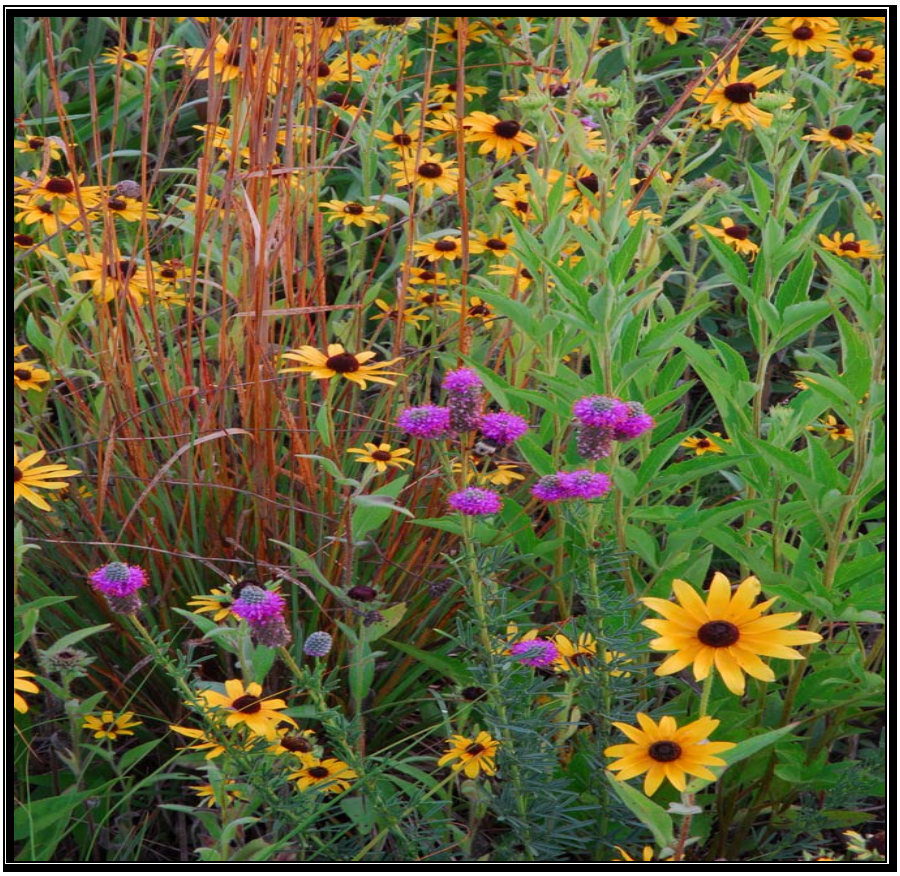
MONITORING AND EVALUATION REPORT

FISCAL YEAR 2007



Midewin National Tallgrass Prairie

USDA FOREST SERVICE

Cover Photo is of the Midewin South Patrol Restoration Project
Taken by Bill Glass

2007 ANNUAL MONITORING AND EVALUATION REPORT

MIDEWIN NATIONAL TALLGRASS PRAIRIE

This report documents Land and Resource Management Plan (Prairie Plan) monitoring completed in fiscal year 2007. It meets a policy requirement and provides a comprehensive account of our activities based on the issues developed when our Prairie Plan was completed. It also documents our evaluation of monitoring data to determine if management and program direction at the Midewin National Tallgrass Prairie (Midewin) has been effective.

The report is also used to identify the need for "course corrections." We are pleased to report we are "on course" and the tools we have been applying are working. We just want them to happen faster….

The report follows a required format. A one page summary is included. While lengthy, the report provides you information about activities that have occurred over the last 5 years and allows you to see how we have been progressing by program area. The Prairie Plan has been implemented since February 2002 and requires detailed planning at the "site-specific" level in compliance with the National Environmental Policy Act (NEPA).

As we implement the Plan we analyze potential projects, project their effects, and then monitor the results to see if we are doing what we said we would. If we made adjustments they get integrated in our records. In addition to the planning process, Midewin has initiated an Environmental Management System that helps us track controls in implementation. More information on the EMS can be found on our website, as can this report.

Volunteer contributions in 2007 have enriched Midewin's restoration and recreation programs, including seed production activities, trail construction and maintenance, environmental education, heritage projects, and many other activities. Thank you to each person, group, and organization, and to all of Midewin's partners who have helped with habitat restoration and recreation improvements in 2007. You have greatly furthered restoration efforts at Midewin and development of recreation facilities in conjunction with the ongoing cleanup of the former Joliet Army Ammunition Plant. Please see the Midewin National Tallgrass Prairie website at www.fs.fed.us/mntp for detailed information on present and proposed restoration activities and recreational opportunities at Midewin.

Logan Lee
Prairie Supervisor

APPROVAL AND DECLARATION OF INTENT

I have reviewed the 2007 Annual Monitoring and Evaluation Report for the Midewin National Tallgrass Prairie. This report meets the intent of annual monitoring and evaluation outlined in the Prairie Plan (Chapter 6) and complies with regulations contained in 36 CFR 219. The Midewin National Tallgrass Prairie continues to implement the Prairie Plan goals and objectives. Accomplishments to date have addressed the long-term goals in the Prairie Plan.

Monitoring and evaluation have resulted in no significant issues or reasons to change the Midewin Land and Resource Management Plan at this time. However, an amendment to the Prairie Plan will be prepared in fiscal year 2008 based on the need to add a third management area for separate management of newly-acquired Army lands requiring public land use restrictions.

This report is approved:

LOGAN LEE,
Prairie Supervisor

Date: March 31, 2008

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SUMMARY

FY2007 activities that made progress toward fulfillment of Midewin's Prairie Plan goals and objectives included:

- Restoration of tallgrass prairie ecosystems and investment in long-term prairie ecology.
- NEPA analyses and decisions for planned restoration and recreation projects.
- Seed production of native prairie plant species to increase Midewin's capacity to meet restoration goals.
- Maintenance of existing infrastructure and prairie conditions for future use, including grazing, mowing grasses and noxious weeds, and road maintenance.
- Implementation of new recreational facilities-including parking lots, trail heads and trails
- Demolition of unneeded and unsafe infrastructure that was in use during Joliet Arsenal operation - including buildings, rail lines, and utility poles – to promote ecosystem restoration activities.
- Safe public access to portions of Midewin based on the U.S. Army's cleanup schedule.
- Environmental education programs such as Mighty Acorns, the El Valor partnership, tours, and lecture series.

As described throughout this report, monitoring has allowed us to observe and record the effects of actions taken to implement the Prairie Plan. We can conclude that:

- ❖ That the goals and objectives outlined in the Prairie Plan are being met;
- ❖ Management prescriptions are being applied appropriately;
- ❖ The results of land management are responsive to the key issues, concerns, and opportunities;
- ❖ New issues, concerns, and opportunities have been, and are continuing to be, adequately addressed;

The Prairie Plan is being amended to designate transferred parcels with certain land use restrictions and such parcels and land uses are being tracked in a Geographic Information System. The newly transferred parcels will be monitored and reported on, as agreed upon by Midewin and both the US and Illinois EPA.

In summary we have determined that the Prairie Plan desired outcomes are being realized and our assumptions in the initial planning stages are still valid. Monitoring has addressed the physical, biological, social, and cultural elements along with emerging issues at Midewin.

INTRODUCTION

The Midewin National Tallgrass prairie continues to be a "prairie under construction," as restoration of tallgrass prairie ecosystems alters the former Joliet Army Ammunition Plant landscape into one more closely reminiscent of conditions that existed before European settlement of the region. The potential for Midewin is that of a vast beautiful prairie rich with natural and cultural resources that visitors will experience to a greater degree in future years. This report documents monitoring and evaluation results for Fiscal Year 2007. Also considered is monitoring information from activities that have been implemented from the time Midewin was first established in 1996 under the Illinois Land and Conservation Act.

The Midewin Land and Resource Management Plan (Prairie Plan) was approved in February 2002. This report covers activities occurring during fiscal year 2007, providing answers to monitoring and evaluation program questions outlined in Chapter 6 of the Prairie Plan. Monitoring of our actions and evaluation of the results of monitoring are essential steps in effective implementation of the Prairie Plan. These steps help us determine if our management activities are meeting direction of the Prairie Plan and help us determine if there is a need to change the Plan's desired conditions, goals, objectives, standards and guidelines. Improvements in our planning and management decisions are expected outcomes of monitoring and evaluation.

Why we monitor

Monitoring records the effects of actions taken to implement the Prairie Plan, which lists specific monitoring questions. This report responds to those questions for FY 2007 and determines:

1. Whether goals and objectives outlined in the Prairie Plan are being met;
2. Whether management prescriptions are being applied appropriately;
3. Whether the results of land management are responsive to the key issues, concerns, and opportunities;
4. Whether new issues, concerns, and opportunities are arising;
5. Whether environmental effects are occurring as predicted; and
6. Whether costs of implementing the Prairie Plan are as predicted.

Monitoring responses to these questions and the resulting evaluation of the responses are the tools used to help determine the success or shortcomings of Prairie Plan implementation, if the desired outcomes are being realized, and if the assumptions in the initial planning stages are still valid. Through this monitoring and evaluation process we are able to assess the quality of Prairie Plan implementation and the need for changes in Plan direction. Monitoring addresses the physical, biological, social, and cultural elements along with emerging issues. Evaluation addresses the results of monitoring, and makes recommendations for amendments, revisions, or changes in management direction in the Prairie Plan.

MONITORING & EVALUATION RESULTS

The monitoring results that follow reflect the specific monitoring questions in the Midewin Prairie Plan (Chapter 6) *Monitoring and Evaluation Plan*. Questions listed in the Prairie Plan pertain to specific monitoring items. Evaluations of the monitoring results are included with the narratives for each monitoring question. Trends that can be discerned from monitoring results are also addressed.

Program Accomplishments

Determine how well objectives have been met by a quantitative comparison of outputs and services with those projected by the Plan.

Table 1: Proposed & actual management activities & actual accomplishments: FY 2003-2006.

National Forest Fund Code	Project Description	FY 2005	FY 2006	FY 2007
NFPN Forest Planning	Maintenance of existing Plan; prepare amendments as needed.	Amendment to be initiated in FY2006	Amendment initiated	Amendment will be completed in FY2008
NFIM Inventory Monitoring	Conduct above project level integrated resource inventories, inventory planning design, documentation, field data collection, data management and stewardship, and prepare reports. Maintain resource information systems; produce annual monitoring and evaluation report.	TES monitoring 6,500 acres. Heritage inventory: 1,961 acres under contract (Jordan Creek Watershed & Group 66A Bunker Field)	TES monitoring 10,416 acres: Heritage Inventory: 1,999 acres	TES Monitoring: 10,668 acres Heritage Inventory: 617 acres
NFRW Recreation/ Heritage/ Wilderness	Outdoor recreation & management. Heritage resource protection, preservation, & interpretation. Environmental education (EE) programming. Interpretive tours & activities.	Recreation:. Completed design and began construction of west side trail including approximately 2 miles of trail cut and .8 miles of base course spread. Maintained approximate 19 miles of interim trail and 5 interim trail parking lots.	Recreation: No openings occurred. Bailey Bridge trail connecting to Wauponsee Glacial Trail construction initiated. Heritage: 69 site surveys, 28 new sites identified, 4 sites requiring further NRHP investigation, 16 site approved of interpretation EE: Expanse of El Valor camp & Urban Academy by 1 additional five week session. Mighty Acorns served 900 students. Total 3,000 students. 450 tour participants, 10 lectures.	Recreation: Opened 808 acres to the public. Continued construction of west side trail. Finalized construction of 140 bridge. Opened 2 new permanent trailheads Began construction on a new wayside exhibit. Heritage: 9 site surveys; 9 new sites identified, 3 sites requiring further NRHP investigation EE: 10 lectures, 900 Mighty Acorn students, EL Valor camp and Urban Academy.

National Forest Fund Code	Project Description	FY 2005	FY 2006	FY 2007
NFWF Wildlife Fisheries Habitat Management	Conserve and recover TES species and ecosystems (leafy prairie clover, white fringed prairie orchid, and other sensitive species). Continue restoration of Blodgett Road Wetlands; continue grassland bird habitat management through conversion of former cultivated land to either grassland or native vegetation by approximately 150 acres yearly. Manage up to 4,000 acres per year of grassland bird habitat, including invasive shrub and tree removal by hand or mechanical tools.	Managed 20 acres of dolomite prairie to protect TES species. Restoration continued at Blodgett Road, 271 acres. 317 acres converted from cropland to grassland. 8,063 acres under active management. 1,900 linear feet (12 acres) of old hedge row removed to improve grassland bird habitat.	Managed 20 acres of dolomite prairie to protect TES Restoration continued at Blodegett Road, 157 acres 160 acres converted from cropland to grassland 13,602 acres under active management 1,900 linear feet (12) acres of hedge row removed to improve grassland bird habitat.	Managed 20 acres of dolomite prairie to protect TES Restoration continues at Middle grant Creek (502 acres) and Drummond Floodplain (470 acres) 160 acres converted to grassland 14, 346 acres under active management Tree and shrub removal within the Drummond floodplain and Middle Grant Creek Restoration acres to improve grassland bird habitat 217 acres
NFRG Grazing Management	Administer & monitor grazing permits for enhancement of grassland bird habitat (approx. 800-4,000 acres/year).	3,729 acres. 6 grazing permits. 5 allotments managed.	4,525 acres. 11 grazing permits, 10 allotments managed.	4,525 acres, 11 grazing permits, 10 allotments managed.
NFVW Vegetation and Watershed Management	Begin implementation of South Patrol Rd and Mola-Hoff Rd wetland restoration projects (approx. 250-500 acres/yr). Continue native seed production. Develop wetland seedbed. Assess and maintain watershed conditions at Prairie, Jackson, and Grant Creeks. Monitor air quality. Control noxious weeds (approx. 200-500 acres yearly). Continue removal of woody vegetation in fence & hedge rows to connect fragmented areas. Implement NEPA decision on IPM herbicide use.	Restoration continued at South Patrol Road, Rt 66 Prairie & Prairie Creek Woods. Additional species & area added to seed bed production. 3,784 acres treated for noxious and invasive plants. 1,900 linear feet (12 acres) of old hedge row removed to improve grassland bird habitat	Restoration continued at South Patrol Road, Rt 66 Prairie, Middle Grant Creek & Prairie Creek Woods. Additional species & area added to seed bed production. 4,463 acres treated for noxious and invasive plants. 1,900 linear feet (12 acres) of old hedge row removed to improve grassland bird habitat	Restoration continued at South Patrol Road, Rt 66 Prairie, Middle Grant Creek Woods. Additional species & area added to seed bed production 2,034 acres treated for noxious and invasive plants.
NFLM Land Ownership Management	Administer & monitor special use permits. Continue boundary & title management.	4 special use permits for agricultural use; 3,594 acres	8 special use permits for agricultural use; 3,937 acres	8 special use permits for agricultural use; 4670 acres

National Forest Fund Code	Project Description	FY 2005	FY 2006	FY 2007
NFLE Law Enforcement	Support Forest Service LE activities.	LE activities supported.	LE activities supported	LE activities supported
WFPR Wildfire Preparedness	Meet minimum firefighting production capability at Most Efficient Level.	Capacity = 10 chains built/hour	Capacity =10 chains built/hour	Capacity=9 Chains built/hour
WFHF Hazardous Fuels Reduction	Plan, treat, and manage vegetation by mechanical treatment, prescribed fire, and other strategies. Monitor and document treatment. Continue to implement 2001 Prescribed Fire EA decision. Treat approximately 200 – 1,000 acres/year.	Fuels treatment: 717 acres burned; 5,487 acres mowed.	Fuels Treatment 1000 acres burned, 1,114 mowed	Fuels Treatment 1,038 acres burned
CMFC Facilities Capital Improvements and Maintenance	Implement annual maintenance of Administrative Site. Design and build a visitor center.	No new facilities constructed in FY2005.	No new facilities constructed in FY2006.	No new facilities constructed in FY 2006
CMRD Roads Capital Improvements & Maintenance	Eliminate backlog of deferred maintenance for administrative roads (approx. 5 miles/year). Decommission unneeded roads in sensitive habitat, near tracts of native vegetation, & those that fragment grassland habitat or traverse wetlands or streams (approx. 10 miles/year, as funds allow).	No roads decommissioned .6 miles maintained to operation maintenance level.	No roads decommissioned	No roads decommissioned
DMDM Backlog Maintenance	Demolish former Army facilities and infrastructure as funds allow. Started with 22 transite warehouses and 16 railroad trestles.	Demolished 9 building foundations, one warehouse and two road bridges. Removed 1.3 miles of chain link fence.	Demolished 2 buildings	Demolished 12 buildings: 10 Bunkers and 2 warehouses
CMTL Trail Capital Improvements & Maintenance	Designate & maintain interim trails. Design & build permanent trails.	19 miles of interim trails maintained by mowing. Construction for West Side permanent trail began.	19 miles on interim trail maintained by mowing. Construction for West Side permanent trail began.	19 miles on interim trail maintained by mowing. Construction for West Side permanent trail continued.
LALW Land and Water Conservation Fund	Emphasize acquisitions that further Plan objectives and improve access for restoration and recreation.	No new lands acquired utilizing this fund.	No new lands acquired using this fund	No new lands acquired using this fund

National Forest Fund Code	Project Description	FY 2005	FY 2006	FY 2007
PRPR Midewin Restoration Fund	Collect authorized fees from salvage projects and implement priority projects.	N/A	No new lands acquired	No new lands acquired
FDFD Recreation Fee Demo Program	Improve visitor facilities & services.	Maintained parking lots; provided portable toilets; provided interpretive programs.	Maintained parking lots; provided portable toilets; provided interpretive programs	Maintained parking lots; provided portable toilets; provided interpretive programs
PIPI Midewin Rental Fees	Collect fees for authorized agricultural use & implement grassland habitat management projects, including needed equipment, fencing, mowing, and seeding of grasses.	Invasive species control on 3,727 acres. Installed green house for plant propagation. Additional seed cleaning equipment purchased. Insect survey for regional forester sensitive species. Installed fencing for grassland bird management. Removed old fencing and railroad ties.	985 acres integrated fuels treatment-mowing. Installed Deer proof fence- seed production area Brush control treatment 1333 acres Heavy mowing Herbicide treatment for species control Purchased Prairie seed harvester and slip on Fire pump 6 wheel utility vehicle.	Brush control treatment 595 acres-heavy mowing. Herbicide treatment on restoration areas totaling 657 acres. Purchase of large bat-wing mower to mow invasive species. Continued railroad tie removal to allow prescribed burning. Construction of cattle fence to allow enlargement of grassland wildlife management areas. Pasture seed for planting grassland wildlife management area

National Forest Fund Code	Project Description	FY 2005	FY 2006	FY 2007
CWFS – Other Cooperative Funds	Deposit cooperator funds and donations; spend on authorized projects.	CenterPoint wetland funds applied to Middle Grant Creek wetlands restoration: Invasive control and removal of RR ties, night bunkers, debris, and concrete bunker. CorLands contract for invasives control in South Patrol Road, Rt 66 Prairie and Prairie Creek Woods; Purchased seeds for South Patrol Road. TWI prairie and wetland restoration work at Blodgett Rd.	The Wetland Initiative, Corlands, USACE, IDNE funds applied to South Patrol Restoration. Corland, USACE, Ducks Unlimited funds applied to Route 66 Prairie. Corlands, USACE funds applied to Prairie Creek Woods. CenterPoint collected funds applied to Middle Grant Creek restoration. The wetlands Initiative funds applied to Blodgett Road Dolomite Prairie	CenterPoint collected funds applied to Middle Grant Creek and Drummond Floodplain restorations. The Wetlands Initiative funds applied to Blodgett Road Dolomite Prairie and Drummond Floodplain restorations.
NFSD – SCSEP Senior Community Service Employment Project	Hire and train 2-3 senior employees each year.	2 SCSEPs employed.	SCSEP program ceased	SCSEP program ceased in FY06.
HWHW Hazardous Waste	Continue environmental coordination & support. Continue wetlands & drainage confirmatory sampling for arsenic in fence lines, railroad ballast, and Kemery and Doyle Lake sediment.	Risk assessment for evaluation of FY03 & 04 sampling results completed.		

Budgets: How fiscal year 2006 program funding was utilized

The Prairie Plan is the basis for developing multi-year program budget proposals and the annual program of work. Actual funding levels appropriated by Congress determined the rate of implementation of the Prairie Plan. The federal budget is appropriated on an annual basis by the United States Congress for fiscal years (from October 1 through September 30). Midewin leverages the appropriated funding received through partners and volunteers.

Table 2: Final Budgets for Fiscal Years 2002- 2006.

FUND CODE	TITLE OF FUND CODE	FY2003 FINAL	FY2004 FINAL	FY2005 FINAL	FY2006 FINAL	FY2007 FINAL
NFPN	Planning	$25,000	$28,000	$58,000	$49,000	$168,000
NFIM	Inventory / Monitoring	$225,000	$516,000	$375,000	$193,000	$180,000
NFRW	Rec./ Heritage / Wilderness	$368,000	$555,000	$843,000	$663,192	$574,000
NFWF	Wildlife / Fisheries	$375,000	$557,000	$542,000	$399,515	$376,000
NFRG	Grazing Management	$20,000	$30,000	$29,000	$16,010	$17,000
NFVW	Vegetation / Watershed Mgt.	$434,000	$525,000 (less $140,000 of ECAP= $385,000)	$542,000	$427,786	$376,000
NFLM	Land Ownership Mgt.	$87,000	$96,000	$99,000	$57,000	$63,000
NFLE	Law Enforcement	$34,000	$0	$0	$0	$0
WFPR	Fire Preparedness	$792,000	$914,000	$914,000	$679,662	$455,000
WFHF	Hazardous Fuels Reduction	$7,000	$71,000	$57,000	$77,157	$98,000
WFW2	Rehab and Restoration	$0	$0	$0	$0	$0
NFCC	Condition Class	$0	$3,000	$0	$0	$0
CMFC	Facilities Capital Improvement/Maintenance	-$3,000	$501,000	$569,000	$97,207	$100,000
CMRD	Roads Capital Improve./Maint.	-$16,000	$199,000	$306,000	$40,305	$209,000
CMTL	Trails Capital Improve./Maint.	-$7,000	$208,000	$167,000	$616,943	$135,000
CMII	Deferred Maintenance	$20,000	$263,000	$175,000	$638,736	$244,000
CMC2	Fire Facilities – Backlog	$31,000	$0	$0	$0	$0
LALW	Land Acquisition	$0	$5,000	$25,000	$11,000	$15,000
NFMG	Minerals / Geology Management	$0	$0	$0	$50,000	$53,000
NFMP	Monitoring	$0	$0	$0	$0	$0
NFTM	Forest Products	$0	$0	$0	$0	$0
TRTR	10% Roads and Trails	$58,000	$54,000	$51,000	$1,000	$53,000
RTRT	Reforestation Trust Funds	$0	$0	$0	$0	$0
HWHW	Hazardous Waste	$3,000	$140,000 (ECAP)	$0	$0	$0
PIPI	Midewin NTP Rental Fees	$500,000	$500,000	$1,295,000	$1,083,556	$1,083,556
DMDM	Deferred Maint. – Fund Cleanup	$0	$0	$0	$0	$0
WFW3	Rehab and Restoration	$0	$0	$0	$46,300	$0
TOTAL		**$2,953,000**	**$5,025,000**	**$5,954,000**	**$5,147,369**	**$4,199,556**

Potential FY08 monitoring needs? Continue existing volunteer monitoring programs and implement long-term vegetation monitoring in restoration areas and a lichen monitoring program.

Agricultural Use

Are continued agriculture permits used for resource management purposes?

Agricultural permits (leases) have continued to be used for resource management purposes at Midewin. Specifically agricultural permits are used to control invasive plant species until areas can be converted to native vegetation or grassland wildlife habitat. These areas if left idle would be a major source of invasive plant invasion throughout Midewin. Agricultural crops are also used at Midewin in preparation of planting prairie

and wetland vegetation and grassland bird habitat. The agricultural production controls invasives prior to planting and provides an excellent seed bed for planting.

Table 3: Agricultural Permits

FISCAL YEAR	Acres Removed from Production	TOTAL acres in leases includes new acquisitions
1997 – 2002	1,894	
2003	343	3,998
2004	695	3,664
2005	238	3,112
2006	317	3,937*
2007	160	4,670*
TOTAL acres removed from production and converted to grassland or prairie.	3,642	

* - In 2006 additional land was transferred from the Army which included cropland. In both 2006 and 2007 hay fields were added to the agricultural permits program. Both of these factors account for the increases in number of acres from previous years.

The total 3,642 acres is a total acreage of the fields that have been removed from crop production. In some cases there was non-crop production land mixed in with the crop fields. For example bunkers, roads, railroad beds, and small wooded areas. These areas have not been separated out so the actual acres that were in crops may be less.

The trend has been to remove agricultural fields from production to provide habitat. So far, approximately 3,642 acres have been successfully removed from crop production and converted to native habitat and grassland wildlife habitat. This trend should probably level off in the future because of the increasing need to control invasive plant species in lands already converted. The early years of conversions tend to require the most invasive plant species control. Therefore, additional conversions would increase this workload to the point that the quality of control would drop threatening investments already made. Once some converted areas are in a maintenance mode or if additional funding or help from partners is available additional areas can be converted.

Photo 1: Planting pasture grasses

Presently the crop rotation is between Roundup-ready soybeans and winter wheat. Corn has been excluded from this rotation because of the chemicals (pesticides and fertilizer) necessary for corn production. The Asian soybean rust arrived to the continental US in 2004. This fungus can be devastating to soybean production. The means of treating it is a fungicide. Currently the rust is in the southern

states, but is expected to travel north. This fungus could have an impact on the use of soybeans for future management.

Hay permits are utilized in grassland wildlife management areas to control grass height and woody plant invasion. These permits provide the needed mowing plus add some income that goes back into restoration.

Both soybeans and wheat have been used at Midewin prior to the planting of native vegetation. Plantings of soybeans have proven to have fewer problems with invasive plant species than winter wheat. Invasive plant species appear to survive in the wheat field or may colonize in after the wheat has been harvested in the summer.

Several small tracts currently in crops will be transferred from the Army in the near future and will slightly increase the amount in row crop agriculture.

Recommendations:

- Continue agricultural practices to assist in the restoration process and control invasive species.
- Maintain current levels of agriculture until levels of invasive plant infestations in currently converted areas are under better control, only then convert more fields.
- Keep newly transferred acres in agriculture and return agricultural practices to idle fields to control invasive plants species.
- Precede prairie and wetland restoration with two seasons of Roundup-ready soybeans.
- Monitor soybean rust developments and prepare NEPA for the possible use of fungicides for control of the rust.

How many acres are under grazing or special use permits?

Grazing is used as a management tool to control grass height and provide habitat for grassland wildlife. Currently there are 11 allotments, two west of Route 53 with the remaining east of Route 53. The number of acres of land grazed will continue to increase over the next several years, and then probably level off due to similar invasive species problems just as conversion of agricultural lands should slow and level off. It takes several years after conversion to cool season pasture grasses before a tract is ready for grazing, which accounts for the lag period between conversion and actual grazing expansion. Once invasive control in the existing pastures is in the maintenance phase, additional conversion from crop production to grazing can take place.

Table 4: Grazing

YEAR	Acres Grazed
2002	1,996
2003	2,461
2004	2,822
2005	3,467
2006	4,525
2007	4,525

Recommendations:

- Continue grazing leases to provide habitat for grassland wildlife.
- Maintain current planned levels of grazing on Forest Service lands until levels of invasive plant infestations in currently converted areas are under better control.
- Keep newly transferred acres in grazing and return grazing to idle fields as practical considering invasive control needs.
- High priority should be given to controlling invasive trees and shrubs and repairing fencing in newly transferred tracts.
- Develop new watering sources (wells) and possibly limited access stock ponds that can be used by other wildlife.

How many acres of former agriculture land use are being restored?

For the period between 2002 and 2007, approximately 2,930 acres were taken out of crops and planted to cool season pasture grasses. The 2006 planting needs to be replanted. Approximately 541 acres of former crop fields have been converted to native vegetation during the reporting period. Conversion from crop fields to seed production as converted approximately 176 acres.

Table 5: Agricultural Land Restoration

Fiscal Year	Cool Season Grass Pasture and Hay Field Conversion	Prairie and Wetland Conversion	Seed Production
1997 - 2002	1,749	0	145
2003	293	50	
2004	176	488	31
2005	235	3	0
2006	317	0	0
2007	160	0	0
TOTAL	2,930	541	176

Conversion of agricultural land use to cool season grass pasture and natural vegetation should slow down over the next few years for reasons noted in agriculture and grazing section. Conversion to prairie and wetland communities has additionally slowed due to supplemental work needed on areas already converted. If additional funding, staff or partnership help becomes available, additional acreage can be converted. Funding has become available for some native plant restoration, but these projects will take place in non-agricultural areas.

Recommendations:

- Slow conversion until invasives in already converted tracts are better under control.
- Slow conversion to natural communities until supplemental restoration activities has decreased on already converted tracts.
- If additional staffing, funding or partnership help becomes available increase conversion appropriately.

Air Quality

Is Midewin causing significant deterioration of air quality?

During FY 2007, activities at Midewin did not result in significant sources of air pollution or contribute to the deterioration of air quality. Prior to conducting 1,039 acres of prescribed burns, Midewin obtained the necessary permits from the Illinois Environmental Protection Agency (IEPA), and Midewin prescribed burns did not occur during ozone action days.

Capital Infrastructure

Have adequate facilities been provided?

No new facilities were constructed in FY2007. Current facilities are adequate.

Former Army Facilities Removal

Are former contaminated areas being restored?

Midewin has not acquired any of the areas deemed as former contaminated areas. Those areas are being restored or "cleaned-up" by the Army prior to the land exchange to Midewin.

Ecosystem Restoration and Management

Are unfragmented blocks of grassland bird habitat being created and maintained?

Fragmented grassland wildlife habitat consists of grass dominated habitat with tree lines, hedge rows, scattered large trees, numerous shrubby woody plants and/or old army infrastructure dividing up grassland habitat into smaller units. Many types of grassland wildlife especially grassland birds are sensitive to having close woody vegetation and require large open grassland areas for breeding and rearing of young.

Photo 2: Mowing Brush-Opening up Wildlife Habitat

Unfragmenting grassland habitat consists of removing the trees, shrubs and/or infrastructure to create large unfragmented areas. The Prairie Plan calls for 5 large unfragmented areas ranging in size from 501 to over 3,000 acres. Unfragmented habitat is also created during prairie and wetland restoration. Once an area is unfragmented management is needed to keep it in an unfragmented state. This management can take the form of prescribed burning and/or mowing.

So far none of the large unfragmented areas identified in the Prairie Plan have been realized. Currently approximately 1,668 acres within the areas identified as large unfragmented tracts have been opened up. Additionally 685 acres not identified as dedicated unfragmented habitat have been created due to prairie and wetland restoration. In 2007, approximately 3,316 acres were under mowing management to keep them from becoming further fragmented.

Existing habitat should continue to be unfragmented into the future to meet the requirements of the Prairie Plan. At this time no further tracts are scheduled to be unfragmented beyond year 2007, because environmental analysis has not been completed on tree removal. Maintenance of existing grassland wildlife areas through mowing and prescribed burning will continue to control reinvasions of trees and shrubs.

Because of the size of Midewin and limited funds and staffing, woody vegetation encroachment continues and in many areas becomes worse every year. Present management is on areas under grazing, hay production or natural community restoration areas. Other areas are increasing in trees and shrubs and much of the movement of invasive trees and shrubs is along the many roadside ditches, medians and old railroad right-of-ways at Midewin. Areas presently belonging to the Army, but scheduled to be transferred to Midewin are heavily infested with shrubs and are now and will continue to be a source of shrub invasion until these areas can be brought into a management regime.

Recommendations:

- Complete environmental anaylsis for restoring fragmented habitats.
- Continue to unfragment grassland habitat for grassland wildlife, this should occur on a yearly basis.
- Highest priority for unfragmenting should be given to existing grassland habitat areas, grazing tracts, hay fields and prairie/wetland restorations and remnants.
- Continue mowing to control small trees and shrubs in existing management areas and open up others not presently being managed.
- Use of herbicide treatment is necessary in many tracts to better control invasive trees and shrubs, but this must be coordinated with the grazing program. Possible use the fee credit system to achieve this.
- Increase the use of prescribed fire in grassland wildlife areas to help control invasive trees and shrubs.
- Maintain roadsides and medians with periodic mowing, prescribed burning and herbiciding.
- Maintain old railroad beds with periodic mowing, prescribed burning and herbiciding. Maintenance along these railroad beds may be difficult because of the railroad ties left by the army.

Are habitats being restored?

Restoration includes such activities such as converting croplands to cool season grasses, planting native species and management activities to improve existing cool season pastures and natural community areas. The initial conversion of croplands to grass fields and native vegetation is one part of restoration process, the other part is the management of these converted tracts and any tracts of existing native vegetation.

Management includes such activities as prescribed fire, invasive plant species control, and the planting of native seeds and plant plugs.

The acres of habitat being restored will vary from year to year depending upon the management needs in any particular year, but over time should have an increasing trend. For example, specific tracts may be on a 3-year burn rotation and restoration might not be reported in non-burn years and only in the burn year. Currently new acres are being restored at Midewin each year. This trend should slow, because of limited resources and the need to extensively manage the current restoration areas for invasive plant species. Rather than add additional acres that can't be managed properly, resources should be spent on the existing restoration areas.

Table 6: Acres Being Restored

Year	Acres being restored
2002	2,389
2003	4,107
2004	5,583
2005	5,443
2006	6,333
2007	6,472
2008 (planned)	6,500+

Agricultural fields have been converted to grazing tracts in areas identified as grassland habitat in the Prairie Plan. Most of the native vegetation restoration has taken place on the west side of Midewin (west of highway 53) as identified by the Prairie Plan. These habitat restoration projects have converted crop fields, old pastures and abandoned fields to native plant communities.

Over the past six years partners have assisted the Forest Service in restoring five major areas. The table below gives the approximate partner contribution to each project.

Table 7: Restoration Funding

Restoration Project	Acres	Primary Partners	Partner Investment
South Patrol Road	459	The Wetland Initiative, CorLands, USACE, IDNR	$919,000.00
Route 66 Prairie	65	CorLands, USACE, Ducks Unlimited	$156,000.00
Prairie Creek Woods	56	CorLands, USACE	$200,000.00
Middle Grant Creek	502	CenterPoint Properties	$1,200,000.00
Blodgett Road Dolomite Prairie	151	The Wetlands Initiative	$600,000.00+
Drummond Floodplain	470	CenterPoint Properties	$85,000.00

Restoration activities were ongoing in 2007 with partners on three project areas, Blodgett Road Dolomite Prairie, Drummond Floodplain, and Middle Grant Creek. The Wetlands Initiative, through grants, have partnered with the Forest Service to control invasive species and over-seed the existing planted areas at Blodgett Road Restoration area. Restoration work continues at the Middle Grant Creek Project through mitigation funding from CenterPoint Properties. TNT storage bunker removal, invasive species control, road obliteration and recontouring took place in 2007. In Drummond Floodplain, a field tile survey and invasive species control took place in 2007.

Photo 3: South Patrol Road Restoration Project

Additional restoration projects are scheduled to begin in 2008 through partnerships with ExxonMobil. Restoration activities will begin following the land transfer from ExxonMobil. The Wetlands Initiative will continue to partner with the Forest Service with the Drummond Floodplain area in 2008.

Recommendations:

- Continue restoration, but not at the expense of existing restoration areas that need extensive work, especially invasive plant species control.
- Complete NEPA on an expanded restoration area on the west side to have on the shelf as funding becomes available.
- Increase restoration as funding, staffing and/or partnership assistance becomes available.
- Prioritize new restorations to link up with existing and planned restorations.
- Complete NEPA on a restoration area within the Kankakee River watershed on the east side of Midewin to have on the shelf if funding in the watershed becomes available.
- Explore new partnerships to expand restoration in the future.

How many acres are under management?

Management activities include mowing, planting (native vegetation and pasture vegetation), herbicide treatment for invasive species, agricultural production, and mowing and grazing to manage for grassland bird habitat. The acres under management should increase with time, but may level off depending upon the ability of the Forest Service to adequately manage increasing acreage.

Table 8: Acres Under Management

Year	Acres under management
2002	7,675
2003	9,662
2004	10,900

Year	Acres under management
2005	10,908
2006	13,602
2007	14,346
2008 (planned)	14,000+

Recommendations:

- Continue management of existing areas.
- Manage new areas as Forest Service funding and staffing and/or partnership assistance allows.

To what extent are vegetation composition objectives being met?

Planting native vegetation restoration areas was started in 2004. For many native prairie and wetland species, it takes several years for them to get established and be accurately identified in the field. In 2006, The Nature Conservancy helped Midewin staff establish a restoration protocol (Plotwise Floristic Quality Assessment) that should help answer the question of whether the composition objectives are being met. Data from major restoration areas will be compared to data collected from nearby high quality prairie and wetland remnants. This data will be collected on a yearly basis. It will take additional years to determine a trend in species composition. Presently there is insufficient data to determine a trend.

Another method to evaluate composition is to determine if species being introduced are getting established in the plantings. The South Patrol Road and Route 66 Prairie restoration areas have had species lists developed. These species lists are incomplete because some species may be in small numbers and not noticed during surveys. Other species, in particular graminiod species are difficult to find and identify in early years. The most complete species list exists for the South Patrol Road restoration project. In this project, 181 species were seeded or planted, 115 of these species have been found representing 62% of the species planted. The actual percentage may be higher, however, it has been a short period of time since initial planting and the difficulty of locating and identifying young plants constitutes an adequate 62% count at this time. This number is quite high considering other local new prairie restorations. The number of species getting established should increase over time.

Yet, another method of determining if vegetation composition goals are being met is to look at native and non-native invasive species. Early in restorations, invasive species can be quite frequent. With succession and management, the goal would be to have fewer invasive species and smaller frequencies of each species. The Nature Conservancy is assisting the Midewin staff to develop a plotwise floristic quality assessment to monitor invasive species. This protocol has not been totally developed or tested but should be available for future reporting periods.

As the restorations age over the next 5-10 years and additional data points are established the evaluation of composition goals should be more complete.

Recommendations:

- Continue to monitor South Patrol Road, Route 66 and Blodgett Road restorations using the Plotwise Floristic Quality Assessment
- Expand Plotwise Floristic Quality Assessment to other current and future restoration efforts as staffing and funding is available.
- Work with The Nature Conservancy to complete development of an invasive Plotwise Floristic Quality Assessment.
- Explore other methods to monitor vegetation composition goals.

To what extent is habitat management reaching desired habitat structure for RFSS birds and reaching Management Indicator goals?

RFSS birds fall into three categories, wetland birds, grassland birds and open woodland birds. Wetland birds require wetlands (marsh, sedge meadow and wet prairie). Restoration activities have restored former wetlands that had been drained by field tiles and drainage ditches. The South Patrol Road and Blodgett Road restoration projects have restored approximately 100 acres of wetlands. Beaver dams also are good at providing wetland habitat. Where beaver dams do not threaten neighbors or infrastructure they have been left in place. Approximately 70 acres of wetlands are being maintained through the actions of beavers. Wetland birds have been seen using these areas sporadically. Wetlands are starting to form at the Middle Grant Creek restoration project, as this and additional wetlands are created, wetland bird use should increase.

Grassland birds can be placed into three suites, those that prefer short-stature grasses, those that prefer medium-stature grasses and those preferring tall-stature grasses. Species do overlap the three general suites, but each seems to do best in one of the three. The most critical grass height habitat at Midewin is the short-stature grasslands. Midewin uses cattle grazing (see photo 4) to provide the short-stature grass habitat. Hay mowing and idle pastures provide the mid-stature grass habitat, while the prairie reconstructions and other non-grazed areas provides tall-stature grass habitat. Litter depth can also be important for some species.

Photo 4: Cattle Grazing on Midewin to maintain grassland habitat for grassland birds.

Grass height and litter depth is monitored during late spring and early summer to determine if the proper structure is being maintained. Ideally grass heights should range from 15 to 80 cm in height and litter range from 2 to 4 cm in depth to provide habitat for each of the three suites of grassland birds. Data was not collected in 2005 due to staffing problems, but would probably have been similar to 2003 and 2004 since the grazing and management was identical. In 2002 and 2007, no tall-stature grassland tracts were monitored. Tall-stature grasslands do not differ much from year to year and are given a much lower priority in monitoring. If monitoring time is limited as in 2007 these areas are skipped in preference to the short-grass and medium-grass areas where active management is required to maintain the required heights. Grazing

tracts are measured more than non-grazing tracts to help determine the proper number of cattle needed to achieve the desired results. More mid-stature and tall-statue habitat areas exist at Midewin than are measured. The Robel method of determining grass height is used.

Table 9: Grass structure in pastures (short stature grass habitat)

Year	Short Grass Acres	Short Grass Height Range	Short Grass Height Mean	Litter Depth Range	Mean Litter Depth
2002	1335	17-47 cm	30 cm	0.6-2.7 cm	1.7 cm
2003	2133	10-47 cm	23 cm	0.3-5.2 cm	1.9 cm
2004	2169	10-53 cm	25 cm	0.3-3.1 cm	1.7 cm
2005	NA	NA	NA	NA	NA
2006	4071	14-54 cm	31 cm	0.3-3.5 cm	1.6 cm
2007	2436	14-35cm	21 cm	0.65-1.96 cm	1.2 cm

Table 10: Grass height in idle pastures and hay fields (medium stature grass habitat)

Year	Mid Grass Acres	Short Grass Height Range	Short Grass Height Mean	Litter Depth Range	Mean Litter Depth
2002	195	58 cm	58 cm	2.1 cm	2.1 cm
2003	305	34 cm	34 cm	1.2 cm	1.2 cm
2004	195	46 cm	46 cm	1.7 cm	1.7 cm
2005	NA	NA	NA	NA	NA
2006	396	25-47 cm	36 cm	1.2-2 cm	1.6 cm
2007	1035	26-29 cm	27 cm	0.9-2.63 cm	1.6 cm

Table 11: Grass height in idle grasslands and restorations (tall stature grass habitat)

Year	Tall Grass Acres	Tall Grass Height Range	Tall Grass Height Mean	Range Litter Depth	Litter Depth Mean
2002	NA	NA	NA	NA	NA
2003	1028	34-49 cm	43 cm	0.7-4.9 cm	3.0 cm
2004	592	32-53 cm	42 cm	2.8-2.9 cm	2.8 cm
2005	NA	NA	NA	NA	NA
2006	1187	31-47 cm	41 cm	0.3-4.1 cm	2.2 cm
2007	NA	NA	NA	NA	NA

Future analysis should compare numbers of cows in each tract with the grass heights and any differences between yearlings and mother/calf operations. These relationships could be important in fine tuning the grazing to produce the most optimal grassland wildlife habitat in the future. Present staffing does not allow for this analysis.

Grass height analysis shows that Midewin is providing the desirable grass heights for grassland wildlife. The data indicates the current management is appropriate for grassland wildlife and changes to the management regime are not necessary at this time.

Another structure component is the amount and location of shrubs and trees in a grassland. Most grassland birds require wide open areas with little to no shrubs (unfragmented areas). The loggerhead shrike prefers the short-stature grassland with some shrubs for nesting. As areas have been unfragmented, small grouping of shrubby trees have been left for loggerhead shrikes along the perimeters. This action has been successful in maintaining loggerhead shrike populations; see the status of loggerhead shrikes below. Approximately half of the nests, found each year, are in small areas left within unfragmented tracts.

The red-headed woodpecker is a bird of open woodlands and savannas. Although the presence of red-headed woodpeckers has been known at Midewin for years and are assumed to nest, the status is unknown. It is believed the population is small. Woodland and savanna restoration as in Prairie Creek woods should provide for additional habitat.

Current management plans (restoration and grazing) are adequate to maintaining the current populations of RFSS birds. To increase RFSS bird population numbers, additional restoration needs to take place. As additional lands are restored the population numbers should increase. Fine tuning the grazing would be useful, but does not appear to be critical at this point in time.

Recommendations:

- Continue grass height sampling using the Robel method.
- Analyze numbers of cows with grass heights and any differences between yearling and mother/calf operations if staffing is available.
- Correlate the population of grassland birds with grass height and type of cattle operation as staffing permits.
- Continue to provide isolated shrubby habitat along edges of open grasslands for loggerhead shrikes and other shrubland birds.
- Develop a periodic monitoring protocol to monitor the status of the red-headed woodpecker. Either as staffing permits or through the use of volunteers.

Environmental Education/Interpretation

Are tours, interpretation and Environmental education Programs meeting objectives?

The goal of interpretation and conservation education at Midewin is to enhance public awareness and appreciation of prairies in Illinois in such a way that they are motivated to become advocates for prairie conservation and restoration. Midewin's interpretive and conservation education programs continue to focus the following program activities:

Midewin Welcome Center: The Welcome Center was open to the public for the entire fiscal year, visitation for FY2007 did not increase from FY2006. The interpretive sales outlet provided by the Midewin Interpretive Association (MidIA) also operated for the entire year. Sales continue to increase. MidIA continues to refine their inventory in response to sales data and customer demand. Low visitation and staff shortages resulted in the Welcome Center being closed on Sundays following the Labor Day

weekend. Hours were further reduced in early November with the elimination of all weekend hours.

Photo 5: Midewin For Kids

Midewin Explorations Interpretive Activities Program: Midewin offered a full range of on-site interpretive programs during FY2007. "Midewin for Kids", a program targeted at youth ages 7-11, was continued. The number of tour participants in FY2007 was 328. This represents a decrease of 27% from FY2006.

Midewin Lecture Series: 2007 was the fifth year for the Midewin Lecture Series. This series of 10 biweekly evening lectures during the winter months is designed to introduce participants to the natural and cultural history of the Midewin and northeastern Illinois. The Midewin Lecture Series is growing in popularity.

Mighty Acorns Youth Stewardship Program: During FY2007, a total of 5 schools representing 3 public school districts and one private school participated in the Mighty Acorns program at Midewin. This represents a stable program when compared to FY2006. Total student participation in the Mighty Acorn program at Midewin remained at 900 for the 2006-2007 school year. There are currently at least two additional school districts that would like to join the Midewin Mighty Acorns program. Our ability to maintain our existing Mighty Acorns program and to provide some expansion is dependent on our ability to recruit additional volunteers.

El Valor Partnership: During FY2007, Midewin supported the 7th year of the Forest Service El Valor Science & Technology day camp. Two 4 week sessions operated out of the center in the Pilsen neighborhood and one five week session operated out of South Chicago center. The **Urban Academy for Environmental Discovery** successfully operated for a fourth year. In the fall of 2007, El Valor opened a third community center in the Little Village neighborhood.

Future program expansion should include a second summer camp session and the urban academy at the South Chicago facility, and introduction of both programs at the new center in Little Village.

Photo 6: El Valor planting Monarch Waystation

Youth Conservation Corps: Midewin hosted a YCC crew for eight weeks during the summer of 2007, providing employment and environmental education for 7 local high school youth.

Summary:

Through the programs above, Midewin provided interpretive activities for 1,000 individuals in FY2007.

Conservation Education programs at Midewin resulted in 3,200 student contacts.

Recommendations:

- Continue to focus the interpretive program on Land and Resource Plan management goals.
- Through the use of non-personal interpretive media such as signs and brochures, explore ways to provide the same benefits of interpretation to the new audience of dispersed recreation visitors to Midewin.
- Work with the new Volunteer Coordinator to expand the pool of volunteer group leaders for the Mighty Acorns.
- Continue to work with El Valor to refine the curriculum and logistics of the Urban Academy, the expansion of the Science and Technology Summer Camp to two sessions the South Chicago location along with the introduction of the Urban Academy, and expansion of both programs into the Little Village center as it comes on line.
- In addition to the staffed interpretive activities, work to develop additional self guided interpretive products that enhance the visitor experience and are consistent with the Prairie Plan and the Interpretive Master Plan.
- Through grant funding opportunities such as the Forest Service “More Kids In The Woods” program and others, pursue alternative funding sources to maintain current program levels and allow for modest program expansion.

Fire

Has a fire/smoke management plan for Midewin been developed and followed*?*

Fire Management plan is updated on an annual basis. For FY 2007, this plan was completed in January 2007. Planned for FY 2008, a Fire Management Plan with agreements from the villages of Wilmington and Elwood fire protection districts and a Prairie Aviation plan will be included in the Fire Management Plan.

In September of 2007, Midewin participated in developing Illinois's first Smoke Management Plan. This effort is an interagency effort with contributions from county, state, and other federal agencies working with IL EPA to accomplish this plan.

Have fire burn plans been developed and followed?

Burn plans are completed for everything that we burn. For Fiscal year 2007, 5 fire burn plans were completed which amounted to approximately 1039 acres being burned for prairie restoration.

Hazardous Materials

To what extend have hazardous substances sites have been mitigated?

Midewin did not mitigate any hazardous substance sites.

Heritage Resources

To what extent are National Register-eligible sites being identified, protected, and preserved?

Photo 7: Cemetery Clean-up with Volunteers

In FY2007, Midewin had a target of 1,184 acres for archaeological survey. A formal archaeological report was completed for 617 acres during the fiscal year, and the remaining acreage will be included in formal archaeological reports during FY2008.

Through these surveys, 49 National Register of Historic Places (NRHP)-eligible or unevaluated sites were identified and/or protected. 9 new sites, both historic and prehistoric, were identified through Phase I archaeological surveys. Of these, 3 sites will require further investigations to determine their eligibility for listing in the NRHP. Evaluations of sites will be conducted as funding is available. All heritage resources evaluated as eligible for listing in the NRHP, those requiring further study, or those that have not been evaluated, are protected from adverse effects of prairie activities. Protection is achieved by periodic monitoring of site conditions, monitoring during activities, avoidance of sites during project actions, scheduling activities for certain times of year, and other mitigative measures such as fencing. Of these 49 sites, 16 are considered Forest Service Priority Heritage Assets (PHAs). At Midewin, the PHAs are recognized through prior investment in preservation, interpretation, and use, and 5 of the sites are recognized in an approved management plan.

The total acreage for area surveyed at Midewin now includes 9,583 acres.

Table 12: Site Identification, protection, & preservation.

Site # and Type	Action
5 Historic Cemeteries	Monitoring & Protection
13 Heritage Resources	Monitoring & Protection
16 Heritage Resources	Protected
9 Heritage Resources	Identified and Protected.

To what extent are National Register-eligible sites being appropriately examined, reported, and interpreted?

During FY2007, 21 heritage resources were examined, reported, and/or interpreted. Examination and reporting determine whether sites are eligible for the NRHP. Selected sites are interpreted for the public as tours, Passport in Time volunteer projects, and Mighty Acorn conservation education projects. The Youth Conservation Corps (YCC) and Midewin Heritage Association (MHA) assist the Prairie Archaeologist in maintaining the McCune Cemetery, Starr's Grove Cemetery, and select farmsteads.

Table 13: Site Examination, Reporting, & Interpretation.

Site Name & Type	Action
5 historic Cemeteries	Interpreted
11 Farmsteads	Interpreted
3 Schoolhouses	Interpreted
2 Prehistoric Sites	Interpreted

To what extent are traditional cultural properties being identified and protected*?*

Traditional cultural properties (TCPs) are protected by non-disclosure of specific information or locations and by periodic monitoring to assure that TCPs are not impacted by project actions, vandalism, or natural deterioration.

What cumulative effects are management actions having on cultural resources and/or traditional cultural properties*?*

In FY2007, all eligible or unevaluated heritage sites and potential TCPs were protected from direct or indirect effects of management actions. Monitoring found no cumulative effects on heritage resources have resulted from activities at Midewin. Cumulative effects of an adverse nature are avoided by different methods including diverting activities away from sites or avoiding surface disturbances through scheduling activities at times of the year when the ground is frozen or dry. Proper planning and communication between resource specialists has helped to minimize or eliminate adverse effects – including cumulative effects – on archaeological resources. Cumulative effects are additionally being managed through Midewin's Environmental Management System (EMS), which promotes continual improvement of land management effects by adaptive management actions. Monitoring and protection of a prehistoric site in the Middle Grant Creek restoration area was successfully conducted through Midewin's EMS process. Regular Interdisciplinary Team meetings also foster communication between resource specialists which reduces the chance of adverse effects on sites.

Integrated Pest Management

To what extent are noxious weeds and invasive species expanding or being reduced?

Controlling invasive plants at Midewin focuses on three specific situations:
1) Reducing or excluding invasive plant infestations in native habitat remnants, restored natural habitats, and grassland wildlife habitat; and
2) Conducting eradication efforts or preventing seed production in large infestations acting as seed sources for invasive plants.
3) Eradicating infestations of invasive plant species that are new to Midewin.

The majority of herbicide used to control invasive plants in 2007 were glyphosate, triclopyr, and clopyralid, with lesser amounts of sethoxydim. These were directly applied to kill infestations of both herbaceous and woody invasive plants or to kill resprouts from cut stumps of invasive trees and shrubs.

Manual methods (hand pulling, cutting) were primarily used in habitats where vegetation or rare plant species were present. Herbicides were only used in these situations when a highly selective herbicide was available or a non-selective herbicide could be applied in a manner that minimized exposure to non-target plants.

Mowing is widely used to prevent seed production in many invasive plants, especially thistles (Canada thistle, bull thistle, musk thistle), sweet-clover, and invasive shrubs (autumn-olive, Amur honeysuckle, Osage-orange, buckthorn). By preventing seed production, mowing reduces population growth and spread in these invasive plants. Then, at some point in the future, these invasives can be controlled by other means, such as prescribed fire, herbicide application, and/or competition from native plants.

The following table summarizes changes in the expansion of noxious weeds and invasive species at Midewin between FY2002 and FY2007.

Table 14: Expansion of Noxious Weeds and Invasive Species

Measure	2002	2006
Number of NNIS (non-native invasive plant species) present on Midewin	68 species	72 species (four additional species detected, but at least one eradicated and two previously reported species have been prevented from establishing a permanent presence.
Noxious weeds/Invasive plants – acres infested	As prior to Plan, entire site (15200 acres) infested, but to varying degrees with different combinations and intensities of species	18,225 acres infested, but this reflects additional land transferred from the Army to the USFS at Midewin, and not an expansion in infestations. However, there is a reduced frequency of some invasive plants in treated areas.

Measure	2002	2006
Noxious weeds/Invasive plants - locations	Some species widespread, others very localized; at least 10 species restricted to less than five infestations (per species) not exceeding one acre. Two infestations (purple loosestrife and blue globe thistle) eliminated)	Since 2002, little change for some widespread species (Canada thistle, Amur Honeysuckle, Autumn-olive), but documented declines at some sites for Amur honeysuckle, poison hemlock, common teasel, reed canary grass, common reed, and garlic mustard. Since 2002, eradication of infestations for purple loosestrife (4); garlic mustard (1) cut-leaved teasel (2), sericea lespedeza (1), blue globe thistle (1), and crownvetch (4). Of concern are increasing numbers of new infestations for reed canary grass, crownvetch, and cut-leaved teasel, especially and in dolomite prairie areas.
Acres treated for NNIS Plants – Herbicide	Less than 0.1 acre (not including row crop fields)	1380
Acres treated for NNIS Plants – Mowing	2070 (both spot mowing and entire tract mowing)	568 (spot mowing for thistles, sweet-clover); does not include mowing of entire tracts to control encroaching shrubs and trees in grassland habitat.
Acres treated for NNIS Plants – Manual Removal	12	95 (hand control of spot infestations in woodlands and along roadsides)
Number of Invasive Plant Species treated:	**11 species:** garlic mustard cut-leaved teasel common teasel yellow sweet clover white sweet clover Canada thistle musk thistle purple loosestrife Autumn-olive Osage-orange multiflora rose	**29 species were treated in 2007:** garlic mustard cut-leaved teasel common teasel yellow sweet clover white sweet clover wild parsnip poison hemlock Canada thistle musk thistle bull thistle plumeless thistle blue globe thistle purple loosestrife crownvetch bird's-foot trefoil reed canary grass common reed invasive cattails Autumn-olive Osage-orange multiflora rose Amur honeysuckle white mulberry black locust European buckthorn Sericea lespedeza red clover white clover hoary alyssum
Invasive Insects Monitored through partnerships	**1 species:** gypsy moth	**1 species monitored in 2007:** gypsy moth (no captures)

Habitat restoration, combined with partial funding through partnerships, has been essential in expanding integrated pest management for more species on more acreage. Staff training has been expanded to include pesticide applicator license for seasonal positions since 2004, which has allowed increased treatment of isolated infestations both within and outside large habitat restoration projects. In 2007, nineteen staff members and three volunteers were licensed herbicide applicators or operators. Additional habitat restoration, new partnerships, and staff training are needed for these trends to continue.

Potential Next Year Monitoring Needs for IPM/Invasive Species:

- Train additional field-going personnel and volunteers to recognize key invasive species, conduct field surveys for these species, map/collect data on infestation, and enter into appropriate databases.
- Work with partners to rank invasive threats around TES populations and in rare habitats.
- Improve methods for determining effectiveness of treatments, whether chemical, mechanical, or manual.
- Improve methods for collecting and entering information on treatments.
- Continue to participate in technologies assisting in identification and mapping of invasive plant infestations using remote sensing data.

Recreation

Are trails constructed to standards for planned use?

Construction of the West Side Trail continued in 2007 with applying and grading the final lift to approximately .5 mile of the trail. The initial lift was laid for an additional 1.25 miles of trail.

Midewin employees and volunteers completed construction of the 140' long Bailey Bridge. Completion of the bridge facilitated opening an additional 808 acres of Midewin to the public and allowed the connection of the current interim trail system into a vast regional trail system.

Is the Prairie being managed in accordance with prescribed ROS guidelines?

No new permanent recreation developments occurred in FY2007. Those that exist, such as Midewin's Welcome Center, are being managed in accordance with Prairie Plan-prescribed Recreation Opportunity Spectrum (ROS) standards. Trails and additional facilities are being developed in accordance with ROS guidelines.

Do recreational facilities meet the needs of the public?

Midewin is a relatively new unit of the Forest Service and consists of the conversion of a former army ammunition plant. Approximately 7,000 acres of 19,000 acres of Midewin is open to the public. Midewin is currently utilizing about 18 miles of the former ammunition plant roadbed as interim trails and former army parking lots as trailheads to provide temporary facilities until permanent facilities are developed. Two new trailheads

were opened in 2007; River Road trailhead accommodates 28 single vehicles and 2 buses and Iron Bridge trailhead accommodates 32 single vehicles and 9 vehicles with trailers. As more of Midewin is opened to the public and more restoration is undertaken, so will the demand for facilities increase.

The Welcome Center continued to meet the needs of the visiting public in FY2007.

Research

Are key information needs being pursued as research projects?

Research is an integral component of the mission of the US Forest Service at Midewin as prescribed by the Illinois Land Conservation Act of 1995. Information needed at Midewin falls into a number of natural categories:

1. Effectiveness of resource management for purposes of adaptive management.

2. Status of biological resources, especially species of conservation concern, including Regional Forester's Sensitive Species, and federal and state threatened and endangered species.

Research and monitoring projects completed and ongoing within FY 2007 contributed to each of these information needs. The long-term monitoring of bird populations continued with the annual upland sandpiper survey, the now annual shrubland bird bioblitz, and volunteer monitoring of breeding birds. Related projects included the monitoring of vegetation height-density relationships to evaluate habitat structure and quality for grassland birds with respect to cattle grazing or its absence.

Other research projects examined a variety of topics, including specific species of conservation concern, relationship of soil nutrient status to plant performance, effects of fire management on prairie organisms, etc.

Several proposed projects were submitted for external funding or acquired external funding.

Projects receiving external funding

Conservation 2000, Prairie seed banks at Midewin National Tallgrass Prairie: a key to its restoration, Brenda Molano-Flores and Christopher J. Whelan, Illinois Natural History Survey, $34,694.

Van Alen Institute for Projects in Public Architecture, The New York Prize, Public Ecologies: the GRE at Midewin, Ellen Grimes, School of the Art Institute of Chicago, $10,000.

Projects with external funding pending

National Fish and Wildlife Foundation, Carbon sequestration via prairie restoration at Midewin, Christopher J. Whelan and Brenda Molano-Flores, Illinois Natural History Survey, Miquel Gonzalez-Meler, University of Illinois at Chicago, $74,380

Photo 8: Loggerhead Shrike

Other ongoing projects by subject

- Demography, migration and conservation of the Loggerhead Shrike in Eastern North America, Amy Chabot, Queen's University

- Impact of Prescribed Burning on Prairie Spiders, Frank Pascoe, St. Francis University

- Reproductive ecology of prairie plants, Brenda Molano-Flores, Illinois Natural History Survey

- Landscape-level and microhabitat effects on snake community composition in the tallgrass prairie of Illinois, Nicolette Cagle, Duke University

- The effects of soil impoverishment on the growth and reproduction of an annual prairie plant, Helen Mlynarski, University of Illinois at Urbana-Champaign

- Evaluating restoration success within disparate landscapes; assessing restoration authenticity and conservation value using insects, plants and vertebrates of conservation concern (2006-2007), Ron Panzer, Northeastern Illinois University

- Sex ratio variation in gynodioecious Lobelia siphilitica: effects of population size and geographic location, Christine Caruso, University of Guelph, and Andrea L. Case, Kent State University

- Field Guide to Fishes and Crayfishes, Francis M. Veraldi, Army Corps of Engineers, and Philip, W. Willink, The Field Museum of Natural History

- Inventory, research, and monitoring of prairie weevil and its effects on the *Silphium* family of plants, Emily Kluger, University of Illinois at Urbana-Champaign

- Woody plant invasion of grasslands: Interactions between seed dispersal and microhabitat characteristics, Christopher J. Whelan, Illinois Natural History Survey

- Relationships among arthropods, floristics, vegetation, and grassland birds, Kara Higley-Kubik, DePaul University

- Linkages among arthropods, vegetation height, and grassland birds, Lisa Nakamoto, University of Illinois at Urbana-Champaign and Daniel G. Wenny, Illinois Natural History Survey

Scenery Management

Is scenery of NFS land improving?

Photo 9: Removal of Railroad Ties

Middle Grant Creek is a relatively new restoration project that began in 2005 with some army infrastructure removal and tree removal in 2005. Ammunition plant remnants continued to be removed in 2007 with 15 concrete bunkers removed. Re-contouring of the entire area began in 2007 and will conclude in 2008. The scenic integrity has diminished for the short term, because this area is under extensive reconstruction/restoration, but is expected to rise as the project progresses.

In addition to restoration projects, the following projects affected the overall scenic integrity improvement of Midewin:

- 859 tons of debris removed
- 1062 tons of abandoned railroad ties removed

These projects have a small footprint on the land and cannot be measured in acreage; although, they affect the scenic integrity of the landscape on a much larger scale.

Table 15: Scenic integrity improvements acres per year

	2004	2005	2006	2007
Prairie Restoration	823	65	888	0*

**Several projects have contributed to improving the scenic integrity of Midewin but due to the dispersed nature of the projects, acreage is unavailable.*

Threatened, Endangered Species and Regional Forester's Sensitive Species

To what extent are NFS lands and their management contributing to the recovery, conservation, and viability of threatened, endangered, or proposed species and to what extent are actions prescribed in recovery plans being implemented?

The staff at Midewin has been attempting to increase the amount of monitoring done on listed species and RFSS. Current staffing levels limits the amount of monitoring, but partners and volunteers have helped meet some of this void.

In 2007, populations counts were completed for ear-leaf foxglove, leafy prairie clover, ginseng, small white ladies slipper, limestone hedge-hyssop and glade quillwort. Subplot counts and population estimates were made for Crawe's sedge, false mallow, Pitcher's stitchwort, goldenseal, and Sullivant's coneflower. Acres were surveyed for grassland birds (7,961 acres), wetland birds (305 acres), shrubland birds (1500 acres), ear-leaf foxglove (15 acres), false mallow glade (20 acres), quillwort (20 acres), Pitcher's stitchwort (20 acres), glade mallow (84 acres) leafy prairie clover (20 acres),

limestone hedge-hyssop (20 acres), small white ladies slipper (14 acres), Ginseng (34 acres), glade mallow (100 acres), Common valerian (14 acres) and Sullivant's coneflower (541 acres) for a total of 10,668 acres.

Table 16: Population Counts and Surveys.

2002	Population Counts = 2 Acres Surveyed = 4,592
2003	Population Counts/Estimates = 5 Acres Surveyed = 5,948
2004	Population Counts/Estimates = 7 Acres Surveyed = 6,620
2005	Population Counts/Estimates = 7 Acres Surveyed = 6,717
2006	Population Counts/Estimates = 10 Acres Surveyed = 10,416
2007	Population Counts/Estimates = 11 Acres Surveyed = 10,668

Plants, grassland birds, and wetland birds are adequately being monitored at this time. Additional shrubland bird habitat could be monitored, especially once all the land from the Army is transferred. Much of the current Army land has grown in shrubs and provides habitat for shrubland birds. As more wetlands are recreated at Midewin, monitoring of wetland birds and amphibians will need to be increased. Protocols and monitoring of the RFSS insects needs to be initiated, especially as the prescribed fire program increases and burning takes place in higher quality natural communities. Many of these insects are difficult to capture in large enough numbers to allow for the determination of population trends. Efforts should be made to monitor red-headed woodpeckers.

In compliance with Prairie Plan direction (p. 6-13), monitoring of RFSS and other sensitive species will be conducted on a rotational basis so that in any given year, a subset of species is monitored. Each subset is to be monitored only every five years. Midewin is a fairly new unit and monitoring of many species has only begun over the last 5 years. For many target species, the small number of sampling years makes definitive results difficult to determine, but the trends discernable.

Through the help of volunteers and partners monitoring of some species has taken place at more frequent intervals. Monitoring has been ongoing on a yearly basis for some species. Much of the plant monitoring is being done by a partnership with the Chicago
Botanic Garden (CBG) and volunteers utilizing the Chicago Wilderness "Plants of Concern" (POC) monitoring program. Where necessary to meet the needs of intensive monitoring, additional monitoring techniques are added to the POC protocol. Protocols for some problematic plant species are still being developed and/or refined.

Leafy Prairie Clover *Dalea foliosa* (Federally Endangered):

Leafy prairie clover is a short-lived perennial plant associated with dolomite prairie. Weather conditions are major factors on seedling germination and survival, so the number of seedlings can fluctuate wildly from year to year. A more stable measurement is the vegetative and flowering plants, whose numbers should not fluctuate as much. Population monitoring of the entire population was started in 2002. Overall the population at this point appears stable, although prescribed burns and invasive species management are needed. These management activities have not been carried out to the extent necessary because of previous mixed ownership of the site. With the transfer of 39 acres from ExxonMobil to the FS more thorough management will be possible. With management the population size is expected to increase over time.

Photo 10: Leafy Prairie Clover

Table 17: Leafy Prairie Clover Population Sampling

	# Seedlings	# Vegetative Plants	# Flowering Plants	Flowering & Vegetative Plants	Total # Plants
2002	0	83	9	92	92
2003	161	15	64	79	240
2004	31	76	144	220	251
2005	26	53	115	168	194
2006	41	51	95	136	187
2007	99	86	95	181	280

Monitoring protocols which include assessing population status and impacts of management are currently meeting the goals outlined in the Prairie Plan. The current monitoring techniques are adequate. With the land transfer from ExxonMobil to Midewin, management of the entire population can begin. Re-establishment of fire to the population is critical. Invasive species also need to be controlled within the entire dolomite prairie. This monitoring is being done by FS staff at Midewin.

Midewin is assisting the US Fish and Wildlife Service in recovery actions with this plant. Midewin is raising plants to be put into appropriate habitat in the historic range within northeastern Illinois. With additional restoration planned in the Drummond Floodplain, opportunities may develop for restoration of leafy prairie clover in currently degraded areas. With the expansion of dolomite prairie restoration, the viability of the Midewin population will increase.

Glade Quillwort *Isoetes bulteri* (RFSS, Illinois Endangered Plant):

The glade quillwort is a plant found in association with dolomite prairie. Population size monitoring and demographic monitoring has been established for this plant. The population seems to fluctuate, but appears to be stable based on only five years of data, monitoring was only started in 2003. Additional years of monitoring will be necessary to determine how well the population is doing. Monitoring to leaf number and longest leaf length was started in 2003 as a possible means of measuring fitness of the plants. So far there is little difference from year to year, but because of the short monitoring period trends are difficult to determine. The collecting of demographic data may prove problematic; it is difficult relocating tagged plants. The tags apparently get heaved out of the thin soil from the winter freeze thaw action. Flooding in the Drummond floodplain over the past few years may have had an impact on glade quillwort. The source of the flooding on the BNSF railroad has been rectified. Glade mallow was transplanted onto Midewin from a nearby degraded dolomite prairie, but survivorship has been low. A large portion of the glade quillwort was on ExxonMobil property, with the transfer of the property to the FS, management of the entire population will be much easier and effective.

Table 18: Glade Quillwort Population Sampling

Year	Population Size
2003	163
2004	408
2005	277
2006	398
2007	230

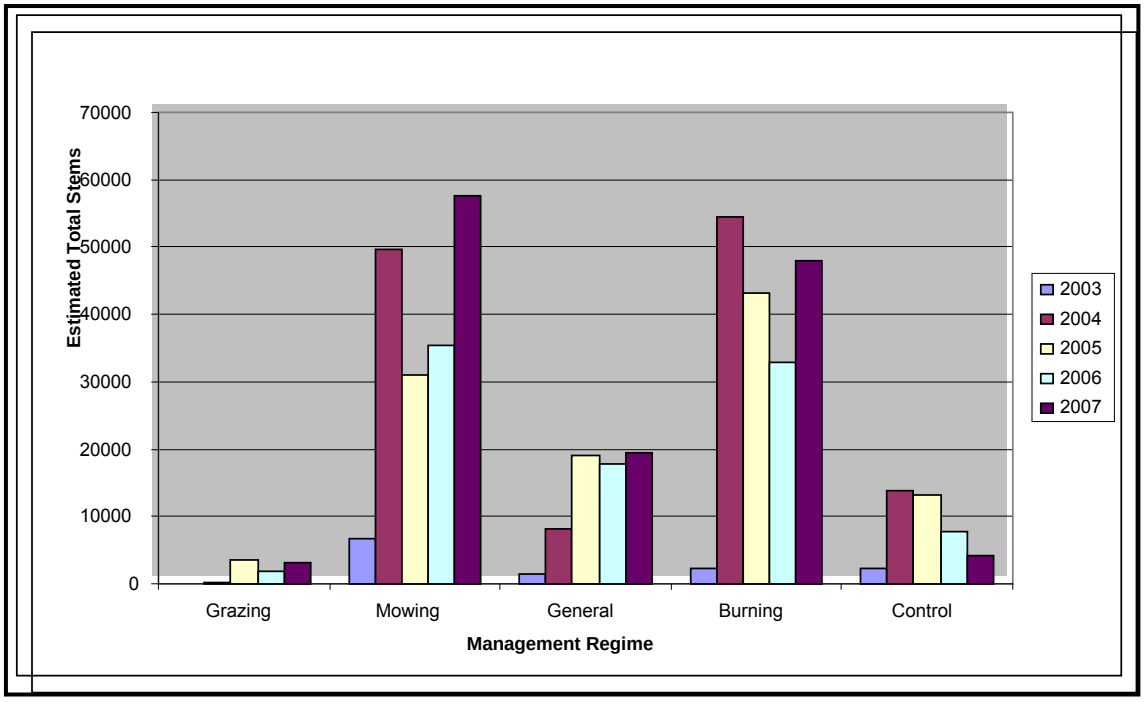
The monitoring goal is to monitor population changes in relation to management activities and to assess the status of the population. Threats to the population such as invasive species are also being monitored. These monitoring techniques to determine population size and threats are adequate and should continue on a yearly basis, along with demographic monitoring if suitable techniques can be developed. Monitoring should help determine the effects of future management on this area and RFSS plant populations. Monitoring is being done by CBG with volunteers and Midewin staff.

Sullivant's Coneflower *Rudbeckia fulgida var. sullivantii* (RFSS):

Sullivant's coneflower is a common perennial plant at Midewin within appropriate habitat. Monitoring was initiated in 2003 to determine the impacts of management (grazing, prescribed burning, mowing, general restoration techniques and a control) on the plant. Five macroplots are being monitored with different management regimes. Each plot has population size, area covered, and invasive species threats identified. In 2004 photopoints were established.

A number of results were obtained: estimated total number of plants, total stem density, mean percent cover, estimated flowering stems, estimated flower heads, and estimated percent reproductive. For each result, the grazing tract had lower values. Mowing and burning usually had higher values for each result. Below, as an example, is the estimated number of plants in each plot.

Figure 1: Estimated Total Plant Counts by Management Regime and Year



The data in the figure is interesting, but there isn't enough years of data to make any definitive statements. In 2003, rosettes and cotyledons were not counted so the numbers are low across all the plots. The highest population counts are found under the active management activities of mowing and burning, but these had high population sizes to begin with. Although the smallest plant counts are located in the grazing plot, this may not mean grazing is deleterious. This area was not grazed from 1996 to 2003. The first total plant count sampling took place in 2004, we do not know if this population was originally small. Only additional years of data will ultimately determine the effects of each management regime.

Planned dolomite prairie restoration in the Drummond Floodplain area will provide additional habitat in the future. Transfer of the ExxonMobil property and the initiation of management should benefit the population. Population increases are likely in the future through these actions.

Monitoring is being done by CBG with volunteers and Midewin staff. Monitoring goals are to determine the impact of different management practices on population numbers, plant cover, density, frequency, and reproductive output.

Ear-leaf False Foxglove *Tomanthera auriculata* (RFSS, Illinois Threatened Plant):

Ear-leaf foxglove is a plant associated with black soil prairies. It is an annual plant with a history of annual fluctuations of population numbers, being abundant in some years and essentially disappearing in other years only to reappear again. The plant is located in six sub-populations. Two of the six sub-populations were new, found during the 2007 monitoring season. Population size monitoring has taking place since 2001. Overall the population appears to be doing well, although some sub-populations may wink out

in some years. The current management of prescribed fire and invasive species control may have positively impacted the population over the last three years.

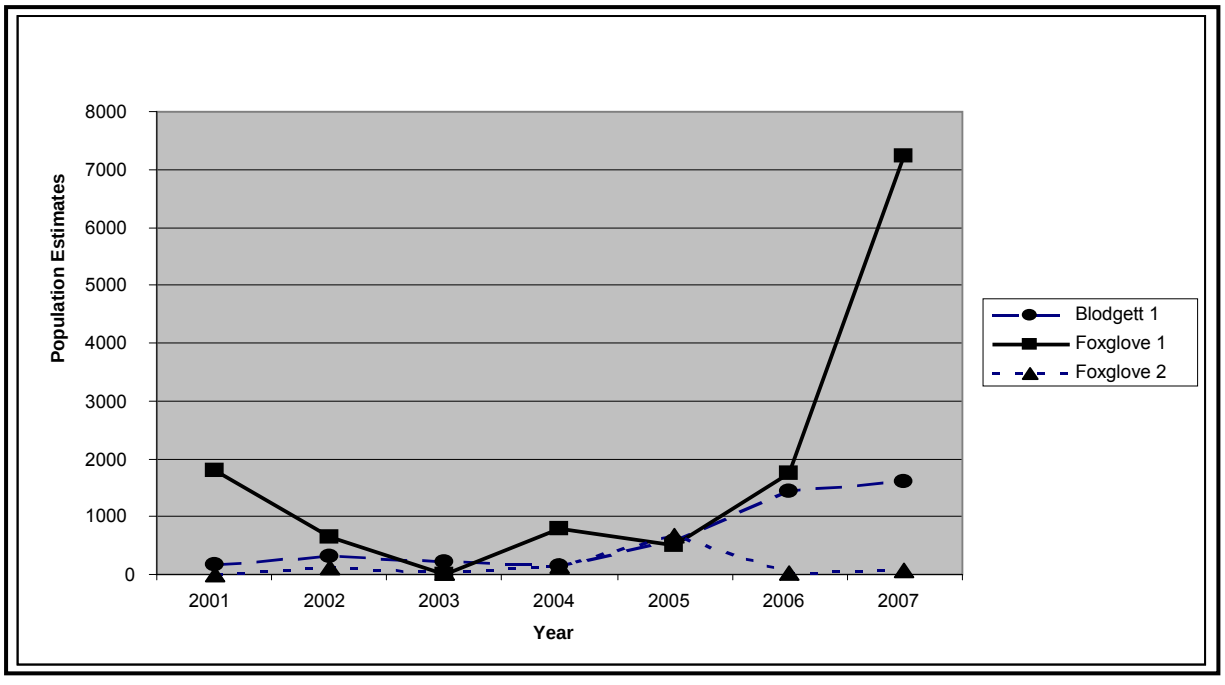
Table 19: Ear-leaf False Foxglove Population Sampling

Year	Population Size/ Number of stems
2001	1873
2002	1134
2003	236
2004	1100
2005	1775
2006	3224
2007	9,400[1]

[1]Two subpopulations were so large that population numbers are estimates based on sample transects.

The subpopulations at Midewin have shown characteristic fluctuations. The table below shows the fluctuations for the three largest subpopulations and have the most complete data. The other subpopulations tend to be either fairly new or the population size is too small to detect trends. Overall the population is increasing, but there does appear to be fairly significant deer browse occurring which is decreasing potential reproduction.

Figure 2: Comparison of Population Size of Three Subpopulations



Current management practices of periodic prescribed burning and invasive species control appear to be adequate at this time. Restoration of prairie habitat will have a positive impact on the ear-leaf false foxglove. Seeds have been planted in some of the restorations, but plants have not been located in these restorations yet. Deer browse may be a problem, and the CBG has proposed testing some deer deterrent techniques.

Monitoring goals include trends in population size over time, impacts of management and threats to the populations. The current monitoring strategy is adequate to meet the goals of the Prairie Plan. Monitoring is being done by CBG with volunteers and Midewin staff.

Globe Mallow *Malvastrum hispidum* (RFSS, Illinois Endangered Plant):

The globe mallow is an annual plant found in dolomite prairies with population numbers in the thousands that may fluctuate yearly. The species occurs on Midewin and the recently transferred ExxonMobil property. The entire population across both ownerships is sub-sampled. Monitoring started in 2003. Three subpopulations are being monitored. Besides the number of plants, an estimated percent cover is determined. Photopoints have also been established at each subpopulation. Overall, based on five years data the populations of the plots look stable which would imply that the overall population is probably stable. With increased and more effective management (prescribed fire and invasive control) with the ExxonMobol transfer should result in population increases.

The Table below indicates the number of plants within each 6 meter by 6 meter monitoring plot within each of the three subpopulations.

Table 20: Globe Mallow Subpopulation Sampling

Year	Plot 1	Plot 2	Plot 3	Total of 3 Plots
2003	459	164	NA*	623
2004	111	34	317	462
2005	215	14	210	439
2006	81	73	496	650
2007	169	7	87	263

* Plot 3 was not established until 2004.

In 2007, the estimated population on subpopulation 2 based on the sampling plot 2 is 1,139 individuals, while subpopulation 3 is estimated to have 5,434 individuals. The number of plants in the plots is at it's lowest since the start of the monitoring, but because of the transient nature of annual plants it is difficult at this time to tell if this lower number is a trend or a one time event. Only future years of data will answer this question. Overall the population appears healthy and common throughout the habitat.

The goals of the monitoring are to reflect population changes in relation to management activities and to track threats to the population. Presently these goals are being met. Continued experimentation with photoplots should continue. With the land transfer from ExxonMobil and start of management, monitoring will become more important and should be able to determine the effects of management.

Pitcher's Stitchwort *Minuartia pitcheri* (RFSS, Illinois Threatened Plant):

Pitcher's stitchwort is another annual dolomite prairie plant that can have large fluctuations in population size from year to year and plant locations. This plant is difficult to monitor because of its annual transitory nature. Because of the large population sizes and difficulties in population monitoring, the protocols are still in the formative stages. Seven permanent plots have been established and monitored since 2004. Within the plots, subplots are used to determine population size and the data averaged and merged for the entire plot. Use of the larger plots accommodates the fluctuation in population size and migration of the annual plant locations. The current data is too incomplete to determine any trends. Photoplots were established in 2004 to visually show population change from year to year.

Photo 11: Pitcher's Stitchwort

Table 21: Pitcher's Stitchwort Subpopulation Sampling

Year	Plot 1	Plot 2	Plot 3	Plot 3A	Plot 4	Plot 4B	Plot 6
2004	5	7	375	NA	63	NA	NA
2005	63	NA	129	NA	15	NA	198
2006	0	NA	101	600*	1	147	55
2007	0	NA	77	1525	1	181	281

*An estimate because of the large and dense population in 2006 in this location.

The goals of the monitoring are to reflect population changes in relation to management activities and to track threats to the population. Because of the former split ownership only limited management has taken place. Now that the ExxonMobil land has been transferred more effective management can take place and hopefully population increases will be detected. More years of data are needed to make serious evaluations on management practices. The current subplot monitoring doesn't appear to be adequate. It's hoped the photoplots will help determine gross population changes over time. Pitcher's Stitchwort has a very transient nature that makes monitoring difficult. Monitoring is being done by the CBG with assistance from volunteers and Midewin staff.

Crawe's Sedge *Carex crawei* (RFSS):

Crawe's sedge is small perennial sedge which can be found in dolomite prairies and other calcareous areas. Subpopulation monitoring was set up in 2004. Different monitoring techniques are being tried and evaluated. There are currently 4 subpopulations and it will take several years to determine any trends. The random quadrats are censused within the subpopulations to determine densities. The densities are used to estimate population sizes for the subpopulations.

Table 22: Crawe's Sedge subpopulation

	Subpop1	Subpop2	Subpop3	Subpop4
2004	101-200	101-200	1124	165
2005	401-800	NA	1094	2663
2005 est	NA	NA	17769	76468
2006	7562	NA	4102	18118
2007	16108	NA	8936	68221

Cells shaded in grey represent exact counts of plants. In 2005 and subsequent years total subpopulation sizes were estimated based on quadrat and transect subsampling. Subpopulation 2 has not been monitored recently due to problems with localized flooding.

Monitoring goals are to reflect population changes in number and extent of area occupied in relation to management activities and threats to the population. The monitoring protocols seem adequate at this time. The CBG is helping develop monitoring techniques and implementing the monitoring with volunteers.

Limestone Hedge-Hyssop *Gratiola quartermaniae* (RFSS):

This small newly described semi-aquatic annual plant species was only discovered at Midewin in 2003. It grows in small vernal ponds within the dolomite prairie. Monitoring was initiated in 2006 and all the monitoring protocols are just being developed. There isn't enough data at this time to indicate how the population is doing.

Monitoring goals are to determine the population size and area of the population. The techniques used will help determine significant increases of decreases of the population. The CBG with the assistance of volunteers is monitoring the population.

Glade Mallow *Napaea dioica* (RFSS):

Glade mallow is a perennial plant usually fund in alluvial soils along streams and rivers. Two small subpopulations are known and were monitored for presence in 1997, 1998 and in 2002, but not seen in other years. In 2006 and 2007, concentrated efforts were made to relocate these populations. No plants were found. The goal was to relocate the plants so that the plants could be caged to keep deer from browsing them. There has been little reproduction due to deer browse. Searches will continue, but it may be necessary to reintroduce this plant species. It appears that this plant may have been extirpated on Midewin from deer browse. Reintroduction with protection from deer browse is planned. This species is successfully being grown in the Midewin seed production area.

White Lady's Slipper *Cyprideium candidum* (RFSS, Illinois Threatened Plant):

White lady's slipper is a long-lived perennial orchid that tends to occur in calcareous prairies. Seven subpopulations are located on Midewin with two additional ones on adjacent Illinois Department of Natural Resources property. Each subpopulation located on Midewin is only represented by a few plants. One subpopulation on adjacent land is represented by several hundred plants. The Midewin subpopulations appear stable, but because of the small size are probably vulnerable to random events.

Photo 12: White Lady's Slipper

Table 23: White Lady's Slipper subpopulation

Year	Subpop 2	Subpop 3	Subpop 4	Subpop 5	Subpop 6	Subpop 7	Subpop 8
2002	1	NA	NA	NA	NA	NA	NA
2003	2	1	2	NA	NA	NA	NA
2004	2	1	2	NA	NA	NA	NA
2006	2	2	3	NA	9	NA	NA
2007	2	5	3	1	10	2	1

NA means the subpopulations were not yet located in that year.

The monitoring goal is to determine potential population changes in relation to management activities. The monitoring protocol is adequate.The monitoring is being done by volunteers with protocols developed by the CBG.

Common Valerian *Valeriana edulis var. ciliate* (RFSS):

Common valerian is a gynodioecious (has both female and hermaphroditic individuals) perennial plant species that is found in prairies and wetlands. Common valerian currently isn't found at Midewin, although it is found on adjoining state land within a few feet of Midewin's boundary. Similar habitat that is adjacent to state land is censused to document plants on FS managed land. So far no plants have shown up, if plants appear population monitoring will start. This plant is being reintroduced into Midewin restorations. Once successfully introduced, monitoring of restored populations will start.

American Ginseng *Panax quinquefolius* (RFSS):

Ginseng is a long-lived herbaceous perennial plant with thick taproot that is harvested for medicinal purposes. Over harvesting is a threat to this species. Ginseng is uncommon at Midewin, found in a few scattered locations in deciduous forest areas.

Monitoring has taken place sporadically from 2001 by Midewin staff. The plants were monitored in 2001, 2003, 2006 and 2007. Some marked plants have disappeared after 2001. Deer browse was thought to be the problem. Fruiting and foliage persistence improved in 2006 after caging the plants. The population is at threat, caging helps protect from deer browse but also calls attention to the plants and illegal harvesting could occur.

Table 24: Ginseng Population Size

Year	Ginseng Population Size
2001	20
2002	NA
2003	9
2004	NA
2005	NA
2006	12
2007	12

Yearly demographic monitoring (number of leaves, height to base of petioles, number of flowers, and number of fruits) was started in 2007 to better monitor the plants and their health. The demographic monitoring should be adequate to determine the health of the population over time. Reintroduction of additional plants and increased protection of existing plants is necessary to have any hope of maintaining the viability of this plant. Midewin staff is performing the monitoring.

Goldenseal *Hydrastis Canadensis* (RFSS):

Goldenseal is another long-lived perennial herbaceous plant with a rhizome that is frequently harvested for supposed medical uses like ginseng. Over harvesting is a threat to this species. Goldenseal is uncommon at Midewin, found in a few scattered locations in deciduous forest areas.

Monitoring has taken place sporadically from 2001 by Midewin staff. The plants were monitored in 2001, 2003 and 2006. Approximately 10 subpopulations were located in the early years, but only 5 in 2006, although the search in 2006 was not as complete. In 2007 demographic monitoring (number of stems with different numbers of leaves, percent herbivory, and number of fruits) was initiated on 6 populations that were located. There isn't enough data to determine any trends although there does seem to be a reduction in stem density which is attributed to deer browse. The population appears to be threatened by deer browse. Plans for 2008 include caging some populations to determine the exact cause of the stem density declines. Caging may also call attention to the plants and with the possibility of illegal harvesting occuingr.

Reintroduction of additional plants and increased protection of existing plants is necessary to have any hope of maintaining the viability of this plant. The demographic monitoring should be sufficient once enough years of data is collected. Midewin staff is doing the monitoring.

Eastern Prairie Fringed Orchid *Platanthera leucophaea* (Federally Threatened):

The eastern prairie fringed orchid currently isn't found at Midewin, it's located on adjacent land owned by the IDNR. The population is within a few hundred feed of Midewin on similar habitat as that at Midewin. As habitat improvement occurs on Midewin it is thought that the existing population may expand onto Midewin if it isn't already there. This orchid spends early stages of its life cycle underground or as hard to find vegetative plants. There is a possibility that there are vegetative plants on appropriate habitat adjacent to the state land.

Photo 13: Prairie Fringed Orchid

Seeds have been introduced onto Midewin from adjacent plants, but no plants have been found yet. Seed reintroduction will probably continue in the future. When plants start to appear from the reintroduction efforts or show up naturally. Monitoring will be initiated.

RFSS Grassland Birds:

Grassland birds are being monitored using several different methods. One monitoring method was designed to accurately reflect the upland sandpiper *Bartramia longicauda* populations and nesting loggerhead shrikes *Lanius ludovicianus migrans* (both species are RFSS). Incidental to this specific data collection, data is also collected on other grassland bird species including the RFSS Henslow's sparrow *Ammodramus henslowii* and Bobolinks *Dolichonyx oryzivorus.*

Henslow's sparrow prefers taller grass heights and is usually found in idle grasslands or prairie restorations. Bobolinks tend to prefer the medium height grasses, lightly grazed areas, hay fields or idle grasslands. Loggerhead shrikes and upland sandpipers prefer short grass heights, usually grazed tracts. Loggerhead shrike habitat needs include scattered small trees and shrubs to nest in, while upland sandpipers prefer open relatively treeless expanses. Although there is some fluctuation in the population numbers from year to year, each seems to be doing adequately at this time based on this survey.

Table 25: Grassland Bird Population Numbers

Year	Bobolink	Henslow's Sparrow	Upland Sandpiper	Loggerhead Shrike (nests)
2001	278	41	15	9
2002	281	15	11	7
2003	234	16	20	9
2004	325	12	21	8
2005	321	20	20	12
2006	260	10	22	12
2007	268	19	25	10

In order to pickup most of the upland sandpipers and loggerhead shrikes this annual census is completed slightly early in the breeding season for some species of grassland birds. Other more rigorous censusing is being performed throughout the breeding season and that data fits very closely with the data collected from the upland sandpiper/loggerhead shrike survey.

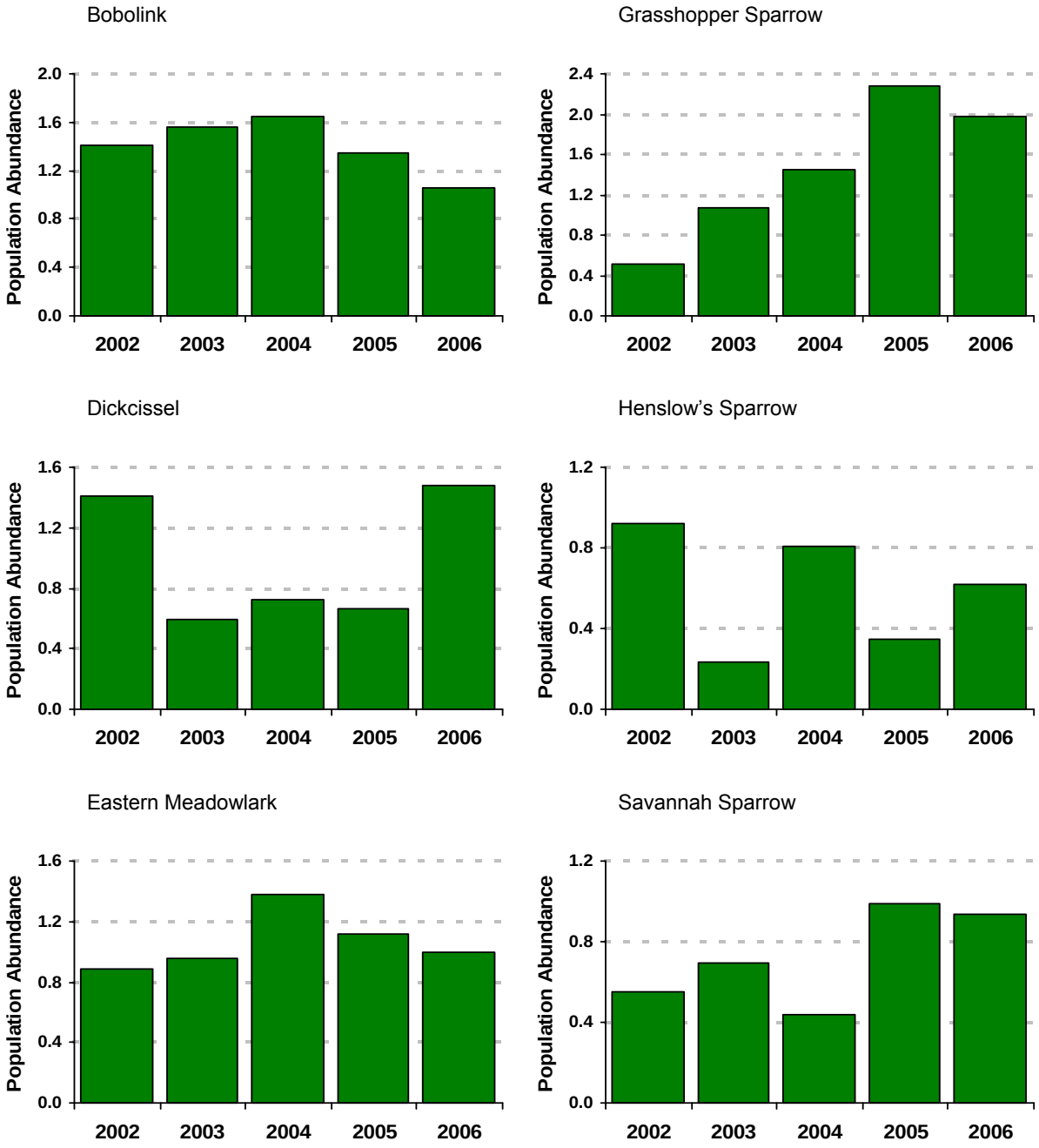
None of these four species are at the population numbers estimated to be needed for viable populations over a 50 year period. The addition of the Army lands will increase these population numbers. As more restoration takes place, the population numbers should increase and hopefully approach the numbers needed for viable populations.

Jim Herkert from The Nature Conservancy has also been censusing grassland birds at Midewin. This is point count data with distance sampling which provides for robust population size estimates. This data can be used to monitor population trends and the effects of management practices. This data includes other grassland birds that are of concern.

Photo 14: Loggerhead Shrike

The following figure shows the population trends from 2002 to 2007. Regression lines done on the data indicate positive slopes of the lines for all the species except for the Bobolink which is negative. Looking at significance levels, Bobolink, Eastern Meadowlark, Henslow's sparrow, and dickcissel have non-significant trends over the five years (i.e. stable populations). Grasshopper and savannah sparrows have a significant trend over the time period (i.e. slightly increasing).

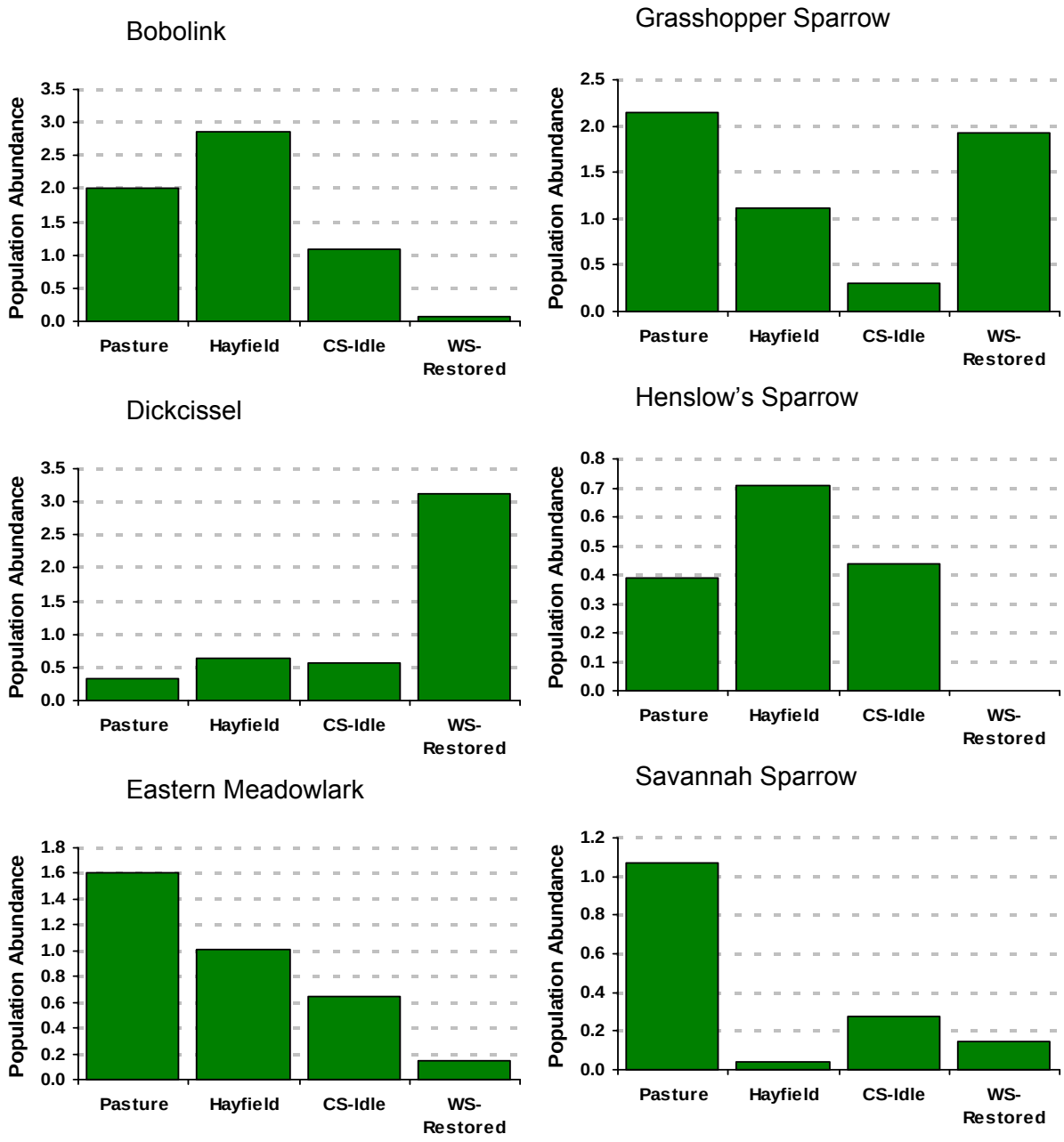
Figure 3: Annual Population Abundance for Grassland Birds



These annual population indices for grassland birds are based on 270 point counts conducted in 11 fields from 2002-2007. Annual indices are least-square means that were derived from a generalized linear model that included fields and years, in order to account for the fact that not all fields were surveyed in every year.

This data can also be examined to show what types of habitat is being used by each bird species. Grassland tracts can be broken up into four types. Active pasture represents the short-grass stature grasslands. Hay fields represent the medium-grass stature grasslands. The tall-grass stature grasslands are represented by cool season grasslands idle (idle pastures) and warm season grasslands (restored prairie). There isn't enough data to draw graphs for upland sandpipers.

Figure 4: Breeding Abundance for Grassland Birds



Breeding bird abundance in major habitat types at Midewin National Tallgrass Prairie, 2002-2006. Numbers are the mean number of birds encountered at point counts conducted in each major habitat type.

The bobolink population is doing well and is at about half the number needed for a viable population (680 pairs).

Henslow's sparrow populations can fluctuate depending upon the management, for example they are sensitive to fire. The high population in 2001 can't be explained, but over time the Henslow's population should increase as more prairie habitat is restored. It's predicted that 65 pairs are needed for a viable population. Currently Midewin is a third of the way to a viable population. As more prairie habitat is restored and the already restored prairie matures this percentage will increase.

Loggerhead shrike population has been fairly steady, usually around 10 nests (10 pairs) on the combined Forest Service and Army property, but some years not all the nests are located. It's estimated that 48 pairs are necessary for a viable population. The number on Midewin should increase with time, but currently this hasn't happened. There appears to be habitat for more shrikes than is currently are found on Midewin. The number has been relatively stable from prior to the Forest Service taking over the property. The Nature Conservancy and FS are working with a researcher to get the Midewin birds banded each year to help determine whether birds are returning each year or new birds are using Midewin each year.

Photo 15: Upland Sandpiper

The upland sandpiper population appears to be stable, but this number is down from the late 1980's and early 1990's when the yearly populations were over a hundred. One hundred twenty-three pairs are needed for a viable population. The upland sandpiper offers the largest challenge for grassland birds at Midewin. Although suitable habitat has been increasing, the population size hasn't increased. The large drop from the 1980's and 1990's can't be explained. The drop in population sizes maybe a case of problems elsewhere, for example on the bird's winter range. There may be a slight increase in numbers over the past few years.

Monitoring is being done by FS staff with assistance from The Nature Conservancy, Illinois Natural History Survey, Illinois Department of Natural Resources and volunteers. The monitoring seems adequate, but more precise monitoring is being developed in partnership with The Nature Conservancy.

Other Federally listed and RFSS Species:

The other RFSS bird species tend to have a spotty presence at Midewin each year. Data is inadequate to determine trends or viability of these species at this time. As restoration and management activities expand additional habitat for these species will become more common and there may be an increase in habitat usage at Midewin and better monitoring may be possible.

Short-eared owl *Asio flammeus* and northern harrier *Circus cyaneus* are raptors that may have nested infrequently at Midewin in the past, but there is little evidence of current nesting. Both of these species are common winter residents, especially when their prey items (voles) are common.

Monitoring for wetland birds was begun in 2005 with the increase in wetlands with restoration activities. In 2005, several King rails *Rallus elegans*, a pair of least bitterns *Ixobrychus exilis* and a pair of American bitterns *Botaurus lentiginosus* were thought to nest on Midewin. In 2006 several king rails were thought to nest on Midewin. In 2007

no birds of concern were located. There are no current records of common moorhen *Gallinula chloropus* although they have nested in the past.

The federally listed bald eagle *Haliaeetus leucocephalis* and Whopping crane *Grus Americana* have used Midewin infrequently during migration. There is no evidence they are nesting on Midewin.

One or two calling male Cerulean warblers *Dendroica cerulean* were reported reported on the former Joliet Army Ammunition Plant in the mid-1990's. There is no evidence that these birds were breeding and there have been no confirmed sightings since the initial ones.

The red-headed woodpecker *Melanerpes erythrocephalus* nests at Midewin, but nothing is known about the population size of this woodpecker. The population size is thought to be small. Monitoring protocols have not been developed since this species has only recently been added to Midewin's sensitive species list. Monitoring needs to be developed for this uncommon bird.

Photo 16: Plains Leopard Frog

Plains leopard frog *Rana blairi* is an uncommon frog at Midewin. They have not been seen lately, but there is no reason to think they are not still on Midewin. Frog and toad monitoring by volunteers over the past several years have not turned up breeding ponds for the plains leopard frog. Additional monitoring in the future may turn up the breeding areas and then additional monitoring can be done to possibly ascertain the population.

Blanding's turtle *Emydoidea blandingii* is a very uncommon turtle at Midewin. Several sightings were recorded in the mid-1990's. No Blanding's turtle has been seen since the original sightings. A graduate student trapped turtles for one summer in areas they were previously seen and did not catch any. It's not known if there still is a population of this rare turtle. It seems likely, even if there is, it may not be a viable population. There is the possibility of reintroducing Blanding's turtle in the future since this is captive breeding programs in the Chicago area. Turtles seen in appropriate ponds will continue to be identified to possibly locate Blanding's turtles on Midewin.

The Indiana bat *Myotis sodalis* is listed as a federally endangered mammal. Although Midewin is near the edge of its northern range, the US Fish and Wildlife Service feels there may be a possibility of Indiana bats in Northeastern Illinois. Bat surveys in the past have failed to turn up Indiana bats. In 2007, Midewin started a comprehensive bat survey to determine specifically if Indiana bats use Midewin and to determine what other species use the site. In 2007, bat surveys were conducted in appropriate habitat on the west side (west of Route 53). No Indiana bats were found. In 2008, plans call for surveying the east side of Midewin.

Franklin's ground squirrel *Spermophilus franklinii* is a secretive rare prairie mammal. Franklin's ground squirrel prefers tall, thick grasses and forbs. They appear to be quite rare at Midewin, no live animals have been found but a carcass was found on the far

east side of Midewin near an abandoned railroad that the Will County Forest Preserve District is developing into a trail. Surveys are needed to determine if Franklin's ground squirrels are on Midewin and to assess the population size. A local college professor has expressed some interest in doing a survey, but has not started yet.

The ellipse *Venustaconcha ellipsiformis* is a mussel that is known to occur in Jackson Creek. Monitoring portions of Jackson Creek have been done biennially from 2001 by a consultant monitoring the water quality in Jackson Creek for the Deer Run Industrial Park. Ten sampling sites are monitored; half of the sites are on Midewin's property, the other half on the Joliet Army Training Area. The table below shows the data from the 5 Midewin sampling sites.

Table 26: Midewin sampling sites

Mussel Bed #	# Observed 2001	# Observed 2003	# Observed 2005	# Observed 2007*
5	2	1	3	
6	1	3	0	
7	1	3	7	
8	2	0	4	
11	0	1	0	
Total #	6	8	14	

**The 2007 report has not been received from the consultant*. The 2006 report stated that the population seemed stable although small. The consultant also noted recruitment in the population. 2007 was to be the final year in this monitoring funded by the industrial park. Midewin staff should continue the monitoring although specialized training may be necessary.

Thirteen RFSS insects are known from Midewin. Monitoring populations of these insects is difficult. Midewin staff has been depending upon researchers familiar with these species to determine their presence in the past. Currently a two-year project on insects is funded through the Midewin Fund. Once this project is complete Midewin staff will have better idea on the status of these species. Food plants for these species are being reintroduced into Midewin prairie and wetland restorations. Monitoring may consist of monitoring the increase of food plants and periodic presence monitoring of the particular insects. Midewin staff is working with an expert from Northeastern Illinois University to develop a monitoring protocol that volunteers can do on the red-veined prairie leafhopper.

Table 27: Midewin RFSS Insects

Scientific Name	**Common Name**
Aflexia rubranura	Red-veined Prairie Leafhopper
Papaipema beeriana	Blazing Star Stem Borer
Papaipema eryngii	Rattlesnake-master Borer
Papaipema tennii	New Species
Danella lita	Crawling Mayfly
Dichagyris reliqua	A Noctuid Moth
Macrosteles potoria	A Leafhopper
Onconcnemis saundersiana	A Nocuid Moth

Scientific Name	Common Name
Plusia vernusta	White-streaked Looper Moth
Sparatiniphaga includens	A Noctuid Moth
Schinia jaguarina	A Owlet Moth
Sphinx eremtius	Hermit Sphinx Moth
Sphinx luscitiosa	Clemen's Sphinx Moth

Recommendations:

- Continue monitoring Federally-listed and RFSS species.
- Increase monitoring of each species to a yearly basis if increased staffing, funding and/or partnership assistance becomes available.
- Increase restoration and management of habitat for loggerhead shrikes and upland sandpipers.
- Encourage research to determine what the problem with loggerhead shrikes and upland sandpiper is. Why they haven't responded to increased habitat.
- Work with researchers to develop methods to monitor RFSS insects.
- Increase monitoring of wetland species as wetland restoration increases and develop more formalized methods.

Wildlife

What effects are management activities having on Management Indicators?

Management Indicators for Midewin include native habitat, suites of wildlife and specific species. The native habitat indicators at Midewin include: dolomite prairie, upland typic prairie, wet typic prairie, sedge meadow, marsh, seep, savanna, forest/woodland. Each native habitat management indicator has associated plant species.

Table 28: Representative Plant species of Native Habitat Management Indicators

Native Habitat Management Indicators	Representative Plant Species (not always restricted to one habitat)
Dolomite Prairie	Tufted Hair Grass, Flatstem Spikerush, Low Calamint, Hairy Beardtongue, Nodding Wild Onion, Prairie Dropseed
Upland Prairie	Big Bluestem, Little Bluestem, Prairie Dropseed, Obedient Plant, Purple Prairie-clover, Rattlesnake-master, Leadplant, Compass-plant, Prairie Coreopsis, Prairie Phlox, Hoary Puccoon, Rough Blazing-star, Round-headed Bush-clover, Prairie Oval-sedge
Wet Prairie	Prairie Cordgrass, Michigan Lily, Common Mountain-mint, Prairie Sundrops, Bull Sedge, Prairie Ironweed, Big Bluestem, Golden Alexander, Bottle Gentian, Marsh Bedstraw, Riddell's Goldenrod
Sedge Meadow	Tussock Sedge, Broom Oval-sedge, Bluejoint Grass, Swamp Milkweed, Autumn Sneezeweed, Blue Monkey-flower, Wild Blue Iris, Dudley's Rush, Marsh Running Sedge, Marsh Fox Sedge
Marsh	Great Bulrush, Common Arrowhead, Common Bur-reed, River Bulrush, Mad-dog Skullcaps, Lake Sedge, Duckweed, Mild Water-pepper, White Water-crowfoot, Broad-leaved Cattail
Seep	Great Blue Lobelia, Spotted Joe-Pye-Weed, Orange Jewelweed, Fowl Manna Grass, White Turtlehead, Porcupine Sedge

Native Habitat Management Indicators	Representative Plant Species (not always restricted to one habitat)
Savanna	Burr Oak, Hazelnut, Shagbark Hickory, Wild Hyacinth, Sweet Joe-Pye Weed, Bottlebrush Grass, Spring Beauty, Little Bluestem, Penn Sedge, Prairie Crabapple, Mullein False-foxglove
Woodland/Forest	White Oak, Red Oak, Bitternut Hickory, Hop-hornbeam, Elm-leaved Goldenrod, Woodland Blue Phlox, Wild Geranium, Gray's Sedge. Blackhaw Viburnum, Mayapple, James' Sedge, American Elm, Late Figwort, Yellow Crownbeard, Virginia Bluebells

Management of the native vegetation remnants is occurring where NEPA Decisions Notices have authorized restoration work. Currently, native vegetation remnants are either improving (with authorized management), at a status quo condition or in some cases degrading due to the lack of management. A prairie wide habitat maintenance environmental assessment was completed this March. Restoration on all the native vegetation remnants can proceed. Improvement in the quality of native vegetation remnants is expected with authorized management.

Grassland habitat indicators are used for monitoring grassland habitat, both acreage and management treatments. Many species of grassland wildlife are highly sensitive to habitat structure (grass height, litter density), management (prescribed burning, haying, mowing) or area effects (fragmentation). Grassland habitat indicators are represented by three habitats, short-stature grassland, medium-stature grassland and tall-stature grassland. Each habitat is represented by specific wildlife. The grassland birds have been discussed above and are doing well indicating these management indicators are in good shape. Little is known of the other representative wildlife which tend to be harder to census, but since the habitat seems in good condition it's likely these species may also be doing okay.

Table 29: Representative Wildlife Species of Grassland Habitat Indicators

Grassland Habitat Indicator	**Representative Wildlife Species** (Not always restricted to one habitat)
Short-stature Grassland	upland sandpiper, grasshopper sparrow, and thirteen-lined ground squirrel
Medium-stature Grassland	bobolink, eastern meadowlark, smooth green snake, and deer mouse
Tall-stature Grassland	Henslow's sparrow, sedge wren, and meadow vole

Benthic Macro-invertebrates are aquatic insects (especially insect larvae), crustaceans, snails, worms, leeches, and other invertebrates are present in and on the substrate of permanent streams ("benthic" means "bottom"). Benthic macro-invertebrates have been monitored since 1996 at Prairie, Jackson and Grant Creeks as discussed above.

Leafy prairie-clover and Henslow's sparrows were discussed above under TES species and appear to have stable populations and are expected to increase with increased restroration.

The monitoring of white-tailed deer has only begun and the data set is too small at this time. The population of white-tailed deer is thought to be either increasing or stable at

this time. There has been fall off in the hunting success of white-tailed deer and deer browse in the seed beds has required the installation of deer-proof fences. These would suggest that the deer population at the very least is stable. The Nature Conservancy is monitoring the deer population at Midewin. The winter 2005-2006 season survey resulted in 389 white-tailed deer and 415 in the 2006-2007 season.

Volunteer Program

The volunteer program is essential for continual progress at Midewin National Tallgrass Prairie. In FY07, volunteers completed several projects. Although the majority of the work began in FY06, the Bailey Bridge construction was completed in FY07, which provides public access to 808 more acres of land. A bridge decking project continues on the Iron Bridge that will connect east and west side trails on Midewin.

Photo 17: Volunteers Harvesting Seeds

Some volunteers take on responsibility to maintain these trails along with other landscaping jobs. A waddle fence was constructed at the new parking lot at the River Road Seedbeds. With the help of many volunteers, a wooden fence was built around the perimeter of the new Iron Bridge Trailhead. A Boy Scout Troop completed some decorative wooden screens around the portable toilets at the Iron Bridge Trailhead. The inner city El Valor group of Chicago planted a pollinator garden at the Iron Bridge Trailhead. Midewin is also working together with another inner city Chicago group from Eden Place Nature Center in order to strengthen a bond between urban and rural communities.

Volunteers collect data for monitoring programs for birds, frogs & toads, butterflies, Riverwatch, lichens, restoration plot vegetation, and Plants of Concern, which are all ongoing programs structured to track trends reflecting Midewin's restoration and conservation practices.

Several volunteers help educate the public by leading tours or teaching environmental education activities for the Mighty Acorns Program which brings in students and teachers from many local schools. Some of these same volunteers travel to surrounding communities to spread awareness of Midewin's mission. The Midewin Alliance, a 501(c)3 partnering coalition, always plays an integral role by helping with the Welcome Center and organizing events. A few volunteers participated in research and design for signs, brochures, and a prairie wildflower coloring book.

The pioneer cemeteries are being restored and managed by many committed volunteers. Some of these same volunteers and other heritage volunteers dedicate time to the Passport in Time (PIT) program all over the United States, including

Midewin. The PIT volunteers designed and sewed a Depression Era quilt for the 6th annual quilting project.
Many hours were spent in restoration in the form of harvesting hundreds of pounds of seed from the seedbeds and the wild which are then cleaned and sorted, invasive species control, and planting flats in the shade houses and in restoration areas on site. Two volunteers helped in the herbarium by mounting many pressed plant species for documentation and observation.

The volunteer program adopted a new database to track all these volunteer hours and information, with the help of a volunteer with vast computer skills. The current volunteers are enthusiastic and new volunteers have increasing interest. The data below shows the volunteer base has remained steady, with consideration. We expect the progress at Midewin to flourish. Midewin values the dedication of our volunteers and holds a Volunteer Recognition Banquet every year to celebrate, reminisce, and present awards to show our sincere appreciation for everyone's hard work.

Table 30: Volunteer Hours by Resource Category:

The categories reflect 'Resource Category' as defined in the USDA Forest Service 'Senior, Youth & Volunteer Programs Accomplishment Report,' FSM1800-16.

Resource Category	**Hours**
Recreation (includes construction, landscaping, and trail maintenance)	1345.00
Heritage (includes PIT, Heritage Association)	512.00
Wildlife, Fish, Plants (includes ecological monitoring)	950.00
Range Management (includes restoration)	3462.00
Forest Management (not applicable)	0.00
Watershed & Air Management (not applicable at this time)	0.00
Protection (not applicable at this time)	0.00
Research (includes brochure design)	9.00
Business & Finance (includes office, Welcome Center, and MidIA)	562.00
Facilities Construction off-enter (not applicable)	0.00
Facilities Construction on-center (not applicable)	0.00
Other Facilities (includes ambassadors)	26.00
Other (includes Mighty Acorns, interpretation, and Alliance)	1193.00
TOTAL	**8140.00**
Appraised Dollar Value	**$152,786.00**

Table 31: Comparison of Volunteers, Hours, and Percentage Changes from FY04 through FY07

	FY04	FY05	Δ FY04-FY05	% Δ FY04-FY05	FY06	Δ FY05-FY06	% Δ FY05-FY06	FY07	Δ FY06-FY07	% Δ FY06-FY07
Number of Volunteers	263	354	+ 91	+35%	413	+59	+17%	1708 (420 individuals and 30 groups)	+1295	314%
Volunteer Hours	6383	5671	-712	-11%	11005	+5334	+94%	8140	-2865	-26%

The data reflects an increase in the number of volunteers between FY06 and FY07 by 314% yet a decrease in volunteer hours contributed (-26%). This is attributed to the inclusion of over 900 Mighty Acorn students that volunteered 0.5 hours each during their stewardship activity on each field trip. This resulted in high volunteer numbers without significantly increasing volunteer hours. The volunteer hour totals for FY07 should not necessarily be viewed as a large decrease from FY06, but rather Midewin experienced a high influx of volunteer hours in FY06 compared to previous years. FY06 was a big year for all day large group volunteer events, which in turn increased the number of hours contributed. Furthermore, volunteers donated many hours to the building of the Bailey bridge, although the majority was constructed in FY06. Another reason for the escalation in hours in FY06 before tapering off in FY07 was the introduction of year long botany classes. The initial interest was substantial and resulted in an enthusiastic group of regulars filtering through. According to USDA Forest service calculations, the hours contributed by volunteers in FY07 are equivalent to 4.5 fulltime staff.

Midewin's monitoring programs are either administrated internally or with regional and state-wide partner programs. The anuran and grassland bird surveys are lead by Midewin scientists and data is gathered by volunteers. Midewin has a partnership with Chicago Botanical Garden's Plants of Concern, the Illinois Natural History Survey, the Illinois Butterfly Monitoring Network and the Illinois RiverWatch Program. These organizations provide the framework, protocol, training and resources that Midewin utilizes with volunteer monitors on site. The data collected at Midewin is used to reflect progress on site and also contributes to the larger monitoring effort regionally or state-wide.

Volunteer ecological monitors are vital in gathering data on wildlife, stream quality and vegetation at Midewin every year. There is increasing interest in monitoring opportunities at Midewin and as restoration progresses more volunteers will be recruited. Currently, there is sufficient help for the available sites for bird, anuran, and riverwatch, and plants of concern monitoring. This will increase as more sites require monitoring. Midewin needs to enlist more volunteers to monitor butterflies and survey lichens. There is ample opportunity for vegetation monitors with experience in native and exotic plant identification. The new volunteer database offers Midewin's volunteer program more options to keep record of volunteer hours, availability, interests, special skills, training, and contact information which will be a useful tool in the further development and support of a flourishing volunteer team.

U.S Army Transfer (T3) Remediated Lands

The land transfer of 2,640 acres recorded in the Federal Register on September 27, 2005 included 538 acres with land use restrictions. The restrictions include: prevent unrestricted exposure to soils with residual contamination and prevent the development and use of the property for residential, schools, childcare or playgrounds, or industrial uses. In FY2007, no soil or groundwater disturbances occurred on these newly transferred lands, nor have restricted development activities occurred on the 538 acres of remediated lands.

The Forest Service at Midewin agreed to report on the land use for these parcels in the Midewin Annual Monitoring and Evaluation Report. The most appropriate way to track and monitor land uses will be to designate a new Management Area for those lands with restrictions.

Recommendation:

- Amend the Prairie Plan to designate transferred parcels with land use restrictions and keep track of such parcels and land uses in a Geographic Information System.