

Monitoring and Evaluation Report

Fiscal Year 2006



Midewin National Tallgrass Prairie

USDA Forest Service

2006 ANNUAL MONITORING AND EVALUATION REPORT

MIDWIN NATIONAL TALLGRASS PRAIRIE

This report documents Land and Resource Management Plan (Prairie Plan) monitoring completed in fiscal year 2006. It also documents our evaluation of the resulting information and data, to determine the effectiveness of management and program direction at the Midwin National Tallgrass Prairie (Midwin). The Prairie Plan has been implemented since it was approved in February 2002. Implementation of the Prairie Plan requires detailed planning at the “site-specific” level in compliance with the National Environmental Policy Act (NEPA). Project level planning is evident in the land management activities that have been designed to restore tallgrass prairie ecosystems and increase public recreational opportunities.

Opportunities for experiencing Midwin are possible by planning, public involvement, project analysis, and decision-making. Decisions are made through the NEPA process to authorize restoration, recreation, and other related projects in conformance with Prairie Plan goals and objectives. These decisions are then validated or changed through monitoring project effects and evaluating those effects over time to determine if changes in land management practices are needed.

Volunteer contributions in 2006 have enriched Midwin’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 Midwin’s partners who have helped with habitat restoration and recreation improvements in 2006. You have greatly furthered the vision of advancing restoration efforts at Midwin and developing recreational facilities in conjunction with the ongoing cleanup of the former Joliet Army Ammunition Plant. Please see the Midwin National Tallgrass Prairie website at www.fs.fed.us/mntp for detailed information on present and proposed restoration activities and recreational opportunities at Midwin.

Logan Lee
Prairie Supervisor

APPROVAL AND DECLARATION OF INTENT

I have reviewed the 2006 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 2007 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

September 17, 2007
Date

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INTRODUCTION

As restoration of tallgrass prairie ecosystems continues to alter the former Joliet Army Ammunition Plant landscape into one more closely reminiscent of conditions that existed before European settlement of the region, The Midewin National Tallgrass Prairie is a “prairie under construction.” 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 2006 and looks at trends that have become apparent from the accumulation of monitoring results from fiscal years 2002-2006. 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 our fifth year of monitoring and evaluation reporting on actions intended to implement 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. Chapter 6 of the Prairie plan outlines the monitoring and evaluation program for Midewin.

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 FY2006 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

1.1 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: FY2003-2006.

National Forest Fund Code	Project Description	FY2003	FY2004	FY2005	FY2006
NFPN Forest Planning	Maintenance of existing Plan; prepare amendments as needed.	No amendment needed.	No amendment needed.	Amendment to be initiated in FY2006	Amendment initiated and 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: 5,900 acres.	TES monitoring: 6,000 acres. Heritage inventory: 1,651 acres.	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
NFRW Recreation/ Heritage/ Wilderness	Outdoor recreation & management. Heritage resource protection, preservation, & interpretation. Environmental education (EE) programming. Interpretive tours & activities.	<u>Recreation:</u> 3 miles of interim trails designated & mowed. Hunting access on 2,500 acres. Scoping for first permanent trail. <u>Heritage:</u> 3 PIT projects. Underground Railroad campfire interp. program. <u>EE:</u> El Valor camp. Mighty Acorns served 740 students. Total 2,800 students received EE services.	<u>Recreation:</u> 6,400 acres opened to the public. 19 miles of interim trail designated. Planning for first trail continued. <u>Heritage:</u> 2 PIT projects. Underground Railroad campfire interpretive program. <u>EE:</u> El Valor camp, plus expanded to Urban Academy. Mighty Acorns served 900	<u>Recreation:</u> 6,400 acres open. 19 miles of interim trail maintained. West Side Trail construction initiated. <u>Heritage:</u> 56 NHRP-sites protected, 32 new sites identified, 19 heritage resources interpreted, 1 PIT project. <u>EE:</u> El Valor camp & Urban Academy. Mighty Acorns	<u>Recreation:</u> No openings occurred. Bailey Bridge trail connecting to Wauponsee Glacial Trail construction initiated. <u>Heritage:</u> 69 sites surveys, 28 new sites identified, 4 sites requiring further NRHP investigation, 16 site approved of interpretation <u>EE:</u> Expanse of El Valor camp & Urban Academy

National Forest Fund Code	Project Description	FY2003	FY2004	FY2005	FY2006
			students. Total 2,645 students received EE services. 75 tours, 5 campfire programs, & 10 lectures offered.	served 900 students. Total 2,800 students. 67 tours, 4 campfire programs, & 10 lectures.	by 1 additional five week session. Mighty Acorns served 900 students. Total 3,000 students. 450 tour participants, 10 lectures
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. Blodgett Road restoration: 200 acres converted from cropland to prairie & grassland. 5,564 acres under active management.	Managed 20 acres of dolomite prairie to protect TES species. Blodgett Road restoration: 528 acres converted from cropland to prairie & grassland. 6,472 acres under active management. 390 acres cleared of trees & shrubs for grassland bird habitat.	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 Blodgett 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.
NFRG Grazing Management	Administer & monitor grazing permits for enhancement of grassland bird habitat (approx. 800-4,000 acres/year).	2,461 acres. 6 grazing permits. 5 allotments managed.	3,010 acres. 6 grazing permits. 5 allotments managed.	3,729 acres. 6 grazing permits. 5 allotments managed.	4,690 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.	Restoration continued at South Patrol Road & Mola project areas. Grant & Jordan Creek assessments completed. 4,000+ acres treated for noxious weeds. 12 acres of old fence line removed	Restoration continued at South Patrol Road, Mola, & Prairie Creek Woods. Additional species & area added to seed bed production. 4,000+ acres treated for noxious weeds.	Restoration continued at South Patrol Road, Rt 66 Prairie & Prairie Creek Woods. Additional species & area added to seed bed production. 3,784 acres	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

National Forest Fund Code	Project Description	FY2003	FY2004	FY2005	FY2006
	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.	to unfragment 335 acres.	12 acres of old fence line removed to unfragment 415 acres.	treated for noxious and invasive plants. 1,900 linear feet (12 acres) of old hedge row removed to improve grassland bird habitat	treated for noxious and invasive plants. 1,900 linear feet (12 acres) of old hedge row removed to improve grassland bird habitat
NFLM Land Ownership Management	Administer & monitor special use permits. Continue boundary & title management.	4 special use permits for agricultural use.	4 special use permits for agricultural use.	4 special use permits for agricultural use; 3,594 acres	8 special use permits for agricultural use; 3,937 acres
NFLE Law Enforcement	Support Forest Service LE activities.	LE activities supported.	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 = 10 chains built/hour	Capacity =10 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: 2,205 acres mowed.	Fuels treatment: 500 acres mowed.	Fuels treatment: 717 acres burned; 5,487 acres mowed.	Fuels Treatment 1000 acres burned, 1,114 mowed
CMFC Facilities Capital Improvements and Maintenance	Implement annual maintenance of Administrative Site. Design and build a visitor center.	Continued SO complex construction. Opened new office in March 2003.	Hotshot fire crew facility constructed. Garage constructed.	No new facilities constructed in FY2005.	No new facilities constructed in FY2006.
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	No roads decommissioned .13 miles maintained to operation maintenance levels.	3 miles decreased to Level II Standard. 15 miles maintained to operation maintenance level.	No roads decommissioned .6 miles maintained to operation maintenance level.	No roads decommissioned

National Forest Fund Code	Project Description	FY2003	FY2004	FY2005	FY2006
	streams (approx. 10 miles/year, as funds allow).				
DMDM Backlog Maintenance	Demolish former Army facilities and infrastructure as funds allow. Started with 22 transite warehouses and 16 railroad trestles.	Demolished 48 miscellaneous buildings, 11 timber railroad trestles, 8 warehouses, & 8 foundations.	Demolished 4 warehouses, 1 power station, & 2 guard houses. Removed 5 miles of chain link fence.	Demolished 9 building foundations, one warehouse and two road bridges. Removed 1.3 miles of chain link fence.	Demolished 2 buildings
CMTL Trail Capital Improvements & Maintenance	Designate & maintain interim trails. Design & build permanent trails.	Designated & mowed 3 miles of interim & build permanent trails.	19 miles of interim trails designated & mowed. Planning continued for West Side permanent trail	19 miles of interim trails maintained by mowing. Construction for West Side permanent trail began.	19 miles on interim trail maintained by mowing.
LALW Land and Water Conservation Fund	Emphasize acquisitions that further Plan objectives and improve access for restoration and recreation.	Acquired 95-acre Russell Tract.	No new lands acquired.	No new lands acquired utilizing this fund.	No new lands acquired using this fund
PRPR Midewin Restoration Fund	Collect authorized fees from salvage projects and implement priority projects.	N/A	N/A	N/A	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.	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.	Cattle fence installed for grassland bird management areas. 1,500 acres brush cleared. 210 acres converted from cropland to grassland. Purchased seed cleaning equipment & dust collection system.	Implementation highlights: Herbicide treatment of 2,620 acres for invasive control. Initiated restoration of 100 acres through invasive removal. Brush control on 1,641 acres. Purchased seeds & plants.	Invasive species control on 3,727 acres. Installed green house for plant propagation. Additional seed cleaning equipment purchased. Insect survey for regional forester sensitive	985 acres integrated fuels treatment-mowing. Installed Deer proof fence- seed production area Brush control treatment 1,333 acres Heavy mowing Herbicide treatment for species control

National Forest Fund Code	Project Description	FY2003	FY2004	FY2005	FY2006
			<p>Purchased seed cleaning equipment.</p> <p>Purchased Type 7 fire engine for prescribed burns.</p> <p>Installed deer guard in fence to protect River Rd. seedbeds.</p> <p>Installed cattle fence for grassland bird management.</p>	<p>species.</p> <p>Installed fencing for grassland bird management.</p> <p>Removed old fencing and railroad ties.</p>	<p>Purchased Prairie seed harvester and slip on Fire pump 6 wheel utility vehicle.</p>
CWFS – Other Cooperative Funds	Deposit cooperator funds and donations; spend on authorized projects.	CenterPoint monitoring agreement.	<p>CenterPoint monitoring agreement.</p> <p>CenterPoint wetland funds used to start design of Middle Grant Ck. wetlands restoration project.</p>	<p>CenterPoint wetland funds applied to Middle Grant Creek wetlands restoration:</p> <p>Invasive control and removal of RR ties, night bunkers, debris, and concrete bunker.</p> <p>CorLands contract for invasives control in South Patrol Road, Rt 66 Prairie and Prairie Creek Woods;</p> <p>Purchased seeds for South Patrol Road.</p> <p>TWI prairie and wetland restoration work at Blodgett Rd.</p>	<p>The Wetlands Initiative, CorLands, USACE, IDNR funds applied to South Patrol Restoration.</p> <p>CorLands, USACE, Ducks Unlimited funds applied to Route 66 Prairie.</p> <p>CorLands, USACE funds applied to Prairie Creek Woods.</p> <p>CenterPoint collected funds applied to Middle Grant Creek restoration.</p> <p>The wetlands Initiative funds applied to Blodgett Road Dolomite Prairie</p>
NFSD – SCSEP Senior Community Service Employment	Hire and train 2-3 senior employees each year.	3 SCSEPs employed.	2 SCSEPs employed.	2 SCSEPs employed.	SCSEP program ceased

National Forest Fund Code	Project Description	FY2003	FY2004	FY2005	FY2006
Program					
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.	Sampled 800 feet of fence lines for arsenic. Sampled railroad ballast along portions of planned West Side Recreation Trail. Sampled Blodgett Marsh.	Sampled 1 mile of additional rail bed ballast for residual arsenic pesticide where open access & trails are planned. Initiated risk assessment for evaluation of FY03 & 04 sampling results.	Risk assessment for evaluation of FY03 & 04 sampling results completed.	

Budgets: How FY2006 program funding was used

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). Midwin leverages the appropriated funding received through partners and volunteers.

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

Fund Code	Title Of Fund Code	FY2002 Final	FY2003 Final	FY2004 Final	FY2005 Final	FY2006 Final
NFPN	Planning	\$40,000	\$25,000	\$28,000	\$58,000	\$49,000
NFIM	Inventory / Monitoring	\$350,000	\$225,000	\$516,000	\$375,000	\$193,000
NFRW	Rec./ Heritage / Wilderness	\$356,000	\$368,000	\$555,000	\$843,000	\$663,192
NFWF	Wildlife / Fisheries	\$393,000	\$375,000	\$557,000	\$542,000	\$399,515
NFRG	Grazing Management	\$11,000	\$20,000	\$30,000	\$29,000	\$16,010
NFVW	Vegetation / Watershed Mgt.	\$317,000	\$434,000	\$525,000 (less \$140,000 of ECAP= \$385,000)	\$542,000	\$427,786
NFLM	Land Ownership Mgt.	\$75,000	\$87,000	\$96,000	\$99,000	\$57,000
NFLE	Law Enforcement	\$7,000	\$34,000	\$0	\$0	\$0
WFPR	Fire Preparedness	\$792,000	\$792,000	\$914,000	\$914,000	\$679,662
WFHF	Hazardous Fuels Reduction	\$5,000	\$7,000	\$71,000	\$57,000	\$77,157
WFW2	Rehab and Restoration	\$0	\$0	\$0	\$0	\$0
NFCC	Condition Class	\$0	\$0	\$3,000	\$0	\$0
CMFC	Facilities Capital Improvement/Maintenance	\$560,000	-\$3,000	\$501,000	\$569,000	\$97,207
CMRD	Roads Capital Improve./Maint.	\$147,000	-\$16,000	\$199,000	\$306,000	\$40,305
CMTL	Trails Capital Improve./Maint.	\$40,000	-\$7,000	\$208,000	\$167,000	\$616,943

CMII	Deferred Maintenance	\$700,000	\$20,000	\$263,000	\$175,000	\$638,736
CMC2	Fire Facilities – Backlog	\$450,000	\$31,000	\$0	\$0	\$0
LALW	Land Acquisition	\$43,000	\$0	\$5,000	\$25,000	\$11,000
NFMG	Minerals / Geology Management	\$1,000	\$0	\$0	\$0	\$50,000
NFMP	Monitoring	\$0	\$0	\$0	\$0	\$0
NFTM	Forest Products	\$2,000	\$0	\$0	\$0	\$0
TRTR	10% Roads and Trails	\$1,000	\$58,000	\$54,000	\$51,000	\$1,000
RTRT	Reforestation Trust Funds	\$0	\$0	\$0	\$0	\$0
HWHW	Hazardous Waste	\$5,000	\$3,000	\$140,000 (ECAP)	\$0	\$0
PIPI	Midewin NTP Rental Fees	\$500,000	\$500,000	\$500,000	\$1,295,000	\$1,083,556
DMDM	Deferred Maint. – Fund Cleanup	-\$4,358	\$0	\$0	\$0	\$0
WFW3	Rehab and Restoration	\$100,000	\$0	\$0	\$0	\$46,300
TOTAL		\$4,890,642	\$2,953,000	\$5,025,000	\$5,954,000	\$5,147,369

Agricultural Use

1.2 Are continued agriculture permits used for resource management purposes?

Agricultural permits 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: Row crop production (soybeans and wheat)

FISCAL YEAR	Acres Removed from Production Per Year	Acres Added (Temporarily) does not include new acquisitions	TOTAL acres in crops includes new acquisitions
FY 1999-2000			3,831
2001	112		3,719
2002	48		3,671
2003	260	355	3,998
2004	907	141	3,664
2005	552		3,112
2006	160	284	3,724
2007 (planned)		318	4,042
TOTAL	1,721*		

* - The acres removed from production vary from year to year depending upon whether areas already removed from production need to go back into production temporarily. For example pasture plantings may not have been successful and may have to go back to crops for two years prior to replanting. The total (1,721 acres) is an accurate reflection of how many acres have been successfully removed from agriculture and converted to native habitat or successful grassland wildlife habitat from 2001 through 2006.

The acres between 2003 and 2004 on the summary table above don't completely add up considering amount removed and added. This is due to the use of one-year agricultural plantings to control invasive plants prior to conversion to prairie and wetlands, and the

addition of two tracts, Russell and Morgan Woods, which were in row crops. Also some fields that had been idle for a few years were formally removed from crop production with the conversion to prairie and wetland. Additionally, some tracts were taken out of agriculture and put into the native seed production. In 2005 additional lands were transferred to the Forest Service from the Army, which accounts for the large increase in Agriculture Use acres.

The trend has been to remove agricultural fields from production to provide habitat. So far, 1,721 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. Midewin and partners are currently at about the limit for yearly control of invasive plant species on the areas already converted. 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.

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.

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.

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.

2.2 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 10 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. 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: Acres grazed by year

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

Recommendations

- Continue grazing permits 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 limit access to stock ponds that can be used by other wildlife.

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

For the period between 2002 and 2006, approximately 1,107 acres were taken out of crops and planted to cool season pasture grasses. The 2005 planting needs to be replanted, so the net gain in cool season grass conversion for the reporting period is 789 acres. Approximately 538 acres of former crop fields have been converted to native vegetation during the reporting period. Additionally 76 acres adjacent to native habitat restoration areas were taken out of crop production because they became too wet following adjacent restoration and have been allowed to grow up into native wetland vegetation.

Table 5: Acres of agricultural land conversion by year

Fiscal Year	Cool Season Grass Pasture Conversion	Prairie and Wetland Conversion (acres)
2002		
2003	210	50
2004	419	488
2005	318*	76
2006	160	0
2007 (planned)	0	0

*Because of grass crop failure, these acres are being returned to crop production for 2 years and then will be reconverted to grassland wildlife habitat.

Conversion of agricultural land use to cool season grass pasture and natural vegetation should slow down over the next few years. Conversion to prairie and wetland communities has slowed due to supplemental work needed on areas previously converted. If additional funding, staff, or partnership help becomes available, more 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 previously 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 partnerships help becomes available increase conversion appropriately.

Air Quality

3.1 Is Midewin causing significant deterioration of air quality?

During FY2006, activities at Midewin did not result in significant sources of air pollution or contribute to the deterioration of air quality. Prior to conducting 717 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

4.1 Have adequate facilities been provided?

No new facilities were constructed in FY2006. Current facilities are adequate.

Former Army Facilities Removal

5.1 How many unsafe Army facilities or structures have been removed?

This table identifies the number of facilities and structures that have been removed over the past 5 years.

Table 6: Facilities and Structures

	No. Of Bldgs.	Misc. Items.
FY2002	0	Group 63 Fence 850 ft.
FY2003	50	
FY2004	5	
FY2005	7	Group 63 Fence 5,000+/- ft
FY2006	2	
Total	64	5,850 ft.

5.2 Are former contaminated areas being restored?

Midewin has not acquired any of the areas deemed as formal contaminated areas. Those areas are being restored by the Army prior to the land exchange to Midewin.

Ecosystem Restoration and Management

6.1 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.

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 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 maintain the area, which may consist of mowing or prescribed burns.

None of the large unfragmented areas identified in the Prairie Plan have been realized. Currently, 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 2006, 2,943 acres were under 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 hasn't been completed on tree and shrub 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, 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 and 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.



Figure 1: Volunteer collecting seed.

Recommendations

- Complete environmental analysis 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 and prescribed burns.

6.2 Are habitats being restored?

Restoration includes activities such as converting croplands to cool season grasses, planting native species, and restoration 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, 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.



Figure 2: Tractor seeding a restoration area.

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 may be reported 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 7: Acres being restored

Year	Acres being restored
2002	2,389
2003	4,107
2004	5,583
2005	5,443
2006	6,333
2007 (planned)	6,000+

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.

Over the past five years partners have assisted the Forest Service in restoring five major areas.

Table 8: Restoration Project Areas

Restoration Project	Acres	Primary Partners	Partner Investment
South Patrol Road	459	The Wetlands Initiative, CorLands, USACE, IDNR	\$919,435
Route 66 Prairie	65	CorLands, USACE, Ducks Unlimited	\$156,133
Prairie Creek Woods	56	CorLands, USACE	\$200,181
Middle Grant Creek	500	CenterPoint Properties	\$2,500,000
Blodgett Road Dolomite Prairie	151	The Wetlands Initiative	\$600,000+

Restoration activities continued with partners on two project areas, Blodgett Road Dolomite Prairie and Middle Grant Creek restoration areas in 2006. The Wetlands Initiative through grants they have received 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, field tile removal, stream debris removal, culvert removal, and invasive species control took place in 2006.

Additional restoration projects are scheduled to begin in 2007 through partnerships with The Wetlands Initiative, US Army Corps of Engineers, CorLands, and ExxonMobil. Restoration activities will begin in the Drummond Floodplain area and ExxonMobil land donation area. The Wetlands Initiative will continue to partner with the Forest Service with the Blodgett Road restoration in 2007.

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.

6.3 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 9: Acres under management by year

Year	Acres under management
2002	7,675
2003	9,662
2004	10,900
2005	10,908
2006	13,602
2007 (planned)	13,000+

Recommendations

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

6.4 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.

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 graminoid 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, 176 species were seeded or planted, 115 of these species have been found representing 65% of the species planted. The actual percentage is probably higher. For the short period of time since initial planting and the difficulty of locating and identifying



Figure 3: Bill Glass with volunteers during annual monitoring trip

young plants, 65% is adequate 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 the invasive species. Invasive species can be native and non-native. 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.

- Continue existing volunteer monitoring programs and implement long-term vegetation monitoring in restoration areas and a lichen monitoring program.
- Explore other methods to monitor vegetation composition goals.

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

RFSS birds fall into two categories, wetland birds and grassland 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 don't threaten neighbors or infrastructure they have been left in place. Approximately 70 acres of wetland are being maintained through the actions of beavers. Wetland birds have been seen using these areas sporadically. As additional wetlands are created, this 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 is the short-stature grasslands. Midewin uses cattle grazing 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-grazing areas provides tall-stature grass habitat. Litter depth can also be important for some species.

Grass height and litter depth is monitored during spring and 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. Analysis of monitoring results for the past five years shows that grass heights for areas maintained as grassland bird habitat were within the prescriptions outlined in the Prairie Plan for short, medium, and tallgrass habitats. Data was not collected in 2005, but would probably have been similar to 2003 and 2004 since the grazing and management was identical. In 2002, no tall-stature grassland tracts were monitored. 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-stature habitat areas exist at Midewin than are measured. The Robel method of determining grass height is used.

Table 10: Short Grass acres and structure by years

Year	Short Grass Acres	Short Grass Height Range	Short Grass Height Mean	Litter Depth Range	Mean Litter Depth
2002	1,335	17-47 cm	30 cm	0.6-2.7 cm	1.7 cm
2003	2,133	10-47 cm	23 cm	0.3-5.2 cm	1.9 cm
2004	2,169	10-53 cm	25 cm	0.3-3.1 cm	1.7 cm
2005	NA	NA	NA	NA	NA
2006	4,071	14-54 cm	31 cm	0.3-3.5 cm	1.6 cm

Table 11: Medium Grass acres and structure by year

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

Table 12: Tall Grass acres and structure by Year

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	1,028	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	1,187	31-47 cm	41 cm	0.3-4.1 cm	2.2 cm

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 will be important in fine-tuning the grazing to produce the most optimal grassland wildlife habitat in the future.

Grass height analysis shows that Midewin is providing the desirable grass heights for grassland wildlife. The data indicates that the current management is appropriate for grassland wildlife and that 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. Of the 12 nests in 2005, 5 were in these small areas left within unfragmented tracts.

Current management plans (restoration and grazing) are adequate in maintaining populations of RFSS birds. 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.
- Continue to provide isolated shrubby habitat along edges of open grasslands for loggerhead shrikes and other shrubland birds.

Environmental Education/Interpretation

7.1 Are tours, interpretation and environmental education programs meeting objectives?

The goal of interpretation and conservation education at Midwin 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. Midwin’s interpretive and conservation education programs continue to focus on Prairie Plan goals and objectives through the following program activities:

Midwin Welcome Center: The Welcome Center was open to the public for the entire fiscal year. Visitation for FY2006 was slightly up from FY2005. The interpretive sales outlet provided by the Midwin 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. The Welcome Center was open on both Saturday and Sunday throughout the summer and into the fall hunting season.

Midwin Explorations Interpretive Activities Program: Midwin offered a full range of on-site interpretive programs during FY2006. With the identification of a new route on the east side of Midwin, equestrian tours returned to the program schedule. The popular twilight bicycle tours were retained. The evening campfire programs continue to attract significant participation as did the two twilight cemetery tours. “Midwin for Kids,” a program targeted at youth ages 7-11, was added to the list of interpretive programs. The number of tour participants in FY2006 was 450. This represents no change from FY2005.

Midwin Lecture Series: Fiscal year 2006 was the fourth year for the Midwin 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 Midwin and northeastern Illinois. The Midwin Lecture Series is growing in popularity.

Mighty Acorns Youth Stewardship Program: During FY2006, a total of 5 schools representing 4 public school districts and one private school participated in the Mighty Acorns program



Figure 4: El Valor Science and Technology Camp Participants

at Midewin. This represents a stable program when compared to FY2005. Total student participation in the Mighty Acorn program at Midewin remained at 900 for the 2005-2006 school years. 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 FY2006, Midewin supported the 6th year of the Forest Service El Valor Science & Technology day camp. In addition to two 4-week sessions operated out of the center in Pilsen, 2006 saw expansion to the summer camp program to El Valor's South Chicago center with one 5-week session being offered.

Urban Academy for Environmental Discovery successfully operated for a third year. In the fall of 2007, El Valor will open a third community center in the Little Village neighborhood. Future program expansion should include a second summer camp session and Urban Academy at the South Chicago facility, and introduction of both programs at the new center in Little Village.



Figure 5: YCC crew installing fencing.

Youth Conservation Corps: Midewin hosted a YCC crew for eight weeks during the summer of 2006, providing employment and environmental education for 7 local high school youth.

Summary

Through the programs above, Midewin provided interpretive activities for 1,100 individuals in FY2006.

During FY2006, 3,000 individuals participated in environmental education programs at Midewin.

Recommendations

- Continue to focus tour program on 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.

Fire

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

No smoke management plan has been developed. This is an Illinois state responsibility to administer a smoke plan statewide. At this time, we do not measure smoke pollutants or measure air quality when we do our prescribed burns. We do follow the state burning permit system and apply annually, before conducting prescribed burns.

8.2 Have fire burn plans been developed and followed?

Fire burn plans are written for all of our projects. In 2006, we prepared 7 burn plans. On Midewin, we accomplished approximately 1,000 acres of burning, 591 acres of mechanical treatment (force account), and 523 acres of mechanical treatment (by contract) to treat hazardous fuels. The entire prairie is considered Wildland Urban Interface (WUI). The prairie fire management plan was updated.



Figure 6: Bunker field prescribed burns

Hazardous Materials

9.1 To what extent have hazardous substances sites have been mitigated?

Midewin did not mitigate any hazardous substance sites.

Heritage Resources

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

In FY2006, 1,999 acres were surveyed through Phase I archaeological surveys. Through these surveys, 69 National Register of Historic Places (NRHP)-eligible or unevaluated sites were identified and/or protected. 28 new sites, both historic and prehistoric, were identified through Phase I archaeological surveys. Of these, 4 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 69 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 area surveyed at Midewin is now 8,966 acres.

Table 13: Site Identification, protection, & preservation.

Site # and Type	Action
5 Historic Cemeteries	Monitoring & Protection
21 Heritage Resources	Monitoring & Protection
15 Heritage Resources	Protected
28 Heritage Resources	Identified and Protected.

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

During FY2006, 26 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 Acorns 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 14: Site Examination, Reporting, & Interpretation.

Site Name & Type	Action
5 historic Cemeteries	Interpreted
8 Farmsteads	Examined
2 Prehistoric Sites	Examined
9 Farmsteads	Interpreted
3 Schoolhouses	Interpreted
2 Prehistoric Sites	Interpreted

Note: Some sites appear on the table twice as they were both interpreted and examined.

10.3 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.

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

In FY2006, all eligible or unevaluated heritage sites and potential TCPs were protected from the direct or indirect effects of management actions. Monitoring found that 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 among resource specialists which reduces the chance of adverse effects on sites. Finally, 10 sites, 8 historic farmsteads, and 2 prehistoric sites were formally evaluated in anticipation of project implementation.

Integrated Pest Management

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

Controlling invasive plants at Midewin increasingly 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 that act as sources for invasive plants.
- 3) Eradicating infestations of invasive plants that are new to Midewin.

The majority of herbicide used to control invasive plants in 2006 was glyphosate, triclopyr, and clopyralid, with lesser amounts of sethoxydim. These were directly applied to kill infestations or resprouts of invasive woody plants. 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 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.

Table 15: Changes in the expansion of noxious weeds and invasive species at Midewin between FY2002 and FY2006.

Measure	2002	2006
Number of NNIS (non-native invasive plant species) present on Midewin	68 species	71 species (three 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	18,100 acres infested, but this reflects additional land transferred from the Army to the USFS at Midwin, and not an expansion in infestations. However, there is a reduced frequency of some invasive plants in treated areas.
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. One infestation (purple loosestrife) 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); 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	<0.1 acre (not including row crop fields)	1,520
Acres treated for NNIS Plants – Mowing	2070	2,926 (spot mowing for thistles, sweet-clover) 2,943 (entire tracts mowed to control autumn-olive, bush honeysuckle, and Osage-orange)
Acres treated for NNIS Plants – Manual Removal	12	40 (mostly spot infestations in woodlands)
Number of Invasive Plant Species treated:	<u>11 species:</u> 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	<u>28 species have been treated in at least one year since 2002:</u> 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
Invasive Insects Monitored through partnerships	<u>1 species:</u> gypsy moth	<u>At least 2 species have been monitored for at least one year since 2002:</u> gypsy moth wood-boring beetles (including emerald ash borer) One gypsy moth (a male) was captured in 2005. No further records.

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 in 2005, which has allowed increased treatment of isolated infestations both within and outside large habitat restoration projects. In 2006, twenty staff members were licensed herbicide applicators. Additional habitat restoration, new partnerships, and staff training are needed for these trends to continue.

Table 16: Specific IPM/Invasive Species Monitoring Activities for FY2006

Specific Monitoring Activity	Purpose	Methods	Responsible Parties
Evaluating treatment needs (where are the infestations, their size, and prioritizing treatments)	To allocate limited resources where they will be most effective in controlling invasive plants.	Field surveys, GIS	USDA Forest Service, Midewin staff
Invasive plants in or adjacent to TES species populations and rare habitats	Identify and treat immediate threats to TES species and rare habitats	Field surveys, limited vegetation sampling	Chicago Botanic Garden Plants of Concern program working with Midewin staff.
Invasive insects	Determine spread of specific invasive insects across Illinois	Lures/traps placed in field	University of Illinois Cooperative Extension Service
Treatment results (mowing, herbicide application, hand control)	To determine efficacy of treatments, efficiency of using contractors vs. seasonal staff.	Field surveys, limited sampling	USDA Forest Service, Midewin Staff
Acres treated, methods used	Track areas treated and methods used.	FACTS (database)	USDA Forest Service, Midewin Staff

Table 17: Findings from Monitoring IPM/Invasive Species Activities for FY2006

Specific Monitoring Activity	What did we learn?	Contributions to better projects and plan implementation.	Potential Improvements	Contribution to 5-year Report
Evaluating	More time needed	Developing more	Involve volunteers.	Acres of habitat

treatment needs (where are the infestations, their size, and prioritizing treatments)	to survey infestations.	integrated management plans for specific sites.		improved; acres infested and treated; numbers of invasive species present on Midewin.
Invasive plants in or adjacent to TES species populations and rare habitats	Partnerships proved an effective way to alert Midewin staff to potential threats.	Provides another perspective for prioritizing management needs.	Work with partners to rank invasive threats in these situations	Number of activities accomplished with partners and volunteers; improvements in TES populations and rare habitats
Invasive insects	Required minimal time by staff (2 days/year to assist partner)	Awareness of Midewin and USFS with other agencies/ organizations	Involve additional agencies/NGOs in monitoring for invasive insects.	Partnerships; tracking of important pest species in Illinois.
Treatment results (mowing, herbicide application, hand control)	Seasonal staff often performed better than contractors in conducting treatments	Results contribute to better planning for implementation, including timing, allocating specific tasks to contractors, partners or staff; identification of best treatment methods or combination of methods for specific invasive species.	Locate external funding to continue seasonal hiring programs; use trained, proficient volunteers in treating invasive plants.	Acres and species treated; rating efficacy of treatments
Number of acres treated, methods used	Developed better system (daily logs) for field staff and contractors to track treatments.	Better planning for staff time for data entry into FACTS.	Better tracking (locations, acres) of non-chemical treatments.	Acres treated, eventually amounts of herbicide used.

Recommendations

- 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 efficacy of treatments, whether chemical, mechanical, or manual.
- Improve methods for collecting and entering information on treatments.
- Continue to participate in technologies that may assist in identification and mapping of invasive plant infestations using remote sensing data.

Land Ownership

12.1 To what extent land boundaries have been adjusted?

Midewin did not acquire any new lands in FY2006.

Recreation

13.1 Are trails constructed to standards for planned use?

Construction of the West Side Trail continued in 2006 with applying and grading the final lift to approximately .8 miles of the trail. The initial lift was laid for an additional half mile of trail. Wet weather throughout the construction season considerably prolonged the trail construction process.

In September of 2006, construction began on a 140- foot-long Bailey Bridge over Prairie Creek on the east side of Midewin. During the week prior to National Public Lands Day and the Monday following, an average of 20 volunteers worked each day on the new span. The bridge will facilitate opening an additional 800 acres of Midewin to the public and will allow the connection of the current interim trail system into a vast regional trail system.



Figure 7: Construction of the Bailey Bridge

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

No new permanent recreation developments occurred in FY2006. Those that exist, such as Midewin's Welcome Center, are being managed in accordance with Prairie Plan-prescribed ROS standards. Trails and additional facilities are being developed in accordance with ROS guidelines.

13.3 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 6,400 acres of 19,000 acres of Midewin is open to the public. Midewin is currently using about 16 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. Permanent facilities are planned that will better accommodate user needs and provide a place where users can come in touch with the natural environment. In 2006, contracts were awarded for two new permanent trailheads that are expected to open in 2007. As more of Midewin is opened to the public and more restoration is undertaken, the demand for facilities will increase.

The Welcome Center, the only permanent facility that was open in 2006, continued to meet the needs of the visiting public in FY2006.

Research

14.1 Are key information needs being pursued as research projects?

In FY2006, research at Midewin continued with an emphasis on restoration and management. Research into processes underlying the structure and functioning of the grassland flora and fauna and the effects of restoration and management practices, with focus on adaptive management, continues.

The following research proposals were submitted for external funding:

- **Prairie Seed Banks at Midewin National Tallgrass Prairie: A Key to its Restoration.** Brenda Molano Flores and Christopher J. Whelan, Illinois Natural History Survey. Proposal submitted to IDNR C2000 for funding award to University of Illinois at Urbana-Champaign.
- **Woody plant invasion of grasslands: Interactions between seed dispersal and microhabitat characteristics.** Daniel G. Wenny, Christopher J. Whelan, and Norberto J. Cordeiro, Illinois Natural History Survey. Proposal submitted to IDNR C2000 for funding award to University of Illinois at Urbana-Champaign.
- **Determining the potential for carbon sequestration through prairie restoration.** Christopher J. Whelan, Illinois Natural History Survey, Miguel Gonzalez-Meler, and Joel S. Brown, University of Illinois at Chicago. Proposal submitted to IDNR C2000 for funding award to University of Illinois at Chicago.

The following was proposed for consideration at Midewin:

- **Grand Restoration Experiment.** Edward Heske and Christopher Whelan, Illinois Natural History Survey, and Joel Brown, Mary Ashley, Miguel Gonzalez-Meler and Lynne Wiora, University of Illinois at Chicago, Center for Research in Urban Ecology.

The Grand Restoration Experiment (GRE) is a proposed investigation involving Midewin, the Illinois Natural History Survey (INHS), and the University of Illinois, Center for Research in Urban Ecology and Human Dominated Landscapes (CRUE). The major objective of the proposed research is to conduct a long-term, landscape-scale experimental restoration that will examine mechanisms that structure the composition and dynamics of the tallgrass prairie and associated ecosystems. Initial focus will concentrate on above-ground trophic interactions among small mammals, particularly voles and other small rodents, insectivorous and granivorous bird species, and native tallgrass plant species. Research on below-ground processes, including the potential of soils of northeast Illinois for carbon sequestration through tallgrass prairie restoration, will also be incorporated.

New and continuing agreements to pursue scientific investigations and studies also included:

- MOU with Emily Kluger of the University of Illinois at Urbana-Champaign for inventory, research, and monitoring of prairie weevil and its effects on the *Silphium* family of plants.
- MOU with Christine Caruso to study *Lobelia siphilitica*
- MOU with Amy Chabot for loggerhead shrike monitoring.
- MOU with Francis M. Veraldi of the Army Corps of Engineers and Dr. Philip W. Willink of The Field Museum of Natural History to inventory and research fish at Midewin.
- MOU with Illinois State University to monitor biological resources.
- MOU with Nicolette Cagle of Duke University to monitor snakes.
- MOU with Helen Mlynarski of University of Illinois at Urbana-Champaign for monitoring the effects of soil impoverishment on the growth and reproduction of an annual prairie plant.
- MOU with Susan Harrell Yee of University of Chicago to understand spatial dynamics of treehoppers.
- Holly A. Zak of Northeastern Illinois University monitoring the status of Blanding's Turtles and the population of Midland Painted Turtles.
- Kara Higly-Kubik of DePaul University studying the relationships among arthropods, floristics, vegetation, and grassland birds.

Scenery Management

15.1 Is scenery of NFS land improving?

The South Patrol Road, Blodgett Road and Route 66 restoration projects continue to move toward the long-term scenic integrity objective of primarily high with small inclusions of moderate and low. These prairie restoration projects continue to take on the aesthetic values of a prairie and in the wetland and wet prairie portions of the restoration efforts in particular.

Middle Grant Creek is a relatively new restoration project that began in 2005 with some Army infrastructure removal and tree removal. Ammunition plant remnants continued to be removed in 2006 including the removal of fire hydrant (16), concrete debris (801 tons) and a box culvert.

In addition to restoration projects, the following projects were completed that affect overall scenic integrity improvement of Midewin:

- 2 warehouse foundations removed
- 7 warehouses removed (slabs and foundations remain)

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 18: Acres of scenic integrity improvements

	2004	2005	2006
Prairie Restoration	823	65	888

Five-Year Summary

Midewin has made significant strides in meeting the Scenery Integrity Objectives since the Plan was signed in 2002. Eight hundred eighty-eight, including Prairie Creek Savanna, restoration acres have undergone significant restoration practices. Restorations such as these typically go down in scenic integrity in the first few years. As the restoration matures, they look better as they begin to look more like the intended native habitat. The scenic integrity of a prairie restoration can improve yearly for several years. South Patrol Road, Blodgett Road, and Route 66 restorations are all at this point of maturity. They look like a prairie, but the aesthetic value will continue to increase over the next several years.

The 385 acres of Middle Grant Creek restoration are in the initial stages of restoration. This stage of restoration often lowers in scenic integrity due to the initial extensive changes in the landscape such as removal of existing infrastructure, drains tile and existing vegetation. After restorative planting begins, scenic integrity will increase.

There have also been extensive changes to the landscape prairie-wide. Much of the Army infrastructure has been removed since 2002. Examples include

- 11 warehouses (500' x 50') were demolished down to their foundations
- 1 steel-framed power substation was demolished
- 2 former guard stations were removed
- 5 miles of 7-foot-high chain link fence were removed
- 1 concrete bunker removed
- 6 warehouse foundations 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.

Social and Economic

16.1 To what extent is Midewin contributing to the local economy?

Under the Illinois Land Conservation Act that established Midewin, 25% of agricultural leasing revenues are shared with local communities for support of roads and schools. This is consistent with revenue-sharing agreements on other Forest Service units and is commonly referred to as the "25% Fund." This is a national program in which 25% of the revenues generated from timber sales and other commercial activities on national forests are shared back to the counties. Midewin began contributing to local schools and roads in Will County in 1998. The 25% Fund payments to Illinois are remitted from the U.S. Treasury to the Illinois State Treasurer, who then transfers them to the Illinois Department of Natural Resources (IDNR) for distribution.

Payments to Will County are split 50/50 and paid to the Will County Treasurer for roads and to the Will County Superintendent of Schools. The school payment is further split between the Wilmington (73%) and Elwood (27%) school districts based on the proportionate acreage of Midewin in the two districts.

The Secure Rural Schools and Community Self-Determination Act of 2000 (P.L. 106-393) – also known as the Stabilization of Payments Act, gives counties a stable “25% fund payment” in the future, regardless of revenues collected. This means that reductions in agricultural leasing at Midewin will have no effect on future payments to Will County. Revenues collected in FY2006 were \$454,703 and the amount paid to Will County under P.L. 106-393 was \$231,897.

In addition, payments under the Payment in Lieu of Taxes (PILT) program were initiated in 1999 for Midewin. The former Joliet Arsenal lands had not been included in federal acreage under Army administration, and were submitted to the Bureau of Land Management for inclusion in the calculations in 1998, resulting in a first PILT payment to Will County in 1999. The PILT payment to Will County for FY2006 was \$3,638.

Summary

In the ten years since the establishment of Midewin, Will County has received \$2,073,134 in direct federal payments for support of roads and schools.

Table 19: Payments to Will County

FY2006 Payments to Will County	
25% Fund	\$231,897
PILT	\$3,638

Table 20: Midewin Collections and Contributions

Rental Fee Account (agriculture revenues)	Total Revenues Collected	25% Fund Payment to Will County from IDNR	Half to Will County Treasurer for Roads	Half To Will County Superintendent of Schools	Wilmington Schools (73%)	Elwood Schools (27%)
FY1997	\$845,405					
FY1998	\$657,676	\$375,770*	\$187,885*	\$187,885*	\$137,156	\$50,729
FY1999	\$788,205	\$197,051	\$98,526	\$98,526	\$71,924	\$26,602
FY2000	\$625,015	\$156,253	\$78,127	\$78,127	\$57,033	\$21,094
FY2001	\$678,083	\$217,458 #	\$108,729	\$108,729	\$79,372	\$29,357
FY2002	\$690,653	\$218,932	\$109,466	\$109,466	\$79,910	\$29,556
FY2003	\$434,967	\$221,698	\$110,849	\$110,849	\$80,920	\$29,929
FY2004	\$411,306	\$224,474	\$112,237	\$112,237	\$81,933	\$30,304
FY2005	\$356,618	\$229,601	\$114,800	\$114,800	\$83,805	\$30,995
FY2006	\$454,703	\$231,897	\$115,949	\$115,949	\$84,642	\$31,306
Total	\$5,942,631	\$2,073,134	\$1,036,568	\$1,036,568	\$756,695	\$279,872

*Payments calculated based on combined 1997 and 1998 revenues of \$1,503,081. # Stabilized payment to Will County began per P.L. 106-393.

Table 21: Fund Contributions

	PILT	Will County Entitlement Acres
FY1999	\$11,265	15,088 acres
FY2000	\$1,642	15,570 acres
FY2001	\$2,396	15,667 acres
FY2002	\$2,528	15,681 acres
FY2003	\$2,851	15,681 acres
FY2004	\$2,974	15,681 acres
FY2005	\$3,037	15,347 acres
FY2006	\$3,638	17,978 acres
Total	\$30,331	

Threatened, Endangered Species and Regional Forester’s Sensitive Species

17.1 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 2003, population counts were completed for ear-leaf foxglove, leafy prairie clover, glade quillwort, goldenseal, and ginseng. Acres were surveyed for grassland birds (5,600 acres), Sullivant’s coneflower (250 acres), ear-leaf foxglove (8 acres), Crawe’s sedge (10 acres), glade quillwort (10 acres), false mallow (20 acres), Pitcher’s stitchwort (20 acre), leafy prairie clover (20 acres), goldenseal (5 acres), and ginseng (5 acres) for a total of 5,948 acres.

In 2004, population counts/estimates were completed for ear-leaf foxglove, leafy prairie clover, glade mallow, glade quillwort, small white ladies slipper, Pitcher’s Stitchwort, and Sullivant’s coneflower. Acres were surveyed for grassland birds (5,970 acres), ear-leaf foxglove (15 acres), false mallow (20 acres), glade quillwort (20 acres), Pitcher’s stitchwort (20 acres), leafy prairie clover (20 acres), small white ladies slipper (14 acres) and Sullivant’s coneflower (541 acres) for a total of 6,620 acres.

In 2005, population counts were completed for ear-leaf foxglove, leafy prairie clover, and glade quillwort. Subplot counts and population estimates were made for Crawe’s sedge, false mallow, Pitcher’s stitchwort, and Sullivant’s coneflower. Acres were surveyed for grassland birds (5,970 acres), wetland birds (97 acres), ear-leaf foxglove (15 acres), false mallow glade (20 acres), quillwort (20 acres), Pitcher’s stitchwort (20 acres), leafy prairie clover (20 acres), small white ladies slipper (14 acres) and Sullivant’s coneflower (541 acres) for a total of 6,717 acres.

In 2006, population counts were completed for ear-leaf foxglove, leafy prairie clover, ginseng, goldenseal, limestone hedge-hyssop and glade quillwort. Subplot counts and population estimates were made for Craue’s sedge, false mallow, Pitcher’s stitchwort, and Sullivant’s coneflower. Acres were surveyed for grassland birds (7,789 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), Goldenseal (34 acres), Ginseng (34 acres) and Sullivant’s coneflower (541 acres) for a total of 10,416 acres.

Table 22: 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 = 10 Acres Surveyed = 10,416
2007 (Planned)	Population Counts = 12 Acres Surveyed = 8,000+

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 up 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.

Recommendations

- Continue monitoring Regional Forester’s Sensitive Species as identified in the Prairie Plan.
- Increase the amount of amphibian, wetland bird and insect monitoring as staffing, partners and funding is available.

Transportation and Utilities

18.1 How many miles of roads are decommissioned?

The goal stated in the Road Analysis Plan for Midewin (2002) and tiered to the Prairie Plan is to decommission roads based on Level I (closure without restoration), Level II (closure, removal of building materials, grading, and stabilizing), or Level III obliteration (closure, removal of building materials, restoring soil, and re-vegetation). For the five-year period ending in 2006, three miles of roads have been decommissioned to the Level II

standard referenced above. All three miles are located on the east side of Midewin in the area that is currently open to the public for recreational use.

18.2 To what extent are road closures effective in preventing off-road vehicle travel?

Off-road vehicle travel is prohibited at Midewin. The posting of signs and enforcement of rules have served as effective deterrents to prohibit off-road vehicle travel. Areas that were previously disturbed by illegal travel continue to show signs of natural recovery, indicating that the signing and enforcement actions are having the desired effect. In 2006, Midewin continued to issue enforcement actions (including violation notices with monetary fines, written notices similar to a warning ticket, and verbal warnings) causing a continued decline in the number of illegal incursions.

Watershed, Riparian, and Wetlands

19.1 What is the condition of watersheds within Midewin?

Several studies were conducted on watershed conditions at Midewin between 1997 and 2000. Studies included macroinvertebrates, streamflow data collection, mussel inventories, and water quality sampling of stormwater runoff, surface water, and ground water at various locations. In accordance with Forest Service Manual (FSM) 2500 and the Prairie Plan, watershed conditions at Midewin are evaluated as Condition Class I, II, or III (ranging from highest to lowest watershed quality).

The table below compares watershed condition classes from fiscal years 2002 and 2003 combined, and FY2006. The FY2002 and FY2003 designations were derived from the 2000 assessment and from additional stream studies.

Table 23: Watershed Condition Classes.

Watershed	FY2002-2003 Class	FY2006 Class
Jackson Creek	II	II
Prairie Creek	II	II
Grant Creek	II	III
Jordan/Lower Forked Creek	II	II

The Grant Creek watershed declined from a Condition Class II in FY2002-2003 to a Condition Class III in FY2004 and continues to be in this condition in FY2006, mainly due to its continuing decline in geomorphic and hydrologic integrity. The major contributor to this decline is an increase in the impervious surface area of the watershed from continued development within the Deer Run Industrial Park.

Region 9 has guidelines for assessing watershed conditions, and a watershed assessment using those parameters was completed in 2000. The following table shows those results:

Table 24: FY 2000 watershed assessment results.

Watershed	Restoration Priority	Protection Priority
Jackson Creek	1	1
Prairie Creek	3	2
Grant Creek	2	4
Jordan/Lower Forked Ck.	4	3

The lower number is highest priority.

Based on the data and observations of water resources in the years since the FY2000 watershed assessment, some changes in priorities were recommended for FY2004 and continue to be the same for FY2006.

Table 25: FY2006 watershed assessment results.

Watershed	Restoration Priority	Protection Priority
Jackson Creek	2	2
Prairie Creek	3	1
Grant Creek	1	3
Jordan/Lower Forked Ck.	4	4

19.2 How many acres of riparian lands have been restored?

Monitoring takes place in the context of changes in species composition (native vs. non-native) for acres of riparian land. In FY2002 and 2003 combined, approximately 17 acres in Prairie Creek Woods were restored to riparian habitat.

Table 26: In-stream structures removed from Midewin streams during the past 5 years

Structure	2002	2003	2004	2005	2006
Trestle Bridge	4 Prairie	10 Prairie, 1 Jordan			
Road Bridge	1 Jordan	1 Prairie		1 Grant	
Box Culvert					2 Grant

Source: Unpublished Midewin NTP data

In addition, woody debris that became piled up on debris gates and stream crossings was removed from Prairie Creek and Grant Creek in 2005. Concrete rubble was removed from the banks of Grant Creek in 2006.

19.3 To what extent are management activities affecting riparian areas?

Observations to date indicate the need for increased management to slow bank erosion in Grant Creek and to prevent woody debris from entering streams. Erosion is also occurring along Prairie Creek in some areas. Riparian areas along some tributaries to Prairie Creek are being grazed which is allowed under the Prairie Plan, but grazing may contribute to unstable stream banks. At this time, Midewin does not have a detailed inventory of riparian vegetation.

19.4 How many acres of wetland have been restored?

In accordance with Prairie Plan direction, frequency of monitoring will be every five years for wetlands. Monitoring takes place in the context of changes in species composition (native vs. non-native) for acres of wetlands. By FY2003, 287 acres of wetland had been restored for the Blodgett Road restoration project and 536 acres of wetland were restored for the South Patrol Road restoration project. For both project areas, 82 additional acres were restored in FY2004.

In FY2006, drain tiles were destroyed and water hydrants were removed in the Middle Grant Creek area in preparation of restoring wetlands. Restoration also continued in areas where wetland restoration has already started.

19.5 To what extent are management activities affecting wetland areas?

Current information about the extent of effects by management activities on wetland areas is not yet available.

Watershed, Riparian, Wetland Recommendations

- Continue working with Remote Sensing Application Center and Regional Office to develop cost-effective ways to monitor wetlands on Midewin lands.
- Develop method(s) to track erosion and deposition features within stream channels.
- Maintain GIS data files to track agricultural and grazing uses on Midewin land over time.
- Continue to be aware of and involved in external projects that have potential affect the watersheds and/or streams flowing through Midewin lands.
- Develop method(s) to inventory riparian vegetation to prioritize riparian treatment areas.

Water Quality

20.1 What is the condition of water bodies on Midewin?

Montgomery Watson Harza (MWH) is contracted to monitor wells that were installed for the Army, as required by the Record of Decision. Most of the wells are situated on property that has not yet been transferred to Midewin. In May 2004, the first U.S. Environmental Protection Agency five-year review period ended, and an assessment and report were published.

MKM Engineers, Inc. also conducts groundwater monitoring for sulfate, volatile organic contaminants (VOC), and explosives within contaminated Army lands. Results from Spring monitoring for 2005 and 2006 show many areas still with high levels of sulfates and explosives, as shown below. VOCs were not detected during this period, remaining consistent with previous testing. High sulfate concentrations were detected on Midewin land around the southern ash pile (M1), while high explosive concentrations were found along TNT Road bordering Midewin property.

Table 27: Sites that exceed the Risk Based RG for compounds tested.

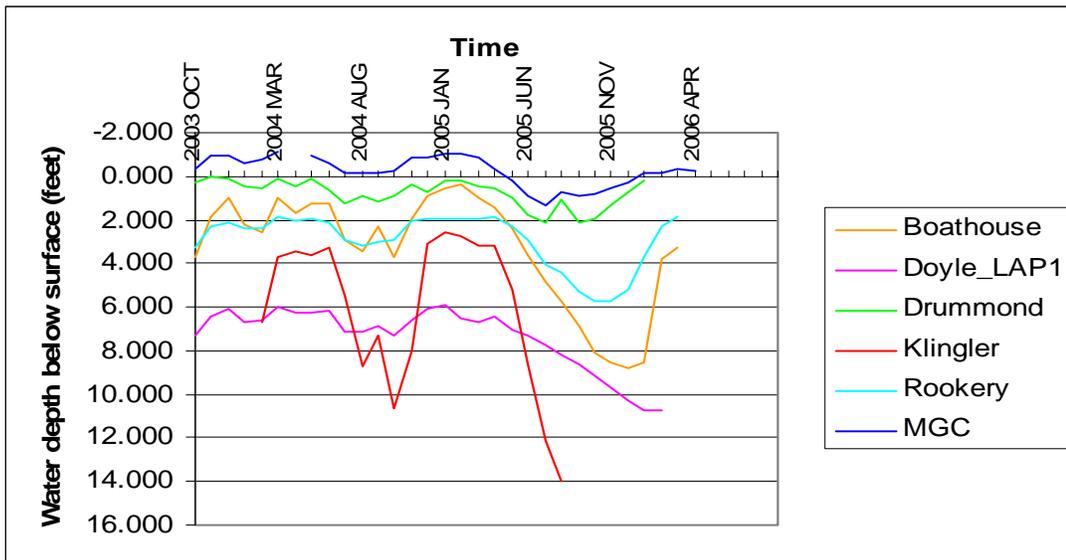
Compound	Spring 2005	Spring 2006
Sulfates	M1, M8	M1, M7, M8
Explosives	L1, L14, L2, L3, M13, M6, M7	L1, L14, L2, L3, M13, M6, M7
VOCs	None	None

Source: MKM Engineers, Inc. 2006a, 2006b.

In addition, Carlson Environmental, conducts shallow groundwater sampling for CenterPoint Properties at six locations, three of which are on Midewin. The six sites have been tested for explosives and volatile organic contaminants (VOC); no explosives or VOCs were detected in the groundwater samples collected during 2004, indicating no change from the 2003 results. Carlson groundwater results for 2005 and 2006 are not available at this time.

Ten Midewin monitoring wells installed by the U.S. Geological Survey (USGS) in FY2003 were monitored by the USGS until September 30, 2004. The depth to water is the only parameter currently monitored in 6 of these wells as shown below. This data shows water above the surface for most of the year within the Middle Grant Creek area, while the water at Drummond Road is within 1 or 2 feet below the surface.

Table 28: Depth of water below ground for Midewin groundwater monitoring wells.



Source: Unpublished Midewin NTP data.

The largest threat to groundwater quality on Midewin at this time continues to be urbanization. The shallower aquifers may be affected by increased storm water runoff and impervious surfaces, reducing the infiltration and recharge of groundwater. There is the potential for contaminants from urbanization to infiltrate into shallow groundwater systems. Contaminants may include nutrients, petroleum products, heavy metals, and other substances common in urban runoff.

Storm Event Monitoring

Carlson Environmental samples stormwater runoff and surface water for CenterPoint at four stations (1 and 4 on Jackson Creek, and 6 and 7 on Grant Creek) in the Deer Run Industrial Park vicinity during a rain event in spring and summer. Copper, zinc, chloride, total suspended solids (TSS), and nonpolar fats, oil, and grease (FOG) were sampled. Results are shown for 2005 and 2006. There was not a suitable storm to sample during the spring of 2005, so extra data was collected during the summer storm event.

Table 29: Storm event water quality monitoring for 2005. Values are in mg/L.

Analyte	EPA Benchmark Value	North Outfall I	South Outfall I	Stream Site 1	Stream Site 4	Stream Site 6	Stream Site 7	North Outfall (flush)	North Outfall (comp)	South Outfall (grab)	South Outfall (comp)
Total copper	0.0636	NE	NE	ND	ND	ND	ND	ND	ND	ND	NE
Total zinc	0.117	NE	NE	ND	ND	ND	ND	0.028	0.026	ND	NE
TSS	100	NE	NE	24	26	3.6	2.6	39	25	27	NE
FOG	15	NE	NE	ND	ND	ND	ND	ND	ND	ND	NE
Chloride	NE	NE	NE	160	160	73	71	1400	850	89	NE

(TSS= Total suspend solids; FOG=Non +polar fats, oil, and grease; ND = Not detected; NE = Not evaluated). Source: Carlson Environmental, Inc. and Christopher B. Burke Engineering, LTD. 2006.

Table 30: Storm event water quality monitoring for 2006. Values are in mg/L.

Analyte	EPA Benchmark Value	North Outfall I	South Outfall I	Stream Site 1	Stream Site 4	Stream Site 6	Stream Site 7	North Outfall (flush)	North Outfall (comp)	South Outfall (flush)	South Outfall (comp)
Total copper	0.0636	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total zinc	0.117	ND	0.023	ND	0.02	ND	ND	0.18	ND	0.023	ND
TSS	100	19	32	20	20	12	11	54	23	31	22
FOG	15	ND	ND	ND	ND	ND	ND	ND	15	15	ND
Chloride	NE	940	640	110	110	640	97	66	64	64	64

(ND = Not detected; NE = Not evaluated). Source: Carlson Environmental, Inc. and Christopher B. Burke Engineering, LTD. 2007.

Other Water Chemistry Monitoring

In addition to storm event sampling, water quality is also tested when Carlson Environmental conducts macroinvertebrate monitoring and collects other stream physical data. Results are provided below since 2003 for stream sites on Jackson Creek (1 and 4) and Grant Creek (6 and 7).

Table 31: Water quality monitoring during macroinvertebrate sampling and stream physical parameter collection.

Analyte	Year	Standard (mg/L)	Stream Site 1 (mg/L)	Stream Site 4 (mg/L)	Stream Site 6 (mg/L)	Stream Site 7 (mg/L)
Total Copper	2003	2.33 Jackson	ND	ND	ND	ND
	2004	2.58 Grant	ND	ND	ND	ND

	2005		ND	ND	ND	ND
	2006		ND	ND	ND	ND
Total Zinc	2003	1	ND	ND	0.064	ND
	2004		ND	ND	ND	ND
	2005		ND	ND	ND	ND
	2006		0.023	0.024	ND	ND
Total Suspended Solids	2003	100	37	34	20	21
	2004		18	6.6	3.8	8.4
	2005		18	24	4	8.4
	2006		42	40	9.6	8.4
Nonpolar fats, oil, and grease	2003	NE	ND	ND	ND	ND
	2004		ND	ND	ND	ND
	2005		11	19	13	32
	2006		ND	ND	ND	ND
Chloride	2003	500	100	110	65	88
	2004		140	120	160	160
	2005		94	94	120	200
	2006		74	73	170	170

TSS= Total suspend solids; FOG=Non polar fats, oil, and grease; ND = Not detected; NE = Not evaluated).
Source: Carlson Environmental, Inc. and Christopher B. Burke Engineering, LTD. 2006.

Surface Water Quality Evaluation

During storm events, concentration of total copper was well below EPA benchmark value. However, in one storm event, concentration of total zinc exceeded benchmark values at the north outfall in 2006. In addition, for the first time FOG (non polar fats, oil, and grease) were detected at both the north and south outfalls in 2006 that equaled the EPA benchmark but FOG were not detected in the streams. Water quality during macroinvertebrate sampling has been well below EPA values. The presence of FOG in 2005 stream samples appears to be an unusual occurrence. It should be noted that the above stream water quality results represent “snapshots” in time within the streams instead of regular daily, weekly or monthly sampling.

Development of Deer Run Industrial Park has resulted in a large increase in impervious surface used for vehicles, vehicle storage, and maintenance. As of 2006, no correlation can be made between increasing development and use of Deer Run with water quality degradation problems in Jackson Creek or Grant Creek. With continuing development of the industrial park and surrounding communities, water quality will be an ongoing concern for these streams.

Physical Parameters Monitoring

Physical parameters are monitored at the 4 locations on Jackson Creek (Stations 1-4) and 2 locations on Grant Creek (Stations 6-7) by Carlson Environmental, and the results for FY2005 and FY2006 are as follows:

Table 32: Physical parameters monitoring for Jackson and Grant Creeks

Sampling location	Year	pH	Temperature (C)	Dissolved Oxygen (mg/L)	Conductivity (mS/cm)
Station 1 (Jackson)	2005	7.03	11.50	22.40	1.020

	2006	8.30	16.25	10.10	0.995
Station 2	2005	6.92	12.02	21.80	1.013
	2006	8.53	16.40	9.91	1.012
Station 3	2005	6.87	11.96	21.30	0.985
	2006	8.35	17.12	10.30	0.972
Station 4	2005	6.90	12.13	19.50	1.002
	2006	8.12	16.85	10.00	0.966
Station 6 (Grant)	2005	7.06	12.40	18.50	0.936
	2006	8.50	15.90	9.98	0.982
Station 7	2005	6.97	12.61	19.00	0.889
	2006	8.88	16.12	9.76	0.934

Source: Carlson Environmental, Inc. and Christopher B. Burke Engineering, LTD. 2006, 2007.

Physical Parameters Evaluation

Monitoring of physical parameters by Carlson Environmental indicates a decrease in water quality during 2006. Physical parameters in 2005 were similar to results from previous years. In contrast, 2006 showed significant increases in pH and temperature and a 50% decrease in dissolved oxygen compared to previous results. These differences cannot be attributed to low flow rates because there was more water flow in 2006 compared to 2005 at all stations except station 3 on Jackson Creek. However, it should be noted that the above physical parameters represent a “snapshot” in time within the streams instead of regular daily, weekly or monthly sampling.

Macroinvertebrate Monitoring

Macroinvertebrate surveys were conducted using volunteers in the Illinois RiverWatch monitoring program, which is part of the Illinois EcoWatch program. Macroinvertebrate data exist for Grant Creek, Prairie Creek and Jackson Creek on the Midewin National Tallgrass Prairie. Three indexes of stream quality are determined at each sampling point within a stream: taxa richness (TXR), Ephemeroptera + Plecoptera + Trichoptera taxa richness (EPT), and macroinvertebrate biotic index (MBI). MBI scores provide a general overview of stream health. Taxa richness is an indicator of the diversity of aquatic life. EPT taxa richness is an indicator of the diversity of highly sensitive aquatic organisms. Data for these indexes are presented below.

Table 33: FY2003-2005 RiverWatch monitoring macroinvertebrate data and quality rating*

Stream	Taxa Richness (TXR)			EPT Taxa Richness (EPT)			Macroinvert. Biotic Index (MBI)		
	2004	2005	2006	2004	2005	2006	2004	2005	2006
Grant	10 (F)	6 (VP)	13 (G)	3 (F)	1 (VP)	5 (E)	5.31 (F)	5.33 (F)	5.10 (F)
Jackson	3 (VP)	14 (E)	13 (G)	0 (VP)	6 (E)	6 (E)	5.27 (F)	6.20 (P)	4.70 (G)
Prairie1	--	13 (G)	16 (E)	--	6 (E)	5 (E)	--	4.65 (G)	5.13 (F)
Prairie2	12 (G)	10 (F)	15 (E)	4 (G)	2 (P)	5 (E)	4.94 (G)	6.22 (P)	5.90 (P)
Prairie3	14 (E)	9 (F)	10 (F)	4 (G)	1 (VP)	3 (F)	4.30 (E)	6.43 (VP)	4.98 (G)

*Quality rating where E = excellent, G = good, F = fair, P = poor, VP = very poor. Quality rating is based on tentative revised 2004 rating table on RiverWatch macroinvertebrate identification sheet. Source: Unpublished Midewin NTP data.

In addition, Carlson Environmental has been conducting macroinvertebrate monitoring in Jackson Creek and Grant Creek as part of their water quality monitoring for Deer Run Industrial Park since 2001, provided below:

Table 34: Macroinvertebrate Biotic Index (MBI) for stream areas sampled by Carlson Environmental, Inc.

Sampling location	2001	2002	2003	2004	2005	2006
Station 1 (Jackson)	5.19	5.47	5.70	5.21	5.77	5.43
Station 2	5.25	5.47	5.31	5.26	5.23	5.41
Station 3	5.38	5.58	5.35	5.57	5.36	5.47
Station 4	5.42	5.22	6.18	5.36	5.27	5.19
Station 5 (Grant)	6.25	NA	5.56	5.94	6.61	7.29
Station 6	5.35	4.76	5.00	5.04	5.93	5.60
Station 7	4.44	4.72	5.78	4.15	5.14	3.13

Source: Carlson Environmental, Inc. and Christopher B. Burke Engineering, LTD. 2007.

Macroinvertebrate Monitoring Evaluation

Macroinvertebrate sampling on RiverWatch sites in 2006 show an improvement from the previous year on almost all sites, improving to the range previously recorded over time at these sites. The one exception is Prairie Creek upstream of Road 2W (Prairie2) which did have an improved MBI in 2006, but would still be considered poor quality and appears to be declining overall over time. This site is downstream of Kemery Dam on Prairie Creek, which may be contributing to the decline in macroinvertebrates.

Data from Carlson Environmental indicate general stable macroinvertebrate populations on Jackson Creek. Grant Creek shows steadily declining MBI results for Station 5 (upstream) and generally improving results at Station 7 (downstream). Their reports indicate difficult sampling conditions due to low water flows at the upstream site on Grant Creek, whereas the downstream site has more water flowing and is closer to the Des Plaines River. Unlike RiverWatch sampling, which attempts to sample in May or June each year, Carlson sites were sampled at different times from late June to early October.

Streamflow Monitoring

Stream flow discharge information was collected by Carlson Environmental as a part of their water quality monitoring on Jackson Creek and Grant Creek.

Table 35: Discharge (cubic feet per second) for stream areas sampled by Carlson Environmental, Inc.

Sampling location	2003	2004	2005	2006
Station 1 (Jackson)	18.72	33.53	12.36	18.02
Station 2	18.06	27.53	24.96	19.72
Station 3	19.20	39.99	17.50	31.20
Station 4	14.40	16.13	8.82	10.86
Station 5 (Grant)	3.27	1.80	NA	NA
Station 6	12.76	21.68	3.20	6.00
Station 7	17.28	19.21	5.46	6.00

Source: Carlson Environmental, Inc. and Christopher B. Burke Engineering, LTD. 2004, 2005, 2006, 2007.

The above data illustrates the wide range of flows experienced in Midewin streams, from a high of 40 cfs in Jackson Creek to no measurable flow in upstream Grant Creek during some years. As a result of urbanization in the surrounding region, Midewin's streams have become more "flashy" during storms, negatively impacting stream corridors. As more impervious surfaces develop, larger volumes of water run into creeks at much higher velocities for shorter times, causing severe erosion and sedimentation. Water quality is also affected as more suspended solids are present in the water, both from runoff and from the water's ability to carry more particles. As suburban communities are developed and populations grow upstream from Midewin, new water treatment plants and other point sources will discharge directly into streams, increasing the base flows of Jackson, Prairie, and Grant Creeks.

Future Concerns

Carlson Environmental will be discontinuing monitoring as a requirement for Deer Run Industrial Park in the near future. Midewin staff, volunteers, and/or partners will need to fill the gap and obtain necessary information. The biggest threat to Midewin's streams in coming years is urbanization which will most likely lead to more water flowing into the streams of variable quality. Nonpoint source pollution continues to be a problem for Midewin's streams. However, in spite of nutrient runoff causing increased algae in Prairie and Grant creeks at certain times of the year, the waters remain relatively clear.

Fish Survey

The Illinois Department of Natural Resources conducted fish sampling surveys on Prairie Creek and Grant Creek in 2005 (Rung and Pescitelli 2007). One site on Grant Creek and 5 sites on Prairie Creek were surveyed within Midewin lands. The report states a high abundance of intolerant and tolerant-neutral species in Prairie Creek and Grant Creek suggesting that good habitat and water quality conditions currently exist in these areas. One species in Grant Creek, the southern redbelly dace, may indicate groundwater dominated flow in the area of Middle Grant Creek.

The authors discussed the barriers to fish passage on Prairie Creek which may influence future fish survival. Kemery Dam is a human-caused barrier to fish populations above and below the dam. There is also a natural bedrock barrier where Prairie Creek enters the Kankakee River, preventing fish species from the Kankakee entering Prairie Creek. These barriers may contribute to a loss of fish species if changes in water quantity and/or quality occur due to the inability to recruit fish, but also act as barriers to some invasive aquatic species.

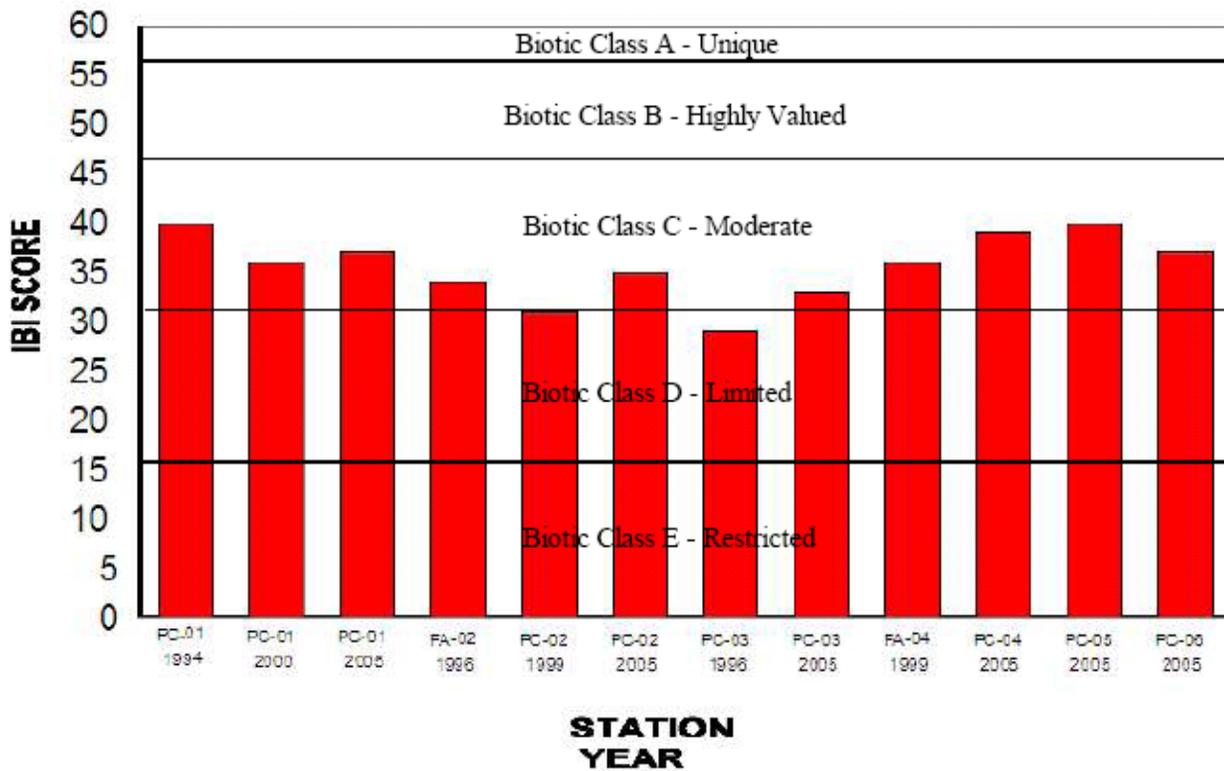


Table 36: Index of Biotic Integrity Scores (IBI) for all stations sampled on Prairie Creek 1996-2005, showing ranges of Biological Stream Characterization Biotic Class and resource description.
 Source: Rung and Pescitelli 2007.

Water Quality Recommendations

- Macroinvertebrates: Continue monitoring current RiverWatch and add one site on Jackson Creek and Grant Creek to coincide with previous Carlson Environmental macroinvertebrate monitoring.
- Streamflow and Physical Parameters: Establish procedures to monitor streamflow and physical parameters on a regular basis at selected RiverWatch locations.
- Water Chemistry: Assess feasibility of conducting regular water chemistry sampling at selected locations of Midewin streams.
- Physical Parameters: Install stream water level recorders to track water levels over time in selected areas within Midewin streams.
- Groundwater: Obtain equipment to monitor groundwater levels in all 10 wells originally installed by USGS to gather long term water level data around Midewin. Army consultants will continue to monitor the natural attenuation of remaining groundwater plumes.
- Groundwater: When remaining land is transferred to Midewin, there will be about 150 additional wells on those lands. Plans need to be developed to decide which wells Midewin wants to keep for what purposes, and what agency is responsible for removing unwanted wells.

Water Resources Summary

The overall quality of water resources ranges from fair to good. Nutrient runoff is always a concern. Water quantity in Midewin streams should increase overall due to urbanization

in the surrounding region, but its rate of increase is unknown. A higher base flow could benefit some species within Midewin's streams, but increased flashiness of water flow and higher rates may increase streambank erosion and sediment deposition. Streams will continue to adjust their channels to accommodate the transport of water and sediment in response to changes in the watershed.

Wildlife

20.1 What effects are management activities having on Management Indicators?

With the exception of white-tailed deer all wildlife management indicators have been addressed previously in other sections of this report. The monitoring of white-tailed deer has only begun and the data set is too small at this time. However, the population of white-tailed deer is thought to be either increasing or stable at this time. There has been decrease in the hunting success of white-tailed deer. Deer browse in the seedbeds has required the installation of deer-proof fences. These anecdotes suggest that the deer population is stable.

Partners and Volunteers

New and ongoing partnerships in FY2006 in support of restoration activities included wildlife habitat, heritage, soils program, and wetlands projects.

- U.S. Fish & Wildlife Service - Mead's Milkweed Recovery.
- Illinois Department of Natural Resources (IDNR) - native plants for prairie restoration.
- CenterPoint Properties and the Army Corps of Engineers to improve wetland and upland ecosystems in Middle Grant Creek and Drummond Floodplain.
- The National Fish and Wildlife Foundation to manage the Midewin Tallgrass Prairie Fund for the protection, restoration, and environmental education and interpretation of Midewin and its watersheds.
- The Nature Conservancy provided assistance with volunteer coordination and technical expertise on the management and protection of natural, historical, and recreational resources.
- El Valor collaborated to provide environmental education and natural resource career exploration opportunities for Latino and urban youth in south Chicago.
- CorLands assisted with restoration of prairie and wetland habitats of Midewin.
- Northeastern Illinois University agreed to monitor and collect data on sensitive insects at Midewin.
- Chicago Wilderness partnership. The Forest Service plays a significant role in biodiversity recovery in the Chicago metropolitan region by restoring and managing the grassland ecosystems and other important natural communities at Midewin for optimal biodiversity recovery; by providing technical assistance to local and regional organizations in the Prairie Parklands; and by working with a growing network of partners and volunteers in the conservation community.

- The Wetlands Initiative shared resources to cooperatively implement restoration and reconstruction of the Blodgett Marsh Dolomite Prairie and the South Patrol Road project.

Throughout fiscal year 2006, volunteers assisted Midewin's staff in accomplishing our mission of ecological restoration, education, and providing appropriate recreational opportunities onsite. Volunteer accomplishments to highlight this year include a Passport in Time Quilting Project which commemorated 10 years of Midewin, Linking Girls Scouts to public land service projects through National Public Lands Day, and the Midewin's Botany Program which offered training and field experience to volunteers beginning and extending their learning on native plant identification. Another large volunteer effort was the weeklong construction project of building a Bailey Bridge. By the end of the week, coinciding with National Public Lands Day, the entire 140-foot length of the bridge extended over Prairie Creek, which allowed for the expansion of public recreational areas.

Table 37: Volunteer hours by project category.

FY06 Resource Category	Hours
1. Recreation (incl. Interpretation, Environmental Education, Trails, Outreach)	3,046.50
2. Heritage (incl. PIT, Heritage Association)	427
3. Wildlife, Fish, Plants (incl. Species Monitoring, Restoration)	7,045.50
4. Range Management (not applicable)	0
5. Forest Management (not applicable)	0
6. Watershed & Air Management (incl. Hydrology and Streams; Air Mgmt not applicable)	43
7. Protection (includes Fencing)	72
8. Research (not applicable)	0
9. Business & Finance (incl. Office and Welcome Center)	143
10. Facilities Construction off-center (not applicable)	0
11. Facilities Construction on-center (not applicable)	0
12. Other Facilities (incl. Fleet)	18
13. Other (incl. Midewin Alliance)	300
TOTAL	11,005

(Note: The categories reflect "Resource Category" as defined in the USFS "Senior, Youth & Volunteer Programs Accomplishment Report," FSM1800)

Table 38: FYs 2003, 2004, 2005, 2006 Comparison of Volunteers, Hours, and Percentage Changes

	FY03 Actual	FY04 Actual	#Change Btw 03-04	%Change Btw 03-04	FY05 Actual	#Change Btw 04-05	%Change Btw 04-05	FY06 Actual	# Change Btw 05-06	% Change Btw 05-06
# Volunteers	337	263	-74	-22.00%	354	+91	+34.6%	413	+59	+16.66%
# of Hours	6,533	6,383.25	-150.75	-2.08%	5,671.25	-721	-11.15%	11,005	+5,333.75	+94%

The data reflects an increase in the number of volunteers between FY05 and FY06 (16.6%), which is attributed to a rise in first-time volunteers and large group volunteer events.

Monitoring

In FY06, volunteer monitors were critical in gathering data on wildlife, stream quality and vegetation at Midewin. Midewin participates in a variety of volunteer monitoring programs either administrated in-house or with regional and statewide partner programs. Midewin's Amphibian monitoring and Grassland Bird monitoring is lead by Midewin scientists and volunteers gather the data. The partner monitoring programs that Midewin participates in includes Chicago Botanic Gardens' Plants of Concern, the Illinois Butterfly Monitoring Network, and the Illinois RiverWatch Program. Each of these partner organizations provides the framework, protocol, training, and resources that Midewin uses with volunteer monitors on site. The data gathered at Midewin is used for direct feedback to our site as well as contributing to the larger monitoring effort regionally or state-wide.

Volunteer monitoring efforts contribute to Midewin Staff's ability to make informed decisions on priority sites based on the information gathered. Continual progress is charted to the restoration and remnant areas showing wildlife and plant species present or those not present at sites.

Recommendation

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

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 FY2006, 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.

SUMMARY

FY2006 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.
- 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;
- ❖ Environmental effects are occurring as predicted or, when they are not occurring as predicted, that land management practices are being altered in a manner that is consistent with both the Prairie Plan for adaptive management and with our Environmental Management System for continual improvement; and
- ❖ The costs of implementing the Prairie Plan have similar to those predicted.

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.