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THE COMMUNICATOR

NEWS FROM THE NEBRASKA COOPERATIVE FISH & WILDLIFE RESEARCH UNIT

Volume 4, Issue 2 October 2008

Changing Faces

In early July, research technician and otter trapper, **Kent Fricke**, traded his position studying otter range and habitat for the opportunity to complete a Masters degree at Austin State University. While we miss Kent, we also wish him success in his new venture!

We welcome **Amy Williams** and **Ryan Lueckenhoff**. Amy took over the otter research responsibilities in August. At the same time, she also began a Masters degree program focusing on the Nebraska otter habitat and home range research in relationship to habitat restoration. Craig Allen is Amy's advisor.

Ryan also began his Masters degree program in August and is advised by Kevin Pope. Ryan is working with white bass and hybrid striped bass in the southwest reservoirs project.

Fisheries student, **Nate Gosch,** was awarded his masters degree on August 16, 2008. Congratulations, Nate! Nate is currently working with the Missouri Department of Conservation. ❖

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Adaptive Management

The Nebraska Coop Unit co-sponsored a July 28 – August 1 workshop: *Modeling as an Assessment Tool for Adaptive Management*.

Steve Light, Lance Gunderson and Drew Tyre instructed the one-week short-course which was held in Lincoln, Nebraska on the University of Nebraska–Lincoln campus. The 22 participants included representatives from federal and state agencies, private organizations, and graduate students from eight states.

The workshop taught principles of adaptive management using examples of modeling for Adaptive Environmental Assessment, and rapid prototyping, and demonstrated how these techniques can be applied to large river systems.

Using adaptive management principles to link science with decision making is strategic goal of the U.S. Department of the Interior. The USGS Cooperative Research Units Program is committed to providing leadership for reaching this goal. ❖

New Research

Geographic Trends in Contamination of Nebraska's Surface Waters as Indexed by Sex Steroids of Common Carp

During the past few years, endocrine disrupting compounds (EDCs) have been identified in Nebraska streams and rivers, particularly downstream from beef cattle feedlots and from local wastewater treatment plants. Evaluating the extent to which EDCs occur in these streams, and in lakes and reservoirs throughout Nebraska, is important because recruitment of fishes in these water bodies is extremely variable, and EDCs have been suggested as being responsible for limited recruitment of fish in some reservoirs.

GOALS: This one-year seed project will document the geographical variation in sex steroid concentrations in adult common carp—which is an indirect assessment of geographic trends in the occurrence of EDCs—from 20 lakes and reservoirs

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throughout Nebraska. We hypothesize that sex steroid profiles will vary considerably across Nebraska, and will be associated with bioavailability of steroidogenic compounds within each reservoir. If correct, the study will provide preliminary data and direction for developing large, multi-year grant proposals for assessing potential risks associated with contamination of surface waters—identified as a top ten water challenge for Nebraska.

CURRENT STATUS: Field sampling is complete and laboratory assessments are underway. Initial results suggest that sex steroid profiles *do* vary considerably across Nebraska.

FUNDING: UGSG 104b funds administered by UNL Water Center

Southeast Prairies BUL and Sandstone Prairies BUL Research

In 2007, the Southeast Prairies Biological Unique Landscape (BUL) and Sandstone Prairies BUL were included in a Flagship Initiative approved by the Nebraska Natural Legacy Project's Partnership Team. The Nature Conservancy is the designated lead agency for conducting project research and monitoring. Designated partners are the Northern Prairies Land Trust, Nebraska Game and Parks Commission, Nebraska Cooperative Fish and Wildlife Research Unit, and the University of Nebraska at Omaha. Research and evaluation projects will be implemented to help guide conservation work within the Southeast Prairies and Sandstone Prairies BULs.

GOALS: The fragmented nature of the landscape within the BULs creates challenges for conservation. The initial 2008 data collection sampled native prairies of various size, quality, and isolation to determine how these factors affect insect populations in tallgrass prairies. Understanding more about these issues will help inform decisions regarding project size, priority landscapes, and project design in managing eastern Nebraska landscapes. 2008 results will guide the development of future research.

CURRENT STATUS: Preliminary data collections were completed in summer 2008. Floristic Quality Assessment data were collected on 16 research sites. Following this, insect sweep netting took place on the same sites.

GRADUATE RESEARCH ASSISTANTS: none

TECHNICIAN: Chris Wood

BOTANIST: Alicia Admiraal

FUNDING: The Nebraska Game and Parks Commission

Current Research

Assessing the Relationship between Stable Isotopes and Grassland Bird Productivity on Great Plains National Park Service Properties

GOALS: This project will provide National Park Service (NPS) managers with an assessment of habitat quality for breeding grassland birds at three NPS sites, and assess the success of the unique stable isotope techniques used in the study. Little is known about the relative value of NPS grassland habitats to regional songbird production. The data collected should determine if bird reproduction is successful at these sites, and provide insight for the best allocation of resources to promote grassland bird populations.

Eastern Meadowlark chick

CURRENT STATUS: Park sites are Pipestone National Monument, MN; Homestead National Monument, NE; and Tallgrass Prairie National Preserve, KS. The first field season ended in July. Avian nest survival data will be analyzed this winter. The second field season will begin in May 2009. Stable isotope values will be determined from feather and blood samples taken from nestlings and adults. Research will target four species of grassland birds, dickcissel (*Spiza americana*), grasshopper sparrow (*Ammodramus savannarum*), eastern meadowlark (*Sturnella magna*), and western meadowlark (*Sturnella neglecta*).

GRADUATE RESEARCH ASSISTANT: Sarah Rehme

TECHNICIANS: Jenna Frank, Nate Hasse, Mary Lugg, Ashton Mueller, Ryan Rezac, Sally Tucker

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Editor, Valerie A. Egger

Welcome to the Nebraska Coop Unit newsletter! The newsletter will be distributed two or three times a year.

Questions or newsletter ideas can be directed to vegger1@unl.edu, or
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Our Cooperators:

U.S. Geological Survey, Department of the Interior
University of Nebraska–Lincoln
- Institute of Agriculture and Natural Resources
- School of Natural Resources

Nebraska Game and Parks Commission
The Wildlife Management Institute
U.S. Fish and Wildlife Service

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Funding: USGS Natural Resource Preservation Program (NRPP) and the National Park Service

Cross-Scale Structure in Ecosystems

Goals: We are conducting a series of empirical analyses to determine the distribution of functional groups within and across scales, the association of measures of biotic variability in vertebrates (e.g., invasions, extinctions) with discontinuities in body mass distributions, and cross-scale analyses of patterns in body mass distributions from local to hemispheric scales. This project specifically investigates cross-scale structure and its implications in ecosystems.

Current Status: Analysis of Mediterranean-climate data is complete and a report is in final revision.

Graduate Research Assistant: Aaron Lotz

Funding: The James S. McDonnell Foundation–*Studying Complex Systems*

Diversity and Ecological Functions

Goals: This project seeks to understand how grassland plant diversity affects the provision of ecological services.

Current Status: In 2005, data was collected on pollination and herbivory. Field research in 2006 and 2007 focused on herbivory and invasion resistance. Data collections are nearly complete with data analyses to follow.

Kristine Nemec conducted her third field season in 2008 on restoration plots located near Wood River, Nebraska (south central Nebraska) with technician Michelle Hellman. In June and August, Kristine and Michelle collected ground beetles, ants, spiders, and also aboveground insects such as lady beetles and grasshoppers. Plant species observed along transects were also recorded. The data collected are being used to compare ecosystem services provided by the plant and invertebrate communities in high and low diversity grassland restorations. Insect specimens from last year's sampling season have been sorted and sent to insect taxonomists for identification.

Lindsey Reinarz has finished three samples of herbivory rate and insect sweeps. Insect analysis and identification are nearly complete; analysis of the floral quality at the research sites is next. Information and data will be collected to help explain emerging relationships.

Graduate Research Assistants: Lindsey Reinarz (University of Nebraska at Omaha, advised by L. Wolfenbarger and Craig Allen), and Kristine Nemec (employee of U.S. Army Corps of Engineers)

Technician: Katy Dornbos and Michelle Hellman

Funding: The James S. McDonnell Foundation–*Studying Complex Systems*, Nebraska Game and Parks Commission, University of Nebraska at Omaha, and the Nature Conservancy

Impact of White Perch on Walleye; and Predators of White Perch at Branched Oak and Pawnee Reservoirs

Goals: These companion projects examined white perch interactions with other fishes in two Nebraska reservoirs. Food habits and diet overlap among white perch, crappie, walleye, white bass, and channel catfish were evaluated. The study will result in recommendations for a predator program to control the stunted white perch population in Branched Oak Reservoir and allow current management programs to be refined for stunted white perch.

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Conferences/Meetings/Workshops

Craig Allen attended and presented research at the Resilience 2008 Conference: *Resilience, Adaptation and Transformation*. This international science and policy conference was held in Stockholm, Sweden, April 14 – 17. The poster *Adaptive Management Approach to Rebuilding Resilience in the Platte River Basin,* by graduate student Chad Smith, was displayed at the conference.

Sam Wilson traveled the Midwest giving several presentations:

- March 2008, Regional Mountain Lion Meeting, Deadwood, SD, presented on mountain lions in Nebraska
- April 2008, the 2008 National Conference on Feral Hogs, St. Louis, MO, presented on feral pigs in Nebraska
- June 2008, Midwest Furbearer Resources Workshop, Olathe, KS, presented on river otter home range and habitat use in Nebraska

On June 5, Thad Miller presented *Nebraska Invasive Species Project: Past, Present and Future*, at the Nebraska Soil and Water Conservation Society annual meeting in Holdrege, Nebraska.

Craig Allen was an invited participant for an adaptive management meeting held in Auburn, Tennessee, July 22 – 24. The meeting was sponsored by the U.S. Geological Survey Cooperative Research Units Program.

Annabel Major and Thad Miller attended the annual meeting of the Ecological Society of America (ESA) in Milwaukee, Wisconsin, August 1 – 8. Thad also presented his research dissertation at the meeting.

In August, Craig Allen and Kevin Pope traveled to Denver, Colorado to meet with USGS regional staff as part of a USGS Central Executive Leadership Team meeting.

Kevin Pope and Dustin Martin attended the 138th annual meeting of the American Fisheries Society (AFS), *Fisheries in Flux*, August 17 – 21, in Ottawa, Canada.

Annabel Major attended the *Human Dimensions of Wildlife Management: Pathways to Success Conference* in September in Estes Park, Colorado.

In November, Craig Allen will deliver a workshop on complex adaptive systems at the International Institute of Applied Systems Analysis in Austria. Other presenters will include Annabel Major, Aaron Alai, Ahjond Garmestani, Shana Sundstrom, and Jan Sendzimir. ❖

Graduate Student News

Aaron Alai

M.S. Graduate Research Assistant, Wildlife

Aaron is interested in predicting the vulnerabilities in ecological systems that will allow invading species to be successful. He is exploring the relationships of migrant and nomad species in South Africa (in collaboration with Graeme Cumming at the University of Capetown), as well as gaps found in body mass distributions.

Using C++, Aaron is developing a computer program to most efficiently find the fewest number of gaps in a bird species while keeping the variance within gaps at the lowest possible levels. This gap-to-variance ratio program can then be used to determine relationships between more than one variable. The program will include user-friendly comments enabling non-programmers to modify the code to meet their own research needs.

Nathan (Nate) Gosch

M.S. Graduate Research Assistant, Fisheries

Nate successfully defended his thesis on May 15, 2008, *Predation as a Mechanism for Control of White Perch: An Investigation of Food Habits in Two Nebraska Reservoirs,* and graduated in August 2008. After a short-term position with the Nebraska Game and Parks Commission, Nate recently accepted a position with the Missouri Department of Conservation.

Christopher (Chris) Lewis

Ph.D. Graduate Research Assistant, Fisheries

Chris is currently collecting data for his second field season. Larval fish sampling was completed this past June, and Chris is now focusing his efforts on sampling juvenile walleye and white bass. In late July, Chris revived trawling surveys on Enders,

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Medicine Creek, and Harlan County Reservoirs. In early August, Chris commenced his second round of fall electrofishing surveys.

After an intense spring of working on the southwest reservoirs, Chris finally found time to take in some camping and fishing at some of Nebraska's state parks. Thanks to fellow student, Dustin Martin, this Canadian he is "hooked" on catfishing!

Aaron Lotz

Ph.D. Graduate Research Assistant, Wildlife

Aaron continues to work on his dissertation research, focusing on empirical analyses of body size distributions. With assistance from Pablo Marquet (Catholic University of Chile), he is nearly finished with analyses of bird and mammal community body mass distributions in North and South America with a focus on the effect of changes in spatial scale on body mass distributions. Aaron has begun work on building a socio-ecological model to determine the factors most influential in predicting the number of endangered and invasive bird and mammal species, on a country by country scale, throughout the world.

With assistance from David Lambert (Louisiana School for Math, Science, and the Arts), Aaron is nearly finished with analyses on paleological mammal community body mass distributions in North America (Bridger Basin area, Florida, and Nebraska) with a focus on the effect of geological time on body mass distributions.

Annabel Major

Ph.D. Graduate Research Assistant, Wildlife

As coordinator for the invasive species project, Annabel has been working with Craig Allen developing and submitting new grant proposals to continue the work begun initially through Nebraska Environmental Trust funding. Proposals will also focus on the need to develop and support a Nebraska state-wide council on invasive species. Annabel continues to expand the project's outreach functions.

Dustin Martin

M.S. Graduate Research Assistant, Fisheries

Dustin finished collecting data for his second field season in June. Currently, he is analyzing data and writing his thesis. Dustin presented his research, *A Patch Occupancy Model to Assess Importance of Habitats for Walleye*, at the 2008 American Fisheries Society Conference in Ottawa, Ontario in August.

Thaddeus (Thad) Miller

M.S. Graduate Research Assistant, Wildlife

Thad recently presented his thesis research at the annual meeting of the Ecological Society of America in August. His presentation is entitled *Prioritizing Invasive Plant Management and Rare Species Conservation Using the Relative Risks Model.* It was included as a contributed oral paper in the *Invasion: Models and Management* session. Thad successfully defended his thesis this fall and will graduate in December 2008.

Kristine Nemec

Ph.D. Graduate Research Assistant, Wildlife

Kristine conducted her third and final field season in 2008 on restoration plots located near Wood River, Nebraska (south central Nebraska), aided by research technician, Michelle Hellman. Throughout her Ph.D. program, Kristine continues to work for the U.S. Army Corps of Engineers.

Sarah Rehme

M.S. Graduate Research Assistant, Wildlife

Sarah has completed her first field season working with Larkin Powell (UNL) and Craig Allen on a National Park Service project that will assess productivity and site fidelity of grassland birds in three Great Plains national parks. Sarah and her team of research technicians collected data from national parks in Kansas, Nebraska, and Minnesota. They monitored the nests of Eastern and Western Meadowlarks, Grasshopper Sparrows, and Dickcissels, while also banding adult birds and nestlings. The project will continue next summer.

Sarah instructing her research crew

Lindsey Reinarz

M.S. Graduate Research Assistant, Wildlife

Lindsey received a scholarship from the Nebraska Energy Federal Credit Union. She plans to attend the Midwest Fish

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and Wildlife Conference in Ohio in December 2008. Lindsey wants to develop a method of evaluating success of prairie restorations. She continues to make progress on her thesis.

Lindsey Richters

M.S. Graduate Research Assistant, Fisheries

Lindsey's project, *Population Assessment of Channel Catfish in Nebraska*, will provide needed baseline data on the structure and dynamics of reservoir populations throughout Nebraska. With the help of two research technicians, Lindsey spent the summer field sampling at numerous Nebraska lakes. In June, Lindsey participated in the 2008 Bicycle Ride Across Nebraska (BRAN).

Lindsey at an outdoor expo in Kearney, NE

Chad Smith

Ph.D. Graduate Research Assistant, Wildlife

Chad's research interest is in the area of adaptive management. His poster and abstract, *Adaptive Management Approach to Rebuilding River Ecosystem Resilience in an Agricultural Landscape,* were presented at the April Resilience 2008 Conference in Stockholm, Sweden.

As director of Natural Resources for Headwaters Corporation, Chad is leading efforts to implement the Adaptive Management Plan for the Platte River Recovery Implementation Program, including the program's Integrated Monitoring and Research Plan.

Amy Willaims

M.S. Graduate Research Assistant, Wildlife

Amy joined the NE Coop Unit as a wildlife masters student in August 2008. She dived right in and has nearly completed her first field season trapping, tagging, and tracking otters. Amy plans to study otters' responses to phragmites control on the Platte River.

Justin Williams

M.S. Graduate Research Assistant, Wildlife

Justin is investigating the potential spread and impact of non-native plant species in Nebraska. He gave the presentation *Forecasting the Invasion and Distribution Potential of Non-Native Plant Species in Nebraska* at several Nebraska conferences and meetings including the UNL School of Natural Resources Research Colloquium, the Natural Resource Districts managers meeting, the Nebraska Weed Control Association annual meeting, the Nebraska Invasive Species Conference, the Nebraska Wildlife Society annual meeting and at the Madison, Wisconsin, Midwest Fish and Wildlife Annual Conference.

Sam Wilson

M.S. Graduate Research Assistant, Wildlife

Sam continues to track otters on the Platte River, and also continues his work controlling feral hog populations with the Nebraska Game and Parks Commission. As part of this work Sam gave various presentations in South Dakota, Missouri and Nebraska on Nebraska mountain lions, feral pigs in Nebraska, and river otter home range and habitat use in Nebraska. ❖

Our Mission

***T**rain graduate students for professional careers in natural resources research and management*

***C**onduct research that will create new information useful for management of natural resources*

***P**rovide technical assistance to cooperators*

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CURRENT STATUS: The project is almost complete. The graduate research assistant graduated in August 2008.

GRADUATE RESEARCH ASSISTANT: Nate Gosch

UNDERGRADUATE ASSISTANTS: Ted Ehly, Landon Pierce, Jeff Stittle, and John Walrath

FUNDING: U.S. Geological Survey, and Nebraska Game and Parks Commission

Monitoring, Mapping and Risk Assessment for Non-Indigenous Invasive Species in Nebraska (Nebraska Invasive Species Project)

GOALS: This research project will help coordinate cohesive biosecurity and management of non-indigenous species in Nebraska. This project is also mapping the potential spread of many invasive species in Nebraska.

CURRENT STATUS: The project's Web site was recently redesigned into a more user-friendly and sustainable format.

Outreach activities include invasive species activities at the Lincoln Folsom Zoo, Earth Day on the UNL campus, and Walnut Creek Watershed/Papio South High School Field Days in Papillion/La Vista.

Investigations continue into the potential spread and impact of non-native plant species in Nebraska. Justin Williams plans to use an invasive species assessment protocol to rank non-native plant species based on their risk of becoming invasive in Nebraska. He will also utilize spatial models to predict the plants' potential distributions.

Several grant proposals were developed and submitted to funding agencies in September and at least one additional proposal is in development. The proposals will continue, and further expand, work begun by the project

GRADUATE RESEARCH ASSISTANT: Justin Williams

PROJECT COORDINATOR: Annabel Major

WEB SITE: snr.unl.edu/invasives

FUNDING: Nebraska Environmental Trust

Population Assessment of Channel Catfish in Nebraska

GOALS: This project is focused on assessing the present variability in the dynamics (recruitment, growth and mortality) and structure (abundance, size- and age-structure, and condition) of channel catfish populations found in Nebraska reservoirs. This information will help managers determine the need for future stockings and harvest regulations of channel catfish.

CURRENT STATUS: Catfish populations from 24 water bodies across Nebraska will be compared among water body types and also among stocking strategies, and a relatively new gear configuration for collecting catfish samples will be compared to current standards. Lindsey Richters and her field technicians completed the first sampling season this summer on 18 water bodies across Nebraska with 2,200 catfish collected.

GRADUATE RESEARCH ASSISTANT: Lindsey Richters (employee of Nebraska Game and Parks Commission)

RESEARCH TECHNICIANS: Dan Dobesh, Nick Dobesh

FUNDING: Nebraska Game and Parks Commission

Recruitment of Walleye and White Bass in Nebraska's Southwest Irrigation Reservoirs

GOALS: Established for flood control and irrigation, the reservoirs in Nebraska's Republican River watershed also attract many anglers. White bass populations in these reservoirs are self-sustaining. Walleye, however, must be restocked annually as natural reproduction and recruitment of young are limited. This project will increase our understanding of the factors affecting recruitment of walleye and white bass in irrigation reservoirs, which is vital for understanding reservoir fish ecology in semi-arid regions.

CURRENT STATUS: The second field season is nearly complete. Adult walleye and white bass were tracked with telemetry and sampled with electrofishing to identify spawning sites and assess associated habitats. This is the second and final year for the telemetry portion of this study. Larval fish surveys were completed in June. Juvenile fish surveys were initiated in late July using trawling. Fall electrofishing surveys for juvenile fish took place from early August until early October. Creel surveys for 2008 are underway and will continue through October to gather data on species of fish being caught by anglers.

GRADUATE RESEARCH ASSISTANTS: Christopher Lewis, Ryan Lueckenhoff, Dustin Martin

UNDERGRADUATE ASSISTANTS: Ted Ehly, John Walrath

CREEL CLERKS: Greg Hoffman, M. Doug Miller

FUNDING: Nebraska Game and Parks Commission

River Otter Home Range and Habitats

GOALS: This project is collecting home range and habitat use information on river otters along the big bend area of the Platte River using radio telemetry. Data collected, in conjunction with the results of an ongoing river otter health and reproductive

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survey and results from NGPC's annual otter bridge survey, will help to close existing information gaps and contribute to the creation of the Nebraska River Otter Management Plan and the Statewide Comprehensive Conservation Plan.

CURRENT STATUS: In fall 2006, transmitters were implanted into five river otters with an additional eight otters implanted in fall/winter 2007. Tracking of the thirteen implanted otters continues. The 2008 final trapping/implanting season began in September with a goal of tagging twelve additional otters. Amy Williams is currently doing double duty as research technician and new Masters student. A search is currently underway for a temporary research technician to assist with the project.

GRADUATE RESEARCH ASSISTANT: Sam Wilson, Amy Williams

FUNDING: Nebraska Game and Parks Commission, The Nature Conservancy

Spatial Risk Assessment of Invasive Species Impacts on Native Species in Nebraska

GOALS: This project is assessing the risks that native Nebraska species face from non-native invasive species. Products will include spatial models of stressors and targets, models of spatial overlap, hazard indices, and relative risk indices for each target.

CURRENT STATUS: Stressors (invasive species on the Nebraska Watch List) have been identified, and we have acquired the spatial data for rare and endangered species and plant communities from the Nebraska Game and Parks Commission's Nebraska Legacy Project. The area of spatial overlap between invasive species and target rare species and communities will be determined. That value will be combined with a hazard index in order to develop an overall relative risk assessment value.

Thad Miller presented his thesis research at the annual meeting of the Ecological Society of America in August.

GRADUATE RESEARCH ASSISTANT: Thad Miller

FUNDING: Nebraska Game and Parks Commission, and U.S. Geological Survey

Understanding Invasions and Extinctions

GOALS: Compared to other continental areas, Mediterranean regions have been invaded by a large number of non-indigenous organisms, including vertebrates. Concomitant with invasions, declines and extinctions have transformed the faunas of Mediterranean ecoregions.

Our project objectives are to 1) compare the vertebrate body mass structures of Mediterranean-climate ecosystems, and 2) examine the effects of invasions and extinctions in Mediterranean-climate ecosystems on body mass structure and alpha, beta and gamma diversity.

CURRENT STATUS: In the Mediterranean climate ecosystems studied, changes in species distribution within functional groups—across different body mass aggregations in mammals and when both taxonomic groups were combined—further validate an apparent decrease in functional redundancy and cross-scale resilience.

More invasive and endangered species were found to occur at the edges of body mass aggregations (than could be expected by chance alone) in 40% of datasets, and in all datasets when analyzed by taxonomic group. This finding supports similar analyses that examined the distribution of invasive and endangered species in relation to body mass aggregations.

Analyses are complete and a report is in revision.

GRADUATE RESEARCH ASSISTANT: Aaron Lotz

FUNDING: U.S. Geological Survey ❖

EVENTS

The 2008 annual Coordinating Committee of the Nebraska Cooperative Fish and Wildlife Research Unit was held on Friday, October 24 on the University of Nebraska–Lincoln east campus. Nearly forty people attended from the university, Nebraska Game and Parks Commission, U.S. Fish and Wildlife Service, Headwaters Corp., USGS, National Park Service, and state agencies.

Awards & Recognitions

In May 2008, the University of Nebraska–Lincoln and USGS co-sponsored a four-day Climate Change Workshop. During the conclusion of the workshop, UNL Vice Chancellor for Research Prem Paul recognized Craig Allen for his efforts in helping to make the workshop a success. USGS also recognized Craig's role in planning the workshop by awarding him the USGS Special Thanks for Achieving Results (STAR) award.

Craig received the USGS CRU Performance Award from the Cooperative Research Units Program (CRU) Headquarters.

Posters by Justin Williams and Aaron Alai received second place and third place awards respectively in the student poster contest at the 2008 Nebraska Invasive Species Conference. ❖