John is also a member of the Wildlife Disease Association. He is New York State's representative to the Great Lakes Fishery Commission Fish Disease Control Committee.

JOSEPH GORSUCH - Nominating Committee Candidate for Vice President

Joe is a native of Kimmell, Indiana who now lives in Rochester, New York. He was born on December 27, 1947. He is an aquatic biologist in the biochemistry section of the Eastman Kodak Company. He has been with Kodak since 1974. He received his B.S. in Wildlife Biology from Purdue in 1969 and his M.S. in Environmental Sciences (Aquatic Biology) from Purdue in 1973. Joe has long been active in the New York Chapter. He served on the membership committee in 1975 and 1976, on the program committee in 1976 and 1977. He was Secretary-Treasurer of the Chapter from 1977 to early 1979. Joe is also a member of the Water Quality and Fish Culture Sections of the AFS. Other societies to which he belongs include: The North American Benthological Society and The American Society for Testing and Materials. In the latter society, he is chairman of the sub-committee on Sampling Design of the Committee on Biostatistics and is a member of committees on Sampling Methods and Effluents Toxicity sub-committee on Health Hazards to Aquatic Animals.

LAWRENCE C. SKINNER - Nominating Committee Candidate for Secretary-Treasurer

Current Chapter responsibility: Secretary-Treasurer, member of Workshop, Water Quality and Executive Committees.

Past Chapter activities: Chairman or member of Water Quality Committee for four years.

Employer: New York State Department of Environmental Conservation
Bureau of Environmental Protection

Responsibilities: Establishment of water quality standards and criteria for protection of fish and wildlife, and for SPDES or other permits. Coordinator of the Aquatic Habitat Protection Program.

Education: B.S. in Fisheries Science from Cornell University in 1969.

Past Employment: All past employment has been with the New York State Department of Environmental Conservation.

1974 - present: As above in Albany, New York

1972 - 1974: Stationed in Region 5 at Warrensburg, New York. Responsiblities included work in fish, wildlife and FWMA program management.

1969 - 1972: Stationed in Region 9 (formerly Region 2) in Olean, N.Y. Fisheries management activities were the primary emphasis.

Publications and Presentations:

Spagnoli, J.J., and L.C. Skinner. 1977. PCB's in fish from selected waters of New York State. Pestic. Monit. J., 11 (2): 69-87.

Made presentations on PCB's and Mirex at NYS Chapter AFS meetings in 1976 and 1977.

Presented a paper on PCB's in the Hudson River at the Northeast Division AFS meeting in 1977.

JAMES MAREAN - Nominating Committee Candidate for Secretary-Treasurer

Jim is a native of Binghampton who now lives in Baldwinsville. He was born on July 21, 1951. He received his B.S. from Syracuse College of Forestry in 1973 and his M.S. in Fisheries from Syracuse in 1976. He worked for NALCO Environmental Sciences in Syracuse from 1976 to 1979 as an Associate Fisheries Biologist. He is presently employed by the Miller Brewing Company in Quality Control. He has been a New York Chapter Member since 1976. He is also a member of the International Association for Great Lakes Research and gave a paper on larval fish distribution in the St. Lawrence River at their 1979 meeting.

adopted
2-1-80
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New York Chapter - American Fisheries Society

PROPOSED RESOLUTION TO EXPAND THE DINGELL-JOHNSON PROGRAM

WHEREAS, Dingell-Johnson Federal Aid to Fisheries legislation, approved by the U.S. Congress in 1950, levies a 10% excise tax on most fishing tackle items; and

WHEREAS, the 266 million dollars collected to date has greatly improved fishing opportunities and knowledge of fisheries resources by providing funding for; 38,000 acres of new fishing waters; renovation of thousands of acres of substandard waters; 3,210 water recreational access sites; 643 fisheries research projects and thousands of technical fisheries reports; and

WHEREAS, the fishing tackle industry was instrumental in the original passage of the Dingell-Johnson legislation which it continues to support; and

WHEREAS, states have voiced a very critical need for greatly increased fisheries management and research funding; and

WHEREAS, the recreational boat and motor industry with annual new unit sales volume in excess of 2 billion dollars is exempt from the excise tax despite the fact that these Dingell-Johnson expenditures have vastly improved boating opportunity and boating sales; and

WHEREAS, it has long been established that fishing is the primary use of recreational boating equipment; and

WHEREAS, the use of boats and motors greatly increases the vulnerability of fisheries resources to fishermen exploitation thereby increasing the need for expanding and protecting those resources;

NOW THEREFORE BE IT RESOLVED, that the New York Chapter of the American Fisheries Society assembled in Marcy, New York, February 1, 1980 urges that the U.S. Congress amend and expand the Dingell-Johnson Act to require a 3 percent federal manufacturer's excise tax on all new recreational boats (except sailboats, kayaks, and hydroplanes which are 25 feet or less in length), all outboard motors and all boat trailers with the resulting funds to be administered under the same terms and by the same US Fish and Wildlife Service organizations as administers the present programs, and that copies of this resolution be provided to all U.S. senators and congressmen representing New York State. (Reference Senate 1631, H.R.6074)

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

NEWSLETTER

* * * * * *
Society News
* * * * * *

Northeast Fish and Wildlife Conference

New York Chapter members were the dominant force in the freshwater sessions at the annual Northeast Division's Fish and Wildlife Conference, held earlier this year in Providence, Rhode Island. Ten of 27 freshwater papers were either delivered by or co-authored by New York Chapter members. Five of 27 marine papers were either delivered by or co-authored by New York Chapter members. Furthermore, NYCAFS President Phil Briggs, chaired one of the marine sessions. The New York Chapter should be proud of its contributions to the Northeast Division technical sessions.

The new officers of the Northeast Division are Ed Cooper from Penn State, President; our own Bill Flick as President-Elect; and another New York Chapter member, Carl George remains as Secretary-Treasurer. Bob Jones from Connecticut is the Northeast Division's representative on the National Nominating Committee. Past President Steve Taub has agreed to serve for a year as the Northeast Division's liaison with the National. As you can see, our Chapter is well represented among the officers of the Northeast Division.

Oh yes, Dwight Webster was honored at the Northeast Meeting for his many and great achievements to fishery science, teaching and the AFS. Dr. Webster has long been an active member of our Chapter. He also served the Northeast Division as Vice-Chairman in 1960-61, Chairman in 1961-62, Vice President in 1968-69 and President in 1969-70. Congratulations are in order.

National AFS Meeting Scheduled

The national AFS meeting will be held this year at West Yellowstone, Montana (September 12-15, 1979). The registration fee for the National American Fisheries Society Meeting at West Yellowstone will be $20.00 in advance, $25.00 at the door. Student registration (AFS student members) will be free. Non-AFS members will pay an extra $10.00 fee. It behooves many of our chapter members to keep up their membership in the National AFS if they plan to go to Montana this fall.

1980 NYCAFS ANNUAL MEETING!!

The 1980 meeting promises to be one of our best and you are urged to begin planning for attendance and participation NOW. The program committee has already been busy putting together a stimulating and challenging session for your professional enhancement.

This year's meeting will feature a four member panel discussion on the topic of "Should a Marine Angling License be Required?" New York has a very large industry associated with saltwater fishing and presently has no license requirement. The philosophical and economic ramifications of such a licensing decision are of importance to us all. Mr. Richard Stroud, executive president of the Sport Fishing Institute has agreed to participate on the panel. His national perspective and expertise should be most enlightening. "Dick" is also president-elect of the American Fisheries Society. Dr. Bruce Wilkins, Leader of the New York Sea Grant Extension Program, will moderate the panel.

A "Best Student Paper Award" in the amount of $50.00 will be offered by the chapter this year. Students who are doing research now or writing should keep this in mind for our next meeting. A "student" must be registered at the time the paper is submitted.

This year's meeting will be held on February 1-2, 1980 at Bergamo East. Registration will begin Thursday, January 31st at 6:00 PM and continue on Friday morning. Technical paper sessions will begin Friday morning to give us an additional 1/2 day on the program. The meeting will end at noon on Saturday. A complete schedule will be sent out with the first call for papers on October 1, 1979.

You are urged to make plans now to attend the annual meeting - even if the above mentioned haven't aroused your interest:

Wait until you find out what is on the program for Friday evening!!??

1980 NYCAFS ANNUAL MEETING AND WORKSHOP TO BE SEPARATE EVENTS!!!

The program committee and the workshop committee met jointly on May 4, 1979 to discuss the coordination of the annual meeting program and the chapter workshop on "Decision Making in Fisheries Management." It has been decided by the joint committees and approved by the executive committee of the Chapter that the workshop and annual meeting program should not be held simultaneously. Numerous reasons contributed to this decision:

- Bergamo does not have a large room where visual aids can be used during daylight hours, which will be an important component of the major workshop sessions, and probably could not accommodate the potential workshop attendance.

- Changing the site of a joint workshop-program annual meeting would result in considerably higher daily cost to members which would accrue over a long time period. This could jeopardize the annual meeting which has proved so successful the past three years.

- Extending the combined session to a 4 or 5 day period could decrease participant interest in the latter days and may also prohibit some people from attending the entire time.

- Separate times will permit optimizing programs for both the workshop and annual meeting rather than compromising both to fit them into a joint format.

The plan adopted calls for the workshop to be scheduled sometime during the summer or early fall of 1980 at a location other than Bergamo. More information will be forthcoming in later newsletters.

NYCAFS Committee Status

Environmental Concerns Committee:

As authorized at the February business meeting of the chapter, the Environmental Concerns Committee is being organized. This committee will function under the guidelines approved at that meeting to prepare position papers for the chapter when the normal resolution procedure will not provide timely response to a problem. We rely on the membership to inform the committee of any action or inaction which will ultimately affect fish or the fishery in New York. Members of the committee are as follows:

Jim Colquhoun, Chairman
NYSDEC, Field Toxicant Research Unit
8314 Fish Hatchery Rd.
Rome, New York 13440
Phone: (315) 337-0910

Tom Joliff
NYSDEC, Cape Vincent Station
Cape Vincent, New York 13618
Phone: (315) 654-2147

Pat Marinak
Ichthyological Associates
111 Main St., P.O. Box 2
Stamford, New York 12167
Phone: (607) 652-3563

We would also welcome an additional committee person from the marine district. Please contact the chairman if you are interested.

Water Quality Committee:

The Water Quality Section of A.F.S. is attempting to increase its

membership. If you are interested in Water Quality as it pertains to fisheries, membership in this section should be considered. A membership form is enclosed.

Professional Standards Committee:

The committee met in early June with the major objective being to develop a professional certification procedure. To date, the committee has finalized criteria for professional certification, and is presently conducting surveys of educational institutions and consulting firms in order to form a consensus on the feasability of a professional certification program.

Testing and Certification Committee:

The committee has met and is currently purusing the idea of a written test for entry level biologists.

We should have more on the progress of the various committees' by the next issue of the newsletter, as a result of an upcoming executive committee meeting, scheduled for late July.

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General Interest News

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Science Service "Cleans House"

The New York State Science Service of the State Education Department is making available, for a fee, publications covering a variety of topics. Subject areas are as follows:

Anthropological Survey - Anthropology, Archeology

Biological Survey - Botany, Entomology, Zoology

Geological Survey - Geology, Paleontology

A complete publication and price list (published in April, 1977) may be obtained by writing:

The University of the State of New York
The State Education Department
New York State Science Service
Albany, New York 12234

FDA Temporary Tolerance for PCBs Lowered

The Food and Drug Administration announced on June 28th that the temporary tolerance for polychlorinated biphenyls (PCBs) in fish and shellfish will be lowered

from 5.0 parts per million to 2.0 parts per million effective August 28, 1979. This action fulfulls a promise by FDA Commissioner Donald Kennedy to have a decision by June 30th, the date of his leaving. This may also negate a suit by the Environmental Defense Fund to lower the PCB limit for several commodities.

The new temporary tolerances for the commodities affected are:

	Old Limit	New Limit
Fish & shelffish	5.0 ppm	2.0 ppm (edible portion)
Milk	2.5 ppm	1.5 ppm (fat basis)
Dairy Products	2.5 ppm	1.5 ppm (fat basis)
Poultry	5.0 ppm	3.0 ppm (fat basis)
Eggs	0.5 ppm	0.3 ppm

Stream Classification Copies Available

For copies of the report, Stream Classification 1977: Proceedings of a workshop held at Pingree Park, Colorado, 10-13 October 1977, write to the address given below and ask for FWS/OBS-78/23.

Technical Information Officer
Western Energy and Land Use Team
Office of Biological Services
U.S. Department of Interior
Drake Creekside Building
2625 Redwing Road
Fort Collins, Colorado 80526

Any Recent Publications??

An attempt will be made in future newsletters to keep NYCAFS members abreast of work being performed by fellow members. Therefore, we encourage those of you who have recent publications or technical reports, to send us a full citation of your paper(s), so that they may be incorporated into future newsletters.

Where is He??

We are lacking the whereabouts of a fellow member of the NYCAFS. The individual is David McDonough, we would appreciate any information you may have concerning this individual.

Change of Address??

Please, inform us if your address has changed, since the last time you registered in the NYCAFS.

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About the Newsletter

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We will try to publish two more newsletters prior to the 1980 NYCAFS Annual Meeting, assuming we have an adequate amount of news to report. Any inquiries or information you may have of potential interest to fellow members would be appreciated and may be directed to Scott Quinn at the address given below:

New York State Department of Environmental Conservation
Bureau of Water Research - Room 519
50 Wolf Road
Albany, New York 12233

APPLICATION FOR MEMBERSHIP IN AFS SECTIONS

Membership in AFS Sections is open to AFS members who have paid their dues. Section bylaws differ as to membership year and amount of dues. See the other side of this form for membership year and amount. Then fill out this form and mail it with your check to the appropriate individual. Check NEW or RENEWAL.

NAME _____ ☐ NEW ☐ RENEWAL

ADDRESS _____

CITY _____ State/Province _____ ZIP _____

I am ☐ am not ☐ a member of AFS. _____ _____
SIGNATURE

☐ FISH HEALTH SECTION	☐ FISH CULTURE SECTION	☐ FISHERIES ADMINISTRATORS SECTION	☐ WATER QUALITY SECTION	☐ FISHERIES EDUCATORS SECTION
9-30-78 to 9-30-79	Calendar year 1979	Anniversary of Membership	Calendar year 1979	Calendar year 1979
$5.00	$2.00	$2.00	$3.00	
Mail form to	Mail form to	Mail form to	Mail form to	Mail form to
Dianne Elliott 15206 N.E. 8th Apt. E-12 Bellevue, WA 98007	Leo E. Orme Rt. 2, Box 395 Spearfish, SD 57783	Robert E. Thomas NE Game & Parks Comm. Box 36370 Lincoln, NE 68503	John Meldrim Ichthyological Assoc., Inc. 100 S. Cass St Middletown, DE 19709	Richard L. Noble Dept Wdlf & Fish. TAMO College Station, TX 77843

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

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Newsletter

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Several bits of information are included in this newsletter. Therefore, in order that you do not miss something of possible importance to you, a list of topics covered in this newsletter has been provided, as follows:

A.F.S.

N.Y.S. Chapter News

1980 Annual Meeting

- Preview
- Agenda
- Workshop Schedule
- "Call for Papers"
  Abstract information and format
  Best student paper award
  Rating schedule for judging best student paper

Northeast Division News

1980 Annual Meeting

- Preview
- "Call for Papers"

Parent Society News

- Notes on the A.F.S. Annual Meeting

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

ANNUAL MEETING PREVIEW

This year's annual meeting is rapidly approaching and the stimulating and challenging program promised in our summer Newsletter is coming to fruition. Please mark February 1 and 2 on your calendar now and plan to attend. The following preliminary schedule provides you some idea of the content of this year's metting. Please note that we will begin at 9:00 AM on February 1 so that those of you who must travel long distances may wish to register Thursday evening, January 31. A call for papers accompanies this announcement. The five-member panel on the topic "Should a Marine Angling License be Required?" has been completed and promises to be a very enthusiastic and informative session. The panel will be moderated by Dr. Bruce Wilkins, Leader of the New York Sea Grant Extension Program, and will consist of the following individual panelists: Mr. Richard Stroud, Sport Fishing Institute and President-Elect of the American Fisheries Society, Mr. Al Ristori, freelance writer and member of the Mid-Atlantic Fishery Management Council, Mr. Tony Taormina, Director, Division of Marine Resources, New York State DEC, Mr. Scott Simons, Managing Editor of the Long Island Fishermen, and Mr. Lou Rodia, Editor of Angling News. These people represent a wide variety of interests and opinions on the subject they will discuss. Several of these people have addressed topics of a similar nature in national symposia. We are indeed fortunate to have such an esteemed panel participating in our annual meeting. You are encouraged to communicate the existence of this panel discussion to other professionals in the field who may be interested.

Friday evening's program should also be very interesting to the Chapter membership. Dr. W. E. Ripley, Fisheries Advisor to the United Nations Development Program, New York City, will present a review of the operational and financial structure of satellite organizations in the United Nations who have fisheries programs under their jurisdiction. He will then review specific kinds of opportunities for both short and long-term employment in a variety of countries overseas with widely differing fisheries management problems. In conjunction with this presentation Dr. Ray Oglesby, Professor of Aquatic Science at Cornell University, will give a presentation describing his recent experience as a fisheries consultant for the Food and Agriculture Organization (FAO) of the United Nations in Sri Lanka. Dr. Oglesby spent approximately 2-1/2 months working in Sri Lanka during the summer of 1979. These two gentlemen should provide a very enlightening and educational discussion for everyone and particularly for any individuals who may consider a United Nations fisheries appointment at some time in their career.

Your program committee is very enthused about these highlight sessions of our meeting but recognize that the key element in a successful annual Chapter meeting is good attendance and participation by its membership. Your contribution of technical papers and interest in both the panel discussion and evening program are essential.

A complete program with abstracts of contributed technical papers, registration forms for room and board at Bergamo/East, as well as other pertinent information will be mailed to the membership in early January.

See you all at Bergamo February 1 and 2, 1980.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

PRELIMINARY AGENDA FOR 1980 ANNUAL MEETING

Thursday - January 31	1800-2100	Registration
Friday - February 1	0800-0930	Registration
	0930-1200	Technical Papers
	1200-1300	Lunch
	1300-1530	Panel Discussion "Should a Marine Angling License be Required?"
	1530-1730	Business Meeting
	1730-1830	Social Hour
	1830-1930	Dinner
	1945-2100	Evening Program "International Fisheries Opportunities with the United Nations"
Saturday - February 2	0800-0900	Breakfast
	0900-1200	Technical Papers
	1200-	Presentation of award for best student paper
		Adjournment

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

CHAPTER WORKSHOP LOOKS LIKE A WINNER!

The workshop committee reports steady progress and it appears our first effort will be a real good one. All the groundwork has been developed, site chosen, date set, agenda finalized and a highly respected group of speakers chosen. Workshop details are outlined below:

Title:

Practical Fisheries Management: More with less in the 1980s.

Goal:

To increase capability of fisheries biologists to formulate efficient fish management strategies under constraints of fiscal realities in the 1980s.

Objectives:

- To expose all attendees to new and emerging efficient fisheries assessment and interpretive methods for immediate and long-term application.

- To review selected fisheries management strategies and the effect of their implementation.

- To illustrate selected methods for evaluating management actions, compatible with social needs and fiscal resources.

- To provide all attendees the opportunity to apply elements of the workshop to management strategy formulation for an assigned fisheries problem.

Location:

Cazenovia College Convention Center
Cazenovia, New York

Dates:

Registration	-	12:00 Noon - 9:00 P.M. Mon., July 14, 1980
Program Speakers	-	8:00 A.M. - 5:00 P.M. Tues., July 15, 1980
Workshop Sessions	-	8:00 A.M. - 12:00 Noon Wed., July 16, 1980

Cost:

Not finalized because potential outside funding may be obtained which will substantially reduce attendees costs. However, Cazenovia College was chosen because of the reasonable rate schedule. Therefore, even without sponsorship, total costs will be no more than $85 per person for the entire workshop. With sponsorship, costs may be as low as $50 per attendee including two nights lodging, two breakfasts, two lunches, one buffet dinner, beer and snacks, coffee breaks and registration.

Attendance:

We will limit attendance to the first 150 reservations. All attendees will pre-register with advance payment. Northeast AFS Division members will be solicited via the Division newsletter and Fisheries will also list the workshop. First registration forms will be mailed after January 1, 1980.

Workshop format:

- Invited speakers will cover agenda topics in full day session (July 15).

- Lab sessions will follow in the A.M. of July 16.

- There will be six 1-1/2 hour lab sessions with 25 participants each. A workshop committee member will observe each Lab, but the group will elect its leader from among attendees.

A fictitious fishery management problem will be prepared, complete with objectives, data and costs, by the workshop committee. Each Lab session will prepare management and evaluation strategies based on techniques presented the prior day.

Following the Lab sessions, all participants rejoin and invited speakers will form a panel. They will then be presented the same problem to solve in front of the full audience. Lab session leaders can, if they choose, debate the panel's rationale compared to his group's. The individual learning experience should be maximized by each person relating his chosen rationale to that debated on the floor.

Publication of Proceedings:

Each speaker will be asked to prepare a maximum 1000-word summary of their subject material along with a bibliography of pertinent material.

Financial assistance will be solicited from several sources to pay for publication. The summaries and bibliography will be a valuable fish management handbook.

Speakers:

No effort was spared to obtain top speakers on various workshop topics. Not all selected speakers have been contacted, but those that were and accepted the invitation are listed on the agenda below. The full slate will be filled by November 1979.

Agenda July 15, 1980

Time	Subject	Speaker
8:00-8:10 A.M.	Introduction	Bruce Shupp, DEC, Albany
8:10-8:30 A.M.	Keynote Address	Herb Doig, DEC, Asst. Comm. Natural Resources
	I. Baseline data for formulating management strategy	
8:30-9:15	A. Lake and Stream Surveys	
9:15-9:45	1. Lake Surveys 2. Stream Surveys	John Forney, Cornell Univ. Edwin Cooper, Penn State Univ.
9:45-10:00	-------- Coffee Break --------	
10:00-10:30	B. Evaluating Angler Use and Harvest	Not contacted
10:30-11:00	C. Predicting Potential Yield	
	1. Morpho-chemical and morpho-edaphic indices of lake and stream productivity	Not contacted
	2. Predicting reservoir standing crop and harvest from analysis	Not contacted

	environmental factors	
	angler demands and s	Not contacted
	unch ----------	
	n of data for formulating rategy	
1:00-1:30	Techniques 1. Population Dynamics 2. Comparison/Contrast	Not contacted
1:30-2:30	B. Proportional Stock Density (PSD): An alternative interpretive technique	Richard O. Anderson Mo. Coop. Fish Unit
	III. Management Options and their evaluation	
	A. Stocking	
2:30-3:00	1. Salmonids	Not contacted
3:00-3:15	--------- Coffee Break ----------	
	2. Warmwater/Coldwater	
3:15-3:30	a. Predator-prey ratios as a guide to stocking	Not contacted
3:30-3:45	b. A new approach to predatory potential for stocking success	Al Schiavone DEC, Watertown
	B. Regulations: Role and Evaluation	
3:45-4:30	1. Size Limits	Richard O. Anderson
4:30-4:50	2. Trophy Angling	Edwin Cooper
4:50-5:20	C. Habitat Manipulation	Steve Gloss Cornell Coop. Fish Unit
5:20-5:30	IV. Wrap-up and Summary	Carl Sullivan Exec. Director, AFS
5:30-6:30	Social Hour - Beer provided	
6:30	Steamship Round Buffet	

Agenda July 16, 1980

8:00-9:45	Six Individual Workshops	
9:45-10:00	--------- Coffee Break ---------	
10:00-11:45	Panel Session	
11:45-12:00	Summary and Evaluation	William Pearce DEC, Cape Vincent
12:00	--------- Lunch ----------	

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

CALL FOR PAPERS

The annual meeting of the New York Chapter of the American Fisheries Society will be held February 1-2, 1980 at Bergamo/East, Chaminade Road, Marcy, New York. You are encouraged to submit an abstract and title of a technical paper to be considered by the program committee for presentation at the annual meeting. This meeting offers a fine opportunity to present results of research and management investigations in a constructive and professional atmosphere. Please note that a best student paper award will be presented by the Chapter at the annual meeting this year. Material attached to this notice provides detailed information about the award. Presentation of papers cannot exceed 15 minutes. This time limitation will be strictly enforced at the meeting.

INSTRUCTIONS TO AUTHORS

Authors are requested to submit a detailed and informative abstract of their contribution on the enclosed form (less than 250 words):

1) A form is attached for submission of titles and abstracts for contributed papers. This should be typed within the allotted space which has been designed for direct printing and returned no later than December 15, 1979. If more than one paper is submitted use additional forms.

2) In addition please submit a 1 or 2 page summary of your paper for use by the program committee in screening the papers to be presented at the meeting; only the short abstract will be printed.*

3) Please follow the instructions on the attached announcement for submitting papers to be considered for the best student paper award, as well as forwarding the above information to the chairman of the program committee.

4) Send your completed title, abstract and summary on the enclosed form to:

Dr. Steven P. Gloss, Program Chairman
NYAFS, NY Cooperative Fishery Research Unit
Department of Natural Resources
Fernow Hall, Cornell University
Ithaca, New York 14853

☐ Please check here if paper is to be considered for best student paper award. Be sure that you have also completed the application form for this award and forwarded it to Mr. Robert Foley.

Program Committee:

Bill Eustance
Bob Foley
Bruce Shupp
Steve Gloss

*Authors will be notified of acceptance of papers by January 4, 1980.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

abstract

Author

Title

Abstract

ANNOUNCEMENT OF BEST STUDENT PAPER AWARD

The New York State Chapter of the American Fisheries Society will present an award for the most outstanding paper delivered by a student at the 1980 meeting. The winner shall receive in addition to a $50.00 cash award an appropriate certificate commemorating his award.

Each paper will be judged on: (a) presentation, including strict adherence to time schedule and the stimulation and handling of questions; (b) quality and significance of research and interpretation of data; (c) quality, effectiveness, appropriateness and utilization of illustrative materials. (A sample rating schedule is enclosed).

The recipient must be the equivalent of a full-time student who is devoting his or her major efforts to a formal program of studies or have defended his or her thesis or dissertation within the 12 months preceding the annual meeting at which the paper is delivered. The paper must be based on investigations performed while the author was a student. A paper will not be considered as a student paper if it has a joint author, unless the joint author is another student. The student's major professor or department chairperson must certify that these criteria have been met.

If you wish to be considered for this award at the 1980 meeting of the N.Y.S. Chapter of the A.F.S., please complete the required information and send to: Bob Foley, Hale Creek Field Station, 7235 Steele Ave. Ext., Gloversville, N. Y. 12078, by the Call for Papers deadline.

- -

Please type or print:

Name _____ Date _____

Title of paper: _____

Mailing address: _____

I am/was a full-time student in the following department:

_____

_____

At the time of the presentation of the paper, I will be a full-time student or will have defended a thesis or dissertation within the past 12 months. I will be the first author and will present the paper. I have read the accompanying description of the Best Student Award criteria.

Signed: _____

I certify that the person above meets the criteria for the Best Student Paper Award as described above.

Date _____ Signed: _____
(Major Professor or Department Chairperson)

Title _____

Address _____

ST STUDENT PAPER

FISHERIES SOCIETY, 1980

_____

_____

1. Presentation _____
2. Organization _____
3. Visual Aids _____
4. Originality _____
5. Scope _____

TOTAL POINTS _____

RATING CATEGORIES

1. Presentation:

Continuity	Time	Speaking Effectiveness	Stimulation/Handling of Questions	Grammar
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3

2. Organization:

Arrangement of Main Points	Experimental Design	Summary of Findings
1 2 3	1 2 3	1 2 3

3. Visual Aids:

Visibility	Complete	Design	Impact	Understandable
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3

4. Originality:

New Idea or Concept	New Application	Unique Approach to Problem
1 2 3	1 2 3	1 2 3

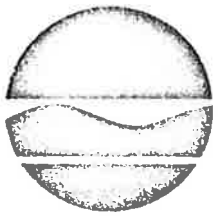
5. Objectives of Study:

Appropriateness of Design	Fulfilled by Study	Value
1 2 3	1 2 3	1 2 3

Rank each paper presented and give points as they apply. A total of 60 points would be a perfect paper presented in a superior manner.

Judge: _____ Date: _____

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233



Robert F. Flacke
Commissioner

NORTHEAST DIVISION - AMERICAN FISHERIES SOCIETY

1980 Meeting

*** FIRST CALL FOR PAPERS ***

The 1980 meeting of the Northeast Division of the American Fisheries Society will be held at the Nevele Country Club, Ellenville, New York, from April 27 - 30, 1980. Our meeting will be part of the Northeast Fish and Wildlife Conference having the general theme "A Look Ahead to the 1980's".

Tentative plans for the fisheries program include four technical sessions in the fields of marine, freshwater and anadromous fisheries and fish culture. If there is enough interest in a specific region-wide issue, we will consider organizing a "state-of-the-art" or "pros-cons" forum to enhance the program. Your 1980 Program Committee won't leave any stone unturned in their efforts to develop a truly excellent and informative fisheries program.

But success depends upon your involvement. We need your abstracts for technical papers and your ideas on issues . . . . as soon as possible. Plan to get your work into shape for the Conference so that we can all look at it and benefit from its discussion.

Contributions should be sent to the Program Committee Chairman no later than December 15. Each contribution should contain the following information:

1. Title of your paper.
2. Name, affiliation, mailing address and telephone number of author(s).
3. An abstract of about 150 words -- typewritten and double spaced.
4. A letter or outline that gives the Program Committee sufficient detail to properly evaluate the paper.
5. Time required for presentation. Generally a total of 30 minutes is provided for each paper. This includes 20 minutes for presentation and 10 minutes for questions.
6. A list of projection equipment needs. A successful presentation depends upon people being able to read your tables and figures from a distance of 60 feet.

Get your material to me before you take off for that Thanksgiving vacation.

Set your sights for the 1980 Conference. The facilities will be great, costs will be reasonable, the company will be enjoyable and the program will be excellent.

Sincerely,

Paul Neth

Paul C. Neth, Program Committee Chairman
Northeast Division American Fisheries Society
N.Y. Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

1980 Program Committee

Anthony Bonavist, N.Y.DEC
Steven Gloss, Cornell U.
Robert Griffiths, N.Y.DEC
Edward Horn, N.Y.DEC
William Pearce, N.Y.DEC
John Poole, N.Y.DEC (Marine)
Paul Neth, N.Y.DEC, Chairman

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

Notes on the A.F.S. Annual Meeting at

West Yellowstone, Montana

September 12 - 15, 1979

West Yellowstone is a long way from New York. However, several New York Chapter members made their way to the beautiful "Big Sky" country. Bill Pearce gave an excellent presentation on New York's problems in developing our fine salmonid fishery in Lake Erie. Al Schiavone gave a fine presentation on what the black crappie has done to the walleye and yellow perch in Moon Lake. Debbie Wallace, while she gave no paper, was active in committee work. David Phillips and Maurice Alexander from SUNY, Syracuse presented a paper on the ecological effect of Bunker C oil on fish in St. Lawrence River marshes. Dr. Phyllis Cahn, a Chapter member from C.W. Post College on Long Island who is on sabbatical to Washington with the N.S.F., also attended the meetings. Herb Doig gave the state position in a debate panel on "State-Provincial Management Rights and Responsibilities vs. Federal Rights and Responsibilities" at the International Association of Fish and Wildlife Agencies meeting on Tuesday the 11th. I hope that I did not miss acknowledging any other New Yorkers, whether Chapter members or not, who were at the meetings.

Members of the A.F.S. nearly outnumbered townspeople. They were 687 A.F.S. members at West Yellowstone which has a population of about 800! This was the largest attendance at the A.F.S. Annual Meeting since the Centennial Meeting in New York City in 1970.

Congratulations are in order to the Cornell Chapter that was approved by the A.F.S. at the meeting. For those of you who are interested, a new Marine Fishery Section has been approved by the A.F.S., contingent upon completion of the requirements in the A.F.S. Constitution and By-Laws. For more information on this new section, you should contact Bradford Brown at National Marine Fisheries Service, Woods Hole, MA 02543.

National A.F.S. dues will increase to $27 next year as a result of a 1,235 to 786 vote in favor by mail ballot. Karl Lagler and Reeve Bailey were elected Honorary Life Members of the Society. Ken Carlander was honored with the Society's Award of Excellence. Dick Stroud of the Sport Fishing Institute assumed the Presidency of the Society taking over this role from Henry Regier. Dick Ryder is President-Elect. Dave Wallace is First Vice President. John Magnuson is Second Vice President. The New York Chapter wishes the new parent Society officers well in their tasks.

Other business came up during the Society's Executive Committee meetings that will be discussed at the next executive committee meeting of the Chapter.

Phil Briggs, President
New York Chapter
American Fisheries Society

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

May 1979

Dear Chapter Member:

This message is directed to all 1978 members and paid 1979 members.

The Chapter needs your support and continued involvement so that we can maintain an active Chapter. For those of you who have not paid your 1979 Chapter dues, your prompt attention is requested in completion and return of the membership dues sheet with your dues. For those of you who have paid, if you are aware of prospective members, please pass the membership and dues sheet to them and encourage their participation in the Chapter.

Enclosed is a copy of the President's letter to the membership, the proposed Chapter workshops, the Chapter position statement procedure and the 1978 membership directory as compiled in December 1978.

A newsletter is being formulated at this time. Any news or other items of interest to the membership is requested. Please forward your news to:

Scott Quinn
N.Y.S. Department of
Environmental Conservation
Bureau of Water Research, Room 519
50 Wolf Road
Albany, NY 12233

OR

Lawrence Skinner
Box 81, Route 43
West Sand Lake, NY 12196

for inclusion in the newsletter. The deadline is June 15 if we are to have news mailed by about June 30.

Sincerely,

Lawrence C. Skinner

Lawrence C. Skinner
Secretary-Treasurer

Enclosure

NEW YORK CHAPTER HIGHLIGHTS

Concurrent technical sessions of the New York chapter were highlighted by a preview presentation of an excellent film "A Trout Stream in Winter" presented by Dr. Robert Butler of the Pennsylvania State University Cooperative Fishery Research Unit. A total of 27 papers were presented by chapter members ranging in diversity from population studies, feeding ecology, marine and estuarine studies, lake restoration and fish contaminants. The meetings were attended by 180 persons.

The New York Chapter has embarked on three new ventures as a result of chapter meetings held February 2-3, 1979 in Marcy, New York.

First, a unique opportunity to have direct input to the State Legislative Committee on Environmental Conservation has been offered. Legislative members desire professional fisheries opinion on fisheries related bills subject to committee action prior to their consideration by the full state Legislature. The chapter will select representatives in various fields of the fisheries profession who will provide expert opinion as the need indicates.

Secondly, the chapter will sponsor a workshop prior to the 1980 annual meeting on decision making in fisheries management. The program will be designed to aid fisheries personnel to select proper alternatives for getting the most information to fill research and management needs when funding is restricted, i.e. "Get the most bang for the buck". The program format is nearly complete; to receive up-to-date information, contact Bruce Shupp, N.Y.S. Department of Environmental Conservation, Room 518, 50 Wolf Road, Albany, New York 12233.

Lastly, the national Fisheries Scientist certification program is not as effective as the chapter desires; the chapter has assumed the responsibility of designing and implementing an experimental certification program. The program would provide more flexibility thru creation of several levels of certification and would encourage employers to give preference to certified fisheries scientists. The thought is to provide stepped-up recognition of the qualifications of individuals in various fisheries fields and delineate employer needs to aid selection of qualified fisheries personnel (via the certification program) to meet the employers needs. The ultimate goal is to require professionally licensed persons to oversee, conduct and report on fisheries management and research activities.

New officers(with address)for the chapter are:

President - Philip T. Briggs
N.Y.S. Department of Environmental Conservation
SUNY, Building 40
Stony Brook, New York 11790

Vice President - John S. Grim
Box 162
Rhinebeck, New York 12572

Secretary-Treasurer - Lawrence C. Skinner
Box 81, Route 43
West Sand Lake, New York 12196

The chapter continues to grow by "leaps and bounds".

Chapter membership for several successive years is as follows:

1975-76	84	
1976-77	97	
1977-78	109	
1978-79	285	
1979-80	202	(As of February 28, 1979)

MINUTES OF THE ANNUAL MEETING, FEBRUARY 3, 1979

A quorum of 109 of 190 paid 1979 members being present, President Bruce Shupp called the meeting to order at 10:55 AM in the Chapel at Bergamo/East, Marcy, New York.

Minutes of the annual meeting of February 4, 1978, executive committee meetings, the secretaries and treasurer's reports were distributed prior to the meeting by Secretary-Treasurer Joe Gorsuch. No additions or corrections being noted, they were approved as submitted. Particular notice was made of the improvement in service and quality of the Secretary-Treasurer's activities. The Auditing Committee of Steve Simkins and Martin Pfeiffer finds the treasurer's records in good order and accurate.

The chapter heartily commends Dave Green and the Program Committee on the concurrent sessions of scientific papers presented in the past day. The topics presented proved to be of wide interest and stimulated much discussion. Chapter Membership in 1978-79 of 284 members more than doubled 1977-78 total 109 members largely thru the Membership Committee's efforts directed by chairman Phil Briggs.

Certification of fisheries scientists as a national AFS program has not been very effective. One of the program goals was to promote development of well qualified expertise within the field of fishery science. It was hoped this would lead to a professional licensing program similar to those programs necessary for licensing of engineers, doctors, lawyers, etc., in which licensing is required prior to practicing in the profession. Such a program would involve an intensive examination program, a code of ethics, reporting with a licensed professionals signature affixed and requirements by employers for licensed or certified professionals. The Professional Standards Committee chaired by John Nickum recommended the following:

1. An experimental certification program within the chapter be established and to be of an approximate 5 years duration. A committee should be established to develop entry requirements and a voluntary testing program.

2. A second committe or professional board of certification be established to develop advanced certification levels above the entry level and provide the mechanism for testing the individuals applying for such certification.

3. The Professional Standards Committee shall act as overseer to the above committees or boards.

4. Encourage government, colleges and other employers to require and/or select certified professional fishery scientists.

Publicity about the chapter has generated favorable attention from the Parent Society and NE Division for which the Publicity Committee and its chairman Jack Hasse are commended.

Two newsletters about chapter member activities were generated during the year. Joe Gorsuch suggested the separation of newsletter activities from the Secretary-Treasurer responsibilities due to the pressure of work developed by an expanded chapter membership. President Shupp recommended the incoming president separate these duties and form an ad-hoc committee to serve the newsletter function but with distribution thru the Secretaries office.

For election of officers the following candidates were nominated by the Nominations Committee (John Forney, chairman) and from the floor by Doug Sheppard.

President:	Phil Briggs
Vice President:	Bill Eustance John Grim Joe Gorsuch

The office of Secretary-Treasurer is a two-year position with election of the Secretary-Treasurer elect in the year prior to installation in office. This is to promote more orderly transfer of records and accounts with banks and the postal service.

OLD AND NEW BUSINESS

New Initiatives for the chapter include consideration of workshops and providing expert opinion to legislative committee members on fisheries related bills. New Initiatives committee members Terry Culp, Art Newell and John Nickum had outlined two workshop concepts (see attachment) dealing with decision making (Workshop Y) and sampling procedures (Workshop X) in chapter discussions on February 2, 1979. During the February 3 meeting there was overwhelming interest expressed in these ideas, however, the interest expressed presents a problem with controlling attendance and functioning of the workshops. Bill Pearce moved that the workshop on decision making in fisheries management be held in conjunction with the 1980 annual meeting of the chapter. The motion was amended (Bill Eustance) by adding that the NY Chapter shall advance "seed" money in support of the workshop, however, the money shall be recovered by fees upon attendees. The motion as amended was adopted by majority vote.

The second initiative, i.e. providing expert opinion to legislative committee members suggested proved to be very controversial. Considerable discussion revolved around several points, e.g. (1) confusion as to the needs and desires of legislative members and their aides for information, (2) whether the members providing information would represent the voice of the chapter or provide only their professional views, and (3) whether the chapter may be considered to be lobbying thus subject to loss of tax exempt status. Jim Colquhoun moved that

consideration of the subject be tabled until the annual meeting in 1980. An amendment (Ed Kuzia) to have the New Initiatives Committee continue investigation of the proposal and report to the chapter in 1980 was advanced and seconded. Motion to call the question (limit debate) was defeated. Further discussion pointed out that if the chapter does not act at this meeting, one year of possible input would be lost and possibly the entire proposal may be lost since legislative members may note lack of responsiveness by the chapter. Subsequent vote on the main motion as amended after discussion defeated both the motion and amendment. Leigh Blake moved that the President be empowered to direct response to the legislative committee staff when technical expertise is required on fisheries related bills. Amendment by Bill Ewell stating that the five past chapter presidents oversee the actions of the President was seconded. Majority vote approved both the amendment and main motion. President Shupp suggested that the incoming President should also consult with his Executive Committee on any appointments and in developing a list of people with appropriate expertise to respond to the Legislature. Further, the New Initiatives Committee was directed to continue investigating the needs of legislative staff and report to the Executive Committee at their earliest convenience.

A method for developing and handling position statements by the chapter when needed between chapter meetings was outlined by Ed Kuzia on February 2, 1979 and distributed in written form at this chapter meeting (copy attached). Bob Myer moved acceptance of the methodology but with the following amendment: "If time permits for membership review, the statement shall appear in the chapter Newsletter for comment." (to be inserted as an added sentence to (2)(f)).

A resolution on water quality standards (distributed on February 2, 1979) was introduced by Resolutions Committee chairman 'Ned' Holmes. Considerable discussion was generated concerning the professional stance to be adopted by the chapter, i.e. should we adopt a purist stance towards protection of fisheries or should a note of compromise be adopted as expressed in the draft document (attached). C. Lavett Smith moved adoption of the draft statement. Amendment by Jim Colquhoun to delete the paragraph on page 3 beginning "Although..." and ending on page 4 with "...ecosystem." was seconded. The motion as amended was adopted by majority vote.

Current chapter by-laws do not conform with chapter practice nor totally conform with parent society by-laws. It was moved that the chapter adopt the parent society by-laws (seconded). J. Gorsuch pointed out that should chapter by-laws totally conform with parent society by-laws, it would require all chapter members being members of the parent society. Amendment (C.L.Smith) moved to appoint a committee to investigate the by-laws relative to compliance with the parent society and current practices was seconded. Majority vote passed the amendment and original motion as amended.

Professional Standards Committee chairman John Nickum introduced the following motion which was seconded and passed unanimously.

Move that the N.Y. Chapter American Fisheries Society initiate an experimental certification program providing three levels of voluntary certification for professional fisheries workers. This program shall be initiated by the President through the appointment of an ad-hoc Testing and Certification committee charged with responsibility for developing appropriate test and standards for entry level, mid-level and senior-level fishery scientists. The Testing and Certification Committee shall report to the Executive Committee and shall include representation from the Professional Standards Committee, 2-year college faculty, 4-year and graducate college faculty, private and corporate agencies and public fishery management agencies. The Professional Standards Committee shall contact regulatory agencies, public and private employers of fishery professionals and educational institutions offering fishery training to determine the extent to which they will participate in such a program. A specific program shall be presented to the 1980 meeting for action by the chapter.

Results of the election of officers are as follows:

President: Phil Briggs
Vice President: John Grim

Installation of officers including the Secretary-Treasurer elect was accomplished. President Briggs presented "Past-President Certificates" to Bruce Shupp, Robert Werner and C. Lavett Smith.

Meeting was adjourned at 1:20 PM.

Respectfully submitted,

Lawrence C. Skinner

Lawrence C. Skinner
Secretary-Treasurer

NEW YORK STATE CHAPTER OF THE AMERICAN FISHERIES SOCIETY
TESTIMONY TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION HEARINGS ON PROPOSED CLASSIFICATIONS AND
STANDARDS OF WATER QUALITY AND PURITY

The American Fisheries Society (AFS) was organized in 1870. The Society has at present approximately 8000 members. Its objectives are conservation, development and wise use of recreational and commercial fisheries, promotion of fisheries science and research, and dissemination of knowledge about fish, fisheries and related subjects. The 283 members of the New York State Chapter of the AFS (NYSAFS) represent a diverse mixture of fisheries management, propagation and research biologists, limnologists, aquatic ecologists, marine scientists and students affiliated with academic institutions, government agencies, industry or aquatic consulting firms. Concern for the quality of New York waters is implicit throughout the Chapter membership; therefore, the NYSAFS finds it necessary to comment on the Proposed Classification and Stndards of Quality and Purity for New York Waters.

Quality of our waters reflects the quality of our environment, and ultimately the quality of human life. Toxic substances in New York waters and their aquatic food chains have been identified as direct threats to health. However, the Chapter is not qualified to address health related issues and will confine its comments to the impact of toxicants on the fish and the fishery.

A fishery is the complex of interactions within and between populations of fish being harvested, the populations of fishermen and the environments of each. A population of fish is not considered a fishery until harvested for some type of human use; i.e. recreation or food. Pursuit of fish for these uses constitutes a significant industry in New York, resulting in both enjoyable use of leisure time and revenue to the State's economy. Although fish may be affected directly by toxicants, lower trophic organisms (their food) may be even more sensitive to these toxicants. Therefore, it is necessary to establish standards and criteria which not only protect the fish but additionally their food organisms.

National Oceanographic and Atmospheric Administration (1977) estimated the value of New York saltwater commercial finfish landings (paid to fishermen) at $30.6 million in 1977. The National Marine Fisheries Service (1978) estimated 2.5 million saltwater anglers fished New York waters in 1973-74. The U. S. Fish and Wildlife Service (USFWS 1977) estimated U. S. saltwater anglers fished an average of 12.7 days each and made expenditures averaging $16.65/day in 1975. Multiplying these average days and expenditures by New York's 2.5 million saltwater anglers and expanding for inflation at 8 percent per year 1975-1978, results in estimated total annual expenditures for saltwater recreational angling in New York of $600.7 million.

In addition, there are approximately 800,000 licensed freshwater anglers in New York (Department of Environmental Conservation unpublished data 1978). The USFWS (1970) estimated there are 0.63 unlicensed anglers to every licensed angler; therefore, approximately 1.3 million anglers fish New York freshwater annually. Brown (1976a) estimated each freshwater angler fished an average of 17.8 days annually in 1973. USFWS (1977) estimated the average daily expenditure of warmwater and coldwater anglers at $9.76 in 1975. Expanding by 8 percent inflation over the period 1975-1978 and multiplying by the number of mandays expended by anglers on New York freshwater results in an estimated annual expenditure of $284.6 million.

Combined saltwater commercial fishing and saltwater and freshwater recreational angler expenditures amount to $915.9 million annually. Therefore, first generation expenditures on New York fisheries alone represent almost a one billion dollar industry—a vital segment of the New York economy.

Effects of toxic substances and changes in ambient physical parameters on growth, survival and reproductive capability of fish and other aquatic fauna have been well documented in literature. The impact of DDT on reproductive success of lake trout in Lake George, New York is an excellent example of the effect of a contaminant on perpetuation of a desirable species (Burdick et al, 1964).

Accumulation of toxic substances in fish flesh and ensuing regulations or warnings promulgated to safeguard human health have also had profound

impact on fisheries. Brown (1976b) estimated that the possession ban on certain species and sizes of salmonids in Lake Ontario and its tributaries caused a 70 percent drop in angling use in the Salmon River, one of New York's most popular trout and salmon fishing tributaries. Closure of the Upper Hudson River from Fort Edward to Troy in 1975 because of PCB contamination restricts enhancement of the fishery in that section of the Hudson in the near future. In the lower Hudson, commercial fisheries for American eel, striped bass and several other species have been closed due to PCB contamination. Mercury contamination of Onondaga Lake, Syracuse, New York resulted in prohibition of angling in a once intensely used fishery in a major urban area. Following a 1977 ban on consumption of fish in a 100-mile section of the South Fork of the Shenandoah River, Virginia due to mercury contamination, angling use declined 72 percent from 1975 levels (Martin, 1978). A ban on fishing was also imposed on Lake St. Clair, Michigan in 1970 because of mercury contamination. It was estimated that the closure resulted in $3.3 million loss in gross business revenue to Michigan (Martin, 1978).

The need to protect the fishery, therefore, is not only based on preservation of healthy aquatic ecosystems which reflect the quality of life but also on the importance of the fishery to the economy of New York State as has been previously outlined. It is with these factors in mind that the Chapter supports those standards and criteria based on scientifically supported data which identify a need for further regulation in order to protect a fishery. PCB, Mirex and Mercury have had demonstrated adverse effects on fisheries of New York State and their discharge should be more strictly controlled. The other proposed standards and criteria have to be judged on their scientific merit. For these other standards and criteria a review panel of experts in Aquatic Toxicology and Environmental Chemistry from academia, industry and government is recommended to determine what standards and criteria are adequate and can be successfully implemented.

Additionally, the Chapter recommends that the Congress of the United States and the Legislature of New York State appropriate adequate funding for both field and laboratory aquatic toxicity tests, as well as developing economical treatment technology. The results of appropriate studies could then be used to set standards and criteria where adequate data and/or adequate treatment technology does not presently exist.

LITERATURE CITED

Brown, T. L. 1967a. The 1973 Statewide Angler Study. DEC Spec. Report, NYS Bureau of Fisheries, 50 Wolf Road, Albany, New York 12233. 117 p. mimeo.

Brown, T. L. 1976b. After the Ban. Coastlines Vol. 7(6), November-December, 1976. NYS Sea Grant Institute, Cornell University, Ithaca, New York.

Burdick, G. E., E. J. Harris, H. J. Dean, T. M. Walker, J. Skea and D. Colby 1964. The accumulation of DDT in lake trout and the effect on reproduction. Trans. Amer. Fish. Soc. 93. 127-136.

Martin, Robert G. 1978. Impacts of Aquatic Contaminants on Angling. SFI Bulletin 293. Page 1-3. Washington, D.C. 20005. April, 1978.

NOAA 1977. Fred Blossom, Patchogue, Long Island, New York. personal communication.

NMFS 1978. Current Statistics. No. 7500. NOAA, Washington, D.C.

USFWS 1972. 1970. National Survey of Hunting and Fishing. USDI, FSFW, Washington, D.C.

USFWS 1977. 1975 National Survey of Hunting, Fishing and Wildlife—Associated Recreation. USFWS. Washington, D.C.

NYC-AFS POSITION STATEMENT PROCEDURE

1) The Chapter President, through approval by the Executive Committee, or the Environmental Concerns Committee through the Executive Committee, are permitted according to AFS By-Laws, to prepare position statements or letters of concern on environmental or fishery concerns.
2) Suggested Procedure:
   (a) Member notifies Environmental Concerns Committee Chairman (E.C.C.) of problem area.
   (b) E.C.C. investigates the problem, discusses with his committee and decides if Chapter should respond and if normal resolution procedure will not suffice.
   (c) E.C.C. contacts Chapter President to discuss and justify his position.
   (d) President contacts Executive Committee to get approval to proceed (majority rule).
   (e) E.C.C. organizes sub-committee to research problem and prepare position statement.
   (f) Written statement is reviewed by Environmental Concerns Committee, edited and submitted to President for Executive Committee approval. If time permits for membership review, the statement shall appear in The Chapter Newsletter for comment.
   (h) If testimony at hearing is required, this can be accomplished by the President, E.C.C. or member with most expertise on subject making presentation of the Chapter's official, written response and handling the cross-examination. (Chapter President will decide on best choice for personal testimony).

Adopted 3 February 1979

PROPOSED WORKSHOPS
New York Chapter, American Fisheries Society

The ad hoc committee proposes that two workshops, designed to meet member needs, be held over the next 12-18 months. One workshop would be geared to meeting needs in the field decision making aspects of fishery management. The other would be geared to solving problems in sampling design and the analysis of samples obtained in particular sampling programs. The exact length, format, location, and dates for these workshops are not suggested at this time, although two-day sessions would probably be adequate if the formats described below are accepted. The chapter needs to decide whether or not to sponsor either or both workshops. If the workshops are to be sponsored, then suggestions for changes in topic and/or format would be in order. Finally, committees to develop and arrange the workshops must be appointed.

The outlines below are not final and/or complete, but are offered to provide a basis for decision-making and guidance.

Workshop X

Title: A decision matrix for fish management

A. Keynote speaker
B. Assessing management potential of lakes and streams (What does it produce- what could it produce - what should it produce)
    1. The biological survey (what to collect, how much and how to interpret)
    2. Indices of fish production
        Phosphorus loading, Ryder index and other measures of potential harvest
    3. Evaluating angling demand, species preferences, angler attitudes
C. Assessing current yield
    1. Indices of harvest - angler diary programs, post card surveys
    2. Creel census
D. How to evaluate management options
    1. To stock or not to stock
        (a) How many trout are enough? (This is relevant to Great Lakes, Finger Lakes, Champlain)
        (b) Predator-prey ratios as a guide to stocking warmwater reservoirs - will they work in other waters?
    2. Role of regulations
        (a) Yield-per-recruit as a guide to minimum size limits
        (b) Minimum size limits for optimum community structure
        (c) Trophy angling concept - when and where will it work
            1. A success study
            2. A failure - northern pike in Escanaba Lake
E. An example of the decision making process - contrived data or a case

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

MEMBERSHIP APPLICATION

Annual Dues: 1980, $2.00 _____
1981, regular, $5.00 _____
student, $2.00 _____

NAME: _____ DATE: _____

HOME ADDRESS*: _____ HOME PHONE: _____

_____ BUS. PHONE: _____

ZIP CODE: _____ AREA CODE: _____

EMPLOYER:
(SCHOOL) _____

_____

_____

JOB TITLE: _____

SPECIALIZATION
OR INTEREST _____

_____

MAKE PAYMENT TO: N. Y. CHAPTER AFS and send to:

Lawrence C. Skinner, Sec.-Treas.
c/o Box 81, Route 43
West Sand Lake, New York 12196

*NOTE: If your name appeared in the 1979 N.Y. Chapter Membership Directoryand there are no additions or corrections, indicate "Same as 1979" for all information appropriate following your name.

Please include fisheries related news of interest to Chapter members for inclusion in the Chapter's newsletter. Your efforts will help keep us all informed.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

NEWSLETTER

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Society News
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Northeast Fish and Wildlife Conference

New York Chapter members were the dominant force in the freshwater sessions at the annual Northeast Division's Fish and Wildlife Conference, held earlier this year in Providence, Rhode Island. Ten of 27 freshwater papers were either delivered by or co-authored by New York Chapter members. Five of 27 marine papers were either delivered by or co-authored by New York Chapter members. Furthermore, NYCAFS President Phil Briggs, chaired one of the marine sessions. The New York Chapter should be proud of its contributions to the Northeast Division technical sessions.

The new officers of the Northeast Division are Ed Cooper from Penn State, President; our own Bill Flick as President-Elect; and another New York Chapter member, Carl George remains as Secretary-Treasurer. Bob Jones from Connecticut is the Northeast Division's representative on the National Nominating Committee. Past President Steve Taub has agreed to serve for a year as the Northeast Division's liaison with the National. As you can see, our Chapter is well represented among the officers of the Northeast Division.

Oh yes, Dwight Webster was honored at the Northeast Meeting for his many and great achievements to fishery science, teaching and the AFS. Dr. Webster has long been an active member of our Chapter. He also served the Northeast Division as Vice-Chairman in 1960-61, Chairman in 1961-62, Vice President in 1968-69 and President in 1969-70. Congratulations are in order.

National AFS Meeting Scheduled

The national AFS meeting will be held this year at West Yellowstone, Montana (September 12-15, 1979). The registration fee for the National American Fisheries Society Meeting at West Yellowstone will be $20.00 in advance, $25.00 at the door. Student registration (AFS student members) will be free. Non-AFS members will pay an extra $10.00 fee. It behooves many of our chapter members to keep up their membership in the National AFS if they plan to go to Montana this fall.

1980 NYCAFS ANNUAL MEETING!!

The 1980 meeting promises to be one of our best and you are urged to begin planning for attendance and participation NOW. The program committee has already been busy putting together a stimulating and challenging session for your professional enhancement.

This year's meeting will feature a four member panel discussion on the topic of "Should a Marine Angling License be Required?" New York has a very large industry associated with saltwater fishing and presently has no license requirement. The philosophical and economic ramifications of such a licensing decision are of importance to us all. Mr. Richard Stroud, executive president of the Sport Fishing Institute has agreed to participate on the panel. His national perspective and expertise should be most enlightening. "Dick" is also president-elect of the American Fisheries Society. Dr. Bruce Wilkins, Leader of the New York Sea Grant Extension Program, will moderate the panel.

A "Best Student Paper Award" in the amount of $50.00 will be offered by the chapter this year. Students who are doing research now or writing should keep this in mind for our next meeting. A "student" must be registered at the time the paper is submitted.

This year's meeting will be held on February 1-2, 1980 at Bergamo East. Registration will begin Thursday, January 31st at 6:00 PM and continue on Friday morning. Technical paper sessions will begin Friday morning to give us an additional 1/2 day on the program. The meeting will end at noon on Saturday. A complete schedule will be sent out with the first call for papers on October 1, 1979.

You are urged to make plans now to attend the annual meeting - even if the above mentioned haven't aroused your interest:

Wait until you find out what is on the program for Friday evening!!??

1980 NYCAFS ANNUAL MEETING AND WORKSHOP TO BE SEPARATE EVENTS!!!

The program committee and the workshop committee met jointly on May 4, 1979 to discuss the coordination of the annual meeting program and the chapter workshop on "Decision Making in Fisheries Management." It has been decided by the joint committees and approved by the executive committee of the Chapter that the workshop and annual meeting program should not be held simultaneously. Numerous reasons contributed to this decision:

- Bergamo does not have a large room where visual aids can be used during daylight hours, which will be an important component of the major workshop sessions, and probably could not accommodate the potential workshop attendance.

- Changing the site of a joint workshop-program annual meeting would result in considerably higher daily cost to members which would accrue over a long time period. This could jeopardize the annual meeting which has proved so successful the past three years.

- Extending the combined session to a 4 or 5 day period could decrease participant interest in the latter days and may also prohibit some people from attending the entire time.

- Separate times will permit optimizing programs for both the workshop and annual meeting rather than compromising both to fit them into a joint format.

The plan adopted calls for the workshop to be scheduled sometime during the summer or early fall of 1980 at a location other than Bergamo. More information will be forthcoming in later newsletters.

NYCAFS Committee Status

Environmental Concerns Committee:

As authorized at the February business meeting of the chapter, the Environmental Concerns Committee is being organized. This committee will function under the guidelines approved at that meeting to prepare position papers for the chapter when the normal resolution procedure will not provide timely response to a problem. We rely on the membership to inform the committee of any action or inaction which will ultimately affect fish or the fishery in New York. Members of the committee are as follows:

Jim Colquhoun, Chairman
NYSDEC, Field Toxicant Research Unit
8314 Fish Hatchery Rd.
Rome, New York 13440
Phone: (315) 337-0910

Tom Joliff
NYSDEC, Cape Vincent Station
Cape Vincent, New York 13618
Phone: (315) 654-2147

Pat Marinak
Ichthyological Associates
111 Main St., P.O. Box 2
Stamford, New York 12167
Phone: (607) 652-3563

We would also welcome an additional committee person from the marine district. Please contact the chairman if you are interested.

Water Quality Committee:

The Water Quality Section of A.F.S. is attempting to increase its

membership. If you are interested in Water Quality as it pertains to fisheries, membership in this section should be considered. A membership form is enclosed.

Professional Standards Committee:

The committee met in early June with the major objective being to develop a professional certification procedure. To date, the committee has finalized criteria for professional certification, and is presently conducting surveys of educational institutions and consulting firms in order to form a consensus on the feasability of a professional certification program.

Testing and Certification Committee:

The committee has met and is currently purusing the idea of a written test for entry level biologists.

We should have more on the progress of the various committees' by the next issue of the newsletter, as a result of an upcoming executive committee meeting, scheduled for late July.

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General Interest News

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Science Service "Cleans House"

The New York State Science Service of the State Education Department is making available, for a fee, publications covering a variety of topics. Subject areas are as follows:

Anthropological Survey - Anthropology, Archeology

Biological Survey - Botany, Entomology, Zoology

Geological Survey - Geology, Paleontology

A complete publication and price list (published in April, 1977) may be obtained by writing:

The University of the State of New York
The State Education Department
New York State Science Service
Albany, New York 12234

FDA Temporary Tolerance for PCBs Lowered

The Food and Drug Administration announced on June 28th that the temporary tolerance for polychlorinated biphenyls (PCBs) in fish and shellfish will be lowered

from 5.0 parts per million to 2.0 parts per million effective August 28, 1979. This action fulfulls a promise by FDA Commissioner Donald Kennedy to have a decision by June 30th, the date of his leaving. This may also negate a suit by the Environmental Defense Fund to lower the PCB limit for several commodities.

The new temporary tolerances for the commodities affected are:

	Old Limit	New Limit
Fish & shelffish	5.0 ppm	2.0 ppm (edible portion)
Milk	2.5 ppm	1.5 ppm (fat basis)
Dairy Products	2.5 ppm	1.5 ppm (fat basis)
Poultry	5.0 ppm	3.0 ppm (fat basis)
Eggs	0.5 ppm	0.3 ppm

Stream Classification Copies Available

For copies of the report, Stream Classification 1977: Proceedings of a workshop held at Pingree Park, Colorado, 10-13 October 1977, write to the address given below and ask for FWS/OBS-78/23.

Technical Information Officer
Western Energy and Land Use Team
Office of Biological Services
U.S. Department of Interior
Drake Creekside Building
2625 Redwing Road
Fort Collins, Colorado 80526

Any Recent Publications??

An attempt will be made in future newsletters to keep NYCAFS members abreast of work being performed by fellow members. Therefore, we encourage those of you who have recent publications or technical reports, to send us a full citation of your paper(s), so that they may be incorporated into future newsletters.

Where is He??

We are lacking the whereabouts of a fellow member of the NYCAFS. The individual is David McDonough, we would appreciate any information you may have concerning this individual.

Change of Address??

Please, inform us if your address has changed, since the last time you registered in the NYCAFS.

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About the Newsletter

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We will try to publish two more newsletters prior to the 1980 NYCAFS Annual Meeting, assuming we have an adequate amount of news to report. Any inquiries or information you may have of potential interest to fellow members would be appreciated and may be directed to Scott Quinn at the address given below:

New York State Department of Environmental Conservation
Bureau of Water Research - Room 519
50 Wolf Road
Albany, New York 12233

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

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Newsletter

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Several bits of information are included in this newsletter. Therefore, in order that you do not miss something of possible importance to you, a list of topics covered in this newsletter has been provided, as follows:

A.F.S.

N.Y.S. Chapter News

1980 Annual Meeting

- Preview
- Agenda
- Workshop Schedule
- "Call for Papers"
  - Abstract information and format
  - Best student paper award
  - Rating schedule for judging best student paper

Northeast Division News

1980 Annual Meeting

- Preview
- "Call for Papers"

Parent Society News

- Notes on the A.F.S. Annual Meeting

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

ANNUAL MEETING PREVIEW

This year's annual meeting is rapidly approaching and the stimulating and challenging program promised in our summer Newsletter is coming to fruition. Please mark February 1 and 2 on your calendar now and plan to attend. The following preliminary schedule provides you some idea of the content of this year's metting. Please note that we will begin at 9:00 AM on February 1 so that those of you who must travel long distances may wish to register Thursday evening, January 31. A call for papers accompanies this announcement. The five-member panel on the topic "Should a Marine Angling License be Required?" has been completed and promises to be a very enthusiastic and informative session. The panel will be moderated by Dr. Bruce Wilkins, Leader of the New York Sea Grant Extension Program, and will consist of the following individual panelists: Mr. Richard Stroud, Sport Fishing Institute and President-Elect of the American Fisheries Society, Mr. Al Ristori, freelance writer and member of the Mid-Atlantic Fishery Management Council, Mr. Tony Taormina, Director, Division of Marine Resources, New York State DEC, Mr. Scott Simons, Managing Editor of the Long Island Fishermen, and Mr. Lou Rodia, Editor of Angling News. These people represent a wide variety of interests and opinions on the subject they will discuss. Several of these people have addressed topics of a similar nature in national symposia. We are indeed fortunate to have such an esteemed panel participating in our annual meeting. You are encouraged to communicate the existence of this panel discussion to other professionals in the field who may be interested.

Friday evening's program should also be very interesting to the Chapter membership. Dr. W. E. Ripley, Fisheries Advisor to the United Nations Development Program, New York City, will present a review of the operational and financial structure of satellite organizations in the United Nations who have fisheries programs under their jurisdiction. He will then review specific kinds of opportunities for both short and long-term employment in a variety of countries overseas with widely differing fisheries management problems. In conjunction with this presentation Dr. Ray Oglesby, Professor of Aquatic Science at Cornell University, will give a presentation describing his recent experience as a fisheries consultant for the Food and Agriculture Organization (FAO) of the United Nations in Sri Lanka. Dr. Oglesby spent approximately 2-1/2 months working in Sri Lanka during the summer of 1979. These two gentlemen should provide a very enlightening and educational discussion for everyone and particularly for any individuals who may consider a United Nations fisheries appointment at some time in their career.

Your program committee is very enthused about these highlight sessions of our meeting but recognize that the key element in a successful annual Chapter meeting is <u>good attendance</u> and <u>participation</u> by its membership. Your contribution of technical papers and interest in both the panel discussion and evening program are essential.

A complete program with abstracts of contributed technical papers, registration forms for room and board at Bergamo/East, as well as other pertinent information will be mailed to the membership in early January.

See you all at Bergamo February 1 and 2, 1980.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

PRELIMINARY AGENDA FOR 1980 ANNUAL MEETING

Thursday - January 31	1800-2100	Registration
Friday - February 1	0800-0930	Registration
	0930-1200	Technical Papers
	1200-1300	Lunch
	1300-1530	Panel Discussion "Should a Marine Angling License be Required?"
	1530-1730	Business Meeting
	1730-1830	Social Hour
	1830-1930	Dinner
	1945-2100	Evening Program "International Fisheries Opportunities with the United Nations"
Saturday - February 2	0800-0900	Breakfast
	0900-1200	Technical Papers
	1200-	Presentation of award for best student paper
		Adjournment

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

CHAPTER WORKSHOP LOOKS LIKE A WINNER!

The workshop committee reports steady progress and it appears our first effort will be a real good one. All the groundwork has been developed, site chosen, date set, agenda finalized and a highly respected group of speakers chosen. Workshop details are outlined below:

Title:
Practical Fisheries Management: More with less in the 1980s.

Goal:
To increase capability of fisheries biologists to formulate efficient fish management strategies under constraints of fiscal realities in the 1980s.

Objectives:
- To expose all attendees to new and emerging efficient fisheries assessment and interpretive methods for immediate and long-term application.
- To review selected fisheries management strategies and the effect of their implementation.
- To illustrate selected methods for evaluating management actions, compatible with social needs and fiscal resources.
- To provide all attendees the opportunity to apply elements of the workshop to management strategy formulation for an assigned fisheries problem.

Location:
Cazenovia College Convention Center
Cazenovia, New York

Dates:

Registration	-	12:00 Noon - 9:00 P.M. Mon., July 14, 1980
Program Speakers	-	8:00 A.M. - 5:00 P.M. Tues., July 15, 1980
Workshop Sessions	-	8:00 A.M. - 12:00 Noon Wed., July 16, 1980

Cost:
Not finalized because potential outside funding may be obtained which will substantially reduce attendees costs. However, Cazenovia College was chosen because of the reasonable rate schedule. Therefore, even without sponsorship, total costs will be no more than $85 per person for the entire workshop. With sponsorship, costs may be as low as $50 per attendee including two nights lodging, two breakfasts, two lunches, one buffet dinner, beer and snacks, coffee breaks and registration.

Attendance:
We will limit attendance to the first 150 reservations. All attendees will pre-register with advance payment. Northeast AFS Division members will be solicited via the Division newsletter and Fisheries will also list the workshop. First registration forms will be mailed after January 1, 1980.

Workshop format:

- Invited speakers will cover agenda topics in full day session (July 15).

- Lab sessions will follow in the A.M. of July 16.

- There will be six 1-1/2 hour lab sessions with 25 participants each. A workshop committee member will observe each Lab, but the group will elect its leader from among attendees.

A fictitious fishery management problem will be prepared, complete with objectives, data and costs, by the workshop committee. Each Lab session will prepare management and evaluation strategies based on techniques presented the prior day.

Following the Lab sessions, all participants rejoin and invited speakers will form a panel. They will then be presented the same problem to solve in front of the full audience. Lab session leaders can, if they choose, debate the panel's rationale compared to his group's. The individual learning experience should be maximized by each person relating his chosen rationale to that debated on the floor.

Publication of Proceedings:

Each speaker will be asked to prepare a maximum 1000-word summary of their subject material along with a bibliography of pertinent material.

Financial assistance will be solicited from several sources to pay for publication. The summaries and bibliography will be a valuable fish management handbook.

Speakers:

No effort was spared to obtain top speakers on various workshop topics. Not all selected speakers have been contacted, but those that were and accepted the invitation are listed on the agenda below. The full slate will be filled by November 1979.

Agenda July 15, 1980

Time	Subject	Speaker
8:00-8:10 A.M.	Introduction	Bruce Shupp, DEC, Albany
8:10-8:30 A.M.	Keynote Address	Herb Doig, DEC, Asst. Comm. Natural Resources
	I. Baseline data for formulating management strategy	
	A. Lake and Stream Surveys	
8:30-9:15	1. Lake Surveys	John Forney, Cornell Univ.
9:15-9:45	2. Stream Surveys	Edwin Cooper, Penn State Univ.
9:45-10:00	-------- Coffee Break --------	
10:00-10:30	B. Evaluating Angler Use and Harvest	Not contacted
10:30-11:00	C. Predicting Potential Yield	
	1. Morpho-chemical and morpho-edaphic indices of lake and stream productivity	Not contacted
	2. Predicting reservoir standing crop and harvest from analysis	Not contacted

of some environmental factors

11:30-12:00 Noon	D. Evaluating angler demands and preferences	Not contacted
12:00-1:00 P.M.	---------- Lunch ----------	
	II. Interpretation of data for formulating management strategy	
1:00-1:30	A. Standard Techniques 1. Population Dynamics 2. Comparison/Contrast	Not contacted
1:30-2:30	B. Proportional Stock Density (PSD): An alternative interpretive technique	Richard O. Anderson Mo. Coop. Fish Unit
	III. Management Options and their evaluation	
2:30-3:00	A. Stocking 1. Salmonids	Not contacted
3:00-3:15	--------- Coffee Break ----------	
3:15-3:30	2. Warmwater/Coldwater a. Predator-prey ratios as a guide to stocking	Not contacted
3:30-3:45	b. A new approach to predatory potential for stocking success	Al Schiavone DEC, Watertown
3:45-4:30 4:30-4:50	B. Regulations: Role and Evaluation 1. Size Limits 2. Trophy Angling	Richard O. Anderson Edwin Cooper
4:50-5:20	C. Habitat Manipulation	Steve Gloss Cornell Coop. Fish Unit
5:20-5:30	IV. Wrap-up and Summary	Carl Sullivan Exec. Director, AFS
5:30-6:30	Social Hour - Beer provided	
6:30	Steamship Round Buffet	

Agenda July 16, 1980

8:00-9:45	Six Individual Workshops	
9:45-10:00	--------- Coffee Break ---------	
10:00-11:45	Panel Session	
11:45-12:00	Summary and Evaluation	William Pearce DEC, Cape Vincent
12:00	--------- Lunch ---------	

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

CALL FOR PAPERS

The annual meeting of the New York Chapter of the American Fisheries Society will be held February 1-2, 1980 at Bergamo/East, Chaminade Road, Marcy, New York. You are encouraged to submit an abstract and title of a technical paper to be considered by the program committee for presentation at the annual meeting. This meeting offers a fine opportunity to present results of research and management investigations in a constructive and professional atmosphere. Please note that a best student paper award will be presented by the Chapter at the annual meeting this year. Material attached to this notice provides detailed information about the award. Presentation of papers cannot exceed 15 minutes. This time limitation will be strictly enforced at the meeting.

INSTRUCTIONS TO AUTHORS

Authors are requested to submit a detailed and informative abstract of their contribution on the enclosed form (less than 250 words):

1) A form is attached for submission of titles and abstracts for contributed papers. This should be typed within the allotted space which has been designed for direct printing and returned no later than December 15, 1979. If more than one paper is submitted use additional forms.

2) In addition please submit a 1 or 2 page summary of your paper for use by the program committee in screening the papers to be presented at the meeting; only the short abstract will be printed.*

3) Please follow the instructions on the attached announcement for submitting papers to be considered for the best student paper award, as well as forwarding the above information to the chairman of the program committee.

4) Send your completed title, abstract and summary on the enclosed form to:

Dr. Steven P. Gloss, Program Chairman
NYAFS, NY Cooperative Fishery Research Unit
Department of Natural Resources
Fernow Hall, Cornell University
Ithaca, New York 14853

☐ Please check here if paper is to be considered for best student paper award. Be sure that you have also completed the application form for this award and forwarded it to Mr. Robert Foley.

Program Committee:

Bill Eustance
Bob Foley
Bruce Shupp
Steve Gloss

*Authors will be notified of acceptance of papers by January 4, 1980.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

abstract

Author

Title

Abstract

ANNOUNCEMENT OF BEST STUDENT PAPER AWARD

The New York State Chapter of the American Fisheries Society will present an award for the most outstanding paper delivered by a student at the 1980 meeting. The winner shall receive in addition to a $50.00 cash award an appropriate certificate commemorating his award.

Each paper will be judged on: (a) presentation, including strict adherence to time schedule and the stimulation and handling of questions; (b) quality and significance of research and interpretation of data; (c) quality, effectiveness, appropriateness and utilization of illustrative materials. (A sample rating schedule is enclosed).

The recipient must be the equivalent of a full-time student who is devoting his or her major efforts to a formal program of studies or have defended his or her thesis or dissertation within the 12 months preceding the annual meeting at which the paper is delivered. The paper must be based on investigations performed while the author was a student. A paper will not be considered as a student paper if it has a joint author, unless the joint author is another student. The student's major professor or department chairperson must certify that these criteria have been met.

If you wish to be considered for this award at the 1980 meeting of the N.Y.S. Chapter of the A.F.S., please complete the required information and send to: Bob Foley, Hale Creek Field Station, 7235 Steele Ave. Ext., Gloversville, N. Y. 12078, by the Call for Papers deadline.

- -

Please type or print:

Name ____ Date ______________

Title of paper: ____

Mailing address: ____

____

I am/was a full-time student in the following department:

____

____

____

At the time of the presentation of the paper, I will be a full-time student or will have defended a thesis or dissertation within the past 12 months. I will be the first author and will present the paper. I have read the accompanying description of the Best Student Award criteria.

Signed: ______________________________

I certify that the person above meets the criteria for the Best Student Paper Award as described above.

Date ______________ Signed: ______________________________
(Major Professor or Department Chairperson)

Title ____

Address ____

____

ST STUDENT PAPER

FISHERIES SOCIETY, 1980

_____

_____

1. Presentation _____
2. Organization _____
3. Visual Aids _____
4. Originality _____
5. Scope _____

TOTAL POINTS _____

RATING CATEGORIES

1. **Presentation:**

Continuity	Time	Speaking Effectiveness	Stimulation/Handling of Questions	Grammar
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3

2. **Organization:**

Arrangement of Main Points	Experimental Design	Summary of Findings
1 2 3	1 2 3	1 2 3

3. **Visual Aids:**

Visibility	Complete	Design	Impact	Understandable
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3

4. **Originality:**

New Idea or Concept	New Application	Unique Approach to Problem
1 2 3	1 2 3	1 2 3

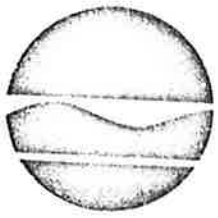
5. **Objectives of Study:**

Appropriateness of Design	Fulfilled by Study	Value
1 2 3	1 2 3	1 2 3

Rank each paper presented and give points as they apply. A total of 60 points would be a perfect paper presented in a superior manner.

Judge: _____ Date: _____

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233



Robert F. Flacke
Commissioner

NORTHEAST DIVISION - AMERICAN FISHERIES SOCIETY

1980 Meeting

*** FIRST CALL FOR PAPERS ***

The 1980 meeting of the Northeast Division of the American Fisheries Society will be held at the Nevele Country Club, Ellenville, New York, from April 27 - 30, 1980. Our meeting will be part of the Northeast Fish and Wildlife Conference having the general theme "A Look Ahead to the 1980's".

Tentative plans for the fisheries program include four technical sessions in the fields of marine, freshwater and anadromous fisheries and fish culture. If there is enough interest in a specific region-wide issue, we will consider organizing a "state-of-the-art" or "pros-cons" forum to enhance the program. Your 1980 Program Committee won't leave any stone unturned in their efforts to develop a truly excellent and informative fisheries program.

But success depends upon your involvement. We need your abstracts for technical papers and your ideas on issues . . . . as soon as possible. Plan to get your work into shape for the Conference so that we can all look at it and benefit from its discussion.

Contributions should be sent to the Program Committee Chairman no later than December 15. Each contribution should contain the following information:

1. Title of your paper.
2. Name, affiliation, mailing address and telephone number of author(s).
3. An abstract of about 150 words -- typewritten and double spaced.
4. A letter or outline that gives the Program Committee sufficient detail to properly evaluate the paper.
5. Time required for presentation. Generally a total of 30 minutes is provided for each paper. This includes 20 minutes for presentation and 10 minutes for questions.
6. A list of projection equipment needs. A successful presentation depends upon people being able to read your tables and figures from a distance of 60 feet.

Get your material to me before you take off for that Thanksgiving vacation.

Set your sights for the 1980 Conference. The facilities will be great, costs will be reasonable, the company will be enjoyable and the program will be excellent.

Sincerely,

Paul Neth

Paul C. Neth, Program Committee Chairman
Northeast Division American Fisheries Society
N.Y. Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

1980 Program Committee

Anthony Bonavist, N.Y.DEC
Steven Gloss, Cornell U.
Robert Griffiths, N.Y.DEC
Edward Horn, N.Y.DEC
William Pearce, N.Y.DEC
John Poole, N.Y.DEC (Marine)
Paul Neth, N.Y.DEC, Chairman

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

Notes on the A.F.S. Annual Meeting at

West Yellowstone, Montana

September 12 - 15, 1979

West Yellowstone is a long way from New York. However, several New York Chapter members made their way to the beautiful "Big Sky" country. Bill Pearce gave an excellent presentation on New York's problems in developing our fine salmonid fishery in Lake Erie. Al Schiavone gave a fine presentation on what the black crappie has done to the walleye and yellow perch in Moon Lake. Debbie Wallace, while she gave no paper, was active in committee work. David Phillips and Maurice Alexander from SUNY, Syracuse presented a paper on the ecological effect of Bunker C oil on fish in St. Lawrence River marshes. Dr. Phyllis Cahn, a Chapter member from C.W. Post College on Long Island who is on sabbatical to Washington with the N.S.F., also attended the meetings. Herb Doig gave the state position in a debate panel on "State-Provincial Management Rights and Responsibilities vs. Federal Rights and Responsibilities" at the International Association of Fish and Wildlife Agencies meeting on Tuesday the 11th. I hope that I did not miss acknowledging any other New Yorkers, whether Chapter members or not, who were at the meetings.

Members of the A.F.S. nearly outnumbered townspeople. They were 687 A.F.S. members at West Yellowstone which has a population of about 800! This was the largest attendance at the A.F.S. Annual Meeting since the Centennial Meeting in New York City in 1970.

Congratulations are in order to the Cornell Chapter that was approved by the A.F.S. at the meeting. For those of you who are interested, a new Marine Fishery Section has been approved by the A.F.S., contingent upon completion of the requirements in the A.F.S. Constitution and By-Laws. For more information on this new section, you should contact Bradford Brown at National Marine Fisheries Service, Woods Hole, MA 02543.

National A.F.S. dues will increase to $27 next year as a result of a 1,235 to 786 vote in favor by mail ballot. Karl Lagler and Reeve Bailey were elected Honorary Life Members of the Society. Ken Carlander was honored with the Society's Award of Excellence. Dick Stroud of the Sport Fishing Institute assumed the Presidency of the Society taking over this role from Henry Regier. Dick Ryder is President-Elect. Dave Wallace is First Vice President. John Magnuson is Second Vice President. The New York Chapter wishes the new parent Society officers well in their tasks.

Other business came up during the Society's Executive Committee meetings that will be discussed at the next executive committee meeting of the Chapter.

Phil Briggs, President
New York Chapter
American Fisheries Society

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

May 1979

Dear Chapter Member:

This message is directed to all 1978 members and paid 1979 members.

The Chapter needs your support and continued involvement so that we can maintain an active Chapter. For those of you who have not paid your 1979 Chapter dues, your prompt attention is requested in completion and return of the membership dues sheet with your dues. For those of you who have paid, if you are aware of prospective members, please pass the membership and dues sheet to them and encourage their participation in the Chapter.

Enclosed is a copy of the President's letter to the membership, the proposed Chapter workshops, the Chapter position statement procedure and the 1978 membership directory as compiled in December 1978.

A newsletter is being formulated at this time. Any news or other items of interest to the membership is requested. Please forward your news to:

Scott Quinn
N.Y.S. Department of
Environmental Conservation
Bureau of Water Research, Room 519
50 Wolf Road
Albany, NY 12233

OR

Lawrence Skinner
Box 81, Route 43
West Sand Lake, NY 12196

for inclusion in the newsletter. The deadline is June 15 if we are to have news mailed by about June 30.

Sincerely,

Lawrence C. Skinner

Lawrence C. Skinner
Secretary-Treasurer

Enclosure

NEW YORK CHAPTER HIGHLIGHTS

Concurrent technical sessions of the New York chapter were highlighted by a preview presentation of an excellent film "A Trout Stream in Winter" presented by Dr. Robert Butler of the Pennsylvania State University Cooperative Fishery Research Unit. A total of 27 papers were presented by chapter members ranging in diversity from population studies, feeding ecology, marine and estuarine studies, lake restoration and fish contaminants. The meetings were attended by 180 persons.

The New York Chapter has embarked on three new ventures as a result of chapter meetings held February 2-3, 1979 in Marcy, New York.

First, a unique opportunity to have direct input to the State Legislative Committee on Environmental Conservation has been offered. Legislative members desire professional fisheries opinion on fisheries related bills subject to committee action prior to their consideration by the full state Legislature. The chapter will select representatives in various fields of the fisheries profession who will provide expert opinion as the need indicates.

Secondly, the chapter will sponsor a workshop prior to the 1980 annual meeting on decision making in fisheries management. The program will be designed to aid fisheries personnel to select proper alternatives for getting the most information to fill research and management needs when funding is restricted, i.e. "Get the most bang for the buck". The program format is nearly complete; to receive up-to-date information, contact Bruce Shupp, N.Y.S. Department of Environmental Conservation, Room 518, 50 Wolf Road, Albany, New York 12233.

Lastly, the national Fisheries Scientist certification program is not as effective as the chapter desires; the chapter has assumed the responsibility of designing and implementing an experimental certification program. The program would provide more flexibility thru creation of several levels of certification and would encourage employers to give preference to certified fisheries scientists. The thought is to provide stepped-up recognition of the qualifications of individuals in various fisheries fields and delineate employer needs to aid selection of qualified fisheries personnel (via the certification program) to meet the employers needs. The ultimate goal is to require professionally licensed persons to oversee, conduct and report on fisheries management and research activities.

New officers(with address)for the chapter are:

President - Philip T. Briggs
N.Y.S. Department of Environmental Conservation
SUNY, Building 40
Stony Brook, New York 11790

Vice President - John S. Grim
Box 162
Rhinebeck, New York 12572

Secretary-Treasurer - Lawrence C. Skinner
Box 81, Route 43
West Sand Lake, New York 12196

The chapter continues to grow by "leaps and bounds".

Chapter membership for several successive years is as follows:

1975-76	84	
1976-77	97	
1977-78	109	
1978-79	285	
1979-80	202	(As of February 28, 1979)

MINUTES OF THE ANNUAL MEETING, FEBRUARY 3, 1979

A quorum of 109 of 190 paid 1979 members being present, President Bruce Shupp called the meeting to order at 10:55 AM in the Chapel at Bergamo/East, Marcy, New York.

Minutes of the annual meeting of February 4, 1978, executive committee meetings, the secretaries and treasurer's reports were distributed prior to the meeting by Secretary-Treasurer Joe Gorsuch. No additions or corrections being noted, they were approved as submitted. Particular notice was made of the improvement in service and quality of the Secretary-Treasurer's activities. The Auditing Committee of Steve Simkins and Martin Pfeiffer finds the treasurer's records in good order and accurate.

The chapter heartily commends Dave Green and the Program Committee on the concurrent sessions of scientific papers presented in the past day. The topics presented proved to be of wide interest and stimulated much discussion. Chapter Membership in 1978-79 of 284 members more than doubled 1977-78 total 109 members largely thru the Membership Committee's efforts directed by chairman Phil Briggs.

Certification of fisheries scientists as a national AFS program has not been very effective. One of the program goals was to promote development of well qualified expertise within the field of fishery science. It was hoped this would lead to a professional licensing program similar to those programs necessary for licensing of engineers, doctors, lawyers, etc., in which licensing is required prior to practicing in the profession. Such a program would involve an intensive examination program, a code of ethics, reporting with a licensed professionals signature affixed and requirements by employers for licensed or certified professionals. The Professional Standards Committee chaired by John Nickum recommended the following:

1. An experimental certification program within the chapter be established and to be of an approximate 5 years duration. A committee should be established to develop entry requirements and a voluntary testing program.

2. A second committe or professional board of certification be established to develop advanced certification levels above the entry level and provide the mechanism for testing the individuals applying for such certification.

3. The Professional Standards Committee shall act as overseer to the above committees or boards.

4. Encourage government, colleges and other employers to require and/or select certified professional fishery scientists.

Publicity about the chapter has generated favorable attention from the Parent Society and NE Division for which the Publicity Committee and its chairman Jack Hasse are commended.

Two newsletters about chapter member activities were generated during the year. Joe Gorsuch suggested the separation of newsletter activities from the Secretary-Treasurer responsibilities due to the pressure of work developed by an expanded chapter membership. President Shupp recommended the incoming president separate these duties and form an ad-hoc committee to serve the newsletter function but with distribution thru the Secretaries office.

For election of officers the following candidates were nominated by the Nominations Committee (John Forney, chairman) and from the floor by Doug Sheppard.

President:	Phil Briggs
Vice President:	Bill Eustance
	John Grim
	Joe Gorsuch

The office of Secretary-Treasurer is a two-year position with election of the Secretary-Treasurer elect in the year prior to installation in office. This is to promote more orderly transfer of records and accounts with banks and the postal service.

OLD AND NEW BUSINESS

New Initiatives for the chapter include consideration of workshops and providing expert opinion to legislative committee members on fisheries related bills. New Initiatives committee members Terry Culp, Art Newell and John Nickum had outlined two workshop concepts (see attachment) dealing with decision making (Workshop Y) and sampling procedures (Workshop X) in chapter discussions on February 2, 1979. During the February 3 meeting there was overwhelming interest expressed in these ideas, however, the interest expressed presents a problem with controlling attendance and functioning of the workshops. Bill Pearce moved that the workshop on decision making in fisheries management be held in conjunction with the 1980 annual meeting of the chapter. The motion was amended (Bill Eustance) by adding that the NY Chapter shall advance "seed" money in support of the workshop, however, the money shall be recovered by fees upon attendees. The motion as amended was adopted by majority vote.

The second initiative, i.e. providing expert opinion to legislative committee members suggested proved to be very controversial. Considerable discussion revolved around several points, e.g. (1) confusion as to the needs and desires of legislative members and their aides for information, (2) whether the members providing information would represent the voice of the chapter or provide only their professional views, and (3) whether the chapter may be considered to be lobbying thus subject to loss of tax exempt status. Jim Colquhoun moved that

consideration of the subject be tabled until the annual meeting in 1980. An amendment (Ed Kuzia) to have the New Initiatives Committee continue investigation of the proposal and report to the chapter in 1980 was advanced and seconded. Motion to call the question (limit debate) was defeated. Further discussion pointed out that if the chapter does not act at this meeting, one year of possible input would be lost and possibly the entire proposal may be lost since legislative members may note lack of responsiveness by the chapter. Subsequent vote on the main motion as amended after discussion defeated both the motion and amendment. Leigh Blake moved that the President be empowered to direct response to the legislative committee staff when technical expertise is required on fisheries related bills. Amendment by Bill Ewell stating that the five past chapter presidents oversee the actions of the President was seconded. Majority vote approved both the amendment and main motion. President Shupp suggested that the incoming President should also consult with his Executive Committee on any appointments and in developing a list of people with appropriate expertise to respond to the Legislature. Further, the New Initiatives Committee was directed to continue investigating the needs of legislative staff and report to the Executive Committee at their earliest convenience.

A method for developing and handling position statements by the chapter when needed between chapter meetings was outlined by Ed Kuzia on February 2, 1979 and distributed in written form at this chapter meeting (copy attached). Bob Myer moved acceptance of the methodology but with the following amendment: "If time permits for membership review, the statement shall appear in the chapter Newsletter for comment." (to be inserted as an added sentence to (2)(f)).

A resolution on water quality standards (distributed on February 2, 1979) was introduced by Resolutions Committee chairman 'Ned' Holmes. Considerable discussion was generated concerning the professional stance to be adopted by the chapter, i.e. should we adopt a purist stance towards protection of fisheries or should a note of compromise be adopted as expressed in the draft document (attached). C. Lavett Smith moved adoption of the draft statement. Amendment by Jim Colquhoun to delete the paragraph on page 3 beginning "Although..." and ending on page 4 with "...ecosystem." was seconded. The motion as amended was adopted by majority vote.

Current chapter by-laws do not conform with chapter practice nor totally conform with parent society by-laws. It was moved that the chapter adopt the parent society by-laws (seconded). J. Gorsuch pointed out that should chapter by-laws totally conform with parent society by-laws, it would require all chapter members being members of the parent society. Amendment (C.L.Smith) moved to appoint a committee to investigate the by-laws relative to compliance with the parent society and current practices was seconded. Majority vote passed the amendment and original motion as amended.

Professional Standards Committee chairman John Nickum introduced the following motion which was seconded and passed unanimously.

Move that the N.Y. Chapter American Fisheries Society initiate an experimental certification program providing three levels of voluntary certification for professional fisheries workers. This program shall be initiated by the President through the appointment of an ad-hoc Testing and Certification committee charged with responsibility for developing appropriate test and standards for entry level, mid-level and senior-level fishery scientists. The Testing and Certification Committee shall report to the Executive Committee and shall include representation from the Professional Standards Committee, 2-year college faculty, 4-year and graducate college faculty, private and corporate agencies and public fishery management agencies. The Professional Standards Committee shall contact regulatory agencies, public and private employers of fishery professionals and educational institutions offering fishery training to determine the extent to which they will participate in such a program. A specific program shall be presented to the 1980 meeting for action by the chapter.

Results of the election of officers are as follows:

President: Phil Briggs
Vice President: John Grim

Installation of officers including the Secretary-Treasurer elect was accomplished. President Briggs presented "Past-President Certificates" to Bruce Shupp, Robert Werner and C. Lavett Smith.

Meeting was adjourned at 1:20 PM.

Respectfully submitted,

Lawrence C. Skinner

Lawrence C. Skinner
Secretary-Treasurer

NEW YORK STATE CHAPTER OF THE AMERICAN FISHERIES SOCIETY
TESTIMONY TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION HEARINGS ON PROPOSED CLASSIFICATIONS AND STANDARDS OF WATER QUALITY AND PURITY

The American Fisheries Society (AFS) was organized in 1870. The Society has at present approximately 8000 members. Its objectives are conservation, development and wise use of recreational and commercial fisheries, promotion of fisheries science and research, and dissemination of knowledge about fish, fisheries and related subjects. The 283 members of the New York State Chapter of the AFS (NYSAFS) represent a diverse mixture of fisheries management, propagation and research biologists, limnologists, aquatic ecologists, marine scientists and students affiliated with academic institutions, government agencies, industry or aquatic consulting firms. Concern for the quality of New York waters is implicit throughout the Chapter membership; therefore, the NYSAFS finds it necessary to comment on the Proposed Classification and Stndards of Quality and Purity for New York Waters.

Quality of our waters reflects the quality of our environment, and ultimately the quality of human life. Toxic substances in New York waters and their aquatic food chains have been identified as direct threats to health. However, the Chapter is not qualified to address health related issues and will confine its comments to the impact of toxicants on the fish and the fishery.

A fishery is the complex of interactions within and between populations of fish being harvested, the populations of fishermen and the environments of each. A population of fish is not considered a fishery until harvested for some type of human use; i.e. recreation or food. Pursuit of fish for these uses constitutes a significant industry in New York, resulting in both enjoyable use of leisure time and revenue to the State's economy. Although fish may be affected directly by toxicants, lower trophic organisms (their food) may be even more sensitive to these toxicants. Therefore, it is necessary to establish standards and criteria which not only protect the fish but additionally their food organisms.

National Oceanographic and Atmospheric Administration (1977) estimated the value of New York saltwater commercial finfish landings (paid to fishermen) at $30.6 million in 1977. The National Marine Fisheries Service (1978) estimated 2.5 million saltwater anglers fished New York waters in 1973-74. The U. S. Fish and Wildlife Service (USFWS 1977) estimated U. S. saltwater anglers fished an average of 12.7 days each and made expenditures averaging $16.65/day in 1975. Multiplying these average days and expenditures by New York's 2.5 million saltwater anglers and expanding for inflation at 8 percent per year 1975-1978, results in estimated total annual expenditures for saltwater recreational angling in New York of $600.7 million.

In addition, there are approximately 800,000 licensed freshwater anglers in New York (Department of Environmental Conservation unpublished data 1978). The USFWS (1970) estimated there are 0.63 unlicensed anglers to every licensed angler; therefore, approximately 1.3 million anglers fish New York freshwater annually. Brown (1976a) estimated each freshwater angler fished an average of 17.8 days annually in 1973. USFWS (1977) estimated the average daily expenditure of warmwater and coldwater anglers at $9.76 in 1975. Expanding by 8 percent inflation over the period 1975-1978 and multiplying by the number of mandays expended by anglers on New York freshwater results in an estimated annual expenditure of $284.6 million.

Combined saltwater commercial fishing and saltwater and freshwater recreational angler expenditures amount to $915.9 million annually. Therefore, first generation expenditures on New York fisheries alone represent almost a one billion dollar industry—a vital segment of the New York economy.

Effects of toxic substances and changes in ambient physical parameters on growth, survival and reproductive capability of fish and other aquatic fauna have been well documented in literature. The impact of DDT on reproductive success of lake trout in Lake George, New York is an excellent example of the effect of a contaminant on perpetuation of a desirable species (Burdick et al, 1964).

Accumulation of toxic substances in fish flesh and ensuing regulations or warnings promulgated to safeguard human health have also had profound

impact on fisheries. Brown (1976b) estimated that the possession ban on certain species and sizes of salmonids in Lake Ontario and its tributaries caused a 70 percent drop in angling use in the Salmon River, one of New York's most popular trout and salmon fishing tributaries. Closure of the Upper Hudson River from Fort Edward to Troy in 1975 because of PCB contamination restricts enhancement of the fishery in that section of the Hudson in the near future. In the lower Hudson, commercial fisheries for American eel, striped bass and several other species have been closed due to PCB contamination. Mercury contamination of Onondaga Lake, Syracuse, New York resulted in prohibition of angling in a once intensely used fishery in a major urban area. Following a 1977 ban on consumption of fish in a 100-mile section of the South Fork of the Shenandoah River, Virginia due to mercury contamination, angling use declined 72 percent from 1975 levels (Martin, 1978). A ban on fishing was also imposed on Lake St. Clair, Michigan in 1970 because of mercury contamination. It was estimated that the closure resulted in $3.3 million loss in gross business revenue to Michigan (Martin, 1978).

The need to protect the fishery, therefore, is not only based on preservation of healthy aquatic ecosystems which reflect the quality of life but also on the importance of the fishery to the economy of New York State as has been previously outlined. It is with these factors in mind that the Chapter supports those standards and criteria based on scientifically supported data which identify a need for further regulation in order to protect a fishery. PCB, Mirex and Mercury have had demonstrated adverse effects on fisheries of New York State and their discharge should be more strictly controlled. The other proposed standards and criteria have to be judged on their scientific merit. For these other standards and criteria a review panel of experts in Aquatic Toxicology and Environmental Chemistry from academia, industry and government is recommended to determine what standards and criteria are adequate and can be successfully implemented.

Additionally, the Chapter recommends that the Congress of the United States and the Legislature of New York State appropriate adequate funding for both field and laboratory aquatic toxicity tests, as well as developing economical treatment technology. The results of appropriate studies could then be used to set standards and criteria where adequate data and/or adequate treatment technology does not presently exist.

LITERATURE CITED

Brown, T. L. 1967a. The 1973 Statewide Angler Study. DEC Spec. Report, NYS Bureau of Fisheries, 50 Wolf Road, Albany, New York 12233. 117 p. mimeo.

Brown, T. L. 1976b. After the Ban. Coastlines Vol. 7(6), November-December, 1976. NYS Sea Grant Institute, Cornell University, Ithaca, New York.

Burdick, G. E., E. J. Harris, H. J. Dean, T. M. Walker, J. Skea and D. Colby 1964. The accumulation of DDT in lake trout and the effect on reproduction. Trans. Amer. Fish. Soc. 93. 127-136.

Martin, Robert G. 1978. Impacts of Aquatic Contaminants on Angling. SFI Bulletin 293. Page 1-3. Washington, D.C. 20005. April, 1978.

NOAA 1977. Fred Blossom, Patchogue, Long Island, New York. personal communication.

NMFS 1978. Current Statistics. No. 7500. NOAA, Washington, D.C.

USFWS 1972. 1970. National Survey of Hunting and Fishing. USDI, FSFW, Washington, D.C.

USFWS 1977. 1975 National Survey of Hunting, Fishing and Wildlife—Associated Recreation. USFWS. Washington, D.C.

NYC-AFS POSITION STATEMENT PROCEDURE

1) The Chapter President, through approval by the Executive Committee, or the Environmental Concerns Committee through the Executive Committee, are permitted according to AFS By-Laws, to prepare position statements or letters of concern on environmental or fishery concerns.
2) Suggested Procedure:
   (a) Member notifies Environmental Concerns Committee Chairman (E.C.C.) of problem area.
   (b) E.C.C. investigates the problem, discusses with his committee and decides if Chapter should respond and if normal resolution procedure will not suffice.
   (c) E.C.C. contacts Chapter President to discuss and justify his position.
   (d) President contacts Executive Committee to get approval to proceed (majority rule).
   (e) E.C.C. organizes sub-committee to research problem and prepare position statement.
   (f) Written statement is reviewed by Environmental Concerns Committee, edited and submitted to President for Executive Committee approval. If time permits for membership review, the statement shall appear in The Chapter Newsletter for comment.
   (h) If testimony at hearing is required, this can be accomplished by the President, E.C.C. or member with most expertise on subject making presentation of the Chapter's official, written response and handling the cross-examination. (Chapter President will decide on best choice for personal testimony).

Adopted 3 February 1979

PROPOSED WORKSHOPS
New York Chapter, American Fisheries Society

The ad hoc committee proposes that two workshops, designed to meet member needs, be held over the next 12-18 months. One workshop would be geared to meeting needs in the field decision making aspects of fishery management. The other would be geared to solving problems in sampling design and the analysis of samples obtained in particular sampling programs. The exact length, format, location, and dates for these workshops are not suggested at this time, although two-day sessions would probably be adequate if the formats described below are accepted. The chapter needs to decide whether or not to sponsor either or both workshops. If the workshops are to be sponsored, then suggestions for changes in topic and/or format would be in order. Finally, committees to develop and arrange the workshops must be appointed.

The outlines below are not final and/or complete, but are offered to provide a basis for decision-making and guidance.

Workshop X

Title: A decision matrix for fish management

A. Keynote speaker
B. Assessing management potential of lakes and streams (What does it produce-what could it produce - what should it produce)
    1. The biological survey (what to collect, how much and how to interpret)
    2. Indices of fish production
        Phosphorus loading, Ryder index and other measures of potential harvest
    3. Evaluating angling demand, species preferences, angler attitudes
C. Assessing current yield
    1. Indices of harvest - angler diary programs, post card surveys
    2. Creel census
D. How to evaluate management options
    1. To stock or not to stock
        (a) How many trout are enough? (This is relevant to Great Lakes, Finger Lakes, Champlain)
        (b) Predator-prey ratios as a guide to stocking warmwater reservoirs - will they work in other waters?
    2. Role of regulations
        (a) Yield-per-recruit as a guide to minimum size limits
        (b) Minimum size limits for optimum community structure
        (c) Trophy angling concept - when and where will it work
            1. A success study
            2. A failure - northern pike in Escanaba Lake
E. An example of the decision making process - contrived data or a case

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

MEMBERSHIP APPLICATION

Annual Dues: 1980, $2.00 _____
1981, regular, $5.00 _____
student, $2.00 _____

NAME: _____ DATE: _____

HOME ADDRESS*: _____ HOME PHONE: _____

_____ BUS. PHONE: _____

ZIP CODE: _____ AREA CODE: _____

EMPLOYER: (SCHOOL) _____

_____

_____

JOB TITLE: _____

SPECIALIZATION OR INTEREST _____

_____

MAKE PAYMENT TO: N. Y. CHAPTER AFS and send to:

Lawrence C. Skinner, Sec.-Treas.
c/o Box 81, Route 43
West Sand Lake, New York 12196

*NOTE: If your name appeared in the 1979 N.Y. Chapter Membership Directoryand there are no additions or corrections, indicate "Same as 1979" for all information appropriate following your name.

Please include fisheries related news of interest to Chapter members for inclusion in the Chapter's newsletter. Your efforts will help keep us all informed.

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

New York Cooperative Fishery Research Unit
Department of Natural Resources
Fernow Hall, Cornell University
Ithaca, New York 14853

19 February 1980

Mr. David Green
Division of Marine Resources
NYS Department of Environmental Conservation
SUNY Building 40
Stony Brook, New York 11794

Dear Mr. Green:

I am writing to express appreciation on behalf of the New York Chapter American Fisheries Society for your presentation at our recent annual meeting. Things have a way of getting hectic at such events and outside speakers may easily get the feeling of being shuttled in and out without a lot of attention. Please be assured that your valuable contribution to our successful meeting will be remembered well beyond the few minutes you were speaking.

Thanks again and please feel free to contact members of the New York Chapter if we may be of some assistance to you in the future.

Sincerely,

Steve

Steven P. Gloss
1980 Program Committee Chairman

SPG:ak

xc: John Grim
Philip Briggs
→Lawrence Skinner
A. S. Taormina

Similar letters sent to:

R. T. Oglesby
Hoyt Wheeland
Scott Simons
Al Ristori
Richard H. Stroud
Lou Rodia
Bruce Wilkins

1880 Kodak 1980

A 100-year start on tomorrow

February 16, 1980

Mr. Lawrence C. Skinner
NYS DEC
50 Wolf Road
Albany, NY 12233

Dear Larry:

As Chairman of the Membership Committee of the NY Chapter AFS, I will need a list of all current(1980) members. I will also need about twenty five sheets of the chapter's letterhead, as well as, several copies of the membership forms. Any form letters which I send will be photo-copies and not originals. You shall receive a file copy. It will also be necessary for me to know when a person contacted by a committee member pays their dues. Could you keep me posted on a regular basis (monthly) concerning those persons paying dues? I will have my committee members put their names on the bottom of dues forms so we will know the success of our efforts.

I am asking John Spagnoli to serve with me, as well as, Neil Ringler, Carl George, Howard Loeb, Allen Beebe, Bob Lange, Bob Boenig and Carol Hutchings. Dennis Dunning agreed to serve on the committee, but I need his current address. Would you please forward it to me?

I hope to hear from you soon.

materials sent
2-28-80
LCS

Sincerely,
J. W. Gorsuch

Joseph W. Gorsuch
Membership Chairman & Vice-Pres.
NY Chapter AFS

EASTMAN KODAK COMPANY · 1669 LAKE AVE. · ROCHESTER, NEW YORK 14650 · 716 458-1000
Biochemistry Section, HS/HF Lab B-306

February 5, 1980

TO: The NYAFS Chapter and President Grim

FROM: The 1979 Professional Standards Committee

RE: Final Report

Based on the recommendation of the 1978 committee and as directed by Chapter vote in 1979, the Professional Standards Committee began the task of developing a state-wide professional certification program for aquatic and fishery biologists in New York. For many reasons the development of certification criteria is difficult and requires considerable diplomatic skill. Members of our committee equally represented government, private and academic agencies which employ and/or train aquatic/fishery biologists. Together we reached a concensus concerning the scope and quality of knowledge and experience required to consider an individual a certified professional. We believe the levels and qualifications within levels that we created (attachment A) are broad enough to encompass the diversity of aquatic/fishery professionals in New York, yet specific enough to include only those individuals who have demonstrated substantial professional ability or the potential for significant professional contributions.

Concurrent with establishing certification criteria, the committee sought to establish the potential interest in professional certification among employers and universities throughout New York and the Northeast (attachment B). The results of consulting firm (attachment C) and university (attachment D) surveys indicate mixed, but positive interest in the proposed certification effort. Most respondents considered New York certification a good idea and thought the certification of recent college graduates especially desirable. Fewer respondents, especially those at academic institutions, thought certification was worthwhile for individuals already established in the field. While state agencies were not surveyed, the general perception expressed by NYSDEC personnel was that certification would enjoy little support within the agency for two reasons: 1) current civil service regulations preclude using NYAFS certification as a criterion for employment and 2) widespread uncertainty and apprehension concerning the potential effects of professional certification on agency personnel. The overall impression arising from discussions and compilation of survey results, but never stated directly, was that certification by the Chapter was a good idea, but only if criteria are carefully drawn and decisions regarding actual certification of individuals are uniform.

Unfortunately, in October the committee learned that the national AFS has instructed that no certification efforts be made at other than the national level. A national committee has been formed to revitalize the current national

Department of Biological Sciences 716-395-2193/2190
State University of New York College at Brockport Brockport, New York 14420

(A)

Proposed NYAFS Certification Criteria

Level I

Aquatic Biologist

Purposes:

1) To rank recent fishery graduates according to their knowledge of aquatic biology, fisheries, and related disciplines.

2) To identify those graduates with highest qualifications.

Required Education:

1) An Associate, BS, or BA degree in a natural science.

Required Experience:

1) None

Testing Methods:

1) A written test created and administered by the NYAFS.

Level II

Fishery Biologist

Purposes:

1) To certify current fishery technicians, biologists, managers, planners, culturalists, researchers, and teachers.

2) To identify and recognize highly competent and promising people in fisheries.

3) To improve public and employer perceptions of fishery workers as professionals.

Required Education:

1) An Associate, BS, or BA degree in a natural science and 4 years of fishery experience.

2) An MS degree and 2 years of fishery experience, or a Ph.D degree.

3) In lieu of formal or appropriate degrees, 8 years' experience in fisheries may be substituted.

Required Experience: (cont)

2) Mastery of field and/or laboratory fishery techniques and methods.

3) Proven ability to analyze and interpret fishery data.

4) Mastery of professional writing and speaking skills.

5) Professional leadership.

Testing Methods:

1) Submission of vitae and supporting documents by candidates.

2) Interview and a two-thirds majority decision by the NYAFS Professional Certification Board.

(B)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
New York Cooperative Fishery Research Unit
Fernow Hall, Cornell University
Ithaca, New York 14853

27 July 1979

Dear Sir/Madam:

The New York Chapter of the American Fisheries Society (NYAFS) is beginning a five-year experimental program for certification of professional fishery biologists. The program has evolved in response to several factors, including the need of employers to find the best qualified aquatic and fishery biologists; a need to identify those persons who are recognized as qualified to speak as a professional scientist on fishery issues and, therefore, to represent the profession on such issues; and a desire within the profession to improve the image and status of fishery biologists. The New York Cooperative Fishery Research Unit has major functions involving research, education, and technical assistance in fishery science and is therefore cooperating with the NYAFS Professional Standards Committee in conducting a survey of colleges and universities involved in training potential fishery biologists.

The American Fisheries Society has operated a voluntary professional certification program for several years; however, participation has been less than that needed for a successful program. The New York Chapter AFS is attempting to develop a certification program with additional features in the hope that it will generate enthusiastic, voluntary support. We believe fishery biologists will perceive the program as a valuable professional asset and will support it.

A three-level program of certification is anticipated and is summarized below:

1. Aquatic Biologist: designed for inexperienced aquatic and fishery biologists. Recent graduates of two- and four-year programs will be tested using a standardized test currently being developed. Employers will be encouraged to use the results to help select those graduates with the best academic qualifications.

2. Fishery Biologist: designed for experienced fishery biologists who have demonstrated high quality laboratory, field, writing, and/or analytical abilities in professional aquatic/fisheries positions. Vitae and supporting documents for candidates will be reviewed by the NYAFS Professional Certification Board.

systems research, inc.

biological consulting • environmental studies • impact assessments

455 Cayuga Road
Buffalo, New York 14225
(716) 631-9538

28 September 1979

Dear Sir/Madam:

The New York Chapter of the American Fisheries Society (NYAFS) is beginning a five-year experimental program for certification of professional fishery biologists. The program has evolved in response to several factors, including the need of employers to find the best qualified aquatic and fishery biologists; a need to identify those persons who are recognized as qualified to speak as a professional scientist on fishery issues and, therefore, to represent the profession on such issues; and a desire within the profession to improve the image and status of fishery biologists.

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2. Fishery Biologist: designed for experienced fishery biologists who have demonstrated high quality laboratory,

(C)

November 9, 1979

NYAFS Professional Standards Committee Survey: Consulting Firms

A survey form and letter describing the proposed NYAFS Professional Certification Program were sent to 55 New York Consulting firms. Eleven letters were returned as undeliverable by the Post Office, indicating a high turnover rate of such firms. Despite the fact that much pressure for certification programs appears to come from consultants, a disappointing 6 of 44 possible respondents replied. Informal discussions indicate substantial concern that business sensitive information might become available to competitors, thus a reduced response.

Respondents report an average of 40 employees, 9 of whom are aquatic/fishery biologists. Sixty-seven percent would use NYAFS Certification as a hiring criterion and 83% would use certification as the deciding factor in choosing among nearly identical job applicants. Respondents indicate that 98% of their senior staff would attempt to qualify for NYAFS certification. Fifty percent believe certification would improve professional status and salary, as well as improve business, while 33% believe the proposed NYAFS program is useless.

Reliable predictions are not possible from this small sample. However, the tenor of the response we received is generally positive. The chapter can reasonably expect a pool of 100 to 200 level 2 and 3 applicants from NY consulting firms.

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State University of New York College at Brockport Brockport, New York 14420

7. Please check the skills required (or desired) of fisheries (aquatic) biologists with the following educational backgrounds in your firm. (check one or more under each column)

n = 4
2 no response

	Technicians	BS or BA	MS or MA	Ph.D. or equivalent
Field Sampling	100%	100%	100%	100%
Lab Analysis	100	100 %	100	100
Data Analysis	50	100 %	100	100
Statistical Analysis	0	50	100	100
Technical Writing	0	50	100	100
Verbal Presentations	0	25	100	100
Program Administration	0	25	50	100
Business Development	0	0	75	100
Other (please list) Hearings	0	0	25	25

8. Would your present senior fisheries (aquatic) staff be willing to submit their credentials for review should a certification program be offered?

	percentage	
Yes -	98%	n = 6
No -	2%	

9. Do you believe certification of fisheries (aquatic) personnel would: (check one or more)

17% a. improve personnel productivity?
50% b. lead to higher salaries for certified personnel?
50% c. improve chances for advancement within your firm?
50% d. improve opportunity for business development thus increasing volume of sales, contracts, etc?
33% e. be useless?

D

SUNY College at Brockport

NYAFS Professional Standards Committee Survey: College and University Results

A survey form and letter describing the proposed NYAFS Professional Certification Program were sent to approximately 300 colleges and universities in New York, Pennsylvania and New England in August 1979. Questionnaires were returned from 95 institutions, 66 with aquatic-fishery programs, 29 without. It is probably safe to assume that non-respondents do not offer aquatic-fishery programs. Data were analysed in mid-October 1979 and results are presented here.

Averaged over institutions in and outside New York with aquatic-fishery programs, 87% will encourage their students to take our entry level written test and 89% believe a certification program will enhance the employability of their graduates. Interestingly, only 55% of the respondents would attempt to qualify at our intermediate and upper levels and only 57% believe our program will aid respondents or their colleagues professionally (see attached summaries). However, 96% of the respondents believe the proposed certification program is a good idea.

Institutions without aquatic-fishery programs obviously felt the proposed NYAFS Certification Program would do less for their faculty and students. Significantly, 100% of these respondents thought the certification program to be a good idea.

In an attempt to evaluate the thoughts of the better established aquatic-fishery programs in New York, institutions with 4 or more faculty were analysed separately. While support for the certification program was less enthusiastic than New York institutions as a whole, a clear majority indicated our program would benefit students and was a good idea. Few thought the program would benefit respondents or colleagues (see attached summaries).

Based on survey response, it appears the pool of entry level applicants could be as large as 200 students. If data on the number of graduates during the past five years in New York is accurate, there exists another pool of nearly 200 fishery biologists who would be eligible to apply for certification at the intermediate level. It is difficult to estimate the upper level pool in New York, especially given the lack of enthusiasm exhibited by respondents. The survey indicated 70 such professionals in the state.

While the survey was not designed or conducted in a rigorous statistical fashion the results clearly indicate widespread enthusiasm for the proposed NYAFS certification program, especially at the entry level. The chapter should anticipate procedures and expenses for the level of effort required to produce a meaningful program.

Department of Biological Sciences 716-395-2193/2190
State University of New York College at Brockport Brockport, New York 14420

NYAFS PROFESSIONAL CERTIFICATION SURVEY

(2)

1. Institution Name NY Schools w/o Aquatic-Fisheries

2. Department Name 16 respondents

3. List by name and specialty the aquatic and/or fishery biology faculty who teach and/or engage in research at your institution.

6 faculty total in all schools

4. List the aquatic and/or fishery biology courses that are taught at your institution. Please list by course title.

None

5. How many students specializing in aquatic and/or fishery biology graduate from your program each year? None

6. Estimate the number of graduates from your program during the past five years who have obtained employment in fishery/aquatic biology.

None

7. Will you encourage your students to take the NYAFS entry level certification test? n = 6 yes = 33%

8. Do you think such a test would improve the employability of your graduates?

n = 6 yes = 50%

9. Would you be willing to administer certification tests for aquatic/fishery biologists on your campus?

~~no~~ few said yes

10. Would you attempt to qualify for certification at Level 2? Level 3?

n = 6 yes = 33%

11. Do you think certification would aid you or your colleagues professionally?

n = 6 yes = 33%

12. Do you think a certification program will improve the professional status of fishery biologists?

n = ~~6~~ 8 yes = 75%

13. Do you think the NYAFS certification program is a good idea? Please explain.

n = 6 yes = 100%

14. Are you or any of your colleagues a member of NYAFS?

n = 10 yes = 10%

Please return to the address below by September 1, 1979:

John G. Nickum
New York Cooperative Fishery Research Unit
118 Fernow Hall, Cornell University
Ithaca, New York 14853

NYAFS PROFESSIONAL CERTIFICATION SURVEY (4)

1. Institution Name Other States' Schools w/o Aquatic-Fisheries

2. Department Name 13 respondents

3. List by name and specialty the aquatic and/or fishery biology faculty who teach and/or engage in research at your institution.

2 faculty total

4. List the aquatic and/or fishery biology courses that are taught at your institution. Please list by course title.

None

5. How many students specializing in aquatic and/or fishery biology graduate from your program each year?

None

6. Estimate the number of graduates from your program during the past five years who have obtained employment in fishery/aquatic biology.

1 student

7. Will you encourage your students to take the NYAFS entry level certification test? n=2 yes = 50%

8. Do you think such a test would improve the employability of your graduates? n=2 yes = 50%

9. Would you be willing to administer certification tests for aquatic/fishery biologists on your campus?

10. Would you attempt to qualify for certification at Level 2? Level 3? n=1 yes = 0%

11. Do you think certification would aid you or your colleagues professionally? n=3 yes = 67%

12. Do you think a certification program will improve the professional status of fishery biologists? n=3 yes = 100%

13. Do you think the NYAFS certification program is a good idea? Please explain. n=3 yes = 100%

14. Are you or any of your colleagues a member of NYAFS? n=8 yes = 0%

Please return to the address below by September 1, 1979:

John C. Nickum
New York Cooperative Fishery Research Unit
118 Fernow Hall, Cornell University
Ithaca, New York 14853

(E)

November 13, 1979

Mr. Philip T. Briggs, President
NYAFS Chapter
NYSDEC Finfish and Crustaceans Unit
Building 40, SUNY
Stony Brook, New York 11794

Dear Phil:

It is with regret and disappointment that those of us involved in developing the NYAFS Professional Certification effort learned of the rather arbitrary decision by our parent society to prohibit such programs. The proposed NYAFS Professional Certification program was conceived as a five year experiment during which the difficulties inherently associated with certification could be carefully examined. It was hoped we would evolve a meaningful, beneficial program for New York aquatic/fishery biologists. If not, after five years the certification effort could be dropped by chapter vote.

Many of us involved in the process believed the national AFS could use the New York program as a microcosm study, and use our experiences to modify and enhance the little used national certification program. An effective national program would eliminate the need for NYAFS certification. It is unfortunate the national has chosen a bureaucratic response to deal with our efforts, rather than a scientific response more compatible with our customary modes of professional scientific operation. The national seems blind to a clear opportunity to gain important knowledge with little national effort or expense.

I have enclosed the certification criteria and university/consultant survey results developed by the Professional Standards Committee. It is clear substantial support for professional certification exists in New York and the Northeast generally. Although not surveyed, civil service-related, state agency personnel are less enthusiastic about certification. An essential feature of any successful certification program is the ability to demonstrate the value of certification to this important group of fishery professionals.

It is my hope you will persuade the national to support an experimental certification program in New York, with the ultimate goal of using our experiences to develop a meaningful national program. I have had the privilege of coordinating the certification effort in New York for the past year. I am convinced that the many fine New York fishery professionals working on the project can create a program worthy of national support and pride.

If I can be of further service to you or the national in regard to these matters, please do not hesitate to contact me.

Sincerely,

James M. Haynes

James M. Haynes, Ph.D.
Chairman, NYAFS Professional Standards Committee

JMH/r
Enclosure

Department of Biological Sciences 716-395-2193/2190
State University of New York College at Brockport Brockport, New York 14420

8 February 1980

Mr. Mark Holdren
Genesee Brewing Company, Inc.
445 St. Paul Street
Rochester, New York 14605

Dear Mr. Holdren:

The New York Chapter of the American Fisheries Society extends their appreciation for the refreshments you and your company provided for our recent meeting. Generosity such as yours is sure to make any meeting a success.

I received several favorable comments about the Black Horse Ale. Is this a new product the company is marketing?

Again, many thanks!

Sincerely,

Lawrence C. Skinner
Secretary-Treasurer

cc: Ned Holmes

8 February 1980

Mr. David Heicher
60 Hunt Avenue
Hamburg, New York 14075

Dear Mr. Heicher:

In reviewing the membership listing for the 1979 membership directory, I noted that you paid the 1979-80 dues twice. Therefore, I am applying the excess 1979-80 payment to the 1980-81 dues thus no monies for chapter dues need be paid. Your 1980 membership card is enclosed.

Sincerely,

Lawrence C. Skinner
Secretary-Treasurer

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

JAN 2 [illegible] 1980

MEMORANDUM

To: Larry Skinner

From: John S. Grim

Enclosed is a mailing package composed of a letter and inserts directed to the various educational institutions in New York State. The names and addresses, also attached, are in pencil but I think they are legible enough for the purpose.

I really don't think you can get this mailing out by the time of the date at the top of the letter, but I had to put some date on it for identification.

The Membership Directory is being typed and a copy can be submitted to you sometime between now and the annual meeting.

I expect to set up a desk at the meeting to take dues from those attending the meeting that havenot paid their 1980 dues. Can you have a supply of 1980 application blanks there for that purpose?

See you at Bergamo.

American Fisheries Society
5410 Grosvenor Lane · Bethesda, Maryland 20014

Recd
1-19-80
LCS

TO Mr. Lawrence Skinner, Secretary-Treasurer
New York Chapter, AFS
Box 81
West Sand Lake, NY 12196

DATE January 14, 1980

SUBJECT Reply to letter of 1-8-80

Dear Mr. Skinner:

Enclosed is a copy of the Past President's certificate. Please supply the information for the blanks marked with the red question mark. Upon receipt of this information we will order the certificate prepared. We will also send the "Best Student Paper" at that time.

Information requested supplied
1-21-80
LCS

Sincerely,

Tonia Brome

Tonia Brome
Chapter Liaison

American Fisheries Society

New York Chapter

PRESIDENT

Philip T. Briggs

in recognition of personal contributions rendered by him to advance and improve the science of fisheries in the professional and public interest by serving as president of the New York Chapter of the American Fisheries Society and as a member of the Executive Committee of the Northeastern Divison of the American Fisheries Society for the period February 3, 1979 to February 1, 1980 is hereby awarded this Certificate of Appreciation.

By order of the Membership of the New York Chapter of the American Fisheries Society assembled in Massey, New York on this first day of February

Chapter Vice President

Chapter Secretary-Treasurer

Executive ~~Secretary~~ Director

Draft - 8/23/79

A BILL

To provide for uniform state licensing of marine recreational fishermen and for other purposes.

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, that this Act may be cited as the "Uniform Marine Recreational Fishing Licensing Act of 1979."

Sec. 2. FINDINGS. The Congress finds and declares that --

(1) While the number of saltwater recreational fishermen is growing rapidly, access to fishing areas is being reduced by private development, critical sportfish habitat areas are being degraded, and some species of fish which are fished for primarily by marine recreational fishermen in territorial waters are fully exploited or over-exploited.

(2) Marine recreational fishing constitutes a significant source of employment and contributes substantially to the economy of the Nation. Programs to promote marine recreational fishing have not been developed or have been discontinued in many coastal States on account of lack of funds.

(3) Data concerning the number of recreational fishermen in each State and the nature of their fishing activities is vital for the purposes of managing fisheries under the Federal Conservation and Management Act of 1976 (16 U.S.C. §1801 et. seq.) and the fisheries management laws of the coastal States.

(4) Such data is also essential to an equitable distribution of funds for fish restoration and management projects under the Dingell-Johnson Fish Restoration and Management Projects Act of 1950 (16 U.S.C. 777-777K).

"recreational fishermen" shall include any person engaging or intending to engage in fishing for recreation.

(4) The term "marine fish" shall include all species of finfish, crabs, shrimp and lobster in the high seas and territorial waters, including anadromous species, but shall not include landlocked specimens of such species.

(5) The term "recreational fishing vessel" means any vessel used to transport marine recreational fishermen for hire and includes charter boats as well as party, or head, boats.

(6) The term "Secretary" means the Secretary of the department in which the National Marine Fisheries Service is operating.

(7) The term "tidal waters" shall mean all those waters where the tide regularly rises and falls.

Sec. 5. LICENSE.

(1) No person between 16 and 65 years of age shall engage in fishing for recreation in tidal waters without a marine recreational fishing license issued pursuant to this Act, except that persons fishing from a licensed vessel or licensed fishing pier need not possess a marine recreational fishing license.

(2) No vessel shall transport marine recreational fishermen for a fee without a marine recreational fishing vessel license, and no person shall charge a fee to the public for the privilege of fishing from a pier without obtaining a marine recreational fishing pier license.

(3) Any person desiring to engage in fishing for recreation and any person desiring to operate a recreational fishing vessel or pier in a State which does not have a marine fishing license program approved by the Secretary may obtain a marine recreational fishing license upon application to the Secretary in accordance with regula-

of significance to marine recreational fishing, (d) such other programs directly benefitting marine recreational fishing as shall be approved by a policy control board drawn from the marine recreational fisheries constituency, and (e) administrative and enforcement activities limited to the issuance of licenses and enforcement of the license law and fishery management regulations relating to recreational fisheries, including habitat protection; provided, that funds from such special account expended for such administration and enforcement activities shall not exceed 30% of aggregate annual receipts from the sale of licenses.

(4) Expenditures of receipts on account of the sale of licenses shall be made in accordance with policies established by a policy control board appointed by the principal State official with marine fishery management responsibility and expertise. Such policy control board shall consist of at least five but no more than nine persons having a broad knowledge of marine recreational fishing in the waters of the State and the adjacent high seas and persons having knowledge and expertise in biological, ecological and environmental matters relating directly to the marine recreational fisheries. Employees and elected officials of State and Federal government shall not be eligible for membership on a policy control board.

(5) Validity of licenses issued by any State regulating marine recreational fishing in contiguous waters shall be recognized reciprocally.

(6) The penalty for engaging in recreational fishing without a license shall be a fine in an amount equal to at least 5 times the fee for an individual marine recreational fishing license and, in the case of

that persons previously fined hereunder shall be liable to a penalty of not less than $100, for each violation.

(2) Whoever shall operate a recreational fishing vessel without a license in violation of subsection (3) of Sec. 5 of this Act shall be liable to a penalty of $1,000 for the first offense and $2,000 for the second and each subsequent offense.

(3) The Secretary shall assess and collect any penalty incurred under this Act or any regulations prescribed pursuant to Sec. 9 of this Act. The Secretary may, in his discretion, remit or mitigate any penalty imposed under this section, or discontinue prosecution therefore on such terms as he may deem proper.

(4) Commissioned, warrant, and petty officers of the United States Coast Guard may board any vessel required to be licensed under this Act at any time such vessel is found upon the navigable waters of the United States or its Territories and the District of Columbia, or on the high seas, address inquiries to those on board, require appropriate proof of identification therefrom, examine the license issued under this Act.

Sec. 11. CONGRESSIONAL POLICY. It is hereby declared to be the policy of Congress to encourage uniformity of marine recreational fishing license laws as among the several States and the Federal Government to the fullest extent practicable, subject to reasonable exceptions arising out of local conditions.

Sec. 12. EFFECTIVE DATE. This Act shall take effect three years after the date of its enactment.

American Fisheries Society

NEW YORK CHAPTER

1980 ANNUAL MEETING

February 1, 1980

Panel Discussion:

SHOULD A MARINE ANGLING LICENSE BE REQUIRED?

Speaker:

SCOTT J. SIMONS

Editor, *The Long Island Fisherman Magazine*

Topic:

"What saltwater fishermen stand to gain via a license requirement."

Today's marine recreational fisherman has many considerations to make concerning the pros and cons of the establishment of a marine recreational fishing license. Basically, these considerations fall into four categories: fishing facilities, local management, economic, and political effectiveness. We must examine how these four areas will be effected and influenced by the establishment of a marine recreational fishing license and what these changes will mean to sport fishermen.

In order to put these considerations into their proper perspective for the purpose of our discussion, we will examine the present-day realities of these considerations in a local region. As a result of being the Editor for the last five years of a weekly sportfishing magazine, *The Long Island Fisherman*, I am naturally most familiar with the considerations that must be made by the marine recreational fisherman in the State of New York. However, each of the four considerations in New York are quite similar, if not virtually the same, as those that must be made in any of the marine coastal states in America.

FISHING FACILITIES.

The first consideration that a marine recreational fisherman in New York must make is to examine the public fishing facilities presently available, because they are the means by which we obtain access to the fishing grounds. For example, what is the value of a small boat to the fisherman if there aren't adequate launch ramps or docking facilities? Let's take a look at the present fishing facilities in New York, followed by a discussion on how these facilities could be improved as a result of the establishment of a marine recreational fishing license.

Small Boat Launch Ramps. At the present time, New York State has publicly funded the acquisition, constructions and maintenance of 171 public launch ramp facilities. But of this impressive number, only *four* provide the small boat fisherman with access to saltwater. The remaining 167 launch ramp facilities are located on freshwater lakes, rivers and reservoirs—a ratio of more than 16½ freshwater ramps to every ramp providing access to saltwater. This disparity exists despite the fact that more than one-third of the boat registrations in New York are on Long Island, and there are almost twice as many marine anglers as there are freshwater anglers in the State.

Needless to say, four launch ramps couldn't possibly service such a large geographic area as Long Island, which virtually all of New York State's marine coastal waters surround. For example, the North Shore of Long Island borders on the ninety-mile-long Long Island Sound and also has many large harbors and bays...yet there is not one public launch ramp facility on Long Island's North Shore! Another example of the lack of adequate launch ramp facilities can be found at Long Island's eastern-most tip, which is Montauk Point. Montauk Point is one of the most famous sportfishing ports in the world, holding more International Game Fish Association records than any other. The only areas that hold more IGFA World Records are the Continent of Australia and the States of Florida and Hawaii. Yet Montauk Point does not have a single public launch ramp facility!

Artificial Fishing Reefs. The value of artificial fishing reefs in improving the opportunities for the marine angler are well known: they serve to attract a fish population to a confined area within easy access to the marine angler. But they are costly to construct, and therefore, must be funded by the state rather than private enterprise. In New York, the State Government has provided funds to date for only two artificial fishing reefs: one ocean reef off Fire Island, and a second reef in Great South Bay. A third reef has been started at the Sore Thumb in Fire Island Inlet with the sinking of a large barge for the basic foundation, but construction can go no further due to the lack of available funds.

There are three things necessary to construct artificial reefs: materials, labor and transportation. Acquisition of materials for reefs is no problem, and usually can be obtained at a very low cost factor. In fact, suitable materials can often be obtained free. For example, on Long Island there are thousands of derelict wooden boats that are sitting in dry dock at marinas and in people's back yards that will never be used as water vehicles again due to their deteriorated condition or high maintenance costs. They have no resale value, so most of the owners of these vessels would gladly donate them to an artificial reef building program just to get rid of an eyesore.

Research programs have shown that one of the best materials that can be used for artificial reefs are old automobile tires, which also are available at no cost. The tires don't deteriorate in an underwater marine environment, and their hollow donut shapes create excellent habitats for marine life. There is a wealth of such materials available at no cost; so lack of materials or funds to acquire them are not the reasons that we don't have more marine artificial fishing reefs.

Once a source for building materials has been found, the next problem is labor. Manpower is needed to collect the materials and properly prepare them for use. The tires, for example, must be banded together to make certain formations, and they must be weighted with poured concrete so that they do not move from the reef site. An unweighted tire would also float and become a hazard to navigation. Wooden boats must also undergo a preparation process so that all potential flotsam is removed. Sinking the boats at the reef site should be no problem—people sink boats all the time without the need of expert instruction.

The labor necessary for the collection and preparation of reef materials would also not be a cost factor because sufficient voluntary labor is available. For example, virtually all of the labor used for the construction of the artificial fishing reef at Kismet was provided voluntarily by members of the Babylon Tuna Club. If the state had an active program for the construction of artificial fishing reefs there is every reason to believe that sufficient voluntary labor would be provided by organized fishing clubs as well as individual sport fishermen.

Where the real problem lies, then, is in the transportation of these materials. First they must be transported on land from the collection sites to the water, then by water vehicles to the reef site itself. And this transportation can cost a considerable amount of money. Due to the size of the materials, type of equipment necessary to transport them and other factors (such as unions), this transportation usually cannot be provided voluntarily by the private sector. State funding for the transportation of materials, therefore, becomes the prime requisite for the construction of artificial fishing reefs. Because this funding has been unavailable, the construction of artificial reefs in New York's territorial waters has been at a standstill, and will remain so for the foreseeable future.

An excellent example of opportunities missed due to this lack of funding was a situation that developed about five years ago. The New York City Department of Sanitation had decided to replace all of its trash barrels with a new type that were designed to have paid-advertising signs affixed to them to raise revenue. The old trash barrels were round and heavily weighted with poured concrete in the bottom to discourage vandalism. These trash barrels were also made of heavy galvanized metal so that they would not rust or deteriorate from the weather at their outdoor locations on street corners and in parks. One of the subscribers of *The Long Island Fisherman* happened to be an official in the N.Y.C. Sanitation Department, so when some 20,000 of these old trash barrels became surplus and the Department was looking to get rid of them, he gave me a call at *The Fisherman*. He thought that the trash barrels would be an excellent material to use for constructing artificial fishing reefs, and he was right—they were galvanized metal which wouldn't deteriorate quickly in an underwater marine environment, they were already weighted and their shape formed an excellent shelter for marine life. So here we had a vast amount of reef building materials that were not only available for acquisition at no cost, but didn't even need preparation before use. The only problem was one of transportation. Where would the funds come from necessary to get the trash barrels from where their present location was to a designated artificial reef site? Knowing that there were no state funds set aside for this purpose, I told the sanitation man the situation and the idea was regrettably dropped.

Fishing Piers. The existence of public fishing piers is very important to those marine anglers who do not own a boat, the elderly and others living on fixed incomes, and those with physical handicaps that limit their activities. Yet the State of New York has seen fit to furnish this user group with only three public fishing piers: one in Jones Beach State Park and two in Robert Moses State park. All three are located in bay waters. There are no public fishing piers located on the ocean, and New Yorkers can only look with envy at the ocean piers constructed for recreational fishermen in other states such as the Carolinas and Florida.

Beach Access. Another area of importance to New York's marine recreational fishermen is the problem of beach access. Despite its hundreds of miles of beaches that provide some of the best surf fishing opportunities on the Eastern Seaboard, the New York surf fisherman finds himself with an unwarranted access problem. Immense stretches of prime fishing beaches are inaccessible to the surf fisherman, primarily due to town residency laws that all but make it impossible to park close to a beach unless you are a resident of the town that you wish to fish in. In many cases, the only access available is through Government-owned land such as State Park complexes and Federally owned preserves such as the Fire Island National Seashore. But even here, the marine recreational fishermen run into an access problem due to their lack of organization and resulting political impotency as a user group.

A good example of this lack of access is the situation at Orient Point State Park, which is located at the tip of Long Island's North Fork. This park is located at a point where the waters of Long Island Sound, Gardiner's Bay, the Peconic Bay complex and Block Island Sound converge and overlap, making its rocky shore line an excellent access point for the recreational surf fishermen to intercept and catch game fish such as striped bass, weakfish, bluefish and many species of bottom fish. Yet the park is closed to fishermen during the prime surf fishing hours of darkness! And as any fisherman knows, this is tantamount to banning fishing in the park...you just don't find game fish coming into the shallow surf to feed within range of the fisherman during the daylight hours.

A large percentage of the beach access presently available to recreational surf fishermen is in Long Island State Parks and the Fire Island National Seashore; but even here the recreational fishermen's rights of access are constantly being threatened. Rules and regulations being contemplated for the Fire Island National Seashore and the State's Coastal Zone Management Program may severely curtail the use of beach vehicles. Although for the most part recreational fishermen are ardent, responsible conservationists, they often find themselves suffering for the sins of others. Many of the rules and regulations that are formulated with the intent of controlling irresponsible use of environmentally damaging dune buggies, also have the effect of unfairly regulating the responsible use of beach buggies, which does not damage the beach environment. In many areas, a prohibition on the use of beach vehicles is tantamount to banning surf fishing itself, because without them there would be no access to the beaches due to the distances involved.

Bridge Access. Another type of access that has been denied New York's recreational fishermen is that which bridges afford. Whereas many states, such as Florida, have provided access to the excellent marine fishing that a bridge spanning a body of water can provide to recreational fishermen by designing their bridges with the fisherman in mind, such is not the case in New York. Despite its dozens of bridges spanning Long Island's many bays, inlets and estuaries, recreational fishing is either illegal or impossible on all but a single bridge located on Long Island. This lack of fishing facilities on our many marine bridges comes as a particularly heavy blow to our many senior and physically handicapped citizens who cannot fish from boats or do not have the ability to fish from the surf.

To summarize, the public fishing facilities available to the marine recreational fishermen in New York are: four launching ramps, two artificial fishing reefs, three fishing piers, access to about ten percent of its beaches and one bridge. Can anyone honestly state that these public facilities are adequate for the 2.3 million marine recreational fishermen who live in New York and own over 100,000 boats that are used in saltwater? How can such a situation have come to exist? How can it be rectified? These are some of the considerations that the marine recreational fishermen of New York must make when addressing the pros and cons of the implementation of a saltwater fishing license.

LOCAL MANAGEMENT.

Another criteria that the recreational fisherman must examine is how his state manages its fisheries resource, with specific attention given to the distribution and access rights of the two prime user groups of that resource: the commercial and recreational fishermen. The first step in this direction is an examination of the laws in effect at present concerning the activities of the two user groups. Once again, we will use the State of New York as an example.

At the present time, the recreational fisherman has the following restrictions placed on his activities: a sixteen inch minimum size requirement on striped bass;

a fourteen inch minimum size requirement on summer flounder, known locally as fluke; and a twelve inch minimum size requirement on northern weakfish. There are no bag limits or closed seasons on any species taken by recreational fishermen.

While there are more restrictions on the activities of commercial fishermen, they are hardly adquate and do little, if anything, to protect the rights of the recreational fishermen to have access to the resource. In addition to the three minimum size restrictions that apply to the sportfisherman, commercial fishing interests have had the following restrictions placed on their activities by the State of New York: gillnetting is prohibited in certain areas where they would be a hazard to navigation; the use of purse seines for foodfish are banned within state waters; and a no-netting law in the waters of the Town of Hempstead, also on the grounds of being a navigational hazard.

One of the biggest inadequacies of New York's restrictions on commercial fishing is the lack of a single law or regulation prohibiting commercial fishing interests from interfering with game fish that are spawning. A prime example of this situation repeats itself every May in Great South Bay when thousands of weakfish enter the Bay complex to spawn. The fish spawn on the flats off Heckscher State Park where the water is only a few feet in depth, making them highly vulnerable to gillnetting by commercial fishermen. These spawning weakfish are so tightly grouped that the gillnetter does not even have to let his net "set" for a period of time—he just puts it out and pulls it in, using it more like a gillnet/purse seine, taking thousands upon thousands of pre-spawn fish in the process. To add insult to injury, the market price for the weakfish during May is only a few cents a pound due to the glut of fish arriving at the market; many of the soft-fleshed fish in such poor condition that they must be discarded.

Needless to say, this annual rape of a fishery resource by commercial fishermen does not go unnoticed by recreational sportfishermen, and the situation has led to much social conflict between the two user groups—particularly in light of the fact that the sportfishermen must wait until the spawning ritual is over before they can catch individual fish on rod and reel because Mother Nature, in her wisdom, provided that the weakfish will stop feeding while spawning. In an effort to stop this interference with spawning game fish, sportfishermen have introduced local legislation that would ban the use of gillnets during the month of May, and the legislation would also place a bag limit of six fish per day on recreational fishermen. Unfortunately, the commercial fishing lobby in New York has been strong enough to prevent any legislation that would alleviate this problem.

Another major problem that New York's recreational fishermen have with both the commercial fishermen and the State Government is our lack of protection as a user group. For example, there are no sportfishing sanctuaries where recreational fishermen are guaranteed their right to fishing access without fear of those rights being interfered with by those using commercial fishing techniques. Trawlers and gillnetters are permitted to fish in confined bodies of water like Great South Bay and Moriches Bay where a local fish population can easily be overfished commercially, to the detriment of those wishing to fish those areas for recreational purposes. Haul seiners seeking striped bass don't think twice about interfering with the rights of sportfishermen as they set their nets in front of, and around a surfcaster. During the fall run of game fish in places such as Montauk, scores of gillnets set along the ocean beaches to intercept migrating schools of striped bass, bluefish and weakfish, deny the small boat fishermen access to the inshore waters. Purse seiners seeking menhaden will not hesitate to set their nets around sportfishermen fishing for bluefish and striped bass in small boats. Fish traps catch migrating fish before the sportfishermen have had an opportunity to catch them or they have been allowed to spawn. Fish traps are also presently permitted in New York State Park facilities, forcing recreational fishermen to compete for the same natural resource with a commercial fishing enterprise. There are no length restrictions on gillnets, and they do not have to be marked or even tended! This dangerous practice has already cost at least one sportfisherman his life when his boat became entangled in an unmarked gillnet.

Anyone in New York State can become a commercial fisherman, because there are no license requirements. A twelve-year-old child can purchase a gillnet two miles long, stretch it across Great South Bay and catch spawning fish, and no one could stop him. In many towns on Long Island a license to operate a hot dog stand costs upwards to two thousand dollars—yet no license or fee is required of a person who operates a one hundred ton trawler!

Local management of our fishery resources in state jurisdictional waters is of extreme importance to the marine recreational fisherman. Fisheries management plans on the Federal level emanating from the Regional Management Councils are worthless if commercial fishermen are allowed to overharvest and deny access to recreational sportfishermen once the fish have entered local state waters. We must have local laws that would protect our rights of access to a viable fishery. Laws must be implemented that would establish sportfishing sanctuaries, license commercial fishermen, prevent overfishing, ban commercial fishing on spawning grounds, and place gear restrictions in areas where the use of certain commercial fishing techniques would interfere with the rights of the recreational marine fisherman.

ECONOMIC CONSIDERATIONS.

The lack of adequate fishing facilities and laws protecting the rights of the recreational sportfishermen in New York State are difficult to comprehend when one considers the immense economic force of the sport fishing industry. To fully appreciate the inequities of this situation, let's pause for a moment to study the depth and scope of the economic contribution sport fishermen make to the economy of New York State.

According to the latest Federal survey, there are 2.3 marine recreational fishermen in New York State. If we were to suppose for a moment that each of these individual fishermen were to spend only $100 a year on pursuing their sport, that would translate into $230 million a year spent by the State's sportfishermen. With a prevailing statewide sales tax of seven percent, this means that recreational sportfishermen are paying $16.1 million a year in sales taxes. How much of this revenue is spent by New York supporting the activities of the user group? In fiscal year 1976-77, the total expenditures of New York's Department of Environmental Conservation (DEC) was $202,014,000, of which $987,000, or .005%, was spent on marine resources. But of this amount, only $100,000 is actually spent on marine finfish! This means that New York State is spending less than four-and-a-half cents per angler annually on marine

finfish programs.

The discrepancies between the amount of revenues raised from sportfishermen and that returned in benefits are even more pronounced when we look at the money spent on boats. For example, there are more than 102,000 boats registered to those living in the marine district, which raises $557,322 in annual revenues for the State through boat registration fees. If we were to assume that the average boat were to only cost $5,000, this would mean that the purchase of each of these vessels raised an additional $350 in sales tax revenues, or an additional $15,300,000 in total tax revenues! Add to this the tax revenues raised from the tax on gas, oil and diesel fuel used by marine engines, the sales taxes paid on fishing tackle, equipment and bait, and the corporate taxes paid by marinas, bait and tackle shops, charterboats and headboats, boat liveries, and business establishments selling boats, motors and boating supplies and equipment and it's easy to see that the recreational marine fishermen of New York State aren't getting any financial support from the State Government that is even remotely related to the revenues that we are raising for the State through the taxes that we are being forced to pay.

Let's compare this lack of state support that saltwater fishermen receive with that which New York's freshwater anglers receive. The Fish and Wildlife budget in fiscal year 1976-77 was $11,305,000, a large proportion of which is used to support the activities of the State's freshwater fishermen. The money is used for facilities such as State fish hatcheries and management programs, and virtually every New York State freshwater lake of any size has a State-maintained buoy system and more than adequate launch ramp facilities. For example, while the State's saltwater sportfishermen only have four launch ramp facilities, freshwater sportfishermen have nine launch ramp facilities on Lake Champlain, eight on Lake Ontario, six on Cayuga Lake and eleven on the St. Lawrence River!

New York's freshwater fishermen are also protected from the excesses of commercial fishermen. Commercial fishermen are strictly regulated by laws limiting gear, seasons, and even species. For example, game fish such as trout and largemouth bass have been assigned exclusively to recreational sportfishermen as a user group, and commercial fishing for these and other species is banned. In short, the rights of the freshwater angler are given preference over those of commercial fishing interests in New York State.

POLITICAL CONSIDERATIONS.

In the final analysis, New York State's 2.3 million saltwater sportfishermen must look to the arena of political considerations to answer such questions as: Why is there such a lack of fishing facilities available to the marine angler? Why does the State take such good care of the freshwater fishermen while neglecting its saltwater fishermen? Why doesn't the State respond to the needs and rights of its marine recreational fishermen?

The Apathetic Sportfishermen. Over the years, the saltwater sportfishermen of New York State have received the reputation of being apathetic towards doing anything that would protect our rights as a user group against commercial fishermen and an unresponsive State Government. Unfortunately, these charges of apathy in the past have largely been based in fact—we *have* been apathetic. We have stood idly by and let commercial fishermen, both foreign and domestic, overfish species after species, then deny us our rights of access and a fair share of the remaining viable fisheries. To understand why we have allowed this feeling of apathy to do such damage to the quality of our sport, we must first look at why we have become recreational fishermen to begin with.

Ask yourself this simple question: Why did I choose to become a recreational fisherman? Was it to attend public hearings? Was it to write letters to politicians demanding my rights? Was it to lobby government officials? Of course not! One of our prime motivations for becoming recreational marine anglers has been to escape such activities. Many of us go fishing to escape the political realities of the Twentieth Century life—we get in our boats and head offshore to forget about double-digit inflation...to forget about politics...to forget about rising taxes...to forget about the threats of nuclear war...all we want to do is spend a relaxing day on the water, fishing in peace, forgetting all of the day-to-day problems of Twentieth Century man. And what are we asked to do to protect this act of solitude? We are asked to participate in the very actions that we are seeking to escape as recreational fishermen. Naturally, in our hearts we protest...but if we don't put aside our emotions and begin to participate in the political process to protect our rights as sportfishermen from both Government interference and commercial fishing interests, then we will ultimately lose the solitude that recreational sportfishing affords us because either there will no longer be any fish to catch or we will be prevented from fishing for those that remain.

Political Influence. This is where the real value of a marine recreational fishing license lies. In the past, New York's 2.3 million saltwater sportfishermen have been completely unorganized, and as a result have been politically impotent with both the State and Federal bureaucracies that we must deal with. A saltwater fishing license would be the first major step in giving the saltwater sportsman the political influence that our numbers and economic expenditures deserve. It has been stated many times by various state officials that if the marine recreational fishermen in our State were ever to be licensed they would become the largest, strongest lobby in New York State.

We have seen what benefits the State's freshwater anglers have received from the act of licensing. Their license fees have gone to improve freshwater fishing facilities; management plans protect them against commercial fishing pressures; they have political influence on the policies of both the Fish and Wildlife Department and the DEC. For example, New York State receives approximately $650,000 per year in Dingell/Johnson monies from the Federal Government, a reimbursement of the ten percent excise tax on fishing tackle. Theoretically, half of such money could and should be spent on marine anglers because they are paying half of the tax...but we are not organized, and the end result is the marine angler paying yet another tax without receiving any benefit because not a single penny of Dingell/Johnson money is being spent on marine resources!

It is easy to understand the political influence that freshwater fishermen have in New York State because they are licensed and politically active. But what about New York's commercial fishermen? Why do they have such tremendous political influence so out of proportion to their actual numbers? At best, there are perhaps a thousand legitimate commercial fishermen who make their living solely from their commercial fishing

activities. Yet they have had the political influence to defeat every single piece of legislation that would either place restrictions on their activities or be of benefit to the State's 2.3 sportfishermen. The reason is organization. Although they are unlicensed, they are highly organized, and therefore, politically effective. When a public hearing is held on a topic that concerns them, the commercial fishermen will stack the meeting room. When a bill they consider to be detrimental to their activities is going through the legislative system, they will go to the State Capital by the busload to lobby against it. So we have the unique situation of less than a thousand individuals playing the tune that more than two million sportfishermen are forced to dance to.

Changes in Attitude. But recently we have been seeing a change in attitude among the recreational marine angler in New York. They have finally said "enough" to the commercial fishermen, we aren't going to be pushed around any longer. The first sign of this change in attitude was during the fight for the 200-Mile Limit in the early Seventies. Never let a commercial fisherman tell you that they are responsible for the 200-Mile Limit. Because the fact of the matter is that it was the thousands of letters from *sportfishermen* to members of Congress protesting the rape of our fisheries by the foreign armadas that was responsible for its passage. Commercial fishermen fought *against* a 200-Mile Limit for fear that its establishment would allow the Government to place restrictions on our own domestic fisherman...which, in fact, it has. Needless to say, our commercial fishermen don't like interference from the Government, like placing quotas on what they catch. The commercial fisherman's idea of a quota is "everything I am capable of catching, less one fish."

Further evidence of the new attitudes of sportfishermen were evident recently at the bluefish hearings held by the Mid-Atlantic Regional Fisheries Council. At one of the fact-finding hearings in Rockville Centre, more than 2,000 sportfishermen tried to get in a meeting room that had a maximum occupancy of about two hundred. Normally, a hearing of this type could be expected to draw maybe twenty or thirty fishermen, and most of those would be commercial. But sportfishermen had turned up at the hearings to protest the proposed entry of purse seiners into the fishery for bluefish and the establishment of a frozen export market of the species. After witnessing what the tuna purse seine fleets had done to the once abundant bluefin tuna in a few short years, sportfishermen were not about to see the same thing happen to its bluefish, which is the most popular game fish swimming in New York waters.

The last change in attitude among New York's sportfishermen is a growing awareness for the need to establish a marine recreational fishing license. There was a time in the not too distant past that the mere mention of a saltwater fishing license was enough to make the most docile of sportfishermen raise their voices and fists in anger. But as the realizations of present-day realities have set in and sportfishermen have become convinced that a saltwater license now holds much more good than harm, this attitude has been rapidly changing. In the most recent readers' survey held by *The Long Island Fisherman* magazine and her two sister publications, *The New Jersey Fisherman* and *The New England Fisherman*, more than two out of three recreational sportfishermen approve the implementation of a saltwater fishing license—if the monies generated from license fees were used for projects such as marine research, public fishing piers and launching ramps, increased beach access and construction of artificial fishing reefs. But there is still a very vocal one-third minority that opposes a saltwater license under any circumstances. But even this vocal minority is slowly beginning to realize that a saltwater fishing license may be a necessary evil if fishing facilities and opportunities for recreational fishing are going to be improved and sportfishermen are to obtain the political influence their numbers and economic power deserve.

The prevalent feeling these days is that a saltwater fishing license for marine recreational fishermen is not only a necessity, but is inevitable. It is no longer a question of *if* we are going to be licensed, but *when*, and in what manner. Is the implementation of a saltwater fishing license going to protect the sport and give the recreational sportfishermen the political influence we need, or is it just going to be another user tax without any benefits?

N B I
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October 18, 1979

Mr. Larry Skinner, Sec.-Treas.
N.Y.Chap. AFS
NYS DEC
50 Wolf Rd.
Albany, N.Y.12233

Dear Larry,

Enclosed is the letter to be addressed to the unpaid 1978 membership. It is written with the intention of including the single sheet application form presently in use. Two sheets should not go over one ounce and would be covered by the minimum postage.

This is all for now. I'll see you Monday.

Sincerely yours,

John S. Grim

Enc
NYC AFS membership
letter

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY
New York State Department of Environmental Conservation
Building 40, State University of New York
Stony Brook, New York 11794

JAN 2 0 1980

January 10, 1980

Dear Larry

There will be a brief, but important, meeting of the Executive Committee of the New York Chapter of the American Fisheries Society prior to the Annual Meeting at Bergamo East. This meeting will be held at 9:00 PM the evening of January 31, 1980 at Bergamo. The exact room will be posted at the registration desk. Please plan to attend as the order of business of the business meeting will be discussed. If you cannot make it, please have a member of your committee attend.

Sincerely,

Phil

Philip T. Briggs, President
New York Chapter
American Fisheries Society

PTB:jsr

JAN 15 1980

Tentative Agenda For Annual Business Meeting

New York Chapter - American Fisheries Society

TO BE DISCUSSED AT EXECUTIVE COMMITTEE MEETING

1. Call to Order (Sec.-Treas. starts counting to see if we have quorum)
2. Appoint two Sergeants-at-Arms.
3. Determination of Quorum (Pres. asks Sec. Treas.: "Do we have quorum?" Sec.-Treas. answers - answer better be "Yes" or we are in trouble.)
4. President's remarks.
5. Minutes of last meeting.
6. Introduction of Guests and Visitors (AFS and Division officers and other prominent people if present)

    6A. Allow time for any AFS or Division Officer to address Meeting.

7. Report of Secretary-Treasurer.
8. Report of Chapter Committees (Order to be determined in Executive Committee meeting except that the last two must be, in order, Resolutions and Nominating)
9. Report of Resolutions Committee.

    9A. Vote on resolutions if any.

10. Report of Nominating Committee

    10A. Additional nominations from floor

    10B. Election of New Officers

11. Old Business
12. New Business
13. Announcement of Election Results
14. Installation of New Officers
15. Remarks by New President
16. Adjourn

* * * *

*** ATTENTION NORTHEAST FISHERIES PROFESSIONALS ***

* * * *

WHY? This is the final call for papers for the 1980 meeting of the Northeast Division of the American Fisheries Society. This Conference is the premier event for fisheries professionals in the Northeast.

WHEN AND WHERE? The Conference will be held from April 27-30, 1980 at the Nevele Country Club, Ellenville, New York. Clear your calendar now for those dates. Accommodations, service and meeting facilities will be excellent and modestly priced. Details will be sent to you by early February 1980.

WHAT'S THE CONFERENCE THEME? "A Look Ahead to the 1980's". The coming decade holds promise for many significant issues, challenges as well as progress in the fisheries field. Mr. Carl Sullivan, Executive Director of AFS and Editor of "Fisheries", one of several nationally known, natural resources leaders who will set the Conference tone, will discuss his perspectives on 1980's during the opening session. Don't miss this.

WHAT ABOUT THE TECHNICAL SESSIONS? HOW ARE WE DOING SO FAR? Actually we wish that you hadn't asked that question. You'd hardly know that we have 1200 hard-working, dedicated, professional, AFS members in the Northeast. Our first call for papers brought in 10 responses.

WHAT KIND OF A PROGRAM ARE YOU LOOKING FOR? One for the working fisheries professional — a program that will let you go home with a head full of good ideas, new ideas and new professional contacts. With your help, the Program Committee is prepared to develop technical sessions in marine, freshwater and anadromous fisheries and fish culture, as well as panel discussions on significant issues or state-of-art workshops.

WHAT CAN I DO? Get your abstracts and ideas for panel discussions to us as soon as possible.

We know that you are doing fine work out there — work that will be of interest to many and should be reported upon. We make good progress in fisheries first by doing good work, and secondly by letting others know about it. Communications is the name of the game. So come on, push other chores aside for an hour or two and hammer out that abstract and your ideas.

HOW DO I DO IT? It's simple. Just send your material to Paul Neth, Program Committee Co-chairman. Include the following information for your paper:

January 28, 1980

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

Dear Fellow Biologist,

We are writing you to invite you to share the activities of the New York Chapter of the American Fisheries Society. You may be aware that the American Fisheries Society is the world's oldest scientific group dedicated to the conservation of marine and aquatic resources. What you may not know, however, is that the New York Chapter of the American Fisheries Society was formed in 1968 to bring the benefits of the parent society closer to home.

Membership in the chapter has grown to over 280. Its activities are patterned after those of the American Fisheries Society. An annual meeting or conference is held in central New York in February. Papers are presented that cover a wide range of topics. A copy of the 1978 program is enclosed as an example. Student papers are encouraged, and an award is given for the best student paper.

A special "workshop" meeting is scheduled for June, 1980 entitled "Practical Fisheries Management; More with Less in the 1980's". Additional workshops are envisioned for future years on topics of particular interest.

There are also benefits of a social nature. The annual meeting provides an opportunity for old friends to meet and affords an occasion to make new friends. The Membership Directory supplies phone numbers and addresses for all members as well as an indication of the basic interest of each member.

And what does all this cost? Would it surprise you to know that the annual dues are $2.00; that the annual meeting is a day-and-a-half affair that includes four meals and overnight lodging for less than $25.00?

Enclosed is an application blank for your use. If you need more, make copies on a duplicating machine or write to the Secretary-Treasurer. We hope to see a lot of you and your students in the years to come.

Sincerely yours,

John S. Grim

John S. Grim, Chairman
Membership Committee

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PROGRAM - NEW YORK FISHERIES MEETING

Sponsored by

New York Chapter, American Fisheries Society
February 3-4, 1978
Bergamo/East, Marcy, New York

February 3, 1978

10:00 am — Registration

12:00 — Lunch - Bergamo/East dining hall

I. 1:15-2:45 — Business Meeting

A. Call to order
B. President and Executive Committee reports
C. Committee reports
D. Old business
E. New business
F. Election of officers

2:45-3:00 — Coffee Break

II. 3:00-5:30 — Contributed papers

3:00 — Overlap and Diel Variation in Feeding Habits of Alosa spp. Juveniles From the Lower Hudson River Estuary - S.A. Grabe and R.E. Schmidt

3:15 — Natural Reproduction and Juvenile Ecology of Pacific Salmon and Steelhead Trout in Tributaries of the Salmon River, New York - J.H. Johnson and N.H. Ringler

3:30 — Orientation of Weakly Electric Fish under Diurnal and Nocturnal Conditions - A. DeFazio

3:45 — Direct Measurements of Daily Growth in Free-living Stream Fishes - E.B. Brothers

4:00 — The Effect of Hypophysectomy and Thyroxine on Light-induced Visual Pigment Changes in the Brook Trout, Salvelinus fontinalis - D.J. Taylor

4:15 — A Comparison of Gear Efficiency Associated with Sein and Rotenone Collections - M.P. Weinstein, R.W. Davis, A.M. Hill and P.B. Woodward

4:30 — Effect of Cooking and Trimming on Levels of Mirex, DDT and Aroclor 1254 in Lake Ontario Brown Trout - J.C. Skea and H.A. Simonin

	4:45	What's Going on in the Division of Marine Resources - P.T. Briggs
	5:00	A Comprehensive Fish Disease Control Program for New York State Hatcheries - J.H. Schachte, Jr.
	5:15	Hatchery vs. Wild Trout - J. Brown
III.	5:30	Happy Hour (Bring your own booze - "add-ins" will be available)
	6:00	Dinner - Bergamo/East dining hall
IV.	7:30-9:00	Panel Discussion - Effects of Winter Navigation - William Pearce, Chairman

February 4, 1978

	8:00-8:45	Breakfast - Bergamo/East dining hall
V	9:00-12:00	Panel Discussion - Aquaculture in New York State - John Nickum, Chairman

NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

NEW YORK CHAPTER

AMERICAN FISHERIES SOCIETY

1980 Membership Application

Annual Dues: $2.00

Annual Dues: $2.00

NAME: _____ DATE: _____

HOME ADDRESS: _____ HOME PHONE: _____

_____ BUS. PHONE: _____

EMPLOYER : _____
(SCHOOL:)

_____

_____

JOB TITLE: _____

AREA OF SPECIALIZATION
OR INTEREST: _____

_____

MAIL $2.00 CHECK IN NAME OF N.Y.S. CHAPTER AFS TO:

Lawrence C. Skinner, Sec.-Treas.
Box 81, Route 43
West Sand Lake, N.Y. 12196

Note: Please include the Zip Code in your address and area code in your phone number. If your name appeared in the 1978 NYS Chapter Membership Directory or Supplement, and there are no additions or corrections to it, you need not complete this form. Please just indicate "same as 1978". Also, if you have any fisheries related news that would be of interest to the Chapter members, please send it to the Secretary-Treasurer for inclusion in the Chapter's Newsletter.