United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

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IN REPLY REFER TO

FWS/AES-CIFO

February 5, 2002

Mr. Don Meyer
Acting Regional Forester
USDA Forest Service
310 West Wisconsin Ave, Suite 580
Milwaukee, Wisconsin 53203

Dear Mr. Meyer:

This letter transmits the U.S. Fish and Wildlife Service's (Service or we) biological opinion on the proposed implementation of the preferred alternative for the Proposed Land and Resource Management Plan for Midewin National Tallgrass Prairie dated May 2001. Midewin National Tallgrass Prairie is located in Will County, Illinois. At issue are the potential effects implementation of the management plan may have on the eastern prairie fringed orchid (*Platanthera leucophaea*), a species federally listed as threatened, and the leafy prairie clover (*Dalea foliosa*), a species federally listed as endangered.

This biological opinion is based on information contained in your biological assessment received on December 13, 2001 (final version received on January 14, 2002); the Draft Environmental Impact Statement for Midewin National Tallgrass Prairie dated May 2001; a telephone conversation held on January 9, 2002 with Marcella DeMauro of the Will County Forest Preserve District; a field visit to Midewin held on December 13, 2001; an e:mail message received from Gerald Bade of the Rock Island Field Office of the Service dated July 17, 2001; a meeting held on January 14, 2002, among representatives of Midewin National Tallgrass Prairie and the Service; a telephone conversation with Renee Thakali of the Midewin National Tallgrass Prairie held on January 24, 2002; a telephone conversation with Eric Ulaszek of Midewin National Tallgrass Prairie held on January 29, 2002; telephone conversations held with Ron Abrant of the U.S. Army Corps of Engineers held on January 24 and 25, 2002; the recovery plan for the leafy prairie clover (U.S. Fish and Wildlife Service 1996); and the recovery plan for the eastern prairie fringed orchid (U.S. Fish and Wildlife Service 1999). The complete administrative record for this consultation is on file at the letterhead address.

Formal consultation was requested by the Forest Service in a letter dated December 13, 2001, and was accepted by the Service on December 20, 2001. During the meeting held on January 14, 2002, the Forest Service agreed to expand the standard and guidelines as they apply to threatened, endangered and sensitive species. We have informally consulted on a number of smaller restoration projects proposed by the Forest Service at Midewin. We have concurred with their conclusion that the projects were not likely to adversely affect federally listed species.

Description of the Proposed Action

The U.S. Forest Service proposes to implement its preferred alternative described in the Draft Environmental Impact Assessment for the Midewin National Tallgrass Prairie Land and Resource Management Plan (USDA Forest Service 2001a and b). The Midewin National Tallgrass Prairie was formerly used by the U.S. Army for munitions manufacture and packaging. In addition to this activity the Army also conducted agricultural and grazing leases. As a result most of Midewin has been altered by human activities and little is dominated by native vegetation. Currently the Prairie supports 120 acres of dolomite prairie potentially suitable for the leafy prairie clover, and less than 150 acres of prairie potentially suitable for the eastern prairie fringed orchid. Under the preferred alternative 1,375 acres would be restored to dolomite prairie and about 7,300 acres would be restored to habitats potentially suitable for the orchid. Existing and restored habitats would be managed to maintain their species composition and function. Eventually Midewin will be opened to recreational uses including: hiking, on-trail bicycle riding, cross-country skiing, on-trail horseback riding, hunting, and specialized camping opportunities (USDA Forest Service 2001b).

The Forest Service proposes to use a variety of techniques to restore and manage the prairie. The Forest Service would use prescribed burning, herbicide applications, and mowing to maintain an open habitat structure, create microhabitats for eastern prairie fringed orchids and leafy prairie clover to become established and control alien invasive weeds. The Forest Service may use grazing in habitat potentially suitable for the eastern prairie fringed orchid (USDA Forest Service 2001b). Prescribed burns in dolomite prairie potentially suitable for the leafy prairie clover would not occur after April 30 or before October 15 of any calendar year, and would burn no more than 50 percent of the habitat known to be occupied by the leafy prairie clover (Ulaszek, 2002, pers.comm.).

During the meeting held on January 14, 2002, the Forest Service agreed to expand the standard and guidelines as they apply to threatened, endangered, and sensitive species. Specifically the Forest Service has proposed to implement the following guidelines to protect these species (Thakali 2002, pers. comm):

- Evaluate all existing or restored dolomite prairie habitat for potential restoration or introduction of leafy prairie clover.

- Evaluate all existing or restored dolomite prairie, upland typic prairie and wet typic prairie habitat for potential reintroduction of eastern prairie fringed orchid.

- Restore or introduce leafy prairie clover and eastern prairie fringed orchid into areas determined suitable.

- When using herbicides in leafy prairie clover or eastern prairie fringed orchid habitat apply approved herbicides with special care using wipe type applicators or other techniques to eliminate drift; survey the area and cover known plants near application area before herbicide application; use no pre-emergent herbicides; all personnel applying herbicide must be trained in identification of leafy prairie clover and eastern prairie fringed orchid.

- Locate new trails at least 25 yards away from known eastern prairie fringed orchid or leafy prairie clover plants, and close all trails located within 0.25 miles of plants during blooming season.

- Prior to livestock grazing in occupied or potential eastern prairie fringed orchid habitat, survey for presence of the plants and locate livestock fences at least 1/8 mile away from occupied habitat for these plants (Thakali, 2002, pers. comm.).

Status of the Species

The leafy prairie clover (*Dalea foliosa*) is a small short-lived herbaceous perennial in the legume or pea family (Fabaceae). It is known from 29 populations in Alabama, Tennessee and Illinois. The leafy prairie clover requires full sun and low competition, and occurs in limestone cedar glades, limestone barrens and wet-mesic dolomite prairie. To some degree fire maintains each of these habitats. In dolomite prairies, small microhabitat areas likely support plants, where the moisture regime is appropriate. Soils are very shallow, less than 18 inches (45 cm) in depth. Water penetrates to the bedrock, and during the winter months freezes causing some natural disturbance in the form of frost heave (USFWS 1996).

Seedling leafy prairie clover plants are routinely killed by frost heave and drought, and few individuals reach maturity. In a study that monitored individual plants, most plants died within their first year, and only 4.6 percent survived for 5 years. In addition, plants sometimes become dormant for a season or two, and then reappear. Although individual plants are short lived, seeds remain viable for at least 8 years. In addition, in Illinois over 70 percent of plants produced viable seed, and the number of seeds produced per flower head ranged between 5 and 429. Thus, in occupied (or recently occupied) habitat a large seed bank may exist. Seeds are likely distributed by the wind, gravity, birds or small mammals (USFWS 1996).

The recovery plan for the leafy prairie clover identifies certain areas as potentially important for the leafy prairie clover, and recommends that these areas be evaluated as potential recovery sites. One of the sites identified for Illinois was the Joliet Army Arsenal. The Arsenal has since been closed, and much of its former land holdings have been transferred to the U.S. Forest Service to become the Midewin National Tallgrass Prairie. If Midewin is successful in its attempts to restore dolomite prairie, then Midewin could become an important recovery site for the leafy prairie clover. In order for the leafy prairie clover to be reclassified to threatened status, the recovery plan recommends three populations ranked as high viability be protected and managed each in Alabama, and Illinois. In Tennessee the plan recommends 12 populations ranked as high viability. Restored populations should persist at high or moderate viability for a minimum of 10 consecutive years (USFWS 1996).

The federally threatened eastern prairie fringed orchid (*Platanthera leucophaea*) is a long-lived herbaceous perennial. The plant rises in a single stalk from an underground tuber. Linear leaves sheath the stalk, with basal leaves being larger. The flowering stalk extends above the leaves and may have from 5 to 40 creamy fringed flowers. The top flowers open last. Currently it is known from 59 populations in 6 states, mostly from Wisconsin, Illinois, Michigan and Ohio. It also occurs in Ontario, Canada. It occurs in tallgrass silt-loam or sand prairies, sedge meadows, fens, and occasionally sphagnum bogs. It seems to be adapted to some natural patch disturbances, or areas with dynamic disturbance regimes. The orchid occasionally colonizes successional habitats or recolonizes previously occupied areas. In large habitat areas with natural disturbance regimes, the orchid population shifts spatially over time. Seedling establishment requires development of mycorrhizae with soil-inhabiting fungi, and maintenance of habitat dominated by grass like species. The plants are very difficult to find unless they are in bloom. In some years, some plants may remain dormant, or following years of heavy bloom, may show reduced growth. The plants do not flower until they are about 5 years of age (USFWS 1999). In one study where individual plants were counted in a 1 meter square quadrat, vegetative (non-flowering) individuals were found to out number flowering individuals by eight to one (Bade 2001, in Litt).

The eastern prairie fringed orchid requires full sun for optimum growth and reproduction, and therefore is limited to habitats dominated by herbaceous species. Encroachment of woody vegetation is a threat to many populations. Populations are managed by using dormant season prescribed burning, and dormant season herbicide applications. The orchid populations seem to fluctuate greatly from year to year, and occasionally disappear. Though the orchid is adapted to dormant season disturbance, damage to the plants during the growing season may prevent sufficient food storage to produce a flowering bulb for the following year, and may prevent seed set if the flowering stalk is damaged. The seed capsules each contain thousands of minute seeds that are dispersed by wind (USFWS 1999).

The Service will consider removing the eastern prairie fringed orchid from the List of endangered and threatened species when 22 highly viable populations are distributed across the range of the species. Currently only six highly viable populations exist. The recovery plan identifies the Grant Creek, Will

County population of the orchid as being of moderate viability due to a small population size, small habitat patch size, and the habitat being in a late successional stage. Increasing the habitat area and population size should increase the viability ranking for this population (USFWS 1999).

Environmental Baseline

The leafy prairie clover occurs in small numbers on Midewin National Tallgrass Prairie in dolomite prairie (Ulaszek et al. 2002). The dolomite prairie potentially suitable for the leafy prairie clover on Midewin was recently damaged by inadvertent filling and construction traffic stemming from an adjacent industrial development, and unauthorized herbicide spraying along a railroad. These actions fall under the purview of a permit issued by the U.S. Army Corps of Engineers under their authority as described in section 404 of the Clean Water Act. The Corps has indicated that it intends to reinitiate section 7 consultation on these actions (Abrant 2002, pers comm.).

The eastern prairie fringed orchid occurs immediately adjacent to Midewin on property owned by the Illinois Department of Natural Resources, where individual plants occur approximately 100 feet from Midewin's boundary. The orchid is not known to occur on Midewin at the present time (Ulaszek et. al. 2002).

Effects of the Proposed Action

In terms of potential adverse affects to federally listed species, the Service is more concerned about efforts to manage occupied habitat than efforts to restore altered areas. Some proposed management techniques could adversely affect individual plants, though overall the effect should be to increase populations of both plants.

The leafy prairie clover should benefit from prescribed burning, because burning keeps the habitat open, removes duff, and may create microhabitats suitable for seed germination. However, plants are killed by frost heave, and the recovery plan for the species indicated that fall prescribed burns may increase frost heave. However, Ms. DeMauro (2002, pers comm.) indicated that frost heave may just be more visible following fall burns, and that fall burns may not lead to an increase in frost heave. Will County Forest Preserve sites are burned on a rotational basis and burning is done both in the spring and in the fall. Under this management, the total number of plants over the last several years has ranged between 1000 and 2500 plants.

The Forest Service proposes to gradually phase out agricultural activities, and no listed species inhabit areas currently used for agriculture. Therefore, cessation of agricultural activities will not affect listed species at Midewin.

The construction of trails could potentially remove eastern prairie fringed orchid or leafy prairie clover individuals. Members of the public using these trails could intentionally or accidentally harm individual plants as well. However, the Forest Service proposes to carefully place new recreational trails at least 25 yds away from known individuals of the leafy prairie clover and the eastern prairie fringed orchid, and to close trails within 0.25 miles of blooming individuals. The prairie clover is not known to be attractive to plant collectors. The eastern prairie fringed orchid could conceivably be sought by orchid fanciers, but is extremely difficult to locate unless it is in bloom, and the person trying to find the plant is close enough to actually see it. Closing trails within 0.25 miles of blooming orchids should reduce the chances that plants will be harmed by recreating members of the public.

The Forest Service does not currently plan (i.e., in the next 3-5 years) to allow grazing in dolomite prairie. In areas that may be inhabited by the eastern prairie fringed orchid, the Forest Service would search the area for plants when the orchid is in bloom, and then construct fences to keep livestock at least 0.125 miles from known plants. Though non flowering plants would likely be missed and it is possible that some eastern prairie fringed orchid plants would exist outside of the fenced areas, other individuals should be protected. In addition, the grazing would help reduce the overall ground cover, and may reduce competing species, thereby improving overall habitat conditions for the orchid.

The Forest Service proposes to use contact herbicides to control alien and native invasive species. Such invasive species, if left uncontrolled, may render the habitat unsuitable for the eastern prairie fringed orchid and the leafy prairie clover. They have proposed measures to protect individual plants. The Forest Service would use wipe type applicators and other methods to reduce the chances of non-target species being affected. In some cases individual eastern prairie fringed orchid or leafy prairie clover plants would be covered to prevent contact with herbicides. Staff applying the herbicides would be trained on the identification of the leafy prairie clover, eastern prairie fringed orchid, other sensitive species, and the target alien invasive weeds. No pre-emergent herbicides would be used. The use of herbicides is the only effective method known to control invasive woody brush such as common buckthorn (*Rhamnus cathartica*) or glossy buckthorn (*R. frangula*), and is the most effective method known to control reed canary grass (*Phalaris arundinacea*). Thus the use of herbicides is necessary to achieve the Forest Service's goals, and overall should improve conditions for the two federally listed plants.

Prescribed burning is used through out the upper mid-west to manage prairies. Orchid sites sometimes benefit from dormant season burns, and the subsurface tuber is not harmed by fires. The Forest Service proposes to burn no more than 50 percent of the habitat occupied by the leafy prairie clover, and only burn before April 30 or After October 15 of any given calendar year. Thus, the Forest Service has included adequate safeguards to protect young leafy prairie clover plants.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to this proposed action or are beyond the scope of this biological opinion (e.g., future consultations on specific projects whose impacts were not fully addressed by this opinion; future consultations on the granting of rights-of-way across Midewin, etc.) are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Because the action area considered in this biological opinion is federally owned, and all actions will require review to ensure that their impacts were addressed by this opinion, and may require separate consultation pursuant to section 7 of the Act, there are no cumulative effects.

Conclusion

The leafy prairie clover currently occurs in Alabama, Tennessee and Illinois. The recovery plan identified the Joliet Army Arsenal (portions are now the Midewin National Tallgrass Prairie) as a potential recovery site for one of three populations required in Illinois before the species may be down listed to threatened. The actions proposed by the Forest Service make it more likely that the action area will become a recovery site for this species, although individual plants may be harmed by some actions proposed (e.g., trail construction, herbicide application). The safeguards to protect this species proposed by the Forest Service make it extremely unlikely that sufficient number of individuals will actually be harmed to cause further decline in the species status. In actuality, the overall status of the species should improve as a result of implementing the Forest Service's management plan.

The eastern prairie fringed orchid is currently known from 59 populations mostly located in Wisconsin, Illinois, Michigan, and Ohio. Midewin is adjacent to the Grant Creek orchid population owned by the Illinois Department of Natural Resources. That population is currently considered to be of moderate viability. Increasing both the habitat patch size and the population size should increase the viability of this population. The Forest Service's proposed large scale mesic prairie restoration may result in the Grant Creek population achieving a high viability rating. Some proposed actions could harm individual plants (e.g., grazing, herbicide application, trail construction and use). However the Forest Service has developed safeguards to minimize the chances of that occurring.

It is our Biological Opinion that the proposed action is not likely to jeopardize the continued existence of the leafy prairie clover or the eastern prairie fringed orchid. If successful, the implementation of the Forest Service's management plan should contribute to the recovery of these two species.

Conservation Recommendations:

1) We recommend that the Forest Service set up permanent demographic monitoring plots for a subset of the population to monitor the impacts of prescribed burning and other management tools. As part of this demographic monitoring program, the Forest Service should monitor reproduction of these species. If there is a declining trend, then the Forest Service should monitor pollinator visitation and pollinator populations (among other factors) to determine the cause of these declines.

2) We recommend that the Forest Service monitor recreational use of sensitive habitats and enforce restrictions to stay on trails.

3) We recommend that the Forest Service carefully monitor the results of management techniques, and make changes based on the results of monitoring.

Reinitiation - Closing Statement

This biological opinion covers actions reasonably anticipated by the Midewin National Tallgrass Prairie Land and Resource Management Plan, and is therefore programmatic in nature. When site specific projects are developed, the Forest Service should evaluate and document in writing whether impacts to listed species have been fully addressed in this programmatic consultation, and reinitiate consultation if impacts were not fully addressed and a listed species may be affected (positively or negatively) by the proposed action. The Forest Service should seek the concurrence of the Service in its determinations. Projects whose scope and impacts are consistent with this opinion would be tiered to this opinion. The Service would send the Forest Service appropriate documentation on how the projects were addressed by this programmatic opinion, along with any required findings. The Forest Service does not need to seek the concurrence of the Service for projects that would have no effect on a listed species (e.g., maintenance of existing roads or signs located outside of potentially suitable habitat).

As provided in 50 CFR § 402.16, reinitiation of consultation is required if: (1) new information or monitoring reveals effects of the continued implementation of the Prairie Plan and projects predicated upon it may affect the listed species in a manner or to an extent not previously considered in this opinion; (2) the continued implementation of the Prairie Plan and projects predicated upon it is subsequently modified in a manner that may cause an effect to Federally listed species not considered in this opinion; (3) a new species, which occurs on or could be affected by actions on Midewin, is added to the List of endangered and threatened species; (4) critical habitat is designated for a listed species on Midewin National Tallgrass Prairie; (5) additional listed species are discovered or proposed for restoration on Midewin; (6) the listed species expand from their current locations into new locations not specifically addressed in this opinion; or (7) the Forest Service proposes management techniques not addressed in this opinion (e.g., grazing in dolomite prairie, different

methods to control herbicides, removing drain tile near listed species, etc.), which may affect federally listed species.

Thank you for your interest in the recovery of these two listed species. If you have any questions regarding this biological opinion, please contact Ms. Karla Kramer at (847) 381-2253 ext. 230.

Sincerely,

John D. Rogner

John D. Rogner
Field Supervisor

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