HIGHLIGHTS

Land Acquisition Sets New Record for the Millennium
Morris WMD set a new station record for overall land protection this millennium, with a total of 1,696 acres protected, of which 282 acres were added to WPAs, 886 acres as habitat and wetland easements, and 527 acres as Northern Tallgrass Prairie easements.

The largest tract acquired was the Randy Anderson Northern Tallgrass Prairie NWR Easement, a 447 acre tract of outstanding native prairie, which along with adjacent Glacial Lakes State Park and other fee and easement tracts, helps to protect a 4,500 acre prairie-oak woodland complex in central Pope County.

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

The Randy Anderson NTP NWR Easement was purchased in 2015.
2015-01 8/30/2014 Richard Hamilton

Climatic Conditions
Morris, Minnesota

January: cold the first half of the month and warm the last
The mean temperature was 15.6°F, which was 7.0°F above average (1886-2015). The high temperature was 41°F on the 26th. The low temperature was -15°F on the 13th. There were 13 days with a minimum temperature of 0°F or lower, and also 11 days with a minimum temperature of 22°F or greater. Monthly precipitation was 0.33 inches, which was 0.37 inches below average. Snowfall totaled 4.3 inches. No major winter storms occurred, but there was persistent cloud cover. Winter (October-March) snow received to date was 15.8 inches of snow, while the average is 26.3 inches. The US Drought Monitor had the area as "abnormally dry."

January sun. 2015-02 DMO 1/22/2015

February: winter roller coaster with "Alberta Clippers"
The month's mean temperature was 6.4°F, which is 0.4°F below average. The high temperature was 34°F on the 7th and the low temperature was -18°F on the 5th and 22nd. We had a significant warm up from the 5th to 10th only to crash to below normal temperatures the rest of the month. We had 19 days with minimum of 0°F or lower and 10 days with a minimum of -10°F or lower. Precipitation was 0.44 inches, which is 0.25 inches below normal. We had 8.3 inches of snow. Minnesota was coldest in the nation eight times this month.

March: temperatures rebound
Mean temperature for March was 30.7°F, which is 3.6°F above average. The high temperature was 71°F on the 15th and the low temperature was -15°F on the 4th and 5th. During the second week of the month, bright sunny skies, absence of snow cover, and southerly winds produced record high afternoon temperatures. March 13th saw: Milan 77°F, Browns Valley 67°F, and Wheaton 65°F; on March 15th Morris had 71°F. Precipitation totaled 0.67 inches, which is 0.49 inches below average. Nine inches of snow fell in March, bringing the winter's (October-March) total to 33 inches compared with the average of 36.4 inches. Winter storm "Thor" on the 3rd and 4th brought three to seven inches throughout the district. Winds gusted to 40 mph along with three days of gripping cold artic air.

April: from Moderate Drought to Severe Drought
The mean temperature was 45.8°F, which is 2.4°F above average. The high temperature was 77°F on the 14th and the low was 16°F on the 3rd. Precipitation this month was 1.04 inches, which is 1.27 inches below normal. April was particularly windy with 15 days of winds greater than 30 mph and a peak wind speed of 52 mph. Strong winds brought very mild temperatures on April 8th with record temperatures of 81°F at Wheaton and 80°F at Browns Valley. Ice out occurred on the 2nd on many lakes in the area.

May: 15 days with rain ends Severe Drought conditions
Mean temperature for May was 55.6°F, close to the average of 56.3°F. The high temperature was 86°F on the 28th and the low temperature was 32°F on the 9th. Benson had a record 90°F on the 28th. Precipitation was 7.76 inches which is 4.8 inches above normal. This made May 2015 the 3rd highest precipitation on record going back to 1886. The highest recorded precipitation occurred in 1942 with 8.89 inches. On the 11th Madison recorded 2.25 inches, Montevideo had 2.00 inches and Wheaton had 2.22 inches. On the 17th at Morris, 3.22 inches fell which is a new daily record for that date. On the 18th colder temperatures produced a trace of snow. On May 16th, 14 tornado sightings were reported in Lac qui Parle, Chippewa, Swift and Pope Counties.

June 2015
Mean temperature for June was 67.7°F, which is 1.6°F above average. The high temperature was 96°F on the 9th and the low was 49°F on the 1st. Precipitation received during June was 1.86 inches which is 2.15 inches below average. Precipitation from April through June was well above the average of 9.26 inches, with 10.67 inches so far this year.

July 2015
The month of July had a mean temperature of 70.6°F which is close to the average of 70°F. The high temperature was 90°F on the 12th and the low temperature was 47°F on the 7th. Browns Valley had a reading of 98°F on 12th which was the state high. Precipitation was 3.67 inches which is 0.03 inches above the average.

From June 29 to July 5 we experienced unusual milky skies. Smoke from fires in northern Manitoba and Saskatchewan, well over 1,000 miles away, reduced visibility and air quality here. 2015-03 DMO 6/30/2015

August 2015

The mean temperature for August was 67.0°F, which is 1.2°F below normal. The high was 90°F on the 14th. The low temperature was 44°F on the 25th and 26th. August 14th through the 16th was the hottest of the summer with temperature in the 90s accompanied by very high dew points. Precipitation for August was 6.31 inches, 3.28 inches above average. We received a record 3.05 inches of rainfall on the 7th breaking the previous record of 2.11 inches in 1986. Other rainfall record events in the district were: 4.03 inches at Madison, 2.15 inches at Dawson and 1.63 inches at Browns Valley on the 19th. A brief touch-down of a tornado was reported four miles west of Sunburg, near Rice WPA. August ended with sultry high dew points again.

September 2015: below average monthly rainfall

For the month of September the mean temperature was 65.7°F, 6.7°F above average. This was the 4th highest mean on record, and ties with the 1998 record. The high temperature for September was 88°F on the 16th while the low was 37°F on the 11th. Precipitation was 1.34 inches which is one inch below average. A 1.13 inch rainfall on the 23rd broke the 1963 record of 0.54 inches. Rainfall for April–September totaled 21.99 inches which is 3.75 inches above average. State-wide, this was the warmest September on record.

October 2015: record high temperatures

The mean temperature was 49.4°F, 2.6°F above average. The high temperature was 93°F on the 11th. This broke the 1934 record of 84°F. Other records set include Wheaton 97°F, Appleton 95°F, Benson and Canby 91°F, and Glenwood 90°F. The

low temperature was 25°F on the 16th and was the first killing frost date for 2015. Precipitation totaled 1.56 inches, which is 0.27 inches below normal. Snowfall occurred on the 28th, however there was no accumulation. October 11th was the warmest day on record, 20°F above normal. A powerful area of low pressure moving with a cold front brought strong winds that evening and into the next day with top wind gusts of: 54 mph at Morris; 51 mph at Appleton, Canby, and Glenwood; 46 mph at Benson; and 45 mph at Granite Falls.

November 2015

November's mean temperature was 37.2°F, which was 7.5°F above average. Statewide, this November was the 4th warmest in history. The high temperature for the month was 68°F on the 2nd. The low temperature was 8°F on the 27th and 28th. Many local lakes and large wetlands froze on those dates. November precipitation totaled 1.85 inches, which is 0.87 inches above average. The first staying snowfall occurred on the 19th and the 30th; however snowfall was only 0.2 inches this month compared to 9.2 last year. The average is six inches.

Table 1 – Winter Snowfall at Morris, MN – WCROC – 2004-2015

Year	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	Total
2004-05	0.0	0.4	2.2	11.6	7.1	1.6	0.0	**22.9**
2005-06	0.0	6.3	15.5	2.3	6.4	3.8	0.0	**34.3**
2006-07	1.0	0.0	2.0	2.4	18.1	5.6	6.0	**35.1**
2007-08	0.0	0.2	10.9	1.3	7.6	11.7	21.0	**52.7**
2008-09	0.0	5.3	21.8	7.0	10.3	8.0	4.0	**56.4**
2009-10	4.7	0.2	14.5	4.8	12.9	0.0	0.0	**37.1**
2010-11	1.0	5.2	21.7	16.0	14.8	6.6	1.0	**66.3**
2011-12	0.0	1.6	1.6	7.9	9.4	1.7	0.0	**22.2**
2012-13	0.3	0.7	10.7	3.5	19.2	7.6	13.0	**55.0**
2013-14	0.3	0.0	10.4	10.4	3.1	3.6	6.2	**34.0**
2014-15	0.0	9.2	1.8	4.3	8.3	9.0	0.0	**32.6**
***Mean**	**0.7**	**5.0**	**6.0**	**8.1**	**7.4**	**7.8**	**3.3**	**40.0**

***130 Year Mean (1885-2015)**

December 2015: the least amount of sunshine since 1962

Mean temperature this month was 22.3°F, which is 6.6°F above average. Lake Minnewaska and Lake Reno did not become completely ice covered until the 19th, making this year one of latest on record (only December 20 in 2012 and 1998 were later). In many years the lakes are frozen by Thanksgiving but this year's weather patterns kept most of the state above freezing, even at night, for much of December. The high temperature was 44°F on the 10th and the low was -6°F on the 27th. Precipitation was 1.07 inches, 0.4 inches above average. Snowfall for the month was 11.3 inches.

Morris Highlights

- The annual mean temperature for 1886-2015 was 42.1°F
- The annual mean temperature for 2015 was 44.7°F
- High temperature for the year was 96°F on June 9
- In 2015 there were four days of high temperatures exceeding 90°F
- Low temperature for the year was -18°F on February 4 and 22
- During 2015 there were 38 days with a minimum temperature of 0°F or lower
- Total precipitation was 27.9 inches which was 3.58 inches above normal
- Winter of 2014-2015, (October-March) had 32.6 inches of snow; average is 36.4 inches
- Calendar year 2015 recorded 33.1 inches of snow
- Last spring frost occurred on May 19
- First fall killing frost occurred on October 16 with a temperature of 25°F

Generally, 2015 was a warm year. 2015-04 DMO 3/11/2015

2015 was the Earth's warmest year since record keeping began in 1880, surpassing the previous record set in 2014. In 2015 Minnesota finished in the top ten warmest as well. From 1895-2015, it was seventh warmest. Globally, July was the warmest (1880 to 2015) of the 20th Century. September and December were both the warmest on record. February, the 17th coldest of modern record, prevented Minnesota's 2015 annual temperature from an even higher ranking. The warmest year on record is 1987.

*The weather data reported are taken from West Central Research and Outreach Center (WCROC) and are reported to the National Weather Service as the official for Morris. Observations for each day cover the 24 hours ending at 8 a.m. At most weather sites, the 24 hour time frame ends at midnight. This report has been adjusted to the actual date that the record occurred.

MONITORING AND STUDIES

1a. Surveys and Censuses

Christmas Bird Count

There are two Christmas Bird Count (CBC) circles in Morris WMD. In 2015, the Morris CBC was on December 14, and the Lac qui Parle CBC was held on December 17. The Morris WMD staff was joined by three volunteers, and the group recorded 33 species. Like in 2014, we observed an unusually low number of dark-eyed juncos (only 7, compared to 30 or more in a typical year). The Lac qui Parle observers recorded 41 species. They recorded a low number of Canada geese (2,000) and red-bellied woodpecker (1), and a high count of 45 common mergansers.

Participants in the Morris Christmas Bird Count Observed 33 species, including this Merlin. 2015-05 ALG 12/17/15

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 June 5 (49 bird species observed) and the Appleton route on June 25 (56 bird species observed). Biologist Galt conducted the Chokio North route on June 22 (43 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 conservation programs. That additional habitat is obvious in the number and diversity of birds observed.

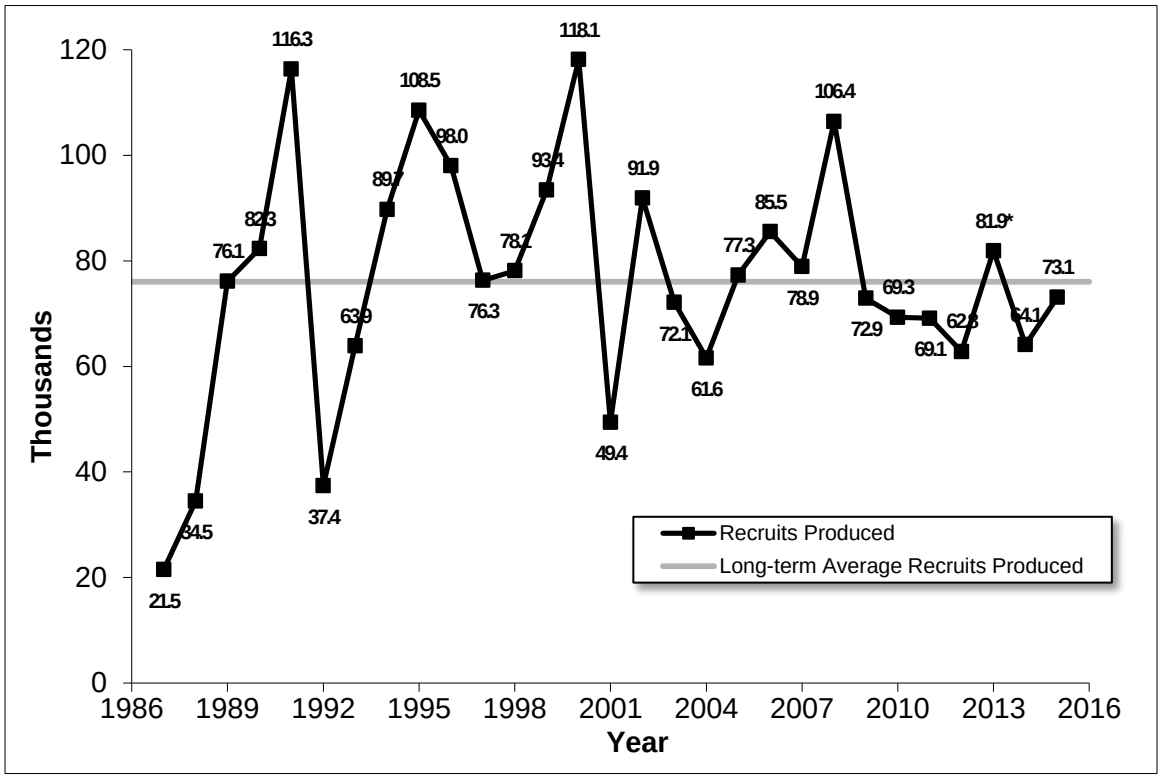
Four Square Mile Waterfowl Pair Count

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.

Our estimated number of breeding pairs (57,460) was up slightly from 2014, but still below the long-term average. The population estimate for mallard (26,922) and blue-winged teal (20,074) were both up from 2014 and close to the long-term averages.

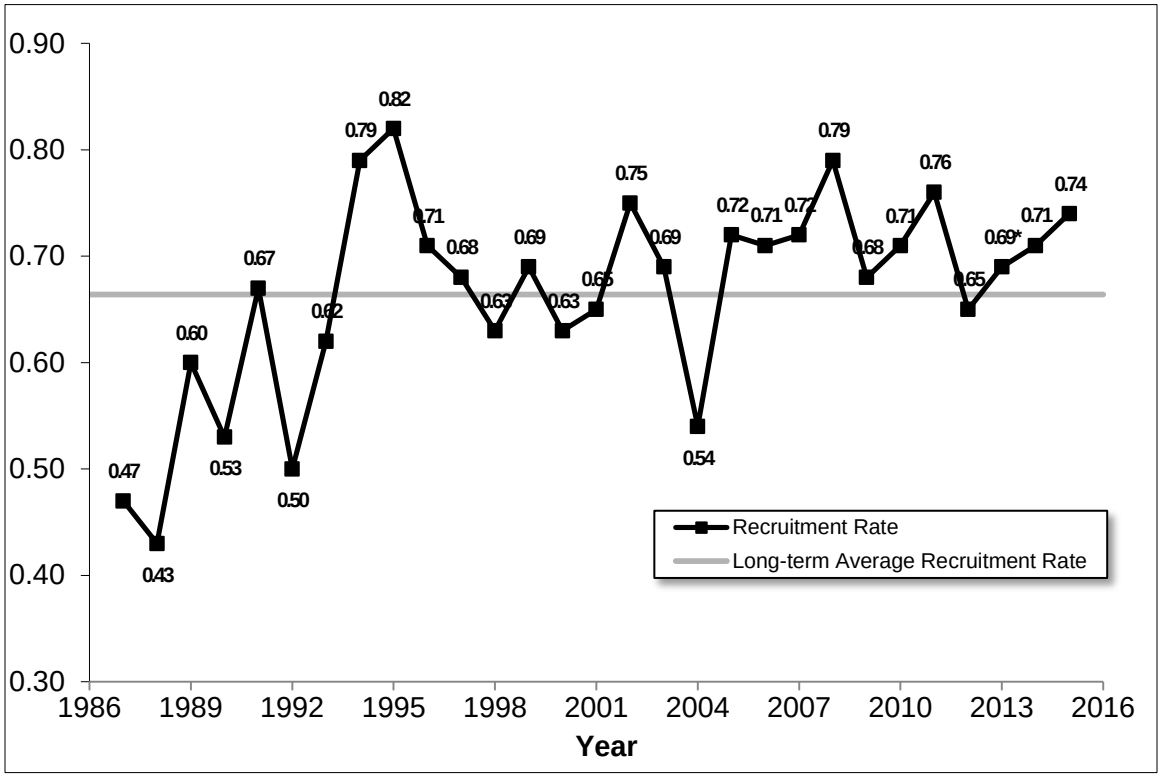
Morris WMD contributed 73,061 recruits to the fall flight (Figure 1). Morris WMD recruitment rate was at 0.74 this year (Figure 2). The Prairie Pothole Joint Venture Implementation Plan has a recruitment rate objective of 0.60 under average environmental conditions, and 0.49 for all managed areas.

Figure 1 – Recruits Produced in the Morris WMD, 1987 – 2015



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 – 2015



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).

Woodcock Survey

Biological Technician Oglesby assisted with the annual American woodcock singing-ground survey. Morris WMD is on the periphery of the woodcock range. There are two assigned survey routes in the district, one in Pope County and one in Stevens County. Routes are 3.6 miles long, with 10 listening stations where observers record the number of woodcock heard peenting. The route in Pope County is run annually. This year it was surveyed on April 25 with 7 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 (percent change per year) in woodcock heard during the singing ground survey. The short term (2014-2015) and 10-year (2005-2015) trends were not significant (i.e., unchanged) in the Central Management Region. The region continued to experience a long-term (1968-2015) declining trend (-0.7 percent per year). Minnesota had a 28.12 percent increase from 2014 to 2015. The 10-year and long-term trends for the state showed an increase, though not statistically significant.

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 routes in the district were run in 2015, four of which were conducted by Biological Science Aid Marella and Biologist Vacek. Farwell and Otrey were only run during the last two count periods. The most common species observed were boreal chorus frog, northern leopard frog, and Canadian toad. American toads were observed less often than usual this year.

This northern leopard frog was spotted at Long Lake WPA in June.
2015-06 SCV 6/11/15

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 40 wetlands on 15 WPAs in Pope and Swift Counties.

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. In 2015, we surveyed 91 wetlands and documented wild rice on 22 of those (Table 2).

Table 2 – Wetlands Surveyed for Wild Rice – Morris WMD – 2015

Wetland	Status		Wetland	Status		Wetland	Status
Bangor A	Present		Nelson Lake G	Absent		Overby J	Absent
Bangor B	Present		Nelson Lake H	Absent		Overby K	Present
Bangor D	Present		Nelson Lake I	Absent		Overby L	Present
Bangor E	Present		Nelson Lake J	Absent		Overby M	Present
Bangor F	Absent		Nelson Lake K	Absent		Overby N	Absent
Bangor G	Absent		Nelson Lake L	Absent		Overby O	Present
Bangor H	Absent		Nelson Lake M	Absent		Paulson A	Present
Barsness A	Present		Nelson Lake N	Absent		Paulson B	Absent
Blue Mounds A	Present		Nelson Lake O	Absent		Paulson C	Absent
Froland A	Absent		Nelson Lake P	Absent		Paulson D	Present
Froland B	Absent		Nelson Lake Q	Absent		Paulson E	Present
Froland C	Absent		Nelson Lake R	Absent		Stenerson Lake A	Absent
Froland D	Absent		Nelson Lake S	Absent		Stenerson Lake B	Absent
Froland E	Present		Nelson Lake T	Absent		Stenerson Lake C	Absent
Froland F	Absent		Nelson Lake U	Absent		Stenerson Lake D	Absent
Froland G	Absent		Nelson Lake V	Absent		Stenerson Lake E	Absent
Froland H	Absent		Nelson Lake W	Absent		Stenerson Lake F	Absent
Glacial Lake A	Present		Nelson Lake X	Absent		Stenerson Lake G	Absent
Lake Johanna A	Absent		Nelson Lake Y	Absent		Stenerson Lake H	Absent
Lake Johanna B	Absent		Nelson Lake Z	Absent		Stenerson Lake I	Absent
Lake Johanna C	Absent		Ouren A	Present		Stenerson Lake J	Absent
Lake Johanna D	Absent		Ouren B	Present		Stenerson Lake K	Absent
Lake Johanna E	Absent		Overby A	Absent		Stenerson Lake L	Absent
Lake Johanna F	Absent		Overby B	Present		Stenerson Lake M	Absent
Larson A	Present		Overby C	Absent		Stenerson Lake N	Absent
Nelson Lake A	Present		Overby D	Absent		Stenerson Lake O	Absent
Nelson Lake B	Absent		Overby E	Absent		Stenerson Lake P	Absent
Nelson Lake C	Absent		Overby F	Present		Stenerson Lake Q	Absent
Nelson Lake D	Absent		Overby G	Absent		Stenerson Lake R	Absent
Nelson Lake E	Absent		Overby H	Absent			
Nelson Lake F	Absent		Overby I	Present			

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. This year surveys were completed on Blue Mounds, Helgeson, Prairie, and Goodman WPAs.

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.

In 2015, the regional hydrology staff took care of downloading hydrology data from the monitoring stations at Rothi and Nelson Lake. No water quality data were collected this year.

Wetland Verification and Condition Assessment
For the third 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 the current accuracy of our GIS habitat data layer 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 described above, the wetland assessment survey has been focused on the highest priority WPAs in the district. In 2015, we visited 44 wetlands on four WPAs (Long Lake, Edwards, Krantz Lake and Loen). Since starting this survey, we have visited nearly 240 wetlands on 17 showcase WPAs in the district. A complete analysis is pending, but we have determined that 25 percent of the wetlands visited were incorrectly classified in the habitat layer and 16 percent were incorrectly drawn. Most inconsistencies reflected the increased water permanence regimes that we have observed anecdotally (e.g., a wetland was mapped 20 years ago as a temporary wetland but has since transitioned to a seasonal wetland, or two small wetlands have now become one larger wetland). This information will help us prioritize revisions and updates to our very useful GIS habitat layer.

This sora nest was discovered during wetland surveys on Long Lake WPA. It is rare to see one of these secretive marshbirds, much less find one of their nests.
2015-07 SCV 6-11-15

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. DNR surveys in 2015 included populations on several WPAs, and our staff assisted this year by reporting previously undocumented populations on WPAs in Big Stone, Stevens, and Pope Counties.

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.

It has been 10 growing seasons since the fields were first planted. All the study results reported so far were from the early establishment phase of a prairie reconstruction. Ten years and beyond is when the "true nature" of a planting will be known. Luckily, we were able to secure funding to conduct vegetation monitoring in the study plots in 2015. Survey results are pending.

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. This year, new transects were established in the Prairie WPA/WMA complex. 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.

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.

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.

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 add any new basins this year, but did do annual vegetation and hydroperiod monitoring on nine of the eleven 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).

Glacial Lake WPA Overspray Monitoring

In 2009, a 4.7 acre strip of prairie along the eastern and northeastern boundary of Glacial Lake WPA was impacted by an aerial spray operation on the neighboring pasture. In July of that year, we conducted a preliminary damage assessment and determined that about 40 forb species were either wilted or killed by the herbicide. A more detailed survey was conducted in 2009 and 2010 to document the damage. A restoration plan was developed and a contractor (paid by the aerial spray applicator) planted seedlings and broadcasted seed on the site in 2011. We surveyed the site in 2009 and 2010, and again one last time in 2015. Survey results are being summarized this winter.

Secretive Marshbird Research

Nina Hill, a graduate student at the University of Minnesota, is conducting research on secretive marshbirds in the Prairie Pothole Region of Minnesota. Overall, the research will examine the effects of vegetation management (particularly cattail control methods) on wetland use by secretive marshbirds. One of her study areas is in Morris WMD. In the Morris area, study wetlands cover a range of management histories regimes, including various management tools (e.g., fire, grazing) and various levels of management frequency. We hope to learn how our overall WPA management (which is usually targeted to the upland plant community) affects the vegetation community and marshbird abundance in our shallow wetlands.

In 2015, Nina surveyed about 180 wetlands in the Morris area. She recorded 605 bird detections. Table 3 shows a preliminary summary of individual bird detections at survey points. Surveys will be repeated in 2016.

Table 3 – Preliminary Summary of Marshbird Observations in Morris WMD 2015

Species	Round 1	Round 2
American Bittern	35	30
American Coot	28	22
Black Tern	4	38
Least Bittern	3	2
Pied-billed Grebe	54	69
Sora	114	61
Virginia Rail	25	35
Wilson's Snipe	36	14

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.

- **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 JohnsonWPAs.

- **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.

- **Wild Bee Surveys in Prairie-Grassland Habitats** – *Crystal Boyd* with the Minnesota DNR is working on a statewide, baseline survey of wild bees in the state. In 2015, she included sampling transects on Rothi and Loen WPAs.

- **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 2014-2016.

1c. General Wildlife Observations

This year brought a relatively normal phonological spring. The first Canada goose pairs established territories in mid-March, and the first major push of migrating waterfowl happened March 9-14. April 14 brought the first observations of bats flying, and chorus frogs calling. The first goose brood was observed on May 11 at Stammer WPA. The first monarch was not seen until June 2, but we were pleased to see more monarchs overall this season compared to the last few years.

The DNR pheasant index, based on their August Roadside Survey, was up 33 percent from 2014, but still 39 percent below the 10-year average and 59 percent below the long-term average. Our relatively mild winter and decent spring nesting conditions certainly benefitted pheasants this year, but by far the biggest impact on Minnesota's pheasant population over time is grassland habitat. Gray partridge and mourning doves, also recorded during the August surveys, showed similar patterns of increased numbers since 2014 but staying below 10-year and long-term averages.

We noticed a greater than usual number of river otters in the district in 2015, including one right at our headquarters, Edwards WPA!

2015-08 ALG 12/16/2015

HABITAT RESTORATION

2a. Wetland Restorations (On/Off refuge)

Private Lands

Fifteen wetlands were restored on private lands in 2015. These restorations occurred on two properties. One was owned by a private individual north of Starbuck in Pope County, and the other property was owned by Pheasants Forever, Inc. and was a planned addition to the Hanson WPA (now Lake Simon WPA) in Swift County. These restorations included ditch fills, tile breaks, and sediment removal. They were also included in the ongoing Sediment Removal Adaptive Management study.

This year saw an increase in the number of planned and completed wetland restorations due to a number of fee title acquisitions (in partnership with Pheasants Forever, Inc.) and new easements that included substantial cropland acreages with drained wetlands. Over 50 basins were surveyed during the year.

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.

These contractors are removing sediment from a wetland on the Stenerson Lake WPA addition in Pope County. This was one of 15 wetlands that were restored on this property in cooperation with Pheasants Forever, Inc. 2015-9 ALG 10/07/2015

Waterfowl Production Areas
Six wetlands were restored on WPAs in 2015; three were completed by District staff on Neimackle WPA in Stevens County and three were restored by a contractor on Rothi WPA using North American Wetland Conservation Act grant funds. Two other wetlands were surveyed and designed on Hillman WPA.

Table 4 – Wetland Restorations – Morris WMD – 1987 to 2015

	Total Restorations				Total Restorations	
Year	**Basins**	**Acres**		**Year**	**Basins**	**Acres**
1987	33	79		FY 2002	35	313
1988	208	673		FY 2003	75	255
1989	84	282		FY 2004	54	289
1990	82	278		FY 2005	25	78
1991	103	839		FY 2006	42	128
1992	85	228		FY 2007	17	45
1993	117	508		FY 2008	26	69
1994	78	556		FY 2009	14	30.4
1995	49	268		FY 2010	9	52.5
1996	42	177		10/2010-11	14	52.9
1/1-9/30/97	34	423		FY 2012	9	67
FY1998	91	311		FY 2013	1	11
FY 1999	51	345		FY 2014	2	01.1
FY 2000	73	387		FY 2015	21	22
FY 2001	38	120				
				Total	**1,512**	**6,887.9**

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. Restoration may also entail enhancement through inter-seeding into existing sod, whether a prairie remnant or a previously restored crop field.

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 reconstructtions 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.

Weed control on young prairie reconstructions is often necessary to reduce shading and seed set of biennial and perennial non-planted species. 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.

This year we embarked on a landmark renovation of a pastured grassland that was both remnant prairie and grassland areas with a cropping history, also known as "old fields". The easement (389G-1) in Pope County adjoins our Glacial Lakes WPA. Germination of seeded natives is difficult in a sodded seedbed, so a combination of inter-seeding and planting seedlings was used to ensure the best chance of successful establishment.

To improve the seed to soil contact, a prescribed burn was conducted on April 28 to remove the thatch layer. While the remnant hilltops and side hills retained a decent assemblage of native species, the old fields were dominated by Kentucky bluegrass and smooth brome. To better prepare these areas for inter-seeding, glyphosate herbicide was applied (2 quarts per acre) on May 22 when these species had grown to an average of 6 inches. Beginning on May 26 and ending May 28, a mix totaling at least 60 species (Table 37) was broadcast using a 5525 John Deere tractor and Vicon spreader and then packed using a Brillion packer across 63 acres of the site. Other site preparation included flagging rocks in the remnant prairie and leveling gopher mounds in the old fields.

Seedling plug holes were drilled with a gas operated auger; clusters were arranged in a circle and randomly located within each acre.
2015-10 JBB 6/3/2015

A contractor crew from Minnesota Native Landscapes, arrived on June 1 to begin the installation of 35,016 seedling plugs at a density of 500 plugs per acre. The site was divided into two soil types for the plug installation species list with a core of 25 species and six additional species for the more mesic soils. Since the dry soils were getting 25 species and the dry-mesic soils 31 species, the number of each species per acre was roughly 20 and 16 respectively. Installation arrangement called for clusters of 75 percent of each species, or 15 and 12, with the remaining placed randomly within each acre. A key tool for this design approach was a high quality handheld GPS unit.

Through the month of June the YCC crew and other staff attempted to water new seedlings, but the randomized nature of the planting design and size of the project area complicated this process. The plugs were easiest to find in the old field areas that were devoid of other vegetation, as opposed to the well vegetated prairie remnants. Fortunately, the site was blessed with frequent and abundant rainfall events the first six weeks (5.5 inches through July 15). Other post installation activities included conservative mowing of annual weed growth by the landowner on July 27, and backpack spot spraying and shoveling of plumeless thistle several times throughout the summer.

The goal of this native prairie enhancement project is to increase species richness and diversity in the plant community of this easement to improve the habitat for threatened and endangered butterflies, grassland birds, and other endemic prairie wildlife. To make sure all bloom periods were covered, the plant list included species

that bloom in early spring, some in late spring, mid-summer, and so on until late fall, with special attention to key species for the larval and nectaring stages of the Dakota skipper and poweshiek skipperling butterflies.

Seed, seedlings, and the expertise to plant them are not cheap. Grant funds from two sources were obtained (Section 5c) totaling $83,360. Additionally, the Partners program contributed $7,500 to purchase seed, and another $35,486 of in-kind match was made for burning, seeding, spraying, plant surveys, and providing seed harvested by staff, bringing total project costs to $119,346 for the 70 acres ($1,704.94/acre).

The mix used for inter-seeding Easement 389G-1 (Jim Wulf) contained at least 60 species of forbs, grasses, and sedges, and was planted at a rate of over 35 seeds per square foot. 2015-11 JBB 5/26/2015

Native Prairie

The original upland vegetation within the Morris District was tallgrass prairie. The total native prairie acreage on WPAs within the District was approximately 7,209 in 2015. This total includes the Lake Simon unit, but does not include Finden as initial habitat mapping has not been field verified and corrected. The Stenerson Lake and Hastad additions will be transferred in 2016 and once habitat mapping is verified

there, any native prairie on these two sites will be added to the 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.

Even without a prescribed fire to stimulate seed production, there were still harvestable quantities of Liatris pychnostachya available on Svor WPA. Three different kinds of caterpillars were observed doing some harvesting of their own. Two of them blend in well with the fuzzy gray pappus.
2015-12 JBB 10/3/2015

Native Seeding

Since 1973, the Morris WMD has planted roughly 12,846 acres of native vegetation. 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." In the past 13 years, we have averaged just over 24 acres per year of seeding natives into expired food plots, alfalfa hayfields, crop fields of acquisitions, tree grove removal areas, or brome conversions. 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 recent years, reconstruction projects with North American Wetland Conservation Act (NAWCA) and Outdoor Heritage Fund (OHF) 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. Most of the mixes used in these projects were a combination of our own harvests and purchased seed. However, due to low availability of our own seed this year, only the mix for the seeding at 389G-1 was composed of these two sources. All of the other seed mixes therefore were composed of only purchased seed (Appendix A).

In its fourth growing season, the prairie reconstruction at Westport WPA had an explosion of wild bergamot. With just a little bit of spot weed control on the few small patches of plumeless thistle, the site was harvested with a combine.
2015-13 JBB 8/05/2015

From approximately 2004 to 2012 when we were planning seed mixes for reconstructions in soils with a cropping history, or restoration/enhancement inter-seedings, 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.

In the 2015 calendar year, 455.0 acres were seeded to native grasses and forbs on ten WPAs, one TGP tract, one easement, and a Pheasants Forever (PF) tract slated for transfer (Table 5). The PF tract was an addition to Hanson WPA (SW-26) which was

renamed Lake Simon WPA. It was still owned by PF at the time of seeding and thus coordinated by Partners Biologist Galt. A contractor from Ohio (FDC Enterprises) received the bid award. They drilled a 51 species mix that was not considered local ecotype due to a few cultivar grasses (Appendix A). The Rothi and Edwards reconstructions were seeded with a Truax drill by Habitat Forever through a NAWCA grant. Habitat Forever also seeded the 10 acre former shelterbelt site at Edwards. Expenses for this were covered by an expedited Conservation Partners Legacy grant obtained by the Friends Group. Other sites seeded by contractors were four WPAs where trees were removed. Prairie Restorations Inc. was awarded the bid to broadcast a local ecotype mix on these areas with bare soils through the Prairie Recovery Project (PRP) (Section 5a). All other seedings were conducted by various staff.

At Niemackl Slough, the wet-mesic zone around the large wetlands, and the two drained wetlands in the northern third of the WPA were too wet to seed in the spring of 2014, so they were broadcast by Partners Biologist Galt using an UTV and Vicon on March 26. The area to be seeded was split into four plots, wherein three of the plots had 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 was not spiked and received the same rate that went on the uplands. In late July, Heavy Equipment Operator Pittman broadcast leftovers from the upland mix on the new ditch plugs at Rothi. Tractor Operator Saverynski spread a 2009 harvest from Grove Lake WPA that contained plumeless thistle seed back out on the same field in early November.

This year was marked by the discovery that farmers no longer rely solely on glyphosate for their weed control in Round-up Ready corn-bean rotations. Several projects planned for seeding in the spring were delayed due to discovery that Flexstar (chemical name Flomesafen) and/or Sonic (chemical name Sulfentrazone) were used in addition to glyphosate. Both of these products report up to 18 month residual and re-plant intervals for commercial sunflowers. Both farmers on Karsky and Edwards were out of compliance with their permit. The farmers at the additions to Prairie and Stenerson Lake were not farming under a permit. For Karsky and Prairie we were able to farm with oats, but Edwards had to be completed by June 20 due to the NAWCA grant expiring. Stenerson Lake was farmed with beans, with direction that no herbicides other than glyphosate could be used. The Stenerson Lake addition was still under ownership by PF with Partners Biologist Galt overseeing restoration and farming.

At Edwards the contractor was supposed to hold back the forb seed and just plant grasses, but he forgot. The 35 acre field was a sculpted seeding with three mixes for the different soil types of wet-mesic, mesic, and dry-mesic. Once it was discovered that the contractor had made a mistake, soil samples were collected for each of the three soil types and sent to South Dakota Agricultural Laboratories for analysis. It was determined the dry-mesic soil sample had nine parts per billion (ppb) of Flomesafen, mesic soils 46 ppb, and wet-mesic 62 ppb. What isn't known for sure

is what these levels mean for natives. Both the dry-mesic and mesic soils had a "decent" expression of planted natives and non-planted "weed" species. However, in the wet-mesic soils planted forbs and grasses were rare and there were few broadleaf weeds. This 2.5 acre area will be replanted in 2016.

The difference between the lack of germination of planted species in the wet-mesic soils (on the left half of the photo) and the robust expression of planted species in the mesic soils is evident here in this photo at Edwards WPA.
2015-14 JBB 9/23/2015

Table 5 – Prairie Reconstructions and Restorations – Morris WMD – 2015

Unit Name	Unit ID	Unit Type	Date	Acres	Comments
Niemackl Slough	SV-56	WPA	03/26	28.20	FWS broadcast wet mixes
Jim Wulf	P-389G-1	Easement	05/28	63.10	FWS broadcast inter-seeded local ecotype
Edwards	SV-16	WPA	06/11	35.00	HF drilled local ecotype
Edwards	SV-16	WPA	06/12	10.10	HF drilled local ecotype
Green Muhly	NTGP-1	NWR	06/15	0.57	NRCS drilled switchgrass
Lake Simon	SW-26	WPA	06/10	122.00	FDC drilled MN Natives
Lundgren (Groves)	C-01	WPA	06/10	11.70	Prairie Restore drilled LE
Hegland (Groves)	L-13	WPA	06/10	6.10	Prairie Restore drilled groves & broadcast scattered piles LE
Karsky (Piles)	B-01	WPA	06/10	7.90	Prairie Restore drilled groves & broadcast scattered piles LE
Loen (Piles)	SW-18	WPA	06/10	12.80	Prairie Restore drilled groves & broadcast scattered piles LE
Rothi	B-02	WPA	06/11	32.20	HF drilled local ecotype
Rothi (Ditch Plugs)	B-02	WPA	07/23	0.76	FWS broadcast local ecotype
Edwards	SV-16	WPA	10/31	4.80	Volunteers broadcast inter-seeded local ecotype
Grove Lake	P-46	WPA	11/02	116.75	FWS broadcast inter-seeded local ecotype
Westhausen	SW-11	WPA	11/23	3.20	Prairie Restore drilled LE
Total				**455.00**	

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, 58 sites on 41 WPAs and 11 private tracts, totaling 1,744 acres have been seeded with local ecotype natives (Table 6). In the past few years seed has been harvested from eight 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 Seedings – Morris WMD
2002 – 2015

Big Stone County		**Stevens County**	
Anderson	9.9 acres	Edwards	45.0 acres
Artichoke	5.8 acres	Fish Lake	10.4 acres
Dismal Swamp	9.5 acres	Fults	12.0 acres
Hillman	40.0 acres	Mau	10.8 acres
Karsky	25.4 acres	Mero	7.7 acres
Kufrin	113.0 acres	Miller	8.8 acres
Prairie	18.1 acres	Pepperton	14.4 acres
Rackl Esmt.	24.4 acres	Pieske	82.0 acres
Reisdorph Esmt.	5.4 acres	Pomme de Terre Lake	29.0 acres
Ronning Esmt.	11.9 acres	Pomme de Terre River	10.0 acres
Rothi	118.75 acres	Schultz	3.0 acres
Schmeichel Esmt.	13.1 acres	Thorstad	30.0 acres
Seidl	13.0 acres		
Stadem Esmt.	12.0 acres	**Swift County**	
Wellendorf Esmt.	5.5 acres	Artichoke Lake	37.6 acres
		Big Slough	8.0 acres
Lac qui Parle County		Hennen NTGP (11G)	13.0 acres
Beyer	27.0 acres	Loose	32.0 acres
Colbert	27.7 acres	Loen	30.8 acres
Hamann Esmt.	52.0 acres	Roderick	27.0 acres
Taylor	33.2 acres	Welsh	70.0 acres
Arden Hegland*	8.0 acres		
		Traverse County	
Pope County		Geyer	75.0 acres
Blue Mounds	6.0 acres	Lawrence	76.0 acres
LuVerne Forbord*	10.4 acres	Robin Hood	113.7 acres
Grove Lake	155.0 acres		
Reed Esmt.	4.6 acres	**Yellow Medicine County**	
Rolling Forks	40.0 acres	Spellman Lake	11.0 acres
Rustad	69.0 acres	Swede Home	11.3 acres
Walden	40.7 acres		
Westport	76.0 acres	*private landowner	

Seed Harvest

The 2015 seed harvest was exceptional compared to the past few years on several notes (Table 7). Compared to previous year's efforts, we hand collected a greater quantity and wider variety of species than we have ever done before. As usual we tried to focus on more rare, and difficult to purchase species like narrow-leaved purple coneflower, veiny pea, silverleaf scurfpea, gentian (downy and bottle), prairie onion, blazingstars, lobelias, dwarf indigo bush, phlox, and leadplant. In addition to our annual Volunteer Seed Harvest Day held this year on October 3, we collaborated

with a local Boy Scout who was working on an Eagle Scout project to hand collect seed from species that are pink or purple flowering, for spreading at the Kate Livingston Memorial. The weather cooperated very well for each event, and anywhere from three to twelve volunteers came out on Saturdays from September 19 through October 24. The WPAs collected at were Glacial Lake (September 19 and October 24), Edwards (September 26), Svor, Easement 170G, Swift Falls (October 3), Fitzgerald (October 10), and Hegland (October 17).

Ira Hoffman (second from right), volunteers, staff and Friends members hand spread collected seed in the wet-mesic area and near the Kate Livingston Memorial on Edwards WPA. 2015-15 JBB 10/31/2015

Due to the number of species collected and the difficult task of separating seed from pappus of milkweed, stems of blazingstar, and seedheads of coreopsis, gentian, thimbleweed, narrow-leaved purple coneflower and prairie onion, Biological Science Technician Mortensen took these to Litchfield WMD to run through their hammer mill. This is the first time we have used their machine to process seed; it worked well, giving us a more pure seed that can be easily mixed in with our other harvests or purchased mixes and provide the flexibility to then broadcast or drill.

A staff seed harvest yielded an impressive bounty in just a few hours at Hamann WPA. Primary species collected were both wet blazingstars (Liatris *pychnostachya* and L. *ligulistylis*), rattlesnakeroot, dwarf false indigo (amorpha nana), and prairie onion to name a few. 2015-16 JBB 9/28/2015

In addition to the substantial volunteer collection, and along with the normal effort from BST Oglesby, the harvests really piled up in the conference room thanks to the efforts of BST Mortensen and BSA Marella who were on staff through the fall, a luxury we haven't had most years. 2015-17 JBB 10/6/2015

We were able to borrow the Flail-vac from Big Stone NWR once again and employed it successfully at four sites harvesting primarily sideoats grama at Westport and Artichoke Lake (Lot number: P61SW21-SO15), and Indiangrass at Hamann and McIver. It seems to work well for terminal seedheads that strip well by hand. Tight clustered seedheads like Maximillian sunflower and narrow-leaved purple coneflower on the other hand, aren't budged by the fast moving bristles. Lot P61SW21-SO15 tested out at 19.8 percent pure live seed (PLS) with a minimum of 15 species, while the other Flail-vac harvest (Lot number: FVNP15) tested out at 49.2 percent pure live seed (PLS) with a minimum of 14 species, and Indiangrass as the most abundant at 41.61 percent purity.

After a couple years of frustration with the performance of the Gleaner combine, the maintenance staff was able to troubleshoot the problems we were having with the help of a Gleaner dealer in Mountain Lake, Minnesota. After the adjustments were made it was used at Pomme de Terre Lake, Hastad, and Westport WPAs for a total bounty of 1,878 bulk pounds. The Hastad harvest (Lot number: L10NP15) tested out at 25.4 percent PLS with a minimum of 31 species. Big bluestem, asters, goldenrods, sunflower, and black-eyed susan were the most common species in the 7 gram sample. The Westport sample (Lot number: P61LE15) had almost 5 percent wild bergamot and 21 other species at 9.2 percent purity. TZ tests were in the 70 percent range though, so the lot came in at only 10.65 percent PLS, which means that there are only 49 PLS pounds for the 461 bulk pounds harvested. This lot had many heavy woody stems due to the lateness of the harvest and the senescence of the wild bergamot, so for the first time in several years we took a lot to the cleaning mill at Big Stone NWR to try to reduce the size and number of stems. At 1,009 bulk pounds, the largest harvest of the year came from the four year old local ecotype seeding at Pomme de Terre Lake. This lot (SV34-2015) tested out at 43.9 percent PLS with a minimum of 19 species, and little bluestem as the most abundant.

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 somewhat 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.) About 300 bags made from re-purposed pantyhose material were placed out on Jackson WPA in mid-July. Plants were determined to be close to ripening when a majority of the seedpods were a golden color and beginning to open up. Bags were collected on August 3. The bounty was down a bit from previous years, as it appeared many bags and seedheads were removed a bit prematurely.

A couple of rare white prairie phlox were found on Krantz Lake WPA.
2015-18 JBB 7/16/2014

Another summer species that we tried to target for hand harvest by the YCC crew was veiny pea (*Lathyrus venosus*). 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. The majority of the harvest this year was once again from Edwards WPA on July 29 in the remnant prairie area that was burned in 2014. An equivalent amount was also collected at Westport WPA on August 3.

A third summer harvested species occurred with an opportunistic harvest of showy ticktrefoil (*Desmodium canadense*) at Fahl WPA. A rainy day on August 19 changed the plans for a Conservation Corps of Minnesota crew that was contracted for the week for PRP work. They needed other work to do and were able to collect about five pounds of pure live seed in a few hours. The dormant burn that was conducted there for the thistle study had not only stimulated greater seed production, but the phenology of most plant species was advanced when compared to sites that were unburned or burned after green-up.

Table 7 – Native Seed Harvested – Morris WMD – 2015

Site	Collection Dates	Primary Species Collected	Method	Acres	Quantity	Comments
Edwards WPA	07/29 - 30	Lathyrus venosus	Hand	2.40	*	
Jackson WPA	08/03	Phlox pilosa	Hand	0.54	*	
Westport WPA	08/04	Lathyrus venosus	Hand	2.24	*	~1 pound of seedpods
Fahl WPA	08/19	Desmodium canadense	Hand	5.90	*	TNC's CCM crew hand harvested
Hillman WPA	09/10	A. canescens, E. angustifolia	Hand	9.84	*	
Hillman WPA	10/01	Gentiana andrewsii, G. puberulenta	Hand	3.57	*	
Glacial Lake WPA	09/14 09 15 09/19	Allium stellatum, Amorpha canescens, E. angustifolia, Coreopsis palmata	Hand	6.37	*	
Hutchinson WPA	09/15	E. angustifolia, Pediomelum argophyllum, R. arkansana, A. syriaca	Hand	11.19	*	
Loose WPA	09/16	E. angustifolia	Hand	2.57	*	
Prairie WPA	09/16	E. angustifolia, A. canascens, D. candida	Hand	5.10	*	
Westport WPA	09/16	B. curtipendula, S. nutans, A. gerardii	Flailvac	1.53	408	Lot# P61SW21-S015
Artichoke Lake WPA	09/17 09/18 09/21	B. curtipendula, A. gerardii, S. scoparium, S. nuttans, A. canascens, P. argophyllum, S. heterolepis, M. fistulosa, A. stellatum	Flailvac	6.69	*	Lot# P61SW21-S015
Henry WPA	09/21	A. canescens, D. candida, A. stellatum, L. aspera, E. angustifolia, H. pauciflorus	Hand	3.83	*	Also harvested Anemone cylindrica,
Redhead Marsh WPA	09/21	A. canescens, E. angustifolia, A. stellatum, D. candida, D. purpurea, H. pauciflorus, H. maximiliani, cirsium flodmanii, Z. aptera, R. arkansana	Hand	13.58	*	
Rolling Forks WPA	09/21	A. canescens, L. punctata, Muhlenbergia cuspidata	Hand	0.49	*	
Hamann WPA	09/22 10/02	S. nutans, A. gerardii, P. virgatum, Liatris spp., Prenanthes racemosa, A. nana, asters and goldenrods	Flailvac	10.89	389	Lot# FVNP15 Includes McIver
SW-170G	09/26 10/03	L. aspera, L. pycnostachya	Hand	1.33	*	
Edwards WPA	09/26 09/28	E. angustifolia, Rosa arkansana, L. aspera, Anemone cylindrica	Hand	1.58	*	

Table 7 – Native Seed Harvested – Morris WMD – 2015 (continued)

Site	Collection Dates	Primary Species Collected	Method	Acres	Quantity	Comments
Hamann WPA	09/28	Prenanthes racemosa, L. pycnostachya, A. stellatum, A. nana, G. andrewsii, L. siphilitica, asters spp.	Hand	13.91	~20	Staff collection
McIver WPA	09/29	L. ligulistylis, L. pychnostachya	Hand	1.84	*	
Moen WPA	09/29	Asclepias syriaca	Hand	0.01	*	
Fitzgerald WPA	09/30	Gentiana andrewsii, Lobelia siphilitica	Hand	8.83	*	
Svor WPA	09/30 10/03	L. pycnostachya, L. ligulistylis, Prenanthes racemosa	Hand	4.04	*	
Hillman WPA	10/01	Gentiana andrewsii, G. puberulenta	Hand	1.29	*	
Rothi WPA	10/01 10/21	A. stellatum, E. angustifolia, Rosa arkansana	Hand	9.04	*	
Pomme de Terre Lake WPA	10/01	S. scoporium, mixed natives	Combine	8.40	1,009	Lot# SV34-2015
Swift Falls WPA	10/03	Liatris punctata, Amorpha canascens, E. angustifolia	Hand	1.30	*	
McIver WPA	10/05 10/06	Andropogon gerardii, Sorghastrum nutans, Amorpha canescens, Liatris ligulistylis	Flailvac	12.57	389	Lot# FVNP15 includes Hamann flail-vac harvest
Hastad WPA	10/10	A. gerardii,	Combine	10.00	408	Lot# L10NP15
Fitzgerald WPA	10/10	Lobelia siphilitica, Amorpha nana,	Hand	2.30	*	~5 Volunteers
Paulson WPA	10/13	Allium stellatum	Hand	0.10	*	
Westport WPA	10/14	M. fistulosa, Verbena stricta, Asters spp., goldenrods spp.	Combine	8.90	461	Lot# P61-LE-15
Hegland WPA	10/17	L. aspera, S. heterolepis, E. angustifolia	Hand	5.24	*	
Prairie WPA	10/21 11/02	A. syriaca, A. stellatum, S.heterolepis	Hand	5.10	*	
Rolling Forks WPA	10/15 10/21 10/22	A.canescens, L.punctata, D.purpurea, Sporobolus compositus	Hand	1.11	*	Collected by Donna Oglesby
Edwards WPA	10/22	E. angustifolia	Hand	3.39	*	
Glacial Lake WPA	10/24	A. laevis, A. foeniculum, G. puberulenta, A. canascens, L.punctata, L. aspera	Hand	12.32		
Fahl WPA	10/27	Vernonia fasciculata	Hand	0.65	*	Ironweed in a dense patch
Fahl WPA	10/27	Coreopsis palmata	Hand	0.79	*	Abundant
Private	10/27	Lobelia siphilitica	Hand	0.21	*	Lobelia abundant

*Hand harvest small quantity not measured

HABITAT MANAGEMENT

3a. Wetland Management

Cattail Scrapes in Seasonal Wetlands

Invasive cattails are a significant threat in prairie wetlands, negatively impacting the native wetland plant community, hydrologic functioning, and waterbird use. Cattail plants spread by rhizomes and, if left unchecked, can quickly take over an entire seasonal wetland basin.

Managers have a suite of tools available to manage cattail, including herbicides, mechanical removal, burning and grazing. Herbicide control seems to work best in wetlands that have deeper, relatively permanent water; the dead plant material can sink and decompose in the water. In more seasonally-flooded basins, chemically-killed cattail plant material will not readily decompose and would need to be removed by fire or mechanical means to create desired, open water conditions. Research has shown that managing cattails with fire alone is only effective when the wetland substrate is dry enough for fire to consume the cattail rhizomes (i.e., dry for more than one growing season). This is a difficult situation to create, even with water level management capabilities.

This year, we partnered with Pioneer Heritage Conservation Trust (PHCT) to try a new approach to cattail control. The group received Expedited Conservation Project (ECP) funding from the Minnesota DNR Conservation Partners Legacy (CPL) grant program to manage cattail-choked seasonal wetlands. We worked with PHCT in the past to chemically treat cattails in semi-permanent wetlands; with this new grant funding targeting seasonal wetlands, we decided to mechanically remove the cattail biomass, including the rhizome layer, out of the basin. We hope that this technique will “reset the clock” of cattail invasion, allowing us to maintain a more desirable plant community and habitat structure through regular burning and grazing.

Five wetlands on Lamprecht WPA and two wetlands on Schultz WPA were scraped in early December this year. The contractor will complete one additional wetland scrape at Schultz in 2016. We plan to follow the changes in these wetlands over the coming years to assess whether this intensive approach is worth the extra up-front expense.

Lamprecht WPA wetland before scrape. 2015-19 AJK 11/28/2015

Before and after comparison photos of a seasonal wetland at Lamprect WPA, where the cattail biomass was scraped out of the basin in an attempt to improve wetland conditions.

Lamprecht WPA wetland after scrape. 2015-20 AJK 12/14/15

Wild Rice Seeding

Also in partnership with PHCT, we seeded wild rice in nearly 20 wetlands across seven different WPAs in the district. PHCT purchased wild rice seed using ECP funding, and on September 11, Morris staff hand-broadcasted the seed at Hanson, Benson Lake, Rolling Forks, Blue Mounds, Brady, Edwards, and Greiner WPAs. This is the second time that PHCT has received a CPL grant to seed wild rice in wetlands on state and federal public land. The success of this and the 2013 wild rice seeding is being monitored with periodic surveys (Section 1a).

BST Kleinschmidt seeding wild rice at Rolling Forks WPA.
2015-21 SAV 9/11/2015

Water Level Management

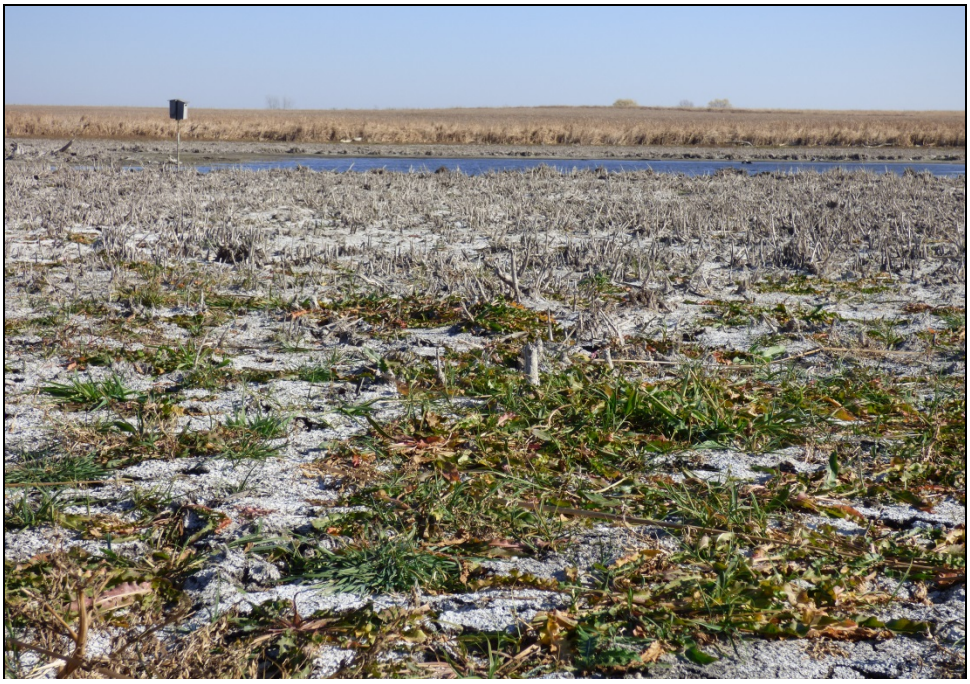
Morris WMD has 32 wetlands with water control structures on 20 different WPAs. We use water level gauge readings, on-site habitat observations, and aerial photography to assess the effects of management. Most structures are visited monthly from April to October each field season for gauge readings and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

Many of the water control structures in the district are aging, having been initially installed in the 1980s. When a structure fails, we use our water management and maintenance records to determine whether to continue managing water levels with a new structure or replace it with a fixed elevation dike. This year we replaced the Loen-South structure with a similar design. Also this year, Ducks Unlimited completed surveys and a design to replace the Edwards H structure that has not been functioning since 2007. In 2016 a new sheetpile weir with stoplogs and concrete box

culvert will be installed to replace the double, full-round riser stoplog structure that has been in place since 1988.

Some highlights of the water management program in 2015:

- We conducted a gradual, full drawdown at Artichoke WPA. This wetland was last dewatered in 2009. The drawdown went well, with most substrate being exposed by fall (photo 2015-19).
- The boards were replaced at Moen WPA after a 2014 drawdown. The basin did not reflood very well, so we will keep a close eye on that wetland in 2016 to ensure there aren't any major issues.
- After the 2014 drawdown at Edwards G, we mowed cattail over the winter and reflooded the wetland in spring 2015. It took longer than we anticipated for this small wetland to refill so we did not have much success in drowning the cattails. There was certainly a short-term benefit, however, with particularly good waterfowl use in early spring. Muskrats have moved into the basin as well, which will aid our cattail control efforts.
- High summer precipitation in 2014 led to Edwards I maintaining high, flood-stage water levels during that full season. The result in 2015 was that several areas of previously dense cattail were flooded out. We started a very gradual drawdown on that wetland during the summer to start preparing for the construction on the Edwards H structure.



Artichoke WPA underwent a drawdown in late summer of 2015, exposing most of the substrate throughout the basin. 2015-22 SCV 11/3/2015

Edwards I had very high water levels throughout 2014, resulting in large beds of cattail being flooded out this year. 2015-23 SCV 6/30/2015

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 or sweet clover is triggering the management action, haying may take place earlier to prevent seed production and thus reduce a serious weed problem. In recent years tree control has also been an objective of haying.

Prior to this year our method of selecting cooperators for haying was based on a list of those who had expressed interest, and by local area. Since interest was low, this system seemed to work well, as we could scout sites for weed problems and issue permits in just a few days. We are now required to select cooperators through the bid or lottery draw, so in 2015 we put nine WPAs up for bid, but only four were bid on. One of the sites that did not receive a bid was then negotiated, so five WPAs were hayed for cash rent. Two more WPAs were hayed at no charge due to a native restoration project in an alfalfa/brome field on Easement 337G. Additionally, three FmHA easements were hayed under permits for a grand total of 421 acres (Table 8).

Table 8 – Haying Summary – Morris WMD – 2015

Unit Name	County	Acres	Date	Fee	Comments
Kufrin WPA	Big Stone	56.74	7/01	NC*	Sweet Clover
Beyer WPA	Lac qui Parle	83.00	7/02	$1,500.00	Canada Thistle
Robin Hood WPA	Traverse	105.42	7/09	$1,250.00	Sweet Clover
Bolson Slough WPA	Lac qui Parle	54.43	7/15	$2,100.00	Sweet Clover
Helgeson WPA	Big Stone	16.00	7/15	NC*	Sweet Clover
FmHA C-16 (Turnquist)	Swift	9.50	7/16	$95.00	
FmHA C-021,1,2 (Suckow)	Swift	11.50	7/16	$115.00	
Artichoke WPA	Big Stone	30.97	7/27	$125.00	Sweet Clover
FmHA C-011 (Plessner)	Lac qui Parle	24.00	8/03	$240.00	
Florida Creek WPA	Lac qui Parle	29.44	8/28	$1,305.00	NPAM
Totals		**421.00**		**$6,730.00**	

*Permittee was not billed, due to swap for easement restoration project.

3c. Grazing

Locating salt and mineral blocks at an old rockpile on Benson Lake WPA proved the ticket for encouraging the goats to chow down on the sumac surrounding the rocks. Unfortunately, they ignored most of the other substantial sumac patches. Animal units (AUs) were increased from 13.15 to 40.1 for the last 33 days of the grazing period, resulting in all of the sumac patches looking like this one by the time they were removed on September 23. 2015-24 JBB 8/27/2015

Like prescribed fire, we use prescribed 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.

In total 38 permits were issued to graze 33 WPAs and one easement, with 4,602.5 acres receiving treatment (Table 9). This is the second highest number of acres grazed in the history of the District. Of the 38 permits issued, thirteen of them were awarded through the bid or lottery process. The others were either multi-year permits written prior to implementation of the bid/lottery process, or we received approval from the Refuge Supervisor to use the negotiation method due to adjacent pastures or pastures under our easement program receiving management.

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. Due to the bidding process, permits are now issued with a grazing window of two to four weeks longer than the actual length of grazing. This gives flexibility to the permittees, while still meeting the habitat management objectives of the prescription. There were 24 permits issued with a starting date of May 3 or earlier, but with the delayed spring, actual entry dates on most were a week to four weeks later.

Recently, we have had more grazers interested in late summer and fall grazing. 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. In 2015, eight WPAs were still being grazed in September, with removal on October 1 at Redhead Marsh, marking the latest grazing date.

Historically, a lack of border fence, declining cattle operations, and uninterested neighbors has limited our ability to utilize short duration grazing. From 2000 to 2010, we grazed an average of 1,111 acres and 13 units per year. 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 2011 to 2015 an average of 4,127 acres spread over 37 WPAs were treated with grazing. One thing that has helped this is the use of temporary interior electric to subdivide the unit into cells for short duration targeted rotational grazing. This

approach allows for fewer cattle and shorter durations within cells, but a longer duration for the permittee and for the entire WPA. This is a big deal, as there is a lot of hassle and expense with gathering up cattle and hauling them to and from a site; the longer cattle are in one location, the more appealing grazing WPAs becomes for cooperators.

New permanent boundary fence was built by Minnesota Pro Fence at Prairie WPA, while Grassland Solutions replaced or repaired the boundary fence at Twin Lakes WPA, and installed a new high-tensile fence at Florida Creek WPA. No cooperators built new fence this past year. All of the contractor-built fences were entirely covered through the Prairie Recovery Project Grant (Section 5a).

Thanks to funding from the Prairie Recovery Project, we were able to install a water tank and well at Grove Lake WPA. The tank was located near the intersection of three of the four paddocks. This will allow for a reliable watering source should we have a drought year, as there are many pivot wells in the area that draw the high water table down in years with minimal summer rainfall.
2015-25 JBB 9/15/2015

This year, depending on when the permit was written, the grazing fees for negotiated and lottery permits were calculated using a base rate of between $20.76 and $26.75 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 $338.49 for Welfare WPA to a high of $3,361.80 for Loen WPA. The highest payment per AUM was for Hastad WPA. The permittee bid $22.50 per AUM, which he paid up front for the first year, but he fell short by eight AUMs, so his total of $11,495.25 worked out to $22.89 per AUM.

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. There were four permittees, including the experimental goat grazing, that were not charged a fee due to grazing fewer AUMs than planned. We also utilized grass banking arrangements on four WPAs while working with permittees who have pastures under easement.

Loose WPA was among a handful of units that received grazing for the first time under our ownership. Others in the past two years were Loen, Redhead Marsh, Snetting, Boehnke, Schultz, and Lubenow WPAs. 2015-26 JBB 6/22/2015

Table 9 – Grazing Summary – Morris WMD – 2015

County/WPA	Planned Dates	Actual Dates	Fee	Acres	Planned AUMs	Actual AUMS
Big Stone						
Easement 371G	5/01 - 9/30	5/01 - 6/30	$273.32	82	129.0	83.2
Boehnke	5/18 - 8/02	5/22 - 7/22	$525.00	88	75.0	74.3
Henry	5/01 - 7/31	6/02 - 7/29	$364.00	81	72.8	70.7
Redhead Marsh	6/01 - 9/30	5/23 - 10/1	$2,188.95	195	183.0	184.3
Rothi-East central	6/07 - 9/12	5/16 - 9/20	$1,863.25	101	119.0	123.4
Rothi-SW	5/01 - 7/31	5/16 - 7/18	**C** $232.27	211	96.5	60.2
Twin Lakes-Interseed	4/21 - 5/04	4/25 - 5/11	$808.80	40	27.0	27.7
Twin Lakes-Interseed	7/01 - 7/10	6/26 - 7/08	"	"	21.6	32.5
Twin Lakes-South	5/01 - 7/01	5/12 - 6/25	$1,126.93	129	99.2	101.2

Table 9 – Grazing Summary – Morris WMD – 2015 (continued)

County/WPA	Planned Dates	Actual Dates	Fee	Acres	Planned AUMs	Actual AUMs
Lac qui Parle						
Freeland	5/01 - 6/15	5/06 - 6/04	GB	68	60.0	59.4
Hastad-North	5/01 - 9/30	5/04 - 9/12	$11,495.25	511	510.9	502.0
Hastad-South	5/01 - 6/19	5/03 - 6/20	$793.60	84	73.5	75.6
Pope						
Avok Slough	5/01 - 7/01	6/02 - 6/29	$50.00	44	36.75	29.4
Benson Lake-Goats	5/01 - 10/9	5/23 - 9/23	NC[1]	71	75.0	86.2
Gjerdingen	6/20 - 7/20	6/24 - 7/25	NC*	41.5	48.0	36.6
Grove Lake	5/01 - 9/10	6/19 - 9/18	$1,925.00	377	280.0	140.25
Heidebrink-SE	7/06 - 8/16	7/02 - 8/08	$613.23	51	63.8	58.6
Kolstad Lake	5/01 - 8/10	5/19 - 7/29	GB	194	168.0	167.4
Lake Johanna	5/01 - 6/30	5/05 - 6/06	$956.00	107	87.5	78.0
Larson-N½	5/01 - 6/04	5/19 - 7/16	GB	134	158.0	148.4
McIver-SE	5/01 - 6/04	5/09 - 6/23	$319.27	30	35.0	45.3
Overby-East	4/23 - 6/07	5/11 - 7/13	**C** $146.89	67	54.0	41.6
Rolling Forks-NE	5/12 - 6/20	5/15 - 6/19	$1,582.83	97	100.0	103.5
Snetting	5/01 - 7/15	6/12 - 7/15	$139.00	40	35.0	33.2
Stenerson Lake	6/01 - 7/18	5/28 - 7/10	GB	106	105.6	102.1
Stevens						
Fish Lake	5/01 - 6/11	5/04 - 6/12	$800.82	88	82.0	71.5
Fults	5/23 - 6/27	5/30 - 6/27	NC*	157	196.0	133.2
Golden	7/01 - 9/15	7/03 - 9/05	$1,003.45	126	110.25	111.4
Pepperton-SE	7/01 - 8/11	7/07 - 8/24	$652.25	65	58.8	68.6
Schultz	5/01 - 8/31	6/01 - 8/23	$1,420.00	188	160.0	158.5
Welfare	4/18 - 5/22	5/05 - 5/31	**C** $338.49	58	56.0	43.2
Swift						
Artichoke Lake-W	5/03 - 7/25	5/17 - 8/28	$108.50	264	274.4	300.3
Bengtson-N	5/01 - 7/23	5/18 - 8/23	$112.54	83	71.4	79.5
Gilbertson	5/31 - 6/30	6/04 - 7/04	$451.74	95	30.0	43.5
Loen-NE	5/03 - 9/05	5/08 - 9/12	$3,361.80	112	180.9	228.8
Loen-S	5/01 - 7/30	5/05 - 7/07	NC*	279	216.0	153.6
Loose	5/01 - 7/31	5/12 - 7/14	$397.87	68	60.0	48.5
Lubenow	7/01 - 8/18	7/11 - 9/02	Paid in 2014	70	61.2	52.6
Total			**$33,333.40**	**4,602.5**	**4,271.1**	**3,958.25**

NC* = No Charge (deductions exceeded grazing fee in final year of permit period of use)
C = Credit
GB = Grass Banking
NC[1] = No Charge (experimental)
NA = Not Applicable

In November, 11 WPAs were put up for bid to be grazed in 2016. On December 1, bids were opened and eight were awarded permits. Welker, Florida Creek, and Hawk Creek were the three WPAs that did not receive a bid. 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. Newspapers, radio stations, facebook, email, and websites were all contacted and/or used to advertise the grazing opportunities. Although multiple inquiries were received for several units, four only received one bid. Lamprecht received the most interest at six bids, ranging from a low of $0.50 per Animal Unit Month (AUM), to the high bid of $20.15 per AUM. After being unable to award a permit for Stegner in 2014 due to two declinations, it received one bid for $4.00 per AUM. The lowest awarded bid was $1.70 per AUM for Glenwood WPA. The awarded bids averaged out to $8.43 per AUM, which is $1.66 less than the average from 2014. The Refuge Supervisor granted permission to bypass the bid or lottery method for eight units due to the above mentioned reasons, or in the case of Hegland, the experimental use of goats for treating buckthorn. This process has resulted in several new cooperators in the past two years, mostly due to the advertising it requires. For instance, the permittee for Stegner had hayed for us, but had not been issued a grazing permit before.

3d. Farming

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. In 2015, six WPAs had fields that were cash rented and farmed under special use permits for seedbed preparation. Big Slough (35 acres) and Artichoke (54 acres) each had fields in their first year of a three year permit, while Hastad (65 acres) and Walden (20 acres) had fields in their second year. The only other active farming in 2015 was at Karsky (18.5 acres) and Prairie (16.5 acres) WPAs. These two fields were planted to oats hay for one year to buy time due to concern for herbicide carryover. These were put out for bid in the late winter and received little interest. Prairie had two bids, while Karsky only got one. The same bidder was awarded both with a high bid of $7.39 per acre.

The permittee at Big Slough WPA helped us convert the smooth brome grass field to natives by popping hundreds of small cedar stumps with a skidsteer, before breaking the sod with a disk. He then planted oats, which performed poorly due to the decomposition of the root biomass using up available nitrogen. Fortunately, his low rent of $3.00 an acre buffered his losses from the poor yield of less than one bale per acre. 2015-27 JBB 4/28/2015

3f. Fire Management

The fire programs of Morris Wetland Management District (BNR) and Big Stone National Wildlife Refuge and Wetland Management District (BGR) combined in 2014 and 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 organization. Coverage area for the Hub includes the counties of: Big Stone, Chippewa, Lac qui Parle, Lincoln, Lyon, Pope, Stevens, Swift, Traverse, and Yellow Medicine, Minnesota.

The Hub experienced average wildfire activity in 2015 with two wildfires. An average number of prescribed fire treatments occurred on BNR, though BGR was well below average. BNR burned less than the recent average number of acres, and again BGR was well below average acres burned. The season length was on par with previous years. No accidents or injuries involving personnel or equipment occurred during fire program activities.

Alex Galt lighting off a cattail patch during a controlled burn on Diekmann WPA.
2015-28 PJM 4/3/2015

Prescribed Fire

The first burn of the season (excluding winter piles) was on March 31, with the last being on June 8 for the spring season, and October 22 for the fall season. The Hub staff burned 34 treatments for 3,394 acres on federally owned lands that were within the Morris District, and 9 treatments for 638 acres on federally owned lands within the Big Stone NWR/WMD, totaling 43 treatments for 4,032 acres (Table 10). Broadcast burns were implemented in the spring and the fall. Piles were burned in the winter, summer, and with the broadcast burns. This was the first year that contractors were utilized as equipment operators on pile burning projects.

Help for prescribed burning at the Hub came from the BNR/BGR staffs, neighboring FWS offices, ADs (a short duration hiring plan), and five crews from other states (detailers). Local/neighboring help came from Sherburne NWR, Litchfield WMD, Detroit Lakes WMD, and The Nature Conservancy (TNC). Eleven detailers funded by the Minnesota Prairie Chicken Society Conservation Partners Legacy Grant (Prairie Chicken Grant) came from the Wichita Mountains NWR (Oklahoma), St. Marks and St. Vincent NWRs (Florida), and the Leopold/Horicon FWS Complex. The Hub attempted to hire three temporary (seasonal) firefighters, but only succeeded in hiring one. Funds that typically would have been used to pay seasonal salaries were used to create Reimbursable Interagency Agreements in order to recruit four BLM detailers from Lander, Wyoming and Zortman, Montana. Hub personnel assisted in prescribed burns at the Sherburne NWR, Fergus Falls WMD, and on the Superior National Forest.

Morris WMD and TNC employees performing prescribed fire operations.
2015-29 PJM 4/10/2015

Table 10 – Prescribed Burn Summary – Morris Hub – 2015

Burn Name	County	Unit Type/ Station	Burn Date	Acres
Hegland-Piles	Lac Qui Parle	WPA/BNR	02/09/2015	3
Fahl	Swift	WPA/BNR	03/31/2015	125
Diekmann-West	Traverse	WPA/BNR	04/03/2015	130
Froland-NE	Pope	WPA/BNR	04/08/2015	23
Pomme de Terre Lake	Stevens	WPA/BNR	04/10/2015	41
Klevenberg	Pope	WPA/BNR	04/10/2015	71
Middlewest Investment	Big Stone	WPA/BNR	04/27/2015	34
Gullickson-South	Pope	WPA/BNR	04/28/2015	52
389-G	Pope	WPA/BNR	04/28/2015	79
Rosby Lake	Pope	WPA/BNR	04/29/2015	247
Johnson-East	Stevens	WPA/BNR	05/01/2015	125
Struck	Stevens	WPA/BNR	05/08/2015	140
Pepperton-East	Stevens	WPA/BNR	05/09/2015	306
Wente	Stevens	WPA/BNR	05/09/2015	198
Edwards-NW	Stevens	WPA/BNR	05/09/2015	64
Jorgenson-South	Big Stone	WPA/BNR	05/19/2015	43
McIver-NE	Pope	WPA/BNR	05/19/2015	62
Prairie 1	Big Stone	WPA/BNR	05/20/2015	121
Rothi-West	Big Stone	WPA/BNR	05/20/2015	119
Rothi-East	Big Stone	WPA/BNR	05/20/2015	110

Table 10 – Prescribed Burn Summary – Morris Hub – 2015 (continued)

Burn Name	County	Unit Type/ Station	Burn Date	Acres
Hillman-West	Big Stone	WPA/BNR	05/22/2015	164
Florida Creek-A, B	Lac Qui Parle	WPA/BNR	05/22/2015	125
Hegland-SE	Lac Qui Parle	WPA/BNR	05/22/2015	181
Westhausen-West	Swift	WPA/BNR	05/22/2015	61
Rolling Forks-North	Pope	WPA/BNR	05/26/2015	31
Swift Falls	Swift	WPA/BNR	05/27/2015	78
Karsky	Big Stone	WPA/BNR	05/27/2015	150
Edwards-North	Stevens	WPA/BNR	06/08/2015	14
Edwards-SW (Fenceline)	Stevens	WPA/BNR	06/25/2015	2
Karsky-Piles	Big Stone	WPA/BNR	07/06/2015	4
Lake Johanna-North	Pope	WPA/BNR	09/29/2015	120
Appleton-South (Blackline)	Swift	WPA/BNR	10/05/2015	17
Appleton-South	Swift	WPA/BNR	10/11/2015	225
Bolson Slough	Lac Qui Parle	WPA/BNR	10/14/2015	129
EP1	Big Stone	WPA/BGR	04/23/2015	8
EP2	Big Stone	WPA/BGR	04/23/2015	25
EP3	Big Stone	WPA/BGR	04/23/2015	19
Gislason Lake-NE	Lincoln	WPA/BGR	04/26/2015	94
Yellow Medicine	Lyon	WPA/BGR	04/26/2015	166
Kaercher Overlook	Lac Qui Parle	WPA/BGR	05/09/2015	66
West Lotthammer	Lac Qui Parle	WPA/BGR	05/21/2015	83
Mueller Homestead	Lac Qui Parle	WPA/BGR	05/21/2015	141
Lee-SE	Lac Qui Parle	WPA/BGR	10/22/2015	36
TOTALS			**43**	**4,032**

Wildfire

Wildfire activity was average within the Hub for the calendar year, with two wildfires on Federal land for 0.6 acres (Table 11). A local volunteer fire department suppressed a 0.5 acre wildfire located on Giese WPA on April 15, ignition cause unknown. On September 2 a baling machine caught on fire on Big Stone Refuge burning 0.1 acre, which was extinguished by Hub and volunteer fire department personnel. A fire occurred on April 1 approximately 0.5 miles south of Big Stone Refuge that the Hub staff assisted on, this fire was 10 acres. In addition to the above fires, a prescribed burn on private land got out of control in Swift County on May 2, spread onto FWS easement property, and was suppressed by local volunteer fire departments.

Wildfire activity in Minnesota was heavier than normal to the north of the Morris Fire Hub. The Hub dispatched both detailers and Hub fire personnel to aid in wildfire staffing at Agassiz NWR, Detroit Lakes WMD, and State/private land near Roseau

and Black Duck, Minnesota. The wildfire activity resulted in decreased prescribed burning.

Nationally, it was an extremely busy fire season. For the first time ever, the number of acres burned nationally exceeded 10 million. The ten year average is 72,722 fires/6,595,028 acres; 2015 experienced 68,151 fires for 10,125,149 acres. The National Preparedness Level (PL 1-5), which gauges national fire activity and resource needs throughout the country, peaked and remained at PL-5 for an extended period of time. Members of the Morris District Staff assisted with interagency wildfire assignments in the states of Minnesota, Washington, Oregon, Idaho, Montana, and California.

Table 11 – Wildfire Burn Summary – Morris District – 2015

Fire Name	County	Acres Burned	Date Burned
Giese	Stevens	.5	4/15/2015
Baler	Big Stone	.1	9/02/2015
Total Wildfires	**2**	**0.6**	

Heath Morgan, a Wyoming BLM employee, assisting Morris on a prescribed fire on Johnson WPA, Stevens County. 2015-30 PJM 5/1/2015

Training, Development and Outreach

- Members of the District Fire Crew attended various fire trainings including L-380 (Fireline Leadership), The Battle of Shilo Civil War Staff Ride, and S-230/231 (Crew Boss/Engine Boss).
- 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.
- Phil Millette presented on the topic of wildland fire management at the Hancock Public School.
- Dan Angelo presented at Conservation Day (Pope and Stevens County Fourth Grade students) on the topic of wildland fire management.

Other

- The Morris Hub purchased a new Ford F550 cab and chassis that will be used to replace an aging engine stationed at Morris. The new engine will be operational in 2016.

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. As in 2014, we were once again able to have a crew of seasonal employees this year that rotated between a variety of duties, including weed control. This approach gives them the greatest variety of experience and also reduces the odds of burnout. This year's crew was comprised of Cecilia Marella, Kevin Mortensen, Shaun McNally, Jenna Harlow, and Hanna Morris, an occasional volunteer. Shaun and Jenna had other duties as major responsibilities, but did assist once in a while with weed control. Invasive species focused on by the ISC, YCC and other staff, CCM, and contractors were: Canada thistle, plumeless thistle, yellow and white sweet clover, yellow toadflax, wild parsnip, Queen Anne's lace, crown vetch, bird's foot trefoil, purple loosestrife, leafy spurge, and trees.

Since we were short-handed with functioning mowers this year, we used $2,049 of 6860 funds to hire farmers to mow weedy prairie reconstructions for us at Big Slough, Seidl, Geyer, Robin Hood, and Lawrence WPAs. After a mower breakdown at Hillman, we also paid Big Stone SWCD $460.00 to mow 36.4 acres of Queen Anne's lace. Otherwise, BST Kleinschmidt and grant-funded contractors (Prairie Restorations Inc. and Habitat Forever) did the bulk of the mowing (Table 12).

Just 28 percent of the one year old 40 acre prairie reconstruction at Walden WPA needed mowing for plumeless thistle. There was a nice catch of Canada wildrye, black-eyed susan, Maximillian sunflower, and false sunflower.
2015-31 JBB 8/24/2015

The fluctuations in acres of noxious weed control over the last seven 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. The weather in 2015 was very cooperative and rarely led to a change of plans for weed control activities, but we did run out of time to get to lower priority species or to follow-up control efforts from earlier in the year.

In Table 12, the column for contracted acres refers to mowing prairie reconstructions by a contractor when the presence of thistle or other noxious weeds 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 seedings at Edwards and Rothi WPAs were mowed by Habitat Forever for annual weeds and therefore were not counted in the total.–Some progress was again made in mapping, treating, and documenting previously unknown infestations such as bird's foot trefoil at Loen (NE), musk thistle at Redhead Marsh, and yellow toadflax at Scofield WPA.

Table 12 – Broadleaf Noxious Weed Control – Morris WMD – 2015

	Acres Treated			
County	**Mechanical**	**Spray**	**Contracted**	**Total**
Big Stone	31.5	48.5	36.4	116.4
Chippewa	0.0	0.0	0.0	0.0
Lac qui Parle	9.4	30.4	0.0	39.8
Pope	11.1	105.7	0.0	116.8
Stevens	74.4	61.4	12.7	148.5
Swift	0.0	41.1	8.3	49.4
Traverse	0.0	0.0	20.9	20.9
Yellow Medicine	0.0	0.9	0.0	0.9
Total 2015	**126.4**	**288.0**	**78.3**	**492.7**
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**

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 or mulching attachment on the skid steer, mowing with our new rotary 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.

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), two private contractors, Plotz Timber Harvest (Plotz) and Dahl Logging (Dahl), were hired to take out scattered trees and tree groves at Appleton, Bangor, Heidebrink, Lake Johanna, Spring Lake, and Welsh WPAs. The most common species cut was likely Siberian elm, with box elder, cottonwood, buckthorn, ash, and cedar the next most abundant in that order. Conservation Corps of Minnesota (CCM) crews were utilized heavily as well to basal bark spray scattered smaller trees, resprouts, and "baby" groves, many of which were grazed just prior to treatment which facilitates better access to the tree trunks. A total of 477.3 acres were treated by CCM at the following WPAs: Appleton, Bangor, Benson Lake, Hegland, Karsky, Larson, Stenerson Lake, and Redhead Marsh. Some tree work was accomplished with field staff at Gjerdingen, Niemackl Slough, and Rustad WPAs. BST Mortensen and Marella spent two days basal bark spraying scattered trees post grazing at Gjerdingen, BST Kleinschmidt

mowed thousands of small cottonwoods at Niemackl Slough, and our YCC crew girdled box elder at Rustad.

The aftermath of the August 2014 basal bark herbicide application to trees growing in seasonal wetland basins on Artichoke Lake WPA is evident in this photo. We followed up this treatment with mulching in January 2016. Waterfowl will now have "open water" with which to conduct their breeding activities. 2015-32 JBB 6/22/2015

Contracted tree removal on the district has fluctuated in quantity throughout the last 13 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 (landscape 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 an 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 landscape 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.

Large piles of ash generated from burning giant cottonwoods can be seen in this photo at Karsky WPA. Consumption was near 100 percent for 13 of 14 piles. Ash and unburned material was buried and a load of topsoil was brought in and spread and then hand seeded with natives by PRS Miner.

2015-33 JBB 7/10/2015

Through a new innovative arrangement with our RXB3 qualified fire staff, Plotz and Minnesota Native Landscaping were also contracted to burn piles with our staff on site. The Hastad pile burning with Plotz in February did not go well due to poor piling arrangement and soil content, but the piles burned by Minnesota Native Landscaping at Karsky in early July burned very well, with nearly 100 percent consumption.

Here is a panoramic before and after view of the grove removal at Welsh WPA completed by Dahl Logging through a Prairie Recovery Project Grant. The piles are scheduled to be burned with a landscape burn in the spring of 2016.
2015-34 ACM 2015 (top) 2015-35 ACM 2015 (bottom)

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 – 2015

WPA	Start Date	End Date	Method	Acres
Welsh	03/15/2015	04/15/2015	Contractor – Multi	10.1
Karsky*	05/11/2015	05/11/2015	Basal Stump Spray	4.0
Appleton*	05/14/2015	05/15/2015	Basal Stump Spray	1.1
Hegland*	06/01/2015	08/13/2015	Basal Spray	93.7
Heidebrink	06/21/2015	06/25/2015	Contractor Mulched	8.9
Bangor	06/26/2015	07/08/2015	Contractor – Multi	91.0
Appleton	07/06/2015	07/10/2015	Contractor – Multi	6.0
Lake Johanna	07/09/2015	07/20/2015	Contractor – Multi	37.8
Rustad	07/13/2015	07/13/2015	YCC Girdled	0.37
Stenerson Lake*	07/20/2015	07/20/2015	Foliar Willow	0.50
Stenerson Lake*	07/20/2015	07/23/2015	Basal Spray	132.5
Larson*	07/28/2015	08/12/2015	Basal Spray	101.7
Redhead Marsh*	08/02/2015	08/03/2015	Basal Spray	8.5
Bangor*	08/11/2015	08/11/2015	Stump Cut	26.5
Spring Lake	07/13/2015	08/10/2015	Contractor – Multi	109.9
Gjerdingen	08/24/2015	08/31/2015	Basal Spray	11.1
Blue Mounds*	09/01/2015	09/01/2015	Basal Spray	82.3
Benson Lake*	09/02/2015	09/03/2015	Basal Spray	26.5
Niemackl Slough	10/08/2015	10/08/2015	Mow Saplings	30.4
Totals				**782.87**

*Tree control performed by Conservation Corps of Minnesota and/or TNC seasonals

The YCC crew was utilized to try girdling as a tree control method on a box elder grove at Rustad WPA.
2015-36 JBB 8/24/2015

Canada Thistle (*Cirsium arvense*)

Efforts to control Canada thistle were similar to 2014 and up from recent years due to an increase in recent prairie reconstruction sites, but still well below 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, or mowing with no spraying. Our new strategy in "juvenile" reconstructions is to just let them mature and treat with mowing only if the undesirable weeds appear to be roughly 30 percent or greater of the vegetation cover. The majority of units in Table 14 that were mowed were done so because they met this threshold. Two units (Pomme de Terre River and Loen WPAs) appeared to have more sweet clover than Canada thistle. Several sites in the table were backpack sprayed primarily for other species such as plumeless thistle or crown vetch, with Canada thistle sprayed incidentally.

Newer seedings, those less than five years old, tend to make up the bulk of our Canada thistle control sites. At Westport WPA though, with the exception of a half dozen small "patches" of plumeless thistle, the four year old seeding there had very little thistle growth of any kind. The patches were spot treated with shovels to clean up the site for planned seed harvest.
2015-37 JBB 8/5/2015

The station received only three weed complaints in 2015 (Dismal Swamp, Fults, and Paul WPAs). Dismal Swamp was a repeat complaint, so it was broadcast spot sprayed with the UTV this year while it was in the bud stage. Fults was a new seeding with only two small patches, but a neighbor with a low tolerance for thistle called to request we mow it. By his description we expected the entire 12 acre site to be full of thistle; instead there was an estimated half-acre of thistle present. With only one mower working at the time, a deal was worked with the grazing permittee to mow it for a discount from his bill. Unfortunately, they didn't follow directions to just mow the patches and instead mowed the entire 12 acre seeding. The complaint for Dismal Swamp comes through the county weed inspector and seems to be unrelated to the degree of actual infestation. Either someone has a very low tolerance for Canada thistle, or they have a beef with us and just use the noxious status of thistle to invoke a response. He has finally gotten the message though to contact us before seed-set so it can be dealt with when the herbicide will be the most effective. 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. The complaint for Paul came too late, as the plants had already gone to seed, so it will be addressed next year prior to flowering.

Table 14 – Sites Treated for Canada Thistle – Morris WMD – 2015

Unit Name	End Date	Spray Acres	Mow Acres	Comment
Loen-NE	5/20/2015	1.16		Plumeless thistle primary
Loen-NE	6/01/2015	6.53		Plumeless thistle primary
Glacial Lake	6/09/2015	2.07		Plumeless thistle primary
Westhausen	6/11/2015	3.71		Wild parsnip primary
Dismal Swamp Ⓟ	6/18/2015	32.70		Complaint
Edwards	6/23/2015	0.53		Crown vetch primary
Pomme de Terre River*	6/25/2015		10.01	2014 Seeding Sweet clover primary
Dismal Swamp*	6/26/2015		9.35	2013 seeding
Prairie*	6/26/2015		10.29	2013 Seeding
Fults* ®	6/26/2015		12.70	2014 Seeding - Complaint
Karsky*	6/29/2015		11.90	2013 Seeding
Fish Lake*	6/29/2015		5.77	2013 Seeding
Miller*	6/29/2015		8.84	2013 Seeding
Pepperton*	6/29/2015		14.38	2013 Seeding
Glacial Lake	6/29/2015	25.71		Plumeless thistle primary
Spellman Lake	6/30/2015	0.96		UTV boomless
Westhausen	6/30/2015	0.50		UTV boomless
Loen*	7/01/2015		15.21	2013 Seeding Sweet Clover Primary
Walden*	7/01/2015		11.60	2014 Seeding
Geyer	7/01/2015		11.36	2012 Seeding
Robin Hood*	7/01/2015		9.54	2014 Seeding
Colbert*	7/07/2015		9.47	2014 Seeding
Redhead Marsh	7/09/2015	1.96		Musk thistle primary
Twin Lakes	7/09/2015	13.70		2013 Inter-seeding
Loen	7/10/2015	15.51		Farming prep
Pomme de Terre Lake	7/22/2015	1.57		Seed harvest prep
Pieske	7/22/2015	4.09		Spotted knapweed primary
Edwards*	7/31/2015		45.46	2015 Seeding
Welsh	8/04/2015	3.11		Plumeless thistle primary
Loen-NE	8/12/2015	4.84		Plumeless thistle primary
Total Acres		**118.65**	**185.88**	

Ⓟ - Big Stone County Weed Inspector complaint
® - Neighbor complaint
* - First or second year reconstruction

Wild Parsnip (*Pastinaca sativa*)
One of the more concerning new weeds 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.

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 Otrey 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.

Control efforts on this invasive species (Table 15) were down from last year (100.59 acres in 2014, 21.48 acres in 2013, 120.80 acres in 2012) due to progress made reducing patch sizes at sites such as Rothi, and lack of time to get to all of the infestations. The treatment at Westhausen wasn't so much an effort to control the infestation there as it was due to preparing the tree removal site for a native seeding. The plan for the Westhausen infestation is to fence the unit and rotationally graze livestock for five years or more to keep it from producing seed. The largest infestation we are treating continues to be the one at Rothi WPA. In addition to spot treatment with hand crews here, cattle are being used to keep it from producing seed in an area about 100 acres in size.

The east central portion of Rothi WPA was treated with grazing again for the fourth consecutive year. As in 2014, we again utilized the YCC crew to expand the parsnit control effort at Berg WPA.

The grazing at Bredberg WPA was not continued this year to give other vegetation a rest from defoliation and to break a cycle of dependency and expectation by the permittee. The permittee is an organic dairyman which complicates an integrated pest management approach utilizing herbicide. Future grazing efforts will likely involve non-organic beef cattle.

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.

Table 15 – Wild Parsnip Control – Morris WMD – 2015

WPA	Start Date	End Date	Phenology	Treatment	Acres
Westhausen	6/11/2015	6/11/2015	Flowering	Spray	3.71
Berg	6/17/2015	6/18/2015	Pre-flowering	Shovel/Pull	5.27
Westhausen	6/30/2015	6/30/2015	Flowering	Spray	0.50
Rothi	7/16/2015	7/16/2015	Post-flowering	Cut seed heads	5.30
Rothi	7/17/2015	7/17/2015	Post-flowering	Shovel/Pull	4.77
Pomme de Terre Lake	7/22/2015	7/22/2015	Post-flowering	Spray	1.58
Schultz	7/27/2015	7/27/2015	Post-flowering	Shovel/Pull	3.33
Rothi	7/27/2015	7/27/2015	Post-flowering	Shovel/Pull	0.59
Total Acres					**25.05**

One wild parsnip plant was found in an unmowed strip in the 2014 seeding at Big Slough WPA. As much seed as possible was collected from the plant and bagged for disposal, but it was obvious that some had already been deposited on the ground. This spot will have to be re-visited often in the next few years to prevent future seed production if we are to achieve eradication. 2015-38 JBB 8/4/2015

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. In 2015, BST Kleinschmidt treated six small patches on August 10 with glyphosate when the plants were in the flowering stage. A new patch was discovered and treated by WRS Bright on August 7 on the Schellburg Prairie Bank Easement about 50 yards south of the southwest corner of the addition to Prairie WPA.

This patch of common tansy was likely started with seed brought in on logging equipment by a contractor hired to do some tree cutting (note the pile in the background). WRS Bright treated the patch with glyphosate he had on-hand to try to retard seed production. In future years, application needs to be earlier in the growing season, prior to flowering, and with a broadleaf selective product.

2015-39 JBB 8/7/2015

Spotted Knapweed *(Centaurea maculosa)*
We've had good success in controlling this species on the few units that have had infestations. For the fourth straight year no plants have been found at Nordby WPA, but populations thought to be eradicated at Cyrus and Pieske WPAs needed treatment this year once again. A few plants were also found and sprayed at Pomme de Terre Lake WPA. We will continue to re-visit these sites to ensure successful eradication.

Crown Vetch (*Coronilla varia*)
In 2015, 55.90 acres with crown vetch were sprayed on four 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. In 2014 we only treated 3.53 acres on Centennial, Edwards, and Long Lake. Of the four sites treated this year, only Fahl 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. Glenwood, Pearson, Wall, and Swede Home WPAs are sites we know have infestations, 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 – 2015

WPA	Date	Phenology	Acres
Edwards	06/23/2015	Flowering	0.54
Centennial	07/10/2015	Flowering	0.14
Long Lake	07/15/2015	Flowering	17.45
Edwards	07/15/2015	Flowering	37.77
Fahl	08/03/2015	Post-Flowering	1 plant
Total			**55.90**

Queen Anne's Lace *(Daucus carota)*
Another weed to appear on the district within the past ten 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 2015, no plants were found at Schultz, Blue Mounds, or Seidl, while two plants were pulled at Geyer. New infestations discovered and treated in 2014 at Colbert, Loose, and Glacial Lake (one plant at SW gate), were re-visited while known infestations were treated again at Brady and Hillman WPAs. The 2007 prairie reconstruction on the Arden Hegland easement (102G) was also canvassed, and no plants were found.

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 by the Big Stone SWCD after our mower broke down. We now know of eight WPAs and one easement that have had one or more plants of this species. We will continue to check the locations that turned up empty this year and last, for several more years.

Table 17 – Queen Anne's Lace Control – Morris WMD – 2015

County	WPA	Date	Phenology	Treatment	Acres
Big Stone	Hillman	7/20/2015	Flowering	Hand Pull	4.86
Pope	Glacial Lake	7/27/2015	Flowering	Hand Pull*	0.00
Traverse	Geyer	7/27/2015	Flowering	Hand Pull*	< 0.01
Big Stone	Rothi	7/27/2015	Flowering	Hand Pull	0.59
Swift	Loose	7/27/2015	Flowering	Hand Pull	0.70
Swift	Brady	8/03/2015	Flowering	Hand Pull	1.52
Big Stone	Rothi	8/12/2015	Flowering	Hand Pull	6.73
Pope	Glacial Lake	8/13/2015	Flowering	Hand Pull*	0.00
Big Stone	Hillman	8/25/2015	Flowering	Mow	36.43
Swift	Loose	9/08/2015	Flowering	Hand Pull*	0.00
Total					**50.84**

*Single plants.

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. 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. 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.

In 2015, two new infestations were discovered and treated. A small patch of a few plants along the road near the southwest corner of the new addition to Stenerson Lake was hand pulled/shoveled, while backpack sprayers were used to treat some of what was found at Scofield WPA. Cyrus and Overby WPAs were also re-visited and treated. Acre figures of treatment have varied from year to year, due as much to mapping accuracy, such as inclusion with other species being treated at the same time, as due to an actual increase or decrease in patch size.

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

Much like crown vetch, bird's-foot trefoil, which is still commercially available, has been around for several years as 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 one can assume it now represents a threat to waterfowl production goals. Like toadflax it appears to fluctuate in expression, from year to year, and as such Bahr WPA was not treated again this year, nor did we return to the infestation discovered and treated in 2012 at Redhead Marsh WPA. The patches discovered in 2013 at Cyrus WPA though were sprayed for the third straight year again on July 20. The other site treated in 2015 was a new infestation of 10.54 acres at Loen WPA that was encountered while treating thistle in the northeast portion of the unit. It seems cattle may have contributed to the spread of this species as most every plant appeared to be growing out of a cow pie. A new patch discovered in 2014 in the parking lot of Pomme de Terre Lake WPA was not sprayed this year. 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.

Biennial thistle

Plumeless thistle *(Carduus acanthoides)* started to show up within the district around 2005. It got a foothold on private lands, especially overgrazed pastures, but also smooth brome dominated CRP with coarse soils. Within about a five year period it has expanded and in some cases taken over fields and pastures. As of 2015, a minimum of 40 WPAs (up from 25 in 2013) are now known to have occurrences of plumeless thistle (Table 18). Twenty-one WPAs received treatment for plumeless thistle control this year (Table 19), with eleven WPAs and one easement being new sites (Artichoke Lake, Big Slough, Brady, Edwards, Finden, Larson (P-64), Pomme de Terre River, Rustad, Twin Lakes, Stenerson Lake, Walden, and 389G-1). 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.

The disturbance from the prairie reconstruction activities at Easement 389G-1 generated the need for several trips to shovel or spot spray plumeless thistle. The landowner was also eager to do his part to help control "weeds", including plumeless thistle. On July 27 he mowed the portion that had been sprayed with glyphosate prior to planting which had a strong response from foxtail, ragweed, red clover, and thistles. 2015-40 JBB 7/27/2015

Table 18 – Known Sites with Plumeless Thistle – Morris WMD – 2015

Big Stone County	**Pope County**	**Stevens County**
Anderson	Nelson Lake	Pomme de Terre Lake
Bauman	Overby	Pomme de Terre River
Dismal Swamp	Rolling Forks	Thorstad
Kufrin	Rustad	**Swift County**
Twin Lakes	Scofield	Artichoke Lake
Chippewa County	Stammer	Big Slough
Hawk Creek	Starbuck	Brady
Pope County	Stenerson Lake	Fahl
Benson Lake	Walden	Loen
Berg	Westport	Roderick
Blue Mounds	**Stevens County**	Welsh
Froland	Edwards	**Traverse County**
Glacial Lake	Long Lake	Geyer
Grove Lake	Nordby	Diekmann
Larson	Pieske	Robin Hood

Table 19 – Sites Treated for Plumeless Thistle – Morris WMD – 2015

Unit	Start Date	End Date	Phenology	Method	Acres
Loen	5/20/2015	6/01/2015	Rosette	Chemical	7.70
Glacial Lake	6/09/2015	6/09/2015	Rosette	Chemical	2.08
Edwards	6/23/2015	6/23/2015	Pre-flowering	Chemical	0.54
Pomme De Terre River*	6/25/2015	6/25/2015	Flowering	Mow	10.02
Glacial Lake	6/26/2015	6/29/2015	Rosette	Chemical	25.71
Benson Lake	6/26/2015	6/29/2015	Pre-flowering	Chemical	6.91
Benson Lake	6/26/2015	6/26/2015	Pre-flowering	Handcut	3.33
Walden*	7/01/2015	7/01/2015	Flowering	Mow	11.60
Big Slough	7/03/2015	7/03/2015	Pre-flowering	Mow	8.31
Twin Lakes	7/07/2015	7/09/2015	Pre-flowering	Chemical	13.70
Glacial Lake	7/07/2015	7/08/2015	Flowering	Chemical	10.74
389G-1	7/07/2015	7/07/2015	Rosette	Handcut	0.63
389G-1	7/08/2015	7/08/2015	Flowering	Chemical	2.45
Artichoke Lake	7/09/2015	7/09/2015	Pre-flowering	Chemical	0.05
Rustad	7/13/2015	7/13/2015	Flowering	Handcut	2.45
Stenerson Lake	7/20/2015	7/20/2015	Flowering	Handcut	1.16
Pomme De Terre Lake	7/22/2015	7/22/2015	Flowering	Handcut	0.61
Pomme De Terre Lake	7/22/2015	7/22/2015	Flowering	Chemical	1.58
389G-1	7/30/2015	7/30/2015	Flowering	Chemical	4.96
Glacial Lake	7/30/2015	7/30/2015	Flowering	Chemical	22.82
Fahl	8/03/2015	8/03/2015	Flowering	Handcut	4.05
Brady	8/03/2015	8/03/2015	Post-flower	Handcut	1.52
Welsh	8/04/2015	8/04/2015	Flowering	Chemical	3.11
Larson	8/04/2015	8/04/2015	Flowering	Chemical	12.94
Westport	8/07/2015	8/10/2015	Flowering	Handcut	1.38
Walden	8/12/2015	8/12/2015	Post-flower	Handcut	9.58
Overby	8/12/2015	8/12/2015	Post-flower	Handcut	9.43
Loen	8/12/2015	8/12/2015	Post-flower	Chemical	10.54
Big Slough	8/13/2015	8/13/2015	Flowering	Mow	8.31
Finden	8/18/2015	8/18/2015	Post-flower	Handcut	13.86
Roderick	8/21/2015	8/21/2015	Post-flower	Handcut	2.15
					214.21

*Mowed primarily 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. Our experience is similar, in that it seems to decrease or at least fluctuate in abundance over time as a reconstruction ages, to a level that we are more comfortable with. For instance, in 2010 considerable time was spent (about two solid weeks) at Grove Lake WPA in the prairie reconstruction spot-spraying both plumeless thistle and Canada thistle. In 2011, it took just two days, and while it is not completely absent, in the last four growing seasons there has been no action taken on plumeless thistle there. This was due in part to a much lower occurrence of plumeless plants and a limitation of staff time.

In addition to plumeless thistle, we also sprayed the other two biennial thistles present on the district. On July 9, 1.97 acres were sprayed for musk thistle (*Carduus nutans*) at Redhead Marsh WPA. Most was along the west boundary where we had fenced through the over-farming in 2014, and hand broadcast native seed.

Bull thistle (*Cirsium vulgare*) was also encountered and sprayed along with plumeless thistle on the following sites:

- Loen-NE, 5.7 acres sprayed on July 9
- Larson, 12.94 acres sprayed on August 4
- Twin Lakes, 8.4 acres sprayed on August 13

Musk thistle is becoming more prevalent in certain portions of Big Stone County. This infestation was located on a spoil pile at a gravel pit along County Road 21, .75 miles south of Highway 12 and adjacent to Easement 343G.
2015-41 JBB 6/23/2015

Sweet Clover *(Melilotis spp.)*

A weed we seem to spend more and more time and effort each year trying to control in first and second year prairie reconstructions is sweet clover, both yellow and white. Because this plant is a biennial we use mowing to reduce seed production in these restored areas, and grazing by cattle in remnant prairie areas. In 2015, we mowed 196.35 acres at 14 WPAs (Table 20).

Table 20 – Sites Treated for Sweet Clover – Morris WMD – 2015

WPA	Start Date	End Date	Method	Acres
Pomme de Terre River	6/25/2015	6/25/2015	Mow	10.02
Rothi	6/25/2015	6/25/2015	Mow	11.77
Dismal Swamp	6/26/2015	6/26/2015	Mow	9.35
Prairie	6/26/2015	6/26/2015	Mow	10.29
Fish Lake	6/29/2015	6/29/2015	Mow	5.77
Karsky	6/29/2015	6/29/2015	Mow	11.91
Miller	6/29/2015	6/29/2015	Mow	8.84
Pepperton	6/29/2015	6/29/2015	Mow	14.39
Walden	7/01/2015	7/01/2015	Mow	19.76
Loen	7/01/2015	7/01/2015	Mow	15.21
Lawrence	7/02/2015	7/02/2015	Mow	11.15
Seidl	7/02/2015	7/02/2015	Mow	12.94
Colbert	7/07/2015	7/07/2015	Mow	9.48
Edwards	7/29/2015	7/31/2015	Mow	45.47
Total				**196.35**

Purple Loosestrife *(Lythrum salicaria)*

Purple loosestrife control started at Morris WMD in 1997 with raising and release of its natural predator the loosestrife beetle *(Gallerucella* spp.). New infestations of purple loosestrife were discovered at Welsh WPA on August 28 this year and were controlled by hand pulling. A check at Aal and Centennial WPAs found more plants that were dug up on August 7, 10 and 11 for a combined total of 0.32 acres at all three sites. At most known sites, loosestrife beetles (Table 21) are successfully keeping loosestrife in check.

Table 21 – Purple Loosestrife – Morris WMD – 1997-2015

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
Welsh*	No	0	222.00	439.00	0.30	No
Total	**8**	**18**	**2401.19**	**4293.47**	**3.2276**	

*Beetles present without being released
**New site in 2015; acres unknown

Leafy Spurge (*Euporbia 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.

Flea beetle release Site 3 on Loen WPA at the beginning of a three year grazing program using both cattle and sheep combined with existing biological control. Notice the patch of leafy spurge infestation in 2013. 2015-42 DMO 6/18/2013

After 3 years of rotated grazing by sheep and cattle, along with flea beetle attacks during summer, leafy spurge stem and seed production has disappeared at Site 3. 2015-43 DMO 7/29/2015

In 2015 a total of 5,500 flea beetles were harvested from Rolling Forks WPA. The beetles were released at three sites on three WPAs (Table 22). Since 1997 the Morris WMD has released flea beetles at 230 release sites on 64 WPAs. Beetles were applied to 0.19 acres in 2015. Unlike the past two years when small patches at Bauman, Daly, Geyer, and Mosquito Ranch were treated with application of herbicide (usually Plateau), this year no chemical applications were made due to time and staff limitations. Future collection from sites on Loen WPA may not be possible, due to the success of additional management (grazing sheep).

Table 22 – Beetles Released on WPAs – Morris WMD – 2015

County	WPA	No. Sites	No. Released
Big Stone	Rothi	1	2,000
Lac Qui Parle	Pearson	1	3,000
Stevens	Edwards	1	500
Totals		**3**	**5,500**

This photo is of the 0.14 acre Site 4 at Rothi WPA, where 2,000 flea beetles were released. 2015-44 DMO 6/16/2015

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 2015, Intern Jessica Oldakowski 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 current information, especially the weed distribution maps for Pope and now Swift County. Some spraying was done in 2015, but most of her time was spent mapping. She was hired on permanent full-time and will split duties between the CWMA and Buffer Initiative in 2016.

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. WRS 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 for the first 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.

Alex Runde was the intern hired for 2015 to continue mapping and treating target weeds. A few excerpts of his report are included here:

For the three major weeds I targeted (Leafy spurge, wild parsnip, and Queen Anne's lace), 67% of work days I went out with the backpack sprayer, 28% of the time went out with the Gator, and the remaining 5% of the time set out with hand pulling in mind (Mostly wet or above 90º days when spraying 2, 4-D is not recommended because of the high likelihood of burning grass).

This summer, I worked with 28 landowners. 21 of the 28 were for wild parsnip, 3 for Queen Anne's lace, and 4 for thistle or 'other'. Land owners were contacted by either letter or phone. In some cases, proactive landowners either came into the office, or stopped me along the side of the road to ask that I spray weeds on their property. In cases such as this, it was encouraging to see the high interest in working with the CWMA. In other cases (mostly absentee landowners), it seemed that landowners had grown tired of having their property sprayed every year, and were not so good at returning calls. Aside from the four landowners for thistle, 19 of the 24 contacted allowed me to spray, and all 24 talked at least some management options, although only one seemed to follow through on this talk. This brings the effectiveness of contact by the CWMA this year to 20 for 24, or roughly 83%.

This portable board is updated yearly and taken to various events to educate the public on the various weeds of concern, how to identify them, and how to control them on their private land. 2015-45 JBB 4/11/2011

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. The Appleton Area Office banded 450 geese and the Glenwood Area Office banded 240 geese.

We are grateful to the local DNR staff for giving our seasonal employees and YCC members the opportunity to band Canada geese each summer. Those few days of their summer are always a highlight for our budding biologists.

2015-46 SAB 7/07/2015

4d. Nest Structures

We check and maintain nest structures over the winter because the ice provides easy access. Because of this, our results in the narrative run a year behind – the results here are from the 2014 nesting season. We tried something new in 2014, hiring a contractor to check some of the structures for us. The individual maintains structures for Delta Waterfowl.

Table 23 shows the structures that were available (in good enough condition for a duck to build a nest) and got used, did not get used, or unknown, as well as the structures that were not available (tipped, bent, poor condition, etc.). We are in the process of removing structures that have not been used in the last three years, that have become surrounded by dense cattail, and that are perpetual maintenance problems. Our hope is that these efforts will improve our use rates.

Table 23 – Nest Structure Check – Morris WMD – Winter 2014-2015

Count	Available Used	Available Not Used	Available Unknown	Not Available	Total
Hen Houses	54	92	18	19	183
Wood Duck Box	14	3	1	3	21
Goose Tub	0	4	0	0	4

Proportion	Available Used	Available Not Used	Available Unknown	Not Available
Hen Houses	29.5	50.3	9.8	10.4
Wood Duck Box	66.7	14.3	4.8	14.3
Goose Tub	0.0	100.0	0.0	0.0

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 8-23, throughout most of the district, 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 2015.

A large spring hatch can result in depredation complaints.
2015-47 DMO 5/25/2012

Beaver

The number of beaver damage complaints were minimal in 2015. We received one complaint from a landowner who believed that beaver on Grove Lake WPA were causing flooding problems on adjacent private land. Additionally, clean out projects were done by staff on Artichoke, Edwards and Nelson Lake WPAs to keep water control structures operational. It was not necessary to remove any beaver in 2015.

This beaver is minding his own business. 2015-48 ALG 8/2015

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, five to seven million dollars per year, has been from the state's Outdoor Heritage Fund with lesser amounts from North American Wetlands Conservation Act (NAWCA) Grants. Two fee title tracts were donated to the Service this year. The Miller tract was an addition to Beyer WPA (Lac qui Parle County), and the Gunewitz Tract was an addition to Hanson WPA (Swift County). Hanson WPA was renamed Simon Lake WPA to remove the confusion caused by having two Hanson WPAs (one in Pope County and one in Swift County).

In addition to land acquisition, PF also provides funding and labor to conduct rehabilitation and restoration projects on WPAs. Projects included fence construction, tree removal, and grassland seeding. PF has Habitat Specialists stationed throughout western Minnesota to conduct grassland restoration projects.

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

Three NTP easement tracts were donated to the Service: one in Big Stone County and two in Pope County. TNC obtained signed options and/or closed on a number of easements in 2015 so 2016 will see more new NTP easements. In addition, signed options were obtained for two new fee tracts, Hoffman (80 acres) and Cramlet (65 acres), both along Hassel Creek in Pope County. These tracts will be the first new NTP fee tracts acquired since the single 22 acre Green Muhly Tract was acquired in Stevens County in 2007.

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 specialist is stationed at the Litchfield WMD office and serves Pope and Swift Counties. The other specialist, Angie Miner, is stationed at the Morris WMD office and serves the western portion of the District.

Morris WMD partnered with TNC Prairie Recovery Specialist (PRS) Miner to utilize the Lessard-Sams Outdoor Heritage Funds to complete a variety of prairie enhancement and restoration projects within the district. The PRS designed and contracted projects such as fencing, seeding, and tree removal. The PRS also utilized TNC seasonal employees and CCM crews for fence removal, invasive weed control, and follow-up management. The PRS and TNC seasonal employees also participated in prescribed burns as needed throughout the season. Projects funded and managed by the PRS in 2015 are shown in Table 24.

Table 24 – Projects Completed by TNC on Service Lands
Morris WMD – 2015

WPA	County	Acres	Contractor	Cost	Completed	Activity
Appleton	Swift	225.0	TNC	-	10/05/15	Prescribed Fire Assist
Appleton	Swift	7.2	Plotz	$13,600.00	7/10/15	Woody Veg Removal
Appleton	Swift	19.8	CCM	-	5/15/15	Woody Veg Removal-Scattered
Fahl	Swift	125.0	TNC	-	3/31/15	Prescribed Fire Assist
Fahl	Swift	-	CCM	-	8/19/15	Seed Harvesting
Florida Creek	Lac qui Parle	125.0	Grassland Solutions	$ 9,246.62	8/11/15	Fence Installation
Florida Creek	Lac qui Parle	125.0	TNC	-	5/22/15	Prescribed Fire Assist
Grove Lake	Pope	-	Gateway Construction	$11,450.00	7/31/15	Cattle Watering Tank Installation
Grove Lake	Pope	-	Don's Pump and Well	$16,420.00	8/30/15	Well Installation
Hegland	Lac qui Parle	6.1	Prairie Restorations	$ 8,380.00	6/10/15	Seed and mow tree grove removal areas
Hegland	Lac qui Parle	98.0	CCM	-	8/13/15	Woody Veg Removal
Helgand	Lac qui Parle	12.0	Plotz	$ 1,500.00	3/01/15	Some brush piles burned
Hillman	Big Stone	164.0	TNC	-	5/22/15	Prescribed Fire Assist
Karksy	Big Stone	4.0	CCM	-	5/10/15	Woody Veg Removal
Karsky	Big Stone	15.0	Dahl Logging	$23,398.00	1/09/15	Woody Veg Removal
Karsky	Big Stone	-	Minnesota Native Landscapes	$12,356.00	7/08/15	Brush Pile Burning
Karsky	Big Stone	7.9	Prairie Restorations	See Hegland	6/10/15	Seed and mow tree grove removal areas
Karsky	Big Stone	-	Ronglien Excavating	$ 1,836.00	8/06/15	Topsoil delivered for burned brush pile site restoration
Karsky	Big Stone	150.0	TNC	-	5/27/15	Prescribed Fire Assist
Klevenburg	Pope	71.0	TNC	-	4/10/15	Prescribed Fire Assist

Table 24 – Projects Completed by TNC on Service Lands – 2015 (continued)

WPA	County	Acres	Contractor	Cost	Completed	Activity
Loen	Swift	12.8	Prairie Restorations	See Hegland	6/10/15	Seed and mow tree grove removal areas
Lundgren	Chippewa	11.7	Prairie Restorations	See Hegland	6/10/15	Seed and mow tree grove removal areas
Lundgren	Chippewa	7.1	TNC	-	6/11/15	Herbicide application prior to reseeding grove restoration
Pepperton	Stevens	306.0	TNC	-	5/09/15	Prescribed Fire Assist
Pomme de Terre Lake	Stevens	41.0	TNC	-	4/10/15	Prescribed Fire Assist
Prairie	Big Stone	355.0	Pro Fence	$30,390.00*	8/10/15	Fence Installation *Includes Prairie WMA Fence
Redhead Marsh	Big Stone	94.0	CCM	-	8/04/15	Woody Veg Removal
Rolling Forks	Pope	31.0	TNC	-	5/26/15	Prescribed Fire Assist
Spring Lake	Swift	112.0	Plotz	$37,900.00	8/10/15	Woody Veg Removal
Twin Lakes	Big Stone	340.0	Grassland Solutions	$65,775.66*	8/28/15	Fence Installation *Includes Victory WMA Fence
Welsh	Swift	32.0	Dahl Logging	$12,460.00	4/14/15	Woody Veg Removal
Westhausen	Swift	3.2	TNC	-	6/11/15	Herbicide application prior to reseeding grove restoration
Westhausen	Swift	3.0	Prairie Restorations	See Hegland	11/23/15	Seed tree grove removal areas
Westhausen	Swift	3.0	Schultz Excavating	$ 660.00	11/04/15	Old grove site disked for reseeding
TOTALS		**2,506.8**		**$245,372.28**		

The Conservation Fund

One fee title tract, the Gunewitz Tract, was purchased by The Conservation Fund (TCF) in 2014 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. PF later purchased the tract from TCF and donated it to the Service.

TCF also recently partnered with the Minnesota Land Trust to purchase habitat easements and then donate them to the Land Trust to oversee. In 2015, they purchased a 285 acre habitat easement along the south and east side of Larson WPA in Pope County.

Pioneer Heritage Conservation Trust
The Pioneer Heritage Conservation Trust (PHCT) is a local conservation organization with members primarily from Pope, Douglas, and Ottertail Counties. They have successfully obtained a number of grants throughout the last few years to fund conservation projects in the district. In 2015, they secured three CPL grants. One grant for $48,360 was used to conduct enhancement of native prairie on the Jim Wulf Easement (389G-1), adjacent to Glacial Lake WPA (Section 2b, 5c). Another grant for $27,720 was obtained to purchase wild rice for seeding WPA wetlands (Section 3a). Finally, PHCT received a grant for $28,500 to manage cattails in seasonal wetlands in Stevens County (Section 3a).

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

Staff members work with other agencies including 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 Habitat Team to develop and coordinate the habitat restoration work on new fee title acquisitions. There are several noteworthy partnerships that contributed to the amount of leveraged funding and habitat restoration accomplishments in 2015. These partnerships will continue to be a major part of the habitat restoration work on public and private lands within the District.

As the number of completed projects grows, so does the number of project inquiries from private landowners. These inquiries are typically sent our way by neighbors and other partners. We currently have over 40 projects on our “wait list.”

FY2015 Completed Partners Program Accomplishments:

- 23 Upland restoration/enhancements – 1,550.75 acres
- 23 Wetland restoration/enhancements – 200.86 acres

Total 1,751.61 acres

- Total USFWS cash contribution – $ 75,927
- Total USFWS in-kind contribution – $ 14,500
- Total partner cash contribution – $386,431
- Total partner in-kind contribution – $ 9,949

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. They 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.

Two tree removal projects were completed on habitat easements in 2015 with Lac qui Parle LTT funding. These projects and the partnership were highlighted in May on a field tour associated with the Midwest Association of Fish and Wildlife Agencies conference. The Morris WMD was awarded WLI funding for a fencing project that will allow a habitat easement to be incorporated in the management of the Prairie WMA/WPA complex in Big Stone County. This project should be completed in 2016.

The Glacial Lakes LTT continued to direct its efforts toward habitat management projects on privately owned native prairies. We completed five tree removal projects, one prairie restoration, and one prairie reconstruction in the spring of 2015 with Glacial Lakes LTT funding. The Wulf prairie restoration project (Jim Wulf habitat easement 389G-1) was 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 involved 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. Thousands of prairie seedlings (plugs) where planted in clusters for pollinator efficiency along with a diverse native seed mix. The plugs involved a significant amount of effort to keep them watered depending on precipitation in June. The site

will be monitored to help inform us on the success of this type of restoration technique. (See Section 2b for more details about this project.)

This prairie reconstruction took place on a property that was native prairie until just a few years ago. The prairie was plowed under in response to commodity prices but was too steep and dry to be productive for row crops. We worked with the new landowners and the Glacial Lakes LTT to plant it back to prairie. Oats were planted in April then sprayed just prior to planting in order to stabilize the slopes. 2015-49 ALG 6/05/2015

Pheasants Forever (PF) acquires approximately 2,000 acres of land in Minnesota every year. Within the Morris WMD, we work closely with PF staff and local chapters to acquire high priority properties in fee title. These properties are eventually donated to the Service (Section 5a). The Partners Biologist provides technical assistance to PF to restored 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) is another major acquisition and restoration partner for Morris WMD. TNC has been acquiring land in fee title and permanent conservation easements within the Northern Tallgrass Prairie Habitat Preservation Area in western Minnesota for addition to the Northern Tallgrass Prairie (NTP) National Wildlife Refuge (Section 5a). The goal is to protect native prairie and associated wetland complexes. TNC and Service staff work together to review potential acquisitions in priority areas. The Partners Biologist provides technical assistance to TNC to restored and enhance these acquisitions prior to donation. TNC covers the cost of restoration projects with LSOHF funding.

This is a view of the Reed NTP Habitat Easement (P-59G2) prior to restoration. 2015-50 ALG 12/19/2013

This is a view of the Reed NTP Habitat Easement (P-59G2) after restoration. This was the first NTP restoration project completed in partnership with TNC and LSOHF. 2015-51 ALG 6/24/2014

RESOURCE PROTECTION

6a. Law Enforcement

During 2015, 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.

In February of 2016, Officer Doug Briggs transferred to a new position as a Zone Officer for Michigan, northern Ohio and Indiana. As a result, the Law Enforcement section is very brief and only covers some of the highlights for 2015. These highlights are as follows:

- With MN DNR, jointly investigated an anonymous tip of possessing an eagle mount. It was observed in a Facebook photo. We contacted the individual and it was determined that they had a valid permit to possess the mount.
- After several years, we finally caught someone shooting at Stenerson Lake WPA. He was captured on surveillance cameras and later, when contacted at his residence, admitted to shooting at the WPA.
- The US vs Ahrendt (Buckstar Bait) case from 2014 was appealed and the judgment was affirmed in 2015.

6b. Permits/Economic Use

In 2015, we issued 54 Special Use Permits. The permits were issued for seed harvesting, conducting scientific studies, cutting hay, grazing, cash rent farming, burning on easement, cutting firewood, and rearing walleye fry.

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 Fund (LSOHF) Grant. This arrangement works well as PF prefers acquisition over easements as their constituents desire more public lands to hunt on rather than just habitat protection. Unfortunately, current SWAP funding levels are no longer enough to purchase all available easement

opportunities. 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 the cost of easements, has doubled in recent years so our limited funds do not go as far. It is hoped that the 2014 approved price increase for Duck Stamps from $15.00 to $25.00 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 acquires funding through LSOHF Grants to purchase both fee and easement lands and then donate the tracts to the Service. The Conservation Fund (TCF) recently became a new land acquisition partner with the purchase of the 275 acre Gunewitz Tract in Swift County, an addition to the 80 acre Hanson (now Simon Lake) WPA. TCF was able to purchase the tract at an auction with only two weeks' notice which is a unique and important function. PF later purchased the tract from TCF with LSOHF funds.

In recent years, the Morris district has primarily pursued acquisition of easements over fee title tracts as there are more landowners interested in selling easements, easements cost less per acre which thus allows us to protect more land, and management of easements requires fewer resources than do 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

Pheasants Forever was successful in purchasing/donating one tract of land to the district, totaling 277 acres. The tract is an addition to the 80 acre Hanson WPA in Swift County. As there is currently another Hanson WPA approximately eight miles away in Pope County, the new enlarged WPA was named Simon Lake WPA. The Service purchased a five acre inholding, the Miller farmstead, within the boundary of Beyer WPA. The tract will require building and tree removal work. In addition, in 2015, PF acquired the 315 acre Fettig Tract, an addition to Stenerson Lake WPA in Pope County, and the 40 acre Hantho Farms tract, an addition to Hastad WPA. These two tracts will be donated to the Service in 2016. Finally, in late 2015, the Service acquired a purchase option on the 354 acre Stadem Tract with a planned closing date of June, 2016. This tract would be an addition to Hillman WPA.

Table 25 – Morris WMD – 15 Years of Fee Title Land Acquisition – 2001-2015

Year	Acres	Tract Name	WPA	County
2001	167	Rothi	Rothi	Big Stone
2002 *	594	7 tracts	Centennial	Big Stone
2003	2	Doherty	Long Lake	Stevens
2004	0			
	99	Knollheim	Haglund-Hastad	Lac qui Parle
2005	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			
	96	Nelson	Svor	Swift
2013	20	Burdick	Prairie	Big Stone
	202	Beyer	Beyer	Lac qui Parle
	36	Schmeig	Beyer	Lac qui Parle
2014	282	Gardner	Finden	Pope
	199	MN Farms	Niemackl Slough	Stevens
	5	Miller	Beyer	Lac qui Parle
2015	277	Gunewitz	Lake Simon	Swift
TOTAL	**2,564**			

* WRP Easements purchased to facilitate acquisition.

Table 26 – Waterfowl Production Area Realty Acreage – Morris WMD
Calendar Year 2015

County	Units	Realty Acres	Goal Acres	Percent Acquired
Big Stone	58	11,741.78	15,600	75
Chippewa	2	360.10	0	N/A
Lac qui Parle	19	4,094.88	6,600	62
Pope	66	13,153.88	21,000	63
Stevens	56	9,631.60	12,850	75
Swift	30	8,016.50	10,800	74
Traverse	12	4,105.20	6,720	61
Yellow Medicine	5	1,082.70	1,260	86
Total	**248**	**52,905.69**	**74,830**	**70**

Beyer WPA, Lac qui Parle County. Pheasants Forever purchased the property and donated it to Fish and Wildlife Service. 2015-52 DMO 7/03/2014

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 2015, counties received 24 percent of the amount prescribed by the revenue sharing formula (3/4 of one percent of fair market value).

Table 27 – Revenue Sharing Payments – Morris WMD
FY 2010 – FY 2015

County	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Big Stone	$32,656	$30,686	$36,151	$33,836	$35,575
Chippewa	1,027	995	805	1,094	793
Lac qui Parle	10,627	9,986	11,720	10,970	13,501
Pope	41,716	39,200	46,005	43,060	46,301
Stevens	29,127	27,370	32,122	30,065	33,585
Swift	22,645	18,233	21,398	20,028	21,483
Traverse	10,027	12,473	14,638	13,701	14,405
Yellow Med.	4,016	3,774	4,429	4,145	4,358
TOTAL	**$151,841**	**$142,717**	**$167,268**	**$156,899**	**170,001**

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 establishment of the Minnesota Lessard Samms Outdoor Heritage Fund (LSOHF) in 2009 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 very little interest in wetland easements this year. Only two wetland easements were purchased, protecting a total of 52.6 acres of wetlands.

Under the terms of a wetland easement, the Fish and Wildlife Service purchases the rights to drain, burn, level, or fill wetlands from a willing seller. The highest priority easement proposals are those which preserve wetlands located within one of 13 Focus Areas in the District.

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 28 – Wetland Easement Program Status – Morris WMD – 2015

County	Number Easements	Wetland Acres	Total Tract Acres	Goal Acres
Big Stone	203	6,857.8	25,544.51	42,640
Chippewa	4	115.1	392.00	0
Lac qui Parle	43	1,463.0	5,279.31	23,540
Pope	268	9,127.9	34,502.50	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 2015	**691**	**22,226.4**	**81,701.01**	**147,290**
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**

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. However, we no longer pursue fully restrictive easements as they require a full appraisal which takes three to six months to complete and the purchase price is often very similar to the cost of a fee purchase. The three remaining types of easement options allow varying opportunities for grazing and limited haying but prohibit drainage and tillage. The landowner is required to pay taxes and control noxious weeds. Currently, a realty process called Assessed Land Value is available for minimally restrictive easements and allows quick and efficient offers. We have been purchasing many easements in recent years on grasslands 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, as the funds were transferred to North and South Dakota because the Director saw these states as a higher priority. Despite reduced funding, nine habitat easements were purchased in 2015 protecting a total of 886.8 acres of grasslands and wetlands. In comparison, only three habitat easements were purchased in 2014, protecting 317 acres. Habitat easements must have commissioner review and Land Exchange Board approval in the same manner as wetland easements.

Table 29 – Habitat Easement Program Status – Morris WMD – 2015

County	Easements	Acres
Big Stone	50	5,122.64
Chippewa	0	0.00
Lac qui Parle	16	1,249.00
Pope	29	3,355.19
Stevens	2	57.87
Swift	16	935.62
Traverse	2	296.16
Yellow Medicine	10	1072.37
2015 Total	**125**	**12,126.87**
2014 Total	**116**	**11,240.07**
2013 Total	**113**	**10,922.60**
2012 Total	**108**	**9,864.88**
2011 Total	**90**	**8,501.42**

Steffen Stadsvold Habitat Easement, P-400G. 2015-53 DMO 8/24/2015

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 eliminated opportunities to acquire additional FmHA easements.

Table 30 – FmHA Easements – Morris WMD – 2015

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.

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, and, more recently, Lessard-Sams Outdoor Heritage Fund (LSOHF) grant funds, 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.

Three new Northern Tallgrass Prairie (NTP) NWR easement tracts were acquired this year through a partnership with The Nature Conservancy (TNC). The Service identifies fee and easement tracts for protection and TNC acquires the tracts using funds received from a LSOHF grant and then donates the tracts to the Service. In 2015, three easement tracts totaling 527 acres were acquired. Two of the tracts are located in southeast Pope County. The largest of the two tracts is the Randy Anderson Easement (P-59G14), 447 acres, which is located along the east side of Glacial Lakes State Park. This easement is of outstanding quality and a great addition

to the NTP NWR. The third easement tract was acquired in southwest Big Stone County, just west of Prairie WPA.

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 31 – Northern Tallgrass Prairie National Wildlife Refuge Units
Morris WMD – Annual Year 2015

County	Fee Tracts	Fee Acres	Easement Tracts	Easement Acres	Total Tracts	Total Acres
Big Stone	0	0	5	349.81	5	349.81
Chippewa	0	0	0	0.00	0	0.00
L Q Parle	0	0	1	27.49	1	27.49
Pope	0	0	8	1,080.40	8	1,080.40
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
Y. Med.	0	0	12	755.56	12	755.56
Total	**1**	**21**	**30**	**2,368.96**	**31**	**2,389.96**

Tim Burdick NTG NWR Easement B-59G6 was purchased by TNC and donated to Fish and Wildlife. 2015-54 DMO 10/26/2015

PUBLIC EDUCATION AND RECREATION

7a. Provide Visitor Services

Morris WMD hosts approximately 69,000 visitors during the year. Most district visitors partake in recreational opportunities such as trapping, hunting, fishing, wildlife observation, interpretation and environmental education. The largest economic impact provided to local communities comes from hunters who are the most frequent users of our WPAs.

The headquarters, located at Edwards WPA (Stevens County), offers a visitor center where general information about Morris WMD, activities, and programs is available. A short paved trail loops through native prairie and is accessible to people with physical disabilities. A scenic, 2.5 mile gravel wildlife drive 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), which was designated as a National Recreational Trail in the National Trail System in 2011.

Prairie Pioneer Days
Once again the District was the host of the Prairie Extravaganza event. 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 on the weekend after July 4th. There was no musical act this year. The usual horse drawn wagon rides were provided by Cory's Belgiums. Other events included bird house building, selling native plants (Morning Sky Greenery), and live raptors (from the Audubon Center for the North Woods).

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
- Watershed mapping in spring

Both Morris and Glacial Hills Elementary schools participated.

Fourth graders make a discovery. 2015-55 SAB 3/5/2015

Youth Hunt

Once again Morris WMD teamed with Ducks Unlimited to host a mentored youth duck hunt. This year we had a total of four mentors and five youth hunters. Thanks to all of the volunteers who contributed to this event!

Youth hunters and mentors. 2015-56 SAB 9/15/2015

The mentored youth hunt is a way to introduce youth into the sport and tradition of hunting in a way that is safe, and ensures that conservation values are passed on to the next generation of sports men and women.

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 2015 waterfowl hunting season looked similar to the previous years. There was a six-duck limit with the state split into three zones — all opening a half-hour before sunrise on September 26. The only noteworthy change, aside from actual dates, is that the daily bag for canvasbacks is two, up from the previous year. The possession limit remains three times the daily limit.

The duck season started off warmer and dryer than usual with plenty of mallard, teal and wood ducks around. Those birds quickly adapted to pressure, and without access to private land, became difficult to hunt. Things were then pretty slow until the first week of November, but of course by then many hunters were focused on deer hunting. Most lakes froze by mid-November and other than some great field hunting opportunities, the late season fizzled prematurely.

We had a "typical" August with small grains being harvested before the early goose season. Local numbers were similar to last year, but hunting was a bit better with the earlier harvest and good field conditions. Pressure continues to trend toward fewer hunters. We are seeing more deliberate hunters that specialize in targeting early geese; they occupy many of the best spots and are effective in harvest. There were decent numbers of birds harvested through the September season.

The regular season was very poor with only limited opportunities for geese. There were some good numbers around duck opener, but only a few after that until just before freeze up. Most opportunities were in central Big Stone County and northern Lac qui Parle County.

Pheasant

Pheasant opener temperatures were in the mid 80's. Hunter reports were optimistic regarding the number of birds seen, but harvest was low. Pheasant numbers seem on par with last year (down from the long term average) but weather conditions may have saved many birds.

Deer

The archery deer season had the highest harvest since 2012. With the snow staring to pile up, deer were yarded up by the end of the season, yet temperatures were mild enough that pressure was actually noticeable in public lands right up to the end.

During the firearm season, deer bag limits were conservative again this year with a one deer limit in most of the state. Hunting conditions were ideal. Other than a couple of windy days in the middle of the week, the weather was very mild and comfortable for hunters. All the field work was complete, so farmers where able to hunt and there was less hiding cover for the deer. It was a great deer season locally. Deer harvest was up this year. This is indicative of a good deer population and ideal hunting conditions. By design, the doe harvest was down as we are trying to maintain or build deer numbers. If we have a mild winter next year, we expect populations to show a bit of increase.

The muzzle loader deer hunters enjoyed favorable weather during muzzleloader season, with a heavy snow storm during the first week but mild temps and conditions after that. Despite the good weather, harvest dropped from 2014. This could be due to the fact that hunters were more successful during the slug season. This success could mean less pressure during the muzzle-loader season because many already had their deer.

Turkey

Some hunters have expressed concern that turkey numbers continue to decline. Of special concern this year was the presence of H5N2 Avian Influenza, which caused harm to many domestic turkey operations. Hunters question if the disease is responsible for the lack of birds this year. The Minnesota DNR believes this is unlikely; according to one area manager: "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 percent below that initial peak."

Trapping

Trends regarding trapper's effort and actual harvest are usually strongly correlated with the selling price of fur. The price of fur has dropped from the previous year for most species (Minnesota DNR Trapping Harvest Statistics). As a result, harvest rate was down, though it was still higher than the ten year average.

Raccoon numbers were high this year, along with coyotes. Otter numbers seem to be stable in much of the district. Opossum are a bit more common after a couple of mild winters.

7b. Outreach

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

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

We are currently producing three to four posts per week on our Facebook page, and now have 6,381 “likes”.

This year the district again hosted several high school and college classes for field trips including Freshwater Ecology, Environmental Studies, and Graphic Arts.

Art students inspired by the prairie. 2015-57 SAB 8/6/2015

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

- Judge Morris High School Science Fair
- Volunteer Thank You Supper
- Glacial Hills Conservation Day - Winter Ecology
- Hodges Annual Township Meeting
- Morris Fifth Grade Science Fair Judging
- Resource Connections
- Glacial Hills Conservation Day - Watersheds
- Country Day Preschoolers
- Morris Conservation Day - Watersheds
- Art Students from the University of Minnesota, Morris
- Prairie Summer Camp through Morris Community Ed
- Welcome Picnic and Expo
- Swift County Water Festival
- Service Learning Class, University of Minnesota, Morris
- Monarch Tagging
- Glacial Hills Fourth Grade Conservation Day - Catching and Identifying Insects

7c. Friends of the Morris WMD

The Friends of the Morris Wetland Management District, a non-profit advocacy and support group, was established in 2001. Their mission is to help the community develop a deeper appreciation and understanding of the Morris WMD. The Friends continue to be amazingly productive and helpful despite their modest membership. The Friends provide active support for district management, particularly activities relating to community relations. Besides numerous other small events and activities, the Friends helped organize, staff, and fund our participation in Prairie Pioneer Days, a local community festival we use to promote awareness of grasslands and wetlands.

Friends' board members completed the Reinvigorating Your Friends Group Training offered by the National Conservation Training Center Via webinar. They completed the Friends of the Morris Wetland District Five Year Strategic Plan. A new friends brochure was completed and distributed.

Dale Livingston co-founder and one time president of the Friends of the Morris Wetland Management District, resigned as a board member but will remain in the group.

In partnership with Stevens County Community Education, Morris WMD staff, and Morning Sky Greenery, the Friends group held a class on gardening for pollinators.

Progress was made on the Kate Livingston memorial located on the wildlife drive on Edwards WPA. (Section 2b)

Kate Livingston memorial is located on the wildlife drive on Edwards WPA.
2015-58 JBB 9/8/2015

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
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

There were no permanent personnel actions in 2015.

Temporary Personnel

Jason C. Crowder	Range Technician, (fire), TFT	03/08/2015 – 09/05/2015
Cecilia C. Marella	Biological Science Aid, TFT	05/03/2015 – 11/12/2015
Jenna L. Harlow	Social Services Aid, TFT	05/26/2015 – 08/15/2015
Shaun J. McNally	Biological Science Tech, TFT	06/15/2015 – 08/28/2015
Kevin M. Mortensen	Biological Science Tech, TFT	06/14/2015 – 12/27/2015
Adam J. Kleinschmidt	Biological Science Tech, Term	06/14/2015 – Present

Kevin Shaun Jason Cecilia

Youth Conservation Corps

Jenna Harlow	Social Services Aid (Leader)	5/26/2015 – 8/15/2015
Andrew Busch	YCC Crew Member	6/08/2015 – 7/31/2015
Leah Thorstad	YCC Crew Member	6/08/2015 – 7/31/2015
Carrie Wilts	YCC Crew Member	6/08/2015 – 7/31/2015
Cody Vail	YCC Crew Member	6/08/2015 – 7/31/2015

Leah Jenna Cody Andrew Carrie

Table 32 – Staff Size – Morris WMD – 2011-2015

		Permanent		Temporary	
	Full Time	**Seasonal**	**Part Time**	**GS & WG**	**Other Programs***
FY 15	13	0	0	6	4
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

*Includes YCC
**Includes Pathways employees

Volunteers

Our volunteers continue to be an asset to the Morris WMD. Most of our regular volunteers are members of our Friends group or students from the University of Minnesota, Morris. In 2015, 55 volunteers contributed 666 hours of work. The bulk of our volunteer hours came from activities such as seed collecting and cleaning, visitor services and outreach, and building nest boxes.

In January, the staff hosted a dinner and short program to thank our volunteers and Friends Group for their help the previous year. The Friends and Volunteer Recognition Dinner has become an annual event. Each volunteer was presented with a Certificate of Appreciation and a gift (determined by their cumulative volunteer hours). Dale Livingston received a special award for completing over 1,000

volunteer hours. In addition, we recognized Hanna Morris as the 2015 Volunteer of the Year. Hanna contributed 71 hours over the year, primarily in upland management and wetland surveys.

Volunteer Hanna Morris removing invasive plants.
2015-59 Cecilia Marella 8/2015

Safety

The station had two reportable accidents in 2015; one injury occurred during a western wildland fire assignment and the other accident occurred during equipment operations while helping another refuge. In accordance with DOI and FWS procedures the district conducted a self-safety assessment. As in most safety assessments there were a few issues that were observed and corrected. Overall the District was in good shape with regards to following safety standards.

Funding

Table 33 – Morris WMD Funding Levels – 2011-2015
(Dollars in Thousands)

Fiscal Year	1260	Fire 9100/9200	*** Special	*** 6860	1121	Total Budget
2015	1,225.4	300.1		8.291	140.7	1,666.2
2014	1,200.6	221.7	**175.2	6.943	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	*101.0		138.1	1,535.2

***Funds are not included in Total Budget figure
**Funds to purchase a John Deere Skid Steer and two Law Enforcement pickups (with all necessary LE equipment installed)
@The Private Lands position was vacant in 2013
*Repair/resurface parking lots and driveway

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

- The FY 2012 1260 budget included $44,596 to purchase two pickups.
- The FY 2011 1260 budget included $135,972 for a Permanent Change of Station move.

We received our final budget figures March 14.

Beginning in 2014, we received Refuge Revenue Sharing (6860) funds. The money we receive is based on the amount of revenue we generate from grazing and haying activities on Service land for the previous year. This money is to be used for "direct support of activities required to continue activities supporting the revenue collections." The $8,291 that we received in 2015 was spent on native flower plugs, mowing, and sprayer supplies (Section 2b and 3g).

General Maintenance

Facilities

The annual inspection of boundary posting continued in 2015. Some of this work was done opportunistically by staff or when specific issues came up that needed our attention, but most of it was accomplished by Biological Technician McNally. This year all WPAs in Traverse, Big Stone, Lac qui Parle, Chippewa, and Yellow Medicine counties were visited.

An attempt was made to replace and construct a perimeter fence on Robin Hood WPA in 2015. At the end of that effort the fence was not constructed due to the contractor backing out of the awarded contract. We will reattempt this project in 2016.

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:

- A dedication sign was installed on Beyer WPA.
- A parking lot was installed at Niemackle Slough WPA.
- A leaking water control structure was replaced on Loen WPA.
- Ditch plugs were repaired on Golden and Pepperton WPAs.
- The district obligated $5,000 for the replacement of a failing WCS on Edward's WPA. The construction is planned for 2016.

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

- The front door handicap door openers were replaced.
- Other general building maintenance included: well junction box repair, garage door opener repairs, fire alarm maintenance, and hoist inspections.
- After years of issues rendering the New Holland TV-140 Tractor useless, it was sold. The district then received an under-utilized John Deere 7410 from Rydell NWR.
- Coordination began to transfer the Gyro Track, which had gone unused for four years, to Union Slough NWR.
- General fleet of passenger vehicles: oil changes, air conditioning, battery replacement, tires, fuel injectors, brakes, radio installation and removal.
- A number of staff continued to work on issues plaguing the combine with positive results.

The following equipment was purchased in 2015:

- Ruggedized Lap Top Computer for Law Enforcement
- Lap Top Replacement Computer
- Polaris Ranger 800 6 X 6 UTV
- John Deere CX20 Flex-Wing Rotary Cutter (Mower)
- John Deere CX15 Flex-Wing Rotary Cutter (Mower)

Fire Purchased

- Prospector Pro Track and Mount Kit for Polaris ATV
- Ford F550 Cab and Chassis (Fire Engine)

Appendix A

Table 34 – Edwards 10 Acre Reconstruction Seed Mix – 2015

Edwards 10 Acre Grasses	**LB/Acre Seeded**	**Seeds/ Sq Ft**	**Seeded % of Mix ****
Big bluestem	0.480	1.82	4.1%
Little bluestem	0.200	1.20	2.7%
Sideoats grama	0.800	3.53	7.8%
Prairie brome	0.400	1.18	2.6%
Bluejoint grass	0.020	1.82	4.0%
Canada wildrye	0.240	0.62	1.4%
Bearded slender wheat	0.380	1.40	3.1%
Switchgrass	0.200	1.80	4.0%
Indian grass	0.600	2.40	5.3%
Prairie cordgrass	0.280	1.06	2.4%
Prairie dropseed	0.400	2.40	5.3%
	4.000	**19.23**	**42.7%**

Forbs	**OZ/acre Seeded**	**Seeds/ Sq Ft**	**Seeded % of Mix ****
Common yarrow	0.080	0.331	0.7%
Anise hyssop	0.360	0.744	1.7%
Prairie onion	0.560	0.141	0.3%
Lead plant	0.840	0.309	0.7%
Canada anemone	0.080	0.015	0.0%
Swamp milkweed	0.140	0.015	0.0%
Common milkweed	1.820	0.167	0.4%
Whorled milkweed	0.280	0.071	0.2%
Heath aster	0.080	0.367	0.8%
Smooth aster	0.360	0.455	1.0%
New England aster	0.420	0.636	1.4%
Canada milkvetch	0.980	0.382	0.8%
Showy tick trefoil	1.260	0.159	0.4%
Joe Pye weed	0.280	0.611	1.4%
Northern bedstraw	0.080	0.083	0.2%
Maximilian's sunflower	1.400	0.418	0.9%
Stiff sunflower	0.420	0.039	0.1%
Common ox-eye	1.120	0.162	0.4%
Blue flag iris	0.900	0.027	0.1%
Rough blazing star	0.500	0.184	0.4%
Meadow blazing star	0.810	0.186	0.4%
Tall blazing star	0.840	0.212	0.5%
Great blue lobelia	0.060	0.689	1.5%

Table 34 –Edwards 10 Acre Reconstruction Seed Mix (continued)

Edwards 10 Acre Forbs	OZ/acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Wild bergamot	0.700	1.125	2.5%
White prairie clover	1.260	0.550	1.2%
Purple prairie clover	2.240	0.926	2.1%
Prairie phlox	0.140	0.061	0.1%
Prairie cinquefoil	0.060	0.318	0.7%
Mountain mint	0.030	0.152	0.3%
Prairie coneflower	1.010	0.974	2.2%
Prairie rose	0.280	0.017	0.0%
Black-eyed Susan	0.840	1.774	3.9%
Cup plant	0.980	0.031	0.1%
Stiff goldenrod	0.840	0.791	1.8%
Showy goldenrod	0.280	0.611	1.4%
Purple meadow rue	0.840	0.212	0.5%
Prairie spiderwort	0.840	0.193	0.4%
Blue vervain	0.280	0.598	1.3%
Ironweed	1.120	0.617	1.4%
Culver's root	0.060	1.102	2.4%
Golden Alexanders	2.520	0.636	1.4%
	27.990	**17.088**	**38.0%**

Sedges/Rushes	LB/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
American sloughgrass	0.038	0.698	1.6%
Brown fox sedge	0.038	1.131	0.0%
Fowl bluegrass	0.098	4.680	0.0%
Wool grass	0.002	1.653	0.0%
Whitetop grass	0.075	0.523	0.0%
	0.251	**8.685**	**1.6%**
	5.000	**45.000**	

** % by seed count

Table 35 – Edwards Sculpted Seed Mixes – 2015

Edwards Dry - Mesic **Grasses**	**LB/Acre Seeded**	**Seeds/ Sq Ft**	**Season C/W**	**Seeded % of Mix ****
Big bluestem	0.344	1.31	W	3.42%
Little bluestem	0.731	4.38	W	11.46%
Sideoats grama	0.817	3.60	W	9.41%
Blue grama	0.129	2.26	W	5.90%
Prairie brome	0.301	0.88	C	2.31%
Canada wildrye	0.516	1.34	C	3.50%
Bearded slender wheatgrass	0.430	1.59	C	4.15%
Prairie Junegrass	0.022	1.17	C	3.06%
Switchgrass	0.129	1.16	W	3.03%
Indian grass	0.516	2.06	W	5.39%
Rough dropseed	0.116	1.30	W	3.40%
Sand dropseed	0.215	0.99	W	2.58%
Prairie dropseed	0.034	0.20	W	0.53%
	4.300	**22.24**		**58.12**%
Grass Species Count	**13**			

Forbs	**OZ/Acre Seeded**	**Seeds/ Sq Ft**	**Bloom E/M/L**	**Seeded % of Mix ****
Common yarrow	0.030	0.124	E/M	0.32%
Anise hyssop	0.460	0.950	M/L	2.48%
Prairie onion	0.690	0.174	M	0.46%
Lead plant	1.380	0.507	M	1.32%
Common milkweed	1.380	0.127	M	0.33%
Whorled milkweed	0.120	0.030	M/L	0.08%
Sky blue aster	0.230	0.422	L	1.10%
Heath aster	0.030	0.138	L	0.36%
Smooth aster	0.350	0.442	L	1.15%
New England aster	0.120	0.182	L	0.48%
Canada milkvetch	1.610	0.628	M	1.64%
Ground plum	0.350	0.669	E	1.75%
Wild white indigo	1.840	0.010	M	0.03%
Showy tick trefoil	1.380	0.174	M	0.46%
Maximilian's sunflower	0.460	0.137	M/L	0.36%
Stiff sunflower	0.350	0.032	M/L	0.08%
Common ox-eye	1.220	0.176	E/M	0.46%
Prairie alumroot	0.010	0.161	E/M	0.42%
Rough blazing star	0.690	0.253	M/L	0.66%
Dotted blazing star	0.350	0.056	M/L	0.15%
Wild bergamot	0.230	0.370	M/L	0.97%

Table 35 – Edwards Sculpted Seed Mixes (continued)

Edwards Dry - Mesic Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Seeded % of Mix
Large-flowered penstemon	0.230	0.074	E	0.19%
White prairie clover	1.610	0.702	M/L	1.83%
Purple prairie clover	2.070	0.855	M/L	2.24%
Prairie phlox	0.020	0.009	E/M	0.02%
Prairie cinquefoil	0.120	0.636	M/L	1.66%
Mountain mint	0.170	0.859	E/M	2.24%
Prairie coneflower	0.830	0.800	E/M	2.09%
Prairie rose	0.690	0.041	M	0.11%
Black-eyed Susan	1.150	2.429	M/L	6.35%
Stiff goldenrod	0.460	0.433	M/L	1.13%
Showy goldenrod	0.230	0.502	M/L	1.31%
Purple meadow rue	0.180	0.045	M	0.12%
Prairie spiderwort	0.370	0.085	E/M	0.22%
Heart leaf golden Alexanders	0.920	0.253	E	0.66%
Golden Alexanders	0.690	0.174	E	0.46%
	23.020	**13.661**		**35.70**%
Forb Species Count	**36**			

Sedges/Rushes	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Seeded % of Mix **
ains oval sedge	0.065	0.649	C	1.7%
Brown fox sedge	0.033	0.983	C	2.6%
Path rush	0.002	0.735	C	1.9%
	0.100	**2.366**		**6.2%**
		38.300		
Sedge/Rush Species Count	**3**			

** % by seed count

19.20%	Cool Season Monocots
45.11%	Warm Season Monocots
3.06%	Early Bloom Forbs
5.78%	Early/Mid Bloom Forbs
4.43%	Mid Bloom Forbes
15.23%	Mid/Late Bloom Forbes
3.09%	Late Bloom Forbes

Table 36 – Edwards Sculpted Seed Mixes – 2015

Edwards - Mesic	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Seeded % of Mix **
Grasses				
Big bluestem	0.730	2.77	W	6.20%
Little bluestem	0.130	0.78	W	1.74%
Sideoats grama	0.860	3.79	W	8.48%
Prairie brome	0.430	1.26	C	2.83%
Bluejoint grass	0.020	1.82	C	4.07%
Canada wildrye	0.240	0.62	C	1.39%
Bearded slender wheatgrass	0.410	1.52	C	3.39%
Switchgrass	0.220	1.98	W	4.43%
Indian grass	0.860	3.44	W	7.68%
Prairie cordgrass	0.170	0.65	W	1.44%
Prairie dropseed	0.240	1.44	W	3.22%
	4.310	**20.06**		**44.86%**
Grass Species Count	**11**			

Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Seeded % of Mix **
common yarrow	0.070	0.289	E/M	0.65%
Anise hyssop	0.480	0.992	M/L	2.22%
Prairie onion	0.490	0.124	M	0.28%
Lead plant	0.740	0.272	M	0.61%
Canada anemone	0.070	0.013	E	0.03%
Swamp milkweed	0.120	0.013	M	0.03%
Common milkweed	1.590	0.146	M	0.33%
Heath aster	0.070	0.321	L	0.72%
Smooth aster	0.320	0.404	L	0.90%
New England aster	0.370	0.561	L	1.25%
Canada milkvetch	0.860	0.336	M	0.75%
Wild white indigo	0.250	0.010	M	0.02%
Showy tick trefoil	1.230	0.155	M	0.35%
Joe Pye weed	0.250	0.545	E/M	1.22%
Northern bedstraw	0.070	0.073	E/M	0.16%
Maximilian's sunflower	1.230	0.367	M/L	0.82%
Common ox-eye	0.980	0.142	E/M	0.32%
Blue flag iris	1.300	0.039	E/M	0.09%
Rough blazing star	0.250	0.092	M/L	0.21%
Meadow blazing star	0.510	0.117	L	0.26%
Tall blazing star	0.510	0.129	M/L	0.29%
Great blue lobelia	0.020	0.230	L	0.51%
Wild bergamot	1.470	2.362	M/L	5.28%
White prairie clover	1.230	0.537	M	1.20%

Table 36 – Edwards Sculpted Seed Mixes (continued)

Edwards - Mesic Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Seeded % of Mix**
Purple prairie clover	1.960	0.810	M	1.81%
Prairie cinquefoil	0.050	0.265	M/L	0.59%
Mountain mint	0.020	0.101	E/M	0.23%
Prairie coneflower	0.740	0.713	E/M	1.60%
Prairie rose	0.250	0.015	M	0.03%
Black-eyed Susan	0.740	1.563	M/L	3.49%
Cup plant	0.870	0.028	M/L	0.06%
Stiff goldenrod	0.740	0.697	M/L	1.56%
Showy goldenrod	0.490	1.069	M/L	2.39%
Purple meadow rue	0.370	0.093	M	0.21%
Prairie spiderwort	0.120	0.028	E/M	0.06%
Blue vervain	0.490	1.046	M/L	2.34%
Ironweed	0.980	0.540	M/L	1.21%
Culver's root	0.010	0.184	M	0.41%
Golden Alexanders	2.210	0.558	E	1.25%
	24.520	**15.976**		**35.72%**

Sedges/Rushes	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Seeded % of Mix **
American sloughgrass	0.038	0.698	C	1.56%
Brown fox sedge	0.038	1.131	C	2.53%
Fowl bluegrass	0.098	4.680	C	10.46%
Wool grass	0.002	1.653	C	3.70%
Whitetop grass	0.075	0.523	C	1.17%
	0.251	**8.685**		**19.42%**
		44.700		

** % by seed count

31.09%	Cool Season Monocots
33.19%	Warm Season Monocots
1.28%	Early Bloom Forbs
4.32%	Early/Mid Bloom Forbs
2.99%	Mid Bloom Forbs
20.45%	Mid/Late Bloom Forbs
3.65%	Late Bloom Forbs

Table 37 – Edwards Sculpted Seed Mixes – 2015

Edwards-Wet-Mesic Grasses	**LB/Acre Seeded**	**Seeds/ Sq Ft**	**Season C/W**	**Seeded % of Mix ****
Big bluestem	0.3500	1.33	W	3.1%
Little bluestem	0.7000	4.20	W	9.9%
Sideoats grama	0.7000	3.09	W	7.3%
Prairie brome	0.7700	2.26	C	5.3%
Bluejoint grass	0.0300	2.73	C	6.4%
Bearded slender wheatgrass	0.1800	0.67	C	1.6%
Virginia wildrye	0.4200	0.93	C	2.2%
Switchgrass	0.0900	0.81	W	1.9%
Indian grass	0.5300	2.12	W	5.0%
Prairie cordgrass	0.2900	1.10	W	2.6%
Prairie dropseed	0.2600	1.56	W	3.7%
	4.3200	**20.78**		**49.0%**
Species Count	**11**			

Forbs	**OZ/Acre Seeded**	**Seeds/ Sq Ft**	**Bloom E/M/L**	**Seeded % of Mix ****
Common yarrow	0.0800	0.331	E/M	0.8%
Anise hyssop	0.5500	1.136	M/L	2.7%
Prairie onion	0.2200	0.056	M	0.1%
Lead plant	0.4400	0.162	M	0.4%
Canada anemone	0.1000	0.018	E	0.0%
Swamp milkweed	0.6600	0.073	M	0.2%
Common milkweed	0.6600	0.061	M	0.1%
Heath aster	0.0400	0.184	L	0.4%
Smooth aster	0.0400	0.051	L	0.1%
New England aster	0.2200	0.333	L	0.8%
Canada milkvetch	1.4700	0.574	M	1.4%
Showy tick trefoil	1.1000	0.139	M	0.3%
Sneezeweed	0.3300	0.985	L	2.3%
Maximilian's sunflower	0.5500	0.164	M/L	0.4%
Common ox-eye	2.2000	0.318	E/M	0.8%
Blue flag iris	0.4400	0.013	E/M	0.0%
Rough blazing star	0.1100	0.040	M/L	0.1%
Meadow blazing star	0.2200	0.051	L	0.1%
Tall blazing star	0.3300	0.083	M/L	0.2%
Great blue lobelia	0.1300	1.492	L	3.5%
Wild bergamot	1.3900	2.234	M/L	5.3%
Large-flowered penstemon	0.1300	0.042	E	0.1%
White prairie clover	1.1000	0.480	M	1.1%
Purple prairie clover	1.8700	0.773	M	1.8%
Prairie cinquefoil	0.0400	0.212	M/L	0.5%

Table 37 – Edwards Sculpted Seed Mixes (continued)

Edwards-Wet-Mesic Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Seeded % of Mix **
Mountain mint	0.1100	0.556	E/M	1.3%
Prairie coneflower	0.7700	0.742	E/M	1.8%
Prairie rose	0.2200	0.013	M	0.0%
Black-eyed Susan	0.6600	1.394	M/L	3.3%
Cup plant	1.3200	0.042	M/L	0.1%
Stiff goldenrod	0.2200	0.207	M/L	0.5%
Showy goldenrod	0.0400	0.087	M/L	0.2%
Purple meadow rue	0.3300	0.083	M	0.2%
Prairie spiderwort	0.1100	0.025	E/M	0.1%
Blue vervain	0.6600	1.409	M/L	3.3%
Hoary vervain	0.5400	0.347	M/L	0.8%
Ironweed	1.2100	0.667	M/L	1.6%
Culver's root	0.0400	0.735	M	1.7%
Golden Alexanders	1.3300	0.336	E	0.8%
	21.9800	**16.646**		**39.3%**
Forb Species Count	**39**			

Sedges/Rushes	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Seeded % of Mix **
American sloughgrass	0.0150	0.275	C	0.6%
Plains oval sedge	0.0450	0.449	C	1.1%
Brown fox sedge	0.0150	0.447	C	1.1%
Fowl mannagrass	0.0090	0.298	C	0.7%
Rice cut grass	0.0900	1.124	C	2.7%
Fowl bluegrass	0.0150	0.716	C	1.7%
Wool grass	0.0020	1.653	C	3.9%
	0.1910	**4.962**		**11.7%**
Total Species	**57**	**42.400**		

** % by seed count

27.24%	Cool Season Monocots
33.50%	Warm Season Monocots
0.93%	Early Bloom Forbs
4.68%	Early/Mid Bloom Forbs
4.47%	Mid Bloom Forbs
18.93%	Mid/Late Bloom Forbes
7.30%	Late Bloom Forbes

Table 38 – Niemackl Slough WPA Wet Seed Mix – 2015

Lot # / Grasses	LB/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Rice cut grass	0.28	3.497	13.79%
Big bluestem	0.80	3.039	11.98%
Indian grass	0.64	2.556	10.08%
Switchgrass	0.40	3.600	14.19%
Canada wildrye	1.20	3.113	12.27%
Bluejoint grass	0.08	7.280	28.70%
Prairie cordgrass	0.60	2.280	8.99%
	4.00	**25.365**	**100.00%**
Total PLS pounds	**36.00**		

Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Blue vervain	2.00	4.270	29.00%
Bottle gentian	0.05	0.321	2.18%
Common boneset	0.10	0.367	2.49%
Common milkweed	1.00	0.092	0.62%
Common ox-eye	2.10	0.304	2.06%
Culver's root	0.25	4.591	31.18%
Great blue lobelia	0.10	1.148	7.80%
Ironweed	1.00	0.551	3.74%
Joe Pye weed	0.30	0.654	4.44%
Mountain mint	0.20	1.010	6.86%
Mud plantain	0.30	0.413	2.81%
New England aster	0.15	0.227	1.54%
Sweetflag	0.20	0.028	0.19%
Sawtooth sunflower	0.20	0.069	0.47%
Showy goldenrod	0.10	0.218	1.48%
Showy tick trefoil	0.10	0.013	0.09%
Swamp aster	0.05	0.092	0.62%
Swamp milkweed	0.80	0.088	0.60%
Tall blazing star	0.30	0.076	0.51%
Golden Alexander	0.70	0.193	1.31%
	10.00	**14.725**	**100.00%**
Total PLS pounds	**5.63**		

Table 38 – Niemackl Slough WPA Wet Seed Mix (continued)

Niemackl Slough Wet Mix - Sedges/Rushes	LB/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Brown fox sedge	0.113	4.132	35.65%
Copper shouldered oval sedge	0.371	2.318	20.00%
Wool grass	0.004	2.342	20.20%
Fowl bluegrass	0.113	0.307	2.65%
White top grass	0.038	0.427	3.68%
American sloughgrass	0.113	2.066	17.82%
	0.750	**11.592**	**100.00%**
Total PLS pounds	**6.75**		

Table 39 – Wulf Seed Mix – 2015

Lot#	Species	Bulk Lb/Acre Seeded	Seeds/ Sq Ft
Hillman	Mixed prairie*	2.57	N/A
Svor	Mixed prairie	0.54	N/A
Edwards	Mixed prairie	0.60	N/A
SSNP14	Mixed prairie*	1.00	N/A
L16NPTT14	Showy ticktrefoil*	0.25	N/A
SV8LESO14	Sideoats grama*	0.53	N/A
FWSWULF1501	Grass/forb/sedge	6.12	33.60
Prairie	Mixed prairie**	2.82	1.15
Prairie	Indian grass	.27	0.66
Totals		**14.70**	**>35.41**

**Prairie species present include: leadplant, little bluestem, rough dropseed, sideoats grama

*Untested harvests

Lot # FWSWULF1501 Grasses	LB/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Big bluestem	0.912	3.5	10.38%
Indian grass	0.456	1.8	5.46%
Little bluestem	0.304	1.8	5.46%
Sideoats grama	0.760	3.3	10.04%
Rough dropseed	0.019	0.2	0.63%
Switchgrass	0.038	0.3	1.02%
Bearded slender wheatgrass	0.380	1.4	4.21%
Prairie dropseed	0.152	0.9	2.68%
Kalm's brome	0.266	0.8	2.34%
June grass	0.038	2.8	8.36%
Blue grama	0.095	1.4	4.18%
Sand dropseed	0.038	2.8	8.36%
Canada wildrye	0.342	0.7	1.96%
Total PLS pounds	**3.800**	**21.7**	**65.09%**

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Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Alumroot	0.01	0.129	0.39%
Anise hyssop	0.32	0.661	1.98%
Black-eyed Susan	0.80	1.690	5.06%
Skyblue aster	0.32	0.588	1.76%
Canada milkvetch	1.60	0.624	1.87%
Common meadow rue	0.03	0.008	0.02%
Common milkweed	0.16	0.015	0.04%
Common primrose	0.02	0.033	0.10%

Table 39 – Wulf Seed Mix (continued)

Wulf Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Common yarrow	0.02	0.159	0.48%
Dotted blazingstar	0.24	0.039	0.12%
False sunflower	0.85	0.123	0.37%
Golden Alexanders	0.16	0.040	0.12%
Ground plum	0.24	0.029	0.09%
Heart leaf golden Alexanders	0.64	0.176	0.53%
Heath aster	0.02	0.073	0.22%
Large flowered beardtongue	0.04	0.013	0.04%
Leadplant	0.96	0.353	1.06%
Maximillian sunflower	1.60	0.478	1.43%
Mountain mint	0.12	0.606	1.82%
New England aster	0.08	0.121	0.36%
Prairie coreopsis	0.24	0.055	0.17%
Prairie coneflower	0.58	0.555	1.66%
Prairie phlox	0.02	0.007	0.02%
Prairie onion	0.16	0.040	0.12%
Prairie rose	0.16	0.010	0.03%
Prairie spiderwort	0.26	0.059	0.18%
Purple prairie clover	1.60	0.661	1.98%
Rough blazing star	0.48	0.176	0.53%
Showy goldenrod	0.16	0.349	1.05%
Showy tick trefoil	0.96	0.121	0.36%
Smooth aster	0.24	0.303	0.91%
Stiff goldenrod	0.05	0.045	0.14%
Stiff sunflower	0.24	0.022	0.07%
White prairie clover	2.08	0.907	2.72%
Whorled milkweed	0.08	0.020	0.06%
Wild bergamot	0.16	0.257	0.77%
Wild white indigo	0.16	0.006	0.02%
	16.00	**10.399**	**31.16%**

Sedges/Rushes	Lb/Acre Seeded	Seeds/ Sq Ft	Seeded % of Mix **
Brown fox sedge	0.017	0.606	1.82%
Copper shouldered oval sedge	0.015	0.094	0.28%
Plains oval sedge	0.018	0.186	0.56%
Path rush	0.001	0.367	1.10%
	0.050	**1.253**	**3.76%**
Total Seeds Per Square Foot		**33.400**	

** of entire mix by seeds/Sq Ft

Table 40 – NAWCA Grant Seed Mix – 2015
(Rothi WPA)

Lot #	Species	PLS Lb/ 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			
Grasses	**Lb/Acre Seeded**	**Seeds/ Sq Ft**	**Seeded % of Mix ****
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	**15.70**	**100.00%**

Table 40 – NAWCA Grant Seed Mix (continued)

NAWCA Grant Seed Mix - Sedges/Rushes	Oz/Acre Seeded	Seeds/ Sq Ft	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/ Sq Ft	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**	
Total Species Count	**45**		

** % by seed count

Table 41 – Lake Simon Seed Mix – 2015

Grasses	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Soils			Seeded % of Mix
				W	M	D	
Big bluestem	0.400	1.52	W	X	X	X	4.0%
Little bluestem	0.600	3.60	W		X	X	9.4%
Sideoats grama	0.600	2.64	W		X	X	6.9%
Blue grama	0.120	2.10	W			X	5.5%
Prairie brome	0.200	0.59	C			X	1.5%
Canada wildrye	0.480	1.25	C		X		3.2%
Bearded slender Wheatgrass	0.400	1.48	C		X	X	3.8%
Prairie Junegrass	0.020	1.06	C			X	2.8%
Green needlegrass	0.360	1.44	C		X	X	3.7%
Switchgrass	0.120	1.08	W	X	X		2.8%
Indian grass	0.440	1.76	W	X	X		4.6%
Rough dropseed	0.120	1.34	W		X	X	3.5%
Sand dropseed	0.020	0.09	W			X	0.2%
Prairie dropseed	0.120	0.72	W		X	X	1.9%
	4.000	**20.67**					**53.8%**
Species Count	**14**						

Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Soils			Seeded % of Mix
				W	M	D	
Common yarrow	0.04	0.165	E/M		X	X	0.4%
Anise hyssop	0.48	0.992	M/L		X	X	2.6%
Prairie onion	0.24	0.061	M		X	X	0.2%
Lead plant	0.96	0.353	M		X	X	0.9%
Common milkweed	1.32	0.121	M	X	X	X	0.3%
Sky blue aster	0.24	0.441	L		X	X	1.1%
Heath aster	0.02	0.092	L		X	X	0.2%
Smooth aster	0.36	0.455	L		X	X	1.2%
New England aster	0.24	0.364	L	X	X		0.9%
Canada milkvetch	2.40	0.937	M		X		2.4%
Ground plum	0.24	0.458	E			X	1.2%
Wild white indigo	0.70	0.010	M				0.0%
White prairie clover	2.16	0.942	M/L		X	X	2.5%
Purple prairie clover	2.40	0.992	M/L		X	X	2.6%
Showy tick trefoil	1.68	0.212	M		X		0.6%
Maximilian's sunflower	1.32	0.394	M/L		X		1.0%
Stiff sunflower	0.48	0.044	M/L			X	0.1%
Common ox-eye	1.68	0.243	E/M		X		0.6%
Rough blazing star	0.60	0.220	M/L		X	X	0.6%
Wild bergamot	0.72	1.157	M/L		X	X	3.0%
Common evening primrose	0.05	0.103	M/L		X	X	0.3%

Table 41 – Lake Simon Seed Mix (continued)

Lake Simon Seed Mix-Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Soils			Seeded % of Mix
				W	M	D	
Large-flowered penstemon	0.84	0.270	E			X	0.7%
Prairie phlox	0.07	0.031	E/M		X	X	0.1%
Prairie cinquefoil	0.02	0.106	M/L			X	0.3%
Mountain mint	0.06	0.303	E/M	X	X		0.8%
Prairie coneflower	0.96	0.926	E/M		X	X	2.4%
Prairie rose	0.24	0.014	M		X	X	0.0%
Black-eyed Susan	0.72	1.521	M/L		X	X	4.0%
Stiff goldenrod	0.24	0.226	M/L		X	X	0.6%
Showy goldenrod	0.24	0.523	M/L		X	X	1.4%
Purple meadow rue	0.12	0.030	M	X	X		0.1%
Prairie spiderwort	0.48	0.110	E/M		X	X	0.3%
Heart leaf golden Alexanders	0.96	0.264	E		X	X	0.7%
Golden Alexanders	0.72	0.182	E	X	X		0.5%
	24.00	**13.261**					**34.5%**
Total Forb Species	**34**						

Sedges/Rushes	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Soils			Seeded % of Mix
				W	M	D	
Plains oval sedge	0.09	0.859	C		X	X	2.2%
Brown fox sedge	0.06	1.787	C	X	X		4.7%
Path rush	0.01	1.837	C		X	X	4.8%
	0.15	**4.482**					**11.7%**
	3	**38.40**					
Total Species Count	**51**						

26.80%	Cool Season Monocots
38.68%	Warm Season Monocots
3.06%	Early Bloom Forbs
4.63%	Early/Mid Bloom Forbs
4.50%	Mid Bloom Forbs
18.80%	Mid/Late Bloom Forbs
3.52%	Late Bloom Forbs

Table 42 – TNC-15 Seed Mix – 2015
(Karsky, Loen, Hegland, Lundgren, Westhausen WPAs)

Grasses	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Soils			Seeded % of Mix
				W	M	D	
Big bluestem	1.240	4.71	W	X	X	X	17.3%
Little bluestem	0.270	1.62	W		X	X	5.9%
Sideoats grama	0.550	2.42	W		X	X	8.9%
Prairie brome	0.030	0.09	C			X	0.3%
Bluejoint grass	0.010	0.91	C	X			3.3%
Canada wildrye	0.520	1.35	C		X		5.0%
Bearded slender wheatgrass	0.360	1.33	C		X	X	4.9%
Prairie Junegrass	0.020	1.06	C			X	3.9%
Switchgrass	0.030	0.27	W	X	X		1.0%
Indian grass	0.330	1.32	W	X	X		4.8%
Prairie cordgrass	0.010	0.04	W	X	X		0.1%
Rough dropseed	0.790	8.85	W		X	X	32.5%
Prairie dropseed	0.030	0.18	W		X	X	0.7%
	4.190	**24.15**					**88.7%**
Total Grass Species	**13**						

Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Soils			Seeded % of Mix
				W	M	D	
Anise hyssop	0.02	0.041	M/L		X	X	0.152%
Nodding onion	0.01	0.002	M	X	X	X	0.006%
Prairie onion	0.01	0.003	M		X	X	0.009%
Lead plant	0.01	0.004	M		X	X	0.013%
Swamp milkweed	0.01	0.001	M	X	X		0.004%
Smooth aster	0.03	0.038	L		X	X	0.139%
New England aster	0.03	0.045	L	X	X		0.167%
Canada milkvetch	0.06	0.023	M		X		0.086%
Cream wild indigo	0.01	0.005	M				0.019%
Wild white indigo	0.01	0.006	M				0.023%
Prairie coreopsis	0.01	0.010	M				0.035%
Showy tick trefoil	0.05	0.006	M		X		0.023%
N. leaf purple coneflower	0.01	0.002	M			X	0.006%
Maximilian's sunflower	0.04	0.012	M/L		X		0.044%
Common ox-eye	0.09	0.013	E/M		X		0.048%
Blue flag iris	0.01	0.0003	E/M	X	X		0.001%
Rough blazing star	0.01	0.004	M/L		X	X	0.013%
Meadow blazing star	0.02	0.005	L	X	X		0.017%
Dotted blazing star	0.01	0.002	M/L			X	0.006%
Tall blazing star	0.01	0.003	M/L	X	X		0.009%

Table 42 – TNC-15 Seed Mix (continued)

TNC 15 Seed Mix - Forbs	OZ/Acre Seeded	Seeds/ Sq Ft	Bloom E/M/L	Soils			Seeded % of Mix
				W	M	D	
Wild bergamot	0.09	0.145	M/L		X	X	0.531%
Large-flowered penstemon	0.01	0.003	E			X	0.012%
White prairie clover	0.06	0.026					0.096%
Purple prairie clover	0.09	0.037					0.137%
Prairie cinquefoil	0.02	0.106	M/L			X	0.389%
Mountain mint	0.01	0.051	E/M	X	X		0.185%
Prairie coneflower	0.05	0.048	E/M		X	X	0.177%
Prairie rose	0.01	0.001	M	X	X	X	0.002%
Prairie rose	0.01	0.001	M		X	X	0.002%
Black-eyed Susan	0.05	0.106	M/L		X	X	0.388%
Cup plant	0.03	0.001	M/L	X	X		0.004%
Stiff goldenrod	0.03	0.028	M/L		X	X	0.104%
Showy goldenrod	0.02	0.044	M/L		X	X	0.160%
Purple meadow rue	0.01	0.003	M	X	X		0.009%
Prairie spiderwort	0.01	0.002	E/M		X	X	0.008%
Blue vervain	0.01	0.021	M/L	X	X		0.078%
Hoary vervain	0.05	0.032	M/L		X	X	0.118%
Ironweed	0.04	0.022	M/L	X	X		0.081%
Heart leaf golden Alexanders	0.02	0.006	E		X	X	0.020%
Golden Alexanders	0.10	0.025	E	X	X		0.093%
	1.18	**0.930**					**3.41%**
Total Forb Species	**40**						

Sedges/Rushes/ Wetland Grasses	LB/Acre Seeded	Seeds/ Sq Ft	Season C/W	Soils			Seeded % of Mix
				W	M	D	
American sloughgrass	0.01	0.184	C	X			0.7%
Plains oval sedge	0.03	0.300	C		X	X	1.1%
Brown fox sedge	0.04	1.191	C	X	X		4.4%
Fowl bluegrass	0.01	0.478	C	X			1.8%
	0.09	**2.152**					**7.9%**
	4	**27.200**					
Total Species Count	**57**						