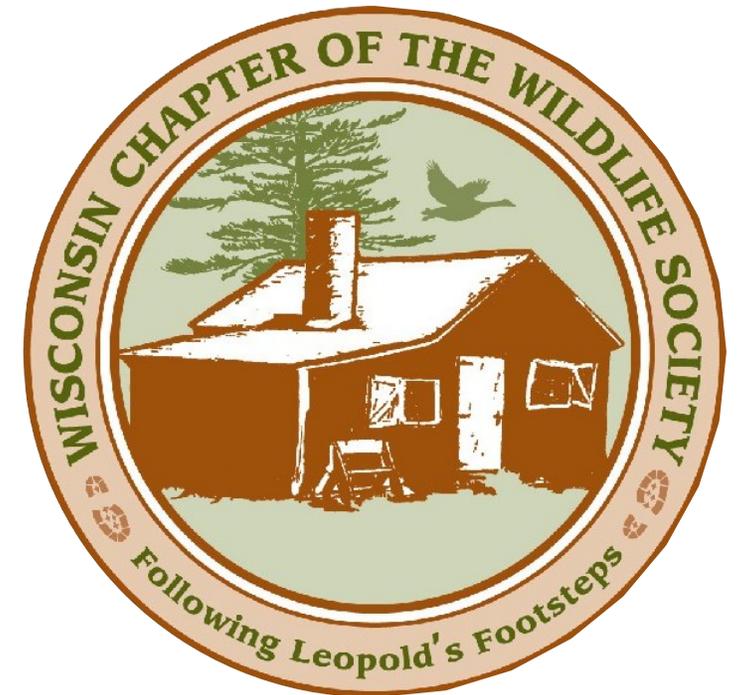


# WISCONSIN CONSERVATION:

Achieving Success in the 21<sup>st</sup>  
Century through Collaboration



2013 Winter Meeting

March 12<sup>th</sup> - 14<sup>th</sup>, 2013

Chula Vista Resort

Wisconsin Dells, Wisconsin

## President's Welcome

On behalf of the Wisconsin Chapter of The Wildlife Society, I'd like to welcome you to the 2013 Winter Meeting at the Chula Vista Resort. We have put together an excellent program again this year. The theme of this year's plenary session is "Wisconsin Conservation: Achieving Success in the 21st Century Through Collaboration". We have 3 great plenary speakers who will remind us of the great conservation achievements we have made in this state and show us how to continue that trend in the 21st century. New this year is a Wednesday afternoon symposium dedicated to effectively engaging the agricultural community to further conservation. This is an exciting session with a very diverse cross-section of academics, wildlife managers and agricultural producers. We continue to try to make our annual meeting student friendly by offering reduced registration rates and special student paper sessions. Also, don't miss the awards ceremony and banquet on Wednesday night to honor your colleagues and to congratulate the future stars of our profession.

I would like to thank the WCTWS Executive Board for bringing the winter meeting together. Special thanks to incoming President Tami Ryan for creating a terrific agenda and to Travis Anderson and Krista McGinley for handling registration and the program layout. Enjoy your 2013 winter meeting!

*Scott Hull*  
*WCTWS President*

## Contact Hours

Attendance at the 2013 WCTWS Winter Meeting can count toward TWS's Professional Development Certificate and/or the Certified Wildlife Biologist Renewal Program.

The following contact hours have been calculated and approved by TWS.

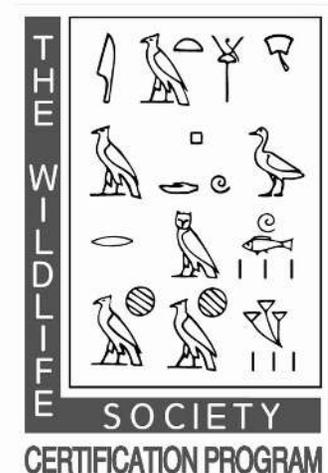
### Wednesday:

Plenary session:	2.5 hours
General session or symposium:	3 hours
Business meeting:	1.5 hours

### Thursday:

Session A or Session B:	3 hours
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**Maximum total hours for both days: 10 hours**



## *Notes*

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## *Schedule At-a-Glance*

### **Tuesday, March 12th, 2013**

6:30 - 7:30 p.m.                      Registration

7:00 - 10:00 p.m.                      Evening Social

### **Wednesday, March 13th, 2013**

8:00 - 9:00 a.m.                      Registration

9:00 a.m. - 12:00 p.m.                      Plenary Session

12:00 - 1:00 p.m.                      Lunch

1:00 - 4:20 p.m.                      General Session & Symposia

4:30 - 6:00 p.m.                      Chapter Business Meeting

6:30 - 10:00 p.m.                      Awards Banquet  
Silent auction / garage sale  
Results of art contest

### **Thursday, March 14th, 2013**

8:00 a.m. - 11:20 p.m.                      Special Student Sessions A & B

11:30 a.m.                      Student Awards

12:00 p.m.                      Conclusion / Adjourn  
*(lunch on your own)*

## *Notes*

*Notes*

*Wednesday, March 12th, 2013*

**Registration**  
8:00 - 9:00 a.m.

*Plenary Session:*  
**“Wisconsin Conservation: Achieving Success in the 21<sup>st</sup> Century through Collaboration”**  
9:00 a.m. - 12:00 p.m.

*Moderator: Scott Hull*

<b>TITLE</b>	<b>SPEAKER</b>
Welcome & Opening Remarks <i>9:00 a.m. - 9:15 a.m.</i>	Scott Hull
Conservation for Whole Communities <i>9:15 a.m. - 10:00 a.m.</i>	Mike Strigel
Understanding Reproductive Success in Whooping Cranes Requires Collaboration <i>10:00 a.m. - 10:45 a.m.</i>	Jeb Barzen
BREAK <i>10:45 a.m. - 11:15 a.m.</i>	
Wisconsin Conservation Success Stories <i>11:15 a.m. - 12:00 p.m.</i>	George Meyer

## Plenary Session - Speakers

### **Mike Strigel, Executive Director** *Gathering Waters Conservancy*

Mike joined Gathering Waters as Executive Director in 2007 after eight years at the Wisconsin Academy of Sciences, Arts and Letters, where he was Executive Director since 2003. A Wisconsin native, Mike is a graduate of Cornell University with a bachelor's degree in Communication and the University of Wisconsin-Madison with a master's degree in Land Resources. His previous field experience with The Prairie Enthusiasts, the International Crane Foundation, and other organizations has taken him through the prairies, savannas, forests, and wetlands of Wisconsin, as well as stints in the forests of southern Oregon and northern California.

### **Jeb Barzem, Director** *International Crane Foundation—Field Ecology Department*

Jeb Barzem has directed the Field Ecology Department at the International Crane Foundation (ICF) for 25 years. His responsibilities include research and restoration work done by ICF in Wisconsin, Southeast Asia, and China as well as long-term research in central Wisconsin on both Sandhill and Whooping Cranes. For the Whooping Crane Eastern Partnership, Jeb chairs the Research and Science team, which is currently trying to solve unsustainable reproduction rates in the Eastern Migratory Population. Jeb received Wildlife Biology degrees from the University of North Dakota (M.S., 1989) and from the University of Minnesota (B.S., 1982).

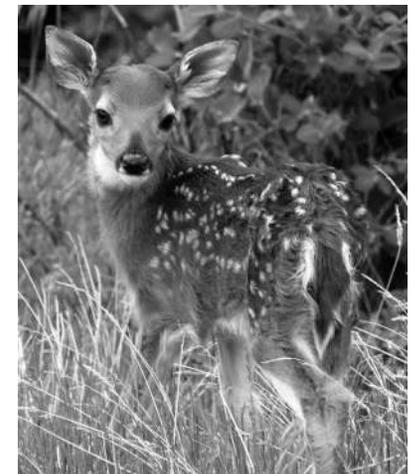
**Warbington, Camille**<sup>1</sup>, Timothy Van Deelen<sup>1</sup>, Christopher Jacques<sup>2</sup>, Karl Martin<sup>2</sup>, Andrew Norton<sup>1</sup>, Jennifer Stenglein<sup>1</sup>, and Michael Watt<sup>2</sup>

<sup>1</sup>University of Wisconsin-Madison

<sup>2</sup>Wisconsin Department of Natural Resources

### **Cause-specific Mortality of Neonatal White-tailed Deer in Different Ecological Contexts**

The population dynamics of a species is inexorably tied to recruitment. In a population of white-tailed deer (*Odocoileus virginianus*), factors limiting recruitment vary spatially and can include both natural (starvation, predation) and human-caused (vehicle collision, hunting) events. To study this, we identified two distinct ecological areas in Wisconsin, the Northern Forest and the Eastern Farmland regions. We captured neonatal white-tailed deer in both areas, fitted them with expandable radio-collars, and tracked their movements and survival (2011-2012). In addition, we obtained daily temperature and precipitation data from weather stations within each study area to determine the relationship between weather and survival during the summer. In the Northern Forest Study Area, we captured 30 fawns in each year, and through the end of August observed 60% mortality in 2011 and 47% mortality in 2012. In the Eastern Farmland Study Area, we captured 48 fawns in 2011 and 46 fawns in 2012, and we observed 29% and 35% mortality through the end of August of the capture year. For both study areas, predation was the primary mortality cause, but fawns in the Eastern Farmland faced mortality from a wider range of causes than fawns born in the Northern Forest. Using Kaplan-Meier log rank test and Bayesian regression, we determined that study area, temperature, and precipitation all affected fawn survival. Since the risks facing fawns can vary depending on location and ecological context, understanding the specific local factors that affect fawn survival is crucial for implementing management strategies.



**Sultaire, Sean**, Benjamin Zuckerberg, and Jonathan Pauli

University of Wisconsin-Madison - Department of Forest & Wildlife Ecology

### **Changes in Snowshoe Hare Occupancy along a Geographic Range Boundary**

Climate change is expected to strongly alter species distributions, particularly along range margins. Such range shifts are, however, difficult to document due to lack of historic data and confounding variables such as land use change. Snowshoe hares, an economically and ecologically important species, exist at their southern geographic limit along the vegetative tension zone in central Wisconsin. In the late 1970s Buehler and Keith (1982) implemented a statewide winter survey to document this range boundary and compare it to observations collected by Aldo Leopold in the 1940s. As snowshoe hares are considered a northern species, and are dependent on deep and persistent snow cover, it is likely that they will be strongly affected by warming winter conditions, which is supported by anecdotal evidence in the state. We are currently involved in a two-year project to revisit over 150 historic hare locations throughout central Wisconsin and use snow tracking surveys to determine the southern distributional limit of snowshoe hares in Wisconsin, and further quantify how this range boundary has changed over the past 30 years. In addition, we will use repeated surveys and occupancy modeling to quantify the probability of being able to detect snowshoe hares using snow track surveys. Our approach will allow us to assess the influence of changing climatic and land cover conditions on the distribution of snowshoe hares in Wisconsin. Results from our work will be critical to assess the likelihood of long-term persistence of snowshoe hares in the state, and provide further guidance regarding their management and monitoring.



## *Plenary Session - Speakers*

**George Meyer, Executive Director**  
**Wisconsin Wildlife Federation**

George Meyer is the Executive Director of the Wisconsin Wildlife Federation. He has worked in the field of conservation for over 40 years, including 32 years with the Wisconsin DNR, 20 of those in senior management. He taught conservation and environmental policy at Lawrence University for two years and has served as the WWF Executive Director since 2003. As Executive Director, George has overall day-to-day responsibilities to implement the policies of the Board of Directors.

## Wednesday, March 13th, 2013 General Session

Moderator: Jason Suckow

Time	Title	Speaker
1:00	Co-management or Collaborative Management: Managing Treaty Resources in the Ceded Territories	Jon Gilbert
1:20	Collaborative Wildland Fire Training at Fox Valley Technical College	Rick Buser
1:40	Why Fewer Middle-aged Gun-deer Hunters Bought Licenses in 2010 and 2011	Robert Holsman
2:00	Bird City Wisconsin - Building Partnerships to Benefit Birds in 60 Communities	Carl Schwartz
2:20	<i>BREAK</i>	
2:40	Spatial Predictive Habitat Mapping for the Endangered Invertebrate Karner Blue Butterfly	Anna H. Hess
3:00	Tracking Wolf Populations across Heterogeneous Landscapes with Genetic Models	Cecilia Hennessy
3:20	Evaluating Wisconsin's Grassland Bird Conservation Area Model	Michael R. Guttery
3:40	Avian Abundance and Diversity on Bioenergy Crop Production Lands	Katie J. Stumpf
4:00	Nest-site Selection and Habitat Use of Spruce Grouse in Wisconsin	Nicholas M. Anich
4:20	<i>CONCLUSION</i>	

**Stenglein, Jennifer L.** and Timothy R. Van Deelen

University of Wisconsin - Madison

### Modeling the Population-level Effect of Wisconsin's Proposed Wolf Harvest

The delisting of the Great Lakes Distinct Population segment of Gray wolves (*Canis lupus*) on January 28th, 2012 ushered in a new period in Wisconsin wolf management that includes a wolf harvest. The effect of harvest on the wolf population is difficult to predict because of wolves' elaborate social structure and the uncertainty about the level to which additional human-caused mortality is compensated by reductions in other causes of mortality. We developed an individual-based model with a background mortality risk landscape based on road density and agriculture for Wisconsin, the Upper Peninsula of Michigan, and a portion of Minnesota. In simulations, once the Wisconsin population reached 844 wolves in a winter count, we initiated a harvest and ran the simulations for 70 years. We based the harvest on the proposed quota of 201 wolves (before tribal quota) and 116 wolves (after tribal quota) and kept track of population size and mortality by cause (harvest, depredation related, and other background mortality) during each year of the simulation. We found that harvesting at rates proportional to a 201 quota would reduce the population an average of 8.5% in the first year and 40.9% after 25 years, and simulating harvest at rates proportional to a 116 quota would reduce the population an average of 0.8% and 12.3% after 1 and 25 years, respectively. Our model is a tool to help understand the effects of a spatial harvest and to facilitate conversation between groups with different goals because wolf harvest is a complex issue.



Sharp, Anthony and Dr. Aaron Thompson

University of Wisconsin - Stevens Point

**The Barriers and Opportunities for Collaboration in the Natural Resource Management of Wisconsin**

A mixed-methodology research project was initiated to explore the barriers and opportunities for collaboration in the Central Wisconsin Grassland Conservation Area (CWGCA). Semi-structured interviews were conducted at the 2012 Greater Prairie Chicken Festival. Utilizing the snow-ball method of attaining knowledgeable persons working in the CWGCA to interview (n=13), Federal, State, and County agents (both employed and retired), along with grazing experts and farmers working directly in the CWGCA were asked their experiences and attitudes toward the collaboration in the CWGCA. Interviews were recorded, transcribed, and analyzed using Corbin & Strauss’s (1998) grounded theory methodology. Results indicate the primary barriers and opportunities surrounding collaboration in the CWGCA are four-fold: mutual trust, differences in values between agriculture and wildlife, open communication between landowners and government agents, and governmental agency constraints. In order to verify qualitative results, quantitative research was initiated through an online survey tailored through Dillamn (2007) and sent to 114 governmental agents working in the CWGCA. 47.3% responded to the survey (n=54) providing noteworthy results displaying that agents believe that management decisions are best informed through science, the best way they can help a landowner is through education, and that one-of-five agents regularly experience negative interactions with landowners. Furthermore, nearly half of the respondents agree that government agents ‘don’t speak farmer very well’, landowners are

hesitant to work with government agencies, and government agents feel that they are not perceived as a member of the community while representing their community.



**Wednesday, March 13th, 2013**  
**Symposia**  
**“Effectively Engaging the Agricultural Community:  
 Finding the Right Message & Messenger”**

*Moderators: Alan Crossley & Andy Paulios*

Time	Title	Speaker
1:00	Symposium Introduction	Alan Crossley / Andy Paulios
1:10	Understand the Midwest Farmer: Negotiating Product and Conservation	Tricia Knoot
1:40	A Year in the Life: Midwest Cash Grain Farmer	Jeff Gaska
2:00	A Year in the Life of a Grazer	Dick Cates
2:20	BREAK	
2:40	Finding the Right Message and Messenger: Effective Communication with Midwest Farmers / Landowners	Rebecca Christoffel
3:40	Perspectives from the Son of a Fuller Brush Salesman	Brian Buenzow
3:55	Panel Discussion	Tricia Knoot / Andy Paulios
4:20	CONCLUSION	

## Thursday, March 14th, 2013 Special Student Session A

Moderator: Rachel Samerdyke

Time	Title	Speaker
8:00	The Influence of Small Mammal Species on the Abundance of Woodland Jumping Mice	Allison M. DeRose
8:20	Diet Analysis of the American Marten	Jenna Carlson
8:40	Assessing Wisconsin's American Marten Reintroductions through Noninvasive and Genetic Techniques	Philip J. Manlick
9:00	Home Range Size and Habitat Selection of American Badgers in Southwest Wisconsin	James Doyle
9:20	To Mark or Not To Mark: Comparing Techniques to Estimate Bobcat Abundance	John D. J. Clare
9:40	Winter Warming, Predators, and Population Regulation: Porcupines ( <i>Erethizon dorsatum</i> ) in Northern Wisconsin as a Case Study	John Pokallus
10:00	<i>BREAK</i>	
10:20	Changes in Snowshoe Hare Occupancy along a Geographic Range Boundary	Sean Sultaire
10:40	Behavioral Responses of Common Loons to Decoy Presentations during the Reproductive Season	Gabriella Jukkala
11:00	Survival and Detection Probabilities of Woodpeckers and Nuthatches Wintering in Central Wisconsin	Jenna Cava
11:20	<i>CONCLUSION</i>	

Senske, Russell and Katie J. Stumpf

Northland College

### Intensity of Deer Browse on Biomass Plant Trials in Northern Wisconsin

A rising interest in developing renewable energy sources has resulted in the conversion of land used for agriculture into energy and/or combustion fuel land. Accordingly, this shift has altered food source and habitat availability for many species. White-tailed Deer (*Odocoileus virginianus*) are common browsers on young trees in northern Wisconsin, so much so that they may significantly reduce the total biomass available for commercial use. We measured the intensity of browse on several plot trials at the Agriculture and Energy Resource Center in Ashland, WI in the fall and winter of 2012-2013. We compared browse intensity across tree species (nine hybrid Willows, one hybrid Polar, Red and White pine, and Larch), planting regimes (different spacing patterns and distances), and soil amendment (Nitrogen). Our data show that *O. virginianus* preferred the hybrid poplar to all other species. Neither planting regime nor soil amendment influence browse intensity. However, given that these variables did influence the amount of biomass produced, we feel certain that our results are limited by small sample size. Future data collection on the browse intensity should be continued to determine the best methods of increasing biomass production without reducing habitat quality and food availability for deer.

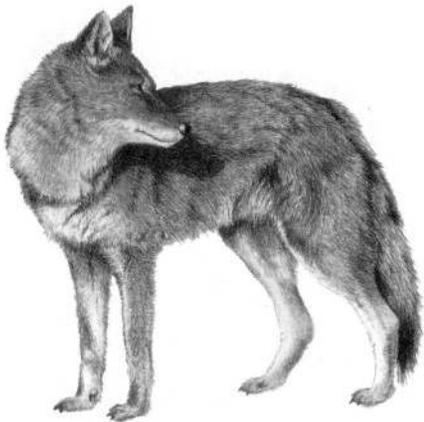


Rossing, Ethan B. and Paula S. Anich

Northland College

### Coyote Scat Analysis: Northern Wisconsin and Central Washington

The coyote (*Canis latrans*) occurs in a broad range of ecosystems throughout North and Central America. The species' habitat ranges from dense forest to open country. Because of the variety of habitats and regions coyotes are found in, their diet and body size may vary considerably. Coyotes predominantly feed on small mammals such as rabbits, mice, voles, and other rodents; however, they are also opportunistic and will scavenge when other food is available. During the months of July-September 2012, scats were collected from northern Wisconsin and central Washington, in order to compare diet and body size of coyotes in both locations. Approximately 30 scats were collected from each state. Within both of the locations, three different sampling sites were established and roughly 10 scat were collected at each sampling site. After scats were collected, an analysis of the scats was performed to determine body size and diet characteristics of the coyotes from each state.



## Thursday, March 14th, 2013 Special Student Session B

Moderator: Sharon Fandel

Time	Title	Speaker
8:00	The Benefits of an Education Can Reach Further than is Expected with Fox Valley Technical College's Wildland Fire Program	Kayla Brunette
8:20	The Barriers and Opportunities for Collaboration in the Natural Resource Management of Wisconsin	Anthony Sharp
8:40	Coyote Scat Analysis: Northern Wisconsin and Central Washington	Ethan B. Rossing
9:00	Contributions of Human-derived Foods to Black Bear Diets in Northern Wisconsin	Rebecca Kirby
9:20	Cause-specific Mortality of Neonatal White-tailed	Camille
9:40	Intensity of Deer Browse on Biomass Plant Trials in Northern Wisconsin <b>WITHDRAWN</b>	Russell Senske
10:00	<i>BREAK</i>	
10:20	Preliminary Survival Rates for Adult White-tailed Deer in Wisconsin	Andrew Norton
10:40	Observer Differences: Nothing to Crow About	Joe Dittrich
11:00	Modeling the Population-level Effect of Wisconsin's Proposed Wolf Harvest	Jennifer L. Stenglein
11:20	<i>CONCLUSION</i>	

## Abstracts - General Session (alphabetical by presenter's last name)

Anich, Nicholas M., Mike Worland, and Karl J. Martin

Wisconsin Department of Natural Resources - Bureau of Science Services

### Nest-site Selection and Habitat Use of Spruce Grouse in Wisconsin

Spruce Grouse (*Falcipennis Canadensis*) are listed as threatened in Wisconsin, and the boreal habitats in which they occur are likely to be threatened by changing climatic conditions. However, the limited information available from Wisconsin leaves it unclear how best to protect their habitat. We radio-tracked Spruce Grouse in northern Wisconsin from 2007-2012, obtained habitat information on 55 birds, and located 25 nests. 18/25 nests were beneath a black spruce. Only three nests were in upland, and only one in a jack pine stand, in contrast to studies from Michigan and Ontario. Overall concealment was a good predictor of nest sites, but not of nest survival. 17/25 nests were successful, with a daily survival rate of 0.985, overall productivity of 1.2 young/female, and 1.9 young/successful nest. Nest survival was associated with moderately dense and uniform 0-0.5m lateral vegetation cover. Black spruce (*Picea mariana*) and tamarack (*Larix laricina*) were the most common habitat components, but we found more use of jack pine (*Pinus banksiana*) and red pine (*P. resinosa*) than others have reported. Male display points contained fewer small broadleaf saplings, greater percent conifer, more jack pine, and denser canopy compared to random points. Winter flock points were typified by dense canopy cover and more jack pine. Brood points were similar to random points. Protecting black spruce swamps

and retaining or establishing closed-canopy coniferous uplands, especially jack pine stands 15-30 years old, adjacent to black spruce/tamarack swamps will provide important habitat for Spruce Grouse in Wisconsin.



Pokallus, John and Jonathan Pauli

University of Wisconsin-Madison - Department of Forest & Wildlife Ecology

### Winter Warming, Predators, and Population Regulation: Porcupines (*Erethizon dorsatum*) in Northern Wisconsin as a Case Study

Changes in both climate and vertebrate community assemblages within northern Wisconsin have created a unique opportunity to examine the impacts of two changing forces on porcupine (*Erethizon dorsatum*) population dynamics: warming winter conditions and the reestablishment of a previously extirpated specialized predator, the fisher (*Martes pennant*). By utilizing a long-term (17-year) capture-recapture dataset collected by the Wisconsin Department of Natural Resources (WDNR), I will quantify the impact of climate change and increased fisher predation on the survival of porcupines at Sandhill Wildlife Area (SWA). Secondly, I will assess recruitment (both adult fecundity and juvenile survival) of porcupines within SWA to identify the relative importance of predation and winter conditions on population growth ( $\lambda$ ). I hypothesize that the arrival of an apex predator has shifted this from a “bottom-up” to “top-down” regulated system even in the face of moderating winter conditions. Thus, I predict that adult survival will be positively related to mild winter conditions and will remain high across years regardless of fisher density or abundance. In contrast, I predict that adult female fecundity rates will be high, but annual juvenile survival will be low as a result of the consumptive and non-consumptive effects of fisher predation. A comparative survivorship analysis of preliminary data collected from April to September 2012 revealed a juvenile survivorship rate of 12% (n=16) and 100% adult survival (n=23). Juvenile mortality was largely due to fisher predation. These preliminary results support my hypothesis that population regulation has switched from “bottom-up” to “top-down”.



**Norton, Andrew**<sup>1</sup>, Tim Van Deelen<sup>1</sup>, Camille Warbington<sup>1</sup>, Mike Watt<sup>2</sup>, and Karl Martin<sup>2</sup>

<sup>1</sup>University of Wisconsin-Madison

<sup>2</sup>Wisconsin Department of Natural Resources

### **Preliminary Survival Rates for Adult Male White-tailed Deer in Wisconsin**

Contention between biologists and hunters over white-tailed deer (*Odocoileus virginianus*) population estimates has been ongoing since Aldo Leopold first estimated deer abundance in Wisconsin in the 1930s. More recently, an external panel of population ecologists reviewed methods used by the Wisconsin Department of Natural Resources (WDNR) and suggested a radio telemetry study would provide the most significant improvements to understanding population dynamics. This recommendation aligned closely with previous research goals of both the WDNR and the Wisconsin Conservation Congress. In 2011, the WDNR initiated a 4-year research project with the primary objective of estimating survival rates for adult ( $\geq 8$  months old) male white-tailed deer. In the first two years of the project, researchers have captured and monitored more than 200 adult male white-tailed deer across two study areas. Not surprisingly, preliminary results suggest the greatest cause of mortality is related to legal harvest. Additionally, we evaluated differences between male harvest rates from 18-month-old deer compared to  $\geq 30$ -month-old deer, which is an important assumption required for current techniques used to estimate deer abundance in Wisconsin.



**Buser, Rick**

Fox Valley Technical College - Department of Wildland Fire

### **Collaborative Wildland Fire Training at Fox Valley Technical College**

The Fox Valley Technical College (FVTC) Wildland Firefighter program has grown from very humble beginnings in the mid-90s to multiple offerings today. These include individual National Wildfire Coordinating Group classes, a certificate in Wildland Fire Equipment Operations, a Technical Diploma in Wildland Fire Crew, an AAS in Wildland Firefighter (which fully transfers to UWO for a BAS in Fire and Emergency Response Management), and an AAS in Wildland Fire Pilot. Customized training is also available. The only program of its kind in Wisconsin, FVTC trains agency personnel and future leaders from all over the state and even other parts of the country. In addition to academic training, a mutual aid agreement with the Wisconsin Department of Natural Resources (WDNR) allows valuable hands-on training for students and provides assistance to WDNR. The program emphasizes high scholastic, physical, safety, and personal accountability standards.



**Gilbert, Jonathan**

Great Lakes Indian Fish & Wildlife Commission

**Co-management or Collaborative Management: Managing Treaty Resources in the Ceded Territories**

Collaboration in the management of natural resources has become commonplace in the wildlife profession over the past decade or more. However, this collaborative relationship is fundamentally different when working with Native American tribes. Native American tribes are sovereign governments who have management responsibilities over their resources. Ojibwa tribes in Wisconsin have treaty-reserved rights to hunt, trap, and gather from public lands off their reservations and these rights bring along with them management obligations. When managing these treaty resources (i.e., resources subject to tribal harvest), collaborative management becomes co-management and requires a different set of skills and attitudes than collaborative management. Co-management is the management of resources held in common between two user groups and managed to meet the objectives of both groups, despite the diversity of these objectives. Co-management requires mutual respect of these diverse objectives and works best when communication begins early and is frequent. Examples from Wisconsin will be used to illustrate the attributes of co-management and evaluate its effectiveness.



**Manlick, Philip J.**<sup>1</sup>, Jonathan N. Pauli<sup>1</sup>, Jim Woodford<sup>2</sup>, Jon Gilbert<sup>3</sup>, and Dan Eklund<sup>4</sup>

<sup>1</sup>University of Wisconsin-Madison - Department of Forest & Wildlife Ecology

<sup>2</sup>Wisconsin Department of Natural Resources - Bureau of Endangered Res.

<sup>3</sup>Great Lakes Indian Fish & Wildlife Commission - Wildlife Section Leader

<sup>4</sup>U.S. Forest Service - Chequamegon-Nicolet National Forest

**Assessing Wisconsin's American Marten Reintroductions through Noninvasive and Genetic Techniques**

The American marten (*Martes americana*) is Wisconsin's only endangered mammal and has been subject to multiple reintroduction attempts, the most recent of which occurred in the Marten Protection Area (MPA) of Chequamegon National Forest from 2008-2011. To evaluate the success of this reintroduction we have employed noninvasive and genetic techniques to quantify American marten abundance, juvenile recruitment, and adult survivorship as well as occupancy and detectability on the landscape. During the 2011-2012 and 2012-2013 winters we deployed approximately 200 noninvasive hair snares to randomly selected sites across the Chequamegon MPA, checking traps every 7-10 days. In conjunction with previously collected genetic material from reintroduced and resident martens, genetic material from collected hair will now be genotyped using a suite of microsatellite loci to estimate American marten abundance via mark-recapture analyses and juvenile recruitment will be estimated via parentage analysis. Additionally, American marten occupancy and detectability was assessed via replicated (k=3) snow tracking across 25 transects throughout the Chequamegon MPA during winter 2013. To quantify the influence of snow and microhabitat on marten occupancy and detectability each track location, as well as 40 random locations, will be correlated to snow depth, snow density, canopy cover, coarse woody debris, and forest composition. These analyses will provide quantitative assessments of abundance, distribution, and juvenile recruitment to help guide the management of American martens in Wisconsin.



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**Kirby, Rebecca**<sub>1</sub>, Jonathan N. Pauli<sub>1</sub>, and David M. MacFarland<sub>2</sub>

<sub>1</sub>University of Wisconsin - Madison

<sub>2</sub>Wisconsin Department of Natural Resources - Bureau of Science Services

### **Contributions of Human-derived Foods to Black Bear Diet in Northern Wisconsin**

As opportunistic omnivores, black bears vary their food intake widely throughout seasons and can become habituated to human resources they encounter. Reliance on such resources and subsequent effects on individual and population dynamics remain largely unknown. In Wisconsin, black bears are an important harvestable species for which baiting is a widely available commonly used tool. To quantify the relative importance of such human food sources to black bears, we used stable isotope analysis of tissues collected from hunter-harvested bears. Because diet analysis with stable isotopes uses the abundance of two elements (<sup>13</sup>C and <sup>15</sup>N) it avoids biases of digestibility that can complicate traditional diet analyses, and sampling tissues with different metabolic rates allows for temporal resolution of diet. We collected small samples of hair, blood, and bone from harvested bears at registration stations in north-central Wisconsin (n=12 in 2011 and n=137 in 2012). We explored preliminary analyses with a subset of sampled bears. Ultimately we will relate isotopic signatures of these tissues back to individual measures obtained from the carcasses to better understand resource use differences among sex and age classes, which could provide guidance for long-term population management.



**Guttery, Michael R.**<sub>1</sub>, Christine Ribic<sub>2</sub>, Andy Paulios<sub>3</sub>, David Sample<sub>4</sub>, and Chris Trosen<sub>5</sub>

<sub>1</sub>University of Wisconsin-Madison - Department of Forest & Wildlife Ecology

<sub>2</sub>U.S. Geological Survey, UW-Madison - WI Cooperative Wildlife Research Unit

<sub>3</sub>Wisconsin Department of Natural Resources - Bureau of Wildlife Mgmt.

<sub>4</sub>Wisconsin Department of Natural Resources - Bureau of Science Services

<sub>5</sub>U.S. Fish & Wildlife Service - St. Croix Wetland Management District

### **Evaluating Wisconsin's Grassland Bird Conservation Area Model**

Significant population declines have been documented for many grassland bird species in recent decades. In the 1990s a grassland bird conservation area (GBCA) model was developed in Wisconsin to help reverse population declines by combining grassland conservation and working agriculture. The key concept of the GBCA model was that management must be conducted at the landscape scale rather than at the individual property. Variations of this model have been adopted by several Midwestern states. Despite the popularity of the model, the underlying concepts have not been thoroughly evaluated. Our objectives are to 1) compare densities and population trends of focal grassland bird species in the GBCAs and the surrounding landscapes and 2) to evaluate the relationship between habitat type, landscape configuration, and focal grassland bird densities. Our research is taking place across 3 focal grassland landscapes in Wisconsin. To address our first objective, we used a GRTS sampling design to distribute over 700 sampling points along roads in and around GBCAs. Detection-adjusted density estimates of grassland obligate species were found to be significantly higher in GBCAs than in the surrounding landscapes. To address our second objective, we used a GRTS sampling design to select survey points across 6 habitat strata in the GBCAs. Habitat-specific densities varied considerably by species but were consistently low in croplands. Results from the 2012 pilot study will be used to refine our design and sampling protocol for subsequent years.



**Hennessy, Cecilia**<sup>1</sup>, Deahn Donner<sup>2</sup>, Jacqueline Frair<sup>1</sup>, Paula Marquardt<sup>2</sup>, and Dave MacFarland<sup>3</sup>

<sup>1</sup>Syracuse University of New York - Environmental Science & Forestry

<sup>2</sup>U.S. Forest Service - Institute for Applied Ecosystem Studies

<sup>3</sup>Wisconsin Department of Natural Resources - Bureau of Science Services

### **Tracking Wolf Populations across Heterogeneous Landscapes with Genetic Models**

Recent increases in wolf numbers across the Great Lakes region have led to the implementation of new management strategies, including harvest by licensed hunters. While the intended effect of the wolf harvest is to decrease and stabilize the population size over time, it is difficult to isolate harvest effects without baseline knowledge of how landscape heterogeneity structures wolf dispersal and reproduction patterns. To gain insight into the landscape genetics of wolves across northern Wisconsin, we will analyze genetic samples from long-term population monitoring programs, the 2012 harvest, and opportunistically and noninvasively collected tissues. We will correlate spatial genetic structure with landscape structure at different levels of organization using landscape resistance models. This information will help identify population connectivity patterns and potential source-sink relationships through fine- and large-scale dispersal events. The results of our investigation will provide better understanding of the forces structuring wolf populations across the Great Lakes region. For this presentation, we will summarize the established information, our specific research questions, and the tools we will employ to explore our questions. This presentation is intended to serve as an introduction to our research project, and to facilitate insightful conversation among wildlife researchers.



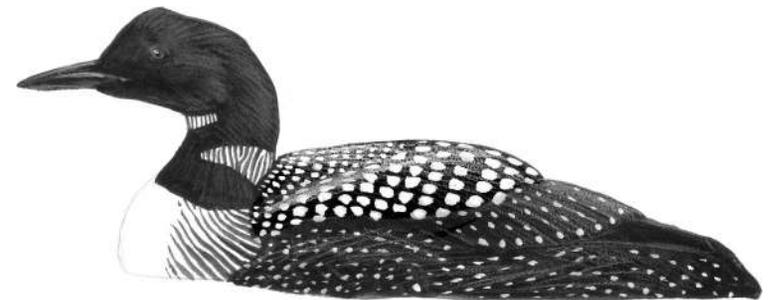
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**Jukkala, Gabriella**

Northland College

### **Behavioral Responses of Common Loons to Decoy Presentations During the Reproductive Season**

Common loons are long-lived solitary breeders that return to established lake territories as pairs each breeding season. Territorial intrusions by visiting or displaced loons frequently occur during the reproductive season, eliciting territorial behavior and aggressive responses from pair-bonded loons. While territorial pair-intruder interactions have been well-documented, the causal factors of the intensity of interaction have not. I wanted to determine if the intensity of pair behavior when interacting with intruders varies with reproductive stages, number and age of nestlings, with one or both pair members present, or between the sexes of pair members. To simulate intruders, I presented intruder decoys to pair-bonded loons marked with unique color bands at 57 lakes in northern Wisconsin during the summer of 2012. I recorded pair behaviors, reproductive stage, distance of closest approach to decoy, age and number of nestlings, and types of vocalizations made while loons interacted with the decoy. It appears pairs exhibit more intense behavior in the presence of intruders when pairs have chicks, and especially when chicks are two weeks old or younger. This may be due to chicks being most vulnerable when they are young, and therefore pairs may need to confront intruders more assertively to protect chicks. More decoy presentations are needed in the future targeting each reproductive stage of a pair to better determine that differences in behavior are a result of the reproductive stage and not differences in levels of assertiveness between loon pairs.



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Doyle, James<sup>1</sup>, Tim Van Deelen<sup>1</sup>, David Sample<sup>2</sup>, and David MacFarland<sup>2</sup>

<sup>1</sup>University of Wisconsin-Madison - Department of Forest & Wildlife Ecology

<sup>2</sup>Wisconsin Department of Natural Resources - Bureau of Science Services

### Home Range Size and Habitat Selection of American Badgers in Southwest Wisconsin

The American badger (*Taxidea taxus jacksoni*) is a priority species for research and conservation in Wisconsin under the state's Wildlife Action Plan due to a general lack of knowledge regarding its status and ecology. Our study area is within the Southwest Wisconsin Grassland and Stream Conservation Area southwest of Madison. This area contains a relatively large amount of grassland and prairie habitat compared to other parts of the state and consequently is thought to represent some of the best habitat for badgers in Wisconsin. We are using radio telemetry to understand how badgers perceive and use such a landscape. Since July 2011, we have captured 15 badgers (12M, 3F) and have outfitted 12 with radio transmitters implanted subcutaneously. Telemetry locations were collected by triangulation at night when badgers are active, by aerial telemetry from a fixed-wing airplane, and by homing on animals in burrows. Auxiliary badger locations were collected through the use of burrow searches, remote cameras, and roadkills. We will present preliminary results of home range and habitat selection analyses. Because badgers may be sensitive to habitat fragmentation, understanding space use and identifying important landscape features indicative of high quality habitat will inform future management decisions and help ensure the species' continued conservation and persistence.



Hess, Anna N.<sup>1&2</sup>, Robert J. Hess<sup>1</sup>, and Andrew J. Storer<sup>2</sup>

<sup>1</sup>Michigan Tech. Univ. - School of Forest Resources & Environmental Science

<sup>2</sup>Wisconsin Department of Natural Resources - Bureau of Endangered Res.

### Spatial Predictive Habitat Mapping for the Endangered Invertebrate Karner Blue Butterfly (*Lycaeides melissa samuelis* Nabokov) across 11 Wisconsin State Properties

Conservation success relies heavily on selecting appropriate sites to re-establish and promote species or biological communities of concern. This is dependent upon an understanding of the areas being considered, the species and communities of focus, and the ability to isolate prominent environmental features, such as soils and native vegetative cover, which drive habitat development and species habitat selection. We developed spatial predictive multi-criteria risk models that generate fine-resolution cartographs which identify existing habitat and evaluate habitat quality. These models 1) identify existing and potential barrens and savanna habitat of varying habitat quality across ecological regions, 2) illustrate habitat quality at the field level, and 3) predict the spatial occurrence of Karner blue adult populations across a flight period (beginning, peak, and end of flight) at the field level. This study was conducted on eleven Wisconsin state properties, producing landscape cartographs of 1-m resolution across expanses as large as ~68,000 acres at a time. These maps assess all active barrens and savanna recovery areas and several properties under consideration in the state of Wisconsin and are capable of being adjusted to address different species within the barrens and savanna biological communities. The results of this study will allow land managers to focus efforts on geographic areas most suitable for habitat development, implement practices that more effectively isolate habitat characteristics that influence species success, and monitor species of concern more efficiently.



Holsman, Robert<sup>1</sup>, and Keith Warnke<sup>2</sup>

<sup>1</sup>University of Wisconsin - Stevens Point

<sup>2</sup>Wisconsin Department of Natural Resources - Bureau of Law Enforcement

### Why Fewer Middle-aged Gun-deer Hunters Bought Licenses in 2010 & 2011

Gun-deer license sales in Wisconsin dropped about 2.5% in each of the 2010 and 2011 hunting seasons. Prior research concluded that the declines were greatest for men aged 35-50 years old. Declining participation by middle-aged men likely adversely affects recruitment. A questionnaire was mailed to a sample of lapsed hunters in 2012. A second sample of annual (bought a license every year) gun-deer hunters received a questionnaire for comparison against lapsed hunters. Survey results indicate that the decline in hunting participation was driven by four major factors: number of deer encounters, deer population reduction policies, land access, and expense. This may be the first human dimensions study to identify “lack of game” as the top barrier to retaining hunters. Lapsed hunters appear to be less avid and more likely to be initiated to hunting by a friend or to start on their own. Lapsed hunters hunted fewer days, experienced a lower harvest rate, had smaller hunting parties, and were more likely to hunt alone. Natural systems are dynamic and deer populations fluctuate. Men in their forties and fifties today came into deer hunting when deer populations were high, and those experiences set a standard for what made for “satisfaction”. Changes in land fragmentation and access, aging forests, deer drives, trail cameras, and many more have likely led to changes in deer distribution and behavior. These changes may negatively influence deer encounters during the gun-deer season, regardless of existing deer densities. As managers and deer hunters, we need to understand that our experiences now are partially affected by deer numbers, but also by how we hunt, and how the landscape has changed.



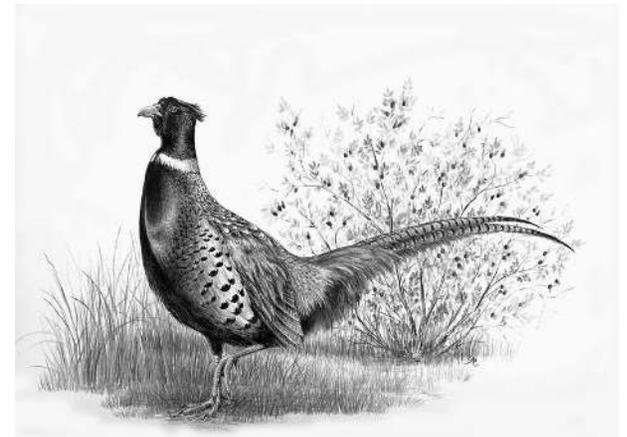
Dittrich, Joe<sup>1</sup>, Dr. Jason Riddle<sup>1</sup>, and Scott Hull<sup>2</sup>

<sup>1</sup>University of Wisconsin-Stevens Point - College of Natural Resources

<sup>2</sup>Wisconsin Department of Natural Resources - Bureau of Science Services

### Observer Differences: Nothing to Crow About

Studies have shown that differences in observer-specific detection probability can be an important source of variation in avian point count surveys, and ignoring this source of variation can lead to erroneous population estimates. Our objective was to determine if differences in individual observer detection probabilities were a substantial source of variation in our data. We conducted roadside point counts for ring-necked pheasant (*Phasianus colchicus*) in central Wisconsin during the 2011 and 2012 pheasant crowing season (early April through mid-May). A combination of methods was used including two double-observer methods: independent double-observer and dependent double-observer. Both double-observer methods required two observers to conduct the surveys concurrently, which allowed us to compare each observer’s detection probability to their partner’s. We used Program MARK to calculate observer-specific detection probabilities and to compare two models, one that allowed each observer to have a unique detection probability and a constant model that did not allow detection probability to vary between observers. For the independent double-observer data we found that the constant model had approximately 91% (p-hat 0.76, SE 0.028) and 100% (p-hat 0.70, SE 0.023) of the AICc weight in consecutive years. The 2011 dependent double-observer data could not support estimates for all observers, but the 2012 data indicated approximately 97% (p-hat 0.77, SE 0.059) of the AICc weight on the constant model. These results suggest that observer differences in detection probability may be negligible for single focal species surveys where the focal species is relatively conspicuous when available.



DeRose, Allison M., Emily K. Heald, and Paula S. Anich

Northland College

### The Influence of Small Mammal Species on the Abundance of Woodland Jumping Mice

The Woodland Jumping Mouse (*Napaeozapus insignis*) is a rare, old-growth boreal rodent species. The northern half of Wisconsin is the southern limit of its geographic range. The distribution of this species in Wisconsin and its interactions with other small mammal species are not well understood. Over the last 100 years, only 55 occurrences of Woodland Jumping Mice have been confirmed. Due to its perceived rarity, the Woodland Jumping Mouse has been listed as a Species of Concern Without Protection by the Wisconsin Natural Heritage Inventory and also as a Species of Greatest Conservation Need by the Wisconsin Wildlife Action Plan. This study will attempt to better illustrate the existence of the Woodland Jumping Mouse in Wisconsin, as well as analyze the influence of other small mammal species on the abundance of Woodland Jumping Mice. Over a period of 3 months and 6,600 trap-nights, we set Sherman live traps in late-successional, boreal habitats in Ashland, Bayfield, Price, and Sawyer Counties of the Chequamegon National Forest, in order to locate populations of Woodland Jumping Mice. In addition to the target species, we captured 593 animals of 10 species. We calculated average morphometrics and sex ratios for each species trapped. We looked for statistically significant correlations between the abundance of Woodland Jumping Mice and other small mammal species.



Carl Schwartz

Bird City Wisconsin

### Bird City Wisconsin: Building Partnerships to Benefit Birds in 60 Communities

Bird City Wisconsin - a growing coalition of citizens, public officials, and organizations led by the Natural Resources Foundation of Wisconsin, the Wisconsin Bird Conservation Initiative, and Audubon groups statewide - wants to ensure that communities maintain healthy populations of birds and appreciate them. Since its launch in February 2010, it has recognized 60 communities - more than double the number cited at the 2012 WCTWS Winter Meeting. Towns, villages, counties, and cities - including four of the state's five largest - are committing to making their neighborhoods better places for people, birds, and other wildlife using a variety of conservation activities. The program, modeled on Tree City USA, offers high-profile public recognition to communities that meet at least 7 of 22 criteria for creating/protecting bird habitat, fostering conservation education, taking steps to protect birds from perils, and recognizing International Migratory Bird Day. Celebrations of IMBD have emerged as a key part of the program, drawing the attention and praise of Environment for the Americas, IMBD's home. Bird City stresses the economic incentive to practicing conservation and has recruited public officials and interested citizens who belong to Audubon groups, nature preserves, bird clubs, natural history museums, conservation organizations and agencies, garden clubs, eco-minded businesses, and chambers of commerce that can be effective partners for developing and implementing Bird City strategies. Bird City has forged partnerships with the Departments of Natural Resources and Tourism and uses its website - [www.birdcitywisconsin.org](http://www.birdcitywisconsin.org) - to publicize its efforts, facilitate applications, and disseminate best practice information.



**Stumpf, Katie**, Kathleen E. Drozd, and Stephen J. Ventura

Northland College

### **Avian Abundance and Diversity on Bioenergy Crop Production Lands**

Current interest and the ensuing surge in using renewable resources for energy has led to substantial conversion of agricultural lands to short rotation woody biomass production lands. Many wildlife species, including birds, rely on these agricultural lands for food, shelter, nesting habitat, and rest during migration stopovers. However, different production methodologies, planting regimes, and the associated impacts on habitat quality may negatively affect avian community composition, both diversity and abundance. We conducted point counts at the Agriculture and Energy Resource Center (AERC) in Ashland, WI during the fall of 2012 to determine avian species diversity and abundance and determine whether the avian community had responded to the different crop production methods. We detected 18 species at seven points; the most abundant species were Canada Goose, Song Sparrow, and Common Grackle, and notable detections included Eastern Phoebe, Common Rail, and Eastern Kingbird. Both diversity and abundance decreased considerably over the season, making comparisons across planting regimes difficult. However, future studies conducted during spring and fall migration and summer breeding, across multiple years, will likely show patterns that will be important considerations for management of agricultural land conversions.



**Clare, John D. J.** and Eric M. Anderson

University of Wisconsin-Stevens Point - College of Natural Resources

### **To Mark or Not To Mark: Comparing Techniques to Estimate Bobcat Abundance**

Population abundance is often the most critical parameter for formulating specific management decisions. Cryptic carnivore species are often monitored or estimated indirectly using detection indices, but non-invasive sampling techniques are commonly touted as a means to effectively census otherwise inestimable populations. However, there are several available methods for estimation using marked or unmarked individuals, and consideration of model assumptions is paramount for future survey design. We sampled bobcats with remote cameras over more than 1,000 km<sup>2</sup> in central Wisconsin. We estimated abundance using capture-recapture (C-R) analysis, considering each site as a separate group and all sites as a single pooled population. Repeated counts estimates were also generated at local and area-wide scales relaxing assumptions of spatial independence and replicating independence via post-hoc manipulations. Point estimates of abundance were greater using repeated counts when pooling sites, but all confidence intervals greatly overlapped and there was little difference in precision. Bias in repeated counts estimates increased at group-level scales, and overlap between estimates decreased. We discuss potential causes for point estimate differences, and cautiously suggest that estimators based on detection probabilities without individual identification may be useful for landscape-scale carnivore surveys.



Cava, Jenna A., Jason D. Riddle, and Richard P. Thiel

University of Wisconsin - Stevens Point

### Survival and Detection Probabilities of Woodpeckers and Nuthatches Wintering in Central Wisconsin

Annual survival and detection probabilities are currently unknown for several sittid and piccid species considered common in North America. We used a mark-recapture study and Program MARK to estimate annual survival rates and capture probabilities of White-breasted Nuthatches (*Sitta carolinensis*), Downy Woodpeckers (*Picoides pubescens*), and Hairy Woodpeckers (*Picoides villosus*) wintering in central Wisconsin, 2006-2012. We conducted a Robust Design analysis on 49 White-breasted Nuthatches. Results did not support gender differences for annual survival or capture probabilities. Annual survival was low ( $\phi=0.30$  [CI 0.16-0.50]) and initial capture probabilities were lower than recapture probabilities ( $p=0.25$  [CI 0.16-0.37],  $c=0.43$  [CI 0.37-0.49]). Sample sizes for the Woodpecker species did not support the Robust Design analysis, so we conducted closed capture and Cormack-Jolly-Seber (CJS) open population analysis on 12 Downy Woodpeckers and 14 Hairy Woodpeckers. CJS models suggest annual survival was similar for all woodpeckers ( $\phi=0.49$  [CI 0.34-0.64]). Annual capture probability for both species was estimated at 1, as all individuals were caught each year between initial capture and disappearance. Intra year capture probabilities for all species were similar and did not differ from recapture estimates, but did vary slightly between years ( $p=0.24$  [CI 0.15-0.37] to 0.47 [CI 0.34-0.61]). This study demonstrates the importance of collaborations between student organizations (UWSP Student Chapter of The Wildlife Society) and state

agencies (DNR staff at Sandhill) in providing demographic data and population dynamics models for species that may be under-represented as focal research targets.



## Symposium Speaker Biographies (alphabetical by speaker's last name)

### Brian Buenzow

Wildlife Technician - Wisconsin Department of Natural Resources

Brian has been the wildlife technician at Newville (in Rock County) since 1981. His work includes managing thousands of acres of grass planted and burned on public and private lands, maintenance of 14,000 acres of public land, negotiating up to 22 sharecrop agreements in Rock and Green counties, and leasing over 10,000 acres of land from 80+ landowners per year. As the son of a Fuller Brush salesman, Brian has excelled at working with landowners to develop wildlife habitat on private land. He has been married to Mary Ann (DNR Forester) for 14 years and so is well versed in some forestry discussions. They have four kids with only one left at home. That leaves plenty of time to spend fishing, hunting, and enjoying life with family and friends.



## Richard (Dick) Cates

Cates Family Farm Grass-fed Beef – Spring Green

Dick earned a Ph.D. (1983) in Soil Science and Plant Health from the Univ. of Wisconsin-Madison while serving an Aldo Leopold Fellowship, an M.S. in Soil Science from Montana State Univ. (1979), and a B.A. in Anthropology and Geography from Dartmouth College (1974). Shortly after completion of the Ph.D., he served for eight years (50%-time appointment) as an agriculturist with the Wisconsin Dept. of Agriculture, Trade and Consumer Protection's Sustainable Agriculture Program.

Presently, Dick is a Senior Lecturer in the Dept. of Soil Science, Director of the CALS Grazing Systems Programming Initiative, and Director of the Wisconsin School for Beginning Dairy & Livestock Farmers (WSBDF; a program of the UW Center for Integrated Agricultural Systems), a program he helped initiate in 1995. The WSBDF, now in its 18th year, emphasizes dairy and livestock farm start-up, managed grazing, and business skill development through classroom curriculum and on-farm internship training. The WSBDF was the first program within the UW-Madison CALS to offer classes through Internet distance education. Dick also teaches courses he helped to develop on grassland management and ecology and managed grazing. The accomplishments and awards that Dick has earned during his distinguished career are too numerous to mention.

Dick and Kim Cates and their three children, Shannon (30 years), Eric (27 years), and Peter (deceased), have operated an 800-acre managed-grazing beef steer and custom dairy heifer business since 1987. In 1989 they began to direct-market beef from their pasture-raised Angus (now also, Jersey) steers; at present they provide Cates Family Farm beef directly to more than 200 households, retail-businesses, and restaurants located in south central Wisconsin, Madison, Milwaukee, and the Chicago area.



Carlson, Jenna, Jonathan Pauli, Jonathan Gilbert, John Pokallus, and Philip Manlick

University of Wisconsin-Madison - Department of Forest & Wildlife Ecology

## Diet Analysis of the American Marten (*Martes americana*)

American martens (*Martes americana*) are the only endangered mammal in Wisconsin. However, we currently lack basic information on their diet and foraging ecology within the Great Lakes region. To fill this knowledge gap, we initiated a study to quantify the diet of the marten population inhabiting Chequamegon-Nicolet National Forest (CNNF) using a two-fold approach of scat and stable isotope analyses. Marten scat samples were collected at rest sites within CNNF during winter months from 2000-2011 ( $n=70$ ). Occurrences of each prey item identified in each scat sample were recorded, and the proportion of each prey item for each scat sample was estimated. For the analysis of stable isotopes, marten hair was acquired from specimens housed at the University of Wisconsin Zoology Museum ( $n=11$ ), and opportunistically sampled from carcasses within CNNF from the winters of 2005-2008 ( $n=4$ ). Potential prey hair and feather samples were collected in CNNF during the spring, summer, and fall seasons of 2010-2012 to gather reproductive isotopic signatures of diet items. Our data will answer fundamental questions of regional marten foraging, which may be of use for conservation and reintroduction efforts.



## *Abstracts - Special Student Sessions* (alphabetical by presenter's last name)

**Brunette, Kayla**

Fox Valley Technical College Wildland Fire Program

### **The Benefits of an Education can Reach Further than is Expected with Fox Valley Technical College's Wildland Fire Program**

After two years on a structural fire department, I decided I wanted to know everything there is to know about firefighting. Choosing to go back to school to gain further knowledge in fire science was the first step I took to being a well-educated firefighter. Fox Valley Technical College (FVTC) was the first place I looked and the Wildland Fire Program caught my eye. With high scholastic requirements, physical standards, personal safety, and group accountability, the FVTC Wildland Fire Program encouraged me and my fellow students to be more than just firefighters. The program forms students into becoming active members of an ecologically smarter society. Through prescribed fire training, private lands assistance, and multiple environmental classes, FVTC Wildland Fire Program students don't just learn how to start and put out fires. We, as students, learn about the impact of fire, both positive and negative, as well as the planning that goes into prescribed burning. Obtaining my AAS in Wildland Fire has put me down the right path to accomplishing further goals in my fire science education.

**Rebecca Christoffel**

Assistant Professor - Iowa State University

Rebecca Christoffel was hired as an Assistant Professor and Extension Wildlife Biologist in the Natural Resource Ecology & Management Department at Iowa State University in October of 2009. Prior to Iowa State, Rebecca was a project manager and human dimensions specialist at D.J. Case & Associates Inc. She received her B.S. and M.S. degrees in Wildlife Ecology from the University of Wisconsin-Madison. After serving as the Wildlife Outreach Specialist and Coverts Coordinator for UW-Madison for 3+ years, she returned to school to earn her Ph.D. in Fisheries and Wildlife with an emphasis on Human Dimensions from Michigan State University in 2007. Rebecca has had a lifelong passion for wildlife, particularly unhuggables – amphibians, reptiles and bats.



**Jeff Gaska**

Farmer – Dodge County

Jeff was raised on a small cash crop/beef farm in Dodge County, Wisconsin, near Columbus. He grew up working the fields but also wandering in the marshes and woods. In high school and college he took courses relating to agriculture production and wildlife management, graduating from UW Stevens Point with a bachelor’s degree in Wildlife Management in 1990. Over the next 9 years, while continuing to farm part-time, he worked for the WDNR as an LTE developing habitat on public and private lands and producing native prairie seed for the Bureau of Endangered Resources. He also spent 2 of those years as a Project Biologist in the Glacial Habitat Restoration Area, purchasing land and easements as well as developing wildlife habitat on those properties. From 1999 to 2009 he was Pheasants Forever’s Regional Wildlife Biologist for Wisconsin. There he worked with federal, state, and local agencies along with other non-profits and agricultural-production-based organizations to develop and promote wildlife-friendly agricultural practices. In 2009, Jeff left Pheasants Forever to be a stay-at-home-dad and farm full-time. He currently farms 450 acres, growing corn, soybeans, winter wheat, and alfalfa, and manages a 25-cow beef herd with his wife and two children.



**Tricia Knoot**

Research Social Scientist - Wisconsin Department of Natural Resources

Tricia joined the Wisconsin DNR as a Research Social Scientist in June of 2012. She grew up on a lake in southeast Wisconsin, where she spent most of her time catching turtles and exploring the surrounding woodlands. She earned her B.A. in Zoology and Conservation from UW-Madison, and then completed her M.S. and Ph.D. degrees from Iowa State University, with diverse experience including understanding how conservation buffers serve as habitat for grassland birds, identifying social and policy barriers to oak management on private lands, and evaluating adoption of conservation practices by farmers. In her role with the DNR, her research focuses on understanding factors that can improve land management decisions that lead towards ecologically, socially, and economically sustainable landscapes. In her time away from work, she spends time hiking and fishing with her husband and two children.

