

U.S. Geological Survey South Dakota Cooperative Fish and Wildlife Research Unit

2011 ANNUAL REPORT



IN COOPERATION WITH:

South Dakota State University
South Dakota Department of Game, Fish & Parks
Wildlife Management Institute
U.S. Fish and Wildlife Service

South Dakota Cooperative Fish and Wildlife Research Unit

FOREWORD

The South Dakota Unit of the U.S. Geological Survey's Cooperative Research Unit program has served an important role in graduate education and technical assistance in fish and wildlife management at South Dakota State University since 1963. Research at the South Dakota Unit, guided by our Coordinating Committee, is conducted primarily by graduate students (M.S. and Ph.D.) studying a wide range of natural resource problems. The Unit is housed in the Department of Natural Resource Management at South Dakota State University, where we share a large supply of field equipment and on/off-campus laboratory facilities. The USGS EROS Data Center and the GIS Center of Excellence (GISCE) at SDSU provide unique resources and collaborative opportunities for the South Dakota Coop Unit.

Since the early 1960s, about 230 theses and dissertations have been completed by students working through the South Dakota Coop Unit. Unit students have conducted research on a variety of topics that include endangered species, wetland ecology, fisheries management, upland game, big game management, and non-game species. A list of theses and dissertations are available at <http://www.sdstate.edu/wfs/publications/index.cfm>. In 2010, Professor Emeritus and Assistant Unit Leader (retired) Dr. Kenneth F. Higgins established an endowment to support graduate student research at SDSU. The *Kenneth F. Higgins Waterfowl Legacy Research Endowment* is directed toward supporting graduate student research activities that benefit wetland-dependent avian species. Contributions to the endowment can be made by contacting the SDSU Alumni Association (888.735.2257; alumni@statealum.com).

As the South Dakota Unit enters our 49th year of service, we will continue to address applied research needs of our state and federal cooperators to help manage fish and wildlife resources in the Northern Great Plains. Please feel free to contact us for more information.

Steven R. Chipps
Unit Leader, Professor
Steven.Chipps@sdstate.edu
605.688.5467

UNIT ADDRESS: U.S. Geological Survey, South Dakota Cooperative Fish and Wildlife Research Unit, South Dakota State University, Department of Natural Resource Management, Box 2140B, Northern Plains Biostress Laboratory, Room 201, Brookings, SD 57007; telephone: 605-688-5467; fax: 605-688-4515; e-mail: Kathryn.Tvedt@sdstate.edu.
http://www.coopunits.org/South_Dakota/

CONTENTS

	Page
UNIT STAFF AND COOPERATORS	4
COORDINATING COMMITTEE.....	5
RESEARCH PERSONNEL	5
ADMINISTRATIVE SUPPORT.....	7
PROGRAM DIRECTION STATEMENT.....	7
COMPLETED PROJECTS.....	8
ONGOING PROJECTS	11
TEACHING	15
THESES AND DISSERTATIONS	15
AWARDS AND HONORS.....	15
SCIENTIFIC PRESENTATIONS	16
TECHNICAL AND POPULAR PUBLICATIONS	20
SCIENTIFIC PUBLICATIONS.....	21

UNIT STAFF AND COOPERATORS

DR. STEVEN R. CHIPPS

Unit Leader and Adjunct Professor

Ph.D. University of Idaho

Aquatic ecology

Steven.Chipps@sdstate.edu

DR. JOSHUA D. STAFFORD

Assistant Unit Leader and Adjunct Associate Professor

Ph.D. Mississippi State University

Waterfowl and wetlands ecology and management

Joshua.Stafford@sdstate.edu

KATHRYN TVEDT

Unit Administrative Support Specialist

Kathryn.Tvedt@sdstate.edu

DI DRAKE

Accounting Specialist

Di.Drake@sdstate.edu

TERRI SYMENS

Senior Secretary

Terri.Symens@sdstate.edu

COOPERATORS

South Dakota State University (SDSU); South Dakota Game, Fish and Parks (GFP); U.S. Geological Survey (USGS); Wildlife Management Institute (WMI); and the U.S. Fish and Wildlife Service (USFWS).



COORDINATING COMMITTEE

Tony Leif, Director
Division of Wildlife
SD GFP
523 East Capitol Avenue
Pierre, SD 57501-3182

Dr. Stephen Torbit
Assistant Regional Director
USFWS-Mountain Prairie
Denver Federal Center
P. O. Box 25486, DFC
Denver, CO 80225-0486

Pat Ruble
Midwest Field Representative
Wildlife Management
Institute
12748 West Bank Drive
Millersport, OH 43046

Dr. Barry Dunn
Dean SDSU, College of
Agriculture and Biological
Sciences
Box 2207
Brookings, SD 57007

Dr. Michael Tome
Unit Supervisor
Cooperative Research Units
206 4th Avenue
Brunswick, MD 21716

RESEARCH PERSONNEL

Research Associate

Breanna VanDeHey

Ph.D. Candidates

Mark Fincel
Daniel James
Tobias Rapp
Tandi Perkins
David Deslauriers
Adam Janke

Undergraduate Research Technicians

Jason Augspurger
Zach Jessee
Tiffany Hennigs
Denielle Meyerink
Brent Martens
Christopher Sundmark

M.S. Candidates

Diana Iriarte
Hilary Meyer
Megan Thul
Cameron Trembath

COOPERATING FACULTY – SOUTH DAKOTA STATE UNIVERSITY

<u>Name</u>	<u>Department</u>	<u>Cooperative Activity</u>
Dr. Katie Bertrand	Natural Resource Management	Fish ecology studies
Dr. Michael Brown	Natural Resource Management	Limnology studies
Dr. Delvin DeBoer	Civil and Environmental Engineering	Water quality
Dr. Charles Dieter	Natural Resource Management	Waubay study
Dr. Leigh Fredrickson	Natural Resource Management	Wetlands research
Dr. Brian Graeb	Natural Resource Management	Fish ecology studies
Dr. Daniel Hubbard	Natural Resource Management	Wetland studies
Dr. Jon Jenks	Natural Resource Management	Wildlife ecology
Dr. Kent Jensen	Natural Resource Management	Bird studies
Dr. Carter Johnson	Natural Resource Management	Wetland ecology
Mr. Michael Kjellsen	Natural Resource Management	National Wetland Inventory
Dr. Barry Dunn	Dean, College of AgBio Sciences	Funding/facilities
Dr. Thomas Loveland	GIS Center of Excellence	Breeding bird study
Dr. Darrell Napton	Geography	Wetland study
Dr. Regg Neiger	Veterinary Sciences	Waterfowl studies
Dr. David Willis	Natural Resource Management	Administration, Funding
Dr. Michael Wimberly	GIS Center of Excellence	Pallid sturgeon distribution
Dr. Melissa Wuellner	Natural Resource Management	Fish ecology studies

REGIONAL COOPERATING SCIENTISTS

<u>Name (South Dakota Unit Person)</u>	<u>Agency/University</u>	<u>Subject</u>
Dr. Michael Anteau (Stafford)	USGS – NPWRC	Wetland and waterbird health
Mr. Michael Barnes (Chipps)	SD GFP	Walleye reproduction
Dr. Brian Blackwell (Chipps)	SD GFP	Aquatic Invasive Species
Dr. John Coluccy (Stafford)	Ducks Unlimited, Inc.	Conservation planning
Dr. Michael Eichholz (Stafford)	Southern Illinois University	Migration ecology
Dr. James Garvey (Chipps)	Southern Illinois University	Diet Quantification
Dr. Robert Gates (Stafford)	The Ohio State University	Spring-migration ecology
Dr. Dylan Kesler (Stafford)	University of Missouri	Avian ecology, modeling
Dr. Robert Klaver (Chipps)	USGS – EROS	GIS/Landuse
Dr. Robert Klumb (Chipps)	FWS, Minnesota	Pallid Sturgeon
Mr. Dave Luchessi (Chipps)	SD GFP	Small impoundments
Dr. Brian McLaren (Chipps)	Lakehead University	Lake sturgeon ecology
Dr. Ben O’Neal (Stafford)	Franklin College	Radar ornithology
Dr. Craig Paukert (Chipps)	Missouri Coop Fish and Wildlife Unit	Paddlefish
Dr. Aaron Pearse (Stafford)	USGS – NPWRC	Biometrics
Dr. Robert Pilsbury (Chipps)	University of Wisconsin	Didymo in the Black Hills
Dr. Greg Sass (Stafford)	Illinois Natural History Survey	Integrated wetland management
Mr. Kurt Schilling (Chipps)	FWS	Hatchery Studies
Dr. James Stone (Chipps)	South Dakota School of Mines & Tech.	Hg Studies
Dr. Corey Suski (Chipps)	University of Illinois	Fish Physiology
Dr. David Wahl (Chipps)	Illinois Natural History	Bioenergetics
Dr. Pat Weatherhead (Stafford)	University of Illinois	Risk taking in ducks
Dr. Molly Webb (Chipps)	FWS, Montana	Lake sturgeon reproduction
Mr. Jerry Wilhite (Chipps)	SD GFP	Black Hills trout
Dr. Steve Windels (Chipps)	National Park Service	Lake sturgeon

ADMINISTRATIVE SUPPORT

SOUTH DAKOTA STATE UNIVERSITY

The Unit receives administrative assistance from the Office of Grants and Sponsored Programs at South Dakota State University and we wish to thank Holly Beutler, Dr. James Doolittle, Nicole Lounsbery, Jacqueline Nelson, Kay Scheibe, and Doug Ward for their assistance and advice.

US GEOLOGICAL SURVEY, COOPERATIVE RESEARCH UNIT PROGRAM

The South Dakota Unit receives administrative assistance from the CRU Headquarters staff in Reston, VA. We thank Suzanne Cartagirone, Shana Coulby, Brenda Croston, Don Dennerline, Terry Linton, Rita Raines, Mike Tome and Kevin Whalen for their advice and assistance.

US FISH AND WILDLIFE SERVICE

We thank the following FWS offices and personnel for their support: Aberdeen Wetland Acquisition Office (Patrick Russell); Brookings' Wildlife Habitat Office (Kurt Forman); Ecological Services Office (Natalie Gates, Steven Krentz); Gavin's Point National Fish Hatchery and Aquarium (Kurt Schilling); Great Plains Fish and Wildlife Management Office (Robert Klumb); Huron Wetland Management District; Lacreek NWR (Tom Koerner); Madison Wetland Management District (Tom Turnow); Sand Lake NWR (Bill Schultze); and Waubay NWR (Larry Martin, Eric Salo).

PROGRAM DIRECTION STATEMENT

The Unit's program direction is reviewed annually by our Coordinating Committee. The overall program direction will be to conduct applied research to benefit management of Northern Great Plains habitats and biota. Wetland research in the Prairie Pothole Region will incorporate landscape-level influences on the fish, wildlife, invertebrates, and plant communities of wetlands.



Ecological services – such as water retention, livestock forage, flood reduction, ground water recharge, esthetics, and fishery potential – will be included in research efforts when appropriate. Applied aspects of wetland research will strive to address wetland conservation, waterfowl production, human dimensions of wildlife management, and integration with agricultural and aquaculture practices. Fisheries research will focus on the management, conservation, and production of native species and sport fishes. The Unit will develop collaborative and integrative research programs with state, federal, and NGO agencies to address emerging issues dealing with climate change, land-use patterns, invasive species, and conservation of fish and wildlife of the Northern Great Plains. Because of its socio-economic and recreational value, the Missouri River provides unique challenges and opportunities in the region. Thus, the study of native, endangered, and introduced fishes and wildlife of the Missouri River will continue to be a focus of Unit research.

COMPLETED PROJECTS

South Dakota River Studies Completion and Public Information

This study determined the extent of riverine habitat on state land and inventory fishes. There are 72 miles of streams on public land on 203 parcels of public land in eastern South Dakota. We surveyed 58 sites, most in headwater streams, which excluded large river sites (e.g., boat access), and many small tributaries on Corps lake land. Water quality and habitat data were gathered as a “snap shot” to give future surveyors information on conditions during sampling. We identified 7,144 fishes of 40 families. Only 56 specimens of 10 species were game fishes. Six species were monitored species: Topeka shiner, blackside darter, hornyhead chub, slenderhead darter, northern redbelly dace, and carmine shiner.

FUNDING

South Dakota Department of Game, Fish and Parks (F-113-R, 1710)

INVESTIGATORS

Luke Borgstrom, M.S. and Cari Ann Hayer

FACULTY

Charles Berry and Katie Bertrand

COMPLETED

January 2011

Influence of *Didymosphenia geminata* on Brown Trout in Rapid Creek, South Dakota

We evaluated the influence of a nuisance algae, *D. geminata*, on prey availability and brown trout diets in Black Hills streams. In the presence of *D. geminata*, macroinvertebrate abundance was composed of fewer, larger taxa and higher numbers of smaller taxa (i.e., chironomids). Brown trout in Rapid Creek consumed fewer ephemeropterans and a high amount of dipterans. Nonetheless, diet analysis showed that brown trout in Rapid Creek consumed as much or more prey than trout from two other streams unaffected by *D. geminata*. Moreover, relative weight of brown trout from Rapid Creek was high (>100), implying that food availability was not limiting. These findings imply that *D. geminata* did not negatively impact feeding and condition of brown trout in Rapid Creek, although mechanisms affecting size-structure in Rapid Creek remain unknown.

FUNDING

South Dakota Department of Game, Fish and Parks (F-15-R-1514)

INVESTIGATOR

Daniel James,
Ph.D. candidate

FACULTY

Steven Chipps

COMPLETED

July 2011



Effects of Variable Prey Resources on Food Web Dynamics in Missouri River Impoundments

Prey availability has a large influence on growth and condition of walleye in large reservoirs. In Lake Oahe, South Dakota, rainbow smelt are a primary prey of walleye, but their abundance varies significantly from year to year. Recently, gizzard shad have become established in Lake Oahe and their abundance has increased considerably. To evaluate the importance of gizzard shad on walleye growth and condition in Lake Oahe, we compared recent estimates of walleye feeding and growth to that observed in the mid 1990s, when smelt abundance was high, and the early 2000s, when both smelt and shad abundance was low. Comparative analysis revealed that growth rate of walleye foraging on gizzard shad (2008-2009) was intermediate to that of walleyes feeding on predominantly rainbow smelt (1993-1994) or mixed prey resources of invertebrates and fishes (2001-2002). Because gizzard shad are available during short time periods (< 2 mos) in late summer, walleye can only achieve about 50% of their yearly maintenance requirements from this prey source. Conversely, rainbow smelt, which are available and consumed year round, provide a continuous energy source that contributes to high growth rate. Nonetheless, when abundant, gizzard shad can provide an important subsidy to Lake Oahe walleyes during periods of low rainbow smelt abundance.

FUNDING

South Dakota Department of Game, Fish and Parks (F-15-R-1515)

INVESTIGATOR

Mark Fincel, Ph.D. candidate

FACULTY

Steven Chipps

COMPLETED

July 2011



Status and Distribution of Fishes in Select North Dakota Rivers and Streams

River regulation has altered the structure and dynamics of many riverine ecosystems, most notably through construction of large dams. To better understand the role of tributary streams within the Garrison Reach, we examined the effects of mainstream river regulation on tributary fish assemblages. Mainstream river regulation in the Garrison Reach has enriched tributaries near the dam and in the reservoir environment, while tributaries not directly adjacent to these habitats experienced species losses, presumably from river regulation (e.g. loss of dispersal corridors and altered flow regime). Larger tributaries not only displayed less species turnover between time periods, but are experiencing taxonomic homogenization, while smaller tributaries exhibited higher species turnover and appear to be differentiating. These results suggest that tributaries provide important spawning areas for many Missouri River fishes, and likely contribute to the persistence of fish species within the regulated river environment of the Garrison Reach.

FUNDING

North Dakota Department of Game and Fish

INVESTIGATORS

McClain Johnson, M.S. candidate

FACULTY

Brian Graeb and Charles Berry

COMPLETED

December 2010



Below-Ground Food Production in Habitats Utilized by the Rocky Mountain Population of Greater Sandhill Cranes

Sandhill cranes (*Grus canadensis*) have been present on the North American landscape for over 4 million years and have adapted to wetlands for nesting, feeding, and roosting. The goal of this study was to gain insights into the type, abundance, biomass, and distribution of below-ground foods used by RMP cranes at three United States Fish and Wildlife Service (USFWS) National Wildlife Refuges (NWR) in the Intermountain West. Large-scale wetland loss across the continent makes the Intermountain West one of the few remaining areas where greater sandhill cranes can carry out a successful annual cycle because of the presence of remnant wetlands. Results of this study indicate below-ground foods are a substantial part of the nutritional resources available in wetlands across the Intermountain West. Natural wetlands provide a greater diversity, abundance, and biomass of below-ground invertebrate and plant foods than agricultural habitats. Distribution, abundance, and biomass of below-ground foods of value to RMP cranes vary spatially and temporally with geomorphic setting and abiotic processes. These nutritionally valuable foods are commonly available when above ground foods are reduced, increasing their value to cranes in fall, winter, and early spring.

FUNDING

U.S. Fish and Wildlife Service (RWO #99)

INVESTIGATORS

Diana Iriarte, M.S. candidate

FACULTY

Leigh Fredrickson, Kent Jensen, Steve Chipps

COMPLETED

August 2011

Water Quality, Nutrient Dynamics and Factors Affecting Water Clarity in U.S. Bureau of Reclamation Reservoirs

Jamestown and Tschida reservoirs are operated by the U.S. Bureau of Reclamation and represent significant regional water resources. Recreational use within these units has increased in recent years. To meet these demands, Resource Management Plans (RMP) have been completed that address several needs related to overall management of the units. The purpose of the RMPs is to foster stewardship of public lands within the units. As changes in land management and recreation occur, baseline data on water quality are needed. Using mass-balance models, we showed that nutrient concentration (total phosphorus) in Jamestown Reservoir was underestimated by the model. This was likely due to inputs coming into the reservoir that were not related to major tributary inlets. Using field data on chlorophyll a, detritus, and inorganic suspended solids, we developed predictive models for estimating Secchi depth in Jamestown Reservoir and Lake Tschida. Reservoir-specific models provided a means to simulate the effects of seston concentration on Secchi depth that should prove useful for evaluating seasonal and/or spatial variability in water quality.

FUNDING

Bureau of Reclamation (RWO #98)

INVESTIGATOR

Michael Greiner, M.S. candidate

FACULTY

Steven Chipps

COMPLETED

December 2010



Estimating Forage Production for Waterbirds and Waterbird Responses to Habitat Management at Lacreek National Wildlife Refuge, South Dakota

Lacreek NWR provides critical food resources for migratory waterbirds in western South Dakota, including waterfowl and shorebirds. The refuge is the winter home to over half of the High Plains population of Trumpeter Swans. Duck use-days were used to calculate carrying waterfowl capacity on Lacreek National Wildlife Refuge based on average moist-soil plant seed and arrowhead forage yields. In 2008 and 2009, sampled impoundments produced an average of 150 kg/ha and 200 kg/ha, respectively. Using duck use-day estimates, it was determined that when moist-soil seed production on Lacreek National Wildlife Refuge was solely considered, the refuge is currently not capable of supporting the average number of dabbling ducks migrating and wintering on the refuge. In 2008 and 2009, sampled impoundments produced an average of 2,500 kg/ha and 2,000 kg/ha of achenes and tubers, respectively. Using waterfowl use-day estimates, it was determined that based solely on arrowhead tuber production, Lacreek National Wildlife Refuge is currently capable of supporting the average number of trumpeter swans wintering on the refuge and average arrowhead achene and tuber production is likely capable of supporting the average number of dabbling ducks migrating and wintering on the refuge.

FUNDING

U.S. Fish and Wildlife Service (RWO #101)

INVESTIGATOR

Heather McWilliams, M.S. candidate

FACULTY

Kent Jensen, Charles Berry and Robert Klaver

COMPLETED

May 2011

ONGOING PROJECTS

Lake Sturgeon Population Characteristics, Movements and Habitat Use in Namakan Reservoir



The lake sturgeon (*Acipenser fulvescens*) is a Minnesota state-listed species of special concern.

In Canada, western populations of lake sturgeon are considered to be endangered and the Rainy River-Lake of the Woods populations to be of special concern. Since the late 1800s lake sturgeon populations have declined in the Laurentian Great Lakes. These declines have been attributed to loss or fragmentation of crucial spawning, nursery, and feeding habitats. This project has two objectives: 1) to document the population characteristics of lake sturgeon in Namakan Reservoir and relate recruitment patterns to historical hydrological and reservoir-operation variables to better understand effects of climate and dam operation, and 2) to identify seasonal habitat use and reproductive patterns in lake sturgeon. This information will be used to assess effects of existing threats to spawning and foraging habitat.

FUNDING

U.S. National Park Service

INVESTIGATOR

Cam Trembath, M.S. candidate

FACULTY

Steven Chipps and Brian McClaren

EXPECTED COMPLETION

April 2012

Latitudinal Variation in Juvenile Pallid Sturgeon Physiology

Pallid sturgeon are found from the upper Missouri to lower Mississippi rivers and thus are exposed to a wide range of environmental conditions. In many fishes, populations at different latitudes become adapted to regional environmental conditions and can exhibit differences in physiological, morphological and behavioral traits. Recent work with pallid sturgeon indicates that pallid sturgeon from the upper Missouri River were genetically distinct from those in the Mississippi River. Although well-documented, it is unclear if (or how) genetic differences manifest as physiological or behavioral adaptations in young pallid sturgeon. To determine if physiological differences exist among age-0 pallid sturgeon from the upper Missouri and Mississippi rivers, we are measuring growth, consumption and metabolic rate across a range of water temperatures.



FUNDING

U.S. Army Corps of Engineers

INVESTIGATOR

Hilary Meyer, M.S. candidate

FACULTY

Steven Chipps, Brian Graeb, Robert Klumb

EXPECTED COMPLETION

November 2011

Influence of Reservoir Productivity on Food Web Structure and Walleye Stocking Success in Two South Dakota Impoundments



Management of walleye (*Sander vitreus*) fisheries in South Dakota impoundments can be hindered by factors that include poor

habitat quality, eutrophication and limited natural recruitment. Richmond and Mina reservoirs, located in northeastern South Dakota, represent important regional fisheries and are managed for a variety of sport fishes that include black crappie, bluegill, channel catfish, largemouth bass, white bass and walleye. Natural reproduction of walleyes in both reservoirs is low, necessitating periodic stocking of fingerling fish. The extent to which factors such as prey availability and(or) environmental variation influences growth and survival of young walleyes is not known. To address these questions, we are using a combined field and experimental approach to evaluate diet, growth and survival of fingerling walleye in Mina and Richmond reservoirs.

FUNDING

South Dakota Department of Game, Fish & Parks (F-15-R-1521)

INVESTIGATOR

Megan Thul, M.S. candidate

FACULTY

Steven Chipps and Brian Blackwell

EXPECTED COMPLETION

July 2012

Spatial Distribution of Rocky Mountain Sandhill Cranes in Response to Habitat Conditions During the Annual Cycle

This study documents the annual life cycle of sandhill cranes to changing habitat availability in the intermountain corridor from Idaho to Mexico. Study areas include FWS refuges and surrounding private land in parts of five states including Idaho, Colorado, and New Mexico, in two flyways (Central and Pacific), and in two countries (USA and Mexico). Objectives are to 1) identify wetland and agricultural habitats along the corridor; 2) summarize long-term hydrologic and climatic data for wetland systems; 3) monitor seasonal use of selected wetland and agricultural habitats by cranes; 4) link chronology and extent of movements with climatic, hydrologic, wetland, and agriculture conditions; and 5) monitor habitat conditions of selected wetlands and link with timing, type, and duration of use by cranes. The information is important in the Conservation Planning process because the role of refuges is identified within the surrounding private landscapes.



FUNDING

U.S. Fish and Wildlife Service; photo by Tom Bentley, DOE

INVESTIGATOR

Tandi Perkins, Ph.D. candidate

FACULTY

Leigh Fredrickson and Charles Berry

EXPECTED COMPLETION

April 2012

Development of a Spatially Explicit Growth Model for Larval Pallid Sturgeon: A New Tool for Habitat Assessment

The pallid sturgeon (*Scaphirhynchus albus*) is a federally endangered species native to the Missouri and lower Mississippi River. Throughout much of the Missouri River system, natural reproduction by pallid sturgeon is believed to be negligible--attributed primarily to the loss of spawning habitat and(or) rearing areas. Long-term recovery and maintenance of this species will likely require significant habitat restoration efforts, with an emphasis on spawning and nursery habitat. Thus, knowledge about feeding and growth dynamics of larval pallid sturgeon is important for identifying rearing areas and monitoring habitat restoration efforts. The goal of this study is to develop a model that could be used to evaluate spatially-explicit growth potential for larval pallid sturgeon. By combining physiological energetics with site-specific, environmental conditions, the approach developed here will enable biologists to identify important rearing areas in the Missouri River. Moreover, linking information on drift dynamics (i.e., drift location and drift distance in the river) with the ability to assess growth potential of larval pallid sturgeon in areas where they might settle-out, will provide a powerful tool for assessing larval habitat quality in the Missouri River. This information, in turn, will be useful for identifying bottlenecks to growth and potential survival of larval pallid sturgeon.

FUNDING

U.S. Army Corps of Engineers (RWO #104)

INVESTIGATOR

David Deslauriers, Ph.D. candidate

FACULTY

Steven Chipps, Brian Graeb, Robert Klumb

EXPECTED COMPLETION

December 2015

Evaluating Relationships Between Wetland Quality, Land Use, and Waterbirds in the Prairie Pothole Region

Wetland drainage and upland conversion for agriculture has significantly altered the landscape of Prairie Pothole Region of North America. As a result, this wetland-dominated region now contains a mosaic of disturbance regimes, from relatively intact pasturelands to nearly complete wetland and upland loss and conversion. Further, wetland drainage and upland conversion continue in the region and may be accelerating due to recently-high commodity prices and mechanized drain tiling that can dewater large areas and lower groundwater tables. Consequences of conversion may disturb bottom-up processes and reduce carrying capacity for waterbirds that rely on wetlands. Conservation and management efforts require reliable information on the responses of birds to habitat loss and degradation for efficient allocation of resources and prediction of long-term consequences of management decisions. We will investigate wetland health and degradation by measuring the functional responses (via plasma-metabolite dynamics) of spring-migrating waterfowl and other waterbirds to variation in habitat quality in the Prairie Pothole Region, but namely in the eastern Dakotas. Plasma dynamics of sentinel waterfowl species still reveal potential variation in landscape degradation and identify potential anthropogenic stressors on ecosystem function.



FUNDING

U.S. Geological Survey-CRU, and Northern Prairie Wildlife Research Center - (RWO #103)

INVESTIGATOR

Adam Janke, Ph.D. candidate

FACULTY

Joshua Stafford, Michael Anteau (NPWRC)

EXPECTED COMPLETION

December 2015

TEACHING

STEVE CHIPPS

Fall 2010: *Aquatic Invertebrate Ecology*

This course covered the phylogeny, life-history, habitats and ecology of major freshwater invertebrates. Students developed an appreciation for biomonitoring theory and studied the impacts of exotic and invasive species.

THESES AND DISSERTATIONS

Greiner, M.J. 2011. Urban fisheries in eastern South Dakota: Assessment of angler satisfaction and fishery resources. M.S. Thesis, South Dakota State University, Brookings, SD.

Iriarte, D.P. 2011. Below-ground food production in habitats utilized by the Rocky Mountain population of greater sandhill cranes. M.S. Thesis, South Dakota State University, Brookings, SD.

Johnson, S.M. 2010. Status and distribution of fishes in tributaries of the Garrison Reach of the Missouri River, North Dakota. M.S. Thesis, South Dakota State University, Brookings, SD.

McWilliams, H. N. 2010. Estimating forage production for waterbirds and waterbird response to habitat management at Lacreek National Wildlife Refuge, South Dakota. M.S. Thesis, South Dakota State University, Brookings, SD.

AWARDS AND HONORS

STEVE CHIPPS, UNIT LEADER:

- President's Award; Education Section of the American Fisheries Society
- Received a plaque from the Society of Wetland Scientists for service as Associate Editor of *Wetlands*, 2007-2009.
- Received a STAR (Special Thanks for Achieving Results) award for exceeding performance standards for the Federal FY 10.

JOSHUA STAFFORD, ASSISTANT UNIT LEADER:

- Douglas Wilcox award for outstanding Associate Editor of *Wetlands*, 2010.
- Received a plaque from the Society of Wetland Scientists for service as Associate Editor of *Wetlands*, 2007-2010.

DAN JAMES, PH.D. CANDIDATE:

- 2011 AFS Skinner Memorial Award
- 2011 Outstanding Ph.D. Student-Fisheries, Department of Natural Resource Management

HILARY MEYER, M.S. CANDIDATE:

- 2011 AFS Skinner Memorial Award
- 2011 Student Travel Award-World Sturgeon Congress
- 2011 Graduate Student Travel Award-South Dakota State University
- 2011 Best Student Paper Award, Honorable Mention- Missouri River Natural Resources Conference
- 2011 Best Student Poster Award Honorable Mention-American Fisheries Society, Seattle, WA

SCIENTIFIC PRESENTATIONS

Fincel, M., S. Chipps, and B. Graeb. 2010. Dietary Niche Partitioning and Variability of Sauger and Walleye in South Dakota Missouri River Impoundments. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.

Fincel, M. and S. Chipps. 2010. Increases in Gizzard Shad Abundance Influences Walleye Isotope Signatures in Lake Oahe, South Dakota. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.

James, D., M. Fincel, J. Erickson and S. Chipps. 2010. Influence of urbanization on trophic interactions in a coldwater stream. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.

Meyer, H., S. Chipps, B. Graeb and R. Klumb. 2010. Growth, Metabolism and Energy Density of Juvenile Pallid Sturgeon Fed Commercial and Natural Diets. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.

Rapp, T., B.D.S. Graeb, S.R. Chipps, and R.A. Klumb. 2010. Prey selectivity by juvenile pallid sturgeon. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.

Semrow, M., H. Meyer, S.R. Chipps, B. Graeb. 2010. Effects of Ultraviolet Radiation on Growth and Condition of Age-0 Pallid Sturgeon. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.

- Thul, M., S. Chipps, and B. Blackwell. 2010. Prey use and diet overlap of walleyes and freshwater drum in South Dakota impoundments. 71st Midwest Fish and Wildlife Conference, Minneapolis, MN.
- Chipps, S.R., Greiner, M.J., and D.O. Lucchesi. 2011. Reeling in anglers: factors influencing satisfaction of urban anglers in South Dakota. 48th Annual meeting of the Dakota Chapter American Fisheries Society, Bismarck, ND.
- Fincel, M., S. Chipps, and B. Graeb. 2011. Diet overlap and variability between sauger and walleye in Missouri River Impoundments. South Dakota Walleyes Unlimited, Chamberlain, SD.
- Fincel, M.J. and S.R. Chipps. 2011. The influence of variable prey abundance on walleye growth in a large, Missouri River reservoir. 48th Annual meeting of the Dakota Chapter American Fisheries Society, Bismarck, ND.
- Fincel, M.J., and S.R. Chipps. 2011. Foraging Patterns of Walleye and Sauger as Revealed by Stable Isotope Analysis. 141st Annual Meeting of the American Fisheries Society, Seattle, WA.
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- Smith, R. V., J. D. Stafford, M. M. Horath, C. S. Hine, and A. P. Yetter. 2011. Diverse wetland habitats attract waterbirds to The Emiquon Preserve during Fall. Third Midwest-Great Lakes Chapter Society for Ecological Restoration International Meeting. Springfield, IL.
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- Stafford, J.D. 2011. Waterfowl ecology and prairie reconstruction. Madison Wetland Management District, Invited Speaker, Madison, South Dakota.
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