

THE MAINE CHAPTER OF THE WILDLIFE SOCIETY

THE MAINE WILDLIFER



SPRING 2014

WILDLIFE STUDENT PERSPECTIVE—UNITY COLLEGE BEAR STUDY

By Mariana Rivera Rodriguez, Unity College

Yellow measuring tape plays a stark contrast against the dark fur of a black bear. On a given day over eight weeks during the summer of 2013, student interns and volunteers from Unity College (UC) are multitasking in the woods of Wildlife Management District (WMD) 23 in Waldo County, Maine. One team is checking the trapline for bears, the other is checking the prebait line for signs of bears; still other students are meeting with landowners, and others are at headquarters checking tax maps and datasheets. But every task and its achievement (the land permission that was obtained, the prebait site that was hit, the trap that was set) converges seamlessly when the call comes in: we have a bear.

On site, numbers are quietly called out, repeated, and written down. With his clipboard, an intern meticulously copies the data. A temperature reading is taken, and there's a request for water. A bucket is poured over the bear where she lays anesthetized, and ice packs are repositioned. Her chest rises and falls, steady breaths brushing hot against our fingers as we pull a tooth and tattoo an ID number to the inside of a lip. Course fur tickles our knuckles as we secure a radiocollar around her neck. Blood is drawn from the inside of her thigh, and vials pass from hand to hand, while other busy fingers are pulling hair for later analysis,

the caps of markers hanging from between teeth as numbers and letters are scribbled on yellow envelopes.

This is the Unity College Bear Study, for which last summer a crew of 12 undergraduate students spent eight weeks trapping, tagging, and tracking black bears in central Maine. Under the training and leadership of study coordinators Dr. George Matula and Lisa Bates, the UC Bear Study ran its pilot field season over the summer of 2013. What had begun the previous year as the seed of an idea by Matula to provide UC students with real-life, hands-on large mammal research, had evolved into a summer field season researching bears in an area of the state where this research had not been done before.

With permission from the Maine Department of Inland Fisheries and Wildlife (MDIFW), Matula, Bates, and the students of Unity College have set out to investigate a colonizing black bear population in central Maine for which the State has no current data. MDIFW's current study areas – Downeast, Spectacle Pond, and Bradford – are far from Waldo County in WMD 23. Despite having one of the longest-running black bear monitoring programs in the country, there is simply not enough staff, time, or money for MDIFW to cover the entire state. But extrapolating

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density estimates from the three established study areas and applying them to bears in WMD 23 could be inaccurate. The bears in central Maine are a growing, colonizing population entering reforested areas with low densities of conspecifics; life history, home range, habitat use, and other demographics are likely different from their northern and eastern counterparts.

WMD 23 is essentially unexplored territory for black bear research in Maine, and Unity College students are hungry for the opportunity to decipher the demographics of bears in their own backyards.

The black bear is expertly elusive. For every bear trapped and handled in a field season, hours upon hours of mosquito-infested labor have been invested searching for signs of bear activity, scouting for potential habitat, and lugging bait and lure through the woods: donuts, beaver carcasses, anise oil, skunk essence, and beaver castor. On a sweltering day, the malodorous mix of bear attractants wafts into our faces as we travel from site to site. Mosquitos feast on us as we set snares and clear trap circles. Sweat trickles into our eyes as

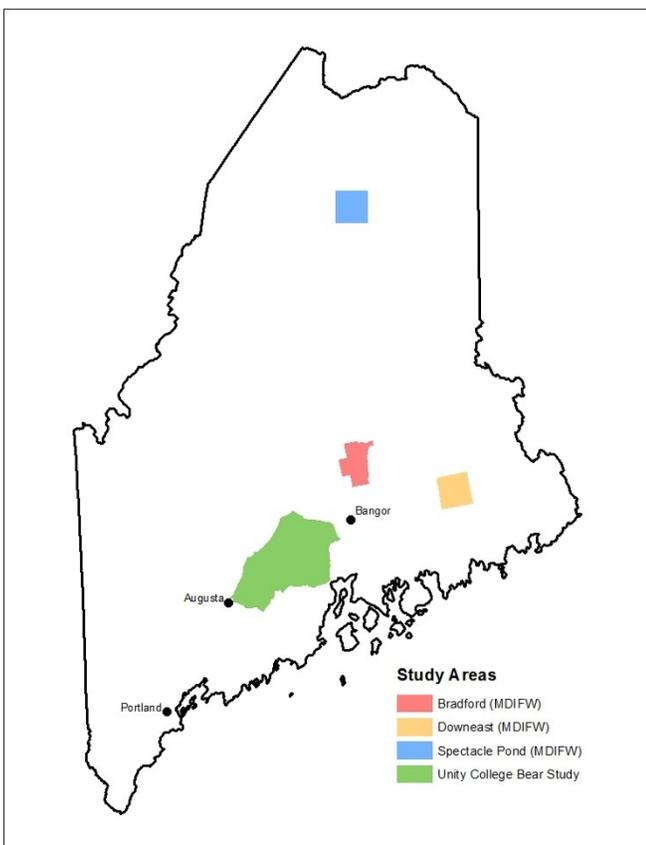


we hustle from location to location in Unity, Burnham, Albion, and Monroe. Every hour of sunlight is maximized.

Our hunger, enthusiasm, and hard investments over the summer 2013 season were rewarded. During our pilot year, we obtained permission from 68 landowners for 11,000 acres of private land access, on which 40 Aldrich foot snares at 37 trap sites were set, two culvert traps and 30 hair snares were deployed; and after over 3600 combined hours of work, the result was the successful capture of eight bears plus three recaptures, and the fitting of three females with radiocollars.

Our smallest female, UC004, wears a refurbished VHF lynx collar from MDIFW which will be replaced with a larger GPS collar while she's in her den this winter. UC003 and UC007, each wearing GPS/satellite collars, were both killed in traffic in July and August. Fortunately, we were able to collect over 140 locations between them, and noting larger home ranges than we had anticipated. Because females provide the best recruitment data and do not roam as far as males, fitting sows with radiocollars is the best way to gather data on home range, habitat use, and recruitment. As our sample size increases with subsequent trapping seasons, we hope to determine if data we collected over our pilot year are truly representative of the WMD 23 population. Next summer, we hope to collar a female bear with a video camera to obtain an on-the-ground, bear's-eye view of habitat, range, behavior, diet, and activity. Meanwhile, wildlife biology student Jonah Gula has continued to track UC004 these several months, and data analysis on her home range is ongoing. She has chosen to den for the winter approximately 15 feet above the ground in the hollow of a tree. Revisiting her den to replace her collar will be a highlight of the winter.

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It should not go without noting that the research being conducted by the UC Bear Study is significant and relevant, with real potential impacts for the management of bears in Maine. On quiet evenings last summer after interns and volunteers had washed the grime from our backs and rested our legs, our study coordinators never failed to remind us of the far-reaching importance of our work. As future professionals, it was important that we remember how the social and biopolitical climate would affect us in our careers.

Presently, black bears in Maine are at the center of a heated dispute, as anti-hunting organizations and special interest groups seek to qualify a referendum to place a ban on the state's three traditional bear hunting methods. The passing of a ban on bait, trap, and hound hunting would significantly limit MDIFW's ability to effectively manage the growing black bear population in the state, where wildlife managers depend so heavily on a sustainable harvest to maintain a healthy population of bears.

Students at Unity College understand that field research is not just one, but one of many, elements to wildlife management. Exposing the summer interns and volunteers to the realities of management beyond the mud on our boots provided us with the bigger-picture, practical perspectives

we would need as future biologists, researchers, policymakers, educators, and stakeholder liaisons.

Our second summer field season is fast approaching, and preparations that have been underway since the beginning of last semester are picking up in pace. Over 80 students on 15 teams are working hard to analyze samples and data obtained last summer, streamline field and laboratory protocols, reach out to additional landowners, and develop outreach materials. Would-be interns are applying for the summer field positions, and our coordinators are elbow-deep in budgets and administrative details.

A large mammal research project is not without its costs, to say the least, and we owe our pilot year's success to the financial support of Unity College, the Maine Chapter of the Safari Club International, and private and alumni donations. Going into year two, we are grateful for a continuing financial investment from the college, and the ongoing generosity of private and alumni donors, as we continue to search and apply for more funding.

Though the lifetime of the UC Bear Study is indefinite, the success of our pilot year secured the second year, and we anticipate further successes to secure further years of continuing research. For now, we prepare to hit the ground faster, harder, and sooner for summer 2014.

WILDLIFE AT UNITY COLLEGE

By Eve Dietrich, Interim Student Representative, METWS



Myself and Club members assisting in putting up a wood duck box with local Cub Scout Troop and Sebasticook Regional Land Trust at Konokulous Bog

As Unity College has grown in numbers and interests, the students who are involved in wildlife sciences expands. In order to provide a community to these students, along with relating experiences, a Wildlife Club was created in 1972. Since the club's creation, there has been many changes and has been led by multiple advisors and officers. Most recently in 2011, longtime professor and Wildlife Club advisor Dr. Dave Knupp retired, and the advisory position was passed off to new professor of wildlife, Dr. Brent Bibles. At the start of the fall 2013 semester, the club had over 60 members, with around 30 actively participating.

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In addition to the club's advisor, the group is led by four officers, currently: Destiney Priest, President; McKinley (Kiki) Bell, pro-tem Vice President; Alyssa Beers, Treasurer; and Carolyn Nietupski, Secretary. Recently, a new position of Student Representative (Eve Dietrich-interim) has been created to make connections between Unity College and METWS. This group of leaders provides the opportunities for the 125+ students enrolled in a wildlife program to volunteer, gain skills, network, socialize, etc.

The club focuses heavily on volunteering opportunities that will provide skills and experience to those participating, while helping wildlife in some manner. A popular trip that has occurred nearly every spring semester is a visit to Loki Wolf Refuge in North Conway, NH. Here we assist the managers in cleaning the wolf's pens from the winter, distributing food, building enclosures, etc. Another favorite that is done in the fall is assisting the Friends of Acadia in their annual cleanup of the carriage trails at Acadia National Park. We take this opportunity to volunteer for a few hours, hike around the park, and camp within the park. In addition to those larger volunteering events, the club does smaller, more localized events. In the past two years, +/-20 wood duck boxes were created by club members. Some of these were put on trees around the Unity area, specifically Konokulus Bog (done with a local Cub Scout troop), and along Sandy Stream. Those boxes are cleaned and maintained by the club year round. In addition to those in the area, we also have boxes that are ready to be mounted in Lower Mason Pond, Belfast. Club members have also assisted organizations such as Maine Medical Center and MDIFW at check stations for deer and turkey during their appropriate seasons. Smaller opportunities, such as mist netting, cleaning of wildlife equipment, and other related work are also available.

While not organizing or completing volunteer work, the club has a variety of guest speakers attend meetings. These range from our own professors that discuss their master/Ph.D. work, to US Fish and Wildlife biologists, and everything in between. These provide an opportunity to see the work that is done outside after graduation, as well as provides networking with individuals and organizations that may be hiring. In preparation of these speakers, some professional development is also done: checking of resume's, cover letters, internships and such is discussed by officers and the school's career counselor.

Although the club is funded under our Student Government

Association, we do some of our own fundraising. In addition to an ongoing bottle drive around campus, we also do two campus wide events that provides some fun competition, as well as some spending money for the club. In the fall, we do a 'Wildlife Carnival'. This is set up as different tables that have various wildlife related skills or activities at them that students complete in teams of four, traveling round robin style. These tables range from silhouette identification (imagine a student trying to imitate a rhino grazing), to track ID, to statistics and trap/equipment ID. In the spring semester, we host an 'ID Bowl' which is similar to the Quiz bowl's that larger student chapters compete at during conferences or conclaves. Both of these are well received by the student body (our first ID bowl had nearly half our schools student body in attendance!!), as well as the professors who often offer extra credit to those participating.

Somewhere between all this we manage to go to classes, attend other meetings, maintain some sort of social life, eat, and work. Ha! With the energy that our group has, many are attracted to return and participate in our various events. We all look forward to any new opportunities or connections that can be provided through METWS.

For more information about the club, please contact:

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SUMMARY REPORT - FERAL CAT COMMITTEE UPDATE

By Stacie Grove, Principal Ecologist, NewEarth Ecological Consulting, Saco, Maine

The domestic cat is an exotic species to North America and those that are feral or free-ranging are a widespread and potentially serious threat to the integrity of native wildlife populations and natural ecosystems. The effects of cats on wildlife are difficult to quantify; however, a growing body of literature suggests that feral cats are significant in the mortality and population shifts of small mammals, birds, reptiles, and amphibians (Balogh et. al., 2011, Dauphine and Cooper 2009, Loss et. al., 2013, Stone 2010, van Heezik et. al., 2010). Further, feral and free-ranging cats pose a threat to local populations of federal or state-listed species and species of conservation concern (USFWS 2006, Winter 2006), and are globally identified as one of the 100 worst invasive species (ISSG 2010).

Although impacts from feral and free-ranging cats have been relatively well documented in some locations, little is known about the presence and impact from feral cats in Maine.

To gain a better understanding of this issue in Maine, the Maine Chapter of the Wildlife Society (METWS) established the Feral and Outdoor Cat Committee (Committee). The Committee has been working to educate the public on feral and free-ranging cats, locate information on potential colonies, and conduct site-based studies to better understand the dynamics of feral colonies and their potential impacts on Maine's natural resources.

In 2012, the Committee received funding from the Maine Outdoor Heritage Fund (MOHF) to facilitate ongoing efforts by the Committee to better understand feral cat colonies in Maine. A study was performed by University of Maine student Whitney Bushey, and further supported by members of the Committee, and staff at NewEarth Ecological Consulting of Saco, Maine to identify and visit potential colony locations, collect site specific information (i.e., size, location, health of individuals), assess colony locations relative to wildlife resources of special significance, and to

develop recommendations for further investigations on cat-wildlife interactions at specific priority sites.

Committee members used emails, telephone calls, flyers, and social media to solicit information from agencies, natural resource organizations, and relevant sectors of the public regarding potential locations of feral cat colonies in Maine. Fifty-one potential sites were identified. Information on colony locations ranged from precise addresses to only general locales. Estimates of colony sizes ranged from "a few" to close to 500. Efforts to solicit information from outside sources on potential colony locations had relatively meager results similar to other efforts in Maine. The Humane Society contacted 750 entities in Maine and only 231 (31%) responded (Lisnik 2011). From that effort, 26 colony sites were identified, although no specific location information was provided.

Of the 51 potential colony sites identified, 32 (63%) were visited between Aug 2012 and Jan 2013 to collect site-specific information. The other 19 sites could not be accurately located. Cats were observed at five of the 32 (16%) visited sites and the greatest number of cats observed at any one colony was eight. Of the 51 potential sites, 10 (24%) occurred within 0.5 miles of state-designated

Significant Wildlife Habitat (SWH). Of the five locations confirmed to have cats, only one site was near a SWH (0.32 miles from a significant vernal pool). The low number of confirmed colonies identified by this study, and the lack of evidence of cats at each, was unexpected. Estimates on the number of feral cat colonies in Maine range from 36 to 333, and some colonies reportedly have over 500 individuals (personal communication; Dr. Elizabeth Stone, Lisnik 2011). The numbers of cats at the colonies given by outside sources contacted specifically for this study also indicated relatively high numbers of cats (> 25) for at least half of the sites identified. Although the list of potential locations with



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enough data to locate the site was relatively low (32), it was assumed that most of these would have relatively high densities of cats. Instead, presence of cats was confirmed at only five locations, and the highest number of cats found at any site was eight.

Given the number of persons contacted and sites visited, information gathered on feral cat colonies in Maine fell below expectations. The low number of colonies identified by sources likely to be "in-the-know" regarding feral cat colonies, may indicate colonies in Maine are not as large or widespread as initially thought. Other variables that may account for the low number of sites identified include limitations in the solicitation effort/approach, lack of data available from the persons contacted, and unwillingness of sources to offer information due to concerns regarding how information on the colonies would be used. It is also possible that feral cat colonies in Maine have not reached the levels of concern reported in other areas of the United States. The overall rate of cat abandonment may be lower in Maine, or if abandoned, cold temperatures, predators, limited food sources, may be keeping colonies in relatively low densities in Maine. Other factors include incomplete data on the precise locations of sites, and limitations with the overall survey effort (limited access due to private property, poor tracking conditions, limited time on site, and difficulty in capturing periods of high-activity at sites).

Recent studies and literature seem to point toward free-roaming housecats as a more significant and widespread threat to wildlife. Future efforts in Maine may best be spent on efforts to educate the public on feral and free-ranging cats and developing incentives for cat owners to keep cats indoors.

The full report can be found online at: <http://joomla.wildlife.org/maine>

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FEATURE ARTICLES**WILDLIFE IN THE FAST LANE**

*By Brad Zitske, Assistant Regional Wildlife Biologist, Maine Department of Inland Fisheries & Wildlife,
Gray/Sebago Lakes Regional Office (Region A)*

Being a wildlife biologist in the most populous region in Maine is never mundane. With more people come the often unavoidable human/wildlife interactions and conflicts. These take place year round and can result in some interesting incidents such as deer browsing on prized gardens, dozens of turkeys devouring the overflow from bird feeders (and subsequently damaging lawns), bats in homes, industrious beavers creating flooding issues, a bear sleeping on the front porch of a home in suburban town, and just about anything else one can imagine. We have to be able to respond thoughtfully (and quickly!) to people when attempting to reconcile nuisance wildlife complaints. Helping the public with these problems is only one of our myriad duties. We also give many presentations and talks to school groups, local conservation groups, attend sportsmen's shows, fairs, and speak on behalf of our state's wildlife resources at public forums or other events.

Regional biologists are often described as the 'jacks-of-all-trades' in the Department and, at any given time on any given day, we need to be able to answer questions regarding hunting laws and regulations, help game wardens with injured animals, and of course, be knowledgeable about general wildlife species' life histories. We are the foot soldiers and faces of the Department within our respective regions on a regular basis. We work closely with our colleagues in the Fisheries Division and Warden Service on a variety of issues. So closely with the latter, in fact, that it is a rare week when I am NOT asked if I am a game warden or if I have been on "North Woods Law".

One of our tasks is the responsible management of Wildlife Management Areas (WMAs) throughout the state. These lands consist of a wide variety of habitat types and recreational opportunities such as hunting, fishing, trapping, hiking, bird-watching, and even horseback riding. We work closely with our Lands Management Program to ensure that these areas are being managed to meet the objectives of species management plans and to maximize a diversity of habitat types.

Reviewing development proposals from landowners, consultants, state and federal agencies, and requests for information of rare, threatened, or endangered (RTE) species also is a year-round effort and takes up a fair amount of our time. These projects frequently necessitate field visits



to assess habitat and/or species presence and often result in collaboration on remediation or mitigation measures to ensure that development does not have adverse impacts on our wildlife resources. Again, more humans mean more development, and we are one of the busiest regions in the state in reviewing applications for new projects.

The sheer ecological diversity of Maine brings with it enormous biological diversity. We can be seen in the field doing any number of wildlife surveys depending on the season. From December to April, we are out every week monitoring over 25 long-term stations across the state where we record snow depths, snow profiles, and deer-sinking depths. This information provides us with an annual index of winter severity and is a critical criterion in assessing the status of our deer population. It also plays a key role in determining how many any-deer permits are allotted during

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deer hunting season. Also in the winter are otter surveys, Barrow's goldeneye surveys, deer wintering area assessments, duck box repair and use surveys, and some mammal tracking surveys depending on the region. Spring and summer bring my favorite - bird surveys and monitoring! We survey for mourning doves, American woodcock, breeding birds, grassland birds, migratory shorebird surveys, band ducks and geese, and in Region A only, help out our partners at Maine Audubon with piping plover management. The piping plover project is a complex one in that it would not be possible without the cooperation and coordination of countless private landowners and volunteers, municipalities, and other agencies and departments.

We also do vernal pool surveys and herpetile monitoring with our Research & Assessment Section (RAS) colleagues within the Department. The RAS staff is comprised of species specialists and habitat mappers that work statewide and our regional work frequently intersects theirs. We aid in species-specific surveys (including but not limited to eagle, moose, deer, and heron flights) whenever possible as well.

Fall in Maine is a wonderful time to be out in the field as most of us know. For Region A, it means doing maintenance on WMAs, coordinating a highly regarded pheasant release



program at designated sites with area rod and gun clubs, and preparing registration stations for the upcoming moose and deer seasons. We assist in staffing moose registration stations in other regions as well. Come deer season in November, we are fully engaged for the entire hunting season and the week following as we collect biological samples from hunters and meat cutters nearly every day. This is a Herculean feat that occurs statewide with biologists and contractors attempting to reach our goals of collecting data on 15% of all deer harvested within each Wildlife Management District. Our efforts have resulted in a very healthy deer

population, particularly in southern and central Maine. This is a fun time of year when we really get a chance to engage the public and hear stories from countless people around the state.

In Region A, we have the highest abundance of RTE species in the state. This is partially due to being at the northern or southern extent of many species' ranges and the presence of sandy beaches not found in many other parts of the state. The occurrence of so many RTE species brings the challenge of balancing the needs of both humans and wildlife. With the efforts of many people within the Department and our capable partners around the state, we are committed to protecting the natural resources of Maine for future generations of residents and visitors alike.

A NETWORK OF VHF TOWERS: TRACKING MIGRATION IN THE GULF OF MAINE

By Sara Williams, USFWS—Maine Coastal Islands National Wildlife Refuge

A network of radio telemetry towers with passive receiving units has been established in the Canadian Maritimes and coastal areas of New England to monitor movements of passerines, shorebirds, seabirds, and bats. Migration and foraging behavior is largely unknown for many Maine species. This migration research was prompted by recent technological advances in tracking technology and a growing interest in developing offshore wind energy in the Gulf of Maine. The data we've collected so far is not only fascinating, it reveals habitats and environmental factors that dictate behavior and will provide landscape level guidance for conservation actions.

An initial equipment investment of \$3,500 and \$150 per tag makes NanoTags an affordable and lightweight alternative to satellite transmitters, which typically cost a minimum of \$2,500 per tag. Each stationary tower passively receives and logs signals from hundreds of individuals and signal strength can be used to identify flight direction. Multiple towers are necessary to interpret landscape level movements. By programming receiving units to search for target frequencies, data can be collected from multiple research projects and taxa almost simultaneously. Over the last few years, biologists conducting migration research have developed an international and multi-agency partnership that

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is unprecedented in this region. There is a long-term commitment by Gulf of Maine biologists to continue this work and an eagerness to expand participation. I hope a review of the technology and current projects will inspire new Maine partners and research questions.

What are NanoTags?

Lotek NanoTags are the smallest and lightest coded radio transmitters currently available and are capable of tracking hundreds of individuals on a single frequency. A general rule of thumb is that a bird tracking device should weigh less than 3% of the animal's bodyweight, but the lighter the better. For all tracking devices, there are many other considerations such as attachment method and design of the unit ensure the device is not affecting their behavior. The smallest NanoTag currently weight 0.29 grams (5mmx3mm), meaning almost every bird and bat species in Maine can be tracked.

Dr. Philip Taylor and his lab at Acadia University in Nova Scotia have been studying passerine migration using NanoTags in Canada since 2009, and continue to study new questions on an ever expanding scale. The Taylor lab at Acadia developed low-cost VHF receiving units called "SensorGnomes" that scan for and log detected NanoTag signals. Antennae elevated on towers or lighthouses detect signals from 6-20 kilometers away and the entire station can be operated with solar power. SensorGnomes are built by the user and are capable of supporting multiple monitoring devices such as temperature or acoustics. When compared

with traditional radio transmitters, the scan cycle time for NanoTag receivers is greatly reduced due to the use of a single frequency. Also, the on/off (burst) cycle of NanoTags is programmable, so battery life can be extended up to several months. The batteries of traditional radio telemetry tags may only last 2-3 weeks.

The support from the Taylor lab at Acadia University to researchers using NanoTags has been tremendous. The design and programming of receiving units and data post-processing techniques are constantly being improved, and information is shared with users at no cost. In 2014, SensorGnomes will communicate wirelessly using cell phone signals, allowing data to be downloaded remotely and viewed in real-time.

In 2013, Dr. Taylor reported over 20 million detections were gathered from the 70 network towers (Figure 5). This included nine partners from 18 agencies and 800 individuals tagged from 12 vertebrate species. The US Fish and Wildlife Service established 12 of the 14 towers in Maine in 2013. In 2014, Maine Coastal Islands NWR will move 4 stations from Downeast Maine to the mid-coast area (Figure 6) and Dr. Taylor will add an additional 150 towers in Atlantic Canada and Ontario. Trevor Peterson from Stantec Consulting Services will also add 6 stations in Maine this year to fill in coverage gaps.

A valuable forum partners to discuss research needs and results is at the annual meeting of the *Northeast Regional Migration Monitoring Network* (NRMNN), held March

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Figure 1. Semipalmated sandpiper (*Calidris pusilla*), Addison (Rebecca Holberton)



Figure 2. Red-eyed vireo (*Vireo olivaceus*), Petit Manan Point, Steuben (Jen Smetzer)



Figure 3. Black guillemot (*Cephus grylle*), Petit Manan Island, Steuben (Linda Welch, USFWS)

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26-27, 2014 at the Schoodic Institute at Acadia National Park. The Network is a dynamic interactive group of resource agencies, academic institutions, non-government organizations, and private foundations from Atlantic Canada

to the mid-Atlantic region working to learn about the movement biology and ecology of birds and bats. The Network is coordinated by the University of Maine's Dr. Rebecca Holberton and PhD candidate Adrienne Leppold. NRMNN website:

<http://sbe.umaine.edu/avian/MigrationMonitoring.html>



Figure 4. Nash Island nanotag tower with 3 antenna and fencing to protect equipment from sheep (Linda Welch, USFWS)

Figure 5. Locations of VHF telemetry receiving stations in 2013.

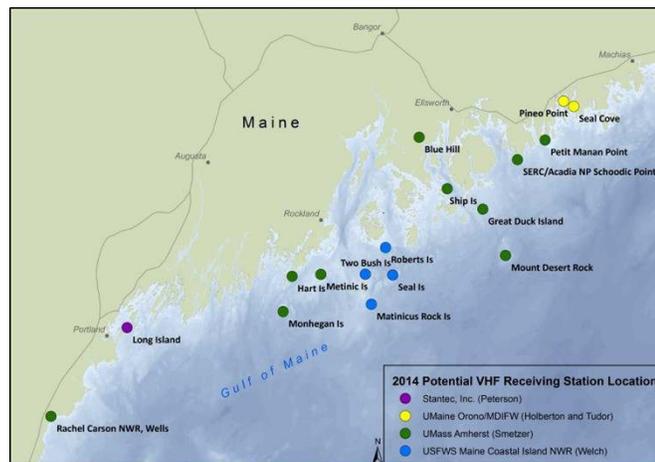
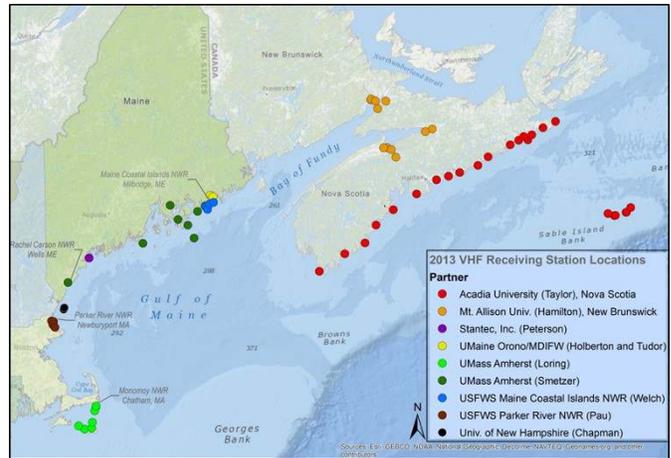


Figure 6. Potential Maine VHF telemetry receiving stations in 2014.

2014 NANOTAG PROJECTS IN MAINE

Seabird Foraging Behavior

Although colony management has significantly increased seabird populations in the Gulf of Maine, Maine Coastal Islands National Wildlife Refuge and National Audubon have recently documented breeding seasons where terns cannot find enough fish to feed their chicks, resulting in declines in reproductive success by 50-70%. Tony Diamond at the University of New Brunswick documented the complete

abandonment of terns from Machias Seal Island in 2007 after several years of limited food and poor success. Controlling predators and monitoring terns and alcids on Maine seabird islands will continue to be our most important task; however, it is important to look beyond the managed breeding colonies to ensure the stability of Gulf of Maine seabird populations. To predict whether or not seabirds will continue to thrive in the Gulf of Maine as the climate

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(Maine NanoTag Projects, Continued from page 10)

changes, we must locate and characterize productive foraging areas and work collaboratively with other disciplines to understand the dynamics of this complex marine ecosystem. Foraging behavior of terns at Petit Manan Island in Steuben was studied in 2012 and 2013, and we documented terns flying considerable distances to find food. Terns spent 9-14 hours per day foraging, with average round trip flight distance of 48km for common terns (*Sterna hirundo*) and 80km for Arctic terns (*S. paradisaea*). In 2014, towers will be moved to study seabirds at the Metinic, Matinicus Rock, and Seal Island complex in mid-coast Maine (Figure 6). The Refuge has also used geolocators to track Arctic tern migration and satellite transmitters to document razorbill and greater Shearwater foraging behavior. We will continue to test new devices to document fine scale foraging behavior.

Seabird management in the Gulf of Maine is a collaborative effort by the US Fish and Wildlife Service, National Audubon Project Puffin, Maine Department of Inland Fisheries and Wildlife, and many more partners. For more information about the Gulf of Maine Seabird Working Group, visit gomswg.org.

Bat Migration Monitoring

A pilot study was conducted by Trevor Peterson, Senior Wildlife Biologist, Stantec Consulting Services Inc., at Maine Coastal Islands NWR in 2013 to determine the effectiveness of using NanoTags and passive receiving equipment to document bat migration in the fall (see the Fall 2013 edition of *The Maine Wildlifer*). In 2014, Stantec will deploy additional towers in coastal areas of Maine to study bat movement and migration patterns and determine whether bats use offshore islands as stopover sites. "Learning more about behavior of bats offshore will be critical in predicting risks to bats from offshore wind projects", Trevor commented. He also identified the need for future projects to track a wide variety of bat species while they are actively migrating and to determine their rates of travel during migration.

Zara Dowling, an Offshore Wind IGERT Fellow at the University of Massachusetts Department of Environmental Conservation, is also interested in studying bat migration in order to mitigate effects of wind power on at-risk species. She is currently designing her project and will likely begin field work this year in Downeast Maine using NanoTags to characterize movements and document habitat use. Zara

stated that "migratory species account for approximately 75% of bat mortality at windfarms and mortality peaks during the fall migration season...A greater understanding of habitat use and movements can inform wind facility siting and operation."

Shorebird Migration Monitoring

Last year, Dr. Rebecca Holberton of University of Maine Orono and Lindsay Tudor, Shorebird Biologist for the Maine Department of Inland Fisheries and Wildlife initiated a multi-year study to document shorebird behavior during migration in coastal Maine and habitat quality of staging sites. Specifically, they are monitoring the length of stay at important foraging and roosting sites and documenting movements between sites. By combining individual data with existing flock survey data, the population status of shorebirds using staging areas can be evaluated. They are also studying the habitat quality of staging areas by analyzing the condition of captured birds. The 2013 sites studied in Downeast Maine are virtually pristine, with limited development and very little human disturbance. Research will be expanded in 2015 and 2016 to include sites in southern Maine where the frequency of human disturbance is higher and shorebird habitats are more vulnerable to degradation.

This project will provide the Maine Department of Inland Fisheries and Wildlife (MDIFW) with information essential to conserving critical shorebird staging habitats and developing effective shorebird management plans. Due to increasing coastal development projects including fast-tracked offshore wind and tidal energy development, MDIFW requires a greater knowledge of shorebird movements and habitat use to make sound recommendations during permit review of development projects.

Passerine Migration Monitoring

In 2014, Jennifer Smetzer, Offshore Wind IGERT Fellow at the University Of Massachusetts Department of Environmental Conservation, will continue to operate the 7 receiving stations she established in 2013 to assess the risk of offshore wind development to migrating songbirds. Her research will reveal new information about songbird migration, and also help inform responsible siting and operation of offshore wind development in this region. Towers are located along an inland to offshore transect in order to assess whether birds are taking a more coastal or offshore route. The project's focal species are red-eyed

(Continued on page 12)

FEATURE ARTICLES

(Maine NanoTag Projects, Continued from page 11)

vireos, which experience high mortality by terrestrial wind turbines, and blackpoll warblers (*Setophega striata*), a species known for making long-distance flights during migration. In 2013, 60 red-eyed vireos and 23 blackpoll warblers were tagged at Petit Manan Point in Steuben ME. Birds will be captured at this site again in 2014. She will use spatial analysis techniques such as state space modeling and graph theory to relate songbird movement to weather patterns, biophysical features, and demographic factors such as gender, age, natal origin (identified by feather isotopes). Jennifer is also exploring methods for identifying tern foraging areas using 2013 NanoTag data collected by Maine Coastal Islands NWR 2013 NanoTag data. When asked how the existing network of towers should be expanded in the future, Jennifer gave the following eloquent response:

Expanded coverage in offshore areas is critical for assessing over-water movements of birds, including installations on weather buoys, and/or shipping vessels in regions lacking islands. Ultimately, a fuller understanding of movement patterns and resource use in general requires analysis at multiple scales, and over a fuller range of a species' annual cycle. As such, it is important to expand the network of receivers down the Atlantic seaboard (and beyond), in order to track animals at increasingly expanded spatial and temporal scales. I am very impressed with the model under which this growing network of receivers and researchers is already being organized, through the NRMMN and the efforts of Acadia University. It is highly functional, is enabling researchers to achieve a level of inquiry and rigor that no single research entity could feasibly accomplish without this collaboration, coordination, or infrastructure, and deserves continued support.

(Jennifer Smetzer, personal communication)

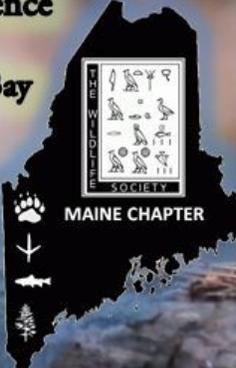
It's time to come out for spring!

METWS Spring Meeting Working Lunch - 12:00 -1:30 pm
Meeting with Northeast Section - 5-6 pm
Monday April 14th, 2014



**70TH ANNUAL
 NORTHEAST
 FISH & WILDLIFE
 CONFERENCE**
 April 13 - 15, 2014
 Portland, Maine

NEAFWA Conference
Holiday Inn by the Bay
Portland, Maine



MAINE CHAPTER



MAINE TWS CHAPTER NEWS

PRESIDENT'S MESSAGE BY SARAH BOYDEN

Stepping in as a pinch-hitter president, I faced a steep learning curve but with the support of current and former board members we hosted an excellent fall meeting and accomplished several goals laid out in the strategic plan. None of this would have been possible without President-elect, Lauren Gilpatrick. We met 7 years ago while working as wildlife technicians in New York, chasing bats, and drinking good beer. Dozens of field projects later, we were thrilled to reunite through the METWS board and, of course, sample more good beer at our board meetings.



The wildlife field seems to attract the best people and METWS is no exception with a dedicated collection of passionate biologists. Beyond Lauren's work with Biodiversity Research Institute, her outreach with Burly Bird helps generate much needed funds for conservation of Maine wildlife species. This year will be an exciting and challenging year for wildlife conservation. With Lauren's leadership and can-do attitude, the chapter will continue to advocate for the conservation principles that are our common thread.

The board is happy to welcome two candidates for open positions, Mao Lin for president-elect and Unity student,

Maddie Crane for the new second student-rep position. If you attended the fall meeting, "Careers in Wildlife," you probably met Mao. His outgoing personality placed in him in the center of a sea of students, answering questions, and recruiting interns. Mao is deeply committed to conservation of Maine's wildlife through his work with the Gulf of

Maine Coastal Program. From cottontail recovery to seabird preservation, Mao shares our passion for wildlife conservation. Maddie Crane is a sophomore in the Wildlife and Fisheries Management program at Unity College and a junior officer in Unity's student wildlife chapter. Maddie grew up on a small family farm. With over 8,000 working farms in Maine, adding Maddie's agricultural experience to the board will help highlight the wildlife and agricultural challenges we face here in Maine. Maddie will also continue to strengthen the relationship and involvement of Unity's growing student chapter.

As always, the board and METWS committees welcome your interest and participation. Join us in April at NEAFWA for our annual business meeting to learn more about how you can become involved.

MEMBERSHIP BY SARAH SPENCER, CHAIR

I can hardly believe another winter has come and is nearly gone but judging by the now nonexistent woodpile, winter was indeed here and I am looking forward to another spring. Just prior the January thaw, amid a frigid stretch of weather, I was approached by the METWS officers to chair the Membership Committee and happily agreed to serve. I am a Forester/Associate Wildlife Biologist, AWB® with a variety of interests and pursuits. I grew up off "the grid" on my family's woodlot in Old Town and received a B.S. in Wildlife Ecology from UMaine and a M.S. in Wildlife and Fisheries Conservation from UMass. Since then, I have worked at sampling and identifying invertebrates, mapping and eradicating invasive plants, monitoring breeding birds, and managing forests and wildlife on private lands. The one constant throughout those years has been my membership in TWS. At UMaine, I served as an officer in the Student Chapter and Student Rep to the Maine Chapter, and at UMass I encouraged student participation as



a way to gain experience through connections with graduate students and professionals.

TWS joins us together in one place to enhance our profession for the betterment of the rest of society. Membership in the Maine Chapter is our opportunity to remain connected to other professionals in our field and who are exposed to similar challenges as ourselves while practicing the profession. Whether you are an early career, seasoned, or retired professional, each of you renews your membership each year for a slightly different reason. Your reason may be to see colleagues at events several times a year, learn about research and projects via our newsletter, network with future employers/employees, keep in touch with classmates, or all of these things. The importance of membership is subtle but significant, and for the price of a decent lunch, you can have all of these things and more! I encourage you to continue renewing your membership in the Maine Chapter each year and also to reach out to your colleagues and ask them to do the same.

MAINE TWS CHAPTER NEWS

PRESIDENT ELECT'S MESSAGE

By Lauren Gilpatrick

Fall quickly became winter in 2013, but I can't recall a year where that wasn't the case. Our fall meeting and panel discussion on Careers in Wildlife Biology in November was a success with over 70 people attending. A healthy turnout of Chapter members and many students from the University of Maine and Unity College gained insight and perspective from a great speech given by longtime member Jerry Longcore. More enlightenment came from a question and answer session with a group of wildlife biologists from all walks of Maine wildlife careers. Thank you to all who participated, all who attended, and to all the new members who signed up – welcome!

I hope you have enjoyed some of the wildlife photographs I've been posting on our Facebook page and including in the newsletters. Our new logo provides a strong visual presence and our page continues to reach a wide audience on a regular basis - whether it's a post about environmental education, a local news story, an employment opportunity, or a wildlife photograph with the species identified – we are connecting with more people and getting our name out to a broader audience. The Maine Chapter has an active online presence through this social media platform and I encourage members to participate. It's a quick and easy way to stay connected to the Maine Chapter and plugged into national TWS news feed and updates. It's understandable if you're not interested in the whole idea of Facebook - but we would love to see and

hear more from our members by any means available! As always, everyone is encouraged to send stories and photographs for submission to the Maine Wildlifer.

We had quite a winter this year. Our climate can be humbling in so many ways with the long months of ice, snow, and bitter cold. Like most critters, the approaching spring sparks a season of renewal for us. It's a time of being busier than a beaver in a willow blow-down. The year 2014 ahead will be no exception, with our spring meeting at the 70th Annual Northeast Fish and Wildlife Conference in Portland, an updated position statement and information sheet for the bear referendum, the formalization of our Conservation Affairs Committee, the addition of a second student representative, along with further collaboration with the Northeast Section, and a young forest land conservation project...the list is always growing!

I've had the opportunity to meet many great wildlifers since joining the Biodiversity Research Institute this year and look forward to connecting with even more in the coming months. Don't forget the University of Maine Student Chapter Game Banquet on April 6th at 4pm at the PCCA in Brewer! It will be a great chance to connect with wildlife students and fill up on tasty game meals. I hope to see more of your faces and look forward to a fun and productive year in the Maine Chapter.



Happy spring! In 2013 these amazing birds were both daily visitors to my yard in Freeport.

MAINE TWS CHAPTER NEWS

ELECTION CANDIDATES—PRESIDENT ELECT

Mao Lin

My background is atypical for an officer, but hear me out. I am not from Maine, don't hunt, fished only once, and I live in Portland. I grew up in a New York City suitcase community where "wild" meant sidewalk cracks and fragmented forests. My parents are Chinese immigrants and they raised me with two simple values: work hard and make money. Also, stop playing with bugs and animals – they are filthy. But at Binghamton University, I latched onto a professor who inspired me to learn more about "filthy bugs and animals." After college I worked short-term research and education jobs, but struggled to find long-term employment.

Things changed when I accepted a planning and policy internship with U.S. Fish and Wildlife Service. Honestly, I applied to it mainly because it paid well (thanks Dad). I didn't want an office job, but I worked hard (thanks Mom) and received an amazing career in return. Highlights include establishing a new National Wildlife Refuge, working on seabird nesting islands, conducting aerial surveys, and recruiting and mentoring fantastic students. Along the way, I also went to graduate school at Antioch University New England. Currently, I work for USFWS Gulf of Maine Coastal Program in Falmouth as an outreach biologist.

So my city-kid-turned-wildlifer background might be a little unusual, but I can offer a natural knack for organization, proven abilities at developing partnerships, a candid approach at recruitment, carefully practiced communication skills, and experience planning and managing projects. The waning interest in professional societies concerns me, but that's an outreach issue that I can help tackle. Maine is gifted with incredible wildlife resources, and we are fortunate to have talented people protecting and managing them. As an officer, my goal is simply to support their work.



DON'T FORGET TO VOTE! <https://www.surveymonkey.com/s/RVRD3PR> (closes midnight, April 4)

ELECTION CANDIDATES—UNITY STUDENT REPRESENTATIVE

Madison (Maddie) Crane

Hello,

My name is Madison (Maddie) Crane. I am a sophomore studying Wildlife Biology and Wildlife and Fisheries Management at Unity College. I am originally from the small town of Woodbury, Connecticut. My family has a small hobby farm. We raise poultry, goats, and alpacas. In high school I studied Natural Resource Management as well as Veterinary Science. I have served as my FFA Chapter's Reporter. In the fall of 2013, I was elected as the Junior Officer for Unity College's Wildlife Club. Since I have kept up with club activities, most recently volunteering to put up Wood Duck boxes on Lower Mason Pond in Belfast. I will be working this summer at Cub Creek Science Camp in Missouri, working with their large variety of captive wildlife as well as domestic animals. I look forward to creating a stronger connection between Unity and the Maine Chapter of the Wildlife Society.



MAINE TWS CHAPTER NEWS

IMAGES FROM THE METWS FALL 2013 MEETING CAREERS IN WILDLIFE BIOLOGY



Jerry Longcore speaks about lessons learned during an amazing career in wildlife



Fall Meeting panelists included from left to right: Mao Lin (USFWS), Deb Perkins (First Light Consulting and METWS Board Member), Dr. Jennifer Long (Husson University), John DePue (MDIFW), Sgt. Alan Gillis (ME Warden Service), Ray Ary (Plum Creek), and Adam Vashon (USDA and also a Past President of METWS).

ANNOUNCEMENTS

AUDIT COMMITTEE SEEKS ADDITIONAL MEMBER

By Wende Mahaney

The Board and the Audit Committee would like to thank Rich Dressler for the time that he served as Chair of the METWS Audit Committee. Now it's time for Rich to have a little more opportunity to enjoy his well-deserved retirement and for someone else in the Maine Chapter to volunteer their time! The Audit Committee conducts an annual audit of our Chapter's finances, which typically involves only one short committee meeting and a very few

additional hours of preparation and review time (for the committee as a whole). In the grand scheme of things, this is a relatively painless way to serve the Maine Chapter! Currently, we are a committee of two and are hoping to have a third person join the fun.

Please contact me if you are interested (wende_mahaney@fws.gov or 207-866-3344). We will be conducting the next audit in the summer of 2014.

INTERESTED IN THIS ARTICLE?

Offshore Observations of Eastern Red Bats (*Lasiurus borealis*) in the Mid-Atlantic United States Using Multiple Survey Methods

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0083803>

EAGLE HILL INSTITUTE COURSES

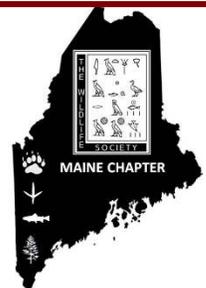
This summer the Eagle Hill Institute in Steuben, Maine is offering 31 week-long courses on Natural History.

Overview of the summer program: <http://www.eaglehill.us/programs/nhs/natural-history-seminars.shtml>

Course Listing: <http://www.eaglehill.us/programs/nhs/nhs-calendar.shtml>

NEW METWS LOGO & STICKERS

The new TWS-approved logo depicts our state outline and four symbols. The symbols mirror what the hieroglyphics in the TWS logo read – beasts (mammals), birds, fish, and plants – but with a Maine twist – a bear track, turkey track, brook trout, and white pine. METWS MEMBER logo stickers will be available at the Spring Meeting!



METWS ON FACEBOOK

Don't forget to 'LIKE' METWS on Facebook. Post your photos and share your Maine wildlife stories! Check out our photo albums of Maine critters, read news highlights, and keep in touch.

There's something wild lurking on
your tax return!



Give a gift to
wildlife this year -
put a check with
the chickadee!



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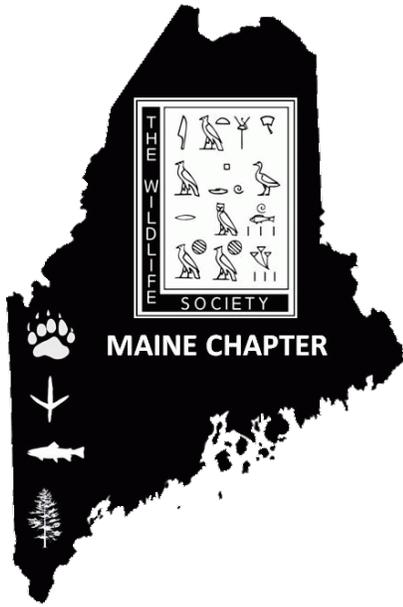
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joomla.wildlife.org/maine

The Annual Game Banquet is the Chapter's way of thanking PCCA for funding scholarships to students in the WLE Department at Orono. Proceeds from the banquet support the Student Chapter.

The Chapter is requesting meat donations to support the banquet.

Meal tickets are \$8 (half-off if you donate meat!).

We have a photo contest in the works.

Contact Caitlin Gunn
Caitlin_gunn@umit.maine.edu
with questions

COME GET YOUR GRUB ON!

University of Maine Student Chapter of The Wildlife Society

Annual Game Banquet

**PENOBSCOT
COUNTY
CONSERVATION
ASSOCIATION -
BREWER**

**WELCOME
HUNTERS!**

SUNDAY APRIL 6TH, 2014

4:00PM