

October 2012



# Pintail Action Group Newsletter

## 2012 Waterfowl Population Breeding and Habitat

The 2012 Waterfowl Population Breeding and Habitat Survey were characterized by aver-



age to below-average moisture, a mild winter, and an early spring across the southern portion of the traditional and eastern survey areas. Northern habitats of the traditional and eastern survey areas

generally received average moisture and temperatures.

The total pond estimate was 5.5 million. This was 32% below 2011 and 9% above the long-term average. The [report](#) of the total duck population estimate of 48.6 million birds represents an 7% increase over last year's estimate of 45.6 million birds and was 43% above the long-term average. The estimate for northern pintails of 3.5 million was 22% below the 2011 estimate.

Unfortunately, exceptional drought conditions continue for a second

year throughout much of the central and southern Great Plains and adjoining states. Habitats of the Gulf Coast are improved from 2011, with many areas of improving habitat conditions. Playas of the western Great Plains continue to experience extreme drought that will affect habitat availability during migration and wintering, but not to the extent of the record breaking drought of 2011. Throughout 2012, drought conditions became prevalent and intensified in the northern Great Plains.

Inside this issue:	
2012 Waterfowl Population Breeding	1
John Eadie Receives Two Prestigious Awards	1
Projected impacts of climate, urbanization, and water supply management	2
Combining Lipid Dynamics, Body Condition and Winter Origin of Spring Migratory-Northern Pintails in the Rainwater Basin to Evaluate Habitat Use	4
Ducks Unlimited Canada and Bayer CropScience Partner to Examine Pintail	6
Recent Pintail Publications	7
Note from Chris Hildebrandt	7

## John Eadie Receives Prestigious Awards

Dr. John Eadie of U.C. Davis and charter PAG member recently received recognition from two groups for his contributions to waterfowl and wetland conservation efforts.

Ducks Unlimited honored Eadie with the 2012 Wetland Conservation Achievement Award in the Research/Technical category.

DU's award recognizes individuals who have made outstanding contributions to the

restoration and conservation of North America's wetlands and waterfowl.

John also received the National Blue-winged Teal Award from the North American Waterfowl Management Plan. The award recognizes partners whose activities result in substantial benefits to waterfowl, other wetland-associated migratory bird populations, or wetlands habitats. In receiving the award for 2012, Eadie was recognized for his scientific

accomplishments, his teaching contributions, his mentorship of up-and-coming conservation biologists, and for efforts to advise and contribute to waterfowl conservation efforts.

From the Press Releases Announcing the Awards:

"John has been systematic in discovering the food resources needed



**John Eadie**

**Eadie... continued on page 3**

## Projected impacts of climate, urbanization, and water supply management on habitats and ecology of pintails and other waterfowl in the Central Valley of California.

Joe Fleskes, USGS-Western Ecological Research Center

Most waterfowl habitats in the Central Valley of California rely on managed surface water supplies stored in reservoirs and delivered via a complex system to a wide array of competing water users. Water supplies vary with snow pack, temperature, and precipitation, all of which are projected to change substantially under some global climate models; land use and water management decisions can also greatly impact water supplies.

This multi-partner project is developing necessary data and adapting and applying the Central Valley Water Evaluation and Planning (WEAP) model to investigate impacts of various climate, urbanization, and water management scenarios on waterfowl habitats and ecology in the Central Valley. For each scenario, water supplies and demands are modeled in WEAP to estimate resulting landscape change. The amount, timing, and location of supported waterbird habitats based on WEAP results are then included in bioenergetics models to evaluate adequacy of food supplies to support waterfowl populations under each scenario.

Two bioenergetics modeling approaches are being used;

the traditional TRUOMET accounting of waterfowl food supplies and population demands and a spatially-explicit, agent-based modeling approach that allows an evaluation of not only changes in the amount of habitat, but also changes in the spatial and temporal distribution of those habitats.

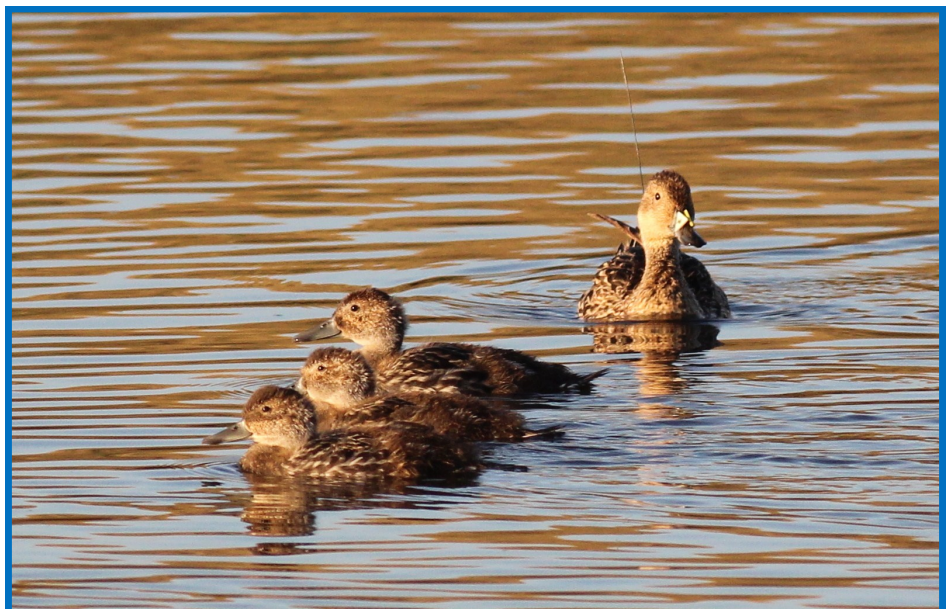
Initial modeling has indicated that under some scenarios, water supplies will not be adequate to maintain waterfowl habitat and food supplies at the levels necessary to support Central Valley Joint Venture (CVJV) goal populations of waterfowl throughout the wintering interval. Beginning with Butte Basin in the northern Sacramento Valley, the

project goal is to complete scenario evaluations for hydrological basins throughout the Central Valley as funding allows.

Led by USGS-Western Ecological Research Center, project partners include the California Landscape Conservation Cooperative, USFWS, CVJV, California Dept. of Fish and Game, Ducks Unlimited, Delta Waterfowl, Stockholm Environment Institute, PRBO Conservation Science, and University of California-Davis.

Additional project information is available at:

<http://www.werc.usgs.gov/Project.aspx?ProjectID=204>



## Eadie —continued from page 1

and exploited by ducks in the Central Valley," said Fritz Reid, Ph.D., DU Director of Conservation Programs, Boreal & Arctic Programs. "This information on seasonally flooded wetlands and riceland habitats has helped build the conservation model for these critical wintering grounds. His strength as an educator has built the capacity of graduate students and field ecologists alike."

In addition to his role as an educator, Dr. Eadie consistently shares his expertise with Ducks Unlimited, the Central Valley Joint Venture, the Pacific Flyway Studies Group, the California Department of Fish and Game, U.S. Fish & Wildlife Service and California Waterfowl Association. Each of these organizations has benefited

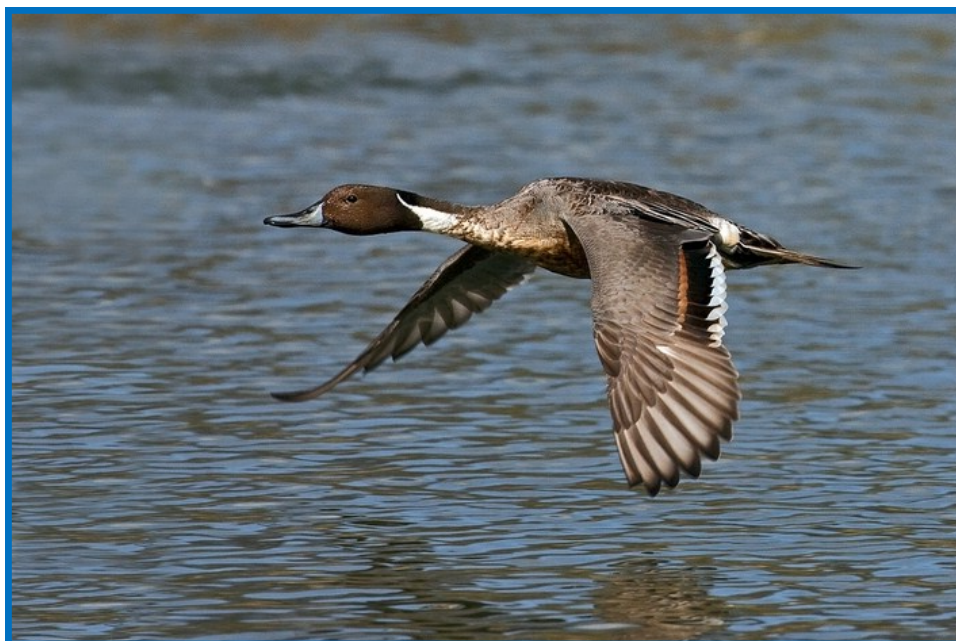
greatly from his leadership, vision and depth of knowledge.

A top scholar and skilled researcher, Eadie has published numerous articles to advance the understanding and biological knowledge of key conservation issues including avian ecology; waterfowl management & conservation; population ecology and wetland ecology and conservation.

Dr. Eadie considers it an honor and privilege to work on integrating waterfowl management with critical habitat concerns while continually adapting harvest management practices. He says the challenge is trying to update the whole human dimension side of things in a

more explicit and coherent way. "That's really important as it acknowledges the importance of hunters and the traditions of hunting in terms of maintaining our capacity for wetlands and waterfowl and all the great recreational values to both hunters and non-hunters alike," said Eadie. "And we need to understand many of the challenges we're going to face not necessarily biological but may be sociological in terms of funding conservation, keeping the funds we need in place to sustain wetland

and the people that manage those wetlands."



## Combining Lipid Dynamics, Body Condition, and Winter Origin of Spring Migratory Northern Pintails in the Rainwater Basin to Evaluate Habitat Use

Dustin J. Casady  
Projected Degree: M.S.  
Supervisor: Dr. Letitia M. Reichart

### Contact Information:

Dustin J. Casady; Department of Biology ; University of Nebraska at Kearney  
2401 11<sup>th</sup> Avenue; Kearney, NE 68849  
[casadydj@lopers.unk.edu](mailto:casadydj@lopers.unk.edu)

Dr. Letitia M. Reichart; Department of Biology  
BHS 318; University of Nebraska at Kearney  
2401 11<sup>th</sup> Avenue; Kearney, NE 68849  
[reichartlm@unk.edu](mailto:reichartlm@unk.edu)

Northern Pintails (*Anas acuta*) are below population goals set by the North American Waterfowl Management Plan, and low reproductive success likely has contributed to population decline for this species. Reproductive success is directly influenced by lipid acquisition on spring migratory stopover sites, where quality food resources are essential to maintain body condition. Birds that arrive on breeding grounds in good body condition have higher reproductive success, thus by understanding lipid changes at stopover sites, management can be implemented to provide necessary food resources to help Northern Pintails arrive in good condition. To elucidate the relationship between the Rainwater Basin, an important stopover site in south-central Nebraska, and lipid acquisition by Northern Pintails, we will look at short term measures of lipid change and body condition in relation to overwintering origin. In addition to measures of plasma lipid metabolites we will analyze whole body lipid composition to determine body condition and will measure stable isotopes in feathers to determine overwintering origin. We will evaluate if overwintering origin is correlated to body condition and lipid change in the Rainwater Basin during spring migration. Poor body condition in birds has been correlated with lipid metabo-

lites, where birds in poor condition have lower levels of triglycerides and higher levels of both  $\beta$ -hydroxybutyrates and glycerol. Subpopulations of Northern pintails use specific areas of the Rainwater Basin thus, overwintering origin in relation to changes in lipid metabolites and body condition may allow managers to pinpoint where management actions could increase nutrient resources and negate cross-seasonal effects, such as poor conditions on the wintering grounds.



## PINTAIL ACTION GROUP HOSTS SYMPOSIUM

Periodically, the Pintail Action Group (PAG) sponsors and hosts a symposium relative to issues or subjects of importance to pintails, other waterfowl, and the habitats that support these populations. As part of the 2012 Annual Meeting of The Wildlife Society in Portland, Oregon, PAG organized the symposium “Multi-scale Modeling for Conservation of Migratory Birds.”

Populations of migratory birds use multiple habitats across a wide variety of ecosystems throughout the year. Historically, investigation and modeling the demography of migratory bird populations has primarily been limited to individual species during discrete periods of the annual life cycle. However, during discrete periods, the multi-species migratory bird community is comprised of a mixture of individuals with different histories in terms of previously used habitats and physical locations. In addition, during migration and movements, individual migratory birds have options of traveling to different regions, ecosystems, and habitats to fulfill their physiological needs during the annual cycle. How-

ever, a suitable framework to quantitatively incorporate such “cross-seasonal” influences on the population demography of migratory birds is lacking.

The symposium included (1) an introduction to the issue including background, previous limitations, and future opportunities; (2) potential frameworks and quantitative approaches to building a demographic model to incorporate cross-seasonal effects; and (3) case studies highlighting efforts to build this type of population model. The purpose was to describe and illustrate the concept of metapopulation analyses across multiple temporal and spatial scales cross-seasonally linking the influence of multiple habitats and other impacts on demography of migratory bird populations

The symposium was well-attended. The organizers would like to sincerely thank each presenter and their co-authors for preparing and presenting such excellent papers. The success of the symposium was due to your hard work. The following are the authors and presentations.

M. Runge “Building for migratory birds: capturing temporal and spatial linkages”

A. Afton, M. Mitchell, and S. Jenkins “Movements, stopover locations, and body condition of lesser scaup during spring migration”

J. Austin, S. Boomer, J. Lyons, R. Clark, S. Slattery, and D. Howerter” Modeling scaup populations across seasons and regions: application for a comprehensive conservation action plan”

B. Mattson, M. Runge, J. Devries, S. Boomer, J. Eadie, D. Haukos, J. Fleskes, D. Koons, W. Thogmartin, and R. Clark “A modeling framework to integrate harvest and habitat management of North American waterfowl: case-study of northern pintail population dynamics”

J. Sedinger and C. Nicolai “Multi-seasonal effects on the dynamics of the black brant population”

G. Albanese “A multi-scale examination of stopover habitat use by migrant shorebirds in the Southern Great Plains”

S. Skagen and B. Andres “Shorebirds across the Western Hemisphere:: understanding the linkages”

A group of PAG members, lead by Bob Clark, are revising the Northern Pintail account for the Birds of North America series. Look for an updated account in 2013

The next meeting of the Pintail Action Group will be at the 2013 Ecology and Conservation of North American Wildfowl - a joint meeting between the North American Duck Symposium and North American Arctic Goose Symposium in Memphis, TN during 27-31 January. The meeting will be on Sunday, January 27 at the Peabody Hotel from 8:30-12:00. Consult the meeting program for location. Topics for discussion include activities, work group progress, current and future research, and chair succession. In mid-December, there will be a PAG announcement for agenda items and presentation topics. There is a NAWMP special meeting the afternoon of the 27th; thus, it is anticipated that the PAG meeting will conclude prior to the start of the NAWMP meeting so that folks can attend both meetings.

## Ducks Unlimited Canada and Bayer CropScience Partner to Examine Pintail Duckling Survival

David Johns, Jim Devries, and Bob Clark, University of Saskatchewan

Thousands of glacial depressions in Saskatchewan's Prairie Pothole Region (PPR) were filled with water this spring, and dotted with the bright plumage of abundant breeding waterfowl. An arriving female northern pintail was faced with a stark choice - settle in grassland areas, or in cropland areas with fields of standing stubble from last year's harvest or the enticing greenery in fields of winter wheat.

Our research indicates that where she sets her wings has implications not only for herself but for the survival of this season's young as well. The management strategy of increasing the area devoted to winter wheat production in the PPR centers around providing attractive, relatively safe nesting cover for pintails in early spring.

Previous research has shown that winter wheat supports higher nest densities and survival compared to spring-seeded cereal crops. However, with past research revealing that duckling survival in cropland-dominated landscapes can be 16-52% lower than grassland environments, lower brood survival rates may offset the nesting success gains obtained from winter wheat.

Our main objective was to investigate whether this nest-brood survival trade-off exists.

Pintail breeding ecology was studied in 2011 and 2012 in regions of moderate to high pintail breeding pair densities (>4 pairs/km<sup>2</sup>). These regions also were characterized by winter wheat production and included locally strong gradients between cropland- and grassland-dominated

landscapes. Work was conducted near Climax, SK, in 2011 and in the vicinity of Lake Alma, SK, in 2012.

Equal acreages of winter wheat, spring-seeded cereals, cereal stubble, hayland and grassland were searched for duck nests using standard nesting-searching techniques. Female pintails were captured at nests just prior to hatch and radio-marked, tracked daily using telemetry, and broods were monitored weekly from hatch to 45 days of age (or until broods were lost).

Excellent water conditions in the PPR, over both years, attracted large numbers of breeding pintails. In 2011, 195 pintail nests were found on 8,000 acres of upland cover and 53 females were radio-marked. Complete brood histories were collected from 36 females (26 in cropland, 10 in grassland). Apparent brood survival rates were 69% overall in cropland and 70% in grassland-dominated landscapes.

In 2012, 152 pintail nests were found on 10,000 acres and 50 females were radio-marked which provided 44 known brood histories (20 in cropland, 24 in grassland). Apparent brood survival rates were

65% overall in cropland and 75% in the grassland-dominated landscape. More detailed analyses regarding landscape and habitat-specific effects on brood and duckling survival are currently underway.

Overall, both field seasons were successful, provided new, useful information about pintail brood ecology, and would not have been possible without tremendous support.

Sincere thanks are expressed to the research staff, private landowners, Ducks Unlimited Canada's Institute for Wetland and Waterfowl Research, Bayer CropScience, Environment Canada, US Fish and Wildlife Service through the North American Wetland Conservation Council, Natural Sciences and Engineering Research Council of Canada, University of Saskatchewan, Wildlife Habitat Canada and several private donors.

Contact David Johns (david.johns@usask.ca) for more information.



## Recent Pintail Related Publications

- Buler, J. J., L. A. Randall, J. P. Fleskes, W. C. Barrow, Jr., T. Bogart, and D. Kluver. 2012. Mapping wintering water fowl distributions using weather surveillance radar. *PLoS one* 7(7): e41571. doi:10.1371/journal.pone.0041571
- Casazza, M. L., P. S. Coates, M. R. Miller, C. T. Overton, and D. R. Yparraguirre. 2012. Hunting influences the diel patterns in habitat selection by northern pintails *Anas acuta*. *Wildlife Biology* 18:1-13. doi: 10.2981/09-099
- Coates, P. S., Casazza, M. L., B. J. Halstead, and J. P. Fleskes. 2012. Relative value of managed wetlands and tidal marshlands for wintering northern pintails. *Journal of Fish and Wildlife Management* 3:98-109.
- Fleskes, J. P. 2012. Wetlands of the Central Valley of California and Klamath Basin. Pages 357-370 in D. Batzer and A. Baldwin, editors, *Wetland Habitats of North America: Ecology and Conservation Concerns*. University of California Press, Berkeley, California.
- Fleskes, J. P., D. S. Skalos, and M. A. Farinha. 2012. Bird use of fields treated postharvest with two types of flooding in Tulare Basin, California. *Journal of Fish and Wildlife Management* 3:164-174.
- Fleskes, J. P., B. J. Halstead, M. L. Casazza, P. S. Coates, J. D. Kohl, and D. A. Skalos. In Press. Waste rice seed in conventional and stripper-head harvested fields in California: Implications for wintering waterfowl. *Journal of Fish and Wildlife Management*.
- Henaus, V., M. D. Samuel, R. J. Dusek, J. P. Fleskes, and H. S. Ip. 2012. Presence of avian influenza viruses in water fowl and wetlands during summer 2010 in California: Are resident birds a potential reservoir? *PLoS ONE*. 7(2): e31471. doi:10.1371/journal.pone.0031471.
- Mattson, B. J., M.C. Runge, J.H. Devries, G.S. Boomer, J.M. Eadie, D.A. Haukos, J. P. Fleskes, D.N. Koons, W.E. Thogmartin, and R. G. Clark. 2012. A modeling framework for integrated harvest and habitat management of North American waterfowl: case-study of northern pintail metapopulation dynamics. *Ecological Modeling* 225: 146-158.
- Pearse, A. T., G. L. Krapu, and R. R. Cox, Jr. 2012. Spring snow goose hunting influences body composition of water fowl staging in Nebraska. *Journal of Wildlife Management* 76:1393-1400.
- Smith, L.M., D.A. Haukos, and S. McMurry. 2012. High Plains Playas. Pages 299-311 in D. Batzer and A. Baldwin, editors, *Wetland Habitats of North America: Ecology and Conservation Concerns*. University of California Press, Berkeley, California.
- Yamaguchi, N. M., Hupp, J. W., Flint, P. L., Pearce, J. M., Shigeta, Y., Shimada, T., Hiraoka, E. N. and Higuchi, H. 2012. Habitat use and movement patterns of Northern Pintails during spring in northern Japan: the importance of agricultural lands. *Journal of Field Ornithology*, 83: 141-153. doi: 10.1111/j.1557-9263.2012.00364.x

### Note from Chris Hildebrandt, Regional Biologist, South Pacific Flyway, Ducks Unlimited

Here in the San Joaquin Valley of California's Central Valley, Northern Pintail showed up earlier this fall than anyone around can remember, with the first migrants, some 1,000 birds, arriving near Los Banos on Aug. 1, 2012 (typically arrive like clockwork on Aug. 10). Unfortunately, it likely reflects the dry conditions in the Klamath Basin, forcing the birds to fly over and travel farther south earlier. Habitat conditions in the SJ Valley are excellent, with many private and public wetland managers working year round to provide optimal seasonal wetlands for migratory waterfowl. Also, even with the drought conditions, sufficient water was available for moist soil management in the grasslands of the SJ Valley, so excellent forage exists for pintail and other waterfowl species.

The Tulare Basin did not have readily available surface water supplies like in 2011, and had to rely on expensive deep well pumped water, however, Mendota Wildlife Area, Kern Refuge, and some of the larger private wetland complexes here irrigated annual moist soil plants for waterfowl and have excellent conditions. Wetland habitats in the southern CA area and along the Lower Colorado River are in excellent shape, and aren't as affected by drought conditions through more stable water sources.