



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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IN REPLY REFER TO:

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FWS/AES-TE

Memorandum

To: Assistant Regional Director

Through: Ecological Services Program Manager, Endangered Species/Habitat Conservation

From: Regional HCP Coordinator

Subject: Set of Findings: The Michigan Karner Blue Butterfly Habitat Conservation Plan

On July 23, 2008, the U.S. Fish and Wildlife Service (Service) received an application for an incidental take permit (ITP) under the Endangered Species Act of 1973, as amended (Act) from the Michigan Department of Natural Resources (Michigan DNR). The ITP duration is 20 years and is intended to allow for incidental take of the Karner blue butterfly resulting from activities related to habitat management, utility and transportation right-of-way maintenance, and certain development activities on non-federal lands in Michigan.

In accordance with the Act (16 U.S.C. 1539 (a)(2)(A)), a Habitat Conservation Plan (HCP) accompanied the permit application. The Michigan DNR prepared an Environmental Assessment (EA) for the ITP application request. A Federal Register Notice, announcing receipt of the permit application, and soliciting comments on the application, was published in the Federal Register on January 25, 2008. The notice opened a 60-day comment period ending March 25, 2008, prior to the final decision by the Service. One comment was received from Consumer's Energy.

This memorandum constitutes a Set of Findings for processing the application and describes the Service's rationale for making its recommendation to issue an ITP to the applicant.

I. DESCRIPTION OF PROPOSAL

The Michigan DNR applied to the Service for a permit to incidentally take Karner blue butterfly (*Lycaeides melissa samuelis*) under the authority of section 10(a)(1)(B) of the Act. The 20 year duration permit would allow incidental take in occupied habitat throughout Michigan on non-federal lands. Activities within the proposed HCP fall within three categories: habitat management, utility and transportation right-of-way maintenance, and development.

Habitat management will be required to simulate and maintain the conditions required by the Karner blue butterfly (KBB) and other species associated with the Oak Savanna Ecosystem. Management techniques used to mimic the Oak Savanna historic disturbance regime include prescribed burning, mowing/hydroaxing, manual and chemical vegetation removal, soil scarification, seeding and planting, and livestock grazing. Vegetation management techniques are also proposed for utility and transportation rights-of-way maintenance appropriate for the intended purpose of rights-of-way. Maintenance activities in rights-of-way will include some techniques intended to maintain KBB habitat if consistent with rights-of-way purpose. Development activities may include construction of houses, buildings, landscaping, parking lots, and other artificial structures; agriculture, horticulture, intensive forestry; and road and utility development. Most of these actions could have long-term impacts due to permanent removal of habitat.

The KBB is currently known to occur on approximately 3,900 acres within ten counties in Michigan; nearly 2,700 acres of known occupied habitat are on non-federal lands. Incidental take is primarily expected in this ten county area. The HCP identifies conservation measures the Applicant will implement for the purposes of minimizing and mitigating incidental take that may occur in the future. The primary goal of the HCP is to minimize and mitigate the unavoidable adverse effects of ground disturbances to KBB habitat from necessary habitat management, right-of-way maintenance, and development activities.

II. SECTION 10(a)(2)(A) HCP CRITERIA - ANALYSIS AND FINDINGS

1. The impact that will likely result from such taking

The applicant has prepared an HCP to address the potential effects of permitted activities. The HCP and EA describe the proposed activities and the anticipated impacts to the KBB and the associated habitat within the project area. The Service has determined incidental take of the species would occur as a result of habitat management and utility and transportation right-of-way (ROW) maintenance activities, which are expected to have short-term (<2 growing seasons) adverse impacts, but long-term benefits. Incidental take of the species and its habitat would occur as a result of some construction and development activities, as these would lead to permanent conversion of occupied habitat. Development that would cause occupied habitat on non-federal land to be reduced by more than 1% at any given time will not be permitted. As such, the amount of occupied habitat that might be developed in any given year ranges from 0 to 27 acres. This number may be adjusted as the occupied acreage changes. The HCP provided sufficient information for the Service to evaluate the impacts of the proposed activities. The Service's analysis of the project impact is described in January 15, 2009, Biological Opinion, Log 07-R3-ELFO-03.

2. Steps that will be taken to monitor, minimize, and mitigate such impacts, funding that will be available to implement such steps, and the procedures to be used to deal with unforeseen circumstances.

The Michigan DNR is responsible for ensuring implementation and compliance with the terms and conditions of the ITP and the conservation measures in the HCP. The applicant's HCP provides measures to avoid or minimize harm to individuals, mitigation measures to compensate for potential losses, and a monitoring program to track the success of minimization and mitigation measures and avoid potential disturbances to KBB within the project area.

The following measures will be implemented to avoid, minimize, and mitigate adverse effects on Karner blue butterflies and habitat:

- Habitat Management:
 - Pre-treatment/disturbance surveys will be conducted to determine the presence and distribution of KBB within proposed treatment areas where the species is likely to occur and following treatment during first 2 years of management under the HCP. Presence of KBB will be assumed in absence of surveys.
 - Techniques will usually be applied to no more than one-third of any particular occupied KBB habitat patch within a calendar year.
 - Whenever possible, mowing/hydro-axing will be scheduled when at least four inches of snow cover the ground or when cutting equipment would directly avoid lupine. If not possible, these activities will be restricted to periods when adult KBB are not present, in which case, equipment will be operated to achieve a cutting height of at least six inches above the ground.
 - Heat, when used, will be applied to individual plants (e.g., propane-torch removal). On-site fire-suppression equipment (e.g., hand pumps, ATV-mounted sprayers, extinguishers) will be available in case of fire persistence and to prevent unintentional ignition of lupine and KBB nectar plants.
 - Spot spraying of herbicide will be used in a manner to avoid drift into areas occupied by lupine. Herbicides will be applied by certified applicators in compliance with label directions.
 - Livestock grazing may be conducted through the release of grazing animals on up to one-third of occupied habitat patches that are greater than one acre. Grazing will be conducted on short rotation and livestock will be removed before non-woody vegetation is reduced to an average height of approximately six inches.
 - Only native species will be seeded or planted.
- Utility and Transportation Right-of-Way Maintenance:
 - Activities in occupied habitat that could result in take will not occur when adult KBBs are present, typically between May 15 and August 15, except for rare circumstances.
 - Surveys to determine presence and distribution of lupine and KBB will be conducted prior to treatment/disturbance and during first the 2 years following treatment/disturbance. Presence of KBB will be assumed in absence of surveys.
 - Areas containing lupine immediately adjacent to treatment areas will be marked and workers will not stockpile materials, park vehicles or otherwise cause adverse impacts in those areas.
 - All employees and contractors working in project sites will be trained on KBB life history and habitat requirements and instructed on measures required to avoid and minimize take of KBB and long-term adverse impacts.
 - To the extent possible, truck and heavy-equipment traffic will be limited to existing disturbed areas. During replacement and repair of infrastructure, existing structures will be dismantled in place or otherwise repaired in ways to reduce impacts to lupine.
 - Displaced soils will be deposited away from lupine areas and within the smallest possible side-cast areas needed for temporary storage. Excavated areas will be backfilled using the original soil that was deposited in temporary storage areas.

- Development:
 - Construction of houses, buildings, landscaping, parking lots, and other artificial structures; agriculture, horticulture, intensive forestry; and road and utility development will not occur between May 15 and August 15.
 - Surveys for distribution of lupine and Karner blue butterflies will be conducted prior to project planning and implementation.
 - Prior to any ground-disturbing activities, adjacent lupine areas that will not be developed will be flagged or otherwise marked; workers will not stockpile materials, park vehicles or otherwise cause adverse impacts in those areas.
 - All employees and contractors working in project sites will be trained on KBB life history and habitat requirements and instructed on measures required to avoid and minimize take of KBB and long-term adverse impacts.
 - No invasive plant species will be introduced into developed areas.
 - Development that would cause occupied habitat on non-federal land to be reduced by more than 1% at any given time will not be permitted.

- Miscellaneous Mitigation Activities:
 - Mitigation will most often be required where activities, such as development, lead to permanent conversion of occupied KBB habitat.
 - In cases where impacts will be minimal and habitat is expected to recover within the same growing season, required mitigation could entail nothing more than monitoring to document that no discernible impacts to Karner blue butterflies occurred.
 - In other cases, required mitigation could include habitat restoration on-site as well as creation of suitable KBB habitat in other areas.
 - Long-term or permanent destruction (conversion) of occupied habitat will require creation of suitable KBB habitat elsewhere.
 - When possible, mitigation will include restoration of the entire disturbed area, as well as creation of additional suitable KBB habitat equal to 25 – 50% of the disturbed area.
 - A mitigation land-exchange ratio of up to 3:1 (3 acres of habitat created for every 1 acre of occupied habitat disturbed and not restored) will be the upper limit for mitigation.
 - When possible, suitable habitat will be created in areas adjacent to disturbed occupied patches.
 - Purchase and protection of occupied habitat may be considered as mitigation if it is accompanied by additional habitat expansion or if habitat management necessary to maintain existing populations is assured.
 - All mitigation sites will be monitored to determine habitat and population impacts and restoration success.
 - The need for mitigation may be met in advance of specific projects by applying a concept similar to that of a Safe Harbor Agreement.

The treatment of unforeseen circumstances in the HCP (section 10.3) is consistent with the Service's Habitat Conservation Plan Assurances ("No Surprises") Rule, dated February 23, 1998. Unforeseen circumstances relevant to this HCP might include the introduction of harmful diseases or additional exotic species that could have significant detrimental effects on Karner blue

butterflies. If this occurs, the HCP states the Michigan DNR and the Service will consider potential measures to address the changed conditions.

3. Alternative actions to the taking the applicant considered and the reasons such alternatives are not proposed to be utilized.

The applicant considered three other alternatives during the planning process.

Alternative 1 – No Action Alternative: Under this alternative the Service would not issue an incidental take permit. Without the ITP/HCP, authorized activities resulting in take of KBB would include habitat management authorized by existing 10(a)(1)(A) permits to the Michigan DNR and The Nature Conservancy, management conducted under the Landowner Incentive Program, and any development or right-of-way maintenance approved under separate permits. The Service did not select this alternative for implementation because it affects a limited geographic scope (approximately 900 acres) and because utility and transportation right-of-way maintenance activities may not be coordinated with statewide KBB conservation efforts.

Alternative 2 – Reduced-scope HCP: This alternative limits conservation activities to occupied KBB habitat owned and managed by State agencies, local governments and conservation-oriented non-governmental organizations (approximately 900 acres). Occupied habitat on land owned by private transportation and utility companies, private-land developers, and other private land-owners would not be addressed. The Service did not select this alternative for implementation because less land would be included, resulting in an accumulation of negative impacts and lack of coordination with statewide KBB conservation efforts.

Alternative 3 – Provision of Refuges: Under this alternative attempts would be made to conserve KBB through establishment of permanent refuges. Use of refuges may concentrate KBB within focused sites thereby increasing risks associated with local disturbances and catastrophic events (Saunders et al. 1991). Because KBB require a shifting mosaic consisting of discrete but transient habitat sites connected by dispersal corridors, habitat site re-colonization following local extirpations may be hampered under this alternative. This alternative was not select for implementation because it would not meet the project's purpose.

4. Other measures that the Director may require as being necessary or appropriate for the purposes of the plan.

The applicant developed the HCP in consultation with the Service and further modified the HCP as a result of public comments.

III. ENVIRONMENTAL ASSESSMENT AND PUBLIC COMMENT - ANALYSIS AND FINDINGS

The Michigan DNR prepared the EA for this ITP application. A Notice of Availability was published in the *Federal Register* on January 25, 2008, notifying the public of the availability of the permit application, EA and HCP for public comment accepted through March 25, 2008. The Service received one public comment during the comment period.

IV. SECTION 10(a)(2)(B) PERMIT ISSUANCE CRITERIA - ANALYSIS AND FINDINGS

1. The taking will be incidental.

The Service finds the take will be incidental to the otherwise lawful activities occurring as a result of the proposed habitat management, utility and transportation ROW maintenance and development by the Michigan DNR and its partners under the HCP.

2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking.

The Service finds the applicant has developed the HCP pursuant to the requirements provided in the Act and its implementing regulations and has provided for mitigation and minimization of take to the full extent practicable. The “maximum extent practicable” concept consists of considering the economic objectives with the applicant (reflected by the scope of the project and its design), a measurement of the subsequent impact imposed on the protected species, and the degree to which the extent of mitigation and minimization measures offered in the HCP compensate for impact to the species. Minimization efforts do not take precedence over mitigation efforts or vice-versa. Minimization and mitigation can take many forms and any combination to address direct, indirect, and cumulative adverse effects on listed species. In this particular case, the level of incidental take is expected to be low once measures of the HCP and permit are in place, and the applicant has provided mitigation and minimization to offset the expected impacts to KBB. The Service’s Biological Opinion described the incidental take expected to occur as a result of issuing this ITP.

3. The applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided.

Through execution of the Implementing Agreement, the Applicant ensures funding is available to meet their obligations under this Agreement, the Permits, and the HCP throughout the 20-year term of the HCP. The Service’s HCP Assurances (“No Surprises”) rule is discussed in the HCP and measures to address changed and unforeseen circumstances have been identified. Unforeseen circumstances would necessitate coordination between the Service and the Applicant. The Applicant has committed to a coordination process to address such circumstances. The Service has therefore determined the financial commitment, along with the willingness to address changed and unforeseen circumstances in a cooperative fashion, is sufficient to meet this criterion.

4. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

The Service has reviewed issuance of an ITP to the applicant in accord with section 7 of the Act to cover activities associated with the proposed activities and HCP/Permit maintenance. As concluded in the Biological Opinion, the ITP will not appreciably reduce the likelihood of survival and recovery of KBB.

5. Additional measures as required by the Director of the Service will be implemented.

The EA and HCP have incorporated all elements necessary for issuance of a section 10(a)(1)(B) permit.

6. The Director of the Service has received the necessary assurances that the plan will be implemented.

The permit will be valid only if the minimization and mitigation measures have been carried out in accordance with the HCP and the terms and conditions of the permit. Failure to perform the obligation outlined by the conditions of the section 10(a)(1)(B) permit may be grounds for suspension or revocation of the permit.

V. GENERAL CRITERIA AND DISQUALIFYING FACTORS

The Service has no evidence the permit application should be denied on the basis of criteria and conditions set forth in 50 CFR § 13.21(b) and (c). The Michigan DNR has met the criteria for the issuance of the permit and does not have any disqualifying factor that would prevent the permit from being issued under current regulations.

VI. RECOMMENDATIONS ON ISSUANCE OF PERMIT

Based on the findings of the Regional Office and the East Lansing, Michigan Field Office staff, and with respect to the ITP application, HCP, EA, and biological opinion, we concur the issuance of the section 10(a)(1)(B) ITP to the Michigan DNR proposing the *Habitat Conservation Plan for take of the Karner blue butterfly* is recommended.

TJ Miller
Program Manager, Endangered Species

Date

Peter Fasbender
Regional HCP Coordinator

Date