HIGHLIGHTS

1. An extremely wet late summer resulted in an abundance of full wetlands going into the fall and produced a good seed crop for both farmers and wildlife. Rainfall received in August and September totaled 13.06 inches in Morris. Average rainfall for May through September is 15.85 inches, thus 82 per cent of the entire summer average rainfall was received in just two months.

2. Excellent station funding levels allowed the district to hire 11 seasonal employees which included a YCC crew and leader, as well as two biological technicians, three STEP students, and one SCEP student. As a result of this increased staff we were able to make significant progress in controlling invasive species and trees, rebuilding fence, and conduct vegetation monitoring as well as a biological review of habitat easements.

3. A new WPA Prioritization Model was developed (Section 1b) to guide management and acquisition efforts throughout the District. This model will become increasingly important during times of severe budget and staffing cuts, when decisions are needed regarding which areas will receive less management.

4. Efforts to increase acquisition of easements and fee title tracts resulted in 13 new wetland and habitat easements protecting 1,265 acres of grasslands and wetlands. In addition, five fee title proposals totaling 1,576 acres were submitted to Realty and are currently in the review or appraisal process.

Spring migrants. 2010-1 BRF 3/17/2010

Climatic Conditions
Morris, Minnesota

October 2009:
The mean temperature in October was 39.5ºF, which is 7.4ºF below normal. High temperature for the month was 64ºF on the 19th. Low temperature was 19ºF on the 13th. Precipitation for the month of October totaled 6.77 inches, which is 4.99 inches above normal. Rainfall amounting to 1.89 inches on October 2 was a new daily record. We had measurable precipitation on 18 days in October. Greatest events were 1.89 inches on the 2nd, 0.67 inches on the 6th, 0.68 inches on the 15th, 0.72 inches on the 21st, and 0.91 inches on the 30th. Snowfall total was 4.7 inches. Snowfall of 1.8 inches on the 12th and 0.9 inches on the 15th were also new daily snowfall records.

November 2009:
November's mean temperature was 37.9ºF, which was 8.2ºF above normal. The high temperature was 61ºF on the 7th. The low temperature was 20ºF on the 16th and 17th. Precipitation totaled 0.33 inches, which was 0.65 inches below normal. Snowfall was 0.20 inches.

December 2009:
Mean temperature during December was 11.9ºF, which was 3.6ºF below the 122-year mean (1886-2008). A high temperature reading of 46ºF occurred on the 1st. The -14ºF reading on 10th was the low temperature for December. Precipitation totaled 1.32 inches, which is 0.66 inches above normal. Snowfall totaled 14.5 inches, with 9.5 coming from December 24th through the 27th.

Summary - Calendar Year 2009
For the 2009 calendar year the mean temperature was 40.2ºF which is 1.9ºF below average. Annual precipitation was 23.49 inches, 0.68 inches below normal. Precipitation during the growing season (April through August) was 8.27 inches, 7.63 inches below normal. In 2009, there were 56 days with minimum temperatures of 0ºF or below, and there were 4 days with maximum of 90ºF or above. The lowest minimum temperature was -31ºF on January 31st. The highest maximum temperature of the 2009 was 92ºF on May 20th and June 27th.

January 2010:
January's mean temperature was 8.9ºF, which is 0.3ºF above normal. The high temperature was 34ºF on the 18th, 23rd, and 24th. The low temperature was -31ºF on the 2nd. There were 14 days with minimum temperatures of 0º or below. Precipitation totaled 1.20 inches, which is 0.50 inches above normal. Snowfall totaled 4.8 inches. There were two major snow storms this month, one on January 6th and 7th, and rain changing to blizzard January 23rd through 25th. Winds of 58 mph were record at Morris.

February 2010:
The mean temperature was 9.6ºF, which was 3.7ºF below normal. The high temperature was 30ºF on the 17th and the low temperature was -20ºF on the 11th. This month's precipitation totaled 1.08 inches, which is 0.41 inches above normal. Snowfall total was 12.9 inches.

March 2010:
A reading of 33.0ºF was the mean temperature for the month of March, which is 6.1ºF above normal. The month's high temperature was 70ºF occurring on the 31st; while the month's low was 0ºF on the 1st. Precipitation totaled 1.02 inches, which was 0.14 inches below normal. No snowfall was recorded, which is the seventh time in the years 1886 through 2010 with 0 inches of snow. Other years of no March snowfall include 1981, 1930, 1928, 1925, 1919, and 1889. The winter season (October 2009 through March 2010) snowfall totaled 37.1 inches.

Remnants of winter snow around the edges of this marsh which is threatening to overflow the township road. 2010-2 BRF 3/17/2010

April 2010:
A mean temperature of 50.9ºF, which was 7.2ºF above normal occurred for the month of April. The high temperature was 75ºF on the 15th and the low temperature of 26ºF on the 8th. During April only 4 days had reading below 32ºF. April's precipitation totaled 1.59 inches, which was 0.71 inches below normal. No snowfall occurred during the month.

May 2010:
The mean temperature for May was 56.9ºF, which was 0.6ºF above average. A reading of 93ºF on the 25th was the highest temperature for the month and also a new record for that day. The lowest temperature reading for May was 30ºF on the 9th. We had 3 days with a high temperature above 90ºF. Precipitation for May totaled 2.50 inches, which was 0.46 inches below normal.

June 2010:
For June the mean temperature was 66.2ºF, which was 0.1ºF above normal. High temperature was 86ºF on the 18th and 23rd. Low temperature was 47ºF on the 3rd. Precipitation totaled 3.35 inches, which is 0.63 inches below normal. Half the days in June saw precipitation.

July 2010:
July's mean temperature was 71.3ºF, which was 0.4ºF above normal. A high temperature of 93ºF on the 18th and low temperature of 53ºF on the 19th were the variations for July. Three days of 90ºF or greater occurred this month. A total of 3.14 inches of precipitation was recorded, 0.51 inches below normal; 1.76 inches fell during the first week of July.

August 2010:
August was much warmer and wetter than normal; the mean temperature was 71.2ºF, which was 2.6ºF above normal. The month's high temperature was 89ºF on the 10th. In August, we had 21 days with temperatures in the 80's. The month's low temperature was 46ºF on the 25th and 26th. Precipitation totaled 7.93 inches for the month, which is 4.94 inches above normal. On the 13th a new daily record rainfall of 3.81 inches was set.

September 2010:
For September the mean temperature was 56.2ºF, which was 2.9ºF below the average. For the month the high temperature was 76ºF on the 13th. The low temperature for the month of September was 38ºF on the 19th. Precipitation for the month was 5.13 inches, which is 2.79 inches above normal. On September 9, a new daily record rainfall of 1.68 inches was set.

Summary - January – September, 2010

- The coldest day was January 2, 2010, with a -31ºF reading
- The highest temperature of 93ºF occurred on May 25, 30, and July18
- There were 6 days with a maximum temperature of 90ºF or greater
- There were 44 days of 0ºF or lower
- August and September rainfall totaled 13.06 inches
- May through September rainfall totaled 22.05 inches, 6.2 inches above normal

Table 1 – Monthly Precipitation Totals By County – Morris WMD – FY 2010

Month	Big Stone	Chippewa	Lac qui Parle	Pope	Stevens	Swift	Traverse	Yellow Medicine
October 2009	6.4	6.8	7.2	6.0	6.8	6.5	6.9	7.4
November 2009	0.4	0.2	0.2	0.3	0.4	0.3	0.5	0.2
December 2009	1.6	2.3	1.9	1.0	1.3	1.7	1.6	2.4
January 2010	1.2	1.6	1.3	0.9	1.4	1.1	1.2	1.3
February 2010	1.2	0.9	1.1	0.6	1.1	1.3	1.2	0.9
March 2010	1.0	1.1	1.1	1.0	1.1	0.9	1.4	1.3
April 2010	1.5	0.8	0.9	1.7	2.3	2.0	2.2	0.8
May 2010	2.5	2.3	2.5	2.3	2.2	1.8	2.2	2.8
June 2010	3.6	6.0	5.1	3.9	3.5	4.0	3.3	6.6
July 2010	4.0	4.2	3.7	4.6	3.1	3.4	2.7	3.7
August 2010	6.8	8.7	4.1	7.8	6.7	6.2	3.9	7.0
September 2010	5.8	7.2	6.7	5.5	5.8	5.4	6.5	8.8
Total	**36.0**	**42.1**	**35.8**	**35.6**	**35.7**	**34.6**	**33.6**	**43.2**

Monthly precipitation totals, averaged across the observation stations in each county. Data are from the State Climatology Office – DNR Waters, http://climate.umn.edu

MONITORING AND STUDIES

1a. Surveys and Censuses

Christmas Bird Count
Two Christmas Bird Counts (CBC) took place in the Morris District this year. The Morris area CBC was held December 17. Six participants found 33 bird species in the count circle. The Lac qui Parle CBC was held on December 19, with 12 participants counting 43 species, including a western meadowlark and Harris' sparrow.

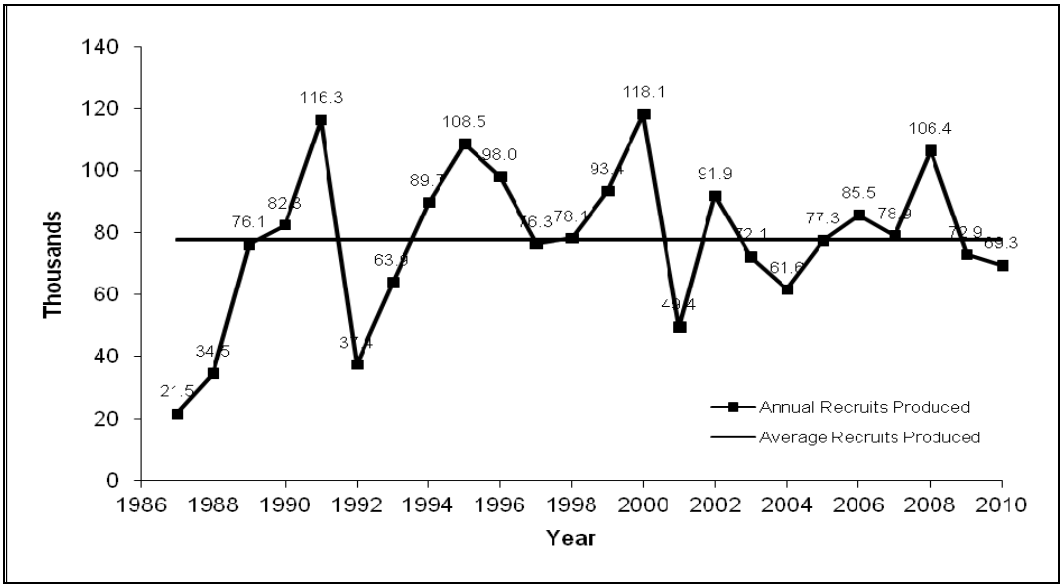
Woodcock Survey
Biological Technician Oglesby assisted with the annual American woodcock singing-ground survey. There are two assigned survey routes in the district, one in Pope County and one in Stevens County. Routes are 3.6 miles long, with 10 listening stations where observers record the number of woodcock heard peenting. The route in Pope County is run annually. This year it was surveyed on April 26 with seven birds observed, which is fairly consistent with previous years. 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 short term (1-year), 10-year, and long term (1968-present) trends in males heard. There were no significant trends (i.e., stable) for Minnesota. For the Central region, the short term trend was not significant, the 10-year trend was -1.2 percent/year, and the long term trend was -1.0 per cent/year.

Four Square Mile Waterfowl Pair Count
The annual four square mile breeding waterfowl survey has taken place for 22 years. 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 the Morris WMD and prairie pothole region of Minnesota and Iowa.

Wetland conditions were about average in the Morris WMD this year. The estimated number of breeding pairs (48,700) was well below the long-term average.

There were 164,600 recruits produced in the Minnesota portion of the Prairie Pothole Region in 2010. The Morris WMD contributed 69,300 recruits to the fall flight. The Minnesota Prairie Pothole Region and Morris WMD recruitment rates were both at relatively healthy levels again this year (0.62 and 0.66, respectively). The Prairie Pothole Joint Venture Implementation Plan has a recruitment rate objective of 0.6 under average environmental conditions, and 0.49 for all managed areas.

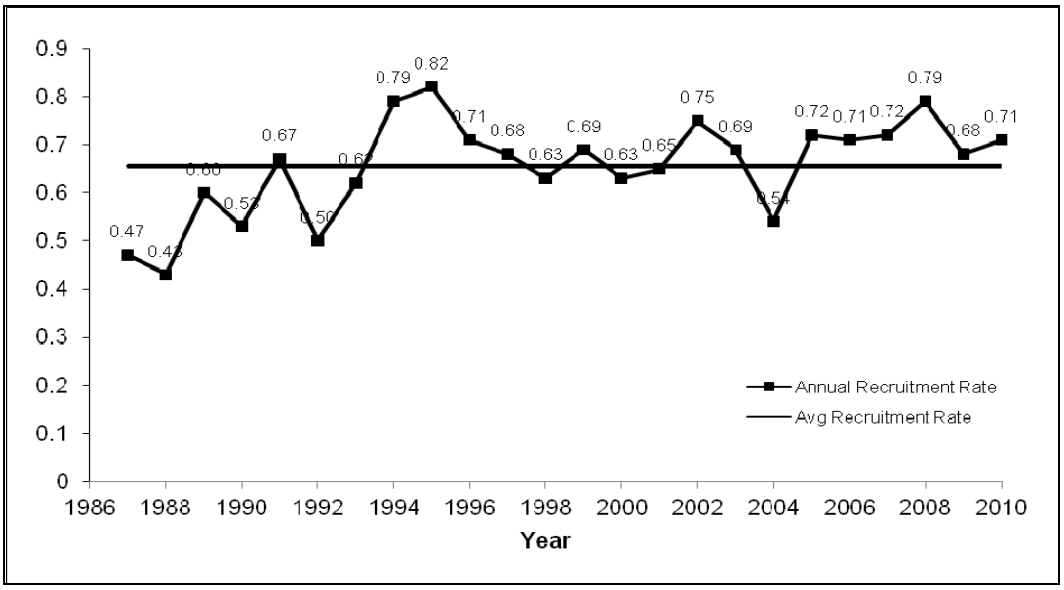
Figure 1. Number of Recruits Produced in the Morris WMD, 1987-2010



Data values are for five species – mallard, gadwall, blue-winged teal, shoveler, and pintail. Horizontal line is long-term average (77,500).

A lone gadwall swimming on the marsh on Pepperton WPA.
2010-3 R. Schmiesing 5/11/2009

Figure 2. Recruitment Rate for the Morris WMD (1987-2010)



Data values are for five species: mallard, gadwall, blue-winged teal, shoveler, and pintail. Horizontal line is long-term average (0.66).

Annual Brood Surveys

This was the third year of a three year project to survey broods on designated Four Square Mile Survey plots throughout the prairie pothole region. FWS Habitat and Population Evaluation Team and Ducks Unlimited are coordinating this extensive survey, which they hope will provide information about how waterfowl production relates to the breeding population and landscape characteristics. Biologist Vacek and SCEP Randa completed surveys on five plots in Stevens County. The plots we survey have a high wetland density, but many of the wetlands are temporary and seasonal so they are dry or completely obscured by crops when the surveys are done. The road-based surveys are conducted from July 20 to August 5 each year. We expect to see a data summary at the end of the project (2011).

Butterfly Surveys of Selected WPAs

We hired a contractor to conduct butterfly surveys on Prairie, Twin Lakes, Hillman, Hastad and Hegland WPAs, Prairie WMA, and a habitat easement (BS-278G). All of these sites except the easement have prior records of prairie-specialist butterflies, including the Dakota Skipper, a Candidate for the Endangered Species List. Current information about the butterflies present on these units is critical information for our management decisions, particularly burn planning. There were 18 species of butterflies observed total, with site-specific species richness varying from five to thirteen (Table 2). The only prairie-obligate butterfly observed was Regal fritillary (four individuals) at Hillman WPA.

Table 2 – Butterfly Species Recorded at Select Big Stone and Lac qui Parle

County WPAs – Morris WMD – FY 2010

Common Name	Species Name	Hastad/ Hegland WPAs	Hillman WPA	Prairie WPA/ WMA	Twin Lakes WPA	BS-278G
Least skipper	*Ancyloxypha numitor*		x			
Common wood-nymph	*Cercyonis pegala*	x	x		x	x
Meadow fritillary	*Clossiana bellona*	x	x	x	x	x
Prairie ringlet	*Coenonympha inornata*		x			
Orange sulphur	*Colias eurytheme*	x	x	x	x	x
Clouded sulphur	*Colias philodice*	x	x		x	x
Monarch	*Danaus plexippus*	x	x	x	x	x
Variegated fritillary	*Euptoieta claudia*				x	
Bronze copper	*Lycaena hyllus*		x			
Mourning cloak	*Nymphalis antiopa*		x	x		
Pearl crescent	*Phyciodes tharos*	x	x	x	x	x
Mustard white	*Pieris napi oleracea*				x	
Cabbage white	*Pieris rapae*					x
Long dash	*Polites mystic*	x	x		x	x
Tawny-edged skipper	*Polites themistocles*				x	
Eyed brown	*Satyrodes eurydice*		x			
Regal fritillary	*Speyeria idalia*		x			
Red admiral	*Vanessa atalanta*	—	—	—	x	—
Total Number of Species		**7**	**13**	**5**	**11**	**8**

Minnesota Odonata Survey Project

For the past several years, a group of volunteers have been working to inventory the Odonata (dragonflies and damselflies) of Minnesota. This year, Morris WMD hosted the annual Minnesota Dragonfly Gathering, July 23-25. After a few hours of classroom training, the 27 participants headed out to the field to survey dragonflies. Stops included Pepperton, Artichoke, and Edwards WPAs. West-central Minnesota is very under-surveyed, so nearly every stop the group made added new county records. In all, we documented 25 species and had 35 new county records.

Table 3 – Damselfly and Dragonfly Species Recorded During Minnesota Dragonfly Gathering, July 23-25, 2010 – Morris WMD

Scientific Name	Common Name	Pepperton WPA	Artichoke WPA and Artichoke Lake	Pomme deTerre River	Edwards WPA
Hetarina americana	American Rubyspot			X	
Lestes congener	Spotted Spreadwing	X	X		
L. unguiculatus	Lyre-tipped Spreadwing	X	X	X	X
L. rectangularis	Slender Spreadwing		X	X	X
L. dryas	Emerald Spreadwing			X	
Argia apicalis	Blue-fronted Dancer		X	X	
Enallagma hageni	Hagen's Bluet	X	X		X
E. exsulsans	Stream Bluet			X	
E. civile	Familiar Bluet	X	X		X
E. carunculatum	Tule Bluet		X		
Ishnura verticalis	Eastern Forktail	X	X	X	X
Nehallenia irene	Sedge Sprite	X	X		X
Anax junius	Common Green Darner	X	X		X
Aeshna interrupta	Variable Darner	X	X		
A. constricta	Lance-tipped Darner		X		
Stylurus amnicola	Riverine Clubtail			X	
Libellula pulchella	Twelve-spotted Skimmer	X	X		X
Leucorrhinia intacta	Dot-tailed Whiteface	X			
Plathemis lydia	Common Whitetail			X	
Sympetrum corruptum	Variegated Meadowhawk	X	X		X
S. costiferum	Saffron-winged Meadowhawk	X	X		
S. internum	Cherry-faced Meadowhawk	X	X	X	X
S. obtrusum	White-faced Meadowhawk	X	X	X	
S. rubicundulum	Ruby Meadowhawk	X		X	
S. semicinctum	Band-winged Meadowhawk				X

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.

Several of the nine designated routes in the district were at least partially completed this year. Typically, the most common species observed are western chorus frog, northern leopard frog, and American toad. Many of the routes were completed by DNR-recruited volunteers, while WRS Durbian and Biologist Vacek completed three routes. We plan to continue participating in this annual survey and would like to add routes in areas of special management concern or that are not well covered by the existing routes.

Wild Rice Inventory

Although prairie wetlands are not typically considered prime habitat for wild rice, we have observed this important waterfowl food on several WPAs. In an attempt to better understand the distribution and relative abundance of wild rice throughout the district, we developed and tested a rice monitoring protocol this year. The protocol was based on that developed by the 1854 Treaty Authority for monitoring the extensive rice beds in northern Minnesota. Wetlands were visited in August to search for rice. When rice was found on a basin, the general area was mapped in GIS. Photos were also taken at a number of wetlands, which will aid in qualitative comparisons of rice density among wetlands and years. In 2010, wild rice was documented on 12 WPAs. This number will likely grow in coming years, since Swift County sites were not surveyed as thoroughly as Pope. Data will be shared with Minnesota DNR Shallow Lakes staff.

Five-lined Skink Surveys

In 2006, we worked with a University of Minnesota-Morris student to survey an FmHA easement in Yellow Medicine County for five-lined skinks. Five-lined skinks are a state species of special concern that had been documented at several places in the area in the 1980s. In 2006, the student only located one juvenile skink, and in some associated aerial photo analysis revealed significant encroachment of cedar and buckthorn at the site. While five-lined skink use rotting logs for egg-laying and hibernation, they require exposed rock for basking. It is possible that the granite outcrops on this site had become too shaded by encroaching trees and shrubs.

We undertook a significant woody cover removal project at this easement in 2008. To follow up on this work, we coordinated with a UMM student again this year to survey the site and some surrounding areas to assess the current skink population since tree removal. Results from this survey are still pending.

Wetland Resources Monitoring

In an attempt to better understand wetland hydrology, Regional Hydrologist Josh Eash has established a long-term monitoring project to study surface and ground water within wetland complexes at Rothi and Nelson Lake WPAs. Josh was testing equipment at some wetlands on Rothi this year, and will install more stations at both units in 2010. 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 quality parameters are being collected periodically throughout the growing season. 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.

Fish Inventory

SCEP Randa spent much of the summer conducting a survey of fish populations in 22 wetlands at 18 WPAs. The purpose of this work was to assess changes since a 1985 rough fish survey and to determine fish presence in basins with water control structures. Thirteen species of fish were found this year, with the most abundant being fathead minnow, northern redbellied dace, black bullhead, brook stickle-back, and central mudminnow (Table 4). Only four basins surveyed this year had carp: Byre, Lynch Lake, Fish Lake, and Murphy WPAs. Smith and Sherstad Slough WPAs were each found to be carp-free; both of these basins had carp in the 1985 survey. Water clarity and vegetation information was also collected at each basin.

Table 4 – Fish Species Found in a Survey of 22 WPA Wetlands During 2010

Species	Total Individuals
Black bullhead	579
Bluegill	19
Brook stickleback	533
Central mudminnow	376
Common carp	212
Fathead minnow	26,994
Golden shiner	1
Iowa darter	93
Johnny darter	2
Northern pike	3
Northern redbellied dace	700
Orange spotted sunfish	298
White sucker	8

SCEP Jacob Randa with YCC enrollees checking nets at Long Lake WPA.
2010-4 SCV 7/7/2010

1b. Studies and Investigations

Enhancing Our Prairies – Effects of Tree Removal on Grassland Birds
This was the sixth field season of a study to monitor the response of grassland birds before and after removing trees from large grassland habitat blocks. This study is being coordinated by the HAPET office and field work is being done at the Morris and Litchfield WMDs. Each district has treatment (trees removed) and control (trees left in place) sites with 20 point count stations in each. In the Morris WMD, treatment study fields are on Thomson and Larson Slough (both now part of Kufrin WPA), Nelson Lake (two fields), and Wente WPAs. Control areas are at Hagstrom, Stegner, and Rolling Forks WPAs. Stegner and Rolling Forks were added in 2007 to allow us to cut trees on two sites that were formerly controls (Larson Slough and Nelson Lake-east).

In June, grassland bird point counts were done at all 160 stations. Biological Technician Oglesby conducted point counts at Nelson Lake and Rolling Forks, and we hired a contractor to do counts at the remaining five sites. In July and August, we sampled vegetation at all point count stations. Vegetation monitoring consisted of assessing the plant community and structure as well as measuring the distance to the nearest trees and shrubs.

So far, the data has not shown any significant increases of grassland bird density on the sites where trees were removed. Interestingly, there is an overall lack of

grassland birds on all the sites. The most common grassland obligates we have observed are clay-colored sparrow, bobolink, and sedge wren. We speculate that the constant disturbance needed to follow-up on tree removal sites may be keeping the sites unattractive to grassland birds. It is also possible that factors other than WPA-scale habitat conditions are having a stronger influence on settling patterns of grassland birds (e.g., current population levels, fragmentation of grasslands in surrounding landscape). We plan to continue surveys for this project for one more year, then reassess the future of the project.

Biologist Vacek presented a talk on the tree removal study at the North American Prairie Conference at Cedar Rapids, Iowa in August.

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 the Morris, Fergus Falls and Litchfield WMDs and Neal Smith NWR. Each site has two to four study fields consisting of 108 plots that were seeded by one of three seeding techniques and three seed mixes (fully crossed for a total of nine treatments). The seeding techniques include dormant broadcast, spring broadcast, and spring drill. The seed mixes are of three diversity levels: 10, 20 and 34 species.

USGS used Science Support Program funding to hire technicians who completed vegetation monitoring on all the study sites this summer. The group plans to meet and discuss our results over the coming winter. We anticipate publishing the results of this research in the coming year. The group plans to continue coordinating our management actions on the sites and conduct vegetation monitoring again in five years (2015).

Minnesota Grassland 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. As time permits, we also assist our partners with surveys. Our basic protocol includes monitoring vegetation composition

using a belt transect and checklists of indicator species (native and invasive), as well as structural information like litter depth and visual obstruction.

In the coming winter, we will work with statisticians and the modeler to do the first model run on data collected since 2008. This will be very informative and should help all the partners better understand the adaptive management process.

Native Prairie Adaptive Management Project

We participated in another grassland monitoring project, which is in its third year of funding through the Refuge Cooperative Research Program (RCRP). The Native Prairie Adaptive Management Project is being developed by refuge biologists and managers from Regions 3 and 6, as well as USGS partners from Northern Prairie and Patuxent Wildlife Research Centers. The particular focus of this project is to learn how well we can reduce smooth brome and Kentucky bluegrass from remnant prairies on refuge lands. The project includes over 120 management units throughout the Prairie Pothole Region.

Biologist Vacek has served on the science team for this project. The science team has been responsible for developing the monitoring protocol, the model that will be used to test our predictions about management effects, and a database to standardize data entry. The RCRP funding ran out in 2010, but USGS partners have acquired some additional funding to see the project to completion. Within the next year, the Service will assume full responsibility for maintaining the project. Luckily, the Inventory and Monitoring Zone Biologist in Region 6 has offered to take on overall coordination for the project.

Morris WMD has eight management units in the project, located at Hillman, Florida Creek, and Freeland WPAs. We completed surveys at all the sites this year. Our data, along with that collected at the other management units, was used to test the model and provide a preliminary decision support matrix. Each station received a management recommendation for their individual management units based on the plant composition at those units.

The Impact of Encroaching Woody Vegetation on Waterfowl Nest Success in Western Minnesota

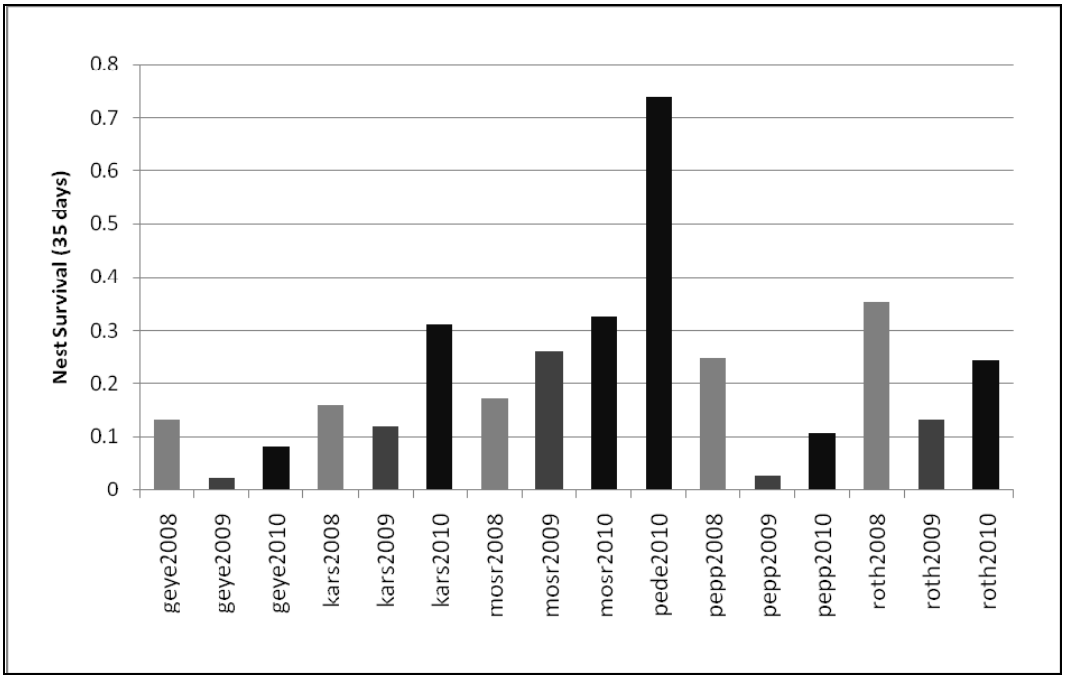
This was the third and final season of a Prairie Pothole Joint Venture-funded study to assess the relationship between woody vegetation and duck nest success. Dr. Todd Arnold and PhD Candidate Sarah Thompson are conducting the research. From 2008-2010, Sarah and her technicians searched for nests on 32 WPAs in Big Stone, Traverse, western Swift and western Stevens Counties, and found 1,066 nests. The overall nest success rate over the three years was 13.3 percent. In addition to nest success data, Sarah collected habitat and landscape data for each nest.

Their analysis showed that daily survival rates varied widely among WPAs and years (Figure 3). Nest survival was highest for nests surrounded by more grass

and for nests farthest from wetland edges. Older nests and nests initiated earlier in the breeding season also had higher daily survival rates. Only two of nine variables for woody vegetation were correlated with nest success; nests were more successful when they were far from woodlots, but nests located in lightly wooded areas had higher daily survival rates. However, they caution that this last trend was driven by a very small number of nests. Most nests had no lone trees and a very small number were in savannah-like landscapes.

Sarah also collected data at fake nest sites, random locations (nest site selection) and collected some grassland songbird surveys. Results on those aspects of her research are still pending. Nest survival increased with additional lone trees at the nest site.

Figure 3. Estimated Nest Survival at Selected 2008-2010 Study Sites in Morris WMD



(geye=Geyer WPA, kars=Karsky WPA, mosr=Mosquito Ranch WPA, pede=Pederson WPA, pepp=Pepperton WPA, roth=Rothi WPA)

Sediment Removal Adaptive Management

Morris WMD participated 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). This was the second field season for the project, during which we tested monitoring protocols and treatments and implemented the monitoring protocol that has been developed by the team. We were able to restore hydrology and remove accumulated sediment from two additional

wetland basins this year on Moultan Lake WPA in Big Stone County. We monitored vegetative structure and diversity, invasive species, and hydro-period on the five basins that were restored last field season. The sites will be 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 2011 as they are available (a wetland must meet strict criteria to be included in the project).

Management Priority Tool

Morris WMD is currently developing a Management Priority Tool that will help us make better decisions about habitat management on our lands. Morris WMD does not have the resources to manage each waterfowl production area (WPA) to its full potential. We are nearly finished with our Habitat Management Plan (HMP), a document that clearly defines the priorities and habitat goals for District lands. The HMP helps determine *how* WPAs should be managed, but we also wanted a strategic and thoughtful way to decide *where* to apply our limited management resources. The model was developed with input from the entire WMD staff and key partners, and modeling assistance from the USGS - Upper Midwest Environmental Sciences Center. It integrates landscape-and WPA-scale information that is relevant to the District's priorities, which include waterfowl breeding habitat, grassland bird habitat, threatened and endangered species, and prairie and wetland ecosystem integrity. The model provides a score for each of our WPAs; by focusing our management efforts on the highest scoring WPAs, we can ensure that we are allocating our management to the places where we will get the greatest benefit.

Other Studies

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

- **Tolerance of Native Forbs to Herbicide Treatment** – *Dr. Roger Becker* at the University of Minnesota Extension has a one acre study plot in a local ecotype seeding at Kufrin WPA. The study is testing the tolerance of native forbs to herbicides at various application rates and timings.
- **Forb Interseeding** – *Molly Tranel* with the Minnesota DNR Farmland Research Group is conducting a study to determine the best approach to introduce forbs into a grass-dominated field. There is a study plot on Schultz WPA (Section 2b).
- **Comparison of Native Grassland Management Treatments to Spring Prescribed Burns** – *Dave Rave* with the Minnesota DNR Wetland Wildlife Populations and Research Group just completed a three year project to compare the vegetation response to fall biomass harvests relative to spring burning. This research was funded by the Working Lands Initiative and included sites on Lamprecht, Giese, and Pepperton WPAs. A final report is pending.

- **Identification of Moth (Lepidoptera) Species Dependent Upon Native Prairie Habitat** – *Robert Dana* with Minnesota DNR Ecological Resources is conducting intensive sampling of native prairie and degraded grassland habitats in western Minnesota to identify moth species that are prairie-specialists. He had traps on Prairie, Hillman, and Hegland WPAs. The study will go through 2012.
- **Population Structure and Trophic Role of Tiger Salamanders in Stevens County** – *Heather Waye* at the University of Minnesota-Morris hopes to establish a long-term study of tiger salamanders in Stevens County. She will monitor population size, demographics, movement among populations, and the trophic role of larval and adult salamanders. Her surveys will be done on Pepperton WPA.
- **Working Plan for Biofuel Production and Wildlife Conservation in Working Prairies** – *Dr. Clarence Lehman* and others at the University of Minnesota are researching the wildlife response to various prairie biofuel land management practices. Study sites on Morris WMD include Artichoke Lake and Odden WPAs.

1c. General Wildlife Observations

The first signs of spring were observed during the first week of March: the snow buntings disappeared, horned larks were in pairs instead of flocks, and Canada goose pairs were visiting wetlands.

The sighting of the first robin assures us that spring is "just around the corner."
2010-5 DMO 4/7/2010

The waterfowl migration started in earnest around mid-March. Chorus frogs and leopard frogs started calling by the end of March.

We continue to enjoy seeing sandhill cranes in the eastern part of the district. Two were seen on Krantz Lake WPA in the spring, and several were observed in eastern Pope County during August.

A black bear made a short visit to the City of Morris in April. After an "encounter" with a car, it retreated to this tree for a few days before leaving the area. 2010-6 JBB 4/28/2010

HABITAT RESTORATION

2a. Wetland Restorations (On/Off refuge)

Private Lands
Six wetlands totaling 46.5 acres were enhanced this year with repairs and improvements on private land. All of the structures had been damaged after increased drainage and precipitation in the past 15 to 20 years. One new basin (2.5 acres) will be restored on private land. The work has not been completed due to high water on the site. These seven projects were completed among six landowner's properties. Only two of the repairs were on easements. All of the private lands agreements were renewed and extended for another ten years. Projects were in Pope and Stevens Counties. Three mallard nest cylinders were given to landowners to be placed in their restored wetlands.

These numbers are lower than our traditional wetland restoration numbers primarily because we are seeing a change in our program. The Partners program is becoming more diverse. We cost shared projects this year to seed grass, convert old monotypic grass seedings to diverse stands of native species, and to remove invasive woody vegetation. We are also seeing much of the demand for wetland restoration being completed by other agencies like the Natural Resource Conservation Services. The Wetland Reserve Program (WRP) has been very successful in our local counties, especially with securing the largest basins for wetland restoration. The important thing is that restoration work happens, and the great part about WRP is that the basins will be protected forever by a Reinvest in Minnesota easement after the 30 year WRP expires.

Wetland restoration/repair project costs averaged $3,190 for each basin during FY 2010, which is significantly more than the long term. The average size of restored/repaired wetlands on private land was 7 acres, about 2.6 acres more than the long term average for the Morris WMD. The 7 wetlands cost the Service $22,330 to restore during FY 2010.

Waterfowl Production Areas
Six of the nine ditch plugs staked for repairs on WPAs in 2009 were repaired during FY 2010. Further repairs will be needed in 2011. A very wet 2010 did not offer good conditions for any wetland restoration structure repair or installation. Two new ditch plugs were constructed on Moultan Lake WPA in Big Stone County. Both basins will be included in the sediment excavation monitoring study (Section 1b). These two basins were paid for by the Fourth graders at the Ortonville Elementary school, who have raised funds for wetland restoration over the years. Their money is matched by the Big Stone County Soil and Water Conservation District, the Upper Minnesota Watershed District and the Big Stone County Environmental Services Office. In addition, Pheasants Forever has grant

funding to install a new water control structure on State Lake WPA. The project was awarded during late summer of FY 2010. The project has not been completed because of high water preventing access to the site.

Stacy Salvevold and Ron Sundheim installing a Clemson Leveler on Sundheim repair. 2010-7 Heather Rickerl 09/1/2010

Table 5 – Wetland Restorations – Morris WMD – FY 2010

	Fee		Private		Total	
County	**Basins**	**Acres**	**Basins**	**Acres**	**Basins**	**Acres**
Big Stone	2	3.5	0	0	2	3.5
Chippewa	0	0	0	0	0	0
Lac qui Parle	0	0	0	0	0	0
Pope	0	0	3	19.5	3	19.1
Stevens	0	0	3	18.6	3	18.6
Swift	0	0	0	0	0	0
Traverse	0	0	1	10.5	1	10.5
Yellow Medicine	0	0	0	0	0	0
Total	**2**	**3.5**	**7**	**48.6**	**9**	**51.7**

Table 6 – Wetland Restorations – Morris WMD – 1987 to FY 2010

Year	Total Restorations Basins	Acres	Year	Total Restorations Basins	Acres
1987	33	79	FY 1999	51	345
1988	208	673	FY 2000	73	387
1989	84	282	FY 2001	38	120
1990	82	278	FY 2002	35	313
1991	103	839	FY 2003	75	255
1992	85	228	FY 2004	54	289
1993	117	508	FY 2005	25	78
1994	78	556	FY 2006	42	128
1995	49	268	FY 2007	17	45
1996	42	177	FY 2008	26	69
1/1-9/30/97	34	423	FY 2009	14	30.4
FY1998	91	311	FY 2010	9	52.5
			Total	**1,465**	**6,733.9**

2b. Upland Restorations (On/Off refuge)

In its fourth growing season the prairie reconstruction at Grove Lake is starting to show a lot of color with many flowering native forbs. 2010-8 JBB 7/7/2010

Grasslands consist of native prairie, planted native species, introduced cool-season grass seedings, and legume plantings. Management practices include fire, grazing, and haying. Traditionally, new fee and easement acquisitions have provided the

acreage for seeding each year. In recent years a concerted effort has been made to retire and restore food plots, and convert low quality, weed infested grass stands. Restoration may involve farming for several years or straight conversion with tillage and herbicide. Usually, newly acquired land is cash rented back to the original landowner and farmed with round-up (glyphosate) ready soybeans, which makes a good seedbed for native grasses and provides a means of controlling weeds. In the cases where we are converting grass stands with a historical weed problem, we cash rent to the previous landowner or a willing neighbor for several years in a soybean/corn rotation with the final year being soybeans.

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

Native Prairie

Northern Minnesota isn't the only region of the state with beautiful fall colors, as evidenced here with this gorgeous patch of golden hued prairie cordgrass (*Spartina pectinata*) at Twin Lakes WPA. 2010-9 JBB 10/7/2010

The original upland vegetation within the Morris District was tallgrass prairie. With the addition of State Lake WPA the total native prairie acreage on WPAs within the District was approximately 7,159 in 2010. 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. Some of the smaller acreage remnants have not been actively managed because of size, terrain, location, and staff time.

Native Seeding

Private Lands

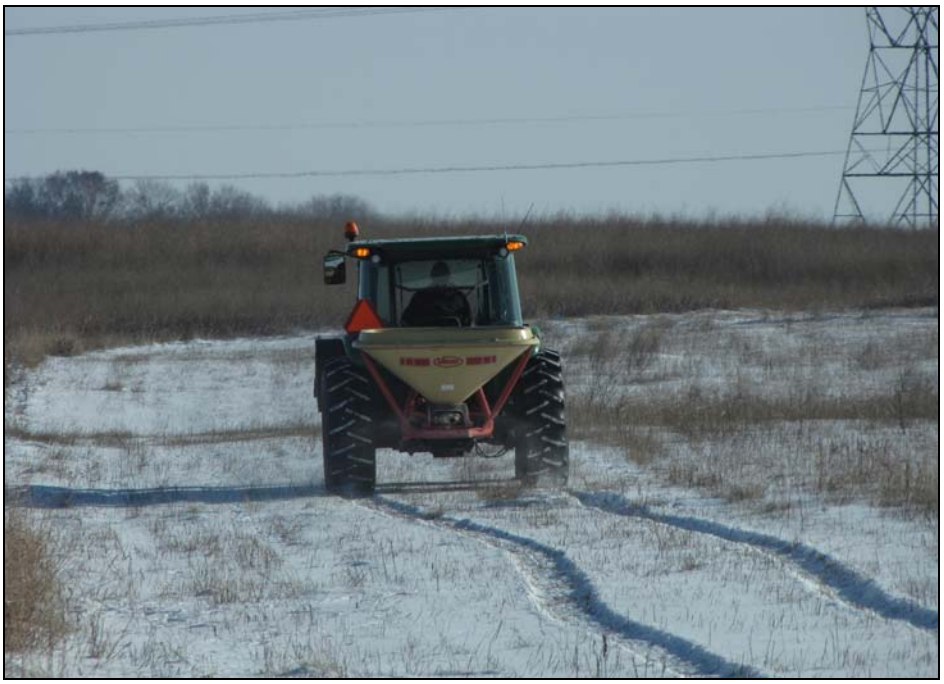
Four private land owners in Lac qui Parle, Yellow Medicine and Big Stone Counties restored or converted single species seedings to diverse native grass species. Two hundred twenty-four acres of grasses were seeded to improve nesting habitat. A 73.5 acre inter-seeding of CRP was completed on Otrey Lakes Farm property in Big Stone County. A large portion of this seeding was paid for by Big Stone Working Lands Initiative and Farm Services Agency (FSA). This property was enrolled in a perpetual habitat easement later in the year. Sixty-five acres were inter-seeded on Greg Payne's perpetual RIM easement in Yellow Medicine County. Most of the funds spent on this seeding came from a CPL grant application secured by the East Yellow Medicine chapter of Pheasants Forever. Partners just put up the 10 percent cost share that must be non-state money to secure the grant funds. An inter-seeding on 40.5 acres of Jim Graner's CRP in Lac qui Parle County was completed this year as well. Partners paid half the expenses, and Mr. Graner and FSA in combination paid for the other half of the seeding expenses. An inter-seeding of 45.1 acres on Mike Spors property in Lac qui Parle County was completed using Partners funds for about 75 percent of the cost and the Minnesota DNR Wildlife Office spent another $2,000 on this project. When inter-seeding on CRP, I always write my agreements for 10–15 years, depending on how much money the landowner is willing to pay toward the project, no matter when their CRP expires. This hopefully ensures that the expense of improving cover will be there for 10 to 15 years, whether the CRP expires or not.

The total cost for these seedings was $45,840, which is about $205 per acre. All of these seedings were 25 to 30 species mixes of native grasses and forbs and as many of them as possible were Minnesota native harvest. Species that could not be acquired locally were commonly used cultivars for this part of the state. Details on the mixes can be found in the project files. The above contributing partners paid a total of $32,584 and Partners paid $13,256 to get these projects completed. The value of the in-kind site prep and clipping that Mike Spors contributed is worth about $1,000 and was not included in the $45,840.

Waterfowl Production Areas

This fiscal year, 74 acres were seeded to native grasses and/or forbs on three WPAs (Table 7)**.** A detailed list of the seed mix used this year is in Tables 33 and 34 (Appendix A) at the end of this report. Rustad WPA was seeded by Pheasants

Forever's West Central Minnesota Habitat Team with funds from a Lessard-Sams Outdoor Heritage Council (LSOHC) Grant.



The broadcast seeding at Schultz WPA occurred under ideal weather conditions on December 16, 2009 with roughly six inches of snow cover on the site. 2010-10 JBB 12/16/2009

The mix contained 29 forbs and one sedge (Table 34), with a seeding rate of 19.8 ounces per acre. 2010-11 JBB 12/18/2009

We also participated in a study with the Minnesota DNR's farmland research arm investigating techniques aiding the establishment of dormant interseeded forbs into existing tallgrass stands. The study site at Schultz WPA has replicates of four different techniques: One set of plots was mowed once; another mowed twice, another sprayed with 8 ounces of clethodim, and another sprayed with 16 ounces. Clethodim (trade name Select 2EC) is a grass selective herbicide. Mowing height was four to six inches. Spraying and the first mowing treatments occurred on May 26, while the second mowing was conducted on June 18. All of the treatment techniques were intended to set back or stunt the established grasses to aid forb germination and seedling growth. Each plot was approximately one acre in size. The site had been burned in September, 2009 to facilitate the interseeding. The Minnesota DNR researcher will conduct vegetation sampling from 2011 to 2013, but anecdotal observations late summer showed very few planted forbs present.

This lonely prairie clover was one of only a handful of planted species found in the four acres of seeded study plots on Schultz WPA.
2010-12 JBB 7/1/2010

Table 7 – Prairie Reconstruction Seedings – Morris WMD – FY 2010

Unit Name	Unit ID	Unit Type	Acres	Date	Comments
Rustad	P-25	WPA	69	05-24-10	PF drilled local ecotype natives
Schultz	SV-23	WPA	4	12-16-09	Broadcast interseeded forbs over snow
Edwards	SV-16	WPA	1	05-26-10	ATV broadcast geothermal well sites
Total			**74**		

Since 1973, the Morris Wetland Management District has planted roughly 11,370 acres of native grasses. As identified in the Comprehensive Conservation Plan,

restorations will replicate, to the extent possible, the structure, species composition, and processes of native ecological communities in the tallgrass prairie. Thus, where practical, restorations will use local ecotype seed containing eight or more grass species and 30 or more forb species. However, the primary limiting factor to converting more fields of marginal tame grass nesting cover to local ecotype natives is seed availability and expense.

In only its third growing season the prairie reconstruction at Taylor WPA is showing great promise. The invasive species crew did a very thorough job spot spraying Canada thistle, which allowed for the site to be combine harvested. 2010-13 JBB 8/12/2010

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

We are making progress on our goal of production of local ecotype seed. Since 2002, 20 sites totaling 930.7 acres have been seeded with local ecotype natives (Table 8). In the past few years seed has been harvested from seven of these sites: Kufrin, Thorstad, Rothi, Westport, Robin Hood, Grove Lake, and now Taylor. We

are still not past the bottleneck, but we are getting closer. In a few years, we should be able to annually harvest 100 acres or more of seed from these sites.

With prairie reconstructions it is often the case that a Pandora's Box of problems is opened up, as can be seen here where plumeless thistle is out-competing planted species. It often takes ten years of micro-management to get a seeding to a maintenance friendly status. 2010-14 JBB 7/15/2010

Table 8 – Local Ecotype Native Seedings – Morris WMD
FY 2002 – 2010

Big Stone County

Hillman	40.0 acres
Karsky	13.4 acres
Kufrin	106.0 acres
Prairie	8.0 acres
Rackl Esmt. (312G)	24.4 acres
Rothi	103.0 acres

Lac qui Parle County

Colbert	18.3 acres
Taylor	33.2 acres
Arden Hegland (private)	8.0 acres

Pope County

LuVerne Forbord (private)	10.4 acres
Grove Lake	155.0 acres
Rolling Forks	40.0 acres
Rustad	69.0 acres
Westport	40.0 acres

Stevens County

Thorstad	30.0 acres

Swift County

Hennen-NTGP (11G)	13.0 acres
Loose	32.0 acres
Loen	16.0 acres

Traverse County

Lawrence	76.0 acres
Robin Hood	95.0 acres

Field conditions didn't allow the usual application of glyphosate and 2,4-D just after the seeding operation. As a result, diligent mowing efforts were required to suppress the effects of robust annual weed growth in the prairie reconstruction at Rustad WPA. 2010-15 JBB 7/2/2010

For the third consecutive year a forb mix and grass mix was purchased from one vendor, Feder Prairie Seed, rather than cobbling together individual species purchased from several vendors. Although potentially more expensive, this simplified the purchasing process immensely. The mesic soil forb mix consisted of 40 species (Table 33, Appendix A), 30 of which are in families displaying some degree of tolerance to the clopyralid and aminopyralid herbicides (trade names Transline, Pyramid, Milestone). This will make herbicide application for thistles more feasible since there will be less non-target loss of costly forbs. This "Cadillac" seeding also contained six species of rushes and sedges, which is a first on the district. A separate mix for a nine acre wet mesic area was also purchased, but soil conditions never dried out enough to allow equipment on to finish the job. It is hoped that 2011 will be more "normal" and allow access sometime during the summer for mowing and seeding.

The first phase of tillage was completed in spring and fall at four other sites on the district that will be restored in 2011 with funds from a NAWCA grant that Pheasants Forever received. These prairie reconstructions will be straight conversions with no farming, just tillage and tree removal. The sites are: Welsh (SW-4) 65 acres, Roderick (SW-29) 30 acres, Pomme de Terre Lake (SV-34) 30 acres, and Pieske (SV-36) 84 acres. Each of these sites was chosen because they had well drained soils and poor quality tame grass nesting cover. As with Rustad WPA, Pheasants Forever's West Central Minnesota Habitat Team has been

overseeing the site prep, and will be responsible for establishment and maintenance in the planting year (approximately June 2011). A similar project of 70 acres is being done on Geyer WPA through a LSOHC grant. This site, though, will be farmed for one year with soybeans, rather than straight tillage.

Pheasants Forever contracted a farmer to plow up the brome here at Pomme de Terre Lake WPA and three other tame grass sites. 2010-16 JBB 4/28/2010

Seed Harvest

The 1989 Gleaner R40 that was purchased in June 2008, did another fabulous job of efficiently harvesting seed for us. Fall harvest conditions were excellent, and a wet summer should have created conditions for a high yield of viable seed. This year approximately 6,050 bulk pounds of native grass and forb seed were harvested by the combine from Grove Lake, Hillman, and Taylor WPAs. Additionally, approximately 200 bulk pounds of blazingstars, golden alexanders, cinquefoil, coneflowers, leadplant, bergamot, sunflowers, prairie clovers, goldenrod, blue asters, little bluestem, dropseed, onion, phlox, showy tick trefoil, and veiny pea were harvested by hand and with the ATV seed stripper.

The tract of Hillman WPA north of Highway 12, which was burned in the spring, had an abundance of Maximilian's sunflower (*Helianthus maximiliani*).
2010-17 JBB 10/7/2010

As in years past, most of the hand harvested forbs this year came from the annual volunteer seed collection day. Sixteen volunteers and two staff members turned out on Saturday, October 2 and collected approximately 56 bulk pounds from Kolstad Lake WPA. Total estimated value of the seed and labor was $7,960. Other hand collections were conducted in July, August, and September by seasonal staff, WRS Bright, and/or Biological Technician Oglesby. Species collected were prairie phlox, bush vetchling, prairie onion, showy tick trefoil, and blazingstar. The following units were hand-collected from: Hamann, Maki, Bengtson, Gilbertson, Loen, Fitzgerald, and Ben Wade.

Extra efforts were made this year to collect prairie phlox (*Phlox pilosa*) seed. Current retail price for prairie phlox seed is over $1,500 a pound, making it less than practical for inclusion in prairie reconstruction seed mixes of the scale we typically do. We have several prairie remnants on the district where this species is somewhat abundant. Mid-July to early August is the timeframe that this plant produces seed. This is a time of the field season that we are typically busy with other management activities, but it is also a time when we have the most manpower for a hands-on harvest method.

A typical prairie phlox (*Phlox pilosa*) seed head with pods in various stages of maturity. 2010-18 JBB 7/22/2010

One reason the seed is so expensive is the nature of the seed ripening and dispersal process. Like many native plants the seed on individual plants and among plants, ripens at different rates. On the same plant there may be seed that has already been expelled while some are still flowering. As well, one plant may have expelled all of its seed, while another neighboring plant is still flowering. Hand clipping seed heads results in about thirty percent of the seed being captured at the optimum time for viability. Also, hand clipping requires repeated visits to a site to clip seed heads at the optimum time. The impracticality of repeated visits to the widely dispersed prairie remnants on our district with harvestable quantities of phlox requires a different approach.

We initiated a harvest process wherein a bag could be attached that would capture all of the seed as it is expelled over a three week period. Two hundred inexpensive cotton bags with drawstrings were purchased, as well as 150 sandwich baggies and twist ties. At Hamann WPA, in a matter of a couple hours on July 22, three staff affixed all of the bags to phlox plants that were close to ripening. Plants were determined to be close to ripening when a majority of the seed pods were a golden color and beginning to open up. In an attempt to alleviate moisture build-up on the inside of the plastic bags they were perforated with stick pins. This proved insufficient however (see photo on page 34), and many of the seed heads had mildew. The cloth bags also did not breathe well enough to eliminate mildew issues. Thus, it was determined that for this to be a viable method, the bag material needs to breathe and not soak up moisture. Nylon hosiery or a mesh material such as cheesecloth or bug netting is thought to best fit the bill. Indeed it

was later discovered that a guide from the Tallgrass Prairie Center suggests nylon hosiery can be used for species with explosive seed pods.

Another site was identified near Maki WPA with an unusually dense concentration of phlox. The site was on the upslope margin of the ditch just east of the parking lot approach, next to a cornfield. It appeared that the application of glyphosate to the corn had killed off some of the brome directly adjacent to the cropfield, creating an opportunity for phlox to fill in the vacancy. The opportunity to harvest such easy "pickings" was much anticipated. The plants never reached maturity however as the county highway department needlessly mowed the entire ditch. This was a very disappointing situation.

Although easy to cinch up on the plant with the drawstring, the cloth bags were quite heavy, blocked sunlight, and soaked up moisture.
2010-19 JBB 7/22/2010

The sandwich baggies trapped moisture and caused mildew even more so than the cloth. 2010-20 JBB 7/28/2010

A concentration of 350 prairie phlox plants adorned with baggies made for a comical sight. 2010-21 JBB 7/22/2010

Table 9 – Native Grass Seed Harvested – Morris WMD
Calendar Year 2010

Unit Name and ID	Harvest Method	Species	Pounds of Yield	Acres	Date(s)
Taylor (L-3)	Combine	Local ecotype: stiff goldenrod *M. fistulosa* Lot# L3LE10	2277 bulk 396 PLS	30.11	9/27, 9/28
Hillman (South) (B-14)	Combine	Native prairie: stiff goldenrod, asters, Lot# B14NP10	1,773 bulk 137.5 PLS	18.89	9/30, 10/1, 10/4,
Hillman (North) (B-14)	Combine	Native prairie, mostly *H. maximiliani* & *solidago spp*. Lot# B14MAX-NP10	~1,000 bulk 16.9% PLS	15.51	10/7, 10/8
Grove Lake (P-46)	Combine	Local ecotype mostly *M. fistulosa* & little bluestem Lot# P46LE10	~1,000 bulk 20.8% PLS	17.89	10/15, 10/18, 10/19
Hillman (North) (B-14)	Seed Stripper	Native prairie, mostly Little Bluestem Lot# SS-NP10	~100 bulk	8.32	9/30, 10/1
Twin Lakes (B-57)	Seed Stripper	Dry native prairie: Plains Muhly, Pr. Dropseed Lot# SS-NP10	~15 bulk	3.33	10/8, 10/15
Henry (B-6)	Seed Stripper	Dry native prairie: *L. aspera*, leadplant, onion, untested	~8 bulk	2.69	10/19
Kolstad Lake (P-8)	Hand	*Coreopsis, L. punctata,* Leadplant Lot# SS-NP10	56 bulk	1.7	10/2/2010
Hamann (SW-3)	Hand	*Phlox pilosa*	~0.1 bulk	1.39	7/22, 8/2, 8/4, 8/9
Bengtson (SW-13)	Hand	Wild onion	~0.5 bulk	2.80	8/31
Rolling Forks (P-10)	Hand	*L. aspera, L. punctata, Coreopsis palmata*	<0.2 bulk	0.67	10/1
McIver (P-2)	Hand	*L. pycnostachya,* snakeroot	~0.1 bulk	0.84	9/29
Hanson (P-51)	Hand	*Coreopsis, L. aspera*	~0.2 bulk	0.08	10/6
Ben Wade (P-29)	Hand	*L. ligulistylis*	~1Bulk	0.68	10/1, 10/14
Gilbertson (SW-23)	Hand	Veiny pea (*Lathyrus venosus*), onion	<0.5 bulk ~0.1 bulk	1.51	7/22 9/1
Fitzgerald (SV-37)	Hand	Showy tick trefoil	3 bulk	8.42	8/26
Loen (SW-18)	Hand	*L. aspera, Z. aptera,*	<1 Bulk	3.14	9/20

HABITAT MANAGEMENT

3a. Water Level Management

Morris WMD has 30 wetlands with water control structures on 18 WPAs. We use water level gauge readings, on-site habitat observations, and aerial photography to assess the effects of management. Most structures are visited monthly from April to October each field season for gauge readings and general maintenance. The annual water plan has details about management results and future plans for each basin.

Some highlights of the water management program for FY 2010:

- Artichoke WPA was drawn down through spring 2010 to allow sediment cleanout and gauge installation. In March we experimented with using a Marsh Master to crush cattail around a portion of the wetland perimeter before the basin was reflooded. The wetland was reflooded in spring and although this treatment didn't kill cattail, we did make anecdotal observations of waterfowl using the flooded residual vegetation.
- The Pepperton WPA structure was replaced in fall 2009 but no boards were added this year because some regrading was still needed around the dike. This will happen in FY 2011, after which the basin will be reflooded.
- The Sherstad Slough structure remained empty of boards again this year, though it again did not see a complete drawdown at any point during the season.
- A new structure was installed at Long Lake-Edwards E. This structure had a history of problems, and the spillway had been replaced several times. The new structure is a better size and design for the size of this watershed. (Section 8b)

The Long Lake-Edwards-Structure E water control structure was replaced this year. 2010-22 JBB 10/12/2010

Range Technician Odegard using a Marsh Master to smash cattail on the wetland perimeter at Artichoke WPA. This basin was in drawdown and we were curious if this type of vegetation management would improve shallow, open water habitat after the wetland flooded. 2010-23 FED 3/25/2010

3b. Haying

Historically, haying has been used for upland habitat management and noxious weed control on a limited basis on the Morris WMD, averaging 630 acres over the last five years. In 2010, 14 WPAs and 3 easements were hayed for a total of 675.6 acres. Using cooperators to clip thistle problem areas and remove the litter as hay allows us to treat more acres than can be accomplished mowing with district staff. Haying alfalfa fields is delayed until after July 15 to allow for duck nests to hatch. However, the 20 acre field at Walden WPA is the last remaining alfalfa field on the district. On units where an abundance of thistle is triggering the management action, haying may take place earlier to eliminate a serious noxious weed problem.

As in the past few years, several units were hayed for tree control (Cyrus, Wente, and easement SW-157G/BS-301G). The cooperators are issued a permit with two fee options; a high fee, and a low fee if the trees are removed. The Wente site required the cooperator to cut trees too big for the hay equipment with chainsaws.

Permits were issued for three more units for tree control (Hillman, Artichoke Lake, and Hawk Creek), but for various reasons were not cut. The wet summer made for challenging haying conditions, as we rarely went a week without rain. The earthen dike at Hillman (south of the north parking lot) which is used to access that part of the unit, had erosion issues to the extent that the cooperator didn't feel he could cross it with his equipment. We repaired the dike rather quickly only to have heavy rains cause water to spill over both ends of the dike, thus the cooperator still could not access the area to be cut.

Within a week of being repaired, water from yet another heavy rainfall spilled around both ends of this dike at Hillman WPA. 2010-24 JBB 9/22/2010

This year two sites were again hayed to assist with forb interseedings. The Froland site was interseeded in the fall of 2007 and probably should have been cut in 2008 to encourage growth of interseeded forbs. However, with the weeds finally under control on this site we elected to leave it alone in 2008. In 2009 and again in 2010, the decision was made to remove the overstory in hopes of encouraging the interseeded forbs to grow. A few forbs, mostly prairie coneflower (*Ratibida columnifera*), were observed flowering at the east end of the field. The Robin Hood site was interseeded in the fall of 2009. It was hayed in late July to reduce shading by removing the overstory, which should encourage establishment of planted forbs.

Table 10 – Haying Summary – Morris WMD – FY 2010

Unit Name (ID)	Permit Period	Acres	Fee
Pearson (L-7)	8/06/10 – 9/01/10	28.0	$112.00
SW-175G/BS-301G	7/22/10 – 9/30/10	17.0	Waived (tree control)
Cyrus (P-56)	7/26/10 – 8/31/10	30.0	$ 60.00
Fish Lake (SV-38)	7/22/10 – 8/22/10	59.0	$177.00
Wente (SV-05)	7/22/10 – 8/22/10	94.0	$188.00
Hillman (BS-14)	7/15/10 – 8/02/10	25.0	$ 50.00
Robin Hood (T-10)	7/15/10 – 8/07/10	85.0	$255.00
Olson (BS-32)	7/15/10 – 7/31/10	87.3	$174.60
Walden (P-19)	7/15/10 – 7/31/10	20.0	$ 50.00
Froland P-22)	7/13/10 – 7/31/10	27.8	$ 69.50
Loose (SW-30)	7/12/10 – 7/31/10	32.0	$ 16.00
Kufrin (BS-12)	7/12/10 – 7/31/10	20.6	$ 10.30
Monson FmHA (SW-C021)	7/16/10 – 9/01/10	14.5	$101.50
Garfield (L-11)	7/15/10 – 8/16/10	16.8	$ 84.00
Plessner FmHA (L-C011)	8/17/10 – 9/30/10	26.2	$ 10.00
Artichoke Lake (SW-21)	4/01/09 – 12/31/11	56.7	Biomass Research
Odden (BS-51)	4/01/09 – 12/31/11	35.7	Biomass Research
Total		**675.6**	

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

A small glimmer of hope that the forb interseeding will be successful was found at the east end of the field on Froland WPA. 2010-25 JBB 6/30/2010

3c. Grazing

We also use controlled grazing as a grassland management tool. The overall objective of using grazing is to improve the nesting habitat for migratory birds. Specific objectives of grazing depend on the site, but may include: reducing litter layer buildup, relieving competition from invading cool-season grasses, promoting tillering, 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.

Grazing traditionally has not begun until mid-April for two reasons. First, most cooperators are not finished calving until early May. Second, the combination of spring rains and high stocking rates can cause degradation of the sod. For those units with planned grazing in early spring, only three were initiated prior to May.

Recently, we have had more grazers interested in late summer and fall grazing and in 2010 we implemented it on 11 units and one easement. Objectives of grazing at this time can be reducing the litter layer, increasing plant density thru tillering, 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 come off in time for the grass to recover before freeze-up, thus allowing some residual cover for the following spring.

Traditionally, a lack of border fence, declining cattle operations, and uninterested neighbors, have limited our ability to utilize grazing. Lately, some grazers seem eager to utilize our grasslands for short term grazing and are more willing to do additional fencing now than in the past. This year 1,224 acres spread over 18 WPAs and one easement were treated with grazing. Special Use Permits for Struck (SV-25), Glenwood (P-58), and Hawk Creek (C-2) were issued for grazing, but the grazing did not occur. The cooperators failed to complete the necessary permanent high tensile fencing.

New permanent fence was built by cooperators at Bredberg (P-11), Freeland (L-18), Hastad (L-10), Henry (B-06), and Horton (SV-26). The fence at Welker WPA (SW-05) was repaired and the last remaining new section was completed by seasonal staff. This WPA borders a farm with bison, but the farmer was not willing to do any fence work. An agreement with another area cooperator was issued several years ago, but he failed to complete the fence work due to wet conditions. According to our records, the native prairie on this unit has not had any disturbance, so it will be exciting to see the natives respond to grazing. The wet-mesic prairie won't allow our traditional early spring grazing which targets cool-season exotic grasses, so a later time frame will be used. Since the fence work was done by staff, the opportunity to graze this unit will likely be put out for bid. It will be interesting to see what cattlemen will be willing to pay, as they will likely need to haul their cattle to this isolated unit for 30 days of grazing.

In early June of 2010, we received special project funding in the amount of $23,000 for a boundary fence on Rothi WPA. The project entailed the construction of approximately 19,520 feet of new fence and approximately 9,945 feet of fence repair. The lack of fence on this unit has prohibited the use of grazing and/or patch-burn grazing to control exotic invasives in both the remnant prairie and seeded native production sites.

We budgeted $15,000 for construction ($0.50 per foot), or roughly $0.64 per foot for new and $0.25 for repair, which was right in line with custom fencing work that had been completed in the area in the recent past. Much effort was also made to contact area contractors to get a rough estimate of expected bids. This effort reassured us our budget was in the ballpark. In order to ensure short cuts were not taken on materials, we purchased the materials (including a cattle guard) for this project at a cost of about $8,000.

In late June we submitted a Purchase Request and Statement of Work to contracting for the construction of the fence. Unfortunately, the project got tied up in Engineering, and after a 2 month delay, the project could not be bid out due to contracting deadlines. The project was then awarded to a MATOC contractor which requested $45,000. As this amount was $22,000 over budget, we requested that the bid not be awarded.

We now have two options: pursue a LSOHC-CPL grant for custom fencing or try to use a combination of building the new fence with staff (primarily YCC) and using cooperators to repair/rebuild the existing fence as needed.

This year, depending on when the permit was written, the grazing fees were calculated using a base rate of $15.11 or $18.26 per Animal Unit Month (AUM) with deductions for fence installation, fence repair, water hauling, etc. Because there is no report for Minnesota, the base rate was an average of USDA reported rates for South Dakota and North Dakota. Fees ranged from a low of a credit of $2,870.41 for Bredberg WPA to a high of $921.48 for Bolson Slough WPA. Credits can only be carried over to the following years of a multi-year special use permit. If at the end of the permit deductions exceed the fee, the credit is deleted from the books (i.e. Persen, McIver (SE), Pepperton, and Welsh WPAs).

Table 11 – Grazing Summary – Morris WMD – Calendar Year 2010

WPA Name & ID	Acres	AUM's	Total Fee	Grazing Period
Easement (BS-271G)	82	130.6	$711.06	5/1–6/30 & 9/1–10/1
Henry (BS-06)	36	33.4	$492.84 credit	5/8 – 6/11
Persen (BS-38)	35	37.6	No fee*	7/25 – 8/19
Bolson Slough Cell B (L-6)	36	58.8		4/15–5/8 & 5/20–5/27
Bolson Slough Cell C (L-6)	76	40.0	$921.48	5/9–5/19 & 5/28–6/5
Freeland (L-18)	68	48.3	$2,494.95	9/1 – 9/17
Hastad (L-10)	180	177.3	$1,491.62 credit	5/2 – 8/4
Hegland (L-13) – Goats	45	80.7	No fee - experimental	6/7 – 10/10
Bredberg (P-11)	105	122.1	$2,870.41 credit	5/15 – 7/31
Gjerdingen (P-5)	33	65.1	$253.77	7/21 – 8/21
Heidebrink (P-17)	33	54.7	$638.64	7/17 – 8/23
McIver SE (P-2)	30	23.7	No fee*	5/5 – 5/22
McIver NE (P-2)	42	54.1	$142.98 credit	5/22 – 7/1
Golden (SV-11)	59	67.2	$3.97 credit	5/31 – 7/18
Horton (SV-26)	72	102.4	$523.09 credit	7/12 – 9/3
Mau (SV-14)	111	119.7	$340.65	5/8 – 6/12
Pepperton (SV-45)	40	50.4	No fee*	7/19 – 8/30
Welfare (SV-54)	49	101.6	$1,482.32 credit	4/15–6/1 & 7/15–8/15
Gilbertson (SW-23)	34	44.1	$248.04	4/18 – 5/30
Welsh (SW-4)	103	36.3	No fee	5/7 – 6/7
Totals	**1,224**	**1,377.9**		

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

After an exhaustive search for a willing goat herder, a gentleman from Gary, South Dakota, agreed to pasture his goats on Hegland WPA. This experimental grazing is targeting buckthorn and other tree saplings/re-sprouts where the grove used to be in the southwest corner of the unit. The district supplied all of the materials (electric mesh fence, charger, battery, and solar panels) and most of the labor for

setting up and moving the portable fencing. The cooperator agreed to supply water if necessary, tend the goats, and assist with moving the portable mesh fence.

Three paddocks of about 12 to 15 acres were each grazed at different times throughout the growing season. The plan was to graze for two months per paddock from May 1 to November 1, but we had a late start and difficulty getting the stocking rate fine tuned to the paddock size. The herd started out with 57 goats and no kids, but that proved insufficient given our late start, so 37 nannies with kids were added after 35 days of grazing the north paddock. On August 9, the paddock was moved to the southeast part of the grove removal area, and remained there until September 11, when it was moved for the final time to the southwest. It remained up until October 10.

The herd of 94 adults and 37 kids thoroughly cleaned up each paddock, as high as they could reach. However, trees in the north paddock that were completely defoliated on August 9 leafed out as if nothing had happened. This is thought to be at least a three year effort with the expectation that it will take successive years of browsing to kill off the trees. Although it is tempting to go in with hand crews to saw and spray the trees, we would like to see what the goats can do on their own.

In conclusion, it appears as though a paddock of about 15 acres can handle a stocking rate of 94 adults and 37 kids for a month. In 2011, if we stick to the plan of one time through for each paddock at two months each, or roughly 24 AUM's, then 12 animal units would be needed. The animal unit factor for an adult goat is 0.2, and a nanny with kid 0.3, so 60 adults or 40 nannies with kids equals 12 animal units.

Table 12 – Goat Grazing Summary – Morris WMD – Calendar Year 2010

Paddock	Grazing Period	Number of Goats	AUM's
North	June 7 – July 12 (37 days)	57 adults	14.0
North	July 13 – August 9 (27 days)	57 + 37 nannies with kids	20.2
Southeast	August 9 – Sept. 11 (34 days)	57 + 37 nannies with kids	25.5
Southwest	Sept. 11 – Oct. 10 (28 days)	57 + 37 nannies with kids	21.0
Total			**80.7**

The affects of 59 consecutive days of browsing on the trees in the north paddock are easily apparent in this photo. 2010-26 JBB 8/4/2010

The north paddock 54 days later. Although they look fine, it is our hope the trees were stressed by the herbivory of the goats. 2010-27 JBB 9/28/2010

3d. Farming

Each year previously broken areas such as poor quality grasslands, old stands of alfalfa, or food plots that are no longer in use are identified to be planted back to natives. These areas are set up to be farmed for one to three years with area cooperators and then seeded with a local ecotype, or cultivar native seed mix. In 2010, 40 acres were farmed for seed bed preparations on Westport WPA (P-61).

There were 305.9 acres of cropland managed as food plots for resident wildlife. The food plots were located on waterfowl production areas identified by the Minnesota DNR as significant wintering areas for ring-necked pheasants and white-tailed deer. The majority of food plots were located near shelterbelts and/or cattail sloughs which provide escape and winter cover. Plots were located on soils not classified as highly erodible land, so as to have minimal soil loss potential. Corn, soybeans, and small grains are used in these plots. Soybeans or small grains are used in the rotation to promote nutrient cycling and reduce insect or disease cycles associated with repeated corn growth. The cooperator is responsible for all field work, seed, fertilizer, and weed control. One third of the plot is left standing in the field in alternate strips. The alternate strips help disperse snow and reduce the chances of the entire plot being buried in snow. The cooperator is allowed to harvest any leftover crops the following spring.

Due to a revision in Service policy, permanent food plots will be phased out beginning in 2011. In the future, food plots (Cooperative Farming Agreements) or farming (Special Use Permits) will only be used for converting undesirable nesting cover to desirable native species and will remain in place for no more than three years.

Table 13 – Food Plot Summary – Morris WMD – FY 2010

County	No. of WPAs With Food Plots	No. of Food Plots	Total Acres
Big Stone	7	7	74.9
Lac qui Parle	1	1	10.0
Pope	2	2	26.0
Stevens	9	9	79.0
Swift	3	3	56.0
Traverse	3	4	38.0
Yellow Medicine	2	2	22.0
Total	**27**	**28**	**305.9**

3f. Fire Management

Derrick Odegard, Dan Angelo, and Terry Storey using drip torches on Edwards WPA. 2010-28 PJM 10/18/2010

This year's fire season had moderate wildfire activity on the district and a state wide shut down of prescribed fire due to ongoing drought conditions throughout the state. Prescribed Fire operations picked up again on May 15th after a 12 day shutdown and quickly tried to make up for lost time. The season was as safe and efficient as it could be, with no injuries, escapes, or major damage to equipment. District staff performed at an extremely high level throughout the burn season.

Prescribed Fire

The Morris staff burned 4,254 acres on federally owned lands and 65 acres on private-owned easements. Most of the burns were in the spring, but summer and fall burns added to the totals.

Help for prescribed burning at Morris came from the district staff, adjacent districts and several crews from other states. Local help came from Big Stone NWR. Additional help came from the Buffalo River Fire Use Module (NPS), Neil Smith NWR, Iowa WMD and Balconies NWR. Our appreciation is extended to those who helped.

Table 14 – Prescribed Burn Summary – Morris WMD – FY 2010

County/ Burn Name	Unit Type	Burn Date	Acres Burned
Big Stone			
Humpty Dumpty	WPA	4/08/10	80
Daly	WPA	4/08/10	35
Wagner	WPA	4/09/10	157
Hillman-N	WPA	4/14/10	70
Dybdahl	WPA	4/15/10	144
Redhead	WPA	5/15/10	154
Twin Lakes	WPA	5/15/10	107
Lac qui Parle			
Goodman-SE	WPA	5/03/10	4
Farrel	WPA	5/16/10	298
Goodman	WPA	6/16/10	140
Florida Creek	WPA	5/20/10	182
Larson	WPA	5/20/10	166
Pope			
Rolling Forks	WPA	4/05/10	122
Kolstad Lake	WPA	4/27/10	395
Walden	WPA	4/27/10	777
Nelson Lake-E	WPA	5/18/10	313
Ben Wade	WPA	5/19/10	283
Blue Mounds-E	WPA	5/25/10	115
Froland-Pile	WPA	6/29/10	1
Stevens			
Edwards-N	WPA	11/09/09	14
Hutchingson	WPA	4/26/10	67
Edwards-Islands	WPA	5/17/10	1
Bahr	WPA	5/21/10	77
Miller-N	WPA	5/21/10	128
Fitzgerald	WPA	5/27/10	139
Swift			
155G-1	Habitat Easement	4/05/10	65
Svor-West	WPA	5/03/10	248
Roderick	WPA	9/14/10	39
Traverse			0
Yellow Medicine			0
Total: 28 Treatments			**4,321**

Prescribed fire on Wagner WPA. 2010-29 SWG 4/9/2010

Wildfire

Wildfire activity was moderate on the district for the fiscal year, with three wildfires for 323 acres, one threat fire (McIver) and three state assists wildfires. Fire conditions throughout the state in Minnesota worsened through mid-May, until enough precipitation was received to aid in spring green up. Morris WMD sent one engine with three crew members to help the Chippewa National Forest on the Cut Bank Fire and a second engine with two crew members were sent to perform initial attack on the Superior National Forest. Minnesota had a very minimal wildfire season.

Nationally, it was a very quiet fire season. Members of the Morris staff assisted with interagency fire assignments in two different states. The fire crew participated in suppression activities in California, and Minnesota.

Table 15 – Wildfire Burn Summary – Morris WMD – FY 2010

County	WPA Name	Date Burned	Acres Burned
Pope	Blue Mounds	3/23/2010	321
Stevens	Horton	5/04/2010	1
Big Stone	Rothi	5/01/2010	1

Training and Development

District employees assisted with interagency fire training as well as training volunteer fire departments in basic wildland firefighting. Staff members helped instruct S200 (Incident Commander Type 4), S234 (Ignitions Operations), RX301

(Burn Plan Implementation) and S215 (Fire Operations in the Wildland Urban Interface) courses.

Members of the fire crew also attended various fire trainings, including S-234 (Ignitions Operations), S-271 (Helicopter Crewmember), RX-310 (Introduction to Fire Effects), RX-341 (Prescribed Fire Plan Preparation), and the Leadership Challenge. Seth Grimm detailed to the National Fire Center in Boise, ID to fill in as a Fire Management Specialist for Fish and Wildlife's Fire Management Branch.

Equipment
The District added a new Marsh Master with help from the Regional Fire Program, as well as Sherburne NWR and the Zone office. The Marsh Master arrival is scheduled for the end of February 2011.

Rural Fire Assistance Grants
No departments within the District received grant money in FY 2010.

Regional Fire Program Review
The district had a Regional Fire Program Review on June 7-8, 2010. The review is intended to ensure that there is continuity within the fire program, compliance with Service and Departmental policy and uniformity and compliance in the use of program funds. Program areas that are reviewed include program administration, preparedness, emergency fire operations, and resource fire management. This was accomplished through inspections and interviews with key refuge staff associated with the functional areas identified within the agenda below. The Morris Wetland Management District came away from the review receiving very high marks in all areas.

3g. Pest Plant Control

In response to increasing threats from a growing number of plant species, two seasonal biological technicians were hired for the second consecutive season to map and treat infestations on the district. Invasive species that the Invasive Species Crew (ISC) focused on were: yellow toadflax, wild parsnip, common tansy, spotted knapweed and Queen Anne's lace. They also focused on local ecotype seed production sites like Taylor, Grove Lake, and Rothi, spot treating Canada thistle, plumeless thistle, wild parsnip, and Queen Anne's lace. Many of the wild parsnip sites in Pope County that were only mapped in 2009 were treated by the crew in 2010. Much progress was again made in mapping, treating, and documenting suspected, known, and previously unknown infestations.

With our current limited resources, infestations of wild parsnip like this one in remnant prairie at Westhausen WPA (SW-11) are likely beyond the Early Detection Rapid Response (EDRR) phase and thus will require more creative control methods than our usual shoveling of taproots and backpack spraying rosettes. 2010-30 JBB 7/1/2010

Table 16 – Noxious Weed Control – Morris WMD – FY 2010

	Acres Treated			
County	**Mow**	**Spray**	**Contracted**	**Total**
Big Stone	133.5	31.5	0.0	165.0
Chippewa	0.0	0.0	0.0	0.0
Lac qui Parle	0.0	49.7	0.0	49.7
Pope	25.4	139.2	*138.0	302.6
Stevens	68.0	125.3	0.0	193.3
Swift	39.8	78.2	0.0	118.0
Traverse	77.0	11.1	0.0	88.1
Yellow Med.	0.0	0.0	0.0	0.0
Total 2010	**343.7**	**435.0**	**138.0**	**916.7**
Total 2009	**764.0**	**514.2**	**32.0**	**1,310.2**
Total 2008	**723.0**	**327.0**	**0.0**	**1050.0**
Total 2007	**395.5**	**230.0**	**90.0**	**715.5**
Total 2006	**883.3**	**867.9**	**104.2**	**1,855.4**

*Contracted through Pheasants Forever.

Woody Vegetation Control

Beside 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.

As in previous years, tree removal work was done through a combination of our staff time and equipment, and contractors. This year though, manpower shortages significantly reduced our control efforts from the levels of previous years.

Table 17 – Woody Vegetation Control – Morris WMD – FY 2010

County	Unit	Method
Big Stone	Kufrin	Stump grind
	Hillman	Fecon re-sprouts
Pope	Benson Lake	Fecon sumac
	State Lake	Hand
Stevens	Edwards	Hand
	Fish Lake	Hand
	Pomme de Terre Lake	Fecon
	Pieske	Hand
Swift	Roderick	Fecon
	Welsh	Hand & Fecon
Traverse	Geyer	Contractor

Wet conditions all summer long delayed completion of the tree removal work at Geyer WPA. The contractor (Plotz Timber Harvest LLC) was hired by Pheasants Forever with Lessard-Sams Outdoor Heritage Council grant funds as part of a prairie reconstruction project. 2010-31 JBB 4/28/2010

Canada Thistle (*Cirsium arvense*)

Efforts to control Canada thistle in 2010 were down from historical averages. With new information and new herbicides, our old strategy of mowing problem areas in the summer and spraying those areas with herbicide in the fall has largely been replaced with spraying in the bud stage. The mowings that did occur were in newer local ecotype seedings at Loen, Lawrence, Karsky, and Kufrin where some thistles were present, but we were mostly mowing as part of our normal protocol in newer seedings to reduce annual weed competition. The site at Artichoke Lake is an old grove site that is in the process of being cleaned up and seeded to natives. The spraying efforts at Taylor and Grove Lake were spot spraying for planned seed harvests. The station received one complaint in 2010 (Moulton Lake). It was too late to act on, so it was added to the spray list for the coming year. This is down from two reports in 2009, and nine reports in 2008. Overall, weed complaints are far below historical levels. Possible reasons for this are improved herbicides, pro-active management on our part, a changing philosophy by farmers in the Round-up Ready era of farming, and a proliferation of CRP fields with weed issues.

Table 18 – Sites Treated for Canada Thistle – Morris WMD – FY 2010

WPA	Date	Acres Sprayed	Acres Mowed
Artichoke Lake (SW-21)	7/01/2010		3.7
Artichoke Lake (SW-21)	10/1/2010	3.5	
Centennial (B-33)	7/06/2010		26.4
Colbert (L-4)	6/15/2010	19.2	
Grove Lake (P-46)	6/01/2010	126.7	
Hillman (B-14)	7/09/2010		13.6
Karsky (B-1)	6/23/2010		13.0
Kufrin (B-12)	6/23/2010		80.5
Kufrin (B-12)	10/1/2010	5.4	
Kufrin (B-12)	6/29/2010	3.7	
Kufrin (B-12)	6/23/2010	5.5	
Lawrence (T-2)	7/01/2010		76.9
Loen (SW-18)	6/24/2010		9.3
Loen (SW-18)	7/13/2010		7.0
Loen (SW-18)	7/28/2010		16.4
Pedersen (T-11)	6/29/2010	11.0	
Seidl (B-31)	6/29/2010	16.7	
Taylor (L-8)	6/22/2010	30.4	
Totals		**222.1**	**246.8**

Spotted Knapweed *(Centaurea maculosa)*
Fortunately, the sites with spotted knapweed are down to just a very few plants. Because of the tillage at Pomme de Terre Lake just a few plants were found and pulled on the east side along the road to the boat launch. A couple more plants were found on the approach to Nordby as well as along the south property line at Westport. These were sprayed with Milestone. Plants were pulled again at Cyrus. This site has improved, but still has the most plants of any site. Fortunately, the infestation is still confined to the ditch with the majority found within about a tenth of an acre. Like Pomme de Terre Lake, at least for this year the tillage at Pieske took care of any previous infestations. A new discovery at Rothi was made by graduate student Sarah Thompson. She found it post-flowering in three locations along the trail from the central parking lot. Since it was too late in phenology to treat, the spots were mapped for future control efforts.

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

Table 19 – Wild Parsnip Control – Morris WMD – FY 2010

WPA	Date	Phenology	Method	*Acres
Rolling Forks (P-10)	5/18/2010	Rosette	Chemical	0.53
Gullickson-south (P-49)	6/01/2010	Rosette	Chemical	0.23
Stammer (P-41)	6/01/2010	Flowering	Chemical	0.38
Jorgenson (P-34)			Chemical	
Rothi (B-2)	6/08/2010	Rosette	Chemical	3.25
Rothi (B-2)	6/08/2010	Flowering	Mechanical	3.25
Rothi (B-2)	6/21/2010	Flowering	Mechanical	3.25
Rothi (B-2)	6/21/2010	Rosette	Chemical	3.25
Rothi (B-2)	7/08/2010	Both	Both	2.1
Rothi (B-2)	7/14/2010	Both	Both	2.1
Rothi (B-2)	7/21/2010	Both	Both	2.1
Rothi (B-2)	8/02/2010	Both	Both	2.0
Rolling Forks (P-10)	7/16/2010	Rosette	Chemical	0.06
Ben Wade (P-29)	7/15/2010	Flowering	Mechanical	4.94
Ben Wade (P-29)	8/06/2010	Pre-Flowering	Chemical	0.90
Ben Wade (P-29)	8/06/2010	Rosette	Chemical	2.66
Bredberg (P-11)	8/10/2010	Pre-Flowering	Chemical	2.01
Total Acres Treated				**11.71**

*Several different treatments were made on the same patches of wild parsnip.

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. In 2009 and again in 2010, control efforts were focused in and around the local ecotype seed production fields at Rothi. The ISC started out spot spraying individual rosettes and returning every seven days or so to treat new rosettes. Once the YCC crew was on board, they were used to shovel plants that had bolted while the ISC continued searching for and spraying rosettes. This strategy resulted in excellent control.

Because of staff limitations the larger infestations on the rest of Rothi were not treated. We hope to be able to use multi-species grazing as a control method in the very near future on Rothi, Westhausen, and Ann Lake WPAs. We are currently experimenting with cattle grazing as a control method on Bredberg WPA.

Cattle grazing on Bredberg WPA is being used to see if they can control wild parsnip. We are not sure if they eat it, but there is evidence that they may trample flowering plants and thus limit seed production. In the future, placement of mineral blocks in wild parsnip patches may succeed in trampling a greater percentage of plants. Cattle grazing definitely improves detection of rosettes and may facilitate spot spraying efforts as well.

2010-32 JBB 6/30/2010

Common Tansy (*Tanacetum vulgare*)
The first ever and only (known) infestation of common tansy on a WPA was discovered in 2008 on Anderson WPA (B-52) in Big Stone County. The discovery was too late in 2008 (i.e. in full bloom) to treat with herbicide or to mow, however a neighbor did spray a few of the plants in the ditch and near the field approach in the southeast corner. The herbicide used by the neighbor appeared to be glyphosate as it killed grass as well. The infestation was mapped with a GPS unit and was treated in July 2009 with 2,4-D and metsulfuron methyl. The ISC returned to the site in 2010 and only found one plant to treat.

Crown Vetch (*Coronilla varia*)
This is a weed that because of its slow rate of spread is less of a priority, but still gets some attention if we have time. There are probably more occurrences than we have documented, but currently we have mapped or treated it in the past on four of the five known WPAs with infestations. For the fourth consecutive year many of the infestation patches of crown vetch on Edwards WPA were treated with herbicide. They were spot sprayed with the ATV to minimize non-target impacts. Infestations at Centennial, Long Lake, Florida Creek, and Pearson WPAs were not treated due to time and staff constraints.

Queen Anne's Lace *(Daucus carota)*
Another new weed to appear on the district in the last three 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. Cutting or pulling second year plants to prevent seed production or 2,4-D application to rosettes are the main courses of action for control. Like wild parsnip though, we may try cattle grazing.

Up until this year, the only known population on federal land was an approximately 11 acre infestation in the southeast section of Hillman WPA. In 2010 several small patches showed up in the local ecotype seed production field on Rothi, east of the minimum maintenance road, and a few plants were found on Brady WPA in the driveway to the old farmsite. The Rothi and Brady infestations were treated by handpulling and spraying respectively. The Hillman infestation was mowed in 2009 to try and prevent seedset, but we learned it needed multiple mowings to hit re-growth and rosettes that were too short to get clipped during the initial mowing. In 2010, we were unable to treat. We are hoping to use cattle grazing in 2011 and beyond as our primary control method on this site. The literature indicates the seed is only viable for two years, so hopefully we can be successful with herbivory.

These new biennial weeds can be daunting to eradicate or control, especially when they aren't really on the 'radar' of weeds to control on neighboring lands. The formation of a Big Stone County Cooperative Weed Management Area is an

encouragement, as this will provide the means to begin to deal with these weeds on private land.

Yellow Toadflax *(Linaria vulgaris)*
Last year yellow toadflax, also known as 'butter and eggs,' and bird's-foot trefoil burst onto the scene in the form of large infestations on a couple of WPAs.

Of greatest concern is the yellow toadflax infestation in the local ecotype restoration at Grove Lake WPA. The presence of this species threatens to undermine seed harvest goals for this site. In late August the ISC backpack and ATV sprayed toadflax with a mix of 2,4-D and metsulfuron methyl throughout much of the west central part of the field.

Bird's-foot trefoil *(Lotus corniculatus)*
Bird's-foot trefoil, which is still commercially available, has been around for several years as it was a component of roadside plantings to control erosion. It wasn't too concerning as an invasive as it didn't seem to spread rapidly and invade grasslands. However on some sites, such as Bahr WPA, it has formed huge patches that displaced grass cover, thus it now represents a threat to waterfowl production goals. We are hoping to get Bahr WPA fenced in the near future so that cattle can be used to control this weed.

Plumeless Thistle *(Carduus acanthoides)*
This biennial thistle showed up within the district several years ago. It got a foothold on private lands, especially overgrazed pastures, but also brome CRP with coarse soils. Within a three or four year period it has expanded and in some cases has taken over fields and pastures. A minimum of 15 WPAs have been identified with infestations of biennial thistle, and include: Anderson (B-52), Benson Lake (P-50), Diekmann (T-12), Fahl (SW-19), Froland (P-22), Glacial Lake (P-43), Grove Lake (P-46), Hawk Creek (C-2), Kufrin (B-12), Nelson Lake (P-38), Rolling Forks (P-10), Scofield (P-62), Stammer (P-41), Thorstad (SV-8), and Westport (P-61). The ISC and others spent considerable time (about two solid weeks) at Grove Lake in the local ecotype seeding spot spraying both plumeless thistle and Canada thistle. Rolling Forks was mowed twice to prevent seed set with intentions of late fall spraying rosettes, but time and staff limitations prevented this from occurring. The portion of the Rolling Forks site that was boom sprayed in early spring 2009, had a good kill on plumeless rosettes, but suffered collateral damage to planted forbs.

Table 20 – Sites Treated for Plumeless Thistle – Morris WMD – FY 2010

WPA	Date	Acres Mowed	Acres Sprayed
Fahl (SW-19)	5/18/2010		3.6
Grove Lake (P-46)	6/01/2010		126.7
Stammer (P-41)	6/01/2010		0.3
Rolling Forks (P-10)	7/15/2010	10.1	
Froland (P-22)	8/06/2010		5.5
Froland (P-22)	8/09/2010		2.3
Rolling Forks (P-10)	8/19/2010	10.4	
Thorstad (SV-08)	10/1/2010	31.3	
Totals		**51.8**	**138.4**

Leafy Spurge (*Euphorbia esula*)

A major biological control for leafy spurge was initiated in the late 1990s at Morris WMD. The four root-feeding flea beetle insects released to control spurge (*Aphthona flava, A. lacterosa, A. nigricutis,* and *A. czwalinae*) have become established and have reproduced. The very effective flea beetle larvae feed on the root system. Populations increase rapidly after introduction and the insects are easily captured for transplanting to additional locations.

In 2010, 14,100 flea beetles from 5 WPAs (Moulton Lake, Bailey Slough, Pearson, Loen, and Lynch Lake) were harvested for establishment of new colonies. The beetles were released on 3 sites on 3 WPAs (2 new locations and 1 existing). To date flea beetles are on 213 release sites at 59 WPAs. On these 59 WPAs, 415.7 acres are infested with leafy spurge. Beetles were applied to 0.06 acres in 2010.

Table 21 – Beetles Harvested from WPAs – Morris WMD – FY 2010

County	No. WPAs	Beetles Collected
Big Stone	1	7,000
Lac qui Parle	2	3,100
Swift	2	4,000

Table 22 – Beetles Released on WPAs – Morris WMD – FY 2010

County	WPA	No. Sites	No. Released
Big Stone	Karsky	1	10,000
Pope	Nelson Lake	1	4,000
Swift	Westhausen	1	100

Purple Loosestrife (*Lythrum salicaria*)
All known sites with purple loosestrife were checked. *Gallerculla spp*. are successfully keeping loosestrife in check. Purple loosestrife sites at Blue Mounds WPA that had been chemically treated with Garlon 3a in 2009 were visited in June 2010; all plants were dead.

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

The Pope-Swift CWMA continued 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 2010, intern Zach Gutknecht, spent much of his time mapping locations of invasive weeds in Swift County. The results of his survey efforts and the extent of infestations opened some eyes in the Swift County SWCD office, as to just how wide spread the problems are. As in previous years, Zach collected and transplanted leafy spurge beetles. Zach also coordinated a weed awareness workshop held in Danvers on June 29. There were presentations on common toadflax, plumeless thistle, wild parsnip, and WRS Bright gave a presentation on woody vegetation. Unfortunately the event was sparsely attended so the steering committee is considering different seasonal timing of the workshop to increase attendance. This year much difficulty was had in getting the "Weed of the Week" articles published in the local papers, especially the Pope County Tribune. Lack of space was the reason given. The website (www.weedwatchers.org) continues to be a year round source of information for folks interested in invasive weeds. It needs to be updated with 2010 information, especially the weed distribution maps for Pope and now Swift County.

Another effort to expand the CWMA into Douglas and Stevens Counties and receive additional funds through a Pulling Together Initiative (PTI) grant from the National Fish and Wildlife Foundation was unsuccessful. It appears as though the PTI grant program is underfunded, as competition for limited funds is fierce. CWMAs cannot be productive without funding for equipment, materials, and interns to carry out the work. A CWMA without funding is like a spray jug without herbicide; pretty ineffective. Dedicated funding through the LSOHC CPL grant is being looked at as a possible source of funds.

Big Stone CWMA

Based on the success of the Pope CWMA, Cara Greger and Brad Olson from the Lac qui Parle Area DNR office initiated formation of a steering committee and applied for funding through the BWSR grant. 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. Funds have already been used to purchase equipment such as an ATV, sprayer, trailer, and herbicide. The Morris WMD purchased CWMA weed brochures and a GPS with ArcMap for the project. Darrin Welle, the 2009 Pope CWMA intern, was hired as the Big Stone SWCD technician in June. He has been and will continue to be a huge asset to achieving the goals of the Big Stone CWMA. He is now the chair of the steering committee. Staff from Traverse County SWCD and Ag Inspector John Fridgen also joined the steering committee in hopes of expanding the area to their county with additional funds if a PTI grant was received. Unfortunately, as with the Pope CWMA expansion, the application was not awarded. Plans are underway to have Darrin pursue funding through the LSOHC CPL grant. The challenge with these funds is the limit of their application to public lands or lands under easement.

Dow Agro and UM Extension Field Day

On July 20 a field day for land managers was held in Ortonville, hosted by Dow Agro and the University of Minnesota Extension. The morning featured several presentations on invasive species, prairie reconstruction site prep, herbicides, and herbicide trials. The main feature of the day, though, was a site visit to Dr. Roger Becker's study site at Kufrin WPA. Small plots were set-up within a one acre area, with replicates of different herbicide mixes and rates, and two different application timings, June and September of 2009. The study is testing the tolerance of native forbs to herbicides at various application rates and timings as well as the control of Canada thistle. In June 2010, an additional plot was added using our pickup boom sprayer. This involved just three replicate treatments of different herbicides and rates. After lunch WRS Bright led the tour through the 2002 seeding at Rothi and the 2005 seeding at Hillman, providing a detailed management history for each site.

In early 2009, we met with Louanne Brooks and Mary Halstvedt of Dow Agro Services to address our uncertainties with regards to treating Canada thistle in newer prairie reconstructions. This one acre study plot at Kufrin WPA was the result, and provided the perfect elements to learn about non-target effects of herbicide applications. 2010-33 JBB 6/2/2010

The abundance of blooming wild bergamot in the background of the photo is the 2009 treatment small plots, while the foreground is the 2010 treatment large strip plots. It was valuable for participants to see the effects in both the year of treatment and the year post treatment. 2010-34 JBB 7/20/2010

FISH AND WILDLIFE MANAGEMENT

4a. Bird Banding

The Morris WMD assisted local DNR area wildlife staff with their annual goose banding effort. Locally breeding giant Canada geese are banded in Minnesota each year in an attempt to gather movement and harvest data for the population. The groups we worked with banded about 1,000 geese this year.

4b. Disease Monitoring and Treatment

In early August, hundreds of double-crested cormorants and ring-billed gulls that nest at Marsh Lake, Big Stone County, died from Newcastle Disease. Sampling and clean-up activities were conducted by Minnesota DNR and USDA Wildlife Services. Aside from wildlife mortality, the main concern with Newcastle is the economic impact if it spreads to a domestic poultry operation. Some islands on Marsh Lake were closed through late fall to prevent hunters from spreading the virus.

4c. Reintroductions

The Morris WMD continued its involvement with an effort to re-establish a greater prairie chicken (*Tympanuchus cupido pinnatus*) population in west-central Minnesota. This project, in its eleventh year, is supported by the Service, Minnesota Department of Natural Resources, Minnesota Prairie Chicken Society, Society of Tympanuchus Cupido Pinnatus, and The Nature Conservancy. Translocations ended in 2006 (574 birds moved since 1999).

Because there are very few birds with working radio collars, we use the number of males on booming grounds as an index to our prairie chicken population. Several Morris WMD staff members assisted with spring surveys again this year. In late March we began roadside listening surveys to locate booming grounds and grounds were observed from blinds in April and May.

Continuing the trend of recent years, the number of prairie chickens counted dropped in 2010. There were also fewer booming grounds, with only six active this year (Table 23). Two booming grounds are on or adjacent to WPAs (Rothi and Hastad). There were about 28 males on booming grounds in 2010, which is a 68 percent decline since 2007 (the first season after releases ended). None of the booming grounds had more males than last year, which indicates that there is a

lack of reproduction. Unfortunately, the future of this new prairie chicken population does not look good.

Table 23 – Prairie Chicken Booming Grounds in Reintroduction Area Morris WMD – FY 2010

County	Booming Ground Name	Number Males
Big Stone	Rothi	6
Chippewa	Chippewa Prairie South	4
Lac qui Parle	Hegland/Hastad	5
Lac qui Parle	Plover Prairie	2
Swift	Chippewa Prairie North	4
Traverse	Miller Prairie	7

Interestingly, populations at the known sharp-tailed grouse leks in the area seem to be holding steady. A few sharptails and sharptail-prairie chicken hybrids were observed on three prairie chicken booming grounds this year. The Beardsley dancing ground had 14 males and the Lee dancing ground (on Big Stone NWR) had eight males.

4d. Nest Structures

Morris WMD has two main goals in its nest structure program: to maintain approximately 300 nest structures on WPAs within the district and to distribute nest structures to cooperators with reliable instructions for placement and maintenance. The cooperators must be willing to set up and maintain the structures on private lands. The structures, including mounting post and bracket, predator guard and hardware are given away through the station's private lands program. The mounting posts are used sign posts supplied free by the local State Department of Transportation office. This program has been very successful and well received by the public. In FY 2010 we gave away six cylinders to participants (Section 5c). Since the inception of the program in 1995, we have distributed 1,467 nest cylinders. Delta Waterfowl biologist Matt Chouinard has also placed and maintained approximately 60 nest structures on WPAs in Big Stone, Stevens and Swift Counties.

Over the course of FY 2011 we will review previous data and make decisions regarding the future size and scope of the WPA nest structure program. Results from the FY 2010 nesting season included 248 nesting structures on WPAs available for use with 496 nesting sites available on these structures. Nests were initiated on 47 or 18.9 percent of the structures.

4e. Pest Control

Goose Damage

Crop damage caused by resident Canada geese continues to be an issue throughout the district. Options available to private landowners to lessen damage caused by the birds include electric fencing and shooting permits. Extended hunting seasons with generous bag limits are also in place to try to reduce the number of birds statewide. The goose damage complaints in our district are handled primarily by the local DNR offices; however, we sometimes get involved if the complaint is adjacent to a WPA. Our office received no damage complaints in FY 2010.

We begin to see the first goose broods in early May. 2010-35 SJD 5/18/2009

Beaver

The number of damage complaints continues to fall. We received one complaint from private landowners adjacent to State Lake WPA who believed that beaver on this unit were causing flooding problems on their land. Investigation by Project Leader Freske and WRS Durbian revealed that the dam causing the reported problem was on private land. It was not necessary to remove any beaver during FY 2010.

COORDINATION ACTIVITIES

5a. Interagency Coordination

Ducks Unlimited
We cooperated with Ducks Unlimited to replace the metal water control structure (Long Lake E), below the headquarters shop on Edwards WPA, with a new concrete structure (Section 3a). The old structure was severely corroded and at risk of failing. The new structure was completed in early September.

Design work was completed by Ducks Unlimited for the installation of a new pumping station and water control structures on Wiley WPA. The purpose of the project is to facilitate periodic draw-downs to kill fish and allow aquatic plants to become reestablished and maintained for the benefit of waterfowl. Construction will occur during the summer of 2011.

Funding for both of the above projects was obtained through a Conservation Partners Legacy Grant which Ducks Unlimited received.

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

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

5c. Private Lands

The Morris WMD had 1.3 FTEs this year for the Partners for Fish and Wildlife program. Funding for work on private land typically comes from the Partners program, Challenge Cost Share program, North American Waterfowl Management Plan, private donations, and the Legislative and Citizens Commission on Minnesota Resources (LCCMR). The 1121 budget for FY 2010 was $181,474. In addition, $25,000 in grants from LCCMR held in the State Private Lands Office was spent in the Morris WMD. This budget covers salaries, supplies, and prairie and wetland restoration and enhancement costs as well as repairs on past projects. The budget was matched with financial and in-kind contributions from private landowners and other agencies and organizations totaling $258,859. For most of

our work we are using a Blanket Purchase Agreement for heavy equipment needs and the Partners Agreement which allows us to reimburse the landowner. By the end of the fiscal year all FY 2010 Partners and grant funds were obligated to projects, and most of those projects were completed. Much of the 2010 dirt work was not completed during fall of 2010 due to an error in our contracting office awarding our BPA for heavy equipment. As soon as that error was taken care of, it started to rain.

Reese easement before invasive tree removal. 2010-36 SLS 3/5/2010

Reese easement after invasive tree removal. 2010-37 SLS 5/5/2010

FY 2010 Accomplishment Summary

- 7 wetland restorations, wetlands managed or ditch plug/water control structure repairs, impacting 49 acres of wetlands
- 767 acres of grassland enhanced by tree removal, biological weed control and grazing/grassland management
- 225 acres of new grassland seeded or converted from cool-season exotics to natives
- 20 landowners impacted by 21 Partners Agreements

Landowner Assistance

During FY 2010, ten or more landowners were referred to their local Natural Resource Conservation Service (NRCS) office to get signed up for Conservation Reserve Program (CRP), Wildlife Habitat Incentive Program or Wetland Reserve Program (WRP) Easements. The Partners biologist also provided advice to NRCS WRP Easement Managers about how to control invasive trees that are getting established in CRP and WRP tracts. Fifteen landowners that were not involved in WLI project areas were also assisted with prairie management and tree removal issues. Glenwood West Township was assisted with a redesign of an old ditch plug and a culvert to prevent overflow from damaging a new road.

Two landowners were assisted with shallow lake or wetland pumping/management projects. Both were draw down projects that landowners were planning to undertake on their own to improve water quality and stimulate aquatic plant growth. Neither project was completed due to wet weather conditions. Both projects will probably be completed once the weather allows.

The partners biologist assisted a number of private groups with making five Conservation Partners Legacy grant applications during FY 2010. One project was completed in Yellow Medicine County this year, and two other projects were funded for FY 2011 – FY 2014 work.

The Pope County Cooperative Weed Management Area has been a highly successful project that the Morris WMD is involved in as a project partner (Section 3g). The partners biologist has been providing GIS and technical support to the Pope County Weed Management Intern, who is using TNC's Weed information Management System database to store information about weed infestations and treatments that have occurred in Pope County.

During FY 2010, Partners Biologist Salvevold assisted 17 landowners with interest in perpetual wetland or habitat easements from the Service. The acquisition of these easements required much communication from the partners biologist between the Service's Realty program and landowners. It also required numerous days of staking boundaries, making maps, checking on CRP contracts, etc. A large amount of time in June and July was spent on realty transactions, and that is usually the busiest time of year for preparing to complete wetland restorations in the fall. Biologist Salvevold also assisted four landowners getting information

about protecting their land with a state Prairie Bank Easement, when the Service easement was not an option or not the best fit for their land.

The partners biologist is on a committee that selected Reinvest in Minnesota (RIM) Easements that will perpetually protect granite rock outcrops along the Minnesota River. The Granite Outcrop easement project is funded by the Minnesota LCCMR. This group has funded this easement for two years. Each year we have had more applications than funds, so this team scores each easement application based on the quality of the outcrop and its ability to provide habitat for outcrop plants and animals that are of special concern to the State of Minnesota. The highest scoring easements are accepted into RIM. Outcrops are unique habitats in Minnesota, and they are rapidly being lost to granite mining. These easements are designed to protect these unique habitats from ever being lost. Approximately 1,000 acres of outcrops should be able to be protected with the FY 2009 and FY 2010 money.

Biological Science Technician Rickerl assisted the private lands biologist this year completing an inventory of habitat quality and management needs on all habitat easements, nearly 100 when she was working on this project. Lots of grant funds are available to spend on perpetually protected lands in Minnesota. Now we know what cover improvements are needed and can overlap those needs with our priority work areas to determine where we should invest the time and energy in applying for grant funds to be spent on easements.

The landowner, partners, Minnesota DNR, and NRCS partnered to remove trees on this 120 acre WRP easement. The trees were chipped (above) and the chips were used for Biomass energy. 2010-38 NRCS Photo 8/31/2010

Private Lands Grass Drills

In 1997, the Morris WMD Partners for Fish and Wildlife Program, along with multiple partners, purchased two Dura Tech Haybuster grass drills. Both Stevens and Swift County Soil and Water Conservation Districts were loaned these drills through MOUs. The Stevens SWCD coordinated seeding in Stevens County using a newer drill purchased in 2005 and one of the Dura Tech drills provided by the Service in Stevens, Traverse, and parts of Pope and Big Stone counties. The Swift SWCD coordinated seeding with one Dura Tech drill provided by the Service in parts of Big Stone, Lac qui Parle, Chippewa, Pope and all of Swift counties. To date Stevens County has seeded 5,148 acres. Stevens and Swift County SWCDs will continue to utilize these drills, as authorized in the MOUs, for future seeding efforts. From 1998 to 2009, the Service purchased or sponsored drills were used to seed 17,020.1 acres on private land in the District.

Wetland Projects

Six wetlands totaling 46.5 acres were enhanced this year with repairs and improvements on six landowner's properties. The wetland restoration/repair project costs averaged $3,190 for each basin (Section 2a).

Repaired rock spillway at Knute Christenson property in Stevens County.
2010-39 SLS 10/20/2010

Working Lands Initiative

The Working Lands Initiative (WLI) has become a large portion of the partners biologist's job at the Morris Wetland Management District. The WLI is a public/private partnership that is working to provide private landowners in portions of the state that have been identified as high priorities for wildlife with tools to implement conservation practices but still keep their lands working for

agricultural purposes. The Morris Wetland Management District has target areas and project teams in six different counties. These projects have been very successful. They have allowed the Partners program to use state funds dedicated to help get alternative conservation practices implemented on the landscape and have also helped to get numerous perpetual easements purchased throughout the prairie/farmland portion of Minnesota. This is an excellent opportunity for us to expand how we utilize partnerships and allows us to target and focus where we know we will get the "most bang for our buck." Each team has focus areas in their counties where they are spending their time and money to improve areas that are already good for wildlife. These partnership projects are very time consuming, but have led to some of the most successful and well recognized conservation projects in the state in a number of years. The project work is heavily focused on restoring and protecting wetland and grassland habitat in western Minnesota for the long term benefit of waterfowl and prairie obligate species. Thousands of acres have been impacted by these projects throughout the eight county district.

Pope, Stevens, Yellow Medicine (via Lyon County WLI), Traverse, and Big Stone Counties all have active projects that are paying incentives for CRP enrollment and perpetual easement enrollment. These projects are promoting and assisting with the financial aspect of implementing rotational grazing and tree removal in native prairie and native pasture lands. They are educating landowners about the importance of grassland management with fire or grazing as the primary management tools and are promoting winter wheat and rye production as good sources of spring nesting cover for grassland birds.

The Big Stone WLI team has been busy with CRP incentives, tree removal, cost sharing interseeding of old CRP plantings, and getting native prairie in the Correll target area enrolled in Minnesota DNR's Native Prairie Bank Easement.

A new target area was established in FY 2010 by the Morris and Litchfield Partners Biologists in Pope, Swift and Kandiyohi Counties called the Ordway Prairie Target Area. There is much new energy and a new pot of funds to help landowners manage their native prairies within this target area. Partners and ARRA funds have been used to date to accomplish private land management in this area, but new WLI funds will expand what we are able to accomplish. A public out-reach event was held at the Sunburg Cafe to determine local interest in a working lands target area, and overwhelming support for the prairie management goals of this project has been garnered from the local residents of that area. Numerous projects including tree removal and easement and WPA acquisitions have already been completed in this target area.

The Ordway Prairie target area was nominated in an effort to gain support and resources to address the problem of woody vegetation (primarily eastern red cedar) invading and overtaking one of the last significantly sized areas of native dry prairie in central Minnesota. As noted in the report by the Minnesota County Biological Survey ("Norway Lake Prairie", January, 2003), the area "...represents

one of the best remaining areas of high quality native habitat in the state...and merits the highest level of protection available." The target area is surrounded by 3,050 acres of state, federal, and TNC owned property and perpetual upland easements. The target area is focused on the private land in between the protected land so that private landowners could improve the management, quality and protection status of their native prairies. This target area offers a significant opportunity to work with grazers to protect and manage grassland habitats but to also keep the land working for these producers. This is the first target area solely coordinated by the Service as well as the most confusing logistically for Minnesota DNR, who administers the funds. Because of the location of this high quality prairie, state, federal and local natural resource managers selected an area that crosses three counties, three DNR Area Wildlife Office areas, two Service WMD boundaries, and two DNR Regional Offices. Numerous partners are involved in the project because of the many area and regional offices that manage land in this area.

Partners Biologist Salvevold nominated the Minnesota Department of Natural Resources for the Secretary of the Interior's Partners in Conservation Award in fall 2009. The Minnesota DNR won the award in May of 2010. The presentation of awards will take place in Minnesota during fall 2010. This project has been quite an accomplishment for the state and should not go unrecognized. It is their continued support of Working Lands Initiative that has made it so successful in western Minnesota. We have seen the impact on thousands of acres of land in our highest priority areas in our District.

Education

- The fourth graders at the Ortonville Elementary School went on a tour of wetland restorations in their area during May. About 45 students and teachers participated. These students also paid for two restorations on Moultan Lake WPA in Big Stone County during the summer.
- The Morris Cub Scouts were provided with 8 bluebird and 7 wood duck box kits to be assembled as a badge project.
- The Partners Biologist also spent 2 days at Farmfest in Redwood Falls, Minnesota, in August. The Minnesota Private Lands Office provides wood duck and bluebird kits and assistance for assembling those kits to children and their parents and grandparents. This year 500 bluebird boxes and 100 wood duck boxes were available. If even a few of these kids who primarily come from a farm background become more interested in natural resources, then we are having an impact on the children of rural Minnesota.
- Adult education, especially related to our working lands initiative projects in western Minnesota (see above), has been big the past couple of years.

Ortonville 4th Graders in their "Save the Wetlands" handmade shirts on their 2010 wetland tour. 2010-40 SLS 5/25/2010

Trimble GPS Survey Rover

In August an R8 Trimble GPS Survey Rover was purchased. The Region 3 Partners program contributed $20,000 toward the purchase while Litchfield and Morris WMDs each contributed $4,847. The rover will allow us to survey elevation to Mean Sea Level (MSL) using the data distributed from Department of Transportation radio towers throughout the state. The equipment gets the MSL using a cell phone. This equipment allows us to survey without the line of sight that was previously required by the laser level. It also allows us to locate boundaries based off of previous survey information. We can do complete construction planning and staking for our habitat restoration, and this survey grade GPS will make locating biological monitoring locations exact to the hundredth of inches. All in all this is a step from the most basic, crude survey capability to the most advanced survey capability. It will make our restoration and management decisions easier and much faster than using our previous survey equipment. Morris and Litchfield offices will share this equipment.

RESOURCE PROTECTION

6. Law Enforcement

With Officer Henderson moving on to Kulm WMD in North Dakota in 2009, the station started the year without an officer on staff. Officer Briggs arrived in February and completed his training requirements in September, leaving the District without an officer for most of the year. With one officer to cover 245 Waterfowl Production Areas and easement contracts spread throughout the eight county district, Officer Briggs relies on observations from other employees, State Conservation Officers, and reports from the public to supplement his own patrol efforts.

Waterfowl Production Areas
Common violations encountered on WPAs throughout the year were vehicle trespass, farming encroachment, rock dumping, abandoned property, and destruction of government property. Numerous warnings were issued and corrective actions took place. Several investigations were closed due to a lack of any leads.

Fall is a busy time of year in the district with hunting enforcement. Officer Briggs worked closely with State Conservation Officers to patrol WPAs. In 2010, typical hunting violations were no hunting license in possession, failure to validate federal waterfowl stamp, lead shot, and unplugged shotgun.

Easements
Aerial surveillance of easements flights are the primary investigative tool used to detect violations. These surveillance flights consist of low level observations and aerial photography that can be viewed at a later date. Most violations are associated with the draining or filling of wetlands.

There were 44 open cases to start off the year; 17 cases were opened in 2010, with only 2 cases being closed. Open cases include map requests. A full time officer on staff for the entire year should improve the open/closure ratio of easement cases.

6b. Permits and Economic Use Management

During FY 2010, we issued 61 Special Use Permits (SUP). The permits were issued for cutting hay, grazing, cash rent farming (Sections 3b, c, d), firewood cutting, fencing, tree removal, and tile repair on WPAs and habitat easements.

6g. Land Acquisition Support

We have in place an efficient and effective process for acquiring wetland easements and those habitat easements that allow continued haying or grazing. Purchase of fee title tracts requires a complex and time consuming appraisal/ review/offer process that regularly takes more than a year, which does make it difficult to purchase land. The Morris district primarily pursues acquisition of easements over fee title tracts as there are more landowners interested in selling easements, easements cost less per acre which thus allows us to protect more land, and management of easements requires fewer resources than does management of fee title lands. However, despite the obstacles to fee title acquisition we do pursue fee title tracts. We primarily target tracts adjacent to existing WPAs, which will make management more cost effective, and tracts that are located in areas with high potential for waterfowl production or that contain native prairie.

Fee Title

We purchased two fee title tracts this year under the small wetlands program. The Loren Reidinger tract added 34.46 acres to Appleton WPA, Swift County. The 123 acre Peter Snortum tract in Yellow Medicine County is an addition to Dakota WPA which is now 269 acres in size.

The Snortum purchase (left), is a roundout to Dakota WPA (right). 2010-41

As a result of current crop prices of $5.00 – $6.00/bushel of corn, many land-owners are reluctant to sell land. However, despite the obstacles in purchasing fee title lands, we do have four tracts which are currently in the appraisal or review process: Dwayne Lent, 48 acres; Camp Lake, 702 acres; Westview LLC, 662 acres; and Swartz, 72 acres - all of these tracts are located in Pope County. We also have a signed option on the Elliot Nelson tract, 92 acres, in Swift County.

Table 24 – Waterfowl Production Area Realty Acreage – Morris WMD FY 2010

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

Table 25 – Waterfowl Production Area Managed Acreage* – Morris WMD FY 2010

	Managed Acres 9/30/09		Managed Acres 9/30/10	
County	Units	Acres	Units	Acres
Big Stone	58	11,738.99	58	11,738.99
Chippewa	2	360.14	2	360.14
Lac qui Parle	18	4,065.24	18	4,065.24
Pope	65	13,236.00	65	13,236.00
Stevens	55	9,676.46	55	9,676.46
Swift	30	7,653.41	30	7,687.87
Traverse	12	4,141.77	12	4,141.77
Yellow Med.	5	952.66	5	1,075.76
Total	**245**	**51,824.67**	**245**	**51,982.23**

*****Keeping an accurate tally of the acreage of so many units is difficult. The acres recorded as purchased in real estate records are shown in Table 24 above. The actual acres we manage do not precisely match real estate records. The two most common reasons are 1) land use lines that differ from legal descriptions; and 2) managing land within the boundaries of a meandered lake. Although we do not technically own the land within the meander line, water levels are often low enough that we end up managing a fringe of land between the meander line and the water's edge.

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

we spend time discussing each fee and easement tract with local counties who occasionally use the forum to discuss an array of issues regarding the Fish and Wildlife Service. Water, weeds, and taxes are frequent subjects. While the meetings are occasionally challenging, they do force the staff to hear and consider local concerns regarding management of federal land. Federal land acquisition is almost always controversial anywhere in the country. On wetland management districts, though, we usually acquire land each year and thus the difficult relationships that often arise from land acquisition never have a chance to completely heal before the next acquisition project.

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, should make up the difference between the revenue sharing payment and the taxes that would be paid on the land if it remained private property. 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.

Removing cropland from agricultural production is the other major concern that is raised more and more often by people opposed to our program. Commissioners from various counties frequently raise concerns of losing cropland acres for local farmers. Cropland loss is also used as an argument against our habitat (grassland) easements or wetland easements involving wetland restoration.

Revenue sharing payments (so-called "in-lieu-of-tax payments") are important to our acquisition program. Counties are understandably interested in the annual payment they receive and they are concerned about low payments. In 2009, counties received only 30.7 percent of the amount prescribed by the revenue sharing formula (3/4 of one percent of fair market value). However, due to rapidly increasing land values and recent reappraisals of fee tracts in certain counties, the revenue sharing check received by certain counties went up dramatically in recent years. That softened the concern over low revenue sharing payments in those counties. In other counties, it remains tough to explain why the government is not paying 100 percent of its revenue sharing commitment. Of course, we make many fewer demands on county resources than do owners of private land. Our drain on county resources for infrastructure, law enforcement, and human services is minimal or absent. Furthermore, in Minnesota, state school aid formulas tend to offset any loss of local property tax and prevent any loss of income to a school district when we purchase land. Still, while our net economic effect to most counties is almost certainly positive, it is difficult to get past the fact that we pay less than 100 percent of the authorized amount.

Table 26 – Revenue Sharing Payments – Morris WMD
FY 2006 - FY 2010

County	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010*
Big Stone	$20,331	$19,797	$15,360	$14,433	
Chippewa	486	1,009	1,447	1,360	
Lac qui Parle	8,359	14,813	11,492	10,799	
Pope	53,878	52,098	41,063	39,334	
Stevens	26,734	25,851	20,107	38,492	
Swift	16,579	16,031	31,784	29,992	
Traverse	9,540	18,215	14,132	13,279	
Yellow Med.	3,231	3,124	2,424	4,918	
Total	**$139,138**	**$150,938**	**$137,145**	**$152,607**	

*Payments for FY 2010 have not yet been received.

The long term success of fee acquisition is unknown. Our real estate capabilities, the farm economy, farm programs, revenue sharing, and many other issues combine to influence our land acquisition program. However, the recent establishment of the MN Conservation Partners Legacy Grant Program has provided a significant increase in funds available for land acquisition. As this program is planned to exist for the next 23 years it could play a critical role in the future of land acquisition. With the continued degradation of habitat on private land, fee title acquisition remains a critical tool for habitat protection.

Wetland Easements

Interest in wetland easements was somewhat limited this year as many landowners preferred habitat easements. A total of three wetland easements was purchased, protecting a total of 61.9 acres of wetlands on 262.93 acres of land. Last year we purchased one wetland easement covering 13.55 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. Easements of highest priority have been those which preserve wetlands within two miles of a waterfowl production area. However, wetlands near state land or other acceptable habitat can also be protected by easement. In recent years, many wetland easements are related to our private lands program where we restore drained wetlands on private land; many of these landowners are interested in selling us an easement to leave the wetland in place permanently.

The future of our easement program is directly related to funds, staff time, and the process by which we provide landowners an easement offer. We could take many more easements if we had more staff time available to increase unsolicited easement contacts and enough acquisition money to pay for them. Many wetlands that need protection are still available and the program remains popular with landowners. Roughly half of all duck production in western Minnesota comes from

temporary and seasonal wetlands which still have little or no protection under state and federal law. Each year sees more ephemeral wetlands drained in the district. Small shallow wetlands are usually not defined as wetlands by USDA and are specifically excluded from Minnesota's wetland protection legislation in typical agricultural situations. Our easement is the only protection available for many remaining wetlands.

Table 27 – Wetland Easement Program Status – Morris WMD – FY 2010

County	Number Easements	Wetland Acres	Total Easement Acres	Goal Acres
Big Stone	200	6,755.5	25,347.01	42,640
Chippewa	4	115.1	392.00	0
Lac qui Parle	40	1,368.7	5,078.58	23,540
Pope	263	9,024.6	35,021.09	44,180
Stevens	57	1,824.4	5,116.40	6,090
Swift	69	1,486.5	5,255.10	14,540
Traverse	35	1,146.0	3,871.51	8,440
Yellow Med.	11	181.4	659.27	7,860
Total 2010	**679**	**21,902.2**	**80,740.96**	**147,290**
Total 2009	**676**	**21,840.3**	**80,478.03**	**147,290**
Total 2008	**675**	**21,826.7**	**80,318.03**	**147,290**
Total 2007	**672**	**21,735.1**	**79,948.03**	**147,290**
Total 2006	**667**	**21,572.3**	**79,460.56**	**147,290**

Wildlife Habitat Protection Easements

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

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

We increased our efforts to expand the habitat easement program this year and were successful in protecting some excellent habitat. A total of 9 habitat easements were established, protecting 1,169 acres of grasslands and wetlands. Last year we purchased seven habitat easements, covering 977.31 acres.

Habitat easement acquisition ebbs and flows based on landowner interest, realty workload, and availability of funds. Habitat easements must have commissioner review and Land Exchange Board approval in the same manner as the wetland easement.

Table 28 – Easements For Wildlife Habitat Protection
Morris WMD – FY 2010

County	Easements	Acres
Big Stone	27	2,804.90
Chippewa	0	0.00
Lac qui Parle	10	664.92
Pope	18	1,825.91
Stevens	0	0.00
Swift	15	895.62
Traverse	2	296.16
Yellow Medicine	6	688.99
2010 Total	**78**	**7,176.50**
2009 Total	**69**	**6,007.61**
2008 Total	**62**	**5,030.30**
2007 Total	**61**	**4,988.20**
2006 Total	**55**	**4,456.67**

Farmers Home Administration Easements

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

Table 29 – FmHA Easements – Morris WMD – FY 2010

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

One Northern Tallgrass Prairie NWR easement tract was acquired this year, the 35.29 acre Kevin Peterson Tract in Yellow Medicine County.

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

Table 30 – Northern Tallgrass Prairie National Wildlife Refuge Units
Morris WMD – FY 2010

County	Fee Tracts	Fee Acres	Easement Tracts	Easement Acres	Total Tracts	Total Acres
Big Stone	0	0	2	224.75	2	224.75
Chippewa	0	0	0	-0-	0	-0-
L Q Parle	0	0	1	27.49	1	27.49
Pope	0	0	2	164.05	2	164.05
Stevens	1	21	0	-0-	1	21.00
Swift	0	0	2	110.00	2	110.00
Traverse	0	0	2	45.70	2	45.70
Y. Med.	0	0	12	755.56	12	755.56
Total	**1**	**21**	**21**	**1,327.55**	**22**	**1,348.55**

With less than one percent of the original tallgrass prairie remaining in Minnesota, programs like the Northern Tallgrass Prairie NWR are critical to protect this highly endangered ecosystem. 2010-42 SJD 2002

PUBLIC EDUCATION AND RECREATION

7a. Provide Visitor Services

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

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

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

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

Morris WMD has another self-guided nature trail located at Froland WPA (Pope County). In 2008 we received $75,000 to make trail improvements on Froland. Included in the project were an upgraded parking area, an expanded trail system

with interpretive signs, and the addition of informational kiosks, benches and an overlook platform with stationary binoculars. Work was completed in the fall of 2010.

Prairie Pioneer Days

On July 12, during Morris' annual Prairie Pioneer Days, staff members and Friends did their part to celebrate our prairie heritage. This year the Friends group hired Skilly & Duff, a folk music ensemble, which helped draw attendance of over 200 people to the event. Visitors not only enjoyed music, but also horse-drawn wagon rides through the prairie, a display of prairie plants, and free bird house construction for kids. This year also saw the addition of the "Zoo Experience"; staff from the Bramble Park Zoo in South Dakota brought their animal ambassadors for hands on environmental education.

Puddles was present for Prairie Pioneer Days again this year.
2010-43 SJB 7/12/2010

Second Grade Field Day

Each year the district provides a fun day of environmental education where second grade students learn about the wonders of the natural world. In past years the event was held in May, but this year the event was moved to the fall, at the request of the teachers. Second grade field days in October 2009, and September 2010 resulted in two second grade field days in one fiscal year.

October 14, 2009 we hosted the 18th annual event (not September 23 as stated in last year's narrative). Due to inclement weather, much of the event was held indoors, but the students remained cheerful throughout.

On September 29, 2010 we hosted the 19th field day, where students from five schools (Morris, Glacial Hills, Minnewaska, Hancock, and St. Mary's) participated in a variety of instructional activities focusing on the Prairie Pothole Region. Most staff members participated, along with volunteers Judy Johnston (SWCD), Ron Rosen (Friends Group), and Jake Randa (SCEP student).

Young Biologists in training at Second Grade Field Day.
2010-44 SJB 09/29/2010

Hunting

Hunting continues to be a major part of many people's lives, especially in rural areas. Harvests of the primary game species (waterfowl, pheasants and deer) were down in much of our area, mostly due to the unusually wet weather and late crop harvests. Even if hunters don't fill their limit, they are out enjoying the great outdoors. The diversity of WPAs in the Morris district offers many options for the hunter.

The 2009 waterfowl season opened September 5 with the Early Canada Goose Hunt. The regular waterfowl season ran from October 3 to December 1. The daily bag limit for ducks was six, which could not include more than any combination of the following: four mallards (only one hen mallard), two redheads, two scaup, two wood ducks, one black duck, one canvasback, and one pintail. The daily limit for Canada goose was two (five during the early September and late December seasons). The December (late) goose hunt ended the waterfowl hunting season on the 21st. Overall, the Minnesota duck harvest was down in 2009 (400,000 birds, compared to 580,000 in 2008).

Other migratory bird and small game hunting opportunities include rabbit, squirrel, ruffed grouse, gray partridge, wild turkey, crow, woodcock, rail, snipe, mourning dove, raccoon, coyote, and fox. Pheasant season ran from October 10 to January 3 with a daily bag limit of 2 roosters (increased to 3 per day after December 1). Fall turkey hunting opportunities have increased in recent years, with significantly more permits issued and permit areas open during that season. The spring season brought the highest turkey harvest on record in Minnesota, though hunter success rates were below average.

Minnesota's statewide deer harvest was down in 2009, with a total of 194,178 deer harvested. The decline was somewhat expected, since significantly fewer antler-less permits were issued this year; Minnesota's deer herd is at or near population goals across much of the state. Archery season for deer opened on September 18, general firearms season was November 7-15, and muzzle loader season occurred from November 28-December 13.

Father and son participate in our first annual Youth Waterfowl Hunt.
2010-45 FED 9/18/2010

This year marked a first for the Morris Wetland Management District; we partnered with MN Ducks Unlimited to sponsor a mentored youth waterfowl hunt. The youth hunt was held on September 18, 2010, before the start of the regular duck season. Eleven young novice hunters, and their parent or guardian, teamed up with eleven veteran volunteer mentors. Morris WMD staff conducted training on duck identification, landowner interactions, and hunting laws and ethics. Catering was provided by the Friends of the Morris Wetland Management District. With hunting on a decline nationwide, many of the traditional avenues of introducing youth into hunting (relatives and peers) are becoming less common. 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.

In addition to the events described above, staff provided visitor services support to the following at the district headquarters:

- Morris Area High School Wildlife Biology Class, October 15
- University of Minnesota Morris, Freshwater Ecology Class, October 28-29
- Minnesota Dragonfly Gathering, July 23-25 (Section 1a)

The following meetings/training sessions were held at the district headquarters:

- Management Prioritization Tool workshop, December 8
  (held at USDA Soils Lab due to office renovation)
- Fire Refresher, March 29
- Fire Review, June 7-8
- Wildlife and Habitat Review, June 14-16
- Grassland Bird Workshop, July 20-22
  (held at USDA Soils Lab due to large group size)

7b. Outreach

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

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

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

- Slide Show Presentation at the University of MN, Morris
- Judged posters at the Morris High School Science Fair
- Stevens County Expo
- Booth at the University of MN, Morris Job Fair
- Represented FWS at Pope Soil and Water Planning
- Provided advisor for the Morris Area Elementary School Science Fair
- Participant at Pope County Weed Awareness Workshop
- Booth at Horticulture Night
- Dow Agro Sciences field day (Section 3g)
- Presentation, "Trees are Weeds Too," presented at Weed Awareness Workshop put on by Pope-Swift Cooperative Weed Management Area
- Soil and Water Conservation District's Conservation Day
- Big Stone County 6th Grade Conservation Day
- Gave an environmental education program with MN GreenCorps and Morris Community Ed
- Garden Field Day
- Taught native plant identification session at Minnesota Master Naturalist Workshop
- Ortonville Elementary 4th Grade Wetland Restoration Tour
- Helped staff MN Private Lands booth at FarmFest

Minnesota GreenCorps helps with environmental education.
2010-46 SJB 6/24/2010

7c. Friends of the Morris WMD

The Friends of the Morris Wetland Management District, a non-profit advocacy and support group, was established in 2003. Their mission is to help the community develop a deeper appreciation and understanding of the Morris Wetland Management District. The Friends continue to be amazingly productive and helpful despite their modest membership.

During the fiscal year, one friend, along with a friends liaison from the staff, participated in the 2010 Regional Friends conference in La Crosse WI April 16-18. This conference is a way for the Service to support the growth and effectiveness of Friends by providing a forum for Friends to build their skills and interact with Service staff from around their Region. The regional conferences are an incredible opportunity to build regional esprit de corps and support networks.

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

Kate & Dale Livingston, Treasurer and President of the Friends of the Morris Wetland Management District. 2010-47 SJB 2/25/2010

8b. General Administration

1 2 3 4 5 6 7 8
9 10 11 12 13 14

1. Raymond Briggs, Law Enforcement Officer, GS-9, PFT, EOD 2/14/10.
2. Derrick Odegard, Range Technician, GS-6, PFT Seasonal.
3. J. B. Bright, Wildlife Refuge Specialist, GS-11, PFT.
4. Phil Millette, Supervisory Range Technician, GS-7, PFT.
5. Joshua Pittman, Tractor Operator, WG-8, PFT, EOD 9/26/10.
6. Styron Bell, Wildlife Refuge Specialist, GS-9, PFT.
7. Frank Durbian, Wildlife Refuge Specialist, GS-12, PFT.
8. Rodney Ahrndt, Engineering Equipment Operator, WG-10, PFT.
9. Stacy Salvevold, Wildlife Biologist, GS-11, PFT.
10. Bruce Freske, Wetland Manager, GS-13, PFT, EOD 10/11/09.
11. Seth Grimm, Fire Management Officer, GS-11, PFT.
12. Donna Oglesby, Biological Technician, GS-7, PFT.
13. Sara Vacek, Wildlife Biologist, GS-11, PFT.
14. Karen Stettner, Administrative Officer, GS-9, PFT.

The following permanent personnel actions took place in FY 2010:

- Our new Manager, Bruce Freske, began working at Morris on October 11. He came from Mattamuskeet National Wildlife Refuge in North Carolina.
- On February 14, Doug Briggs began working as our new Law Enforcement Officer. Doug came from the National Park Service in Hixson, Tennessee.
- Tractor Operator Joel Boutain resigned effective May 1. Joel left the Service to devote more time to his private business.
- Jacob Randa, SCEP student, began working for us on May 23.
- Joshua Pittman was hired to replace Joel Boutain as our new Tractor Operator. He started on September 26.

Temporary Personnel

Kevin Thell, Terry Storey, Damon Taylor, Jacob Randa, Heather Rickerl

Jacob Randa	Biologist, SCEP	5/23/2010 – 9/11/2010
Kevin Thell	Range Technician, TFT	3/28/2010 – 9/25/2010
Blake Johnnson	Range Technician, TFT	3/28/2010 – 9/25/2010
Terry Storey	Tractor Operator, Intermittent	4/11/2010 –
Damon Taylor	Biological Science Tech., TFT	5/23/2010 –11/20/2010
Heather Rickerl	Biological Science Tech., TFT	6/06/2010 –10/02/2010
Ryan Schnieder	Biological Science Tech., STEP	5/09/2010 – 8/28/2010
Lauren Dennhardt	Biological Science Tech., STEP	5/23/2010 – 8/28/2010
Joseph Dunlavy	Biological Science Tech., STEP	5/23/2010 – 8/28/2010

YCC Crew

Adam Pankratz	Biological Science Tech., STEP	5/23/2010 – 8/14/2010
Jason Todd	YCC Crew Member	6/06/2010 – 7/19/2010
Cody Torkelson	YCC Crew Member	6/06/2010 – 7/31/2010
Alexandra Tanner	YCC Crew Member	6/06/2010 – 7/31/2010
Jordan Nelson	YCC Crew Member	6/06/2010 – 7/31/2010

Cody Torkelson, Jason Todd, Adam Pankratz (Leader)
Jordan Nelson Alexandra Tanner

Table 31 – Staff Size – Morris WMD – FY 2006 to FY 2010

	Full Time	Permanent Full Time Seasonal	Part Time	Temporary GS & WG	Other Programs*
FY 10	13	1	0	10**	4
FY 09	13	1	0	8**	0
FY 08	13	1	0	9**	0
FY 07	12	2	0	6**	0
FY 06	12	2	0	4	3

*Includes YCC
**Includes SCEP

Oil Spill

In the late spring, summer, and fall months, seven district employees volunteered to work in the Gulf Coast, assisting with the clean-up response for oil spilled from the Deepwater Horizons explosion on April 20, 2010. Employees worked as a

Deputy Operations Section Chief, Resource Advisors, Taskforce Leaders, Helicopter Crew members working in both Sensitive Lands and Wildlife Rescue Operations. District employees worked a total of 182 days on the oil spill response.

Cleanup crew removing oil from the Florida coast.
2010-48 BRF 9/9/2010

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 FY 2010, 27 volunteers contributed 567 hours of work. About half of these hours were in the area of visitor services and outreach through Friends activities such as the Prairie Pioneer Days event.

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).

Safety

The station had three reportable accidents during FY 2010. Rodney Ahrndt, Engineering Equipment Operator, hit a deer while returning from a training session at Iron River National Fish Hatchery; Seth Grimm, Fire Management Officer, injured his foot while conducting PT; and Jason Todd, YCC, sprained his ankle while entering the shop office.

Funding

Table 32 – Morris WMD Funding Levels – FY 2006-FY 2010
(Dollars in Thousands)

FY	1260	Fire 9100/9200	Special	1230	1120	Total Budget
10	1,273.9	416.7	-0-	-0-	181.5	1,872.1
09	1,032.1	271.2	*1,164.9	-0-	132.2	1,435.5
08	1,155.6	269.0	80.0	-0-	127.6	1,632.2
07	1,083.9	308.9	-0-	-0-	88.3	1,481.1
06	972.2	273.2	-0-	1.0	136.6	1,383.0

*Construction - Retrofit Office Building

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

The 1260 project specific funds in 2010 included:
- $22,037 for a new pickup
- $ 7,114 to purchase an ATV
- $18,000 for SCEP position and YCC camp
- $23,000 for fencing project on Rothi WPA
- $85,638 for PCS moves

The 9131 budget included $140,555 to purchase a Marsh Master

General Maintenance

Computers/Office Equipment

Computers: Dell Latitude E6400 XFR ($5,000)
Dell Optiplex 780 x 6 ($4,236)
Dell Precision T7500 ($1,750)
Dell Latitude E6410 ($1,000)

Equipment

Marsh Master w/rotary cutter (Fire) ($140,555)
John Deere 333DTRK Skid Steer w/attachments ($66,547)
2 Polaris Ranger ATV's ($7,114; $7,999)
Stump Grinder ($5,100)
Cargo Trailer ($3,515)
Pickup ($22,037)
R8 Trimble GPS Survey Rover ($29,695 – Section 5c)

Facilities

Inspection of boundary posting continues to be a priority for the district. The majority of the work was done by STEP student Dunlavy with periodic assistance from other members of the staff and YCC Crew. In FY 2010 we focused on Pope, Stevens, Swift, and Big Stone Counties. The crews were able to completely check the perimeter of 52 units replacing 166 posts and 337 signs. Over the past five

years we have been able to inspect the boundary signs on 90 percent of the WPAs located within the District.

The YCC Crew, assisted by Tractor Operator Storey, repaired fencing on Welker and Pomme de Terre Lake WPAs and removed old fencing on State Lake and Edwards WPAs. A section of split rail fence that ran along the highway in front of the office was removed due rising repair costs.

New post and rail parking areas were constructed on Sherstad Slough, Blue Mounds, and Barry Lake (west) WPAs.

Levees and ditch plugs were repaired by Engineering Equipment Operator Ahrndt, Range Tech. Thell and Tractor Operator Storey on Robin Hood, Hillman, Stammer and Jorgenson WPAs and Stueve Wetland Easement. Water control structures on both Pepperton and Edwards WPAs were repaired by Engineering Equipment Operator Ahrndt. A new water gauge was installed on Artichoke WPA.

Other projects completed in 2010:

- Froland WPA Hiking Trail project initiated in FY 2009
- Legacy RLGIS data from 2000-2010 was entered into the District's GIS by Biological Technician Oglesby.

Office Retrofit Project:
On November 18, 2009, employees packed up their offices, loaded pickups, and moved to their new winter office in the shop building. Project Leader Freske, WRS Durbian and Administrative Officer Stettner set up offices in the shop crew room while the rest of the staff moved into cubicles in the newly insulated shop storage area. The move went very smooth and phones and computers were plugged in and operational with no problems. On November 23, Innovative Builders from Alexandria, Minnesota, began remodeling the 1981 office building. Included in the retrofit project: insulated doors and windows; geo-thermal heating/cooling system; motion sensor lighting; an elevator; handicap accessible, water conservation bathrooms; solar panels for electricity; new siding and deck; and a new concrete sidewalk. A change order was issued to add the painting of all interior walls in the upstairs portion of the building. The original contract called for spot painting of disturbed areas. However, it was impossible to match existing paint due to fading, etc. The final cost of the retrofit project was $1,035,053.

Innovative was a very good contractor to work with and we feel they did good quality work. We moved back into our office on April 28.

Twenty-eight well holes were drilled for the geo-thermal heating/cooling system.

Pipes for the geo-thermal system were run from the well field to the office building.

Before Front entrance to office.

After

Before Cedar siding on building

After New paint job and new siding

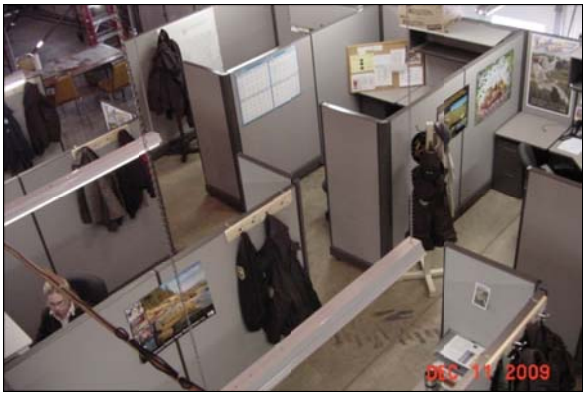
Before Back side of office building

After Solar panels

Before Back of office with landscape

After New deck, siding and landscape

WRS Durbian in temporary office



Bird’s eye view of temporary offices in shop

ITEMS OF INTEREST

Minnesota DNR Area Managers Kurt Vacek (top) and Kevin Kotts were presented with the Secretary of the Interior's Partners in Conservation Award (Section 5c).
2010-49 9/30/2010 SLS

Appendix A

Table 33 - Rustad WPA Seed Mix - Morris WMD – FY 2010

Grasses	LB/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Big bluestem	0.80	3.0	14.84%
Indian grass	0.80	3.2	15.61%
Little bluestem	0.11	0.7	3.35%
Sideoats grama	0.76	3.3	16.40%
Switchgrass	0.19	1.7	8.37%
Canada wildrye	0.21	0.5	2.65%
Bearded Slender wheatgrass	0.23	0.8	4.13%
Prairie dropseed	0.06	1.6	7.69%
Prairie brome	0.30	0.9	4.37%
Bluejoint grass	0.04	3.5	16.93%
Prairie cordgrass	0.30	1.2	5.66%
	3.8	20.4	100.0%
Total PLS pounds	**262.20**		

Forbs	OZ/Acre Seeded	Seeds/SqFt	Seeded % of Mix **
Alumroot	0.02	0.321	1.94%
Blue flag iris	1.06	0.032	0.19%
Blue vervain	0.40	0.854	5.16%
Bottle gentian	0.16	1.028	6.22%
Canada anemone	0.06	0.011	0.07%
Canada milkvetch	0.50	0.195	1.18%
Common meadow rue	0.30	0.076	0.46%
Common milkweed	0.10	0.009	0.06%
Common ox-eye	0.80	0.116	0.70%
Common yarrow	0.02	0.132	0.80%
Cream wild indigo	0.16	0.005	0.03%
Culver's root	0.16	2.938	17.77%
Cup plant	1.20	0.039	0.23%
Golden Alexanders	1.80	0.455	2.75%
Heart leaf golden Alexanders	0.30	0.083	0.50%
Ironweed	0.80	0.441	2.67%
Joe Pye weed	0.20	0.436	2.64%
Maximillian sunflower	0.40	0.119	0.72%
Meadow blazing star	0.20	0.046	0.28%
Mountain Mint	0.30	1.515	9.16%

New England aster	0.40	0.606	3.67%
Northern bedstraw	0.30	0.482	2.92%
Prairie cinquefoil	0.30	1.589	9.61%
Prairie coreopsis	0.30	0.069	0.42%
Prairie coneflower	0.60	0.579	3.50%
Prairie onion	0.20	0.051	0.31%
Prairie rose	0.20	0.012	0.07%
Prairie spiderwort	0.10	0.023	0.14%
Purple prairie clover	1.40	0.579	3.50%
Rough blazing star	0.20	0.073	0.44%
Showy goldenrod	0.80	1.745	10.55%
Showy tick trefoil	1.00	0.126	0.76%
Smooth aster	0.30	0.379	2.29%
Stiff goldenrod	0.60	0.565	3.42%
Swamp milkweed	0.10	0.011	0.07%
Tall blazing star	0.60	0.152	0.92%
Western sunflower	0.10	0.034	0.21%
White prairie clover	1.40	0.611	3.69%
Wild bergamot	1.66	2.668	16.13%
Wild white indigo	0.50	0.020	0.12%
	20.00	16.536	100.0%
Total PLS pounds	**86.25**		

Sedges/Rushes	**Lb/Acre Seeded**	**Seeds/SqFt**	**Seeded% of Mix ****
Brown fox sedge	0.015	0.551	11.88%
Copper shouldered oval sedge	0.045	0.278	5.99%
Wool grass	0.006	3.434	74.07%
Fowl bluegrass	0.015	0.041	0.88%
White Top Grass	0.005	0.057	1.23%
American sloughgrass	0.015	0.275	5.94%
	0.100	4.636	100.00%
Total PLS pounds	**6.900**		

Italicized species are those that show some degree of tolerance to aminopyralid and clopyralid herbicides.

Table 34 - Schultz WPA Interseed Forb Mix - Morris WMD – FY 2010

Common Name	Percent of mix by weight
Wild bergamot	4.85
Narrow-leaved purple coneflower	0.59
Golden Alexander	1.09
Stiff goldenrod	3.04
Sky blue aster	6.73
Prairie cinquefoil	19.35
Showy tick trefoil	0.46
Hoary vervain	1.80
Leadplant	0.79
Prairie onion	0.76
Partridge pea	0.53
Culver's root	7.92
Black-eyed Susan	10.92
Rough blazingstar	0.24
Canada milkvetch	2.94
Yellow coneflower	4.01
New England aster	4.25
Heath aster	2.97
Blue vervain	6.90
Bottle gentian	2.22
Heartleaf golden Alexander	0.24
Birdsfoot coreopsis	0.25
Alum root	3.46
Bicknell's sedge	2.47
Tall blazingstar	4.35
Maximilian's sunflower	0.64
False sunflower	0.78
Purple prairie clover	2.23
White prairie clover	2.82
Common milkweed	0.40