

REVIEW AND APPROVALS

MORRIS WETLAND MANAGEMENT DISTRICT

Morris, Minnesota

ANNUAL NARRATIVE REPORT

January 1, 2012 – December 31, 2012



Wetland Manager Date Refuge Supervisor, Area 3 Date

Regional Chief, NWRS Date

INTRODUCTION

The Morris Wetland Management District (WMD), originally established in 1964 as the Benson WMD, includes 245 waterfowl production areas (WPAs) totaling 51,789 acres in fee title ownership. In addition, the Morris office administers approximately 22,099 wetland acres of waterfowl management easement lands, 1,237 acres of FmHA easements, and 9,865 acres of wildlife habitat protection easements. The Morris WMD also administers fee and easement units of the Northern Tallgrass Prairie National Wildlife Refuge. We have now acquired 24 prairie easement tracts totaling 1,415 acres. All fee and easement areas are scattered throughout Big Stone, Chippewa, Lac qui Parle, Pope, Stevens, Swift, Traverse and Yellow Medicine Counties. The headquarters is located four miles east of Morris, Minnesota on the 861 acre Long Lake-Edwards WPA.

The topography of west-central Minnesota is diverse, ranging from the granite outcrops of the Minnesota River bottoms to the rolling hills of Pope County. The flat agricultural land of the Red River Valley of the north blends into the transition zone between the tallgrass prairie and eastern deciduous forest. Soils of the region are generally productive which contributed to the historically high concentrations of breeding waterfowl. With the advent of modern agriculture, over 60 percent of the original wetlands were drained and nearly 100 percent of the native grasslands were converted to cropland.

The primary objective of this District is to acquire, develop, and manage habitat for waterfowl production. Waterfowl species that commonly breed in this area include blue-winged teal, mallard, gadwall, wood duck, redhead, canvasback, ruddy duck, and Canada goose. The District also contains good populations of ring-necked pheasant and white-tailed deer, and an expanding wild turkey population. Another high priority objective is to provide habitat for native plants and animals. Private land habitat improvement for waterfowl and other wildlife is an important habitat restoration tool. Waterfowl production areas are open to public hunting and a variety of other wildlife oriented uses. The WPAs receive their highest public use on opening days of waterfowl, pheasant, and deer hunting seasons.

The 51,789 acres of fee-title WPAs that we manage includes 18,438 acres of wetland, 7,202 acres of native prairie, 11,234 acres of re-seeded natives, 12,230 acres of other grasslands, 2,222 acres of woody cover, 400 acres of cropland, and 717 acres of other habitat (roads, rivers, and other miscellaneous habitat types).

INTRODUCTION

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HIGHLIGHTS

1. Extreme weather seems to be the new norm. The winter of 2011/2012 was the 4th warmest on record with the 3rd smallest snowfall. March was the 2nd warmest on record with many area lakes completely opened by the 3rd week in March (climatic conditions).
2. The early spring and late fall resulted in a very long growing season which allowed a record number of acres to be grazed and burned. A total of 37 WPAs were grazed totaling 3,899 acres and 57 prescribed fires conducted totaling 7,681 acres (sections 3c, 3f).
3. The long dry growing season and record crop prices led to a significant increase in wetland easement violations. A total of 22 new investigations were opened (section 6a).
4. Despite high crop prices, interest in easements remained strong. A record number of acreage of easements were acquired in the district. A total of 4 wetland easements and 18 habitat easements were acquired, protecting 1,494.96 acres of grasslands and wetlands (section 6g).



With the dramatic increase in corn and soybean prices, pastures like this one are being purchased and converted to cropland. Big Stone County. 2012-1

Climatic Conditions

Morris, Minnesota

January 2012:

January's mean temperature was 19.0°F, which was 10.5°F above the 126-year mean (1886-2011). The high temperature was 59°F on the 5th. There were three days in January with temperatures 50°F or greater and there were seven days that set new records. Temperatures were 15 to 20 degrees warmer than normal. The low temperature for the month was -18°F on the 19th which tied with the record set in 2008 for that date. There were only eight days this January with 0°F or lower. Precipitation totaled 0.50 inches, 0.20 inches below normal. Snowfall for January totaled 7.9 inches. Brown ground was the rule rather than the exception this month. Winter snowfall from November through January was 11.1 inches.



There has never been a 60°F temperature recorded during the first week of January in Minnesota's modern climate record. This photo was taken in Cyrus, MN. Other record temperatures in western Minnesota were: Canby 63°F, Hanley Falls 61°F, Echo 60°F, Granite Falls 59°F, Benson 59°F, Appleton 59°F, Morris 59°F, Starbuck 58°F, Glenwood 55°F, Marietta 62°F, Madison 61°F, Montevideo 61°F and Clara City 60°F.

2012-2 DMO 1/05/2012

February 2012:

Mean temperature for February was 21.6°F, which was 8.4°F above the average. High temperature on the 1st was 50°F. We had three days with temperatures 43°F or greater. The low temperature was -8°F on the 10th. We had three days with 0°F or lower (only 14 days for the winter to date). Precipitation totaled 0.97 inches,

which was 0.29 inches above normal. Snowfall for February was 9.7 inches. Winter (November–February) snowfall equaled 20.8 inches. Snow on February 29th was 5.5 inches and 0.6 inches of precipitation which was a new daily record.

March 2012:

The mean temperature for March was 40.1°F, which was 13.2°F above normal. This was the second warmest on record. High temperature for the month was 81°F on the 18th. March had five days with a temperature 70°F or greater.

Unprecedented mid-March influx of warm, moist air produced record setting temperatures (typical of late May). Fifteen new daily maximum records were set for March. The low temperature for the month was -6°F on the 4th. There were only two days with 0°F or lower temperature. Precipitation totaled 0.95 inches for the month, which was 0.22 inches below normal. Snowfall for March totaled 1.7 inches. Winter (October-March) snowfall of 22.5 inches will be known as “the winter that wasn’t”.



Hoar frost on big bluestem. 2012-3 DMO 2/1/2012

April 2012:

April's mean temperature was 46.4°F, which was 2.9°F above normal. The high temperature was 79°F on the 24th (tied the 1998 record). The low temperature was 18°F on the 11th. Precipitation during April totaled 2.54 inches, which was 0.26 inches above normal. A new daily record precipitation of 1.14 inches occurred on the 16th (previous record was 0.85 inches in 1891). There was no snow in April.

May 2012:

May's mean temperature was 59.5°F, which was 3.2°F above normal. The high temperature for May was 97°F on the 19th. May's low temperature was 37°F on the 12th and 30th. There were six days of record breaking temperatures in May. Precipitation was 4.02 inches which is 1.06 inches above normal.

June 2012:

The mean temperature was 68.3°F, which was 2.2°F above normal. The high temperature was 91°F on the 9th and the low was 42°F on the 12th. Precipitation totaled 3.33 inches, which is 0.61 inches below normal. The second half of the month broke or tied all-time temperature records. June temperatures also contributed to a record warm first half of the year and warmest 12 months since record keeping began in 1886.

July 2012:

The mean temperature for July was 75.4°F, which was 4.5°F above normal. This was the tenth consecutive month with above average temperatures. High temperature for July occurred on the 4th and 16th with a reading of 97°F. There were seven days with temperatures above 90°F, three days of 70°F days, and 21 days with readings in the 80s. July's low temperature of 57°F occurred on the 10th. Precipitation was 2.01 inches, which is 1.63 inches below normal (abnormally dry for this month).

August 2012:

August mean temperature was 67.0°F, which was 1.2°F below normal. This was the first time this year with a below normal average. The high temperature was 88°F on the 1st and 29th. The low temperature was 41°F on the 17th. Precipitation was 3.24 inches which was 0.22 inches above normal. There was a surge of severe weather, primarily winds between 45 to 55 mph, on the 3rd. On the 23rd a storm five to seven miles southwest of Hancock produced hail 0.88 to 1 inch in size in a period of 10 to 15 minutes, stripping leaves from crops.

September 2012:

Mean temperature was 58.2°F, which was 0.8°F below normal. The high temperature was 91°F on the 11th. There were three days with temperatures above 90°F. The September 30th temperature of 84°F tied with a record set for that date in 1933. The low temperature was 26 °F on the 23rd. The first frost occurred on the 18th when a reading of 30°F was recorded. Precipitation was 0.03 inches which is 2.32 inches below normal. September was the driest on record, beating the record of 0.22 inches in 1979.

October 2012:

The mean temperature was 53.6°F, which was 3.8°F below normal. The high temperature was 79°F on the 3rd. The low temperature was 17°F on the 12th. Precipitation was 1.25 inches which was 0.58 inches below normal. Precipitation of 1.18 occurred from the 17-20th. The season's first snowfall was 0.3 inches on the 25th. It did not last very long.

November 2012:

November's mean temperature was 31.5°F, which was 1.7°F above normal. The temperature high for the month was 59°F on the 17th. November's lowest temperature was 3°F on the 26th. Precipitation was 0.45 inches, which was a deficit of 0.52 inches for the month and 4.28 inches below normal for the year. As a result of the abnormal dryness, the extent of the drought continued to expand and worsen across the district. Snowfall totaled 0.7 inches. Ice began to form during the second half of the month and many soils froze to a depth of four inches.



The drought conditions continued to expand and worsen across the area during October and was classified in the **extreme** or **severe** category.

2012-4 DMO 11/2/2012

December 2012:

The mean temperature for December was 15.8°F, which was 0.1°F above normal. The high temperature was 52°F on the 3rd. The low temperature was -13°F. Precipitation was 0.98 inches, 0.31 inches above normal. Snowfall totaled 10.7 inches.

Morris, MN 2012 Weather Summary

- The annual mean temperature was 45.5°F, which is 3.4°F above the 126 year mean of 42.1°F. The annual mean temperature has been above the 126 year mean in 12 of the last 15 years.
- Annual precipitation was 20.27 inches, 3.94 inches below average. Annual growing season precipitation (April through August) was 15.14 inches, 0.70 inches below average. We had 30.7 inches of snow compared to the average of 39.4 inches.
- The high temperature was 97°F on July 4th and 16th. There were ten days when temperature reached 90°F or greater.
- The year's low was -17°F on January 20. There were 24 days when the minimum temperature was 0°F or below.
- January was the fourth warmest on record
- Meteorological winter (December - February) was the fourth warmest on record. Snow cover during this winter was the third lowest.
- March was the second warmest on record.
- Metrological Spring (March-May) was the warmest spring on record.
- July was the second warmest on record.
- September was the driest on record.
- October was generally drier and cooler than average.



The start of one of November's more sunny days. 2012-5 DMO 11/21/2012

MONITORING AND STUDIES

1a. Surveys and Censuses

Christmas Bird Count

There are two Christmas Bird Count (CBC) circles in Morris WMD. In 2012, both the Morris and Lac qui Parle CBCs were held on December 14. In Morris, eight participants were pleased to record 39 species. Highlights included Harris' sparrow, brown creeper, and a hoary redpoll. Ten individuals participated in the Lac qui Parle count, and were able to record 46 species. Highlights there included northern shoveler and a high count of 154 common redpolls.

Woodcock Survey

Biological Technician Oglesby assisted with the annual American woodcock singing-ground survey. Morris WMD is on the periphery of the woodcock range. There are two assigned survey routes in the district, one in Pope County and one in Stevens County. Routes are 3.6 miles long, with 10 listening stations where observers record the number of woodcock heard peenting. The route in Pope County is run annually. This year it was surveyed on April 30 with 13 birds observed. The Stevens County route is run every five years unless birds are observed, in which case it would be run annually. The Division of Migratory Bird Management uses the singing-ground survey data to calculate trends (% change per year) in woodcock heard during the singing ground survey. The results of the singing-ground survey were similar to last year. The short-term (2011-2012) and 10-year (2002-2012) trends were not significant in the Central Management Region, but the region does have a long-term (1968-2012) declining trend of -0.8% per year. There were no significant trends (i.e., no change) for any of the three time periods for Minnesota.

Breeding Bird Survey

Staff conducted one breeding bird survey route this year. The breeding bird survey is coordinated by USGS and the Canadian Wildlife Service. It is a long-term, large-scale survey used to monitor status and trends of North American bird populations. There are several routes within the Morris WMD, many of which are conducted by staff from the Division of Migratory Birds and other volunteers. Biologist Vacek ran the Chokio (#21) route on June 22, and observed 53 bird species. As in previous years, there was a distinct lack of grassland birds.

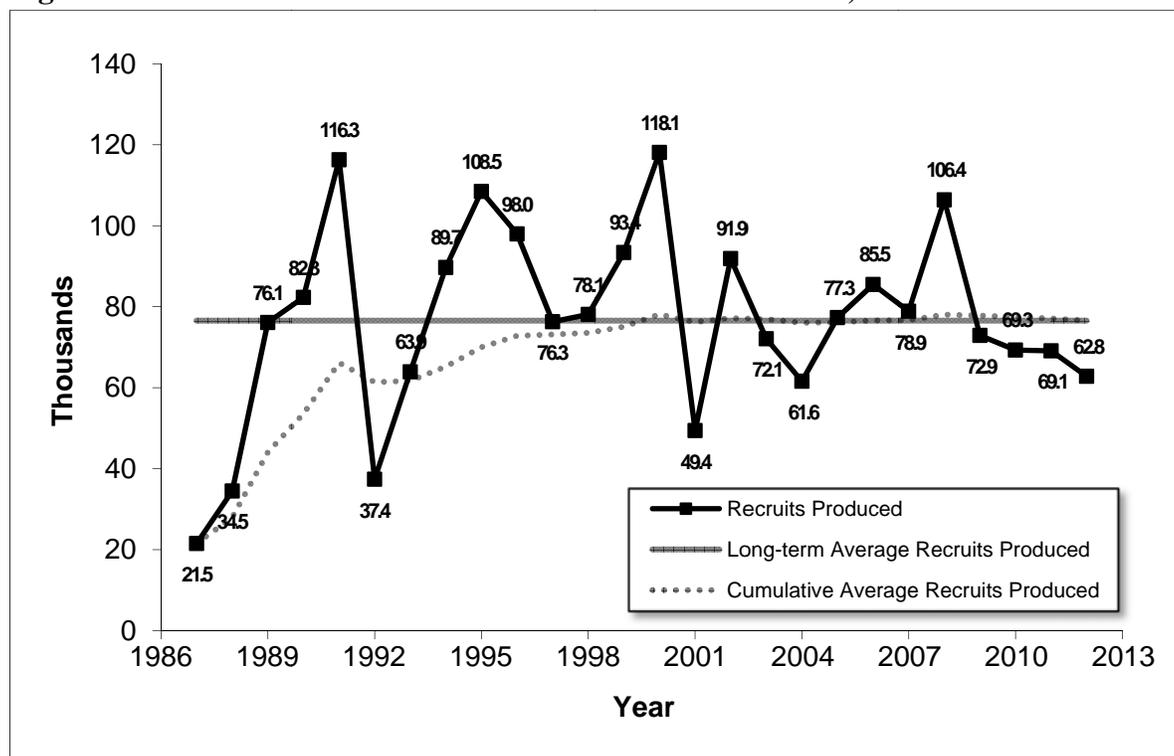
Four Square Mile Waterfowl Pair Count

The annual four square mile breeding waterfowl survey has taken place since 1987. Each year, the Region 3 Habitat and Population Evaluation Team uses data from this survey to compile wetland condition, breeding waterfowl population, and waterfowl production estimates for Morris WMD, as well as other districts, and the prairie pothole region of Minnesota and Iowa.

Wetland conditions were similar to the long-term average for the survey. Our estimated number of breeding pairs recovered slightly relative to the last few years (57,100) but was still below the long-term average. Pair data for individual species matched our anecdotal observations in the field: decent numbers of blue-winged teal and wood ducks, but a huge decline in mallard pairs.

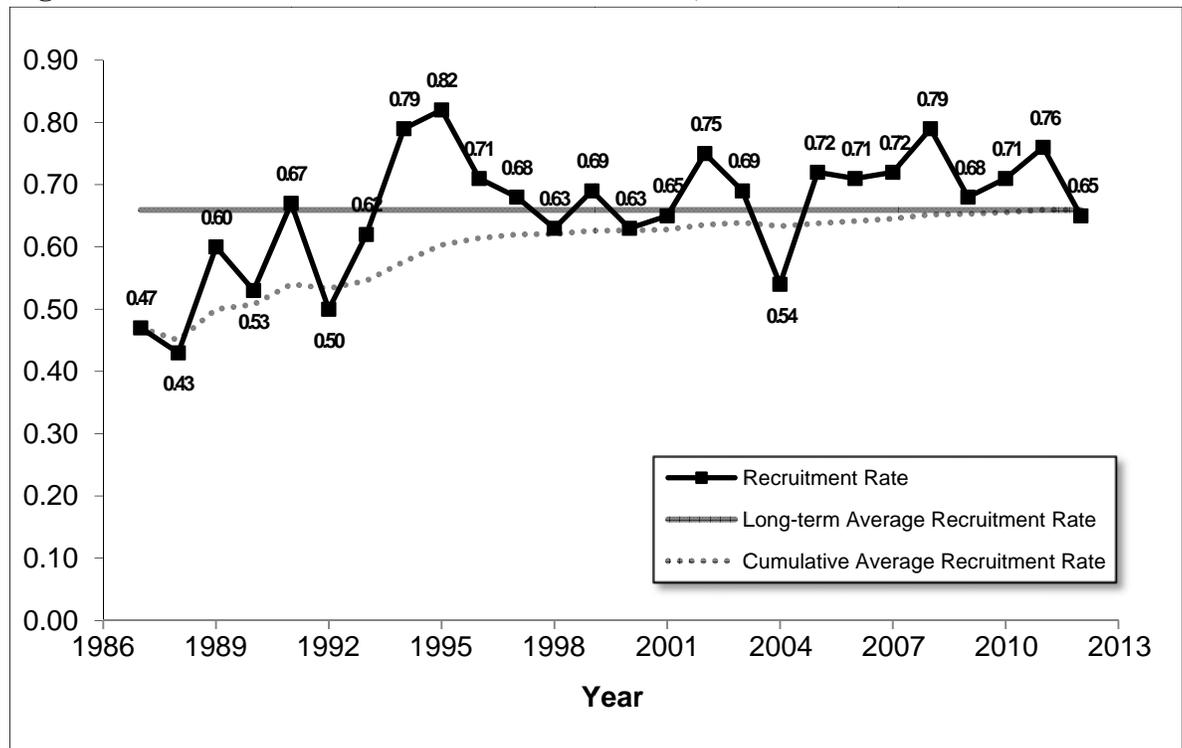
There were 209,600 recruits produced in the Minnesota portion of the Prairie Pothole Region in 2012. Morris WMD contributed 62,800 recruits to the fall flight (Figure 1). Morris WMD recruitment rate was at a healthy 0.65 this year (Figure 2), similar to the 0.62 recruitment rate for the overall Minnesota Prairie Pothole Region. The Prairie Pothole Joint Venture Implementation Plan has a recruitment rate objective of 0.60 under average environmental conditions, and 0.49 for all managed areas.

Figure 1 – Number of Recruits Produced in the Morris WMD, 1987-2012



Data values are for five species - mallard, gadwall, blue-winged teal, northern shoveler, and northern pintail.

Figure 2 – Recruitment Rate for the Morris WMD, 1987-2012



Data values are for five species - mallard, gadwall, blue-winged teal, northern shoveler, and northern pintail.

North American Amphibian Monitoring Program/Minnesota Frog and Toad Calling Survey

We continued to participate in the North American Amphibian Monitoring Program this year. Routes were visited after sunset three times annually (early spring, late spring and summer). Observers identified the frog and toad species present at each stop based on breeding calls and estimated the abundance of each species using an index value.

The Minnesota DNR recruits volunteers for these routes, but has difficulty finding individuals to survey in our rural area. Biological Technicians Flahave and Fretueg, and Biologist Vacek surveyed four of the nine designated routes in the district this year. The most common species observed were Boreal Chorus Frog, Northern Leopard Frog, and American Toad (Table 1).

**Table 1 – Frog and Toad Species Observed During Calling Surveys
Morris WMD - 2012**

Species	Route Name			
	Otrey	Odessa	Fairfield	Bangor
Wood Frog		x		
Boreal Chorus Frog		x	x	x
Spring Peeper				x
Northern Leopard Frog		x	x	x
American Toad	x	x		x
Cope's Gray Treefrog			x	x
Canadian Toad	x		x	
Great Plains Toad				

Integrated Waterbird Management and Monitoring Program

Beginning in the fall of 2010, Morris WMD helped field test the protocols for the Integrated Waterbird Management and Monitoring Program (IWMM). Ducks Unlimited provided funding for technicians to help conduct surveys during the fall survey seasons in 2010-2012. Morris staff also completed surveys on some wetlands throughout the 2011 and 2012 seasons. The IWMM is a cooperative effort of managers and scientists to understand and optimally manage conservation lands along the Atlantic and Mississippi Flyways to support continental populations of waterbirds.

Sample wetlands were chosen based on aspects of the protocol that IWMM staff was interested in testing. In fall 2010, the focus was on the best approach to survey large wetlands and shallow lakes. In 2011 and 2012, the focus shifted to incorporating state and private lands. We also included most wetlands in Morris WMD with water control structures, hoping that this standardized protocol would be an appropriate technique to help guide our water level management decisions.



Biological Technician Fretueg surveys waterbirds on Edwards WPA as part of the Integrated Waterbird Management and Monitoring program.

2012-6 SCV 9/07/2012

Native Prairie Remnant Inventory

We continued the ongoing floristic quality assessments on remnant native prairie tracts managed by Morris WMD. Briefly, we list all plant species observed during a field visit to a prairie remnant. Using the coefficient of conservatism that has been assigned to each plant of the northern Great Plains, we are able to calculate a floristic quality index (FQI) that can be used to compare the relative quality of remnants. In addition to the FQI, we can analyze remnants based on other calculations such as the percent of native or nonnative species present.

In the coming years, there will be a focus on completing FQI assessments for the top 20 priority WPAs based on the prioritizing management tool. This year we hired a contractor (Scott Zager, Wildlands Ecological Services) to complete surveys on three high priority units: Krantz Lake, Nelson Lake, and Overby WPAs.

Wild Rice Inventory

Although prairie wetlands are not typically considered prime habitat for wild rice, we have observed this important waterfowl food on several WPAs. In an attempt to better understand the distribution and relative abundance of wild rice throughout the district, we developed and tested a rice monitoring protocol in 2010. The protocol was based on that developed by the 1854 Treaty Authority for monitoring the extensive rice beds in northern Minnesota. We did not have time to formally survey and map wild rice this year, but do plan to continue this effort as time

allows in future years. Data will be shared with Minnesota DNR Shallow Lakes staff.

Wetland Resources Monitoring

In an attempt to better understand wetland hydrology, Regional Hydrologist Josh Eash has established a long-term monitoring project to study surface and ground water within wetland complexes at Rothi and Nelson Lake WPAs. Hydrology data collected at the monitoring stations include precipitation, water quantity, and ground water levels. Quantifying hydrology will allow us to better predict bounce, source water availability, groundwater recharge, hydrologic impacts of upstream land use, impacts of restored wetlands on flood abatement, and threats and needs of prairie wetlands under current climate change scenarios. In addition, water chemistry and basic biological parameters are being monitored monthly. Water quality data will help us determine wetland health, impacts of adjacent land use, wetland filtration potential, and influence of restoration design and management practices on mitigating non-point source contaminants. Currently, there are only three long-term wetland monitoring sites in the Prairie Pothole Region. The data we collect may also be used to refine climate change models for the region.

For the second year, the Biological Resources Division cost-shared a seasonal biological technician who was stationed at Morris WMD. This arrangement worked well – it provided support for a position at Morris, and saved time and travel costs for the regional hydrology staff. Bio Tech Fretueg spent about one week each month collecting hydrology monitoring data. It will be very interesting to follow the hydrologic trends in these basins, especially considering the extremely wet and dry conditions they experienced the past two years.

Fire Effects Monitoring

The Minnesota Prairie Chicken Society received a CPL grant to enhance prescribed burning on Minnesota WMDs. Most of the funding was used to hire detailers to assist districts with prescribed fire (Section 3f), but a small part of the funding was set aside to hire fire monitoring interns who were stationed at Morris, Fergus Falls, and Detroit Lakes WMDs.

Individuals from those stations, the regional fire ecologist, and a regional Inventory and Monitoring program biologist cooperated to develop a standardized protocol to monitor the fire effects on sites burned through the grant funding. We decided to focus on monitoring in planted grasslands, and are using the station HMP habitat objectives to guide what is monitored. We collected pre-burn vegetation data in 2012 and will collect post-burn data in 2013. Monitoring included data about the fire behavior and fuel bed, plant composition, and vegetation structure. The regional fire program also supported the purchase of several fire data loggers that we will deploy during the prescribed burns to record the temperature and duration of the burn. Morris collected pre-burn data on nine sites this year.



Fire Monitoring Intern Patrick Rohloff collects visual obstruction readings at Pepperton WPA as part of the Minnesota Prairie Chicken Society CPL grant for Enhancing Prescribed Burning on Minnesota WMDs. 2012-7 SCV 7/27/2012

1b. Studies and Investigations

Evaluation of Methods for Canada Thistle-Free Habitat Restoration

This study compares the effectiveness of various seeding techniques and seed mixes for suppressing Canada thistle establishment in new restorations. The hypothesis is that by increasing competition and decreasing the disturbance inherent in seeding, we can produce more weed-resistant restorations. Diane Larson (USGS-Northern Prairie Wildlife Research Center) is the principle investigator for this study, which is being conducted at Morris, Fergus Falls and Litchfield WMDs and Neal Smith NWR. Each site has two to four study fields consisting of 108 plots that were seeded using one of three seeding techniques and three seed mixes (fully crossed for a total of nine treatments). The seeding techniques included dormant broadcast, spring broadcast, and spring drill. The seed mixes were of three diversity levels: 10, 20 and 34 species.

We did not collect any monitoring data this year. The team continued working on journal articles as well as a fact sheet describing results so far to fellow land managers. We plan to continue coordinating our management actions on the sites and conduct vegetation monitoring again in 2015.

Grassland Monitoring Team

In 2007 we joined with a group of Minnesota prairie managers and ecologists to develop a standardized grassland monitoring program. Our primary partners are The Nature Conservancy and Minnesota Department of Natural Resources. This group originally came together around the idea of monitoring the effects of grazing management, but soon realized that our real question was how to best manage remnant prairies to minimize invasive species (cool-season grasses and woody plants) and favor native species.

The group used a structured decision making workshop to develop the project framework and worked for three years to refine the adaptive management model and monitoring protocol. Morris WMD sites include Welsh, Welker, Hamann, Glacial Lake, and Twin Lakes WPAs; the sites are monitored every three years on a rotating schedule. As time permits, we also assist our partners with surveys. Our basic protocol includes monitoring vegetation composition using a belt transect and checklists of indicator species (native and invasive), as well as structural information like litter depth and visual obstruction.

Biologist Vacek serves on the coordination team for this project. We finalized the new state-and-transition model structure this year, and are currently finalizing a centralized, online database to improve data management (a complex task with the number of agencies and partners involved).

Native Prairie Adaptive Management Project

The Native Prairie Adaptive Management Project was developed by refuge biologists and managers from Regions 3 and 6, as well as USGS scientists from Northern Prairie and Patuxent Wildlife Research Centers. The particular focus of this project is to learn how well we can reduce smooth brome and Kentucky bluegrass from remnant prairies on refuge lands. The project includes over 120 management units throughout the Prairie Pothole Region.

Biologist Vacek has served on the science team for this project since its inception. The science team has been responsible for developing the monitoring protocol, the model that will be used to test our predictions about management effects, and a database to standardize data entry. The Inventory and Monitoring program in Region 6 is responsible for the overall coordination role for the project.

Morris WMD has nine management units in the project, located at Hillman, Florida Creek, and Freeland WPAs. One management unit at Hillman was not surveyed this year because it was grazed until just before the monitoring window. Our monitoring and management data, along with that collected at the other management units, was entered in an online database and used to generate management recommendations for the coming year. The recommendations are based on a model prediction of the best management decision given the current vegetation state and recent management history at the site.

In addition to the adaptive management decision support tool, we can use the data from this project to get an overall picture of the plant composition at these management units. There are several ways to summarize the data; Table 2 shows the proportion of each NPAM management unit that was near pristine, somewhat invaded by introduced plants, or mostly invaded by introduced plants in 2012. The most common invasives vary by site, but include smooth brome, Kentucky bluegrass, and reed canarygrass.

**Table 2 – Native Prairie Adaptive Management Summary
Morris WMD – 2012**

<u>Management Unit</u>	<u>Invasion Level</u>		
	<u>Pristine (>95% native)</u>	<u>Somewhat Invaded (50-95% native)</u>	<u>Mostly Invaded (<50% native)</u>
Florida Creek A	48.8	25.6	24.8
Florida Creek B	25.5	26.0	45.0
Florida Creek C	100.0	0.0	0.0
Freeland A	7.0	3.0	40.0
Freeland B	27.3	10.3	60.5
Hillman A	27.6	41.4	30.8
Hillman B	26.9	22.7	49.1
Hillman D	54.5	39.5	5.8



The invertebrate diversity and activity was impressive during NPAM vegetation monitoring at Florida Creek WPA. Management Unit C at this WPA is the highest quality prairie we have in the project. 2012-8 SCV 8/29/2012

Sediment Removal Adaptive Management

Morris WMD continues to participate in an adaptive management project focusing on the role of sediment removal in wetland restoration. We would like to learn more about if and when removing sediment is an appropriate tool to use when restoring partially drained or drained wetlands. The project includes stations throughout Minnesota (Refuges and Private Lands Offices). We did not restore any new basins this year, but did do annual vegetation and hydroperiod monitoring on the seven wetlands that were restored during previous growing seasons. Sites in the project are surveyed once a year before restoration, annually for the first four years, and in years six and eight. The model will be run in years four and eight to determine if sediment removal is producing more biologically diverse wetlands. We will add more sites in 2013 as they are available (a wetland must meet strict criteria to be included in the project).

Other Studies

Several other outside agencies or universities use Morris WMD lands for research sites. The research has some value to us but we are not closely involved in the surveys or study design.

- **Tolerance of Native Forbs to Herbicide Treatment** – *Dr. Roger Becker* at the University of Minnesota Extension has a one acre study plot in a local ecotype seeding at Kufrin WPA. The study is testing the tolerance of native forbs to herbicides at various application rates and timings (Section 3g).
- **Forb Interseeding** – the Minnesota DNR Farmland Research Group is conducting a study to determine the best approach to introduce forbs into a grass-dominated field. There is a study plot on Schultz WPA (Section 2b).
- **Identification of Moth (Lepidoptera) Species Dependent Upon Native Prairie Habitat** – *Robert Dana* with Minnesota DNR Ecological Resources is conducting intensive sampling of native prairie and degraded grassland habitats in western Minnesota to identify moth species that are prairie-specialists. He had traps on Prairie, Twin Lakes, and Hegland WPAs. The study went through 2012.
- **Population Structure and Trophic Role of Tiger Salamanders in Stevens County** – *Heather Waye* at the University of Minnesota-Morris has a long-term study of tiger salamanders in Stevens County. She is monitoring population size, demographics, movement among populations, and the trophic role of larval and adult salamanders. Her surveys are being done on Pepperton WPA.
- **Working Plan for Biofuel Production and Wildlife Conservation in Working Prairies** – *Dr. Clarence Lehman* and others at the University of Minnesota are researching the wildlife response to various prairie biofuel land management practices. Study sites on Morris WMD include Artichoke Lake and Odden WPAs. This was the last year of the study.
- **Water Level and Chemical Monitoring** – *Mark Gernes* and colleagues at the Minnesota Pollution Control Agency are sampling wetland hydrology and water chemistry at two wetlands on Lee and Golden WPAs. The wetlands were chosen to improve understanding of the role of wetlands on water quality in the Drywood Creek watershed.
- **Carbon Sequestration in Minnesota's Wetlands** – *Kyle Zimmer* of St. Thomas University is researching the regulation of inorganic and organic matter dynamics in shallow lakes. A wetland on Froland WPA was treated with Rotenone in 2010 as part of the study, and data collection will continue through 2013.

1c. General Wildlife Observations

With the early spring came early wildlife sightings. Goose pairs started claiming wetlands in early March. The main waterfowl migration started around March 10. Reptiles and amphibians started becoming active around March 18, when we had the first sightings of garter snakes, tiger salamanders, and singing chorus frogs. With the spring arrivals came spring departures – March 16 was the last time we saw common redpolls at the feeders.

Other interesting observations this year included the abundant waterfowl and shorebirds present during the spring migration at Wiley WPA, including a cinnamon teal and a willet (see Section 3a for more information about that drawdown). A white-tailed jackrabbit was seen at Geyer WPA in late May. Like much of the upper Midwest, we had a dickcissel irruption this year due to the drought conditions further south in their breeding range.



A plains hognose snake was observed on Welsh WPA. 2012-9 GF 7/2012

HABITAT RESTORATION

2a. Wetland Restorations (On/Off Refuge)

A total of nine wetlands were restored on private lands covering 67 acres. More detailed information about the restorations was not collected as the Partners Biologist position was vacated in October and not refilled in 2012 resulting in a lack of staff available to research and collect the information.

Table 3 – Wetland Restorations – Morris WMD – 1987–2012

Total Restorations			Total Restorations		
Year	Basins	Acres	Year	Basins	Acres
1987	33	79	FY 2000	73	387
1988	208	673	FY 2001	38	120
1989	84	282	FY 2002	35	313
1990	82	278	FY 2003	75	255
1991	103	839	FY 2004	54	289
1992	85	228	FY 2005	25	78
1993	117	508	FY 2006	42	128
1994	78	556	FY 2007	17	45
1995	49	268	FY 2008	26	69
1996	42	177	FY 2009	14	30.4
1/1-9/30/97	34	423	FY 2010	9	52.5
FY 1998	91	311	10/2010-11	14	52.9
FY 1999	51	345	2012	<u>9</u>	<u>67</u>
			Total	1,488	6,853.8

2b. Upland Restorations (On/Off Refuge)

Grasslands consist of native prairie, planted native species, introduced cool-season grass seedings, and legume plantings. Management practices include fire, grazing, and haying. Traditionally, new fee and easement acquisitions have provided the acreage for seeding each year. In recent years a concerted effort has been made to retire and restore food plots, and convert low quality or weed infested grass stands. Restoration may involve farming for several years or straight conversion with tillage and herbicide. Newly acquired land is usually cash rented back to the original landowner or tenant and farmed with Roundup (glyphosate) Ready soybeans for a year, which makes a good seedbed for native grasses and provides a means of controlling weeds. In the cases where we are converting grass stands with a historical weed problem, we cash rent to the previous landowner or a

willing neighbor for several years in a soybean/corn rotation with the final year being soybeans. In the last few years, many of our seeding efforts have aimed to address low diversity native reconstructions and low quality remnant prairie by interseeding forb rich seed mixes. These mixes have been composed of local harvests augmented with local ecotype purchased seed.



The seed mix for the 2008 native reconstruction at Lawrence WPA has the distinction of being one of the few recipients of extremely expensive prairie phlox (*Phlox pilosa*) seed. It was very gratifying to see a smattering of plants in full bloom, responding to the prescribed burn conducted two months prior.

2012-10 JBB 7/03/2012

Weed control on young seedings is critical. A combination of herbicide applications, mowing, burning, haying, and grazing are used to aid the establishment and maintenance of both native and cool-season grass seedings and legume stands. Part of the Vegetation Establishment Agreement for an easement is that a property owner is required to spray Roundup (glyphosate) 10-14 days before seeding. For native grass establishment and maintenance, prescribed burning reduces competition from unwanted cool-season grasses, but may also stimulate broadleaf weeds. This may necessitate the subsequent application of herbicides or mechanical manipulations. Prescribed burning for new seedings is most often conducted in the spring of the third growing year when there is enough plant material to carry a fire. This stimulates the native warm season grasses and forbs and gives them a competitive edge.

Native Prairie



The remnant prairie at Prairie WPA was full of fall color after being stimulated with a spring burn. 2012-11 JBB 9/25/2012

The original upland vegetation within the Morris District was tallgrass prairie. The total native prairie acreage on WPAs within the District was approximately 7,180 in 2012. The areas vary in size from less than one acre to 513 contiguous acres on Hastad WPA. Over the past few years, active management consisting of prescribed burning, grazing, and haying has been applied to most of the remnants, with some even receiving interseeded forb and grass seed. Some of the smaller acreage remnants have not been actively managed because of size, terrain, location, and staff time.

Native Seeding

Since 1973, the Morris WMD has planted roughly 11,850 acres of native grasses. As identified in the Comprehensive Conservation Plan, upland restorations, also referred to as prairie reconstructions, will replicate, to the extent possible, the structure, species composition, and processes of native ecological communities in the tallgrass prairie. Thus, where practical, reconstructions will use local ecotype seed containing eight or more grass species and 30 or more forb species. However, the primary limiting factor to converting more fields of marginal tame grass nesting cover to local ecotype natives is seed availability and expense. Reconstruction projects with North American Wetland Conservation Act (NAWCA) and Lessard-Sams Outdoor Heritage Fund (LSOHF) grant funds have enabled us to do “Cadillac” seedings with more than 55-65 species of forbs and grasses with a seeds per square foot forb to grass ratio of 1:2. As in the past, most

of the seed mixes used this year (Appendix A) were a mixture of our own harvests and purchased seed. The seeding at Seidl consisted of a four species wet mix that was broadcast from the UTV through the ephemeral basins as an augmentation to the 2011 seeding. Three species for Seidl were purchased from Prairie Moon Nursery. The mixes used at Overby and Rothi were augmented with forb and grass mixes purchased from Feder's Prairie Seed, rather than cobbling together individual species from several vendors. Although potentially more expensive, this simplified the purchasing process immensely. The number of species in the mixes ranged from a low of at least 41 for Long Lake, which did not contain any purchased seed, to a high of at least 60 species for Rothi. When planning seed mixes for reconstructions in soils with a cropping history, or restoration/enhancement inter-seedings, we try to include plenty of species (Appendix A), that are in families displaying some degree of tolerance to the clopyralid and aminopyralid herbicides (trade names Transline, Pyramid, Milestone). This will make herbicide application for thistles more feasible since there will be less non-target loss of costly forbs.

This year, 200 acres were seeded or interseeded to native grasses and forbs on five WPAs and six easements (Tables 4 and 5). The 0.3 acre seeding at Blue Mounds WPA was a bare soil area that resulted from some fence line clearing work.



The native reconstruction in the food plot at Rothi, seeded in late November 2011, had an abundance of Maximilian's sunflower (*Helianthus maximiliani*) despite a first growing season that was on the droughty side.

2012- 12 JBB 9/6/2012

We are in the third year of a study with the Minnesota DNR's farmland research group investigating techniques aiding the establishment of dormant inter-seeded forbs into existing tallgrass stands. The site had been burned in September, 2009 to facilitate the interseeding in December, 2009. The study site at Schultz WPA has replicates of four different techniques: In 2010, one set of plots was mowed once; another mowed twice, another sprayed with eight ounces of clethodim, and another sprayed with 16 ounces. Clethodim (trade name Select 2EC) is a grass selective herbicide. Mowing height was four to six inches. Spraying and the first mowing treatments occurred on May 26, while the second mowing was conducted on June 18. All of the treatment techniques were intended to set back or stunt the established grasses to aid forb germination and seedling growth. Each plot was approximately one acre in size. The Minnesota DNR researcher will conduct vegetation sampling from 2011 to 2013. Anecdotal observation in 2012 showed an increase in forb abundance and richness from 2011.

Table 4 – Prairie Reconstruction Seedings – Morris WMD – 2012

<u>Unit Name</u>	<u>Unit ID</u>	<u>Unit Type</u>	<u>Acres</u>	<u>Date</u>	<u>Comments</u>
Schmeichel	B289-G	Easement	13.1	5/20/12	PF drilled MN natives
Reisdorph	B327-G	Easement	5.4	5/20/12	PF drilled MN natives
Ronning	B323-G	Easement	1.7	5/21/12	PF drilled MN natives
Ronning	B324-G	Easement	10.2	5/20/12	PF drilled MN natives
Rutledge	P404-G	Easement	5.5	9/25/12	PL broadcast
Helgeson	B333-G	Easement	56.8	11/02/12	PF drilled natives
Blue Mounds	P-55	WPA	<u>0.3</u>	6/28/12	Broadcast seeded MN natives
Total			93.0		

Table 5 – Prairie Restoration Inter-Seedings – Morris WMD – 2012

<u>Unit Name</u>	<u>Unit ID</u>	<u>Unit Type</u>	<u>Acres</u>	<u>Date</u>	<u>Comments</u>
Long Lake	SV-02	WPA	48.6	6/04/12	Broadcast inter-seeded local ecotype natives
Overby	P-03	WPA	8.7	11/05/12	Broadcast inter-seeded local ecotype natives
Rothi	B-02	WPA	43.9	6/15/12	Broadcast inter-seeded local ecotype natives
Seidl	B-30	WPA	<u>6.0</u>	5/14/12	Broadcast inter-seeded local ecotype natives
Total			107.2		



In an effort to enhance low diversity grasslands, whether remnant prairie, seeded natives, or even old brome fields, several sites were inter-seeded this year with high-diversity mixes. Some sites, such as this one on the left side of the photo at Rothi, employed the assistance of a spring burn and then cattle to target the cool-season grasses and improve seed to soil contact with hoof action. The old brome fields at Overby were spring burned, grazed mid-June to mid-July, and then again mid-October to mid-November.

2012-13 JBB 9/06/2012

Most of the remnant prairie tracts on WPAs present challenges to bulk seed harvesting using combines because they tend to be rough, rocky, and steeply sloped. Some tracts may also be compromised by adjacent cultivar seedings that have had seed blow in and affect the integrity of the local ecotype native stand. Harvesting by hand and using an ATV seed stripper are the only other means available for collecting from remnant prairie, but these methods are considerably less efficient. Consequently, if we are going to be serious about our goal of restoring grasslands with local ecotype native seed, we have to create our own production plots using seed harvested from remnant prairie, or provide seed to contractors under a cooperative agreement to grow it for us.

We are making progress on our goal of production of local ecotype seed. Since 2002, 33 sites totaling 1,349 acres have been seeded with local ecotype natives (Table 6). In the past few years seed has been harvested from eight of these sites: Kufirin, Thorstad, Rothi, Westport, Robin Hood, Grove Lake, Taylor, and Colbert. We are still not past the bottleneck, but we are getting closer. In a few years, we should be able to annually harvest 100 acres or more of seed from these sites.



The prairie reconstruction at Rustad WPA is very robust for only being in its third growing season. 2012-14 JBB 7/09/2012



Not only did the neighbor to the west of Rustad WPA farm over the boundary by a row or two in places, he also over-sprayed with Roundup. All vegetation appeared to be killed, up to fifteen feet inside the boundary line in the worst places. This will create a void that will be filled, most likely by thistle. We will be keeping a close eye on this in the next few years.

2012-15 JBB 7/09/2012

**Table 6 – Local Ecotype Native Seedlings – Morris WMD
2002 – 2012**

Big Stone County		Stevens County	
Hillman	40.0 acres	Pieske	82.0 acres
Karsky	13.4 acres	Pomme de Terre Lake	29.0 acres
Kufrin	113.0 acres	Schultz	3.0 acres
Prairie	8.0 acres	Thorstad	30.0 acres
Rackl Esmt.	24.4 acres		
Reisdorph Esmt.	5.4 acres	Swift County	
Ronning Esmt.	11.9 acres	Artichoke Lake	4.6 acres
Rothi	118.0 acres	Hennen-NTGP (11G)	13.0 acres
Schmeichel Esmt.	13.1 acres	Loose	32.0 acres
Seidl	13.0 acres	Loen	16.0 acres
Stadem Esmt.	12.0 acres	Roderick	27.0 acres
		Welsh	70.0 acres
Lac qui Parle County		Traverse County	
Colbert	18.3 acres	Geyer	75.0 acres
Taylor	33.2 acres	Lawrence	76.0 acres
Arden Hegland*	8.0 acres	Robin Hood	103.3 acres
Pope County			
Blue Mounds	6.0 acres		
LuVerne Forbord*	10.4 acres		
Grove Lake	155.0 acres		
Rolling Forks	40.0 acres		
Rustad	69.0 acres		
Westport	76.0 acres		

*private landowner



Some portions of the native reconstruction field at Thorstad WPA (seeded in 2008) are coming along nicely. 2012-16 JBB 7/10/2012

Seed Harvest

This year approximately 3,333 bulk pounds of native grass and forb seed were harvested with the combine or Flail-Vac from Edwards, Hastad, Hillman, Kufrin, Loose, Prairie, Rothi, Tangen, and Welker WPAs, and Easement SW-147G. We were able to borrow Big Stone NWR's Flail-Vac seed-stripper and, in combination with the Gleaner R40 combine, maximized good harvest weather by harvesting multiple sites on the same days. With the dry fall, harvest conditions were decent and we were able to harvest most of the available sites. Many repairs were made to the combine prior to fall and it performed very well until the last few sites (Prairie, Hastad, and Easement SW-147G), when a plugging issue resulted in a high degree of chaff and a loss of seed.



There's a narrow window of opportunity every fall for harvesting seed off of prairies and high-diversity reconstructions. Most years we have more seed harvest sites than we can get to with just the combine, so it was nice to have another machine, especially one that could navigate sites that the combine couldn't. Maintenance Worker Saverynski is harvesting at Welker WPA.
2012-17 JBB 9/25/2012

The annual volunteer seed collection day was held once again. Eight volunteers and one staff member turned out on Saturday, September 22 and collected approximately 10 bulk pounds from Edwards WPA. Total estimated value of the seed and labor was \$1,000. Gilbertson WPA was the only other unit where fall hand-collections occurred. Biological Technician Oglesby collected 10 species of forbs and one grass (plains muhly).

Extra efforts were made again this year to collect prairie phlox (*Phlox pilosa*) seed. Current retail price for prairie phlox seed is \$1,760 a pound, making it less than practical for inclusion in prairie reconstruction seed mixes of the scale we typically do. We have several prairie remnants on the district where this species is somewhat abundant. Mid-July to early August is the timeframe that this plant produces seed. This is a time of the field season that we are typically busy with other management activities, but it is also a time when we have the most manpower for a hands-on harvest method.

One reason the seed is so expensive is the nature of the seed ripening and dispersal process. Like many native plants, the seed on individual plants and among plants ripens at different rates. On the same plant there may be seed that has already been expelled while some are still flowering. As well, one plant may have expelled all of its seed, while another neighboring plant is still flowering. Hand

clipping seed heads results in about thirty percent of the seed being captured at the optimum time for viability. Also, hand clipping requires repeated visits to a site to clip seed heads at the optimum time. The impracticality of repeated visits to the widely dispersed prairie remnants on our district with harvestable quantities of phlox requires a different approach.

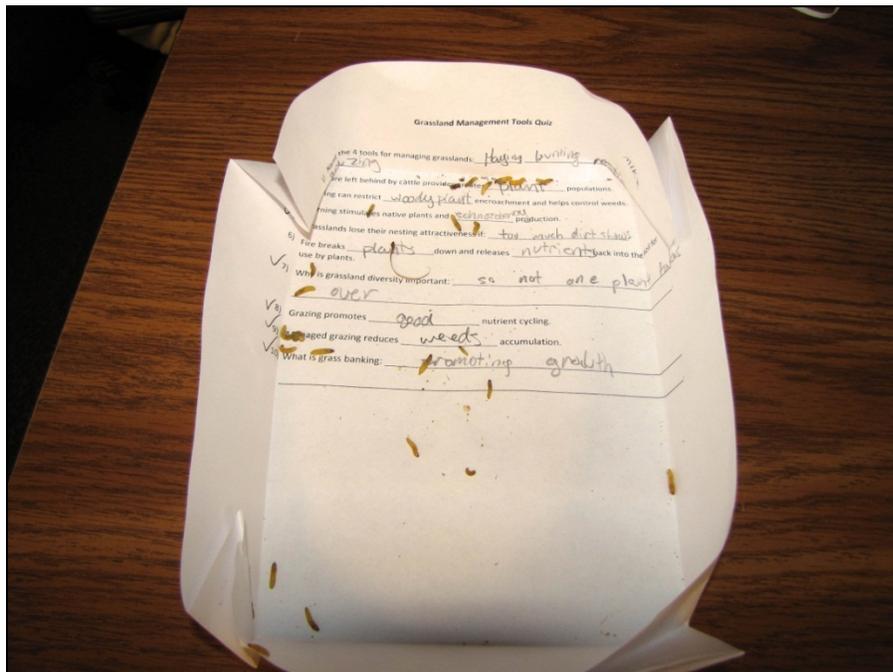
We initiated a harvest process wherein a bag could be attached that would capture all of the seed as it is expelled over a three week period. Three hundred mesh bags with drawstrings were purchased and approximately 275 bags were made from pantyhose and twist ties. This year we focused phlox harvest efforts on Glacial Lake and Hagstrom WPAs. At Glacial Lake WPA, in a matter of an hour on July 10, the YCC crew affixed all of the bags to phlox plants that were close to ripening. Bags were pulled a couple of weeks later and then moved to patches at Hagstrom WPA which was delayed in maturation due to a prescribed burn. Some clipping of seed heads was done at this site as well for plants with just a few remaining seeds. Plants were determined to be close to ripening when a majority of the seedpods were a golden color and beginning to open up. Although we were able to put all of our bags out on both sites, and in theory should have doubled last year's harvest of 3.3 ounces, this year's efforts only netted 1.1 ounces of seed with a retail value of approximately \$180. Speculation from the crews that removed the bags is that seed is escaping through the mesh of the nylon mesh bags. This year we plan to make more pantyhose bags. Although they tear more easily, they at least hold onto their seed. Administrative Officer Stettner deserves a big thank you for sewing the hosiery and cleaning seed. At Morris WMD, coffee breaks aren't just about coffee!

While at Glacial Lake WPA, the YCC crew also harvested veiny pea (*Lathyrus veinosus*). This legume produces seed pods that need to be opened right away because most contain a worm that would otherwise eat the seed if you waited for the pod to dry and open up on its own. With the amount of handwork required to collect this seed, the amount collected was nominal, but still a good learning experience for the crew. Like most cool-season forbs, it is a difficult species to get for a seed mix. As with prairie phlox, it is nice to be able to take advantage of such opportunities, even when the amount is small, because when it comes to restoring or reconstructing prairie, there's no such thing as too much species richness.



After putting out seed bags on prairie phlox, the YCC crew harvested and processed seed from a cool-season legume called veiny pea. We found out the hard way from a previous effort a couple of years ago that almost every seedpod contains a worm that will eat all of the seeds if given the opportunity, so we shelled the pods right away this time.

2012-18 JBB 7/11/2012



Live worms found in veiny pea pods. 2012-19 JBB 7/11/2012

Table 7 – Native Grass Seed Harvested – Morris WMD – 2012

Unit Name	Harvest Method	Species	Pounds of Yield	Acres	Date(s)
Kufrin & Hillman	Combine	Local ecotype: Lot# B14B12LE12	702 bulk 138.2 PLS	14.1 & 12.1	9/7 & 9/8/12
Rothi	Combine	Local ecotype: Lot# B2LE12	552 bulk 141 PLS	18.7	9/24/12
Rothi	Combine	Native prairie: Lot# B2NP12	262 bulk 46.1 PLS	43.6	9/25/12
Hastad & Easement SW-147G	Combine	Native prairie: Lot# CNP12	755 bulk 189.9 PLS	17.9 23.5	10/9 & 10/10/12
Prairie	Combine	Native prairie: Lot# B53NP12	662 bulk 111.8 PLS	33	10/1/12
Edwards	Flail-Vac	Dry prairie: Lot# FVNP12	400 bulk 52 PLS	24.3	9/26/12
Welker	Flail-Vac	Dry prairie: Lot# FVNP12	See above	15.2	9/25/12
Tangen	Flail-Vac	Dry prairie: Lot# FVNP12	See above	6.0	10/5/12
Loose	Flail-Vac	Dry prairie: Lot# FVNP12	See above	14.6	10/4/12
Edwards	Hand	9 grasses, 18 forbs	~10 bulk	4.8	9/22, 9/27 & 10/3/12
Glacial Lake	Hand	Veiny pea	2.8 oz	1.7	7/10/12
Glacial Lake	Hand	Prairie phlox	1.1 oz	1.7	7/24/12
Hagstrom	Hand	Prairie phlox	See above	1.6	7/24 & 8/7/12
Gilbertson	Hand	Plains muhly, Prairie dropseed, forbs	N/A	2.3	10/10/12



The slope in the foreground above the auto tour route parking lot at Edwards WPA, as well as the hillside in the background, provided a nice mix of species to harvest for both the Flail-Vac and the volunteer hand harvest event. Some of the more abundant species were prairie coreopsis, leadplant, and prairie dropseed.

2012-20 JBB 9/20/2012

HABITAT MANAGEMENT

3a. Water Level Management

Morris WMD has 32 wetlands with water control structures on 20 WPAs. We use water level gauge readings, on-site habitat observations, and aerial photography to assess the effects of management. Most structures are visited monthly from April to October each field season for gauge readings and general maintenance. The annual water plan has details about management results and future plans for each basin.

Some highlights of the water management program in 2012:

The new water control structure on State Lake WPA was completed this year. The stop-log structure will allow management on a 20 acre wetland that was originally restored through a private lands agreement in 1999. This project was completed in cooperation with Pheasants Forever with funding from the LSOHC.



The stop log riser at State Lake WPA is positioned within an approximately 650 foot earthen dam. Construction at the site was complete in the fall of this year. 2012-21 SCV 11/20/2012

In cooperation with Ducks Unlimited, a pump and a fish barrier were installed at Wiley WPA in 2011. Like many other wetlands in the district, these two wetlands at Wiley have suffered from stable water levels, resulting in undesirable rough fish populations, high turbidity, and little to no submergent wetland vegetation. We

used the pump to dewater both basins starting in late fall 2011. We turned the pump off in early July of this year and, due to the drought conditions, the basin remained dry into freeze-up.



In early May, exposed mudflat and shallow water made both basins at Wiley attractive to migrating waterfowl and shorebirds. 2012-22 SCV 5/03/2012



By August, the basins at Wiley WPA were completely exposed with significant substrate cracking. Both basins had extensive plant emergence, including smartweeds, ragweed, dock, and some perennials like bulrush.

2012-23 SCV 8/10/2012

Mother Nature decided to conduct drawdowns for us on several other basins this year. WPA wetlands that were unusually dry this fall included Stewart, Centennial, Giese-East, Giese-West, Edwards-F, and Edwards-G.

3b. Haying

Historically, haying has been used for upland habitat management and noxious weed control on a limited basis on the Morris WMD, averaging 586 acres since 2004. In 2012, eight WPAs and one easement were hayed for a total of 298.7 acres (Table 8). Using cooperators to clip invasive weed problem areas and remove the litter as hay allows us to treat more acres than can be accomplished just mowing with district staff. On units where an abundance of thistle is triggering the management action, haying may take place earlier to prevent seed production and thus eliminate a serious noxious weed problem.

In recent years tree control has often been an objective of haying. This year Quaal WPA was the lone unit where that was the management objective. Permits were issued for sweet clover control on Avok Slough, Mero, Welsh, Hormann, and Lawrence WPAs respectively.

Table 8 – Haying Summary – Morris WMD – 2012

<u>Unit Name</u>	<u>Permit Period</u>	<u>Acres</u>	<u>Fee</u>
Centennial	7/10/12 – 8/15/12	58.6	\$290.00
Anderson	8/23/12 – 9/20/12	11.0	\$66.00
Quaal	7/15/12 – 8/15/12	25.1	\$50.00
Avok Slough	7/18/12 – 8/15/12	14.3	\$42.00
Mero	8/07/12 – 8/31/12	29.0	\$87.00
Welsh	7/18/12 – 8/15/12	36.6	\$108.00
Easement T-64G	7/15/12 – 7/15/12	26.9	0.00*
Hormann	7/10/12 – 8/15/12	30.0	\$90.00
Lawrence	7/10/12 – 8/15/12	<u>67.2</u>	\$201.00
Total		298.7	

Note: Fees are determined based on site conditions (i.e. roughness), nutritional quality of vegetation, and habitat objectives.

*Minnesota DNR cut hay for habitat management.



For the second consecutive year, this slope at Centennial WPA contained enough Canada thistle, sweet clover, and biennial thistle to warrant mowing. We utilized a local cooperater to do it for us. He bailed and removed the hay for biomass. 2012-24 JBB 7/03/2012

3c. Grazing

We also use controlled grazing as a grassland management tool. The overall goal of using grazing is to improve the nesting habitat for migratory birds. Specific objectives of grazing depend on the site, but may include: reducing litter layer buildup, relieving competition from invading cool-season grasses, reducing seed production in biennials such as Queen Anne's lace and wild parsnip, promoting tillering and structural diversity, and stimulating native grasses. A high concentration of livestock (approximately one cow and calf pair per acre) is often used to remove a dense litter buildup and the new growth in roughly a 30-day period of time. We hope this will promote vigorous growth of desired native species and create quality nesting habitat.

Early spring grazing has traditionally been the most frequently used time period. Most years grazing at this time starts around May 1, but varies depending on spring green-up and calving timing of the permittee. There were seventeen WPAs that were spring grazed in April, May, and/or June of 2012. This year, with the mild winter and early green-up, six of these were initiated prior to May (Twin Lakes, Bailey Slough, Bolson Slough, Long Lake, Welker, and Welsh).



One of two mallard duck nests found while checking the grazing affects at Twin Lakes WPA is featured in this photo. Both were found after hens flushed from the disturbance of the ATV as cattle fed within 30 feet of the nest. This nesting occurred despite the very heavy grazing pressure being implemented to facilitate an inter-seeding objective. 2012-25 JBB 6/12/2012

Recently, we have had more grazers interested in late summer and fall grazing and in 2012 we implemented summer grazing on 25 units and fall grazing on two units. Objectives of grazing at this time can be reducing the litter layer, increasing plant density through tillering, promoting structural diversity, controlling Queen Anne's lace, and targeting cool-season exotic grasses after most natives have entered dormancy. The late summer grazing period is a nice time of year to graze because it is after the nesting season, but the cattle typically come off in time for the grass to recover before freeze-up, thus allowing some residual cover for the following spring.

Traditionally, a lack of border fence, declining cattle operations, and uninterested neighbors has limited our ability to utilize grazing. Lately, some grazers seem eager to utilize our grasslands for short term grazing and are more willing to do additional fencing now than in the past. Since 2004, we have grazed an average of 1,630 acres per year. This year, a record high of 3,899 acres spread over 37 WPAs was treated with grazing. A special use permit for fall grazing on Welker was issued but the grazing did not occur due to lack of watering sources. A permit was also issued for summer grazing on Bengtson WPA, but the cooperator failed to complete the necessary temporary fencing.



This bare area was the result of tree clearing by staff in preparation for a custom fencing job at Blue Mounds WPA. The stumps were treated with herbicide and a native grass mix was broadcast over the site to help prevent resprouting and undesirable vegetation from taking hold.

2012-26 JBB 6/18/2012

New permanent fence was built or re-built by cooperators at Lamprecht, Long Lake, Goodman, and Kontz WPAs, and contractors built new high tensile fence at Blue Mounds and Johnson WPAs. All of the materials were provided by station funds, but the labor at Blue Mounds and Johnson was covered through the Prairie Recovery Grant (section 5a). Cattle were used to aid interseeding efforts at Rothi (west of the minimum maintenance road), Overby, and Long Lake. Rothi and Long Lake were spring grazed and interseeded, while Overby was accomplished in the fall.

This year, depending on when the permit was written, the grazing fees were calculated using a base rate of between \$18.26 and \$20.26 per Animal Unit Month (AUM) with deductions for fence installation, fence repair, water hauling, etc. Because there is no report for Minnesota, the base rate was an average of USDA reported rates for South Dakota and North Dakota. Fees ranged from a low of a credit of \$1,948.13 for Maki WPA to a high of \$3,810.07 for Welsh WPA. Credits can only be carried over to the following years of a multi-year special use permit. If at the end of the permit deductions exceed the fee, the credit is deleted from the books.

Another first this year with the grazing program was the utilization of a mini-joint venture, also known as grass banking, on Blue Mounds WPA. Instead of a cash rent arrangement as payment, the cooperator rested 323 acres of prairie. This

agreement will be for three years. This type of arrangement is expected to be more widely used in the future for situations where the wildlife resource will receive greater benefit on the rested private land, such as pastured prairie covered under a habitat easement.

The third consecutive season of grazing with goats was completed at Hegland WPA. This year we were able to borrow additional electric mesh fence, which enclosed approximately 30 acres. This allowed sustained grazing pressure throughout most of the growing season. In the previous two seasons with a rotational paddock system that enclosed about 15 acres, the trees recovered once the grazing pressure ceased. On May 12, 65 nannies and 110 kids were put in the paddock that was set up in the southwest portion of Hegland WPA. They weren't removed until September 19. This year we also added some cattle (6 yearlings) to help graze grasses such as reed canary grass. Total animal unit months of grazing with the goats and cattle was approximately 122.8, which would seem a very heavy rate, but considering the goats mostly browse and the cattle mostly forage on grass, it seemed to have the effect we wanted. The woody plants appeared stressed, with just a few leaves at the tops of some of the taller ones, but time will tell us if there were trees killed. We plan to run a fire through it either this spring or next fall to hurt the trees further, and aid inter-seeding and a fencing project.



As in past years, the goats readily ate the leaves off the many buckhorn trees in the southwest corner of Hegland WPA. 2012-27 JBB 9/24/2012

Table 9 – Grazing Summary – Morris WMD – 2012

WPA	Acres	AUM's	Total Fee	Grazing Period
Hillman	338	383.5	\$3,326.93	5/07 – 8/20
Redhead Marsh	39	36.6	\$0*	8/18 – 9/12
Rothi (East Central)	101	84.3	\$53.54	7/27 – 9/21
Rothi (West of Min. Maint.)	56	49.1	\$71.26	6/04 – 7/27
Rothi (East of Min. Maint.)	41	24.8	\$0*	5/05 – 6/04
Twin Lakes (NW1/4)	95	185.9	\$2,035.24	4/20 – 6/24
Twin Lakes (NE)	83	83.6	\$280.60 credit	8/20 – 9/13
Hawk Creek	84	64.5	\$0*	5/12 – 7/03
Bailey Slough	26	16.6	\$0*	4/20 – 8/15
Bolson Slough (Cell A)	34	42.0	\$427.44	4/22 – 5/12
Hegland Goats & Cattle	30	122.8	No fee- experimental	5/12 – 9/14
Bangor	152	137.6	\$94.19	5/11 – 8/10
Berg	41	39.6	\$1,291.23 credit	5/26 – 6/20
Blue Mounds	128	108.0	AUM Exchange	6/18 – 8/18
Bredberg	105	97.0	\$0*	5/04 – 8/06
Glenwood	120	91.7	\$0*	6/06 – 7/19
Heidebrink (NW)	140	164.9	\$950.55	5/02 – 6/18
Larson (S1/2)	55	62.7	\$0*	7/16 – 8/10
McIver (West)	45	47.5	\$74.35	5/05 – 7/02
Nelson Lake	80	114.1	\$71.66	7/19 – 9/19
Ouren	82	55.7	\$244.07	7/13 – 8/14
Overby	84	74.4	\$242.82	6/18 – 7/17 & 10/16 – 11/13
Golden (South)	59	50.6	\$0*	6/29 – 8/04
Horton	72	49.4	\$0*	7/31 – 8/25
Huebner	35	42.7	\$0*	5/05 – 6/29
Johnson (DeLong)	54	116.9	\$889.26	6/02 – 7/06
Lamprecht	180	135.8	\$0*	6/15 – 9/19
Long Lake	113	136.0	\$101.68 credit	4/06 – 6/30
McNally Slough	110	86.1	\$353.75	6/02 – 8/19
Pepperton	109	59.4	\$5.26 credit	8/05 – 9/17
Smith	141	146.4	\$687.15	5/01 – 6/01
Staples	30	38.8	\$0*	5/11 – 6/30
Struck	106	163.4	\$1,636.26	7/05 – 9/21
Artichoke Lake	270	226.2	\$773.25 credit	7/08 – 9/29
Hamann	88	79.8	\$0*	5/01 – 6/11
Maki	105	100.8	\$1,948.13 credit	6/07 – 7/31
Welker	113	81.1	\$0*	4/17 – 6/04
Welsh (A, B, D, E)	321	452.0	\$3,810.07	4/27 – 10/6
Westhausen (NE)	18	25.4	\$18.32	5/29 – 8/03
Kontz	16	20.0	\$225.55 credit	5/18 – 6/13
Totals	3,899	4,097.7		

*Deductions exceeded grazing fee in final year of permit period of use.

3d. Farming

Each year previously broken areas such as poor quality grasslands, old stands of alfalfa, or food plots that are no longer in use are identified to be planted back to natives. These areas are set up to be farmed for one to three years with area cooperators and then seeded with a local ecotype or cultivar native seed mix. In 2012, 70 acres were cash rented and farmed under special use permits for seedbed preparations on WPAs, while 63.5 acres were farmed on easements. The field at Edwards WPA was in its first year and will be farmed for two additional years, while the site at Rothi WPA was in its second year and will be farmed for one more year. There were two small fields totaling 5.7 acres on the Rutledge Easement (P-404G), and one field totaling 57.8 acres on the Harley Helgeson Easement (B-333G) that were farmed with soybeans.

In 2012, there were 305.8 acres of cropland on 23 WPAs managed as food plots for resident wildlife. As a side note, a NAWCA grant was applied for and received through Pheasants Forever to help with restoration costs on 18 of these sites, which total 254 acres. Native seeding restoration will occur through 2015. Table 10 shows the farming and restoration schedule of these NAWCA funded sites.

The sites that have been allowed to have food plots were located on waterfowl production areas identified by the Minnesota DNR as significant wintering areas for ring-necked pheasants and white-tailed deer. The majority of food plots were located near shelterbelts and/or cattail sloughs which provide escape and winter cover. Plots were located on soils not classified as highly erodible land, so as to have minimal soil loss potential. Corn, soybeans, and small grains are used in these plots. Soybeans or small grains are used in the rotation to promote nutrient cycling and reduce insect or disease cycles associated with repeated corn growth. The cooperator is responsible for all field work, seed, fertilizer, and weed control. One third of the plot is left standing in the field in alternate strips. The alternate strips help disperse snow and reduce the chances of the entire plot being buried in snow. The cooperator is allowed to harvest any leftover crops the following spring.

Due to a revision in Service policy, permanent food plots will be phased out. From now on, food plots (Cooperative Farming Agreements) or farming (Special Use Permits) will only be used for converting undesirable nesting cover to desirable native species and will remain in place for no more than three years.

**Table 10 – NAWCA Funded Farming and Restoration Schedule
Morris WMD – 2012-2015**

<u>Unit</u>	<u>County</u>	<u>Acres</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Anderson	BS	9.3	Beans	restore		
Artichoke	BS	6	Beans	restore		
Dismal Swamp	BS	10	Beans	restore		
Karsky	BS	14	Beans	restore		
Prairie	BS	10	Beans	restore		
Rothi (new SUP)	BS	35	Corn	beans	restore	
Walden	P	20	Corn	beans	restore	
Walden (new FP)	P	20	Corn	beans	restore	
Edwards (new SUP)	SV	35	Beans	corn	beans	restore
Fish Lake	SV	10	Beans	restore		
Fults	SV	10	Corn	beans	restore	
Mau	SV	12	Corn	beans	restore	
Mero	SV	7	Beans	restore		
Miller	SV	8	Corn	beans	restore	
Pepperton	SV	14	Beans	restore		
Pomme de Terre River	SV	12	Beans	restore		
Lawrence	TR	12	Beans	restore		
Robin Hood-2	TR	<u>10</u>	Corn	beans	restore	
		254.3				
Total Acres Restored by Year			0	104.3	115	35

Table 11 – Food Plot Summary – Morris WMD – 2012

<u>County</u>	<u>No. of WPAs With Food Plots</u>	<u>No. of Food Plots</u>	<u>Total Acres</u>
Big Stone	6	7	102.8
Lac qui Parle	1	1	10.0
Pope	1	1	20.0
Stevens	7	7	73.0
Swift	3	3	56.0
Traverse	2	2	22.0
Yellow Medicine	<u>2</u>	<u>2</u>	<u>22.0</u>
Total	22	23	305.8

3f. Fire Management



Malta WPA, the first burn of the year. 2012-28 PJM 1/9/2012

This year's fire season again had moderate wildfire activity on the district and also produced a record number of prescribed fire acres and treatments completed. Most if not all of the wildfire acres came in the fall while the majority of the prescribed acres occurred in the spring. The season was as safe and efficient as it could be, with no injuries, escapes, or major damage to equipment. District staff performed at an extremely high level throughout the burn season.

Prescribed Fire

The spring season started off very early this year with unseasonably warm temperatures during the winter months. On a 50 degree day in early January the Morris staff conducted their first burn of the year; crew members on the burn stated that fuel and fire conditions felt like that of a May day. The Morris staff burned 7,354 acres on federally owned lands, 237 acres on private owned easements, and 90 acres on property owned by the City of Morris, for a total of 7,681 acres on 57 treatment units (Table 12). Most of the burns were in the spring, but fall burns added to the totals. The City of Morris burn was a joint effort between the City and the Morris WMD for habitat improvement.

Help for prescribed burning at Morris came from the district staff, adjacent districts and several crews from other states. Local help came from Big Stone NWR while additional help came from the Buffalo River Fire Use Module (National Park Service), Leopold WMD (WI), Horicon NWR (WI), Seney NWR (MI), Wichita Mountains NWR (OK), Texas Mid-Coast Refuge Complex (TX),

Carolina Sandhills NWR (SC), The Nature Conservancy, Cedarville, CA Bureau of Land Management, and the Angeles National Forest (CA). Our appreciation is extended to those who helped.

Many of the detailers came with funding help from a Minnesota Prairie Chicken Society grant that was used to enhance habitat through the increased use of prescribed fire.



Burning cattails over the ice. Malta WPA 2012-29 PJM 1/9/2012



First prescribed fire on Taylor WPA. 2012-30 SWG 3/28/2012

Table 12 – Prescribed Burn Summary – Morris WMD – 2012

County/ Burn Name	Unit Type	Burn Date	Acres Burned
Big Stone			
Malta	WPA	1/09/12	132
Nelson	WPA	3/24/12	45
Powers	WPA	3/25/12	100
Centennial	WPA	3/28/12	430
Kufrin-North	WPA	4/03/12	98
Johnson	WPA	4/12/12	120
Rothi-West	WPA	4/23/12	259
Tangen	WPA	4/23/12	47
Stegner	WPA	4/23/12	175
Prairie	WPA	4/24/12	97
Moulton Lake-North	WPA	4/24/12	60
Odden-East	WPA	4/25/12	205
Barry Lake	WPA	5/01/12	147
Artichoke-Central	WPA	5/02/12	276
Henry	WPA	5/13/12	61
Bucholz	WPA	5/16/12	44
Daly	WPA	11/15/12	25
Lac qui Parle			
Taylor	WPA	4/04/12	175
Pearson	WPA	4/11/12	278
Garfield	WPA	4/11/12	185
Hastad-West	WPA	4/26/12	374
Hackert	WPA	5/03/12	40
Florida Creek	WPA	5/16/12	67
Pope			
Rolling Forks-East	WPA	3/31/12	320
Bangor-East	WPA	4/14/12	141
Stammer	WPA	4/14/12	85
Snetting	WPA	4/14/12	70
Stadsvold-West	Habitat Easement	4/17/12	100
Overby-West	WPA	4/19/12	125
Stewart-North	WPA	4/19/12	80
Hagstrom	WPA	5/12/12	313
Stevens			
Grote	WPA	3/21/12	45
Edwards-Islands	WPA	4/02/12	1
City of Morris	Private Lands/City	4/18/12	90
Stimmler	WPA	4/18/12	126
Pomme de Terre River	WPA	4/19/12	120
Edwards-Central	WPA	4/20/12	128
Miller-South	WPA	4/25/12	71

Table 12 – Prescribed Burn Summary, Continued.....

County/ Burn Name	Unit Type	Burn Date	Acres Burned
Mero-North	WPA	4/30/12	105
Big Stone	WPA	5/10/12	82
Stevens	WPA	5/12/12	81
Landers	WPA	5/13/12	86
Edwards-NE	WPA	5/30/12	1
Edwards-Piles	WPA	10/31/12	10
Swift			
Lubenow	WPA	3/25/12	290
Brady-East	WPA	3/30/12	150
Monson Lake	WPA	3/30/12	50
Gilbertson	WPA	4/10/12	125
Loose	WPA	4/10/12	80
Loen-South	WPA	4/17/12	173
Nelson 147-G	Habitat Easement	4/26/12	137
Byre	WPA	5/02/12	86
Traverse			
Jenk	WPA	3/20/12	40
Murphy	WPA	4/22/12	80
Mosquito Ranch	WPA	4/22/12	640
Lawrence	WPA	4/30/12	90
Yellow Medicine			
Dakota-West	WPA	5/03/12	120
Chippewa			
			<u>0</u>
Total	57 Treatments		7,681

Wildfire

Wildfire activity was moderate on the district for the calendar year, and while we did have several dry and windy days in the spring, all of the wildfire activity occurred in the fall season with five wildfires for 351.5 acres (Table 13). Fire conditions throughout the state of Minnesota became very dry in the fall and produced a busy season in many areas. Morris WMD sent personnel and equipment to assist with fires in the Detroit Lakes WMD, Agassiz NWR, the Karlstad fire in northern Minnesota, and the North Minnie fire near the Minnesota/Canadian border.

Nationally, it was a very busy fire season as well. Members of the Morris staff assisted with interagency fire assignments in eight different states. The fire crew participated in suppression activities in Colorado, Wyoming, Idaho, Missouri, Montana, Arkansas, Wisconsin, and Minnesota. A member of the crew also performed a short detail to the Minnesota Interagency Fire Center to help out with dispatch and ordering operations.

Table 13 – Wildfire Burn Summary – Morris WMD – 2012

<u>County</u>	<u>WPA Name</u>	<u>Date Burned</u>	<u>Acres Burned</u>
Big Stone	Threat Fire	10/02/2012	44.0
Pope	Grove Lake	10/12/2012	0.5
Stevens	Big Stone	10/29/2012	33.0
Big Stone	Seidl	11/16/2012	265.0
Pope	Stammer	11/19/2012	<u>9.0</u>
Total			351.5

Training and Development

District employees assisted with interagency fire training as well as training volunteer fire departments in basic wildland firefighting. Staff members helped instruct S200 (Incident Commander Type 4), S234 (Ignitions Operations), S231 (Engine Boss), and S131 (Advanced Firefighter) courses.

Members of the fire crew also attended various fire trainings including S234 (Ignitions Operations), S260 (Interagency Business Management), and S200 (Incident Commander Type 4).

Equipment

The district received a new Ford F-150 and added it to the fire fleet as a command vehicle. The district continues to maintain the other equipment it has.

Rural Fire Assistance Grants

No departments within the District received grant money in calendar year 2012.

3g. Pest Plant Control

In response to increasing threats from a growing number of undesirable plant species, two seasonal biological technicians were hired for the fourth consecutive season to map and treat infestations on the district. Invasive species that the Invasive Species Crew (ISC) focused on were: Canada thistle, biennial thistle (musk, plumeless, and bull), yellow toadflax, wild parsnip, common tansy, spotted knapweed, Queen Anne's lace, crown vetch, bird's foot trefoil, leafy spurge, and trees. In previous years, the crew has been used for precision weed treatment in local ecotype seed production sites such as Rothi, Taylor, Westport, and Grove Lake WPAs, to name a few. Of those four sites, this year they just focused on the production fields at Rothi where wild parsnip continues to persist, albeit in lower abundance.

More recent reconstructions received the bulk of the ISC's attention this year. Queen Anne's lace was discovered in the six acre prairie reconstruction field at Blue Mounds and an investigation determined that it must have come from the seed mix which contained seed harvested from Hillman WPA (Lot #B14NP10).

The other fields that received this lot were checked. A few plants were found and pulled in the restored food plots at Geyer and Schultz. No plants were found in the former food plots at Seidl, Robin Hood, or Rothi. While preparing this report, a discovery was made that the seed harvest from Arden Hegland's easement (Lot #AHLE11) contained "Wild Carrot". Wild carrot is another common name for Queen Anne's Lace. It wasn't listed in the weeds section of the lab report, but rather as a native! Fortunately, this entire lot went on the 44 acre inter-seeding at Rothi, so it is at least on an area we regularly visit for weed control already.

The YCC crew was occasionally utilized to shovel tap roots of wild parsnip and plumeless thistle, and pull Queen Anne's lace. Follow-up treatments were conducted on most every infestation mapped in the last few years. Some progress was again made in mapping, treating, and documenting previously unknown infestations. This year 242.6 acres (24.8%) of the mowing or chemical treatments listed in Table 14 were conducted in conjunction with, or as the result of, the process of restoring a site to native prairie vegetation.



The discovery of Queen Anne's Lace in the new seeding at Blue Mounds WPA led to a check of all sites seeded with the same mix.

2012-31 JBB 6/18/2012

Table 14 – Noxious Weed Control – Morris WMD – 2012

<u>County</u>	<u>Mow</u>	<u>Acres Treated</u>		<u>Total</u>
		<u>Spray</u>	<u>Contracted</u>	
Big Stone	209.5	317.6	0.0	527.1
Chippewa	0.0	0.0	0.0	0.0
Lac qui Parle	0.0	44.8	0.0	44.8
Pope	76.0	79.6	0.0	155.6
Stevens	47.2	51.5	0.0	98.7
Swift	65.1	2.1	0.0	67.2
Traverse	82.6	0.0	0.0	82.6
Yellow Medicine	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total 2012	480.4	495.6	0.0	976.0
Total 2011	537.7	906.3	0.0	1,444.0
Total 2010	343.7	435.0	138.0	916.7
Total 2009	764.0	514.2	32.0	1,310.2
Total 2008	723.0	327.0	0.0	1,050.0

Woody Vegetation Control

Besides encroachment of cool-season exotic grasses, our tracts of remnant prairie and re-established native grasses have also been invaded by trees. Siberian elm, boxelder, cedar, cottonwood, buckthorn and willow are the most common. Efforts to control trees may involve mechanical cutting with either a tree shear attachment on the skid steer, a carbide toothed shredder attachment (manufactured by Fecon) on the Ford TV-140 bi-directional tractor, mowing with our flail mowers, haying with cooperators, or hand cutting with chainsaws or circular bladed brush saws. We may also use chemical control methods, in combination with mechanical methods, or alone with basal bark application of Garlon 4E/ Pathfinder II type products. Fire and herbivory with cattle or goats may also be used effectively in certain situations.

As in previous years, tree removal work was done through a combination of our staff time and equipment, and contractors. Through the partnership with TNC's LSOHC-funded Prairie Recovery Project (section 5a), a private contractor, Minnesota Native Landscapes, was hired to cut and pile trees at Artichoke WPA. They completed the work in just a few days in November. Additionally, a Conservation Corps of Minnesota crew was hired and used in combination with our staff to cut and stump treat scattered trees over 33.9 acres on Big Slough WPA, 114 acres at Lake Johanna WPA, and clear fence lines at Kolstad Lake WPA. The work at Big Slough was conducted in June and again in August (no CCM), and in October at Kolstad Lake. Either Jason Nordmann or Andrea Lund (hired in late October), the Prairie Recovery Specialists with work areas on our district, coordinated the contracting and oversaw the tree work. We also used a combination of our own staff and Jason's seasonal technicians for fence line clearing at Blue Mounds, Benson Lake, Jorgenson and Hastad WPAs.

A special use permit was also issued to Dow Agro Sciences for woody vegetation control demonstration at Redhead Marsh and Kufrin WPAs. This was done on June 21 by Lee Shambeau of 4Control, in advance of a small field tour Dow was conducting for marketing representatives in July. Most of the application was with a handgun, and control appeared to be excellent. Different combinations of Garlon 4 Ultra, DMA4 (2, 4-D), Garlon 3A, and Milestone were used on poison ivy, boxelder, buckthorn, green ash, cottonwood, and willow.

Table 15 – Mechanical Woody Vegetation Control – Morris WMD – 2012

<u>County</u>	<u>Unit</u>	<u>Method</u>
Big Stone	Artichoke	Contractor
Lac qui Parle	Hastad	Hand
Pope	Blue Mounds	Hand
	Lake Johanna	Hand
Stevens	Edwards	Fecon
Swift	Big Slough	Hand

The ISC and/or other staff used chemical control on tree re-sprouts and/or saplings at Hastad, Ann Lake, Hillman, Rothi, and Staples WPAs. This tree work covered an area totaling 514.3 acres. Tree work at Nelson Lake that began in December, 2011, was finished up by spring. Since the TV-140 needed repair, we borrowed Agassiz NWR's Ford TV-6070 and used our Fecon head. There were numerous breakdowns over the six weeks we had borrowed it, but we were still able to get a lot done by using the Fecon on the more firm ground and the skid steer tree shear or brush hog mower on the marshier sites. Chainsaws were used as well.



The contractor did an excellent job of piling the trees from the shelterbelt at Artichoke WPA. 2012-32 JBB 10/25/2012



One of the first and last projects Engineering Equipment Operator Ahrndt carried out in his career was the planting and then removal of the demonstration shelter belt on Edwards WPA. After removal in May, the tree piles were burned on October 31, 2012. The area will be farmed for two years and then seeded to a high diversity native mix. 2012-33 SWG 10/31/2012

Canada Thistle (*Cirsium arvense*)

As in recent years, efforts to control Canada thistle in 2012 were way down from historical averages. With new information and new herbicides, our old strategy of mowing problem areas in the summer and spraying those areas with herbicide in the fall has largely been replaced with spraying in the bud stage. All of the units listed in Table 16, except for Florida Creek, Kuftrin, and Redhead Marsh, were mowed or sprayed because of the restoration/reconstruction process and would have been conducted regardless of the presence of thistle. Other than annual weeds, Canada thistle was the primary weed present at these sites. The station received only two weed complaints in 2012 (Bauman and Mosquito Ranch). At both units the thistle had already set seed, so treatment would have been ineffective and only promoted the spreading of seed.

Overall, weed complaints are far below historical levels. Possible reasons for this are improved herbicides, proactive management on our part, changing philosophy by farmers in the round-up ready era of farming, and a proliferation of CRP fields with weed issues.

Table 16 – Sites Treated for Canada Thistle – Morris WMD – 2012

<u>WPA Name</u>	<u>Start Date</u>	<u>End Date</u>	<u>Spray Acres</u>	<u>Mow Acres</u>
B-329G, 329G2*	6/12/2012	6/12/2012		6.5
Florida Creek	6/15/2012	6/15/2012	22.8	
Kufrin	6/22/2012	6/22/2012	4.5	
Redhead Marsh	6/22/2012	6/29/2012	3.6	
Pomme de Terre Lake*	6/26/2012	6/02/2012		2.2
Geyer*	6/26/2012	6/26/2012		67.3
Seidl*	6/27/2012	6/27/2012		13.1
Pieske*	6/27/2012	6/28/2012		24.8
Geyer*	6/27/2012	6/27/2012		7.1
B-335G, 335G1*	6/28/2012	6/28/2012		4.3
Schultz*	6/28/2012	6/28/2012		3.2
Roderick*	7/02/2012	7/02/2012		27.9
Westport*	7/05/2012	7/06/2012		39.9
Robin Hood*	7/09/2012	7/09/2012		8.1
B-329G*	7/11/2012	7/11/2012		1.0
Rothi*	7/11/2012	7/11/2012		15.1
Blue Mounds*	7/11/2012	7/11/2012		6.2
Rustad*	7/11/2012	7/11/2012		4.9
Edwards*	7/18/2012	7/18/2012		10.1
Schultz*	8/13/2012	8/13/2012		3.1
Kufrin	8/14/2012	8/14/2012		64.3
Twin Lakes*	9/10/2012	9/10/2012	<u>38.3</u>	<u> </u>
Total			69.2	309.1

* Indicates a unit sprayed or mowed as part of the normal management protocol for restorations.

Wild Parsnip (*Pastinaca sativa*)

Without a doubt, the most aggressive new weed to appear on the district is wild parsnip. This biennial readily invades remnant prairie, and doesn't appear to be triggered by any management activities, although burning has been documented to improve germination.

Table 17 – Wild Parsnip Control – Morris WMD – 2012

<u>WPA</u>	<u>Start Date</u>	<u>End Date</u>	<u>Phenology</u>	<u>Treatment</u>	<u>Acres</u>
Horse Lake	6/01/12	6/01/12	Flowering	Mechanical	0.100
Berg	6/04/12	6/04/12	Basal Rosette	Mechanical	1.500
Gullickson-S	6/04/12	6/04/12	Flowering + Basal Rosette	Mechanical	0.380
Rolling Forks	6/04/12	6/04/12	Flowering + Basal Rosette	Mechanical	0.560
Ben Wade	6/05/12	6/05/12	Flowering + Basal Rosette	Chemical	9.900
Stammer	6/05/12	6/05/12	Flowering + Basal Rosette	Mechanical	7.400
Jorgenson	6/06/12	6/13/12	Basal Rosette + Pre-Flowering	Mechanical	8.500
Hagstrom	6/11/12	6/11/12	Flowering + Basal Rosette	Mechanical	0.590
Schultz	6/11/12	6/27/12	Flowering + Basal Rosette	Mechanical	0.480
Bengtson	6/11/12	6/11/12	Flowering + Basal Rosette	Mechanical	5.600
Helgeson	6/12/12	6/12/12	Flowering + Basal Rosette	Mechanical	0.110
Kufrin	6/12/12	6/12/12	Basal Rosette + Pre-Flowering	Mechanical	0.170
Rothi	6/12/12	7/09/12		Chemical	3.000
Rothi	6/12/12	7/09/12	<Null>	Chemical	40.500
Kufrin	6/21/12	6/21/12	Flowering <Null>	Mechanical	0.002
Mero	6/27/12	6/27/12	Flowering + Basal Rosette	Chemical	0.020
Kufrin	7/03/12	7/03/12	Flowering <Null>	Chemical	0.990
Bengtson	7/11/12	7/17/12	Flowering <Null>	Chemical	2.100
Jorgenson	7/11/12	7/11/12		Chemical	6.900
Ben Wade	7/26/12	7/26/12		Chemical	7.600
Rolling Forks	7/26/12	7/26/12	<Null>	Chemical	0.480
Stammer	7/27/12	7/27/12	<Null>	Chemical	19.200
Berg	7/30/12	7/30/12	Flowering <Null>	Chemical	4.500
B-332G	8/09/12	8/09/12	Flowering	Chemical	0.180
Total Acres					120.80

In 2008, we discovered huge wild parsnip infestations on Rothi and Westhausen WPAs, small ditch or roadside infestations on Rolling Forks and Helgeson WPAs, and scattered plants on easement BS-276G,1. In 2009, infestations on Ann Lake, Ben Wade, and Bredberg, as well as smaller patches on Gullickson (south), Jorgenson, and Stammer WPAs were mapped. In 2010, a new infestation on Schultz WPA in Stevens County was mapped as well. The northern tier of Pope County is probably the biggest problem area on the district, followed closely by the Otre Lakes area in Big Stone County, the eastern third of Swift County, and near Westhausen WPA.

In 2012, new infestations treated for the first time were: Mero, Schultz, Berg, Hagstrom, Horse Lake, Bengtson, and Westhausen. The treatment at Berg was a combination of grazing, shoveling, and spot spraying with backpacks. The east central portion of Rothi was also treated with grazing from late July to mid-September. The northeast portion of Westhausen was treated with a long

duration/low stocking density of beef cattle from May 29 to August 3. Results at Westhausen were encouraging. The grazing at Bredberg was ineffective due to the selective foraging behavior of the dairy cattle used there. In 2013 and 2014 we are going to use interior fencing to implement a rotational grazing strategy with a higher stocking rate to reduce the selectivity problem.



The recently discovered infestation of wild parsnip at Berg WPA was treated for the first time on June 4 with the help of prairie recovery seasonal staff.

2012-34 JBB 6/04/2012

The infestation at Rothi WPA seemingly exploded from just a few plants in 2007 to huge patches and many scattered plants in 2008. Since then control efforts have primarily been focused in and around the local ecotype seed production fields at Rothi. The approach used is to first spray rosettes and then return within two weeks to treat new rosettes and pull or shovel flowering plants. Repeated visits throughout the spring and summer are ideal because wild parsnip produces rosettes throughout the entire growing season, but not always practical given our staff limitations and other priorities. Our efforts at Rothi around the production fields have been successful at reducing the level of infestation. Because of staff limitations the larger infestations on the rest of Rothi were not treated with hand crews. We hope to be able to use grazing as a control method in the very near future on the heavily infested Ann Lake WPA as well. Beef cattle appear to like it and seek it out, and therefore will provide the most thorough means of control with the right grazing strategy. A rotation system wherein the cattle re-visit paddocks every three to four weeks throughout the growing season will keep this plant from producing seed, which is the key to its eradication.

Spotted Knapweed (*Centaurea maculosa*)

Fortunately, the sites with spotted knapweed are down to just a very few plants. Because of the tillage at Pomme de Terre Lake just a few plants were found and pulled on the very east end along the road to the boat launch. There is no record of treatment at Nordby or Cyrus WPAs this year, but I can't say for sure if it is because none were found, we didn't make it there, or the work we did wasn't recorded. Like Pomme de Terre Lake, for this year at least the tillage at Pieske took care of any previous infestations.

Common Tansy (*Tanacetum vulgare*)

The first ever and only (known) infestation of common tansy on a WPA was discovered in 2008 on Anderson WPA in Big Stone County. The discovery was too late in 2008 (i.e. in full bloom) to treat with herbicide or to mow, however a neighbor did spray a few of the plants in the ditch and near the field approach in the southeast corner. The herbicide used by the neighbor appeared to be glyphosate as it killed grass as well. The infestation was mapped with a GPS unit and was treated in July 2009 with 2,4-D and metsulfuron methyl. The ISC returned to the site in 2010 and only found one plant to treat. In 2011, the site was not treated. In 2012, plants reappeared in most locations previously mapped, but were not treated due to phenology of the plants at discovery.

Crown Vetch (*Coronilla varia*)

This is a weed that because of its slow rate of spread is less of a priority, but still gets some attention if we have time. There are probably more occurrences than we have documented, but currently we have treated it on the following WPAs: Fehr, Nordby, Edwards, Long Lake, Florida Creek, and Redhead Marsh. We sprayed crown vetch on 97.34 acres this year (Table 18). Fehr and Redhead Marsh had not been treated in previous years. Nordby and Centennial were not treated this year. Pearson WPA in southern Lac qui Parle, Wall WPA in Pope, and Swede Home WPA in Yellow Medicine, are three sites we know about, but have not been treated or mapped due to staff and time limitations. This plant has a long-lived seed, so like most weeds, control efforts with herbicide have to be for the long haul, with plans to return every year until it is no longer found.

Table 18 – Crown Vetch Chemical Control – Morris WMD – 2012

<u>WPA</u>	<u>Date</u>	<u>Phenology</u>	<u>Acres</u>
Edwards	6/28/2012	Flowering	36.10
Fehr	6/28/2012	Flowering	0.29
Florida Creek	6/15/2012	Pre-flowering	22.80
Florida Creek	7/12/2012	Flowering	22.00
Long Lake	7/13/2012	Flowering	12.50
Redhead Marsh	6/22/2012	Flowering	2.54
Redhead Marsh	6/29/2012	Flowering	<u>1.11</u>
			97.34

Queen Anne's Lace (*Daucus carota*)

Another new weed to appear on the district is Queen Anne's lace. Similar to wild parsnip, it is a biennial in the carrot/parsley family, which makes treatment with Milestone (aminopyralid) or Transline (clopyralid) ineffective due to its tolerance to these selective herbicides. With small infestations, approximately 100 plants or less, cutting or pulling second year plants to prevent seed production or 2,4-D application to rosettes are the main courses of action for control. In 2012, we treated Queen Anne's lace on five WPAs (Table 19). For the second consecutive year at Hillman WPA, we used cattle grazing to reduce seed production. Because of the advanced growing season, the timing this year was a little late and approximately 10 percent of the plants were robust and capable of producing large quantities of seed. The grazed plants were reduced in stature from four feet to in some cases as little as six inches, causing a 90 percent or greater reduction in seed. The 21.5 acre infestation was mowed on July 25, while the cattle were still on the unit. The cattle were removed August 20. We will likely continue using cattle here to reduce seed production.

Table 19 – Queen Anne's Lace Control – Morris WMD – 2012

<u>County</u>	<u>WPA</u>	<u>Date</u>	<u>Phenology</u>	<u>Treatment</u>	<u>Acres</u>
Big Stone	Hillman	7/25/2012	Flowering	Mechanical & Cattle	21.50
Big Stone	Rothi	7/23/2012	Flowering	Mechanical & Hand Pull	0.68
Pope	Blue Mounds	8/09/2012	Flowering	Mechanical	5.90
Stevens	Schultz	8/08/2012	Flowering	Mechanical	3.20
Traverse	Geyer	8/08/2012	Flowering	Mechanical	<u>0.01</u>
Total					31.29

We now know of six WPAs with infestations of this weed. In 2010 several small patches showed up in the local ecotype seed production field on Rothi WPA, east of the minimum maintenance road, and a few plants were found on Brady WPA in the driveway to the old farm site. The Rothi and Brady infestations were not treated due to time and staff limitations in 2011. The Hillman infestation was mowed in 2009 to try and prevent seedset, but we learned it needed multiple mowings to hit re-growth and rosettes that were too short to get clipped during the initial mowing. In 2010, we were unable to treat. This year in addition to grazing the largest infestation at Hillman, we also re-visited and pulled and/or sprayed several new patches discovered in 2011 on the unit. We are hoping to use cattle grazing as our primary control method on this site. The literature indicates the seed is only viable for two years, so hopefully we can be successful with herbivory.

The three new infestations discovered in 2012 were all small prairie reconstruction sites seeded in 2011 with seed harvested by our combine at Hillman in 2010

(Lot# B14-NP10). Apparently, the harvest was contaminated with a small amount of seed that was not detected in the sample tested by the seed lab. We hand pulled the few plants that were found at Blue Mounds, Schultz, and Geyer, and will have to keep a close eye on these sites and the other retired food plots (Seidl, Robin Hood, and Rothi) that received the same seed mix, but were not yet found to have this species.

These new biennial weeds can be daunting to eradicate or control, especially when they aren't really on the 'radar' of weeds to control on neighboring lands. The formation of a Big Stone County Cooperative Weed Management Area is an encouragement, as this will provide the means to begin to deal with these weeds on private land.

Yellow Toadflax (*Linaria vulgaris*)

In 2010, yellow toadflax, also known as 'butter and eggs,' and bird's-foot trefoil burst onto the scene in the form of large infestations on a couple of WPAs.

Of greatest concern is the yellow toadflax infestation in the local ecotype restoration at Grove Lake WPA. The presence of this species threatens to undermine seed harvest goals for this site. Possibly due to the drought, there was very little flowering of this plant, therefore we did not conduct any treatments this year.

Bird's-foot trefoil (*Lotus corniculatus*)

Bird's-foot trefoil, which is still commercially available, has been around for several years as it was a component of roadside plantings to control erosion. It wasn't too concerning as an invasive as it didn't seem to spread rapidly and invade grasslands. However on some sites, such as Bahr WPA, it has formed huge patches that displaced grass cover, thus it now represents a threat to waterfowl production goals. Bahr WPA was not treated this year, but was still very prevalent. A new infestation was discovered at Redhead Marsh along with crown vetch, and was treated on June 22 and June 29. Both efforts totaled 3.6 acres, but included patches of both species. The boom truck was used for the first application, while the ATVs were used to spot spray patches with their booms or handheld wands a week later. We will continue to monitor these sites and treat accordingly.

Plumeless Thistle (*Carduus acanthoides*)

This biennial thistle really started to show up within the district around 2005. It got a foothold on private lands, especially overgrazed pastures, but also brome CRP with coarse soils. Within a five year period it has expanded and in some cases taken over fields and pastures. A minimum of 20 WPAs are known to have occurrences of biennial thistle, and include: Big Stone County: Anderson, Kuftrin; Chippewa County: Hawk Creek; Pope County: Benson Lake, Froland, Glacial Lake, Grove Lake, Nelson Lake, Rolling Forks, Scofield, Stammer, Westport; Stevens County: Norby, Pieske, Thorstad; Swift County: Roderick, Fahl; Traverse County: Diekmann, Geyer.

In 2010 the ISC and others spent considerable time (about two solid weeks) at Grove Lake in the local ecotype seeding spot spraying both plumeless thistle and Canada thistle. In 2011, they got it done in just two days, and in 2012 there was no treatment of plumeless thistle. This was due in part to the much lower occurrence of plumeless plants and a limitation of staff time. The only site treated in 2012 that had also been treated in 2011, was the native reconstruction field at Roderick, which was to some extent, part of the normal protocol for post-seeding maintenance. Froland, Rolling Forks, Nordby, and of course Grove Lake, were either not re-visited due to staff limitations, or did not warrant treatment due to a low occurrence of plants. The new native reconstruction at Roderick WPA, which was boom sprayed with 2, 4-D in the late fall of 2011, needed mowing to prevent seedset. It was mowed the one time on July 2, and since it was not mowed again in late August, may have still set seed. Including Roderick, we treated plumeless thistle on four WPAs in 2012 (Table 20).

New encouraging information from the Detroit Lakes Wetland Management District showed that over a five year period of mowing twice per summer at 13 inches or 26 inches, and not mowing, all led to very similar and minimal abundance of plumeless thistle on three native reconstruction fields. They have taken the approach to let the site mature, and not to mow.

Table 20 – Sites Treated for Plumeless Thistle – Morris WMD – 2012

<u>WPA</u>	<u>Objective</u>	<u>Date</u>	<u>Phenology</u>	<u>Treatment</u>	<u>Acres</u>
Pieske	Habitat Restoration	6/27/2012	Flowering	Mechanical	24.8
Schultz	Habitat Restoration	8/13/2012	Flowering	Mechanical	3.1
Roderick	Habitat Restoration	7/02/2012	Flowering	Mechanical	27.9
Geyer	Habitat Restoration	6/26/2012	Flowering	Mechanical	<u>67.3</u>
Total					123.1

Purple Loosestrife (*Lythrum salicaria*)

Purple loosestrife control started in 1997 with the raising and release of its natural predator the *Galerucella* spp loosestrife beetle. Last year a new infestation of purple loosestrife was discovered at Aal WPA in Pope County. Active management consisted of hand digging the individual plants. This year a check at Aal WPA found more plants that were missed in 2011; 50 plants were dug on August 8. Most known sites with *Galerucella* spp are successfully keeping loosestrife in check (Table 21).

Table 21 – Purple Loosestrife – Morris WMD – 1997-2012

<u>County/WPA</u>	<u>Bio. Release</u>	<u>No. Sites</u>	<u>Wetland Acres</u>	<u>Upland Acres</u>	<u>Acres Invested</u>	<u>Controlled</u>
Lac qui Parle						
Farrell	No	0	162.1	236.0	0.0	Yes
Pope						
Aal	No	0	16.3	17.5	0.1	Maybe
Benson Lake	Yes	3	22.1	108.0	0.1	No
Blue Mounds	No	0	97.0	295.8	0.0	Yes
Kolstad Lake	Yes	2	17.9	257.6	0.2	No
Lake Johanna	Yes	2	142.1	215.3	0.1	No
*Larson	No	0	75.0	217.0	0.1	No
Nelson Lake	Yes	4	327.2	638.1	0.5	No
Ouren	Yes	2	23.5	119.9	0.1	No
Overby	Yes	1	10.3	313.8	0.3	No
Stevens						
Darnen	Yes	3	32.9	17.7	1.0	No
Edwards	No	0	106.6	360.4	0.0	Yes
Fehr	No	0	12.4	67.6	0.15	Yes
*Fitzgerald	No	0	57.2	63.7	0.1	No
Fults	Yes	1	81.4	185.9	0.021	No
Swift						
Brady	<u>No</u>	<u>0</u>	<u>57.4</u>	<u>139.1</u>	<u>0.0</u>	No
Total	8	18	1,241.4	3,253.4	2.771	

*Beetles present without being released

Leafy Spurge (*Euphorbia esula*)

A major biological control program for leafy spurge was initiated in the late 1990s at Morris WMD. Four root-feeding flea beetles *Aphthona flava*, *A. lacertosa*, *A. nigriscutus*, and *A. czwalinae* were released to suppress infestations of leafy spurge; *A. lactertosa*, *A. nigriscutus*, and *A. czwalinae* have established and reproduced. The *A. flava* died out after a few years. The very effective flea beetle larvae feed on the spurge root system. Populations increase rapidly after introduction and the insects are easily captured (harvested) for redistribution (release) to additional locations, providing a valuable spurge management tool.

In 2012, flea beetles numbering 14,000 were harvested from Loen WPA on June 6. The beetles were released at four sites on Hegland WPA. Since 1997, the Morris WMD has released flea beetles at 224 release sites on 61 WPAs. On these 61 WPAs an estimated 415.9 acres or more have been infested with leafy spurge. Beetles were applied to 0.003 acres in 2012.



Since 2001 approximately 44,500 flea beetles have been released on these 0.2 acres of leafy spurge on Karsky WPA. Two species of beetle have been tried, however, this patch continues to increase in size and very few beetles are found during checks. The area was sprayed on August 3, well after adult beetles complete their life cycle. The area is on the burn list for next season. More monitoring will be needed. 2012-35 DMO 5/21/2012



Hegland WPA, one day before beetle release at Site #1 of four release sites.
2012-36 DMO 6/05/2012

Pope-Swift Cooperative Weed Management Area

The Pope County CWMA was expanded into Swift County in 2010 when funds were received through a grant from the Minnesota Board of Water and Soil Resources (BWSR). The group received \$25,000 over two years. This cooperative effort is vital to adequately addressing the emergence of many new invasive weeds, which all carry serious implications if they get established. Wildlife Refuge Specialist Bright serves on the steering committee.

The Pope-Swift CWMA mission is to focus on education, training volunteer weed watchers for rapid response, infestation documentation, treatment, and monitoring. The project has mapped and/or treated the following weeds: common tansy, wild parsnip, spotted knapweed, plumeless thistle, leafy spurge, bouncing bet, and common toadflax. These were chosen because of their difficulty to control, their tendency to take over grassland cover, and the uncertainty in their distribution and abundance.

In 2012, Intern Will Clayton returned and continued with mapping and early detection and rapid response treatment of target weeds. The website (www.weedwatchers.org) continues to be a year round source of information for folks interested in invasive weeds, but it needs to be updated with 2010 - 2012 information, especially the weed distribution maps for Pope and now Swift County.

Big Stone-Traverse CWMA

Based on the success of the Pope CWMA, Cara Greger and Brad Olson from the Lac qui Parle Area DNR office initiated formation of a steering committee and applied for funding through the BWSR Grant in 2009. Wildlife Refuge Specialist Bright serves on the committee which also includes Big Stone NWR staff. The Big Stone CWMA received the maximum award of \$15,000 over two years. Funds were used to purchase equipment such as an ATV, sprayer, trailer, and herbicide, and hire an intern for the summer. The Morris WMD purchased CWMA weed brochures and a GPS with ArcMap for the project. For the second grant, the CWMA was expanded to include Traverse County and the project received a \$20,000 grant award for 2012 and 2013. With funding for the BWSR grant program uncertain, and needing greater funding for equipment, the steering committee headed by Cara attempted a third application for a \$50,000 Pulling Together Initiative Grant through the National Fish and Wildlife Foundation. Late in 2012, we received the good news that this attempt had been successful!

Kufrin WPA - UM Extension Study Plot

The study is testing the tolerance of native forbs to herbicides at various application rates and timings as well as the control of Canada thistle. Small plots were set up within a one acre area with replicates of different herbicide mixes and rates, and two different application timings, June and September of 2009. In June 2010, an additional plot was added using our pickup boom sprayer. This involved just three replicate treatments of different herbicides and rates. On July 18, WRS

Bright and Roger Becker led a small tour for Dow AgroSciences marketing reps. Dr. Becker is continuing surveys to determine efficacy on Canada thistle and non-target impacts. Thus far it appears the untreated control has a few more planted forbs and slightly more Canada thistle than any of the Milestone and/or Transline treated plots, but overall abundance of thistle in the reconstruction field and plot is very low.



Dr. Roger Becker leads a tour of Dow AgroSciences personnel through the study plots at Kufrin WPA. 2012-37 JBB 7/17/2012

FISH AND WILDLIFE MANAGEMENT

4a. Bird Banding

Morris WMD assisted local DNR area wildlife staff with their annual goose banding effort. Locally breeding giant Canada geese are banded in Minnesota each year in an attempt to gather movement and harvest data for the population. Wildlife Refuge Specialist Klavetter and the YCC crew assisted the Glenwood DNR staff to band 425 geese in Pope and Douglas Counties.

4c. Re-Introductions

Morris WMD continued its involvement with an effort to re-establish a greater prairie chicken population in west-central Minnesota. This project is supported by the Service, Minnesota Department of Natural Resources, Minnesota Prairie Chicken Society, Society of Tympanuchus Cupido Pinnatus, and The Nature Conservancy. From 1999 to 2006, we moved 574 prairie chickens from northern Minnesota to the re-introduction area.

We use the number of males on booming grounds as an index to our prairie chicken population. Biologist Vacek and Biological Technician Oglesby assisted with spring surveys again this year. In late March we began roadside listening surveys to locate booming grounds and grounds were observed from blinds in April and May.

Unfortunately, the future of the re-introduced prairie chicken population does not look promising. The number of birds has declined every year since we ended translocations in 2006. Five booming ground were active in 2012, with a total of nine males (Table 22). Two booming grounds are on or adjacent to WPAs (Rothi and Hastad).

Table 22 – Prairie Chicken Booming Grounds in Morris WMD – 2012

<u>County</u>	<u>Booming Ground Names</u>	<u>Number of Males</u>
Big Stone	Rothi	2
Chippewa	Chippewa Prairie South	2
Lac qui Parle	Hegland/Hastad	3
Swift	Chippewa Prairie North	1
Traverse	Miller Prairie	1

We also continue to record sharp-tailed grouse in the project area. Although their numbers had been steadier than prairie chickens in recent years, even the sharp-tails seemed to decline again this year. A few sharp-tails and sharp-tail/prairie chicken hybrids were observed on two prairie chicken booming grounds this year.

The Beardsley dancing ground had 5-6 males (down from 8-12 in 2011). Unfortunately, the grassland habitat provided by an expired CRP field adjacent to this dancing ground appeared to have been plowed this spring. The Lee dancing ground on Big Stone NWR was not active this year.

4d. Nest Structures

Morris WMD has two main goals in its nest structure program: to distribute nest structures to members of the public and to maintain 300 nesting structures on WPAs within the district. Public cooperators who receive nest structures must be willing to set up and maintain the structures on private lands. The structures and hardware are provided through the station's private lands program. In 2012 we gave away nine cylinders and nine wood duck boxes to participants. Since the inception of this program in 1995, we have distributed 1,483 nest cylinders.

During the 2012 nesting season, we had 214 structures available (i.e., in adequate condition) for nesting on WPAs in the district. Most were double cylinder hen houses, though there are some single cylinder hen houses, wood duck boxes, and goose tubs. Another 50 structures that had been installed in the past were unavailable either because they were missing or were in disrepair. Of the 214 available structures, 79 (37%) were used by at least one hen.

We had excellent use in our wood duck boxes this year; 19 of 20 wood duck boxes were nested in for a 95% use rate. There were 190 hen houses available. Sixty of those were used for at least one nest, for a use rate of 32%.

In addition, Delta Waterfowl has a Working Lands Initiative grant to install and maintain hen houses and wood duck boxes in west-central Minnesota. Matt Chouinard with Delta has been working hard on this project for several years now, and has placed over 180 hen houses and 20 wood duck boxes on WPAs in Morris WMD. Matt and his staff were able to definitively determine use in 140 hen houses on our WPAs in 2012. Of those, 73 were nested in by ducks for a 52% use rate. Nest success was 80%. Twelve of 20 wood duck boxes were used, for a 60% use rate. Nest success in the wood duck boxes was 75%.

In recent years, low use rates on our structures have caused us to question the value of continuing with our nest structure program. After reviewing previous years' nest structure data, we have corrected the way we calculate use rates. Structures that are not actually available for a hen to nest in (generally due to disrepair) are no longer included in the total number of structures when calculating use rates. Table 23 shows the available structures and use rates in recent years.

The lower use rates may also be related to the location of the structures within wetlands. Since they were installed, many structures have become encroached by cattail, making them less attractive to hens. Starting with the 2011 nest structure

visits, we expanded our data collection to include a structure's proximity to emergent vegetation. Only 14% of available hen houses that were within 3 feet of dense cattail were used, whereas 43% of structures further from vegetation were used. Structures that are in dense emergent vegetation are a priority to remove in the next few years.

Finally, we have also noticed over the years that structures in certain parts of the district seem to have lower use rates. Table 24 shows the use rates of hen houses by county. Note that only 9% of the available hen houses in Pope County were used, yet approximately one third of our structures are there. This certainly drives down our overall use rates. There is no point in maintaining structures that never get used, so starting in 2013, if no structures on a WPA have been used for three consecutive years, we will remove them and focus our efforts elsewhere.



Josh Pittman adds straw to a nest cylinder during annual maintenance of nest structures. 2012-38 JMS 3/21/2013

Table 23 - Nest Structure Use Rates in Morris WMD, 2010-2012 Nesting Seasons

Nest Structure Fate	2010			2011			2012		
	Count	% of Avail	% of Total	Count	% of Avail	% of Total	Count	% of Avail	% of Total
Used	97	44.50	35.79	70	31.11	24.14	79	36.92	29.92
Not Used/ Unknown	121	55.50	44.65	155	68.89	53.45	135	63.08	51.14
Available	218		80.44	225		77.59	214		81.06
Not Available/ Missing	53		19.56	65		22.41	50		18.94
Total	271			290			264		

Table 24 – Nest Structure Use Rates (Hen Houses Only) by County in Morris WMD, 2012 Nesting Season

County	Fate	Count	% of Structures in the County
Big Stone	Used	2	13.3
	Not used	13	86.7
	Total	15	
Pope	Used	5	8.6
	Not used	53	91.4
	Total	58	
Stevens	Used	50	51.5
	Not used	47	48.5
	Total	97	
Swift	Used	3	21.4
	Not used	11	78.6
	Total	14	

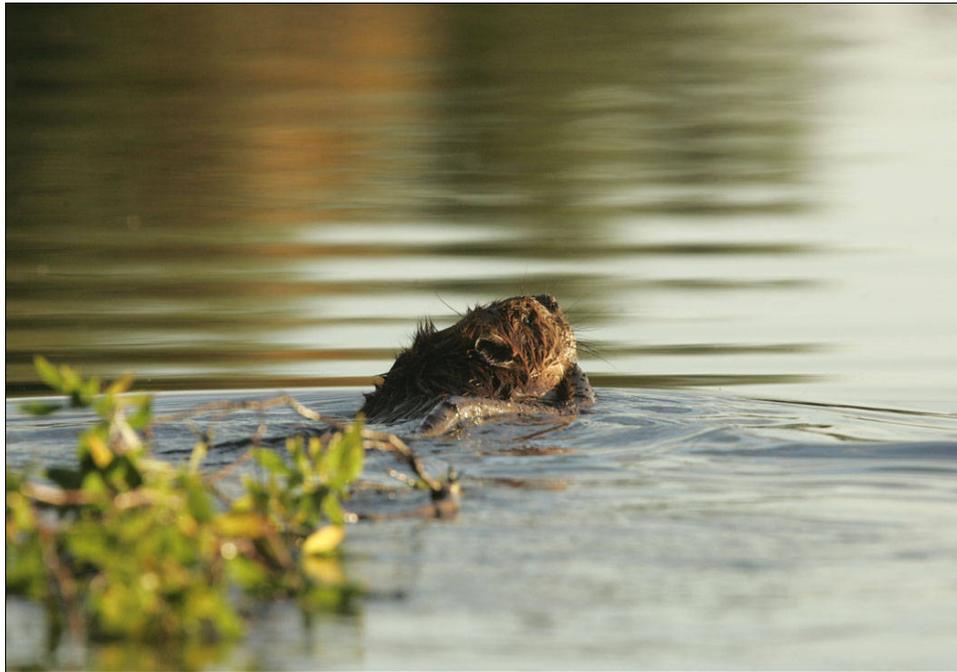
4e. Pest Control

Goose Damage

Crop damage caused by resident Canada geese continues to be an issue throughout the district. Options available to private landowners to lessen damage caused by the birds include electric fencing and shooting permits. Extended hunting seasons with generous bag limits are also in place to try to reduce the number of birds statewide. The goose damage complaints in our district are handled primarily by the local DNR offices; however, we sometimes get involved if the complaint is adjacent to a WPA. Our office received no damage complaints in 2012.

Beaver

We did not receive any complaints from private landowners adjacent to a WPA. However, the station did coordinate a beaver dam removal with an adjacent private property owner because the dam was impacting the outlet of Sherstad Slough WPA. Minor clean out projects were done on Ben Wade and Loen WPAs to keep water control structures operational. It was not necessary to remove any beaver during 2012.



The number of beaver damage issues or complaints remained minimal in 2012.
2012-39

COORDINATION ACTIVITIES

5a. Interagency Coordination

Ducks Unlimited

An agreement was completed with DU to design and engineer a new water control structure for Structure H on Edwards WPA. Actual construction is anticipated in 2014. Funding for the project will likely be obtained through a Conservation Partners Legacy (CPL) Grant which Ducks Unlimited will submit.

Pheasants Forever

PF purchased the 202 acre Beyer Tract in Lac qui Parle County which will be donated to the Service as a new WPA. This was the first new WPA purchased since the acquisition of State Lake WPA, Pope County, in 2008.

Prairie Recovery Project

Initiated with funding from the Minnesota Outdoor Heritage Fund in 2010, the Minnesota Prairie Recovery Project encompasses five core prairie landscapes in western and southwestern Minnesota. Goals of the project are to enhance grassland/wetland complex on public lands to increase native species diversity and improve critical wildlife habitat. Management techniques will include prescribed fire, conservation grazing and/or haying, removal of woody vegetation, and mechanical and chemical control of invasive species.

Other Coordination

- Working lands initiative
- Cooperative weed management areas
- We work closely with NRCS in their implementation of conservation programs including WRP, CRP, CREP, etc.

Staff members worked with other agencies that included Soil and Water Conservation Districts, local water boards, county highway departments, etc. on many issues. With the complex, scattered, and diverse land holdings of a wetland management district, there are always issues arising each year related to roads, drainage, invasive species, and other topics requiring interagency coordination. Information about cooperative efforts and interagency coordination can be found in nearly every section of the narrative report.

5c. Private Lands

During 2012, Partners Biologist Salvevold assisted 15 landowners with interest in perpetual wetland or habitat easements from the Service. Easement proposals were prepared and submitted for nine different landowners. If all of the proposed

easements are accepted, 1,034 acres of upland and wetlands will be protected forever. These easement acquisitions required much communication between the Partners Biologist, the Service's Realty program and landowners. It also required numerous days of staking boundaries, making maps, checking on CRP contracts, etc. The Partners Biologist also assisted four landowners with getting information about protecting their land with a state Prairie Bank Easement, when the Service easement was not an option or not the best fit for their land.

FY 2012 Partners Funding Obligated to:

- 1 cross-fencing project – 110 acres
- 4 prescribed burn projects – 305 acres
- 6 native grass seeding projects - 90 acres
- 10 tree removal projects – 1,267 acres
- 13 private land wetland restorations – 49.7 acres
- 1 shallow lake pumping project – 45 acres
- 22 landowners assisted financially
- **Total acres directly impacted in 2012 = 1,867 acres**

FY2012 Total Partners Funds Received

- 1121 = \$60,000 (\$40,000 regular and \$20,000 Climate Change)
- Other Partner cost share and in-kind = \$197,500

The Partners Biologist assisted a landowner in the Langhei Working Lands focus area with getting a prescribed burn completed on two different native seedings that had been completed on their land over the past five years. Habitat Forever completed the burn for the landowner on about 100 acres of land, and the Pope County Working Lands Team paid for it. A second burn was arranged for the upland manager at the West Central Research and Outreach Center on the University of Minnesota campus in Morris. The site was a 13 acre native prairie site that has a large overlook above it. It was a great opportunity to inform the public of the benefits of prescribed burning to stimulate native grasses. The Minnesota DNR Wildlife office and the Stevens County Pheasants Forever chapter paid for the prescribed burn to be completed, and again a Habitat Forever crew completed the burn. The donors were recognized with a sign at the overlook.

Numerous easement owners were assisted by the Partners Biologist to get special use permits to complete upland management on their habitat easements or to prepare their easements for upland restoration or management during 2012. These treatments included prescribed burning, prescribed grazing, weed control, and haying to deal with weed problems. A wetland easement owner was also assisted in getting a special use permit to temporarily pump down a wetland on his easement to stimulate plant growth and kill invasive fish.

The Partners Biologist assisted the Friends of Morris WMD with another CPL grant application to get funds to seed and burn new easements or easements that have received management in the past couple of years. This grant is for eight

tracts: four seedings totaling 93.5 acres and four burns totaling over 250 acres. Partners will pay for three of the seedings to provide the match needed for the burns and a 60 acre new seeding on an easement in Big Stone County.

The Partners Biologist spent two days at Farmfest in Redwood Falls, Minnesota, in August. This year 400 bluebird boxes and 100 wood duck boxes were constructed. If even a few of these kids become more interested in natural resources, then we are having an impact on the children of rural Minnesota.

A livestock information meeting was held in August in Lac qui Parle County. The Partners Biologist spoke to the group of graziers about the cost share programs available through the Partners programs as well as opportunities to work with the district grazing on public land.

Working Lands Initiative continued to be a large portion of the Partners Biologist's job at Morris. The WLI is a public/private partnership working in portions of the state identified as high priorities for wildlife, to implement conservation practices but still keep their lands working for agricultural purposes. Morris WMD has target areas and project teams in six different counties. Thousands of acres have been impacted by these projects throughout the district.

Pope (Langhei and Ordway target areas) and Big Stone have active projects that are paying incentives for CRP enrollment and perpetual easement enrollment. These projects are promoting and assisting with the financial aspect of implementing rotational grazing and tree removal in native prairie and native pasture lands. They are educating landowners about the importance of grassland management with fire or grazing as the primary management tools and are promoting winter wheat and rye production as good sources of spring nesting cover for nesting grassland birds.

The Langhei WLI team held a local birding event as well as hosted a birding field trip that was part of the Detroit Lake Festival of Birds. The Festival of Birds participants toured three sites enroute to Prairie Horizon's Farm. The goal of the working lands team was to try to show birders that their food choices impact the landscape and the birding opportunities around them. Prairie Horizon's Farm raises and finishes grass fed beef on organic certified pastures. Their managed grazing system is always home to a wealth of prairie birds, and this tour was a way to show folks that agriculture and bird habitat can mix. The tour was a great success, and everyone enjoyed their locally raised and locally sourced lunches. We are talking about doing the event again next year.

The Big Stone WLI team removed a building and the trees from a site in Big Stone County that was acquired in an FWS habitat easement. The easement is just over 200 acres, and a small portion of the easement, approximately 30 acres, had historically been used as a race track and supper club. The buildings were cleaned up and the trees that had grown up around the track were removed. This opened up the entire 200 acres of prairie by removing the obstructions throughout the tract.

The Region 3 hydrologist for FWS has been assisting with some water monitoring that was completed at the delayed drainage wetlands that were restored by the Partners Biologist in the Otrej WLI target area. We are trying to determine if holding water in small, shallow wetlands can provide water quality improvements as well as wildlife habitat compared to letting water flush through a tile system as soon as it thaws in the spring. The 2011 results were processed and preliminary results show less nitrogen leaving the delayed drainage basins than a standard tile outlet. The release of water from the basins was also just after the hydrograph for the Minnesota River started to decrease, so we held water in the basins long enough to store water versus contribute to flood waters. We were not able to complete any monitoring in 2012 because it was so dry.

The Ordway WLI team removed trees from 610 acres of the target area in Pope, Kandiyohi and Swift counties on native prairies throughout that area. The team also completed the fencing of the 280 acre Brenner Lake WPA in Kandiyohi County. A grazing management plan was developed and the results from rotating cows through seven paddocks on the WPA have been fantastic. The plants responded tremendously to the first grazing periods. The first paddock was grazed in May, and the cool-season exotic grasses produced very little seed, while the warm season native grasses and the wildflowers were stimulated and produced seed very well. It is nice to see results that replicate burning by using cows to provide the disturbance. It just puts another tool in our hands for management of our grasslands and native prairies.

The Minnesota Prairie Plan was released to the public this year, and many NGOs and agencies are working on plans to implement some of the major portions of the plan. The Nature Conservancy (TNC) and the Minnesota DNR have both been getting started on project locations where they plan to expand the Working Lands Initiative focus areas to include some of TNC's focus areas. The Partners Biologist has been leading the work of the WLI teams that work in both of TNC's focus areas within the Morris WMD. She has spent much of her time consulting and hosting meetings with landowners, graziers, agency and NGO folks to try to come up with a plan for implementing working lands at a larger scale in these Prairie Plan focus areas.

In addition to the WLI projects the Partners Biologist has also been providing GIS and technical support to the Pope County Weed Management Intern, who is using TNC's WIMS database to store information about weed infestations and treatments that have occurred in Pope County.

The Partners biologist has also been working on designs for three easements that have dikes in need of major repairs in order to maintain water levels without damaging anything downstream. A new piece of land was added to Svor WPA in Swift County and needed to have some wetland restorations completed on the tract. The Partners Biologist has been working on those surveys and designs, and also assisted with overseeing the contractor who was installing a water control structure on State Lake WPA in Pope County.

RESOURCE PROTECTION

6a. Law Enforcement

During 2012 the district's law enforcement staff remained the same as the previous reporting period with one Law Enforcement Officer Doug Briggs and one dual function officer Wildlife Refuge Specialist Mead Klavetter. Most enforcement activities are associated with easement violations and WPA use regulations. With a district consisting of eight counties, state conservation officers carry the brunt of the responsibility for hunting and public use enforcement within the district. We maintain a good rapport with state officers working cooperatively during the fall hunting seasons and providing assistance when requested. A significant amount of violations are also discovered by employees during the course of their duties.

Waterfowl Production Areas

Common violations encountered on WPAs throughout the year were vehicle trespass, farming encroachment, rock dumping, abandoned property, and destruction of government property. Numerous warnings were issued and corrective actions took place.

Fall is a busy time of year in the district with hunting enforcement. Officers Briggs and Klavetter worked closely with State Conservation Officers to patrol WPAs. Violation notices were issued for no federal waterfowl stamp, unplugged shotgun, trapping in violation of state regulation, abandoned property, illegal take, operating a boat on a WPA and unauthorized driving on a WPA. This year there was a significant rise in the number of incidents involving abandoned property, especially with tree stands and trail cameras that were being illegally maintained on WPAs.



One of 13 tree stands found and seized since they were illegally set up on WPAs. 2012-40 MLK 9/28/2012

Other violations detected were no hunting license in possession, unauthorized ditch clean out, trespass grazing, failure to comply with special use permit, baiting, hunting in a closed area, damage to vegetation, and commercial operation. In the case of commercial operations being conducted on the district without a special use permit, 32 minnow traps were seized in two incidents.



These minnow traps were seized from Geyer WPA, Traverse County.
2012-41 RDB 4/18/2012

Our district also helps nearby refuges when requested. Officers Briggs and Klavetter patrolled Big Stone NWR as needed. No notices of violation were issued there, but four written warnings were issued and vandalism was documented at one of their parking lots.

Easements

Aerial surveillance utilizing high altitude photography continues to be the primary investigatory tool used to monitor easements. Fall 2012 flights were successful with about 85% of the easements being photographed. A dry fall and warm late fall/early winter temperatures resulted in easement violations occurring after easement flights had concluded. Several easement violations were also discovered during routine patrols. In 2012, 22 new easement cases were opened consisting of burning, draining, and filling violations. Of those 22 cases nine have been closed, seven are awaiting restoration in the spring and six are still being investigated. With this fall's dry and warm conditions we saw many landowners take the opportunity to remove trees from wetland edges throughout the district. Unfortunately, on wetland easements, this usually leads to a fill violation as trees commonly were then being piled in the protected wetland basin.



Trees pushed and piled into a protected wetland basin.
2012-42 RDB 9/20/2012

Although easement violations can result in criminal or civil charges, the ultimate goal is the restoration of the resource. Two easement cases were forwarded to the U.S. Attorney's Office after the landowners refused to voluntarily comply.

In order to relieve some of the back log of purchased wetland easements that do not have an "Exhibit A" (a map delineating wetland basins protected by an easement), the district hired a Biological Science Technician, Steve Huber. Steve began work on September 14, 2012 and has made significant progress, completing 30 plus "Exhibit A" easement maps.

Training

Officer Briggs hosted his first Refuge Law Enforcement Trainee, Ashley Look. During this time Trainee Look was being mentored and evaluated on her field skills and interaction with the public. She has since successfully completed her 33 week training requirement and has been duty stationed at the Litchfield Wetland Management District.

6b. Permits and Economic Use Management

During 2012, we issued 68 Special Use Permits. The permits were issued for conducting scientific studies, cutting hay, grazing, cash rent farming, firewood cutting, fencing, tree removal, and tile repair on WPAs and habitat easements.

6g. Land Acquisition Support

This year, the Service Realty branch focused acquisition efforts on easements while Pheasants Forever (PF) became the primary organization purchasing land for WPAs using funds obtained through a Lessard-Sams Outdoor Heritage Council grant. This arrangement works well as PF prefers acquisition over easements; their constituents desire more public lands to hunt on over simply protecting habitat. Also, currently, Small Wetlands Acquisition Program funding levels are barely enough to cover the cost of easements which means outside funding is needed to maximize purchase opportunities for both easements and fee title lands.

In recent years, the Morris district has primarily pursued acquisition of easements over fee title tracts as there are more landowners interested in selling easements, easements cost less per acre which thus allows us to protect more land, and management of easements requires fewer resources than does management of fee title lands. However, despite the obstacles to fee title acquisition we do pursue fee title tracts. We primarily target tracts adjacent to existing WPAs, which will make management more cost effective, and tracts that are located in areas with high potential for waterfowl production and/or that contain native prairie.

Fee Title

No fee title tracts were purchased in 2012. As a result of current crop prices between \$6.00 – \$8.00/bushel of corn, many landowners are reluctant to sell land. The Camp Lake tract in Pope County, reduced to 543 acres in size, is being considered for purchase but an American Farmland Trust Easement on the tract has complicated the purchase.

Pheasants Forever did purchase a 203 acre tract in northwest Lac qui Parle County which will eventually be transferred to the Service to become Beyer WPA. Realty also closed on a 20 acre addition to Prairie WPA in Big Stone County. The tract was purchased from Tim Burdick but has not yet been finalized as a new tract.

**Table 25 – Waterfowl Production Area Realty Acreage
Morris WMD – 2012**

<u>County</u>	<u>Units</u>	<u>Realty Acres</u>	<u>Goal Acres</u>
Big Stone	58	11,721.48	15,600
Chippewa	2	360.10	0
Lac qui Parle	18	4,090.40	6,600
Pope	65	13,153.88	21,000
Stevens	55	9,631.60	12,850
Swift	30	7,643.36	10,800
Traverse	12	4,105.20	6,720
Yellow Medicine	<u>5</u>	<u>1,082.70</u>	<u>1,260</u>
Total	245	51,788.72	74,830

The legislation authorizing purchase of WPAs requires that the Fish and Wildlife Service receive approval by the state involved. In Minnesota, the state makes its decision to approve or deny acquisition tract-by-tract through a decision by the Land Exchange Board. Land Exchange Board members are the Governor, Auditor, and Attorney General. Before going to the Land Exchange Board, we discuss the proposed acquisition with the board of commissioners of the county involved. The county does not approve or deny the acquisition but does express its opinion to the Land Exchange Board through this process that we call certification. With county certification, Land Exchange Board approval is almost automatic; without county certification, approval at the state level is less assured.

Tax loss remains an important issue related to land acquisition. A trust fund payment is made to the county government with each new fee purchase where revenue sharing is short. The interest from the trust fund payment, when invested at the current one-year treasury bill interest rate, was intended to make up the difference between the revenue sharing payment and the taxes that would be paid on the land if it remained private property. However, in recent years, interest rates have been so low that the payments do not make up for losses. The payments are only made in cases where the estimated revenue sharing payment for the land is less than the current taxes on the property. It is up to the counties to decide what to do with the money; they can spend it or invest it. Previously purchased land is not covered by the trust fund payments since they are made as part of the land purchase. The county commissioners appreciate this program but don't consider it the full answer to the revenue sharing problem.

Revenue sharing payments (so-called "in-lieu-of-tax payments") are important to our acquisition program. Counties are understandably interested in the annual payment they receive and they are concerned about low payments. In 2011, counties received only 23 percent of the amount prescribed by the revenue sharing formula (3/4 of one percent of fair market value). However, due to rapidly increasing land values and recent reappraisals of fee tracts in certain counties, the revenue sharing check received by certain counties went up dramatically in recent years. That softened the concern over low revenue sharing payments in those counties. In other counties, it remains tough to explain why the government is not paying 100 percent of its revenue sharing commitment. Of course, we make many fewer demands on county resources than do owners of private land. Our drain on county resources for infrastructure, law enforcement, and human services is minimal or absent. Furthermore, in Minnesota, state school aid formulas tend to offset any loss of local property tax and prevent any loss of income to a school district when we purchase land. Still, while our net economic effect to most counties is almost certainly positive, it is difficult to get past the fact that we pay less than 100 percent of the authorized amount.

Table 26 – Revenue Sharing Payments – Morris WMD – 2008–2012

<u>County</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY2012</u>
Big Stone	\$15,360	\$14,433	\$30,474	\$32,656	\$30,686
Chippewa	783	1,360	959	1,027	686
Lac qui Parle	11,492	10,799	9,917	10,627	9,986
Pope	41,063	39,334	38,930	41,716	39,200
Stevens	20,107	38,492	27,122	29,127	27,310
Swift	31,784	29,992	21,133	22,645	18,233
Traverse	14,132	13,279	9,357	10,027	12,473
Yellow Med.	<u>2,424</u>	<u>4,918</u>	<u>3,748</u>	<u>4,016</u>	<u>3,774</u>
Total	\$137,145	\$152,607	\$141,640	\$151,841	\$142,348

The long term success of fee acquisition is unknown. Our real estate capabilities, the farm economy, farm programs, revenue sharing, and many other issues combine to influence our land acquisition program. However, the recent establishment of the MN Conservation Partners Legacy Grant Program has provided a significant increase in funds available for land acquisition. With the continued degradation of habitat on private land, fee title acquisition remains a critical tool for habitat protection.

Wetland Easements

Interest in wetland easements was somewhat limited this year as many landowners preferred habitat easements. A total of four wetland easements were purchased, protecting a total of 131.5 acres of wetlands on 322.5 acres of land. Last year we purchased three wetland easement protecting 65.5 acres of wetlands.

Under the terms of a wetland easement, the Fish and Wildlife Service purchases the rights to drain, burn, level, or fill wetlands from a willing seller. The highest priority easement proposals are those which preserve wetlands within two miles of a waterfowl production area. However, wetlands near state land or other acceptable habitat can also be protected by easement. In recent years, many wetland easements are related to our private lands program where we restore drained wetlands on private land; many of these landowners are interested in selling us an easement to leave the wetland in place permanently.

The future of our easement program is directly related to funds, staff time, and the process by which we provide landowners an easement offer. Roughly half of all duck production in western Minnesota comes from temporary and seasonal wetlands which still have little or no protection under state and federal law. Each year sees more ephemeral wetlands drained in the district. Small shallow wetlands are usually not defined as wetlands by USDA and are specifically excluded from Minnesota's wetland protection legislation in typical agricultural situations. Our easement is the only protection available for many remaining wetlands.

Table 27 – Wetland Easement Program Status – Morris WMD – 2012

<u>County</u>	<u>Number Easements</u>	<u>Wetland Acres</u>	<u>Total Easement Acres</u>	<u>Goal Acres</u>
Big Stone	202	6,834.6	25,464.51	42,640
Chippewa	4	115.1	392.00	0
Lac qui Parle	41	1,389.7	5,103.61	23,540
Pope	267	9,122.0	35,473.50	44,180
Stevens	57	1,824.4	5,116.40	6,090
Swift	69	1,486.5	5,255.10	14,540
Traverse	35	1,146.0	3,871.51	8,440
Yellow Med.	<u>11</u>	<u>181.4</u>	<u>659.27</u>	<u>7,860</u>
Total 2012	686	22,099.7	81,336.31	147,290
Total 2011	682	21,968.2	81,013.81	147,290
Total 2010	679	21,902.2	80,740.96	147,290
Total 2009	676	21,840.3	80,478.03	147,290
Total 2008	675	21,826.7	80,318.03	147,290

Wildlife Habitat Protection Easements

The Fish and Wildlife Service introduced the habitat easement in 1993. This easement protects grassland habitat adjacent to wetlands in addition to the wetlands. While native prairie tracts receive the highest priority, we pursue easements on other grassland habitat as well, as long as the block provides significant waterfowl value.

Four types of easement are available. The four options allow varying opportunities for grazing and limited haying. All four easement types prohibit drainage and tillage. The landowner is required to pay taxes and control noxious weeds. A new realty process allowing quick and efficient offers for minimally restrictive easements has caused the district to shift exclusively to easements for which the landowner retains grazing and/or haying rights. In particular, we have been taking many easements in recent years on native prairie pastures containing or adjoining wetlands. With the landowner still able to graze the sites, it is both attractive to the landowner and beneficial to migratory birds to permanently protect these grasslands.

Starting in 2009, we increased our efforts to expand the habitat easement program and have been successful in protecting some excellent habitat. In 2012, a total of 18 habitat easements were purchased, protecting 1,363.46 acres of grasslands and wetlands. Last year a total of 12 habitat easements were purchased protecting 1,325 acres of grasslands and wetlands.

Habitat easements must have commissioner review and Land Exchange Board approval in the same manner as the wetland easement.

**Table 28 – Easements For Wildlife Habitat Protection
Morris WMD – 2012**

<u>County</u>	<u>Easements</u>	<u>Acres</u>
Big Stone	44	4,485.85
Chippewa	0	0.00
Lac qui Parle	11	704.92
Pope	25	2,488.49
Stevens	1	21.47
Swift	16	935.62
Traverse	2	296.16
Yellow Medicine	9	932.37
2012 Total	108	9,864.88
2011 Total	90	8,501.42
2010 Total	78	7,176.50
2009 Total	69	6,007.61
2008 Total	62	5,030.30
2007 Total	61	4,988.20

Farmers Home Administration Easements

The former Farmers Home Administration (FmHA) is now part of the Farm Service Agency (FSA). For consistency, we continue to call easements related to their programs FmHA easements. We inspect each easement for compliance each year and manage the units in a manner similar to our fully restrictive habitat easements, using prescribed fire, haying, grazing, or no management action as appropriate. Changes in USDA rules and policies have nearly eliminated opportunities to acquire additional FmHA easements.

Table 29 – FmHA Easements – Morris WMD – 2012

<u>County</u>	<u>Easements</u>	<u>Easement</u>	<u>Acres</u>
		<u>Tracts*</u>	
Big Stone	1	1	4.82
Chippewa	1	1	63.20
Lac qui Parle	2	2	114.93
Pope	5	11	220.13
Stevens	1	2	73.55
Swift	10	17	418.12
Traverse	0	0	0.00
Yellow Medicine	3	9	342.48
Total	23	43	1,237.23

*Some easements contain more than one tract.

Northern Tallgrass Prairie National Wildlife Refuge

The Fish and Wildlife Service received approval in 2000 to proceed with development of this refuge. Funding for acquisition has come through both Land and Water Conservation Fund appropriations as well as through a state conservation corridors grant. The refuge concept is modeled after the small wetlands (WPA) program and aims to protect 77,000 acres of remaining native tallgrass prairie in scattered tracts in western Minnesota and northwest Iowa. Prairie protection is accomplished through a combination of fee title and easement acquisition. Overall refuge coordination is provided by the manager of the Big Stone NWR. Various refuges and wetland management districts are responsible for coordinating acquisition and management of individual refuge units in designated counties. The Morris WMD is responsible for those units that fall within our eight county district.

No Northern Tallgrass Prairie NWR easement tracts were acquired this year.

Northern Tallgrass Prairie NWR tracts in the Morris district are managed similarly to our WPAs and habitat easements though they have a primary purpose of prairie protection rather than waterfowl production. We use prescribed fire and other upland management tools as appropriate. We seed any acres of disturbed soil with seed harvested from nearby native prairie remnants.

**Table 30 – Northern Tallgrass Prairie National Wildlife Refuge Units
Morris WMD – 2012**

<u>County</u>	<u>Fee Tracts</u>	<u>Fee Acres</u>	<u>Easement Tracts</u>	<u>Easement Acres</u>	<u>Total Tracts</u>	<u>Total Acres</u>
Big Stone	0	0	4	290.79	4	290.79
Chippewa	0	0	0	-0-	0	-0-
Lac qui Parle	0	0	1	27.49	1	27.49
Pope	0	0	2	164.05	2	164.05
Stevens	1	21	0	-0-	1	21.00
Swift	0	0	2	110.00	2	110.00
Traverse	0	0	2	45.70	2	45.70
Yellow Med.	<u>0</u>	<u>0</u>	<u>12</u>	<u>755.56</u>	<u>12</u>	<u>755.56</u>
Total	1	21	23	1,393.59	24	1,414.59

PUBLIC EDUCATION AND RECREATION

7a. Provide Visitor Services

Based on a 2003 University of Minnesota report (*Estimating Visitor Use Levels at Waterfowl Production Areas in Minnesota*), Morris WMD receives approximately 69,000 visitors during the year. Visitors benefit from the Service's commitment to conserving, protecting and enhancing fish, wildlife and plants and their habitats at each unit in the district. Most district visits are associated with public recreational opportunities such as trapping, hunting, fishing, wildlife observation, interpretation and environmental education. Hunting, fishing and trapping in accordance with state regulations are permitted on WPAs. Open year around, WPAs provide solitary places to take a quiet stroll, places for recreation (hunting, etc.), and outdoor classrooms to observe and learn about the natural world. Due to their scattered distribution throughout the landscape, countless other passive visitors drive by and enjoy WPAs and the wildlife that they support.

The economic importance of WPAs was shown in results from *Impacts and Benefits of Waterfowl Production Areas* by Drew Laughland, Senior Economist with Eastern Research Group (2005). The local analysis for the Morris district shows that non-local visitors (people driving more than 60 miles) to our WPAs directly spend over seven million dollars each year and are responsible for the direct creation of 75 jobs. This only includes direct spending by non-local WPA visitors. There are additional benefits created by local WPA visitors, including the money rippling through the economy.

The largest impact provided to local communities comes from hunters who are the most frequent users of the land. Waterfowl production areas are used by an estimated 32,000 waterfowl hunters, 700 other migratory bird hunters, 18,250 upland game hunters, 5,500 big game hunters, 980 small game hunters, 3,500 anglers, and 40 trappers. An estimated 8,900 visitors enjoyed wildlife observation and hiking.

The headquarters, located at Edwards WPA (Stevens County), offers a visitor center where general information about the Morris WMD, activities, and programs are available. A short paved trail loops through native prairie and is accessible to people with physical disabilities. A scenic, 2.5 mile gravel wildlife tour route is open for vehicle traffic during spring, summer, and early fall, and is always open for foot or bicycle travel. The route demonstrates wildlife management techniques and provides wildlife viewing opportunities. We also maintain a 1.2 mile long hiking trail that winds through native prairie, woodlands, and around a wetland. Morris WMD has another self-guided nature trail located at Froland WPA, Pope County.

Prairie Pioneer Days

On July 14, during Morris' annual Prairie Pioneer Days, staff members and Friends did their part to celebrate our prairie heritage. This year the Friends group hired Skilly and Duff, an Irish folk music ensemble, which helped draw attendance of 200 people to the event. Visitors not only enjoyed music, but also horse-drawn wagon rides through the prairie, a display of prairie plants, and free bird house construction for kids. This year also saw the addition of live raptors from the Audubon Center of the North Woods. The owls, kestrel, and red tailed hawk were a huge hit, and we plan to have these animal ambassadors back next year.



Let me tell you a secret. 2012-43 SJB 7/14/12

Prairie Puppet Pageant

With this project the Morris WMD teamed with a local non-profit artist collective (Prairie Renaissance Cultural Alliance) for art based environmental education. Together we applied for and received an \$11,770 grant from the Lake Region Arts Council. Locals, under the guidance of the Minnesota State Arts Board roster artists Esther Ouray and Julie Kastigar, created masks and puppets representing different plants and animals of the prairie. The puppets and masks were then used to tell the story of the prairie in an outdoor pageant near the District's visitor center.



Return of the Bison. 2012-44 SJB 6/23/2012

Hunting

Hunting continues to be a major part of many people's lives, especially in rural areas. The primary game species in our area are turkey, pheasant, waterfowl, and deer. Other migratory bird and small game hunting opportunities in Morris WMD include rabbit, squirrel, woodcock, rail, snipe, mourning dove, raccoon, coyote, and fox. Even if hunters don't fill their limit, they are out enjoying the great outdoors. The diversity of WPAs in Morris WMD offers many options for the hunter.

Turkey

Preliminary harvest numbers show the 2012 spring turkey harvest of 11,324 is the third-highest ever, according to the Minnesota DNR. The birds have rebounded from the hard winters in recent years. Wild turkeys were extirpated from Minnesota around 1900. Re-introduction efforts have been incredibly successful and wild turkeys thrive throughout our district today.

Pheasant

According to the Minnesota DNR roadside surveys, population indices for ring-necked pheasants increased from 2011. The winter of 2011-12 was fairly mild, and was followed by a warm spring. Weather conditions during the nesting season were also very good. Overall, hunting success in our area was fair but improved from 2011. The opener was fair because crops were already harvested. However, the dry, warm conditions throughout the season were hard for dogs.

Waterfowl

The 2012 waterfowl season was a success. Locally, hunters continue to enjoy the opportunities provided by the split season. In addition, our dry fall conditions provided good shallow wetland habitat for dabbling ducks. Most of Morris WMD falls in the central zone, while southern Lac qui Parle and Yellow Medicine Counties are included in south zone. In each area, the first season ran September 22-30; the second season was October 6-November 25 in the central zone and October 13-December 2 in the south zone.

The early goose season ran September 1-21, with a bag limit of 5 birds. Locally, goose hunting was slow at the beginning of the regular season (September 22-30 and October 6-December 21 central or October 13 – December 28 south), but numbers increased later in the season. The early crop harvest allowed for many field hunting opportunities for Canada geese.

Once again this year Morris WMD teamed with Ducks Unlimited to host a mentored youth waterfowl hunt. The mentored youth hunt is a way to introduce youth into the sport and tradition of hunting in a way that is safe, and ensures that conservation values are passed on to the next generation of sports men and women. We hosted five kids this year (two more were registered but had to cancel due to a family emergency). There were a couple of kids with limits and a bonus goose and the others faired just as well with at least three ducks. Thanks to everyone who put in the time to help.



DNR Conservation Officers Tony Anderson and Mitch Lawler assisted Officer Briggs with the law enforcement presentation to youth hunt participants.

2012-45 SJB 9/7/2012



A successful hunt.... 2012-46 SJB 9/8/2012

Deer

The 2012 firearm deer season in western Minnesota ran from November 3-11. Minnesota hunters harvested 184,649 deer during the 2012 season, down 4% from 2011, according to the Minnesota DNR. The statewide archery harvest was up 5%, muzzleloader increased 1%, and firearm harvest was down 5%. Locally, deer harvest declined for all three license types compared to 2011: archery 23%, muzzleloader 7%, and firearm 15%.

Trapping

There was quite a bit of trapping pressure because of good fur prices. However, many wetlands were dry or hard to access because of mud flats.

7b. Outreach

The Morris WMD web page is: <http://midwest.fws.gov/morris>

The WPA mapper, a website featuring maps and aerial photography of WPAs, is also an important tool for the public to locate and learn about their waterfowl production areas: http://gis.fws.gov/wpa_mapper

We continue to produce two to three posts per week on our facebook page, and now have 130 “likes”.

In an effort to increase public awareness and education outreach, the Morris staff represented the Service at the following events throughout the year:

- Presentation for Jane Addams (bilingual community group), April 12
- Jane Addams field trip, April 12
- Bonanza Educational Center, May 10
- Youth Fishing Day with Big Stone NWR, May 19
- Prairie Pageant, June 23
- Prairie Pioneer Days, June 14
- Radio station interview, June 11
- Morris Community Education Kids, June 16
- Chinese students off site slide show, June 18
- Chinese students field trip, June 19
- 4-H group, August 12
- SWELL
- Swift County Water Festival
- Morris Job Fair
- Resource Connection Expo

7c. Friends of the Morris WMD

The Friends of the Morris Wetland Management District, a non-profit advocacy and support group, was established in 2001. Their mission is to help the community develop a deeper appreciation and understanding of the Morris WMD. The Friends continue to be amazingly productive and helpful despite their modest membership.

The Friends provide active support for district management, particularly activities relating to community relations. Besides numerous other small events and activities, the Friends helped organize, staff, and fund our participation in Prairie Pioneer Days (Section 7a), a local community festival we use to promote awareness of grasslands and wetlands.

The Friends worked with Partners Biologist Salvevold to acquire another Conservation Partnership Legacy Grant for habitat improvements on several easements (Section 5c).

PLANNING AND ADMINISTRATION

8b. General Administration



12 11 9 2 6 5 13
8 1 10 3
7 4

1. Bruce Freske, Wetland Manager, GS-13, PFT.
2. Mead Klavetter, Wildlife Refuge Specialist, GS-12, PFT.
3. Sara Vacek, Wildlife Biologist, GS-11, PFT.
4. J. B. Bright, Wildlife Refuge Specialist, GS-11, PFT.
5. Seth Grimm, Fire Management Officer, GS-11, PFT.
6. Raymond Briggs, Law Enforcement Officer, GS-11, PFT.
7. Styron Bell, Wildlife Refuge Specialist, GS-9, PFT.
8. Karen Stettner, Administrative Officer, GS-9, PFT.
9. Phil Millette, Supervisory Range Technician, GS-7, PFT.
10. Donna Oglesby, Biological Technician, GS-7, PFT.
11. Joshua Pittman, Engineering Equipment Operator, WG-9, PFT.
12. Jacob Saverynski, Maintenance Worker, WG-7, PFT.
13. Steven Huber, Bio Science Technician, GS-0404-5, Term.



Michael

Orion

Andrew

Ryan

YCC Crew

Ryan Snyder	Bio. Science Tech. (Leader)	5/06/2012 – 8/25/2012
Orion Doll	YCC Crew Member	6/03/2012 – 7/28/2012
Andrew Goulet	YCC Crew Member	6/03/2012 – 7/28/2012
Michael Rausch	YCC Crew Member	6/03/2012 – 7/28/2012

Table 31 – Staff Size – Morris WMD – 2008- 2012

	<u>Full Time</u>	<u>Permanent</u> <u>Full Time</u> <u>Seasonal</u>	<u>Part Time</u>	<u>Temporary</u> <u>GS & WG</u>	<u>Other</u> <u>Programs*</u>
FY 12	14	0	0	8	3
FY 11	14	1	0	8**	5
FY 10	13	1	0	10**	4
FY 09	13	1	0	8**	0
FY 08	13	1	0	9**	0

*Includes YCC

**Includes SCEP

Volunteers

Our volunteers continue to be an asset to the Morris WMD. Most of our regular volunteers are members of our Friends group or students from the University of Minnesota, Morris. In 2012, 20 volunteers contributed 681 hours of work. The bulk of our volunteer hours came from activities such as seed collecting and cleaning, visitor services and outreach, and building nest boxes.

In January, the staff hosted a dinner and short program to thank our volunteers and Friends Group for their help the previous year. The Friends and Volunteer Recognition Dinner has become an annual event. Each volunteer was presented with a certificate of appreciation and a gift (determined by their cumulative volunteer hours). In addition, we recognized Kalaa Ross as the 2012 Volunteer of the Year. Kalaa has contributed 74 hours over the past two years in projects ranging from upland management to nest structure construction and placement.



Kalaa Ross is awarded Volunteer of the Year for 2012.
2012-47 DMO 1/17/13

Safety

The station had one reportable accident on May 17, 2012. Wildlife Refuge Specialist Styron Bell backed into a privately owned vehicle with a government vehicle while on duty.

Funding

Table 32 – Morris WMD Funding Levels – 2008–2012

(Dollars in Thousands)

<u>FY</u>	<u>1260</u>	<u>Fire</u> <u>9100/9200</u>	<u>Special</u>	<u>1120</u>	<u>Total</u> <u>Budget</u>
2012	1,312.7	245.3		149.1	1,707.1
2011	1,140.8	255.3	**101	138.1	1,534.2
2010	1,273.9	416.7	-0-	181.5	1,872.1
2009	1,032.1	271.2	*1,164.9	132.2	1,435.5
2008	1,155.6	269.0	80.0	127.6	1,632.2

*Construction - Retrofit Office Building

**Repair/resurface parking lots and driveway

The budget amounts for 1260 and 9100/9200 are somewhat deceiving because they often include “project specific” funds.

- The FY 2012 1260 budget included \$44,596 to purchase two pickups.
- The FY 2011 1260 budget included \$135,972 for a Permanent Change of Station move.
- The FY 2011, 9263 budget included \$21,363 to purchase a pickup.
- The FY 2010, 9131 budget included \$140,555 to purchase a Marsh Master.

General Maintenance

Facilities

Annual inspection of boundary posting continued in 2012. Most of this work was done by staff opportunistically and with help from the Friends group. This year sign work was accomplished in Chippewa, Pope and Stevens Counties. The staff was able to check the perimeter of nine units, replacing 21 posts and 39 signs.

Several repair and maintenance projects associated with ditches, dikes, access and water control structures were completed by Engineering Equipment Operator Ahrndt, Maintenance Mechanic Pittman, and Maintenance Worker Saverynski:

- tile break on BS-333G (Helgeson) and BS-443G (Haukos) easements
- dike repair on P-315X (Punt), and P-107X (Danielson) easements
- ditch plugs on Stammer, Bredberg (Pope); Lawrence (Traverse) WPAs
- access improvements on Johnson (Big Stone), Hagstrom (Pope), Miller (Stevens) WPAs

Several projects were completed around the headquarters. Most notably:

- the aging entrance sign was replaced
- the phone system was damaged by a lightning storm so it was upgraded
- the rubber mulch landscaping around the headquarters building was removed and replaced with cedar



The YCC crew replaced the rubber mulch with cedar wood chips.
2012-48 DMO



Manager Freske enrolled in Advanced Leadership Development Program. As part of the program, he swapped jobs with Beth Oms from Albuquerque, New Mexico. While at Morris, Beth (blue shirt) was treated to a “Minnesota Pot Luck”, compliments of the staff. 2012-49 DMO 11/1/2012

ITEMS OF INTEREST



After 32+ years of service, Rodney Ahrndt retired. Manager Bruce Freske presented Rodney with this plaque. 2012-50 5/31/2012 DMO



Rodney joins fellow Morris WMD retirees: Bernie Angus, Gaylord Bober, Darrell Haugen, Al Radtke, Victor Gades, Larry Lewis and John Hutchinson. 2012-51 5/31/2012 DMO

APPENDIX A

Table 33 – Rothi (west) Inter-Seed Mix – 2012

Lot #	Species	PLS #/Acre Seeded	Seeds/Sq. Ft.
B14B2	Prairie Species*	1.70	16.50
AHLE11	Sunflower	0.39	1.80
AHLE11	Prairie Species*	0.62	3.10
MORRW1202	Feder Prairie Seed Forb Mix*	0.45	4.40
SSHH11	Big bluestem	0.14	0.43
SSHH11	Switchgrass	0.05	0.52
SSHH11	Prairie Species*	0.31	1.58
Totals		3.66	27.80

*Prairie species present in one or more lot include: wild bergamot, false sunflower, golden alexander, prairie clover (sp.), leadplant, vervain (sp.), prairie cinquefoil, goldenrods (sp.), asters (sp.), elymus (sp.), Indiangrass, switchgrass, little bluestem, muhlenbergia (sp.), Kalms brome, rough dropseed, liatris (sp.), dwarf indigo, sunflower (sp.), prairie dropseed, sideoats grama, prairie coreopsis, anise hyssop, mountain mint, black-eyed Susan, purple prairie coneflower, Canada milkvetch, cream wild indigo, wildrose, rattlesnake master, yarrow, whorled milkweed, smooth blue aster, New England aster, prairie onion, showy tick trefoil, thimbleweed, snakeroot, boneset, large-flowered beardstongue, yellow coneflower, purple meadow rue, common milkweed, culvers root, stiff goldenrod, Joe pye weed, ironweed, heartleaf alexander, milkweed (sp.), fowl bluegrass, wood betony, gentian, bedstraw, cordgrass, sand dropseed, sneezeweed, prairie spiderwort, cup plant.

Table 34 – Long Lake Inter-Seed Mix – 2012

Lot#	Species	PLS #/ Ac Seeded	Seeds/Sq. Ft.
B14-NP11	Prairie Species*	0.75	3.77
B14-NP11	Big bluestem	0.51	1.97
B14-NP11	Indiangrass	1.58	6.32
B14-NP11	Sunflower (sp)	0.58	2.73
B14-Max-NP10	Maximilian sunflower	0.42	1.97
B14-Max-NP10	Prairie Species*	0.08	0.43
L8LE11	Stiff goldenrod	0.11	1.77
L8LE11	Switchgrass	0.92	8.26
L8LE11	Prairie Species*	2.11	10.55
Totals		7.06	37.77

*Prairie species present in one or more lot include: leadplant, little bluestem, rough dropseed, sideoats grama, prairie dropseed, prairie cinquefoil, prairie clover (sp.), bugleweed, rattlesnake root, muhlenbergia (sp.), wild bergamot, cordgrass, elymus (sp.), Canada bluejoint, primrose, sedge (sp.), liatris (sp.), prairie onion, purple coneflower, stiff goldenrod, asters (sp.), goldenrods (sp.), yellow coneflower, gentian (sp.), golden alexander, black-eyed Susan, senecia (sp.), vervain (sp.), large-flowered beardstongue, germander, Canada tickclover, false sunflower, Kalms brome, mountain mint, bidens.

Table 35 – Overby Inter-Seed Mix – 2012

Lot#	Species	PLS #/Acre Seeded**	Seeds/Sq. Ft.
FM-9-25-01	Feder Forb Mix (See Species List Below)	0.36	2.18
GM-9-25-03	Feder Grass Mix (See Species List Below)	0.38	4.02
SW21-NP09	Rough Dropseed	0.96	10.5
SW21-NP09	Prairie Species*	0.79	3.9
B14-Max-NP10	Maximilian sunflower	0.26	1.24
B14-Max-NP10	Prairie Species*	0.05	.27
BS-08	Big bluestem	0.69	2.6
T10-07	Canada wildrye	0.25	.48
SLWG-29	Bearded slender wheatgrass	0.45	0.9
Totals		4.19	26.09

*Prairie species present in one or more lot include: Rough dropseed, big bluestem, sunflower sp., indiagrass, little bluestem, leadplant, liatris sp., stiff goldenrod, vervain sp., switchgrass, sideoats grama, wild bergamot, milkweed sp., goldenrods sp., asters sp., gentian, bearded slender wheatgrass, purple coneflower, large flowered penstemon, Kalm's brome, bedstraw, onion, black-eyed Susan, long-headed yellow coneflower, cordgrass, tall cinquefoil, sand dropseed, prairie clover sp., golden Alexander sp., prairie dropseed, snakeroot, yarrow, muhlenbergia sp., fowl bluegrass

**When broadcast inter-seeded at a rate of 10.8 bulk pounds per acre.

Lot #: GM-9-25-03	LB/Acre		Seeded %
Grasses	Seeded	Seeds/SqFt	of Mix
Little bluestem	0.095	.57	14.18%
Sideoats grama	0.125	.55	13.68%
Prairie dropseed	0.041	.24	5.97%
Rough dropseed	0.038	.41	10.20%
Prairie brome	0.038	.11	2.74%
Bluejoint grass	0.0076	.69	17.16%
Prairie cordgrass	0.0152	.05	1.24%
June Grass	0.019	1.40	34.83%
	0.447	4.02	100.00%
Lot #: FM-9-25-01	Oz/Acre		Seeded %
Forbs	Seeded	Seeds/SqFt	of Mix
Wild Bergamot	.1382	.222	10.18%
Oxeye Sunflower	.1152	.016	0.73%
Golden Alexander	.0921	.023	1.05%
Stiff Goldenrod	.0921	.086	3.94%

Alum Root	.0115	.185	8.48%
Bottle Gentian	.0115	.074	3.33%
Showy Tick Trefoil	.0576	.007	0.32%
Hoary Vervain	.0921	.058	2.66%
Maximilian Sunflower	.0345	.010	0.46%
New England Aster	.0691	.105	4.81%
Canada Milkvetch	.0921	.035	1.60%
Prairie Cinquefoil	.0645	.341	15.64%
Northern Bedstraw	.0115	.018	0.82%
Heartleaf Golden Alexander	.1382	.038	1.74%
Long Head coneflower	.1382	.132	6.05%
Prairie Onion	.0230	.005	0.22%
Cream Wild Indigo	.0230	.0007	0.03%
Mountain Mint	.0230	.116	5.32%
Prairie Coreopsis	.0691	.015	0.68%
Culvers Root	.0069	.127	5.82%
Cup Plant	.0691	.002	0.09%
Narrow Purple Coneflower	.0460	.007	0.32%
Lead Plant	.0460	.018	0.82%
Purple Prairie Clover	.1589	.065	2.98%
Prairie Spiderwort	.0460	.010	0.46%
Dotted Blazing Star	.0460	.007	0.39%
Purple Meadow rue	.0230	.005	0.32%
Gray Goldenrod	.0069	.047	2.15%
Harebell	.0023	.047	2.15%
Prairie Larkspur	.0207	.028	1.28%
Prairie Turnip	.0345	.001	0.05%
Yellow Avens	.0069	.001	0.05%
Prairie Phlox	.0230	.010	0.46%
Whorled Milkweed	.0230	.005	0.22%
Wild Rose	.0345	.002	0.09%
Button Blazing Star	.0460	.017	0.77%
Large Flowered Penstemon	.0921	.029	1.33%
White Prairie Clover	.1589	.069	3.16%
Showy Goldenrod	.0576	.125	5.73%
Smooth Blue aster	.0576	.072	3.30%
	2.2150	2.180	100.00%

Table 36 – Seidl Wet Inter-Seed Mix – 2012

Lot#	Species	Bulk #/Ac Seeded	Total Bulk #
Prairie Moon Nursery	White Top	0.2	1.25
Prairie Moon Nursery	Fowl Manna Grass	0.33	2.0
Prairie Moon Nursery	Reed Manna Grass	0.8	4.8
L16-NP11	Canada bluejoint grass	1.5	9.5
Totals		2.83	17.55