

FISHERIES PROGRAM

Fisheries Session I

Monday afternoon, May 8

FITNESS DIFFERENCES AMONG REMNANT POPULATIONS OF THE ENDANGERED SONORAN TOPMINNOW (*POECILIOPSIS OCCIDENTALIS*)

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A genetic survey of 21 populations of the Sonoran topminnow (*Poeciliopsis occidentalis*) from Arizona and Sonora, Mexico, found Arizona populations to contain significantly lower levels of genetic variability than their Mexican counterparts. Three of the five Arizona populations surveyed were found to be genetically invariant at 25 loci. In this study, we examined the short-term effects of low genetic variability on components of fitness in three remnant topminnow populations from Arizona.

Gravid *P. occidentalis* were collected from three Arizona populations differing in mean levels of genic heterozygosity (H): Monkey Spring (H = 0.0 %), Tule Spring (H = 1.5 %), and Sharp Spring (H = 3.7 %). First generation laboratory progeny were isolated in a recirculating aquatic incubator and raised to reproductive maturity (12 weeks) under conditions of constant temperature, photoperiod, and diet. Four proximal estimators of mean fitness were measured at the end of the experimental period: survivorship, growth, fecundity, and developmental stability. In general, all fitness components increased with an increase in genetic variability, supporting a positive association between genetic variability and fitness as measured under these laboratory conditions. These results clearly demonstrate the necessity of genetic and demographic information in the formulation of sound conservation and fisheries management practices.

determined. Light values were obtained using a Gossen Lunapro light meter and converted into lux. Time and light correlates of twilight activities of the species present in each section were studied.

It was determined that the composition of the fish community changed with the seasons. As the temperature of the water fell, nocturnal and crepuscular species switched their activities to primarily the daytime. As the water continued to cool, fish species gradually disappeared until only the trout were active in the stream. Suckers and bluegill sunfish were found to be buried under rocks and debris in the stream bottom. Where the other fish species went was not determined.

As the water warmed in the spring, the different fish species again appeared, until by summer all fish species were again present.

A new behavior was discovered during the study and was investigated in depth. It was a feeding association between the smallmouth bass and the white sucker, in which the bass fed on organisms chased into the water column by the bottom feeding sucker. This relationship was determined to be dependent upon light levels, water temperature and current.

This study suggested that the activity patterns of the fish community were the result of resource partitioning to avoid strong competitive interactions. An alternative hypothesis is that the activity patterns might be the result of opportunistic adaptations to a constant fluctuation in the availability of resources in the stream.

EFFECTS OF INTRODUCING ATLANTIC SALMON ON NATIVE BROOK TROUT

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This study attempts to determine if stocking Atlantic salmon fry into nursery streams containing brook trout results in interspecific competition for habitat. Previous studies have suggested that brook trout are competitively excluded from preferred habitats when Atlantic salmon are present. Such shifts in habitat utilization are often considered evidence of competition. Habitat utilization by brook trout was studied in four streams in central Maine over two field seasons (May-October), resulting in approximately 3800 observations. Each stream had two reaches, the upstream being a control section (brook trout only). Downstream sections were subject to manipulation as follows: Perry Brook - no manipulation (brook trout only); Bear Brook - no manipulation in year one (brook

correspondence analysis, cluster and discriminant analysis) to identify and test repeated patterns of stream structure and function based on the relationship between measured habitat variables and stream fish species assemblages, with particular emphasis on reproducing trout populations.

A simple, bivariate, thermal-gradient model was developed and used as a stream macrohabitat templet. This templet is grounded on key independent abiotic factors (stream gradient and summertime water temperature), which are meaningful aggregate variables (oxygen, flow, substrate) representative of known or suspected processes regulating stream fish species communities. The model effectively classified 79 percent of a test-data set, on the basis of the discrimination between optimal (reproducing) trout and non-trout streams.

Fish species assemblages in Massachusetts' smaller, wadeable streams differ along an environmental gradient from the western Berkshire highlands to the eastern Coastal seaboard. Within the limits of fish biogeographical distribution, a similar gradient is operative within any given drainage system as well. However, this gradient is not necessarily continuous, but varies primarily in response to abiotic factors of the environment (e.g., acidification, siltation, thermal pollution due to alterations in riparian land-use), which then serve to regulate fish species occurrence.

This approach to stream resource classification will serve as the basis for: (1) responsive management/protection of the Commonwealth's lotic waters by resource category, (2) implementation of a wild trout management program, and (3) further indepth studies pertaining to aquatic ecoregion delineation and application of a lotic index of biotic integrity.

THE ECOLOGY OF AMERICAN EELS (ANGUILLA ROSTRATA) IN THE HUDSON RIVER

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American eels, Anguilla rostrata, were collected from the Hudson River between river mile 12, at the George Washington Bridge, and river mile 151, at Troy, New York. Trawling was performed at night between June 15 and August 13, 1987 and resulted in the capture of 468 eels. Length of specimens ranged from 68 mm to 660 mm with a mean of 282.8 mm. Weight ranged from 0.2g to 698.1 g with a mean of 55.7 g. The mean age determined by otolith analysis was 6.5 years. Annual growth averaged 19.1% or 38.9 mm. Empty stomachs were found in 21.8% of specimens. Stomach content analysis of the remaining 366 eels revealed a generalized feeding pattern with 48 different species of prey. Arthropods were the major food group. They occurred in 85.3% of stomachs and constituted 48.6% of total food weight. Fishes composed 33.9% of stomach content by weight but occurred in only 10.1% of stomachs. The isopod Cyathura polita was the single most important prey species. It was found in 44.3% of stomachs and formed 14.7% of total food weight. Gammarus was the most important genus of prey with several species occurring across the range of the study area.

LONGITUDINAL VARIATION IN FISH ASSEMBLAGE
STRUCTURE AND HABITAT RELATIONSHIPS IN A
LAKE ONTARIO TRIBUTARY

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Small streams tributary to eastern Lake Ontario support fish communities high in diversity and density. Thirty species have been reported from Little Sandy Creek. Among these are the introduced (and all naturally reproducing) Pacific salmon (chinook and coho), rainbow trout and brown trout, and the native brook trout. In addition, Atlantic salmon is stocked annually as part of a pilot restoration program. Management of fish populations in Little Sandy Creek and other Lake Ontario tributaries requires knowledge of their distribution, resource utilization patterns, and interactions.

A study was conducted in summer 1988 to document the longitudinal distribution of fish assemblages in Little Sandy Creek, and to describe patterns of habitat use by species and size classes. Upstream, midstream and downstream sites were sampled monthly. Eighteen riffles, glides, and pools were electrofished to assess species composition, density, biomass, and relative abundance. Micro-spatial patterns of habitat utilization were examined in pre-established grids of 1 square meter cells by direct observation using mask and snorkel.

Overall density and diversity was highest in the far downstream site, which included warmwater species not found in the mid- and upstream sites. Habitat heterogeneity and pool development were highest at this site. Direct observation of fish distribution provided information on small-scale resource utilization patterns. Ongoing analyses include multivariate analysis of niche parameters and examination of niche relationships among coexisting species.

food habits led to the development of some new approaches to such studies.

The food habits of Rhinichthys atratulus and R. cataractae, collected by electroshocking from the Waccabuc River, were compared using a new measure of overlap:

$$\beta = 1/2(\alpha + n_s/n)$$

where α = percent similarity, n_s = number of shared food categories, and n = total food categories. The food habits of juvenile Morone saxatilis and juvenile Microgadus tomcod, collected by trawling from the lower Hudson River, were also compared in this way.

The proposed index can be shown, with hypothetical sets of data, to overcome certain disadvantages of rank correlation methods, and of the Morisita and Schoener indexes. Since the calculated value of β is dependent, as are other indexes, on such arbitrary factors as taxonomic level of identification, its absolute value is of limited usefulness. No suggestion is made regarding an arbitrary value indicating "significant overlap."

Instead a comparison of "between species-within collection overlap" with "within species-between collection overlap" is suggested. When this is done with the present data, the food habits within each pair of species are shown to be more a function of collection than of species. Such a result may be used as a general criterion of overlap.

DISTRIBUTION AND ABUNDANCE OF ONCORHYNCHUS CARCASSES IN LAKE ONTARIO TRIBUTARIES

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An understanding of natural reproduction in Great Lakes tributaries requires estimates of numbers of adult Pacific salmon (Oncorhynchus tshawytscha and O. kisutch) entering these streams. Highly variable stream flows and the large number of such streams largely preclude counting weirs as a tool for monitoring salmon runs. In two tributaries of eastern Lake Ontario, adult returns of Pacific salmon are being studied using biweekly ground surveys of tagged carcasses.

outnumbered females in spring trawl catches. Females predominated in dredge collections in both winter and summer. Jonah crabs were generally scattered across the shelf, mostly in deeper water than rock crabs. Northern lady crabs were commonly distributed in depths less than 40 m, and were concentrated off Long Island and New Jersey. Most rock crabs were collected at 3-18°C, jonaah crabs at 3-14°C, and lady crabs at 11-26°C.

During the ten years, from fall data, relative abundances of all three species were variable with no consistent increase or decrease. Catch per tow was greater at night than by day. Where crabs are numerous, they are important in food webs, as prey of fishes and as predators upon many species of invertebrates, including commercially important shellfish.

Marine and Coastal Fisheries Session II

Tuesday afternoon, May 9

COMPARITIVE RECRUITMENT AND GROWTH OF SPRING VS. SUMMER SPAWNED BLUEFISH JUVENILES (Pomatomus saltatrix) IN THE NEW YORK BIGHT

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There are at least two distinct spawning periods for the bluefish (Pomatomus saltatrix) along the U.S. Atlantic coast: one in spring (late March-early May) in the South Atlantic Bight and the other during mid-summer (late June-early August) in the Mid-Atlantic Bight. A previous study used otolith analysis to show that young-of-the-year bluefish recruiting to Long Island, NY estuaries consisted primarily of spring-spawned fish. Based on circulation patterns over the shelf we hypothesized that the summer-spawned recruits should drift to the southwest (i.e. New Jersey (NJ)). Sampling in 1987 supported this hypothesis. In 1988, however, the abundance of summer-spawned fish throughout the Bight, and especially in NY, was much higher than previously recorded. Summer-spawned juveniles had been virtually non-existent in NY from 1985-7. Abundance of both cohorts recruiting to the NY Bight fluctuates greatly from year to year. Spring-spawned bluefish recruit between late May to mid June but the summer-spawned fish recruit in mid to late August. Based on otolith analyses, summer-spawned bluefish grew faster in the ocean than spring-spawned fish. Spring-spawned bluefish grow about 1.2 mm/day in the estuary and are important to the autumn snapper fishery.

CHARACTERIZATION OF THE STRIPED BASS SPORT FISHERY ON THE
ANNAPOLIS RIVER, NOVA SCOTIA.

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University, Greenville, North Carolina.

One of the best known sport fisheries for striped bass in the Canadian Maritimes is located on the Annapolis River in Nova Scotia. In the mid 1970s, this population exhibited a decline in numbers. Creel and spawning surveys suggest recruitment failure as one cause for this decline. Since the last creel survey conducted in 1978, a tidally-driven electrical generating station was constructed in the Annapolis River estuary.

The study was conducted between 1 June and 22 October 1987. During the creel survey 937 hours were sampled, for a total of 898 fishermen and 60 fish encountered. Angler number was only 36.6% of that in 1978. Fishing effort was lower compared to 1978, but fishing success was 60% higher (19.8 h/fish). Only 5% were residents of other Canadian provinces or the USA, indicating a decline in non-local and tourist participation from that reported in 1978.

A total of 223 striped bass were sampled. Of these, 60.1% were caught on rod and reel and the remainder by gill net. All fish were aged, the length-weight relationships were calculated, and food habits investigated. The data collected suggested that the recruitment failure reported in the 1970s has ended. Tag returns from this and previous studies, combined with the biological data from this study, suggest that the Annapolis River striped bass population is composed of a mixture of migratory and resident fish.

The creel survey was an effective method of sampling the population to monitor the effects of the tidal power station on the population. Further study is required to identify the nursery area for striped bass spawned in the Annapolis River, and to determine what percentage of the population is migratory.

Fisheries Session III

Wednesday morning, May 10

REDUCED GROWTH IN LAKE TROUT EXPOSED TO GAS SUPERSATURATION

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Lake trout (Salvelinus namaycush) were reared for one year at six levels of gas supersaturation ΔP 4, 17, 33, 43, 58 and 75 mm Hg (100.5 to 110.2% of saturation) to assess the effects of these long-term exposures on growth, survival, and hematology. Mortality rates did not differ among

transfers and 7 days after the transfers. No differences ($P < 0.05$) in hematocrit, leucocrit, hemoglobin, or serum protein were found among fish acclimated at the four DO concentrations. The only significant change after transfer was an increase in serum protein, from 5.2 g/100 ml on day 1 to 6.0 g/100 ml on day 7. Also, two trends were observed: hemoglobin concentration decreased with an increase in DO, as a function of both acclimation DO and treatment DO, and hematocrit increased (both acutely and chronically) after transfer to lower DO. In general lake trout acclimated to these high DO concentrations did not show major hematological changes.

COMPARISON OF PRODUCTION CAPACITY ASSESSMENT AND ESTIMATION OF AMMONIA ACCUMULATION AS MEANS OF DETERMINING HATCHERY CARRYING CAPACITY

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The accumulation of metabolic waste is an important consideration in predicting the production potentials of fish hatcheries. Un-ionized ammonia (NH_3) is generally considered to be the most important metabolite affecting hatchery production, but recent literature suggests that site-specific water quality characteristics may significantly affect NH_3 toxicity. If metabolite effects on cultured fish cannot be explained by NH_3 exposure alone, a bioassay technique used in Production Capacity Assessment (PCA) may be the most appropriate means of predicting hatchery production potential.

The carrying capacities of three hatchery water supplies, with respect to metabolite exposure, were determined by PCA and by estimation of the accumulation of NH_3 to a predetermined maximum limit. These techniques were compared and evaluated for their application in predicting hatchery production potential. Advantages and disadvantages of each method are discussed in terms of specific water chemical parameters of the hatchery site.

RELICENSING HYDROELECTRIC PROJECTS IN THE 1990'S: AN OPPORTUNITY TO IMPROVE FISH AND WILDLIFE RESOURCES

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Over 100 hydroelectric projects in New York and the New England states will be relicensed during the 1990's by the Federal Energy Regulatory Commission. Because of the age of these projects and the lack of environmental legislation during their construction, few have adequate provisions for protecting and enhancing fish and wildlife

WILDLIFE PROGRAM

**Wildlife Session—New Directions in
Wildlife Management**

Monday afternoon, May 8

DATA QUALITY AND ANIMAL CARE REQUIREMENTS FOR WILDLIFE RESEARCH IN THE 1990s.

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Social and regulatory changes in the 1990s can be expected to alter substantially the climate of fish and wildlife research. The reasons for the change are varied and ill-defined, but the result is obvious: Scientists will be asked, as never before, to justify, document, and produce quantifiable results from the research process. Two areas in which the change is imminent are: (1) Animal care oversight and record-keeping, and (2) Data quality and documentation. This talk will focus on the regulatory, legal, and scientific requirements which are likely to become state-of-the-art in the future. Current legislature and regulatory initiatives will be discussed focusing on three areas: (1) the impetus of the legislation or regulation, (2) the current or proposed requirements for researchers, and (3) the likely impact on fish and wildlife research, especially field studies.

Animal care regulations arise from ideas perceived by the public of duplicative and needlessly painful procedures carried out on laboratory vertebrates in biomedical research. They will require animal care committees at all research or teaching organizations which use most mammalian species in the field or laboratory. All research and teaching protocols will be reviewed for both alternatives to the use of vertebrates and animal handling procedures which minimize pain or discomfort to experimental subjects. All research facilities will also be reviewed against minimum housing standards appropriate to the species utilized and to the research plan. With many wildlife species, this will represent a challenge to guidelines developed for more traditional biomedical species. Wildlife field procedures and handling mechanism will need to be justified to animal care committees in terms of their necessity to the research being proposed. Recent questions, again in the biomedical research community, about the credibility of conclusions drawn from research data and, in some cases, about the existence of critical data have led to regulations which require federal contractors or grantees to assume responsibility for conduct of research projects, to establish formal mechanisms for investigation and resolution of allegations of scientific misrepresentation, and to report such allegations to federal agencies promptly. In addition, requirements for research and support documentation, data retention, technical review, and data release are being proposed through both regulatory and legislative mechanisms. This movement has prompted several universities and professional societies or journals to assess current practices and propose new self-regulating standards for scientific research and publication. In conclusion, the likely impact of all this regulation on the field of fish

MONOMOY GULLS: A RESOURCE MANAGEMENT CHALLENGE

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From 1961 to 1984 numbers of herring gulls (Larus argentatus) nesting on Monomoy National Wildlife Refuge, Chatham, Massachusetts increased from 1 to 14,500 pairs. From 1966 to 1984 numbers of great black-backed gulls (L. marinus) nesting on Monomoy increased from 75 to 5,000 pairs. Concurrent with this rapid growth of gull colonies was a dramatic decline in numbers of other beach-nesting birds. From 1966 to 1986 numbers of common terns (Sterna hirundo) nesting on Monomoy decreased from 2,500 to 400 pairs, and roseate terns (S. dougallii), once numbering 900 pairs, were eliminated as a breeding species. The piping plover (Charadrius melodus) population also declined, from an estimated 15 pairs in the 1950's to 5 pairs in 1986. Predation of tern and plover chicks and displacement of nesting terns by gulls are believed to have contributed to these population declines. Lethal and non-lethal gull management methods used on Monomoy from 1980 to 1984 neither decreased numbers of nesting gulls nor increased numbers of nesting terns and plovers. Other control measures successfully used at other colonies may be ineffective for Monomoy gull colonies due to their sizes and locations.

SELENIUM ACCUMULATION BY ANIMALS INHABITING A SOIL-CAPPED FLY ASH LANDFILL

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The disposal of fly ash produced by coal burning electric utilities has become a significant problem in the United States. Approximately 45 million metric tons of fly ash is either stockpiled or placed in landfills annually. These landfills pose potential environmental hazards due to the presence of potentially toxic elements such as selenium in the fly ash. We investigated the accumulation and routes of uptake of selenium by animals inhabiting a ten year old soil-capped landfill and an adjoining sedimentation pond. The animals inhabiting the landfill were censused at two week intervals during the summer of 1988 and several species (6 vertebrate and 2 insect) were collected and analyzed for selenium content.

A total of 18 species of vertebrates were observed on the site and an additional 19 species were observed in close proximity to the landfill site. All of the species sampled contained significantly greater quantities of selenium than animals from the control areas. Sunfish (Lepomis gibbosus), frogs (Rana pipiens), and voles (Microtus pennsylvanicus) showed the greatest increases in selenium content among the vertebrates and both insect species showed large increases in selenium. The main routes of movement seem to include uptake by plants growing on the site and then subsequent ingestion by herbivores and leaching into a sedimentation pond with subsequent uptake by aquatic organisms, both plants and animals. Fly ash landfills appear to pose a potential hazard to wildlife populations due to the rapid movement of selenium and probably other potentially toxic elements from the landfill into the surrounding environment.

on recommendations provided. New jobs are developed to implement the revisions. Revised systems must be monitored and reviewed constantly to respond to changes in resources or incorporate new methodologies. Management systems have been prepared for cervid, furbearer, waterfowl, gamebird and non-game species. Our goal is to develop the best possible management systems within existing political and resource constraints.

THE USE OF WILDLIFE AS MONITORS OF ENVIRONMENTAL
CONTAMINATION AT THE MOHAWK NATION TERRITORY OF
AKWESASNE NEAR MASSENA, NEW YORK

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Conservation, Delmar, New York
Ken Jock, James Ransom, Mohawk Nation at
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The Mohawk territory of Akwasasne, (Land Where the Partridge Drums) where approximately 8,000 native Americans reside, is just east of Massena, New York. Akwasasne consists of approximately 28,000 acres comprised of islands in the St. Lawrence River and lands on the south shore of the river. The Grasse River joins the St. Lawrence River within a mile of Mohawk land, and the Raquette and St. Regis Rivers pass through Akwasasne to enter the St. Lawrence River. The land of Akwasasne is a mixture of forested, abandoned agricultural, and agricultural areas with generally low density residential districts. The St. Lawrence River is the heart of Akwasasne and is a source of drinking water, food, medicinal plants, and recreation. Over the last 100 years, especially in the last 40 years, following the building of the St. Lawrence Seaway, Akwasasne has become surrounded by such industrial corporations as General Motors Central Foundry Division, ALCOA, Reynolds Metals Company, Domtar Paper, Canadian Industries Limited, the St. Lawrence Seaway Development Corporation, and the St. Lawrence Power Authority. The St. Lawrence River drains the Great Lakes, and Akwasasne therefore receives contaminants afflicting those bodies of water (especially Lake Ontario). The Mohawks have relied for centuries on fish, waterfowl, and wild mammals to supply a large portion of their dietary protein. However, data acquired in this study reveal contamination with PCBs, dioxins, dibenzofurans, and chlorinated insecticides which make much of the wildlife unsuitable for human consumption. This study shows that pollution brought downriver, leached from industrial landfills and carried by air into Mohawk lands, is threatening the health of the Mohawk people and their economy, and even strikes at the spiritual integrity of this Native American community.

characteristics of the taxon, the reclassification has remained controversial. Recent declines in Allegheny woodrat populations in several states have prompted a number of northern states to list the Allegheny woodrat as threatened or endangered. The endangered status of the group has fueled renewed interest in the taxonomy and patterns of genetic variation in eastern woodrats. Variation in mitochondrial DNA genotypes for 26 eastern woodrat populations representing 4 subspecies from New York to Key Largo, Florida were examined using restriction enzymes. Allozyme variability in 4 of these populations was also examined. The results indicate high levels of genetic differentiation between magister and other subspecies of woodrats, but relatively little variation within the magister group. The implications of these findings to the taxonomy of eastern woodrats, the federal status of Allegheny woodrats, and possible reintroduction programs in the northeast are discussed.

FOOD AVAILABILITY AND POPULATION ENERGETICS OF
BALD EAGLES WINTERING AT QUABBIN RESERVOIR

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The success of the Massachusetts Bald Eagle (Haliaeetus leucocephalus) Reintroduction Program depends largely on the survival of the young eagles which have been hacked at Quabbin Reservoir since 1982. If food availability at the Reservoir is marginal, these hacked eagles may be incurring food and energy stress and associated mortality during winter food shortages. However, if food is limiting, increased eagle survival could be realized by enhancing natural food supplies or by providing artificial food sources. To determine whether natural food sources are sufficient, we monitored eagle numbers, determined food availability, and estimated the energetic needs of eagles wintering at Quabbin Reservoir during the two winter periods of 1986-87 and 1987-88. We conducted regular ground and aerial surveys to assess numbers of wintering eagles and white-tailed deer (Odocoileus virginianus) carcasses. When possible, deer carcasses were weighed, sexed, aged, and monitored to assess how rapidly they were consumed. An energetics model was used to predict the ecological metabolism of wintering eagles. Quabbin received about 1,000 eagle-use days from January through March in

THE PROBLEM WITH PROTECTING RARE SPECIES BY
PRESERVING SIGHTING LOCATIONS

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A common method of preserving local populations of rare species is to protect the general area of a recorded sighting. This method favors sessile species, like plants and certain invertebrates, because their habitat can be characterized and located. Also favored are highly mobile organisms, such as birds, that migrate or have very large dispersal distances and can consequently recolonize fragmented habitats too small to hold viable populations over a long period. Protecting sighting locations will not preserve non-migratory species with short dispersal distances, including most species of amphibians, reptiles, and small mammals. Habitat fragmentation will isolate these populations, reduce their viability and increase the potential for local extinction, with little or no chance for recolonization. Short dispersal distance species associated with early succession habitat face an additional pressure of habitats naturally becoming unsuitable. We compared two different protection strategies employed in NJ. The Pinelands Preservation Act and the Coastal Areas Facilities Review Act (CAFRA) protect all habitats within an entire region, the Freshwater Wetlands Protection Act protects a specific habitat type. Both use sighting locations as the basis for rare species protection. For species regulated by all three agencies the impact of protection varies widely although this may not be apparent in short-term considerations. Although all of these protection strategies fail to consider long-term stochastic variation inherent to small isolated populations, the Pinelands approach offers the best protection while Wetlands offer the least.

RESPONSE TO CONSPECIFIC ROADSIDE PLAYBACK
RECORDINGS: AN INDEX OF RED-SHOULDERED HAWK
BREEDING DENSITY

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Taped calls were broadcast along roadside routes in north central New York to detect red-shouldered hawks (Buteo lineatus). In 1986, three 8 km routes were established along woodland roads. Calls were broadcast every 0.8 km along each route and were replicated 12-15 times at 6-8 day intervals from 15 March through 15 July. The same procedure was repeated in 1987. There were 80 observations in 1986 and 63 observations in 1987. The mean number of observations/route for all routes and years pooled was 1.74. Phenological and behavioral differences in response were detected throughout the study periods. Conditional probabilities of detection and estimates of percent area occupied (AO) are presented. The coefficient of correlation between %AO and observed nest density within the effective study area around survey routes is 0.981 ($p < 0.001$). This technique has potential for state-wide application to establish an efficient index of red-shouldered hawk abundance which will aid in the development of a long term management strategy for this threatened species. Guidelines to implement this technique are presented.

Wildlife Session—Upland Game and Furbearers

Tuesday morning, May 9

HABITAT USE BY SPRUCE GROUSE IN THE ADIRONDACKS OF NEW YORK

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We obtained 1022 locations of 20 radio-marked spruce grouse (Dendragapus canadensis) during spring-fall 1986-87 to document habitat use. Grouse were located in 3 suitable habitats that supported persistent populations since 1976, which we compared to 2 marginal habitats with sparse (< 3.2 grouse/100 ha) or extirpated populations. Core habitats were defined for females and seasonally for males using 50% and 70% contours determined by harmonic mean home range analysis. Forest composition was quantified with importance values (IV). Habitats studied were coniferous; deciduous tree IV was less than 2% in every area.

**PREVALENCE OF PATENT BAYLISASCARIS PROCYONIS
INFECTION IN RACCOONS (PROCYON LOTOR) IN ITHACA,
NEW YORK**

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New York Cooperative Fish and Wildlife
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NY, and S.J. Schwager, Biometrics Unit,
Cornell University, Ithaca, NY.

The occurrence of the raccoon roundworm (Baylisascaris procyonis) in raccoon populations from native habitat as well as urban and suburban areas is both a wildlife disease problem and a human health concern. The prevalence of patent B. procyonis infection in raccoons was determined by examining fecal samples collected over an 11-month period in Ithaca, New York. Patent B. procyonis infection was found in 56 of 277 (20.2%) fecal samples collected from 243 raccoons. Forty-five of the 106 (42.4%) samples collected in September, October, and November contained eggs of this parasite. Evaluation of host sex/age and prevalence of patent infection revealed a significantly ($P \leq 0.001$) higher incidence of infection in juveniles when compared to adults. No significant differences were noted in other comparisons of host sex and age. Samples from the fall months had a significantly higher incidence of infection than non-fall months ($P \leq 0.001$).

The association of egg presence with sex/age/season was investigated using contingency analysis. This analysis, which identified the relative contribution of the variables to the overall significance value ($X^2 = 87.17$, d.f. = 7) indicates that juvenile males in the fall months contribute most ($((O-E)_2/E = 39.50)$ to the Chi-square statistic. Therefore, human contact with raccoons in the fall, particularly the keeping of young raccoons as pets, should be discouraged.

**REDUCING MAMMALIAN PREDATION ON EGGS BY USING A CONDITIONED
TASTE AVERSION TO DECEIVE PREDATORS**

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When "baits" consisting of eggs injected with 25-50 mg of emetine dihydrochloride were distributed in 10 different 0.5 km² areas, mammalian predators, which had been feeding on untreated eggs, developed a conditioned taste aversion to the baits and reduced their consumption of them by 75%. The predators (primarily raccoons, canids, opossums, and striped skunks)

NESTING ECOLOGY AND SURVIVAL OF HEN AND POULT EASTERN WILD
TURKEYS IN SOUTHERN NEW HAMPSHIRE

Thomas, G. E., and J. A. Litvaitis, Department of
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Historically, the eastern wild turkey (Meleagris gallopavo sylvestris) occurred throughout most of southern New Hampshire. Alteration of habitat, combined with overharvesting, resulted in the extirpation of turkeys in New Hampshire by 1854. In 1975, wild turkeys were transplanted into southern New Hampshire from New York. However, expansion of this population has been limited compared to the expansion of similar transplants in other states. Therefore, reproduction and survival were studied during 1987 and 1988 to determine how these parameters may influence the status of turkeys in New Hampshire.

Fifty-six hen turkeys were equipped with backpack-mounted transmitters and monitored during pre-nesting (ca. 15 March - 12 May), nesting (ca. 13 May - 11 June), and post-nesting (ca. 12 June - 31 August) periods. Ninety-one percent of the hens attempted nesting. Nesting success was 55% (n = 31), and 28% (n = 14) of hens that lost their first clutch attempted to renest. Nest sites were characterized as being surrounded by dense vegetation and were less than 100 m from pastures or roads. Seventy-nine percent of the nests had overhanging branches. Mean clutch size was 11 during both years (range = 7-16). Mean hatching success and egg fertility were 79% and 81%, respectively. Mammalian predators [coyotes (Canis latrans), foxes (Vulpes vulpes), and raccoons (Procyon lotor)] were suspected of causing all nest failures (n = 16), except two.

Poult mortality was 89% and 73% during the first 2 weeks after hatching during 1987 and 1988, respectively. Hen mortality was 23%, 5%, and 8% during the pre-nesting, nesting, and post-nesting periods, respectively. Mammalian predators [coyotes, fox, and fisher (Martes pennanti)] were the major mortality factor of hens. We conclude that limited renesting attempts and high poult mortality may be contributing to the modest expansion of the turkey population in southern New Hampshire.

habitat is increasingly ubiquitous in urban areas and recreational parks. Consequently, these areas have high resident raccoon populations which are often not subject to population management. Because these urban areas and parks have dense human populations or high levels of recreational use, interactions between raccoons and humans occur at an elevated level. These factors collectively contribute to a challenging wildlife management problem. Certain human and raccoon behaviors inevitably cause conflicts. These are manifested through property damage, human injury, and the fostering of negative human values toward raccoons or wildlife, in general. Conservation agencies must deal with negative public opinion toward wildlife and the high cost of handling nuisance raccoon problems. Our experience in several urban areas and parks leads us to believe that these conflicts can be minimized through implementation of an integrated management program. The components of such a program need to include the distribution of technical advice and educational information to people likely to encounter raccoons, management to control raccoon populations, and a year-round program to remove individual nuisance raccoons. If one of these components is absent, conflicts will continue to occur at an unacceptable level with high costs to both society and the agency. We consider this an opportunity to demonstrate to the public that wildlife managers have solutions to wildlife nuisance problems.

**DISTRIBUTION, PRODUCTIVITY, AND FOOD HABITS OF A
RECENTLY ESTABLISHED COYOTE POPULATION IN
CONNECTICUT**

Daniel J. Harrison, Department of Wildlife,
University of Maine, Orono, Maine
Dale W. May and Paul W. Rego, Wildlife
Bureau, Connecticut Department of
Environmental Protection, Hartford,
Connecticut

Coyotes (Canis latrans) colonized Connecticut during the 1950's as part of a general range expansion into eastern North America. Sightings and reports of coyotes increased rapidly during the late 1970's and early 1980's, suggesting a statewide increase in range and numbers. During 1980-86, 323 coyote pelts were tagged to monitor trends in harvests and distribution in Connecticut. Numbers of pelts tagged increased from 14 in 1980 to 68 in 1984; coyotes had been reported from 61% of 169 towns by 1987. Of 66 towns without reported coyote harvests, 29 were densely populated towns bordering either the Connecticut River or Long Island Sound. From 1983-86, carcasses of 145 coyotes were collected to assess food habits, age structure, and productivity. Common prey remains in coyote stomachs (n=102) were white-tailed

"first-come, first-served" basis or by market pricing. Assuming permits could be sold, the average price those who had hunted would be willing to pay for a permit was \$35.28, while the average for those who had not been able to hunt was \$31.10. However, approximately one-fifth of the respondents indicated that they would refuse to pay anything for a permit.

BLAZE ORANGE: PANACEA OR PLACEBO?

John C. Proud and Robert T. Gotie
New York State Department of Environmental Conservation
Cortland, NY

Media coverage of hunting accidents has stimulated increased public concern about hunter safety in New York. The public perception that hunting accidents are both unnecessary and avoidable has led to a legislative initiative for a blaze orange requirement in the state. To provide a rational information base on this topic before a major policy decision is made, we conducted a study in Central New York to determine current use of blaze orange garments, attitude of hunters towards its use and their support of pending legislation. An annual Small Game Hunter Harvest Survey served as the vehicle for contacting hunters in a nine county area. As part of this survey, 1554 participants were asked a series of questions on blaze orange. Of the hunters contacted, 49.9% wear blaze orange garments while hunting small game and 75.6% wear it when afield for big game. 81.4% of these hunters believe that wearing blaze orange will reduce hunting accidents. Visibility was the most frequently offered reason for this belief. 64.9% of the hunters interviewed indicated support for legislatively requiring blaze orange garments be worn while hunting in New York. Increasing age was negatively correlated with the strength of belief that wearing blaze orange will reduce hunting accidents. These results should be considered when interpreting recent and future hunting accident statistics in New York. Because of the beliefs held by hunters, a legislative requirement may not succeed in raising blaze orange use above 82% for big game hunters in New York. Support from the effected public for a mandatory blaze orange requirement should be carefully reviewed in light of these findings.

ORGANIZATIONAL COMMUNICATION WITHIN ELECTRIC UTILITIES
INVESTIGATING ANIMAL-CAUSED FAULTS IN SUBSTATIONS

Jody W. Enck and Tommy L. Brown
Dept. of Natural Resources, Cornell University
Ithaca, NY

Periodically many organizations or agencies determine that their internal communications networks lack completeness and/or consistency. Often the obstacles to effective communication are not recognized until some new task is attempted. Recently, obstacles to effective internal communication

New York residents participated in saltwater sportfishing. Not only does fishing represent an important leisure activity, but it is also big business. During 1986, resident "downstate" anglers (New York City, Westchester, Rockland, Nassau, and Suffolk counties) spent nearly \$1,139,000,000 dollars in pursuit of recreational saltwater fishing. There is no question that recreational saltwater fishing represents an important leisure activity and economic resource in New York. However, the question must be asked, why are only approximately 15% of the downstate households participating in saltwater sportfishing? With nearly 3.4 million metropolitan New York City households not participating in marine angling, the potential for increasing participation from a management and economic development perspective seems great.

During the winter and spring of 1987, 1,262 households in the metropolitan New York City area were contacted by telephone about recreational saltwater fishing activity in 1986. Of these, 1,034 households indicated they contained no saltwater anglers. These households were asked to give reasons why members did not participate in saltwater sportfishing. From the data, three areas primarily account for non-participation. These barrier areas were time, the fishing activity, and the fishing environment.

The management implications of this study indicate that managers of marine fisheries resources in New York could potentially influence participation in recreational saltwater angling by addressing time, access, and knowledge barriers which presently preclude participation.

WHAT CONSTITUTES "GOOD FISHING"?

Bruce T. Wilkins

Dept. of Natural Resources, Cornell University, Ithaca, NY

A pilot study of angler satisfactions with angling on Canadarago Lake was conducted in 1988. The major foci of this trip-based study was identification of factors contributing to overall angling trip satisfaction, including pre-trip expectations. Major factors considered in the study were expectations, catch characteristics, and external variables such as weather and companions. Preliminary findings will be presented and discussed in light of various theories on satisfaction and comparisons with findings in selected related studies.

of 10 pounds each. Furthermore, the expectations of these anglers just prior to the 1988 season were extremely high - for the same or even better creel results than in 1987. Further findings of this study are discussed. The presentation then discusses the problems managers will likely face as (or if) anglers eventually come to accept these unreasonably high catch levels as a norm, a need, and a right.

Wildlife Session—Big Game

Tuesday afternoon, May 9

CAN POPULATION SIMULATION HELP SET HARVEST QUOTAS FOR ANTLERLESS DEER IN NEW YORK?

J. Edward Kautz, New York Department of Environmental
Conservation, Delmar, New York.

To help answer this question, I evaluate 2 recent white-tailed deer population simulation models: Deer CAMP (Moen, Severinghaus, and Moen 1986) and Deer Sheet (Williams 1988). The assumptions, logic, structure, and data input requirements of each are evaluated. I then test the ability of each model to predict known harvest and age ratios for selected areas in New York State. If the models work well: 1) simulated population sizes can be used to estimate the required harvest of antlerless deer in the next season for a desired deer population change, and 2) evaluation of a season's results will be possible one year sooner than with the current method (Dickinson 1982, 1986). I also discuss possible design improvements in simulation models intended for setting and evaluating antlerless deer harvest quotas.

HARVEST CHARACTERISTICS OF WHITE-TAILED DEER RECENTLY SUBJECTED TO HUNTING

Carla J. Mitchell and Winston P. Smith, Department of
Biology and Center for Management, Utilization and
Protection of Water Resources, Tennessee Technological
University, Cookeville, TN

The Oak Ridge Reservation supports a white-tailed deer population which during 1945-1985 experienced only natural mortality. Since the fall of 1985, the population experienced controlled either-sex hunts. Initially, 6.4 deer/km² were removed; median age of both males and females in the sample (n=809) was 2.5. The oldest male and female were 7.5 and 9.5, respectively. Fawns represented the most common age class (31%) among females; the mode age class for males was 2.5 (30%). Proportion of yearlings in the harvest increased from 22% in 1985 to 38% in 1988. At the same time, the proportion of 2.5+ year-olds decreased from 52% in 1985 to 39% in 1988. The overall sex ratio of the harvest changed little; however, the yearling harvest was biased toward males (\bar{x} =71%). Also during this time, mode age at death of females increased from 0.5 to 2.5; median age at death decreased from 2.5 to 1.5. Both mode and median age at death for males decreased from 2.5 to 1.5. Median ecological

THE IMPACT OF DEER ON FOREST VEGETATION IN WEST VIRGINIA

Thomas J. Allen and Terry Hingtgen

West Virginia Dept. of Natural Resources, Elkins, WV

The impact of deer on forest vegetation was measured on 18 exclosures in various forest types in West Virginia during 1984 and 1987. Comparisons were made between the 2 years. Square exclosures 1/40th acre in size were established using 8-foot hog wire fencing with an equal sized area adjacent to the exclosure being established by setting corner posts. Vegetation was measured in 3 strata: overstory, understory and ground cover around 9 permanently marked points. The impact of deer on the vegetation was measured over the 3-year period between the treatment and control areas of each exclosure based on indicator plant species. The exclosures were established in areas of low (county buck kills .8-1.5 deer/sq. mi.) and high deer populations (county buck kills 5-7 deer/sq.mi.) and the impact on vegetation measured for each density level. The project is a long-term study and vegetation measurements will be continued at 3 years intervals. Over time, the full impact of high deer densities on the environment will be realized. Preliminary results show that deer do influence key species in the reproductive strata even in the initial 3-year period.

PREDICTING WHITE-TAILED DEER FEMUR FAT LEVELS FROM MANDIBULAR CAVITY TISSUE

Ronald J. Regan and Steven G. Parren, Vermont
Department of Fish and Wildlife, Barre,
Vermont

At northern latitudes, the physical condition of white-tailed deer (*Odocoileus virginianus*) during winter has important implications for harvest management. Several physical condition indices are available which utilize organ fat, blood assays, or bone marrow fat. The femur has typically been used for marrow indices. Because femurs are relatively difficult to collect, we evaluated mandibular cavity tissue as a possible substitute. During the periods 1 February-15 May, 1985 and 1986, Vermont Fish and Wildlife Department wardens collected 258 pairs of femurs and mandibles from deer of both sexes and all ages. Most deer had been freshly killed (<24 hours) on highways. The fat content of each sample was determined by computing the ratio of oven-dried weight to wet weight. Fat content of the mandibular cavity tissue was highly correlated with that of femur marrow ($r = 0.93$, $n = 258$, $P < 0.001$). We used backward elimination and stepwise procedures to examine the relative contribution of several variables when constructing a regression model of femur fat content. Mallows' C_p statistic was used to select the best fitting regression equation (Femur = $1.11[\text{Mandible}] + 0.008$). Sex, age, and month of death provided little additional predictive ability and were

undernutrition compared to fawns among residential communities. Relative differences in undernutrition were attributed to a high density population and supplemental feeding concomitant with hurricane effects on barrier island vegetation. Insular deer populations exhibit many similarities to mainland populations. However, these results suggest that insularization affects the ability of deer populations to adapt to a changing environment.

1. Present Address: Acadia National Park, Bar Harbor, Maine

A GEOGRAPHIC INFORMATION SYSTEM ANALYSIS OF A
SUBURBAN WHITE-TAILED DEER POPULATION
Litwin, T. S., A. M. Ducey-Ortiz and
R. H. LeB. Downer, Seatuck Research Program
Cornell University, Islip, New York

Habitat fragmentation resulting from human land use activity is affecting a variety of wildlife populations in the Northeast, including that of the white-tailed deer. The interspersed suburban development in deer habitat has resulted in an increase of non-traditional interactions with the human population.

To examine this process, a total of 34 white-tailed deer, located on the Seatuck National Wildlife Refuge, Islip, NY, were radio-collared and monitored from 1984-87. Deer movements, representing 4137 individual locations, were analyzed in the context of four layered theme maps: habitat, land use, hydrology and roads.

Preliminary analysis indicates that these 34 deer had seasonal variation in their preference of specific habitat mosaics. Preferences varied according to sex and social status of the animal. Variation in preferences were better explained by the habitat mosaic at a radius of 60 meters of the deer observation, than by the specific habitat that the deer was in ($r=.53$ vs. $r=.88$). Individual deer utilization distributions were calculated and found to be very small (< 0.84 ha. for females) and significantly larger for males ($p > .01$). Movement rates, calculated from the distance and time between observations, showed increases with the amount of human activity associated with land use patterns. The concentration of deer observations along small drainages is most likely the result of their use as vegetated corridors through developed areas.

This study has shown that grid-based geographical information systems can be used cost effectively in the spatial analysis of a wildlife resource functioning in a highly complex landscape

predation were documented. Also, two tripods were used by more than one hen mallard, and three of the tripods were used by wood duck hens.

**DEVELOPMENT AND MANAGEMENT OF GRASSLANDS FOR WATERFOWL AT
OAK ORCHARD AND TONAWANDA**

Dan Carroll, New York State Department of
Environmental Conservation, Avon, New York

The Oak Orchard and Tonawanda Wildlife Management Areas are two wetland areas located in the Lake Plains ecozone of Western New York and centrally located between Rochester and Buffalo. These areas are also located in the Lower Great Lakes - St. Lawrence Basin, priority habitat area of the North American Waterfowl Management Plan. A major management activity on these areas has been the establishment of 500 acres of grasslands including warm and cool season grasses. Cool season grasses were established by planting or by natural establishment which eliminated seed costs. The cool season grasses were established on the lower, wetter fields and are managed for later nesting waterfowl, such as the blue-winged teal. This management format will provide preferred nesting cover for later nesting waterfowl through the normal spring growth of grasses without annual additions of fertilizer and lime, allow for the annual mid-summer harvest of hay to control the intrusion of broadleaf and woody vegetation, and provide prime spring and fall grazing areas for Canada geese. The warm season grasses (primarily Blackwell switchgrass) were planted on the higher, more droughty soils. This poor soil grass has high stem rigidity and provides excellent residual characteristics for early nesting waterfowl (mallards). The various stands of switchgrass are managed for the harvest of seed to develop additional nesting cover by conducting occasional prescribed burns and applying herbicide, or for nesting cover by allowing the occasional harvest of hay (mid-summer) and applying herbicide every 3 or 4 years.

**A BREEDING GROUND SURVEY OF ATLANTIC FLYWAY CANADA
GEESE IN NORTHERN QUEBEC**

Richard A. Malecki, USFWS, New York
Cooperative Fish and Wildlife Research Unit,
Cornell University, Ithaca, New York and
Robert E. Trost, USFWS, South Carolina
Cooperative Fish and Wildlife Research Unit,
Clemson University, Clemson, South Carolina.

An aerial survey of Canada geese (Branta canadensis) conducted over a 825,226 km² area in northern Quebec provided an estimate of 157,122 breeding pairs. About 90% of the estimate occurred in the Ungava peninsula and southern Ungava Bay region. Densities averaging 1.63 pairs/km² were found in coastal habitat

plant material comprised 92% and 8% respectively of the total dry weight of all food consumed. Foods were consumed in direct proportion to availability within each habitat type. The salt marsh snail (Melampus bidentatus) was the principle food item. It comprised 64% of the total dry weight of food consumed, and 93% of the total dry weight of food consumed from the salt marsh habitat. The salt marsh was the predominant feeding habitat until snow or ice cover limited snail availability and forced black ducks to rely on foods from other habitats. Killifish (Fundulus spp.), sea lettuce (Ulva lactuca), and algae were the predominant food items consumed in tidal creeks, mud flats, and refuge impoundments respectively, and comprised 25%, 2%, and 3% respectively of the total dry weight of all food consumed. Wintering black ducks exhibited an opportunistic foraging strategy by shifting their use of feeding habitats to take advantage of the most available food supplies.

ECONOMIC LOSS CAUSED BY TUNDRA SWANS FEEDING IN CRANBERRY BOGS

Paul M. Castelli, New Jersey Division of Fish, Game and Wildlife, Robbinsville, NJ; and
James E. Applegate, Rutgers University, New Brunswick, NJ

Wintering populations of tundra swans (Cygnus columbianus) in the Atlantic Flyway have increased steadily during the last 30 years (Stiener 1984). Historically, tundra swans fed on the leaves, stems and tubers of aquatic and marsh plants. However, since 1969 Atlantic Flyway tundra swans have been observed field feeding on waste corn and soybeans as well as shoots of winter wheat (Bellrose 1976). In New Jersey, tundra swans have begun feeding nocturnally in cranberry (Vaccinium macrocarpon) bogs. New Jersey is the third largest cranberry producer in the United States (NJDA 1987). The purpose of this study is to document the economic loss associated with tundra swan feeding in New Jersey cranberry bogs during the winters of 1985-86 and 1986-87.

A questionnaire was mailed to all members of the New Jersey Cranberry Growers Association (NJCGA) at the end of the 1987 harvest. Non-respondents received a second mail questionnaire and if necessary were called by the president of the NJCGA who administered the questionnaire via telephone thereby achieving a 100% response.

Twenty-five (71.4 percent) of the 35 members were active cranberry growers during the survey period. We asked each respondent the number of acres they grew during each survey year and compared this with the state total in the New Jersey Agricultural Statistics Report (NJDA 1987) in order to gauge the extent of our surveys' coverage of cranberry growers. Survey participants reported growing 89.0 percent and 90.0 percent of the state totals in 1986 and 1987 respectively.

Seventeen (68.0 percent) of the 25 active growers reported swans present in their bogs during both winters. All growers with swans reported some depredation. Larger growers were more likely to have swans and related damage than small growers. The growers rated swans feeding on redroot (Lachnathes tinctorial) tubers as their number one problem. Adjacent cranberry vines are often uprooted by swans feeding on this common weed of cranberry bogs. Cratering the bottom of the bogs was the second worst problem. Craters interfere with machinery used to fertilize, herbicide, and harvest. Growers rated direct feeding on cranberry vines as a relatively rare problem, usually associated with newly planted vines. Any damages to vines causes a multi-year loss, because it takes 4-5 year to cranberry vines to mature and begin production.

sources of colonizing individuals of species. Many of our parks and wildlife refuges are actually habitat "islands". The size of these habitat islands and their proximity to other similar habitats will be major determinants of the diversity of wildlife they will be able to support over time.

Edge, the ecotone where two or more habitat types converge, is beneficial to some species but detrimental to others. The latter include many species with very specialized habitat requirements. The negative effects of edge for these species may include increased contact with natural predators, parasites, or competitors, and increased human disturbance, road-kills, and poaching. Forest fragmentation and creation of edge results in increased nest predation and brood parasitism by edge species on migratory forest songbirds.

PRESERVING SMALL WILDLIFE POPULATIONS IN FRAGMENTED HABITATS: PRACTICAL APPLICATIONS

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and Wildlife, P. O. Box 1298, Bangor, ME 04401

Curtice R. Griffin, Department of Forestry and Wildlife
Management, Holdsworth Hall, University of Massachusetts,
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Concepts of minimum viable population size (MVP), island biogeographic theory, and edge effects have important applications to the management of small wildlife populations and the selection and design of habitat preserves. The heath hen (Tympanuchus cupido) declined from over 800 individuals to extinction in less than 20 years as the result of a catastrophic event combined with random changes in environmental, demographic, and genetic variables. Currently, many local populations of rare and endangered species in the Northeast are below MVP levels. Implications of the MVP concept for management of rare species are discussed.

Island biogeographic theory has direct applications to the selection, design, and management of wildlife preserves. Preserves that seek to maximize diversity should be as large as possible, ideally large enough to support MVP's of all the species they seek to preserve. In some cases, however, several small preserves will protect more diversity than will a single large preserve. Preserves that approximate a circular shape will minimize edge effects. The likelihood of population and genetic interchange between preserves will be increased by decreasing the distance between preserves. It has been proposed that the effects of isolation between wildlife preserves can be lessened by linking preserves with habitat corridors. Although the concept of corridors is intuitively appealing, there are few data to support the use of corridors by wildlife. Potential advantages and disadvantages of habitat corridors for wildlife in the Northeast are discussed.

changes in hayfield vegetation. Of 90 fields originally planted to a legume mixture, young fields consisted of tall, dense, homogeneous stands of legume-dominated vegetation with little litter; older fields consisted of short, sparse, patchy stands of grass-dominated vegetation with abundant litter. Bobolink abundance was most highly correlated (negatively) with total vegetation cover. Other significant negative correlates were alfalfa cover and vegetation height; positive correlates included field size, vegetation patchiness, litter cover, and plant species richness. Fields with early mowing dates the previous year had fewer Bobolinks than expected. Hayfields ≥ 8 years old had Bobolink densities (1.2 males/ha) 4 times greater than native prairie habitats and $\geq 67\%$ greater than any other habitat type in our study area. However, the current trend toward earlier hay-cropping has made hayfields less productive habitats for Bobolinks. In an area of intensive dairy farming, we estimated that hay-cropping was responsible for a yearly reduction of 29-45% of the fledglings that would have been produced had no mowing occurred before 20 July. Furthermore, declines in acreage in hay, increases in the relative abundance of alfalfa, and shorter rotations for hay crops apparently have had negative effects on Bobolink populations as well as those of other grassland species.

WILDLIFE HABITAT EVALUATION IN NEW YORK CITY PARKS

Matthew Sanderson, New York State Department of Environmental Conservation, Long Island City, NY,
D. L. Lev, New York City Department of Parks & Recreation, New York, NY, and C. L. Nilon, Kansas Department of Wildlife & Parks, Pratt, KS

Because wildlife related recreation and nature interpretation are important components of New York City park management plans, one aim of the Natural Resources Group of the New York City Department of Parks and Recreation is to maintain and improve habitats for various wildlife species. To accompany thorough vegetative, soil, and water resource assessments in natural areas of city parks, it has developed habitat appraisal guides to evaluate an area's habitat potential for chosen wildlife indicator species. Indicator species used were cottontail rabbit, gray squirrel, ring-necked pheasant, black-capped chickadee, yellow warbler, American kestrel, mallard duck, wood duck, muskrat, Atlantic brant, or clapper rail. The appraisal guides were originally drawn from three sources: USDI Fish and Wildlife Service and Pennsylvania Game Commission Habitat Suitability Index models and guides used by the Missouri Department of Conservation. The appraisal guides were adapted for use in urban park environments by the Northeastern Forest Experiment Station of the USDA Forest Service.

Using the guides, seven New York City parks were rated based on analysis of life requisites such as winter cover, food supply, and reproductive sites in various cover types. The analysis resulted in a Habitat Suitability Index (HSI) rating for individual covertype

COMPUTER MAPPING WILDLIFE CORRIDORS -- NEW DIRECTIONS FOR MANAGEMENT PRIORITIES?

John S. Barclay, University of Connecticut, Storrs, CT,
Scott S. Hobson, The Environmental Scientific Corp.,
Providence, RI, and Daniel L. Civco, University of Connecticut,
Storrs, CT

Efforts to sustain wildlife and other biotic resources on private land have often been futile where rising land values for urban functions outstripped institutional capabilities to respond with alternatives to development. Wildlife corridors have been proposed as a means of maintaining some wildlife populations in urbanizing areas. However, strategic tracts which connect open space units must be identified while management options remain. Conversion of 80 K² (20,000 A) of undeveloped land to urban uses per year has been reported for Connecticut, among the most densely populated of the United States (244 people/k²). Efforts to identify strategic corridors began with public/quasi public lands in seventeen towns (1,160 k²) in southcentral Connecticut. The properties were computer digitized, data were tallied and maps prepared using Earth Resources Data Analysis System (ERDAS) software. Fourteen percent of the total area was identified as urban, 23% semi-protected "open space", and 62% presumably subject to development. Corridors were identified, digitized, and displayed according to one of three priorities based on distance between open space parcels; presence of streams, ridgetops or major wetlands; and proximity to environmentally sensitive areas. Delineated corridors were equivalent to 9% of the total area of the 17 towns, 2% more than the known areas of special environmental concern. The process demonstrated a means whereby a strategic network of undeveloped lands can be referenced for use in resource management decisions.

A METHOD FOR EXPEDIENT SITE SPECIFIC WILDLIFE HABITAT EVALUATION FOR ENVIRONMENTAL IMPACT ASSESSMENT

Joel D. Gove, Schoor, DePalma and Canger Group, Inc.
Manalapan, NJ

A method of site specific habitat assessment is discussed. The methodology has been devised to accommodate the time and cost restraints inherent in private site design and development. Accumulation of pertinent, accurate background data is essential. Regional wildlife inventories promulgated by Federal, State and Local Governmental Agencies, together with soil surveys, wetland maps and local vegetative geographies are commonly examined prior to the field investigations. Through field review, analysis of topographic surveys, and interpretation of aerial photographs a site specific plan of vegetative associations (communities) is formulated. Regional aerial photographs may be used to determine the extent of the vegetative associations adjacent to the subject site. During the course of intensive field investigation, a site specific inventory of plant species by vegetative community and frequency is completed and all signs of wildlife utilization must be noted. Observations must be both quantitative (number of individual observations for each species) and qualitative (in which vegetative community did the sighting occur?). Standard methods for determination of species diversity may be utilized, though interpretation of the results must take into account the specific constraints placed on sampling, such as weather conditions and sample period (season, time of day, etc.). Final habitat

There is a tremendous potential. About 75 percent of the commercial timber land in the United States is in private lands. This land is held by almost 8 million landowners. With state agencies like Fish & Wildlife, Water Quality, and Recreation, working in partnership with State Foresters, the possibility exists to bring millions of acres of forest land under stewardship management. Fish and wildlife and their habitat would benefit immensely.

In the course of their routine activities, wildlife officers come in contact with more armed individuals than any police officer. The possibility of a life-threatening situation occurring from not only the wildlife violator, but other criminal users of the outdoors, is readily apparent. In light of its tactical advantages, administrators would do well to consider the auto pistol.

EXPLANATION AND DEMONSTRATION OF FIREARMS
TRAINING SYSTEMS (FATS)

James Beard, Assistant Director, Bureau
of Law Enforcement, Pennsylvania Game
Commission, Harrisburg, Pennsylvania

This paper will demonstrate the use of a simulator (video machine projecting scenarios onto screen) with pistol/shotgun firing lasers to indicate hits. All action, once a shot is fired, is assessed by computer, which will measure reaction time, judgement used, seriousness of wound, etc.

Law Enforcement Session II

Tuesday morning, May 9

ASSESSING FISHERIES LAW ENFORCEMENT AND
COMPLIANCE IN MASSACHUSETTS

Doctor Jon G. Sutinen, Department of
Resource Economics, University of Rhode
Island, Kingston, Rhode Island

This paper presents the results of a year-long study of enforcement and compliance in the inshore commercial lobster fishery of Massachusetts. The analysis in the study is based on data collected using a novel survey methodology. Massachusetts commercial lobstermen reported on their personal experiences with the State's Environmental Law Enforcement program, assessed the program's performance and described the behavior of compliers and violators in the fishery. This data has been used to make improvements in the enforcement program, and to estimate the extent and nature of non-compliance in the fishery. The levels of illegal landings are estimated as well as the number of lobstermen who frequently violate regulations.

Operation Feathered Friends was a nine-month investigation which dealt with the unlawful killing and selling of protected birds of prey. This investigation resulted in the prosecution of 50 individuals and the seizure of over 100 birds of prey, including a bald eagle and a golden eagle.

Operation Trapline was a paper-trail investigation which resulted in the prosecution of 168 individuals for illegal trapping, selling, and buying of raw furs. There were reported fur sales of approximately \$1.2 million for the 1986-87 trapping season. This investigation revealed unreported fur sales of \$.48 million for an actual total of \$6 million.

Operation Whitetail was the result of two years of intense covert investigation of the unlawful killing and selling of whitetail deer. The covert officers purchased over 3,000 pounds of deer meat during the last year of this investigation and 15 individuals were prosecuted. This investigation also resulted in the seizure of a moonshine still and the uncovering of a major stolen video equipment ring in West Virginia and Maryland.

Through the work of the covert unit and the publicity generated as a result of these investigations, we feel this type of investigative tool is the ideal way to combat the commercialization of wildlife and will be a good deterrent for the future.

A REGIONAL MANAGEMENT SYSTEM DESIGNED TO IMPROVE LAW ENFORCEMENT EFFICIENCY

Allan L. McGroary, Director, Division of
Law Enforcement, Massachusetts Department
of Natural Resources, Boston,
Massachusetts, and Doctor Jon G. Sutinen,
Department of Resource Economics,
University of Rhode Island, Kingston,
Rhode Island

A Regional Management System developed by Massachusetts Division of Law Enforcement provides managers, from the first line supervisor to the director, with a tool to measure the impact of decisions, to monitor progress in accomplishment of goals, to guide the effective utilization of resources and to communicate with others about the progress and needs of the agency. The system relies on internal data collected monthly from officer work summaries. All manhours available to the division are divided into three categories - operation,

AN ANALYSIS OF THE RECRUIT ACADEMY DEFENSIVE
TACTICS TRAINING PROGRAM

Environmental Conservation Officers
Samuel D. Servadio and Michael G. Wheeler,
Division of Law Enforcement, New York
State Department of Environmental
Conservation, Syracuse, New York

This paper outlines the current basic academy Defensive Tactics program for the New York State Department of Environmental Conservation's Division of Law Enforcement and includes a cost/benefit analysis.

The lecture will stress the importance of defensive tactics training and its positive effects on attitude and demeanor.

Many of the primary problems encountered when running an academy defensive tactics program, such as instructor scheduling, reduction in field staff, recruit attrition, safety concerns, and equipment costs, will be addressed.

The discussion will conclude with a justification of the costs incurred in this defensive tactics training by illustrating the many benefits that are gained. Benefits such as increased officer safety, improved productivity, improved public image and the most cost effective, reduction of departmental liability.

A slide presentation will be utilized to support this lecture.

Law Enforcement Session III

Wednesday morning, May 10

PROFESSIONALISM IN CONSERVATION LAW ENFORCEMENT

Professor Wilson G. Hess, Dean of Faculty,
Unity College, Unity, Maine

Since the 1970's, the process of professionalization has become increasingly important to the field of conservation law enforcement. Changes such as the increased emphasis on environmental regulations and greater attention to law enforcement techniques have helped to define the profession of conservation law enforcement. Sociologists tell us that true "professions" possess: 1) a body of expert knowledge and skill practices, 2) a system of specialized training, 3) ethics for regulating conduct, and 4) a system

THE USE OF MOUNTED WHITETAIL DEER AS A LAW
ENFORCEMENT DECOY

Lieutenant Paul Bernstein, Division of Law
Enforcement, New York State Department of
Environmental Conservation, Schenectady,
New York

In recent years, it has become apparent that the methods used to apprehend violators of our big game laws are not as effective as they were in the past due to the higher degree of mobility on the part of the violators and the lack of available unposted land to hunt upon.

This has given rise to a large segment of the big game hunting population taking to the roads and highways to kill a deer. This, in turn, has infuriated many landowners as the road hunting violator seems to have a total disregard for the sanctity of another's land and the legal and proper manner of taking a deer. They resort to shooting from the vehicle and actually take deer right off peoples' front lawns. This has led to the intensification of the posting problem.

With this in mind, we started looking for innovative ways of combating illegal road hunting and this gave way to our trying out the use of a mounted whitetail deer as a law enforcement tool in dealing with road hunters.

WHY WON'T THEY DO IT MY WAY? - AN ANALYSIS OF
DIFFERENCES IN APPROACH TO PROBLEM SOLVING
BETWEEN SCIENTIFIC AND ENFORCEMENT STAFF

Lieutenant Robert A. Henke, Division of
Law Enforcement, New York State
Department of Environmental Conservation,
Warrensburg, New York

It is not uncommon to hear agency biologists or technical staff express dismay over the actions taken by enforcement personnel in particular circumstances. This is equally true in the obverse as well. Yet specific questioning will show that goal statements are most often nearly identical and individuals within each unit are almost over zealous in their avowal that there is nothing remotely resembling a "rift" or even less than that a philosophical disharmony between divisions.

The author uses data from interviews, surveys, and a review of training and degree requirements for law enforcement and program staff to show how the mechanics of dependence upon deductive versus inductive logic account for

SPECIAL SESSIONS

Poster Session

Tuesday afternoon, May 9

INNOVATIVE PRESERVATION OF A NEW ENGLAND WETLAND Peter W. Spear, Natural Resource Consulting Services, Concord, New Hampshire

As with many ski areas in the glaciated Northeast, to remain viable they are feeling the demand to expand, in order to compete. Gunstock Ski Area in Gilford, NH planned a major snowmaking expansion for 1986-1987. Sources of water were carefully examined, and the ponding of a 25 acre wetland was determined to be the only reasonable source of an adequately large body of water. This paper is a case history of this completed project with discussions on the institutional considerations for planning such an impoundment, but with special emphasis on the innovative methods used to mitigate impacts to the diverse wetland.

The key to the projects' implementation was the development of a Wetland, Fish and Wildlife Mitigation Plan which reduced the impacts. The centerfold of the plan was a design which allowed the seasonal flooding of the impoundment. Growing season finds the impoundment gone while winter brings a full pond for water extraction for snowmaking. Subimpoundments were built of haybales to provide winter cover for hibernating animals.

Preliminary data of the three year post-construction monitoring period are explored. Rather than create another steep-sided pond this project attempts to allow man the use of a wetland during a part of the year and in a manner that will not compromise the wetland's overall value. The application of this project and its special mitigation to other developments that do not require year-round water supply is discussed.

AN APPROACH FOR DEFINING POPULATIONS OVER LARGE GEOGRAPHICAL AREAS George E. Menkens, Jr. and Richard A. Malecki, Cornell University, Ithaca, NY

We examined a harmonic-mean measure (program HOME RANGE), usually used for characterizing core use areas of

INTERACTIVE VIDEO IN WILDLIFE MANAGEMENT
Bruce T. Wilkins and Geri Gay, Cornell
University, Ithaca, NY

An interactive videodisc program permits hunters or others interested in field identification of 8 waterfowl species to gain that expertise using identifying characteristics not typically available to instructors. The disc, linked to an IBM computer, permits students or the learning sequence, to stop birds in flight; identify key field characteristics including flight patterns; permits individuals to see birds in their natural settings. Steps in developing such a disc and program are described and associated costs and equipment requirements are noted. The program will be demonstrated as part of the presentation.

Major problems in using this technique include gaining needed film footage, hardware and stimulating use of the program by faculty and agencies. Characteristics advancing or retarding adoption of this and other innovations are reviewed. The trialability and observability of interactive videodisc technology facilitates its adoption. Examples are cited of its comparative advantage, complexity and incompatibility with existing patterns of teaching apparently retarding adoption. Potential values of this technology in wildlife management are considered.

FISHERIES MANAGEMENT GUIDELINES FOR ACIDIFIED
WATERS IN THE ADIRONDACK REGION

Kent R. Schreiber and R. Villella, US
Fish & Wildlife Service, Kearneysville,
WV; Carl Schofield, Cornell University,
Ithaca, NY; Steve Gloss, Wyoming Water
Research Center, Laramie, WY; Michael
Marcus, Western Aquatics, Inc., Laramie,
WY

Many of the major reported impacts of acidic deposition have been associated with fishery resources. Concerned managers are interested in interim remedial measures that may be employed to restore and protect affected aquatic ecosystems and to ensure healthy and productive commercial and sport fisheries. Between 1983 and 1987 ten small (0.5 - 6.0 ha), acidic (pH<5) lakes in the Adirondack Mountains of New York State were used in neutralization experiments to evaluate the response of stocked brook trout populations to liming and re-acidification. Caged trout were placed in each lake immediately before and after liming to evaluate acute

BIOTIC COMMUNITY COMPARISONS BETWEEN PROTECTED
AND ALTERED WATERSHEDS - A HIERARCHICAL LAND-
SCAPE APPROACH

Mary Jo Croonquist, Robert P. Brooks,
Dean E. Arnold, Edward D. Bellis and
Carl S. Keener, Pennsylvania State
University, University Park, PA

Protection of riparian and wetland systems has been recognized recently as an important component of watershed protection programs. The purpose of this study was to determine the effects of human-caused alterations on the aquatic habitats of watersheds so that future conservation and restoration programs for damaged areas could be implemented. Two watersheds within the same ecoregion were selected from the Ridge and Valley Province of Central Pennsylvania; a reference, or undisturbed watershed, and a watershed disturbed by agricultural and residential disturbance. The study tested a new approach of assessing impacts on wetland, stream, and riparian areas by analyzing the changes occurring in biotic communities found along four hierarchical positions of the watershed. The four hierarchical categories used were, headwater, second order tributary, mid-reach, and mainstem. Three replicates of each category were selected giving 12 sites per watershed or 24 sites total.

Communities of vertebrates and vascular plants were sampled over a 12-month period. Vertebrates were sampled 12 times. Vascular plants were sampled six times throughout the growing season. Geographic information systems (GIS) were used to obtain landscape information regarding drainage area at each hierarchical position, total drainage area, land-use, and degree and form of disturbance. GIS information was related to the observed data on biotic communities and water quality to develop an assessment of changes induced by human activities. Watersheds were expected to be relatively similar in headwater regions where the disturbed watershed was protected as state forest lands. The degree of difference in species composition between watersheds was expected to increase down the hierarchy to mainstem sites of the disturbed watershed where anthropogenic disturbances were most prevalent.

ends of the area. However, problems with keeping drivers on line and maintaining good communications have biased counts. Recently, a drive count to correct these problems was conducted on the 4.9 km² Glendorn Estate in northwestern Pennsylvania. Roughly rectangular, the estate measured 1.8 km by 2.7 km. One hundred drivers, spaced 18 m apart, were positioned along the 1.8 km west fenceline. Positions were identified and numbered on the fenceline. Crew chiefs assigned to each of 10 groups of 10 drivers placed their drivers on the fenceline, with themselves in the middle. Chiefs followed marked routes (surveyor's flagging tied to trees at approximate 5 m intervals). Drivers guided on him, or a neighboring driver that could see him. Two string lines were placed across the Estate, perpendicular to the route of travel, approximately 1 and 2 km from the starting point: drivers were to wait at the string line until given the command to recommence walking. This tactic maintained a fairly straight line. A drive leader maintained communication with chiefs via hand-held radios. He used an air horn to signal all drivers when to stop (one long blast) and to start (three short blasts). Three persons walked outside the fenceline ahead of the drive line on each side and 10 were positioned at the end fence to count deer exiting the enclosed area.

WILDLIFE WETLAND MODIFICATION AND ENHANCEMENT;
POSITIVE ECOLOGICAL BENEFITS DOCUMENTATION
(1981-1987)

Carlo R. Brunori, MD. Forest Park &
Wildlife Service, Annapolis, MD

The recent environmental concerns and laws have highlighted a new problem for wildlife biologists and managers as well as other ecologists. The need to create and enhance wildlife wetland habitat and create additional benefits for fishery, water quality and wetland diversity has come under pressure from various review agencies (State, Federal, etc.) with regard to preservation instead of a conservation approach. The heavy loss and degradation of wetlands in the past creates a strong need to reverse this trend and achieve net gains for the future or we will continue to lose the many values associated with wetlands (anadromous fish, puddle ducks, aquatic vegetation and water quality, not to mention endangered species in general). A 7 acre tidal-freshwater site was converted in an intermittent stream area to create a permanent wetland area at the upper edge of a non-saline tidal area (.5 acre) in combination with 6.5 acres of non-tidal freshwater intermittent stream flood plain area. The wise use of an existing road berm across the site for the dam construction resulted in an excellent

Step-by-step instructions tell you how you can set up a library lending program in your community. Groups and organizations such as the Association for Retarded Citizens, Scouts and even nursing homes will take up fishing if they have equipment and instructions available. Who knows maybe even you can make use of this idea for a few hours of quality time.

DETERMINANTS OF BROOK TROUT FECUNDITY

William D. Skinner, and D.E. Arnold,
Pennsylvania State University, University
Park, Pennsylvania

We sampled brook trout at six locations (5 streams) in 1987, in central Pennsylvania, in an effort to identify correlates of fecundity. Specifically, we examined the relationships between female body weight and several fecundity measures, namely number of eggs, weight of ovaries, individual egg weight (wet and dry), egg weight/gram of fish weight and egg number/gram of fish weight. Data from each site were tested individually, versus pooling all six sample sets, in order to determine how common any particular pattern may have been. Egg number was positively correlated with fish weight at all six sites (r^2 ranged from .94 to .41), ovary weight correlated with fish weight at five sites (r^2 .94 to .74). Individual egg weight correlated with fish weight at 4 sites (r^2 .85 to .47) and with egg weight/gram fish weight at 3 sites (r^2 .88 to .76). The mean percentage of dry matter/egg was fairly consistent among the six sites (range = 11%). The intensity of the relationship of the above mentioned egg variables and fish weight was also examined with respect to the pH and ANC of the six sites. There appeared to be no influence of pH and ANC on these relationships. The main findings of this study indicate a linear relationship between fish weight and number and weight of eggs. Fish that had high body weight percentage in eggs only had high individual egg weight at half the sites, suggesting that allocating large amounts of energy to ovaries may not result in eggs with greater survival chances (larger eggs). Lastly, the lack of a clear stream pH - fecundity relationship suggests that there may be other more pH sensitive aspects of reproduction warranting investigation.

sampled using inclined plane traps from May-October. Downstream migrational periods were from 24 June-14 October (113 days) in 1987 and 21 June-15 October (117 days) in 1988. A total of 330 and 207 migrant juveniles were captured in 1987 and 1988 respectively. The majority of seaward migrants were captured over a 14-day period in both years (98% from 24 June-7 July in 1987; 89% from 7 July-21 July in 1988). Migratory activity was closely associated with increases in river flow and relative decreases in water temperature. Age of captured fish, determined by analysis of otolith daily growth increments, was not correlated with timing of migration. The majority of the seaward migrations occurred on or near quarter moon phases (approximately 69% in 1987; 80% in 1988), with fewer migrations associated with new moons (31% in 1987; 20% in 1988). No migrations observed were coincident with full moon phases. Mean total lengths of both resident juveniles and downstream migrants both increased significantly throughout the 1987 and 1988 migrational periods.

These data suggest that migrations of juvenile alewives occur during periods of increased waterflow and relative decreases in water temperature. The majority of juveniles migrate prior to the end of July, and alternative pathways around turbines should be provided from mid-June through mid-October to maximize the numbers of fish migrating to sea.

TRI-SOCIETY COMMITTEE ON THE STATUS OF WOMEN AND MINORITIES
IN NATURAL RESOURCES

FINAL REPORT
(December 1989)

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I. Background

A. Historical Summary

In 1986, leaders of the New York Chapter of the American Fisheries Society (NYAFS) and the New York Chapter of the Society of American Foresters (NYSAF) identified mutual interest in exploring the status of women and minorities in their respective professions. During 1987, the NYAFS established an Ad Hoc Committee on Women and Minorities to "generally assess and characterize the roles of women and minorities in natural resources professions within New York." This effort was seen as prerequisite to defining potential roles for the committee.

With preliminary information suggesting a need to further examine the status of women and minorities in New York natural resources roles, an invitation was extended to NYSAF and the New York Chapter of The Wildlife Society (NYTWS) to form a tri-society committee. This was approved and the Tri-Society Committee on the Status of Women and Minorities first met in January 1988. Its charge was to "assess and characterize the status of women and minorities in natural resources professions and education within New York State, and to report any associated issues or recommendations to the Chapters for consideration and action."

The Committee first assembled additional documentation on employment trends and participation of women and minorities in academic fields related to natural resources. Although available documentation was limited, the Committee concluded that women and minorities appear to be under-represented in New York natural resources professions when preparation of these groups in natural resources academic fields is considered.

The next phase of work was to identify the range of problem areas that could result in such under-representation and begin to identify possible action items to address those problems. From the problem areas listing generated, associated action items were identified and locus of responsibilities suggested. The result is a listing of problem areas with associated recommended actions to be carried out by the Chapters via their various committees, and/or the parent societies.

B. Committee Membership

Representing the New York Chapter of the American Fisheries Society were Michael Duttweiler and Barbara Knuth.

Representing the New York Chapter of the Society of American Foresters were Hugh Canham and Hilary Dustin.

Representing the New York Chapter of The Wildlife Society were Louches Powell and Pat Reixinger.

C. Value of Diversity in Natural Resources Professions

We view the issue of diversity in the natural resources professions broadly, to include racial, ethnic, cultural, and sexual diversity. Recognizing and fostering this diversity will have benefits that include a desirable workforce and hiring pool in the future, an enhanced ability for the professions to respond to emerging natural resource management and societal needs, and an increased capacity to understand and diffuse conflicts that might otherwise result in severe limitations on the activities of natural resource professionals.

Demographic trends emphasize the need to address concerns for diversity. In 1988, a report was issued by the national Task Force on Women, Minorities, and the Handicapped in Science and Technology. That report stated that in the year 2000, a mere 10 years hence, 85% of new entrants to the nation's workforce will be members of minority groups and women. As in science and engineering, these groups have been under-represented historically in the natural resources professions. The talents and abilities of a significant fraction of society are lost to natural resources professions when substantial under-representation continues to exist. Our professions can begin to address potential shortfalls in future hiring pools only by recognizing the need to recruit and encourage members of these under-represented groups into natural resources education and careers.

Diversifying our professions provides a stimulus for intellectual, professional, and philosophical growth. Diversity in our society implies that many people do and will view natural resources based on personal, social, and cultural values that are perceived as different from the accepted norms fostered historically in the natural resources professions. Many of the conflicts and debates raging over what are appropriate natural resource management decisions and strategies could be reduced or eliminated with a broader understanding of the diversity of management goals and objectives that may exist within our society. Women comprise over 50% of the population; minority groups, particularly some racial groups, are growing to become less the "minority" and more influential and powerful in society. Women, racial minorities, cultural minorities, and people with disabilities may bring a different perception, attitude, understanding, and approach to the profession and to management activities than would a "traditional" natural resource manager steeped in a management philosophy based in Western European tradition and fostered in a relatively homogeneous professional milieu. If natural resource professionals hope to be understood and accepted by our future society, the professions must make an effort also to understand, accept, and embrace the diverse groups in that society.

As C. Chesney noted (Journal of Non-white Concerns, 1981), "Society is faced with a limit to its production possibilities (i.e., fixed amount of land, associated natural resources, labor, and capital); therefore, it must choose among the various combinations available... Because the decision maker is an inherent variable in this equation, minorities need to share more of these roles. Such a homogenous group -- middle class non-minority -- cannot always be sensitive to the minority view ... Because there is a great potential for future resource [management] policy to benefit more diverse groups, minority professionals should be involved in determining current needs, establishing priorities, and selecting alternatives... Policies affecting the development [and management] of our natural resources are relevant to the lives of all Americans."

II. Existing Data on the Status of Women and Minorities in New York State Natural Resource Professions

A. Summary

The Tri-society committee contacted the National Offices of each society (AFS, SAF, TWS) for statistics available regarding women's participation in natural resource oriented education in New York, and membership in each society (chapter), and gathered employment statistics from civil service records.

The data available show some trends that may indicate problems for women and/or minorities in making the transition from education to employment in natural resources professions. For example, in 1982, women accounted for 7.4% of New York Department of Environmental Conservation employees, and 17.6% of the new hires. Minorities accounted for 3.0% of continuing NYSDEC employees and 9.5% of the new hires. During roughly the same time period (Fall 1983), college enrollment figures in fisheries and wildlife curricula showed approximately 28% of students were women (28.6% each for bachelor's and master's programs, 17.9% for doctoral programs). Non-caucasian students accounted for 4.9% of wildlife enrollment and 7.0% of fisheries college enrollment. Enrollment figures for one forestry program (SUNY-ESF) show that in 1985 25% of students were women and 0.3% were minorities. Discrepancies between college enrollment figures and percent of new hires in DEC, especially for women, are cause for concern. Comparisons of minority enrollment in natural resources education and minority new agency hires with demographic trends indicating increasing minority populations demonstrate concerns with educational as well as management institutions.

The following tables summarize data available about participation of women and minorities in natural resources education and professions. According to a 1988 report from the federal Task Force on Women, Minorities, and the Handicapped in Science and Technology, in 1985, the national scientific labor force was comprised of 45% white men, 36% white women, and 10% minorities. In the year 2000, the Task Force predicts new workers entering the labor force will be 15% white men, with the rest being white women, members of minority groups, and immigrants. Statistics reported in Tables 1-3 do not reflect this great wave of the future, but do suggest trends in employment such that new workers entering the labor force now are to a greater degree women and minorities than in the current work force. If natural resources professions are going to be able to attract newcomers to the profession in the coming years, educational enrollment figures and civil service employment data suggest much needs to be done to appeal to and recruit talented women and minorities.

B. Tables

Table 1. University enrollment in selected New York State natural resources programs (SUNY-ESF and Cornell).

| Year | Degree | Total | % Female | % Minority Female | % Minority Male |
|-------------------|--------|-------|--------------|-------------------|---------------------------|
| 1977 ^a | B.S. | 65 | 35.4 (23) | 0.0 | 0.0 |
| | M.S. | 30 | 20.0 (6) | 0.0 | 0.0 |
| | Ph.D. | 22 | 27.3 (6) | 0.0 | 0.0 |
| 1981 ^b | B.S. | 73 | 38.4 (28) | 0.0 | 0.0 |
| | M.S. | 12 | 25.0 (3) | 0.0 | 0.0 |
| | Ph.D. | 6 | 33.3 (2) | 16.7 (1 oriental) | 16.7 (1 foreign national) |
| 1985 ^c | B.S. | 551 | 24.9 (137) | n.d. | n.d. |
| | M.S. | 171 | 30.4 (52) | n.d. | n.d. |
| | Ph.D. | 95 | 21.1 (20) | n.d. | n.d. |
| 1985 ^d | B.S. | 6,074 | 27.0 (1,642) | 1.0 (59) | 2.0 (123) |
| | M.S. | 1,199 | 28.1 (337) | 1.8 (21) | 4.2 (50) |
| | Ph.D. | 446 | 18.2 (81) | 2.0 (9) | 11.9 (53) |

^a Includes fisheries and wildlife curricula; B.S. data for Cornell only

^b Includes fisheries and wildlife curricula, Cornell only

^c Includes Cornell fisheries and wildlife, SUNY Forestry curricula

^d Includes national statistics for fisheries and wildlife curricula

Table 2. Membership statistics for NYSAF reflecting male and female enrollments and salary ranges, 1987.

By Gender

| | | |
|--------|-----|-------|
| Female | 73 | 11.1% |
| Male | 587 | 88.9% |

By Salary Range

| <u>Salary</u> | <u>Males and Females</u> | <u>Females Only</u> |
|---------------|--------------------------|---------------------|
| none reported | 29.39% | 36.99% |
| Under 10K | 18.45% | 41.30% |
| 10-14+K | 10.94% | 17.39% |
| 15-19+K | 14.81% | 19.57% |
| 20-24+K | 12.02% | 10.87% |
| 25-29+K | 13.09% | 8.70% |
| 30-34+K | 10.09% | 0% |
| 35+K | 20.60% | 2.17% |

Table 3. New York State civil service employment in DEC and OPR, total employment for 1979, 1982, 1985; and new hires for 1982.

| <u>Year</u> | <u>Position Type</u> | <u>Total</u> | <u>% Female</u> | <u>% Minority</u> |
|---------------------|----------------------|--------------|-----------------|-------------------|
| 1979 | Administrators | 249 | 3.6 (9) | 1.2 (3) |
| | Professionals | 1308 | 9.2 (120) | 4.1 (53) |
| | Technicians | 624 | 5.4 (34) | 2.1 (13) |
| | Protective Services | 1308 | 5.3 (69) | 4.5 (59) |
| | Para-professionals | 1256 | 34.3 (431) | 7.6 (95) |
| | Totals | 4745 | 14.0 (663) | 4.7 (223) |
| 1982 | Administrators | 318 | 4.7 (15) | 1.9 (6) |
| | Professionals | 1558 | 12.3 (192) | 3.8 (59) |
| | Technicians | 720 | 6.9 (50) | 2.6 (19) |
| | Protective Services | 1194 | 7.2 (86) | 4.7 (56) |
| | Para-professionals | 56 | 55.4 (31) | 16.1 (9) |
| | Totals | 3846 | 9.7 (374) | 3.9 (149) |
| 1982 (New Hires) | Administrators | 4 | 75.0 (3) | 0.0 (0) |
| | Professionals | 52 | 21.1 (11) | 13.5 (7) |
| | Technicians | 21 | 19.0 (4) | 9.5 (2) |
| | Protective Services | 27 | 7.4 (2) | 22.2 (6) |
| | Para-professionals | 1 | 100.0 (1) | 0.0 (0) |
| | Totals | 105 | 20.0 (21) | 14.3 (15) |
| 1985 | Administrators | 324 | 5.5 (18) | 2.8 (9) |
| | Professionals | 1774 | 15.2 (269) | 5.3 (94) |
| | Technicians | 774 | 10.3 (80) | 2.3 (18) |
| | Protective Services | 1607 | 14.3 (229) | 3.9 (63) |
| | Para-professionals | 80 | 47.5 (38) | 23.8 (19) |
| | Totals | 4559 | 13.9 (634) | 4.5 (203) |

C. Issues Contributing to the Status of Women and Minorities

The Committee compiled a list of issues which contribute to the apparent under-representation of women and minorities in the natural resources professions based on collective experience, evidence in the literature, and reports of other groups. The following discussion summarizes the major issues addressed. These issues are given more specific form in the next section on "Problem Areas", which also includes actions recommended to begin to address these problems.

Cultural factors contribute toward steering women and minorities into professions other than those related to natural resources. These include such things as perceptions about what's proper for girls to pursue, whether girls can cope in field-oriented positions, exposure to science classes as young children, access to field trips, the urban vs. rural orientation of the culture, difficulties single women and minorities may have in adapting to or being accepted by small rural communities, and the fact that human values have undergone substantial change in the past 20 years. This latter change affects career preferences, mobility, stress levels, and the complexity of coordinating work and family life, and role expectations. As the concept of "dual-career" families becomes more commonplace, less flexibility may be available to potential future natural resource professionals in terms of location, ability to relocate, and the need for quality family support structures such as childcare facilities.

Under-representation in natural resources professions is a self-perpetuating problem. Under-representation leads to "hyper-visibility" or extra scrutiny of those few women or minorities present, with individuals perceiving they are being watched extra closely for a slip-up or a success. There are a lack of role models in natural resources professions and professional societies due to the low numbers of women and minorities in the societies. This makes it difficult to achieve the critical mass that fosters a sense of legitimacy, belonging, and affiliation. There is a lack of those with seniority who can relate directly to the experiences of women and minorities, and there may be cultural or personal biases against men serving as "mentors" for women in professional settings. Due to the lack of representation of women and minorities, natural resources professions and professional societies are out of touch with some societal values. This leads to conflicts over management decisions, failure to adequately serve some segments of the population, and barriers to education efforts. The low number of women and minorities in natural resources professions contributes to a potentially small pool of members and leaders in professional societies.

Other potential barriers facing women and minorities relate to a variety of professional and educational concerns. There is often a lack of awareness of the possible advantages of cultural, racial, and sexual diversity in the profession. Indeed, some myths persist regarding the abilities of women and minorities, or their suitability for the natural resources professions. Some existing members and leaders of natural resources professions and professional societies may not want diversity, due to some of the cultural biases noted above, or due to a resentment of the perceived special treatment given to women and minorities. This may include some women and minorities who feel it creates the impression that they are succeeding only because they are part of a quota, not based on their qualifications and

accomplishments. Women and all groups of minorities tend to be lumped together when talking about "civil rights", affirmative action, and other concerns, yet the issues that affect them may be quite different, and therefore solutions to problems may be different. Educational materials available about natural resources management practices and careers don't adequately reflect the diversity of jobs involved or the diversity of people who could handle those jobs. Past membership appeals, for example, have either not been distributed so that they could reach a diverse audience, or have not been appealing to a diverse audience (perhaps even having alienated some groups). Overall, we have a lack of statistics on what happens to women and minority students once they graduate or leave school, where and in what they find their first employment, if they stay in the profession, and if they progress at rates comparable to others in the profession.

III. Problem Areas and Recommended Actions

A. Overview and Responsibilities

Based on the statistics and issues discussed in Section II, the Committee developed a list of perceived problem areas and identified specific actions that may be taken by the societies to address those problems. These are listed in the next section.

In the list, Roman numerals (e.g., I) refer to the major problem areas identified. Within each problem area, we identified what we felt were high priority actions items (noted "A"), and lower priority action items (noted "B"). Arabic numerals within each priority groups help identify individual action items. The Committee felt each chapter should assign their own priorities to individual actions.

High priority actions listed include suggestions for responsible groups within each chapter. We identified several potential committees within each chapter (NYAFS, NYTWS, and NYSAF) whose charge implies it would be appropriate for them to address these actions. We also indicated involvement of the parent societies where we felt the action was perhaps too large in scope to be taken on solely by the chapters.

In some cases, we have specifically noted responsibility for the "Women and Minorities" committee. Our view is that this committee be reformed to the level of standing committee within each chapter, and termed the Committee on Professional Diversity. The Committee's responsibilities would be to take actions as noted in the following list, initiate future recommendations for society action, serve as a link between the chapters and resources outside the profession that deal with concerns of women and minorities, act as researchers to locate information and reference materials to assist other chapter committees, and to help coordinate all actions related to women and minorities involving more than one chapter.

B. List of Problem Areas, Actions, and Responsibilities

I. *Cultural Attitudes that Act as Barriers*

I-A.1 Expand and adopt the statement of values and benefits of cultural, racial, and sexual diversity contained in this report.

NYAFS: Women & Minorities, Resolutions
NYTWS: Women & Minorities
NYSAF: Women & Minorities

I-A.2 Workshops on changing values and roles (e.g., role-playing, life-boat game, etc.)

NYAFS: Program, Professional Initiatives
NYTWS: Annual Meeting, Field Meeting
NYSAF: Program

I-B.1 Highlight the role of pay as an influence in recruitment/retention of women and minorities.

I-B.2 Identify common myths regarding women and minorities in employment; develop counter-arguments and coping strategies.

II. *Getting Employed and Recruitment.*

II-A.1 Develop guidelines for recruiting activities including sources of women and minorities candidates, types of presentations to make.

NYAFS: Membership, Women & Minorities
NYTWS: Membership, Women & Minorities
NYSAF: Membership, Women & Minorities

II-A.2 Challenge professional and trade journals to have balanced portrayal of women and minorities by passing a chapter resolution and forwarding it to the parent societies.

NYAFS: Resolutions, Parent Society
NYTWS: Publicity and Information, Parent Society
NYSAF: Public Relations, Parent Society

II-A.3 Publicize avenues for getting hired (e.g. cooperative education) and for being visible (e.g., internships, rosters). Gather information on different avenues of becoming visible so this information can be presented at career days and to guidance counselors. In general, encourage employers to remove the cloak of secrecy on hiring and advancement.

NYAFS: Professional Initiatives
NYTWS: Publicity and Information
NYSAF: Membership

II-B.1 Identify the full range of employment options including self-employment, home-based work, job sharing, and part-time employment.

II-B.2 Develop recruiting materials.

II-B.3 Review Civil Service tests for bias.

II-B.4 Develop a short course on taking Civil Service exams.

III. *Professional Development and Establishment.*

III-A.1 Develop recommendations for ways for providing support systems (networking) and mentoring systems for nontraditional employees. Encourage establishment of support systems at chapter and institutional levels.

NYAFS: Membership, Women and Minorities
NYTWS: Membership, Women and Minorities
NYSAF: Membership, Women and Minorities

III-A.2 Develop Chapter/Society statements on sexual/racial harassment.

NYAFS: Membership, Women and Minorities, Resolutions
NYTWS: Membership, Women and Minorities
NYSAF: Membership, Women and Minorities

III-B.1 Develop ways of providing support systems for supervisors of nontraditional employees.

III-B.2 Develop recommendations for how to diversify leadership in the societies.

III-B.3 Review professional certification standards and guidelines.

**NEW YORK CHAPTER
AMERICAN FISHERIES SOCIETY**

MEETING LOCATION/FACILITIES EVALUATION

During the past four years, the annual meeting of the Chapter has been held in 3 locations: 1987, Beeches in Rome; 1988 and 1989, Holiday Inn in Binghamton; 1990, Treadway Inn in Owego. To assist future program committees in planning and locating annual meetings, we'd appreciate it if you would take a few minutes to complete the following questions and share with us your perceptions about the suitability of each site.

1. Which NYAFS Chapter meetings have you attended in the past 4 years? (check all that apply)

| | |
|--|--|
| <input type="checkbox"/> 1987: Beeches, Rome, NY | <input type="checkbox"/> 1989: Holiday Inn, Binghamton, NY |
| <input type="checkbox"/> 1988: Holiday Inn, Binghamton, NY | <input type="checkbox"/> 1990: Treadway Inn, Owego, NY |

2. How would you rate the meeting rooms used for the oral presentations at each facility? Consider visibility of speakers and screen, amount of work space, type of seating. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

3. How would you rate the social atmosphere provided at each facility? Consider facilities for informal discussion, small group meetings, social gatherings, conversation, after-hours get-togethers. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

4. How would you rate the meals available at each meeting site? Consider food quality, price, accessibility. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

5. How would you rate the accommodations at each facility? Consider sleeping arrangements, living comfort, room cleaning service. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

(OVER)

**INTERESTED IN BECOMING MORE INVOLVED
IN NYAFS CHAPTER ACTIVITIES?**

The NYAFS Chapter carries out its activities via a number of Committees as noted below. We are seeking to identify a "pool" of chapter members who would be interested in participating on any of these committees in the next year or two. Filling out the form below will help the 1990 and 1991 Executive Committee and Committee Chairs identify potential members to assist with Chapter activities.

COMMITTEES:

Environmental Concerns: Chair, Bob Kent

Prepares chapter review and comments on activities, primarily in New York State, of environmental concern. This may include proposed development, land and water management activities, and/or legislation, regulations, or policy changes.

Program: Chair to be named.

Plans and implements program for chapter annual meeting, including topic, inviting speakers, making site arrangements, and coordinating contributed paper and poster sessions.

Membership: Chair, President-elect

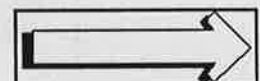
Seeks to recruit and retain chapter members.

Resolutions: Chair, Dieter Busch

Prepares resolutions for chapter and to submit to other AFS units, agencies, etc. regarding fisheries management, policy, and professionalism. Topics are initiated by Committee, chapter members, or other chapter committees.

Newsletter: Editor, Paul Kotila

Prepares and issues several chapter newsletters per year. We are especially seeking New York "regional representatives" to assure sufficient coverage of New York fisheries and aquatic resource news.





NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

MEMO

December 27, 1989

To: Barb Knuth
From: Jack Hasse *Jack*
Subject: NYAFS Meeting Evaluation

I only have two suggestions on the questionnaire you put together.

- (1). How about a question on the time of the year that we hold the meeting?
- (2). Are questions 6 and 7 similiar in that they ask basically the same question in two different ways?

Overall I think you did an excellent job on something that we have been putting off for a number of years.

cc. J. Winter



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. 14853-3001

December 18, 1989

Fishery Science
Forest Science
Wildlife Science
Natural Resources
Resource Policy
and Planning
Aquatic Science

MEMO TO: J. Winter, J. Hasse, D. Einhouse, J. Kahn

FROM:

Barbara A. Knuth

RE:

NYAFS Meeting Evaluation

As discussed at our last Chapter Executive Committee Meeting, I've prepared a draft of a questionnaire to assess member response to recent meeting locations. This would be available at the meeting for those in attendance to complete and drop in a box. Also, we'd put one in the newsletter directly following the annual meeting for those who weren't in attendance or didn't fill one out at the meeting. As you may recall, the purpose of gathering this information is to give some assistance to future program committees in terms of meeting location and facilities, so we need not initiate a search every year, as undertaken this year by Don and Jim.

Please review the enclosed draft questionnaire, and **return any comments you have to me by 10 January, 1990.**

Thanks very much!

- ① How about a question on time of year we hold the meeting?
- ② Are questions 6 and 7 similar in that they ask basically the same question in two different ways?

**NEW YORK CHAPTER
AMERICAN FISHERIES SOCIETY**

MEETING LOCATION/FACILITIES EVALUATION

During the past four years, the annual meeting of the Chapter has been held in 3 locations: 1987, Beeches in Rome; 1988 and 1989, Holiday Inn in Binghamton; 1990, Treadway Inn in Owego. To assist future program committees in planning and locating annual meetings, we'd appreciate it if you would take a few minutes to complete the following questions and share with us your perceptions about the suitability of each site.

1. Which NYAFS Chapter meetings have you attended in the past 4 years? (check all that apply)

☐ 1987: Beeches, Rome, NY
☐ 1988: Holiday Inn, Binghamton, NY
☐ 1989: Holiday Inn, Binghamton, NY
☐ 1990: Treadway Inn, Owego, NY

2. How would you rate the meeting rooms used for the oral presentations at each facility? Consider visibility of speakers and screen, amount of work space, type of seating. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

3. How would you rate the social atmosphere provided at each facility? Consider facilities for informal discussion, small group meetings, social gatherings, conversation, after-hours get-togethers. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
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| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

4. How would you rate the meals available at each meeting site? Consider food quality, price, accessibility. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

5. How would you rate the location of each facility? Consider travel convenience, geographic location in the state. Circle one response for each facility, where 0=don't know; 1=poor; 2=fair; 3=adequate; 4=good; 5=excellent.

| | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

6. Please assign an overall rating for each facility. Circle one response for each site, where 0=don't know; 1=poor; 2=fair; 3= adequate; 4=good; 5=excellent.

- | | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| a) Beeches, Rome, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| b) Holiday Inn, Binghamton, NY | 0 | 1 | 2 | 3 | 4 | 5 |
| c) Treadway Inn, Owego, NY | 0 | 1 | 2 | 3 | 4 | 5 |

7. Please rank the three sites in order of preference as a meeting site, where 1=worst and 3=best:

- _____ Beeches, Rome, NY
_____ Holiday Inn, Binghamton, NY
_____ Treadway Inn, Owego, NY

8. Do you prefer registering at the meeting, or pre-registering by mail (check one)?

- _____ I prefer registering at the meeting.
_____ I prefer pre-registration, sending a payment through the mail and just picking up my registration packet at the meeting.

9. Which of the following meeting costs would you prefer be included in the price of conference registration, for a typical meeting schedule that runs from Thursday night to Saturday noon? (check all that apply)

- _____ Meeting administration, facility fee
_____ Lunch on Friday
_____ Dinner on Friday
_____ Breakfast on Saturday
_____ Lodging on Thursday
_____ Lodging on Friday

10. Please rate each of the following possible meeting activities according to the interest you have in them. Circle one response for each activity, where 0=don't know; 1=of no interest; 2=of little interest; 3=of moderate interest; 4=of great interest.

- | | | | | | |
|---|---|---|---|---|---|
| a) Student caucus or concerns session | 0 | 1 | 2 | 3 | 4 |
| b) Evening entertainment provided by a speaker or speakers | 0 | 1 | 2 | 3 | 4 |
| c) Evening entertainment provided by a musical group | 0 | 1 | 2 | 3 | 4 |
| d) Designated time to meet poster session authors at their posters | 0 | 1 | 2 | 3 | 4 |
| e) Friday late afternoon or evening social or mixer | 0 | 1 | 2 | 3 | 4 |

ANY OTHER COMMENTS ABOUT FACILITIES OR MEETING ACTIVITIES?

PLEASE DROP THIS IN THE RESPONSE BOX LOCATED AT THE REGISTRATION DESK.

THANK YOU!



American Fisheries Society

JOE G. DILLARD
President 1989-1990

CARL R. SULLIVAN
Executive Director

PAUL BROUHA
Deputy Director

October 18, 1989

Dr. Charles C. Krueger
AFS Cornell Chapter Faculty Advisor

Henry K. VanOffelen, President
AFS Cornell Chapter

Dept. of Natural Resources
Cornell University
Ithaca, NY 14853-3001

Dear Charles and Henry:

This letter is written to officially notify you that the request of the Cornell Chapter of the American Fisheries Society to be dissolved was approved by the membership at the AFS Annual Business Meeting on September 6, 1989, in Anchorage, Alaska.

This action was undertaken as requested in your joint letter of July 25 which was presented first to the Excom and then to the membership. I was pleased to see that the AFS student members at Cornell are seeking to become a subunit of the New York Chapter.

Sincerely,

Carl R. Sullivan
Executive Director

CRS/twb

cc: Joe Dillard, AFS President
Bob White, Immediate Past AFS President
John Moring, Northeastern Division President
Jimmy Winter, New York Chapter President
Tom Powell, AFS Constitutional Consultant



American Fisheries Society
Northeastern Division

Connecticut
Delaware
Maine
Massachusetts
New Brunswick
Newfoundland
New Hampshire
New Jersey

New York
Nova Scotia
Pennsylvania
Prince Edward Island
Quebec
Rhode Island
Vermont

Northeast Fisheries Center
Woods Hole Laboratory
Woods Hole, MA 02543

26 September 1989

Dr. J. Winter
President, New York Chapter AFS
Environmental Resources Center
State University of New York
Fredonia, NY 14063

Dear Dr. Winter:

Enclosed is a check for \$140.00 in support of the AFS co-sponsored social at the annual Northeastern Division meeting in Ellenville, NY, May 1989.

Sincerely,

Wendy L. Gabriel
Secretary-Treasurer
Northeastern Division, American Fisheries Society



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

c/o NYSDEC 207 Genesee St. Utica, New York 13501

August 16, 1989

Mr. Robert Inslerman
New York Chapter of the Wildlife Society
c/o NYSDEC, Bureau of Wildlife
Raybrook, New York 12977

Dear Bob:

Enclosed is a check for 275\$ to cover our share of hosting the social hour at the recent Northeast meeting at Ellenville.

Cordially,

Jack Hasse

Secretary/Treasurer NYCAFS



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

July 25, 1989

Jack Hasse
Secretary-Treasurer
New York Chapter of AFS
NYS DEC
207 Genesee Street
Utica, NY 13501

Dear Jack,

In May, our Chapter co-hosted a social at the Northeast Fish and Wildlife meetings. Our share of the bill is \$275. Please make a check in this amount to "NY Chapter of TWS" and send the check to Bob Inslerman. His address is NYS DEC, Bureau of Wildlife, Ray Brook, NY 12977.

Sincerely

Jim Winter
President
NY Chapter of AFS



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

MEMO

April 14, 1989

TO: NY Chapter AFS EXCOM members
FROM: Jack Hasse *Jack*

Enclosed are the minutes from the January 26 EXCOM and annual meeting held at Binghamton.



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

207 Genesee St. Utica, NY 13501

March 15, 1989

Dr. Jimmy Winter
E.R.C.
SUNY at Fredonia
Fredonia, New York 14063

Dear Jim:

Thanks for your letter informing me of the paper awards from the annual meeting as well as your committee appointments.

Since I have been the secretary/treasurer, the news releases for the Fisheries Bulletin concerning the annual meeting have been written by the presidents. Near as I can tell it has been that way for some time.

I sent the 1989-90 directory to Joe Gorsuch for printing yesterday. I have enclosed a printout of the membership as you requested. Students are identified by an "S" after their dues status. We currently have 335 members. We picked up 42 new members at the annual meeting. When I receive a new membership application I send out a directory and membership card which has a short note on it about joining the chapter. I can't tell you for sure who joined in January-February of this year, but if you still want to write to new members I can start providing you with their names and addresses as they join.

Finally, attached is a check to cover your unpaid expenses for the Toronto convention.

Sincerely,

Jack
Jack Hasse



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

207 Genesee St. Utica, NY 13501

March 14, 1989

Mr. Joe Gorsuch
132 Wyndah Road
Rochester, New York 14612

Dear Joe:

Enclosed is the 1989-90 NYCAFS membership directory ready for the printer. We will need 350 copies printed up. If you could have the mailing cover attached to the directory it would help a lot.

Thanks for the breakdown on the printing and mailing costs for the newsletter and directory. Without Kodaks' assistance we would probably have to eliminate the directory and maybe a newsletter issue.

Sincerely,

Jack Hasse

cc Jim Winter



March 8, 1989

Jack Hasse
NYS DEC
207 Genesee Street
Utica, New York 13501

Dear Jack:

You had inquired about the cost of printing the NYC AFS Newsletter and Membership Directory. The approximate costs are \$575 for 400 copies of a 35 page Newsletter, including the outer page (the cost for labor is \$140 dollars, the remainder is the cost for materials). The approximate cost for 400 Membership Directories is \$750. Shipping runs between \$50 and \$75 per printing. I hope this information is helpful.

Sincerely yours,

Joseph W. Gorsuch

Joseph W. Gorsuch
Environmental Sciences Section
Health and Environment Laboratories
Building 306, Kodak Park
Eastman Kodak Company
Rochester, NY 14652-3617
(716) 588-2140

JWG:mg
1212G

*@ 3000/yr
Total*



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

February 14, 1989
Environmental Resources Center
SUNY at Fredonia
Fredonia, NY 14063

Jack Hasse
NYS Dept. of Environmental Conservation
207 Genesee St.
Utica, NY 13501

Dear Jack:

I appreciate your efforts in helping our chapter conclude a successful year and a fine conference. I am looking forward to working with you this year and hope we can continue the excellent tradition and work.

As you requested, the winner of the best student paper award and the best conference paper award was Mary Anne Thiesing of the Department of Biology, Fordham University, Bronx, NY 10458. (Please check our membership list to make sure we have the correct spelling of her name). Her paper was the "Feeding habits of five species of *Notropis* in a southern New York stream, with a new method for food habits analysis." The best poster presentation winners were Steven B. Nack, Don Bunnell, and David M. Green of the Cornell University's Biological Field Station, Bridgeport, NY. Their poster was titled "Identification of black bass spawning and nursery habitats in the Hudson River estuary."

We should get some publicity in the Fisheries Bulletin about our annual meeting with respect to the best paper awards, the theme of the conference, election of Barbara Knuth, installation of myself, matching the Education Section's \$500 challenge donation for JOBSOURCE, etc. I am not sure who usually does this--do you want to write to the Bulletin? If not, I can do it.

I am in the process of setting up committees. I have appointed the following chairpersons: Don Einhouse (DEC, Dunkirk), Program Committee; Paul McKeown (DEC, Olean) and Gary Neuderfer (DEC, Avon) as co-chairpersons of the Professional Initiatives Committee; and James Kahn (SUNY Binghamton) and Tim Sinnott (DEC, Albany) co-chairpersons of the Arrangements Committee.

The Arrangements Committee will investigate alternative places to hold our meeting; preferably a centrally located "lodge setting." Since this could take a couple of years to do, I decided a new committee was better than bogging down next year's program committee. They will have to inform us by spring on whether they need more time so that we can still go back to Binghamton or whether they have landed something new.

Page 2
J. Hasse
February 14, 1989

The Program Committee will consider the following idea. To foster more interactions on Thursday evening, we could replace the banquet with an informal fish fry or buffet with beer, a bluegrass band, and a raffle. Hopefully, we can also increase the attractiveness of social interactions to potential commuters by finding a place with cheaper housing and a more intimate "lodge-like" atmosphere. The Program Committee and the Professional Initiatives committees will consider the possibility of offering a few mini-workshops with the conference or instead of some invited papers. This would replace our larger workshop and reduce the problem of people not getting travel monies for more than one event.

Please send me a current membership list including those people that recently joined at the conference. I would like to have the membership committee or myself send welcoming letters to our new members. In addition, I would like to identify student members, especially those that attended the meeting. Although I do not expect earthshaking contributions, I would like to appoint a student to every committee as a learning experience and an investment in the Chapter's future.

Enclosed is a copy of my VISA statement that shows the lodging expenses for the Toronto AFS meeting that I am submitting to the Chapter for reimbursement. My department picked up the registration fee, transportation, meals, etc.

Sincerely,



Jimmy D. Winter
President
NYCAFS

cc. Barbara Knuth
Frank Panek



VISA ACTIVITY

| |
|-------------------|
| ACCOUNT NUMBER |
| 00-498924-0 |

| BILLING DATE | DAYS IN BILLING PERIOD | PAYMENT TERMS | | MINIMUM PAYMENT | DUE DATE |
|-----------------|---------------------------|---------------|-------|--------------------|-------------|
| | | PURCHASES | LOANS | | |
| SEP 23, 88 | 30 | 1/ 36 | 1/ 36 | 1120 | OCT 18, 88 |

| POST- ING DATE | TRANS- ACTION DATE | CREDIT LINE | CREDIT IN USE | CREDIT AVAILABLE | PURCHASES & LOANS (INCLUDING DEBIT ADJ.) | PAYMENTS & CREDITS | BANK REFERENCE NUMBER |
|--|--------------------------|---------------------------|---------------|------------------|---|--------------------------|-----------------------------|
| | | 1300.00 | 403.50 | 896.50 | | | |
| TRANSACTION DESCRIPTION | | | | | | | |
| 831 | | PAYMENT - THANK YOU | | | | 7830 | 0045661335 |
| 920 | 8256 | 1988 CONFERENCE AFS/IAFWA | | | 9926 | | 7451000 |
| | | MAPLE CD | | | | | 8256095 |
| | | CANADIAN DOLLAR 120.00 | | | | | 400582203 |
| 923 | 8260 | EXECUTIVE MOTOR HOTEL | | | 30424 | | 7451000 |
| | | TORONTO CD | | | | | 8260090 |
| | | CANADIAN DOLLAR 367.50 | | | | | 903991203 |
| PLEASE RETURN THE ENCLOSED PAYMENT CARD ALONG WITH YOUR PAYMENT BY OCT 18,88. | | | | | | | |
| FOR IMPORTANT INFORMATION: | | | | | | | |

PLEASE RETURN THE ENCLOSED PAYMENT CARD ALONG WITH YOUR
PAYMENT BY OCT 18, 88.

NOTICE - SEE REVERSE SIDE FOR IMPORTANT INFORMATION

| ACCOUNT SUMMARY | PREVIOUS BALANCE | PURCHASES & LOANS (INCLUDING DEBIT ADJ.) | PAYMENTS & CREDITS | FINANCE CHARGE | | | | ACC. & HEALTH INS. | LATE CHARGES | NEW BALANCE |
|--------------------|---------------------|---|--------------------------|----------------------------------|-------------|---|--------------|-----------------------------|-----------------|----------------|
| | | | | SERVICE CHARGE OR INTEREST | PER ITEM | X | LIFE INS. | | | |
| PURCHASES | 7830 | 40350 | 7830 | | | | | | | 40350 |
| LOANS | 00 | | | X | | | | | | 00 |
| TOTAL | 7830 | 40350 | 7830 | | | | | | | 40350 |

X AT PERIODIC RATE(S)
M MINIMUM SERVICE CHARGE
CR CREDIT BALANCE

PAY 403.50 BY NEXT BILLING DATE TO AVOID
FINANCE CHARGE ON NEW BALANCE OF PURCHASES.

| RATES ON AVERAGE DAILY BALANCES | PURCHASES | | | LOANS | |
|---|----------------|------------|------------------------|-------------------|------------------------|
| | BEFORE 3/27/81 | | ON OR AFTER 3/27/81 | BEFORE 3/27/81 | ON OR AFTER 3/27/81 |
| | 1st \$500 | OVER \$500 | | | |
| PERIODIC RATE | 1.570% | 1.070% | 1.5700% | .03517% | .05161% |
| CORRESPONDING ANNUAL PERCENTAGE RATE | 18.84% | 12.84% | 18.84% | 12.84% | 18.84% |
| ANNUAL PERCENTAGE RATE | | | | | |

| AVERAGE DAILY BALANCE | |
|-----------------------|-------|
| PURCHASES | LOANS |
| BEFORE 3/27/81 | |
| | |
| ON OR AFTER 3/27/81 | |
| | |

00 14 069M M 021

JIMMY D WINTER
SUCNY AT FREDONIA
ERC
FREDONIA NY 14063



NEW YORK CHAPTER — AMERICAN FISHERIES SOCIETY

January 30, 1989


Mr. Carl Sullivan
Executive Director
American Fisheries Society
5410 Grosvenor Lane, Suite 110
Bethesda, Maryland 20814-2199

Dear Sully:

The New York Chapter of AFS is pleased to advise you that its membership unanimously approved a motion at its Annual Meeting in Binghamton of January 27, 1989 to provide a \$500 match to the Education Section JOBSOURCE challenge. We know that these funds will be put to good work for our membership and hope that other chapters and sections find the funds to help in this effort.

If we can help in any other way, please do not hesitate to call upon us.

Cordially,


Frank M. Panek
Past-President
NYCAFS

cc: James Winter, President NYCAFS
Jack Hasse, Treasurer, NYCAFS ✓



NEW YORK CHAPTER - AMERICAN FISHERIES SOCIETY



MEMBERSHIP DIRECTORY

1989 - 1990

EFFECTIVE APRIL 15, 1989

1989 OFFICERS - NEW YORK CHAPTER
AMERICAN FISHERIES SOCIETY

PRESIDENT

JAMES WINTER

PRESIDENT-ELECT

BARBARA KNUTH

SECRETARY-TREASURER

JACK HASSE

Elected at the Annual Meeting of the New York Chapter on January 27, 1989.
The Annual Meeting was held at the Holiday Inn Arena, Binghamton, New York,
January 26, 28, 1989.

EXECUTIVE COMMITTEE AND STANDING COMMITTEE CHAIRPERSONS

Executive Committee

| | |
|-----------------|---------------|
| President | James Winter |
| President-Elect | Barbara Knuth |
| Secretary | Jack Hasse |
| Past-President | Frank Panek |

Standing Committee

| | |
|------------------------|------------------|
| Audit/Finance | Larry Skinner |
| Environmental Concerns | Douglas Sheppard |
| Membership | Barbara Knuth |
| Nominating | Frank Panek |
| Program | Donald Einhouse |
| Resolutions | Ray Tuttle |

Special Committee

| | |
|----------------------------|------------------------------|
| Professional Initiatives | Gary Neuderfer, Paul McKeown |
| Newsletter | Paul Kotila |
| Status of Women/Minorities | Barbara Knuth |
| Arrangements | James Kahn, Tim Sinnott |

PAST PRESIDENTS

| | |
|------|--------------------|
| 1966 | JOHN GOULD |
| 1967 | ROBERT ZILLIOX |
| 1968 | UDELL STONE |
| 1969 | WILLIAM FLICK |
| 1970 | PAUL NETH |
| 1971 | ROBERT GRIFFITH |
| 1972 | HOWARD LOEB |
| 1973 | MARTIN PFEIFFER |
| 1974 | WILLIAM PEARCE |
| 1975 | WILLIAM PEARCE |
| 1976 | ROBERT WERNER |
| 1977 | C. LAVETT SMITH |
| 1978 | BRUCE SHUPP |
| 1979 | PHILIP BRIGGS |
| 1980 | JOHN GRIM |
| 1981 | JOSEPH GORSUCH |
| 1982 | STEVEN GLOSS |
| 1983 | JAMES HAYNES |
| 1984 | LAWRENCE SKINNER |
| 1985 | GERALD BARNHART |
| 1986 | MICHAEL DUTTWEILER |
| 1987 | ROBERT LANGE |
| 1988 | FRANK PANEK |

MEMBERSHIP LISTING

The names of all members who paid dues for 1988 and/or 1989 through March 14, 1989 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 the member's employer or, for students, the academic institution. An "S" in parentheses indicates that the member is a student. An "*" indicates honorary membership.

The member's home address is given in the second column. If no home address is given the employment or school address is used. In the third column are listed one or two telephone numbers, the number on the first line is the home number and the number on the second line is the business or school number.

In the fourth column a coded number(s) represents the major field of interest of the member. The interpretation of the codes follows:

1. Administration
2. Aquaculture
3. Aquatic biology, ecology (freshwater)
4. Biological controls
5. Benthic organisms
6. Communications (writing, publications, publicity)
7. Exotic species
8. Fish and fishing - general
9. Fish behavior
10. Fish biology - freshwater species
11. Fish biology - marine species
12. Fish biology - estuarine species
13. Fish biology - salmonids and cold-water species
14. Fish biology - warm-water species
15. Fish larvae
16. Fisheries management (population dynamics, habitat improvement, etc.)
17. Genetics
18. Health-medicine, aquatic animals
19. Ichthyology, taxonomy
20. Illustration
21. Impact assessment
22. International fisheries development
23. Legislation and law enforcement
24. Limnology
25. Pesticides
26. Physiology
27. Plankton
28. Pollution
29. Power plants
30. Research
31. Striped bass
32. Sturgeon
33. Toxicology - all phases
34. Water quality - analysis, improvement, etc.
35. Crustaceans
36. Education/Teaching

This directory is for the use of New York Chapter members only and is not to be used for mailing lists, commercial solicitation, etc., without written permission from the Chapter.

NEW YORK CHAPTER
AMERICAN FISHERIES SOCIETY
MEMBERSHIP DIRECTORY
1989-1990

| NAME AFFILIATION | ADDRESS | TELEPHONE | INTERESTS YEAR PAID |
|--------------------------------------|---|------------------------------|------------------------|
| ALDRICH, JOHN SUNY POTSDAM | P.O. BOX 71 FORT COVINGTON, NY 12937 | 315-265-6244 | 3 11 14 885 |
| ALOI, MICHAEL BWEC INC. | 219 W. FIRST STREET OSWEGO, NY 13126 | 315-635-3516 315-343-7081 | 8 10 16 29 37 89 |
| ALUISIO, A.L. NYSCVM CORNELL | NYSCVM, CORNELL UNIV. ITHACA, NY 14853 | 607-253-3365 | 18 895 |
| ALVERAS, RONALD LMS ENGINEERS | 82 CARDINAL DRIVE WASHINGTONVILLE, NY 10992 | 914-496-9619 914-735-8300 | 8 13 16 21 88 |
| ANDERSON, JON VERMONT FISH & GAME | 47 BITTERSWEET LANE BURLINGTON, VERMONT 05401 | 802-862-2043 802-878-1564 | 88 |
| ANGYAL, ROBERT K. NYSDEC | RD #1, BOX 422 STONE RIDGE, NY 12484 | 914-687-7821 914-255-5453 | 8 13 14 16 88 |
| ARNOLD, STEPHEN LMS ENGINEERING | LMS ENGINEERS ONE BLUE HILL PLAZA PEARL RIVER, NY 10965 | 914-651-3613 914-735-8300 | 88 |
| AULD, ANDREW BEAK CONSULTANTS | SENECA STREET INTERLAKEN, NY 14847 | 607-532-9232 716-542-5544 | 16 88 |
| BAKER, RUSS SUNY ESF | P.O. BOX 400 HILER BRANCH BUFFALO, NY 14223 | 716-876-3862 | 8 895 |
| BAKER, RUSS SUNY ESF | 1037 MADISON ST. SYRACUSE, NY 13210 | 315-426-8044 | 8 895 |
| BALDIGO, BARRY ALSC | BOX 398D RD#1 LEE CENTER, NY 13363 | 315-337-1559 315-357-5152 | 5, 21, 33, 34 89 |
| BARNES, JEFFERY | 20 ELIZABETH ST. OSWEGO, NY 13126 | 315-352-1474 | 21 88 |

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| NAME AFFILIATION | ADDRESS | TELEPHONE | INTERESTS YEAR PAID |
|--|---|------------------------------|------------------------------|
| BRANDT, ROBERT E. NYSDEC | STAR ROUTE, BOX 61 BOSTOCK RD. SHOKAN, NY 12561 | 914-657-2450 914-255-5453 | 12 88 |
| BREED, HELEN RETIRED | R.D. #3 BOX 245B TROY, NY 12180 | 518-279-3255 | 19 89 |
| BRENNAN, RANDALL W. | 18-8 BRAEMAR DR. LIVERPOOL, NY. 13090 | 315-424-7918 | 3 7 16 19 24 34 35 89 |
| BRETT, BETTY LOU UNIV. OF ROCHESTER | BIOLOGY DEPT/ U OF R HUTCHISON HALL ROCHESTER, NY 14627 | 716-424-4578 716-275-3844 | 9 10 17 19 30 36 88 |
| BRIGGS, PHILLIP NYSDEC | NYSDEC SUNY BLDG. 40 STONY BROOK, NY 11794 | 516-751-7900 | 5 11 12 16 19 30 35 88 |
| BROSANAN, THOMAS NYC DEP | NYS DEP BUREAU WWT ROOM 212 WARDS ISLAND, NY 10035 | 212-884-4819 212-860-9378 | 3 4 5 12 21 24 34 88 |
| BROTHERS, EDWARD EFS CONSULTANTS | 3 SUNSET WEST, R.D. 7 ITHACA, NY 14850 | 607-347-4203 607-256-5070 | 3 8 9 10 15 16 19 88 |
| BROWN, JERRY EMPIRE FISHERIES | PO BOX 68 BLISS, NY 14024-0068 | 716-322-7777 716-78633152 | 2 14 30 34 88 |
| BROWN, RUSSELL ADIRONDACK LEAGUE | LITTLE MOOSE LODGE ADIRONDACK LEAGUE CLUB OLD FORGE, NY 13420 | 315-369-6781 607-257-3162 | 8 12 13 14 88 |
| BRUBAKER, HANS CORNELL | CORNELL UNIVERSITY ITHACA, NY 14853 | 607-253-0615 | 898 |
| BUERGER, ROBERT SUNY CORTLAND | 1576 VANDOWSEL RD. CORTLAND, NY 13046 | 607-835-6524 607-753-4957 | 16 89 |
| BUNDY, DAVID ONONDAGA C C | 185 ROBINEAU ROAD SYRACUSE, NY 13207 | 315-472-3657 315-469-7741 | 3 89 |

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|--|--|-----------------------------------|--------------------------------|
| CHYTALO KAREN NYSDEC | BLDG. #40 SUNY STONY BROOK STONY BROOK, NY 11794 | 516 7513723 516 7517900 301 | 16,21,25,34 88 |
| CLOCK, JEFFERY A. CENT. HUD. ELEC+GAS | 284 SOUTH AVE POUGHKEEPSIE, NY 12601 | 914-255-6280 914-486-5534 | 3,8,15,16,21,29 89 |
| COE, TOM SUNY MORRISVILLE | BOX 549 MORRISVILLE, NY 13408 | 315-684-7076 315-684-6390 | 2 3 6 8 10 89 |
| COLESANTE, RICHARD NYS DEC | 118 MILL STREET CONSTANTIA, NY 13044 | 315-623-9475 315-623-7311 | 2 3 10 88 |
| COLQUHOUN, JAMES NYS DEC | 56 PAXWOOD ROAD DELMAR, NY 12054 | 518-439-1231 518-457-6178 | 3 18 33 34 89 |
| COLVIN, GORDON NYSDEC | 110 HAWTHORNE ST. PORT JEFFERSON, NY 11777 | 516-331-9125 516-751-7900 | 11 88 |
| CORNELIUS, FLOYD NYS DEC | 11945 HANFORD ROAD SILVER CREEK, NY 14136 | 716-934-4025 716-366-0228 | 88 |
| CORNETT, SCOTT SUNY ESF | RD 2, BOX 411 ENDICOTT, NY 13760 | 607-785-1487 | 16 88S |
| COSTANZA, RICHARD 'ICHTHYOLOGICAL ASSOC | 230 LAKE ROAD, APT 4 DRYDEN, NY 13053 | | 3 5 10 16 21 24 28 36 88 |
| COUTU, JAMES D NYS DEC | 232 WINSLOW STREET WATERTOWN, NY 13601 | 315-788-3837 315-785-2258 | 10 89 |
| COUTU, SUZANNE NYSDEC | 322 TEN EYCK ST. WATERTOWN, NY 13601 | 315-785-9413 315-785-2262 | 16 88 |
| CREAMER, ALLAN E. CORNELL UNIV. | RR #2 BOX 183 RIPLEY, NY 14775 | 716-735-4703 607-253-7017 | 2,13,14,16,17,21 89S |

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|--|--|------------------------------|-----------------------------|
| DEXTER, PATRICIA SUNY ESF | 318 ILLICK HALL SUNY COLLEGE OF ESF SYRACUSE, NY 13210 | 315-473-5940 315-470-6743 | 13, 15 89S |
| DUBOIS, KEVIN R NYS DEC | NYS DEC SUNY BLDG 40 STONY BROOK, NY 11794 | 516-751-7879 516-751-7900 | 11 88 |
| DUCKWELL, GEORGE NYS DEC | SALMON RIVER HATCHERY ALTMAR, NY 13302 | 315-298-4046 315-298-5051 | 1 2 17 18 34 88 |
| DUDA, STEPHEN SUNY BROCKPORT | SUNY BROCKPORT BIOLOGY DEPT BROCKPORT, NY 14420 | 716-244-9455 716-395-5765 | 2 3 28 30 33 34 88S |
| DUNNING, DENNIS NYS POWER AUTHORITY | NYS POWER AUTHORITY 123 MAIN ST WHITE PLAINS, NY 10601 | 914-724-3486 914-681-6401 | 2 3 12-16 21 29 31 89 |
| DUTTWEILER, MIKE CORNELL UNIVERSITY | 345 CODDINGTON ROAD ITHACA, NY 14850 | 607-277-0006 607-255-6505 | 16 36 88 |
| EHLINGER, NEIL NYS DEC | 6747 WILLIAMS ROAD ROME, NY 13440 | 315-337-1238 | 13-18 89 |
| EINHOUSE, DONALD NYS DEC | 11344 DENNISON RD. SILVER CREEK, NY 14136 | 716-965-9799 716-366-0228 | 14 16 89 |
| ELLIOTT, WAYNE NYS DEC | 6 BRUNNSWICK RD NEW PALTZ, NY 12561 | 914-255-8142 914-255-5453 | 8 9 10 88 |
| ELROD, JOSEPH USFWS | USFWS 17 LAKE STREET OSWEGO, NY 13126 | 315-342-2227 315-343-3951 | 3 10 13 16 30 88 |
| ENGEL, RONALD SUNY OSWEGO | R.D. 3, BROWN DR. OSWEGO, NY 13126 | 315-341-3031 | 3 10 24 27 34 35 88 |
| EVANS, JOSEPH, T. NYSDEC | 128 SOUTH ST. OLEAN, NY 14760 | 716-372-8676 | 14, 16 89 |

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|--|--|-------------------------------|---|
| GARRELL, MARTIN ADELPHI UNIVERSITY | ADELPHI UNIVERSITY PHYSICS DEPARTMENT GARDEN CITY, NY 11530 | 516-298-5095 516-294-8700 | 16 24 28 88 |
| GARTH, STEPHEN | RFD 1 CHATEAUGAY, NY 12920 | 518-497-6505 | 88 |
| GARTH, STEPHEN+SUSAN HINCHINBROOKE FISH | RFD #1 BOX 1010 CHATEAUGAY, NY. 12920 | 518-497-6505 SAME | 13, 18 89 |
| GEORGE, CARL UNION COLLEGE | R.D. 4, WAGNER GLENVILLE, NY 12301 | 518-393-0629 518-370-6243 | 3 8 9 10 14 16 18-21 24 88 |
| GERBER, GLENN | 4513 HILLVIEW DR.D KNOXVILLE, TN 37919 | 716-637-3199 716-395-5765 | 3 9 10 14 17 88 |
| GERLACH JEFF D. ERM INC. | 115 PENNA AVE, PHOENIXVILLE, PA 19460 | 215 9334736 215 6969110 | 2, 3, 5, 8, 10-16, 19 21, 27-29, 33-34 88 |
| GILLESPIE, ROBERT SUNY | 56 COTTAGE ST FREDONIA, NY 14063 | 716-679-4214 716-673-3374 | 17, 21, 33 89 |
| GILLIAM, JAMES SUNY ALBANY | BIO SCIENCE SUNY ALBANY ALBANY, NY 12222 | 518-861-7426 518-442-4342 | 2 3 9 10 14 16 17 27 30 88 |
| GLASE, MADELYN S. ICHTHYOLOGICAL ASSOC | 301 FOREST DRIVE ITHACA, NY 14850 | 607-564-76-92 607-257-7121 | 3, 24, 27, 28, 29, 34 89 |
| GLOO, JAMES CORNELL | 5 HAMMOND ST MOHAWK, NY 13407 | 315-866-1827 | 8, 13, 23 898 |
| GLOSS, STEVEN USFWS-U. OF WYOMING | U. OF WYOMING BOX 3067 UNIVERSITY STATION LARAMIE, WYOMING 82071 | 307-766-2143 | 3 28 33 34 89 D. HON |
| GORDON, WILLIAM NYS DEC | P.O. BOX 51 BROWNVILLE, NY 13615 | 315-639-3847 315-785-2254 | 88 |

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| HEITZMAN, DIANA L NYS DEC | NYS DEC 50 WOLF ROAD, ROOM 328 ALBANY, NY 12233 | 518-784-9277 518-457-8819 | 3 10 24 28 30 33 34 88 |
| HERREN, DWIGHT CORNELL | 1583 EAST SHORE DRIVE ITHACA, NY 14850 | 607-272-7473 607-255-8231 | 13,17 89S |
| HILL, RICHARD BEAK CONS., INC | BOX 241 INTERLAKEN, NY 14847 | 607-869-9386 716-542-5544 | 3 34 88 |
| HIRETHOTA, PRADEED SUNY CESF | B-22 SLOCUM HTS. SYRACUSE, NY 13210 | 315-458-8586 | 2 10 14 88S |
| HJORTH, DOUGLAS C T MAIN INC | RD 3, BOX 54 PELHAM, NH 03076 | 603-635-3227 617-262-3200 | 3 5 8-12 14 16 19 27-34 88 |
| HOFFER, NORM SUNY | 3012 BROCKPORT RD. SPENCERPORT, NY. 14559 | 716-352-8458 | 9,13 89S |
| HOLLOWAY, LINDA SUNY CESF | 161 DEARCOP DRIVE ROCHESTER, NY 14624 | 315-423-8197 | 3 8 10 13 14 16 30 88S |
| HOLMES, EDWARD NYS DEC | HIGH ACRES HEMLOCK, NY 14466 | 716-346-5761 716-226-2466 | 16 88 |
| HOLTZ DOROTHY SUNY FREDONIA | 133 JEWETT ERC SUNY FREDONIA FREDONIA NY 14063 | 716 6725649 716 6733375 | 3,10,16,30,34,33 89S |
| HOMA, JOHN JR ICHTHYOL. ASSOC. | 48 TEETER ROAD ITHACA, NY 14850 | 607-272-3778 607-257-7121 | 6 8 16 21 29 30 89 |
| HORTON, JEFFREY M SYRACUSE UNIVERSITY | 12023 CHURCHILL PLACE BIG FLATS, NY 14814 | 607-562-8832 315-478-2312 | 5 8 13 16 17 19 24 30 88S |
| HSU, HUI-MIN NYSCVM, CORNELL | DEPT. AVIAN, AQUATIC MED CORNELL UNIVERSITY ITHACA, NY 14853 | 607-257-7810 607-253-3374 | 2,18,30-34,36 89S |

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|--|--|------------------------------|---|
| KAHN, AMY SUNY SYRACUSE | 1723 MEADOWBROOK DR. APT. 5 SYRACUSE, NY. 13224 | 315-445-9811 315-470-6743 | 3, 16 89 |
| KAHN, JAMES R SUNY BINGHAMTON | ECONOMICS DEPARTMENT SUNY BINGHAMTON BINGHAMTON, NY 13901 | 607-798-8058 607-7772297 | 36 89 |
| KAHNLE, ANDREW NYS DEC | 61 YANKEE FOLLY ROAD NEW PALTZ, NY 12561 | 914-255-6324 914-255-5453 | 3 12 14 16 31 88 |
| KAZYAK, PAUL VERSAR INC. | 628 BARNES AVE. WESTMINSTER, MARYLAND 21157 | 301-848-0624 301-964-9200 | 8 16 28 29 31 89 |
| KEELER, SHAWN NYSDEC | 748 FEURA BUSH ROAD APT. 3 DELAMAR, NY 12054 | 518-439-1139 518-457-5420 | 89 |
| KELEHER, CHRIS CORNELL UNIVERSITY | P.O. BOX 114 THENDARA, NY 13472 | 315-369-6648 315-369-2210 | 3, 8, 9, 10, 28, 30 34 89 |
| KELLER, WALT NYSDEC | NYSDEC STAMFORD, NY 12167 | 607-652-3143 | 16 89 |
| KELSEY, KEVIN FERNWOOD LIMNE INC. | 71 BROWNVILLE RD GANSEVOORT, NY 12831 | 518-793-1282 | 89 |
| KENNEN, JONATHAN SUNY ESF | 1114 E. COLVIN ST. SYRACUSE, NY 13210 | 315-478-8933 | 3 5 10 36 89S |
| KENT, ROBERT J | 246 GRIFFING AVENUE RIVERHEAD, NY 11901 | 516-298-5034 516-727-7850 | 2 36 89 |
| KERR, ROBERT P. COSPER ENVIR. SERV. | COSPER ENVIR. SERVICES BOX 525 NORTHPORT, NJ 11768 | 516-862-6909 516-754-4456 | 2-7 9-14 16 21- 23 25 27-31 33 88 |
| KETOLA, GEORGE US FWS | TUNISON LAB OF FISH NUTRI 3075 GRACIE RD. CORTLAND, NY 13045 | 315-497-1651 607-753-9391 | 2 13 30 34 36 88 |

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| KUSS SARAH MARIE SUNY BROCKPORT | 361 PILASKI RD. GREENLAWN, NY. 11740 | | 2 89 |
| LA MERE, STEVEN ADIRONDACK ECOL. | 5 CLIFF AVE TUPPER LAKE, NY 12986 | 518-359-9413 518-359-7856 | 2 89 |
| LA PAN, STEVEN SUNY ESF | SUNY ENV SCI & FORES 246 ILLICK HALL SYRACUSE, NY 13210 | 315-422-9526 315-470-6805 | 30 88 |
| LANGE, ROBERT NYS DEC | 34 GRETTEL TERRACE BALLSTON LAKE, NY 12019 | 518-877-6608 518-457-6937 | 1, 10, 16 89 |
| LASSOIE, J P CORNELL UNIVERSITY | 117 FERNOW HALL CORNELL UNIVERSITY ITHACA, NY 14853 | 607-564-7258 607-255-2114 | 37 88 |
| LAWRENCE, TRACY SUNY ESF | 109 CHINOOK DR. SYRACUSE, NY 13210 | 315 442 9515 | 10 89S |
| LAZERATION, MARK SUNY BUFFALO | 982 BASELINE RD GRAND ISLAND, NY 14072 | 716-773-8430 716-636-2862 | 2, 10, 25, 28, 30, 33 34, 36 89 |
| LIMBURG, KARIN E CORNELL UNIVERSITY | ECOSYSTEMS RESEARCH CNTR CORSON HALL, CORNELL UNIV ITHACA, NY 14850 | 607-255-4348 | 10 88 |
| LITWA, MICHAEL NYS DEC | 460 17TH STREET W. BABYLON, NY 11704 | 516-957-0983 516-751-7900 | 2 11 31 88 |
| LONG, JOHN FWMA BOARD | 2259 NIAGARA ROAD NIAGARA FALLS, NY 14302 | 716-731-4002 716-285-8447 | 2 3 6 8 16 23 10 14 29 88 |
| MAC NEILL, DAVID NY SEA GRANT | NY SEA GRANT EXT. SUNY BROCKPORT BROCKPORT, NY 14464 | 716-964-7507 716-395-2638 | 10 15 27 89 |
| MACK, ALAN NYS DEC | 65 MINER STREET CAMDEN, NY 13316 | 315-245-3965 315-337-1390 | 10 13 14 16 17 34 88 |

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| MAYNARD, PAUL NYS DEC | SALMON RIVER HATCHERY R.D. 1, BOX 1 ALTMAR, NY 13302 | 315-298-5351 315-298-5051 | 1 2 8 89 |
| MC BRIDE, NORMAN NYS DEC | STAR ROUTE BOX 16 STAMFORD, NY 12167 | 607-652-7914 607-652-7364 | 3 8 16 89 |
| MC CARTHY, CHARLES SUFFOLK CO COMM COL | SUFFOLK CO COMM COLLEGE SPEONK RIVERHEAD ROAD RIVERHEAD, NY 11901 | 516-298-5859 516-765-1011 | 2 11 31 34 35 36 88 |
| MC CULLOUGH, RUSSELL NYS DEC | STATE OFFICE BLDG 317 WASHINGTON ST WATERTOWN, NY 13601 | 315-782-8363 315-785-2262 | 10 16 88 |
| MC DANNELL, GARY GREAT LAKES LAB | 2231 BEDELL RD # B GRAND ISLAND, NY 14072 | 716-773-4962 716-876-5454 | 3 9 14 26 30 88 |
| MC KEOWN, PAUL E NYS DEC | NYS DEC 128 SOUTH STREET CLEAN, NY 14760 | 716-372-0312 716-372-8676 | 3 10 13 14 16 17 19 89 |
| MERCKEL, CHARLES N SUNY BUFFALO | 2340 EAST RIVER ROAD GRAND ISLAND, NY 14072 | 716-773-6588 716-878-6588 | 3 5 10 21 24 25 30 88 |
| MICHALOWSKI, DANIEL SENECA PARK ZOO | 2222 ST. PAUL STREET ROCHESTER, NY 14621 | 716-621-3467 716-266-6846 | 1 3 7 9 10 14 19 23 88 |
| MIKLAS, DALE SUNY ESF | 200 WALNUT PLACE SYRACUSE, NY 13210 | 315-478-5302 | 16 89S |
| MIKOL, GERRY NYS DEC | NYS DEC 50 WOLF ROAD - RM 201 ALBANY, NY 12233 | 518-457-3651 | 34 88 |
| MILLER, DAVID FERNWOOD-LIMNE | BOX 77, ROUTE 9 GANSEVOORT, NY 12831 | 518-793-1282 | 16 89 |
| MILLER, LAWRENCE N HAMPSHIRE F & G | REG 1 FISHERIES BOX 241 N. LANCASTER NH. 03584 | 603-636-2615 603-788-3164 | 16 89 |

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| NADEAU, LEONARD CRYSTAL SPG. TROUT | P.O. BOX 345 SPRING VALLEY ROAD DELHI, NY 13753 | 607-746-2836 | 88 |
| NEMECEK, RUSSELL D.C.W.Q.M.A. | H-4 SPRUCE TREE CIRCLE LIVERPOOL, NY 13090 | 315-652-5501 315-425-2616 | 3, 5, 11, 16, 21, 24 28, 29, 34 89 |
| NETH, PAUL NYS DEC | R.D. 5, JUNIPER DRIVE BALLSTON SPA, NY 12020 | 518-885-7792 518-457-5698 | 1 13 14 16 88 |
| NETTLES, DAVID C NORTH COUNTRY C.C. | P.O. BOX 184 VISTA DRIVE BLOOMINGDALE, NY 12913 | 518-891-2110 518-891-2915 | 10, 13, 36 89 |
| NEUDERFER, GARY NYS DEC | 45 NORMAN DRIVE ROCHESTER, NY 14623 | 716-424-4926 716-226-2466 | 3 5 10 13 14 28 33 34 89 |
| NEWELL, ARTHUR NYS DEC | R.D. 1, BOX 71 WESTERLO, NY 12193 | 518-797-1769 518-458-1769 | 3 33 34 89 |
| O'BOYLE, ROBERT J EASTMAN KODAK | HAEL/ETS, B-306 KODAK PARK ROCHESTER, NY 14650 | 716-467-4087 716-588-2151 | 33 89 |
| O'GORMAN, ROBERT USFWS | USFWS 17 LAKE STREET OSWEGO, NY 13126 | 315-343-2351 315-343-3951 | 10 16 88 |
| O'HARE MARYANN MSRC STONY BROOK | 2 BRYANT CIRCLE WHITE PLAINS, NY 10605 | 516-744-5336 516-632-8740 | 11 88 |
| OLNEY, LOUIS MORRISVILLE AT | ROCKS ROAD, BOX 247 MORRISVILLE, NY 13408 | 315-684-3448 315-684-6237 | 2 9 10 13 14 16 19 89 |
| ORMAN, STEVEN R. NYSDEC | RD #3 TEAL RD. AVERILL PARK, NY 12018 | 518-674-8707 518-457-9008 | 14 88 |
| OSTERBERG, DONALD SUNY POTSDAM | 20 GROVE STREET POTSDAM, NY 13676 | 315-265-8971 315-267-2261 | 3 10 30 36 89 |

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|-----------------------------------|--|------------------------------|------------------------------------|
| POMEROY, JAMES NYS DEC | R.D. 1, BOX 111 HOUGHTON, NY 14744 | 716-437-5346 716-372-0645 | 21 89 |
| POOLE, JOHN C NYS DEC | 14 LAVREL DRIVE SAYVILLE, NY 11782 | 516-589-6194 516-751-7900 | 11 88 |
| PORTER, HUGH ADIR. N.C. ASSOC. | 15 WASHINGTON ST. POTSDAM, NY 13676 | 315-265-9187 315-386-7302 | 13 16 23 24 34 37 88 |
| POSTON, HUGH A USFWS | TUNISON LAB OF FISH NUTR 3075 GRACIE ROAD CORTLAND, NY 13045 | 607-753-8645 607-753-9391 | 30 88 |
| PREALL, RICHARD NYS DEC | NYS DEC 50 WOLF ROAD - RM 518 ALBANY, NY 12233 | 518-355-0981 518-457-1751 | 30 89 |
| PREDDICE, TIMOTHY NYS DEC | 7235 STEELE AVE EXT GLOVERSVILLE, NY 12078 | 518-725-7206 518-773-7318 | 3,8,19,21,28,33 89 |
| PRYE, GARY SUNY ESF | 103 DOOLITTLE AVE WATERVILLE, NY 13480 | 315-841-4659 315-4747741 | 13 898 |
| QUANCE, CARL B NYS DEC | RR #3 BOX 241 ROME, NY 13440 | 315-339-6363 315-793-2554 | 28 33 34 88 |
| QUINN, SCOTT NYS DEC | NYS DEC 50 WOLF ROAD - RM 301 ALBANY, NY 12233 | 518-864-5412 518-457-7470 | 3 10 24 34 88 |
| RACHLIN, JOSEPH LEHMAN COLLEGE | 0-85 MORLOT AVENUE FAIRLAWN, NJ 07410 | 201-791-5165 212-960-8239 | 3,10,11,12,16,19 30,33,36 89 |
| RADLE, EDWARD | 721 PLANK ROAD, R.D. 9 CLIFTON PARK, NY 12065 | 518-371-7518 518-457-6178 | 2 21 19 88 |
| RANDALL, DONNA NYFCU | CORNELL UNIVERSITY 308 FERNOW HALL ITHACA, NY 14853 | 607-277-5477 607-255-5469 | 3 10 33 888 |

NEW YORK CHAPTER
AMERICAN FISHERIES SOCIETY
MEMBERSHIP DIRECTORY
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| NAME AFFILIATION | ADDRESS | TELEPHONE | INTERESTS YEAR PAID |
|---|--|------------------------------|-----------------------------|
| SANFORD, STEPHEN SANFORD'S BAIT FARM | EAST PORT BUY RD WOLCOTT, NY 14590 | 315-594-8925 SAME | 10, 34, 35 89 |
| SARBELLO, WILLIAM NYS DEC | 933 PINE HILL DRIVE EAST SCHENECTADY, NY 12303 | 518-457-6179 | 1 21 88 |
| SCHACHTE, JOHN NYS DEC | 706 FLOYD AVENUE ROME, NY 13440 | 315-339-2518 315-337-0910 | 18 88 |
| SCHIAVONE, ALBERT NYS DEC | NYS DEC 317 WASHINGTON STREET WATERTOWN, NY 13601 | 315-658-2652 315-785-2266 | 10 14 16 88 |
| SCHLENK, CORNELIA SEA GRANT | SEA GRANT, DUTCHESS HALL SUNY AT STONY BROOK STONY BROOK, NY 11794 | 516-632-6905 | 1, 16, 30 89 |
| SCHLEYER, RICHARD | 88 SOUTHERN DRIVE ROCHESTER, NY 14623 | 716-385-4864 716-272-0130 | 7 9 10 13 17 21 22 88 |
| SCHMIDT, ROBERT SIMON'S ROCK COLLEGE | SIMON'S ROCK COLLEGE ALFORD ROAD GRT BARRINGTON MA 01230 | 518-325-7265 413-528-0771 | 3 10 12 15 19 30 89 |
| SCHOCH, WILLIAM NYS DEC | BOX 1063 SARANAC LAKE, NY 12983 | 518-327-3315 518-891-1370 | 16 21 89 |
| SCHOFIELD, CARL CORNELL UNIVERSITY | CORNELL UNIVERSITY FERNOW HALL ITHACA, NY 14853 | 607-272-9476 607-255-2001 | 3 16 34 88 |
| SCHOONMAKER, GARY NIAGARA MOHAWK | NIAGARA MOHAWK POWER CO 300 ERIE BLVD W SYRACUSE, NY 13202 | 315-673-4652 315-428-6619 | 10 13 14 21 88 |
| SCHUG, MALCOLM SUNY POTSDAM | WOODVIEW DRIVE PARISH, NY 13131 | 315-625-7023 315-265-3879 | 9 10 88S |
| SCOTT, G. ROB NIAGRA MOHAWK | 300 ERIE BLVD, WEST SYRACUSE, NY 13202 | 315-428-6622 | 1, 21, 29 89 |

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AMERICAN FISHERIES SOCIETY
MEMBERSHIP DIRECTORY
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| NAME AFFILIATION | ADDRESS | TELEPHONE | INTERESTS YEAR PAID |
|--|---|------------------------------|-----------------------------------|
| SOULE, NORMAN CSH FISH HATCHERY | P.O. BOX 535 COLD SPRG. HARB, NY 11724 | 516-692-8731 516-692-6768 | 2 32 89 |
| SPAGNOLI, JOHN J NYS DEC | 115 ELMHURST DRIVE ORCHARD PARK, NY 14127 | 716-662-0885 716-847-4560 | 25, 28, 34 89 |
| SPATEHOLTS, ROBERT CORNELL UNIVERSITY | PO BOX 349 HEBER CITY, UT 84032-0349 | 315-369-6604 315-357-5188 | 3 8 13 16 28 88 |
| SPENCE, BRIAN C CORNELL UNIVERSITY | CORNELL UNIVERSITY FERNOW HALL ITHACA, NY 14850 | 607-257-5451 607-255-3191 | 3 88S |
| SPENCER, SELDEN SUNY NEW PALTZ | 55 DU BOIS ROAD NEW PALTZ, NY 12561 | 914-255-5077 914-257-2541 | 3 27 36 88 |
| SPOTILA, JAMES SUNY BUFFALO | SUNY BUFFALO-BIOLOGY DEPT 1300 ELMWOOD AVENUE BUFFALO, NY 14222 | 716-836-3059 716-878-6409 | 3 8-10 14 16 28 30 33 36 88 |
| SPRINGER, CHRISTINE SORNELL | 278 LOWER CREEK RD ITHACA, NY 14850 | 607-347-6614 | 33 89S |
| STANG, DOUGLAS NYSDEC | BOX 5170 FISHER AVE CORTLAND, NY 13045 | 607-7568430 607-7533095 | 3, 10, 16 89 |
| STEWART, DONALD SUNY ESF | 256 ILCLICK HALL SYRACUSE, NY 13210 | 315-672-5539 315-470-6924 | 3 10 13 15 16 19 30 89 |
| STILLMANN, LORRETTA HUNTER COLLEGE | 101 PERRY STREET NEW YORK, NY 10014 | 212-242-1486 | 3 10 11 14 15 36 88 |
| STORONSKY, MICHAEL SEAR-BRON ASSOCIATES | 32 KILMAR STREET ROCHESTER, NY 14621 | 716-266-1913 716-475-1440 | 3 10 16 21 22 28 29 34 88 |
| SURPRENANT, LESLIE NYS DEC | 6067 JOHNSTON SLINGERLANDS, NY 12159 | 518-869-1166 518-457-2672 | 3 10 16 21 24 28 34 88 |

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1989-1990

| NAME AFFILIATION | ADDRESS | TELEPHONE | INTERESTS YEAR PAID |
|--|---|------------------------------|--------------------------|
| VOILAND, MICHAEL CORNELL | 3930 STESSON CIRCLE SYRACUSE, NY. 13215 | 315-488-6525 607-255-2832 | 16, 36 89 |
| WADSWORTH, WAYNE | 329 ONTARIO ST. ALBANY, NY 12208 | | 3 4 16 16 24 36 88 |
| WALDMAN, JOHN R HUDSON RIVER FOUND. | 122 E. 42 ST. SUITE 1901 NEW YORK, NEW YORK 10168 | 718-849-2933 212-949-0028 | 6 8 19 31 88 |
| WARKENTINE, BARBARA LEHMAN COLLEGE | 1329 BALCOM AVE. BRONX, NY 10461 | 212-892-7983 212-960-8239 | 3 11 12 19 89S |
| WEDGE, LESLIE NYS DEC | R.D. 1 BOX 543 HOMER, NY 13077 | 607-749-3292 607-753-3095 | 3 8-10 13 14 16 89 |
| WELLER, ROBERT SUNY ESF | 409 WESTCOTT ST. SYRACUSE, N Y 13210 | 315-426-8964 | 89S |
| WERNER, ROBERT SUNY SYRACUSE | R.D. 3, TRACY DRIVE SKANEATELES, NY 13152 | 315-673-4272 315-470-6804 | 3 10 14 15 24 88 |
| WHITE, DAVID SEA GRANT | SEA GRANT OFFICE SUNY OSWEGO OSWEGO, NY 13126 | 315-675-8893 315-341-3092 | 88 |
| WICH, KENNETH NYS DEC | 22 WASHINGTON AVENUE COXSACKI, NY 12051 | | 88 |
| WIDMER, CARL C NYS DEC | 6772 ITALY VALLEY ROAD NAPLES, NY 14512 | 716-374-5048 716-226-2466 | 13 16 89 |
| WILKINS, BRUCE CORNELL | FERNOW HALL CORNELL UNIVERSITY ITHACA, NY 14853 | 607-255-8216 607-255-2162 | 36 37 89 |
| WILKINSON, MICHAEL NYS DEC | 44 PAUL DRIVE AMHERST, NY 14120 | 716-847-4550 | 3 10 13-16 24 89 |

BYLAWS OF THE NEW YORK CHAPTER OF THE AMERICAN FISHERIES SOCIETY

Section 1 - Name and Objectives

1. The name of this organization shall be the New York Chapter of the American Fisheries Society, hereinafter referred to as the Chapter.

2. The objectives of the Chapter shall be those of the American Fisheries Society as set forth in Article 1 of its Constitution, and to encourage the exchange of information by members of the Society residing within the State of New York.

Section 2 - Membership and Dues

1. The membership of the Chapter shall be of the following classes:

(a) Member: Active Members of the American Fisheries Society in good standing, upon enrollment in the Chapter, shall be eligible to vote.

(b) Honorary Member: Persons who, by reason of professional or other attainments, outstanding service to the Chapter, or official position, shall be eligible for election as an Honorary Member upon nomination by two or more Chapter Members in good standing, and a 2/3 vote of the members present at an annual meeting. There shall be two classes of honorary membership:

(1) Distinguished Service and (2) Exofficio. Honorary Members shall be entitled to all rights and privileges of Members, except that Exofficio Members shall not vote or hold office.

2. Annual dues for Members shall be five dollars (\$5.00), except that dues for full-time students shall be two dollars (\$2.00). Honorary Members will not be required to pay dues. Dues of new members shall be payable when application for membership is accepted. Memberships not paid on or before July 1 shall be considered lapsed and those persons shall not receive publications of the Chapter and shall forfeit all rights and privileges of membership as long as dues are unpaid.

Section 3 - Meetings

The Chapter shall hold at least one meeting annually at the time and place designated by the Executive Committee. Notice of the annual meeting of the Chapter shall be mailed to each member at least one month before the date of such meeting. Business shall be conducted in accordance with provisions of these Bylaws, and/or Robert's Rules of Order in the absence of specific guidelines. The program shall be the responsibility of the Program Committee.

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 of the Chapter shall preside at all meetings, serve as Chairperson 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 authorized 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 Chairperson 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, submit a copy of the minutes of the annual business meeting to the Executive Director of the Society and the Secretary-Treasurer of the Northeastern Division within 30 days after said meeting; and collect and be custodian of Chapter funds, disburse funds as authorized by the Executive Committee or 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 Northeastern Division.

The Secretary-Treasurer-Elect shall aid the Secretary-Treasurer in his/her 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 Chairpersons 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.

Section 7 - Chapter Committees

Chairpersons of Committees, except as listed in Sections 5 and 6, shall be appointed by the President. Committee members shall be chosen by the respective committee chairpersons. Standing Committees shall include: Auditing, Environmental Concerns, Membership, Nominating, Program, and Resolutions. The Nominating Committee will be chaired by the immediate past-president and the selection of nominees for office by the Nominating Committee will be done in consultation with, and subject to, the approval of the Executive Committee.

The committees shall be composed of the chairperson and any other members in good standing selected by the chairperson. The committees shall aid the President in the operation of Chapter business and activities. The President shall direct them in their duties. They may also be directed by vote of the membership at an annual meeting.

The term of office for members of the Chapter Committees shall end upon the discharge of the duties for which they were appointed, or at the next annual meeting of the Chapter, whichever comes first.

Section 8 - Voting and Quorum

Decisions at meetings of the Chapter shall be by a majority of those voting, except that amendments to the Bylaws require a 2/3 majority, and excepted further, the election of Honorary Members requires a 2/3 majority vote. Any member in good standing who cannot attend a meeting may request the Executive Committee in writing to register a vote on a previously published question and such a vote shall be counted with the votes of members present. Such votes shall not be used to determine a quorum. Proxy votes must be received by the Secretary-Treasurer before the annual meeting at which the vote is taken.

A quorum for the transaction of official business shall be 20 of the Chapter's voting members.

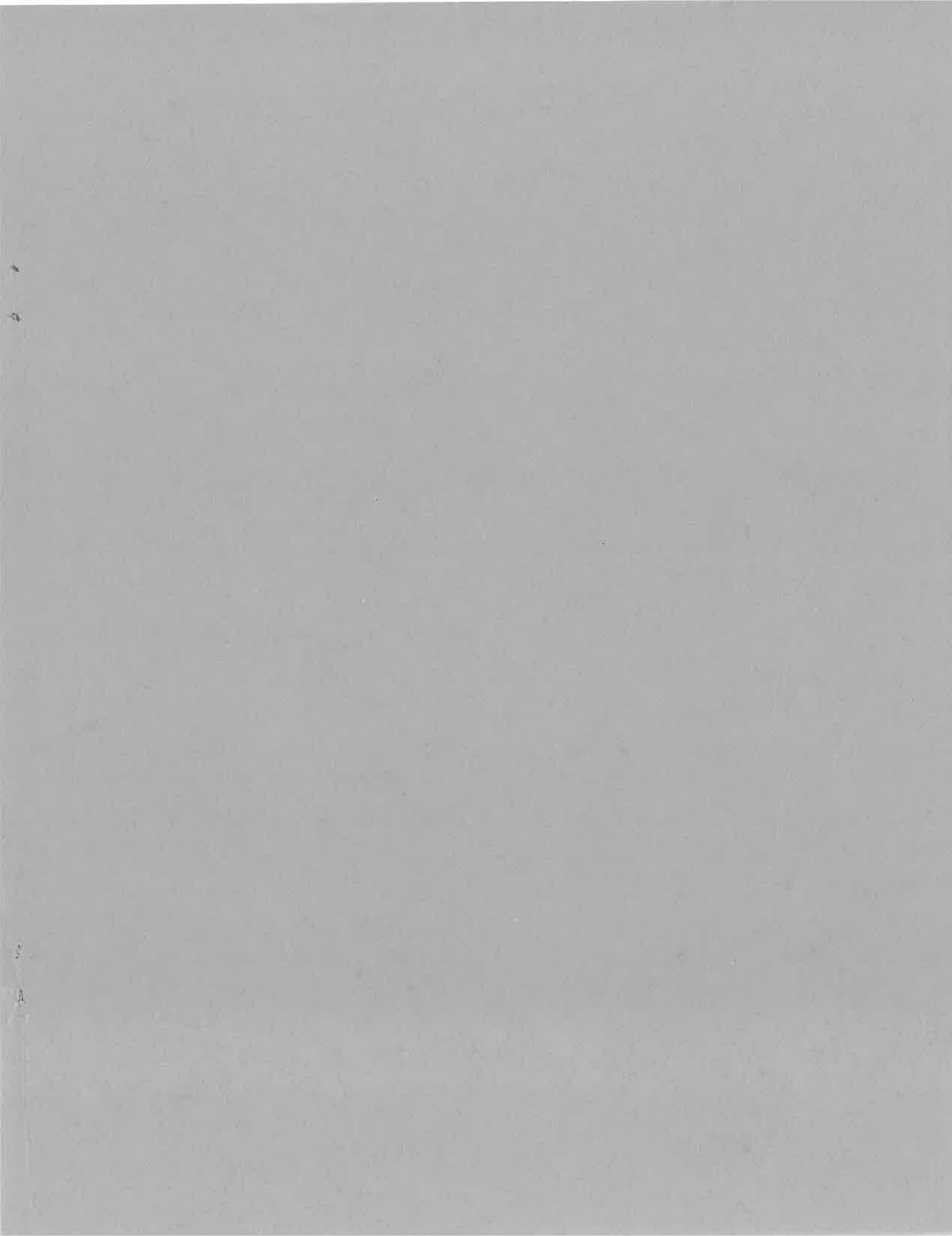
Section 9 - Registration

The Executive Committee may assess each registrant attending meetings of the Chapter a registration fee necessary to cover the costs of the meeting and Chapter activities. Collections shall be made by the Secretary-Treasurer or a representative appointed by that officer.

Section 10 - Amendments of the Bylaws

The Bylaws of the Chapter may be amended in accordance with Section 8 of these Bylaws, provided that prior notice of at least 30 days be given to the membership of the proposed change(s). Said change(s) must be approved by the Executive Committee of the Society before taking effect.

(Revisions of the New York Chapter Bylaws received Executive Committee, American Fisheries Society, approval in September, 1982, and approval by the Chapter membership at the annual business meeting of February 4, 1983.)

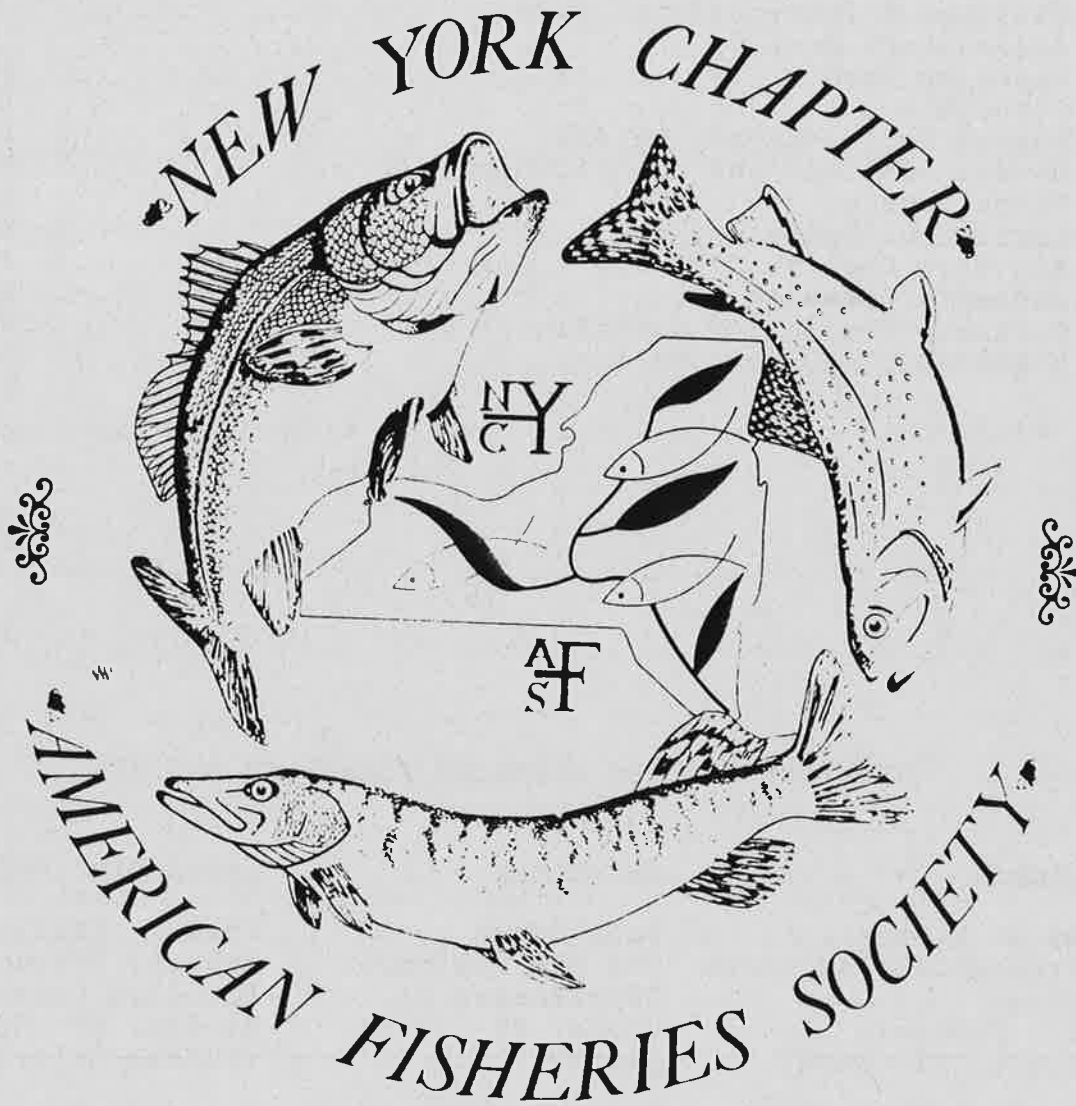




November 1989

NEW YORK CHAPTER - AMERICAN FISHERIES SOCIETY

NEWSLETTER



EDITOR'S CORNER

Everyone at one time or another has probably done a literature search on some topic, used that search to compile a bibliography, prepare a literature review, or document our state of knowledge, and then promptly forgotten about it as the next project appeared. As often as not, the bibliography probably disappeared into the grey abyss of "unpublished" literature (e.g., master's and Ph.D. theses, project completion reports, environmental impact statements), never to be seen again by human eyes.

Every time I have to write a new lecture or start a new project, I have the sneaking suspicion that all my rumaging around in search of information has been done before, if only I could find out where and by whom! We all know the frustrations of investigating a topic for which there are no common "key words", there is no outstanding authority in the field, and there is no single method that can cover all the literature you think you need. So, we do it all "by hand" (or assign it to someone else!). In this age of the high speed computer, there has to be a better way!

Therefore, in the hopes that it will reduce the burden for some of you, I am including one such bibliography in this newsletter. This one happens to be an update on the effects of acid on aquatic systems - a topic that should be of some interest! I hope YOU will send me other bibliographies (annotated or not), regardless of how esoteric, and thus help to make life just a little bit less tedious for someone.

NATIONAL
FISHING
WEEK

1990

JUNE 4-10

In other AFS national meeting news, the following resolutions were approved by the Executive Committee and the membership:

- 1) Opposition to the proposed Great Lakes Inland Waterway.
- 2) Support for increased Great Lakes Fishery Commission funding.
- 3) Restricting discharge of ballast water from ocean-going vessels in the Great Lakes and other North American waters (see related story in "New York News").
- 4) Seeking international agreement to reduce drift gillnet by-catch of salmon, steelhead, sea turtles, marine mammals, and sea birds.
- 5) Encouraging the mitigation of acid mine drainage.

AFS has established an annual \$500 award for artwork for an annual meeting poster beginning in 1991. This competition is not restricted to AFS members, and the award will be presented each year for the poster which best addresses the annual meeting theme. Contest rules will be forthcoming in Fisheries.

An AFS award will be developed to recognize a non-member organization, company, agency, or individual's contribution to fisheries. A separate committee also is to be set up to develop criteria for an AFS Chapter Excellence Award.

The AFS contract with JOBSource will be terminated at the end of 1989 due to limited utilization by individuals and the high cost per search (\$150). Development of an alternative "in-house" employment service will be explored.

An AFS \$1000 challenge grant was approved for National Fishing Week 1990 (4-10 June), contingent on approval of a Wallop-Breaux match by the USFWS. Another \$1000 was approved to support the National Resources Defence Council lawsuit to require an environmental impact statement for the Bureau of Reclamation's water contract renewals. The Western Division and Cal-Neva Chapters have each contributed \$500 to support this effort.

Portland, Oregon, was selected as the site for the 1993 AFS annual meeting.

AFS is joining 24 other national conservation groups to form a coalition that will support national beverage container legislation. You may be hearing from your local AFS reps to enlist your support in this effort.

SUNY researchers are examining the summer habitat and diet preferences of Lake Ontario salmonids. Many of us are aware of the potential for competition when new species are introduced into an ecosystem. Lake Ontario, for example, has a long history of introduced species including brown trout and, more recently, chinook (king) salmon. These species have the potential to compete with native fish such as the lake trout. In an effort to assess this potential, researchers have determined the summer distribution patterns and diet of these fish. Some of the results are presented below:

| Summer Habitat Characteristic | Lakers | Browns | Kings |
|---|---------|-----------|-----------|
| Distance from shore, miles | 0.7-1.7 | 0.4-1.3 | 0.9-2.6 |
| Depth Caught, feet | 54-113 | 26-70 | 36-84 |
| Distance above or below (-) thermocline, feet | -1.6-46 | -1.3-33.5 | -0.5-46.3 |
| Temperature Selected, oF | 45-55 | 50-63 | 53-63 |
| Distance from Bottom, feet | 5.6-100 | 7.9-81 | 44-127 |

Although the kings and browns had similar vertical distributions in the lake, kings preyed more heavily on smelt than brown trout and were distributed further offshore. Lakers and kings preferred offshore areas, had similar diets (mostly smelt), but differed in the preferred temperatures and depths. Lakers and browns appear to be the two species most likely to compete, given their similarities in diet, and offshore and depth distributions. Brown trout, however, may have a competitive edge because of their territoriality and aggressiveness.

The world record coho salmon has been caught in Lake Ontario. In September, Jerry Lifton of New Jersey landed a 33-pound, 4 ounce coho just downstream of the Short Bridge in Pulaski on the Salmon River. This beats the old New York record of 30 pounds, 12 ounces set in 1985 and exceeds the world record for a British Columbia fish by 2 pounds, 4 ounces. Congradualtions, Jerry!

NATIONAL & INTERNATIONAL NEWS

The USEPA has developed a "Small Community Outreach and Education" (SCORE) program to assist rural areas and small communities with their wastewater treatment needs. Because small communities often lack the technical expertise, manpower and capital investment resources necessary to implement adequate treatment facilities, the program is designed to provide or assist in locating these resources. The program is being implemented through the National Small Flows Clearinghouse, West Virginia Univ., P.O. Box 6064, Morgantown, WV 26506-6064. Toll-free phone numbers provide access to technical assistance (800-624-8301 outside West Virginia), and a computer bulletin board (the Wastewater Treatment Information Exchange) provides information on meeting announcements, conferences, electronic mail and surplus equipment (800-544-1936, outside West Virginia). A free newsletter ("Managing Small Flows"), several computer databases, and a wide range of publications are also available through the Clearinghouse.

The Clean Lakes Clearinghouse is also available for use. The Clearinghouse was developed by EPA to produce a data base that can provide technical information on lake management, restoration, and protection. The Clearinghouse can provide a number of services, including abstracts and citations from a variety of sources, responses to specific requests for information on specific lake topics, specialized bibliographies, and user support. To obtain more information on the Clean Lakes Clearinghouse, call the CLC User Support at (202) 382-7111 or write: USEPA, Clean Lakes Program (WH-553), Washington, DC 20460.

AQUACULTURE NEWS

Grant proposals are being solicited by the NYS Department of Agriculture and Markets. The request for proposals (RFP) constitutes the second funding cycle for the 1989/90 program year. Aquaculture projects have previously been supported and funding for well developed cooperative projects through the Agricultural Research and Development Grants is possible. Deadline for submission is 8 December 1989. For more information contact Mr. William Kimball, 1 Winners Circle, Capital Plaza, Albany, NY 12235.

"Principles of Aquaculture", a 3-credit-hour course, will be offered spring 1990 at Cornell University. The lecture course will meet Tuesdays and Thursdays at 1325-1500. Participants will receive an in-depth introduction to aquaculture. Pre-requisites include junior status, with Pass/Fail grades optional. Most of the Cornell Aquaculture Program will be involved in the team-taught course. Similar courses are also available at SUNY Morrisville and SUNY Brockport. Contact the respective institution for details. This course is highly recommended for anyone new to aquaculture.

UPCOMING EVENTS

- Dec. 1989 (tentative) - Time Series Approaches to Water Quality Data, Toronto, ON. If you are interested in attending this course, contact: R. Peter Richards, Water Quality Laboratory, Heidelberg College, Tiffin, OH 44883 (419/448-2198).
- Dec. 3-6, 1989 - 51st Midwest Fish & Wildlife Conference, Hilton Hotel and Ramada Renaissance Hotel, Springfield, IL. For info: Dale Burkett, IL Div. Fish., 600 N. Grand West, Springfield, IL 62706. (217) 785-8287.
- Dec. 3-6, 1989 - Annual Meeting of the North Central Div.. AFS. (with Midwest Fish & Wildlife Conf., see above). For info: Dale Burkett, Ill. Div. Fish., 600 N. Grand West, Springfield, IL 62706. (217) 785-8287.
- Dec. 6-9, 1989 - Symposium on Management of Contaminated Urban Fisheries, Hilton Hotel & Ramada Renaissance Hotel, Springfield, IL. For info: Bob DiStefano, MO Dept. Conserv., 1110 College Ave., Columbia, MO 65201. (314) 449-3761.
- Dec. 8-12, 1989 - Fish Farming Expo III, Riverdale Exhibit Hall, New Orleans, LA. For info: Aquaculture Productions, Inc., P.O. Box 5038, Brandon, MS 39047. (601)992-0760.
- Dec. 15, 1989 - Current Studies in Fisheries Research and Management Technical Meeting, H. R. Stackhouse, Bellefonte, PA. For info: Dick Soderberg, Dept. Biol. Sci., Mansfield Univ., Mansfield, PA 16933.
- Dec. 27-30, 1989 - Centennial Meeting of the American Society of Zoologists and Amer. Microscopical Soc., Animal Behavior Soc., The Crustacean Soc., Internatl. Assoc. of Astacology, Soc. of Systematic Zoology, Boston, MA. For info: Mary Adams-Wiley, Executive Officer, American Society of Zoologists, 104 Sirius Circle, Thousand Oaks, CA 91360. (805) 492-3585, FAX (805) 492-0370.
- Jan. 25-27, 1990 - Annual Meeting of the New York Chapter of the American Fisheries Soc., Owego Treadway Inn, Owego, NY. The first call for papers is out, contact: Joseph P. Galati, NYSDEC, Lake Erie Fisheries Unit, 178 Point Dr. North, Dunkirk, NY 14048-1031.
- March 27-31, 1990 - International Symposium & Workshop on Creel & Angler Surveys in Fisheries Management, Doubletree Hotel, Houston International Airport, TX. For info: E. A. (Mac) McCune, Lake Management Services, P.O. Box 923, Richmond, TX 77469. (713) 342-6018.

- June 10-14, 1990 - World Aquaculture 90, World Trade & Convention Center, Halifax, NS, Canada. For info: Exposition Headquarters, 940 Emmett Avenue #14, Belmont, CA 94002, (800) 222-8882 (outside CA).
- June 20-22, 1990 - New York Natural History Conference: A Forum for Current Research, Empire State Plaza, Albany, NY. For info: The New York Natural History Conference, Rm. 3140 C.E.C., Biological Survey, N. Y. State Museum, Albany, NY 12230. (518) 474-5812.
- June 25-26, 1990 - Symposium on Shellfish Life Histories/Models, Moncton, NB, Canada. For info or to submit papers: Dr. G. Y. Conan or John B. Pearce, Marine Biology Research Laboratory, Universite de Moncton, Moncton, New Brunswick, E1A 3E6, Canada. (506) 857-6131.
- July 1-7, 1990 - Fourth International Congress of Systematic and Evolutionary Biology, Univ. of Maryland, College Park. For info: Congress Secretary ICSEB-IV, Dept. of Microbiology, Univ. of Maryland, College Park, MD 20742.
- Aug. 22-26, 1990 - Third International Conference of Behavioral Ecology and Foraging Behaviour, Uppsala, Sweden. For info: Staffan Ulfstrand, Dept. of Zoology, Box 561, S-751 22 Uppsala, Sweden.
- Aug. 23-30, 1990 - Advanced Research Conference on Frontiers of Statistical Ecology, Fifth International Congress of Ecology Symposium on Statistical Ecology, Yokohama, Japan. For info: Dr. G. P. Patil, Center for Statistical Ecology & Environmental Statistics, 318 Pond Lab, University Park, PA 16802.
- Aug. 26-31, 1990 - Eighth Triennial International Symposium on Biodeterioration and Biodegradation, Windsor, ON. For info: Mary Hawkins, Secretariat-Biodeterioration 8, 10657 Galaxie, Ferndale, MI 48220-2133. (313) 544-0042.
- Aug. 27-31, 1990 - The 120th Annual Meeting of AFS, Pittsburgh Hilton, PA. For info: Carl R. Sullivan, AFS, 5410 Grosvenor Lane, Ste. 110, Bethesda, MD 20814-2199. (301)897-8616.
- Sept. 4-7, 1990 - The Rainbow Trout Symposium, Stirling, Scotland. For info: Willem Kalfflaan 8, 1401 CL BUSSUM, The Netherlands.
- Sept. 4-7, 1990 - Aquaculture International: Congress and Exposition, Trade and Convention Centre, Vancouver, BC. For info: Project Manager, Aquaculture International Exposition, Suite 340-580 Hornby St., Vancouver, BC, Canada V6C 3B6. (604)681-1988.
- April 14-19, 1991 - World Fisheries Congress, Athens, Greece.
- Aug. 1991 - Annual Meeting AFS, San Antonio, TX.

RECENT PUBLICATIONS:GENERAL

Acid Rain: Rhetoric and Reality, by C. Park. 1989. Methuen/Routledge, distributed by Chapman & Hall, 29 West 35th St., New York, NY 1001. 272 p. \$25 (paperback).

Analysis of Biogeochemical Cycling Processes in Walker Branch Watershed, ed. by D. W. Johnson & R. I. Van Hook. 1989. Springer-Verlag, New York. Springer Advanced Texts in Life Sciences. 419 p. \$69.

Analysis of Messy Data. Vol. 2: Nonreplicated Experiments, by G. A. Milliken & D. E. Johnson. 1988. Van Nostrand Reinhold, New York. 199 p. \$51.95.

The Atlantic Salmon in New England 1988-89. 18 p. Available from The Atlantic Salmon Federation, Box 684, Ipswich, MA 09138.

Atrazine Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review, by R. Eisler. 1989. USFWS Biol. Rpt. 85(1.18), 53 p. Available from USFWS, Patuxent Wildlife Res. Center, Laurel, MD 20708.

Balancing the Needs of Water Use, by J. W. Moore. 1989. Environmental Management Series. Springer-Verlag, New York. 278 p. \$69.

The Biology of Estuarine Management, by J. G. Wilson. Croom Helm, distributed by Chapman & Hall, 29 West 35th St., New York, NY 10001. 224 p. \$55.

Canada-United States Acid Rain. 1988. 14 p. Free from Canadian Consulate General, 3 Copley Place, Boston, MA 02116.

Channelized Rivers: Perspectives for Environmental Management, by A. Brookes. 1988. John Wiley & Sons, New York. 326 p. \$79.95.

A Citizen's Guide to Plastics in the Ocean: More than a Litter Problem. 1988. Available from Center for Environmental Education, 1725 DeSales St. NW, Washington, DC 20036. \$2.

Clam Mariculture in North America, ed by J. J. Manzi & M. Castagna. 1989. Elsevier, New York. 461 p. \$118.50.

Congressional Directory: Environment. 1989. 600 p. Available from Betty Farley, Environment Communications, 6410 Rockledge Dr., Suite 203, Bethesda, MD 20817, (301) 571-9791. \$87.50.

Crab and Lobster Fishing, by A. Spence. 1989. Fishing News Books Ltd., Farnham, Surrey, England. 100 p. L15.00.

Viruses in Water Systems: Detection and Identification, by J. C. Block & L. Schwartzbrod. 1989. VCH Publishers, New York. 136 p. \$39.50.

Waste Water Technology, ed. by Institut Fresenius GmbH and Forschungsinstitut für Wassertechnologie. Springer-Verlag, New York. 1,192 p. \$98.

Water Analysis: A Practical Guide to Physico-Chemical, Chemical and Microbiological Water Examination and Quality Assurance, ed. by W. Fresenius, K. E. Quentin & W. Schneider. 1988. Springer-Verlag, New York. 829 p. \$85.

Water Pollution Biology, by P. D. Abel. 1989. J. Wiley & Sons, Inc., P.O. Box 6792, Somerset, NJ 08875-9976. 231 p. \$76.95.

Water Resources People and Issues, by A. Maass. 1989. 142 p. \$8. Available from Supt. of Documents, Washington, DC 20402-9325, (203) 783-3238 (stock No. 008-022-00253-7).

PUBLICATIONS OF GENERAL INTEREST

The Control of Nature, John McPhee. 1989. Farrar Straus Giroux, 19 Union Square West, New York, NY 10003, \$17.95. Three "man against nature" tales (the Atchafalaya, Icelandic volcanoes, and Los Angeles landslides) by one of the best environmental writers around.

Dark Waters: Essays, Stories and Articles, by Russell Chatham. 1989. Clark City Press, 109 W. Callender, Livingston, MT 59047, \$14.95 (paperback). More than just another collection of hunting and (mostly) fishing stories.

Keeper of the Stream. 1989. Pueblo Publishing Co., \$14.50 (paperback). The first American edition of the classic 1952 chronicle of Frank Sawyer, the river keeper for six and one-half miles of stream for the Services Dry Fly Association in England.

Reviews of Environmental Contamination and Toxicology, ed by G. W. Ware. Springer-Verlag, New York.

Vol. 103. 1988.. 169 p. \$38. Contains an article on "Partition of Nonionic Organic Compounds in Aquatic Systems."

Vol. 105. 1989. \$37. Contains articles on the toxicity of aldicarb and methylisocyanate, and aldicarb contamination of ground water.

Vol. 108. 1989. \$42. Contains articles on cobalt in the environment and comparative toxicology of pyrethroid insecticides.

Sharks in Question: A Smithsonian Answer Book, by V. G. Springer & J. P. Gold. 1989. Smithsonian Institute Press, Washington, DC. 187 p. \$15.95 (paperback). An introduction to sharks.

Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Mid-Atlantic) - Spot, by J. M. Phillips, M. T. Huish, J. H. Kerby, & D. P. Moran. 1989. USFWS Biol. Rpt. 82(11.98), 13 p. Available from Publications Unit, USFWS, 18th & C Streets NW, Room 130-ARLSQ, Washington, DC 20240.

Species Profiles: Life histories and Environmental Requirements of Coastal Fishes and Invertebrates (Mid-Atlantic) - Bay Anchovy, by T. Morton. 1989. USFWS Biol. Rpt. 82(11.97), 13 p. Available from Publications Unit (above).

Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Mid-Atlantic) - Bluefish, by G. B. Pottern, M. T. Huish & J. H. Kerby. 1989. USFWS Biol. Rpt. 82(11.94), 20 p. Available from Publications Unit (above).

Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (North Atlantic) - Winter Flounder, by J. Buckley. 1989. USFWS Biol. Rpt. 82(11.87), 12 p. Available from Publications Unit (above).

Standard Methods for the Examination of Water and Wastewater, Suppl. to the 16th ed. 1989. \$30 (plus \$4 postage & handling). Available from Amer. Public Health Assoc., 1015 Fifteenth St. NW, Washington, DC 20005. (202)789-5667.

Striped Bass Status Report, by J. Riffe. 1989. Available from USFWS, National Fisheries Research Center, Box 700, Kearneysville, WV 25430.

The Trout and Salmon Handbook, by R. Ade. 1989. Facts on File, Inc., New York. 122 p. \$19.95. Natural history.

Underwater Farming, by G. S. Fichter. 1988. Pineapple Press, Inc., Sarasota, FL. 119 p. \$10.95. An introduction to aquaculture.

- Brocksen, R. W. & P. W. Emler, Jr. 1988. Living lakes: an aquatic liming and fish restoration demonstration program. *Water Air Soil Poll.* 41(1-4):85-93.
- Brocksen, R. W., et al. 1988. Experimental liming of watersheds: an international cooperative effort between the United States and West Germany. *Water Air Soil Poll.* 41(1-4):455-471.
- Brown, D. J. 1988. The Loch Fleet and other catchment liming projects. *Water Air Soil Poll.* 41(1-4):409-415.
- Brown, D. J., et al. 1988. Loch Fleet: A research watershed liming project. *Water Air Soil Poll.* 41(1-4):25-41.
- Buell, G. R. & N. E. Peters. 1988. Atmospheric deposition effects on the chemistry of a stream in northeastern Georgia. *Water Air Soil Poll.* 39(3-4):275-291.
- Bukaveckas, P. A. 1988. Effects of lake liming on phytoplankton production in acidic Adirondack lakes. *Water Air Soil Poll.* 41(1-4):223-240.
- Chen, C. W., et al. 1988. Sensitivity of Meander Lake to acid deposition. *J. Environ. Engin.* 114(5):120-1216.
- Chew, H., et al. 1988. Aluminum contamination of groundwater: Spring melt in Chalk River and Turkey Lakes watersheds - preliminary results. *Can. J. Fish. Aq. Sci.* 45(Suppl. 1):66-72.
- Christ, R. H., et al. 1988. Interactions of metals and protons with algae. *Environ. Sci. Technol.* 22(7):755-760.
- Claesson, A. & L. Tornqvist. 1988. The toxicity of aluminum to two acid-tolerant green algae. *Water Research* 22(8):977-983.
- Clements, W. H., et al. 1988. Impact of heavy metals on insect communities in streams: A comparison of observational and experimental results. *Can. J. Fish. Aq. Sci.* 45(11):2017-2025.
- Dalziel, T. R., et al. 1988. Hydrochemical budget calculations for parts of the Loch Fleet catchment before and after watershed liming. *Water Air Soil Poll.* 41(1-4):417-434.
- Davis, J. E. 1988. The use of simulation models as resource management tools for restoring acidified waters. *Water Air Soil Poll.* 41(1-4):435-454.
- Desilva, P. K., K. H. G. M. Desilva. 1988. Temperature, salinity, and pH tolerance, and the influence of other ecological factors in the geographic isolation of a freshwater Atyid shrimp (Decapoda, Caridea) in Sri-Lanka. *Arch. Hydrobiol.* 111(3):435-448.

- Honeyman, B. D. & P. H. Santschi. 1988. Metals in aquatic systems. *Environ. Sci. Technol.* 22(8):862-871.
- Hunter, R. D. 1988. Effects of acid water on shells, embryos, and juvenile survival of Planorbella trivolvis (Gastropoda: Pulmonata): a laboratory study. *J. Freshwat. Ecol.* 4:315-327.
- Ivahnenco, T. I., et al. 1988. Effects of liming on water quality of two streams in West Virginia. *Water Air Soil Poll.* 41(1-4):331-357.
- Jackson, S. T. & D. F. Charles. 1988. Aquatic macrophytes in Adirondack (New York) lakes: Patterns of species composition in relation to environment. *Can. J. Bot.* 66(7):1449-1461.
- Janicki, A. & H. S. Greening. 1988. The effects of stream liming on water chemistry and anadromous yellow perch spawning success in tow Maryland coastal plain streams. *Water Air Soil Poll.* 41(1-4):359-383.
- Jansen, W. A. & J. H. Gee. 1988. Effects of water acidity on swimbladder function and swimming in the fathead minnow, Pimephales promelas. *Can. J. Fish. Aq. Sci.* 45(1):65-77.
- Jenkins, A., et al. 1988. A modeling study of long-term acidification in an upland Scottish catchment. *Water Air Soil Poll.* 40(3-4):275-291.
- Karathanasis, A. D., et al. 1988. Aluminum and iron equilibria in soil solutions and surface waters of acid mine watersheds. *J. Environ. Qual.* 17(4):534-542.
- Kay, D. & J. Stoner. 1988. The effects of catchment land use on stream water quality in a acid-susceptible region of west Wales: The implications for compliance with EC drinking water and fishery directives. *Appl. Geogr.* 8(3):191-205.
- Keithan, E. D., R. L. Lowe & H. R. DeYoe. 1988. Benthic diatom distribution in a Pennsylvania stream: role of pH and nutrients. *J. Phycol.* 24:581-184.
- Kelso, J. R. & D. S. Jeffries. 1988. Response of headwater lakes to varying atmospheric deposition in North-Central Ontario, 1979-85. *Can. J. Fish. Aq. Sci.* 45(11):1905-1911.
- Lachance, M., et al. 1988. Airborne transport of sulphur: impacts on chemical composition of rivers on North Shore of the St. Lawrence River (Quebec). *Water Air Soil Poll.* 39(3-4):311-322.
- Lawrence, G. B. & C. T. Driscoll. 1988. Aluminum chemistry downstream of a whole-tree-harvested watershed. *Environ. Sci. Technol.* 22(11):1293-1299.

- Richman, L. A., et al. 1988. Facts and fallacies concerning mercury uptake by fish in acid stressed lakes. *Wat. Air Soil Poll.* 37(3-4):465-473.
- Riely, P. L. & D. B. Rockland. 1988. Evaluation of liming operations through benefit-cost analysis. *Water Air Soil Poll.* 41(1-4):293-328.
- Roberts, D. A. & C. W. Boylen. 1988a. Patterns of epilithic algal distribution in an acid Adirondack lake. *J. Phycol.* 24:146-152.
- Roberts, D. A. & C. W. Boylen. 1988b. The effects of liming on the epilithic algal community of Woods Lake (Herkimer Co., NY, USA). *Can. J. Fish. Aqu. Sci.* 46:287-294.
- Rochelle, B. P., et al. 1988. Relationship between annual runoff and watershed area for the eastern United States. *Water Resources Bull.* 24(1):35-41.
- Ross, D. D. 1988. The effects of heavy metal pollution on epilithic bacteria. *Purdue Univ. Water Resources Res. Center Tech. Rpt.* 184, 38 p. (zinc, acid)
- Rosseland, B. O. & A. Hindar. 1988. Liming of lakes, rivers and catchments in Norway. *Water Air Soil Poll.* 41(1-4):165-188.
- Rowe, L., J. Hudson & M. Berrill. 1988. Hatching success of mayfly eggs at low pH. *Can. J. Fish. Aqu. Sci.* 45(9):1649-1651.
- Schenck, R. C., A. Tessier & P. G. C. Campbell. 1988. The effect of pH on iron and manganese uptake by a green alga. *Limnol. Oceanogr.* 33(4):538-550.
- Schreiber, R. K. 1988. Cooperative Federal-State liming research on surface waters impacted by acidic deposition. *Water Air Soil Poll.* 41(1-4):53-73.
- Shaffer, P. W., et al. 1988. Watershed vs in-lake alkalinity generation: a comparison of rates using input-output studies. *Water Air Soil Poll.* 39(3-4):263-273.
- Siver, P. A. 1988. Distribution of scaled Chrysophytes in 17 Adirondack (New York) lakes with specific reference to pH. *Can. J. Bot.* 66(7):1391-1393.
- Sprenger, M. D., et al. 1988. Concentrations of trace elements in yellow perch (Perca flavescens) from six acidic lakes. *Wat. Air Soil Poll.* 37(3-4):375-388.
- Sutcliffe, D. W., T. R. Carrick, A. C. Charmier, T. Gledhill, J. G. Jones, A. F. H. Marker & L. G. Willoughby. 1988. Acidification problems of freshwaters: Trophic relationships, p. 64-66. *Reversibility of acidification*, H. Barth, ed., Grimstad, Norway, 9-11 June 1986.

The "RFWI Update" newsletter of the Rensselaer Fresh Water Institute is again available. Many of you may know the Institute for its work on the Adirondack Lake Acidification Mitigation Project and studies of Eurasian watermilfoil in Lake George. Write to Charles Boylen, Director, Rensselaer Fresh Water Institute, Rensselaer Polytechnic Institute, Troy, NY 12180-3590, to get on the mailing list.

The new Sea Grant magazine, "Nor'Easter", is available free. This publication will cover Sea Grant activities in the five northeastern states. It is available in New York from State University of New York, Sea Grant, Stony Brook, NY 11794-5001.

EMPLOYMENT OPPORTUNITIES

The following Environmental Scientist positions are available with the Department of Environmental Protection, Bureau of Wastewater Treatment, Water Quality Section, City of New York.

Research Scientist. Minimum qualifications: Master's degree with specialization in appropriate field of science and three years experience in an appropriate field of specialization including one year in responsible supervisory or administrative capacity; or satisfactory equivalent. \$42,909-\$60,431.

Scientist (Water Ecology). Minimum qualifications: Master's degree with specialization in wastewater analysis or water pollution control, treatment or management, with one year of experience in water quality planning, management or research; or satisfactory equivalent. \$37,431-\$46,435.

Research Assistant. Minimum qualifications: A baccalaureate in an appropriate field with one year of full-time, paid experience in research involving use of analytical research methods and report writing; or satisfactory equivalent. \$26,055-\$34,284.

Interested candidates should send resume, salary history and cover letter to (no deadline given):

Zoe Ann Campbell
Deputy Director of Personnel
DEP Personnel
346 Broadway, Room 831
New York, NY 10013

EPCOT Center at Walt Disney World Resort is seeking Aquaculture Co-op students. Position is 40h/wk. For more information, contact Ms. Virginia S. Mann, Student Coordinator, Land Agriculture Office, P.O. Box 10,000, Lake Buena Vista, FL 32830, (407) 560-7256.

NEW YORK CHAPTER
AMERICAN FISHERIES SOCIETY
WORKSHOP EVALUATION QUESTIONNAIRE

This questionnaire was developed to evaluate the interests and concerns of chapter members towards the continuation of the summer workshop program. From 1980 through 1987, NYC-AFS conducted an annual training session at Cornell University. Due to reduced attendance, workshops have not been held since 1987. Information provided by this questionnaire will be used to determine if the program should be reinstituted or if other alternatives should be considered.

1. Are you a student_____ or professional_____?(check one)
2. By whom are you employed?(check one)
 - a. Academic_____
 - b. Government_____
 - c. Business_____
 - d. Other_____
3. Which of the following most accurately describes your interests?
(check one or more)
 - a. Aquatic Biology_____
 - b. Genetics_____
 - c. Aquaculture_____
 - d. Fish Management_____
 - e. Administration_____
 - f. Fish Health_____
 - g. Environmental Impact_____
 - h. Extension_____
 - i. Education_____
4. Have you ever attended a NYC-AFS sponsored workshop (Y or N)?_____
(Go to Question 6 if you answered yes)
5. Why didn't you attend a NYC-AFS sponsored workshop?
(check one or more)
 - a. Time of year_____
 - b. Lack of interest in topic_____
 - c. Expense_____
 - d. Other_____
6. If you did attend a workshop were you satisfied with the following factors (Y or N)?
 - a. Topics_____
 - b. Facility_____
 - c. Expense_____
 - d. Timing_____

If you answered "no" to any of the above please explain:_____

NOTE THE NUMBER 88 OR 89 ON YOUR MAILING LABEL.
THIS DENOTES YOUR DUES STATUS.
TO BE A CURRENT PAID UP MEMBER YOU SHOULD HAVE AN 89 ON THE LABEL.

ENCLOSED IS A MEMBERSHIP BLANK FOR NEW OR RENEWAL MEMBERSHIPS.

SEND YOUR 1989 DUES TO SECRETARY/TREASURER.

Application for Membership
New York Chapter of the American Fisheries Society
(information provided will be used in the annual membership directory)

Applicant's name: _____

Mailing address: _____

Employer or school: _____

Specialization (s) or interest ** _____

☐ Regular \$5.00

☐ Student \$2.00 *

* Student members must be endorsed by a faculty member signing above.

Telephone _____ home
area code and number

_____ business

☐ Check here if you wish to receive information about national AFS membership.

** Please indicate area (s) of interest by numerical code from list on reverse side of this form.

Make check payable to NY Chapter - AFS and mail with this detachable application to address on reverse side of this form.

Specialization or Interest

1. Administration
2. Aquaculture
3. Aquatic biology, ecology (freshwater)
4. Biological controls
5. Benthic organisms
6. Communications (writing, publishing, publicity)
7. Exotic species
8. Fish and fishing—general
9. Fish behavior
10. Fish biology—freshwater species
11. Fish biology—marine species
12. Fish biology—estuarine species
13. Fish biology—salmonids and cold-water species
14. Fish biology—warm-water species
15. Fish larvae
16. Fisheries management (population dynamics, habitat improvement, etc.)

17. Genetics
18. Health—medicine, aquatic animals
19. Ichthyology, taxonomy
20. Illustrations
21. Impact assessment
22. International fisheries development
23. Legislation and law enforcement
24. Limnology
25. Pesticides
26. Physiology
27. Plankton
28. Pollution
29. Power plants
30. Research
31. Striped bass
32. Sturgeon
33. Toxicology—all phases
34. Water quality—analysis, improvement, etc.

35. Crustaceans
36. Education/Teaching
37. _____
38. _____

Mail Application to:

JACK HASSE
SECRETARY/TREASURER
NYAFS
c/o NYSDEC
207 Genesee St.
Utica, NY 13501



July 1989

NEW YORK CHAPTER - AMERICAN FISHERIES SOCIETY

NEWSLETTER



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NATIONAL AFS NEWS

Carl Sullivan received an enthusiastic welcome from the AFS staff as he returned to the office on April 10. Carl is progressing well from his January operation and hopes to resume his full work schedule in the near future. He continues to receive chemotherapy and remains on extended sick leave. I'm sure we all wish him well.

Have you FAXed anything to AFS lately? A FAX machine is now available in the AFS national office for just such use. The FAX number is (301) 897-8096.

Douglas B. Jester, Jr., became editor of the Society's North American Journal of Fisheries Management on 9 January 1989. He succeeded Robert F. Carline, who edited the journal with distinction for two years. Doug is a 19-year member of AFS and is active in the Michigan Chapter and several Society Sections. He is currently employed by the Michigan Dept. of Natural Resources as a Program Services manager.

Although Doug will remain in Michigan for the time being, manuscripts should be sent to him via the national office:

Douglas B. Jester, Jr., Editor
North American Journal of Fisheries Management
5410 Grosvenor Lane, Suite 110
Bethesda, MD 20814

Authors are encouraged to submit diskettes in WordPerfect or another IBM-compatible word-processing system in addition to the standard four paper copies of their manuscripts.

Dr. Neil Ringler (SUNY-Syracuse, ESF), with New York Sea Grant support, continues to assess the natural recruitment of salmonids in Lake Ontario tributaries. Dr. Ringler estimates that the contribution of wild steelhead population to the total steelhead population of the lake may be as much as 30%.

His work is one of a number of efforts by fisheries biologists documenting what appears to be an increase in natural reproduction of salmonids throughout the Great Lakes. This increase appears to be related to improving water quality conditions. Fisheries biologists are thus seeking ways to distinguish hatchery-reared fish from natural recruitment. Michigan biologists have found that scale circuli can be used to make this distinction, with hatchery-reared fish showing more uniformly spaced circuli than wild fish. This difference apparently reflects the less variable environment of the hatchery.

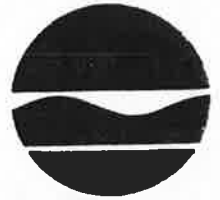
"Father of New York Great Lakes Trout and Salmon Fishing", Bill Pearce, is retiring. After 40 years of untiring and dedicated service to New York fishery resources and anglers, William "Bill" Pearce is retiring from DEC. His leadership and vision brought forth and guided New York's Great Lakes salmonid program, which today stands as one of the Empire State's greatest natural resource development "success stories". Bill's friends, colleagues and coworkers have planned a tribute to honor him for his devoted service and his many career accomplishments. The reception, dinner, and other festivities are set to be held Monday, 28 August 1989, at the Bonnie Castle Resort in Alexandria Bay, New York. Pre-registration is required. Contact Jerry LeTendre @ 315/654-2147 to receive pre-registration information and materials.

NATIONAL & INTERNATIONAL NEWS

Plans for the World Fisheries Congress, in Athens, Greece, in 1991 are progressing well. AFS 1st Vice President, Larry Nielsen, was recently named chairman of the Steering Committee, replacing Tapan Banerjee who was unable to continue in the position because of a new assignment to the American Embassy in Helsinki, Finland. Larry attended his first Advisory Council meeting in Tokyo in May. Thus far, thirty-four natural resource organizations and societies from around the world have agreed to cosponsor the meeting. Current funding support totals \$31,000: \$10,000 from the U.S. Fish & Wildlife Service, \$15,000 from the U.S. National Marine Fisheries Service, a \$5,000 loan from AFS, and \$1,000 from the National Wildlife Federation. The Greek government recently offered to cosponsor the Congress as well.

New York State Department of Environmental Conservation

Fish Disease Control Unit
8314 Fish Hatchery Road
Rome, New York 13440
(315) 337-0910



Thomas C. Jorling
Commissioner

June 23, 1989

Dr. Joseph Buttner
Aquatic Ecology Section
Dept. of Biological Sciences
SUNY Brockport
Brockport, New York 14420

Dear Joe,

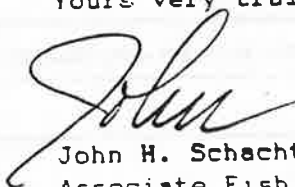
In response to the request at the recent intersector meeting in Albany last month at Department of Agriculture and Markets, I am supplying the following information relative to current Dept. of Environmental Conservation concerns and viral hemorrhagic septicemia (VHS) on the west coast. As we discussed at the meeting, VHS was detected for the first time in North America in feral coho at two hatcheries last fall on Puget Sound. I believe that this discovery requires a policy review by our agency on west coast egg imports. It should also serve as a warning to the private fish culture community in our region to be on guard as to the source of their eggs from the northwestern United States.

The disease is somewhat similar to infectious hematopoietic virus (IHN), a disease of concern also in our attempts to keep it out of the Great Lakes Basin, in that its target species is the rainbow trout. VHS has heretofore been confined primarily to Europe, with the Scandinavian countries experiencing significant epizootics. Our concerns in the Great Lakes region, as with IHN, is the potential impact on our wild rainbow populations. The steelhead trout fisheries of our region would be of particular concern if the disease were introduced. Inasmuch as the agencies cooperating with and adhering to the Model Fish Disease Control Program of the Great Lakes Fish Disease Control Committee already have a long-standing ban on imports of salmonids from west of the Continental Divide, we currently feel agency fish culture facilities are at minimal risk. However, in the private sector only a couple of agencies require similar compliance of private hatcheries within their jurisdictions. We in New York require only

Any lots of fish for which such information is unavailable or incomplete should be rejected.

It is our opinion that while these recommendations are somewhat more restrictive than existing requirements, they are prudent and still permit the import of properly documented salmonid eggs from an area of concern with the only major existing sources of such eggs. We will continue to keep the NYS Aquaculture Association apprised of our regulatory activities in this area so that you may respond as necessary. Also, as requested we are enclosing a sample of New York's fish health inspection report that you may distribute as a guide for importers of salmonid eggs.

Yours very truly,



John H. Schachte, Ph.D.
Associate Fish Pathologist

JHS:em

LIST OF DISEASE AGENTS COVERED BY THE PROGRAM

EMERGENCY

Those diseases which have not been detected within waters of the Great Lakes Basin.

- 1) VHS - Viral Hemorrhagic Septicemia Virus
- 2) IHN - Infectious Hematopoietic Necrosis Virus
- 3) CS - Ceratomyxosis (*Ceratomyxa shasta*)
- 4) PKD - Proliferative Kidney Disease agent

RESTRICTED

Those diseases currently present within the Great Lakes basin, but whose geographic range is limited. Every appropriate action should be taken to further reduce their range.

- 1) WD - Whirling Disease (*Myxosoma cerebralis*)
- 2) IPN - Infectious Pancreatic Necrosis Virus
- 3) BKL - Bacterial Kidney Disease (*Renibacterium salmoninarum*)
- 4) BF - Furunculosis (*Aeromonas salmonicida*)
- 5) ERM - Enteric Redmouth (*Yersinia ruckeri*)

Every effort should be made by member agencies to encourage private fish health inspectors, diagnosticians, or academic laboratories conducting fish disease diagnostic work to report the occurrence of any of the above disease agents detected within the Great Lakes basin to a member agency.

HATCHERY CLASSIFICATION

A. Class A-1

The A-1 classification is limited to those hatcheries that use only an enclosed water supply that is free of fish. They must also have been inspected at 12-month or shorter intervals for a period of two years and found to be free of all the designated diseases.

B. Class A-2

The Class A-2 designation will apply to all hatcheries with a 2-year history of being free of the specified diseases, but having an open water supply, or a closed water supply harboring fish.

C. Class B

Class B will include hatcheries where one or more of the specified diseases have occurred within the past two years. The disease abbreviation becomes part of the classification. For example, a hatchery where furunculosis has been confirmed would be classified B-BF. The diseases that are diagnosed at a hatchery will continue to be listed as suspect for a two-year period after a disinfection program is carried out. This will be done by placing the disease abbreviation in parentheses. For example, the classification of a B-BF-KD-IPN hatchery would be changed to (B-BF-KD-IPN) after disinfection. The suspect disease classification will also be used when eggs are inadvertently received from a source that is later found to be suspect or to have a confirmed disease. For example, the classification of an A-2 hatchery would be changed to B-(BF-KD) if B-(BF-KD) eggs were received from a source classified B-(BF-KD) or B-BF-KD. The suspect classifications will remain in effect until the disease is confirmed, or for a period of two years with at least two annual inspections being conducted during that time.

D. Class C

The Class C designation shall apply to those hatcheries having an unknown disease history because of only partial or no inspection data. The disease abbreviation following the C will be used to identify the specific diseases for which inspection data is not available. This will be followed by the classification that applies to any portion of the inspection that has been completed. For example, at a hatchery where inspection data is available on all of the designated diseases except CS and there was a confirmed diagnosis of BF and KD, the classification would be C-CS, B-BF-KD. This classification will also apply to new hatcheries until completion of the full two-year inspection program. For example, the classification of a new hatchery, having an open water supply would be C until completion of the first inspection. If, after the first inspection, the hatchery is found to be free of all designated diseases, the classification would be changed to C, A-2. The classification would be changed to A-2 after completion of the second annual inspection. If no designated

- Sept. 17-22, 1989 - 25th Annual Conference of the American Water Resources Association. Hyatt Regency, Tampa, Florida. For info: L. M. Buddy Blain, Blain & Cone, P.A., 202 Madison St., Tampa, FL 33602. (813) 223-3888.
- Sept. 18-19, 1989 - Wild Trout IV. Yellowstone National Park, Mammoth Hot Springs, Wyoming. For info: Frank R. Richardson, USDI Fish & Wildlife Service, 35 Spring St., SW, Rm. 1200, Atlanta, GA 30303. (404) 331-3588.
- Sept. 18-23, 1989 - International Symposium on Coldwater Fish Culture. Beijing, China. For info: Mr. Huang Kejia, The China Society of Fisheries, 31 Minfeng Lane, Xidan, Beijing, China.
- Sept. 24-30, 1989 - International Conference and Workshop on Global Natural Resource Monitoring and Assessments: Preparing for the 21st Century. Isle of San Giorgia Maggiore, Venice, Italy. For info: Mr. H. Gyde Lund, USDA Forest Service, P.O. Box 96090, Washington, DC 20090-6090. (202)475-3747.
- Oct. 2-4, 1989 - Aquaculture Europe '89. Bordeaux, France. For info: European Aquaculture Society, Princes Elisabethiaan 69, B-8401, Bredene, Belgium.
- Oct. 2-4, 1989 - Symposium on Multispecies Models Relavant to Management of Living Resources. The Hague, Netherlands. For info: Mike Sisswenwine, NMFS/NOAA, Woods Hole, MA 02543.
- Oct. 3-4, 1989 - International Symposium on the Sturgeon. Confernece Plaza, Bordeaux, France. For info: Secretariat General, Colloque Esturgeon, CEMAGREF, B.P. 3, 33610, Cestas, France.
- Oct. 28-Nov. 1, 1989 - Annual Meeting of the Southern Div. AFS. Sheraton Hotel, St. Louis, Missouri. For info: Stan Michaelson, Missouri Dept. of Conservation, Box 180, Jefferson City, MO 65102. (314) 751-4115.
- Nov. 7-11, 1989 - North American Lake Management Society's 9th Annual International Symposium. Stouffer Hotel, Austin, Texas. For info: NALMS, P.O. Box 217, Merrifield, VA 22116/ (202) 466-8550.
- Nov. 9-11, 1989 - Atlantic Marine Expo. Boston's World Trade Center, Boston, Massachusetts. For info?: National Fisherman Expositions, P.O. Box 7437 (DTS), Portland, ME 04112. (207) 772-3005.
- Dec. 1989 (tentative) - Time Series Approaches to Water Quality Data. Toronto, Ontario. If you are interested in attending this course, contact: R. Peter Richards, Water Quality Laboratory, Heidelberg College, Tiffin, OH 44883 (419/448-2198).

COMPUTERS

The bibliography on stream ecology prepared by H. B. N. Hynes for his classic text, "Ecology of Running Waters" and other publications, is now available on 5.25 or 3.5-inch disks for use on the IBM-PC, XT, AT or compatibles. Over 10,000 references are included. The file requires 512K RAM, MS-DOS 2.11 or higher, a floppy drive, hard disk with 3.5 Mb free space, Q&A 2.0 or higher, and compatible printer. Available from FWR Freshwater Research Limited, 506-18A Street NW, Calgary, AB T2N 2H2, Canada. (403) 283-8865. CAN \$260 (approx. \$210 US).

The Natural Resources Computer Newsletter is available for \$98/year (9 issues) from Michaelsen's Micro Magic, Inc. Publishers, P.O. Box 7332, Fredericksburg, VA 22404. Add \$6 for Canadian subscriptions and \$16 for international subscriptions.

A free subscription to T.H.E. Journal (Technology in Higher Education) is available to educators. This magazine is largely devoted to new developments in computer hardware and software having applications in education. Write to Circulation Dept., T.H.E. Journal, P.O. Box 15126, Santa Ana, CA 92705-0126.

An electronic bulletin board is now available to all AFS members. The AFS Computer User Section has set up a electronic bulletin board that can be used to read bulletins, announcements, and public and private mail. You can also leave public and private messages and download text and programs files from the system. All you need is a computer terminal and a modem. The complete procedure for using the system is described in the Jan.-Feb. issue of Fisheries or you can contact Anthony Frank, AFSCUS Software Librarian & Bulletin Board SYSOP, Fish & Wildlife Service, Natl. Fisheries Research Center-Great Lakes, Ann Arbor, MI 48105. (313) 994-3331, 0800-1600 weekdays.

Automated Biomonitoring: Living Sensors as Environmental Monitors, by D. Gruber & J. Diamond. 1988. Ellis Horwood Ltd., Chichester, England. 208 p. \$49.95. Papers from a 1986 workshop.

Bighead Carp (*Hypophthalmichthys nobilis*): A Biological Synopsis, by D. P. Jennings. 1988. 35 p. Available from Publications Unit, Fish & Wildlife Service, Matomic Bldg., Washington, DC. 20240.

Biological Monitoring of Pesticide Exposure: Measurement, Estimation, and Risk Reduction, ed. by Rhoda G. M. Wang et al. 1989. American Chemical Soc., Washington, DC. 387 p. \$69.95. ACS Symposium Series, vol. 382.

Biosystematics of the Genus *Dicrotendipes* Kieffer, 1913 (Diptera: Chironomidae: Chironominae) of the World, by J. H. Epler. 1988. Memoirs of the Amer. Entomol. Soc. No. 36:1-214. Available from The American Entomological Soc., 1900 Race St., Philadelphia, PA 19103. \$25.

Boat Access Building Guide. States Organization for Boating Access, P.O. Box 25655, Washington, DC 20007. \$25 + \$3 shipping.

Carp Farming, by V. K. Michaels. 1988. Fishing News Books Ltd., Farnham, Surrey, England. 207 p. Available from UNIPUB, 4611-F Assembly Dr., Lanham, MD 20706, or AFS. L15.25 (paperback).

Chemical Characteristics of Prairie Lakes in South-Central North Dakota - Their Potential for Influencing Use by Fish and Wildlife, by G. A. Swanson et al. 1988. 44 p. Available from Publications Unit, Fish & Wildlife Service, Matomic Bldg., Washington, DC 20240.

Coastal Marshes: Ecology and Wildlife Management, by Robert H. Chabreck. 1988. Univ. of Minnesota Press, Minneapolis, MN 138 p. \$25. Emphasizes Gulf of Mexico.

Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Mollusks, by D. D. Turgeon, A. E. Bogan, E. V. Coan, W. K. Emerson, W. G. Lyons, W. L. Pratt, C. F. E. Roper, A. Scheltema, F. G. Thompson & J. D. Williams. 1988. American Fisheries Soc. Spec. Pub. 16, Bethesda, MD. 277 p. \$24. (AFS members \$19)

Complex Interactions in Lake Communities, ed. by Stephen R. Carpenter. 1988. Springer-Verlag, New York. 283 p. \$64. Papers from a workshop.

Cutthroat: Native Trout of the West, by Patrick C. Trotter. 1987. Colorado Associated Univ. Press, Boulder, CO. 219 p. \$25 (hardcover), \$12.50 (paperback). 219 p. (reviewed in Fisheries, March-April 1989).

Diadromy in Fishes: Migrations Between Freshwater and Marine Environments, by Robert M. McDowall. 1988. Timber Press, Portland, OR. \$47.95. Available from AFS.

Fish Viruses and Fish Viral Diseases, by Ken Wolf. 1988. Cornell Univ. Press, Ithaca, NY. 476 p. \$57.50.

Fisheries Research in the Hudson River, ed. by C. Lavett Smith. 1988. State Univ. of New York Press, Albany. 407 p. (reviewed in *Northeastern Environ. Sci.*, 7(2), 1988).

Fishing and Stock Fluctuations, by T. Laevastu & F. Favorite. 1988. Fishing News Books Ltd., Farnham, Surrey, England. 239 p. £25.00. Available from UNIPUB, 4611-F Assembly Dr., Lanham, MD 20706.

Fishing Boats and Their Equipment, 2nd ed., by Dag Pike. 1988. Fishing News Books, Farnham, Surrey, England. 188 p. \$30 (paperback). Available from UNIPUB, 4611-F Assembly Dr., Lanham, MD 20706.

Fresh Fish-Quality and Quality Changes, by H. H. Huss. 1988. FAO Fisheries Series No. 29, FAO, Rome. 132 p. \$9.

Functional Testing of Aquatic Biota for Estimating Hazards of Chemicals, ed by J. Cairns, Jr. & James R. Pratt. 1989. ASTM, 1916 Race St., Philadelphia, PA 19103-1187. 242 p. \$45. Fifteen articles, including fish behavioral assessments, microcosms, St. Lawrence River sediment toxicity, and pollutant impacts in Lake Erie.

The Great Lakes: Living with North America's Inland Waters, ed. by D. H. Hickcox. 1988. American Water Resources Assoc., Bethesda, MD. 296 p. \$45 (paperback). One chapter on the socioeconomic impact of New York's Lake Ontario fishery.

Hynes' Bibliography on the Ecology of Running Waters. For IBM PC, XT, AT or compatibles, 512K RAM, MS-DOS 2.11 or higher, one 5.25-inch or 3.5-inch floppy drive, hard disk with 3.5 Mb free space, Q&A 2.0, compatible printer. CAN \$260. Available from FWR Freshwater Research Ltd., 506-18A Street NW, Calgary, AB T2N 2H2, Canada. (403) 283-8865.

An Illustrated Guide to Shrimp of the World, by Ian Dore & Claus Frimodt. 1987. Osprey Books, Huntington, NY. 229 p. \$85.

An Indexed Bibliography of Northeast Fisheries Center Publications and Reports for 1987, by J. A. Gibson. 1988. NOAA Tech. Memorandum NMFS-F/NEC-58. 20 p. Available from Information Services Sec., Northeast Fisheries Center, Water St., Woods Hole, MA 02543.

Intensive Fish Farming, ed. by Jonathan Shepherd & Niall Bromage. 1988. Blackwell Scientific Publications, Inc., Palo Alto, CA. 404 p. \$44.95. Good introductory text, global perspective. Available from AFS.

Methods for Long-Term Identification of Salmonids: A Review, by T. E. Chart & E. P. Bergersen. 1988. 18 p. Available from Publications Unit, Fish & Wildlife Service, Matomic Bldg., Washington, DC 20240.

Microbial Mats. Physiological Ecology of Benthic Microbial Communities, ed. by Yehuda Cohen & Eugene Rosenberg. 1989. Amer. Soc. for Microbiology, Washington, DC. 494 p. \$59. Papers from a 1987 seminar. Reviewed in Science, 2 June 1989.

The Missouri River: The Resources, Their Uses and Values, ed. by Norman G. Benson. 1988. North Central Div., AFS, Spec. Publ. No. 8, 119 p. \$7 (paperback).

Models that Predict Standing Crop of Stream Fish from Habitat Variables: 1950-85, by K. D. Fausch, C. L. Hawkes & M. G. Parsons. 1988. U.S. Forest Service Gen. Tech. Rpt. PNW-GTR-213, 52 p. Available from Pacific Northwest Research Station, USDA, 319 S.W. Pine St., P.O. Box 3890, Portland, OR 97208.

Modern Deep Sea Trawling Gear, 3rd ed., by John Garner. Fishing News Books Ltd., Farnham, Surrey, England. 96 p. \$35. Available from UNIPUB, 4611-F Assembly Dr., Lanham, MD 20706.

Nutrition and Feeding of Fish, by Tom Lovell. 1989. Van Nostrand Reinhold, New York. 260 p. \$46.95. Available from AFS.

Nutrition and Pond Fishes, by Balfour Hephner. 1988. Cambridge Univ. Press, New York. 388 p. \$69.50.

Oceanic Processes in Marine Pollution. 1987-88. Vol. 1: Biological Processes and Wastes in the Ocean, ed. by J. M. Capuzzo & D. R. Kester. 265 p. \$49.50. Vol. 2: Physicochemical Processes and Wastes in the Ocean, ed. by T. P. O'Connor, W. V. Burt & I. W. Dudall. 235 p. \$49.50. Vol. 5: Urban Wastes in Coastal Marine Environments, ed. by D. A. Wolfe & T. P. O'Connor. 273 p. \$49.50. Krieger Publishing Co., Malabar, FL.

On Lambreys and Fishes: A Memorial Anthology in Honor of Vadim D. Vladakov, ed. by D. E. McAllister & E. Kott. 1988. Kluwer Academic Publishers Group, Norwell, MA. 160 p. \$83.

On the Nature of Continental Shelves, by John J. Walsh. 1988. Academic Press, Inc., San Diego, CA. 520 p. \$45. Modeling of continental shelf processes.

Pollution Threat of Heavy Metals in Aquatic Environments, by Geoffrey Mance. 1987. Elsevier Science Publishing Co., New York. 372 p. \$86.50. Available from AFS.

Practical Handbook of Environmental Control, ed. by Conrad P. Straub. 1988. CRC Press, Inc., 2000 Corporate Blvd., N.W., Boca Raton, FL 33431. \$45.

A Survey and Resource Materials on the Use of Oxygen Supplementation in Fish Culture, by J. Colt, K. Orwicz & G. Bouck. 1988. 45 p. Available from Bonneville Power Admin., Div. of Fish & Wildlife-PJ, P.O. Box 3621, Portland, OR 97208.

Temperature Biology of Animals, by Andrew R. Cossins & Ken Bowler. 1987. Chapman & Hall, New York. 339 p. \$57.50.

Tidal Flat Estuaries: Simulation and Analysis of the Ems Estuary, ed. by J. Baretta & P. Ruurdij. 1988. Springer-Verlag, New York. 353 p. \$113. Ecological Studies vo. 71.

Tin Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review, by R. Eisler. 1989. Fish & Wildlife Service Biol. Rpt. 85 (1.15). 90 p. Available from Sec. of Information Management, Patuxent Wildlife Research Center, USFWS, Laurel, MD 20708.

Toxic Contamination in Large Lakes. Vol. I - Chronic Effects of Toxic Contamination in Large Lakes. 364 p. Vol. II - Impact of Toxic Contaminants on Fisheries Management. 330 p. Vol. III - Sources, Fate and Controls of Toxic Contaminants. 440 p. Vol. IV - Prevention of Toxic Contamination in Large Lakes. 321 p., ed. by Norbert W. Schmidtke. Lewis Publishers, Inc., Chelsea, MI. \$49.95 each. Available from AFS.

Transactions of the 53rd North American Wildlife and Natural Resources Conference. 1988. Available from the Wildlife Management Institute, 1101 14th St., N.W., Suite 725, Washington, DC 20005. \$27.50.

Tuna and Billfish: Fish Without a Country, 4th ed., by J. Joseph, W. Klawe & P. Murphy. 1988. Inter-American Tropical Tuna Commission, La Jolla, CA. 69 p. \$15.75 (paperback). Translated from Spanish edition (1986).

U.S. Environmental Laws: 1988 Edition. 1988. Bureau of National Affairs, Inc. Washington, DC. 874 p. \$45 (paperback).

Variability and Management of Large Marine Ecosystems, ed. by Kenneth Sherman & Lewis M. Alexander. 1986. Westview Press, 5500 Central Ave., Boulder, CO 80301. 319 p. \$31.85 (\$25.50 for AAAS members).

Vegetation of Inland Waters, ed. by J. J. Symoens. 1988. Kluwer, Norwell, MA. 385 p. \$140. Handbook of Vegetation Science, vol. 15/1. Reviewed in Science, 14 April 1989.

1988 NEW YORK CHAPTER AFS OFFICERS

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| President Elect | Barb Knuth |
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YOUR COMMENTS & SUGGESTIONS

PLEASE send any news, comments, or suggestions
you would like to share to:

Paul M. Kotila, Editor
Natural Science Div.
Franklin Pierce College
Rindge, NH 03461
603/899-5111 ext. 430 or 470

or

Joseph K. Buttner, Assoc. Editor
Aquatic Ecology Section
Dept. of Biological Sciences
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Brockport, NY 14420
716/395-5750

NOTE THE NUMBER 88 OR 89 ON YOUR MAILING LABEL.

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Application for Membership
New York Chapter of the American Fisheries Society
(information provided will be used in the annual membership directory)

Applicant's name: _____

Mailing address: _____

Employer or school: _____

Specialization (s) or interest ** _____

☐ Regular \$5.00

☐ Student \$2.00 *

* Student members must be endorsed by a faculty member signing above.

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☐ Check here if you wish to receive information about national AFS membership.

** Please indicate area (s) of interest by numerical code from list on reverse side of this form.

Make check payable to NY Chapter-AFS and mail with this detachable application to address on reverse side of this form.

Specialization or Interest

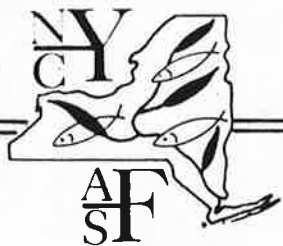
1. Administration
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13. Fish biology—salmonids and cold-water species
14. Fish biology—warm-water species
15. Fish larvae
16. Fisheries management (population dynamics, habitat improvement, etc.)

17. Genetics
18. Health-medicine, aquatic animals
19. Ichthyology, taxonomy
20. Illustrations
21. Impact assessment
22. International fisheries development
23. Legislation and law enforcement
24. Limnology
25. Pesticides
26. Physiology
27. Plankton
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32. Sturgeon
33. Toxicology—all phases
34. Water quality—analysis, improvement, etc.

35. Crustaceans
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Mail Application to:

JACK HASSE
SECRETARY/TREASURER
NYAFS
c/o NYSDEC
207 Genesee St.
Utica, NY 13501



April 1989

NEW YORK CHAPTER - AMERICAN FISHERIES SOCIETY

NEWSLETTER

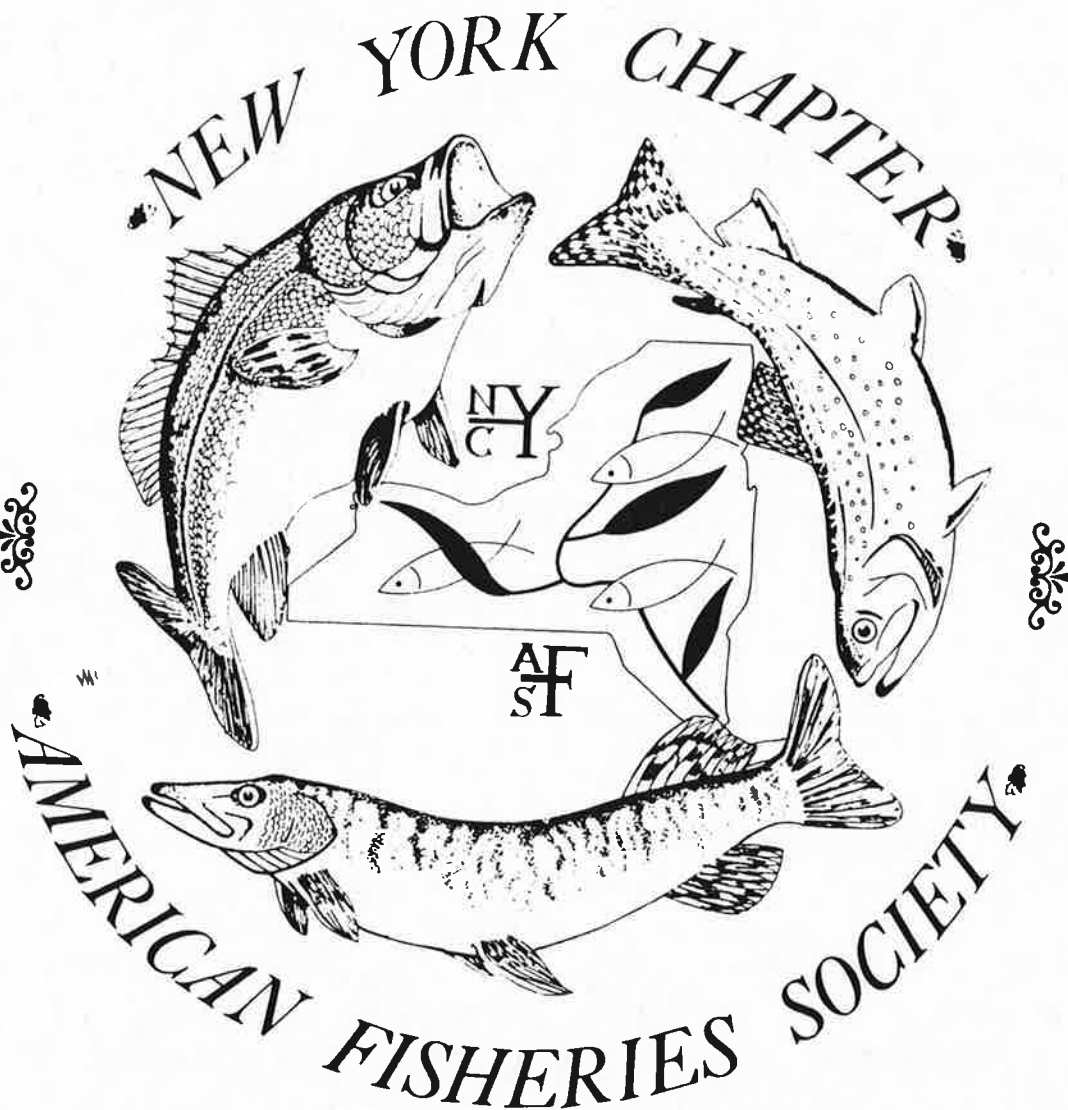


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NEW YORK CHAPTER AMERICAN FISHERIES SOCIETY

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CHAPTER NEWS

Notes From the Annual Meeting, Binghamton, NY.
26-28 Jan. 1989

Approximately 130 members attended the 1989 annual meeting at the Holiday Inn-Arena in Binghamton, NY. Some 20 papers/posters were presented on a variety of fisheries topics ranging from bioacoustic monitoring of Great Lakes fish stocks to identifying the cause of dermal sarcoma in walleye. Gil Radonski filled in for Carl Sullivan at the last minute and gave an informative Key Note presentation on "Sport Fishing: A Look to the Future". Carl was scheduled for surgery on the weekend of the meetings (see National AFS news).

Dr. Barb Knuth, of Cornell University, was elected to the office of President Elect at the business meeting. Jimmy Winter, of SUNY Fredonia, succeeds Frank Panek as President. Our thanks go out to Frank for a job well done over the past year, to Joe Buttner for providing some competition for the office of President Elect, and to our Past President, Bob Lange, for chairing the Nominating Committee.

Congratulations to also go out to the winners of the paper and poster awards. Mary Anne Thiesing, Fordham University, won both the Best Student Paper and Best Conference Paper for her paper entitled, "Feeding Habitats of Five Species of Notropis in a Southern New York Stream, with a New Method for Food Habit Analysis." The Best Poster Presentation award went to Steven Nack, Don Bunnell and Dave Green, of Cornell University, for "Identification of Black Bass Spawning and Nursery Habitats in the Hudson River Estuary." annual meeting.

Minutes of the Annual Business Meeting. 27 Jan. 1989 from Jack Hasse

The annual meeting of the N.Y. chapter of AFS was called to order at 4:20 pm by president Frank Panek with 38 members present. Frank introduced Gil Radonski, NE division president, who talked a few minutes on professional enhancement of those in fisheries and updated the membership on NE Div. activities.

Minutes of the 1988 annual meeting were accepted as written.

President's Report

Out of a total membership of 308, 129 were in attendance at the 1989 annual meeting.

President Panek thank Tim Sinnott, Rich Pearl, Paul McKeown, and Jack Hasse for their assistance in setting up and running the annual meeting.

President-elect, Jim Winters, was placed in the Return a Gift to Wildlife Program review committee by DEC commissioner Jorling. This will give the chapter input into this important program which deals

1988 Annual Treasurer's Report

| | <u>Checking</u> | <u>Cert. of</u> | <u>Money</u> | <u>Total</u> |
|-------------------------|-----------------|-----------------|---------------|--------------|
| | | <u>Deposit</u> | <u>Market</u> | |
| Balance, 27 Jan. 88 | \$226.72 | \$6,089.65 | \$10,076.91 | \$16,393.28 |
| <u>1988 Receipts</u> | | | | |
| Interest | | 646.82 | 472.59 | 1,119.41 |
| Dues After Ann. Meet. | 542.00 | | | 542.00 |
| 1987 Workshop | 100.05 | | 1,937.95 | 2,038.99 |
| 1988 Ann. Meet. | 171.00 | | 2,400.25 | 2,571.25 |
| MM Transfer | 3,500.00 | 4,000.00 | | 7,500.00 |
| Sub-Total | 4,313.05 | 4,646.82 | 4,810.79 | 13,770.66 |
| Total | 4,539.77 | 10,736.47 | 14,887.70 | 30,163.94 |
| <u>1988 Expenses</u> | | | | |
| 1989 Annual Meet. | 46.00 | | | 46.00 |
| 1988 Annual Meet. | 3,462.44 | | | 3,462.44 |
| Office Supplies | 56.68 | | | 56.68 |
| Postage | 426.88 | | | 426.88 |
| Donations | 247.00 | | | 247.00 |
| MM Transfer to Check. | | | 3,500.00 | 3,500.00 |
| Transfer to Key Bank CD | | | 4,000.00 | 4,000.00 |
| Sub-Total | 4,239.00 | 0.00 | 7,500.00 | 11,739.00 |
| Balance 23 Jan. 89 | 300.77 | 10,736.47 | 7,387.70 | 18,424.94 |

New NYCAFS Membership Directories are out. Contact Jack Hasse (315/826-7610) if you didn't receive yours. Because of some problems with membership computer files, you should check your membership listing to be sure your address and other data are listed correctly. Contact Jack if there are corrections to be made.

NATIONAL AFS NEWS

Carl Sullivan, AFS Executive Director, is recovering from a 6 hour operation on 26 Jan. 1989, to remove a large cancerous tumor from his stomach. After experiencing some post-operative infection that sent back to the hospital, he is now recuperating at home.

In related health news, Shelby Gerking, past AFS president is recuperating from quadruple bypass operation with a valve replacement. Likewise, John Gottschalk, another past president, is recovering from triple bypass surgery. Is it the job?!

The J. Frances Allen Scholarship is available from AFS to a female doctoral student whose research emphasis is in fisheries science. This one-time award of \$2,500, established in 1986, is named in honor of Dr. Allen who pioneered women's involvement in AFS and in the field of fisheries. Applicants must be members of AFS. The application deadline is 30 April 1989, and application information is available from: J. Frances Allen Scholarship, American Fisheries Soc., 5410 Grosvenor Lane, Bethesda, MD 20814.

Skinner Memorial Travel Awards are available to enable graduate student members of AFS to attend the annual AFS meeting. Winners are selected by a committee of the AFS Education Section based on academic qualifications, professional service and promise, and reasons for wishing to attend the meeting. Application deadline is 1 May 1989. Application forms are available from: Dr. Barbara A. Knuth, 114 Fernow Hall, Dept. of Natural Resources, Cornell Univ., Ithaca, NY 14853.

Participants in the AFS Toronto Excom retreat selected the following as the five most critical habitat issues in fresh water and marine environments:

Fresh Water Problems

Non-Point Source Pollution
Acid Rain
Riparian Habitat Loss
Toxic Substances
Wetland Loss (tie)
Instream Flows (tie)

Marine Problems

Wetland Loss
Ocean Dumping
Coastal Development
Estuarine Anoxia
Bottom Alteration

Some environmental proposals from the Governor's "State of the State" address (4 Jan. 1989):

- 1) Expansion of the regional attorney staff in DEC to improve enforcement.
- 2) New legislation to toughen penalties for illegal transportation, storage and dumping of medical or infectious waste.
- 3) Legislation to establish a state revolving loan fund to provide, by the year 2000, more than \$4 billion in low interest loans to municipalities for construction of wastewater treatment facilities.
- 4) Legislation to implement the Great Lakes Charter and provide state funding for the Great Lakes Protection Trust Fund.
- 5) Development by DEC of a comprehensive management plan for control of nonpoint source pollution (draft due for release on 15 June 89).

NATIONAL & INTERNATIONAL NEWS

Wallop-Breaux was recently reauthorized for five more years. The following are some of its major amendments:

- 1) Authorizes \$60 million for the Boating Safety Account for fiscal 1989 and 1990, and \$70 million for 1991, 1992, 1993.
- 2) Provides for equal allocation of funds in coastal states between freshwater and marine projects. Sets minimum funding for fresh water projects in such states at 1988 levels so as not to diminish fresh water funding.
- 3) Allows states to contribute funds, property, materials, or services as their matching share.
- 4) Requires the Depts. of Interior and Transportation to prepare a report to Congress on the number, size, and primary uses of recreational water vessels in the U.S. and the amount and types of fuel they use.

Representatives from the USFWS reported at the annual Great Lakes Fish Disease Control Committee meeting on the problems with Viral Hemorrhagic Septicemia (VHS) on the west coast. This disease required the destruction of 3.42 million anadromous Pacific salmon and steelhead trout eggs/fish. This was the first documentation of the disease in North America. Losses as high as 90% have been reported for European stocks of rainbow.

Three aquaculture cooperatives have recently been set up in upstate New York. With support provided by the NYS Dept. of Agriculture and markets, approximately 25 novice aquaculturists in the Oswego/Syracuse, Morrisville and Rochester areas will grow bullhead catfish in cages suspended in their ponds. Technical assistance will be provided by researchers from SUNY Morrisville, SUNY Oswego, and SUNY Brockport. Harvested fish will be processed at Cornell University and marketed through Wegman's Food Pharmacy. The cooperative effort will determine if culture techniques for bullhead developed over the last four years can be transferred successfully to lay people and if bullhead can be cultured profitably in upstate NY.

Guidelines for culture of walley fingerlings in earthen ponds have been developed by researchers at SUNY Brockport, with support from NY Sea Grant and the Great Lakes Research Consortium. The general technique was used successfully in 1988 by Steve Sanford at Wolcott and the Niagara River Angler's Association. Collectively the two groups have stocked nearly 140,000 walleye fingerlings into protected bays and tributaries of Lake Ontario. For a copy of the guidelines, contact NY Sea Grant Extension Specialist David MacNeil, SUNY Brockport, Brockport, NY 14420 (716/395-2638) or Joe Buttner, Dept. of Biological Sciences, SUNY Brockport, Brockport, NY 14420 (716/395-5750).

The town of East Hampton, Long Island, has restricted harvest of scallops in Napeague Harbor to the use of dip nets only. Boats may not be used. This ruling resulted scallop surveys which indicated that only the Napeague Harbor population has recovered.

Suffolk County, NY, has appropriated \$150,000 for brown tide research and three proposals have been selected for funding.

The NYSDEC recently ruled that it is illegal to culture striped bass hybrids in tidal waters of NYS. This sterile hybrid could escape from pens, and its potential impact on wild striper populations is not known. No ruling has been made on enclosed inland culture operations.

Trout will be available for stocking into farm ponds in Monroe County early in 1989. Contact the Monroe County Soil & Water Conservation Service District Technician at (716) 473-2120 for more information.

- May 14-16, 1989 - AFS Fisheries Administrators Section Annual Meeting. Clarion Hotel, Colorado Springs, CO. For info: Don Horak, CO Div. of Wildlife, 317 West Prospect, Ft. Collins, CO 80526.
- May 16-19, 1989 - Annual Meeting of the North American Benthological Society. Univ. of Guelph, Guelph, Ontario. For info: Narinder K. Kaushik, Dept. of Environ. Biology, Univ. of Guelph, Guelph, Ontario N1G 2W1, Canada, (519) 824-4120. A workshop on Stream Rehabilitation and Restoration will be held at the meeting.
- May 21-27, 1989 - AFS Early Life History Section Meeting. Merida, Yucatan, Mexico. For info: Andrea Frank, Mote Marine Lab, 1600 City Island Park, Sarasota, FL 34236. (813) 388-4441.
- May 22-25, 1989 - 40th Tuna Conference. Univ. of California's Lake Arrowhead Conference Center, Lake Arrowhead, CA. For info: Michael Hinton, Chairman, 40th Tuna Conference, c/o Scripps Institute of Oceanography, La Jolla, CA 92093. (619) 546-7033.
- May 25-26, 1989 - 16th Annual Conference on Wetlands Restoration & Creation. Sheraton Grand Hotel, Tampa, FL. For info: Frederick J. Webb, Dir. of Economic Development, Hillsborough Community College, Plant City Campus, 1206 North Park Rd., Plant City, FL 33566, (813) 757-2104.
- May 26-31, 1989 - Fifth Annual Integrated Aquaculture Systems Course. Woods Hole Oceanographic Institute, Woods Hole, MA. For info: EcoLogic, P.O. Box 1440, North Falmouth, MA 02556. (508) 563-5980.
- June 1-3, 1989 - Southern New England AFS Chapter & New England Estuarine Research Society Annual Meeting. Howard Johnson's, East Lyme, CT.
- June 5-16, 1989 - Aquaculture Economics - Third Annual Intensive Short-Course. Clemson University, Clemson, SC. For info: Robert S. Pomeroy, Dept. of Agricultural Economics & Rural Sociology, 240 Barre Hall, Clemson University, Clemson, SC 29634. (803) 656-5789
- June 9-11, 1989 - Aquaculture Workshop: Session III. Hands-On and Demonstrations. Holiday Inn, Newark, NJ. For info: LifeNET the Life Systems Network, P.O. Box 444, Clarksburg, MD 20871. (301) 972-2600. (Also offered on 16-18 June in Washington, DC.)
- June 12-23, 1989 - Coldwater Fish Culture Course (#1201). Syracuse, NY. For info: Superintendent, Fisheries Academy, USFWS, NFRL-Leetown, Box 700, Kerneysville, WV 25430.
- June 12-23, 1989 - Diagnosis and Treatment of Diseases of Warmwater Fish. Short course at the Univ. of Florida. For info: Dr. Thomas L. Wellborn, Rt. 1, Box 754, Blountstown, FL 32424. (904) 674-3184.

- Aug. 15-18, 1989 - Workshop on Multistage Populations: Sampling and Analysis for Research and Environmental Monitoring. Stouffer-Concourse Hotel, Denver, CO. For info: Lyman L. McDonald, Associated Western Statisticians, 2317 Sherman Hill Rd., Laramie, WY 82070, (307) 742-5610.
- Aug. 27-Sept. 1, 1989 - Fifth International Symposium on Microbial Ecology. Kyoto International Conference Hall, Kyoto, Japan. For info: Professor Usio Simidu, c/o Inter Group Corp., Akasaka Yamakatsu Building, 8-5-32 Akasaka, Minato-ku, Tokyo 107, Japan.
- Sept. 4-8, 1989 - The 119th Annual Meeting of AFS. Captain Cook Hotel and William Egan Convention Center, Anchorage, AK. For info: Carl R. Sullivan, Exec. Dir., AFS, 5410 Grosvenor Lane, Bethesda, MD 20814. (301) 897-8616.
- Sept. 9-13, 1989 - 79th Annual Meeting of the International Assoc. of Fish & Wildlife Agencies. Ramkota Inn, Pierre, South Dakota. For info: Mark J. Reeffer, International Assoc. of Fish & Wildlife Agencies, 444 N. Capitol St., NW, Suite 534, Washington, DC 20001. (202) 624-7890.
- Sept. 13-17, 1989 - 6th International Exhibition of Fishing, Industries and Trade of Sea Products, Aquaculture. Parc d'Exposition, Lorient, France. For info: International Fishing Exhibition, SEPIC 17, rue d'Uzes F75002 Paris, France.
- Sept. 17-22, 1989 - 25th Annual Conference of the American Water Resources Association. Hyatt Regency, Tampa, Florida. For info: L. M. Buddy Blain, Blain & Cone, P.A., 202 Madison St., Tampa, FL 33602. (813) 223-3888.
- Sept. 18-23, 1989 - International Symposium on Coldwater Fish Culture. Beijing, China. For info: Mr. Huang Kejia, The China Society of Fisheries, 31 Minfeng Lane, Xidan, Beijing, China.
- Sept. 24-30, 1989 - International Conference and Workshop on Global Natural Resource Monitoring and Assessments: Preparing for the 21st Century. Isle of San Giorgia Maggiore, Venice, Italy. For info: Mr. H. Gyde Lund, USDA Forest Service, P.O. Box 96090, Washington, DC 20090-6090. (202)475-3747.
- October 2-4, 1989 - Aquaculture Europe '89. Bordeaux, France. For info: European Aquaculture Society, Princes Elisabethiaan 69, B-8401, Bredene, Belgium.
- October 2-4, 1989 - Symposium on Multispecies Models Relevant to Management of Living Resources. The Hague, Netherlands. For info: Mike Sisswenwine, NMFS/NOAA, Woods Hole, MA 02543.
- December 8-12, 1989 - Fish Farming Expo III. Riverdale Exhibit Hall, New Orleans, LA.

RECENT PUBLICATIONS

Aquatic Project WILD: Aquatic Education Activity Guide. Developed by the Western Assoc. of Fish & Wildlife Agencies and the Western Regional Environmental Education Council. 1987. 240 p. (paper). Available free for instructional purposes. (reviewed in Fisheries, Nov.-Dec. 1988)

Carp in North America, edited by Edwin L. Cooper. 1987. American Fisheries Soc, Bethesda, MD. 84 p. \$10.00. (reviewed in Fisheries, Nov.-Dec. 1988)

Reading Trout Streams, by Tom Rosebauer. 1988. Nick Lyons Books, N.Y. 162 p. \$17.50. Primarily a guide for fly fishermen. (reviewed in Fisheries, Nov.-Dec. 1988)

Audubon Wildlife Report 1988/89, edited by William J. Chandler. 1988. Academic Press, 1250 Sixth Ave., San Diego, CA 92101. 817 p. \$49.95/\$24.95. Contains chapters on restoration of the Florida Everglades, water projects on the Platte River, impact of plastic debris on marine life, and summarizes federal agency budgets and activities. The National Marine Fisheries Service is the featured agency.

Aquatic Toxicology and Hazard Assessment: 10th Volume, edited by W. J. Adams, G. A. Chapman & W. G. Landis. 1988. American Society for Testing & Materials, Special Technical Publication 971, Philadelphia. 579 p. \$64.00.

Breaking New Waters: A Century of Limnology at the University of Wisconsin, by Annamarie L. Beckel. 1987. Transactions of the Wisconsin Academy of Sciences, Arts & Letters: Special Issue. Madison, WI. 122 p. \$10.00. (available from Center for Limnology, 680 North Park St., Madison, WI 53706)

Chemical and Biological Characterizations of Municipal Sludges, Sediments, Dredge Spoils, and Drilling Muds, edited by J. L. Lichtenberg, J. A. Winter, C. I. Weber & L. Fradkin. 1988. American Society for Testing & Materials, Spec. Technical Publication 976, Philadelphia. 512 p. \$69.00.

Detritus and Microbial Ecology in Aquaculture, ed by D. J. W. Moriarty & R. S. V. Pullin. 1987. International Center for Living Aquatic Resources Management, Manila, Philippines. 420 p. \$24.50 (paper).

Freshwater Crayfish: Biology, Management and Exploitation, ed. by D. M. Holdrich & R. S. Lowery. 1988. Timber Press, Portland, OR. 498 p. \$89.50.

The Crayfishes and Shrimp of Wisconsin. Cambaridae, Palaemonidae, by H. H. Hobbs III & J. P. Jass. 1988. Available from: Milwaukee Public Museum, 800 W. Wells St., Milwaukee, WI 53223. (414) 278-(414) 278-2710 or 278-2787. \$14.95 plus shipping.

Consuming the Resource: An Evaluation of B.A.S.S. Catch-and-Release Proposal. Available through Dewey Kendrick, Bass Anglers Sportman Society, P.O. Box 17900, Montgomery, AL 36141. (205) 272-9530.

Common and Scientific Names of North American Mollusks. 1988. American Fisheries Society, Bethesda, MD. Available from AFS, 5410 Grosvenor Lane, Bethesda, MD 20814. members/nonmembers: \$24.00/\$30.00 (cloth), \$19.00/\$24.00 (paper).

Larval Fish and Shellfish Transportation Inlets. 1988. American Fisheries Society Symposium Series #3, Bethesda, MD. Available from AFS, 5410 Grosvenor Lane, Bethesda, MD 20814. \$12.00 members, \$15.00 nonmembers.

Status and Management of Interior Stocks of Cutthroat Trout. ed. by R. Gresswell. American Fisheries Society Symposium Series #4. 140 p. Available from AFS, 5410 Grosvenor Lane, Bethesda, MD. 20814. \$12.00 members, \$15.00 nonmembers.

11th Annual Larval Fish Conference, ed. by R. Hoyt. 1988. American Fisheries Society Symposium Series #5. 130 p. Available from American Fisheries Society, 5410 Grosvenor Lane, Bethesda, MD. 20814. \$12.00 members, \$15.00 nonmembers.

Science, Law, and Hudson River Power Plants, ed. by Barnthouse, Klauda, Vaughn and Kendall. American Fisheries Society Monograph 4. 350 p. Available from AFS, 5410 Grosvenor Lane, Bethesda, MD 20814. \$28.00 members, \$33.00 nonmembers.

A Boater's Source Directory is available free from the BOAT US Foundation, 880 South Pickett St., Alexandria, VA 22304. (703) 823-9550. Contains information on state boating offices, boating courses, licensing, and courses.

Current and Selected Bibliographies on Benthic Biology, ed. by D. W. Webb. 1988. North Amer. Benthological Soc., 83 p. Available from: David D. Herlong, Secretary, North Amer. Benthological Soc., Carolina Power & Light Co., Harris E & E Center, Rt. 1, Box 327, New Hill, NC 27562.

Ozone Depletion, Greenhouse Gases, and Climate Change, by National Research Council. 136 p. Available from National Academy Press, 2101 Constitution Ave., NW, Washington, DC 20416. \$20.00 (paperback)

Basic Fishery Science Programs. A compendium of Microcomputer Programs and Manual of Operation, by S. B. Saila, C. W. Recksiek, & M. H. Prager. 1988. 225 p. Available from: Elsevier Science Publishing Co. Inc, P.O. Box 882, Madison Square Station, New York, NY 10159. \$73.75. (Computer disk is also available, see "Computers" section)

A variety of fishery/aquatic publications are available from Cornell Cooperative Extension at: Distribution Center C, 7 Research Park, Cornell Univ., Ithaca, NY 14850. A catalog is available from the same address. Some publications that might be of interest are listed below.

| | | |
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| Fish Management in N.Y. Ponds | Info. Bull. 116 | \$2.25 |
| Summary of New York Drainage Law | #1211B 195 | 2.00 |
| Guide to Freshwater Fishes of N.Y. | #1472 108 | 2.50 |
| Handling Your Catch: A Guide for Saltwater Anglers | #1041B 203 | 6.75 |
| Raising Baitfish and Crayfish in New York Ponds | #147E 986 | 0.60 |
| Sources of Fish Contaminants | #104SGFS11.00 | 0.50 |
| Fish Contaminants & Human Health | #104SGFS12.00 | 0.50 |
| Guide to Coastal Erosion Processes, A | #1041B 199 | 2.35 |
| Aquatic Plant Management & Control | #1251B 107 | 2.10 |
| Methods of Applying Herbicides for Aquatic Weed Control | #125NE 85 | 1.00 |
| Summary of New York Water Law, A | #121S 130 | 1.35 |
| Activated Carbon Treatment of Drinking Water | #329FS3 | 0.95 |
| Nitrate: Health Effects in Drinking | #125NRFS400.02 | 0.50 |

The following Cambridge Univ. Press books are available at a 20% discount if you call 1-800-227-0247 (NY only) before 31 May 1989 and refer to "Order Form #716, Ecology & Evolution":

Restoration Ecology. A Synthetic Approach to Ecological Research, ed. by W. R. Jordon III, M. E. Gilpin, & J. D. Aber. 1988. 352 p. \$39.50 (discount, \$31.60).

Algae and Human Affairs, ed. by C. Q. Lembi & J. R. Waaland. 1988. 585 p. \$67.50 (discount, \$54.00).

The Natural History of Lakes, by M. J. Burgis & P. Morris. 1987. 218 p. \$29.95 (discount, \$23.96).

Acidification of Freshwaters, by M. S. Cresser & A. C. Edwards. 1987. 136 p. \$34.50 (discount, \$27.60).

Pesticide Impact on Stream Fauna With Special Reference to Macroinvertebrates, by R. C. Muirhead-Thomson. 1987. 288 p. \$54.50 (discount, \$43.60).

Acid Toxicity and Aquatic Animals, ed. by R. Morris, E. W. Taylor, D. J. A. Brown & J. A. Brown. 1988. 300 p. \$49.50 (discount, \$39.60).

Marine Microbiology, ed. by B. Austin. 1988. 240 p. Hardcover: \$59.50 (discount, \$47.60), paperback: \$19.95 (discount, \$15.96).

DETRITUS

Just When You Thought You Were Beginning to Understand . . .

The AFS Committee on Names of Fishes, at the behest of the American Society of Ichthyologists and Herpetologists, has decided to make some name changes. As a result, the rainbow trout will no longer be Salmo gairdneri (Just when I figured out it ended in one "i", not two!!) and becomes Oncorhynchus mykiss! The taxonomists explain that the rainbow is more closely related to the Pacific salmonids than to European species. Since Oncorhynchus has historical priority, Salmo goes down the proverbial sinkhole. Since the rainbow is now believed to be the same species as the Asian Kamchatkan trout (S. mykiss), and this specific epithet (mykiss) has priority, the rainbow becomes O. mykiss. Got that!?

As a result of genus name change, other North American trout become:

| | |
|----------------------|----------------------------------|
| Apache Trout | <u>Oncorhynchus apache</u> |
| Cutthroat Trout | <u>Oncorhynchus clarki</u> |
| Gila Trout | <u>Oncorhynchus gilae</u> |
| Golden Trout | <u>Oncorhynchus aquabonita</u> |
| Mexican Golden Trout | <u>Oncorhynchus chrysogaster</u> |

Since the brook trout (Salvelinus fontinalis) is not a trout (It's a char, remember!), these changes have no effect on our state fish.

Promises, Promises . . .

According to the Washington Post, George Bush made the following promises and goals during his campaign:

"Enforce the environmental laws aggressively."

"We must speed up the cleanup of toxic waste dumps."

Give "a high priority to groundwater protection."

"We must begin to take effective action" on acid rain.

"reauthorization,...and strenghtening" the Clean Air Act.

"no net loss of wetlands"

"Polluters should pay" for toxic waste cleanup.

Reconstitute Land & Water Conservation Fund as a self-perpetuating National Endowment of the Environment.