

HIGHLIGHTS

Land Acquisition Sets New Records for the Millennium

Morris WMD fee title acquisition reached a new high for the millennium of 719 acres which is the largest one year increase in fee title lands in over 15 years of acquisition. Three new WPAs were created: Beyer WPA in Lac qui Parle County, Finden WPA in Pope County, and Niemackl Slough WPA in Stevens County (Section 6g).

The Northern Tallgrass Prairie (NTGP) NWR, which was established in 2000, increased in size by 25 percent in 2014 with the purchase of four NTGP easement tracts totaling 448.08 acres.

Including both fee title and easement tracts, a total of 1,000.52 acres were protected, which is the greatest amount of land protected by a single station in all of Region 3 in 2014.

The main reason for the dramatic increase in land acquisition is due to partnerships with Pheasants Forever and The Nature Conservancy. Both organizations have been successful in acquiring Lessard Samms Outdoor Heritage Council (LSOHC) grants which they use to purchase land and easements in western and southern Minnesota and donate to the Service.

Congress Passes, President Signs Duck Stamp Price Increase

Congress and President Obama enacted the Federal Duck Stamp Act of 2014. The legislation amends the Migratory Bird Hunting and Conservation Stamp Act to increase the price of Duck Stamps from \$15 to \$25. It is the first Duck Stamp price increase since 1991. The House passed [H.R. 5069](#) on a November 17 voice vote; the Senate passed it by unanimous consent without amendment on December 2. The President signed the bill on December 18. Ninety-eight cents out of every dollar generated by the sale of Duck Stamps goes directly to purchase or lease wetland habitat for protection in the Refuge System.

Climatic Conditions

Morris, Minnesota

January 2014: Polar blasts with gusty winds

For January the mean temperature was 4.4°F, which is 4.2°F below normal. The high temperature for the month was 40°F on the 12th. The low temperature was -25°F on 6th. From January 4 to January 7 arctic air combined with wind chills prompted an order by the governor to close all public schools due to the extreme cold. Wind chills were reported as follows: Glenwood -56°F, Morris -52°F, Benson -51°F, Granite Falls and Montevideo -49°F. During this month we had 23 days of a minimum temperature of 0°F or lower. We had 5 days in which we never reached a high of 0°F. Precipitation for the month totaled 0.69 inches, which is average, and snow totaled 10.4 inches, 2.3 inches above normal.

February 2014: Surges of arctic air

The mean temperature was 7.4°F which is 5.8° below normal. The high temperature was 38°F on the 18th and the low temperature was -18°F on the 10th. We had 23 days with a minimum of 0°F or lower (the same as January). We had 28 consecutive days (January 20 to February 16) where the minimum temperature was 0°F or lower. The 2013-2014 winter had 68 days of 0°F or lower, the most below 0°F days on record. Precipitation for the month was 0.24 inches, 0.44 inches below normal. Snowfall was 3.1 inches, 5.3 inches below normal. For the winter we had 24.2 inches of snow, 4.1 inches below average. We were still listed in a “Moderate Drought” by the US Drought Monitor. This month was windier than normal.



“Snirt” the result of gusty winds this winter. 2014-1 DMO 3/7/2014

March 2014: Drought persists

March saw a mean temperature of 21.9°F which is 5.0°F below normal. The high for the month occurred on the 14th with 59°F. The low temperature occurred on the 2nd with -16°F. The monthly mean was below normal the last 6 months. This season there were 72 days of 0° or below temperatures, 4th most since 1920, while the winter of 1955-1956 had the most with 75 days. March precipitation totaled 0.27 inches, which is 0.90 below average. Snowfall was 3.6 inches; normal is 8.5 inches. Total snowfall this winter was 27.8 inches, about 9 inches below normal. On the last day of March a tornado followed by a blizzard occurred at St. Leo, in Yellow Medicine County. The confirmed EF-0 tornado was the first of the season for Minnesota.

April 2014: Temperatures well below normal

The mean temperature in April was 48.8°F, which is 5.2° below average. The high temperature was 81°F on the 9th and the low temperature was 10°F on the 15th. This also broke the record low of 16°F set in 1928. Precipitation was 3.62 inches. Snowfall for the month was 6.2 inches; average is 3.3 inches. The last 5 days of April received two-thirds of the month's precipitation.

May 2014: Warm to near seasonally normal after a cold start

May's mean temperature was 54.8°F, which is 1.5°F below normal. Monthly mean temperatures for the last 8 months were below normal. The high temperature was 91° on the 31st. The low temperature was 28°F on the 4th and 16th. Precipitation was 2.37 inches which is exactly average. This month was cool and wet, resulting in a late planting season for farmers.

June 2014: One of the wettest on record

The mean temperature for the month was 66.5°F, which is 0.4° above normal. Average mean temperature was very close to the historical average; however, cloudiness during the overnights led to elevated overnight temperature readings while lower daytime maximum temperatures occurred this month. The high temperature was 84°F on the 20th and 21st. The low temperature was 46°F on the 8th. Precipitation was 8.20 inches, 4.22 inches above average. This was the 5th wettest June on record.



These two drake mallards seem to enjoy the ample rainfall of June.
2014-2 DMO 6/2/2014

July 2014: Dry and cooler than normal

A mean of 67.6°F, which is 3.4°F below normal, was all that was reached during the month of July. The high was 89°F on the 21st. A low temperature of 46°F was recorded on the 15th and 16th. Precipitation was 1.32 inches, which is 2.30 inches below normal.

August 2014: Cool spell continues, no heat waves

August mean temperature was 67.9°F, which is 0.3°F below normal. Maximum temperatures were below average while the minimum temperatures were above average this month. The high for the month was 88°F on the 3rd and the low was 46°F on the 26th. The month had two days with a daily low in the 40s. On August 21st rainfall totaling 2.64 inches broke the previous record of 2.07 inches in 1964. Precipitation was 5.75 inches, 2.74 inches above normal. It was a wet month with no hail.

September 2014: Broken record

The mean temperature for September was 60.2°F, which is 1.2°F above average. The high was 82°F on the 27th and 28th, and the low temperature was 33°F on the 13th. Precipitation was 0.95 inches, which is 1.90 below average. The 2014 growing season (May through September) brought only one day with above 90°F (91°F on May 30).

October 2014: Drier than normal

The mean temperature was 47.0°F, 0.2°F above average. The high was 76°F on the 24th; the low temperature was 15°F on the 31st. Precipitation was 0.52 inches,

which is 1.99 inches below average. The US Drought Monitor put us back into the abnormally dry category. The month started cold with average temperatures below normal, the second and third weeks saw the temperature rebound to average and the last week fell back to below normal again.



This was the second lunar eclipse of 2014. It was called the Blood Moon and appeared 53% larger than the April 14 eclipse. 2014-3 DMO 10/8/2014

November 2014: Second windiest month of the year

November's mean temperature was 20.6°F, 9.2°F below normal. This was the 5th lowest on record (15.8°F in 1896 is the lowest on record). The high was 56°F on the 3rd and the low was -11°F on the 27th and 28th. Precipitation was 1.31 inches, 0.23 inches above average. Snowfall totaled 9.2 inches, 4.2 above average. Early on November 10th, a storm produced instant winter throughout the district with snowfall totals ranging between 4 and 15 inches. For the month, Benson, Madison and Dawson had snowfall of 17 inches and Milan had 19 inches.

December 2014: Mild and cloudy

The mean temperature for December was 20.2°F, 4.6°F above average. The high temperature was 45°F on the 14th and the low temperature was -9°F on the 1st. Persistent cloud cover was the norm. During the 13th to the 15th a warm spell was accompanied by extraordinarily moist air with thick fog, which is very unusual weather for winter. December had only five days with a low temperature that reached below 0°F. There were three days with a record high minimum temperature this month. Precipitation was 0.30 inches, which is 0.42 inches below average. We received 1.8 inches of snow, which is 5.8 inches below average. Most of the snow was gone by the middle of the month and we had no major storms.

Annual Summary:

Globally, average temperatures on both land and ocean were the highest since 1880. For the United States average temperatures were above normal for the 18th consecutive year. The midwestern states reported the coldest in years. Minnesota was the coldest since 1996. Morris was cooler than average.

During the winter 2013-2014, there were six days of ground blizzard conditions. There was little snowfall associated with them, but the winds were strong enough to produce the blizzard conditions. We have had only one other winter season with more (1996-1997). Winter 2013-2014 will be remembered for the consistency of the cold and the extremely cold wind chills. Persistent cool and cloudy spring weather produced late ice out dates on Minnesota lakes; in fact it was the second year in a row with ice outs nine days later than normal.

Minnesota had below normal tornado activity for the third consecutive year, and the fewest since 1982. In 2014 the state had 23 confirmed tornado sightings; six occurred in our district. The first tornado of the season occurred on March 31 in Yellow Medicine County. While that tornado warning was being issued, a blizzard warning was in effect in the same area.

Morris Highlights:

- The annual mean temperature was 39.4°F, 2.7° cooler than the long term average (1886-2013) of 42.1°F. The year had eight months with below average mean temperatures while four months had above average mean temperatures.
- The daily high temperature for the year was 91°F on May 30th, while the daily low of the year was -25°F on January 6th.
- Precipitation for the year was 27.10 inches, 2.88 above normal (24.22 inches).
- For the calendar year we received 34.8 inches of snow, 4.8 inches below the average of 39.6 inches.
- Our first kill frost occurred on October 5th.
- A permanent snow cover formed on November 10th.

Table 1 – National Weather Service Precipitation Table – 2014

County	NWS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Big Stone	Artichoke Lake	0.4	0.1	0.6	2.7	3.7	7.3	1.1	5.6	1.0	0.5	1.4	0.6
Chippewa	Milan	0.6	0.2	1.4	3.7	5.0	9.1	1.0	4.4	1.4	1.0	1.4	0.5
Lac qui Parle	Montevideo	0.7	0.4	1.2	2.8	1.6	9.4	1.0	6.7	1.9	1.0	1.2	1.3
Pope	Glenwood	0.4	0.2	0.5	3.4	4.9	7.0	1.8	9.0	3.2	0.9	1.0	0.4
Stevens	Morris	0.7	0.2	0.3	3.6	3.0	8.2	1.8	5.8	1.4	0.5	1.1	0.3
Swift	Benson	0.8	0.4	1.3	4.7	4.6	10.5	1.3	6.0	1.8	1.6	0.9	0.7
Traverse	Wheaton	0.6	0.1	0.4	4.2	1.7	8.0	2.1	3.3	0.8	0.4	0.8	0.5
Yellow Medicine	Canby	0.4	0.2	2.1	3.2	2.8	8.6	1.3	6.2	0.9	0.4	1.1	0.9



Warm temperatures accompanied by extraordinarily moist air with thick fog created this frosty picture. 2014-4 DMO 11/14/2014

MONITORING AND STUDIES

1a. Surveys and Censuses

Christmas Bird Count

There are two Christmas Bird Count (CBC) circles in Morris WMD. In 2014, the Morris CBC was on December 17, and the Lac qui Parle CBC was held on December 22. The Morris observers recorded 30 species. They had an unusually low number of dark-eyed juncos (only 13, compared to 30 or more in a typical year). The Lac qui Parle observers recorded 35 species. They did not have any particularly unusual species, but did see one snowy owl and recorded an extremely low count of only 404 Canada geese.

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 May 5 with 9 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. For the first time in several years, there were significant declines in both the short-term (2013-2014) and 10-year (2004-2014) trends in the Central Management Region. The region also has a long-term (1968-2014) declining trend of -0.9% 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 three breeding bird survey routes 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 route on May 30 (44 bird species observed) and the Appleton route on June 25 (61 bird species observed). Biologist Galt conducted the Chokio North route on June 27 (47 bird species observed). The Chokio and Chokio North routes go through heavily agricultural areas with little cover for wildlife, while the Appleton route takes the observer past parts of the Chippewa and Pomme de Terre Rivers as well as several areas in set-aside programs. That additional habitat is obvious in the number and diversity of birds observed.

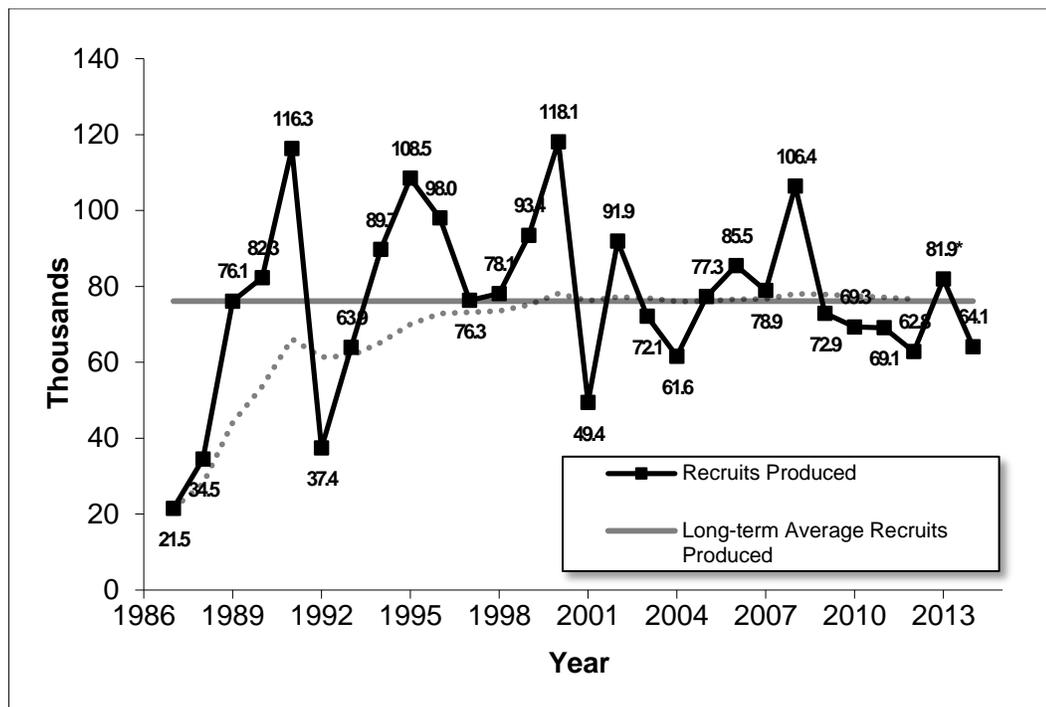
Four Square Mile Waterfowl Pair Count

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 (51,800) was well below the long-term average. Mallard and wood duck pair numbers were about average, while the estimated number of blue-winged teal pairs was down

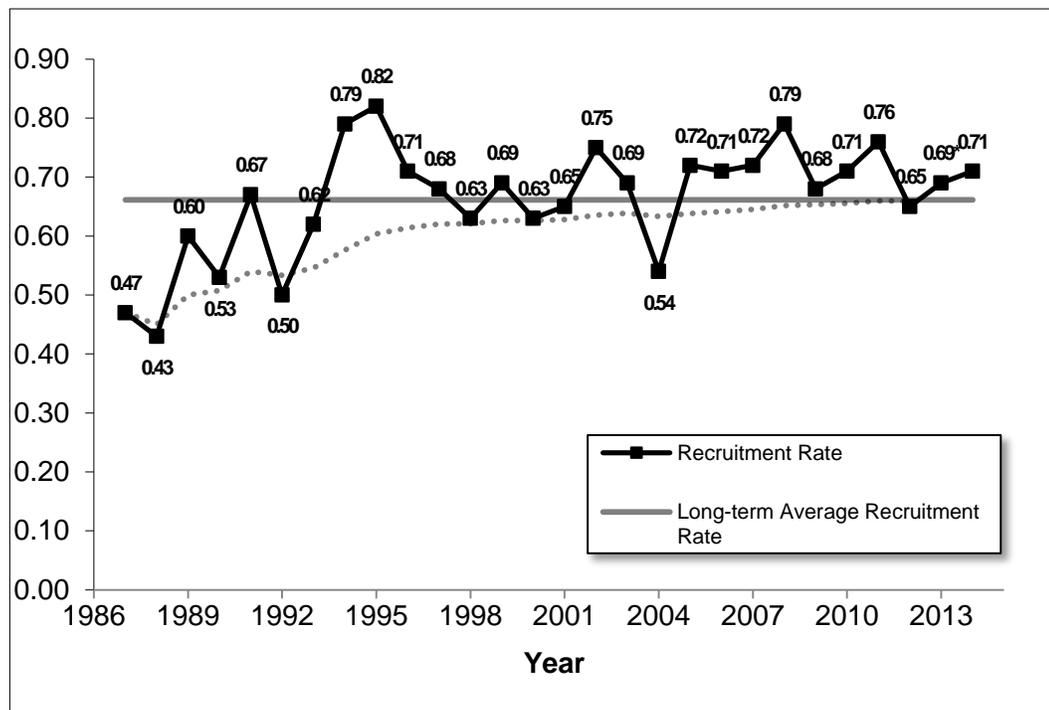
There were 174,600 recruits produced in the Minnesota portion of the Prairie Pothole Region in 2014. Morris WMD contributed 64,100 recruits to the fall flight (Figure 1). Morris WMD recruitment rate was at 0.71 this year (Figure 2), well above the 0.61 recruitment rate for the overall Minnesota Prairie 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 – 2014



Values are for five species - mallard, gadwall, blue-winged teal, northern shoveler, and northern pintail. Data from 2013 were not used in the cumulative or long-term averages due to unreliable results (see 2013 Narrative Report).

Figure 2 – Recruitment Rates for the Morris WMD, 1987 – 2014



Values are for five species - mallard, gadwall, blue-winged teal, northern shoveler, and northern pintail. Data from 2013 were not used in the cumulative or long-term averages due to unreliable results (see 2013 Narrative Report).

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. Five of the nine designated routes in the district were run in 2014, four of which were conducted by Biological Technician Hamilton and Biologist Vacek. The most common species observed were Boreal Chorus Frog, American Toad, Canadian Toad, and Northern Leopard Frog (Table 2). Great Plains Toads were observed more often than usual this year. Also different this year, we heard Chorus Frogs later into the season than in the past. This may be due to a recent change in the Minnesota dates for the three survey periods, which now vary based on which of three zones a route is located in.

**Table 2 – Frog and Toad Species Observed During 2014 Surveys
Morris WMD – 2014**

Species	Route Name					Total Routes
	Chokio	Graceville	Odessa	Otre	Fairfield	
American Toad	x	x		x	x	4
Great Plains Toad	x		x		x	3
Canadian Toad		x	x	x	x	4
Cope's Gray Treefrog	x				x	2
Gray Treefrog	x					1
Green Frog	x	x				2
Northern Leopard Frog	x		x	x	x	4
Wood Frog		x	x		x	3
Spring Peeper	x					1
Boreal Chorus Frog	x	x	x	x	x	5
Total Species	8	5	5	4	7	

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.

We continued to focus this year on completing FQI assessments for the highest priority WPAs based on the prioritizing management tool. This year surveys were completed on Edwards, Hillman, Loen, and Helgeson WPAs. Additional prairies were surveyed out of convenience because we were at the site for other activities, including Moulton Lake and Avok Slough WPAs.



The purple coneflower and plains coreopsis were in full bloom during a prairie remnant inventory at Edwards WPA in July. 2014-5 SCV 7/29/2014

Wetland Verification and Condition Assessment

For the second year, we continued an effort to collect baseline data on wetlands in the district. The focus of this inventory is twofold – first, we want to determine how accurate our GIS layer is with regard to wetland types. Prairie wetlands are classified based on water permanence (i.e., how long during the growing season a wetland has standing water). The “type” of a wetland can change over time due to a number of factors, and we want to verify that our current GIS data are accurate. The second focus of the inventory is to assess the condition of the wetlands. Particularly, we want to know whether the temporary and seasonal wetlands, which are very important to breeding waterfowl, are in good condition to attract duck pairs to our WPAs. Often, wetlands on WPAs have been idled for many years and have become overtaken by dense cattail, reed canarygrass, and/or willow.

As with the native prairie inventory, we are focusing first on the highest priority WPAs as determined by the management prioritization tool. This year, we visited 68 wetlands on seven WPAs (Blue Mounds, Bolson Slough, Farrell, Nelson Lake, Overby, Rothi, and Svor). These preliminary baseline surveys will be complete after one more field season.

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. This survey is meant to improve our understanding of the distribution and relative abundance of

wild rice throughout the district. To date, we have documented wild rice beds in about 25 wetlands on 14 WPAs in Pope and Swift Counties. These numbers are likely to grow since there are some likely wetlands that have not been surveyed.

Starting in 2014, we established a three tier system to survey wild rice on our WPAs. A small subset of wetlands will be surveyed annually with a more intensive method of digital (GPS) mapping, stem counts to document density, and photopoint documentation. All other wetlands with rice will be surveyed on a two year rotation, using more general (visual) mapping and photopoints. A third tier of wetlands include those that have the potential to support rice but where it is not known – these wetlands will be surveyed every four years, unless rice is found in which case they would be moved to the two year rotation. Table 3 shows the wetlands that were surveyed in 2014 and whether rice was present or not.

Table 3 – Wetlands Surveyed for Wild Rice – Morris WMD – 2014

County	Wetland	Status		County	Wetland	Status
Pope	Benson Lake A	Absent		Pope	Kolstad Lake H	Absent
Pope	Benson Lake B	Absent		Pope	Kolstad Lake I	Absent
Pope	Benson Lake C	Absent		Pope	Kolstad Lake J	Absent
Pope	Benson Lake F	Absent		Pope	Kolstad Lake N	Absent
Pope	Benson Lake G	Absent		Pope	Kolstad Lake O	Absent
Pope	Berg A	Present		Pope	Kolstad Lake P	Absent
Pope	Berg B	Absent		Pope	Larson A	Present
Pope	Blue Mounds A	Present		Pope	Larson B	Present
Pope	Blue Mounds B	Present		Pope	Larson H	Absent
Pope	Blue Mounds D	Absent		Pope	Larson L	Absent
Pope	Blue Mounds E	Absent		Pope	Larson O	Absent
Pope	Gjerdingen A	Present		Pope	Rolling Forks A	Present
Pope	Gjerdingen B	Present		Pope	Rolling Forks B	Absent
Pope	Gjerdingen C	Present		Pope	Rolling Forks C	Absent
Pope	Glacial Lake A	Present		Swift	Brady A	Absent
Pope	Greiner A	Absent		Swift	Gilbertson A	Absent
Pope	Greiner B	Absent		Swift	Hanson (SW) A	Absent
Pope	Hanson (P) A	Absent		Swift	Loen A	Present
Pope	Hanson (P) B	Absent		Swift	Loen B	Absent
Pope	Kolstad Lake A	Present		Swift	Loen C	Absent
Pope	Kolstad Lake B	Present		Swift	Loen D	Absent
Pope	Kolstad Lake C	Present		Swift	Loen E	Absent
Pope	Kolstad Lake D	Present		Swift	Monson Lake A	Absent
Pope	Kolstad Lake E	Present		Swift	Quale A	Absent
Pope	Kolstad Lake F	Present		Swift	Rice A	Absent
Pope	Kolstad Lake G	Present		Swift	Roderick A	Absent



A robust stand of wild rice at Blue Mounds WPA, where rice was seeded in 2013 through a partnership with Pioneer Heritage Trust.

2014-6 SCV 9/17/2014

Wetland Resources Monitoring

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, hydrolic 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 data are collected monthly and basic biological parameters are assessed each year. 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 fourth 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 Metcalf 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. The

regional hydrology staff is currently working on a summary report for the data collected at these sites to date.

Small White Lady's Slipper Monitoring

The Minnesota DNR is conducting a state-wide inventory of the small white lady's slipper (*Cypripedium candidum*). This orchid is found in high quality, wet prairies. Although it is found in 17 states and 2 Canadian provinces, Minnesota has the largest number of populations by far. It is a Special Concern species under the Minnesota Endangered Species Law. The purpose of the state's inventory project is to update state records, provide an overall rarity assessment, develop a standardized monitoring protocol, and document long-term trends in select populations. Our staff assisted this year by surveying three WPAs in Pope and Swift Counties. Sites are surveyed by slowly walking through an area and counting clumps (clusters of stems growing together). We were able to document healthy populations at two of the three WPAs.



The YCC Crew was a big help in conducting a systematic survey for small white lady's slippers. This WPA in Swift County was one of only two in the state that was estimated to have over 1,000 lady's slipper clumps present.

2014-7 SCV 6/18/2014

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 (Diekmann and Fahl WPAs), 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.

The only field activities associated with this project in 2014 was an add-on research project led by Diane and Lora Perkins (South Dakota State University). Their study focuses on plant-soil feedback, the changes to soil biota that can occur when soil is occupied by certain plants. While some experts suspect that this feedback may influence prairie reconstructions, the effect of a planted prairie community on soil biota has not been studied in a field setting. Soil samples were collected from Diekmann in October.

It has been 10 growing seasons since the fields were first planted. The team feels strongly that it will be critical to survey the plots within the next year. All the study results reported so far were from what we consider the early establishment phase of a prairie reconstruction. Ten years and beyond is when the “true nature” of a planting will be known. Unfortunately, we have not been able to procure funding needed for a season of vegetation monitoring, but the group plans to continue coordinating our management actions and searching for funding support.

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. With the project in the operational phase, the team's main tasks are communicating and coordinating with participants.

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. Each year, our monitoring and management data, along with that collected at the other management units, is 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. We started collecting vegetation data on our NPAM units in 2009, and the adaptive framework started providing management recommendations in 2011. Just as it will take many years to recover our most invaded prairies, it will take many years to collect enough data to fully understand the best management decisions for a prairie based on its vegetation community and management history.

We do have six years of data on most of our units, however, allowing us to see some interesting trends. Freeland B (Figure 3) has received a defoliation treatment each year. Although we haven't always been able to accomplish the recommended action, the unit has never been rested when the model recommended defoliation. There appears to be an increase over time in the proportion of native dominated plots. Compare this to Hillman A (Figure 4). The model has recommended burning or grazing this unit each year, but for various reasons it has been rested instead. The overall proportion of native dominated plots has remained relatively stable, but the proportion of pristine plots has dropped dramatically in that time.

Figure 3 – Proportion of vegetation transects at Freeland B that are mostly invaded by non-native species, somewhat invaded, or pristine. The main invasive species at this wet prairie is reed canarygrass.

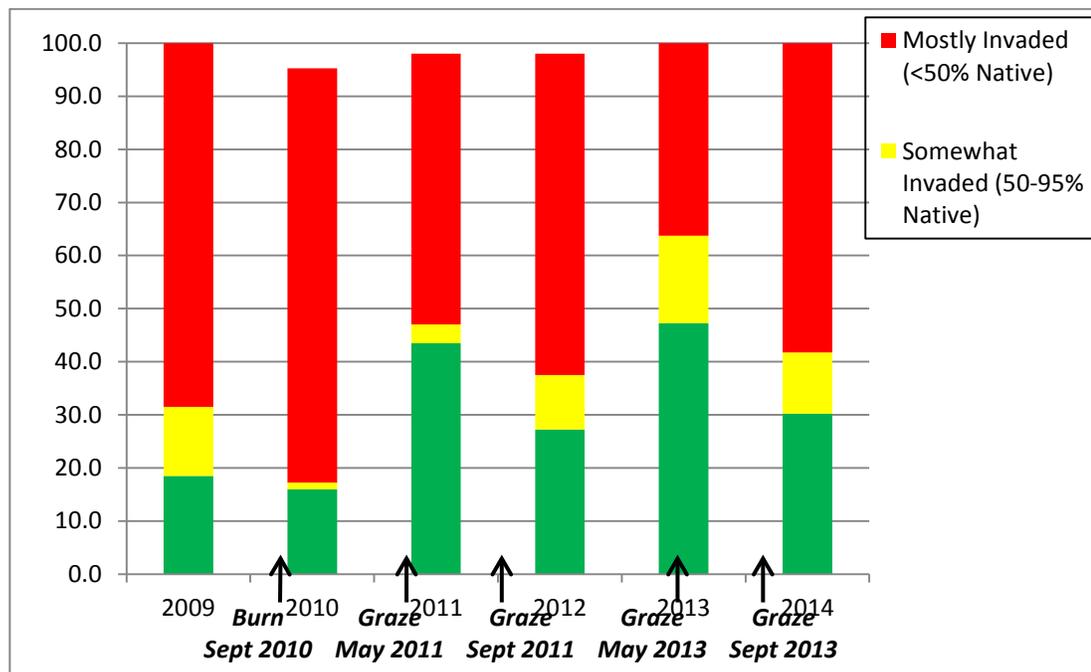
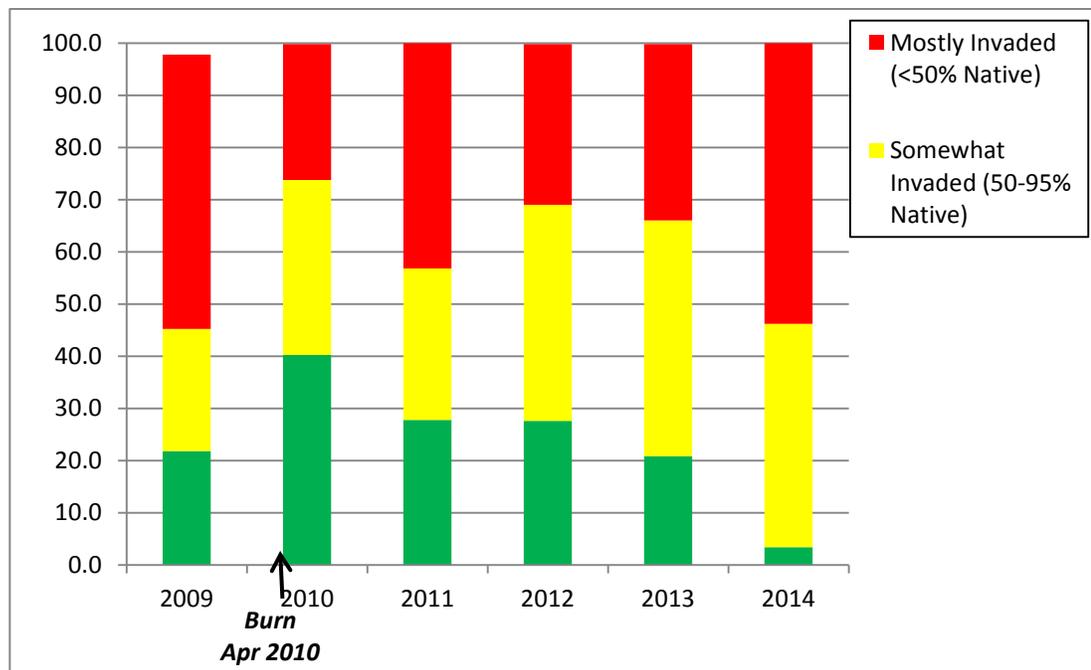


Figure 4 – Proportion of vegetation transects at Hillman A that are mostly invaded by non-native species, somewhat invaded, or pristine. Kentucky bluegrass is the dominant invasive at this management unit.



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 four of the nine wetlands that we have in the project. Wetlands 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 coming years 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 value to us but we are not closely involved in the surveys or study design.

- **Forb Interseeding** – *Nicole Davros* with the Minnesota DNR Farmland Research Group completed 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).
- **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, population genetics, and the trophic role of larval and adult salamanders. Her surveys are being done on Pepperton and Johnson WPAs.
- **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 Dioxide and Methane Emissions from Wetlands** – *Leah Domine* of the University of St. Thomas is leading a research project to look into how shallow lakes function in terms of regional carbon cycling. The wetland on Kill WPA is being used as a study site for the project.
- **Grassland Bird Inventories** – *Marissa Ahlering* with The Nature Conservancy is leading this two-year effort (supported with Region 3 Refuge and Migratory Birds funding) to inventory grassland birds on managed lands throughout northern Iowa and western Minnesota. The objective of this

research is to determine what role conservation lands play in grassland bird conservation. This was the second and final year of surveys.

- **Prairie Butterfly Survey** – *Robert Dana* with the Minnesota DNR is conducting a survey of prairie-dependent butterflies at the Prairie WPA and WMA complex. The surveys will be done annually 2014-16. In 2014 the only target species found was regal fritillary.

1c. General Wildlife Observations

This year brought a relatively normal phenological spring, particularly compared to the very early and very late springs of 2012 and 2013, respectively. The first Canada goose pairs established territories in mid-March (a pair was observed on the wetland behind the office on March 13). The first chorus frogs were heard calling on April 9. A monarch was first seen on May 29 in Pope County. The first goose brood was observed on May 12 at Horse Lake WPA, and the first mallard brood was seen at Edwards WPA on June 6.

The DNR pheasant index, based on their August brood surveys, was up 5% from 2013, but still 58% below the 10-year average and 71% below the long-term average. Winter conditions were generally poor for overwintering wildlife like pheasants. Untimely rains during the peak hatch period probably also impacted fall pheasant numbers. Weather is influential, but by far the biggest impact on Minnesota's pheasant population has been the loss of CRP in the state.

The MN DNR asks the public to submit observations of several small mammals that were formerly common in the prairie region of Minnesota. We are pleased to know that we have Franklin's ground squirrels at Edwards WPA (even if they do eat the bait seed from our dove traps during banding season!). The DNR's jackrabbit index (also counted during the August brood surveys) continues to be at an all-time low; it was a treat to see a jackrabbit bounding across a field near Stammer WPA in May.

The snowy owl irruption reported in the 2013 narrative continued into early spring. One staff member observed a male snowy owl in Swift County on April 22 – after the first pasque flowers were seen blooming! A handful of owls were again observed in the first months of the 2014-15 winter season.

HABITAT MANAGEMENT

2a. Wetland Restorations (On/Off refuge)

Private Lands

Two small wetlands were restored on private lands in 2014. They were located on Herbert Hamann's habitat easement in Lac qui Parle County. These restorations included both a ditch fill and sediment removal. They were also included in the ongoing Sediment Removal Adaptive Management study (see Section 1b).

There were several other wetland restoration projects that were planned for 2014 but were delayed for a variety of reasons. One project, which included three wetland restorations on a property owned by Pheasants Forever (now Niemackl Slough WPA), was delayed as a result of permitting issues with the Bois de Sioux Watershed District. Those issues have been resolved and the project will move forward as originally planned in 2015.

Overall, the number of wetland restorations on private lands continues to be lower than the long-term average as a result of a more diverse private lands program. The Partners Biologist now coordinates many more acres of upland habitat restoration than in the past. These projects include prairie reconstructions, cool-season grass conversion, and invasive tree removal. The result is a more efficient and strategic approach to conservation that focuses on putting the right habitat in the right places.



District staff completed the sediment removal project on Hamann Habitat Easement 107G-1, Lac qui Parle County. 2014-8 ALG 7/14/2014

Waterfowl Production Areas

No wetlands were restored on WPAs in 2014; however, a number of projects are planned for 2015. These projects included multiple wetlands on three new WPAs. Three existing WPAs were surveyed for wetland restoration/enhancement work as well. This will be completed with district staff through a North American Wetland Conservation Act grant.

Table 4 – Wetland Restorations – Morris WMD – 1987–2014

Year	Total Restorations			Year	Total Restorations	
	Basins	Acres			Basins	Acres
1987	33	79		FY 2001	38	120
1988	208	673		FY 2002	35	313
1989	84	282		FY 2003	75	255
1990	82	278		FY 2004	54	289
1991	103	839		FY 2005	25	78
1992	85	228		FY 2006	42	128
1993	117	508		FY 2007	17	45
1994	78	556		FY 2008	26	69
1995	49	268		FY 2009	14	30.4
1996	42	177		FY 2010	9	52.5
1/1-9/30/97	34	423		10/2010-11	14	52.9
FY1998	91	311		FY 2012	9	67
FY 1999	51	345		FY 2013	1	11
FY 2000	73	387		FY 2014	2	01.1
				Total	1,491	6,865.9

2b. Upland Restorations (On/Off refuge)

Grasslands consist of native prairie, planted native species, introduced cool-season grass seedings, and legume plantings. We no longer plant the latter two, and now only seed native mixes with high forb and grass diversity (40 or more species). 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. This year we put a new wrinkle on this process by broadcasting annual rye onto two sites that were not yet ready to be seeded with natives. The former grove site and adjacent disturbed area (6.5 acres) at Bolson Slough WPA was seeded with this cover crop on June 23rd after the concrete foundations were buried. The other site was the former auto tour shelterbelt (10 acres) at Edwards WPA, which we had hoped to have farmed with beans just like

the field on the south side of the tour route, but was simply too wet when the farmer came through to plant. The annual rye did a decent job of suppressing weed growth, armoring the soil, and feeding soil microbes.

Newly acquired land is often cash rented and farmed with Roundup (glyphosate) Ready soybeans for a year if the existing crop was corn when it was acquired. This makes a good seedbed for native species and provides a means of controlling weeds. A corn stubble field can be seeded into if the stalks are baled to reduce the thick residue that can inhibit seed to soil contact. In the cases where we are converting grass stands with a historical weed problem, we typically cash rent 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 inter-seeding forb rich seed mixes. These mixes have been composed of local harvests augmented with local ecotype purchased seed, or vice-versa.

The following two photos taken from roughly the same location show the lack of success at this point of the 2013 inter-seeding at Twin Lakes WPA. The photo from June 23rd shows a dominance of smooth brome and mustard. Cattle were brought in to reduce seed production and above ground biomass. The 40 acre area was grazed from June 29 to July 25 at a rate of 50.6 animal unit months. The photo from August 19th shows the effects with 25 days of recovery. Because the site is difficult to mow, plans are to continue to utilize grazing in the next few years to target cool-season invasive grasses, preferably with an earlier timing than what occurred in 2014. This highly degraded remnant was once a sacrifice pasture when it was in private ownership, so it is expected that this extreme restoration situation is going to require extreme measures for the inter-seeding to make a difference in the native composition of the site.



Twin Lakes WPA on June 23, prior to grazing.
2014-9 JBB 6/23/2014



Twin Lakes WPA on August 19, 25 days post graze.
2014-10 JBB 8/19/2014



The prairie reconstruction seeding at Pepperton WPA, which was seeded July 13, 2013 and mowed June 26, 2014, needed no second mowing since the forbs were coming on so nicely. Like many of the other sites seeded with this mix, there was a peculiar lack of native grasses and an unusually heavy expression of forbs. 2014-11 JBB 8/13/2014

Weed control on young prairie reconstructions is critical. In the last few years, post establishment management philosophy has evolved to have as light of a hand on the land as possible. Our observations have shown that with these high diversity mixes, if we exercise patience and let the site mature, the natives will establish and outcompete the undesirables. Weeds of greatest concern in a new seeding are perennials such as Canada thistle and biennials such as sweet clover, bull thistle, and plumeless thistle. Annuals like giant ragweed, wild sunflower, foxtail, and lamb's quarter may be cause for concern if very dense, but otherwise get a pass. In the first two or three years of establishment, if undesirable weed growth of the above mentioned species is found to be great enough to warrant management, we will clip the site no shorter than eight inches, spot mowing if feasible, or spot spray with a selective herbicide using backpacks and/or ATVs. By year four we often conduct a prescribed burn, either dormant in the spring or early enough in the growing season to minimize impacts to seeded cool-season native species. This stimulates the native warm season species, giving them a competitive edge.

Native Prairie



The remnant prairie on the east portion of Svor WPA responded nicely to the spring fire disturbance. Unfortunately, plans to harvest valuable forb seed here were hindered by the wet fall and soft site conditions.

2014-12 JBB 8/7/2014

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 2014 (2013 and 2014 fee purchases with native prairie have not been mapped yet, and so have not been included in this total). 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 inter-seeded 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 12,423 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, expense, and the maintenance burden of shepherding a site through the weedy stage of establishment.

In the last five years, 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 or 1:1. 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 mixes used were augmented with forb and grass mixes purchased from Shooting Star/Feder Prairie Seed, rather than cobbling together individual species from several vendors. Although potentially more expensive, this simplified the purchasing process immensely.



The 2011 brome conversion at Pomme de Terre Lake WPA, that was custom tilled instead of farmed, continues to progress nicely with minimal weed issues. 2014-13 JBB 8/22/2014

From approximately 2004 to 2012 when we were planning seed mixes for reconstructions in soils with a cropping history, or restoration/enhancement interseedings, we would try to include plenty of species that are in families displaying some degree of tolerance to the clopyralid and aminopyralid herbicides (trade names Transline, Pyramid, Milestone), such as the mint and carrot families. The strategy was that it would make broadcast herbicide application for thistles more feasible since there would be less non-target loss of costly forbs. Lately, we’ve been largely ignoring the tolerance aspect and just seeding as diverse a mix as we can find and/or afford since we have evolved into a spot mow or spot spray approach with thistles and other undesirable competing vegetation.

This year, 388.97 acres were seeded to native grasses and forbs on 15 WPAs and five easements (Table 5). Most of the larger WPA sites were seeded with a Truax drill by Habitat Forever through a NAWCA grant or the Prairie Recovery Project (PRP). The Haukos and Hamann easements in Big Stone and Lac qui Parle Counties respectively were broadcast seeded by our maintenance staff. The seedings at Loose and Redhead Marsh WPAs were crop fields where over-farming was occurring that were discovered when the actual boundary was fenced. They were ATV broadcasted by PRP Specialist Minor. She also seeded exposed soil areas that were a result of tree removal at Lundgren and Stenerson Lake WPAs.

Although most sites were seeded with mixtures of our own harvests and purchased seed, the following three sites were seeded entirely with purchased seed mixes: Beyer (Schmieg addition), Finden, and Niemackl Slough WPAs. The 27 acre seeding for the addition to Beyer WPA consisted of a 58 species local ecotype mix (12 grasses, 6 sedges/rushes, and 40 forbs). Finden WPA had a 17 acre seeding with 11 grasses, 6 sedges/rushes, and 41 forbs, while the 113.48 acre seeding at Niemackl Slough contained 11 grasses, 6 sedges/rushes, and 43 forbs for a total of 60 species (Appendix A). The Finden and Niemackl Slough mixes contained two grass cultivars, so were not classified as local ecotype. Much of the Beyer site was too wet to seed in the spring and most of the summer, so weed growth was sprayed with glyphosate on October 8, then mowed short on the 30th to reduce biomass, and dormant drilled on November 3 by Habitat Forever. At Niemackl Slough, the wet-mesic zone around the large wetlands, as well as the two drained wetlands in the northern third of the WPA were too wet to seed in the spring, so they will be broadcast by our maintenance staff as conditions allow in the late winter or spring of 2015. The area to be seeded will be split into four plots, wherein three of the plots will have a mix spiked with an additional 10 seeds per square foot of one of the following: fowl mannagrass, prairie cordgrass, or rice cut grass. The fourth area will not be spiked and will receive the same rate that went on the uplands.



2014-14 JBB 8/22/2013

The three year old prairie reconstruction at Seidl WPA rebounded from its bull thistle dominated state as seen above, to a state mostly dominated by Maximillian sunflowers. This year only a small portion of it (2.73 acres) needed mowing for Canada thistle control and no bull thistle could be found. Last year's timely mowing prevented seed production for bull thistle.



2014-15 JBB 6/25/2014

The study with the Minnesota DNR's farmland research group investigating techniques aiding the establishment of dormant inter-seeded forbs into existing tallgrass stands was wrapped up in 2013 with the final report completed in 2014. The study site at Schultz WPA was burned in September, 2009 to facilitate the inter-seeding in December, 2009. It had 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. Sites were surveyed by Minnesota DNR contractors in August 2011 and July 2013. Surveys were designed to estimate presence/absence of seeded forb species and all other species, vegetation vertical density, and percent canopy cover of native grasses, exotic grasses, native forbs (including inter-seeded forbs), exotic forbs, bare ground, and duff. Early during the 2013 growing season, a prescribed burn was conducted on May 3 to remove residual vegetation and further aid forb establishment 4-years post-seeding.

The following is an excerpt from their final report:

We observed 24 (83%) of the 29 native seeded forbs in study plots each year. Species richness of seeded forbs was marginally greater in the high herbicide treatment than the control in 2011. Additionally, total species richness and total plant community diversity were greater in the high herbicide and mow 2 treatments than the control in 2011. However, these treatment differences disappeared by 2013. Overall, seeded forb species richness, total species richness, and total plant community diversity were lower in 2013 than 2011. None of the treatments were more effective than the control in helping to increase the percent canopy cover of native forbs over time, and warm season grasses continued to dominate canopy cover 3 years post-treatment. We also completed a cost analysis to determine the cost per acre of 3 management options (interseeding + mowing twice, interseeding + herbicide spraying at higher rate, cropping + new planting). Our cost analysis indicated that interseeding plus mowing (\$296/acre) or herbicide spraying at the higher rate (\$342/acre) were cheaper options than eliminating existing vegetation and planting entirely new seed (\$450/acre). However, the results from our field experiment indicate that neither mowing nor spraying a grass-selective herbicide during the first growing season post-interseeding are effective ways to establish forbs in grasslands dominated by warm-season grasses. Natural resource managers may obtain improved vegetation structure and diversity by spending the additional money to completely eliminate the existing vegetation and then re-planting a higher diversity seed mix into bare ground.

Table 5 – Prairie Reconstruction Seedings – Morris WMD – 2014

Unit Name	Unit ID	Unit Type	Date	Acres	Comments
John Haukos	BS-339G	Easement	4/07	19.79	FWS broadcast MN Natives
Niemackl Slough	SV-56	WPA	5/23	113.48	HF drilled MN Natives
John Reed	P-59G-2	Easement	5/27	4.60	MNL drilled local ecotype
Colbert	L-4	WPA	5/30	9.43	HF drilled local ecotype
Big Slough	SW-8	WPA	6/04	8.04	HF drilled local ecotype
Pomme de Terre River	SV-18	WPA	6/08	10.09	HF drilled local ecotype
Walden	P-19	WPA	6/09	40.72	HF drilled local ecotype
Fults	SV-21	WPA	6/10	12.00	HF drilled local ecotype
Robin Hood	T-10	WPA	6/10	10.40	HF drilled local ecotype
Herb Hamann	L-107G	Easement	6/19	52.00	FWS broadcast local ecotype
Mau	SV-14	WPA	7/02	10.81	HF drilled local ecotype
Rutledge	P-404G	Easement	7/03	1.40	FWS broadcast CP25 mix
Luverne Forbord	P-399G	Easement	7/09	13.60	HF drilled MN Natives
Finden	P-66	WPA	7/14	17.63	HF drilled MN Natives
Artichoke Lake	SW-21	WPA	7/15	33.03	HF drilled local ecotype
Lundgren	C-1	WPA	8/12	0.60	TNC broadcast local ecotype
Stenerson Lake	P-42	WPA	8/25	2.19	TNC broadcast local ecotype
Redhead Marsh	B-20	WPA	8/27	1.43	TNC broadcast local ecotype
Loose	SW-30	WPA	8/28	0.68	TNC broadcast local ecotype
Beyer	L-19	WPA	11/3	27.05	HF drilled local ecotype
Total				388.97	

Most of the remnant prairie tracts on WPAs present challenges to bulk seed harvesting using a combine because they tend to be rough, rocky, and steeply sloped. Some tracts may also be compromised by adjacent cultivar seedings that 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 local ecotype seed production. Since 2002, 57 sites on 40 WPAs and 11 private tracts, totaling 1,698.1 acres have been seeded with local ecotype natives (Table 6). In the past few years seed has been harvested from 8 of these sites: Kufrin, Thorstad, Rothi, Westport, Robin Hood, Grove Lake, Taylor, and Colbert. We are still not past the bottleneck, but we are getting closer. Theoretically, in a few years we should be able to annually harvest 100 or more acres of seed from these sites.

**Table 6 – Local Ecotype Native Seedlings – Morris WMD
2002 – 2014**

Big Stone County		Stevens County	
Anderson	9.9 acres	Fish Lake	10.4 acres
Artichoke	5.8 acres	Fults	12.0 acres
Dismal Swamp	9.5 acres	Mau	10.8 acres
Hillman	40.0 acres	Mero	7.7 acres
Karsky	25.4 acres	Miller	8.8 acres
Kufrin	113.0 acres	Pepperton	14.4 acres
Prairie	18.1 acres	Pieske	82.0 acres
Rackl Esmt	24.4 acres	Pomme de Terre Lake	29.0 acres
Reisdorph Esmt.	5.4 acres	Pomme de Terre River	10.0 acres
Ronning Esmt.	11.9 acres	Schultz	3.0 acres
Rothi	118.0 acres	Thorstad	30.0 acres
Schmeichel Esmt.	13.1 acres		
Seidl	13.0 acres	Swift County	
Stadem Esmt.	12.0 acres	Artichoke Lake	37.6 acres
Wellendorf Esmt.	5.5 acres	Big Slough	8.0 acres
		Hennen NTGP (11G)	13.0 acres
Lac qui Parle County		Loose	32.0 acres
Beyer	27.0 acres	Loen	30.8 acres
Colbert	27.7 acres	Roderick	27.0 acres
Hamann Esmt.	52.0 acres	Welsh	70.0 acres
Taylor	33.2 acres		
Arden Hegland*	8.0 acres	Traverse County	
		Geyer	75.0 acres
Pope County		Lawrence	76.0 acres
Blue Mounds	6.0 acres	Robin Hood	113.7 acres
LuVerne Forbord*	10.4 acres		
Grove Lake	155.0 acres	Yellow Medicine County	
Reed Esmt.	4.6 acres	Spellman Lake	11.0 acres
Rolling Forks	40.0 acres	Swede Home	11.3 acres
Rustad	69.0 acres		
Walden	40.7 acres		
Westport	76.0 acres	*private landowner	



The 33 acre former food plot at Artichoke Lake WPA was just one of 12 sites and 306.28 acres that were seeded down with natives for us by Habitat Forever. 2014-16 JBB 7/15/2014

Seed Harvest

While no seed was harvested in 2013 due to the furlough, and in 2012 approximately 3,333 bulk pounds were harvested with the combine or Flail-Vac, the 2014 seed harvest (Table 7) was relatively unproductive when compared to the historic average. This was due in part to a wet fall that made the stems green and difficult for the combine to handle. Seed was harvested with the combine at Thorstad, Hillman, and Prairie WPAs. The ATV seed stripper was used at Florida Creek WPA in August to harvest Canada bluejoint and showy tick trefoil, and Edwards WPA in October to collect a mixed batch that was strong with button blazingstar. Additionally, we were able to borrow Big Stone NWR's Flail-Vac seed-stripper for a day to harvest at Kufrin WPA.

The annual volunteer seed collection day was held once again. Twenty-one volunteers and one staff member turned out on Saturday, September 20 and collected approximately 10 bulk pounds from Edwards WPA. They focused on narrow-leaved purple coneflower and silverleaf scurfpea, as these were the most abundant and valuable species that were ready for harvest. The rough blazingstar and stiff sunflower weren't ripe for the hand-harvest event, but were on October 14 when 35 pounds were collected with the ATV seedstripper by WRS Bright. Seasonal Jeff Metcalf also hand collected near there on the 6th. Other significant fall hand harvests were accomplished by Tally Hamilton and Jeff at Bengtson WPA on September 5 when they collected prairie onion, leadplant, purple coneflower, rough blazingstar, and prairie clovers from the remnant prairie in the northeast corner of the WPA.



Targeted spring grazing suppressed smooth brome grass and stimulated some forb species like prairie onion at Bengtson WPA. We returned a month after this photo was taken to harvest wildflower seeds.

2014-17 JBB 8/7/2014

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 with only small quantities commercially available, 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 some-what abundant.

A few years ago 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. (See page 25 of the 2012 Narrative for more details about our phlox harvest efforts.) This year we abandoned the use of the purchased mesh bags with drawstrings after several years of use when we came to the conclusion that they leak seed out through the mesh. Instead we purchased pantyhose from the thrift store and made approximately 400 bags. This year we focused phlox harvest efforts on Stewart WPA. Plants were determined to be close to ripening when a majority of the seedpods were a golden color and beginning to open up.



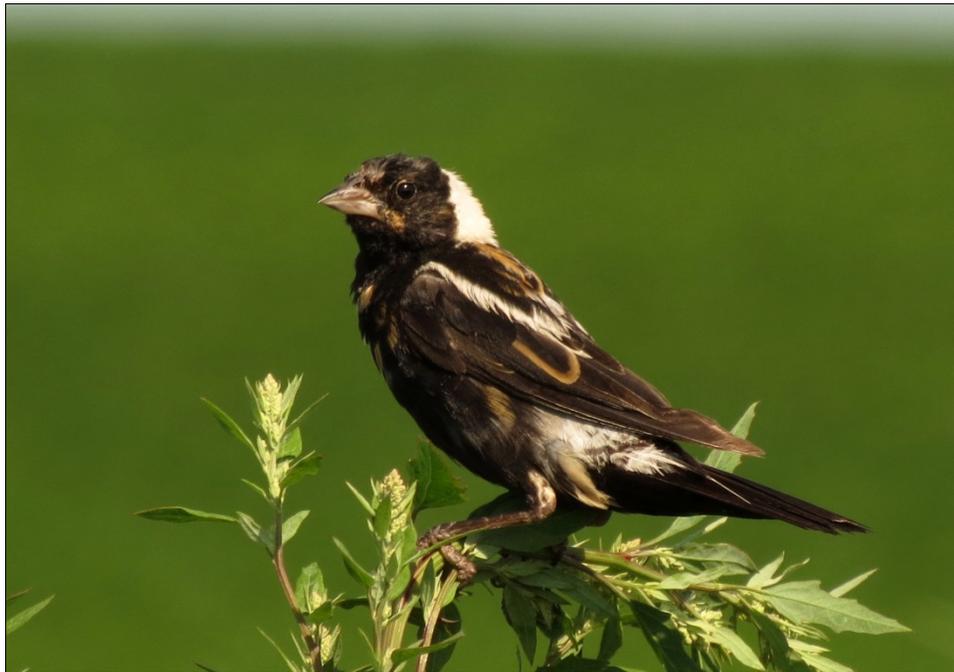
While scouting for potential veiny pea harvest sites, this bumble bee was captured at work on the blossoms of a veiny pea patch at Pomme de Terre Lake WPA. 2014-18 JBB 6/18/2014

Another summer species that we tried to target for hand harvest by the YCC crew was veiny pea (*Lathyrus veinusus*). This legume produces seed pods that need to be shucked open 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. This year we tried storing the pods in the freezer as we worked through the shucking process. This effectively killed the worm and saved many seeds. 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. A site on Rosby Lake WPA was located during flowering, but when the crew returned to harvest, found that deer had browsed most of the seed pods. Another nice patch was discovered on Edwards WPA in the remnant prairie area that was burned in May. The burn delayed maturation though and the YCC crew was done before this site was ripe, so the collection was accomplished by the seasonal bio techs on August 11 and 14.

Table 7 – Native Grass Seed Harvested – Morris WMD – 2014

Unit Name	Harvest Method	Species	Pounds of Yield	No. Acre	Date(s)
Edwards	Brush	Canada bluejoint		0.55	08/13
Edwards	Hand	Canada tick trefoil: Lot# L16NPTT14	19 (a)	1.34	08/21
Edwards	Hand	Veiny pea		2.21	8/11, 8/14
Bengtson	Hand	Prairie onion, Leadplant, Purple coneflower		4.85	09/05
Florida Creek	Brush	Canada bluejoint: Lot# L16NPCBJ14		2.46	08/18
Florida Creek	Brush	Canada tick trefoil: Lot# L16NPTT14	19 (a)	2.96	08/18
Edwards	Hand	Dry prairie: Lot # Edwards	45 (b)	3.47	10/06
Stewart	Hand	Prairie phlox	N/A	0.65	07/21
Svor	Combine	Liatris pycnostachya	41	6.75	10/04
Kufrin (Eids Lutheran)	Flail-vac	Leadplant	75 (c)	5.74	10/04
Kufrin (Larson Slough)	Flail-vac	Leadplant	75 (c)	4.68	10/04
Prairie WMA/WPA	Combine	Dry prairie: Lot# Prairie14	212	53.2	10/10
Hillman	Combine	Dry prairie: Lot# Hillman	195	60.3	10/09
Edwards	Hand	Dry prairie: Lot # Edwards	45 (b)	8.93	09/20
Edwards	Brush	Dry prairie: Lot # Edwards	45 (b)	9.03	10/14

Values with same letter are combined yield from those harvests.



Reconstructed prairies are critical for supporting grassland birds in western Minnesota. 2014-19 ALG 7/29/2014

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.



In addition to habitat benefits, wetland drawdowns also provide an opportunity to clean and maintain water control structures. Quite a bit of accumulated sediment and plant material was cleared from in and around the water control structure at Beaver Pool (Nelson Lake WPA) before it was reflooded.

2014-20 SCV 7/11/2014

Some highlights of the water management program in 2014:

- Nelson Lake Beaver Pool was gradually dewatered in late summer 2013 as part of a cattail control project. Even at full drawdown, most of the wetland area was saturated or had a few inches of standing water. After a prescribed fire and herbicide treatment, the wetland was reflooded in August this year.
- The wetland at Moen WPA was drawn down gradually starting in July.

- We conducted a drawdown on Wetland G at Edwards WPA starting in July. The extent of the drawdown was limited by sediment accumulation and high water downstream. We hope to mow the cattails in this wetland before reflooding, with the intent of providing better wildlife viewing opportunities from the photo blind, walking trail, and auto tour route.

3b. Haying

Historically, haying has been used for upland habitat management and noxious weed control on a limited basis on the Morris WMD, averaging 572 acres annually since 2004. It has some limitations as a tool on many sites due to density of scattered trees too big for hay equipment, roughness from gopher mounds, or damage to equipment from rocks. Also, early July haying, like a late May burn, can have negative impacts for nesting, so is used as a last resort in these instances. However, 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 also been an objective of haying.

In 2014, only one WPA and two FmHA easements were hayed for a total of 73.8 acres (Table 8). The main reason for this reduction in acres was due to the change in policy for how cooperators are selected on WPAs. Rather than subjectively selecting someone to hay from a list of interested cooperators, haying permittees now need to be selected through either a random draw or a bidding process. Although this policy did not technically apply in 2014, we wanted to honor it, and simply did not have time to implement this selection method due to time and staff constraints. Moving forward, haying sites for the coming year will be selected based on past issues and put out for bid by the end of May. Any infestation issues discovered in-season will need to be mowed or sprayed and considered for haying the following year.

Table 8 – Haying Summary – Morris WMD – 2014

Unit Name	County	Acres	Date	Fee	Comments
Suckow FmHA C-021	Swift	11.7	7/16/2014	\$ 70.00	
Smith FmHA C-016-2	Swift	9.6	7/16/2014	\$120.00	
Beyer WPA	Lac qui Parle	52.5	7/21/2014	\$265.00*	Canada thistle
Totals		73.8		\$455.00	

*Permittee has not paid his bill, so it was sent to Denver for collection.

3c. Grazing

We also use controlled grazing as a grassland management tool. The overall goal of using grazing is to improve 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, aiding inter-seeding, 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. This year, with the delayed spring, only three WPAs were initiated prior to May: Kuftrin (Eids Lutheran), Hanson (Sw-26), and Hutchinson. There were 25 WPAs that were spring grazed in May and June of 2014.

Recently, we have had more grazers interested in late summer and fall grazing, and in 2014 we implemented summer grazing on 24 units and fall grazing on four units. Objectives of grazing at this time can be reducing the litter layer, increasing plant density through tillering, promoting structural diversity, controlling wild parsnip or 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 nesting cover for the following spring.

Historically, a lack of border fence, declining cattle operations, and uninterested neighbors has limited our ability to utilize short duration grazing. In the past five years though, more and more grazers seem eager to utilize our grasslands for short term grazing and are more willing to do additional fencing now than in the past. From 2004 to 2013, we have grazed an average of 1,768 acres and 20 units per year. This year, 4,260 acres spread over 40 WPAs were treated with grazing (Table 9). Grazing did not occur on five WPAs for which there were permits in place (Hastad, Menzel, Persen, Rothi (sw), and Sherstad Slough). Hastad and Persen had high water issues, Rothi (sw) needed more fence repair than the cooperator had time to fix, and the permittee at Sherstad Slough didn't have enough animals to fulfill the objectives. At tiny Menzel WPA, which borders a new easement, the grazing did not occur due to the failure of the permittee to install the necessary fencing.



With the addition of a water tank and electric mesh fencing, anecdotal observations indicated this year's treatment was more successful at reducing seed production in leafy spurge in the remnant prairie at Loen WPA. Both sheep and cattle were rotated through the three paddocks roughly every two weeks. 2014-21 JBB 6/4/2014

New permanent barbed wire fence was built and/or re-built by Minnesota Profence at Artichoke Lake and Loen WPAs. They also built a high-tensile wire fence at Stenerson Lake WPA. Grassland Solutions built high tensile fences on the following four WPAs: Loose, Redhead Marsh, Hastad, and Hegland. One short stretch of fence was built by a cooperator at Lubenow WPA. No other cooperators built new fence this past year. All of the contractor-built fences, were entirely covered through the Prairie Recovery Project Grant (see Section 5a).



It was challenging to keep cattle out of the seven acre prairie reconstruction at Mero WPA, but there was a stretch of five weeks or so where the new vegetation got a chance at uninterrupted growth and came on strong.

2014-22 JBB 8/13/2014

This year, depending on when the permit was written, the grazing fees were calculated using a base rate of between \$19.26 and \$25.75 per Animal Unit Month (AUM) with deductions for fence installation, fence repair, water hauling, etc. Because there is no report using AUM rental rates 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 \$1,062.64 for Bengtson WPA to a high of \$4,220.27 for Artichoke Lake WPA. The payment for Artichoke Lake was a bid paid up front for two years of grazing. Taking that into account, the fee for one year was actually \$2,110.13, which was still the highest payment for 2014. This year there were three permittees with a credit. 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.

As mentioned above in Section 3c, regional policy for selection of cooperators was in the process of changing to the bid or lottery method. Although not due to take effect until 2015, a pilot run of the process was implemented for grazing on three WPAs in 2014. The units put out for bid were Artichoke Lake and Lubenow, while the lottery method was used for Fish Lake. The two bidders for Artichoke Lake actually submitted matching bids of \$7.69 per AUM, so the winner was then drawn out of a hat. The winner had also had the high bid for Lubenow, so he declined that one and it went to the other bidder for \$16.66 per AUM. In total there were two bids each and three lottery applications. While the two bid units had ample time to get fencing work completed, the lottery unit had a short turn

around between the drawing date and the turn-in date; otherwise interest may have been a little greater. All permits were for two seasons of grazing.

For grazing beginning in 2015, eight WPAs were put up for bid and four WPAs were available via lottery. The bid units were: Avok Slough, Boehnke, Grove Lake, Hastad, Henry, Schultz, Snetting, and Stegner. The lottery units were: Golden, Mau, Lake Johanna, and Loose. The deadline for bids and applications was October 6. In the past we have negotiated agreements and completed permits primarily over the winter, but with the element of uncertainty that the bid/lottery method introduces to planning for cooperators, the fall deadline was used to give producers ample time to make alternate plans for the coming year should they not get drawn or win bids. It would also allow time for fall fence work for the successful applicants.

Newspapers, radio stations, facebook, email, and websites were all contacted and/or used to advertise the grazing opportunities. Although multiple inquiries were received for most every unit, five only received one bid. Grove Lake and Schultz each received three bids and Stegner two. It was Stegner, however, that both bidders declined due to receiving other units, which resulted in them not needing it. The number of lottery applications ranged from a low of two for Lake Johanna, to a high of ten for Mau. In reality, though, Mau only had four producers when you factor in the family members in the operation who put applications in. The selected applicant was eleven years old, but a legitimate part of the operation with several animals in the herd registered in his name from his 4H involvement. The Refuge Supervisor granted permission to bypass the bid or lottery method for six units based on the fact that they either have neighboring pasture or in the case of multi-species grazing at Loen, unusual circumstances.

An atypical use of grazing occurred at Big Slough WPA where the farming cooperator used cattle to graze down the brome prior to tillage for farming. This site has many small stumps that need to be popped, so grazing it short in the fall served two purposes: reducing biomass and making the stumps more visible for removal. The cooperator will be farming with small grains and cover crops for the next three years, with the option to graze the cover crops.

Table 9 – Grazing Summary – Morris WMD – 2014

County/WPA	Planned Dates	Actual Dates	Fee	Acres	Planned AUMs	Actual AUMs
Big Stone						
Artichoke	6/01 - 8/09	6/15 - 8/25	\$698.25	104	109.6	109.6
Hillman (B)	5/08 - 7/19	5/08 - 7/20	NC*	125	90.0	81.2
Johnson	7/01 - 9/03	8/08 - 9/26	\$256.70	69	65.0	60.0
Kufrin (Eids Luth.)	5/12 - 6/15	4/26 - 5/27	NC*	46	42.0	32.8
Redhead Marsh	7/01 - 9/30	7/02 - 10/1	\$1,014.87	135	138.0	144.3
Rothi (east central)	5/17 - 9/13	5/10 - 9/26	\$1,307.57	101	119.0	139.9
Seidl	6/01 - 7/31	6/01 - 7/31	\$529.53	119	123.0	122.2
Tangen	5/01 - 5/31	5/20 - 6/29	\$330.73	26.7	30.0	36.6
Twin Lakes	5/01 - 7/01	5/02 - 7/25	\$626.03	169	139.2	139.4
Chippewa						
Lundgren	5/10 - 8/02	5/17 - 9/13	\$170.94	216	258.0	186.9
Lac qui Parle						
Bolson Slough(B,C)	4/25 - 6/22	5/03 - 6/22	\$1,032.34	112	118.0	85.4
Colbert	7/08 - 9/01	7/19 - 9/26	NC*	132	145.6	127.0
Goodman	5/01 - 7/31	5/27 - 6/25				
Goodman	5/01 - 7/31	7/14 - 8/18				
Goodman	9/01 - 10/11	9/10 - 10/2	\$1,006.71	130	270.0	227.0
Pope						
Benson Lake (Cattle)	4/20 - 6/21	6/14 - 8/17	\$1,307.26	105	100.8	105.9
Benson Lake (Goats)	5/02 - 10/10	5/26 - 10/3	NC ¹	74	90.0	148.4
Blue Mounds	5/01 - 7/02	5/01 - 7/02	GB	128	113.4	113.4
Blue Mounds (E)	9/13 - 10/10	9/30 - 10/10	GB	(71)	50.4	35.9
Bredberg	5/01 - 7/31	5/16 - 8/18	\$991.34	105	202.5	117.0
Gjerdingen	8/01 - 8/31	8/06 - 9/01	\$198.06C	41.5	48.0	45.1
Glacial Lake	4/15 - 5/31	5/09 - 6/10	\$247.87	28	24.0	18.5
Glacial Lake	9/09 - 10/3	9/11 - 10/10			19.2	28.0
Heidebrink (SE)	6/14 - 7/25	6/22 - 8/04	\$91.37	51	63.8	69.0
Kolstad Lake	5/01 - 7/31	5/27 - 7/30	GB	181	168.0	150.7
Lake Emily	5/05 - 5/31	5/17 - 6/07	NC*	56	49.6	29.8
Larson (N ½)	5/01 - 7/05	5/10 - 7/14	GB	134	158.0	160.8
Larson (S ½)	7/14 - 7/28	7/15 - 7/31	GB	57	36.0	39.9
McIver (SE)	4/25 - 5/30	5/13 - 6/19	\$150.66	30	35.0	37.5
Overby (East)	4/23 - 6/07	5/20 - 6/24	\$217.93C	67	54.0	56.1
Rolling Forks	5/01 - 6/30	5/13 - 6/25	\$1,019.50	104	120.0	90.2
Stenerson Lake	7/15 - 8/05	7/16 - 8/04	GB	41	46.0	38.0
Stevens						
Fish Lake	5/05 - 5/31	5/07 - 6/20	\$886.91	88	54.0	84.8
Fults	5/10 - 6/14	5/17 - 6/25	\$597.32	157	196.0	166.3
Hutchinson	4/13 - 5/25	4/26 - 6/06	NC*	35	52.5	45.9
Lee	7/13 - 8/16	7/21 - 9/08	\$468.00	86	51.1	76.1

	Planned	Actual			Planned	Actual
County/WPA	Dates	Dates	Fee	Acres	AUMs	AUMs
Mero	5/01 - 8/31	6/14 - 9/13	NC*	148	144.0	145.4
Nordby	4/20 - 5/24	5/01 - 6/13	\$946.95	44	56.0	75.6
Pepperton	7/01 - 8/11	6/08 - 7/20	\$450.17	65	58.8	61.0
Swift						
Artichoke Lake	6/01 - 8/16	6/03 - 8/30	\$4,220.27 α	264	274.4	284.5
Big Slough	9/02 - 11/15	10/1 - 11/1	NA	47	NA	NA
Bengtson (N)	5/01 - 7/23	5/14 - 8/10	\$1,062.64C	83	71.4	69.7
Gilbertson	5/01 - 5/31	5/04 - 5/31	\$387.65	37	30	41.8
Hanson	4/30 - 6/21	4/20 - 6/05	\$726.48	56	61.25	79.5
Loen (NE)	5/04 - 8/09	6/02 - 9/08	\$697.01	114	201.6	182.1
Loen (S)	5/11 - 8/08	5/13 - 8/04	\$1,545.62	279	216	257.7
Lubenow	7/01 - 8/18	7/12 - 8/29	\$2,040.85 α	70	61.2	61.2
Total				4,260.2		

NC* = No Charge (deductions exceeded grazing fee in final year of permit period of use)

C = Credit

GB = Grass Banking

NC¹ = No Charge (experimental)

NA = Not Applicable

α = Full Payment for Bid



Cattle were used to substantially reduce seed production in sweet clover at Stenerson Lake WPA, as seen in this photo taken the day they were removed. The ungrazed area to the right of the fence with its sea of four foot high sweet clover is what the entire area looked like prior to grazing.

2014-23 JBB 8/4/2014

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 by area cooperators and then seeded with a local ecotype or cultivar native seed mix. In 2014, three WPAs had fields that were cash rented and farmed under special use permits for seedbed preparation. The 35 acre field at Edwards was in its final year, while Hastad and Walden WPAs had fields in their first year of a three year permit. The only other farming that was active in 2014 was a field at Karsky WPA that was crop-shared for a food plot, where the cooperator left one third standing for resident wintering wildlife. This was the last food plot on the District.

Due to a revision in Service policy, permanent food plots have been phased out. From now on, only cash rent farming will be used for converting undesirable nesting cover to desirable native species. Farming to prepare a seedbed for native reconstructions is limited to three years. Any longer than that requires approval from the Refuge Supervisor. Also, due to the revision in farming policy, four sites were put out for cash bid. All contracts were for four years in length, but with three years of cropping. As mentioned above, two WPAs, Hastad (65 acres) and Walden (20 acres) were tilled up in the spring and farmed with glyphosate ready soybeans. Two other WPAs, Big Slough (35 acres) and Artichoke (54 acres) were also awarded, but their first year of cropping won't be until 2015.

The WPAs were all bid out with two options. The preferred option consisted of small grains, cover crops, and grazing, and if no bids were received, then the second option of glyphosate ready soybeans, corn, and soybeans, was available. Contracts came with the restrictions of no tillage and no neonicotinoid coated seed.

To say interest was low in the bidding process is an understatement. Despite utilizing newspapers, radio, facebook, email, word of mouth, and the website, only two bids were received for Big Slough WPA, and one each for Hastad and Artichoke WPAs. The winning bids were \$3 an acre for Big Slough and Hastad, and \$1 an acre for Artichoke. The same individual was the lone bidder for Hastad and Artichoke. An inquiry for Walden WPA was received after the bid deadline, so the contract was awarded to this individual at the going rate of \$3 an acre. Bids were received after the deadline for Hastad and Artichoke. The bidder had confused the deadline date for farming with the deadline date for grazing bids. He bid the preferred option at \$70 an acre for Hastad and \$25 an acre for Artichoke.

3f. Fire Management

Morris WMD (BNR), and Big Stone National Wildlife Refuge (NWR) and Wetland Management District (BGR) combined their fire programs in 2014. They are now known as the Morris Fire Hub (Hub). Reasons for the consolidation include a downward trend in funding and positions, as well as a work-force planning project that is ongoing within the Region 3 fire program. Coverage for the new Hub includes the following counties: Big Stone, Chippewa, Lac qui Parle, Lincoln, Lyon, Pope, Stevens, Swift, Traverse and Yellow Medicine.

The Hub experienced low wildfire activity in 2014. An average number of prescribed fire treatments occurred on BNR, and BGR was well below average. BNR burned slightly above the recent average number of acres, and again BGR was well below average acres burned. The season length was on par with previous years. The season was as safe and efficient as it could be with no injuries to personnel; however, minor damage to equipment did occur, which will be discussed later. Hub staff performed at an extremely high level throughout the burn season.

Prescribed Fire

The first burn of the season was on April 11, with the last being on May 29. The Hub staff burned 34 treatments for 5,287 acres on federally owned lands that were within the Morris WMD coverage area, and seven treatments for 1,035 acres on federally owned lands that were within the Big Stone NWR/WMD coverage area, totaling 41 treatments for 6,322 acres (Table 10). Some of the fire reporting systems still require different organization codes and designators (BNR, BGR), therefore when and where appropriate BNR and BGR are separated. All of the burns were in the spring as the fall season was above average for rainfall, causing green-up to last longer as well as crops to be harvested later.

Help for prescribed burning at the Morris Hub came from the district staffs, adjacent districts, ADs (a short duration hiring plan), and several crews from other states. Local help came from Sherburne NWR, Fergus Falls WMD, Minnesota DNR, and The Nature Conservancy (TNC). Additional help came from Wichita Mountains NWR (OK), Bureau of Land Management (Cedarville, CA), and Leopold/Horicon NWR Complex,. Our appreciation is extended to those who helped; the number of burns and acres could not have been accomplished without this help. Morris Hub fire personnel are also grateful for the continued effort of collateral duty staff year in and year out. Their help related to fire management operations and the added administrative workload is necessary to run a safe and successful program.



Prescribed burn conducted at Blue Mounds WPA, Pope Co. The burn crew this day included Morris WMD staff and detailers from Wichita Mountains NWR. 2014-24 PJM 4/15/2014

A grant from the Minnesota Prairie Chicken Society funded much of the expenses related to bringing in outside help that was used to enhance habitat through the increased use of prescribed fire. Without this grant much of this help would not have been possible, thereby greatly reducing our acreage treated and managed.

Morris Hub personnel assisted in prescribed burns at Fergus Falls WMD and Superior National Forest.

Table 10 – Prescribed Burn Summary – Morris Hub – 2014

Burn Name	County	Unit Type Station	Burn Date	Acres
Edwards-islands	Stevens	WPA/BNR	10/28/2013	1
Loen-piles	Swift	WPA/BNR	2/3-4/2014	1
Westport-c, w	Pope	WPA/BNR	4/11/2014	99
Humpty Dumpty	Big Stone	WPA/BNR	4/14/2014	68
Blue Mounds-Central	Pope	WPA/BNR	4/15/2014	165
Loen-piles again	Swift	WPA/BNR	4/17/2014	1
Pieske	Stevens	WPA/BNR	4/20/2014	152
Artichoke-north	Big Stone	WPA/BNR	4/22/2014	305
Redhead-1	Big Stone	WPA/BNR	4/22/2014	4
Helgeson-east	Big Stone	WPA/BNR	4/25/2014	53

Burn Name	County	Unit Type Station	Burn Date	Acres
Nelson Lake-cattails	Big Stone	WPA/BNR	4/25/2014	28
Olson-east	Big Stone	WPA/BNR	5/03/2014	243
Karsky	Big Stone	WPA/BNR	5/03/2014	205
Big Slough	Swift	WPA/BNR	5/04/2014	168
Wall	Pope	WPA/BNR	5/05/2014	188
Svor-east	Swift	WPA/BNR	5/07/2014	128
Artichoke-south	Big Stone	WPA/BNR	5/10/2014	192
Hegland-west	Lac qui Parle	WPA/BNR	5/14/2014	362
Krantz Lake	Pope	WPA/BNR	5/15/2014	968
Thorstad/Koehntop	Stevens	WPA/BNR	5/16/2014	136
Stenerson Lake-west	Pope	WPA/BNR	5/16/2014	39
Helgeson-n, s	Big Stone	WPA/BNR	5/16/2014	128
Nelson Lake-sw	Pope	WPA/BNR	5/17/2014	249
Overby-north	Pope	WPA/BNR	5/18/2014	65
Prairie-3	Big Stone	WPA/BNR	5/20/2014	127
Edwards-sw	Stevens	WPA/BNR	5/21/2014	205
Hastad-east 1	Lac qui Parle	WPA/BNR	5/22/2014	7
Rothi	Big Stone	WPA/BNR	5/22/2014	59
Florida Creek	Lac qui Parle	WPA/BNR	5/23/2014	65
Redhead-2	Big Stone	WPA/BNR	5/23/2014	57
Robin Hood	Traverse	WPA/BNR	5/24/2014	377
Kufrin-sw	Big Stone	WPA/BNR	5/25/2014	191
Rothi-2	Big Stone	WPA/BNR	5/27/2014	45
Hastad-east 2	Lac qui Parle	WPA/BNR	5/28/2014	206
Mueller	Lac qui Parle	WPA/BGR	4/14/2014	40
Sherman	Lyon	WPA/BGR	4/22/2014	126
Gislason-west	Lincoln	WPA/BGR	4/25/2014	217
Anderson	Lincoln	WPA/BGR	4/25/2014	86
Arends/Swedzinski	Lincoln/Lyon	WPA/BGR	5/05/2014	392
North ATR	Big Stone	WPA/BGR	5/20/2014	44
Jessen	Lincoln	WPA/BGR	5/29/2014	130
Total		41 Treatments		6,322



Alex Galt on the fire line of the prescribed burn at Humpty Dumpty WPA, Big Stone County. 2014-25 PJM 4/14/2014

Wildfire

Wildfire activity was very low within the Hub for the calendar year. While we did have several dry and windy days throughout the year, there was only one wildfire to report for 1.6 acres (Table 11). It started on private land and burned onto Big Stone NWR property; however, no suppression actions were taken by the Service.

Nationally, it was a moderately busy fire season. The National Preparedness Level (PL 1-5), which gauges national fire activity and resource needs throughout the country peaked at PL-4 for most of August. Members of the Morris Hub fire staff assisted with interagency wildfire assignments in the states of Minnesota, Washington and California. Wildfire assignments in Minnesota involved assisting the Detroit Lakes WMD during high fire danger periods.

Table 11 – Wildfire Burn Summary – Morris Hub – 2014

Fire Name	County	Acres Burned	Date Burned
Volkenant	Lac qui Parle	1.6	4/22/2014
Total		1.6	

Training and Development

- Members of the Hub fire crew attended various fire trainings including L-280 (Followership to Leadership), S-300 (Incident Commander Type 3) and L-381 (Incident Leadership).
- The Annual Fire Refresher was again put on this year at the Morris office by Fire Hub personnel, which is usually attended by 15-30 people.
- A Hub employee again assisted with interagency fire training during the Minnesota Wildfire Academy in early June.

Other

- On May 23, 2014, the Morris Hub had a trailer tire become detached from a trailer while in use. No injuries or damage was done to personnel or equipment other than the trailer. The cause of this was excessive weight being loaded on the trailer. Corrective actions have included weighing all fire equipment as well as gathering the allowable trailer load weights for trailers used by the fire crew. This information is now posted in the fire cache and extra care will be taken in the future to ensure this doesn't happen again.
- Kevin Thell, an eight year returning seasonal for the Morris Hub, took a career-seasonal fire position with the Bureau of Land Management in Montana in June. He will be greatly missed in all aspects of the fire organization, as well as many aspects of non-fire related work. We wish him the very best in future endeavors and look forward to potentially detailing him in for prescribed fire work.



Range Technician Kevin Thell lighting a fire line on Redhead Marsh WPA, Big Stone County. 2014-26 PJM 5/23/14

- The Morris Hub fire staff participated in a few volunteer fire department meetings throughout the spring, attempting to continue fostering good relationships between the Service and volunteer fire departments, therefore making notification and response to wildfires more safe and effective.
- Phil Millette, Supervisory Range Technician at the Morris Hub, received the Fish and Wildlife Service Region 3 Fire Management Torch Award. The Torch Award is presented annually to one individual recognized by peers as exemplifying personnel dedication to Refuge/WMD cooperation and interagency collaboration in meeting habitat conservation burning goals.



Phil Millette receiving the Region 3 Fire Management Torch Award from Regional Director Tom Melius. 2014-27 MLK 1/15/2015

3g. Pest Plant Control

Since 2009, in response to increasing threats from a growing number of undesirable plant species, two seasonal biological technicians have been annually hired to map and treat infestations on the district. In 2013, due to budget issues from sequestration, we were unable to hire a dedicated seasonal invasive species crew (ISC), and instead made do with what personnel resources we had when their workload allowed them to do weed control. In 2014, we were once again able to have a crew of up to four seasonals who rotated between a variety of duties, including weed control. This was a new approach compared to past years when we had more specialized duties. We wanted to give them the greatest variety of experience and also reduce the odds of burnout. This year's crew was comprised of Tally Hamilton, Shawn McNally, Jeff Metcalf, and Mitch Kill. Another change

to the program this year was to have the crew do the majority of data entry into GIS during the year, instead of having Biological Science Technician Oglesby do it in the fall after the crew was gone and unable to clarify questions with reporting documents. Tally took the lead and did an excellent job of staying on top of this task.

Invasive species focused on were: Canada thistle, plumeless thistle, yellow toadflax, wild parsnip, Queen Anne's lace, crown vetch, bird's foot trefoil, leafy spurge, and trees. A new species added to this list that had previously just been treated with biocontrol is purple loosestrife. Small infestations totaling less than 0.25 acres combined at Aal, Centennial, Cyrus, Edwards (Fehr tract), and Stammer WPAs were either foliar sprayed or shoveled/pulled by the ISC or Oglesby. The maintenance staff and a contractor (Habitat Forever) also helped out by mowing infestations in recent prairie reconstructions (Table 12).

Despite a growing season that had many occurrences of precipitation and high winds, conditions that make herbicide application difficult, the ISC was able to accomplish much. The fluctuations in acres of noxious weed control over the last six field seasons has less to do with the relative abundance and occurrence of weeds (there's no shortage) and is more a byproduct of several factors: acres of new prairie reconstructions and tree grove removals, weather patterns, and staffing levels. The dip in acres treated in 2013, for example, was related to the lack of a dedicated invasive species crew.

Contracted acres refers to mowing first or second year prairie reconstructions when the presence of thistle triggered the management. If a prairie reconstruction was mowed and the dominant vegetation was not a noxious weed (such as ragweed or lamb's quarter), then it was not included in the total. For instance, this year's seeding at Colbert WPA in Lac qui Parle County was mowed twice by the contractor, the first time wild sunflower triggered the action, the second time common ragweed. Only the mowing for wild sunflower, a state listed noxious weed, was counted in the total.

Some progress was again made in mapping, treating, and documenting previously unknown infestations such as the purple loosestrife patches at Edwards (Fehr) and Queen Anne's lace at Colbert. This year 266.49 acres (32.3%) of the noxious weed control treatments listed in Table 12 were conducted in conjunction with, or as the result of the process of restoring a site to native prairie vegetation.



Rather than issue a haying permit where all vegetation would get clipped, the four year old prairie reconstruction at Rustad WPA was spot mowed for Canada thistle control (seen in bloom in the background) after this photo was taken to avoid clipping desirable forbs, such as those in the foreground.

2014-28 JBB 7/10/2014

Table 12 – Noxious Weed Control * – Morris WMD – 2014

County	Acres Treated			Total
	Mechanical	Spray	Contracted	
Big Stone	143.5	120.4	12.3	276.2
Chippewa	0.0	0.0	0.0	0.0
Lac qui Parle	28.4	30.4	9.5	68.3
Pope	187.7	24.0	0.0	211.7
Stevens	12.1	48.2	26.0	86.3
Swift	3.4	76.8	23.2	103.4
Traverse	58.0	0.0	19.3	77.3
Yellow Medicine	0.0	0.0	0.0	0.0
Total 2014	433.1	299.8	90.3	823.2
Total 2013	269.8	221.3	106.5	597.7
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

*Only noxious broadleaf species

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, box elder, 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 by 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.



A 40 foot wide path was cleared by the contractor at Stenerson Lake WPA in preparation for the fencing project. 2014-29 JBB 7/7/2014

As in previous years, tree removal work was done through a combination of our staff time and equipment, and contractors (Table 13). Through the partnership with TNC's LSOHC-funded Prairie Recovery Project (PRP) (Section 5a), a private contractor, Plotz Timber Harvest (Plotz), was hired to cut and pile 8.3 acres of tree groves containing buckthorn, cottonwood, and box elder at Hegland WPA. Through a new innovative arrangement with our RXB3 qualified fire staff, Plotz was also contracted to burn the piles with our staff on site. Weather didn't cooperate to burn them in 2014, but they were ignited on February 9, 2015. The contractor will also be paid to bury any unconsumed remains. The other two contractors hired for tree removal that began in 2014 were Minnesota Native Landscaping (MNL) and Dahl Logging (Dahl). MNL cleared approximately 2.8 acres from the boundary at Stenerson Lake WPA in preparation for a fencing

project, and Dahl cleared 15 acres of groves and ringed wetlands, creating 14 very large piles in the process. Dahl started just before the end of the year and finished on January 9, 2015.

Contracted tree removal on the district has fluctuated in quantity throughout the last twelve years depending on funding availability. While cutting down and piling the trees can be the easy part, getting the piles burned and burying remaining debris is definitely the hard part. We've employed a strategy with mixed success of consuming the piles during prescribed burns of the surrounding grasslands (unit burns). This strategy, when coupled with the recent upsurge in new piles due to the steady stream of PRP funds, has led to a backlog of unconsumed piles. This is complicated even more by the FWS policy of needing a RXB3 qualified person on site to oversee burning operations. Our strategy for tree removal and pile consumption has now evolved to a three pronged approach of unit burns, winter burns by staff, and contractor burns. Where appropriate, we've also started requiring contractors to neatly pile green ash and other species well suited for firewood in or near parking lots, so they can be utilized for personal use by the public. This also reduces the size and number of piles that need to be burned.



Here is a panoramic before and after view of the Russian olive tree work at Hillman WPA completed by the CCM crew.

2014-30 ACM 7/28/2014 (top) 2014-31 ACM 7/30/2014 (bottom)

In addition to the heavy equipment contractors, a Conservation Corps of Minnesota (CCM) crew spent a couple of days cutting and stump treating Russian Olives at Hillman WPA, several more days basal bark treating scattered buckthorn at Hegland WPA, and five days over a three week period basal bark spraying

cottonwoods at Artichoke Lake WPA. Other labor intensive tree control was completed by the seasonal staff basal bark or foliar spraying cottonwoods and green ash at Kufryn WPA, green ash at Hillman and Stenerson Lake WPAs, cottonwoods at Pomme de Terre Lake WPA, buckthorn at Artichoke Lake WPA, and a variety of deciduous species at Larson WPA (Pope County).



Karsky WPA, before tree removal. 2014-32 ACM 4/20/2014



Karsky WPA, after tree removal. 2014-33 ACM 2/9/2015

When we first began tree removal twelve or more years ago, public sentiment to the activity was often negative. While we still get an occasional terse email, usually from an irate deer hunter, those attitudes seem to be much in the minority now. The faster a site can be converted from a grove to a nice stand of native grasses and flowers, the greater the likelihood of acceptance, especially from neighbors who may have had a fond attachment to the trees. As the contractor at Karsky was getting close to finishing, he was told by an individual on the township board that they had to leave the trees in the road right of way. This is a stance contrary to the usual for a township, as they usually want us to maintain their right of way for them by asking us to remove trees. The township, however, only has a say in the management of the right of way when it comes to safety, so we sent the contractor back out to remove the last few trees. The effect on the landscape has been quite dramatic, and one the grassland birds will no doubt come to appreciate.

Table 13 – Woody Vegetation Control – Morris WMD – 2014

WPA	Start Date	End Date	Method	Acres
Stenerson Lake	06/12/2014	07/07/2014	Contractor	2.80
Hillman*	07/29/2014	07/30/2014	Cut Stump	7.40
Artichoke Lake*	07/30/2014	08/20/2014	Basal	39.10
Kufrin	08/01/2014	08/01/2014	Foliar Spray	2.59
Kufrin	08/01/2014	08/05/2014	Foliar Spray	12.18
Stenerson Lake	08/06/2014	08/06/2014	Basal Bark	43.21
Hillman	08/07/2014	08/07/2014	Foliar & Basal	60.63
Hegland*	08/15/2014	08/20/2014	Basal	65.84
Pomme deTerre Lake	08/22/2014	08/26/2014	Basal	18.80
Larson (P-64)	08/28/2014	08/28/2014	Basal	4.67
Artichoke Lake	09/23/2014	09/29/2014	Foliar & Basal	33.70
Hegland	08/20/2014	09/30/2014	Contractor	8.30
Karsky	12/27/2014	01/09/2015	Contractor	15.00
Totals				314.22

*Tree control performed by Conservation Corps of Minnesota

Canada Thistle (*Cirsium arvense*)

Efforts to control Canada thistle in 2014 were up from recent years due to an increase in recent prairie reconstruction sites, but still 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 targeted bud stage spraying with backpacks and ATVs. The majority of units sprayed or mowed for thistle in Table 14 were done so as a standard operating procedure for prairie reconstructions in their first or second year of establishment and just happened to have Canada thistle present as the most dominant vegetation. Geyer, Kufrin, Robin Hood, and Seidl were in their

third year of establishment which is a stage that we typically don't disturb with mowing or spraying unless the infestation is large enough to warrant the action.



Newer seedlings, those less than five years old, tend to make up the bulk of our Canada thistle control sites. When the seeded flowers are this showy, however, we take a conservative approach and only mow what we have to, spot mowing thistle patches rather than the whole site. It was a good thing that the second year seeding in the southeast corner of Karsky had a good catch, as it was too moist in many places to mow anyway. 2014-34 JBB 7-15-14

The station received only four weed complaints in 2014 (Bauman, Karsky, Dismal Swamp, and Rustad WPAs). Bauman and Karsky were repeat complaints, so they were proactively spot sprayed this year in the bud and flower stage, while Rustad was mowed, and no action was taken on Dismal Swamp since the complaint was too late to do anything besides spread seed. The complaints for Bauman and Karsky came after spot treatments and seem to be unrelated to the degree of actual infestation, but rather are likely made by neighbors that have a beef with the government and just use the noxious status of thistle to invoke a response from us. For the second consecutive year WRS Bright talked again with Harold Nelson, the Big Stone County Weed Inspector, but this time directed him to just have the complainers contact us directly, as he seems to be doing a poor job of communicating the pointlessness of weed control post seed development. Overall, weed complaints are far below historical levels. One possible reason for this is a relaxed social attitude toward Canada thistle as a cropland weed, although it still seems to be the number one non-cropland weed people are most concerned with. Another reason could be due to more proactive management on our part with selective herbicides and reconstructions with an abundance of other flowering plants.

Table 14 – Sites Treated for Canada Thistle – Morris WMD – 2014

Unit Name	Start Date	End Date	Spray Acres	Mow Acres
Niemackl Slough*	5/27/2014	5/27/2014	05.45	
Long Lake	6/10/2014	7/10/2014	13.91	
Edwards	6/10/2014	7/10/2014	16.09	
Benson Lake	6/18/2014	6/18/2014	01.55	
Miller*	6/26/2014	6/26/2014		08.94
Pepperton*	6/26/2014	6/26/2014		14.37
Edwards*	6/30/2014	6/30/2014	10.37	
Rothi*	7/09/2014	7/09/2014	28.41	
Bauman®	7/10/2014	7/10/2014	02.83	
Karsky®	7/10/2014	7/11/2014	01.18	
Seidl	7/10/2014	7/10/2014		02.73
Rustad®	7/11/2014	7/14/2014		62.85
Westport*	7/14/2014	7/14/2014		74.01
Kufrin	7/15/2014	7/15/2014	06.74	
Lawrence*	7/16/2014	7/16/2014		10.66
Robin Hood*	7/16/2014	7/16/2014		08.72
Anderson*	7/17/2014	7/17/2014		02.97
Dismal Swamp*	7/17/2014	7/17/2014		09.34
Thorstad	7/17/2014	7/17/2014		11.57
Geyer	7/17/2014	7/18/2014		41.64
Geyer	7/17/2014	7/18/2014		08.16
Robin Hood*	7/21/2014	7/21/2014		08.11
Loen*	7/23/2014	7/23/2014		15.04
Big Slough*	7/23/2014	7/23/2014		08.22
Fish Lake*	7/29/2014	7/29/2014		02.79
Beyer*	10/8/2014	10/8/2014	30.41	
Total Acres			116.94	290.12

® - Big Stone County Weed Inspector complaint

® - Neighbor complaint

* - First or second year reconstruction standard operating procedure

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. With a full ISC, control efforts on this invasive species (Table 15) were up from last year and in line with efforts of past years (100.59 acres this year, 21.48 acres in 2013, 120.80 acres in 2012). The largest infestation we are treating continues to be the one at Rothi WPA.

Table 15 – Wild Parsnip Control – Morris WMD – 2014

WPA	Start Date	End Date	Phenology	Treatment	Acres
Berg	6/24/2014	6/26/2014	Flowering	Shovel/Pull	5.49
Kufrin	6/27/2014	6/27/2014	Flowering	Shovel/Pull	1.02
Helgeson	6/30/2014	6/30/2014	Flowering	Shovel/Pull	0.10
Rothi	6/27/2014	6/27/2014	Flowering	Shovel/Pull	6.64
Rothi	6/27/2014	6/27/2014	Pre-Flowering	Chemical	7.49
Rothi	6/30/2014	6/30/2014	Flowering	Shovel/Pull	37.72
Rothi	6/30/2014	6/30/2014	Pre-Flowering	Chemical	0.61
Rothi	7/14/2014	7/14/2014	Flowering	Shovel/Pull	40.49
Kufrin	7/15/2014	7/15/2014	Flowering	Shovel/Pull	0.08
Rothi	7/16/2014	7/16/2014	Pre-Flowering	Chemical	0.74
Rolling Forks	7/22/2014	7/22/2014	Post-Flowering	Shovel/Pull	0.21
Total Acres					100.59

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 Otrek Lakes area in Big Stone County, the eastern third of Swift County, and near Westhausen WPA.

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 (wild parsnip produces rosettes throughout the entire growing season), but not always practical given our staff limitations and other priorities. Our efforts around the production fields at Rothi have been successful at reducing the level of infestation. Because headway is being made here, we have been able to expand hand control efforts to the larger infestations on other portions of Rothi.



In the road ditch at Rothi WPA, not only did the CWMA intern use the wrong tool of broadcast spraying instead of wand spraying, the rate of metsulfuron methyl was so heavy the grasses were burned as well. The grasses did recover, but sadly there were still places where parsnip plants were missed because they were slightly outside the coverage pattern.

2014-35 JBB 6/26/2014

In 2014, we utilized the YCC crew to expand the effort at Berg WPA. As in 2012 and 2013, the east central portion of Rothi WPA was treated with grazing. The grazing at Bredberg WPA was more effective than past years due to the rotational grazing strategy that was used. Although the dairy cattle again did not quite honor the interior electric the whole time, it did force them to eat it, and once they got a taste, it appeared they continued to eat it and keep most of it from flowering.

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 parsnip 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.



The YCC crew spent two solid days at Berg WPA pulling flowering wild parsnip. Crew member Jessica Burks is posing with two plants as a large patch waits in the background. 2014-36 Jenna Harlow 6/26/2014

Spotted Knapweed (*Centaurea maculosa*)

We've had good success in controlling and/or eliminating this species from the few units that had infestations. Since 2012, there have been no plants found at Nordby, Cyrus, or Pieske WPAs. On July 23, WRS Bright pulled a plant at Pomme de Terre Lake WPA. We will continue to re-visit these sites to ensure successful eradication.

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 found only 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. In 2013 and 2014, we were unable to return to the site due to time and staffing limitations.

Crown Vetch (*Coronilla varia*)

In 2014, 3.53 acres with crown vetch were sprayed on three WPAs (Table 16). 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 more occurrences than we have

documented, and more infestations than we can treat given our time and staff limitations. In 2012, we treated a total of 97.34 acres on the following WPAs: Edwards, Fehr, Florida Creek, Long Lake, Nordby, and Redhead Marsh. In 2013 we sprayed 11.31 acres of crown vetch at Florida Creek, Prairie, Artichoke, and Starbuck WPAs. Of the three sites treated this year, only Tangen was a new, undocumented infestation. The infestation treated last year at Artichoke was sprayed with glyphosate and tilled up to be farmed as part of the site prep for a prairie reconstruction. Pearson, Wall, and Swede Home WPAs are three sites we know about, but have not 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 16 – Crown Vetch Chemical Control – Morris WMD – 2014

WPA	Date	Phenology	Acres
Edwards	06/10/2014	Pre-flowering	0.84
Centennial	07/10/2014	Flowering	1.75
Tangen	07/23/2014	Flowering	0.04
Edwards	10/20/2014	Post-Flowering	0.90
Total			3.53

Queen Anne's Lace (*Daucus carota*)

Another weed to appear on the district within the past five years 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 of approximately 100 plants or less, cutting or pulling second year plants to prevent seed production or herbicide application to rosettes are the main courses of action for control. In 2012, we treated Queen Anne's lace on the following WPAs: Blue Mounds, Geyer, Hillman, Rothi, and Schultz. Blue Mounds, Geyer, and Schultz were discovered in 2012 in 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. In 2014, no plants were found at Schultz or Blue Mounds, while one plant each was pulled at Geyer and Seidl. Three newly discovered patches and a fourth that had been addressed in the past were all spot treated with herbicide (metsulfuron methyl) at Rothi in the production field east of the minimum maintenance road. New infestations were also discovered and treated at Colbert, Loose, and Glacial Lake (one plant at SW gate), while known infestations were treated again at Brady and Hillman WPAs.

Due to concerns with grazing pressure effects to native prairie, the southeast arm of Hillman WPA was not grazed to reduce *D. carota* seed production, as it had been the previous three years. Instead it was mowed with the JD 5525 by Mitch Kill. Unfortunately much of the site was also broadcast sprayed by the Big Stone

CWMA intern on July 28. He claimed he didn't realize he was on the WPA. An investigation was conducted that revealed it was possible that he didn't see the signs where he entered the WPA from a vacant farm site he was spraying. We now know of eight WPAs that have one or more plants of this species. We will continue to check the locations that turned up empty this year, for several more years.

Table 17 – Queen Anne's Lace Control – Morris WMD – 2014

County	WPA	Date	Phenology	Treatment	Acres
Big Stone	Hillman**	7/28/2014	Flowering	Chemical	38.39
	Hillman	7/29/2014	Flowering	Hand Pull	0.89
	Hillman**	8/08/2014	Flowering	Mow	18.88
	Hillman	8/27/2014	Flowering	Hand Pull	1.31
	Rothi	7/23/2014	Flowering	Chemical	0.44
	Seidl	9/08/2014	Flowering	Hand Pull*	0.00
LqParle	Colbert	9/25/2014	Post-Flower	Hand Pull	0.70
Pope	Glacial Lake	8/12/2014	Flowering	Hand Pull*	0.00
Swift	Brady	7/29/2014	Flowering	Hand Pull	2.62
	Loose	9/11/2014	Post-Flower	Chemical	0.15
Traverse	Geyer	9/08/2014	Flowering	Hand Pull*	0.00
Total					63.38

*Single plants. **Mowing overlapped the area that was oversprayed.



It wasn't difficult to see where the overspray by the CWMA intern occurred at Hillman WPA. 2014-37 JBB 8/19/2014

Yellow Toadflax (*Linaria vulgaris*)

In 2010, yellow toadflax, also known as “butter and eggs,” 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. In 2012, possibly due to the drought, there was very little flowering of this plant, so no control efforts were undertaken. In 2013, Grove Lake and two new sites on Overby and Cyrus WPAs were treated with backpack sprayers. At Grove Lake seven patches totaling 0.58 acres were backpack sprayed. This year five patches totaling 1.89 acres, two of which were new, were sprayed with either an ATV or backpack. The acre increase was more likely a result of a broader coverage with the ATV, than the actual size of the patches.

In 2014, the three known infestations on Grove Lake, Overby, and Cyrus WPAs were backpack sprayed and a new infestation was found and treated at Nelson Lake WPA. At three patches totaling 8.53 acres, the infestation at Cyrus was found to be much larger than the known patch of 0.32 acres that was treated in 2013. The number of patches and acres of treatment at Grove Lake has varied over the years depending on environmental conditions affecting flowering, maturation of the native seeding and thus competition, and most importantly staff time/effort searching and locating plants.

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. Initially, 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, nor did we return to the infestation discovered and treated in 2012 at Redhead Marsh WPA. The 0.43 acre patch discovered in 2013 at Cyrus WPA was sprayed again on July 24. A new patch discovered in the parking lot of Pomme de Terre Lake WPA was also sprayed on July 24. A slow spreader, this species fits into a lower concern category, so when time and staff resources allow we will continue to monitor these sites and treat accordingly.

Plumeless Thistle (*Carduus acanthoides*)

This biennial thistle 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. As of 2014, a minimum of 30 WPAs (up from 25 in 2013) are now known to have occurrences of plumeless thistle (Table 18). Fifteen WPAs received treatment for plumeless thistle control this year (Table 19), with five being new sites (Berg, Long Lake, Pomme de Terre Lake, Loen, and Robin Hood WPAs). Most of the new occurrences and treatments are associated with prairie reconstruction efforts, probably as a result of soil disturbance and

increased traffic on these sites, as well as an increased effort to micro-manage invasive weed expressions in these highly important projects.



Despite a thorough canvass and treatment on June 25 of the 28 acre prairie reconstruction at Roderick WPA, a few scattered flowering plumeless thistle plants were found on a subsequent visit. 2014-38 JBB 8/6/2014

Table 18 – Known Sites with Plumeless Thistle – Morris WMD – 2014

Big Stone County	Pope County	Stevens County
Anderson	Grove Lake	Pomme de Terre Lake
Bauman	Nelson Lake	Thorstad
Dismal Swamp	Overby	Swift County
Kufrin	Rolling Forks	Fahl
Chippewa County	Scofield	Loen
Hawk Creek	Stammer	Roderick
Pope County	Starbuck	Welsh
Benson Lake	Westport	Traverse County
Berg	Stevens County	Geyer
Blue Mounds	Long Lake	Diekmann
Froland	Nordby	Robin Hood
Glacial Lake	Pieske	

In 2010 the Invasive Species Crew and others spent considerable time (about two solid weeks) at Grove Lake WPA 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, 2013 and now 2014 there was no treatment of plumeless thistle. This

was due in part to a much lower occurrence of plumeless plants and a limitation of staff time.

Table 19 – Sites Treated for Plumeless Thistle – Morris WMD – 2014

Unit	Date	Phenology	Control	Acres
Benson Lake	6/06/2014	Pre-Flower	Chemical	9.40
Overby	6/06/2014	Pre-Flower	Chemical	11.33
Long Lake	6/10/2014	Basal Rosette	Chemical	0.09
Froland	6/18/2014	Pre-Flower	Chemical	0.11
Loen	6/23/2014	Pre-Flower	Chemical	15.10
Welsh	6/24/2014	Flowering	Chemical	32.87
Roderick	6/25/2014	Flowering	Chemical	28.73
Geyer*	7/17/2014	Flowering	Mowed	41.60
Thorstad	7/17/2014	Flowering	Shoveled	11.50
Robin Hood*	7/21/2014	Flowering	Mowed	8.10
Blue Mounds	7/22/2014	Flowering	Shoveled	6.16
Pomme de Terre Lake	7/23/2014	Flowering	Shoveled	0.50
Overby	7/29/2014	Flowering	Shoveled	9.38
Benson Lake	7/29/2014	Flowering	Shoveled	9.40
Anderson	8/06/2014	Flowering	Shoveled	1.58
Berg	8/07/2014	Flowering	Shoveled	0.14
Glacial Lake	8/12/2014	Flowering	Shoveled	29.37
Welsh	8/12/2014	Flowering	Shoveled	0.87
Pomme de Terre Lake	9/25/2014	Basal Rosette	Chemical	0.43
Total				216.66

*Mowed for Canada thistle, but plumeless thistle was present as well.

New, encouraging information from the Detroit Lakes Wetland Management District showed that, over a five year period, 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.

Purple Loosestrife (*Lythrum salicaria*)

Purple loosestrife control started at Morris WMD in 1997 with raising and release of its natural predator the *Gallerucella* spp loosestrife beetle. New infestations of purple loosestrife were discovered at Stammer and Centennial WPAs this year and were controlled by hand pulling. A check at Aal WPA found more plants that had been previously missed; six more plants were dug on July 30. At most known sites, loosestrife beetles (Table 20) are successfully keeping loosestrife in check.

Table 20 – Purple Loosestrife – Morris WMD – 1997-2014

County/WPA	Bio Release	No. Sites	Wetland Acres	Upland Acres	Acres Infested	Controlled
Big Stone						
Centennial**	No	0	431.40	174.00	0.005	Yes
Lac qui Parle						
Farrell	No	0	162.10	236.60	0.0	Yes
Pope						
Aal	No	0	16.30	17.50	0.1238	Maybe
Benson Lake	Yes	3	22.10	108.00	0.1	No
Blue Mounds	No	0	97.00	295.80	0.0	Yes
Kolstad Lake	Yes	2	17.90	257.60	0.2	No
Heidebrink*	No	0	454.30	337.80	0.127	No
Lake Johanna	Yes	2	142.10	215.30	0.1	No
Larson*	No	0	75.00	217.00	0.1	No
Nelson Lake	Yes	4	327.20	638.10	0.5	No
Ouren	Yes	2	23.50	119.90	0.1	No
Stammer **	No	0	52.09	88.67	.0008	Yes
Overby	Yes	1	10.30	313.80	0.3	No
Stevens						
Darnen	Yes	3	32.90	17.70	1.0	No
Edwards	No	0	106.60	360.40	0.0	Yes
Fehr	No	0	12.40	67.60	0.15	Yes
Fitzgerald*	No	0	57.20	63.70	0.1	No
Fults	Yes	1	81.40	185.90	0.021	No
Swift						
Brady	No	0	57.40	139.10	0.0	Yes
Total	8	18	2179.19	3854.47	2.9276	

*Beetles present without being released

**New site in 2014; acres unknown

Garlon 3A was used to treat 0.146 acres of purple loosestrife at Fehr WPA and 0.001 acres at Stammer WPA. Release sites 3 and 4 on Nelson Lake WPA were in Beaver Pool, which underwent extensive cattail control management in 2013 and 2014 (see Section 3a).



Overby WPA release site #1 was included in a control burn conducted on May 18, 2014. The fire had a positive effect on suppressing purple loosestrife.

2014-39 DMO 8/7/2014

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. lacertosa*, *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, beetle populations increase rapidly after introduction, and the insects are easily captured (harvested) for redistribution (release) to additional locations.

In 2014 a total of 6,750 flea beetles were harvested from Loen, Grove Lake, Rolling Forks and Lynch Lake WPAs (Table 21). The beetles were released at six sites on WPAs (Table 22). Since 1997 the Morris WMD has released flea beetles at 227 release sites on 64 WPAs. Beetles were applied to 0.108 acres in 2014.

Table 21 – Beetles Harvested From WPAs – Morris WMD – 2014

County	No. WPAs	Beetles Collected
Pope	2	1,250
Swift	2	5,500



All members of the YCC crew were walked through the step-by-step process of flea beetle release. Approximately 2,500 flea beetles were released on this 0.06 acre patch of leafy spurge at Hillman WPA. 2014-40 DMO 6/30/2014

Table 22 – Beetles Released on WPAs – Morris WMD – 2014

County	WPA	No. Sites	No. Released
Big Stone	Bauman	1	1,000
	Dismal Swamp	1	1,500
	Hillman	1	2,500
Swift	Svor	2	750
	Fahl	1	1,000

In addition to biological control on June 25 at Bauman WPA, this site was chemically treated with 1.6 oz. of Plateau herbicide on July 10, 2014.

Pope-Swift Cooperative Weed Management Area (CWMA)

The Pope County CWMA started in 2008 and expanded into Swift County in 2010 when grant 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 2014, Intern Nicole Zimmerman continued with mapping, early detection, and rapid response treatment of target weeds. The website (www.weedwatchers.org) continues to be a year around source of information for folks interested in invasive weeds, but it needs to be updated with 2013-2014 information, especially the weed distribution maps for Pope and now Swift County. A short synopsis of her report is included here:

Looking over reports from previous years there is a noticeable difference that the amount of treatment sites is decreasing. This helps prove that our program is successful at helping to manage these invasive species. This year we had an employee of the Department of Agriculture drive around our county and she said that it was a very clean county and she was having trouble finding weeds, and this was a great compliment to the CWMA program.

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 BWSR grant funding 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!

Some of those funds were used to purchase a ¾ ton pick-up and Gator UTV. Brandon Bott was the intern hired for 2014 to continue mapping and treating target weeds. A short synopsis of his report is included here:

For this summer the number of landowners contacted increased from last summer with an increased interest in working with the CWMA for treating the weeds in question. Landowners were contacted by letters and phone. Twenty-seven landowners were contacted; nineteen for wild parsnip, five for Queen Anne's Lace (QAL), and three for Leafy Spurge. Twenty-six landowners responded; twenty-three of them allowed access to spray and three discussed management options.

The problem areas for wild parsnip were similar to previous years, but the areas seemed to expand this year. The highly infested areas were located once again along County Road (C.R.) 64 from 670th Avenue to 650th Avenue, C.R. 21 from C.R. 64 to County Highway 10, and C.R. 65 from 350th Street to 330th Street. There were approximately 374 acres of wild parsnip treated on land adjacent to these roads this summer through the CWMA; 8 more acres were treated elsewhere...



Prairie spiderwort (*Tradescantia bracteata*) were observed in abundance in the 2009 prairie reconstruction at Loose WPA. 2014-41 JBB 6/27/2014

FISH AND WILDLIFE MANAGEMENT

4a. Bird Banding

Morris WMD assisted the 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. We helped the Appleton Area Office capture and band 379 geese.

For the second year, we also participated in a mourning dove banding program coordinated by the DNR. Using three traps around the headquarters, we were able to capture and band 12 doves. Both of these banding opportunities were good learning opportunities for our seasonal employees.



A group of Canada geese moving toward a funnel trap on shore. The banding crews round up the geese by boat. Once captured, the banders determine the birds' age and sex, give them some new jewelry, and set them free.

2014-42 TLH 7/9/2014

4d. Nest Structures

Extremely cold weather persisted in January, February and March of 2014 resulting in nest structures never being checked after the 2013 nesting season. During November and December of 2014, ice in the wetlands never became consistent enough, especially in the cattails, to allow for nest structures to be checked. This has prompted the District to pursue additional ways (contracting

services and utilizing additional volunteers) to assist with completing them in early 2015.

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 Minnesota DNR continued their August Canada Goose Management Hunt that allowed hunters to harvest Canada geese from August 9-24 in order to target resident populations. 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 2014.

Beaver

The number of beaver damage complaints were minimal in 2014. We received two complaints from township boards who believed that beaver on Stenson Lake and Lee WPA were causing flooding problems on adjacent township roads. Additionally, clean out projects were done by staff on Wiley, Edwards and Artichoke WPAs to keep water control structures operational. It was not necessary to remove any beaver during 2014.



The number of beaver damage issues or complaints remained minimal in 2014.
2014-43

COORDINATION ACTIVITIES

5a. Interagency Coordination

Pheasants Forever

Through a statewide partnership with the Service, Pheasants Forever (PF) has been actively purchasing tracts identified by the Service for acquisition, and then donating them to the Service to be managed as waterfowl production areas. Most of the funding for these acquisitions, 5-7 million dollars per year, has been from the state's Outdoor Heritage Fund with lesser amounts from North American Wetlands Conservation Act grants. This year four fee title tracts were donated to the Service: Beyer and Schmeig Tracts (Beyer WPA, Lac qui Parle County), Gardner Tract (Finden WPA, Pope County), and the MN Farms Tract (Niemackl Slough WPA, Stevens County). In addition, two new fee title tracts were acquired: the Fetting Tract (addition to Stenerson Lake WPA) and the Gunnewitz Tract (addition to Hanson WPA). These tracts will be donated to the Service in 2015.

In addition to land acquisition, PF also provides funding and labor to conduct rehabilitation and restoration projects on WPAs. Projects include fence construction, tree removal, and grassland seeding. Pheasants Forever has Habitat Specialists stationed throughout western Minnesota to conduct grassland restoration projects. Recently, the Habitat Specialist position in Alexandria was vacated and refilled in Cyrus.

The Nature Conservancy

Another statewide partnership is in place with The Nature Conservancy (TNC) for acquiring lands for the Northern Tallgrass Prairie NWR (NTGP). This partnership differs from the partnership with PF in that not only fee title lands but also easements are purchased and then donated to the Service. All of the funding for these acquisitions, 3-5 million dollars per year, has been from the state's Outdoor Heritage Fund.

Four NTGP easement tracts were donated to the Service, all of them in Pope County. Three tracts are adjacent to Nora WMA and one tract is west of TNC's Ordway Prairie. The Nature Conservancy also closed on four other easements and has signed options on another three easements so 2015 should see several more new NTGP easements.

In addition to land acquisition, TNC also provides funding and labor to conduct grassland rehabilitation and restoration projects on WPAs. Most of the recent projects have been for tree removal on WPAs. Two Prairie Recovery Specialists hired by TNC conduct projects throughout the District. One position is stationed at the Litchfield WMD office and serves Pope and Swift Counties while another

position is stationed at the Morris WMD office and serves the western portion of the district.

The Conservation Fund

One fee title tract, the Gunnewitz Tract, was purchased by The Conservation Fund (TCF) at the request of the Fish and Wildlife Service. The reason for our request to TCF is that a tract of land adjacent to Hanson WPA was going to be sold at auction in two weeks and PF did not have enough time to conduct an appraisal before the land would be sold. However, TCF was able to do a “quick appraisal” and successfully make an offer at the auction. Pheasants Forever later purchased the tract from TCF for an eventual donation to the Service.

Other Coordination

We work closely with NRCS in their implementation of conservation programs including WRP, CRP, CREP, etc.

Staff members work 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 this narrative report.

5c. Private Lands

The Morris WMD had 1.0 FTE this year for the Partners for Fish and Wildlife Program (Partners Program). The Partners Biologist coordinates the habitat restoration work on private properties through the Partners Program and various conservation easement programs. The Partners Biologist also works closely with the district’s Habitat Team to develop and coordinate the habitat restoration work on new fee title acquisitions. The first part of the year involved catching up on the backlog of private lands habitat restoration inquiries that were a result of the Partners Biologist position being vacant for over a year. There are several noteworthy partnerships that contributed to the amount of leveraged funding and habitat restoration accomplishments in 2014. These partnerships will continue to be a major part of the habitat restoration work on public and private lands within the District.

FY2014 Partners Funding Obligated to:

- 9 tree removal projects
- 6 native prairie seeding projects
- 3 wetland restorations projects

The 1121-HR funds totaled \$93,000 (\$40,000 regular allocation, \$3,000 end of year allocation, and \$50,000 MNPLO Cooperative Agreements).

FY2014 Completed Partners Program Accomplishments:

- 14 upland restoration/enhancements – 486.66 acres
- 9 wetland restoration/enhancements – 133.65 acres

Total **620.31 acres**

- total USFWS cash contribution \$ 21,850
- total USFWS in-kind contribution \$ 5,517
- total partner cash contribution \$120,953
- total partner in-kind contribution \$ 2,584

District staff continued to be involved with implementing the Minnesota Prairie Conservation Plan by being active on several Local Technical Teams (LTTs). These LTTs are based around prairie plan's Prairie Core Areas and are comprised of local conservation professionals who work closely with farmers, landowners, local officials, and citizens to promote grassland conservation and grass-based agriculture as outlined in the prairie plan. Local professionals are typically best suited to understand the lay of the land and the people who live there. With this knowledge base, the LTTs identify and help fund high priority grassland-related projects in their work areas. LTTs seek to concentrate their grassland conservation efforts in ways that get positive outcomes for the environment while adding value to the community and economy. They also serve as a resource to those interested in learning more about managing and conserving grasslands. LTTs use Working Lands Initiative funding to complete habitat restoration/management and outreach projects on private lands.

The Lac qui Parle LTT shifted its focus from offering landowners easement signup bonuses to habitat restoration projects in 2014. However, the LTT members still promote the various conservation easement programs when interacting with private landowners. A number of restoration projects were completed in 2014 through LTT coordination. Seed was purchased through the LTT for prairie reconstruction on Steve Sitter's habitat easement (340G) and for the cool-season grass conversion on Tim Burdick's habitat easement (337G), both in Big Stone County. The Morris WMD was awarded WLI funding for two tree removal projects on one new and one existing habitat easement. These two projects will be completed in 2015.

The Glacial Lakes LTT continued to direct its efforts toward habitat management projects on privately owned native prairies. The LTT was awarded just over \$150,000 for projects in 2014. This included five tree removal projects, one prairie restoration, and one prairie reconstruction that will be coordinated by Morris WMD and completed in 2015. The Wulf prairie restoration project (Jim

Wulf's habitat easement 389G-1) should be completed in 2015 as well. This project will be funded through a combination of WLI, Partners Program, and a Conservation Partners Legacy (CPL) grant. The CPL grant was secured by the Pioneer Heritage Conservation Trust in fall 2014. This large project will involve a significant amount of site preparation in spring 2015 including a prescribed burn, gopher mound leveling (by the landowner), and a grass-selective herbicide application on monotypic stands of Kentucky bluegrass and smooth brome. The prescribed burn was planned for fall 2014 but site conditions prevented the burn from taking place.



This privately owned dry prairie hilltop was covered in eastern red cedars until spring 2014. This tree removal project was funded through the Glacial Lakes LTT. 2014-44 ALG 6/24/2014

We don't spend as much time with the Prairie Coteau and Minnesota River Valley LTTs since they are located on the periphery of the district. Staff from other Service field offices participate more in these LTTs based on their locations. However, the Prairie Coteau LTT purchased seed for the prairie reconstructions on Herbert Hamann's new habitat easements (107G, 107G-1) in Lac qui Parle County. His northern easement was seeded by district staff in spring 2014. His southern easement will be seeded in spring 2015.

The Land Stewardship Project (LSP) has been very active engaging landowners in the Chippewa River watershed. Many new easement inquires and private lands restoration projects were a result of their hard work and outreach efforts. We continued to be involved with the "Simon Lake Challenge". This is a grass roots group organized around the Simon Lake area in southeastern Pope County comprised of local farmers, ranchers, recreational landowners, and members of

various conservation organizations and agencies. This community has come together to achieve a common goal of improved water quality, soil health, range quality, and wildlife habitat with the recognition that a sustainable landscape that supports the local agricultural heritage, as well as wildlife, is only possible with cooperation among stakeholders. With the help of the LSP, this group moved forward with a large-scale conservation grazing project that involved cooperation among many landowners within a 3,000-acre demonstration site. In 2014 several ranchers combined portions of their herds and moved them across multiple properties throughout the grazing season.

Pheasants Forever (PF) acquires approximately 2,000 acres of land in Minnesota every year (see Section 5a). The Partners biologist provides technical assistance to PF to restore and enhance these properties prior to donation. Much of the restoration work includes prairie reconstructions on marginal agricultural fields, wetland restorations, and invasive tree removal. In light of our management limitations, our main goal is to restore these properties in such a way that we can maintain high quality wildlife habitat in the long run.

The Nature Conservancy (TNC) has become another major acquisition and restoration partner for the Morris WMD (see Section 5a). TNC and district staff work together to review potential acquisitions in priority areas. The Partners biologist provides technical assistance to TNC to restore and enhance these acquisitions prior to donation. TNC covers the cost of restoration projects with LSOHC funding. The first Minnesota restoration project through this partnership was completed in the Morris district on the Reed NTGP habitat easement 59G-2, (Pope County). Over 170 acres of scattered trees and groves were removed in 2014 on this 190-acre easement. This larger restoration project also included a six-acre prairie reconstruction using a high diversity, local ecotype seed mix.



This is a view of the Reed NTGP habitat easement prior to restoration.
2014-45 ALG 12/19/2013



This is a view of the Reed NTGP habitat easement after restoration. This was the first NTGP restoration project completed in partnership with TNC and LSOHC. 2014-46 ALG 6/24/2014

RESOURCE PROTECTION

6a. Law Enforcement

During 2014 the district's law enforcement staff remained the same from the previous reporting period, with one Federal Wildlife 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, officers rely on reports from staff, neighbors, and state conservation officers. We maintain a good rapport with state officers working cooperatively during the fall hunting seasons and providing assistance when requested.

Waterfowl Production Areas

Common violations encountered on WPAs throughout the year were vehicle trespass, damage to vegetation, and abandoned property.

Another violation that officers are starting to encounter more is chemical overspray from adjacent fields. This kills the vegetation within the WPA and makes the area more susceptible to weeds if not addressed.



Vegetation damage on Welker WPA caused by the aerial application of chemicals on the adjacent field. 2014-47 RDB 08/12/2014



Illegal ditch on Humpty Dumpty WPA. 2014-48 RDB 04/19/2014



Ditch after restoration work had been completed by the responsible party.
2014-49 RDB 5/16/2014

Officer Briggs, Officer Wayne Henderson (now stationed at Kulm Wetland Management District), and State Conservation Officer Daniel Baumbarger testified in federal court on a commercial minnow trapping case that took place on Barry

Lake and Geyer WPAs. The defendant was found guilty on five of six charges and was fined \$2,500.

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 unauthorized driving on a WPA, failure to remove deer stands, migratory bird hunting after legal shooting hours, and use of toxic shot while hunting. Briggs and Klavetter issued 50 warnings during the reporting period. Several open cases still under investigation could lead to more violation notices and/or warnings being issued.

Our district also helps nearby refuges when requested. Officers Briggs and Klavetter patrolled Big Stone NWR as needed and also coordinated several details to provide proactive law enforcement patrols on the refuge. Big Stone NWR continues to be a popular hunting spot during the hunting season. Officer Ryan Pauley (Shiawassee NWR) was brought in to patrol the refuge during the pheasant opener. Two warnings were issued for hunting violations. Officers acquired funding through the Strategic Wildlife Enforcement Program to bring in four additional officers from Region 6 to assist with the opening weekend of deer season. Officers contacted 83 hunters, issuing two violation notices and five warnings.

Easements

Aerial surveillance utilizing high altitude photography continues to be the primary investigatory tool used to monitor easements. In 2014, fall flights were not conducted due to early winter conditions. Arrangements were made to fly when conditions allow during the winter months or spring of 2015. As a result, only 10 new easement cases were opened during the reporting period. Drainage tile continues to be a concern as more and more protected wetlands are being drained. Officers also work with landowners on projects so they remain in compliance with the terms of the easement.

Four easement cases were presented to the U.S. Attorney's Office for prosecution.

Training

Officer Briggs serves as a Firearms Instructor and presented training to officers throughout the year. He also presented training courses at the Region 3 Firearms Qualification training in Des Moines, Iowa.

Officer Briggs graduated from the Land Management Investigator Training Program at the Federal Law Enforcement Training Center in Brunswick, GA. This training focusses on long term natural resource investigations.

The Morris Wetland Management District was once again host to an officer completing training in the Federal Wildlife Officer Field Training and Evaluation Program. Officer Clay Hamilton completed four weeks of training with Field Training Officer Briggs. The officers worked numerous cases related to easements and WPAs. They also coordinated and executed an arrest warrant related to

violations that occurred within the boundaries of the Big Stone National Wildlife Refuge. Officer Hamilton successfully completed his training and is currently stationed in Fairbanks, Alaska as an Officer/Pilot.

6b. Permits/Economic Use

During 2014, we issued 48 Special Use Permits. The permits were issued for conducting scientific studies, cutting hay, grazing, cash rent farming, firewood cutting, fencing, walleye rearing, burning on easement, cutting/haying road ditches, culvert cleanout, and harvesting cattail plants.

6g. Land Acquisition Support

In recent years, the Service Realty branch has focused acquisition efforts on Small Wetlands Acquisition Program (SWAP) easements while Pheasants Forever (PF) became the primary organization purchasing land for WPAs using funds obtained through a Lessard Samms Outdoor Heritage Council (LSOHC) grant (see Section 5a for more details about our partnerships for acquisition support). This arrangement works well as PF prefers acquisition over easements as their constituents desire more public lands to hunt on over simply habitat protection.

Unfortunately, current SWAP funding levels are no longer enough to even cover just the cost of easements. Funding for Minnesota, which was previously \$5 million per year, was reduced to \$2 million per year with the remaining funds directed to North and South Dakota. In addition, the price of land, and as a result easements, have doubled in cost so our limited funds do not go as far. It is hoped that the newly approved price increase for Duck Stamps will result in Minnesota once again receiving \$5 million, as in the recent past.

The Northern Tallgrass Prairie NWR land acquisition program received a much needed boost with a new partnership with The Nature Conservancy (TNC). Similar to the partnership with PF, TNC successfully acquired funding through LSOHC grants to purchase fee and easement lands and then donate to the Service.

The Conservation Fund (TCF) recently became a new land acquisition partner with the purchase of the 275 acre Gunnewitz Tract in Swift County, an addition to Hanson WPA. TCF was able to purchase the tract at an auction with only two weeks' notice which is a unique and important function. Pheasants Forever later purchased the tract from TCF with LSOHC funds. The tract will be donated to the Service in 2015.

In recent years, Morris WMD 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 the 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

Crop prices dropped to between \$3.00 and \$4.00 per bushel for corn. As a result, land prices were about 10-15 per cent lower than they were in 2012. For this reason, PF was successful in purchasing/donating four tracts of land to the district, totaling 719 acres, and resulting in three new WPAs: Beyer WPA in Lac qui Parle County, Finden WPA in Pope County, and Niemackl Slough WPA in Stevens County. Total acres acquired/donated in 2014 was 719.07 acres, which is the largest one year increase in fee lands in more than 15 years (Table 23). In addition, PF acquired the 275 acre Gunnewitz Tract, an addition to Hanson WPA in Swift County, and the 315 acre Fettig Tract, an addition to Stenerson Lake WPA in Pope County. These two tracts will be donated to the Service in 2015.

**Table 23 – Morris WMD – Fee Title Land Acquisition
2000 – 2014**

Year	Acres	Tract Name	WPA	County
2000	25	Homan	Powers	Big Stone
2001	167	Rothi	Rothi	Big Stone
2002 *	594	7 tracts	Centennial	Big Stone
2003	2	Doherty	Long Lake	Stevens
2004	0			
2005	99	Knollheim	Hegland-Hastad	Lac qui Parle
	200	Wiik	Kufrin	Big Stone
2006	0			
2007	26	Faith Church	Moulton Lake	Big Stone
2008	80	Schaeffer	Rustad	Pope
2009	156	Olsen	State Lake	Pope
2010	0			
2011	123	Snortum	Dakota	Yellow Medicine
2012	0			
2013	96	Nelson	Svor	Swift
	20	Burdick	Prairie	Big Stone
2014	202	Beyer	Beyer	Lac qui Parle
	36	Schmieg	Beyer	Lac qui Parle
	282	Gardiner	Finden	Pope
	199	MN Farms	Niemackl Slough	Stevens
Total	2,307			

*WRP Easements purchased to facilitate acquisition.

**Table 24 – Waterfowl Production Area Realty Acreage – Morris WMD
2014**

County	Units	Realty Acres	Goal Acres
Big Stone	58	11,741.78	15,600
Chippewa	2	360.10	0
Lac qui Parle	19	4,090.40	6,600
Pope	66	13,153.88	21,000
Stevens	56	9,631.60	12,850
Swift	30	7,739.36	10,800
Traverse	12	4,105.20	6,720
Yellow Medicine	5	1,082.70	1,260
Total	248	52,624.09	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 a 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. However, we do 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.

In 2013, counties received 25 percent of the amount prescribed by the revenue sharing formula (3/4 of 1 percent of fair market value) (Table 25). However, due to increased land values, future appraisals should result in an increase in payments counties.

**Table 25 – Revenue Sharing Payments – Morris WMD
FY 2009 - FY 2013**

County	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Big Stone	\$14,433	\$30,474	\$32,656	\$30,686	\$36,151
Chippewa	1,360	959	1,027	995	805
Lac qui Parle	10,799	9,917	10,627	9,986	11,720
Pope	39,334	38,930	41,716	39,200	46,005
Stevens	38,492	27,122	29,127	27,370	32,122
Swift	29,992	21,133	22,645	18,233	21,398
Traverse	13,279	9,357	10,027	12,473	14,638
Yellow Med.	4,918	3,748	4,016	3,774	4,429
Total	\$152,607	\$141,640	\$151,841	\$142,717	\$167,268

*Payments for FY 2014 will not be paid until 2015

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

There was no interest in wetland easements this year. Last year, three wetland easements were purchased, protecting 74.6 acres of wetlands on 204.7 acres of land (Table 26).

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 located within one of 15 Focus Areas in the district. 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 26 – Wetland Easement Program Status – Morris WMD – 2014

County	Number Easements	Wetland Acres	Total Easement Acres	Goal Acres
Big Stone	202	6,834.6	25,464.51	42,640
Chippewa	4	115.1	392.00	0
Lac qui Parle	42	1,433.6	5,199.31	23,540
Pope	268	9,127.9	35,502.50	44,180
Stevens	57	1,824.4	5,116.40	6,090
Swift	70	1,511.3	5,335.10	14,540
Traverse	35	1,146.0	3,871.51	8,440
Yellow Med.	11	181.4	659.27	7,860
Total 2014	689	22,174.3	81,540.60	147,290
Total 2013	689	22,174.3	81,540.60	147,290
Total 2012	686	22,099.7	81,335.90	147,290
Total 2011	682	21,968.2	81,013.40	147,290
Total 2010	679	21,902.2	80,740.96	147,290

Habitat 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 purchasing 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. Unfortunately, Duck Stamp funding was reduced from \$5 million per year to \$2 million in

Minnesota. Due to a lack of available funding, fewer habitat easements were purchased in 2014, in comparison to 2013, with a total of three habitat easements purchased, protecting 317.47 acres of grasslands and wetlands. Last year, a total of five habitat easements were purchased, protecting 1,057.72 acres of habitat (Table 27). Habitat easements must have commissioner review and Land Exchange Board approval in the same manner as the wetland easement.

Table 27 – Habitat Easement Program Status – Morris WMD – 2014

County	Easements	Acres
Big Stone	47	4,949.64
Chippewa	0	0.00
Lac qui Parle	14	1,125.12
Pope	26	2,819.69
Stevens	1	21.47
Swift	16	935.62
Traverse	2	296.16
Yellow Medicine	10	1,092.37
2014 Total	116	11,240.07
2013 Total	113	10,922.60
2012 Total	108	9,864.88
2011 Total	90	8,501.42
2010 Total	78	7,176.50

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.

Four Northern Tallgrass Prairie NWR easement tracts were acquired this year due to a new partnership with The Nature Conservancy (Table 28). The Service identifies fee and easement tracts for protection and TNC acquires the tracts using funds received from a LSOHC Grant and then donates to the Service. In 2014, four easement tracts totaling 448.08 acres were acquired. Three of the tracts are located in northwest Pope County along the west and north sides of Nora WMA. A fourth easement tract was acquired in southeast Pope County, just west of TNC's Ordway Prairie.

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 28 – Northern Tallgrass Prairie National Wildlife Refuge Units
Morris WMD – 2014**

County	Fee Tracts	Fee Acres	Easement Tracts	Easement Acres	Total Tracts	Total Acres
Big Stone	0	0	4	290.79	4	224.75
Chippewa	0	0	0	0.00	0	0.00
Lac qui Parle	0	0	1	27.49	1	27.49
Pope	0	0	6	612.13	6	448.08
Stevens	1	21	0	0.00	1	21.00
Swift	0	0	2	110.00	2	110.00
Traverse	0	0	2	45.70	2	45.70
Yellow Med.	0	0	12	755.56	12	755.56
Total	1	21	27	1,841.67	28	1,862.67

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 – 2014

County	Easements	Easement Tracts*	Acres
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.

PUBLIC EDUCATION AND RECREATION

7a. Provide Visitor Services

Morris WMD attracts approximately 69,000 visitors during the year. Most district visitors are associated with public recreational opportunities such as trapping, hunting, fishing, wildlife observation, interpretation and environmental education. The largest impact provided to local communities comes from hunters who are the most frequent users of District lands.

The headquarters, located at Edwards WPA (Stevens County), offers a visitor center where general information about 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). In May of 2011 the trail was designated as a National Recreational Trail in the National Trail System.

Prairie Pioneer Days

Once again the District was host of the Prairie Extravaganza. The event is collaboration between the district and the Friends of the Morris Wetland Management District, and is held in conjunction with the City of Morris' Prairie Pioneer Days festival. As in previous years, we invited folk music group Skilly and Duff to perform, but they canceled due to an unexpected death. The usual horse and buggy ride had to be canceled due to rain, and the other events (bird house building, selling native plants by Morning Sky Greenery, and raptors from the Audubon Center for the North Woods) had to be moved to the maintenance bays. For these reasons we only had about 100 people, which was half our usual attendance. However the Friends group still came out and had a great time.

Fourth Grade Conservation Day

Fourth Grade Conservation Day is an environmental education program for fourth graders that includes three sections.

- catching and identifying insects in early fall
- snowshoeing and winter ecology in winter
- watersheds in the spring

In 2014 the Morris Elementary School and Glacial Hills Elementary participated. Plans are underway to include St Mary's Catholic school next fall.



A student from Glacial Hills Elementary School looks for insects.
2014-50 SJB 9/22/2014

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 deer, pheasant, and waterfowl. 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.

Waterfowl

Minnesota's 2014 waterfowl hunting season looked similar to previous years. There was a six-duck limit with the state split into three zones — all opening half-hour before sunrise on September 27. The only noteworthy change, aside from actual dates, is that the daily bag for canvasbacks was one, down from the previous year. The possession limit remained three times the daily limit.

Despite the warm weather, it was an excellent start to the season with a lot of ducks and thus happy hunters on opening day. There was good but somewhat spotty opportunity for ducks throughout the season. The season ended abruptly in many areas with a blizzard and extreme cold on November 10. There was limited hunting opportunity following the freeze-up.

Morris WMD is in the Canada Goose Intensive Harvest Zone, meaning that hunters had extra goose hunting opportunities in August and September this year. It was a tough August season in that weather inhibited the normal small grain harvest. Hunting pressure was relatively heavy on opening day, and then quickly died down. Birds were tough to find in any huntable numbers this year. The September hunt went better than the August season. Minnesota DNR reported

excellent hunts at the very end of the season and into the first part of the regular season (~mid-October), but the action died off considerably shortly thereafter.

Fields were very wet in some areas and thus ideal hunting opportunities (birds plus dry fields) were tough to find. Even after the freeze-up, die hard hunters were having some good goose hunts right up through December 30th in Big Stone County – targeting geese coming off the Big Stone Power Plant ponds. Despite some highlights, overall, it was a poor season for most goose hunters.

Youth Hunt

Once again this year the Morris WMD teamed with Ducks Unlimited to host a mentored youth duck hunt on September 13. We had a total of 6 mentors and 12 youth hunters. Thanks to all of the volunteers who contributed to this event!

The mentored youth hunt is a way to introduce youth to 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.



All six participants in the Youth Waterfowl Hunt were successful.
2015-51 MLK 9/13/2014

Pheasant:

Despite a short-term increase in the number of Minnesota pheasants, habitat loss continues to be the primary factor in the long-term decline of the state's pheasant population, according to the Minnesota Department of Natural Resources.

The DNR's August roadside survey for pheasants showed a six percent increase in the pheasant index from 2013, an increase that occurred despite a severe

winter, a slow start to spring and heavy rains in June. Weather and habitat are the two main factors that drive pheasant population trends. Like other Midwestern states, the loss of Conservation Reserve Program (CRP) acres is the primary reason there's been a steady decline in Minnesota's pheasant harvest since 2006.

The southern part of the district (Big Stone and Chippewa counties) received 12 - 14 inches of snow in early November, which congregated birds in traditional winter habitat. Lots of thawing occurred through December and by the end of the season just an inch or so of light snow was left on the ground. Pheasants dispersed toward the end of the season, but mostly to areas with minimal hunting disturbance. Overall, it was a fair season, but not as good as expected.

Deer

Although the statewide deer harvest was down this year, the firearm and muzzleloader harvests in our area were up from last year. Cold, windy weather later in the season may have deterred some archery and muzzleloader hunters.

Turkey

Because of the late spring, some areas still had some snow on the ground on the opening day of the turkey season. There were reports of some turkeys still yarded up and difficult to hunt. Surprisingly, little gobbling was reported in the mornings.

In the southern part of the district, there was less snow or flooding going into the season. With the open winter, turkeys never yarded up too densely and were well dispersed for the opener. We noted and heard encouraging reports of many various toms with small groups of hens a couple weeks ahead of the season. As most reintroduced turkey population models would predict, it seems our numbers peaked a few years back and are now holding steady around 15-25% below that initial peak. Fall season continues to be a non-event. Rarely even hear mention of turkey hunting come fall (Minnesota DNR).

Trapping

Trends regarding trappers' effort and actual harvest are usually strongly correlated with the selling price of fur. The price of fur dropped from the high prices offered the previous year for most species (Minnesota DNR trapping harvest statistics). As a result license sales were up statewide from last year, but the actual harvest rate was down. Minnesota trapping harvest is still higher than the last ten year average.

In the Southern part of the district, a November 10th winter storm put an abrupt end to most trapping efforts. There are some signs of muskrat returning following the 2012 collapse. There was an increase in coyote numbers this year. (Minnesota DNR)

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

In early 2014, district staff developed a new social media strategy to utilize powerful and convenient communication tools like Facebook. The Morris WMD Facebook page has become one of the most useful outreach tools used by the district. The number of page likes, or people following the page, grew from under 200 in January 2014 to over 3,000 by the end of the year. The diverse, high quality content that is generated by the staff reaches thousands of people every week. The audience is as diverse as the page content. This gives the district staff a great opportunity to educate people at a local, national, and even international level about wetland management districts and the prairie pothole region.



Several guided interpretive hikes were part of our 50th Anniversary Open House. 2014-52 DMO 10/18/2014

This year we celebrated the 50th anniversary of the establishment of the Morris Wetland Management District (originally the Benson WMD), with an open house during refuge week. The Open House featured Puddles the blue goose, a scavenger hunt, interpretive hikes, a meet and greet with the Wetland Manager and employees, as well as door prizes. After the open house there was a staff member reunion and supper. Former staff, their family members, and members of the Friends group joined us for this celebration (see Items of Interest).

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

- Judges at Morris High School Science Fair
- Volunteer Thank You Supper
- Morris Conservation Day, Snowshoeing and Winter Ecology
- Judges at Morris Fifth Grade Science Fair
- Glacial Hills Conservation Day, Winter Ecology
- Morris Conservation Day, Watersheds
- Prairie Summer Camp through Morris Community Education
- Kindergarten Learning Lab through Morris Community Education
- Kruger Farms Fall Primer
- Soil and Water Environmental Learning Lab
- Swift County Water Festival
- Fourth Grade Conservation Day, Insect Catching and Identification
- Cub Scouts Birding Merit Badge

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. They 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, a local community festival we use to promote awareness of grasslands and wetlands.

This year the Morris WMD staff lost our dear friend and advocate, Kate Livingston, to cancer. Kate, along with her husband Dale, was one of the founding members of the Friends of the Morris WMD in 2001. Over the years Kate served as both president and treasurer. She accumulated 1,546 volunteer hours. A memorial is planned for Kate along the wildlife drive. Dale Livingston has resigned as president of the Friends group, but continues to serve as a board member. Ron Kubik is acting as interim president until an election is held.

PLANNING AND ADMINISTRATION

8b. General Administration



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

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. Raymond Briggs, Law Enforcement Officer, GS-11, PFT.
6. Alexander Galt, Wildlife Biologist, GS-11, PFT.
7. Karen Stettner, Administrative Officer, GS-9, PFT.
8. Styron Bell, Wildlife Refuge Specialist, GS-9, PFT.
9. Daniel Angelo, Prescribed Fire Specialist, GS-9, PFT; EOD 1/19/2014.
10. Phil Millette, Supervisory Range Technician, GS-7, PFT.
11. Donna Oglesby, Biological Technician, GS-7, PFT.
12. Joshua Pittman, Engineering Equipment Operator, WG-9, PFT.
13. Jacob Saverynski, Maintenance Worker, WG-7, PFT.

The following permanent personnel actions took place in 2014:

- Prescribed Fire Specialist Daniel Angelo transferred to Morris from Big Stone National Wildlife Refuge in Odessa, Minnesota.

Temporary Personnel



Jeffrey Tally Mitch Kevin Shaun

Kevin Thell	Range Technician, (fire), TFT	3/23/2014 – 6/28/2014
Katherine Weidman	Range Technician, (fire), TFT	4/06/2014 – 5/31/2014
Tally Hamilton	Biological Science Tech, TFT	5/11/2014 – 10/04/2014
Mitchell Kill	Biological Science Aid, TFT	5/18/2014 – 8/23/2014
Jenna Harlow	Social Services Aid, TFT	5/18/2014 – 8/09/2014
Shaun McNally	Biological Science Tech, TFT	6/04/2014 – 8/16/2014
Jeffrey Metcalf	Biological Science Tech, TFT	6/08/2014 – 11/01/2014
Clay Hamilton	Law Enforcement Trainee	5/27/2014 – 6/21/2014

Youth Conservation Corps



Jenna Zachary Cody Kaitlyn Jessica

YCC Crew

Jenna Harlow	Social Services Aid (Leader)	5/25/2014 – 8/09/2014
Kaitlyn Asmus	YCC Crew Member	6/03/2014 – 7/26/2014
Jessica Burks	YCC Crew Member	6/03/2014 – 7/26/2014
Zachary Krupke	YCC Crew Member	6/03/2014 – 7/26/2014
Cody Vail	YCC Crew Member	6/03/2014 – 7/26/2014

Table 30 – Staff Size – Morris WMD – 2010-2014

	<u>Permanent</u>			<u>Temporary</u>	Other Programs*
	Full Time	Seasonal	Part Time	GS & WG	
FY 14	13	0	0	7	4
FY 13	13	0	0	5**	0
FY 12	14	0	0	8	3
FY 11	14	1	0	8**	5
FY 10	13	1	0	10**	4

*Includes YCC

**Includes Pathways employees

Volunteers

Robert Hamilton	Volunteer	06/07/2014 - 10/04/2014
Joe Snaza	Volunteer	10/30/2014 - present

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 FY2014, 32 volunteers contributed 500 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.

Robert Hamilton, husband of Bio Science Tech Tally Hamilton, volunteered 203 hours between June and October. He worked with the maintenance staff on various projects. Joe Snaza volunteered 109 hours. He came one day a week and worked on various biological projects.

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 Ron Kubik as the 2014 Volunteer of the Year. Ron has contributed 274 hours over the past 11 years, on projects ranging from upland management to nest structure construction and placement.



Several students from the University of Minnesota, Morris hand seeding on Edwards WPA. 2015-53 SAB 11/21/2013

Funding

Table 31 – Morris WMD Funding Levels – 2010-2014
(Dollars in Thousands)

Fiscal Year	1260	Fire 9100/9200	*** Special	1121	Total Budget
2014	1,200.6	221.7	**175.2	118.8	1,541.1
2013	1,086.0	199.8		@ 5.0	1,290.8
2012	1,312.7	245.3		149.1	1,707.1
2011	1,140.8	255.3	*101	138.1	1,535.2
2010	1,273.9	416.7	-0-	181.5	1,872.1

*Repair/resurface parking lots and driveway.

**Funds to purchase a John Deere Skid Steer and two Law Enforcement pickups with all necessary LE equipment installed.

***Special Funds are not included in Total Budget figure.

@The Private Lands position was vacant in 2013.

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

- The FY 2014 1260 budget includes \$70,000 for a restoration project on Big Stone Refuge.
- 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.

We received our final budget figures on March 21, 2014.

Safety

The station had no reportable accidents in 2014. On May 21-22, an Environmental Compliance and Safety Audit was conducted by the regional office safety team, in accordance with DOI and FWS procedures. As in most safety audits there were a few issues that were brought to our attention. Overall the District was in good shape with regards to following safety standards and in the end the District received a better rating than the last audit in 2010.

General Maintenance

Facilities

The annual inspection of boundary posting continued in 2014. Most of this work was done opportunistically by staff or when specific issues came up that needed

our attention like the signing of the three new WPAs. This year sign work was mostly accomplished in Lac qui Parle, Stevens, and Pope Counties. Several repair and maintenance projects associated with ditches, dikes, access, and water control structures were completed by Engineering Equipment Operator Pittman, Maintenance Worker Saverynski, other staff, and YCC:

- Another large rain event occurred in 2014 that required further repairs to the Auto Tour Route.
- Parking lots were installed at Beyer and Finden WPAs. A dedication monument was installed by a contractor at Finden WPA.
- The southern water control structure at Nelson Lake WPA was repaired in conjunction with the wetland draw down and cattail management there.
- Maintenance of kiosks and observation decks.

The headquarters buildings required little maintenance this year, but instead equipment seemed to need constant attention. Most notably:

- Plumbing issues in the shop were resolved and the insulation was bolstered above the office space to help conserve energy.
- Trailers: rim and studs, D rings, lighting issues and wiring harness, tires.
- Argo: multiple axle shafts, rim, charging system, tracks.
- John Deere 333D Skid Steer repair: \$17,941.33.
- Mowers: bearings and hydraulic tank.
- UTVs: sensor throttle position, charging system, transfer case seals.
- General fleet of passenger vehicles: wheel bearings, EGR system, pinion seal, tires, fuel injectors, air conditioning, brakes, radio installation and removal.
- International Semi 2003: fifth wheel plate attachment.
- New Holland TV 140: installed an auxiliary cooling system to resolve constant overheating issues, hydraulic system repairs, parking brake seals, numerous electrical issues.

The following equipment was purchased in 2014:

- Polaris EPS Trail UTV 570 RZR, 45 HP
- Polaris Ranger XP 900 EPS UTV, 60 HP
- John Deere 333E Compact Track Loader (Skid Steer) with multi-purpose bucket, 48" fork, and mulching head
- 2015 Ford F350 4 X 4 Crew Cab Pickup
- 2- 2015 Ford 150 4 X 4 Pickups (outfitted for law enforcement)

ITEMS OF INTEREST

Anniversary

The Morris Wetland Management District celebrated its 50th Anniversary in 2014. Below are several photos of the reunion celebration.



Numerous people attended our celebration. 2014-54 DMO 10/18/2014



Marilyn Bober, Gaylord Bober, Rick Schultz 2014-55 DMO 10/18/2014



Wayne Henderson, Al Radtke, John Paulson. 2014-56 DMO 10/18/2014



Children of staff members enjoyed the evening meal. Adults in the background include Andrea Bright, Rick Schultz, Melanie and Doug Briggs.
2014-57 DMO 10/18/2014

Appendix A

Table 32 – Finden Reconstruction Seed Mix – 2014

	LB/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Grasses			
Big bluestem	0.525	1.99	12.10%
Indian grass	0.525	2.10	12.80%
Little bluestem	0.350	2.10	12.80%
Sideoats grama	0.700	3.09	18.90%
Switchgrass	0.105	0.94	5.79%
Canada wildrye	0.175	0.45	2.78%
Slender wheatgrass	0.210	0.78	4.75%
Prairie dropseed	0.175	1.03	6.30%
Prairie brome	0.542	1.59	9.76%
Bluejoint grass	0.017	1.59	9.75%
Prairie cordgrass	0.175	0.66	4.07%
	3.500	16.33	100.00%

	OZ/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Forbs			
Anise Hyssop	0.08	0.17	1.16%
Black-eyed Susan	1.28	2.70	18.90%
Blue flag iris	0.08	0.002	0.02%
Blue vervain	0.32	0.68	4.80%
Canada anemone	0.048	0.01	0.06%
Canada milkvetch	0.40	0.16	1.10%
Common meadow rue	0.24	0.06	0.43%
Common milkweed	0.08	0.01	0.05%
Common ox-eye	0.64	0.09	0.65%
Common yarrow	0.32	2.12	14.80%
Cream wild indigo	0.016	0.001	0.004%
Culver's root	0.016	0.29	2.06%
Cup plant	0.80	0.03	0.18%
Golden Alexanders	1.44	0.36	2.55%
Heartleaf golden Alexanders	0.24	0.07	0.46%
Ironweed	0.64	0.35	2.48%
Joe Pye weed	0.16	0.35	2.45%
Leadplant	0.48	0.19	1.35%
Meadow blazing star	0.16	0.04	0.26%
Mountain mint	0.24	1.21	8.51%
Narrow-leaved coneflower	0.08	0.01	0.09%
New England aster	0.32	0.48	3.41%
Nodding onion	0.24	0.39	2.71%
Prairie cinquefoil	0.24	1.27	8.93%
Prairie coreopsis	0.24	0.06	0.39%
Prairie coneflower	0.48	0.46	3.25%

	OZ/Acre		Seeded %
Forbs	Seeded	Seeds/SqFt	of Mix **
Prairie onion	0.16	0.04	0.28%
Prairie rose	0.24	0.01	0.10%
Prairie spiderwort	0.08	0.02	0.13%
Purple prairie clover	1.12	0.46	3.25%
Rough blazing star	0.16	0.06	0.41%
Showy goldenrod	0.32	0.70	4.90%
Showy tick trefoil	0.80	0.10	0.71%
Smooth aster	0.24	0.30	2.13%
Stiff goldenrod	0.24	0.23	1.59%
Swamp milkweed	0.08	0.01	0.06%
Tall blazing star	0.48	0.12	0.85%
Maximillian's sunflower	0.80	0.28	1.93%
White prairie clover	0.80	0.35	2.45%
Wild bergamot	1.12	1.80	12.60%
Wild white indigo	0.08	0.003	0.02%
	16.00	14.24	100.00%

	OZ/Acre		Seeded %
Sedges/Rushes	Seeded	Seeds/SqFt	of Mix **
Brown fox sedge	0.37	0.84	11.80%
Plains Oval Sedge	1.09	0.42	5.99%
Wool grass	0.13	5.24	74.00%
Fowl bluegrass	0.37	0.06	0.88%
Fowl Manna Grass	0.12	0.09	1.23%
American sloughgrass	0.37	0.42	5.94%
	2.44	7.07	100.00%
**By Seeds/Sq.Ft.		37.64	

Table 33 – TNC-14 Seed Mix – 2014

(Artichoke Lake, Big Slough, Colbert WPAs)

Lot #	Species	PLS #/Acre Seeded	Seeds/Sq. Ft.
BSR-11	Stiff goldenrod*	0.05	0.50
BSR-11	Prairie Species*	0.16	1.10
L8LE11	Stiff goldenrod	0.01	0.10
L8LE11	Switchgrass	0.15	1.30
L8LE11	Prairie Species*	0.34	1.70
B14NP11	Big bluestem	0.04	0.18
B14NP11	Indiangrass	0.14	0.58
B14NP11	Sunflower	0.05	0.25
B14NP11	Prairie Species*	0.06	0.34
B14MaxNP10	Maximillian sunflower	0.14	0.68
B14MaxNP10	Prairie Species*	0.02	0.10
Feder	Bearded slender wheatgrass	0.42	1.50
HABFO1431	Feder Grass/Forb/Sedge mix**	5.10	39.06
Totals		6.68	47.39

*Prairie species present in one or more lot include: wild bergamot, prairie clover (sp.), leadplant, vervain (sp.), prairie cinquefoil, goldenrods (sp.), asters (sp.), Elymus (sp.), Indiangrass, switchgrass, little bluestem, Muhlenbergia (sp.), rough dropseed, Liatris (sp.), sunflower (sp.), prairie dropseed, big bluestem, mountain mint, sideoats grama, purple prairie coneflower, prairie onion, large-flowered beardstongue, yellow coneflower, stiff goldenrod, cordgrass, rattlesnake root, primrose (sp), Canada bluejoint, Gentian (sp.), bugleweed, golden Alexander, Kalm's brome, showy ticktrefoil, Canada milkvetch, Heliopsis, black-eyed Susan, germander, bidens, sedges (sp.).

**Lot# HABFO1431	LB/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Grasses			
Big bluestem	0.32	1.21	6.47%
Indian grass	0.48	1.92	10.23%
Little bluestem	0.72	4.32	23.05%
Sideoats grama	0.80	3.53	18.82%
Canada wildrye	0.35	0.90	4.82%
Rough dropseed	0.16	1.65	8.78%
Prairie dropseed	0.16	0.94	5.02%
Prairie brome	0.72	2.12	11.29%
Bluejoint grass	0.01	1.09	5.83%
Prairie cordgrass	0.28	1.06	5.68%
	4.00	18.73	100.00%

Forbs	OZ/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Anise Hyssop	0.40	0.83	5.27%
Black-eyed Susan	0.72	1.52	9.69%

Blue vervain	0.64	1.37	8.71%
Canada milkvetch	1.68	0.66	4.18%
Common evening primrose	0.48	0.99	6.32%
Common meadow rue	0.24	0.06	0.39%
Common milkweed	0.48	0.04	0.28%
Common ox-eye	1.60	0.23	1.47%
Common yarrow	0.05	0.32	2.02%
Culver's root	0.05	0.88	5.62%
Golden Alexanders	1.00	0.25	1.61%
Great blue lobelia	0.10	1.10	7.02%
Heath aster	0.06	0.29	1.87%
Hoary vervain	0.80	0.51	3.28%
Ironweed	0.20	0.11	0.70%
Large-flowered penstemon	0.10	0.03	0.20%
Leadplant	0.32	0.12	0.75%
Maximillian sunflower	0.08	0.02	0.15%
Meadow blazing star	0.08	0.02	0.12%
Mountain mint	0.08	0.40	2.57%
New England aster	0.16	0.24	1.54%
Prairie cinquefoil	0.16	0.85	5.40%
Prairie coneflower	0.56	0.54	3.44%
Prairie onion	0.16	0.04	0.26%
Prairie rose	0.16	0.01	0.06%
Prairie spiderwort	0.08	0.02	0.12%
Purple prairie clover	1.28	0.53	3.37%
Rough blazingstar	0.16	0.06	0.37%
Showy goldenrod	0.10	0.21	1.33%
Showy tick trefoil	0.80	0.10	0.64%
Smooth aster	0.06	0.08	0.51%
Sneezeweed	0.24	0.72	4.56%
Stiff goldenrod	0.24	0.23	1.44%
Tall blazing star	0.24	0.06	0.39%
White prairie clover	1.44	0.63	4.00%
Wild bergamot	1.01	1.62	10.32%
	16.00	15.69	100.00%

Sedges/Rushes	Lb/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Brown fox sedge	0.015	0.55	11.88%
Plains Oval Sedge	0.045	0.28	5.99%
Wool grass	0.006	3.43	74.07%
Fowl bluegrass	0.015	0.04	0.88%
Fowl Manna Grass	0.005	0.06	1.23%
American sloughgrass	0.015	0.28	5.94%
	0.100	4.64	100.00%
**By Seeds/Sq.Ft.	5.100	39.06	

Table 34 – Niemackl Slough WPA Mesic Seed Mix – 2014

Lot#: HABFO1426	Lb/Acre		Seeded %
Grasses	Seeded	Seeds/SqFt	of Mix**
Slender wheatgrass (Revenue)	0.36	1.3	7.51%
Big bluestem	0.64	2.4	13.82%
Sideoats grama	0.75	3.3	18.86%
Kalm's brome	0.38	1.1	6.29%
Canada bluejoint grass	0.02	1.7	9.73%
Canada wildrye (Mandan)	0.21	0.5	3.05%
Switchgrass	0.19	1.7	9.63%
Little bluestem	0.11	0.7	3.85%
Indiangrass	0.75	3.0	17.09%
Prairie cordgrass (Red River)	0.15	0.6	3.25%
Prairie dropseed	0.21	1.2	6.92%
	3.77	17.5	100.00%

Forbs	Oz/Acre		Seeded %
	Seeded	Seeds/SqFt	of Mix**
Yarrow	0.02	0.159	1.02%
Anise hyssop	0.48	0.992	6.37%
Prairie onion	0.48	0.121	0.78%
Leadplant	0.72	0.264	1.70%
Canada anemone	0.07	0.013	0.08%
Swamp milkweed	0.12	0.013	0.08%
Common milkweed	0.12	0.011	0.07%
Canada milkvetch	0.60	0.234	1.50%
Heath aster	0.10	0.441	2.83%
Smooth blue aster	0.36	0.455	2.92%
New England aster	0.48	0.727	4.67%
White wild indigo	0.12	0.005	0.03%
Cream wild indigo	0.19	0.006	0.04%
Prairie coreopsis	0.36	0.083	0.53%
White prairie clover	1.20	0.523	3.36%
Purple prairie clover	1.61	0.664	4.27%
Showy tick trefoil	1.20	0.152	0.97%
Narrow-leaved coneflower	0.02	0.003	0.02%
Joe Pye weed	0.24	0.523	3.36%
Bottle gentian	0.001	0.077	0.50%
Ox-eye sunflower	0.96	0.139	0.89%
Maximillian sunflower	0.48	0.143	0.92%
Northern blue flag iris	1.27	0.038	0.24%
Button blazingstar	0.24	0.088	0.57%
Meadow blazingstar	0.72	0.165	1.06%
Prairie blazingstar	0.72	0.182	1.17%
Great blue lobelia	0.05	0.551	3.54%
Wild bergamot	1.99	3.201	20.55%
Common evening primrose	0.24	0.496	3.18%

Prairie cinquefoil	0.05	0.254	1.63%
Mountain mint	0.02	0.121	0.78%
Long-headed coneflower	0.72	0.694	4.46%
Prairie wild rose (<i>R. arkansana</i>)	0.24	0.014	0.09%
Black-eyed Susan	1.44	3.041	19.53%
Cup plant	0.72	0.023	0.15%
Stiff goldenrod	0.72	0.678	4.35%
Showy goldenrod	0.48	1.047	6.72%
Purple meadow rue	0.36	0.091	0.58%
Prairie spiderwort	0.12	0.028	0.18%
Ironweed	0.96	0.529	3.40%
Blue vervain	0.48	1.025	6.58%
Culver's root	0.01	0.220	1.41%
Golden alexander	2.16	0.545	3.50%
	23.66	15.576	100.00%

	Lb/Acre Seeded	Seeds/SqFt	Seeded % of Mix**
Sedges/Rushes			
American sloughgrass	0.038	0.689	11.06%
Field oval sedge (<i>C. molesta</i>)	0.111	0.695	11.16%
Brown fox sedge	0.038	1.377	22.12%
Fowl bluegrass	0.038	0.102	1.64%
Woolgrass	0.005	3.122	50.14%
White top grass	0.021	0.242	3.89%
	0.250	6.227	100.00%
**By Seeds/Sq.Ft.		39.300	

Table 35 – Beyer WPA Seed Mix – 2014
(Schmieg Tract)

Lot#: HABFO1423B	Lb/Acre Seeded	Seeds/SqFt	Seeded % of Mix**
Grasses			
Big bluestem	0.32	1.2	6.10%
Indian grass	0.48	1.9	9.65%
Little bluestem	0.64	3.8	19.30%
Sideoats grama	0.80	3.5	17.70%
Switchgrass	0.08	0.7	3.63%
Canada wildrye	0.18	0.5	2.30%
Rough dropseed	0.08	0.8	4.14%
Prairie dropseed	0.24	1.4	7.10%
Bearded slender wheatgrass	0.16	0.6	2.98%
Prairie brome	0.72	2.1	10.60%
Bluejoint grass	0.02	2.2	11.00%
Prairie cordgrass	0.28	1.1	5.36%
	4.00	19.9	100.00%

Forbs	Oz/Acre Seeded	Seeds/SqFt	Seeded % of Mix**
Anise Hyssop	0.40	0.826	5.42%
Black-eyed Susan	0.48	1.014	6.65%
Blue vervain	0.48	1.025	6.73%
Bottle Gentian	0.01	0.051	0.34%
Canada anemone	0.07	0.013	0.09%
Canada milkvetch	1.65	0.643	4.22%
Common evening primrose	0.48	0.992	6.51%
Common meadow rue	0.24	0.061	0.40%
Common milkweed	0.48	0.044	0.29%
Common ox-eye	1.60	0.231	1.52%
Common yarrow	0.05	0.317	2.08%
Culver's root	0.08	1.469	9.64%
Cup plant	0.32	0.010	0.07%
Golden Alexanders	1.12	0.283	1.86%
Great blue lobelia	0.10	1.102	7.23%
Heath aster	0.06	0.294	1.93%
Hoary vervain	0.80	0.514	3.37%
Ironweed	0.20	0.110	0.72%
Large-flowered penstemon	0.10	0.031	0.20%
Leadplant	0.32	0.118	0.77%
Maximillian sunflower	0.08	0.024	0.16%
Meadow blazing star	0.08	0.018	0.12%
Mountain mint	0.04	0.202	1.33%
New England aster	0.16	0.242	1.59%
Prairie cinquefoil	0.16	0.848	5.56%
Prairie coneflower	0.56	0.540	3.54%
Prairie onion	0.16	0.040	0.27%
Prairie rose	0.16	0.010	0.06%
Prairie spiderwort	0.08	0.018	0.12%
Purple prairie clover	1.12	0.463	3.04%
Rough blazingstar	0.16	0.059	0.39%
Showy goldenrod	0.10	0.209	1.37%
Showy tick trefoil	0.80	0.101	0.66%
Smooth aster	0.06	0.081	0.53%
Sneezeweed	0.24	0.716	4.70%
Stiff goldenrod	0.24	0.226	1.48%
Swamp milkweed	0.16	0.018	0.12%
Tall blazing star	0.24	0.061	0.40%
White prairie clover	1.36	0.593	3.89%
Wild bergamot	1.01	1.620	10.60%
	16.00	15.238	100.00%

Sedges/Rushes	Lb/Acre Seeded	Seeds/SqFt	Seeded % of Mix**
Brown fox sedge	0.015	0.551	11.80%
Plains Oval Sedge	0.045	0.278	5.99%

Wool grass	0.006	3.434	74.00%
Fowl bluegrass	0.015	0.041	0.88%
Fowl Manna Grass	0.005	0.057	1.23%
American sloughgrass	0.015	0.275	5.94%
	0.100	4.636	100.00%
**By Seeds/Sq.Ft.			

Table 36 – NAWCA Grant Seed Mix – 2014

(Fults, Mau, Pomme de Terre River, Robin Hood, and Walden WPAs)

Lot#	Species	PLS #/Acre Seeded	Seeds/Sq.Ft.
HABFO1405	Feder Grass/Forb/Sedge Mix **	4.60	29.90
C-NP-12	Sunflower	0.34	1.50
C-NP-12	Prairie Species*	0.27	2.70
B2-LE-12	Big bluestem	0.48	1.80
B2-LE-12	Prairie Species*	0.20	1.00
B14B12LE12	Side oats grama	0.11	0.50
B14B12LE12	Big bluestem	0.048	0.18
B14B12LE12	Prairie Species*	0.07	0.36
B53-NP-12	Sunflower	0.31	1.40
B53-NP-12	Prairie Species*	0.13	0.66
BSR-11	Stiff goldenrod	0.11	1.00
BSR-11	Prairie Species*	0.37	2.60
Feder	Bearded slender wheatgrass	0.25	0.95
Totals		5.28	44.50

*Prairie species present in one or more lot include: leadplant, little bluestem, rough dropseed, sideoats grama, prairie dropseed, prairie cinquefoil, prairie clover (sp.), rattlesnake root, muhlenbergia (sp.), wild bergamot, cordgrass, elymus (sp.), primrose, liatris (sp.), prairie onion, stiff goldenrod, asters (sp.), goldenrods (sp.), golden alexander, black-eyed Susan, vervain (sp.), large-flowered beardstongue, Showy tick trefoil, false sunflower, Kalms brome, long-headed coneflower, bedstraw, Indiangrass, switchgrass, Canada milkvetch, meadow rue, big bluestem, and sunflower (sp.).

**Lot# HABFO1405			
	Lb/Acre Seeded	Seeds/SqFt	Seeded % of Mix *
Grasses			
Indiangrass	0.45	1.80	11.40%
Little bluestem	0.54	3.24	20.50%
Sideoats grama	0.30	1.32	8.36%
Prairie cordgrass	0.57	2.16	13.70%
Switchgrass	0.03	0.27	1.71%
Canada wildrye	0.31	0.80	5.11%
Prairie dropseed	0.12	3.30	20.90%

Bluejoint grass	0.01	0.91	5.77%
Kalms brome	0.68	1.97	12.40%
	3.01	15.7	100.00%

Sedges/Rushes	Oz/Acre Seeded	Seeds/SqFt	Seeded % of Mix
Brown fox sedge	0.24	0.552	23.10%
Plains Oval Sedge	0.72	0.280	11.70%
Wool grass	0.03	1.170	49.00%
Fowl bluegrass	0.30	0.051	02.14%
Fowl Manna Grass	0.08	0.056	02.38%
American sloughgrass	0.24	0.276	11.50%
	1.61	2.387	100.00%

Forbs	Oz/Acre Seeded	Seeds/SqFt	Seeded % of Mix
Anise hyssop	0.30	0.621	5.30%
Black-eyed Susan	0.54	1.139	9.73%
Blue vervain	0.48	1.022	8.73%
Canada milk vetch	1.26	0.491	4.20%
Common evening primrose	0.36	0.745	6.36%
Common Meadow Rue	0.18	0.045	0.38%
Common milkweed	0.36	0.032	0.28%
Culver's root	0.04	0.734	6.27%
Golden Alexanders	0.96	0.240	2.05%
Great blue lobelia	0.07	0.803	6.86%
Heath aster	0.05	0.229	1.96%
Hoary vervain	0.60	0.384	3.28%
Ironweed	0.15	0.082	0.70%
Large flowered penstemon	0.07	0.022	0.19%
Long-headed coneflower	0.51	0.489	4.18%
Maximillian sunflower	0.12	0.036	0.31%
New England aster	0.12	0.182	1.56%
Ox-eye sunflower	1.20	0.168	1.43%
Prairie blazingstar	0.18	0.045	0.38%
Prairie cinquefoil	0.12	0.636	5.43%
Prairie onion	0.12	0.030	0.26%
Purple prairie clover	1.20	0.492	4.20%
Showy goldenrod	0.07	0.152	1.30%
Showy tick trefoil	0.60	0.078	0.67%
Smooth blue aster	0.05	0.063	0.54%
Sneezeweed	0.18	0.536	4.58%
Stiff goldenrod	0.06	0.056	0.48%
White prairie clover	1.08	0.475	4.06%
Wild bergamot	0.94	1.513	12.90%
Yarrow	0.04	0.165	1.41%
	12.01	11.710	100.00%
Total Seeds per Sq. ft.		29.900	