2005 Annual Budget

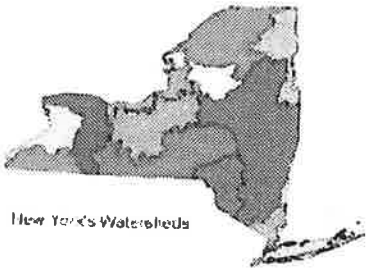
Projected	Income	Projected	Expenses
Memberships	$2,500	2005 Annual Meeting	$7,000
2005 Annual Meeting	$7,000	Workshop	$1,800
Raffle	$ 750	Website	$ 500
Workshop	$3,000	Newsletter/lists	$ 700
Interest	$ 250	Postage	$ 500
		Office Supplies	$ 100
		Raffle	$ 200
		Stipends/student travel	$ 600
		NED Officer Meeting Expense	$ 450
		AFS National Meeting Expense	$1,000
		Donations	$ 600
		Award Plaques	$ 50
Total Income:	$13,500	Total Expenses:	$13,500

*** Special account for use by 2006 national AFS meeting committee**

HOMA

2005 Tri-Society Meeting

Watersheds: Preservation, Restoration, & Management of Our Landscape

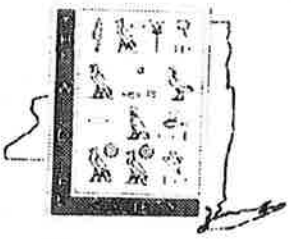


Program and Abstracts for : Friday February 4, 2005

Fisheries Session

Forestry Session

Wildlife Session



Con B-B

Woodland

Board Rm

CAP = Comm Office Today!

11:00am Wood Chips: A Potential Best Management Practice to Minimize the Adverse Water Quality Effects of Forest Harvesting, *Doug Burns, US Geological Survey*

11:30am Restoration of Great Lakes Aquatic Resources – Lake Trout and Lake Sturgeon, *Charles Krueger, Great Lakes Fishery Commission*

Noon Lunch – Students and professionals to intermingle

1:00pm The New York City Watershed Program, *Kevin Brazill, Watershed Agricultural Council*

1:30pm The French Creek Project, *Darran Crabtree, The Nature Conservancy*

2:00pm The Neversink Dam Removal Project, *George Schuler, The Nature Conservancy*

2:30pm Break

3:00pm The Watershed Forestry Initiative, *Albert Todd, US Forest Service*

3:30pm Panel Discussion

4:00pm Adjourn General Session

4:30pm SAF – Graduate Student Presentations

AFS – Business Meeting

TWS – Business Meeting

6:00pm Reception & Poster Session Grand Ball

7:00pm Banquet

Key Note Speaker: Dr. Peter Black, Professor Emeritus, SUNY-ESF

Lessons of the Past and Present to Sustain the Future

WILDLIFE ORAL PAPERS SESSION
TRI-SOCIETY MEETING
FEBRUARY 4, 2005
HOLIDAY INN, LIVERPOOL, NY

8:00 – 8:30 AM	The Elements of Science-based Bird Conservation, *Charles R. Smith, Cornell University.*
8:30 – 9:00 AM	Type E Botulism Caused Waterbird Mortality in the New York Waters of Lake Erie and Lake Ontario, *Kenneth Roblee, Ward Stone, and David Adams, NYS DEC.*
9:00 – 9:30 AM	Using Vegetation Maps for Better Population Estimates of White-tailed Deer, *Tim Green and Jennifer Higbie, Brookhaven National Laboratory.*
9:30 – 10:00 AM	Evaluation of White-tailed Deer Population Models for Potential Use in NYS Harvest Management, *Jeffrey B. Organ and William F. Porter, SUNY-ESF.*
10:00 – 10:15 AM	Break
10:15 – 10:45 AM	Modeling the Effects of Water Level Management on Muskrat Abundance within Upper St. Lawrence River Tributaries, *Jason Toner, John Farrell, and Jerry Mead, SUNY-ESF.*
10:45 – 11:15 AM	A Call to Celebrate the 75th Anniversary of New York's Famed Ruffed Grouse Investigation, *Harlan Brumsted, Cornell University.*
11:15 – 11:45 AM	All Terrain Vehicle Use on State Land in the Adirondacks, *Leslie Karasin, Wildlife Conservation Society*

Bonus Abstract:

Adaptively managing aquatic resources in French Creek

Darran L. Crabtree, French Creek Project, Allegheny College, Meadville, PA 16335

French Creek provides habitat for rare mussels and fishes. In the mid-1980s surveys for rare mussels revealed an almost intact species assemblage compared with surveys conducted almost 100 years prior (Ortmann 1919). For the past 15 years The Nature Conservancy (TNC) and their partners have implemented a diverse array of conservation strategies designed to protect and enhance the creek.

Beginning in the late 1990s, TNC recognized the need to adapt to new information about the threats and biota of the creek. For ten years our work had focused in the New York section of the creek (~8% of the watershed), but survey data from the entire watershed revealed that most of the rare organisms occurred across the Pennsylvania line. At about the same time we initiated a study to determine what effects our investments in Best Management Practices had on improving water quality. Results form this and more recent water and habitat quality studies point out a challenging but reassuring fact, that French Creek's water and habitat quality are already quite high and to document improvements will be difficult.

Currently, TNC's focus is slowly shifting away from the notion that we must "save" French Creek and instead, with multiple partners, we are gathering data needed for biological restoration of nearby watersheds that hadn't fared as well as French Creek. We believe French Creek is and should be used as a reference system, and thus we will have biologically defined goals when restoring nearby rivers.

- Coordinate integrated and comprehensive Large-scale Watershed Initiatives,
- Implement a Watershed and Clean Water Stewardship Grants Program
- Develop and complete special projects to address specific watershed forestry issues and Forest Service strategic goals

As part of the watershed forestry program, the Northeastern Area works to promote and restore watershed health through the conservation, restoration, and stewardship of trees and forests. We advance partnerships and action in four primary areas.

ACTION AREA#1: **Protect and improve drinking water supplies and water quality through the stewardship of forest lands.**	Careful stewardship of forested lands can help ensure healthy watersheds and good water quality. Forested watersheds produce high quality drinking water. Providing information and technology to professionals and ensuring that landowners take measures to protect water quality is essential. Working forest landscapes can also sustain economic stability in rural communities while protecting watershed condition. Conserving forests through acquisition and easements and restoring forests in critical areas like riparian/wetland will improve watershed condition.
ACTION AREA #2: **Protecting and enhancing the health of urban watersheds.**	Watershed health in urban and developing areas is threatened by the fragmentation and destruction of forests that occurs with sprawling growth. With help, communities can successfully plan for the protection of green infrastructure and the quality of life provided by their forests, streams, and healthy watersheds. NA is promoting non-regulatory approaches such as conservation design, watershed planning, protection of stream corridors, and reclamation of urban degraded areas. NA also helps build the capacity of communities to assess the condition of their forests and integrate this information in local planning and decision-making. Promoting the use of forests and biological approaches in storm water management is a priority.
ACTION AREA #3: **Use forestry to enhance water quality and restore streams, wetlands, and aquatic habitats on farms and pasture lands.**	The use of forest ecosystems as solutions to non-point source pollution problems is growing. Riparian forest buffers and other agroforestry practices are being promoted as a practice on crop and pasture lands throughout the country. The restoration of forested wetlands as treatment systems for livestock runoff and use of forests for manure disposal are being tested. National Forest and S&PF personnel are working with federal/state/local groups to protect and restore threatened or degraded stream and aquatic habitats.
ACTION AREA #4: **Understand and communicate the role of forests in water quality and watershed health.**	Most people do not appreciate the link between forests and healthy watersheds. Additional efforts are needed to better understand and communicate the watershed values provided by trees and forests, and develop useful tools for assessment, planning, and decision-making. Efforts to build meaningful educational experiences in watershed forestry are needed in schools and communities.

Kathryn Maloney, Director
11 Campus Blvd., Suite 200
Newtown Square, PA 19073
610-557-4103 (4177-FAX)
kmaloney@fs.fed.us

Robin Morgan, Assistant Director
11 Campus Blvd., Suite 200
Newtown Square, PA 19073
610-557-4124 (4136-FAX)
rmorgan@fs.fed.us

Albert Todd, Watershed Program Leader
410 Severn Avenue, Suite 109
Annapolis, MD 21401
(410) 267-5705 (5777-FAX)
atodd@fs.fed.us

http://na.fs.fed.us

January 2005

2) We believe all our water resources should be "fishable, drinkable, and swimable" as established under the Clean Water Act of 1972. We must re-connect the value of our water and riparian resources with sustainable forest management so we can maintain and improve these benefits in the future.

3) We believe that managing, and/or regulating forest lands contributes to the production of water as a commodity in all its forms.

4) We believe that the protection and management of forested watersheds must consider the dynamic nature of forests. Wildfires, floods, insects and disease, hurricanes, and windstorms can cause changes at the watershed scale. Forest management practices can reduce the impacts from some natural disturbances. In the long-term, disturbance is often critical in maintaining forest health. Forest management practices can also emulate, but not necessarily duplicate, disturbance events and thus, be used to maintain forest and watershed health, while simultaneously providing an array of social, economic and environmental services.

5) We believe that as population increases, our fundamental commitment to sound forested watershed management is critical. A new paradigm for the protection of the natural water-providing systems must be established with the necessary resources to ensure sustainable sources of water now and into the future. Many of the threats to forested watersheds, such as fragmentation, invasive species, and catastrophic wildfire, cross ownership boundaries. Watershed partnerships are an important element in developing and implementing this new paradigm, as they have historically been the most efficient and cost effective way to protect our water resources.

6) We believe the multiple federal, state and local land management mandates over the past three decades complicates forest management responsibilities on both public and private forest lands. As a result, public investment in watershed management has diminished at the same time our communities' demand for water resources and attendant watershed values has increased dramatically. The public budgets are now being reduced and the resources currently available for forest management are not in balance with the value of the water that is being harvested from the watersheds.

7) We believe renewed and long-term watershed research and monitoring is vital to improving our application of forest management practices.

8) We believe that private forest landowner compliance with state approved nonpoint source Best Management Practices (BMPs) and/or water quality standards fulfill the landowner's responsibility to provide high-quality drinking water to the public at-large. Policies and assistance, both technical and financial, should provide additional incentives for private forest landowner to provide high-quality drinking water to the public at-large. Expectations for higher levels of drinking water quality should be met through cooperative, non-regulatory methods.

Future:
Our goal is to raise the awareness across the nation of the connection between healthy forested watersheds and clean water. Through this, we hope to gain public interest and support to manage and sustain forested watersheds to protect and enhance those water resources for immediate and future gains.

Messages:

- ***Water, in all its uses and permutations, is by far the most valuable commodity that comes from the forest land that we manage, assist others to manage, and/or regulate.*** It is also the one commodity that most of the public that we serve want to see optimized from our forest lands.

- We can have active forest management AND healthy watersheds --- provided that Best Management Practices are applied. In fact, healthy forests and watersheds are no accident. Planning and active forest management is essential to maintaining consistent flows of clean and abundant water.
    - Some of the highest quality water (and best fishing) is on streams that originate in watersheds where active forest management is ongoing.

- Water quality and quantity are the integrated result of connections among the upland forest/rangeland, riparian, and stream systems. Any efforts to maintain or improve water conditions will require consideration of these connections and their interactions.

- Water quantity considerations are just as important as water quality considerations in the management of watersheds, realizing that water quality and water quantity may not be achieved in the same practices on the land.

- Significant losses of biodiversity can lead to watershed degradation, and decreases in water quality. Sound stewardship of forest watersheds is defined by substantial progress and success in both the abundance and quality of the water flowing forth, and the quality of fish and wildlife habitat.

- Forested watersheds provide habitat for riparian dependent species, provide fish passage up and down stream at all life stages. A well-managed forest can provide all these, concurrent with delivery of other products and services.

- The need and cost to manage the watershed is not connected at the policy level to the value of the water commodity in all its forms that is being utilized from the forested watersheds.

- develop collaborative watershed projects which can address critical conservation, restoration or stewardship needs in priority areas,
- provide enhanced forest data in support of watershed assessment and planning,
- work with private forest landowners on-the-ground to improve water quality,
- support information needs provide forest resource information to local watershed councils, and

Watershed Forestry Cost-share Grants - Through grants to states, communities, non-profit groups and landowners, the Forest Service and State Foresters will implement critical watershed protection, restoration and stewardship projects that:

- use trees and forests as solutions to water quality problems in urban and agricultural areas
- protect drinking water supplies
- implement and monitor forestry best management practices
- demonstrate the value of trees and forests to watershed health and condition
- restore fisheries and enhance waterfowl and other wildlife habitat
- promote community-based watershed planning and action
- build new partnerships with state, local and non-profit organizations
- complete watershed improvement and forest conservation plans
- restore forest wetlands and establish riparian buffers to improve water quality

Partners

Moving forests and forestry into a more proactive role in the protection and restoration of watersheds, water quality, and important habitats like riparian areas and wetlands, provides the opportunity for a wide range of partnerships. Supporting partners, amongst others, include: National Association of State Foresters, Cooperative Extension, National Association of Conservation Districts, Trust for Public Lands, Western and Southern Governor's Associations, Issac Walton League, Ducks Unlimited, The Nature Conservancy, and Environmental Protection Agency.

Outcomes

Maintaining water quality and restoring degraded streams and watersheds on private lands requires new and expanded roles for State Foresters and Cooperative Forestry. Millions of private forest landowners and thousands of communities are ready to take action. Through the Watershed Forestry Program, new partnerships between federal and state officials, forest managers, and local communities and organizations can be realized. These efforts will result in:

- restoration of thousands of miles of stream and critical fish habitat,
- protection of the drinking water supply for millions of Americans,
- rehabilitation of degraded urban and agricultural watersheds,
- implementation and monitoring of forestry best management practices, and
- appreciation of the full value of trees and forests in maintaining healthy watersheds and clean water in the future.

Future

The USDA Forest Service and State Foresters have developed policy guidance for the implementation. The Watershed Forestry Assistance Program was authorized in late 2003. To date, no designated funding has been set aside for these programs.

atodd 1/05

Lessons of the Past and Present to Sustain the Future

Peter E. Black

Distinguished Teaching Professor of Water and Related Land Resources, Emeritus, SUNY College of Environmental Science and Forestry, 1 Forestry Drive, Syracuse, NY 13210, 315 470-6571; personal website: http://www.waterbudget.com; email: peblack@esf.edu.

In: Aguirre-Bravo, Celedonio, et. al. Eds. 2004. *Monitoring Science and Technology Symposium: Unifying Knowledge for Sustainability in the Western Hemisphere*; 2004 September 20-24; Denver, CO. *Proceedings* RMRS-P-000. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Station.

ABSTRACT: An innovative way to consider the vast 'unused' portion of our natural resources reveals a common and universal ecological pattern. It is characterized by the bulk of the resource being a cushion "in the background," a seemingly endless supply of the resource. Not so. Those 'unused' masses of our resources are buffers essential to life on the planet: they provide back-up protection for life in all its forms. The observed atomic-to-cosmic blueprint demands our attention. This paper connects the dots between the nature of nature, natural resources, population, and sustainability. To achieve sustainability resource management policies and practices must be based on the nature, value, and preservation of the buffers consistent with all the implications – demands and challenges – of a growing human population.

Lessons from a mixed brook trout population

J.M. Robinson*[1], B.C. Weidel[1], C.E. Kraft[1], and D.C. Josephson[1]

* Presenting author
[1] Department of Natural Resources, Cornell University, Ithaca, NY 14583

Abstract : Age, growth, and diet of a mixed population of stocked and wild brook trout (*Salvelinus fontinalis*) were compared over a two year period in a 79 hectare Adirondack lake. The maximum age of stocked (N=216) and wild (N=292) brook trout was 4 and 5, respectively. Both groups of fish attained a similar maximum length of approximately 375mm. The mean length-at-age of stocked fish was significantly greater than wild fish for ages 1-4. The difference in mean length at age between the two populations decreased as age increased. No differences were observed in the diets of stocked and wild fish at a given length. Differences in size at age and growth rates between the two groups of fish can most likely be attributed to the accelerated growth of stocked fish while in the hatchery (~150days). The implications of accelerated early life growth rates and population age structure are discussed in the context of maturation rate, emigration potential, seasonal thermal constraints, and restoration of wild populations.

Oral Presentation
Student

Why is Water Clarity Getting Worse in Onondaga Lake?

Michael E. Spada[1*], Christopher W. Hotaling[2], Nelson Hairston[3], David A. Matthews[1] and Steven W. Effler[1]

[*] Presenting author
[1]Upstate Freshwater Institute
[2]College of Environmental Science and Forestry/SUNY
[3]Ecology and Systematics Cornell University

Abstract : A bottom-up management strategy is being employed to ameliorate water quality problems in Onondaga Lake associated with cultural eutrophication. Accordingly, increases in water clarity, as measured with a Secchi disc (SD), are sought in response to reductions in nutrient loading that are being achieved through increased wastewater treatment. Systematic improvements in SD occurred abruptly in the lake starting in 1987, in the form of an early summer interval of high SD, in response to a reduction in salinity that resulted from closure of an adjoining industry. This "clear-water phase" has been attributed to grazing by large bodied native *Daphnia*, which returned to the lake with the decrease in salinity. The long-term SD record, and features of the lake's zooplankton community and the clear water phase are reviewed. Evidence coupling daphniid filtering with the occurrence and the SD maximum of the clear water phase is presented. Daphniid size and estimates of daphniid filtering are demonstrated to both be good predictors of the maximum SD. Variations in the timing and amplitude of the clear water phase in the lake over a sixteen-year period (1987 - 2002) are described and potential causes are identified. Clarity conditions deteriorated in 2003 and 2004, despite the ongoing reductions in nutrient loading, associated with the losses of *Daphnia* and the clear water phase. Changes in the size structure of the zooplankton community suggest the loss of *Daphnia* is a response to increased predation by zooplanktivorous fish. Potential drivers of such a food web shift are identified.

Oral Presentation
Professional

Movement of sea lamprey in the Lake Champlain basin

Eric A. Howe[1*], J. Ellen Marsden[1], and Wayne Bouffard[2]

*Presenting Author
[1]Rubenstein School of Environment and Natural Resources, Aiken Center, University of Vermont, Burlington, VT 05405
[2]U.S. Fish and Wildlife Service, Lake Champlain Fish and Wildlife Resources Office, 11 Lincoln Street, Essex Junction, VT 05452

Abstract : Sea lamprey (*Petromyzon marinus*) are a nuisance species in the Great Lakes and Lake Champlain that have devastated native fish populations and hampered sport fisheries development. The purpose of this study was to examine inter-basin movement of sea lamprey in Lake Champlain and identify tributaries that contribute lamprey to the lake. A total of 4,125 recently metamorphosed sea lamprey were marked in Lake Champlain tributaries between fall 2001 and winter 2003. These lamprey out-migrated to the lake and returned to tributaries to spawn 12-18 months later. Forty-one marked lamprey were recovered from the lake and tributaries between spring 2002 and spring 2004. There were no apparent trends in movement among basins; sea lamprey were collected considerable distances from their natal tributaries (> 60 km). Likewise, there were no significant differences in tributary contributions, indicating that differential survival rates are not likely among out-migrating transformers from different tributaries. These results suggest that lamprey movement around the Lake Champlain basin is not inhibited by causeways dividing sub-basins, and there are still unmanaged tributaries to the lake that are supporting the lamprey population. Management efforts to control sea lamprey should continue to treat the lake as a single system.

Oral Presentation
Student

Status and recovery of round whitefish in New York

G.B. Steinhart*[1], D.M. Carlson[2], R.J. Preall[3], C.E. Kraft[1], and D.C. Josephson[1]

* Presenting author
[1] Department of Natural Resources, Cornell University, Ithaca, NY 14583
[2] New York State Department of Environmental Conservation, Watertown, NY 13601
[3] New York State Department of Environmental Conservation, Ray Brook, NY 12977

Abstract : Round whitefish *Prosopium cylindraceum* were once found in over 70 Adirondack lakes but now are listed as endangered by the state of New York. Round whitefish are an important component of native communities; serving as prey for salmonids and transferring energy through food webs. As such, the New York State Department of Conservation (NYSDEC) and Cornell University have initiated a project to assess the status of round whitefish in New York, to determine causes for the decline of round whitefish, and to develop a recovery plan. Currently, only two self-sustaining round whitefish populations have been identified; however, their status in a handful of other lakes has not yet been evaluated. Round whitefish are currently thriving in Little Moose Lake and the Cascade Lakes. In Little Moose Lake, round whitefish reach maturity at similar size and grow more quickly than in many other systems outside of New York. In contrast, round whitefish in the Cascade Lakes reach maturity at an early age and small size compared to other systems. The extirpation of round whitefish from many Adirondack waters was likely due to anthropogenic acidification, failures of stocked populations, and/or presence of non-indigenous fish species. The NYSDEC already has begun restoring round whitefish through the establishment of a monoculture brood stock water and experimental plantings in seven ponds with a variety of environmental conditions. Monitoring of stocked waters suggests good survival of stocked fingerlings, but it is too early to tell if naturally sustaining populations will develop.

Oral Presentation

Professional

Laboratory and Field Tests on the Effects of Aqua-Kleen®, an Herbicide, on Fish from Oneida Lake

[1*]Stephanie Johnson, [2]Eric Paul, [2]Andy Hasse, and [1]Kathleen M. Skinner

* Presenting author
[1]Russell Sage College, Troy, NY
[2]NYS Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Bureau of Habitat, Rome Field Station, Rome, NY

Abstract : Aqua-Kleen® (Cerexagri, Inc.) is a common aquatic herbicide used to control invasive plant species in ponds and lakes. The active ingredient is the butoxyethyl ester (BEE) formulation of 2,4-Dichlorophenoxyacetic Acid. The effects of 2,4-D on brook trout (*Salvelinus fontinalis*), walleye (*Sander vitreus*) and fathead minnow (*Pimephales promelas*) were examined in the laboratory. Mortality, as well as noticeably abnormal behaviors were monitored at 24 hr intervals, over a 96 hr period in the laboratory. Brook trout had a 96-hr LC50 value of 0.76 mg/l. Walleye had a 96-hr LC50 of 0.66 mg/l. Fathead minnows were least sensitive, with a 96-hr LC50 of 2.22 mg/l. With behavioral changes of the fish taken into account, EC50 values were also calculated. Brook trout, walleye and fathead minnows had a 96-hr EC50 of 0.76, 0.51 and 2.13 mg/l, respectively.

To compliment the laboratory study, a field study was conducted on Oneida Lake, in Oswego County, NY to test the effects of 2,4-D on fathead minnows and walleyes during a one-week period in July 2004. Some areas of Oneida Lake support extensive growth of non-native water chestnut (*Trapa natans*). Caged fish were kept at two untreated reference areas and two areas treated with Aqua-Kleen®. Mortality and effects of exposure were monitored daily. While laboratory studies indicated that walleyes were more sensitive, no difference in mortality was found between the treated and reference sites in Oneida Lake; with a very low mortality rate of 4.375% in both types of sites. The herbicide appeared to have no detectable effect on the fathead minnows as well, with a mortality rate of 2.5% in both treated and untreated areas. Other experiments were conducted to test the effect of Aqua-Kleen® on *Hyalella azteca*.

Oral Presentation
Student

Scorecard for New York's imperiled fishes: gains, losses and SWG

Douglas M. Carlson*[1]

* Presenting author.
[1]NYSDEC, 317 Washington St., Watertown, NY 13601; 315-785-2262;
dmcarlso@gw.dec.state.ny.us

Abstract : After twenty years of activities with endangered fish programs, there are gains for some species, some have continued to be loosing ground and others are indeed extirpated. Assessing the population status and changes over time for each of the imperiled species is an important step toward species restoration, and in many cases survey information is complicated and difficult to obtain. Unfortunately, we have advanced little beyond this point of calibration for a few of the species. A giant step forward in progress for many species began in 2002 with the Federal funds and guidelines for State Wildlife Grants (SWG). Instead of our previous level of effort focused primarily on endangered and threatened species, we now have master plans being developed for groups of rare animal species in each of 10 New York watersheds. These species were selected as those in "greatest need of conservation", and five projects are underway for species in most-imminent need. The purpose of this report is to show landmarks in progress for 41 inland fish species, and this will help calibrate the gains we anticipate during the next 10 years.

Poster Presentation
Professional

Abstracts for Wildlife Session

The Elements of Science-based Bird Conservation

Charles R. Smith, Department of Natural Resources, Cornell University

One legacy of the ongoing debate over conservation of Spotted Owl in the Pacific Northwest is the conclusion that conservation recommendations with a demonstrable basis in science (i.e. "science-based") have legal standing in courts of law, whereas the opinions of environmental and other groups without a scientific basis, no matter how impassioned, may have lesser or no legal standing. This conclusion has far-reaching consequences and invites questions such as, "What is science?" or "What is science-based conservation?". This presentation will explore those questions, in the context of adaptive ecosystem management, offering guidelines for identifying and evaluating science-based approaches to conservation of migratory birds. Important components of science-based conservation include repeatability of methods, iterative peer-review, and formal acknowledgment of the work of others, all predicated upon the honesty, integrity, and objectivity of those who practice scientific discovery and conservation. Many of these components may be incompatible with the goals of some nongovernmental conservation organizations, which are faced daily with the demands of advertising, marketing, and promotion to maintain or increase income from memberships. In examining some current approaches for ranking migratory birds, based upon perceptions of their conservation needs, it is clear that methods incorporated into populist bird conservation activities like the Partners in Flight ranking methodology (http://www.partnersinflight.org/), the Audubon WatchList (http://www.audubon.org/bird/watchlist/), and the Important Bird Areas (IBA) Program (http://www.audubon.org/bird/iba/index.html) have a limited scientific basis. The IBA approach, because of its substantial reliance upon ambiguous definitions and expert opinion, has significant limitations, creating an illusion of conservation success where none may actually exist. It is conceivable that conservation membership organizations which solicit dues from members based upon promoting an illusion of conservation, without measurable demonstration of conservation success (conservation by proclamation), are defrauding a gullible public, largely ignorant of what constitutes science-based conservation. As bird conservation increasingly becomes a pluralistic, entrepreneurial, money-making enterprise, current practices also raise important ethical questions, beyond the scope of this presentation. I conclude that expenditures of public funds on conservation actions based upon non-scientific approaches could, and perhaps should, be subject to vigorous litigation, as should any limitations imposed upon uses of private land that result from non-science. I reaffirm the observation of the late Daniel J. Boorstin: "The greatest impediment to progress is not ignorance, but the illusion of knowledge."

Oral Presentation
Professional

Using Vegetation Maps for Better Population Estimates of White-tailed Deer.

Timothy Green and Jennifer Higbie, Brookhaven National Laboratory

At Brookhaven National Laboratory (BNL) deer overpopulation has caused an increase in deer-car collisions and ecological damage due to selective grazing and destruction of habitat. BNL's Geographic Information System (GIS) is a tool used to estimate the local white-tailed deer population and assist in management decisions. In the past, ground based surveys have been performed to estimate the population on the Lab's 5,265-acre site located in the Long Island Pine Barrens. Recently, an aerial infrared survey flown in February of 2004, revealed a large discrepancy in the estimated population on site. The aerial flyover yielded a population estimate of 412 deer while traditional ground surveys estimated 1,303 deer. Using data obtained during the ground survey, the locations of deer seen were assigned to the corresponding vegetation type. The result was deer/acre*vegetation type. This number was then extrapolated for the remainder of the site not covered during ground surveys. Using the GIS, a new estimate of 497 deer was calculated. Subsequently additional data has been obtained and past data have been re-examined and updated calculations provided. Initial assessments of this methodology suggest it to be a reasonable tool; the use of GIS layers and analysis, is a plausible and more accurate method for estimating deer populations.

Oral Presentation
Professional

Modeling the Effects of Water Level Management on Muskrat Abundance within Upper St. Lawrence River Tributaries

Presenter: Jason Toner
Masters Candidate
SUNY ESF
Environmental and Forest Biology
Syracuse, NY 13210

Coauthors: Dr. John Farrell and Jerry Mead
SUNY ESF
Environmental and Forest Biology
Syracuse, NY 13210
(315) 470-6990

Abstract: We present a model that predicts active muskrat (*Ondatra zibethicus*) house density for Upper St. Lawrence River tributaries in response to water level variations. We used observed muskrat house densities, site-specific digital elevation maps, and habitat variables (water depth and air temperature) for model development. Annual muskrat house counts were used as population estimates in eight wetlands from 2001 through 2004. All house counts were conducted during the winter in tributary wetlands where cattail (*Typha* spp.) is the dominant vegetation. A total of 224 active muskrat houses were located during 29 surveys. Active house density was nearly six times greater for sites managed with water control structures (2.39 houses/ha) than reference sites (0.43 houses/ha), suggesting that water level is a major factor contributing to relatively low muskrat populations within St. Lawrence River wetlands. We used stepwise logistic modeling procedures to develop a habitat model, based on the presence of active houses in winter, that estimates the probability that a wetland would support muskrats. Mean winter water depth was selected as the most significant determinant of muskrat presence within wetlands. When the probability of presence from the logistic model exceeded a threshold of 0.35, a separate linear regression model was used to predict house density. Two variables, mean fall water depth and winter air temperature, were selected as the most significant determinants of muskrat density. We are currently collecting data needed for model validation. This model is incorporated into the "Integrated Ecosystem Response Model" and will be used by the International Joint Commission to evaluate the effects of alternate water level scenarios on the Lake Ontario and St. Lawrence River system.

Oral Presentation
Student

playing pranks on each other. Mainly, these were undergraduate majors in the wildlife conservation curriculum Dr. Allen developed. Employed weekends and summers by the Bureau of Game, crew members were paid $1.50 a day, and crew leaders, $4.50. While tuition was free then at our NYS College of Agriculture, conditions were so rugged those Great Depression years that these sums enabled some to remain in school. Despite the dedication and industry these student-employees demonstrated, and the uniqueness of their lives, their stories were not deemed appropriate for inclusion in the report. However, the quality of their efforts were recognized with appreciation, and extended to them as a group: The real "hewers of wood and carriers of water."

Understandably, these students developed a close and dynamic camaraderie; they even dubbed themselves Cornell's "Hillers". This esprit endured through Depression years and long overseas tours of duty, to become manifest again after WWII. Its most common form was a reunion gathering, invariably including a visit to "The Hill"! In 1982, their return was a major summer event held on campus as a 50th year celebration. Gardiner Bump, first Director of the Investigation, was the featured dinner speaker. Ben Bradley, Class of '34, addressed the group, too, as their recognized current leader. As a friend of his since '49, it was a pleasure to help Ben as his contact with our department. On that occasion, he steered these alumni to significant decisions for financing a new program in our department to commemorate the Hillers' pioneering contributions to wildlife conservation. Soon, they adopted an undergraduate summer intern program in field studies as their goal, started fund-raising, and by mid-'88 their endowment fund was well established.

Recognizing their progress at a reunion luncheon, Ben announced one remaining need—to have something about the Hillers in writing; that is, who they were and what they accomplished. I took Ben's request to heart, recruited three especially able friends to help, and by my retirement at close of '91, we were underway. Three years later, the College of Agriculture and Life Sciences published the book, VOICES From Connecticut Hill, Harlan B. Brumsted, Mary Margaret and Richard B. Fischer, Bradley L. Griffin. A revolving fund paid for its production, so that proceeds from sales go to the Intern Program's Endowment Fund. Personal accounts drawn from a wide variety of Hiller contributions, were woven together with 100 photographs, to describe their life and times both on campus and The Hill, 1930-1942. The book draws fine reviews. Accordingly, as further 75th Year celebrations, do enjoy VOICES from a library copy or your own purchase. Copies will be on sale here this noon, and we will furnish order forms, too. We thank you for your support of a popular and successful student program!

Oral Presentation
Professional

Migration Patterns and Wintering Range of Common Loons in the Northeastern United States: Preliminary Findings

Kevin Kenow, United States Geological Service, La Crosse, WI;
David Adams, New York State Department of Environmental Conservation, Albany, NY;
Nina Schoch, Adirondack Cooperative Loon Program, Ray Brook, NY;
David Evers, BioDiversity Research Institute, Gorham, ME;
William Hanson, FPL Energy Maine Hydro, Lewiston, ME;
Valerie Trudeau, Natural History Museum of the Adirondacks, Tupper Lake, NY;
Kate Taylor, Loon Preservation Committee, Moultonborough, NH;
Andrew Major, United States Fish and Wildlife Service, Concord, NH;
Michale Glennon, Wildlife Conservation Society, Saranac Lake, NY;
Fred Realbuto, Audubon Society of New York State, Selkirk, NY; and
Robert Kratt, United States Geological Service, La Crosse, WI.

The Common Loon (*Gavia immer*) breeds throughout the Northeastern United States. Several surveys have assessed the abundance and distribution of summering loons. However, migration patterns and wintering range have not been adequately documented. Satellite transmitters were implanted in 12 Common Loons (11 adults and 1 juvenile) that were captured on breeding lakes in New York, New Hampshire, and Maine during the summers of 2003 and 2004. Transmitters on 8 of the birds provided adequate location data to document movement to wintering areas. In most cases, the adult birds appeared to travel non-stop from breeding lakes, or neighboring lakes, to the Atlantic coast. Adult loons marked in New Hampshire and Maine wintered 151 to 240 km from breeding lakes, off the Maine coast. Adult loons marked in the Adirondack Park region of New York wintered along the coasts of Massachusetts (425 km) and southern New Jersey (527 km). A juvenile bird from New York State made a number of stops at lakes and reservoirs en route to Long Island Sound. Maximum functional life of transmitters deployed in 2003 was about 10.5 months, providing opportunity to document spring migration movements as well.

Poster Presentation