Spring Meeting – Kansas Natural Resources Conference

Airport Hilton, Wichita, Consulate II

Thursday, January 26th, 2011 at 4:30pm

I.	Call to Order/ Welcome	Cade Rensink
II.	Installation of New Officers	Cade Rensink/ Jordge LaFantasie
	i. 2nd VP Dusty Tacha	
	Director - Myra Richardson	
	Director - Kevin Parsons	
III.	Approval of Minutes of Previous Meeting	Alex Miller
IV.	Correspondence	
V.	Financial Report	Alex Miller
VI.	Reports of Officers	
	i. 1st Vice-President	Chris Tecklenberg
	ii. 2nd Vice-President	Dusty Tacha
	iii. Past President	Cade Rensink
	iv. Newsletter Editor	Walt Fick
	v. Historian	Jessica Casey
	vi. Board of Directors	Glenn Brunkow, Jamie Holopirek, Myra Richardson, Kevin Parsons
VII.	Reports of Committees	
	i. Student Affairs	Toni Flax/ Alex Miller
	ii. Membership	Jordge LaFantasie/Chris Tecklenberg
	iii. Awards	Rebecca Bergkamp
	iv. Election/Nominating	John Henry/Cade Rensink
	v. Website	Livia Olsen
	vi. Adult Range School	Walt Fick
	vii. KSSRM Large Display	Kevin Price/Jessica Casey/Stasya Berber
	viii. Other	
VIII.	Old Business	

i. RYC — Alex Miller

ii. Spokane Scholarships — Jordge LaFantasie

IX. New Business

i. Annual Meeting Spokane representatives — Jordge LaFantasie

ii. HSYF judge — Jordge LaFantasie

iii. Awards Committee — Jordge LaFantasie/ Cade Rensink

iv. Managing Rangelands/ Joel Brown Seminar — Alex Miller/Doug Spencer

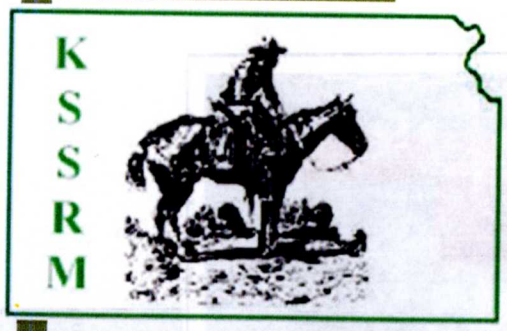
v. Moderator for Rangelands Session — Keith Harmoney

X. Announcements/Updates

i. SRM CEU Offering

ii. Upcoming National SRM meetings

iii. Fall KS SRM meeting



Kansas Section for the Society for Range Management

Fall Meeting

Thursday, October 25th, 2012

9 am—4 pm,
Kansas Wetlands Education Center and Cheyenne Bottoms

FORT HAYS STATE UNIVERSITY'S
KANSAS WETLANDS EDUCATION CENTER

Abstracts of Posters

KANSAS RANCH & RANGE MANAGEMENT INTERNSHIP PROGRAM

Calvin Adams, Ted Alexander, and Cade Rensink. The Kansas Ranch Institute

The Kansas Ranch and Range Management Internship Program aims to train the next generation of ranchers through hands-on experience with mentors who have been nominated and recommended by their ranching peers.

SUPPORTING IMPROVEMENTS ON GRAZING LAND TO BENEFIT WATER QUALITY.

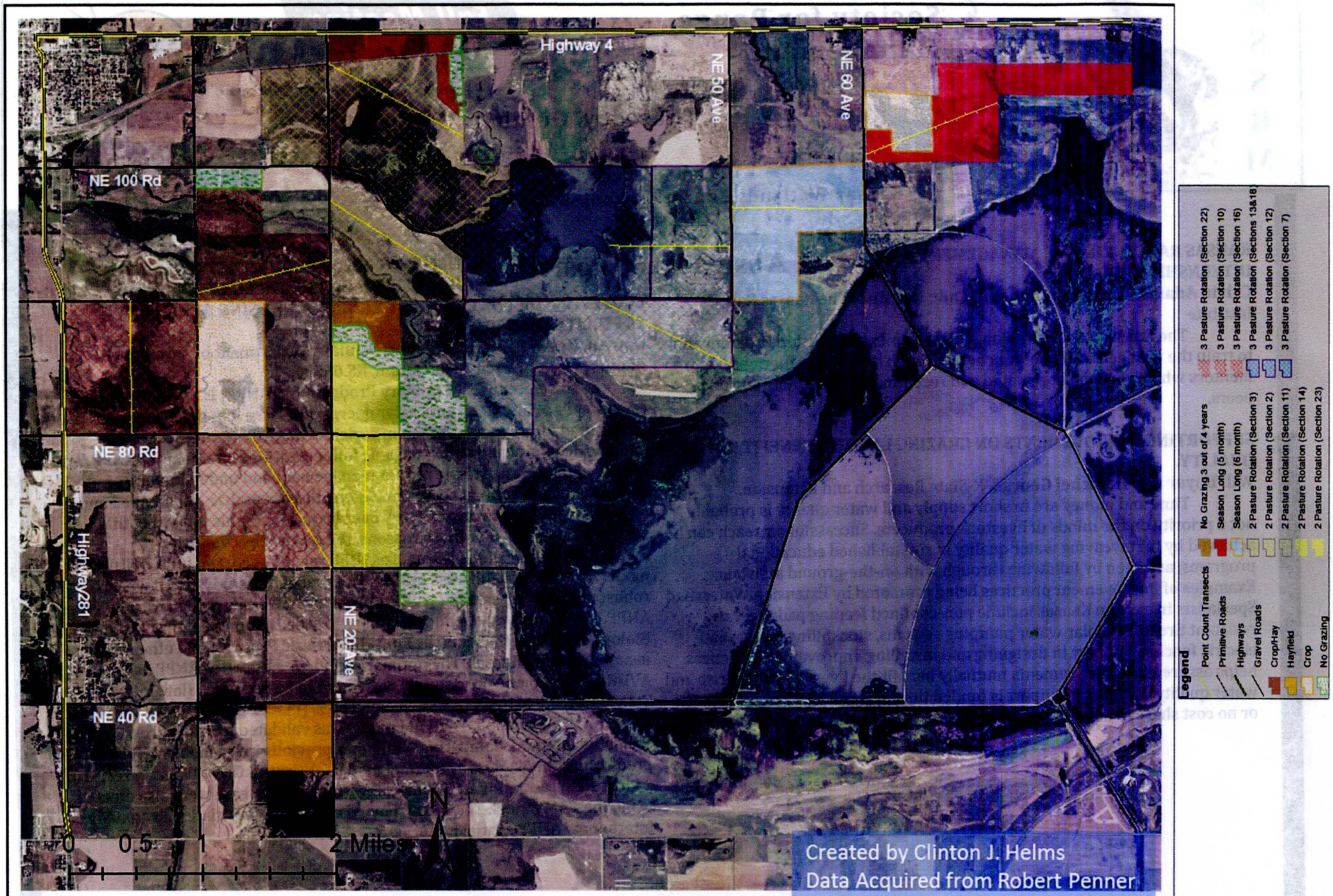
Will Boyer and Herschel George. K-State Research and Extension.

Time and money are in short supply and water quality is probably not a priority on the minds of livestock producers. Successful outreach can be achieved by first weaving water quality into established educational programs, and then by following through with on-the-ground assistance. Examples of improvement practices being promoted by Extension Watershed Specialists in eastern Kansas include non-confined feeding pads, freeze-resistant tire tanks, solar water pumping systems, stockpiling forage, and electric fencing. Support in designing and installing improvement practices helps assure that improvements mutually benefit the livestock enterprise and water quality. Extension support is funded through US EPA section 319, little or no cost share assistance is provided for purchasing project materials.

ESTIMATING ABOVEGROUND NET PRIMARY PRODUCTIVITY OF THE TALLGRASS PRAIRIE ECOSYSTEM OF THE CENTRAL GREAT PLAINS USING AVHRR NDVI SATELLITE IMAGERY.

Nan An, Kevin P. Price, and John M. Blair. Department of Agronomy, Kansas State University, Manhattan, KS 66506.

Aboveground Net Primary Productivity (ANPP) is indicative of an ecosystem's ability to capture solar energy and store it in the form of carbon. Annual and interannual ecosystem variation in ANPP is often linked to climatic dynamics and anthropogenic influences. Measurements of ANPP are of critical importance to the proper management and understanding of climatic and anthropogenic influences on tallgrass prairie, yet detailed and systematic measurements of ANPP over large geographic regions of this system do not exist. For these reasons, this study was conducted to investigate the use of the Normalized Difference Vegetation Index (NDVI) to model ANPP for the tallgrass prairie. The goal of this study is to develop a robust model using satellite AVHRR biweekly NDVI values to predict tallgrass ANPP. This study was conducted using ANPP data from the Konza Prairie Biological Station, the Rannells Flint Hills Prairie Preserve and other sites near Manhattan, Kansas. The optimal period for estimating ANPP using AVHRR NDVI composite datasets was found to be period 30 (late July). The Tallgrass ANPP Model (TAM) explained 53% ($r^2 = 0.53$, $r = 0.73$) of the year-to-year ANPP variation. The TAM model was validated by using Cross-Validation method. Comparing with other previous independent ANPP model predictions, the TAM is the optimal model for Central Great Plains. A series of 1 km x 1 km resolution ANPP maps for a four-county area were also created using the TAM model. The maps showed considerable variation in annual and interannual ANPP spatial patterns.


Highway 4
NE 50 Ave
NE 60 Ave
NE 100 Rd
NE 80 Rd
Highway281
NE 20 Ave
NE 40 Rd
0 0.5 1 2 Miles
N
Created by Clinton J. Helms
Data Acquired from Robert Penner
Legend
Point Count Transects
Primitive Roads
Highways
Gravel Roads
Crop/Hay
Hayfield
Crop
No Grazing
No Grazing 3 out of 4 years
Season Long (5 month)
Season Long (6 month)
2 Pasture Rotation (Section 3)
2 Pasture Rotation (Section 2)
2 Pasture Rotation (Section 11)
2 Pasture Rotation (Section 14)
2 Pasture Rotation (Section 23)
3 Pasture Rotation (Section 22)
3 Pasture Rotation (Section 10)
3 Pasture Rotation (Section 16)
3 Pasture Rotation (Sections 13&18)
3 Pasture Rotation (Section 12)
3 Pasture Rotation (Section 7)

SMALL MAMMAL COMMUNITY STRUCTURE AT A DRIED WETLAND SITE.

Brian M. Zinke* and Elmer J. Finck. Department of Biological Sciences, Fort Hays State University, Hays, KS 67601.

Cheyenne Bottoms is an internationally recognized wetland in Kansas, USA. Known for its importance to avian fauna, little is known about its small mammal community. Live trapping of small mammals with Sherman live traps, vegetation analysis, and soil sampling were conducted monthly (May through August 2012) to determine the effects of drought on small mammals at wetland and nearby grassland sites. Species richness differed by only one species between grassland and wetland sites, but abundance exhibited large differences between sites. The most frequently captured species were *Peromyscus maniculatus, Sigmodon hispidus, Mus musculus,* and *Reithrodontomys megalotis.* Two others, *Cryptotis parva* and *Microtus ochrogaster*, were captured in low numbers. Vegetation and soil attributes were recorded each month along with the small mammal trapping to determine the effects of the drought on these environmental variables and their effects on small mammal abundance and species richness.

MODELING VEGETATION PRODUCTIVITY OF COASTAL LOUISIANA MARSHES:
A SATELLITE REMOTE SENSING APPROACH.

Lynn Brien. Kansas State University, Department of Geography.

The coastal wetlands of Louisiana's Barataria Basin have undergone severe and unprecedented degradation and loss over the last half century. The causes are both natural and anthropogenic. Approximately 3496 km^2 of wetlands are estimated to have been lost between 1956 and 2006. Also lost are wildlife habitats, marine resources, and crucial chemical, hydrological, and storm buffering functions provided by wetlands. In response, major wetland restoration projects have focused on the diversion of fresh water from the Mississippi River. As concern grows over the effects of excess nutrient loading in wetland ecosystems, the success of these restoration strategies is subject to increasing debate. Considering the crucial functions performed by wetland ecosystems, the catastrophic consequences associated with their degradation and loss, and the enormous costs of restoration, there is urgent need for additional research. Rapid synoptic methods are needed to aid in assessing the impacts of diverting nutrient rich water and sediment to Louisiana's coastal wetlands.

The objective of this research is to develop a remote sensing based methodology for predicting vegetation productivity and vulnerability to eutrophication in coastal Louisiana marshes. Estimates of vegetation productivity and identification of vulnerability to eutrophication will be derived from the relationship between satellite image data and field measurements of marsh biophysical characteristics.

TIMING AND INTENSITY OF CATTLE USE ON OLD WORLD BLUESTEM (*BOTHRIOCHLOA ISCHAEMUM*) AND BLUE GRAMA (*BOUTELOUA GRACILIS*) IN SOUTHERN MIXED-GRASS PRAIRIE.

Jessica L. Casey[1], Jordana LaFantasie[1], and Keith Harmoney[2]. [1]Fort Hays State University, Department of Biological Sciences, Hays, Kansas 67601; [2]Kansas State University Agricultural Research Center-Hays, Kansas 67601.

Invasive grasses are of particular concern when it comes to native grassland communities; the invasive grasses decrease the productivity of the native grasses in the native grasslands. Old World Bluestems are an increasing problem in many of the prairie states in North America. Yellow bluestem is a non-native species that has been introduced for hay production, pasture grasses, and roadside grasses for erosion control, and has now exceeded the boundaries for which it was intended. Cattle have been known to graze yellow bluestem early in the grazing season along with the cool season grasses, and then the cattle begin to graze native warm season grasses. The objectives of this study are to1) compare timing and intensity of defoliation of yellow bluestem and native grass, blue grama, by steers, and 2) determine whether mowing pastures with yellow bluestem will increase the amount of steer use. I hypothesized that 1) yellow bluestem and blue grama will be utilized the by steers, 2) the recently mowed areas will have higher defoliation rates than the un-mowed areas due to the fact that the standing dead tissue would discourage steer use will be removed, and 3) blue grama will have a significantly higher rate of defoliation than the yellow bluestem. Some preliminary results are that both blue grama and yellow bluestem were utilized by the steers. The yellow bluestem was defoliated at higher intensities in the mowed areas than in the un-mowed areas.

MANAGING THE QUIVIRA LANDSCAPE

Barry Jones

Basic management strategies utilized at Quivira National Wildlife Refuge.

PRECIPITATION EFFECTS ON SHORTGRASS RANGELAND: VEGETATION PRODUCTION AND STEER GAIN.

Keith Harmoney and John Jaeger. [2]Kansas State University Agricultural Research Center-Hays

Recent severe drought conditions raised concerns about rangeland forage production and animal gains on drought stressed forage. Kansas State University Ag Research Center – Hays rangelands have been used for grazing research since the 1940's. For the 35 years of experiments that had forage production data under similar stocking rates, rangeland production was compared to annual precipitation or specific monthly combinations of precipitation to find the best relationships between the times of year precipitation is received and end of the growing season forage production. The time period of precipitation with the greatest relationship to end of growing season forage production was precipitation from October of the previous year (OctPY) through September of the current year (r^2=0.61). The two month period that had the greatest relationship with end of season forage production was May and June precipitation (r^2=0.48). Meanwhile, at a moderate stocking rate, total individual animal gain decreased as season precipitation increased (r^2=0.50). Spring droughts especially may reduce seasonal forage production, but slightly greater individual animal gains may result as long as adequate forage is available to meet dry matter intake needs.

POLLINATOR PLANTINGS FOR WILDLIFE AND RANGE HEALTH.

Ardath Lawson. Pheasants Forever Farm Bill Biologist.

Providing habitat for pollinators has become a high priority for working agricultural lands, since some two-thirds of all crop species worldwide rely on pollinators for reproduction, including over 100 different crops in the U.S. alone. However, pollinator habitat, consisting of a wide variety of wildflowers and other forb species, is also excellent habitat for many of Kansas' most valuable game species such as quail, pheasant, turkey, and even browsing mammals like deer. Many ground-nesting birds require insects as a source of protein, with the diet of young chicks consisting almost exclusively of insects. Selecting the proper plant species to include in pollinator seedings ensures that a food source is present for pollinators and other insects spring through fall, even under conditions of extreme heat and drought. The presence of wildflowers and other forbs throughout the growing season can be beneficial to rangeland health as well, helping to maintain soil fertility and drawing water up from deeper in the ground, where it then becomes available to grasses. Managing grazing lands with an eye to forb diversity can thus provide a wide variety of benefits to livestock, wildlife, and rangeland ecosystems as a whole.

EFFECTS OF GRAZING TREATMENTS ON NEST SUCCESS OF WET MEADOW BREEDING BIRDS AT CHEYENNE BOTTOMS PRESERVE, BARTON COUNTY, KS.

Clinton J. Helms[1]*, Jordana J. LaFantasie[1], and Robert Penner[2]. [1]Department of Biological Sciences, Fort Hays State University; Hays, KS 67601; [2]The Nature Conservancy, Kansas Chapter.

Cheyenne Bottoms Preserve (CBP) contains approximately 8,000 acres (~3,237 hectares) of wet meadow habitat that is being managed to provide quality habitat for breeding birds through the use of adaptive grazing techniques. Due to the imperiled status of grassland birds, an emphasis has been placed on managing for this particular group at CBP. When not entirely inundated with water, CBP, combined with the grazing management plan, can potentially provide high quality nesting habitat for numerous grassland birds by creating a mosaic of vegetation height and vegetation density. To examine the potential effectiveness of this management plan, we investigated the effects of adaptive rotational grazing treatments versus traditional season-long grazing treatments on common CBP grassland nesting species (e.g., grasshopper sparrow [*Ammodramus savannarum*], dickcissel [*Spiza americana*]) western meadowlark [*Sturnella neglecta*], and eastern meadowlark [*Sturnella magna*]) and attempted to determine if any significant trends could be inferred at the treatment-level scale. Specifically, we looked at avian diversity and avian nest success by employing point-count surveys and nest searching/monitoring techniques. Preliminary results suggest a greater occurrence of nests in random rotational grazing treatments compared to season-long grazing treatments. Overall, there was a marked decrease in abundance of all target species, both between treatments and annually. The effects of an extensive drought, coupled with excessive heat, were evident in much of these data.

MOTIVATING THE UNPAID TRAIL STEWARD: HOW TO ATTRACT, MOTIVATE AND ORGANIZE THE VERY BEST UNPAID TRAIL STEWARDS.

Robert A. Nicholson. Kansas Trails Council, Kansas, USA.

An alternative to the traditional carrot/stick approach is examined for an environment where work for pay is not part of the formula.

KS SRM WEB SITE

Livia Olsen. KSU Libraries.

The Kansas Section web site looks outdated and needs to be redesigned. In the process of redesigning a web site it is important to solicit feedback from users of the web site. This poster presents several redesign options for the Kansas Section membership to review. Any comments, preferences, and suggestions are welcome.

HOW ARE BIRDS AFFECTED BY EASTERN REDCEDAR SUCCESSION IN GRASSLANDS?

Scott W. Schmidt* and Elmer J. Finck. Department of Biological Sciences, Fort Hays State University, Hays, KS 67601.

Tree invasion is often cited as a serious threat to grassland birds. However, some species in need of conservation are dependent on grassland habitats with scattered trees or shrubs. To assess bird-habitat associations in the context of brush management, study sites were stratified by percent canopy cover of eastern redcedar, (0% canopy cover [open grassland], < 5% canopy cover [encroachment level], and > 5% canopy cover [infestation level]). We used repeated point count sampling to quantify abundance and species composition of breeding bird communities. Data were collected in mixed grass and sand prairie habitats of Barton County Kansas from 2011-2012. Overall, grassland specialists were 21% to 46% more abundant on open grassland sites than encroachment ($p=0.002$) and infestation ($p<0.001$) sites. However, the proportion of grassland species associated with scattered trees and shrubs increased along the successional gradient. Thus, not all grassland birds are declining in response to redcedar succession. The reduced model for canonical correspondence analysis provided a better understanding of species distributions, showing 69% of the variation in bird community composition was explained by redcedar canopy cover. Priority species such as Bell's vireo, lark sparrow, and field sparrow had significant positive responses to redcedar infestation sites. Four grassland specialists (dickcissel, grasshopper sparrow, ring-necked pheasant, and eastern meadowlark) showed a significant negative response to infestation sites. Considering the diverse habitat requirements of grassland birds, I would recommend managing quality open grassland and successional habitats to maximize benefits for each subset of species in need of conservation.

MODELING GRASSLAND ABOVE-GROUND BIOMASS IN THE CENTRAL GREAT PLAINS: A CASE STUDY OF TALLGRASS PRAIRIE NATIONAL PRESERVE.

Chuyuan Wang[1], Kevin Price[2], Deon van der Merwe[3], David Burchfield[1], Johnny Bryant[1], and Nan An[2]. [1]Department of Geography, Kansas State University, Manhattan, KS 66506; [2]Department of Agronomy, Kansas State University, Manhattan, KS 66506; [3]Department of Diagnostic Medicine/Pathobiology, Kansas State University, Manhattan, KS 66506.

Hyperspatial remote sensing technology can provide unique imagery dataset and analytical methodology that is more analogous to ground-based processes than those produced from medium and coarse spatial resolution satellite imagery. The objective of this research was to apply hyperspatial remotely sensed data to model grassland above-ground biomass (AGB), using Tallgrass Prairie National Preserve as the study area. This research selected 13 sample plots (0.5×0.5m) on the Prairie that contained monocultures of grass or forbs and their mixtures. The hyperspatial remote sensor used is a three-band digital camera modified from Canon Powershot S100 that has a visible blue band, a visible green band, and a near infrared (NIR) band. The sensor was first held by a tripod to shoot images for each individual sample plot at a low altitude above the ground. The sensor was then equipped under an unmanned hexacopter drone flying at about 50-meter altitude to take aerial images for all the sample plots. Dried grass sample biomass was then recorded for the analysis with their normalized difference vegetation index (NDVI) values derived from hyperspatial images. Results showed that, for the images taken by the tripod-held camera, Green NDVI explained 73% of the total variation in the grass sample AGB, while Blue NDVI explained 75% of the total variation in the grass sample AGB. For the images taken by the hexacopter-held camera, Green NDVI explained about 69% of the total variation the grass sample AGB, while Blue NDVI explained 67% of the total variation in the grass sample AGB. There is also a very strong correlation ($R^2>0.90$) between two sets of NDVI values derived from images taken at two different altitudes.

Fall Business Meeting
Kansas Wetlands Education Center, Cheyenne Bottoms Complex, Barton Co., KS
Thursday, October 25th, 2012, convening at 9:30 am

I.	Call to Order/ Welcome	Jordge LaFantasie
II.	Approval of Minutes of Previous Meeting	Alex Miller
III.	Correspondence	Jordge LaFantasie
IV.	Financial Report	Alex Miller
V.	Reports of Officers	
i.	1st Vice-President	Chris Tecklenberg
ii.	2nd Vice-President	Dusty Tacha
iii.	Past President	Cade Rensink
iv.	Newsletter Editor	Walt Fick
v.	Historian	Jessica Casey
vi.	Board of Directors	Glenn Brunkow, Jamie Holopirek, Myra Richardson, Kevin Parsons McFarland
VI.	Reports of Committees	
i.	Student Affairs	Dusty Tacha/Toni Flax
ii.	Membership	Jordge LaFantasie/Chris Tecklenberg
iii.	Awards	Rebecca Bergkamp
iv.	Election/Nominating	Jordge LaFantasie/Cade Rensink
v.	Website	Livia Olsen
vi.	Adult Range School	Walt Fick
vii.	KSSRM Large Display	Kevin Price/Jessica Casey/Stasya Berber
viii.	Other	
VII.	Old Business	
i.	RYC	Alex Miller/Doug Spencer
ii.	SRM Strategic Plan: comment period	Jordge LaFantasie
VIII.	New Business	
i.	Nominations for new Secretary Treasurer	Chris Tecklenburg/Jordge LaFantasie
ii.	Travel to Annual Meeting, OKC, name change	Jordge LaFantasie
iii.	OKC Scholarships	Jordge LaFantasie
iv.	Young Professionals Conclave	Dusty Tacha
IX.	Update from SRM Board of Directors	Misty Hays- SRM BOD
X.	Update from SRM Offices (Denver, DC)	Jess Peterson, EVP/Kelly Fogarty, Washington DC Liason
XI.	Announcements/Updates	
i.	Raffle Tickets	Chris Tecklenburg
ii.	SRM CEU Offering	Chris Tecklenburg
XII.	Adjourn to Lunch and Poster Session	