

Neal Smith National Wildlife Refuge

Prairie City, IA

Fiscal Year 2009

U.S. Fish & Wildlife Service

Refuge Manager

Date

Refuge Supervisor

Date

Regional Chief, NWRS Date

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INTRODUCTION

The tallgrass prairie. Wild, untamed, respected, admired, and feared by generations of our ancestors. Long before them, the ancestors of peoples native to this place for thousands of years survived on the bounty and blessings their prairie home provided them.

But our generation has no such memory of the prairie. The social, cultural, economic, ecological, and biological history of most of the 20th century did not include the tallgrass prairie. Fortunately for us, our children, and all who follow, we may indeed still get a chance to know the tallgrass prairie, or at least a small part of it. Hope arrived in the 1990's when Iowa Congressman Neal Smith and other concerned and learned citizens were in tune with the urgent need to recapture what by then had become one of the most endangered natural ecosystem on the planet. And they did something about it.

Their energy, foresight, and hard work led to the creation of Walnut Creek National Wildlife Refuge in 1990, and following that, the Prairie Learning Center, in 1996.

Establishment of the Refuge by the U. S. Fish and Wildlife Service was for the purposes of restoring native tallgrass prairie, wetland, and savanna habitats; serving as a major environmental education center providing opportunities for study; providing wildlife dependent outdoor recreation benefits to the public; and providing assistance to local landowners to improve their lands for wildlife habitat.

For future generations, the legacy of the political resolve exerted here will show itself in the rich diversity of wild plants and animals on this 8,654 acre prairie restoration and reconstruction project...one of the largest and most ambitious such undertakings of its kind the world has ever seen. The Refuge, renamed Neal Smith National Wildlife Refuge in 1998, is located in Jasper County, Iowa, on the southern Iowa drift plain, approximately 20 miles east of Des Moines. Urban and regional growth trends lead one to conclude that this still-rural piece of historic landscape will continue to see the positive and negative impacts that human activity brings upon it.

The Refuge staff understands that the continued stewardship and recovery of this prairie and the surrounding watershed is an unequivocal need. The story of the tallgrass prairie needs to be told again and again, for it is the intimacy of the experience which serves to create the stewardship. Compelling biological research projects and outreach programs, special public events, high-quality hunting opportunities, and outstanding environmental education and interpretive programs all bring the intimacy of the prairie to people's lives.

For the Refuge staff the mission is clear. The wisdom, vision and hard work of bringing a small part of the prairie back will continue unabated. We will keep the tallgrass prairie alive, relevant, and important to people in the 21st century.

Monitoring and Studies

1. a. Surveys and Censuses

Bison and elk

Bison and elk herds had a good reproductive year, with seventeen bison calves (80% fecundity) and four elk calves. This puts us at 73 bison and 22 elk at the end of FY09. Bison fecal samples were collected three times during the year and sent to the Wildlife Health Office in Bozeman. Prevalence of parasites was lower than the previous year, with a peak in spring, as is expected. Parasite intensity was also lower, indicating our management (ivermectin at 2008 roundup and fenbendazole medicated mineral blocks in the spring and summer) has been effective. Bison and elk appeared healthy and overall were in good condition throughout the year.

Christmas Bird Count

The Neal Smith NWR Christmas Bird Count was held Jan. 3 with windy conditions making it cold and difficult to find birds. We had a great turnout, with 19 participants, coming from as far away as Colombia and Brazil! We spread out in seven groups across the refuge and the count circle, which centers on Vandalia. We ended up with 37 species for the count circle, with 34 of them on the refuge. Eurasian Collared-dove made the "count week" list. A total of 1370 individual birds were counted.

Here are some of the notable sightings:

Bald Eagle	9
Northern Harrier	1
Rough-legged Hawk	4*
Short-eared Owl	2*
Belted Kingfisher	2*
American Crow	283*
Eastern Bluebird	8*
American Robin	28*
Swamp Sparrow	1 (third time on count)
White-throated Sparrow	1 (only second time on count)
Meadowlark sp.	1 (fifth time on count)

*highest number recorded in the history of the count.

It was exciting having so many Rough-legged Hawks around this winter. We saw them regularly from the Prairie Learning Center. Northern Harriers were much more abundant in November and early December but most had moved on. Last year we had ten harriers on the count. This year's wind was probably a factor in our lower numbers of songbirds like American Tree Sparrows, Dark-eyed Juncos, and American Goldfinches than we have had the last few years with similar effort. Fruit-eating birds like American Robins and Eastern Bluebirds were found in high numbers in counts throughout Iowa this winter.

Spring Bird Observations

A Barn Owl, which is a state endangered species, was observed during a prescribed burn in the Bobolink Unit in March. A flock of more than 100 Smith's Longspurs was found in the Bobolink Unit in April, and remained for about two weeks, attracting attention from birders throughout the state.

Breeding Season Bird Surveys

In 2009 breeding bird counts were again carried out by the Refuge Biologist. This was the 15th year that counts have taken place at Neal Smith NWR. The primary purpose of these surveys is to detect long-term trends in bird populations on the refuge. Survey objectives were to conduct point counts at 107 points representing various vegetation types at the refuge. These are the same points that were surveyed in 2008. This year 692 individuals of 58 species were recorded within the 50-m plots. All together, 2,726 bird detections of 72 species were made. All birds beyond 50 meters, and flyovers (other than swallows) were excluded in the final tally. Additional species detected during counts, but not within the 50-meter-radius included Canada Goose, Ring-necked Pheasant, Wild Turkey, Turkey Vulture, Great Blue Heron, Red-tailed Hawk, Great Horned Owl, Barred Owl, Tree Swallow, Horned Lark, Yellow-breasted Chat, Lark Sparrow, Northern Rough-winged Swallow, and Western Meadowlark.

This year's total bird numbers were up over 2008, perhaps related to weather. Last year was an extremely wet year, with flooding throughout Iowa, and an all-time low for bird numbers was recorded. The most abundant species was Common Yellowthroat with 87 detected at 55 points. The next most common species were Red-winged Blackbird with 67 at 32 points, House Wren with 53 at 21 points, American Goldfinch with 47 at 20 points, and Song Sparrow with 37 at 28 points.

It was the first time Common Yellowthroat topped Red-winged Blackbird as the most abundant species. Eighteen Henslow's Sparrows represented the highest number ever recorded for this species on the refuge's point counts. Two Alder Flycatchers were detected on June 3 and probably represented late migrants. Another late migrant, Blackpoll Warbler, was also detected on June 3. This spring, cool temperatures lasted longer than usual and weather may have delayed migration for these species.

Floristic quality

Floristic quality vegetation surveys were conducted in some of the plantings by Intern Libbey, with many of the transect endpoints relocated in the spring.

Frogs/toads

Nocturnal frog and toad call surveys took place three nights between April and July. Species recorded were western chorus frog, northern leopard frog, American toad, eastern gray tree frog, and cricket frog. These data are contributed to the Iowa DNR.

Monarchs

Monarch tagging and milkweed monitoring were conducted with the help of volunteers. This was the first year for the milkweed monitoring.



Girls scouts help catch monarch butterflies for the monarch watch program at Neal Smith NWR.

1.b. Studies and Investigations

The Land Management and Research Demonstration Program (LMRD) at NSM is coordinated by Regional LMRD Biologist, and includes the research program. In FY09, 34 researchers from nine institutions and agencies performed work on 12 research projects. In some cases, refuge staff served as a part of the research team, as indicated in bold letters in the following list of research projects and the primary researchers.

- Use of chemicals (Transline, Milestone, and combinations) at varying rates to optimally control Canada thistle (*Cirsium arvense*), and minimally impact native species. Three separate but related projects. Byron Sleugh, Dow Agriscience.
- The relationship of avian diversity to changes in vegetative structure through time in tallgrass prairie and savanna ecological restoration at Neal Smith NWR. Brian Olechnowski, Iowa State University (ISU) PhD Project. Major professor: Diane Debinski. Additional researchers: **Pauline Drobney** and **Karen Viste-Sparkman** USFWS. (Dissertation complete; Publication pending).
- Small scale plant distributions in the initial stage of prairie plantings relative to plant diversity and exotic species invasion. Kathryn Yurkonis, ISU PhD Project. Major Professor: Brian Wilsey. (Dissertation complete; Publication pending).
- Canada thistle (*Cirsium arvense*) suppression potential via seed mix, planting season, and planting method (at Neal Smith NWR, Fergus Falls WMD, Litchfield WMD and Morris WMD). Diane Larson, USGS; J.B. Bright, **Pauline Drobney**, Nick Palaia, Sara Vacek, and Doug Wells, USFWS.
- Attempts to convert a reed canary grass (*Phalaris arundinacea*) near monoculture to a diverse sedge meadow considering floristic and hydrologic changes through time. **Pauline Drobney**, USFWS; Keith Schilling, Iowa Geological Survey, Iowa DNR (IDNR).
- Carbon sequestration in a chronosequence of plantings and compared to cropland and native remnant prairies. Cynthia Cambardella and Mark Tomer, USDA/ARS, Keith Schilling, IDNR, Peter Jacobson, Grinnell College, Thomas Isenhardt, ISU, Richard Schultz, ISU, **Pauline Drobney**, USFWS.
- Relationship of hydrology to large-scale ecological restoration in an agricultural landscape. Keith Schilling, Peter Jacobson. (Three publications, 2009).
- Relationship of varying planting rates of side oats grama (*Bouteloua curtipendula*) in initial seed mix to establishment of native plant species diversity and exotic species expression. Ryan Welch, University of Northern Iowa MS Student. Major professor: Daryl Smith. (Thesis completed).
- Evaluating ecosystem function and soil carbon sequestration rates based on soil, hydrology, and floristic changes in a planted prairie. Cynthia Cambardella and Mark Tomer, USDA/ARS; **Pauline Drobney**, USFWS; Thomas Isenhardt, ISU; Peter Jacobson, Grinnell College; Keith Schilling, IDNR and Richard Schultz, ISU.
- Native and exotic plant species found in shed bison hair at NSM. Emily Artz, ISU Undergraduate. Supervising professor: Susan Fairbanks, ISU.
- Soybean aphid densities in soybean croplands relative to proximity to diverse natural landscapes harboring native aphid predators. Matthew O'Neal, ISU.

- Ecosystem services and economic benefits related to installation of diverse native prairie strips within traditional row-cropland. Matthew Helmers, Heidi Asbjornsen, Nancy Grudens-Schuck, Matt Liebman, Matt O'Neal, Lisa Schulte, John Tyndall, Mary Harris, and Rick Cruse all ISU professors; **Pauline Drobney**, USFWS; Randy Kolka, USFS; Mark Tomer and Cynthia Cambardella, USDA/ARS.

Six papers resulting from research at NSM were published in scientific journals (refuge researchers noted in bold) included:

- Olechnowski, B.F.M., D. M. Debinski, **P. Drobney**, **K. Viste-Sparkman**, and W.T. Reed. 2009. Examining changes in vegetation structure through time in a restored tallgrass prairie ecosystem and the implications for avian diversity and community composition. *Ecological Restoration* in press.
- Schilling, K.E., Jacobson, P., 2009. XXXX. Groundwater conditions under a reconstructed prairie chronosequence. *Agric. Ecosyst. Environ.* (2009), doi:10.1016/j.agee.2009.08.013.
- Schilling, K.E., J.A. Palmer, E.A. Bettis III, P. Jacobson, R.C. Schultz, T.M. Isenhardt, Vertical distribution of total carbon, nitrogen and phosphorus in riparian soils of Walnut Creek, southern Iowa. *Catena* 77 (2009) 266-273.
- Schilling, K.E., J., Investigating local variation in groundwater recharge along a topographic gradient, Walnut Creek, Iowa, USA. *Hydrogeology Journal* (2009) 17: 397-407.
- Yurkonis, K.A., B.J. Wilsey, K.A. Moloney and A.G. van der Valk. Early View, Date: October, 2008. The impact of seeding method on diversity and plant distribution in two restored grasslands. *Restoration Ecology*.
- Yurkonis, K.A., B.J. Wilsey, K.A. Moloney, **P. Drobney**, D.L. Larson. Early View, Date: January, 2010. Seeding method influences warm-season grass abundance and distribution but not local diversity in grassland restoration. *Restoration Ecology*.

Other notable events or activities related to research in 2009 include:

- Carbon Sequestration Grant. The LMRD Biologist and colleague Sue Adamowicz (LMRD R5) provided leadership in development and successful competition for R9 SSP research funding of \$30,000 for a carbon sequestration project. This project involves development of protocols to comparably evaluate soil carbon accrual rates in the 5 focus ecosystems that are associated respectively with each of 5 active LMRD programs. Funding is for two structured decision making workshops to develop protocol.
- Agro-ecosystem Field Day. This field day, held on the evening of September 9, interpreted the NSM agro-ecosystem research project and was the first of its kind at NSM. Stakeholders from conservation and agricultural communities including the Iowa Natural Heritage Foundation, The Nature Conservancy, the Iowa Prairie Network, the Soybean Association, Iowa Pork Producers, local farmers, National Resource Conservation Service, Practical Farmers, the Leopold Foundation for Sustainable Agriculture, among others, attended a meeting in the afternoon, followed by a NRCS-style field day on a research site. Research was demonstrated to stakeholders as well as to a larger group of farmers who attended the evening session. Field events were followed by a supper that was cooked and served by the Iowa Pork Producers at the Prairie Learning Center.

- LMRD Research Field Day. In lieu of a Research Reporting Symposium, a Research Field Day was held on September 19. Twelve researchers representing 11 different projects demonstrated their research in the field to visitors. Tools and techniques were available for show and tell, and excellent discussion of prairie, and sedge meadow reconstruction/restoration techniques, invasive species control, wildlife management, ecosystem function, carbon sequestration, hydrology, and other topics were discussed. Participants and researchers alike provided enthusiastically positive feedback on the event. Approximately 50 visitors participated in the field day
- Research Grant. The Agro-ecosystem Research Team received a grant of \$499,833 from the National Institute of Food and Agriculture – Agriculture Food and Research Initiative Managed Ecosystems Program. The grant proposal was entitled: “Learning and Teaching with Experimental Watersheds: Evaluation of Ecosystem Services in Mixed Annual-Perennial Agro-ecosystems.”

Outreach products developed by researchers to interpret their work to general audiences included:

- Learning and teaching with experimental watersheds: evaluation of ecosystem services in mixed annual-perennial agroecosystems. Agro-ecosystem Research Team.
- Neal Smith NWR Watershed Vegetation Survey 2009. Sara Hirsh and Matt Liebman.
- Neal Smith NWR Experimental Watershed Project Habitat Use Survey Results Lisa Schulte Moore and Drake Larsen.
- Would you like to plant your own prairie? Kathryn Yurkonis.
- Which seeding method should we use? A comparison of drill and broadcast seeding at Neal Smith National Wildlife Refuge. Kathryn A. Yurkonis and Pauline Drobney.
- Bird use at Neal Smith NWR. Brian Olechnowski.

Habitat Restoration

2.b. Upland Restoration

Seed harvest:

Students, volunteers, interns, YCC and staff hand-collected a diversity of seed during the harvest season. Harvest took place during summer and fall. This year a special effort was made to collect sedges during June and July, with help from the biology interns and YCC. Sedges are a major component severely under-represented in our prairie reconstruction effort as commercial seed is almost nonexistent. They are also a major component of the bison diet. The Refuge biologist coordinated with Visitor Services staff to identify seed species to collect, with weekly Saturday seed collection by volunteers conducted during September. Throughout the winter, seeds were cleaned in the seed lab by volunteers and students, entered into a database, and placed in the seed storage room.

Greenhouse:

This year the greenhouses were very productive. Seed was stratified in December, germination trays prepared in January, with the majority of the resulting plants being dispersed around the Prairie Learning Center to increase forb diversity. The production plots were again used this year. These plots provide seed originating from prairie remnants in the area. Seed harvesting was accomplished this year as well, with Brian Boot harvesting close to 1,000 pounds of side oats and drop seed in October. This seed will be used to help establish new prairie.

Planting:

The Coneflower and Savanna Reconstruction Units were prepped and planted in FY09. The quarter-mile long ditch in the Coneflower Unit was smoothed and contoured in November. Both units were planted in March, per the seed prescriptions developed by the Refuge Biologist, including hand-collected seed for the Coneflower waterway and sedge meadow. In April, students from DMACC and Central College laid erosion cloth along the main channel and installed silt fences in several locations down the drainage. Later in the spring, the waterway was planted with a seed mix designed to grow in these wetter conditions. Also in April, the leftovers from the seed cleaning were used to plant the remaining few acres on the south edge of the Coneflower planting. Both plantings were mowed in July.

Also planted this year:

- In July, June grass seed was planted on two acres near the production plots to be used as a seed source for future plantings.
- In September, ten acres of native cool-season grasses and sedges were planted in the southwest corner of the bison enclosure that was burned in late July.

Tree removal:

In the fall, trees were cleared along the refuge boundary on the north side of the Thorn Valley Unit to allow the neighbor to rebuild an old fence that was falling apart and overgrown with trees. During the winter, tree removal in Coneflower Prairie and Savanna Reconstruction was completed in preparation for planting. Vermeer Equipment Company ground stumps for several days. Tree removal was halted for the year in April. All together, several hundred trees were cut and piled; stumps were ground and treated by staff.

A crew from Conservation Corps Iowa worked on clearing trees in the Dogleg remnant for a week in September. They cleared about one and one-half acres of trees and carried the downed trees to the edge of the remnant. Refuge equipment was used to move and pile debris.

Habitat Management

3.f. Fire Management

Prescribed Burns

The fire staff burned 17 units for a total of 1,878 acres on the refuge in FY09. The fire staff also assisted with prescribed burns in northern Iowa in the wetlands district, at Port Louisa NWR, and Squaw Creek NWR. Non-refuge burns accounted for approximately an additional 15 burn units.

The fire program passed the annual readiness review. The prescribed fire brochure was updated for 2009. Eight burn plans were revised to comply with current standard.



Prescribed burn on the Butterfly Hill Unit of Neal Smith NWR

Training & Details

Two Annual Fire Refreshers were conducted and four Work Capacity Tests were administered. The Seasonal Fire Tech detailed for 21 days on the Blue Goose Crew. In July, the fire staff detailed to Crab Orchard NWR to help with chainsaw work after strong winds caused significant blow-down damage. PFS also detailed for two weeks to South Texas Refuge Complex for severity.

Prescribed Fire Specialist conducted one S-131 class at the refuge and assisted the Zone FMO with instruction of a S-212 chainsaw class in northern Iowa.

Equipment

A new Ford F350 diesel was purchased and outfitted as a chase truck. Equipment purchased by the fire program included a new ATV with water tank, fire skid and pump for Polaris Ranger, Honda high pressure pump, 22 foot aluminum trailer, 14 foot enclosed trailer, two portable water tanks, one M-3 pump, two bubble cup nozzles with pistol grips, and one fire finder for mop up.

MOU

New memorandums of understanding were implemented with Iowa Department of Natural Resources and Jasper County Sheriff Department for expired Radio Frequency Authorizations (RFA's).

3.g. Pest Plant Control

Sericea lespedeza:

In October 2008 the contractor on the sericea lespedeza spot-spraying project completed treatment of plants in the contract areas. Plants that were treated late and those that were missed were still alive and produced seed this year. Sericea lespedeza seed from some of the plants that were treated late, that were mowed and developed seed late, and untreated plants were collected and taken to the ISU seed lab for tetrazolium (tz) testing. The results were that late developing seed (pods still green) and plants showing signs of chemical burn had 81% viability. Those that were untreated had 66% viability.

The Refuge Manager and Biologist talked with Working Dogs for Conservation in February about using dogs to detect sericea lespedeza. They are interested in working with us in 2010 if we can provide funding for the project. The Friends have agreed to pay for a portion of it.

In late May, interns began searching for and treating sericea lespedeza, continuing this process through the summer, with assistance from the YCC crew and a volunteer. The monitoring and control protocol seems to be making a dent in the population. Units were searched by walking a grid, and any sericea plants found were marked with GPS and spot-sprayed with triclopyr. Although most plants appeared to die, this treatment will need to continue for several more years. Follow-up treatment of plants located in previous years was also conducted and consisted of navigating to the point and spraying with the new spray rig with boomless sprayer or wand.

Other species:

Maintenance workers spot sprayed 160 acres of crown vetch, Canada thistle, and sweet clover in October. STEP students cut and treated honeysuckle in the Thorne Valley savanna in November. In June, Canada thistle patches were sprayed in Bobolink and Cabbage Units using the new boomless sprayer on the Kubota. These units have high plant diversity and this sprayer makes it

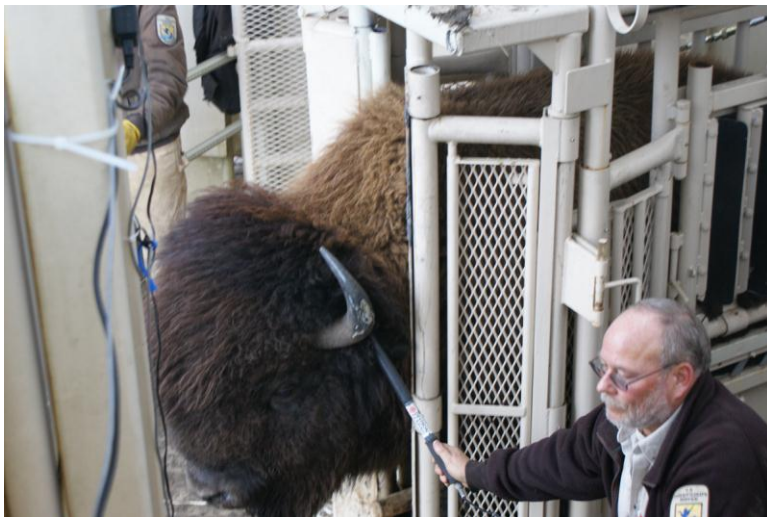
able to spray a smaller area, impacting fewer desirable plants. Maintenance workers sprayed Canada thistle with the patriot sprayer on several larger patches, and mowed hundreds of acres of sweet clover and Canada thistle. The YCC crew hand pulled sweet clover around the Overlook Trail and in Bobolink and Cabbage Units and the Coneflower remnant.

Fish and Wildlife Management

4.c. Reintroductions

Bison roundup

The bison roundup took place November 20, 2008. Updates to the handling facility were finished, a test run of the new squeeze chute was conducted, and the generator to operate the chute and handle the bison was set up. Staff worked together to herd the bison into the handling facility the day before the health screening was conducted. While searching the enclosure for stray bison, a recently deceased cow was located. Dr. Tom Roffe and Lee Jones arrived that afternoon and conducted a necropsy, with assistance from Refuge staff. The cow died of severe pneumonia. Additional lab results are pending. A bull with an injured front leg was discovered during the day and was not captured. Under advisement of Dr. Roffe, no action was taken and he will be monitored.



During the roundup all bison able to fit through the chutes were treated with Ivermectin for internal parasites, due to the known parasite problem this summer. All calves were run through the squeeze chute, micro-chipped, and had DNA samples taken. A random selection of adults was sent through the squeeze chute for disease sampling. All bison were monitored for any sign of respiratory distress but all appeared healthy. Overall condition of the

bison was good, with calves in good-to-excellent condition.

The new chute will need a few modifications for next year and other improvements can be made; but overall, operations went smoothly and cooperation among staff and outside personnel was excellent. Most staff members were directly involved, as well as staff from The Nature Conservancy and Rocky Mountain Arsenal NWR, and volunteers from the Friends of the Prairie Learning Center.

Coordination Activities

5.a. Interagency/Intra-agency Coordination

The refuge biologist participated in the Iowa DNR's Wildlife Action Plan on the Wildlife Working Group and the Birds subcommittee. She also worked with Polk County Conservation, Iowa DNR, Army Corps of Engineers, and NRCS to complete the Makoke Trail brochure. The color brochure was published in the spring and features descriptions of birding locations throughout central Iowa, including maps, photos, and birds likely to be seen at each site. Each featured site was given Makoke Trail signs to indicate they are part of the birding trail. The

publication has been well-received by the public. Other organizations that contributed to the project were Iowa Ornithologists' Union, Des Moines Audubon Society, Iowa Audubon, Jasper, Madison, and Warren County Conservation Boards, Central Iowa Sierra Club, and Pheasants Forever. Other coordination activities the biologist took part in were:

- Served as leader for the Region 3 Prairie Biology Network. Coordinated conference calls and planned the agenda for the Prairie Biology Network meeting that took place Feb. 3-5 in New Richmond, WI.
- Assisted Bob Russell of Migratory Birds in hosting an Upland Sandpiper meeting attended by representatives from several state DNRs, TNC, Audubon, and Manomet Bird Observatory, as well as FWS.

The refuge's biological technician detailed to Sullivan Creek National Fish Hatchery in Michigan in October to assist with lake trout spawning, and he detailed for five weeks in Medicine Hat, Alberta to assist with duck banding.

The refuge manager attended the monthly Prairie City Business Association meetings, and she also accepted an invitation from the city of Prairie City to attend a Prairie City Downtown Visioning meeting. The town is interested in expanding a prairie theme in landscaping and design. The refuge manager also attended a meeting with prospective partners from Central College to discuss Central College's new Sustainability Education and Community-Based Learning partnership initiative in bio-regional training and education, "The Prairie Project." Other coordination meetings and projects the refuge manager was involved with were:

- She and Doug Helmers, Iowa Private Lands Coordinator, met with Loren Lown, Polk County Conservation, at Chichaqua Bottoms to look at an FmHA easement on land that was recently purchased by Polk County. There is a possibility of doing some wetland restoration as well as prescribed burning.
- She attended the DOI bison workgroup meeting in South Dakota. This is the first meeting of the new DOI workgroup. It was very short notice so several members were missing. It was a preliminary meeting of what could be expected of its members and what issues would be discussed.
- She and Dr. Tom Roffe met with TNC members to discuss a possible Memorandum of Agreement to move bison from the FWS bison herds to their herd. They recently re-introduced bison (from the Windcave NPS herd) to their facility in western IA. Presently, no concurrence was reached.
- She attended the Heart of Iowa Cooperative Weed Management Area quarterly meetings.

The Prairie City Entry Plaza Kiosk signs, designed by Refuge Visitor Services staff, were completed and installed. This was the final stage of the TEA Grant the city received with the assistance of the refuge. It has been five years since the refuge approached Prairie City with the idea of working together to secure a TEA Grant for the city, and the grants completion is exciting for all involved.

Three staff members from Rocky Mountain Arsenal NWR and staff from The Nature Conservancy assisted with the bison roundup in November. Dr. Tom Roffe and Lee Jones from the FWS Wildlife Health Office in Bozeman led the technical activities of the roundup.

The Visitor Services Manager met with the Education and Recreation sub-committee for the Iowa State Wildlife Action Plan. She also developed partnerships with four local schools (See 7.b. Outreach).

5.b. Tribal Coordination

Coordination and cooperation continued to grow between the refuge and the Meskwaki Settlement. The Meskwaki Settlement School officially became part of the Partner School Program (see 7.b. Outreach section), signing a Memorandum of Understanding with the refuge. The excess bison squeeze chute was transferred to the BIA for the Meskwaki Department of Natural Resources to use at their bison handling facilities. Members and employees from the Meskwaki Settlement visited during the roundup to get an idea of what to expect when they do their roundup next year. The refuge provided 200 pounds of rough dropseed seed for the Meskwaki Settlement prairie restoration effort. The refuge manager provided a letter of support to Meskwaki DNR for their Tribal Wildlife Grant application. Also, the Zone LEO stationed at the refuge provided assistance to Meskwaki Settlement to investigate mountain lion sightings. Several dogs have been killed or seriously injured and have marks consistent with mountain lion attacks.

Resource Protection

6.a. Law Enforcement

An issue arose this year when the refuge deer season closed but the IA DNR had an extended one week antlerless deer season. Several hunters were out and about on the refuge. They were advised of the closed season on the refuge and left. No Notices Of Violation (NOV) were issued.

The following incidents were reported by the Zone LEO:

- 1 NOV - speeding on road through bison enclosure
- 1 NOV - shooting from the tour road
- 9 NOV's - possession of toxic shot while hunting
- 1 NOV - off-road driving
- 1 NOV - parking in a no-parking area (entrance road)
- 1 NOV - hunting deer in small-game only zone
- 7 written warnings for parking violations
- 1 written warning for off-road driving
- 6 unknown written warnings
- 14 verbal warnings for possession of toxic shot while hunting (hunters that hadn't yet left their vehicles)
- 3 verbal warnings for night trespass
- 5 verbal warnings for blocking gates (subjects were present in the vehicles)
- 3 verbal warnings for parking violations (owners present)
- 1 verbal warning for leaving stands overnight ("I made the hunter go back and get it when I observed that he returned to the truck empty-handed" *quote by Gensmer*)
- 1 verbal warning for juvenile hunting deer in the small-game only area
- 2 verbal warnings for hunting behind no hunting zone signs (only 10 feet behind)
- 16 unknown verbal warnings

Lead shot was a problem this year, probably because we were getting a lot of non-resident and non-local first-time-to-the-refuge hunters. Pheasant numbers were down, locals are not hunting here this year to any extent, and folks are hearing that we have more birds than are found in their areas.

There were several investigations into trespass, leaving stands overnight, road hunting from the tour road, overbag by one of the "deer drive" groups who hunt adjacent to private land, and hunting in a closed area along the bison enclosure fence.

The Zone LEO also assisted two groups of hunters in retrieving wounded deer from the no hunting zones, a persistent problem that should be reviewed as these hunters are reportedly using the retrieve excuse to chase deer from these sanctuary areas to areas open to hunting. This same group had requested to retrieve deer from the no hunting area in previous years.

A number of complaints were received from pheasant and lone deer hunters that the large groups of deer-drive hunters are ruining the hunting experience for other hunters. One of these groups numbers up to 30 hunters who drive the prairie, walking a line that pushes deer section by section. The Zone LEO witnessed this group fire over 40 shots at a herd of deer on one drive, killing only three, but admittedly wounding several that weren't retrieved. These hunters also are telling hunters not in their group that their group has priority as they have hunted the area for many years. Several of the complainants told the Zone LEO that they are afraid to bring their kids on our hunts as long as the big groups are there. This is posing a safety issue, as well as taking the sportsmanship from the activity. The Zone LEO suggests restricting the size of a hunting party, stop the "drives" from occurring, or restrict shotguns as a method of take. Another suggestion was to stop "party hunting" by definition, requiring each hunter to have in possession an unused, valid tag of their own and requiring them to stop hunting when the tag is filled. These hunters can now kill their deer and keep hunting until all the tags in the party are used.

There has been an increase in burglaries in the neighborhood. Staff was reminded to be diligent in keeping vehicles, doors, and gates locked and to report any vehicles parked in field entrances. There has been an increase in littering – mostly beer cans – along the entry road and county roads within the refuge.

The hunting brochure was updated to include non-toxic shot for muzzle loader and shotgun requirements for the upcoming hunting season

6.b. Permits and Economic Use Management

The following special use permits were issued by the Refuge in FY09:

- Several wood collection permits were issued during the fiscal year.
- Cooperative farmers (Gary Van Ryswyk, Gerald Vander Linden and Gordon Wassenaar) were given special use permits for the 2009 farming season.
- A Special Use Permit (SUP) was issued to Cynthia Cambardella to perform research on the Refuge. The title: Integrated Resource Assessment during a tallgrass prairie reconstruction within a small watershed.
- Byron Sleugh, Dow AgroSciences, LLC of West Des Moines, Iowa was issued a SUP authorizing research on the application of herbicide and grazing treatments for control of sericea.
- A permit was issued to Matt Helmers, Iowa State University, allowing research of ecosystem structure and function in watersheds with contracting annual-perennial plant community configurations.
- Keith Schilling, Iowa DNR Geology, was issued a SUP to conduct research to determine spatial and temporal patterns of groundwater nutrient concentrations (N,P, C) in riparian groundwater near Walnut Creek under four different land covers.

- Sue Fairbanks, Iowa State University, received a SUP to determine what native and exotic plant species are distributed as seed carried by and shed in bison & elk hair at the refuge.
- A permit was issued to Jarrad Prasifka, University of Illinois, authorizing collection of insects on infested cordgrass plants.
- A SUP was issued to Ryan Welch, Tallgrass Prairie Center, University of Northern Iowa, to determine the relationship of varying rates of side oats grama in initial plantings to expression of native diversity and exotic species.

As required by the Iowa DNR, monthly wastewater wetland monitoring reports were submitted.

6.g. Land Acquisition Support

An appraisal request for the Rothinghouse property was submitted to the Regional Realty Office. The land is currently owned by the Iowa Natural Heritage Foundation and the Friends of the Prairie Learning Center and Neal Smith NWR. Former Congressman Neal Smith made inquiries regarding the purchase of this property by the Service.

Public Education and Recreation

7.a. Provide Visitor Services

A total of 16,105 walk-in visitors visited the Prairie Learning Center, with 975 people attending meetings at the Prairie Visitor/Learning Center. Visitor Services staff presented interpretation to 1,022 visitors and outreach/education to 5,932 people. Off-site Interpretation was provided to 1,195 people and off-site EE was provided to 2,866. Some 741 visitors attended special events. A total of 88,265 went through the bison enclosure, 38,461 used the Overlook Trail, 4,352 used the Savanna Trail, and 1,112 used the Basswood Trail. Total visitation was estimated at 161,026.

The Tallgrass Brochure was completed and ordered, the Prairie City Kiosk Project was completed and the interpretive signs were installed at the informational kiosk in Prairie City.

Special Events:

The following special events were presented at the refuge during FY09:

October:

- As part of National Wildlife Refuge Week, J.N “Ding” Darling Day was observed on Saturday, October 11, 2008. Eighty volunteers, largely scout groups, harvested seed from a number of sites around the refuge as part of the fall prairie rescue day.
- “The Big Sit!” was celebrated on Sunday October 12th. Two visitors participated.

March:

- Linking Girls to the Land, a birthday celebration for the Girl Scouts and the Refuge System, was held on Sunday, March 15, 2009. There were 30 girl scouts in attendance and they participated in everything from transplanting seedlings to hiking through the prairie.

May:

- International Migratory Bird Day was held on Saturday, May 9, 2009. A morning bird class/hike, kid’s crafts and other activities were offered as part of the celebration. A total of 240 visitors came for the event.
- The annual Junior Duck Stamp Award Ceremony, held on Saturday, May 9, 2009, was attended by over 100 people.

- The first of the Beginning Birding classes was held on Saturday, May 9, 2009. The class was attended by 13 people and was very well received by all. Topics included basic equipment, identifying marks, flight patterns, habitat, and birding by ear. Three classes were led by volunteers. The final class was an early morning field trip in July.



Iowa State Rehabilitation Center brought several educational birds, including this turkey vulture. They discussed the history of the birds and talked about some of the dangers migrating birds face.

June:

- Refuge staff and interns staffed the refuge booth for Prairie Days in Prairie City on Saturday, June 27, 2009. In the evening, the refuge's float, developed by the summer interns, participated in the Prairie Days parade.

July:

- The annual butterfly count was held in Saturday, July 11, 2009. The refuge biologist and assistant manager were joined by four other participants.

September:

- Monarch Madness – over 60 girl scouts and volunteers helped refuge staff catch, tag and release monarch butterflies as part of Monarch Watch. Sixty monarchs were tagged and released, a good number considering the largest numbers migrated through Iowa two weeks earlier than usual.
- Research Field Day – (see 1.b. Studies and Investigations, LMRD Research Field Day).
- Buffalo/Public Lands Day – more than 300 visitors participated in this event. The morning was dedicated to stewardship, particularly seed collection. The afternoon included kid's crafts, bison programs, flint knapping and an invasive species booths.

7.b. Outreach

Partner Schools:

The Partner School Program really began to take shape this year! Four schools signed three year MOU's with the refuge, and staff began working with teachers from the schools to develop lessons that fit into topics in the classroom but use the outdoors to teach it. Each school also dedicated an area to restore prairie for future use by the teachers and students.

Stowe Elementary School:

Staff worked with the administration at Stowe Elementary and in February, 2009 this school, which has an 87% participation in the free lunch program, signed a MOU. This agreement allowed for at least one field trip to the refuge for ALL the students, with more trips if funding for busing could be found, and up to three classroom visits by refuge staff for all classes. The first class visit was in March. Refuge staff spent two days in May working with students and teachers to plant their prairie plots.

Cornell Elementary:

This school was the first to sign an MOU with the refuge to become a Partner School. This was the second year for this program at this school. Three in-classroom visits per class were scheduled, including sessions on cleaning seed and teaching the importance of stewardship and caring for Prairie; winter prairie life, and transplanting seedlings into conetainers. Meetings were held with teachers at each grade level to determine which topics that they currently cover in the classroom which could now be adjusted to be used at the refuge and outdoors. Every grade level visited the refuge in the spring.

Norwoodville Elementary:

This was the first year this school participated in the Partner School Program. Visitor Services staff visited each classroom presenting programs that introduced the students to Neal Smith NWR and its importance, and winter prairie life. The students were also involved in stewardship – they cleaned seeds and were taught about the importance of stewardship and caring for prairie. They also transplanted seedlings into conetainers (eight germination trays were raised by the students in portable greenhouses provided by the Refuge). Meetings were held with teachers at each grade level to determine which topics that they currently cover in the classroom which could now be adjusted to be used at the refuge and outdoors. Every grade level visited the refuge in the spring. All classrooms were also involved in establishing the prairie plot on school grounds.

Meskawaki Settlement School

This year started the partnership between Visitor Services staff and the Meskwaki Settlement School. In October, a high school class visited the refuge to collect seed for the prairie restoration project occurring on Settlement lands. This led to a meeting in November between Visitor Services staff and the schools administration. The new partner school program was discussed, as well the plant propagation program. The school's administration was excited about both of these programs and the refuge manager and visitor services manager met with the school's staff to finalize and sign a MOU formally making the Meskwaki Settlement School a Partner School. The plant propagation program continued throughout the school year with students growing plants in germination trays, transplanting them into conetainers and eventually planting half of the plants in the school's new prairie plot and the other half at the refuge.

Prairie City-Monroe (PCM) School District:

Visitor Services staff met with Dave Ellis, the regional environmental education coordinator, and the superintendent of PCM school district to discuss potential future partnerships that would involve the students coming to the refuge up to five days a week to use it as an outdoor classroom. This was the first step in a long process that will hopefully lead to a full partnership with the PCM school district in using the refuge as an outdoor classroom.

Partner Teacher Program:

This program is designed to encourage teachers to visit the Refuge and other outdoor areas and teach their students using the environment. Two three-day workshops were offered (with a credit from Drake University available to interested teachers), with 23 teachers participating. By attending one of these workshops and bringing their students on a self-led field trip, the teachers qualified for the Partner Teacher Program, which made them eligible for busing reimbursement from the Prairie Passages Bus Fund (see 8. d. Friends of PLC).

Planning and Administration

8.a. Comprehensive Conservation Planning (CCP)

The CCP process began this fiscal year. The internal scoping meeting took place April 9 and 10. RO Planning Team members Karen Westphall, Gabriel DeAlessio, and Gary Muehlendardt presented the overview of what the CCP was about. By the end of the second day, an outline was prepared describing what the steps would be for the next six months. Dates were selected for the Open Houses and assignments were made. The Open Houses were held at Stowe Elementary School in Des Moines and City Hall at Prairie City in June, with a total of nine people attending. New GIS feature classes needed for the CCP were created. The biology/visitor services review for the CCP was held August 3-5, with Westphall preparing a draft report for the CCP team to critique as the next phase of the project.

8.b. General Administration

Staffing changes during the period:

- In October, 2008, Tara Lange joined refuge staff in the Student Temporary Employment Program. Tara worked as a Park Ranger, Visitor Services Technician (GS-025-03), until May, 2009, when she graduated from Drake University.
- Courtney Turnis, a Bio Science Aid in the STEP, left in November, 2008 to pursue other avenues of work. Also in November, Jeffrey Krueger, Biological Science Technician, (GS-0404-06) transferred to Minidoka National Wildlife Refuge in Rupert, Idaho, as a Refuge Operations Specialist.
- Nicholas Allen, Biological Science Aid (GS-0404-03) resigned from the STEP in February, 2009. Nick had been in the program since 2004 and filled many roles as part of the refuge staff.
- Brian Donnelly, Range Technician (Fire), (GS-0455-03) joined the staff in March in a NTE 180 appointment. He remained at Neal Smith NWR until November, 2009. At that time, he transferred to a full time appointment at Santa Ana NWR in Alamo, Texas.
- Jonathan Ostermann, Park Ranger (Visitor Services Tech) (GS-0025-03) resigned from his STEP appointment in May. Jonathan had been in the STEP since December of 2007.
- YCC enrollees began an eight week program on June 8th. We had four enrollees. Their time was spent assisting biology, environmental education and operations.

- In June, Dustin Farnsworth, a post-graduate student at Iowa State University working on a Master's degree joined the staff in the STEP. Dustin's position was Biological Science Tech (General) (GS-0404-4) and he worked with the prescribed fire program. Dustin resigned in August to continue to work on his Master's degree.
- Mitchell Kane, a junior at Iowa State University, came on board in June, also in the STEP. He is a Bio Science Aid (GS-0404-03) and assists our operations staff.
- Cheryl Groom was reassigned to the Assistant Refuge Manager's position in June, leaving the Visitor Services Manager position vacant.
- Colleen Nell was hired in the STEP as Park Ranger (Visitor Services Tech) (GS-0025-03) in August. She is a student at Drake University.

FY 2009 Staffing as of 09/30/2009

Nancy Gilbertson	Wildlife Refuge Manager	PFT	GS-485-13
Cheryl Groom	Wildlife Ref. Spec/Assist Ref Mgr	PFT	GS-485-12
Vacant	Visitor Services Manager	PFT	GS-025-11/12
Carla Dykstra	Administrative Officer	PFT	GS-341-09
Doreen Van Ryswyk	Office Assistant (½ Private Lands)	PFT	GS-318-05
James Krizman	Fire Mgt Specialist (Pres. Fire)	PFT	GS-401-09
Karen Viste-Sparkman	Wildlife Biologist	PFT	GS-486-11
Richard Hager	Biological Science Technician	PFT	GS-404-06
Vacant	Biological Science Technician	PFT	GS-404-06
Vacant	Park Ranger	PFT	GS-025-05/07
Hallie Rasmussen	Park Ranger	PFT	GS-025-09
Allan Murray	Park Ranger (Volunteer Coordinator)	PFT	GS-025-09
Vacant	Env Education Specialist	PFT	GS-1750-07/09
Vacant	Maintenance Worker	PFT	WG4749-05
Colleen Nell	Park Ranger (Vis Svc Tech) (STEP)	TFT	GS-025-03
Mitchell Kane	Bio Science Aid (STEP)	TFT	GS-0404-03
Brian Boot	Maintenance Mechanic	PFT	WG-4749-09
Steven De Bruin	Maintenance Worker	PFT	WG-4749-07
 Co-located Employees			
Gavin Gensmer	Zone 3 Law Enforcement Officer	PFT	GS-025-12
Pauline Drobney	Wildlife Biologist (LMRD)	PFT	GS-486-13
Doug Helmers	Iowa Prvt. Lands Coordinator	PFT	GS-

8.c. Volunteers

FY09 volunteer hours totaled 15,367! October was a great start to the new fiscal year. Eighty volunteers, largely scout groups, joined Second Saturday Stewardship volunteers and staff to observe J.N "Ding" Darling Day on October 11. Participants harvested seed from a number of sites around the refuge as part of the fall prairie rescue day. The school stewardship programs contributed 1800 volunteer hours with students performing tree mapping and stream monitoring, along with harvesting and cleaning seed in the seed lab. On the 17th over 30 refuge volunteers participated in this year's Volunteer Bus Trip. The group traveled west to the Loess Hills region and enjoyed an afternoon of hiking and taking in the beautiful scenery along the ridgelines of the rolling hills. Hager provided an interpretive insight into the development of this unique geological feature. On November 8th, the refuge hosted the annual Volunteer Appreciation

Luncheon. Staff and volunteers joined to reflect on a great year. Volunteers continued the work of cleaning and processing seed in the seed lab throughout the fall and winter. In addition, staff enjoyed the return of volunteers from the Homestead (this is the third year this special needs group is helping clean containers in preparation for winter greenhouse propagation program).

In April, we celebrated the return of spring and on the 18th over 120 volunteers participated in this year's Earth Day (spring prairie rescue). Volunteers from 24 different service groups, scout groups and families spent the morning working with staff members cleaning the production plots, laying retention matting, clearing brush, working in the greenhouse and clearing trash from refuge roadways! Volunteers contributed nearly 600 hours of volunteer service. Volunteers remained active throughout the spring and early summer harvesting seed and working plots as part of the Adopt-A-Trail program. In July, no fewer than four large stewardship groups worked with Ranger Murray to pull sweet clover and Queen Anne's lace along the Overlook Trail. Approximately 80 youths representing groups from Silos and Smokestacks, Ankeny, Pleasant Hill & Waukee Youth in Parks programs joined in the fight against the weeds!

Throughout August & September, volunteers remained busy collecting seed. Crews are working weekly with the Volunteer Coordinator to harvest seed. Refuge volunteers participated in harvesting activities as part of National Public Lands Day. The Refuge Biologist conducted seed collection training for volunteers. The field training included plant identification, how to tell when seed is ripe, and how to record information on seed tag.

8.d. Friends of PLC

The refuge manager attended the Friends' monthly board meetings throughout FY09 and the assistant manager attended the meetings beginning in August to smooth the transition after the refuge manager retires in December, 2009. The 2009 budget provided funds for nine internships, volunteer awards, events, newsletter, and other miscellaneous support totaling approximately \$41,000. The Friends also provided a scholarship to the Prairie City/Monroe High School for one graduating senior who is pursuing a career in wildlife science or environmental education, however there were no applications for this scholarship. A new Friends of the PLC Facebook page was started.

The Friends' Annual Meeting was held prior to the 2009 Volunteer Appreciation luncheon on November 8, 2009. Steven Zoncki, Mark Lyle, Laurie Fenimore, and Tom Prall were elected to the board. At the November board meeting, Lyle was elected president; Zoncki, secretary; and Stan Kuhn, treasurer.

Friends' representatives Stan Kuhn and Tom Prall, along with Gilbertson attended the Friends conference in Washington, DC. They all agreed it was the best conference ever and all were inspired and motivated to try some new ideas presented at the conference.

The Friends approved and signed a new cooperative agreement. The agreement was sent to the Regional Office for the Director's signature. The Friends also adopted a Conflict of Interest Policy.

The Board began preparation for a Congressional Luncheon which would inform the congressional members about their many projects, particularly the Rothinghouse land purchase. The luncheon was scheduled for October 2, 2009.