The Wisconsin Karner Blue Butterfly Habitat Conservation Plan

Annual Report of Activities for Calendar Year 2007

Submitted to the United States Fish and Wildlife Service on April 28, 2008

Revised May 6, 2008

No substantive changes made

Prepared by

David R. Lentz and Matt Krumenauer

Wisconsin Department of Natural Resources

Division of Forestry

Introduction

The Wisconsin Karner Blue Butterfly Habitat Conservation Plan, approved in September 1999, established a statewide program for Karner blue butterfly conservation in Wisconsin. The Wisconsin Department of Natural Resources (Wisconsin DNR) is authorized to oversee implementation of this plan and the activities described in the associated implementing agreement according to the terms of Federal Fish and Wildlife Permit #TE0100064-4. This permit, issued by the United States Fish and Wildlife Service (USFWS) to the Wisconsin DNR on September 27, 1999, authorizes incidental take of Karner blue butterflies (Karners) according to the terms described therein. Forty organizations currently participate as full or limited partners in the Wisconsin Karner Blue Butterfly Habitat Conservation Plan (HCP). This report summarizes activities conducted by these 40 partners on HCP-covered lands in 2007, the eighth full year of HCP implementation.

Monitoring

Monitoring is a critical component of the HCP, and should demonstrate whether or not HCP partners are conserving Karners and their habitat, while still conducting planned land management and development activities. Each year, HCP partner organizations conduct surveys for Karner Blue Butterflies and/or their host plant, wild lupine. The year 2005 saw significant changes in the monitoring program. These provisional changes continued for monitoring in 2006 and were finalized and approved in 2007.

Late in 2003, it became clear to the partners and the FWS that the original HCP monitoring strategy was not clearly providing needed feedback for a proactive adaptive management strategy. In addition, efficient monitoring became a priority in a time of budget and staff constraints for all partners. The years 2004 and 2005 had seen much progress with respect to improving the HCP monitoring program to better meet the HCP's objectives, while maintaining some well designed basic monitoring procedures. In 2006, many of these adjustments were subsequently implemented; most notably: the inclusion of a formal method of Cause-Effect monitoring studies; and discontinuing random sampling of sites to identify new habitat for lupine inventory and allowing partners to seek out habitat in areas they felt had the greatest likelihood, and/or sites where they would need to do a pre-management survey.

The Monitoring Improvement Team (MIT) was formed to assess and improve the monitoring components of the HCP. The MIT designed a system to directly study the cause-effect relationships of the conservation measures (management activities) designed for the HCP. This information will directly feed the adaptive management process providing the opportunity for partners to assess the effects of management and confirm or improve how they do conservation. Cause-Effect monitoring began during the 2005 field season and continued through 2007. Also, all partners provided the following monitoring information for 2007: (1) New lupine and Karner sites, and (2) Pre and post management surveys.

Distance Sampling to replace trends monitoring

As suggested by the MIT, trends monitoring was to be redefined to draw from recovery monitoring, which would take place on recovery properties where long data sets could be gathered over time. Relative abundance indices had been used to track Kbb trend status. Population estimates would be needed to describe the recovery status, so a shift to population estimates was agreed upon. To achieve this goal, a method would need to be identified and agreed upon. The method selected is called Distance Sampling and is a tool to estimate populations. The method was recommended by USGS and endorsed by the Monitoring sub-team of the Federal Recovery Team and the FWS. Five WDNR and two FWS staff attended a national Distance Sampling training at Indiana Dunes NWR in September 2006. DNR recovery property managers and some staff were further trained in Distance in June of 2007. A small pilot test exercise occurred during the 2007 field season at Crex Meadows and Fish Lake State Wildlife Areas to better understand the issues related to site sampling and transect design strategies and to integrate the Distance Sampling method into practice. Statewide recovery monitoring is planned for the spring and summer flight periods in 2008.

As trends monitoring will be accomplished on a state-wide level by the Wisconsin Karner Blue Butterfly Recovery Program through WDNR's Bureau of Endangered Resources, trends monitoring will no longer be conducted or reported by HCP Partners. HCP Partners will continue to conduct pre-management surveys and, as appropriate, cause and effect monitoring.

For more specific details regarding 2007 HCP monitoring activities, please see *Appendix A: 2007 Monitoring Results Summary.*

Associated Species Surveys

As this is a single species (Kbb) HCP, associated species surveys are voluntary for HCP partners. No associated species surveys were reported in 2007.

Certification of Surveyors

The Wisconsin DNR verified that all monitoring surveyors had attended a monitoring training session within the last 5 years. Three monitoring training sessions were held in 2007 in Babcock, Black River Falls and Grantsburg. In 2007, 87 people received monitoring training either for the first time or as a refresher. Following the 2007 training sessions there were a total of 447 surveyors that held a current monitoring certification. (*Appendix B: Certified Surveyors for Karner Blue Butterfly Monitoring: 2003-2007*). Training is available annually to all partners' staff. The WDNR has been able to provide this training beyond the partners to groups of volunteers who are assisting county highway departments with monitoring, environmental consultants and contracted land maintenance staff who regularly work for partners. When partners receive monitoring training, the Wisconsin DNR urges proper completion of updated monitoring forms and offered technical advice. Monitoring and annual report forms were revised to improve the level of quality and proper form completion and accurate site information. The Wisconsin DNR continues to do quality assurance checks on surveyor certification and will continue to encourage improvement and consistency in the survey process through individual contacts, compliance audits, improved training, and other means.

Amendments to Partner Species and Habitat Conservation Agreements

There was one Species and Habitat Conservation Agreement (SHCA) amended in 2007. During 2006 it was realized that most SHCA amendments were perfunctory and did not merit coordination between the DNR and the Service. SHCAs are an agreement between the partner (sub-permittee) and the DNR (permittee). As of 2006, it was agreed that minor SHCA amendments will be handled by DNR and reported to the Service in the annual report. The amendment listed in table1was just such a change.

Table 1: Amendments to Partners Species and Habitat Conservation Agreements

Partner Name	***Date***	***Amendment***
Burnett County Forest	09/17/2007	1) Removed timber harvest restriction language to align SHCA with approved conservation measures. HCP protocol allows harvest year round. 2) Removed Effectiveness Monitoring language. Effectiveness monitoring is no longer required in the HCP.

Land Transfers

Lands included within the HCP continue to change hands between, into, and out of the HCP umbrella. Four partners completed land transfers in 2007. Partners acquired 5 acres and sold 5659.46 total acres of HCP-covered land in 2007. Throughout 2007 there was a net decrease of land by 5654.46 acres (*Appendix C: Land Transferred in 2007*). As of December 31, 2007, the HCP covered approximately 243,704.54 acres. This equates to approximately 2.27 % decrease in 2007 in land included in the HCP under the permit. Since the Incidental Take Permit was issued in 1999 there has been an 8% decrease in lands included under the permit.

The summary of lands included provided in table 2 does not yet reflect adjustments to partners declared lands due to the corrections to the high potential range for the Karner blue butterfly in Wisconsin. These adjustments are planned for 2008.

Table 2: Summary of Lands Included

Acres included at onset of permit **09/27/1999**	Acres included as of **12/31/2006**	Acres included as of **12/31/2007**	Acres increased or (decreased)	Percent change
	249,359	243,704.54	(5,654.46)	2.27 %
264,916			(21,221.46)	8 %

Land Management Activities on Karner Blue Occupied Sites

The Karner blue butterfly is a species which lives in a disturbance-dependent ecosystem. Therefore, management activities occurring on habitat are necessary to continue the existence of Karner blue populations. Management activities include mowing along rights-of-way, timber harvests, brush clearing, and prescribed burning to name a few. Some Karners may be incidentally taken as a result of these activities. These activities however, are an important and necessary step to managing Karner blue habitat and sustaining its populations.

Full-Partner Activities:

- Ten full-partners reported land management activity on sites occupied by Karner blues within the High Potential Range (*Appendix D: Land Management Activities Conducted on Karner Blue Occupied Sites in 2007*). Activities encompassed 2272.85 acres of habitat. Activities included timber harvest, mowing, brushing, prescribed burning and invasive plant control.
- There was no permanent take by full partners in 2007.

Limited Partner Activities:

In 2007, the following activities occurred on lupine sites along road side rights-of-way:

- Six Limited Partners reported mowing of Karner blue potential habitat in 2007 along roadsides. All mowing took place after September 1st in compliance with the mowing protocol. Some partners actually have installed permanent markers for these areas. Four Limited partners did not do any mowing of lupine areas, and one partner no longer has Kbb on their roadside lupine areas. Partners surveyed sites for lupine and followed management guidelines, including mowing in late fall with a blade six inches in height for areas where lupine occurred. Limited partners are not required to do Karner blue presence/absence surveys. Therefore, many of these sites are of unknown Karner occupation, but never-the-less partners apply appropriate conservation measures.
- There was no permanent take by limited partners in 2007.
- Other partners, particularly limited partners who manage roadside rights-of-way are being faced with the need to do permanent take or complete, but temporary removal of habitat. Minor ditch repairs to return adequate drainage is a common event. While the

habitat may be removed on part of the site, new habitat is replaced. Since the use of the land is returning to KBB habitat and not permanently changed as in paving over habitat, the DNR and Service do not consider this "permanent take", but simply another type of "short-term incidental take". Streamlined procedures for dealing with the more routine types of take in this category, e.g. road shoulder and ditch maintenance and repairs in a more efficient and appropriate system was completed by the end of 2007 and are being implemented in 2008. These include a streamlined standardized mitigation guidance and restoration protocols to facilitate easier and faster plan development and will eliminate the need to wait for DNR and FWS approval. Please see *(Appendix E: Limited Partner Activities 2007).*

Outreach and Education Activities

As part of their commitment to the HCP, partners have pledged to encourage Karner blue conservation among all land managers in the Karner blue range, including some voluntary, non-partner participants. Eighteen partners reported outreach and education activities in 2007. DNR and other partners supported each other on many activities. An attempt was made to avoid double counting. For many activities it was difficult to estimate numbers of people reached; for some none were claimed. Thus, a conservative estimate of people directly reached is over 560,000. Many activities indirectly reach many more unknown numbers of people second-handed through environmental and other resource management organizations, socio-environmental research, the newspaper and TV media and very likely many others in partner organizations and others by word of mouth. Outreach and education can take the form of brochures included in mailers, Newspaper and TV interviews, presentations at festivals and conferences to private landowners, resource professionals and public officials, website development, and one-on-one conversations with neighboring landowners, among others. For a detailed list of those activities that were able to be captured, refer to (*Appendix F: Outreach and Education Activities Conducted in 2007*). As in past years, we worked with others attempting collaborative conservation efforts, such as FWS, state agencies, and consultants. Numerous "think tanks" and universities studying innovative conservation activities find the Wisconsin HCP very fascinating. Partners hosted several field trips and inter-organizational information presentations. The Wisconsin DNR has encouraged more diligent reporting of outreach

activities. Many partners continue to remark that Karner blue-related outreach has become routine and they sometimes forget to report it.

Highlights of HCP Partners' Outreach & Education Activities

Conservation Weekend at the Milwaukee County Zoo and The Einstein Project – Butterflies on Parade

American Transmission Company (ATC) continues to provide a variety of outreach and educational venues to the public at large and children in general. ATC staff shared the Karner blue with as many as 15,000 people of all ages.

Habitat Restoration within Biological Recovery Zone

Three HCP utility partners joined together with the FWS Privates Lands program to restore habitat at an electric utility facility. The facility is a way to demonstrate the restoration potential and provide a link between various private landowners and the recovery property. The utility partners have included an informational sign that will help to inform landowners and encourage participation in the FWS Partners for Fish and Wildlife program.

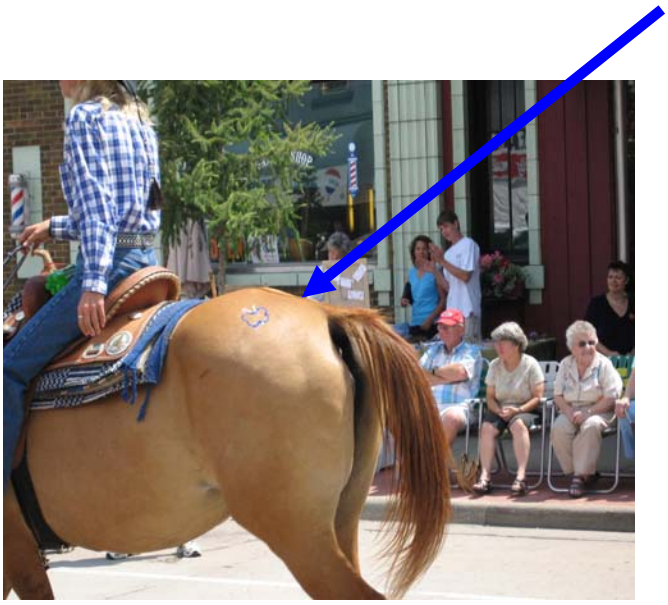
Karner Blue Festival and Jackson County Barrens Tours

The Karner Blue outreach and education has become second nature. The continued efforts of the partners have created a momentum and an awareness of the plight of the Karner blue butterfly that goes beyond the partners' direct audiences. Despite all this, the crown jewel of Karners in Wisconsin has become the Karner Blue Festival in Black River Falls, WI. This distinction has made Black River Falls the Mecca of Karnerdom in the state and arguably the nation.

Karner Blue Festival remains a big event

The Karner Blue Butterfly Festival in Black River Falls continues to be a perennial favorite. Over 2,500 people attended thanks mainly to the efforts of the local chamber of commerce and the Bauer Brockway Barrens Committee. The committee is a public/private grass roots community group committed to restoration of area barrens. The Committee provides educational displays, barrens tours and Karner activities for children of all ages.

Temporary tattoos are a perennial favorite of young and old, 2-legged and 4-legged alike.



An annual highlight of the event is a parade of butterfly-clad floats and marchers. Even the horses wear Karner blues.

A different species of Karners attended the 2007 event. The Karner family from Illinois joined in the festivities wearing their family reunion outfits; even a special tattoo. This isn't a temporary tattoo, but the real thing.

[Karner Family & "real Karner" tattoo]

Activities at the Karner Blue Education Center and Main Street exhibits comes to a halt during the crowning of the new Karner Blue Princess. To vie for the crown the young ladies are required to become very Karner savvy and provide public service to the community.

The fun and festivities wouldn't be complete without a juicy Karner Blue burger at Mollie's downtown.

Here the past Karner blue princesses and their courts introduce each other and pass on the throne.

DNR Division of Forestry Karner Blue HCP Website

The DNR's Karner Blue HCP website has gone through a major facelift. In 2007 the addition of an interactive HCP User's Guide is the keystone of the web-based learning approach. This is greatly expanding the information available and user-friendly accessibility to HCP partners, other agencies, students and general public. A much more comprehensive web redesign is going online in 2008.

HCP Management and Process Improvement (Adaptive Management)

The Five-Point Plan: HCP Program Gives KBB Recovery Program a Boost

The DNR and the other HCP Partners and Participants in the Wisconsin's Karner blue butterfly KBB) conservation program have finite resources available to apply to the KBB. They have realized that in order to finish the conservation program successfully that they must assist in recovery efforts for the species.

Current economic and budget constraints have forced the WDNR and all partners to improve the efficiency of HCP processes. In addition, the HCP Team became aware of the likelihood that the HCP may need to be implemented for a number of additional decades while recovery takes place. Partners are pursuing new approaches to HCP goals that add to the success of the plan while reducing costs and workload. Late in 2005, the DNR developed and proposed an approach that encompasses the needs and conditions for success of the HCP program now and into an uncertain future. As a guide to accomplishing this, the primary goals of the Five Point Plan are as follows:

THE FIVE POINT PLAN FOR A STATEWIDE HCP

1. FOCUS HCP implementation on recovery areas.
2. STREAMLINE PROCESSES and redirect resources.
3. IMPROVE PROTOCOLS AND GUIDELINES, i.e. monitoring and management protocols and guidelines.
4. Support and assist the RECOVERY effort of the KBB in Wisconsin.
5. Extend the TERM of the permit: Develop 10-Year ITP RENEWAL proposal

The HCP Partners adopted this Five Point Plan in 2006. Using it as a guide, significant strides were made in 2006 and 2007 on Points 1-3 of the plan to improve HCP implementation, and in 2007 support of Recovery in Point 4 provided needed assistance to the Endangered Resources Program in establishing the DNR's Recovery Program and developing Recovery Program infrastructure and initiating Recovery monitoring strategies and associated GIS resources. Some improvements in line with the Five Point Plan are as follows:

1. FOCUS

KBB Probability Model

During 2004-2006 the DNR pursued the development of a statistical model to predict the occurrence of wild lupine. The model evolved to become a predictor of Kbb occurrence. Final refinements continue with UW-Madison's Department of Landscape Ecology, the DNR's collaborator on the project. A final draft model was completed in 2006 and rolled out at the HCP Partners 2007 Team meeting.

Karner Blue High Potential Range (HPR) for Wisconsin Is Redefined.

The HPR was corrected using the Karner Blue Probability Model developed in 2004-06 by the Landscape Ecology Lab along with several years of intensive monitoring by HCP Partners. The Lab generated GIS resources and produced numerous maps for the FWS and HCP partners. These maps can also be found on the HCP webpage. http://dnr.wi.gov/forestry/karner/

Original Outreach & Education Focus Renewed – An Updated Communication Plan

The initial intent of the O&E strategy was to reach out to private landowners and municipal land managers who were not already involved in the HCP, then to educate them about the Karner blue and encourage voluntary conservation, either as a partner or a volunteer as under the "voluntary" category in the HCP's innovative participation strategy. The added focus of lands within the recovery areas set a higher priority target. Through adaptive management, we were compelled to evaluate our O&E efforts from 1995-2006. What we realized was that in the absence of much O&E prior to the Karner blue's Endangered listing, the DNR and prospective HCP partners unleashed a plethora of broad O&E on any and all audiences available. The resulting scattergun approach has been very successful at elevating the Karner blue as a widely recognized species among the masses, but fell short in direct contact with actual landowners in the high priority recovery areas. Subsequently, the DNR developed a focused Communication Plan with the help of a working group from the previous Communication Team. This new plan was adopted by the IOC and guides the HCP to direct scarce resources more toward Kbb Recovery.

2. STREAMLINE

Monitoring Streamlined

Monitoring was greatly simplified and further focused on important aspects of implementing the HCP and performing conservation of Kbb habitat. The corrected High Potential Range and new Biological Recovery Zones has provided a biologically valid focus for HCP implementation efforts. The shifting of random effectiveness monitoring using relative abundance indices to population estimates on long-term recovery sites has eliminated a huge workload that resulted in knowledge of little benefit. The model and years of surveying for Karners also narrowed down the prediction of where Karners are likely to occur. This eliminated the continued need for mass, comprehensive inventory surveys. These strategies and improvements were firmed up in 2007 and as of 2008 all partners do pre-management surveys in the newly defined HPR prior to an activity to determine if an approved conservation measure need be applied. *(Please refer to monitoring section of this report for more information.)*

3. IMPROVE GUIDELINES

Management Guidelines and Protocols Get a Facelift

All management guidelines and protocols were revisited. HCP information was previously found spread around in various HCP documents. The content was checked for consistency and pertinence. Where problems were found, intent was clarified and guidelines and protocols were consolidated. The documents were then repackaged into a consistent convention for clarity, ease of use, and ease of future amendments and to improve training. These improvements were rolled out in early 2007 and integrated on the HCP webpage in an interactive web-based training module, which includes an instructional webcast.

Comprehensive Prescribed Burn Protocol Put in Place

After several years trying to affectively apply a rigid and poorly defined prescribed burn protocol handed down from the federal recovery team, we felt we needed to challenge ourselves to tackle the tough job of understanding this man-made version of a restricted and controlled ecological function. Joe Henry, HCP Conservation Biologist at the time gathered a team of experts and experienced practitioners (himself among them) to understand and better define the parameters of landscape vs. metapopulation, land definitions such as management site vs. population site

among many other plant and animal community and management dynamics involved. Joe's team arrived at an extensive and detailed protocol that doesn't "hamstring" managers with a one-size-fits all approach, but rather returns management discretion that allows land managers the flexibility to incorporate many circumstances and situations related to their specific lands, animal and plant species and the ecology of the ecosystem they are managing.

Emergency Guideline Developed

HCP partners have a legal or otherwise societal responsibility to respond to emergencies. These emergencies most frequently are related to utility service outages like power outages usually the results of weather events and downed trees on power lines. There are other utility emergencies related to gas or liquid pipeline leakages. As the urban-rural interface increases the need to respond aggressively to wildfire can not be understated. In the HCP, it was assumed these activities were localized in nature and superseded any responsibility to apply HCP conservation measures to avoid, minimize or mitigate take. We all know the story about "assuming things". To rectify the situation, the Guideline Repackaging and Improvement Team included drafting an Emergency Guideline to clear up confusion, any wrong assumptions and document the required HCP response.

4. RECOVERY

The Wisconsin KBB Recovery effort gets a shot in the arm

In 2007 the DNR's Karner Blue Recovery Program took flight in the Endangered Resources Program. With an assist from the DNR Division of Forestry's HCP Crew, Bob Hess, the KBB Recovery Coordinator in the Bureau of Endangered Resources (BER) assembled a Wisconsin Recovery Working Group and organized four Local Recovery Teams. With a financial boost from the HCP partners, BER hired a Recovery Statistician to guide the development of the Karner Blue population monitoring strategy on state and private recovery properties. The population estimating method selected is Distance Sampling. The HCP Program supported the first 5 DNR staff to be trained in this protocol who attended a workshop in September 2006 at the Indiana Dunes NWR. A broader group of DNR recovery property staff received training in June 2007. A small pilot season to test this method was run during the 2007 field season to

assess the methods, its challenges and considerations for designing the sampling strategy. A full recovery monitoring program is being implemented by the Recovery program in 2008.

Continuing in 2007 the Division of Forestry supported GIS based recovery research through the Department of Forest Ecology and Management at the University of Wisconsin-Madison. Recovery related activities completed in 2007 included development of phase-1 Biological Recovery Zones which used the Kbb probability model to integrate state, private and federal recovery properties with lands of potential habitat in the surrounding areas. A Kbb Emergence Model was needed for Distance Sampling. The model was near completion in 2007, now complete and is going on line in April 2008. Also, the UW lab assisted Black River State Forest staff in bringing their GIS resources up to date for recovery planning and management.

The HCP Program provided needed supplies, services and travel support to BER recovery staff in 2007 and continues to do so in 2008.

Implementation Monitoring – Compliance Audits

Compliance Audits are a required condition of the federal Incidental Take Permit TE010064-4 for the Karner Blue Butterfly. Compliance audits as designed for this HCP, serve to fulfill the intent of Implementation Monitoring, which is described in the ESA monitoring guidance for HCP's. The term Compliance Audit originated with the HCP before the ESA guidance describing it was available. The purpose of these audits is to assess the status and conditions of the management strategies and management activities actually being applied, and the degree to which partners comply with their individual conservation agreements.

The audit process (1) validates whether or not partners are honoring their legal commitments, (2) provides opportunities for continuous improvement through one-on-one contact with individual partners and their local staff, and (3) provides valuable information for adaptive management for the HCP partners and the implementation process.

In 2007, audits were performed for 19 partners or DNR properties:

- 6 county forests
- 2 forest industry companies
- 4 DNR properties or area offices
- 5 Utility corridor managers
- 2 limited partner

A summary of HCP compliance audits conducted by the Wisconsin DNR in 2007 is attached as *Appendix G. Wisconsin Karner Blue Butterfly HCP; Compliance Audits – Audit Year 2007 Summary*

If you have questions about this report or would like to receive a copy of it, please contact Dave Lentz (608-261-6451); David.Lentz@Wisconsin.gov . You may request a copy by writing to Wisconsin Department of Natural Resources, Attn: Dave Lentz FR/4 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921.