

	Title: Habitat Replacement Plan Template For Major Construction Projects	
	Date: May 7, 2010	Revision: 01

I. Purpose and Applicability

This Habitat Replacement Plan (Plan) Template is for use by HCP partners implementing a **major** construction, repair, or maintenance project that will result in **short-term take** or **permanent take** of Karner blues. HCP partners will use this template to develop a project specific habitat replacement plan. The following instructions will provide guidance for using this template.

Note: This guideline only applies to HCP Partners. Those entities not enrolled as a Partner in the Wisconsin Statewide KBB Habitat Conservation Plan (HCP) need to contact the U.S. Fish and Wildlife Service (920) 866-1717 to determine permit needs prior to conducting any activities in occupied Kbb habitat.

II. Project Description and Impact Assessment

1) Project Location and Description

Important -- To receive permit coverage for Temporary Work Space include description in this section and on associated maps.

- a) **Project name** – The project name should be a unique identifier. The project name will be included in future annual reports, monitoring forms and other records associated with the project.
- b) **Address/location** – The address should be the street address or fire number of the project location, if the project location is not associated with an address, specific description of the location should be provided (e.g. ½ mile southwest of the intersection of 5th Ave. and Co. Hwy BB).
- c) **County, Town-Range-Section** – The county, township, range and section of the project location.
- d) **Project Description and Purpose** – This section includes a brief description and map of the project area. The description should include the purpose of the project, expected outcome and the process by which the project activities will be implemented.

2) Project Impacts

- a) **Is the project area occupied by Karner blue butterflies?** Provide a summary of Level 1 (lupine) surveys, and Kbb Level 2 survey results (*see A Guide to Monitoring for the WI KBB HCP for current protocol*). Provide dates and results of surveys conducted within the five years prior to the project.
- b) **Describe all Kbb occupied habitat in the project area.** Kbb occupied habitat should include occupied lupine areas (natal area); all lupine plants within 500 meters of each other, and the intervening habitat including nectar plants. The description should include general site characteristics such as soils, canopy cover, land use, and other characteristics that may apply. Lupine density should be measured as described in the Level 1 Survey Form, and the dominant first and second flight nectar plants should also be listed by abundance, as well as invasive nuisance plants, and other dominant plant species.
- c) Next, **assess if sufficient nectar plants exist** within the Kbb occupied lupine areas. If nectar (either 1st or 2nd brood nectar) is absent or sparse, then determine the *total habitat area* (*see IV. Definitions*) needed by the Kbb subpopulation by extending the occupied habitat by 200 meters out from the perimeter of the lupine area. If nectar plants are present within 200 meters, then add it to the measurable potential impact area to be included when calculating the amount of acres to be mitigated (Note: Consider avoidance of extended nectar areas in calculating impact.).
- d) **What is the percentage of the Kbb subpopulation's total habitat (lupine) to be impacted** in relationship to the **total size of the occupied lupine/nectar habitat?** **NOTE: Include extended nectar areas in calculation where applicable.** The total area of Kbb occupied lupine to be impacted should be documented in acres. If possible, describe the total amount of lupine in and near the project site, and the area of lupine to be impacted. For example if the lupine is locally abundant within a contiguous 10 acre site and 1 acre will be impacted by the project report that 10% of the total lupine area will be impacted. If the total lupine area is not available for survey, e.g. additional contiguous habitat exists on the farm land adjacent to the ROW, report that the lupine area extends beyond the impact area, but estimates are not available for quantification.

III. Mitigation Planning

1) Project Alternatives

- a) **Project Alternatives** – This section should provide an analysis of the alternatives considered for the project including those not selected and why not, and the proposed alternative. Describe why the proposed alternative is the best course of action to achieve the project objectives while minimizing impact to the Karner blue to the greatest extent practicable.

2) Avoidance and Minimization

- a) **Describe how project activities will be completed in a manner that will avoid or minimize impacts to the Karner blue** – Describe how avoidance and minimization techniques will be implemented where feasible. Such measures as avoidance of unnecessary operation of equipment in areas supporting lupine (or dense areas of nectar plants) should be included in this description. Goals to strive for are to avoid impacting more than 1/3 of the lupine and to minimize disrupting dispersal of Kbb between lupine areas. This section should provide enough detail to show that all appropriate and available avoidance and minimization techniques have been considered and implemented to the greatest extent practicable.
- b) **Kbb egg salvage** may be a required or recommended mitigation measure to minimize take and promote recolonization of the restored site if project impact is to a high quality site in a Biological Recovery Zone (BRZ), take is greater 1/3 of the occupied habitat in a given subpopulation, or is permanent take. If included in the Plan, follow the currently approved KBB Egg Salvage Protocol.

3) Habitat Replacement

Note: Habitat replacement will be completed in accordance with the current approved KBB HCP Habitat Restoration Protocol.

- a) **Define the habitat replacement area** or an alternative mitigation – The area of land, in acres, that will be restored upon completion of the project.
- For short-term take, this area should equal or exceed the amount of impacted occupied lupine habitat listed in 2.b. A minimum of 1:1 replacement ratio is required. A greater than 1:1 replacement ratio is recommended to offset Karner blue losses that may occur while the replacement habitat is becoming established. If the area to be replaced is under risk of loss due to landowner activities (e.g., agriculture activities or grazing), or the replacement habitat is likely to be threatened by invasive nuisance plants that are difficult to control, alternative mitigation measures or locations may be proposed.
 - For permanent take, the habitat replacement area should be at least 3 times the area taken. A minimum of 3:1 replacement ratio is required. A greater than the 3:1 ratio is recommended to offset the permanent loss of part or all of an established population.
- b) **Define schedule** – Describe the general schedule of project and habitat replacement activities. It is recognized that schedules shift throughout the planning and implementation of the project. Any changes in schedule should be documented, the previous schedule updated, and the DNR notified. To the extent that a change in schedule affects any avoidance and minimization techniques, the plan should be updated accordingly. In addition to the original

plan, these updates should be included as an amendment to the document with dates showing when edits and changes were made.

IV. Monitoring

1) Monitoring Requirements

- a) **Required *measures of success* for this project** – The *measures of success* for a habitat replacement plan will be specific to each project. The measures of success will describe the criteria and conditions that need to be met for the habitat restoration to be successful upon completion of the project.

The measures of success will depend on a variety of criteria, including location of the project relative to other known Karner blue populations, proximity of project to a Biological Recovery Zone (BRZ), surrounding land use and dispersal opportunities and the relative quality of the site. The Partner should propose measures of success that are specific to the project. The final measures of success for a project will be agreed upon by the Partner, the DNR and the FWS.

Recommended *measures of success* include:

- At least three first and three second flight nectar plant species will be present, and the combined total of nectar plants should commonly occur at each habitat replacement site.
 - Lupine should be well established and commonly occur at each habitat replacement site.
 - Kbb presence in previously unoccupied habitat where plan anticipates Kbb dispersal.
- b) **Describe monitoring that will be completed** – The Partner should describe how this requirement will be met and the surveys that will be conducted. The minimum monitoring required is lupine and Karner presence/absence surveys for up to five years following construction project completion or until the agreed upon measures of success have been achieved. (Level 1: Lupine Presence/Absence Monitoring and Level 2: KBB Presence/Absence Monitoring -- refer to *A Guide to Monitoring for the WI KBB HCP for current protocol. Refer to Appendix A of this documents for the Post-restoration Tracking Report Instructions*)

Record the percentage of the replacement site that is vegetated and whether or not lupine and the seeded nectar plants are established throughout the habitat restoration area. Indicate the qualitative abundance of lupine and combined nectar species on each site (e.g., sparse, common, abundant), as well as the number and species of nectar plants present in both the first and second flight periods. If the seeding is not successful within two full growing seasons, e.g. there are large gaps in the vegetation, lupine has not established well, or there are not three first and three second flight nectar species present, implement remedial actions.

If nuisance plants have invaded the replacement site to the point that the measures of success cannot be achieved, document the invasive species and describe the situation. Evaluate and consider what measures to control them if any are feasible and will lead to achieving the measures of success (contact the DNR for advice on nuisance plant control). Take photos annually from fixed photo points of representative sites during the first and second flight periods and include them in your report to document the status of your habitat replacement plan.

- c) **Describe any additional remedial actions taken** - This section should describe remedial actions taken on habitat replacement sites where the measures of success criteria are not being met. Examples of remedial actions include reseeding, treatment to remove encroaching vegetation or invasive species or other actions appropriate to meet the measures of success.

- d) **Date restoration considered complete** – This section provides documentation of when the habitat restoration is considered complete and the project can be closed out with respect to these HCP requirements. After this point, the area returns to routine HCP management with consideration for Karner blues. This section should list the appropriate survey form or other supporting documentation that will be attached to this plan, which demonstrates that the measures of success have been met. The successful completion of the restoration activity will result in no further monitoring being required related to this project. Records of the project and associated activities must be maintained as described in section V. (below) of this protocol.

V. Recordkeeping and Reporting

- 1) **Records** – This section describes the records that must be maintained for this project. These records should be specific where prescribed (e.g. Level 1/Level 2 survey forms and *Post-restoration Tracking Report Instructions*). For other records, it is up to the Partner to determine the form of documentation that will be maintained. At a minimum this documentation must include all items listed in the Plan, and also be a complete record of the project. The purpose of these records is for use during audits to determine if the project was completed in conformance with the HCP requirements.

More specifically, the following records should be maintained for this project for the life of the USFWS Incidental Take Permit #TE010064-x:

- The Habitat Replacement Plan and subsequent amendments
- Pre-project Level 1 and Level 2 Survey Forms
- Map(s) with location of project area
- Documentation of conformance with this Habitat Replacement Plan. This could include photographs of avoidance and minimization techniques, inspection forms, pictures of the replacement habitat from representative

photo points taken annually during the required monitoring period, or other method as appropriate to the project.

- Monitoring records for all subsequent years of post-project monitoring.

- 2) **Annual Reports** – Annual reports are required during and following construction and habitat restoration and in subsequent years for up to five consecutive years once restoration activities have begun or until the measures of success have been achieved. The first annual report submitted after the project begins should report the construction project activities and if restoration has begun, include restoration activities and any planned restoration activities. In the second year the annual report should include any restoration action take at the project site and the results of post-restoration monitoring. Continue monitoring and any necessary remedial action for up to five years or until the replacement site meets the measures of success. When the measures of success have been achieved, provide the documentation to support this, along with the statement that you have met your replacement habitat requirements and consider the habitat replacement plan complete and that therefore, no further activities will be conducted.

Submit a Plan report with your HCP annual report. Refer to *Post-Reclamation Tracking Report Instructions* and *Annual Report Form* for more complete, specific and current information requirements.

When you determine the measures of success have been achieved, include this finding in your annual report and request concurrence of the DNR. No further reports are required after this time unless otherwise agreed upon.

If the measures of success have not been achieved within 5 years after restoration has begun, consult with the HCP Coordinator.

VI. Definitions

Compensatory Mitigation is a required measure to compensate for the loss of Kbb habitat resulting from permanent take of that habitat. The minimum compensation is 3:1 (3 acres restored for each acre taken).

Dispersal Distance (Kbb adults)

200 meters: When designing mitigation plans, if nectar plants are sparse within the occupied lupine site (subpopulation), the site boundary should be expanded by 200 meters. Several Kbb dispersal studies have found that Kbb movements within sites (subpopulations) are relatively low and short with nearly all movements less than 100 to 200 meters from their home lupine patch (KBB Recovery Plan, 2003, p. 25 and Appendix G, Table G1). Therefore for the purposes of these guidelines 200 meters will be used as a guide for site expansion to incorporate nectar plants.

500 meters: When designing mitigation plans, Kbb sites (subpopulations) that are

Karner Blue Butterfly HCP Management Protocol

greater than 500 meters apart should be considered as separate Kbb sites or subpopulations. Dispersal of Kbb between sites (subpopulations) varies depending on the nature of the habitat, especially canopy cover between habitat sites. For the purposes of these guidelines, 500 meters will be used as the separation distance between Kbb subpopulations (sites). This is based on a study by Fuller (1998) who found that Kbb on a power line corridor (mostly open corridor with scattered clumps of shrubs) rarely dispersed to habitat patches greater than 500 meters from their natal (home) lupine patch (KBB Recovery Plan, 2003, p. 27 and Appendix G, Table G1).

Habitat Replacement is a term unique to this HCP that describes a conservation measure employed by HCP Partners to restore habitat that is significantly damaged, destroyed or removed as a result of short term take related to a construction or maintenance project. Habitat replacement occurs on the same site and usually the same area as was impacted during a construction or maintenance project. The minimum replacement ratio is 1:1.

Habitat Replacement Plan describes the events or activities that caused (will cause) habitat loss, the Kbb and vegetation status, impacts or projected impacts, measures to avoid and minimize impacts, remediation measures to the impact area to restore the habitat and the monitoring to be performed to assess the success of the restoration (this definition applies to this *Habitat Replacement Plan Template For Major Construction Projects*).

Habitat Restoration is the act of implementing processes and protocols to replace habitat lost to natural succession, acts of nature or human activities by restoring the land to vegetation conditions suitable for Kbb occupation. Habitat restoration can be applied to mitigate a construction project (habitat replacement), compensate for permanent take (compensatory mitigation) or as a proactive measure to create Kbb habitat, i.e. as a recovery strategy (Refer to the KBB HCP Habitat Restoration Protocol).

Habitat Restoration Site is a specific site where the Kbb seed mix (containing lupine) is continuously applied to restore habitat.

Major Construction Project – Major construction projects are those short term take activities that will impact greater than 1/3 of the lupine in one occupied lupine area that is separated from other lupine areas by greater than 500 meters (a different subpopulation) that will be restored within 5 years, or permanent take activities that involve loss of occupied lupine habitat that will not be replaced or restored within five years.

Minor Construction Project – Minor construction projects are those activities that will impact less than 1/3 of the lupine in one occupied lupine area that is separated from other lupine areas by greater than 500 meters (a different subpopulation). Examples of

Karner Blue Butterfly HCP Management Protocol

projects that have been defined as minor include the following provided that the above criterion is met.

- Small diameter pipe line installation
- Repair of existing pipeline facilities
- Utility pole replacements
- Stump removal
- Fence and sign installation and repair
- Underground potholing for repair
- Culvert improvement or repair
- Ditch repairs
- Sign replacement
- Guard rail replacement

Natal area – The area of lupine where eggs are laid and subsequently hatched.

Occupied Habitat (Kbb) – Kbb occupied habitat is defined as areas of wild lupine that support Karner blue butterflies.

Occupied Habitat (Kbb) plus adjacent nectar (A.K.A. the *total habitat* area) - Occupied habitat is the lupine area supporting Kbb's, but the total habitat area utilized by Kbb's may include adjacent nectar areas when nectar within the lupine area is insufficient. This "total habitat" area includes Kbb occupied lupine (natal area), all lupine plants within 500 meters of each other, and the intervening habitat including nectar plants. If nectar plants are sparse or missing within the lupine area, then include nectar areas adjacent to and within 200 meters of the lupine area.

Permanent Take – is an impact to the Karner blue butterfly habitat, through land management or land use activities that does not allow for the restoration and reoccupation of the site for a minimum of five years.

Short-Term Take – is an impact to occupied Karner blue butterfly habitat, which results from land management or land use activities that cause habitat disturbance, which will be restored or replaced within five years of the disturbance. Short term take is conducted following approved conservation measures in the HCP in a manner to avoid and/or minimize harm to the Kbb (e.g. through appropriate timing of activities selective routing and siting of projects, etc.) and maintain, enhance, and/or restore Kbb habitat.

Temporary Work Space -- Temporary work spaces are rarely used, short term easements to accommodate the need for additional space during the duration of a construction project, most commonly utility or road construction. Partners such as utilities managers and WDOT seek short-term easements from adjacent landowners to be used as staging or work areas to unload and stage construction project materials and equipment, and sometimes for extra work space (elbow room).

VII. Reference Documents

KBB Egg Salvage Protocol

KBB HCP Habitat Restoration Protocol

Biological Recovery Zone (BRZ) maps

Post-Reclamation Tracking Report Instructions

HCP Annual Report Form

A Guide to Conducting Monitoring for the Wisconsin Karner Blue Butterfly Habitat Conservation Plan

U.S. Fish and Wildlife Service. 2003. Final Recovery Plan for the Karner Blue Butterfly (*Lycaeides melissa samuelis*). U.S. Fish and Wildlife Service, Fort Snelling, Minnesota 273 pp.

Fuller, Steven G. 1998. Interim Report: Summary of individual mark recapture 1998. S.U.N.Y. College of Environmental Science and Forestry.

VIII. Appendix A – Post-Reclamation Tracking Report Instructions

Karner Blue Butterfly HCP

2-4-2009 revision

Post-Restoration Tracking Report Instructions

The purpose of this report is to document the status of your restoration project. In a narrative and table form, report on the progress of all components and commitments in your Habitat Replacement Plan (Plan).

If restoration of all acres is not completed, describe the reasons why it is not completed and state when the remaining acres will be completed. Also state whether the amount and location of restoration is consistent with your Plan. If adjustments were a positive change or increase in acres, describe the changes and reasons. If the deviations from the Plan resulted in a shortfall, describe the reasons for the adjustments and what will be done to compensate, if anything.

The following information should be included in your report:

- 1) Location of restoration site(s) and the date restoration was completed:
 - include map showing location of restoration site(s)

- 2) Status of vegetative cover -- Include the following information:
 - Percent of restoration area vegetated, percent unvegetated and percent dominated by nuisance plants
 - Percent of vegetated areas that support lupine and nectar plants
 - Density of lupine and nectar plants (qualitative estimate e.g. scarce, common, abundant)

Karner Blue Butterfly HCP Management Protocol

- The number of 1st and 2nd flight nectar plant species established, and the names of the nectar plants
- 3) If remedial actions were taken, describe remediation e.g.:
 - Reseeded unvegetated areas (provide seed mix and location of areas reseeded and date of reseeded)
 - Describe control of nuisance plants, which pose a threat to Kbb habitat; describe control measures, e.g. removed by hand pulling, mowing, herbiciding (provide date(s) of treatment)
 - 4) If remedial action has not been taken, but is necessary, describe remedial actions planned:
 - e.g., reseeded or control of nuisance plants (see above); (provide projected date(s) of planned remediation)
 - 5) Attach post-restoration surveys as defined in your Plan and any additional surveys (if applicable) that may be required or requested by the DNR and the FWS during the approval of and included in your Plan.
 - 6) Photo documentation of restored sites should be done to help document success of your Plan. Include photos taken at fixed photo points of representative sites during both first and second flights. Take photos annually until restoration is successful. Submit photos (identified with location and date of photo) with this report.

Submit this report and all applicable surveys and photos with your annual report.

If you have any questions or need assistance, contact Dave Lentz, HCP Coordinator at (608) 261-6451 or by email at David.Lentz@Wisconsin.gov.