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THE COMMUNICATOR

NEWS FROM THE NEBRASKA COOPERATIVE FISH & WILDLIFE RESEARCH UNIT

Volume 4, Issue 1

March, 2008

Changing Faces

In early January, we welcomed two new graduate students—**Lindsey Richters**, fisheries, advised by Kevin Pope; and **Sarah Rehme**, wildlife, co-advised by Larkin Powell and Craig Allen. Lindsey is employed by the Nebraska Game and Parks Commission. Sarah came to Lincoln from Longmont, Colorado.

Beth Forbus received her master's degree in December 2007. She is the second student to earn a graduate degree through the Nebraska Cooperative Fish and Wildlife Research Unit program. Recently, Beth accepted a position in California at Camp Pendleton. We wish her much success in her future endeavors!

Following some changes in the national USGS Cooperative Research Units Program, **Bern Shanks** became the new supervisor of the Nebraska Unit. Bern replaced Kevin Whalen as the unit's supervisor. In addition to the Nebraska unit, Bern also supervises eleven other state units.

Undergraduate students, **Jeff Stittle** and **Landon Pierce** graduated in December each with a B.S. in Natural Resources. As student technicians, Jeff and Landon spent many hours helping collect fish samples and analyzing fish stomach contents. Their assistance, and sense of humor, will be sorely missed. ❖

Annual Meeting

Our annual Coordinating Committee meeting was held November 8 in Lincoln. Bern Shanks was introduced as the new USGS Cooperative Research Units Program supervisor for Nebraska. The two-part agenda featured an on-campus business meeting and overview of research. Following this, we moved to a more informal setting where we heard nine research presentations while enjoying BBQ. Afterwards, researchers, students, staff, and cooperators visited one-on-one and in small groups.

Nearly forty people attended the meeting. Participants represented the University of Nebraska–Lincoln, University of Nebraska Omaha, U. S. Geological Survey, Nebraska Game and Parks Commission, USDA-APHIS, National Park Service, Nebraska Forest Service, U.S. Fish and Wildlife Service, and the Nature Conservancy. ❖

New Research

Assessing Local and Regional Variability in Productivity and Fidelity of Grassland Birds on National Park Service Units in the Great Plains

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 methods (stable isotope techniques) used in the study. Little is known about the relative value of grassland habitats to regional songbird production in NPS units. The data collected should show if bird reproduction is successful at these sites, and provide insight for the best allocation of resources.

CURRENT STATUS: Field research begins in May. Avian nest survival will be intensively monitored in Pipestone National Monument, MN; Homestead National Monument, NE; and Tallgrass Prairie National Preserve, KS. Stable isotope values will be determined for feather and blood samples taken from nestlings and breeding adults.

GRADUATE RESEARCH ASSISTANTS: Sarah Rehme

FUNDING: USGS Natural Resource Preservation Program (NRPP) and the National Park Service *Research continued on page 2*

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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: Field technicians have been hired for the June – August sampling season which will be conducted on 24 water bodies across Nebraska. Catfish populations 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.

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

FUNDING: Nebraska Game and Parks Commission

Current Research

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, nomadism, migration) 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 ASSISTANTS: Aaron Lotz

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

Diversity and Ecological Functions

GOALS: This project seeks to understand how grassland diversity affects 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 Nemeč focused on populations of economically-significant grasshoppers and the pest control provided by predatory invertebrates. She also collected data for soil development and invasion resistance. Katy Dornbos continues to sort and analyze insect samples. Arachnid expert Hank Guarisco of Kansas is identifying the spider specimens to species.



Garden Spider (courtesy of USFWS)

Lindsey Reinartz has finished three samples of herbivory rate and insect sweeps. She conducted vegetation sampling of her fields and an additional herbivory sampling and observation of which insects actually visit the plants. 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 Reinartz (University of Nebraska Omaha, advised by L. Wolfenbarger and Craig Allen), and Kristine Nemeč (employee of U.S. Army Corps of Engineers)

TECHNICIAN: Katy Dornbos

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

Evaluation of Landowner Incentives Program (LIP) for Species at Risk

GOALS: The Nebraska Game and Park Commission's Landowner Incentives Program (LIP) assists landowners with invasive tree removal. We evaluated the impact of tree removal on the avian grassland community over three field seasons.

CURRENT STATUS: This project is complete with results compiled into a master's thesis. Changes in bird species and

Research continued on page 3

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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populations resulting from tree removal did not reflect a basic shift from woodland to grassland species. In some cases, large piles of unburned trees continue to provide cover or nesting habitat for woodland species within a grassland environment.

GRADUATE RESEARCH ASSISTANT: Beth Forbus (graduated, 2007)

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

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

GOALS: These companion projects are examining 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 are being evaluated. It is hoped that the study will result in a predator program that will control the

stunted white perch population in Branched Oak Reservoir and allow current management programs to be refined for stunted white perch.

CURRENT STATUS: The second field season ended November 2007. All stomach content samples have been analyzed and data synthesized. Stable isotope analyses of stomach contents were conducted to confirm results. A master's thesis is being written.

GRADUATE RESEARCH ASSISTANT: Nate Gosch

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

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

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

GOALS: This research project will help build a cohesive bio-security and management system for non-indigenous species in Nebraska. It will be integrated and relatively seamless across institutions and agencies. This project also will map the potential spread of many invasive species in Nebraska.

CURRENT STATUS: A Web site has been developed as a centralized clearinghouse on identification, management, impact and potential spread of currently and potentially established non-indigenous species. The site was recently redesigned into a more user-friendly format. Check it out at: snr.unl.edu/invasives

The Nebraska Invasive Species Conference, held in February, brought together scientists, practitioners, educators and others from across Nebraska concerned with invasions of non-indigenous species. **Check the last page for additional information** on the conference. Future outreach will 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.

GRADUATE RESEARCH ASSISTANT: Justin Williams

PROJECT COORDINATOR: Annabel Major

WEB SITE: snr.unl.edu/invasives

FUNDING: Nebraska Environmental Trust

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Conferences/Meetings/Workshops

Kevin Pope was an instructor for the Max McGraw Wildlife Foundation's Conservation Leaders for Tomorrow program in Dundee, Illinois, October 3 – 7, 2007. Eight UNL students attended the program to learn about the hunting experience, and the social, economic and ecological impacts of hunting.

In December 2007, Madison, Wisconsin hosted the 68th Midwest Fish and Wildlife Conference, *Be the Change: Manage Locally, Conserve Globally*. Attending were Kevin Pope and six graduate students: Aaron Alai, Nate Gosch, Chris Lewis, Dustin Martin, Thad Miller, and Justin Williams. You can find their various presentations in the *Graduate Student News* section.

In January, Craig Allen participated in two USGS sponsored working group meetings. They were for the Aquatic Gap Analysis Program at the National Center for Ecological Analysis and Synthesis (NCEAS) in Santa Barbara, California; and the Adaptive Management Conference Series in St. Petersburg, Florida.

Kevin Pope was an invited plenary speaker at the February 12 – 13, 2008 Nebraska Chapter Meeting of the American Fisheries

Society. Nate Gosch, Chris Lewis and Dustin Martin each gave research presentations during the meeting.

Thad Miller was an invited speaker for the Kansas Natural Resources Conference, February 22 – 23 in Wichita, Kansas. He discussed the spatial risk assessment model he developed for the invasive species project.

Annabel Major and Justin Williams attended the Nebraska Weed Control Association annual meeting in Kearney on February 20.

Craig Allen and Kevin Pope attended the annual meeting of the Kansas Cooperative Fish & Wildlife Research Unit in Manhattan, Kansas on March 4.

On March 12, Craig Allen and Kevin Pope joined the U.S. Fish and Wildlife Service and others at the 50th anniversary celebration of the DeSoto National Wildlife Refuge.

Craig Allen will attend and present research at the Resilience 2008 Conference: *Resilience, Adaptation and Transformation*. This is an international science and policy conference which will be held in Stockholm, Sweden, April 14 – 17. ❖

Graduate Student News

Aaron Alai

M.S. Graduate Research Assistant, Wildlife

Aaron is interested in predicting the vulnerabilities in ecological systems which will allow invading species to be successful. He will explore 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 masses.

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 finished his second field season in November, and is writing his thesis. He gave an oral presentation, *Predation as a Potential Biological Control for White Perch*, to the Midwest Fish and

Wildlife Conference in Madison, Wisconsin in December. In February, he presented results from the first and second field seasons at the Nebraska Chapter of the American Fisheries Society, and also presented results at the UNL American Fisheries Society Student Colloquium on March 8. Nate expects to graduate in August.

Christopher (Chris) Lewis

Ph.D. Graduate Research Assistant, Fisheries

In November, Chris completed the first field season of his Ph.D. project studying recruitment of walleye and white bass in southwest Nebraska irrigation reservoirs. Chris spoke at the 61st Canadian Conference for Fisheries Research, which was held January 3-5, 2008 in Halifax, Nova Scotia. His oral presentation was entitled *Descriptive Models of Recruitment for Walleye in Irrigation Reservoirs*. Chris also spoke at the Annual Nebraska AFS Meeting, which was held February 11 - 13, 2008 at the Ak-Sar-Ben Aquarium near Gretna, Nebraska. His oral presentation was entitled *Descriptive Models of Recruitment for Walleye and White Bass in Irrigation Reservoirs*.

Students continued on page 5

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 on 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 on the number of endangered and invasive bird and mammal species, on a country by country scale, throughout the world.

Annabel Major

Ph.D. Graduate Research Assistant, Wildlife

As of January, Annabel now wears two hats: coordinator for the invasive species project, and Ph.D. student in the area of adaptive management. Most recently, Annabel successfully planned and coordinated the Nebraska Invasive Species Conference.

In her spare time, Annabel is the civilian coordinator for the First Nebraska Volunteer Infantry. She helps plan and manage the Infantry's Civil War Reenactments. In addition to reenactments, the event includes candlelight tours, demonstrations and school day programs. Annabel participates with various other Infantry events as well throughout the year.

Dustin Martin

M.S. Graduate Research Assistant, Fisheries

Currently, Dustin is collecting data for his second field season. He attended the December Midwest Fish and Wildlife Conference in Madison, Wisconsin and presented a poster, *Spawning Sites of Walleye in Irrigation Reservoirs of the Republican River Basin in Southwest Nebraska*. Dustin gave a similar oral presentation at the Nebraska Chapter of the American Fisheries Society Conference in February.

Thaddeus (Thad) Miller

M.S. Graduate Research Assistant, Wildlife

Progress continues on Thad's research focusing on performing risk assessments for non-indigenous invasive plants in Nebraska. Thad has built habitat suitability models for six of fifteen invasive species of interest.

In December, Thad gave an oral presentation at the Midwest Fish and Wildlife Conference, *Setting Priorities for Invasive Plant*

Management and Rare Species Conservation Using the Relative Risks Model in Nebraska. He displayed a poster at the Nebraska Invasive Species Conference in February and gave a presentation to the Kansas Natural Resources Conference.

Kristine Nemec

Ph.D. Graduate Research Assistant, Wildlife

Kristine conducted her second field season in 2007 on restoration plots located near Wood River, Nebraska (south central Nebraska), aided by research technician, Katy Dornbos.

In June and August, Kristine and Katy collected ants, spiders, ground beetles, 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.

Sarah Rehme

M.S. Graduate Research Assistant, Wildlife

Sarah will be working with Larkin Powell (UNL) and Craig Allen on a recently awarded National Park Service project that will access productivity and fidelity of grassland birds in three national parks. This summer, Sarah and her team of research technicians will collect data from national parks in Kansas, Nebraska, and Minnesota. They will monitor the nests of meadowlarks and dickcissels, while also banding adult birds and nestlings.

Lindsey Reinarz

M.S. Graduate Research Assistant, Wildlife

During her second (2007) field season, Lindsey finished three samples of herbivory rate and insect sweeps. Currently she is finishing insect analysis and identification. Next she will analyze the floral quality of the research sites and will gather data to help explain the emerging relationships. Lindsey plans to graduate in 2008.

Lindsey Richters

M.S. Graduate Research Assistant, Fisheries

Lindsey is currently a fulltime employee with the Nebraska Game and Parks Commission. She began her graduate studies in January, with much support from her employer as she will continue to work while pursuing her master's degree. Her

Student continued from page 5

project, *Population Assessment of Channel Catfish in Nebraska*, will provide needed baseline data on the structure and dynamics of reservoir populations throughout Nebraska. In addition to gearing up for an intense field season (June-August), Lindsey is training for a marathon and will participate in the 2008 Bicycle Ride Across Nebraska (BRAN).

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 accepted for the 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.

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 conferences and meetings in the past few months. These include the UNL School of Natural Resources Research Colloquium (Lincoln); the Midwest Fish and Wildlife Annual Conference (Madison, WI), the Natural Resource Districts managers meeting (Lincoln), the Nebraska Weed Control Association annual meeting (Kearney), the Nebraska Invasive Species Conference (Lincoln), and the Nebraska Wildlife Society annual meeting (Kearney).

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. He was a speaker at the Nebraska Invasive Species Conference where he discussed efforts by the Nebraska Game and Parks Commission to control and restrain the spread of feral pigs in Nebraska. ❖

Snakes and Lizards and Birds. Oh, My! And Levitation, too!

Aaron Alai, Aaron Lotz, and Annabel Major volunteer with other School of Natural Resources students at two Lincoln elementary Schools. They guide the children in developing ideas and projects for science fairs, and also hope to build interest in science with hands-on experiments and demonstrations.

This past fall at McPhee, activities and presentations focused on ecology and the environment. Much to the delight of the children, one day's activities included assorted animals (snakes, lizards, turtles, birds) which the children could see *and touch* to demonstrate different types of skin coverings.

This semester, activities were extended to Everett. Experiments so far have included non-Newtonian fluids, homopolar motors, and the investigation of magnetic fields. The final experiment will demonstrate ionic propulsion using high voltage electricity. In layman's terms, this last one imitates levitation!

The graduate students find working with the young people to be stimulating and gratifying. For Annabel, the one-on-one time with the children is the most rewarding. "The changes that you could see happening just in the span of an hour and a half really remind you of how much potential children have, and how often [adults] take this gift for granted." ❖

Our Mission

Train graduate students for professional careers in natural resources research and management

Conduct research that will create new information useful for management of natural resources

Provide technical assistance to cooperators



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.



Fish samples (courtesy of Chris Lewis)

CURRENT STATUS: The second field season is underway. Adult walleye and white bass are being tracked with telemetry to identify spawning sites and assess associated habitats. This is the second and final year for the telemetry portion of this study. Collections of larval fish will begin next month (April). Creel surveys for 2008 will also begin next month and continue through October to gather data on species of fish being caught by anglers. Preliminary models describing walleye recruitment were developed; recruitment appears to be positively related to stocking events and negatively related to water withdrawals associated with irrigation.

GRADUATE RESEARCH ASSISTANTS: Christopher Lewis, 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 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: Five river otters implanted with telemetry in fall 2006 and an additional eight river otters were implanted with transmitters in fall/winter 2007. Tracking of the thirteen implanted otters continues. The final trapping/implanting season will begin in September of 2008.

GRADUATE RESEARCH ASSISTANT: Sam Wilson (employee of Nebraska Game and Parks Commission)

TECHNICIAN: Kent Fricke

FUNDING: Nebraska Game and Parks Commission, with support from the Folsom Children's Zoo

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. After distribution models are built, we will determine the area of spatial overlap between invasive species and target rare species and communities. That value will be combined with a hazard index in order to develop an overall relative risk assessment value.

GRADUATE RESEARCH ASSISTANT: Thad Miller

FUNDING: The Nebraska Game and Parks Commission, and the 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 final revision.

GRADUATE RESEARCH ASSISTANT: Aaron Lotz

FUNDING: U.S. Geological Survey ❖

Awards & Recognitions

Congratulations to the winners of the student poster contest at the Nebraska Invasive Species Conference. They were:

- ★ 1st Place—James Eckberg, *Native Herbivores Repel Exotic Plant Invasion*
- ★ 2nd Place—Justin Williams, *Forecasting the Invasion and Distribution Potential of Non-Native Plant Species in Nebraska*
- ★ 3rd Place—Aaron Alai, *The Predicted Distribution of the Invasive Species *Podarcis sicula* (Italian Wall Lizard)*

A big thanks goes out to *all* poster presenters! ❖

Teaching: Spring 2008

Craig Allen – *Ecology of Biological Invasions*, NRES 896. Biological invasions are an accelerating global phenomenon with potential far-reaching economic and ecological impacts. This course is designed to increase understanding of invasions and their impacts, and draws from plant, invertebrate and vertebrate examples. The focus is primarily on animal invasions and understanding the effects on structure, process and function of native ecological systems.

Students will identify invasive plants along potential invasion corridors in Lincoln, and will submit a group evaluation of a recently published book on invasions.

Kevin Pope – *Quantitative Fishery Assessment*, NRES 896. This new course provides an overview of common statistical methods used in ecological field studies. It is designed to increase 1) understanding of current fishery assessment practices, and 2) proficiency with SAS. Emphasis is placed on quantitative assessments of populations (e.g., recruitment,

SPECIAL EVENT

The Nebraska Invasive Species Conference was held on February 7-8, 2008 in Lincoln Nebraska. It was sponsored by the Unit's Invasive Species Project with funding from the Nebraska Environmental Trust. About 150 people from across Nebraska attended representing a broad array of agencies and organizations.

Keynote speakers were Keith Duncan (New Mexico State University); Randy Westbrooks (U.S. Geological Survey); and Jim Stubbendieck (Center of Great Plains Studies, University of Nebraska–Lincoln). A series of presentations covered both current and perceived future threats from invasive species, and provided input into future steps for managing invasive species.

Breakout sessions covered important issues in partnerships and collaborations, policies and legislation, and threatened and endangered species issues. Each session made recommendations for the future of invasive species management in Nebraska with surprisingly similar perspectives.

These recommendations included: improve state-wide cooperation and information sharing, including an online resource; create formalized, state-level coordination; develop legislative and policy proposals; establish conservation actions to reduce impacts from invasive species; create prevention and early detection systems, including risk assessment, prediction maps, and monitoring networks; incorporate adaptive management methods into current management practices; and develop a public education and outreach focus.

Some recommendations are already being developed such as the online resource, and the formalization of state-level coordination. The Nebraska Invasive Species Project Coordinator at the Nebraska Cooperative Fish & Wildlife Research Unit is committed to increasing communications between institutions and agencies, and maintaining the momentum for the future of invasive species management in Nebraska.

For more information, contact Annabel Major, amajor2@unl.edu, coordinator for the Nebraska Coop Unit invasive species project. snr.unl.edu/invasives

growth, and mortality), communities (predator-prey interactions) and ecosystems (biostressors).

At the completion of this course, students should be able to apply current quantitative methods used in fishery data analysis, effectively communicate statistical ideas, and critique scientific studies (e.g. identify strengths and weaknesses of statistical assessments). ❖