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The aim of this newsletter is to provide a regular report on the activities of the New York Cooperative Fish and Wildlife Research Unit. The mission of the Unit is to conduct applied research on natural resource issues, participate in graduate education, and provide technical assistance and training for natural resource professionals. The Unit is a cooperative effort of the U. S. Geological Survey, New York State Department of Environmental Conservation, Cornell University, U. S. Fish and Wildlife Service, and the Wildlife Management Institute. For more information about the Unit call us at 607-255-2839 or visit our website: http://www.coopunits.org/New_York/

NY Coop News

NEWSLETTER OF THE NEW YORK COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT

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In Memoriam: Mark B. Bain

Mark Bain, Assistant Unit Leader-Fisheries of the NY Coop Unit from 1991-2003, passed away on 8 February 2012 from complications resulting from amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease). He was 56.

I worked alongside Mark at Auburn University in the late 1980s and early 1990s when he was Assistant Unit Leader-Fisheries at the Alabama Coop Unit and I was an Ecologist with the USFWS National Ecology Research Center. It was there that I first heard Mark's hearty laugh and became familiar with his keen intellect and insights into river fish ecology. Mark had a gift for focusing on what was important patterns and trends.

During his time with the NY Coop Unit, Mark continued and expanded his research in aquatic ecology. Mark's early work with the NY Coop Unit was focused on bioassessment methods for large rivers. Building on his research assessing the effects of regulated streamflow on river habitat and fish communities, Mark gave many presentations about this topic nationally and internationally soon after he arrived in NY.

By the mid-1990s, Mark had begun working on stur-

geon in the Hudson River, and maintained a focus on this river throughout his time with the Unit. His research was funded by the NYSDEC, NY Sea Grant Institute, Hudson River Foundation, U.S. Army Corps of Engineers, among others. Mark also pioneered one of the first aquatic GAP analysis projects for the USGS, and he conducted research on



aquatic biodiversity in NY with funding from The Nature Conservancy. Mark and his students co-authored a much needed and useful book for the American Fisheries Society on *Aquatic Habitat Assessment: Common Methods*.

Mark traveled internationally extensively in the late 1990s lecturing and consulting on the conservation of stur-

geon and river flow management. In 2000, Mark received an NSF biocomplexity grant working on physical, biological and human interactions in the Lake Ontario ecosystem. In 1997, Mark took a half-time appointment to lead the MA Coop Unit to help rebuild that Unit.

While with the Unit, Mark advised the following graduate students: Greg Galbreath, MS, 1995; Amy Harig-Aaron, MS, 1995; Reuben Goforth, PhD, 1999; Marci Meixler, MS 1999, PhD 2008; Anne Gallagher Ernst, MS 2000; Katherine Mills, PhD, MS, 2002, 2003; and Kristin Arend, PhD, 2007. Many other students and research associates worked for Mark on his research projects.

Mark enjoyed teaching and taught a variety of courses, including stream ecology early on at Cornell. He received the President's Outstanding Educator Award in 1996 and was listed as one of the Top 15 Professors at Cornell in 1998.

Mark left the Unit in 2003 to become Director of Cornell's Center for the Environment. Mark's laugh was one of his most enduring characteristics. He and his laugh will be missed by all.—WLF

Projects

Trout Population Response to a Water Diversion in Esopus Creek — T. J. Ross, M.S. Student

Trout populations in upper Esopus Creek in the Catskill Mountains of NY are affected by a water diversion from Schoharie Reservoir through the Shandanken Tunnel into the creek. The objective of this project was to evaluate the effects of the coolwater, turbid and high flow discharge from the tunnel into the Esopus Creek.

T.J. completed analysis of summer 2011 field data for his thesis and the final report. He focused on growth, body condition and intensive habitat data for brown trout located upstream and downstream from the water diversion. T.J.'s thesis consists of two chapters: one evaluating the health and

the other evaluating the habitat, movement, growth and condition of brown trout in upper Esopus Creek in response to releases from the water diversion. The results of his thesis will be used to address questions posed in upper Esopus Creek management plans and to inform stakeholders involved in managing upper Esopus Creek fishery and water resources.

T.J. continued work on a collaborative project designed to improve non-lethal methods for estimating the condition of trout using bioelectrical impedance analysis. Alex Koeberle, a Cornell undergraduate student who worked as a summer technician, completed an independ-

ent research project aimed at evaluating differences in growth between hatchery and wild brown trout. Alex presented a poster on his study at the 2012 New York Chapter of the American Fisheries Society meeting where he was awarded, "Best Student Poster".

This project is funded by the U. S. Geological Survey with support from the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, Cornell Cooperative Extension, and awards to T.J. from the Woodrow Wilson Foundation, Doris Duke Fellowship and the Kieckhefer Adirondack Fellowship.



T. J. Ross, M.S. student

Improving Trout Stocking in New York State Streams — Alex Alexiades, Ph.D. Student

Stocking trout in New York streams provides recreational opportunities that are highly valued by anglers; however, there is recent concern by New York State Department of Environmental Conservation (NYSDEC) professionals that some trout stockings fail and stocked fish are not being caught by anglers. We are working cooperatively with NYSDEC to assess the fate of stocked trout, and to estimate stocked trout natural mortality/emigration and fishing mortality, as well as angling effort and catch rates on stocked trout. This information will be used

to update NYSDEC's model for estimating the number of trout to stock.

In spring-summer of 2011, fish population estimates and angler surveys were initiated on eight streams around New York State. Alex has begun preliminary data analysis of these data, and findings thus far have revealed that angler effort and harvest rates have decreased dramatically for many streams since previous estimates were made. Angler catch per unit of effort, however, has remained relatively consistent with historic estimates. Mortality rates for stocked trout in

2011 were found to be an order of magnitude higher than historic estimates in some cases, indicating a decline in stocked trout survival. The study was expanded to ten streams in 2012. Alex plans to examine fish-habitat relationships this summer in the field and continue analysis of NYSDEC collected data.

Alex received a Kieckhefer Adirondack Fellowship Award to study the effects of trout stocking on stream biogeochemical nutrient cycles this summer.

This project is funded by NYSDEC.

*Alex Alexiades
received a Kieckhefer
Adirondack
Fellowship from
Cornell.*



Alex Alexiades, Ph.D. student

Projects

Spatial Ecology and Movements of Black Bears in New York — Matt Adams, M.S. Student

We are evaluating black bear movements in relation to landscape characteristics (e.g., agriculture, human density, roads, topography, patch size) and evaluating habitat selection and temporal variation in space use between bears in anthropogenically modified landscapes and those in forested landscapes.

Matt continued monitoring the distribution and movements of bears from GPS collars. These data will provide information on bear movements and habitat selection patterns in the multi-use landscape of south-central New

York.

This winter, Matt visited denning bears and changed GPS collars. We planned to visit the dens of all collared bears when the weather was cold in late January and February; unfortunately, the cold weather never came and the males and females with yearlings were more active than usual, preventing us from checking all denning bears. During March, Matt visited the dens of three collared female bears suspected to have cubs to ascertain their reproductive output, physical health, and to check the fit of

the collars. Matt spent the rest of the semester preparing for the summer field research season.

Matt attended the Northeast Association of Fish and Wildlife Agencies Conference in April and presented a talk on estimators of animal home ranges.

Matt is advised by Dr. Angela Fuller. The project is funded by the New York State Department of Environmental Conservation.



Matt Adams, M.S. Student

Estimating Black Bear Density Using Genetic Approaches — Cat Sun, M.S. Student

Black bears in New York have been expanding their range and encroaching on agricultural areas and more densely human-populated areas. However, a rigorous density estimate of this growing and expanding population does not exist.

In Winter-Spring 2012, Cat continued to work on the non-invasive mark-recapture study of black bears in south-central New York. To estimate population abundance and density, she worked in the genetics lab analyzing hair samples collected from the 2011 field season, and created encounter histories for

individual bears. These encounter histories will be used in a spatially-explicit mark-recapture model that is being developed.

During spring, Cat attended several wildlife meetings (see Presentations, p. 9) and a training workshop. In April, Cat attended the Hierarchical Modeling in Ecology Workshop at Patuxent Wildlife Research Center in Laurel, MD.

Cat has been preparing for the 2012 field season. Hair snares will be set for 10 weeks to collect black bear hair samples in the study area that encompasses Steuben, Allegany,

and Livingston Counties. Many of the same landowners, NYSDEC state forests, and wildlife management areas will be used, as well as new locations, to set up hair-snares sites.

Cat was recently accepted to the Department of Natural Resources M.S./Ph.D. program and will be continuing as a Unit student for her Ph.D.

Cat is advised by Dr. Angela Fuller, NY Coop Unit, and Dr. Matthew Hare, Cornell University. This project is funded by NYSDEC and a Doris Duke Fellowship awarded to Cat.



Cat Sun, M.S./Ph.D. Student

Projects

New York Sustainable Flows Project — Jason Taylor, Ph.D., Postdoctoral Research Associate

Working in conjunction with The Nature Conservancy (TNC), this project is focused on developing information to inform river flow recommendations for Great Lake tributary streams within NY and PA. Over winter, Jason has spent time building on a draft report of target species and their flow needs. We have now added information for freshwater mussel and macroinvertebrate targets and built conceptual models of how their life histories interact with natural flow regimes to our initial literature review on flow targets.

Additionally, Jason has been working on a stream classification for the region that will be

used to stratify flow-ecology relationships and flow recommendations across similar stream types. This work combined with target flow needs information will be used to drive the discussion in our upcoming June workshop focused on generating flow-ecology hypotheses. The workshop will include conservation and freshwater ecology staff from TNC as well as a technical working group made up of biologists from federal and state agencies, and universities.

Jason has also expanded the scope of the environmental flow work being done in NY by participating in similar projects

led by TNC in Pennsylvania. He has participated in flow-ecology hypotheses and flow recommendation workshops for the Ohio River Basin Ecosystem Flows Project. Jason is working with TNC staff from the PA chapter to synthesize results from several projects into a core set of flow ecology needs for the region.

This project is funded by a grant from the Northeast Regional Conservation Needs Program to TNC and Cornell. The Cornell Lab of Ornithology is helping administer this project.



Jason Taylor, PhD, Postdoctoral Research Associate

Ecological Relationships of Black Bass Populations in New York Lakes — Christian Perry, Ph.D. Student

Smallmouth bass and largemouth bass, collectively known as black bass, are present in lakes and rivers throughout New York. The last comprehensive investigation of the status of these black bass populations was conducted in the early 1980s.

Christian has been characterizing black bass populations in lakes and rivers across New York State using data from the NYSDEC statewide fisheries database. He is collaborating with NYSDEC biologists to finalize selection criteria for data to be used in summarizing

bass population metrics. In a parallel tract, He has begun consolidating environmental data from numerous sources to quantify the influence of biological, chemical and physical characteristics on bass population metrics. Throughout this project, Christian has been providing status updates and receiving regular feedback and advice from NYSDEC biologists and other fisheries experts at conferences and project team meetings. In March, Christian and Coop Unit student T.J. Ross assisted New York City Department of Environmental

Protection fisheries biologist Tom Baudanza in conducting bioelectrical impedance analysis on black bass from lower Esopus Creek to assess their condition.

This project is funded by the NYSDEC.



Christian Perry, PhD student

Projects

Implications of Natural Gas Extraction on the Eastern Brook Trout—Maya Weltman-Fahs, Ph.D. Student

Natural gas extraction from the Devonian Marcellus Shale formation is underway in PA and WV and is expected to commence in NY in the near future. Maya is investigating the environmental ramifications of drilling activities on stream ecosystems using eastern brook trout, a declining native salmonid in the northeastern US, as an indicator species.

Maya and Coop Unit Postdoc Jason Taylor have constructed a conceptual model of the pathways of potential impact between the infrastructural development, fracturing process, and wastewater disposal processes and the success of brook trout at the spawning,

egg and larval development, and juvenile and adult life stages. The model is the basis of a review article Maya and Jason have submitted to *Fisheries*.

Maya received funding for summer field work from the NY Water Resources Institute, and is preparing to begin a survey of stream sites in the southern NY and PA. She will be looking at streams along a gradient of shale gas drilling densities. Maya will be working both on her own and collaboratively with Trout Unlimited. She has selected the survey sites based on a combination of spatial analysis and landowner contact.

Maya plans to collect water, macroinvertebrate, and sediment samples, and evaluate instream habitat and fish abundance and health. She has enlisted assistance from the Cornell Entomology and Biological and Environmental Engineering departments in processing her water and macroinvertebrate samples. Her goal is to use her summer dataset to assess potential correlations between instream conditions, trout populations and the density of gas drilling. She will also select a subset of her summer sites for longer term monitoring.

Bill Fisher is advising Maya.



Maya Weltman-Fahs, Ph.D. Student

Spatial Capture-Recapture Models for Carnivores—Bénédicte Madon, Ph.D., Postdoctoral Research Associate

To estimate the abundance and density of elusive carnivore species in NY State, we are extending traditional spatial capture-recapture (SCR) models and using non-invasive genetic methods (scat and hair collection). In particular, for species known to use river and stream corridors, the Euclidian assumption for the distance from trap to activity center in traditional SCR models may not be appropriate. Therefore, we developed a non-Euclidian metric based on a shortest

path approach using a cost function.

In preparation for a pilot study this summer, Bénédicte developed simulations to explore how to best allocate the sampling effort over the study area. A scat detection dog is expected to be trained for the scat collection this summer, and hair collection devices will be deployed as an additional source of data.

Bénédicte attended a workshop on "Hierarchical models for abundance, distribution and

species richness in spatially structured populations using unmarked/R and WinBUGS" held at Patuxent Wildlife Research Center on 2-5 April, 2012 organized by Dr. Andy Royle and Dr. Mark Kéry.

Bénédicte is working on this project with Angela Fuller, NY Coop Unit and Andy Royle, Patuxent Wildlife Research Center.



Bénédicte Madon, Ph.D., Postdoctoral Research Associate

Projects

Climate Change Vulnerability Assessments—Chris Nadeau, M.S. Student

Climate change is expected to cause large-scale ecological change that could dramatically affect wildlife. Hence, wildlife management agencies must develop rapid assessment tools to determine which species and areas of the landscape will be most vulnerable to climate change. Chris is working with the New York State Department of Environmental Conservation (NYSDEC) to develop a rapid assessment tool to: (1) prioritize the management of Species of Greatest Conservation Need in New York, and (2) identify highly vulnerable and resilient areas of New York.

In early January, Chris presented his ideas for a new climate change vulnerability as-

essment tool to staff at the NYSDEC, North Atlantic Landscape Conservation Cooperative, U.S. Fish and Wildlife Service, and Manomet Center for Conservation Sciences. Chris spent the spring semester incorporating suggestions from that meeting into the design of the tool. The tool will incorporate measures of landscape integrity (e.g., connectivity), landscape complexity, and climate change intensity to identify areas on the landscape that are vulnerable to climate change. The tool will also identify which Species of Greatest Conservation Need are vulnerable to climate change by determining the proportion of the landscape within each species

distribution that is vulnerable to climate change.

Chris also worked on two related projects during the spring. He presented a review of climate change vulnerability assessment tools at the Northeast Association of Fish and Wildlife Agencies Conference in West Virginia. He also developed simulations to evaluate the accuracy of climate-envelope models; the tool used most often to assess the vulnerability of wildlife to climate change.

Chris is advised by Dr. Angela Fuller and the project is funded by NYSDEC.



Chris Nadeau, M.S. Student

Chris Nadeau is a 2012 recipient of a National Science Foundation Graduate Research Fellowship. The prestigious NSF fellowship recognizes outstanding students pursuing research-based graduate degrees in science, technology, engineering and mathematics disciplines who are judged to have the potential to be future research, teaching, and innovation leaders in those fields. Chris will use the 3 years of funding to support his Ph.D. research. Congratulations Chris!

Re-listing the Species of Greatest Conservation Need in NY—Kimberley Corwin, Research Support Specialist

Species assessments are being written in the first phase of the project to update the state's list of Species of Greatest Conservation Need.

Kim, stationed at NYSDEC headquarters in Albany, has worked with NYSDEC and Coop Unit staff to carefully revise the species assessment form to include all elements that will be needed in the decision-making step of the project. The species assessments will provide a summary of the current status, distribution, threats, and population trend for each of the 537 Species of

Greatest Conservation Need (SGCN) currently included in the State Wildlife Action Plan. Once completed, the assessments will be used in the second phase of the project, in which structured decision making will be used to determine whether or not a change in the species' status is justified and needed.

Assessments have been drafted for more than two-thirds of the birds, all 28 mayflies and stoneflies, all 10 beetles, and more than half of the odonates. The information for all fish assessments has been

assembled and is being transferred into the proper format. Species not already on the SGCN list can be nominated for consideration by the submission of a completed assessment form.

This project is funded by the NYSDEC.



Kim Corwin, Research Support Specialist

Projects

Structured Decision Making for Natural Resource Issues in NY—Kelly Robinson, Ph.D., Postdoctoral Research Associate

Kelly is working to incorporate structured decision making (SDM) to address fish and wildlife issues in NY. For the first half of her time at Cornell, Kelly has been helping the NYSDEC use SDM to identify the best management action for reducing the yearling buck proportion of the annual deer harvest. Members of the big game team attended the National Conservation Training Center in September, 2011, and came away with a set of management strategies to reduce take of yearling bucks.

Since her arrival at Cornell in March, Kelly has been meet-

ing with the big game team to further understand the decision problem. She has focused most of her time on building a stochastic population model for NY deer populations that can be used to assess the effectiveness of six management alternatives on reducing harvest of yearling bucks. The model projects population sizes forward in time under different harvest strategies and allows for stochasticity in natural mortality rates and birth rates for three age classes of does and four age classes of bucks, as well as for newborns. Once this model is complete, we will

use it to predict how deer populations from different regions of the state will respond to changes in harvest strategies. The information from this model will then be incorporated in to the SDM process to help the DEC to determine an optimal management strategy for yearling buck protections throughout the state.

Kelly is working with Angela Fuller on this research. Once the deer project is complete, Kelly will work with Bill Fisher on a fisheries project of importance to NYSDEC.



Kelly Robinson, Ph.D., Postdoctoral Research Associate

Meet Kelly Robinson, Postdoctoral Research Associate

Kelly Robinson is a recent graduate of the University of Georgia (UGA), where she received her Ph.D. in Fisheries Science. Under the direction of Dr. Cecil Jennings of the Georgia Coop Unit, she assessed the ecological function of waterfowl impoundments in coastal South Carolina for the estuarine fish community.

Prior to attending UGA, Kelly received her Bachelor's degree in Biology and Spanish from the University of Virginia in 2001, and her Master's degree in Marine Biology from

the College of Charleston in 2006. For her Master's research, she studied the age, growth, and reproduction of a deepwater fish, the barrellfish, and worked with the Marine Resources Monitoring, Assessment and Prediction program at the South Carolina Department of Natural Resources studying the snapper-grouper complex off the coast of SC.

Kelly is currently working with Drs. Angela Fuller and Bill Fisher to use structured decision making to help the NYSDEC make management

decisions for wildlife and fish populations in New York State. Kelly enjoys traveling, attending live musical performances, and spending time with friends and family.



Kelly Robinson sampling Daphnia in Finland

Activities

Publications

- Conway, C. J., and C. P. Nadeau. 2011. Managing Rails with Fire. Final Report, Wildlife Research Report #2011-05, USGS Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.
- Williams, B.K., M.J. Eaton and D.R. Breininger. 2011. Adaptive resource management and the value of information. *Ecological Modeling* 222(18): 3429-3436
- Nadeau, C. P., C. J. Conway, M. A. Conway, and M. Ogonowski. 2011. Restoration of managed marsh units to benefit California black rails and other marsh birds: an adaptive management approach. Final Report, Wildlife Research Report #2011-06, USGS Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.
- Santisteban, L., C. P. Nadeau, and C. J. Conway. 2011. Evaluating population trends and breeding density for 14 species of secretive marsh birds in North America. *Wildlife Report # 2011-01*. USGS Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.
- Taylor, J. M., J. A. Back, and R. S. King. 2012. Grazing minnows increase benthic autotrophy and enhance the response of periphyton elemental composition to experimental phosphorus additions. *Freshwater Science*. 31(2):451-462



Mitch Eaton, Assistant Unit Leader-Ecology



Matt Adams holding black bear cub

Mitch Eaton was recognized by Department of the Interior Secretary Ken Salazar and USGS Director Marcia McNutt for his efforts in the response and restoration of the Gulf coast following the 2010 Deepwater Horizon oil spill.

Activities

Presentations



Cat Sun netting smelt



Bénédicte Madon feeding a rescued porpoise

- Adams, M. C., and A. K. Fuller. 2012. Habitat and spatial ecology of black bears in New York. Department of Natural Resources, Cornell University, Graduate Student Association Symposium. January 19, 2012.
- Adams, M.A., and A. K. Fuller. 2012. Home range models of animal space use. 68th Northeast Fish and Wildlife Conference, Charleston, WV. April 16, 2012.
- Alexiades, A.V. 2012. The Fate of Stocked Trout in New York Streams. NYSDEC Fisheries Bureau Management Team Meeting, Albany, NY, February 23, 2012.
- Alexiades, A.V., W.L. Fisher, and P.J. Sullivan. Brown trout population dynamics and angler behavior in New York. New York American Fisheries Society Annual Meeting, Lake Placid, NY, February 2, 2012.
- Fisher, W. L. 2012. Importance of strategic direction. Southern Division of the American Fisheries Society Leadership Workshop. Biloxi, MS. January 27, 2012.
- Fisher, W. L. 2012. Cooperative Research Units: A collaborative fisheries research partnership between universities and agencies. 2012 Annual Meeting of the New York Chapter of the American Fisheries Society. Lake Placid, NY. February 2, 2012.
- Fisher, W. L. 2012. Importance of strategic direction. Western Division of the American Fisheries Society Leadership Workshop. Jackson, WY. March 27, 2012.
- Fuller, A. K. 2012. Structured decision making for threatened and endangered species. Invited presentation, New York State Chapter of The Wildlife Society, Bronx Zoo, New York. March 2, 2012.
- Koeberle, A.L., T.J. Ross, W.L. Fisher. 2012. Growth of hatchery-reared and wild brown trout in the upper Esopus Creek, New York. New York Chapter of the American Fisheries Society. Lake Placid, NY, February.
- Nadeau, C. P. and A. K. Fuller. 2012. Improving the Future of Climate Change Vulnerability Assessments by Reviewing the Past. Northeast Association of Fish and Wildlife Agencies, Charleston, West Virginia. April 16, 2012.
- Perry, P.C. and Fisher, W.L. 2012. Summarizing Black Bass Relative Abundance and Proportional Stock Density from a New York Statewide Collection Database. New York Chapter of the American Fisheries Society Annual Meeting, Lake Placid, NY. February 2, 2012.
- Perry, P.C. and Fisher, W.L. 2012. Black Bass Project Update. DEC Bureau Meeting. NYSDEC Fisheries Bureau Management Team Meeting, Albany, NY. February 24, 2012.
- Perry, P.C. and Fisher, W.L. 2012. Black Bass Population Characteristics in New York Lakes: A Statewide Database Analysis. North East Fish and Wildlife Conference, Charleston, West Virginia. April 15-17, 2012.
- Ross, T.J., W.L. Fisher, B.P. Baldigo, P.R. Bowser. 2012. Anthropogenic stream alteration: Effects on brown trout habitat, behavior and physiology. Cornell Cooperative Extension of Ulster County Public Seminar Series. Stone Ridge, NY, February.
- Sun, C.S., A. K. Fuller, J. A. Royle, and M. P. Hare. 2012. Exploring sampling schemes in spatial capture-recapture studies using simulations. 68 Annual Northeast Fish and Wildlife Conference, Charleston, WV. April 15, 2012.
- Sun, C. S., A. K. Fuller, J. A. Royle, and M. P. Hare. 2012. Using simulations to explore sampling schemes in mark-recapture studies. Department of Natural Resources, Cornell University, Graduate Student Association Symposium. January 19, 2012.
- Taylor, J. M. and W. L. Fisher. Developing flow-ecology hypotheses in support of ecologically based flow recommendations for Lake Ontario and Erie drainages in New York. American Fisheries Society, New York Chapter Annual Meeting. Lake Placid, NY. February 2012.
- Weltman-Fahs, M., J.M. Taylor, and B. Fisher. Hydraulic fracturing and brook trout habitat restoration in the Marcellus Shale: Potential conflicts in an already controversial landscape. Poster presentation at the American Fisheries Society New York Chapter Annual Meeting. Lake Placid, NY. February 2, 2012.

Activities

Technical Assistance and Training

Technical Assistance

Eaton, M.J. Led two workshops to develop an adaptive management framework for implementing estuarine restoration activities on the Herring River, Cape Cod, MA. Herring River Technical Committee. Plymouth, MA. April/June, 2012

Meetings Attended

Eaton, M. J., and A. K. Fuller. New York Chapter of the Wildlife Society Annual Meeting. Bronx Zoo, NY. March, 2012.

Fisher, W. L. Participated in NYSDEC Trout Team meeting, Cortland, NY. Jan 2012.

Fisher, W. L. Participated in NYSDEC Fisheries Bureau Team Meeting, Albany, NY. Feb 2012.

Fisher, W. L. Participated in NYSDEC Statewide Fisheries Database meeting., Cortland , NY. Apr 2012

Fuller, A. K., and M. J. Eaton. Participated in NYSDEC Wildlife Managers Meeting. Hamilton, NY. March 2012.

Fuller, A. K., and M. J. Eaton. Participated in Advanced Structured Decision Making Practicum, National Conservation Training Center, U.S. Fish and Wildlife Service/ U.S. Geological Survey. 12-16 March 2012.

Courses and Training

Fisher, W. L. Graduate Independent Study in Natural Resources (NTRES 6970). Cornell University, January 23, 2012 - May 2, 2012.

Fuller, A. K. Taught Structured Decision Making for Natural Resource Management (NTRES 6940), Cornell University. January 23, 2012 - May 2, 2012.

Fuller, A. K. 2012 Participated in Faculty Leadership Development Program. College of Agriculture and Life Sciences, Cornell University. Facilitated by Organizational and Development Services, Cornell. January 9-13, 2012.



Angela Fuller, with doe deer



Cat Sun, with wild turkey



Bill Fisher ice fishing on Cranberry Lake, NY



Mat Adams, with bear cub

NY COOP NEWS

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Upcoming

Adaptive Management Conference Series.—The NY Coop Unit will be co-hosting the annual Adaptive Management Conference Series (AMCS) at Cornell University, 12-14 June, 2012. Mitch Eaton and Angela Fuller are helping to organize and plan the confer-

ence with Evan Cooch of the Department of Natural Resources, Cornell. The AMCS is an opportunity for individuals working with the challenges of optimal decision making under various forms of uncertainty, particularly as it relates to the use of natural resources, to

discuss new problems, new approaches, and future challenges.