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Endangered and Threatened Wildlife and Plants; Final Revised Critical Habitat for Hine's Emerald Dragonfly (*Somatochlora hineana*); Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R3–ES–2009–0017]
[MO 92210–0–0009–B4]

RIN 1018–AW47

Endangered and Threatened Wildlife and Plants; Final Revised Critical Habitat for Hine's Emerald Dragonfly *(Somatochlora hineana)*

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are designating critical habitat for the Hine's emerald dragonfly (*Somatochlora hineana*) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 26,531.8 acres (ac) (10,737 hectares (ha)) in 37 units fall within the boundaries of our critical habitat designation. The critical habitat units are located in Cook, DuPage, and Will Counties in Illinois; Alpena, Mackinac, and Presque Isle Counties in Michigan; Crawford, Dent, Iron, Phelps, Reynolds, Ripley, Washington, and Wayne Counties in Missouri; and Door and Ozaukee Counties in Wisconsin.

DATES: This rule becomes effective on May 24, 2010.

FOR FURTHER INFORMATION CONTACT: For general information regarding this finding, contact the Field Supervisor, Chicago Ecological Services Field Office, 1250 S. Grove, Suite 103, Barrington, IL 60010 (telephone: 847-381-2253; facsimile: 847-381-2285). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Background

It is our intent to discuss only those topics directly relevant to the designation of critical habitat in this rule. We received no new information pertaining to the species' life history, ecology, or habitat following our 2007 final critical habitat designation. For information on the Hine's emerald dragonfly, please refer to our proposed critical habitat rule, which we published in the **Federal Register** on July 26, 2006 (71 FR 42442); the final listing determination, published on January 26, 1995 (60 FR 5267); or the Hine's Emerald Dragonfly (Somatochlora hineana, Williamson) Recovery Plan (Service 2001).

Previous Federal Actions

For information about previous Federal actions for the Hine's emerald dragonfly, see our proposed critical habitat rule for the species (71 FR 42442). On March 20, 2007, we published a notice that included revisions to the proposed critical habitat, announced the availability of the draft economic analysis (DEA), and reopened the public comment period (72 FR 13061). Because we needed to meet our settlement agreement's deadline of submitting a final rule to the **Federal Register** by May 7, 2007, we reopened the comment period for only 14 days. Subsequently, we negotiated a new settlement agreement with the plaintiffs (The Center for Biodiversity *et al.*) to submit a final rule to the **Federal Register** by August 23, 2007. Therefore, on May 18, 2007, we published an additional **Federal Register** document that reopened the comment period on the proposal, revisions to the proposal, and the draft economic analysis for an additional 45 days (72 FR 28016). That comment period ended on July 2, 2007. On September 5, 2007, we published a final rule in the **Federal Register** (72 FR 51102) designating 13,221 ac (5,350 ha) as critical habitat for the Hine's emerald dragonfly in Illinois, Michigan, Missouri, and Wisconsin.

On March 10, 2008, six parties (Northwoods Wilderness Recovery, The Michigan Nature Association, Door County Environmental Council, The Habitat Education Center, Natural Resources Defense Council, and The Center for Biological Diversity) filed a complaint against the Department of the Interior and the Service (*Northwoods Wilderness Recovery et al.* v. *Dirk Kempthorne* 1:08–CV–01407) challenging the exclusion of U.S. Forest Service lands from the 2007 final designation of critical habitat for the dragonfly. On February 12, 2009, the U.S. District Court for the Northern District of Illinois approved a settlement agreement in which the Service agreed to a remand, without voiding the critical habitat designation, in order to reconsider the Federal exclusions from the designation of critical habitat for the Hine's emerald dragonfly. Per that settlement, on April 22, 2009, we published a notice (74 FR 18341) reopening the comment period on the July 26, 2006, proposed critical habitat (71 FR 42442). Upon publication of that notice, the July 26, 2006, proposed critical habitat designation of the U.S. Forest Service lands in Michigan and Missouri was reinstated as proposed. Furthermore, until the effective date of this revised final critical habitat determination (see DATES), the existing designation of critical habitat for the Hine's emerald dragonfly remains in place and effective.

Summary of Comments and Recommendations Received

We requested written comments from the public on our proposed designation of critical habitat for the Hine's emerald dragonfly (71 FR 42442) and our draft economic analysis (72 FR 13061; 72 FR 28026). We contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule. We also issued press releases and published legal notices in the *Daily American Republic, Kansas City Star*, *Ozaukee News-Graphic, St. Ignace News, Door County Advocate*, *Alpena News, Ozaukee Press*, and *Joliet Herald News* newspapers. We held one public hearing, on August 15, 2006, in Romeoville, Illinois.

During the comment period that opened on July 26, 2006, and closed on September 25, 2006 and the comment period that opened April 22, 2009 and closed on June 22, 2009, we received 40 comments directly addressing our proposed critical habitat designation: 6 from peer reviewers, 4 from Federal agencies, and 30 from organizations or individuals. During the comment periods from March 20, 2007, through April 3, 2007, and May 18, 2007 through July 2, 2007, we received 16 comments directly addressing the proposed critical habitat designation and the draft economic analysis. Of these latter comments, 2 were from Federal agencies and 14 were from organizations or individuals.

In total, 23 commenters supported the designation of critical habitat for the Hine's emerald dragonfly and 10 opposed the designation. Ten commenters, including three peer reviewers, supported exclusion of one or more particular units as identified in the proposed rule, and 7 commenters opposed exclusion of one or more particular units. Eighteen letters were either neutral or expressed both support of and opposition to certain portions of the proposal. Responses to comments are grouped by those received from peer reviewers, States, and the public, in the following sections. We grouped public comments into 10 general issues specifically relating to the proposed critical habitat designation and draft economic analysis. We have incorporated comments into this final rule as appropriate. We did not receive any requests for additional public hearings.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), and current Department of the Interior guidance, we solicited expert opinions from seven knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, or conservation biology principles. We received responses from six of the peer reviewers. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding Hine's emerald dragonfly critical habitat. We have addressed peer reviewer comments in the following summary and have incorporated them into this final rule as appropriate.

The peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and suggestions to improve this final critical habitat rule. Three of the six peer reviewers specifically stated that they support our proposed designation of critical habitat, while one expressed concern that designation may be premature because the population status of the Hine's emerald dragonfly in Missouri and Michigan is not well understood. Information provided by peer reviewers included suggestions for conducting research on dispersal and habitat use that would better inform future Hine's emerald dragonfly conservation efforts, as well as comments on how to improve critical habitat rules. Peer reviewers also made suggestions and provided language to clarify biological information or make the final rule easier to understand. Several of the peer reviewers provided editorial comments that we have addressed in the body of this rule.

Peer Reviewer Comments

(1) *Comment*: One peer reviewer (as well as three other commenters) suggested that we should designate foraging areas (farmlands, pastures, old fields, ponds, and/or surface waters) as critical habitat.

Our response: Although adult Hine's emerald dragonflies have been observed foraging near or in these types of habitats, the importance of such habitats in meeting the daily dietary needs of the dragonfly is still unknown. Foraging and dispersal areas are present in many of the designated critical habitat units, as they contain open areas that serve as corridors that are used by the dragonfly. In most of the units, foraging and dispersal areas are not limiting factors for the species.

(2) *Comment*: One peer reviewer suggested that we use caution when accepting identifications of early instar (defined as the developmental stage on an insect between molts of its exoskeleton) larvae.

Our response: We agree that identifications of Hine's emerald dragonfly based on early instar larvae should be made with caution. Early instar larvae have been used in Missouri to document the presence of the species at new localities or to identify new Hine's emerald dragonfly breeding habitat. Identifications of early instar larvae were made by the two leading experts on *Somatochlora* species larvae: Dr. Tim Cashatt and Mr. Tim Vogt. These two experts wrote the definitive key to final instar larvae for the genus (Cashatt and Vogt 2001, pp. 94–97). These experts have also positively identified early instar larvae of Hine's emerald dragonfly by examining greater numbers of larval specimens than any other recognized dragonfly larvae expert. Cashatt and Vogt (2001, pp. 94–97) confirmed early instar larvae identification by rearing some individuals to a final stage; this allowed preliminary determinations of the species to be confirmed. Identification of early instar larvae by these two recognized experts constitutes the best scientific data available.

(3) *Comment*: One peer reviewer commented that when the species' recovery plan was developed, the network of sites in Missouri was not known and, had the sites been known, this may have led to different recovery criteria, which may have influenced the identification of critical habitat from a scientific perspective.

Our response: Different recovery criteria may have been developed for Hine's emerald dragonfly had more sites been known in Missouri at the time the recovery plan was drafted. However, such changes to the species' recovery criteria would not have influenced our decision regarding designation of critical habitat in Missouri. We based the exclusion of Missouri sites on: (1) Current implementation of State management plans for the species; and (2) Missouri Department of Conservation (MDC) implementation of successful conservation efforts on some private lands. The existing successful partnerships among State agencies and private property owners could be negatively affected by a critical habitat designation, and this could jeopardize future cooperative conservation efforts. We used all available data and information—including both the recovery plan and additional information gained since its development—to determine which areas are essential to the conservation of the Hine's emerald dragonfly. We will work with the Hine's Emerald Dragonfly Recovery Team in reevaluating recovery criteria when the overall status of the species is reexamined in a 5–year review.

(4) *Comment*: One peer reviewer commented that he is reluctant to assume that Hine's emerald dragonflies do not forage and roost in the forest canopy.

Our response: Hine's emerald dragonflies will use trees for roosting. Researchers have also observed Hine's emerald dragonflies foraging along the forest edge. Given that members of the genus *Somatochlora* commonly forage at treetop level along roads and utility rights of way, and dragonflies often perch in vegetation to avoid predation during their sensitive teneral stage (soft-bodied stage immediately after molt), it is possible that Hine's emerald dragonflies may utilize forest canopies to a greater extent than previously observed. There is no available information, however, to define the degree to which Hine's emerald dragonflies may use these habitats for foraging and roosting. We based our criteria to include up to 328 feet (ft) (100 meters (m)) of closed canopy forest around breeding habitat on observations made by one of the leading species experts (T. Vogt, Missouri Department of Natural Resources, in litt. March 2007); this is the best information we have available to date.

(5) *Comment*: One peer reviewer commented that in Missouri the small populations in identified sites may be elements of larger metapopulations. These individual elements, because they are so small, are probably extirpated fairly frequently even in the absence of human disturbance. For this reason, it would seem prudent to conserve suitable, but currently unoccupied sites, since dispersal to such unoccupied sites must be important to the maintenance of the metapopulation. This does not necessarily mean that such sites should be designated as critical habitat for the species.

Our response: While the Hine's Emerald Dragonfly (*Somatochlora hineana* Williamson) Recovery Plan recognizes that the patchy nature of habitat in Illinois and Wisconsin suggests a metapopulation structure in those two States, only three sites were known in Missouri at the time the Recovery Plan was written (Service 2001). We do not have adequate information to determine if the small populations of Hine's emerald dragonflies in Missouri are part of one

or more metapopulations. Such a hypothesis is best tested by conducting various genetic analyses. Genetic analyses of populations in Missouri were initiated in the summer of 2007; however, they are not yet complete. Until these genetic analyses are completed, it is difficult to assess the status of the Missouri populations of Hine's emerald dragonfly in relation to the overall distribution of the species. DNA analyses initiated by the Illinois Museum are ongoing, and final observations are forthcoming and to be published in a peer-reviewed journal.

(6) *Comment*: One peer reviewer stated that the rationales for exclusions are not easy to understand.

Our response: In this rule, we have attempted to further clarify the rationale for our exclusions and why these exclusions are important to the overall conservation of the Hine's emerald dragonfly (see "Exclusions Under Section 4(b)(2) of the Act" section).

(7) *Comment*: One peer reviewer commented that exclusion of the Missouri units based solely on the fact that the habitat is surrounded by contiguous forest does not seem justified. Without knowing anything about the dispersal ability of the species, that fact alone seems insufficient to conclude that such populations may not be important in the long-term survival of the species in Missouri.

Our response: We have described our reasons for excluding Missouri units from the critical habitat designation under the Exclusions section of this rule. We excluded those areas on the basis of existing conservation plans and partnerships, and not based on the fact that most sites are surrounded by contiguous, closed canopy forest.

(8) *Comment*: One peer reviewer suggested that we should include unoccupied habitat in areas that may serve as dispersal corridors or establish connectivity between sites in the critical habitat designation.

Our response: We attempted to include areas that will serve as dispersal corridors that are contiguous with occupied habitat within our critical habitat units. However, little is known about what factors are essential to enable the species to disperse. We designated areas that were occupied at the time of listing and not now occupied in order to allow for connectivity between units. We also included habitat out to the average dispersal distance of the species in order to maintain this dispersal capability. Not all unoccupied sites may be suitable for dispersal corridors, however. We do not have enough scientific information to assess the importance of dispersal corridors to the conservation of the species. There are multiple reasons why Hine's emerald dragonflies may be absent from sites, even those that have all the necessary habitat requirements. Another peer reviewer noted that reasons such as interspecific interactions (for example, with other dragonflies) could preclude Hine's emerald dragonflies in sites that have all the necessary habitat requirements. For example, in Missouri, the distribution of the Hine's emerald dragonfly may be dictated in part by the presence of large dragonfly predators that have been observed preying on individuals of the same genus (*Somatochlora*) as the Hine's emerald dragonfly.

(9) *Comment*: One peer reviewer stated that designation of critical habitat for the Hine's emerald dragonfly is premature because of the lack of knowledge on the status and population structure of the Hine's emerald dragonfly.

Our response: The Service was under a court order to complete the original designation of critical habitat and submit a final rule to the **Federal Register** by August 23, 2007. We were also under a court order to complete this revised critical habitat determination by April 15, 2010. Consequently, we proceeded with the critical habitat process for this species based on the best scientific data that were available at the time, as required by the Act.

(10) *Comment*: One peer reviewer asked if management plans exist for any of the areas in Wisconsin identified in the proposal.

Our response: Lands owned by resource and conservation agencies in proposed critical habitat units in Wisconsin do not have existing management plans that specifically address the Hine's emerald dragonfly. Those entities with conservation plans for their properties include protective measures to conserve wetland habitat, and thereby help to conserve the dragonfly. Those plans, however, do not identify conservation measures for the Hine's emerald dragonfly.

(11) *Comment*: One peer reviewer recommended that research be conducted on dispersal, particularly female dispersal, and that we consider radio-tracking individual dragonflies, as has been done with Aeshnids (darners).

Our response: Research on dispersal is a task identified in the Hine's Emerald Dragonfly (*Somatochlora hineana* Williamson) Recovery Plan (Service 2001, p. 48). The Hine's Emerald Dragonfly Recovery Team and species experts are assessing the feasibility of using a similar methodology as was used to radio track Aeshnids.

General Comments Received During the 2006, 2007, and 2009 Comment Periods

Issue 1: Biological Justification and Methodology Used.

(1A) *Comment*: Several individuals commented that the July 26, 2006 proposal (71 FR 42442) and the April 22, 2009 proposal (74 FR 18341) did not address groundwater recharge areas.

Our response: In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining what areas are critical habitat, we shall consider those physical and biological features that are essential to the conservation of the species. Some groundwater recharge areas may be included within a critical habitat unit if they co-occur with the biological and physical features essential to the conservation of Hine's emerald dragonfly. Any Federal actions that may affect critical habitat, irrespective of the action's location inside or outside of a critical habitat unit, are subject to section 7 consultation, under the Act. This would include Federal actions that affect groundwater recharge to any of the critical habitat units.

(1B) *Comment*: One individual expressed that we did not show that the best available scientific data support the inclusion of the rail line in Illinois Units 1 and 2.

Our response: The rail line in Illinois Units 1 and 2 does not contain the primary constituent elements and, therefore, does not meet the definition of critical habitat. Therefore, we have not designated it as critical habitat. As stated in the proposal and in this final rule, critical habitat does not include human-made structures existing on the effective date of a final rule and not containing one or more of the primary constituent elements. However, work performed on the rail line would be subject to the provisions of section 7 of the Act if that work could have adverse effects on designated critical habitat or the dragonfly.

(1C) *Comment*: One individual stated that it is not clear whether Wisconsin Unit 11 (containing Kellner's Fen) is sufficiently inclusive, and that this unit should also include the surrounding transitional habitat that may also contain primary constituent elements.

Our response: In designating critical habitat at Kellner's Fen, we used the same criteria we used for all the other units. We designated areas containing the primary constituent elements for the dragonfly, including wetland (fen) areas, shrubby areas, and 100 m into adjacent forest habitat. The map in the **Federal**

Register is generalized, and does not show the habitat variations that actually exist within the unit.

(1D) *Comment*: One comment disputes the accuracy of the report's statement that adult dragonflies are active mid-June to mid-August.

Our response: According to the Recovery Plan (Service 2001), larvae begin to emerge as adult, possibly as early as late May in Illinois and late June in Wisconsin and continue to emerge through the summer (Vogt and Cashatt 1994; Mierzwa *et al.* 1997). The adults' known flight season lasts up to early October in Illinois (Vogt and Cashatt 1994) and to late August in Wisconsin (Vogt and Cashatt 1994). Fully mature adult Hine's emerald dragonflies can live at least 14 days and may live 4 to 6 weeks.

Issue 2: Procedural and Legal Compliance

(2A) *Comment*: Some commenters suggested that excluding Forest Service land was inappropriate as the Forest Service did not consult with the Service under section 7 of the Act. Two commenters mentioned a specific example, the Sprinkler Project on the Hiawatha National Forest, where they believed consultation was not completed. Further, the commenters suggested that designating critical habitat would ensure future consultation between the Service and Forest Service.

Our response: Because we are now designating critical habitat on Forest Service land in Michigan and Missouri, all requirements under section 7(a)(2) are applicable. The Forest Service consistently consults on projects that may affect listed species, including the Hine's emerald dragonfly. The Forest Service completed section 7 consultation on Mark Twain's and Hiawatha's Land and Resource Management Plans. Several other informal and formal consultations have also been completed, including consultation on the Sprinkler Project in 2006.

(2B) *Comment*: One individual commented that the proposed rule states that the conservation role of Hine's emerald dragonfly critical habitat units is to support "viable core area populations," but that the proposed rule did not provide sufficient information to allow commenters to determine whether the proposed units actually contain areas that support such Hine's emerald dragonfly populations.

Our response: "Viable" means capable of living, developing, or reproducing under favorable conditions. We have used the best scientific and commercial information available to determine what conditions are favorable to Hine's emerald dragonfly, and the proposal provided information on the physical and biological features essential to the conservation of the species. We identified areas that are known to contain these features, provided descriptions of the features in each unit, and are designating only those units that contain the features that are essential to the conservation of the species.

(2C) *Comment*: One commenter questioned the legality of the critical habitat designation in regards to takings.

Our response: The designation of critical habitat does not mean that private lands will be taken by the Federal government or that other legal uses will be restricted. We evaluated this rule in accordance with Executive Order (E.O.) 12630, and we believe that the critical habitat designation for the Hine's emerald dragonfly will not have significant takings implications. We do not anticipate that property values, rights, or ownership will be materially affected by the critical habitat designation.

Issue 3: Exclusions

(3A) *Comment*: Several commenters suggested that Michigan Units 1, 2, and 3 should not be excluded, because these units contain areas not covered by Federal or State management plans.

Our response: The entire acreage encompassed by Michigan Units 1 and 2, including some small areas of non-Federal land, were excluded from the previous Hine's emerald dragonfly critical habitat designation published on September 5, 2007. Michigan Unit 3 was not excluded under the previous designation. As of this rule, all of Michigan units 1, 2, and 3 are designated as critical habitat.

(3B) *Comment*: The Forest Plans for the Mark Twain and Hiawatha National Forests do not justify excluding these areas from critical habitat. Although the Forest Plan may address conservation of the Hine's emerald dragonfly, they would not provide for consultation with the Service on future Forest Service actions that may destroy or adversely modify the dragonfly's habitat. Furthermore, while the Service recognizes logging as a threat to the species, the Forest Service has recently proposed timber cutting to protect the species. Neither the Forest Service nor the Service has produced evidence that this logging proposed under the Hiawatha Forest Plan is likely to benefit the dragonfly.

Our response: Because we are now designating critical habitat on Forest Service land in Michigan and Missouri, all requirements under section 7(a)(2) of the Act are applicable. Section 7(a)(2) of the Act applies to any project funded or authorized by a Federal entity, including logging operations on National Forest land.

(3C) *Comment*: One commenter stated that excluding habitat on lands owned by the State of Missouri would lead to no net conservation benefit to the Hine's emerald dragonfly. Designating critical habitat would not harm our good working relationship with the MDC.

Our response: MDC owns and manages all fens on Missouri State lands with Hine's emerald dragonflies. The MDC currently implements various habitat management and conservation actions to sustain and enhance the species at these fens. Furthermore, MDC has recently updated its Conservation Area Plans and the Husman Fen Natural Area Plan to incorporate additional conservation measures for the Hine's emerald dragonfly that will ensure the long-term management and maintenance of fens. The benefits to the species resulting from conservation measures being implemented by MDC would exceed any benefit to the species gained from the designation of critical habitat. Additionally, in their comments on the proposal, MDC requested they be excluded from the critical habitat designation because they anticipate some negative effects of designation. Because of their implementation of management plans for the Hine's emerald dragonfly, we are able to accommodate this request. To provide additional conservation benefits to the species on state-owned and private land, MDC completed a comprehensive Hine's Emerald Dragonfly Recovery Plan for Missouri (Missouri Department of Conservation 2007f) (MDC Recovery Plan). The MDC Recovery Plan outlines numerous recovery objectives, conservation actions, and management recommendations necessary to maintain Hine's emerald dragonfly habitat. These guidelines will help facilitate the recovery of the species in Missouri.

(3D) *Comment*: One commenter expressed that the perception of public hostility does not justify excluding private property. That commenter believed that the lack of support from the general public was due to the Service's failure to properly educate private landowners on the minor impact of designating critical habitat on their property. The commenter stated that the exclusion of all private property in Missouri from critical habitat designation without a unit-by-unit consideration of conservation benefits and landowner amenability is arbitrary.

Our response: We have multiple examples where researchers have been denied access to private land to survey potentially new Hine's emerald dragonfly sites. In other cases, landowners who have documented Hine's emerald dragonflies on their property have been reluctant or apprehensive about taking advantage of multiple landowner incentive programs available to them due to false perceptions of critical habitat.

Service representatives, Hine's emerald dragonfly researchers, and personnel of the MDC's Private Land Services Division expended considerable effort in providing private landowners with information on the Hine's emerald dragonfly and outlining various landowner incentive programs. Despite the combined outreach efforts of multiple individuals, there is documented opposition by private landowners within the dragonfly's range in Missouri that is difficult to overcome. The designation of critical habitat on private property in Missouri would only exacerbate negative attitudes towards federally listed species. See 3I and 3K responses that talk more about management guidelines in a State recovery plan.

We considered the conservation benefits of designating critical habitat for each unit under private ownership, as well as the benefits of excluding the area from critical habitat. The Service weighed the benefits of each, and concluded, using the discretion afforded to the agency under the Act, that actions for the conservation of the species would be best realized if the lands were excluded. More discussion on this topic is covered under the "Exclusions Under Section 4(b)(2) of the Act" section.

(3E) *Comment*: One commenter expressed that Illinois Unit 2 should be excluded from the critical habitat designation, under section 4(b)(2) of the Act, because the substantial benefits of exclusion outweigh any potential benefits of designation and the exclusion will not result in the extinction of the species.

Our response: While the Service recognizes the cooperation of the landowners in Illinois Unit 2, formal conservation agreements or management plans have not been prepared for this unit and, therefore, the future management and protection of this unit are unknown. The landowners of this unit are in the very initial stages of developing a Habitat Conservation Plan for the species. This Habitat Conservation Plan, however, is not complete enough at this time to allow us to evaluate the conservation benefits to the species.

(3F) *Comment*: One commenter stated that Commonwealth Edison's right-of-way in Illinois Units 1-5 and 7 should be excluded because designation of these areas would put Commonwealth Edison's normal operations at severe risk. Another commenter expressed that in Illinois Units 1 and 2, the generating station, rail line, and land adjacent to those structures should be excluded.

Our response: To the greatest extent possible, we avoided including developed areas containing buildings, rail lines, electrical substations, and other urban infrastructure within critical habitat units. Where we have not been able to map out these structures we have excluded them by text. As stated in this rule, critical habitat does not include human-made structures existing on the effective date of a final rule not containing one or more of the primary constituent elements (see definition of "primary constituent elements" in subsequent section). Therefore, human-made structures including utility poles, power lines, rail lines, and the generating station are not included in the critical habitat designation. However, areas around the human-made structures that consist of habitat containing the primary constituent elements of Hine's emerald dragonfly habitat are included in the designation.

Although Commonwealth Edison has been a valued partner in the conservation of Hine's emerald dragonfly, and is one of the parties involved in the preparation of a Habitat Conservation Plan for the species, no management plans for their right of way currently exist.

(3G) *Comment*: Three commenters expressed that the life of a forest plan is likely shorter than the time it will take to recover the Hine's emerald dragonfly. They added that there is no guarantee that the forest plans would be in place or implemented in the future. Therefore, they question the exclusion of Forest Service land in Michigan and Missouri.

Our response: The intended cycle of National Forest plans is 10-15 years. The Mark Twain and Hiawatha National Forest Land and Resource Management Plans were approved in 2005 and 2006, respectively. As identified in the Hine's Emerald Dragonfly (*Somatochlora hineana* Williamson) Recovery Plan, anticipated recovery of the Hine's emerald dragonfly could occur as early as 2019 (Service 2001, p. iv). While we concur that it is likely that current management plans for the Mark Twain and Hiawatha National Forests will expire before the Hine's emerald dragonfly can be recovered, we believe that the track record of cooperation between us and the two national forests outlines the Forest Service's commitment to the conservation of federally listed species under sections 7(a)(1) and 7(a)(2) of the Act. Once the current plans have expired, we are confident that both the Mark Twain and Hiawatha National Forests will complete consultation on the new plans. These consultations will further ensure that actions outlined in future land and resource management plans will not jeopardize the continued existence of any federally listed species, including the Hine's emerald dragonfly. We believe that standards and guidelines established for the Hine's emerald dragonfly will continue to contribute to the conservation of the species until it is recovered and removed from the list of federally protected species. Despite the benefits realized from implementation of the various actions outlined in Forest Service LRMPs for these two national forests, we are designating critical habitat on Forest Service land because we believe the benefits of designating those areas outweighs the benefits of excluding those areas from designation.

(3H) *Comment*: One commenter expressed that we should exclude Illinois Units 1, 2, and 3 because of long-term stakeholder commitment and the Habitat Conservation Plan that is being written.

Our response: Though we are pleased with the progress made to date on the Habitat Conservation Plan, it is still far from complete, and too early to judge its ultimate outcome. At this early stage, the developing Habitat Conservation Plan is not complete enough for us to evaluate whether habitat for the Hine's emerald dragonfly would be appropriately managed. Generally we do not consider excluding an area from critical habitat based on a draft Habitat Conservation Plan until the conservation measures have been determined, an environmental analysis has been completed and released for public review, and we have determined that issuing the associated incidental take permit would not result in a jeopardy or adverse modification finding for the species or its critical habitat. Therefore, we are not excluding Illinois Units 1, 2, and 3 at this time.

(3I) *Comment*: One commenter concluded that there is no reasonable basis for excluding privately owned sites in Missouri and designating Illinois Units 1 and 2. Excluding units in Missouri suggests that similarly situated parties are being treated differently.

Our response: Threats identified for the Hine's emerald dragonfly on private

land in Missouri are addressed through close coordination among personnel with the MDC's Private Land Services Division or Regional Natural History biologists and private landowners. Additionally, MDC personnel work closely and proactively with the National Resources Conservation Service (NRCS) and the Service's Partners for Fish and Wildlife Program to initiate management and maintenance actions on privately owned fens occupied by the Hine's emerald dragonfly that benefit the species and alleviate potential threats.

One site on private property in Missouri is owned and managed by The Nature Conservancy through the implementation of a site-specific plan (The Nature Conservancy 2006, pp. 1–4) that maintains fen habitat. One site under private ownership is a designated State Natural Area that is managed by the MDC through a site-specific plan (Missouri Natural Areas Committee 2007). This plan ensures that the integrity of the fen is maintained (Missouri Natural Areas Committee 2007, pp. 3–29). Hine's emerald dragonfly sites on Missouri State-owned and private land will be further maintained by implementing management guidelines outlined in a State recovery plan that was recently completed (Missouri Department of Conservation 2007f). However, at this time there are no conservation plans in place for Illinois Units 1 and 2 that would guide the implementation of similar measures. In addition, Illinois Unit 1 is a publicly owned site.

(3J) *Comment*: One commenter was concerned with the exclusion of large areas of lands in Michigan and Missouri based solely on the existence of management plans. The commenter suggested that given the uncertainties surrounding funding and implementation, the Service should consider designating these areas. Another commenter opposed exclusion of Michigan Units because the Hine's emerald dragonfly is mobile, and designation of all possible habitat areas is necessary to support increased numbers of the species. Furthermore, the commenter suggested that, by excluding critical habitat areas, we spent more time and money on the designation process.

Our response: While available funding will likely impact the amount of Hine's emerald dragonfly conservation work that occurs in any one year, we are confident that the Forest Service will continue to place a high emphasis and priority on its obligation to contribute to the conservation of the species. In addition, State land management agencies in Missouri are committed to the implementation of recovery actions outlined in their management plans and the recently completed Missouri Hine's Emerald Dragonfly Recovery Plan (Missouri Department of Conservation 2007f). Because we are now designating critical habitat on Forest Service land in Michigan and Missouri, all requirements under section 7(a)(2) are applicable.

In evaluating which areas to exclude, we requested and reviewed management plans and other relevant information. This analysis was conducted for all of the Hine's emerald dragonfly habitat areas we identified as meeting the definition of critical habitat. For excluded units, more time was spent on reviewing pertinent information, addressing public comments, and incorporating public input than for designated critical habitat units. This, however, was not due to the exclusion process, but rather to the amount of pertinent information available for these units (management plans for private and State-owned lands in Missouri) and the large number of public comments associated with exclusion. The evaluation and incorporation of relevant information and public comment was a necessary part of our critical habitat designation.

(3K) *Comment*: One commenter requested that the Service provide an independent rationale why areas adjacent to Forest Service land that are on private property should be excluded.

Our response: In Missouri, we are excluding sites on private land adjacent to Forest Service land because the management and maintenance of these areas are covered through close cooperation between private land owners and the Missouri Department of Conservation in the implementation of recommendations outlined in the Missouri Hine's Emerald Dragonfly Recovery Plan (Missouri Department of Conservation 2007f).

Issue 4: Economic Issues

(4A) *Comment*: The proposed critical habitat rule states that "to the extent that designation of critical habitat provides protection, that protection can come at significant social and economic cost" (71 FR 42443). Two commenters contend that there is no evidence that social or economic costs apply to the Hine's emerald dragonfly critical habitat designation and that some private landowners have recognized that critical habitat designation poses no social or economic threat. Furthermore, the economic and social benefits of critical habitat designation are ignored.

Our response: The economic analysis evaluates the potential economic costs associated with critical habitat designation, and also discusses the benefits of critical habitat designation. Based on our economic analysis, estimated future costs associated with conservation efforts for the dragonfly in areas designated as critical habitat range from $11.0 million to $25.7 million, over the next 20 years, applying a 7-percent discount rate.

The published economics literature has documented that social welfare benefits can result from the conservation and recovery of endangered and threatened species. In its guidance for implementing Executive Order 12866, the Federal Office of Management and Budget (OMB) acknowledges that it may not be feasible to monetize, or even quantify, the benefits of environmental regulations due to either an absence of defensible, relevant studies or a lack of resources on the implementing agency's part to conduct new research. Rather than rely on economic measures, the Service believes that the direct benefits of the proposed rule are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking. Critical habitat designation may also generate ancillary benefits. Critical habitat aids in the conservation of species specifically by protecting the primary constituent elements on which the species depends. To this end, critical habitat designation can result in maintenance of particular environmental conditions that may generate other social benefits aside from the preservation of the species. That is, management actions undertaken to conserve a species or habitat may have coincident, positive social welfare implications, such as the preservation of open space in a region. While they are not the primary purpose of critical habitat, these ancillary benefits may result in gains in employment, output, or income that may offset the direct, negative impacts to a region's economy resulting from actions to conserve a species or its habitat. It is often difficult to evaluate the ancillary benefits of critical habitat. To the extent that the ancillary benefits of the rulemaking may be captured by the market through an identifiable shift in resource allocation, they are factored into the overall economic impact assessment. For example, if habitat preserves are created to protect a species, the value of existing residential property adjacent to those preserves may increase, resulting in a measurable positive impact. Ancillary benefits that affect markets are not

anticipated in this case and therefore are not quantified.

(4B) *Comment*: One commenter suggested that the proposal was premature and legally deficient because it lacked an economic analysis.

Our response: Under the Act, and clarified in our implementing regulations at 50 CFR 424.19, we are required to, "after proposing designation of [a critical habitat] area, consider the probable economic and other impacts of the designation upon proposed or ongoing activities." The purpose of the draft economic analysis is to determine and evaluate the potential economic effects of the proposed designation. In order to develop an economic analysis of the effects of designation critical habitat, we need to have identified an initial proposed critical habitat designation. Following publication of the critical habitat proposal for the Hine's emerald dragonfly, we developed a draft economic analysis of the proposed designation that was made available for public review and comment on March 20, 2007, for 14 days, and reopened for public review and comment on May 18, 2007, for 45 days. On the basis of information we received during the public comment periods, we may, during the development of our final critical habitat determination, find that areas we proposed are not essential, are appropriate for exclusion under section 4(b)(2) of the Act, or are not appropriate for exclusion. An area may be excluded from critical habitat if it is determined that the benefits of such exclusion outweigh the benefits of including a particular area as critical habitat, unless the failure to designate such area as critical habitat will result in the extinction of the species. We have not, however, excluded any areas from the final designation based on economic reasons.

(4C) *Comment*: One commenter expressed that Midwest Generation's rail line and immediately adjoining areas in Illinois Units 1 and 2 should be excluded from critical habitat based on economic impacts, and they provided an independent economic analysis of alternative coal delivery systems.

Our response: On March 20, 2007, we completed an economic analysis that addressed these issues. As stated above and in the proposed rule "critical habitat does not include human-made structures existing on the effective date of a final rule not containing one or more of the primary constituent elements." The rail line is not part of Illinois Units 1 and 2 because it was excluded by text from the proposal rule and from this final rule. Areas around the rail line that are not human-made but contain at least one primary constituent element are included. We determined that the relatively minor economic costs as described in the draft economic analysis do not justify excluding those areas from critical habitat.

(4D) *Comment*: One commenter expressed concerns about the effects of critical habitat designation on the future of the State snowmobile trail system in Door County, Wisconsin, and on improvements to, and installation of, new trails. Concerns include loss of the State trail corridor, which could bankrupt snowmobile clubs in the area, and loss of associated tourist revenue in Door County.

Our response: While the designation of critical habitat for the Hine's emerald dragonfly does not directly affect private landowners without a Federal nexus, it does alert them to the presence of an endangered species on their land and the need to ensure that their activities are consistent with the conservation of the species. Snowmobiling activity on upland areas in the winter will not affect the dragonfly, as adults are not flying in winter and the larval stage overwinters in crayfish burrows in wetlands. Construction and maintenance of snowmobile trails in upland locations at any time of year are not anticipated to affect the dragonfly. If construction and maintenance activities are planned in or near wetland areas occupied by the dragonfly, measures should be taken to preclude adversely affecting the wetlands or their hydrology. As we anticipate that snowmobiling activities will not be adversely affected by designation of critical habitat, we do not anticipate impacts to tourist revenues associated with snowmobiling in Door County.

(4E) *Comment*: One commenter stated that it was unclear from information in the economic analysis whether a determination had been made regarding exclusion of additional areas from the designation of critical habitat for all or some of the units in Illinois based on economic impact.

Our response: The purpose of the economic analysis is to identify and analyze the potential economic impacts associated with the proposed critical habitat designation for the Hine's emerald dragonfly. The economic analysis did not make a determination about any exclusions. The economic analysis is conducted to inform the Secretary's decision about exclusions. The final determination is made in this rule (see "Exclusions Under Section 4(b)(2) of the Act" section). Based on the information in the draft economic analysis and the comments received during the public comment period, we are not excluding any areas based on economic impacts.

(4F) *Comment*: One commenter asserts that there is little (if any) economic activity in Alpena, Mackinac, or Presque Isle Counties in Michigan. The commenter asserts that declining human populations in these counties is evidence of minimal economic activity.

Our response: The methodology used to obtain land values is discussed in Section 2.1 of the economic analysis, and the land values for each potential critical habitat units are presented in Exhibit 2-3. These values reflect the level of actual economic activity in these counties. The land in the three Michigan counties that coincides with the study area is valued at $1,430 per ac in Alpena County; $4,380 per ac in Presque Isle County; and $1,510 per ac in Mackinac County. The land value estimates for economic impacts in these counties (for units MI 3, MI 4, MI 5, and MI 6) were obtained from local zoning and tax assessor officials in these counties. The price of land in the present constitutes the expected value of current and potential future values of that land. Each of the proposed critical habitat units are near waterfront access and roads, which may make them valuable now or in the future.

(4G) *Comment*: Two comments state that the economic analysis fails to define an appropriate baseline, specifically: (1) The analysis of future conservation measures as co-extensive is unjustified; and (2) the inclusion of past costs associated with the proposed critical habitat as consequences of the critical habitat designation is erroneous.

Our response: (1) The economic analysis includes co-extensive costs because courts and the public have asked to see us display all of the costs of critical habitat, whether or not these costs are co-extensive with other causes. (2) The economic analysis explains why past costs are included in the introduction of Chapter 1. The retrospective analysis of past costs is included to provide context for future costs, and in some cases to help predict them. The Service is not suggesting that these costs are a result of the critical habitat designation. Reporting of past costs is also reviewed in Section 1.4 of the economic analysis, where their inclusion is justified on the basis that past costs may have contributed to the efficacy of the Act in that area.

(4H) *Comment*: Two comments state that the economic analysis does not include benefits in the analysis. The un-quantified benefits they list are: Protection of ecosystem services;

increased recreational and wildlife opportunities; reduced flood risks; concurrent conservation of other species; enhanced groundwater recharge; mosquito reduction; existence value of the dragonfly; protection of other species; wetland protection; decreased use of pesticides, chemicals, and herbicides; and potentially higher property values. One of the comments provides testimony of landowners who want to preserve the dragonfly on their property as evidence of existence value. This comment then proceeds to list several non-use valuation techniques. Another comment argues that the benefits should be expressed in monetary terms rather than in biological terms.

Our response: Potential benefits from critical habitat designation are discussed in Section 1.4 of the economic analysis, which recognizes the valuation methodologies discussed by the commenter. The section then describes the policy of the Service whereby benefits are expressed in biological terms. This section also discusses how ancillary benefits are not expected in the case of the Hine's Emerald Dragonfly. The OMB has acknowledged that it may not be feasible to monetize or quantify benefits because there may be a lack of credible, relevant studies, or because the agency faces resource constraints that would make benefit estimation infeasible (U.S. OMB, "Circular A-4," September 17, 2003, available at *http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf*.).

(4I) *Comment*: One comment states that the economic analysis does not explain how the results of the analysis will be used in the critical habitat designation process.

Our response: In the introduction to Chapter 1, the Framework for Analysis states that the economic analysis will be used to weigh the benefits of excluding particular proposed critical habitat areas against the benefits of including them.

(4J) *Comment*: One comment states that the economic analysis does not consider the effects of other land use regulations that may affect how land can be developed or used, and that value losses attributed to critical habitat designation may be improperly attributed.

Our response: Land use regulations and how they affect land values are discussed in Section 2.1 of the economic analysis, in the context of Exhibit 2-3. First, the analysis explains that present land values will reflect the opportunities for development of that land. In this way, the present value of land incorporates all current and expected future regulatory constraints upon land use.

As an illustration, consider three identical parcels, one which housing can be built on with certainty, one which may or may not be subject to regulatory constraints that prohibit the construction of housing, and one where housing construction is absolutely prohibited. The price of the parcel where housing can be built (with certainty) will incorporate the option value for that housing and will sell for the highest price. The parcel where housing may or may not be built due to uncertainties about future regulation will sell for less than the parcel on which housing can be built with certainty, but will sell for more than the parcel where no housing can be built. The market price for land is net of the expected effect of current or future regulations. As described in Section 2.1 of the economic analysis, the GIS process for determining land values took into account zoning regulations and ownership types before determining land values from tax parcel records and interviews with zoning and planning officials. Impacts in this analysis are predicted using the best publicly available data for reasonably foreseeable land uses.

(4K) *Comment*: One commenter argues that the assumption that the value of land is immediately lost is erroneous because there is imperfect information in markets.

Our response: Section 2.1 of the economic analysis provides an explanation of how real estate markets work, and how current prices are the market's best prediction of future land values. It is correct that all consumers are not perfectly informed about products in a marketplace. In the real estate market, a lack of knowledge can result in a higher or lower property value. In the case of a newly regulated market, this would mean that buyers would still be willing to pay too much for the property.

The goal of the analysis in Section 2.1 is to predict the market equilibrium outcome. Limited information among buyers may cause them to pay too much for the property in the short run, but once the market is informed, everyone will pay the true (lower) market equilibrium value. There are many studies that have empirically shown that, though there may be imperfect information among some potential buyers, real estate markets respond quickly to changes in land use regulation (Kiel 2005; Guttery *et al.* 2000). The assumptions used in this analysis are based on the best available information.

(4L) *Comment*: One comment states that the economic analysis improperly inflates the lost value of development because including all land values as lost development values assumes that these lands are certain to be developed, and there is no certainty that the land will be developed.

Our response: Section 2.1 of the economic analysis addresses this in its discussion of how real estate prices adjust to expectations about future property uses. This analysis does not assume that all lands are certain to be developed. The present price per parcel of land incorporates the expected value of potential current and future uses of that land, regardless of when, or if, the land is ever developed. If current and potential uses are taken away, or if the quality of the land declines, the price of the land parcel will decrease (Quigley and Rosenthal 2005; Kiel and McClain 1995). Even the perception that the quality of the land may change can affect real estate values (Kiel and McClain 1996). Land that can be developed will command a higher price because it could be developed (even if it is never developed), and it is that expected value that the analysis considers.

(4M) *Comment*: One comment states that the economic analysis fails to establish a proper baseline because it does not consider potential regulatory changes or changes in market demand. The comment does not specify what specific changes are likely other than potential changes due to global warming or peaked oil production. A similar comment suggests that the assumption that a dolomite mine in Illinois Unit 2 will close because of critical habitat designation does not consider the impact of unknown future events.

Our response: Section 2.1 of the economic analysis reviews the data sources and analytic procedures used to assess the potential value losses over the next 20 years. These data are the best data that are publicly available and as such provide the basis for the prediction of impacts for reasonably foreseeable land uses under expected future conditions. While costs attributable to critical habitat may result from other factors, we cannot speculate about future events. We must use the best information available to us at the time of the analysis.

(4N) *Comment*: One comment states that the economic analysis estimates of lost property values are incorrect because the analysis does not consider changes to the value of properties outside the study area. The comment argues that if some parcels of land are removed from the market, then other

parcels of land will increase in value by the amount of the decrease in land value lost, so that the net economic effect will be zero change.

Our response:The potential for land use restrictions to affect neighboring properties is a valid concern. If there are no substitute parcels available in the vicinity of the parcel to be regulated (no other land that could be sold), then the price for land in that location will be driven up, and there will be a net gain for surrounding landowners, which could offset (fully or partially) the loss of value for the critical habitat units. However, if substitute parcels of land are plentiful in the vicinity of the critical habitat, then the consumer will have many options to choose from, and will not have to pay a higher price for substitute parcels, hence there will be no increase in surrounding land values (Quigley and Swoboda 2006).

Section 2.1 of the economic analysis discusses the possibility that the amount of land available for development in the vicinity of the study area could be very limited. However, the area of land under consideration for designation as well as the value of that land indicates that there will not be a significant impact on the local real estate market. That is, the amount of land that could be removed from development is not believed to be enough to increase surrounding land values. Results from sampling multiple listing services in Michigan and Wisconsin indicate that limiting residential development on vacant parcels will not have a substantial impact on the local land markets. That is, prices of surrounding parcels are unlikely to change and it is unlikely that there will be effects on the community's well-being, because there are many substitute parcels for the critical habitat units.

Sampling of Alpena County, Michigan found 146 parcels; the 50 sampled parcels had an average size of 24.5 ac, and an average asking price of approximately $68,000. Sampling of Mackinac County, Michigan found 229 parcels; the 50 sampled parcels had an average size of 5.8 acres, and an average asking price of approximately $90,000. Sampling of Presque Isle County, Michigan found 255 parcels; the 50 sampled parcels had an average size of 23 ac, and an average asking price of approximately $81,000. Sampling of the Door County (Wisconsin) Realtors Multiple Listing Service found approximately 550 vacant parcels of various sizes; the 50 sampled properties had an average size of 4.15 ac and an average asking price of approximately $66,000. This information is now included in Section 2.1.

(4O) *Comment*: One comment states that the limitation on resource extraction values in Illinois Unit 2 would not have had an effect because the losses in value would be offset by increases in values to competitors. The comment says that the analysis does not consider whether other companies will profit if Material Services Corporation cannot mine the parcel in critical habitat. The comment also argues that the DEA does not consider the fact that there may be lower cost companies that would profit more if the limitation were passed.

Our response: The magnitude of the dolomite deposits in Illinois Unit 2 relative to the rest of the Illinois dolomite market is discussed in Section 2.2.1 of the DEA. The annual revenue from the dolomite mine in Illinois Unit 2 is estimated to be $500,000. As noted in the report, the annual extraction of dolomite in Illinois has an approximate value of $470 million. Approximate dolomite revenues for Will County specifically (the county containing the mine in Illinois Unit 2) are $94 million. While losses of $500,000 per year to the mining company will be substantial, the expected revenues from this single mine are not significant relative to the entire market. That is, not allowing the dolomite in Illinois Unit 2 to be mined will not cause prices faced by competing companies to change; competitors will make no offsetting welfare gains (Just *et al.* 2004).

The commenter suggests that other companies may be able to compensate for decreased mining activity in Illinois Unit 2 by increasing operations at other facilities, and that there will be no net loss to society. The commenter is correct that any shortfall due to the mine being unable to operate will likely be made up by from other places (especially since the magnitude of the mine is small relative to the overall market). There will still be, however, the lost resource value for the company that is not allowed to mine this specific property.

The comment also contends that another mine may have lower costs, and that increased operations at that mine may be more efficient. At this time, there are no publicly available data concerning different costs structures for dolomite mining companies.

(4P) *Comment*: One comment states that the DEA does not consider alternative uses for the land in Illinois Unit 2 if the mine is not allowed to operate. The comment suggests that there might be wildlife viewing values for the property, or that the limitation on the mine would make nearby house values increase.

Our response: The commenter makes a valid point: Alternate land uses are not considered in this estimation for this proposed unit. In section 2.2.1 of the DEA, the analysis reports the mitigation costs of conservation that would be required to offset mining activities as well as the value lost if mining is not allowed. If mining is not allowed, there may be other uses for the property, but the values of the uses will be negligible compared to the lost mining resource value. It is unlikely that there could be significant economic benefits from preserving this parcel from mining. Visual inspection of Exhibit 1 in Appendix F shows that Illinois Unit 2 is located in an industrial corridor. In fact, the area proposed for the mine is surrounded by previously mined areas and industrial or transportation facilities. These location specifics make it unlikely that residential property values would be increased if the mine does not operate; there are no houses nearby and the effect of the industrial corridor that the mine is a part of will have a value-dampening effect. There is not likely to be any increase in wildlife viewing values from a critical habitat designation, as the designation does not make any private land available to the public for wildlife viewing, nor does it increase the ability of the public to view wildlife on public lands where such viewing would be available even absent the designation.

(4Q) *Comment*: One comment states that the economic analysis fails to include other alternatives to deep water wells as potential means to offset decreases in the water table. This comment argues that water conservation measures and storm water conservation regulations should be included as alternative water management strategies in the analysis.

Our response: Section 3.1 of the DEA describes the threat of water depletion and Section 3.1.1 discusses residential consumption and the methodology that was taken to calculate estimated costs for deep aquifer well drilling. The section contends that one potential remedy for depletion of groundwater levels (and subsequent habitat impacts) is to drill municipal wells into the deep aquifer to meet current and future water demands, as discussed by the Service. Other adaptive behaviors may be feasible, but there are no publicly available data available to model them.

(4R) *Comment*: One comment states that the estimation of costs to drill deep aquifer wells assumes that these wells would not be drilled for population

increases if critical habitat designation did not occur; and thus their inclusion inflates the cost estimates.

Our response: The argument that deep aquifer wells may be drilled regardless of the habitat designation is valid. The analysis does assume that new wells will be drilled in response to population growth. However, the analysis states that the presence of critical habitat could prompt new wells to be drilled into the deep aquifer instead of the upper aquifer. The estimated impact due to critical habitat designation is the projected difference between the cost of deep and upper aquifer wells for future population growth. Section 3.1.1 of the DEA discusses residential consumption of water and how population growth estimates are used to predict the number of new wells that will be needed. It is not known whether any new wells will be drilled, and if drilled, whether they will be drilled into the upper or lower aquifer (though upper aquifer wells are less expensive). It is for this reason that both a low (no deep aquifer well costs) estimate is included with a high estimate (which assumes all deep aquifer costs are in response to the dragonfly). The range of costs between the low (zero) and high estimates spans the potential costs for water use mitigation that may occur in these proposed critical habitat units. The use of a range of estimates addresses the concerns about the uncertainty of whether deep aquifer wells would be drilled or not in response to population increases.

(4S) *Comment*: One comment states that the inclusion of invasive species control costs as coextensive is inappropriate, since other species may have been affected.

Our response: The economic analysis discusses invasive species control measures and costs in Section 6.3. Invasive species control was listed as a threat to the species and a potential adverse affect to critical habitat in the proposed rule. Invasive species control has been ongoing in most critical habitat units and will continue regardless of the presence of Hine's emerald dragonfly or the designation of critical habitat.

(4T) *Comment*: One comment addresses the estimation of impacts from the Interstate 355 extension in Chapter 2 of the DEA. This comment states that "total costs for I-355–related development activities range from a low of $11.8 million to a high of $18 million. This number includes opportunity costs to vehicles that have to slow down due to the presence of the dragonfly, since the Illinois Department of Transportation (IDOT) chose to build the road through dragonfly habitat...." The comment also states that the costs that are discussed will occur before the designation takes place. The comment then states that the DEA does not consider the possibility that IDOT could have decided to not build this road due to the presence of the dragonfly.

Our response: In Section 2.3.2 of the DEA, past costs are estimated to be $1.8 million (undiscounted), as shown in Exhibit 2-7. Future costs are estimated to be $2.3 million (undiscounted) as shown in Exhibit 2-8. The economic analysis does not address speed limits on roads through dragonfly habitat in this section. The costs for the interstate extension do not involve any traffic slowing costs, since the interstate extension is being built 8 feet higher than it otherwise would be built to avoid dragonfly collisions (hence avoiding the need for a limited-speed zone); see Section 2.3.2. The costs to build the roadway higher are included in the analysis. Opportunity costs from lost time due to speed limits to avoid take of dragonflies are estimated for other units — IL 7, WI 4, and WI 5. The costs for the I-355 extension are in unit IL 4.

The comment that these costs will be realized before designation is partially correct. Exhibit 2-7 displays the costs of mitigation and conservation through 2006. The costs in Exhibit 2-8 include costs incurred from 2007 through 2026. These costs include costs incurred in the current year, since this is an ongoing project, and costs may be incurred during the proposal period. Most of the dragonfly-specific costs are attributed to a 20 year period (2007-2026).

The economic analysis does not provide economic estimates for a scenario in which the overpass is not built. The overpass construction was substantially under way when the proposed rule considering designation was published. Since the Illinois Tollway Authority had made several conservation and mitigation efforts for the dragonfly, these impacts were included in the analysis.

(4U) *Comment*: One comment states that the economic analysis fails to include all the relevant information concerning travel time lost due to speed limitations on passenger trains in the analysis. Specifically, the comment states that the analysis does not include time lost for riders of METRA commuter trains, nor does it consider the value of passenger time lost (as well as additional fuel costs) for deceleration in preparation for, and acceleration after, the limited speed zone.

Our response: The commenter raises some valid concerns. The economic estimates (Section 5.1) were based upon the best publicly available data at the time. Newly available ridership information for METRA (which was initially omitted) and actual ridership information for AMTRAK (which had been overestimated by a factor of five by the AMTRAK source contacted initially), and adding in the time value lost and additional fuel costs due for acceleration and deceleration, increases the vehicle slowing costs for Illinois unit 7 from $12.6 million to $13.7 million (undiscounted). This corresponds to an increase in costs from $7.1 million to $7.8 million (discounted at 7 percent). These cost increases are insufficient to change the rank orderings of units by level of impact for the high-end estimates (see Exhibit ES-6).

(4V) *Comment*: One comment states that the value of increased train carbon emissions from the deceleration and acceleration are also not quantified for these actions.

Our response: The commenter is correct; the economic analysis does not quantify increased emission levels due to deceleration and acceleration. The marginal quantities of emissions are not likely to be substantial. In addition, there is no emission trading markets for mobile source diesel fuel emissions. In the absence of such a market, cost estimates for additional carbon pollution would be speculative.

(4W) *Comment*: One comment states that the economic analysis does not include the costs in increased traffic congestion from train riders switching to commuting by car that a speed limitation on AMTRAK and METRA commuter rail trains passing through Illinois Unit 7 would generate.

Our response: The commenter is correct. This comment is concerned with the estimation of values in Exhibit 5-3, Section 5.1 of the DEA. New calculations based on information obtained during the comment period quantified the increased delay for causing the AMTRAK and METRA to decelerate from 79 miles per hour (mph) to 15 mph, travel 15 miles per hour for one quarter mile, then accelerate back to a speed of 79 mph.

The estimated time delays are minimal and thus unlikely to be sufficient to cause many travelers to switch to automobile travel. The additional time taken for deceleration would be 36 seconds. The additional time taken for traveling 15 mph for one quarter mile (mi) would be 45 seconds. The increase in travel time for acceleration would be 40 seconds. The additional 2 minutes and 1 second of travel time is highly unlikely to cause train travelers to switch to travel by automobile, especially since the road

that runs parallel to the track that would have the speed limits will be subject to the same speed limit as well. Travel times on the parallel roadway will increase by at least 3.25 minutes. These estimates, and their derivation, are discussed in Section 5.1.

The economic literature on mode-split indicates that an increase in travel time on a commuter train is unlikely to cause much of a shift to car use. Mode-split studies measure how sensitive travelers are to changes in the cost of traveling. An increase of 10 percent of travel time on a commuter train during peak commuting time will cause a 1-percent increase in demand for commuting by automobile (Lago and McEnroe 1981). The additional delay in unit IL 7 may cause a small increase in travel by car. However, the literature indicates that commuters who travel by rail are not very sensitive to small increases in travel times. The estimated change in demand cited above is illustrative of general behavior; there are no publicly available models or data for modeling this specific situation.

(4X) *Comment*: One comment questions the accuracy of projected cost estimates in Exhibit 4-8 relative to the information provided. The comment is specifically concerned with the dates of anticipated costs from 2011-2014 and from 2007-2026.

Our response: The costs that the comment is concerned with are listed in Exhibit 4-8, Section 4.3 of the DEA. These estimates were obtained from documents provided by Midwest Generation concerning costs they have incurred and expect to incur for work done on the railroad line in Illinois Units 1 and 2. The calculations used to spread costs over the periods 2011-2014 and 2007-2026 were not presented in the draft economic analysis. These calculations are now included in Exhibit 4-8.

Future (long-term) rehabilitation costs from 2011 to 2014 are listed in a document submitted by Midwest Generation during the public comment period. The document is entitled "List of Midwest Generation's Environmental Activities Associated with the Rail Line and HED Commitments." The end of the first paragraph of that document concludes: "Long term maintenance items should be implemented in the four to seven year range...." Four years from the first final rule is 2011 and seven years from the proposed rule is 2014. Accordingly, the long-term rehabilitation costs are spread over those years. These are the costs estimated to take place from 2011 to 2014.

(4Y) *Comment*: One comment states that railroad maintenance and culvert maintenance should not be considered threats. The comment states, "The Service contends that this process is maintenance that the railroad would have to do regardless of the dragonfly, but recognizes that undercutting, combined with the construction of approximately 4 new French drains, and regular culvert maintenance may be potential options for mitigating the hydraulic pumping problem."

Our response: Specific types of railroad maintenance, combined with undercutting, are listed in Section 5.2 of the DEA as mitigation measures that respond to the specific threat of the hydraulic pumping of sediments. As discussed in Chapter 4 of the DEA, maintenance activities may also pose threats to critical habitat. A clarifying sentence has been added to the referenced paragraph in the DEA: "While regular maintenance may help mitigate the hydraulic pumping problem, maintenance activities may still pose a threat to critical habitat. An additional clarifying footnote was added following this sentence: "There are types and methods of railroad maintenance that may be employed without threatening the dragonfly or its habitat; Section 4.3 addresses the additional costs of performing such dragonfly sensitive maintenance."

(4Z) *Comment*: One comment states there is no concession stand in unit WI 5.

Our response: This apparent error occurs in Section 2.2.3. There is an interpretive center/gift store located in WI 5. This store is referred to as a "concession" in local zoning documents. This confusion has been clarified in the text.

Issue 5: Site-Specific Issues

(5) *Comment*: We received four comments on the July 26, 2006, proposal (71 FR 42442) and the April 22, 2009, proposal (74 FR 18341), suggesting that we designate multiple areas of unoccupied habitat in Michigan, including the Stonington Peninsula, Garden Peninsula, Munuscong Bay, Drummond Island, Pointe Aux Chenes River, Wilderness State Park, Lennagene Rossman Stratton Memorial, Peter Memorial, Mystery Valley and others. Additionally, the commenters suggested we designate multiple areas in Michigan where the Hine's emerald dragonfly has been observed on site or within 2 miles of a known locality.

Our response: We did not designate unoccupied habitat listed by the commenters because there are no current or historical records documenting the presence of the species at these sites. In 2006, the Hiawatha National Forest conducted surveys on the Stonington Peninsula and did not document the presence of Hine's emerald dragonflies from this locality.

With regard to sites where the Hine's emerald dragonfly has been observed or where it was observed within a 2-mi (3.3-km) radius, we used the methodology outlined under the section of this rule on "Criteria Used to Identify Critical Habitat." In drawing the outer boundary of a unit, we extended the unit boundary from the dragonfly larval habitat up to 100 meters (328 feet) where the primary constituent elements are found unless we reached areas that did not contain the primary constituent elements before that 100 meters (328 feet), such as a closed canopy forest, roadway, or another natural or human-made break in habitat. This boundary extension is to provide foraging areas for the species. A small number of dragonfly observations do not fall within a critical habitat unit. For instance, a one-time observation of a single foraging Hine's emerald dragonfly would not provide enough information to adequately determine the location of the core breeding habitat. We believe that there could be undiscovered Hine's emerald dragonfly breeding sites in Michigan, but using the best scientific data currently available, we have identified the six breeding areas in Michigan of which we are aware.

Issue 6: Effects of Critical Habitat Designation

(6) *Comment*: One private landowner was concerned that the designation of critical habitat may affect current or planned activities. Specifically, the commenter was concerned about delays or disruptions to future plans to expand or enhance an existing rail line, which would require Federal permits.

Our response: Critical habitat designation does not preclude development. Section 7(a)(2) of the Act requires Federal agencies to consult with the Service to ensure that actions they fund, authorize, permit, or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitat. If the Federal action agency determines that a project may adversely affect a listed species or designated critical habitat, formal consultation is required. There is a 90–day period of time in which to consult, and beyond that, another 45–day period of time for the Service to prepare a biological opinion. The analysis of whether the proposed action would

likely jeopardize the continued existence of the species or adversely modify designated critical habitat is contained in the biological opinion. If a jeopardy or adverse modification determination is made, the biological opinion must identify any reasonable and prudent alternatives that could allow the project to move forward.

Issue 7: Philosophy on Utility of Critical Habitat

(7A) *Comment*: Two commenters expressed that they disagree with the statement in the proposal that critical habitat designations are driven by litigation and courts rather than biology. They argue that while many critical habitat designations are the result of litigation, it is only to the extent that the Service fails to meet its statutory obligation to designate critical habitat concurrently with listing and that it is a burden imposed by an unambiguous statutory mandate, not by litigation.

Our response: The section in the proposed rule that contained these statements ("The Role of Critical Habitat in Actual Practice of Administering and Implementing the Act") has been removed from this final rule.

(7B) *Comment*: Two commenters suggested that critical habitat designation is strongly associated with species recovery and that the Service must consider the role of critical habitat in the recovery of the species.

Our response: We agree that we must consider the role of critical habitat in the recovery of species. The Ninth Circuit Court's decision in *Gifford Pinchot Task Force* v. *United States Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) (hereinafter *Gifford Pinchot*) requires consideration of the recovery of species when designating critical habitat. Thus, under this court ruling, and our implementation of Section 7 of the Act, critical habitat designations may provide greater benefits to the recovery of a species. Also, we have found that critical habitat designations serve to educate landowners, State and local governments, and the public regarding the potential conservation value of the areas designated.

(7C) *Comment*: One commenter expressed that the Hawaii example in the proposal does not prove that excluding areas from critical habitat provides superior conservation benefits to designating critical habitat.

Our response: Each exclusion from critical habitat designation is considered on its own merits, after balancing the benefits of designation against the benefits of exclusion, and also considering whether the exclusion will result in the extinction of the species.

Issue 8: Unoccupied Habitat

(8) *Comment*: Two commenters suggested that the Service consider designating areas that would contribute to the species' recovery through reintroduction, introduction, and augmentation efforts, as recommended in the species' recovery plan.

Our response: Although introductions and reintroductions were identified as being potentially important in the 2001 recovery plan, the Service acknowledged that additional surveys needed to be completed (Service 2001, p. 59). Since the recovery plan was written, additional Hine's emerald dragonfly breeding sites were identified in Illinois, Michigan, Missouri, and Wisconsin. Other unidentified sites may also exist in these States. Therefore, at this time we believe that introduction into unoccupied potential habitat, or reintroduction of dragonflies into additional historically occupied but currently unoccupied habitat, may not be necessary to recover the species. As additional research is conducted on the population structure and status of the species, the Service will consider the necessity of introduction and reintroduction of the Hine's emerald dragonfly.

Issue 9: Mapping

(9) *Comment*: Some commenters stated that the maps and descriptions of critical habitat units lacked sufficient detail to determine what essential features are included, what the surrounding land uses are, whether specific properties are included, and whether certain structures are included. Furthermore, they state that the maps should be provided in geological information system and aerial photography formats.

Our response: The scale of the maps prepared under the parameters for publication within the *Code of Federal Regulations* may not be detailed enough to allow landowners to determine whether their property is within the designation. Therefore, when the final rule is published, we will provide more detailed maps on our web site to better inform the public. We also provided contact information for anyone seeking assistance with the proposed critical habitat. Therefore, we believe we made every effort to provide avenues for interested parties to obtain information concerning our proposal and supporting information.

Issue 10: General Comments and Other Relevant Issues

(10A) *Comment*: One commenter stated that critical habitat designation is a "waste of taxpayers' time and money."

Our response: The designation of critical habitat for federally listed species is a requirement under section 4(a)(3)(A) of the Act.

(10B) *Comment*: One commenter expressed that the presence of habitat should have stopped the Interstate 355 (I-355) construction project. The commenter added that projects like the I-355 expansion project show that designation of critical habitat is justified.

Our response: If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, compliance with the requirements of section 7(a)(2) will be documented through the Service's issuance of: (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or (2) a biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

The I-355 project required a permit from the Army Corp of Engineers, which established a Federal nexus, and was addressed under a formal consultation, under section 7(a)(2) of the Act. As part of that formal consultation, conservation measures were agreed to that require the project proponent to fund actions to conserve the Hine's emerald dragonfly and its habitat. The Service concluded that the I-355 project would not jeopardize the continued existence of the Hine's emerald dragonfly.

(10C) *Comment*: One commenter stated that the designation of critical habitat should recognize the importance of protecting genetic diversity through habitat conservation. Specifically, the Hine's emerald dragonfly population in Illinois may contain greater genetic diversity than the other populations. Thus, the importance of protecting habitats in this State is heightened.

Our response: Genetic analysis is identified as a task in the Hine's Emerald Dragonfly (*Somatochlora hineana* Williamson) Recovery Plan (Service 2001, p.54). Genetic analyses have been initiated to better understand the population structure of the species, but the analyses have not been completed. The designation of critical habitat was based on the best available information. All currently occupied

areas in Illinois are included in the critical habitat designation for this and other reasons.

(10D) *Comment*: Two commenters stated that the Service must address Executive Order 13211 and prepare a Statement of Energy Effects, if applicable. Also, the Service must offer an opportunity to comment on any Statement of Energy Effects before making a final determination on the designation.

Our response: Executive Order 13211 was addressed in the Economic Analysis that was announced in the Notice of Availability published on March 20, 2007, and is addressed again in this final rule.

(10E) *Comment*: One commenter is concerned that the proposal infers that Midwest Generation's train traffic is contributing to mortality of Hine's emerald dragonflies and that rail line operations are increasing sediment deposition.

Our response: Vehicular impacts to Hine's emerald dragonflies, including collisions resulting in mortality, have been documented in areas within the species' range. However, since Midwest Generation limits the speed of its trains to 4 to 6 mph in Illinois Units 1 and 2, we have determined that train traffic in these units is not resulting in direct mortality of Hine's emerald dragonflies.

We believe that sediment being released from the rail line ballast in Illinois Units 1 and 2 may be impacting Hine's emerald dragonfly larval habitat. This potential threat is currently being assessed and will be addressed in the Habitat Conservation Plan under development for these units.

(10F) *Comment*: One commenter expressed that human-made structures should be a part of critical habitat.

Our response: We only include areas that contain at least one of the physical and biological features essential to the conservation of the species. Human-made structures are not essential features of the species' habitat.

Comments from States

Section 4(i) of the Act states, "the Secretary shall submit to the State agency a written justification for his/her failure to adopt regulation consistent with the agency's comments or petition. Comments were received from the Illinois Department of Natural Resources (ILDNR), MDC, Michigan Department of Natural Resources (MIDNR) and Michigan Department of Environmental Quality (MIDEQ). Comments supporting the proposed rule were received from the ILDNR and MDC. Additional comments received from States regarding the proposal to designate critical habitat for the Hine's emerald dragonfly are addressed below.

(1) *State Comment*: The Michigan Department of Natural Resources commented that Michigan Units 3, 4, and 5 are partially owned by their agency. As these areas are owned by the State they are afforded protection under land management policies.

Our response: In general, we considered excluding State lands from the final critical habitat designation. Mud Lake-Snake Island Fens, a portion of Michigan Unit 3, is owned by MDNR and is a designated natural area. Much of Michigan Unit 4 is part of Thompson's Harbor State Park. A portion of Michigan Unit 5, approximately 65 acres, is State forest land and managed under Forest Certification Work Instructions. State ownership and the various designations bestowed upon these lands may afford some nonspecific protection for Hine's emerald dragonfly and its habitat. However, we only excluded State that had management plans identifying necessary management and protection efforts for Hine's emerald dragonfly or the primary constituent elements. Therefore, Michigan Units 3, 4, and 5 are included in the final critical habitat designation.

(2) *State Comment*: The Michigan Department of Environmental Quality (MDEQ) emphasized that the State of Michigan has assumed the Federal Clean Water Act section 404 program that provides wetland fill permits. The MDEQ claims that a State, not a Federal, permit is issued; thus, section 7 consultation is not required. However, when reviewing a permit application that could affect a federally listed species or critical habitat, the MDEQ coordinates with the US Environmental Protection Agency (USEPA) and the Service. The MDEQ may incorporate appropriate measures into a permit, thereby avoiding or minimizing impacts to listed species and addressing Federal concerns. The MDEQ cannot issue a permit over the objection of the USEPA Regional Administrator.

Our response: We appreciate MDEQ's dedication to and cooperation in conserving federally listed species. We agree that the approach outlined above is the process we currently use in reviewing section 404 permit applications under the State-assumed program in Michigan.

Summary of Changes from Proposed Rule

The area contained in Wisconsin Unit 1 has been amended. The map and the description of the area for Wisconsin Unit 1 were accurate in the proposed rule; however, the acreage for the unit was incorrect. The error was due to using information from an earlier, larger draft of the map for this unit. Therefore, the acreage has been corrected from 503 ac (204 ha) in the proposed rule to 157 ac (64 ha) in the final rule.

As discussed in the July 26, 2006, proposal (71 FR 42442), additional sites in Wisconsin were evaluated to determine if they contain the features that are essential for the conservation of the Hine's emerald dragonfly. Based on our evaluation of research results from 2006 fieldwork, we have determined that Kellner's Fen in Door County, Wisconsin, contains the features that are essential to the conservation of Hine's emerald dragonfly. Adult Hine's emerald dragonflies have been observed in this area and breeding habitat exists in this unit, although breeding has not yet been confirmed. We announced the proposed addition of this unit in the **Federal Register** on March 20, 2007, and are adding this unit to the critical habitat designation. The additional critical habitat unit, Wisconsin Unit 11, is described in the unit descriptions below.

We are excluding Missouri Units 2b, 3, 6, 9, 10, 11b, 12–20, and 22, from the final designation of critical habitat because we believe that the benefits of excluding these specific areas from the designation outweigh the benefits of including the specific areas. We believe that the exclusion of these areas from the final designation of critical habitat will not result in the extinction of the Hine's emerald dragonfly. These exclusions are discussed in more detail in the Exclusions section below.

We are designating an additional unit on the Mark Twain National Forest that was not known to be occupied by the Hine's emerald dragonfly at the time of the September 5, 2007, final rule, but has since been discovered to be occupied. We included this unit in our April 22, 2009, notice reopening the comment period on the proposed designation. Based on our evaluation of research results from recent fieldwork, we have determined that this newly discovered site on the Mark Twain National Forest in Washington County, Missouri, is essential to the conservation of Hine's emerald dragonfly.

Critical Habitat

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) essential to the conservation of the species and

(b) which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means the use of all methods and procedures that are necessary to bring any endangered or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot otherwise be relieved, may include regulated taking.

Critical habitat receives protection under section 7(a)(2) of the Act through the prohibition against Federal agencies carrying out, funding, or authorizing activities that are likely to result in the destruction or adverse modification of critical habitat. Section 7(a)(2) requires consultation on Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner seeks or requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the Federal action agency's and the applicant's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time of listing must contain physical and biological features that are essential to the conservation of the species, and be included only if those features may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas supporting the essential physical or biological features that provide essential life cycle needs of the species; that is, areas on which are found the primary constituent elements (PCEs) laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species. Under the Act and regulations at 50 CFR 424.12, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed only when we determine that those areas are essential for the conservation of the species and that designation limited to the species' present range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

Areas that support occurrences, but are outside the critical habitat designation, will continue to be subject to conservation actions we and other Federal agencies implement under section 7(a)(1) of the Act. They are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

Climate Change

Climate change will be a particular challenge for biodiversity because the interaction of additional stressors associated with climate change and current stressors may push species beyond their ability to survive (Lovejoy 2005, pp325-326). The synergistic implications of climate change and habitat fragmentation are the most threatening facet of climate change for biodiversity (Hannah *et al.* 2005, p4). In addition, local extinction and range shifts are also being documented for some species including dragonflies. In a study of all 37 species of resident odonates (dragonflies and damselflies) in the United Kingdom, all but two species increased in range size and all but three species shifted northwards at their range margin in the last 40 years (Hickling *et al.* 2005, p. 504). While there is uncertainty about the exact nature and severity of climate change related impacts anticipated within the Hine's emerald dragonfly's range, several scientific studies project that there will be increased duration and intensity of heat waves in summer; higher levels of humidity and evaporation; changing patterns of precipitation with fewer rain events of greater intensity; increased frequency and more-intense dry spells; and more flooding from heavy rains (Easterling and Karl 2000, pp. 168–169, 172, 176; Hall and Stuntz 2007, pp. 5–7; IPCC 2007, pp. 30, 46). These climatic changes may impact the Hine's emerald dragonfly's habitat in a variety of direct and indirect ways including: Changes in hydrology, loss of suitable habitat; loss of inter-specific relationships with crayfish; and increased threats from invasive species.

Physical and Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12(b), in determining which areas within the geographical area occupied at the time of listing to

propose as revised critical habitat, we consider those physical and biological features that are essential to the conservation of the species and which may require special management considerations or protection. We consider the essential physical and biological features to be the PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species. The PCEs include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, and rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derive the PCEs required for the Hine's emerald dragonfly from its biological needs. The areas included in our critical habitat designation for the species contain the essential features to fulfill the species life-history requirements. The PCEs and the resulting physical and biological features essential to the conservation of the Hine's emerald dragonfly are derived from studies of this species' habitat, ecology, and life history as described in the proposed critical habitat designation published in the **Federal Register** on July 26, 2006 (71 FR 42442).

Primary Constituent Elements for the Hine's Emerald Dragonfly

Under the Act and its implementing regulations, when considering the designation of critical habitat, we must focus on the PCEs within the geographical area occupied by the Hine's emerald dragonfly at the time of listing that are essential to the conservation of the species and may require special management considerations or protection. The essential physical and biological features are those PCEs laid out in an appropriate quantity and spatial arrangement determined to be essential to the conservation of the species. All areas designated as critical habitat for the Hine's emerald dragonfly are currently occupied, are within the geographical area occupied by the species at the time of listing, and contain sufficient PCEs to support at least one life- history function.

Based on our current knowledge of the life history, biology, and ecology of the Hine's emerald dragonfly, and the requirements of the habitat to sustain the life-history traits of the species, we determined that the PCEs specific to the Hine's emerald dragonfly are:

(1) For egg deposition and larval growth and development:

(a) Organic soils (histosols, or with organic surface horizon) overlying calcareous substrate (predominantly dolomite and limestone bedrock);

(b) Calcareous water from intermittent seeps and springs and associated shallow, small, slow flowing streamlet channels, rivulets, and/or sheet flow within fens;

(c) Emergent herbaceous and woody vegetation for emergence facilitation and refugia;

(d) Occupied burrows maintained by crayfish for refugia; and

(e) Prey base of aquatic macroinvertebrates, including mayflies, aquatic isopods, caddisflies, midge larvae, and aquatic worms.

(2) For adult foraging; reproduction; dispersal; and refugia necessary for roosting, resting, refuge for adult females to escape from male harassment, and predator avoidance (especially during the vulnerable teneral stage):

(a) Natural plant communities near the breeding/larval habitat which may include fen, marsh, sedge meadow, dolomite prairie, and the fringe (up to 328 ft (100m)) of bordering shrubby and forested areas with open corridors for movement and dispersal; and

(b) Prey base of small flying insect species (e.g., dipterans).

This critical habitat designation is designed for the conservation of those areas containing the physical and biological features necessary to support the species' life-history traits. Each of the areas designated in this rule contain sufficient PCEs to provide for one or more of the life history functions of the Hine's emerald dragonfly.

Special Management Considerations or Protections

When designating critical habitat within the geographical area occupied by the species at the time of listing, we assess whether the physical and biological features essential to the conservation of the species may require special management considerations or protection. In all units, special management considerations or protection of the essential features may be required to provide for the growth, reproduction, and maintenance of the habitat on which the Hine's emerald dragonfly depends.

The lands proposed as critical habitat represent our best assessment of the habitat that meets the definition of critical habitat for the Hine's emerald dragonfly at this time. The essential physical or biological features within the areas proposed as critical habitat may require some level of management to address current and future threats to the Hine's emerald dragonfly, including the direct and indirect effects of habitat loss and degradation from urban development; the introduction of nonnative invasive plant species; and recreational activities.

Nonnative invasive plant species and unauthorized recreational activities (for example, all-terrain vehicles or horseback riding) may alter the vegetation composition or physical structure identified in the PCEs to an extent that the area does not support breeding habitat or refuge for Hine's emerald dragonflies. Additionally, invasive species and unauthorized recreational activities may alter hydrology and alter conditions so that the habitat is unsuitable for crayfish burrows that provide essential wintering refugia for Hine's emerald dragonflies.

In summary, we find that the areas we are designating as critical habitat contain the features essential to the conservation of the Hine's emerald dragonfly, and that these features may require special management considerations or protection. Special management considerations or protection may be required to eliminate, or reduce to negligible level, the threats affecting each unit and to preserve and maintain the essential features that the critical habitat units provide to the Hine's emerald dragonfly. Additional discussions of threats facing individual sites are provided in the individual unit descriptions.

The designation of critical habitat does not imply that lands outside of critical habitat may not play an important role in the conservation of the Hine's emerald dragonfly. In the future, and with changed circumstances, these lands may become essential to the conservation of the Hine's emerald dragonfly. Activities with a Federal nexus that may affect areas outside of critical habitat, such as development, agricultural activities, and road construction, are still subject to review under section 7 of the Act if they may affect the Hine's emerald dragonfly, because Federal agencies must consider both effects to the dragonfly and effects to critical habitat independently. The take prohibitions of section 9 of the Act, applicable to the Hine's emerald dragonfly under 50 CFR 17.71, also continue to apply both inside and outside of designated critical habitat.

Criteria Used To Identify Critical Habitat

We are designating critical habitat in areas we determined were occupied at the time of listing, and that contain sufficient PCEs to support life history functions essential to the conservation of the Hine's emerald dragonfly. Lands are designated based on sufficient PCEs being present to support the life processes of the species. Land designated as critical habitat for this species contain all PCEs and support multiple life processes. We are also designating areas that were not occupied at the time of listing, but which were subsequently identified as being occupied, and which we have determined to be essential to the conservation of the Hine's emerald dragonfly.

To identify features that are essential to the conservation of the Hine's emerald dragonfly and areas essential to the conservation of the species, we considered the natural history of the species and the science behind the conservation of the species as presented in literature summarized in the Hine's Emerald Dragonfly (*Somatochlora hineana* Williamson) Recovery Plan (Service 2001).

We began our analysis of areas with features that are essential to the conservation of the Hine's emerald dragonfly by identifying currently occupied breeding habitat. We developed a list of what constitutes occupied breeding habitat with the following criteria: (a) Adults and larvae documented; (b) Larvae, exuviae (skin that remains after molt), teneral (newly emerged) adults, ovipositing females, and/or patrolling males documented; or (c) Multiple adults sighted and breeding conditions present. We determined occupied breeding habitat through a literature review of data in reports submitted during section 7 consultations and as a requirement from section 10(a)(1)(B) incidental take permits or section 10(a)(1)(A) recovery permits; published peer-reviewed articles; academic theses; and agency reports. We then determined which areas were occupied at the time of listing.

After identifying the core occupied breeding habitat, our second step was to identify contiguous habitat containing one or more of the PCEs within 2.5 mi (4.1 kilometers (km)) of the outer boundary of the core area (Mierzwa *et al.* 1995, pp.17–19; Cashatt and Vogt 1996, pp. 23–24). This distance, the average adult dispersal distance measured in one study, was selected as an initial filter for determining the outer limit of unit boundaries in order to ensure that the dragonflies would have adequate foraging and roosting habitat, corridors among patches of habitat, and the ability to disperse among subpopulations. However, based on factors discussed below, unit boundaries were significantly reduced in most cases based on the contiguous extent of PCEs and the presence of natural or human-made barriers. When assessing wetland complexes in Wisconsin and Michigan we determined that features that fulfill all of the Hine's emerald dragonfly's life history requirements are often within 1 mi (1.6 km) of the core breeding habitat; therefore, the outer boundary of those units is within 1 mi (1.6 km) of the core breeding habitat.

Areas not documented to be occupied at the time of listing but that are currently occupied are considered essential to the conservation of the species due to the limited numbers and small sizes of some extant Hine's emerald dragonfly populations. Recovery criteria established in the recovery plan for the species (Service 2001, pp. 31–32) call for a minimum of three populations, each containing at least three subpopulations, in each of two recovery units. Within each subpopulation there should be at least two breeding areas, each fed by separate seeps and springs. Management and protection of all known occupied areas are necessary to meet these goals.

When determining critical habitat boundaries, we made every effort to avoid including developed areas such as buildings, paved areas, and other structures and features that lack the PCEs for the species. The scale of the maps we have prepared under the parameters for publication within the *Code of Federal Regulations* may not reflect the exclusion of all such developed areas. Any such structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this final rule are excluded from this rule by text and are not designated as critical habitat. Therefore, Federal actions limited to these areas would not trigger section 7 consultation under the Act, unless they affect the species or PCEs in critical habitat.

Units were identified based on sufficient PCEs being present to support Hine's emerald dragonfly life processes. Designated units contain all PCEs and support multiple life processes. Areas lacking documented evidence of breeding based on current knowledge were not considered for critical habitat inclusion because such areas are not deemed essential to the conservation of the species.

A brief discussion of each area designated as critical habitat is provided in the unit descriptions below. Additional detailed documentation concerning the essential nature of these areas is contained in our supporting record for this rulemaking.

Critical Habitat Designation

We are designating 37 units as critical habitat for the Hine's emerald dragonfly. The critical habitat areas described below constitute our best assessment at this time of areas that meet the definition of critical habitat for the Hine's emerald dragonfly. These areas constitute our best assessment of areas determined to be within the geographical area occupied at the time of listing that contain the physical and biological features essential to the conservation of the Hine's emerald dragonfly that may require special management, and those additional areas not occupied at the time of listing but that have been determined to be essential to the conservation of the Hine's emerald dragonfly. Management and protection of all the areas is necessary to achieve the conservation biology principles of representation, resiliency, and redundancy (Shaffer and Stein 2000) as represented in the recovery criteria established in the recovery plan for the species. Recovery criteria established in the recovery plan for the species (Service 2001, pp. 31–32) call for a minimum of three populations, each containing at least three subpopulations, in each of two recovery units. Within each subpopulation there should be at least two breeding areas, each fed by separate seeps and springs. Management and protection of all known occupied areas are necessary to meet these goals.

These units, which generally correspond to the geographic area of the units delineated in the 2007 designation, with the addition of units on Forest Service lands, replace the current critical habitat designation for the Hine's emerald dragonfly in 50 CFR 17.96(a).

Table 1 identifies the approximate area of each designated critical habitat unit by land ownership. Table 2 identifies areas that meet the definition of critical habitat but were excluded from final critical habitat based on their species-specific management plans or partnerships, and the determination the benefits to the species of exclusion from critical habitat outweighs the benefits of designating critical habitat in those units.

TABLE 1. CRITICAL HABITAT UNITS DESIGNATED FOR THE HINE'S EMERALD DRAGONFLY.

Unit	Federal land (acres/hectares)	State land (acres/hectares)	Local and private land (acres/hectares)	Total (acres/hectares) designated
Illinois Unit 1, Will County			419/170	419/170
Illinois Unit 2, Will County			439/178	439/178
Illinois Unit 3, Will County			337/136	337/136
Illinois Unit 4, Will and Cook Counties			607/246	607/246
Illinois Unit 5, DuPage County			326/132	326/132
Illinois Unit 6, Cook County			387/157	387/157
Illinois Unit 7, Will County		130/53	350/142	480/194
Michigan Unit 1, Mackinac County	9,452/3,825			9,452/3,825
Michigan Unit 2, Mackinac County	3,476/1,421		35/14	3,511/1,421
Michigan Unit 3, Mackinac County		23/9	27/11	50/20
Michigan Unit 4, Presque Isle County		875/354	84/34	959/388
Michigan Unit 5, Alpena County		65/26	91/37	156/63
Michigan Unit 6, Alpena County			220/89	220/89
Missouri Unit 1, Crawford County	90/36			90/36
Missouri Unit 2a, Dent County	15/6			15/6
Missouri Unit 4, Dent County	14/6			14/6
Missouri Unit 5, Iron County	50/20			50/20
Missouri Unit 7, Phelps County	33/13			33/13
Missouri Unit 8, Reynolds County	4/2			4/2
Missouri Unit 11a, Reynolds County	22/9			22/9
Missouri Unit 21, Ripley County	6/2			6/2
Missouri Units 23 and 24 Washington County	75/31			75/31
Missouri Unit 25, Washington County	33/13			33/13
Missouri Unit 26, Wayne County	5/2			5/2
Missouri Unit 27, Crawford County	0.8/0.3			0.8/0.3
Wisconsin Unit 1, Door County		42/17	115/47	157/64
Wisconsin Unit 2, Door County		32/13	782/316	814/329
Wisconsin Unit 3, Door County			66/27	66/27
Wisconsin Unit 4, Door County			407/165	407/165
Wisconsin Unit 5, Door County		816/330	2277/922	3,093/1,252
Wisconsin Unit 6, Door County		200/81	30/12	230/93
Wisconsin Unit 7, Door County			352/142	352/142
Wisconsin Unit 8, Door County			70/28	70/28
Wisconsin Unit 9, Door County		684/277	509/206	1,193/483
Wisconsin Unit 10, Ozaukee County		1512/612	800/324	2,312/936
Wisconsin Unit 11, Door County			147/59	147/59

TABLE 1. CRITICAL HABITAT UNITS DESIGNATED FOR THE HINE'S EMERALD DRAGONFLY.—Continued

Unit	Federal land (acres/hectares)	State land (acres/hectares)	Local and private land (acres/hectares)	Total (acres/hectares) designated
Total	13,275.8/5,372.5	4,379/1,772	8,877/3,578	26,531.8/10,737.1

TABLE 2. AREAS DETERMINED TO MEET THE DEFINITION OF CRITICAL HABITAT FOR THE HINE'S EMERALD DRAGONFLY THAT ARE EXCLUDED FROM THE CRITICAL HABITAT DESIGNATION.

Geographic Area	Definitional areas (acres/hectares)	Area excluded from final designation (acres/hectares)	Reason*
Missouri Unit 2b, Dent County	19/8	All	2, 3
Missouri Unit 3, Dent County	18/7	All	2, 3
Missouri Unit 6, Morgan County	22/9	All	2, 3
Missouri Units 9 and 10, Reynolds County	329/133	All	2, 3
Missouri Unit 11b, Reynolds County	91/37	All	2, 3
Missouri Unit 12, Reynolds County	50/20	All	2, 3
Missouri Unit 13, Reynolds County	30/12	All	2, 3
Missouri Unit 14, Reynolds County	14/5	All	2, 3
Missouri Unit 15, Reynolds County	11/4	All	2, 3
Missouri Unit 16, Reynolds County	4/2	All	1
Missouri Units 17 and 18, Ripley County	224/91	All	1, 2, 3
Missouri Units 19 and 20, Ripley County	115/47	All	2, 3
Missouri Unit 22, Shannon County	32/13	All	1
Total	959/388	959/388	

*1= species specific management plan in place; 2= potential loss of partnership with private land owner; 3= existing strong working relationship between MDC and private land owners.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Hine's emerald dragonfly, below.

Illinois Unit 1 —Will County, Illinois

Illinois Unit 1 consists of 419 ac (170 ha) in Will County, Illinois. This unit was occupied at the time of listing and includes the area where the Hine's emerald dragonfly was first collected in Illinois as well as one of the most recently discovered locations in the State. Adults and larvae are found within this unit. The unit consists of larval and adult habitat with a mosaic of upland and wetland communities, including fen, marsh, sedge meadow, and dolomite prairie. The wetlands are fed by groundwater that discharges into the unit from seeps and upwelling that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; illegal all-terrain vehicles; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. The majority of the unit is a dedicated Illinois Nature Preserve that is managed and leased by the Forest Preserve District of Will County. Although a current management plan is in place, it does not specifically address the Hine's emerald dragonfly or its PCEs. This unit also consists of a utility easement that contains electrical transmission and distribution lines and a railroad line used to transport coal to a power plant. In addition, a remaining small portion of this unit is located between a sewage treatment facility and the Des Plaines River. This unit is planned to be incorporated in a HCP that is being pursued by a large partnership, which includes the landowners of this unit. Though we are pleased with the progress made to date on the HCP, it is still far from complete and too early to judge its ultimate outcome. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Illinois Unit 2 —Will County, Illinois

Illinois Unit 2 consists of 439 ac (178 ha) in Will County, Illinois. This unit was occupied at the time of listing and has repeated adult and larval observations. The unit consists of larval and adult habitat with a mosaic of plant communities including fen, marsh, sedge meadow, and dolomite prairie. The wetlands are fed by groundwater that discharges into the unit from seeps and upwelling that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the

PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. The unit is privately owned and includes a utility easement that contains electrical transmission and distribution lines and a railroad line used to transport coal to a power plant. This unit is planned to be incorporated in a HCP that is being pursued by a large partnership, which includes the landowners of this unit. Though we are pleased with the progress made to date on the HCP, it is still far from complete and too early to judge its ultimate outcome. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Illinois Unit 3 —Will County, Illinois

Illinois Unit 3 consists of 337 ac (136 ha) in Will County, Illinois. This unit was occupied at the time of listing and includes one of the first occurrences of Hine's emerald dragonfly known after the discovery of the species in Illinois. The unit consists of larval and adult habitat with a mosaic of upland and wetland communities including fen, sedge meadow, marsh, and dolomite prairie. The wetlands are fed by groundwater that discharges into the unit from seeps and upwelling that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. The majority of the unit is a dedicated Illinois Nature Preserve that is owned and managed by the Forest Preserve District of Will County. Although a current management plan is in place, it does not specifically address the Hine's emerald dragonfly. This unit also consists of a utility easement that contains electrical transmission and distribution lines. This unit is planned to be incorporated in a HCP that is being pursued by a large partnership, which includes the landowners of this unit. Though we are pleased with the progress made to date on the HCP, it is still far from complete and too early to judge its ultimate outcome. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Illinois Unit 4 —Will and Cook Counties, Illinois

Illinois Unit 4 consists of 607 ac (246 ha) in Will and Cook Counties in Illinois. This unit was occupied at the time of listing and includes one of the first occurrences of Hine's emerald dragonfly that was verified after the discovery of the species in Illinois. Repeated observations of both adult and larval Hine's emerald dragonfly have been made in this unit. The unit consists of larval and adult habitat with a mosaic of upland and wetland communities including fen, sedge meadow, and dolomite prairie. The wetlands are fed by groundwater that discharges into the unit from seeps and upwelling that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. The unit is owned and managed by the Forest Preserve District of Will County and the Forest Preserve District of Cook County. Construction of the Interstate 355 extension began in 2005 and the corridor for this project intersects this unit at an elevation up to 67 ft (20 m) above the ground to minimize potential impacts to Hine's emerald dragonflies. This unit also consists of a utility easement that contains electrical transmission lines. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Illinois Unit 5—DuPage County, Illinois

Illinois Unit 5 consists of 326 ac (132 ha) in DuPage County, Illinois. This unit was occupied at the time of listing and has repeated adult observations. The unit consists of larval and adult habitat with a mosaic of upland and wetland plant communities including fen, marsh, sedge meadow, and dolomite prairie. The wetlands are fed by groundwater that discharges into the unit from seeps and upwelling that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. The majority of the unit is owned and managed by the Forest Preserve District of DuPage County. This unit also consists of a railroad line and a utility easement with electrical transmission lines. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Illinois Unit 6— Cook County, Illinois

Illinois Unit 6 consists of 387 ac (157 ha) in Cook County, Illinois. This unit was occupied at the time Hine's emerald dragonfly was listed. There have been repeated adult observations as well as observations of teneral (newly emerged) adults and male territorial patrols suggesting that breeding is occurring within close proximity. The unit consists of larval and adult habitat with a mosaic of upland and wetland plant communities including fen, marsh, and sedge meadow. The wetlands are fed by groundwater that discharges into the unit from seeps that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. The area within this unit is owned and managed by the Forest Preserve District of Cook County. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Illinois Unit 7 —Will County, Illinois

Illinois Unit 7 consists of 480 ac (194 ha) in Will County, Illinois. This unit was occupied at the time of listing and includes one of the first occurrences of Hine's emerald dragonfly known after the discovery of the species in Illinois. Adults and larvae have been found within this unit. The unit consists of larval and adult habitat with a mosaic of upland and wetland communities including fen, marsh, sedge meadow, and dolomite prairie. The wetlands are fed by groundwater that discharges into

the unit from seeps and upwelling that have formed small flowing streamlet channels that contain crayfish burrows. Known threats to the PCEs in this unit that may require special management include ecological succession and encroachment of invasive species; utility and road construction and maintenance; management and land use conflicts; and groundwater depletion, alteration, and contamination. A portion of the unit is a dedicated Illinois Nature Preserve that is managed and owned by the ILDNR. This unit also consists of a railroad line and a utility easement that contains electrical distribution lines. This unit is planned to be incorporated in a HCP that is being pursued by a large partnership, which includes the landowners of this unit. Though we are pleased with the progress made to date on the HCP, it is still far from complete and too early to judge its ultimate outcome. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Michigan Unit 1—Mackinac County, Michigan

Michigan Unit 1 contains 9,452 ac (3,825 ha) in Mackinac County in the Upper Peninsula of Michigan. This area was not known to be occupied at the time of listing. The unit contains at least four breeding areas for Hine's emerald dragonfly, with female oviposition or male territorial patrols observed at all breeding sites. Adults have also been observed foraging at multiple locations within this unit. The unit contains a mixture of fen, forested wetland, forested dune and swale, and upland communities that are important for Hine's emerald dragonfly breeding and foraging. The habitat is mainly spring-fed rich cedar swamp or northern fen. The breeding areas are open with little woody vegetation or are sparsely vegetated with northern white cedar *(Thuja occidentalis)*. Small shallow pools and seeps are common. Crayfish burrows are found in breeding areas. Corridors between the breeding areas make it likely that adult dragonflies could travel or forage between the breeding sites. The majority of this unit is owned by the Hiawatha National Forest. Known threats to the PCEs in this unit that may require special management include nonnative species invasion, woody encroachment, off-road vehicle use, logging, and utility and road right-of-way maintenance. Small portions of the unit are owned by the State of Michigan and private individuals. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Michigan Unit 2—Mackinac County, Michigan

Michigan Unit 2 consists of 3,511 ac (1,421 ha) in Mackinac County in the Upper Peninsula of Michigan. This area was not known to be occupied at the time of listing. The unit contains at least four breeding areas for Hine's emerald dragonfly, with female oviposition or male territorial patrols observed at all breeding sites. The unit contains a mixture of fen, forested wetland, forested dune and swale, and upland communities that are important for Hine's emerald dragonfly breeding and foraging. The breeding habitat varies in the unit. Most breeding areas are northern fen communities with sparse, woody vegetation (northern white cedar) that are probably spring-fed with seeps and marl pools present. One site is a spring-fed marl fen with sedge-dominated seeps and marl pools. Crayfish burrows are found in breeding areas. Corridors between the breeding areas, including a large forested dune and swale complex, make it likely that adult dragonflies could travel or forage between the breeding sites. The majority of this unit is owned by the Hiawatha National Forest and is designated as a Wilderness Area. Known threats to the PCEs in this unit that may require special management include nonnative species invasion, woody encroachment, and off-road vehicle use. About 1 percent of the unit is owned by private individuals. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Michigan Unit 3—Mackinac County, Michigan

Michigan Unit 3 consists of 50 ac (20 ha) in Mackinac County on Bois Blanc Island in Michigan. This area was not known to be occupied at the time of listing, but is currently occupied. The unit contains one breeding area for Hine's Emerald dragonfly with male territorial patrols and more than 10 adults observed in 1 year. The unit contains a small fen that is directly adjacent to the Lake Huron shoreline and forested dune and swale habitat that extends inland. The unit contains seeps and small fens, some areas with marl. Known threats to the PCEs in this unit include maintenance of utility and road right of way, and development of private lots and septic systems. Road work and culvert maintenance could change the hydrology of the unit. Approximately half of the unit is owned by the State of Michigan; the remaining portion of the area is owned by The Nature Conservancy or is subdivided private land. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Michigan Unit 4—Presque Isle County, Michigan

Michigan Unit 4 consists of 959 ac (388 ha) in Presque Isle County in the northern lower peninsula of Michigan. This area was not known to be occupied at the time of listing but is currently occupied. The unit contains one breeding area for Hine's Emerald dragonfly, with female oviposition and adults observed in more than one year. The unit contains a fen with seeps and crayfish burrows present. The fen has stunted, sparse white cedar and marl flats dominated by beaked spike rush (*Eleocharis rostellata*). The threats to Hine's emerald dragonflies in this unit are unknown. The majority of this unit is a State park owned by the MIDNR, the remainder of the unit is privately owned. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Michigan Unit 5— Alpena County, Michigan

Michigan Unit 5 consists of 156 ac (63 ha) in Alpena County in the northern lower peninsula of Michigan. This area was not known to be occupied at the time of listing but is currently occupied. All PCEs for the Hine's emerald dragonfly are present in this unit. The unit contains one breeding area for Hine's Emerald dragonfly, with adults observed in more than one year and crayfish burrows present. The unit contains a mixture of northern fen and wet meadow habitat that are used by breeding and foraging Hine's emerald dragonfly. Known threats to the PCEs in this unit that may require special management include possible hydrological modification due to outdoor recreational vehicle use and a nearby roadway. The majority of the site is privately owned and the remaining acreage is owned by the State of Michigan. This unit is essential to the

conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Michigan Unit 6—Alpena County, Michigan

Michigan Unit 6 consists of 220 ac (89 ha) in Alpena County in the northern lower peninsula of Michigan. This area was not known to be occupied at the time of listing but is currently occupied. The unit contains one breeding area for Hine's emerald dragonfly, with male territorial patrols and adults observed. The unit contains a marl fen with numerous seeps and rivulets important for breeding and foraging Hine's emerald dragonfly. Known threats to the PCEs in this unit that may require special management include possible hydrological modification due to outdoor recreational vehicle use and development. The unit is owned by a private group. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Missouri Unit 1—Crawford County, Missouri

Missouri Unit 1 consists of 90 ac (36 ha) in Crawford County, Missouri, and is under U.S. Forest Service ownership. This fen is in close proximity to the village of Billard and is associated with James Creek, west of Billard. This area was not known to be occupied at the time of listing. The fen provides surface flow, and includes larval habitat and adjacent cover for resting and predator avoidance. The fen and an adjacent open pasture provide foraging habitat that is surrounded by contiguous, closed-canopy forest. To date, only larvae have been documented from this locality. Known threats to the PCEs in this unit that may require special management include feral hogs and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 2a—Dent County, Missouri

Missouri Unit 2a is comprised of 15 ac (6 ha) in Dent County, Missouri, and is under U.S. Forest Service and private ownership. It is located north of the village of Howes Mill and in proximity to County Road (CR) 438. This area was not known to be occupied at the time of listing. The fen provides surface flow, and includes larval habitat and adjacent cover for resting and predator avoidance. The fen and an adjacent open old field provide foraging habitat and are surrounded by contiguous, closed-canopy forest. Adults have been documented from this unit. Known threats to the PCEs in this unit that may require special management include all-terrain vehicles, feral hogs, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors. This unit includes the Forest Service-owned portion of Missouri Unit 2 as it was described in the July 26, 2006, proposal (71 FR 42442).

Missouri Unit 4—Dent County, Missouri

Missouri Unit 4 is owned and managed by the U.S. Forest Service, and consists of 14 ac (6 ha) in Dent County, Missouri. This fen is associated with a tributary of Watery Fork Creek in Fortune Hollow and is located east of the juncture of Highway 72 and Route MM. This area was not known to be occupied at the time of listing. The fen provides surface flow, and includes larval habitat and adjacent cover for resting and predator avoidance. The fen and adjacent old fields provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. To date, only larvae have been documented from this locality. Known threats to the PCEs in this unit that may require special management include feral hogs and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 5—Iron County, Missouri

Missouri Unit 5 is comprised of 50 ac (20 ha) in Iron County, Missouri, and is under U.S. Forest Service ownership. This fen is adjacent to Neals Creek and Neals Creek Road, southeast of Bixby. This area was not known to be occupied at the time of listing. The fen consists of surface flow and is fed, in part, by a wooded slope north of Neals Creek Road. This small but high-quality fen provides larval habitat and adjacent cover for resting and predator avoidance. The fen, adjacent fields, and open road provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. Both adults and larvae have been documented from this unit. Known threats to the PCEs in this unit that may require special management include all-terrain vehicles, feral hogs, road construction and maintenance, beaver dams, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 7—Phelps County, Missouri

Missouri Unit 7 consists of 33 ac (13 ha) in Phelps County, Missouri, and is owned and managed by the U.S. Forest Service. This area was not known to be occupied at the time of listing. This fen is associated with Kaintuck Hollow and a tributary of Mill Creek, and is located south-southwest of the town of Newburg. This high-quality fen provides larval habitat and adjacent cover for resting and predator avoidance. The fen, adjacent fields, and open road provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. Despite repeated sampling for adults and larvae, only one exuviae (shed larval exterior) has been documented from this unit. Known threats to the PCEs in this unit that may require special management include all-terrain vehicles, feral hogs, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 8—Reynolds County, Missouri

Missouri Unit 8 includes Bee Fork West, a portion of the Bee Fork complex. The unit consists of 4 ac (2 ha) in Reynolds County, Missouri, and is owned and managed by the U.S. Forest Service. This locality is part of a series of three fens adjacent to Bee Fork Creek, extending from east-southeast of Bunker east to near the bridge on Route TT over Bee Fork Creek. This area was not known to be occupied at the time of listing. The fen provides surface flow and is fed, in part, by a small spring that originates from a wooded ravine just north of the county road bordering the northernmost fen in the complex. The unit, in conjunction with the rest of the complex (Units 9 and 10, which are excluded from this final designation), is one of the highest quality representative examples of an Ozark fen in the State. The fen provides larval habitat and adjacent cover for resting and predator

avoidance. The fen, adjacent fields, and open road provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. Both adults and larvae have been documented from this unit. The entire complex is an extremely important focal area for conservation actions that benefit Hine's emerald dragonfly. It is likely that the species uses Bee Fork Creek as a connective corridor between adjacent components of the complex. Known threats to the PCEs in this unit that may require special management include feral hogs, ecological succession, utility maintenance, application of herbicides, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 11a—Reynolds County, Missouri

Missouri Unit 11a is under U.S. Forest Service ownership and consists of 22 ac (9 ha in Reynolds County, Missouri. The unit is a series of small fen openings adjacent to a tributary of Bee Fork Creek, and is located east of the intersection of Route TT and Highway 72, extending north to the Bee Fork Church on County Road 854. This area was not known to be occupied at the time of listing. This unit contains a portion of one of the highest quality representative examples of an Ozark fen in the State. The fen provides surface flow and includes larval habitat and adjacent cover for resting and predator avoidance. The fen, adjacent fields, and open path provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. Adults have been documented from this unit. Known threats to the PCEs in this unit that may require special management include feral hogs, beaver dams, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors. This unit includes the Forest Service-owned portion of Missouri Unit 11 as it was described in the July 26, 2006 proposal (71 FR 42442).

Missouri Unit 21—Ripley County, Missouri

Missouri Unit 21 is a small fen and consists of 6 ac (2 ha) in Ripley County, Missouri. It is under U.S. Forest Service ownership and is located west of Doniphan. This area was not known to be occupied at the time of listing. The fen provides surface flow and includes larval habitat and adjacent cover for resting and predator avoidance. The fen and adjacent open, maintained county road provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. To date, only larvae have been documented from this locality. Known threats to the PCEs in this unit that may require special management include feral hogs, all-terrain vehicles, equestrian use, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Units 23 and 24—Washington County, Missouri

Missouri Units 23 and 24 comprise the Towns Branch and Welker Fen complex and consist of 75 ac (31 ha) near the town of Palmer in Washington County, Missouri. The complex consists of two fens that are under U.S. Forest Service ownership. This area was not known to be occupied at the time of listing. These fens provide surface flow and include larval habitat and adjacent cover for resting and predator avoidance. The fens and adjacent open, maintained county roads provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. To date, only larvae have been documented from this complex. Known threats to the PCEs in this unit that may require special management include feral hogs, all-terrain vehicles, road construction and maintenance, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 25—Washington County, Missouri

Missouri Unit 25 consists of 33 ac (13 ha) and is located northwest of the town of Palmer in Washington County, Missouri. The fen is associated with Snapps Branch, a tributary of Hazel Creek, and is owned and managed by the U.S. Forest Service. This area was not known to be occupied at the time of listing. The fen provides surface flow, and includes larval habitat and adjacent cover for resting and predator avoidance. The fen and adjacent old logging road with open canopy provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. To date, only larvae have been documented from this locality. Known threats to the PCEs in this unit that may require special management include feral hogs, all-terrain vehicles, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 26—Wayne County, Missouri

Missouri Unit 26 is owned and managed by the U.S. Forest Service and consists of 5 ac (2 ha). This small fen is located near Williamsville and is associated with Brushy Creek in Wayne County, Missouri. This area was not known to be occupied at the time of listing. The fen provides surface flow and includes larval habitat and adjacent cover for resting and predator avoidance. The fen and adjacent logging road with open canopy provide habitat for foraging and are surrounded by contiguous, closed-canopy forest. To date, only larvae have been documented from this unit. Known threats to the PCEs in this unit that may require special management include feral hogs, all-terrain vehicles, and habitat fragmentation. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Missouri Unit 27—Crawford County, Missouri

Missouri Unit 27 is owned and managed by the U.S. Forest Service and is approximately 3.3 miles (5.2 kilometers) west and southwest of Brazil , Missouri, or about 0.3 mile (0.4 kilometer) southeast of Center Post Church in Crawford County, Missouri. The unit consists of less than 1 ac (0.8 ac (0.3 ha)). This unit was not known to be occupied at the time of listing. Adult Hine's emerald dragonflies have been observed at the site and successful breeding was confirmed (Vogt 2008, p. 10). Surface water consists primarily of seepage pools and small rivulets. Parts of the fen include an open field with scattered shrubs and eastern red cedar *(Juniperus virginiana)* that is likely used as a foraging area by adults. Known threats to the PCEs that may require special management or protections include invasive plant species, feral hogs, all-terrain vehicles, and equestrian use. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Wisconsin Unit 1—Door County, Wisconsin

Wisconsin Unit 1 consists of 157 acres (64 hectares) on Washington Island in Door County, Wisconsin. This unit was not known to be occupied at the time of listing but is currently occupied. Three adults were observed at this site in July 2000, as well as male territorial patrols and female ovipositioning behavior; crayfish burrows, seeps, and rivulet streams are present. The unit consists of larval and adult habitat including boreal rich fen, northern wet-mesic forest, emergent aquatic marsh on marl substrate, and upland forest. Known threats to the PCEs that may require special management or protections include loss of habitat due to residential development, invasive plants, alteration of the hydrology of the marsh (low Lake Michigan water levels can result in drying of the marsh), contamination of groundwater, and logging. A portion of one State Natural Area owned by the Wisconsin Department of Natural Resources occurs within the unit; the remainder of the unit is privately owned. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Wisconsin Unit 2—Door County, Wisconsin

Wisconsin Unit 2 consists of 814 acres (329 hectares) in Door County, Wisconsin. This unit was occupied at the time of listing. The first adult recorded in Wisconsin was from this unit in 1987. Exuviae and numerous male and female adults have been observed in this unit. The unit, which encompasses much of the Mink River Estuary, contains larval and adult habitat including wet-mesic and mesic upland forest (including white cedar wetlands), emergent aquatic marsh, and northern sedge meadows. Known threats to the PCEs that may require special management include loss of habitat due to residential development, invasive plants, alteration of wetland hydrology, contamination of the surface and ground water, and logging. The majority of the land in this unit is owned by The Nature Conservancy and other private landowners with a small portion of the unit owned by the State. Forest areas with 100-percent canopy that occur greater than 328 ft (100 m) from the open forest edge of the unit are not considered critical habitat.

Wisconsin Units 3, 4, 5, 6, and 7—Door County, Wisconsin

Wisconsin Units 3 through 7 are located in Door County, Wisconsin and comprise the following areas: Unit 3 consists of 66 ac (27 ha); Unit 4 consists of 407 ac (165 ha); Unit 5 consists of 3,093 ac (1,252 ha); Unit 6 consists of 230 ac (93 ha); and Unit 7 consists of 352 ac (142 ha). Units 3, 5, 6, and 7 were occupied at the time of listing. Unit 4 was not known to be occupied at the time of listing but is currently occupied. All of the units are within 2.5 mi (4 km) of at least one other unit, making exchange of dispersing adults likely among units. Adult numbers recorded from these units varies. Generally fewer than eight adults have been observed at Units 4, 6, and 7 during any one season. A study by Kirk and Vogt (1995, pp. 13–15) reported a total adult population in the thousands in Units 3 and 5. Male and female adults have been observed in all the units. Adult dragonfly swarms commonly occur in Unit 5. Swarms ranging in size from 16 to 275 dragonflies and composed predominantly of Hine's emerald dragonflies were recorded from a total of 20 sites in and near Units 5 and 6 during 2001 and 2002 (Zuehls 2003, pp. iii, 19, 21, and 43). In addition, the following behaviors and life stages of Hine's emerald dragonflies have been recorded from the various units: Unit 3—mating behavior, male patrolling behavior, crayfish burrows, exuviae, and female ovipositioning (egg-laying); Unit 4—larvae and exuviae; Unit 5— teneral adults, mating behavior, male patrolling, larvae, female ovipositioning (egg-laying), and crayfish burrows; and Unit 6—mating behavior, evidence of ovipositioning, and crayfish burrows.

Unit 5 contains two larval areas, while Units 3, 4, 5, 6, and 7 each contains one larval area. Units 3 through 7 all include adult habitat, which varies from unit to unit but generally includes boreal rich fen, northern wet-mesic forest (including white cedar wetlands), upland forest, shrub-scrub wetlands, emergent aquatic marsh, and northern sedge meadow. Known threats to the PCEs that may require special management include loss of habitat due to residential and commercial development, ecological succession, invasive plants, utility and road construction and maintenance, alteration of the hydrology of wetlands (for example, via quarrying or beaver impoundments), contamination of the surface and ground water (for example, via pesticide use at nearby apple/cherry orchards (Unit 7)), agricultural practices, and logging. The majority of the land in the unit is conservation land in public and private ownership; the remainder of the land is privately owned. Forest areas with 100 percent closed canopy that occur greater than 328 ft (100 m) from the open forest edge of the unit but that are too small for us to map out are not considered critical habitat. Unit 4 is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Wisconsin Unit—8 Door County, Wisconsin

Wisconsin Unit 8 consists of 70 ac (28 ha) in Door County, Wisconsin and includes Arbter Lake. This unit was not known to be occupied at the time of listing but is currently occupied. Numerous male and female adults as well as ovipositing has been observed in this unit; crayfish burrows and rivulets are present. The unit consists of larval and adult habitat with a mix of upland and lowland forest, and calcareous bog and fen communities. Known threats to the PCEs that may require special management include encroachment of larval habitat by invasive plants and alteration of local groundwater hydrology (for example, via quarrying activities), contamination of surface and groundwater, and logging. Land in this unit is owned by The Nature Conservancy and other private landowners. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Wisconsin Unit—9 Door County, Wisconsin

Wisconsin Unit 9 consists of 1,193 ac (483 ha) in Door County, Wisconsin associated with Keyes Creek. This unit was not known to be occupied at the time of listing but is currently occupied. Numerous male and female adults have been seen in this unit; ovipositing females have been observed. Crayfish burrows are present. The unit consists of larval and adult habitat with a mix of upland and lowland forest, scrub-shrub wetlands, and emergent marsh. Known threats to the PCEs that may require special management or protections are loss and degradation of habitat due to development, groundwater depletion or alteration, surface and groundwater contamination, alteration of the hydrology of the wetlands (for example, via stream impoundment, road

construction and maintenance, and logging). The majority of the land in this unit is a State Wildlife Area owned by the Wisconsin Department of Natural Resources with the remainder of the land privately owned. Forest areas with 100 percent closed canopy that occur greater than 328 ft (100 m) from the open forest edge of the unit are not considered critical habitat. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Wisconsin Unit—10 Ozaukee County, Wisconsin

Wisconsin Unit 10 consists of 2,312 ac (936 ha) in Ozaukee County, Wisconsin, and includes much of Cedarburg Bog. This unit was not known to be occupied at the time of listing but is currently occupied. Known threats to the PCEs that may require special management or protections are loss and degradation of habitat due to development, groundwater depletion or alteration, surface and groundwater contamination, and alteration of the hydrology of the wetlands. Numerous male and female adults have been seen in this unit including teneral adults; ovipositing females have been observed, as well as larvae. Crayfish burrows are present. The unit consists of larval and adult habitat with a mix of shrub-carr, "patterned" bog composed of forested ridges and sedge mats, wet meadow, and lowland forest. The majority of area in the unit is State land and the remainder of the land is privately owned. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species' range.

Wisconsin Unit 11—Door County, Wisconsin

Wisconsin Unit 11 consists of approximately 147 acres (59 hectares) in Door County, Wisconsin. This unit was not known to be occupied at the time of listing but is currently occupied. Known threats to the PCEs that may require special management or protections are loss and degradation of habitat due to development, groundwater depletion or alteration, surface and groundwater contamination, and alteration of the hydrology of the wetlands. Adults have been observed in this unit over multiple years. Male patrolling behavior has been observed, and crayfish burrows are present. The unit consists of larval and adult habitat, including a floating sedge mat and lowland and upland conifer and deciduous forest. All land in the unit is privately owned. The northern portion of the unit is owned by the Door County Land Trust. This unit is essential to the conservation of the species because it provides for the redundancy and resilience of populations in this portion of the species' range, where habitat is under threat from multiple factors.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. Decisions by the Fifth and Ninth Circuit Courts of Appeals have invalidated our definition of "destruction or adverse modification" (50 CFR 402.02) (see *Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the PCEs to be functionally established) to serve its intended conservation role for the species (Service 2004c, p. 3).

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is endangered or threatened and with respect to its critical habitat, if any is proposed or designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402.

Section 7(a)(4) of the Act requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. Conference reports provide conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. We may issue a formal conference report if requested by a Federal agency. Formal conference reports on proposed critical habitat contain an opinion that is prepared according to 50 CFR 402.14, as if critical habitat were designated. We may adopt the formal conference report as the biological opinion when the critical habitat is designated, if no substantial new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)). The conservation recommendations in a conference report or opinion are advisory.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or designated critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or designated critical habitat.

An exception to the concurrence process referred to in (1) above occurs in consultations involving National Fire Plan projects. In 2004, the U.S. Forest Service and the BLM reached agreements with the Service to streamline a portion of the section 7 consultation process (BLM–ACA 2004, pp. 1–8; FS–ACA 2004, pp. 1–8). The agreements allow the U.S. Forest Service and the BLM the opportunity to make "not likely to adversely affect" (NLAA) determinations for projects implementing the National Fire Plan. Such projects include prescribed fire, mechanical fuels treatments (thinning and removal of fuels to prescribed objectives), emergency stabilization, burned area rehabilitation, road maintenance and operation activities, ecosystem restoration, and culvert replacement actions. The U.S. Forest Service and the BLM must insure staff are properly trained, and both agencies must submit monitoring reports to the Service to determine if the procedures are being implemented properly and that effects on endangered species and their habitats are being properly evaluated. As a result, we do not believe the alternative consultation processes being implemented as a result of the National Fire Plan will differ significantly from those consultations being conducted by the Service.

If we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. We define "reasonable and prudent alternatives" at 50 CFR 402.02 as alternative actions identified during consultation that:

- Can be implemented in a manner consistent with the intended purpose of the action,
- Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- Are economically and technologically feasible, and
- Would, in the Director's opinion, avoid jeopardizing the continued existence of the listed species or destroying or adversely modifying its critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies may sometimes need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Federal activities that may affect the Hine's emerald dragonfly or its designated critical habitat will require section 7(a)(2) consultation under the Act. Activities on State, tribal, local, or private lands requiring a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit under section 10(a)(1)(B) of the Act from the Service) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) will also be subject to the section 7(a)(2) consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded, authorized, or permitted, do not require section 7(a)(2) consultations.

Application of the Jeopardy and Adverse Modification Standard

Jeopardy Standard

Currently, the Service applies an analytical framework for Hine's emerald dragonfly jeopardy analyses that relies heavily on the importance of known populations to the species' survival and recovery. The section 7(a)(2) of the Act analysis is focused not only on these populations but also on the habitat conditions necessary to support them.

The jeopardy analysis usually expresses the survival and recovery needs of Hine's emerald dragonfly in a qualitative fashion without making distinctions between what is necessary for survival and what is necessary for recovery. Generally, the jeopardy analysis focuses on the range-wide status of Hine's emerald dragonfly, the factors responsible for that condition, and what is necessary for each species to survive and recover. An emphasis is also placed on characterizing the conditions of Hine's emerald dragonfly in the area affected by the proposed Federal action and the role of affected populations in the survival and recovery of the species. That context is then used to determine the significance of adverse and beneficial effects of the proposed Federal action and any cumulative effects for purposes of making the jeopardy determination.

Adverse Modification Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species, or would retain its current ability for the PCEs to be functionally established. Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for the Hine's emerald dragonfly. Generally, the conservation role of the dragonfly's critical habitat units is to support viable populations throughout this species' range.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore should result in consultation for the Hine's emerald dragonfly include, but are not limited to, the following:

(1) Actions that would significantly increase succession and encroachment of invasive species. Such activities could include, but are not limited to, release of nutrients and road salt (NaCl; unless not using road salt would result in an increased degree of threat to human safety and alternative de-icing methods are not feasible) into the surface water or connected groundwater at a point source or by dispersed release (non-point source), and introduction of invasive species through human activities in the habitat. These activities can result in conditions that are favorable to invasive species and would provide an ecological advantage over native vegetation, fill rivulets and seepage areas occupied by Hine's emerald dragonfly larvae; reduce detritus that provides cover for larvae; and reduce flora and fauna necessary for the species to complete its life cycle. Actions that would increase succession and encroachment of invasive species could negatively impact the Hine's emerald dragonfly and the species' habitat.

(2) Actions that would significantly increase sediment deposition within the rivulets and seepage areas occupied by Hine's emerald dragonfly larvae. Such activities could include, but are not limited to, excessive sedimentation from livestock grazing, road construction, channel alteration, timber harvest, all-terrain vehicle use, equestrian use, feral pig introductions, maintenance of rail lines, and other watershed and floodplain disturbances. These activities could eliminate or reduce the habitat necessary for the growth and reproduction of Hine's emerald dragonflies and their prey base by increasing sediment deposition to levels that would adversely affect the organisms' ability to complete their life cycles. Actions that would significantly increase sediment deposition within rivulets and seepage areas could negatively impact the Hine's emerald dragonfly and the species' habitat.

(3) Actions that would significantly alter water quantity and quality. Such activities could include, but are not limited to, groundwater extraction; alteration of surface and subsurface areas within groundwater recharge areas; and release of chemicals, biological pollutants, or heated effluents

into the surface water or groundwater recharge area at a point source or by dispersed release (non-point source). These activities could alter water conditions such that the conditions are beyond the tolerances of the Hine's emerald dragonfly and its prey base, and result in direct or cumulative adverse effects to these individuals and their life cycles. Actions that would significantly alter water quantity and quality could negatively impact the Hine's emerald dragonfly and the species' habitat.

(4) Actions that would significantly alter stream, streamlet, and fen channel morphology or geometry. Such activities could include but are not limited to, all-terrain vehicle use, equestrian use, feral pig introductions, channelization, impoundment, road and bridge construction, mining, and loss of emergent vegetation. These activities may lead to changes in water flow velocity, temperature, and quantity that could negatively impact the Hine's emerald dragonfly and their prey base and/or habitats. Actions that would significantly alter channel morphology or geometry could negatively impact the Hine's emerald dragonfly and the species' habitat.

(5) Actions that would fragment habitat and impact adult foraging or dispersal. Such activities could include, but are not limited to, road construction, destruction or fill of wetlands, and high-speed railroad and vehicular traffic. These activities may adversely affect dispersal, resulting in reduced fitness and genetic exchange within populations and potential mortality of individuals. Actions that would fragment habitat and impact adult foraging or dispersal could negatively impact the Hine's emerald dragonfly and the species' habitat.

Exemptions and Exclusions

Application of Section 4(a)(3) of the Act

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: "The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation."

There are no Department of Defense lands with a completed INRMP within the proposed critical habitat designation. Therefore, there are no specific lands that meet the criteria for being exempted from the designation of critical habitat under section 4(a)(3) of the Act.

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary must designate and revise critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such an area as critical habitat will result in the extinction of the species. The Congressional record is clear that, in making a determination under the section, the Secretary has broad discretion as to which factors to use and how much weight will be given to any factor.

In the following sections, we address a number of general issues that are relevant to the exclusions made in this final rule. In addition, we conducted an economic analysis of the impacts of the proposed critical habitat designation and related factors, which were available for public review and comment. Based on public comment on that document, the proposed designation itself, and the information in the final economic analysis, the Secretary may exclude from critical habitat additional areas beyond those identified in this assessment under the provisions of section 4(b)(2) of the Act. This is also addressed in our implementing regulations at 50 CFR 424.19.

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific information available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat. We cannot exclude such areas from critical habitat when such exclusion will result in the extinction of the species concerned. Following the publication of the proposed critical habitat designation, we conducted an economic analysis to estimate the potential economic effect of the designation. The draft analysis was made available for public review on March 20, 2007. We accepted comments on the draft analysis until April 3, 2007.

The primary purpose of the economic analysis is to estimate the potential economic impacts associated with the designation of Hine's emerald dragonfly critical habitat. This information is intended to assist the Secretary in making decisions about whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation. This economic analysis considers the economic efficiency effects that may result from the designation, including habitat protections that may be coextensive with the listing of the species. It also addresses distribution of impacts, including an assessment of the potential effects on small entities and the energy industry. This information can be used by the Secretary to assess whether the effects of the designation might unduly burden a particular group or economic sector.

This analysis focuses on the direct and indirect costs of the rule. However, economic impacts to land use activities can exist in the absence of critical habitat. These impacts may result from, for example, local zoning laws, State and natural resource laws, and enforceable management plans and best management practices applied by other State and Federal agencies. Economic impacts that result from these types of protections are not included in the analysis as they are considered to be part of the regulatory and policy baseline.

The draft economic analysis forecasts the costs associated with conservation activities for the Hine's emerald dragonfly would range from $16.8 million to $46.7 million in undiscounted dollars over the next 20 years. In discounted terms, potential economic costs are estimated to be $10.5 to $25.2 million (using a 7-percent discount rate). In annualized terms, potential costs are expected to range from $0.9 to $2.4 million annually (annualized at 7 percent). The Service did not exclude any areas based on economics.

A copy of the economic analysis with supporting documents is included in our administrative record and may be obtained by contacting the Field Supervisor, Chicago, Illinois Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**) or by

downloading from the Internet at *http://www.fws.gov/midwest/Endangered*.

Benefits of Designating Critical Habitat

Regulatory Benefits

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Prior to our designation of critical habitat, Federal agencies consult with us on actions that may affect a listed species and must refrain from undertaking actions that are likely to jeopardize the continued existence of the species. Thus, the analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. The difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species, and in some locations, the outcome of these analyses will be similar, because effects on habitat will often result in effects on the species. However, the regulatory standard is different: the jeopardy analysis looks at the action's impact on survival and recovery of the species, while the adverse modification analysis looks at the action's effects on the designated habitat's contribution to the species' conservation. This will, in many instances, lead to different results and different regulatory requirements.

Once an agency determines that consultation under section 7 of the Act is necessary, the process may conclude informally when we concur in writing that the proposed Federal action is not likely to adversely affect critical habitat. However, if we determine through informal consultation that adverse impacts are likely to occur, then we would initiate formal consultation, which would conclude when we issue a biological opinion on whether the proposed Federal action is likely to result in destruction or adverse modification of critical habitat.

For critical habitat, a biological opinion that concludes in a determination of no destruction or adverse modification may contain discretionary conservation recommendations to minimize adverse effects to PCEs, but it would not contain any mandatory reasonable and prudent measures or terms and conditions. We suggest reasonable and prudent alternatives to the proposed Federal action only when our biological opinion results in an adverse modification conclusion.

In providing the framework for the consultation process, the previous section applies to all the following discussions of benefits of inclusion or exclusion of critical habitat.

The process of designating critical habitat as described in the Act requires that the Service identify those lands on which are found the physical or biological features essential to the conservation of the species which may require special management considerations or protection. In identifying those lands, the Service must consider the recovery needs of the species, such that the habitat that is identified, if managed, could provide for the survival and recovery of the species. Furthermore, once critical habitat has been designated, Federal agencies must consult with the Service under section 7(a)(2) of the Act to ensure that their actions will not adversely modify designated critical habitat or jeopardize the continued existence of the species. As noted in the Ninth Circuit's *Gifford Pinchot* decision, the Court ruled that the jeopardy and adverse modification standards are distinct, and that adverse modification evaluations require consideration of impacts to the recovery of species. Thus, through the section 7(a)(2) consultation process, critical habitat designations provide recovery benefits to species by ensuring that Federal actions will not destroy or adversely modify designated critical habitat.

The identification of lands that are necessary for the conservation of the species can assist in the recovery planning for a species, and therefore is beneficial. The process of proposing and finalizing a critical habitat rule provides the Service with the opportunity to determine lands essential for conservation as well as identify the physical and biological features essential for conservation on those lands. The designation process includes peer review and public comment on the identified features and lands. This process is valuable to land owners and managers in developing conservation management plans for identified lands, as well as any other occupied habitat or suitable habitat that may not have been included in the Service's determination of essential habitat.

However, the designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation has been initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and adverse modification of its critical habitat, but not specifically to manage remaining lands or institute recovery actions on remaining lands. Conversely, management plans institute intentional, proactive actions over the lands they encompass to remove or reduce known threats to a species or its habitat and, therefore, implement recovery actions. We believe that the conservation of a species and its habitat that could be achieved through the designation of critical habitat, in some cases, is less than the conservation that could be achieved through the implementation of a management plan that includes species-specific provisions and considers enhancement or recovery of listed species as the management standard over the same lands. Consequently, implementation of any HCP or management plan that considers enhancement or recovery as the management standard will often provide as much or more benefit than a consultation for critical habitat designation conducted under the standards required by the Ninth Circuit in the *Gifford Pinchot* decision.

Educational Benefits

A benefit of including lands in critical habitat is that designation of critical habitat serves to educate landowners, State and local governments, and the public regarding the potential conservation value of an area. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high conservation value for the Hine's emerald dragonfly. Because the critical habitat process includes multiple public comment periods, opportunities for public hearings, and announcements through local venues, including radio and other news sources, the designation of critical habitat provides numerous occasions for public education and involvement. Through these outreach opportunities, land owners, State agencies, and local governments can become more aware of the plight of listed species and conservation actions needed to aid in species recovery. Through the critical habitat process, State agencies and local governments may become aware of areas that could be conserved under State laws, local ordinances, or specific management plans.

Conservation Partnerships on Non-Federal Lands

Most federally listed species in the United States will not recover without cooperation of non-Federal landowners. More than 60 percent of the United States is privately owned (National Wilderness Institute 1995), and at least 80 percent of endangered or threatened species occur either partially or solely

on private lands (Crouse *et al.* 2002, p. 720). Stein *et al.* (1995, p. 400) found that only about 12 percent of listed species were found almost exclusively on Federal lands (90 to 100 percent of their known occurrences restricted to Federal lands) and that 50 percent of federally listed species are not known to occur on Federal lands at all.

Given the distribution of listed species with respect to land ownership, conservation of listed species in many parts of the United States is dependent upon working partnerships with a wide variety of entities and the voluntary cooperation of many non-Federal landowners (Wilcove and Chen 1998, p. 1407; Crouse *et al.* 2002, p. 720; James 2002, p. 271). Building partnerships and promoting voluntary cooperation of landowners are essential to our understanding the status of species on non-Federal lands, and necessary for us to implement recovery actions such as reintroducing listed species and restoring and protecting habitat.

Many non-Federal landowners derive satisfaction from contributing to endangered species recovery. We promote these private-sector efforts through the Department of the Interior's Cooperative Conservation philosophy. Conservation agreements with non-Federal landowners (HCPs, safe harbor agreements, other conservation agreements, easements, and State and local regulations) enhance species conservation by extending species protections beyond those available through section 7 consultations. We encouraged non-Federal landowners to enter into conservation agreements, based on the view that we can achieve greater species conservation on non-Federal land through such partnerships than we can through regulatory methods (61 FR 63854; December 2, 1996).

Many private landowners, however, are wary of the possible consequences of attracting endangered species to their property. Evidence suggests that some regulatory actions by the Federal Government, while well-intentioned and required by law, can (under certain circumstances) have unintended negative consequences for the conservation of species on private lands (Wilcove *et al.* 1996, pp.5–6; Bean 2002, pp. 2–3; Conner and Mathews 2002, pp. 1–2; James 2002, pp. 270–271; Koch 2002, pp. 2–3; Brook *et al.* 2003, pp. 1639–1643). Some landowners fear a decline in their property value due to real or perceived restrictions on land-use options where threatened or endangered species are found. Consequently, harboring endangered species is viewed by some landowners as a liability. This perception results in anti-conservation incentives, because maintaining habitats that harbor endangered species represents a risk to future economic opportunities (Main *et al.* 1999, pp. 1264–1265; Brook *et al.* 2003, pp. 1644–1648). We attempt to ease these concerns through communication and outreach with landowners; however, we recognize that these efforts are not always successful.

The purpose of designating critical habitat is to contribute to the conservation of threatened and endangered species and the ecosystems upon which they depend. In cases where conservation actions are currently employed but anxiety regarding the potential impacts of critical habitat designation exists, we may find that excluding non-Federal lands from critical habitat designation results in improved partnerships and conservation efforts.

Exclusions Under Section 4(b)(2) of the Act

We are excluding Missouri units 2b, 3, 6, 9, 10, 11b, 12–20, and 22 from the final designation of critical habitat for the Hine's emerald dragonfly because we believe that the benefits of excluding these specific areas from the designation outweigh the benefits of inclusion of the specific areas. The conservation actions outlined in a Missouri Hine's Emerald Dragonfly Recovery Plan (Missouri Department of Conservation 2007f) and currently being implemented for the Hine's emerald dragonfly on Missouri State-owned and on private lands through MDC's coordination with private landowners in Missouri provide greater conservation benefit to the species than would designating these areas as critical habitat. We believe that the exclusion of these areas from the final designation of critical habitat will not result in the extinction of the Hine's emerald dragonfly. We reviewed information concerning other units to determine whether any other units, or portions thereof, should be excluded from the final designation. No other units were excluded from the final designation.

State Land Management – Exclusions Under Section 4(b)(2) of the Act

We are excluding all State-owned land in Missouri under section 4(b)(2) of the Act based on conservation measures addressed in species-specific management plans for State-managed lands and Missouri's State-wide Hine's emerald dragonfly recovery plan (Missouri Department of Conservation 2007f). Missouri is the only state within the range of the Hine's emerald dragonfly that has management plans that specifically address conservation of the species on State lands.

Missouri units 16, 17, 18, and 22 are under MDC ownership and Unit 14 is privately owned but managed by MDC. Threats identified on land owned and managed by MDC are feral hogs, habitat fragmentation, road construction and maintenance, all-terrain vehicles, beaver dams, and management conflicts.

In regard to Hine's emerald dragonfly conservation, the MDC has:

(1) Developed management plans for the five conservation areas where the Hine's emerald dragonfly has been documented (Missouri Natural Areas Committee 2007; Missouri Department of Conservation 2007a, pp.1–4; 2007b, pp. 1–3; 2007c, pp. 1–4)

(2) Formulated best management practices (Missouri Department of Conservation 2007d, pp. 1–2) and department guidelines (Missouri Department of Conservation 2007e, pp. 1–3); and

(3) Developed a Statewide recovery plan for the Hine's emerald dragonfly (Missouri Department of Conservation 2007f, pp. 1–33).

These plans provide for long-term management and maintenance of fen habitat essential for larval development and adjacent habitat that provides for foraging and resting needs for the species. Areas of management concern include the fen proper, adjacent open areas for foraging, adjacent shrubs, and a 328-ft (100-m) forest edge buffer to provide habitat for resting and predator avoidance. Based on initial groundwater recharge delineation studies by Aley and Aley (2004, p. 22), the 328-ft (100-m) buffer will also facilitate the maintenance of the hydrology associated with each unit. Actions outlined in area management plans and the state recovery plan for the Hine's emerald dragonfly address threats to habitat by preventing the encroachment of invasive woody plants (ecological succession), and by maintaining open conditions of the fen and surrounding areas with prescribed fire and stand improvement through various timber management practices.

In addition to site-specific plans, there is also a Statewide recovery plan (Missouri Department of Conservation 2007f) that outlines objectives for conserving the Hine's emerald dragonfly on State managed and privately owned property in Missouri (Table 3). The recovery plan includes a budget for Fiscal Years 2006 to 2012, showing MDC's commitment to continue acquiring the funds necessary to implement these actions. The MDC coordinated closely with the Service in developing the site-specific plans and

the Statewide Hine's emerald dragonfly recovery plan and the recommended conservation measures within it. We believe that by implementing those recommended conservation actions in Missouri we can achieve recovery of the species in the State.

TABLE 3. SUMMARY OF OBJECTIVES IN MDC'S RECOMMENDATIONS FOR RECOVERY OF HINE'S EMERALD DRAGONFLY AND OZARK FEN COMMUNITIES IN MISSOURI (FY08-FY12).

MDC Recovery Plan Objective	Conservation benefit for Hine's emerald dragonfly
Maintain the natural integrity of Ozark fen communities by decreasing exotic, feral, domestic, and undesirable native animal and plant populations specifically when those populations threaten Ozark fens, associated natural communities, and habitats essential for the life requirements of the dragonfly	Protect, restore, or enhance breeding and foraging areas
Restore local hydrology and protect groundwater contribution areas by eliminating past drainage improvements and ensuring developments do not adversely affect fen recharge areas	Protect, enhance, or restore breeding and foraging areas
Prohibit vehicle operation in fens unless specifically authorized or prescribed for Ozark fen restoration actions and Hine's emerald dragonfly habitat improvement projects	Protect breeding and foraging areas
Ensure that recreational overuse does not impact Ozark fen communities	Protect breeding and foraging areas
Develop public outreach materials and solutions to advance the conservation of Hine's emerald dragonfly and Ozark fen communities	Protect, enhance, or restore breeding and foraging areas
Manage fire-dependent wetland communities with a fire regime similar to that in which the natural communities evolved and developed	Protect, enhance, or restore breeding and foraging areas
Monitor fen water quality, identify potential pollutants, and develop strategies to abate damages	Protect, enhance, or restore breeding and foraging areas
Increase connectivity within Ozark fen complexes	Enhance breeding and foraging areas

Numerous agencies and groups are working together to alleviate threats to the Hine's emerald dragonfly in Missouri. These cooperating partners include conservation area managers, the MDC's Private Land Services (PLS) Division and Natural History biologists, MDC's Recovery Coordinator for the species, the Service, the Missouri Hine's Emerald Dragonfly Workgroup, and the Federal Hine's Emerald Dragonfly Recovery Team (Recovery Team).

We believe that management guidelines outlined in the conservation area plans and natural area plans, the BMPs, and the Statewide recovery plan for the Hine's emerald dragonfly, along with the close coordination among the various agencies mentioned above (plus other identified species experts as needed), adequately address identified threats to Hine's emerald dragonfly and its habitat on MDC lands. The conservation measures as outlined above provide greater benefit to the Hine's emerald dragonfly than would designating critical habitat on Missouri State-managed lands. Thus the relative benefits of designation of these lands are diminished and limited.

(1) Benefits of Designation

The primary effect of designating any particular area as critical habitat is the requirement for Federal agencies to consult with us under section 7 of the Act to ensure actions they carry out, authorize, or fund do not destroy or adversely modify designated critical habitat. Absent critical habitat designation, Federal agencies remain obligated under section 7 of the Act to consult with us on actions that may affect a federally listed species to ensure such actions do not jeopardize the species' continued existence. Designation of critical habitat may also provide educational benefits by informing land managers of areas essential to the conservation of the Hine's emerald dragonfly.

(2) Benefits of Exclusion

Voluntarily, land managers are currently implementing conservation actions for the Hine's emerald dragonfly and its habitat on State-managed lands in Missouri that are beyond those that could be required if critical habitat were designated. Excluding State-owned lands in Missouri from critical habitat designation will sustain and enhance the already robust working relationship between the Service and MDC. The State has a strong history of conserving the Hine's emerald dragonfly and other federally listed species. The MDC is committed to continued conservation for the Hine's emerald dragonfly through its State management plan for the species. The Service's willingness to work closely with MDC on innovative ways to manage federally listed species will continue to reinforce those conservation efforts, which contribute significantly toward achieving recovery of the species in the State.

Furthermore, in the case of Missouri, there is no appreciable educational benefit because the MDC has already demonstrated its knowledge and understanding of essential habitat for the species through active recovery efforts and consultation.

(3) Benefits of Exclusion Outweigh the Benefits of Designation

We find that the benefits of designating critical habitat for the Hine's emerald dragonfly on State lands in Missouri are outweighed by the benefits of exclusion. Exclusion will enhance the partnership efforts with the MDC focused on conservation of the species in the State, and secure conservation benefits for the species that will lead to recovery, as described above, beyond those that could be required under a critical habitat designation. The benefits of designating critical habitat on State-owned lands in Missouri are already largely being realized through the conservation efforts being implemented under the Statewide recovery plan. Therefore, those benefits

of designation are quite small when weighed against enhancing partnership efforts and securing conservation benefits for the species that would be achieved through excluding State-owned lands in Missouri from designation.

(4) Exclusions Will Not Result in Extinction of the Species

We believe that excluding the Missouri units under MDC ownership (Units 16, 17, 18, and 22) and Unit 14, which is privately owned but managed by MDC, from critical habitat would not result in the extinction of Hine's emerald dragonfly because current conservation efforts under the Conservation and Natural Area Plans and other Plans by the MDC adequately protect essential Hine's emerald dragonfly habitat and provide appropriate management to maintain and enhance the PCEs for the Hine's emerald dragonfly. In addition, conservation partnerships on non-Federal lands are important conservation tools for this species in Missouri that could be negatively affected by the designation of critical habitat. As such, there is no reason to believe that this exclusion would result in extinction of the species.

Private Land Management – Exclusions Under Section 4(b)(2) of the Act

We are excluding all private land in Missouri under section 4(b)(2) of the Act based on the cooperative conservation partnership with private landowners in Missouri. Missouri Units 2b, 3, 6, 9, 10, 11b, 12, 13, 15, 19, and 20 are under private ownership. Missouri Unit 14 is also under private ownership but managed by the MDC.

The Nature Conservancy manages Grasshopper Hollow (Unit 11b) in accordance with the Grasshopper Hollow Management Plan (The Nature Conservancy 2006, pp. 1–4) to maintain fen habitat. The plan includes management goals that specifically address the Hine's emerald dragonfly and its habitat: 1) Sustain the high quality fen complex, with a full suite of fen biota; 2) Restore the fen system in suitable drained fields at the north end of Doe Run lands; and 3) Ensure the long-term viability of healthy populations of the Hine's emerald dragonfly.

Threats to the species identified on private land are feral hogs, habitat fragmentation, road construction and maintenance, ecological succession, all-terrain vehicles, beaver dams, utility maintenance, application of herbicides, and change in ownership. All threats listed above for private property in Missouri are addressed in the Missouri Department of Conservation's Statewide recovery plan for the Hine's emerald dragonfly (Missouri Department of Conservation 2007f, pp. 1–33) and through close coordination between personnel with the MDC's PLS Division or Regional Natural History biologists and private landowners. Additionally, MDC personnel work closely and proactively with the National Resources Conservation Service (NRCS) and the Service's Partners for Fish and Wildlife Program to initiate management and maintenance actions on species-occupied fens to benefit the species and alleviate potential threats and these actions are subject to section 7 of the Act. The Missouri Department of Conservation (2007d, pp. 1–2) has developed BMPs for the Hine's emerald dragonfly, which further displays the agencies dedication to conserving the species and its habitat on both State and private land. These BMPs and close coordination with MDC's Recovery Leader for Hine's emerald dragonflies have resulted in the implementation of various activities on private property to benefit the species or minimize potential threats. Current and ongoing conservation actions on private lands include the following: Developing private land partner property plans; providing landowners with technical support through ongoing site visits; providing grazing and forage harvesting recommendations to minimize potential fen damage; excluding heavy equipment from fen habitat; placing signs on fen habitat alerting land owners to the sensitivity of this natural community; providing public land owners with public outreach regarding the life history requirements of Hine's emerald dragonflies and the sensitivity of the species' unique habitat; providing recommendations on the control of beavers, which are harmful to delicate fen habitat; providing education on the need for and correct use of prescribed fire; excluding livestock from fens and other wetland types; restoring fens and wetlands by restoring hydrology or controlling invasive species and woody brush invasion; applying appropriate nutrient and pest management on adjacent agricultural fields to reduce runoff; implementing practices that control erosion and prevent sediment delivery to wetlands; and when applicable, facilitating the transfer or property from private to public ownership. Although implementing Hine's emerald dragonfly BMPs on private land is voluntary, the best way we have found to ensure effective conservation on private lands is through such voluntary actions. Private landowners are generally more receptive to voluntary conservation actions on their lands than they are to regulated actions or perceived regulation. The MDC has successfully conducted conservation actions on many private land parcels and has dedicated numerous staff hours to these actions (Table 4).

TABLE 4. SUMMARY OF PRIVATE LAND INITIATIVES AND AVERAGE ANNUAL EXPENDITURE FOR HINE'S EMERALD DRAGONFLY CONSERVATION MEASURES CONDUCTED BY MDC STAFF ON PRIVATE LANDS (SINCE 2005).

Conservation Action	Average annual expenditure since 2005 (in MDC staff hours)
Landowner technical support in the form of in-field consultation, correspondence, and other communications. Includes operations that affect private land fens that are known Hine's emerald dragonfly sites or potential sites.	250
Farm plan development and fen restoration planning for private landowners. Includes the development of planning documents for private landowners that have Ozark fens.	75
Grazing system and forage harvesting recommendations to private landowners. Many Missouri fens are located in pastures or hay meadows. Maintaining stocking rates at suitable levels benefits Ozark fens and limits pressures associated with woody encroachment.	50
Technical support to landowners directly related to beaver control within Ozark fen communities.	25

TABLE 4. SUMMARY OF PRIVATE LAND INITIATIVES AND AVERAGE ANNUAL EXPENDITURE FOR HINE'S EMERALD DRAGONFLY CONSERVATION MEASURES CONDUCTED BY MDC STAFF ON PRIVATE LANDS (SINCE 2005).—Continued

Conservation Action	Average annual expenditure since 2005 (in MDC staff hours)
Technical assistance to landowners regarding fencing options to exclude cattle or combat possible ATV incursions.	25
Coordination with utility companies applying herbicides or operating mowing equipment on rights-of-way that cross private lands – activities that have the potential to damage fen communities and Hine's emerald dragonfly habitats.	50
Fen restoration demonstration projects including woody encroachment clearing and herbicide application; often in direct coordination with private land partners.	50, plus herbicide and application expenses of $2500.00
Demonstration exotics control including herbicide application and integrated pest management strategy development. Willow encroachment, reed canary grass control, and multi-flora rose control within fens on private lands. Several private land fens have characteristic infestations of undesirable species; MDC staff have applied herbicides to problem exotic invasive plant species to ensure fen habitats are suitable for Hine's emerald dragonfly.	25
Coordination with private landowners to ensure Hine's emerald dragonfly habitat is not impacted by pasture renovation activities; includes delineation of habitat areas with private land partners.	15 (There have only been a few opportunities for this action)
Signage placement on private land fens. Signage is placed on some fens when requested by private landowners or to engender support and understanding for fen restoration projects.	15
Installation of firelines, in cooperation with private landowners, on burn units that include fen communities.	15
Coordination with landowners interested in selling property with Ozark fens and wetland habitats that have the potential to support Hine's emerald dragonfly. Includes close communications with landowners; interagency coordination and technical assistance; coordination with surveyors, real estate lawyers, and biologists.	40
Presentation and outreach events directed to landowners with Hine's emerald dragonfly populations or Ozark fen natural communities.	40
Media contacts (radio, television, and printed media) and coordination directly related to Hine's emerald dragonfly recovery.	80
Coordination with conservation agents, often regarding private land fens that may be threatened by ATV activities	40
Patrols and enforcement operations.	50

Effective measures will continue to be incorporated to minimize threats from feral hogs and beavers by implementing MDC's Statewide recovery plan for the Hine's emerald dragonfly (Missouri Department of Conservation 2007f, pp. 1–3) and by providing technical assistance and implementation assistance to private landowners through coordination with MDC's PLS Division or Regional Natural History biologists, the NRCS, and the Service's Partners for Fish and Wildlife Program. Utility maintenance (Units 9 and 14) and herbicide application to maintain power line rights of way (Unit 9) were identified as potential threats at two units. Implementing the actions outlined in Missouri Department of Conservation's Statewide recovery plan for the Hine's emerald dragonfly and ongoing coordination among the MDC's PLS Division, MDC's Hine's emerald dragonfly recovery coordinator, and the appropriate utility maintenance company and its contractors will continue to minimize potential threats (Missouri Department of Conservation 2007f, pp. 1–3). The potential change in ownership on private land in Missouri from cooperative landowners to ones who may not want to manage their land to benefit the species is a concern on some private lands. This issue will continue to be addressed by close coordination between new landowners and MDC's PLS Division or their Hine's emerald dragonfly recovery coordinator. The landowner's access to grants and technical assistance from multiple landowner incentive programs administered through the MDC, NRCS, and the Service's Partners for Fish and Wildlife Program will remain a main focus of outreach to potential new private property owners. Unit 14 is under private ownership but is a designated State Natural Area (Missouri Natural Areas Committee 2007). An updated plan developed for the area ensures that the integrity of the fen is maintained (Missouri Natural Areas Committee 2007).

Personnel from MDC are currently working in cooperation with private landowners that have important fen habitat on their lands that support Hine's emerald dragonflies. This direct work with private landowners allows for effective maintenance and enhancement of Hine's emerald dragonfly habitat in the state. MDC is also working toward establishing new landowner relationships and cooperative management programs that will provide important contributions to Hine's emerald dragonfly recovery. Because of the close coordination and excellent working partnership of all

parties listed above, we believe that threats to Hine's emerald dragonfly and its habitat on private property in Missouri are minimized.

(1) Benefits of Designation

The primary effect of designating any particular area as critical habitat is the requirement for Federal agencies to consult with us under section 7 of the Act to ensure actions they carry out, authorize, or fund do not destroy or adversely modify designated critical habitat. Absent critical habitat designation, Federal agencies remain obligated under section 7 of the Act to consult with us on actions that may affect a federally listed species to ensure such actions do not jeopardize the species' continued existence. Designation of critical habitat may also provide educational benefits by informing land managers of areas essential to the conservation of the Hine's emerald dragonfly.

(2) Benefits of Exclusion

We view the continued cooperative conservation partnerships with private landowners to be essential for the conservation of the Hine's emerald dragonfly in Missouri. The MDC has a longstanding history of working with private landowners in Missouri, especially regarding the conservation of federally listed species. Of the 16 units being excluded in the State, 12 (75 percent) are on private land. The MDC has worked closely with the NRCS to implement various landowner incentive programs that are available through the Farm Bill.

To further facilitate the implementation of these and other landowner incentive programs on the ground, the MDC created the PLS Division and established 49 staff positions throughout the State. The PLS Division works with multiple landowners within the range of the Hine's emerald dragonfly in Missouri to undertake various conservation actions to maintain or enhance fen habitat. The MDC has also worked closely with the Service's Partners for Fish and Wildlife Program to implement various management actions on private lands. Close coordination between the two agencies for actions that could benefit the species on private land will continue. Excluding private land in Missouri from designation as critical habitat for the Hine's emerald dragonfly will facilitate the ability to implement those landowner incentive programs with multiple landowners, which would preserve the conservation benefits already initiated for the species or those planned in the future.

The Hine's emerald dragonfly, along with other federally listed species, is such a contentious issue in Missouri that the species is viewed negatively by many private landowners. Multiple private landowners have been contacted by MDC personnel to obtain permission to survey the species on their property. In some cases, access has been denied because of negative perceptions associated with the presence of federally listed species on private land and the perception that all fens currently occupied by the Hine's emerald dragonfly would be designated as critical habitat (Gillespie 2005, pers. comm.).

Although access to survey some private land has been denied, several landowners have conducted various management actions to benefit the Hine's emerald dragonfly, especially in Reynolds County where the largest amount of currently occupied habitat on privately owned land occurs. The designation of critical habitat on such sites would have dissolved developing partnerships and prevented the initiation of additional conservation actions. Additionally, it is likely that the designation of critical habitat on private land in Missouri would have ended the cooperation associated with conservation actions already underway (Missouri Department of Conservation, in litt. 2007).

Based on potential habitat identified by examining the Service's National Wetland Inventory maps, there are other areas with suitable Hine's emerald dragonfly habitat where the species may be found. Many of these sites occur on private land. Pending further research on currently occupied sites, especially related to population dynamics and the role Missouri populations may play in achieving the recovery objectives outlined in the Service's Recovery Plan (U.S. Fish and Wildlife Service 2001, pp. 31–32), the likely discovery of additional sites could provide significant contributions towards the range-wide recovery of the species. Thus, access to private property may be important in achieving recovery of the species.

(3) Benefits of Exclusion Outweigh the Benefits of Inclusion

We find that the benefits of designating critical habitat for the Hine's emerald dragonfly on private lands in Missouri are small in comparison to the benefits of exclusion. The conservation measures being implemented by private landowners, as outlined above, and those being implemented from the Missouri Hine's Emerald Dragonfly recovery plan (Missouri Department of Conservation 2007f) provide greater benefit to the Hine's emerald dragonfly and its habitat than would designating critical habitat on private lands in Missouri. Furthermore, in the case of Missouri, private conservation groups have already demonstrated their knowledge and understanding of essential habitat for the species through active recovery efforts and consultation. The Missouri public, particularly landowners with Hine's emerald dragonfly habitat on their lands, is also well informed about the Hine's emerald dragonfly. Thus the relative benefits of designation of these lands are diminished and limited. Exclusion of private lands in Missouri will enhance the partnership efforts with private conservation groups and private landowners focused on conservation of the species in the State, and secure conservation benefits for the species beyond those that could be required under a critical habitat designation. It is our belief that benefits gained through extra outreach efforts associated with critical habitat and additional section 7 requirements under the Act (in the limited situations where there is a Federal nexus), are outweighed by the benefit of sustaining current and future conservation partnerships, especially given that access to private property and the possible discovery of additional sites in Missouri could help facilitate recovery of the species.

(4) The Exclusions Will Not Result in Extinction of the Species

We believe that the excluding the Missouri units in private ownership (Units 2b, 3, 6, 9, 10, 11b, 12, 13, 14, 15, 19, and 20) from critical habitat would not result in the extinction of Hine's emerald dragonfly because current conservation efforts under The Nature Conservancy's Management Plan for Grasshopper Hollow and the Missouri Recovery Plan for Hine's emerald dragonfly (Missouri Department of Conservation 2007f) adequately protect essential Hine's emerald dragonfly habitat and provide appropriate management to maintain and enhance the PCEs for the Hine's emerald dragonfly. In addition, conservation partnerships on non-Federal lands are important conservation tools for this species in Missouri that could be negatively affected by the designation of critical habitat in Missouri, where there is an established negative sentiment toward Federal regulation for endangered species by some private landowners. As such, there is no reason to believe that this exclusion would result in extinction of the species.

Our economic analysis indicates an overall low cost resulting from the designation. Therefore, we have found no areas for which the economic benefits of exclusion outweigh the benefits of designation, and so have not excluded any areas from this designation of critical habitat for the Hine's emerald dragonfly based on economic impacts. In addition, we anticipate no impact to national security, Tribal lands, or HCPs from this critical habitat designation, and have not excluded any lands based on those factors.

Required Determinations

Regulatory Planning and Review – Executive Order 12866

The Office of Management and Budget (OMB) has determined that this rule is not significant and has not reviewed this rule under Executive Order 12866 (E.O. 12866). OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. Based upon our final economic analysis of the designation, we provide our analysis for determining whether the designation of critical habitat for the Hine's emerald dragonfly would result in a significant economic impact on a substantial number of small entities. The SBREFA amended RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for Hine's emerald dragonfly will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration (SBA), small entities include small organizations, such as independent nonprofit organizations, and small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents, as well as small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if the Hine's emerald dragonfly critical habitat designation would affect a substantial number of small entities, we considered the number of small entities affected within particular types of economic activities (such as residential and commercial development). We apply the "substantial number" test individually to each industry or category to determine if certification is appropriate. However, the SBREFA does not explicitly define "substantial number" or "significant economic impact." Consequently, to assess whether a "substantial number" of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the numbers of small entities potentially affected, we also considered whether their activities have any Federal involvement.

Designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by the designation of critical habitat. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect the Hine's emerald dragonfly. Federal agencies must also consult with us if their activities may affect designated critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (see *Application of the* "*Adverse Modification Standard*" section).

In our final economic analysis of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of the Hine's emerald dragonfly and designation of its critical habitat. This analysis estimated prospective economic impacts due to the implementation of Hine's emerald dragonfly conservation efforts in six categories: Development activities, water use, utility and infrastructure maintenance, road and railway use, species management and habitat protection activities, and recreation. The following is a summary of information contained in the final economic analysis:

(a) Development Activities

According to the final economic analysis, the forecast cost of Hine's emerald dragonfly development-related losses ranges from $8.0 to $11.2 million assuming a 7-percent discount rate. The costs consist of the following: (1) Losses in residential land value in Wisconsin and Michigan due to potential limitations on residential development; (2) impacts to Material Services Corporation (MSC) quarrying operations in Illinois; and (3) dragonfly conservation efforts associated with the construction of the Interstate 355 Extension. Given the small average size and value of private land parcels in Wisconsin and Michigan, the noninstitutional landowners (those for which land value losses were computed; institutionally owned properties do not have assessed property values) are most likely individuals, who are not

considered small entities by the SBA. MSC has 800 employees in Illinois and Indiana, and was recently purchased by Hanson, PLC, which has more than 27,000 employees worldwide. The SBA Small Business Standard for Crushed and Broken Limestone Mining and Quarrying industry sector is 500 employees. Therefore, MSC is not considered a small entity. The conservation-related costs associated with the construction of the Interstate 355 Extension are borne by the Illinois Tollway Authority. The Illinois Tollway Authority does not meet the definition of a small entity. As a result of this information, we have determined that the designation of critical habitat for the Hine's emerald dragonfly is not anticipated to have a significant effect on a substantial number of small development businesses.

(b) Water Use

According to the final economic analysis, the forecast cost of Hine's emerald dragonfly water use-related losses range from $21,000 to $4.0 million assuming a 7-percent discount rate. Public water systems may incur costs associated with drilling deep water aquifer wells. The USEPA Agency has defined small entity water systems as those that serve 10,000 or fewer people. None of the municipalities that could be required to construct deep aquifer wells as a result of conservation efforts for the Hine's emerald dragonfly has a population below 10,000. As a result of this information, we have determined that the designation of critical habitat for the Hine's emerald dragonfly is not anticipated to have a substantial effect on a substantial number of small municipalities.

(c) Utility and Infrastructure Maintenance

According to the final economic analysis, the forecast cost of Hine's emerald dragonfly utility and infrastructure maintenance-related losses is estimated to be $1.1 million over 20 years, assuming a 7-percent discount rate. The costs are associated with necessary utility and infrastructure maintenance using dragonfly-sensitive procedures. Within the designated critical habitat units, Commonwealth Edison is responsible for electrical line maintenance, county road authorities for road maintenance, and Midwest Generation for railroad track maintenance in Illinois Units 1 and 2. Neither company is considered a small entity. As a result of this information, we have determined that the designation of critical habitat for the Hine's emerald dragonfly is not anticipated to have a significant effect on a substantial number of small entities.

(d) Road and Railway Use

According to the final economic analysis, the forecast cost of Hine's emerald dragonfly road and railway use–related losses range from $1.3 to $8.8 million assuming a 7-percent discount rate. The costs are associated with necessary railway upgrades for dragonfly conservation. Midwest Generation is responsible for railroad track improvements in Illinois. Neither Midwest Generation nor the individual travelers who would be affected by slower road speeds are considered small entities. As a result of this information, we have determined that the designation of critical habitat for the Hine's emerald dragonfly is not anticipated to have a significant effect on a substantial number of small entities.

(e) Species Management and Habitat Protection Activities

According to the final economic analysis, the forecast cost of Hine's emerald dragonfly species management and habitat protection–related losses is estimated at $563,000 over 20 years, assuming a 7-percent discount rate. The costs primarily consist of species monitoring, maintenance of habitat, invasive species and feral hog control, and beaver dam mitigation. Species management and habitat protection costs will be borne by The Nature Conservancy (Wisconsin chapter), The Ridges Sanctuary, the Service, the U.S. Forest Service, the MIDNR, and the MDC. None of those entities meets the definition of a small entity. As a result of this information, we have determined that the designation of critical habitat for the Hine's emerald dragonfly is not anticipated to have a significant effect on a substantial number of small entities.

(f) Recreation

According to the final economic analysis, the forecast cost of Hine's emerald dragonfly recreation-related losses are estimated at $19,000 (7-percent discount rate) over the next 20 years. Recreational off-road vehicles and equestrian activities have the potential to alter Hine's emerald dragonfly habitat and extirpate populations. The costs are associated with mitigating the effects of those recreational activities. Those costs will be borne by the MIDNR, MDC, the U.S. Forest Service, and various county police departments. None of those entities meets the definition of a small entity. As a result of this information, we have determined that the designation of critical habitat for the Hine's emerald dragonfly is not anticipated to have a significant effect on a substantial number of small entities.

Based on the previous, sector-by-sector analysis, we have determined that this critical habitat designation would not result in a significant economic impact on a substantial number of small entities.

Energy Supply, Distribution, or Use—Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211 (E.O. 13211; "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use") on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute "a significant adverse effect" when compared to not taking the regulatory action under consideration.

This final rule is considered a significant regulatory action under E.O. 12866 due to potential novel legal and policy issues, but it is not expected to significantly affect energy supplies, distribution, or use. Appendix A of the final economic analysis provides a discussion and analysis of this determination. The Midwest Generation facilities that rely on the transportation of coal through Illinois Units 1 and 2 generate 1,960 megawatts of electricity. The dragonfly conservation measures advocated by the Service, however, are not intended to alter the operation of these facilities. Rather, the recommended conservation activities focus on improving maintenance and railway upgrades. Thus, no energy-related impacts associated with Hine's emerald dragonfly conservation activities within critical habitat units are expected. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use and a Statement of Energy Effects is not required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501), the Service makes the following findings:

(a) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose

an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or tribal governments," with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding" and the State, local, or tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance; or (ii) a duty arising from participation in a voluntary Federal program." The designation of critical habitat does not impose a legally binding duty on non-Federal government entities or private parties. Under the ACT, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. Non-Federal entities that receive Federal funding, assistance, permits, or otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat. However, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above on to State governments.

(b) As discussed in the final economic analysis of the designation of critical habitat for the Hine's emerald dragonfly, the impacts on nonprofits and small governments are expected to be negligible. It is likely that small governments involved with development and infrastructure projects will be interested parties or involved with projects involving section 7 consultations for the Hine's emerald dragonfly within their jurisdictional areas. Any costs associated with this activity are likely to represent a small portion of a local government's budget. Consequently, we do not believe that the designation of critical habitat for the Hine's emerald dragonfly will significantly or uniquely affect these small governmental entities. As such, a Small Government Agency Plan is not required.

Takings

In accordance with E.O. 12630 ("Government Actions and Interference with constitutionally Protected Private Property Right"), we have analyzed the potential takings implications of designating critical habitat for the Hine's emerald dragonfly in a Takings Implications Assessment (TIA). Critical habitat designation does not affect landowner ations that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The TIA concludes that the designation of critical habitat for Hine's emerald dragonfly does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), this rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with DOI and Department of Commerce policy, we requested information from, and coordinated development of, this final critical habitat designation with appropriate State resource agencies in Illinois, Michigan, and Wisconsin. The designation of critical habitat in areas currently occupied by the Hine's emerald dragonfly may impose nominal additional regulatory restrictions to those currently in place and, therefore, may have little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas that contain the features essential to the conservation of the species are more clearly defined, and the PCEs of the habitat necessary to the conservation of the species are specifically identified. While making this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-range planning (rather than waiting for case-by-case section 7 consultations to occur).

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Endangered Species Act. This final rule uses standard property descriptions and identifies the PCEs within the designated areas to assist the public in understanding the habitat needs of the Hine's emerald dragonfly.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses as defined by the NEPA (42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt*, 48 F.3d 1495 (9th Cir. Ore. 1995), cert. denied 116 S. Ct. 698 (1996)).

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994,

"Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act," we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We determined that there are no tribal lands occupied at the time of listing that contain the features essential for the conservation of the species and no tribal lands that are unoccupied areas that are essential for the conservation of the Hine's emerald dragonfly. Therefore, critical habitat for the Hine's emerald dragonfly has not been designated on Tribal lands.

References Cited

A complete list of all references cited in this rulemaking is available on the Internet at *http://www.regulations.govand* upon request from the Field Supervisor, Chicago, Illinois, Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT** section).

Authors

The primary authors of this package are the staff members of the Chicago, Illinois, Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

■ Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

■ 2. Amend §17.95(i) by revising the entry for "Hine's emerald dragonfly (*Somatochlora hineana*)" to read as follows:

§17.95 Critical habitat—fish and wildlife.

* * * * *

(i) *Insects*.

* * * * *

Hine's Emerald Dragonfly (*Somatochlora hineana*)

(1) Critical habitat units are depicted for Cook, DuPage, and Will Counties in Illinois; Alpena, Mackinac, and Presque Isle Counties in Michigan; Crawford, Dent, Iron, Phelps, Reynolds, Ripley, Washington, and Wayne Counties in Missouri; and Door and Ozaukee Counties in Wisconsin, on the maps below.

(2) The primary constituent elements of critical habitat for the Hine's emerald dragonfly are:

(i) For egg deposition and larval growth and development:

(A) Organic soils (histosols, or with organic surface horizon) overlying calcareous substrate (predominantly dolomite and limestone bedrock);

(B) Calcareous water from intermittent seeps and springs and associated shallow, small, slow-flowing streamlet channels, rivulets, and/or sheet flow within fens;

(C) Emergent herbaceous and woody vegetation for emergence facilitation and refugia;

(D) Occupied burrows maintained by crayfish for refugia; and

(E) Prey base of aquatic macroinvertebrates, including mayflies, aquatic isopods, caddisflies, midge larvae, and aquatic worms.

(ii) For adult foraging, reproduction, dispersal, and refugia necessary for roosting, for resting, for adult females to escape from male harassment, and for predator avoidance (especially during the vulnerable teneral stage):

(A) Natural plant communities near the breeding/larval habitat which may include fen, marsh, sedge meadow, dolomite prairie, and the fringe (up to 328 ft (100 m)) of bordering shrubby and forested areas with open corridors for movement and dispersal; and

(B) Prey base of small, flying insect species (e.g., dipterans).

(3) Critical habitat does not include human-made structures existing on the effective date of this rule and not containing one or more of the primary constituent elements, such as buildings, lawns, old fields, hay meadows, fallow crop fields, manicured lawns, pastures, piers and docks, aqueducts, airports, and roads, and the land on which such structures are located. We define "old field" here as cleared areas that were formerly forested and may have been used as crop or pasture land that currently support a mixture of native and nonnative herbs and low shrubs. "Fallow field" is defined as a formerly plowed field that has been left unseeded for a season or more and is presently uncultivated. In addition, critical habitat does not include open-water areas (i.e., areas beyond the zone of emergent vegetation) of lakes and ponds.

(4) *Critical habitat map units*. Data layers defining map units were created on a base of USGS 7.5' quadrangles, and critical habitat units were then mapped using Geographical Information Systems, Universal Transverse Mercator (UTM) coordinates. Critical habitat units are described using the public land survey system (township (T), range (R) and section (Sec.)).

(5) *Note*: Index map of critical habitat units (Index map) follows:

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(6) Illinois Units 1 through 7, Cook, DuPage, and Will Counties, Illinois.

(i) Illinois Unit 1: Will County. Located in T36N, R10E, Sec. 22, Sec. 27, SE1/4 NE1/4 Sec. 28, NE1/4 SE1/4 Sec. 28, NW1/4 NW1/4 Sec. 34 of the Joliet 7.5' USGS topographic quadrangle. Land south of Illinois State Route 7, east of Illinois State Route 53, and west of the Des Plaines River.

(ii) Illinois Unit 2: Will County. Located in T36N, R10E, Sec. 3, NW1/4 E1/2 Sec. 10, E1/2 Sec. 15 of the Romeoville and Joliet 7.5' USGS topographic quadrangles. Land east of Illinois State Route 53, and west of the Des Plaines River.

(iii) Illinois Unit 3: Will County. Located in T37N, R10E, SW1/4 Sec. 26, NW1/4 SE1/4 Sec. 26, E1/2 Sec. 34, W1/2 NW 1/4 Sec. 35 of the Romeoville 7.5' USGS topographic quadrangle. Land west and north of the Des Plaines River and north of East Romeoville Road.

(iv) Illinois Unit 4: Will and Cook Counties. Located in T37N, R10E, S1/2 NE1/4 Sec. 24, W1/2 SW1/4 Sec. 24, SE1/4 Sec. 24 and T37N, R11E, SW1/4 SW1/4 Sec. 17, Sec. 19, NW1/4 Sec. 20 of the Romeoville 7.5' USGS topographic quadrangle. Land to the south of Bluff Road, west of Lemont

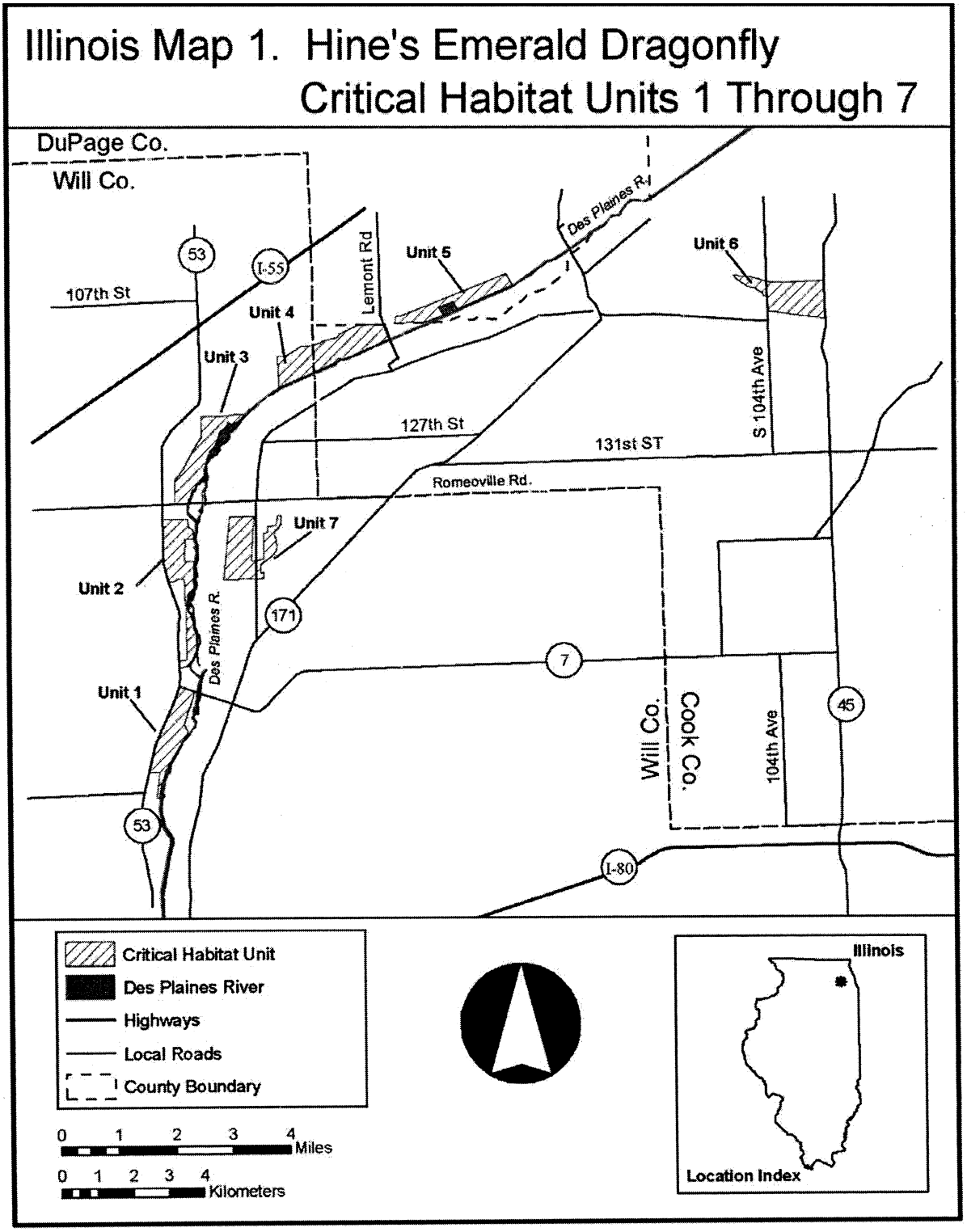
Road, and north of the Des Plaines River.

(v) Illinois Unit 5: DuPage County. Located in T37N, R11E, NW1/4 Sec. 15, NW1/4 SW1/4 Sec. 15, S1/2 NE1/4 Sec. 16, SW1/4 Sec. 16, N1/2 SE1/4 Sec. 16, SE1/4 Sec. 17 of the Sag Bridge 7.5' USGS topographic quadrangle. Land to the north of the Des Plaines River.

(vi) Illinois Unit 6: Cook County. Located in T37N, R12E, S1/2 Sec. 16, S1/2 NE1/4 Sec. 17, N1/2 SE1/4 Sec. 17, N1/2 Sec. 21 of the Sag Bridge and Palos Park 7.5' USGS topographic quadrangles. Land to the north of the Calumet Sag Channel, south of 107th Street, and east of U.S. Route 45.

(vii) Illinois Unit 7: Will County. Located in T36N, R10E, W1/2 Sec. 1, Sec. 2, N1/2 Sec. 11 of the Romeoville and Joliet 7.5' USGS topographic quadrangles. Land east of the Illinois and Michigan Canal.

(viii) *Note*: Map of Illinois Units 1 through 7 (Illinois Map 1) follows:

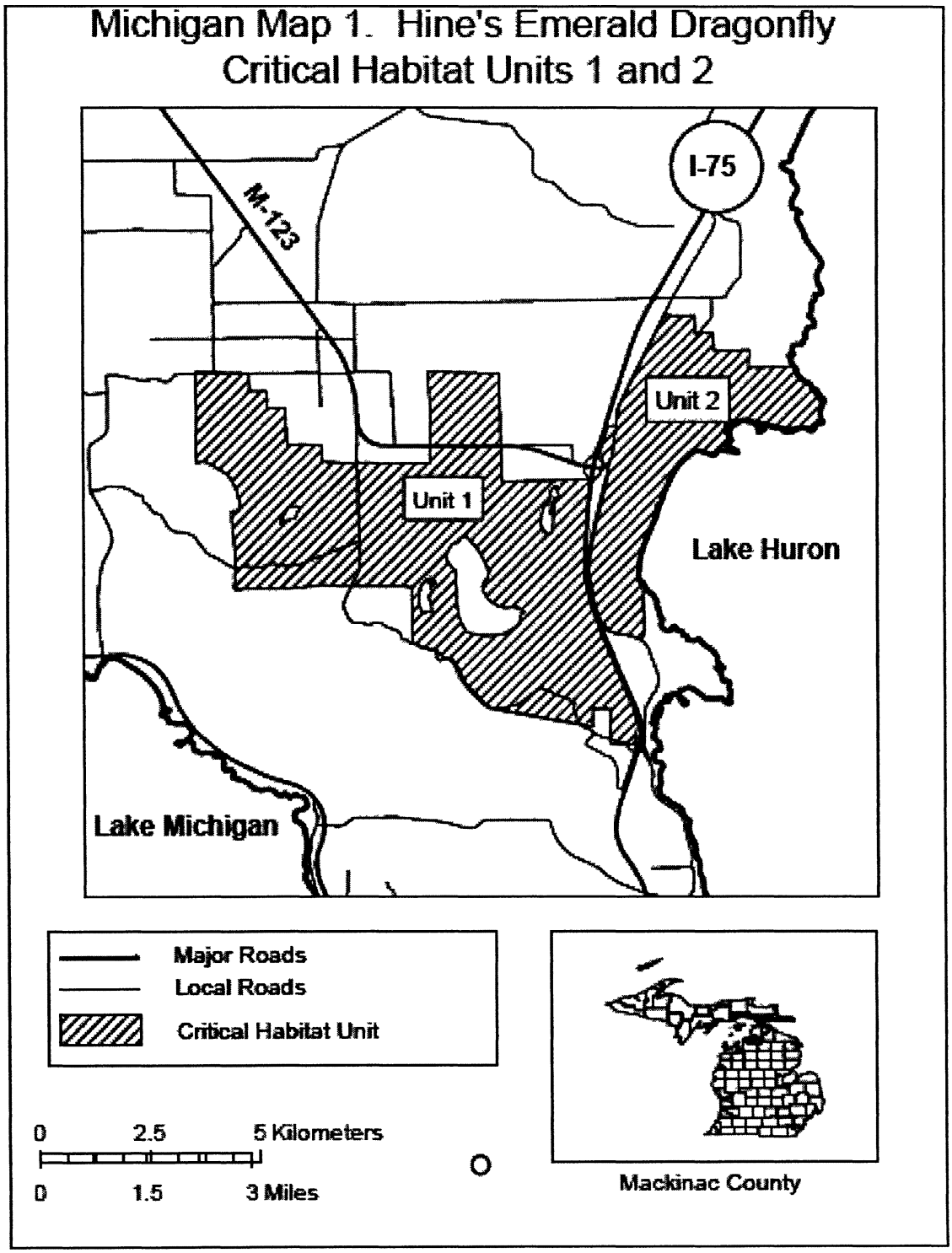


(7) Michigan Units 1 and 2, Mackinac County, Michigan.

(i) Michigan Unit 1: Mackinac County. The unit is located approximately 2 miles north of the village of St. Ignace. The unit contains all of T41N, R4W, Secs. 3, 6, 8, 9, 10, 11, 14, 15, 16, 23; portions of T41N, R4W, Secs. 4, 7, 17, 18, 22, 24, 25, 26, 27; and T41N, R5W, Secs. 1 and 12 of the Moran and Evergreen Shores 7.5' USGS topographic quadrangles. The unit is west of I-75, east of Brevort Lake, and north of Castle Rock Road.

(ii) Michigan Unit 2: Mackinac County. The unit is located approximately 2 miles north of the village of St. Ignace. The unit contains all of T41N, R3W, Sec. 6; portions of T41N, R4W, Secs. 1, 12, 13, 24; portions of T41N, R3W, Secs. 4, 5, 7; and portions of T42N, R3W, Sec. 31 of the Evergreen Shores 7.5' USGS topographic quadrangle. The unit is west of Lake Huron and east of I-75.

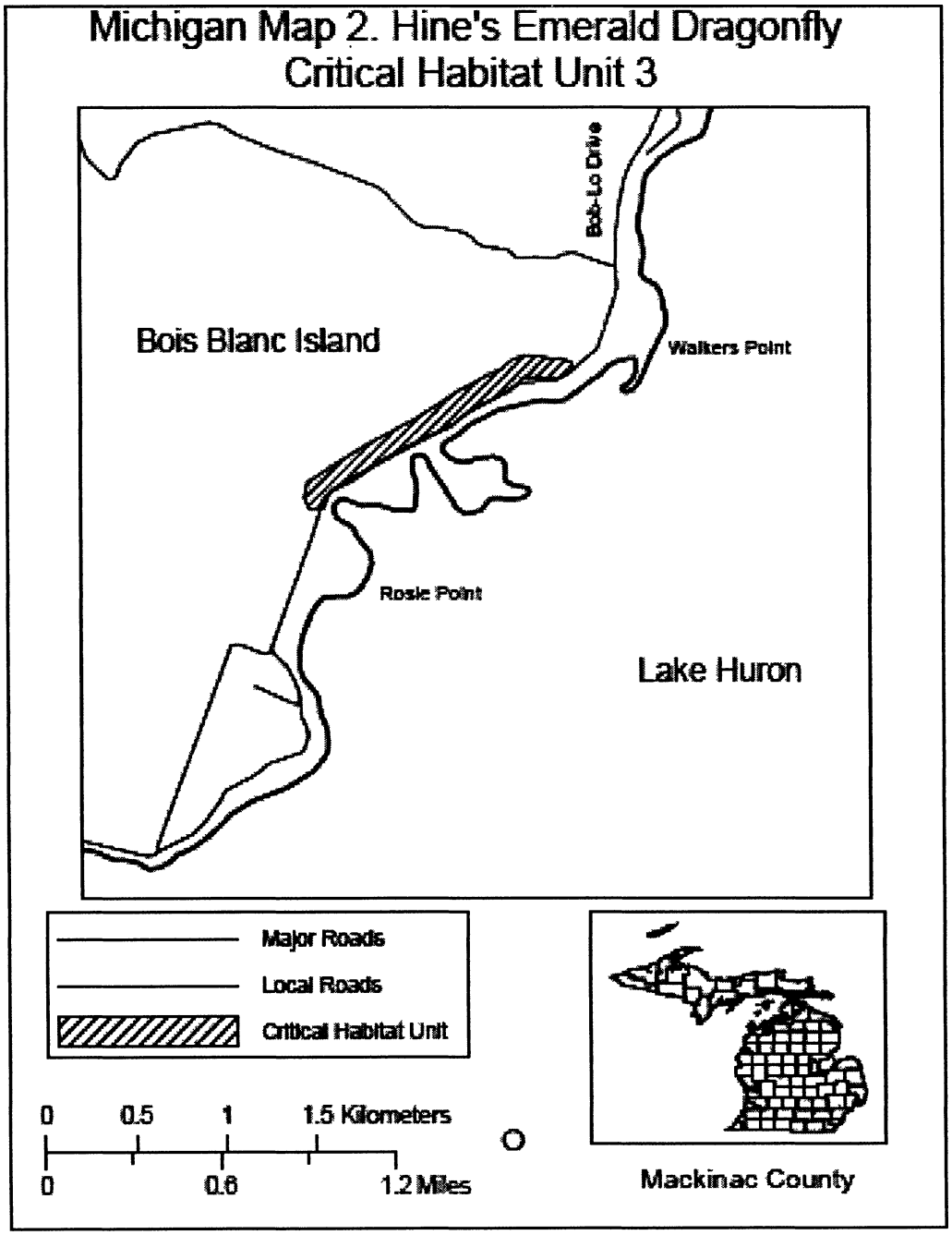
(iii) *Note*: Map of Michigan Units 1 and 2 (Michigan Map 1) follows:



(8) Michigan Unit 3, Mackinac County, Michigan.

(i) Michigan Unit 3: Mackinac County. Located on the east end of Bois Blanc Island. Bois Blanc Island has not adopted an addressing system using the public land survey system. The unit is located in Government Lots 25 and 26 of the Cheboygan and McRae Bay 7.5' USGS topographic quadrangles. The unit extends from approximately Walker's Point south to Rosie Point on the west side of Bob-Lo Drive. It extends from the road approximately 328 ft (100 m) to the west.

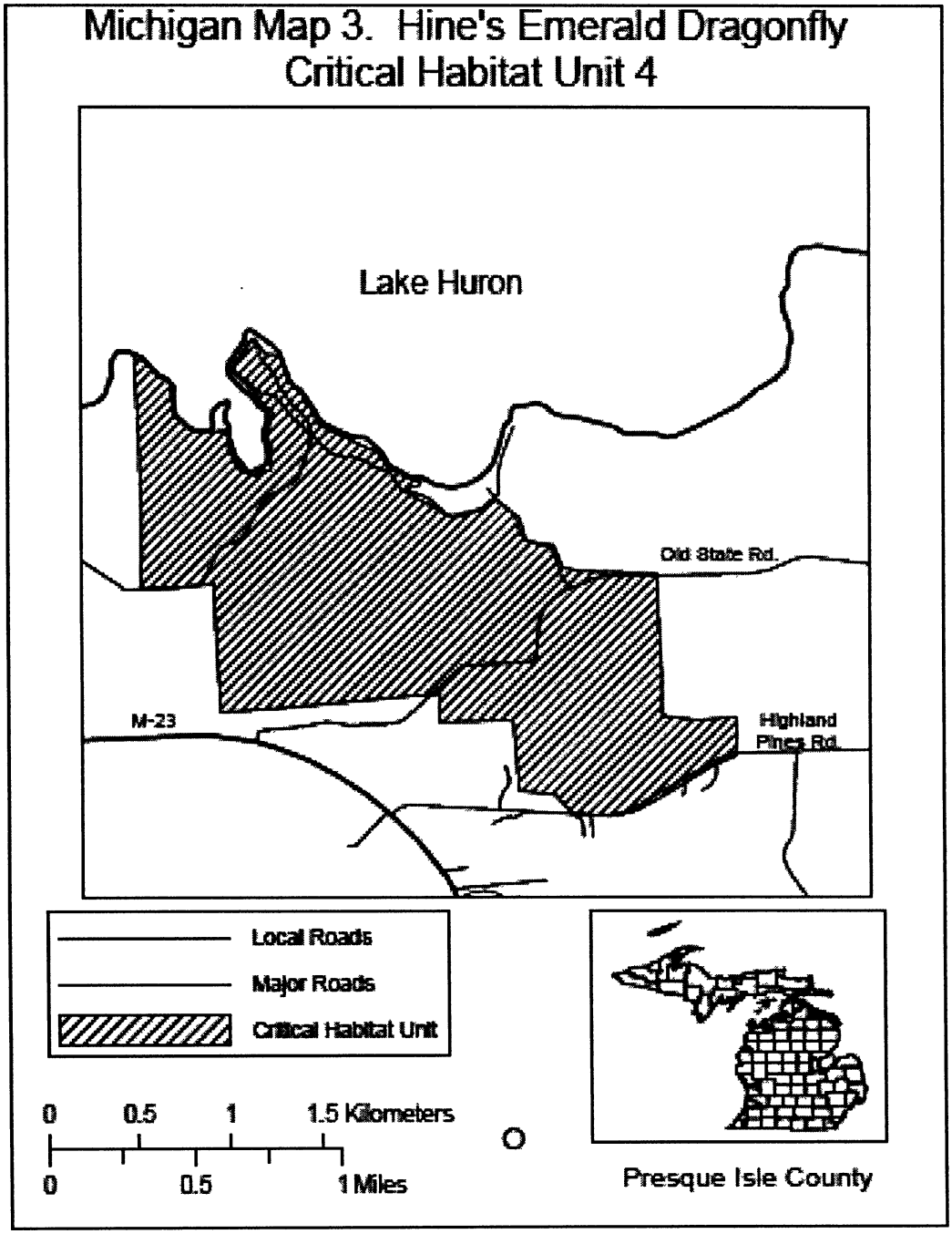
(ii) *Note*: Map of Michigan Unit 3 (Michigan Map 2) follows:



(9) Michigan Unit 4, Presque Isle County, Michigan.

(i) Michigan Unit 4: Presque Isle County. Located approximately 12 miles southeast of the village of Rogers City. The unit contains all of T34N, R7E, SW1/4 SW1/4 Sec. 14, SW1/4 NW1/4 Sec. 15, NE1/4 SW1/4 Sec. 15, NW1/4 SE1/4 Sec. 15, NW1/4 SW1/4 Sec. 15, SE1/4 SE1/4 Sec. 15, NW1/4 NE1/4 Sec. 16, NE1/4 NW1/4 Sec. 16, SE1/4 NE1/4 Sec. 16, and NW1/4 NW1/4 Sec. 23. It also contains portions of T34N, R7E, all 1/4 sections in Secs. 15, all 1/4 sections in Sec. 16, SE1/4 and SW1/4 Sec. 9, SW1/4 Sec. 10, SW1/4 Sec. 14, NE1/4 Sec. 22, NW1/4 and NE1/4 Sec. 23 of the Thompson's Harbor 7.5' USGS topographic quadrangle. The northern boundary of the unit is Lake Huron and the southern boundary is north of M-23.

(ii) *Note*: Map of Michigan Unit 4 (Michigan Map 3) follows:



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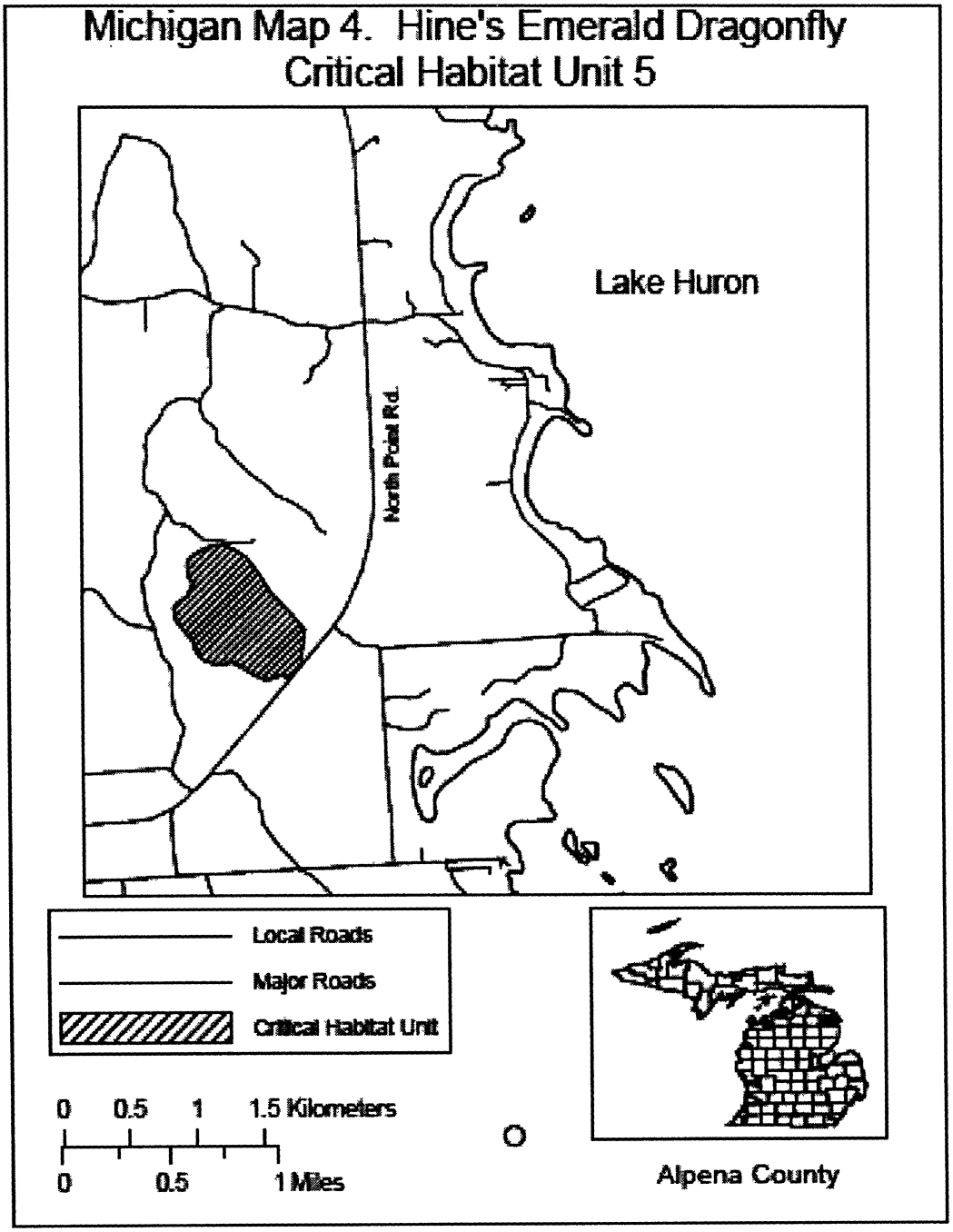
(10) Michigan Unit 5, Alpena County, Michigan.

(i) Michigan Unit 5: Alpena County. Located approximately 9 miles northeast of the village of Alpena. The unit contains all of T31N, R9E, SE1/4 SW1/4 Sec 9. It also contains portions of T31N, R9E, NW1/4 SW1/4 Sec. 9, NE1/4 SW1/4 Sec. 9, SW1/4 SW1/4 Sec. 9, SW1/4 SE1/4 Sec 9; and portions of T31N, R9E, NE1/4 NW1/4 Sec. 16, NW1/4 NE1/4 Sec. 16, NW1/4 NW1/4 Sec. 16 of the 7.5' USGS topographic quadrangle North Point 7.5′ USGS topographic quadrangle. North Point Road is east of the area.

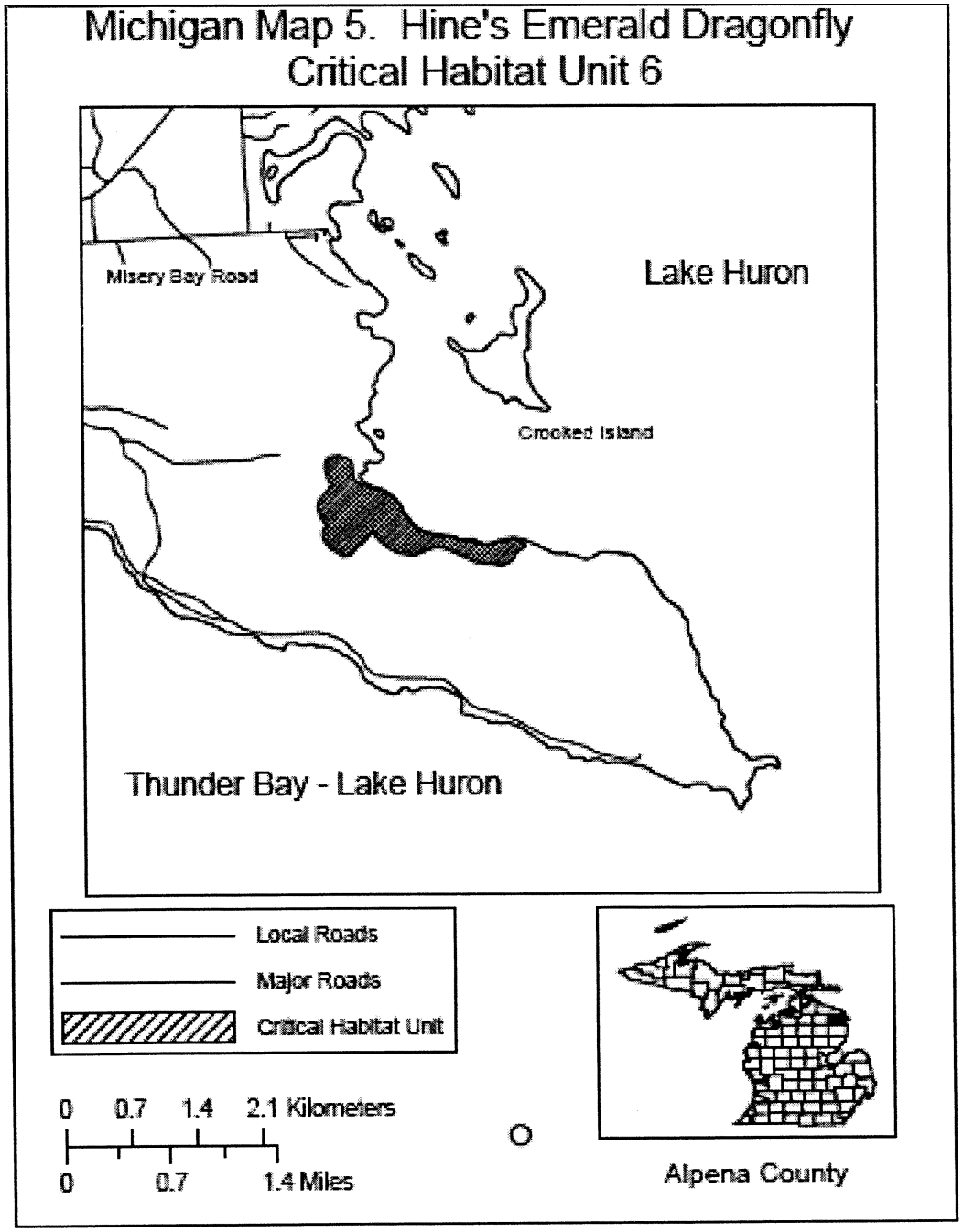
(ii) *Note*: Map of Michigan Unit 5 (Michigan Map 4) follows:



(11) Michigan Unit 6, Alpena County, Michigan.

(i) Michigan Unit 6: Alpena County. Located approximately 5 miles east of the village of Alpena. The unit contains all of T31N, R9E, SW1/4 SE1/4 Sec. 27. It also contains portions of T31N, R9E, NW1/4 SE1/4 Sec. 27, NE1/4 SW1/4 Sec. 27, SE1/4 SW1/4 Sec. 27, SE1/4 SE1/4 Sec. 27; portions of T31N, R9E, NE1/4 NW1/4 Sec. 34, NW1/4 NE1/4 Sec. 34, NE1/4 NE1/4 Sec. 34; and portions of T31N, R9E, NW1/4 NW1/4 Sec. 35, NE1/4 NW1/4, NW1/4 NE1/4 Sec. 35 of the North Point 7.5' USGS topographic quadrangle. Lake Huron is the east boundary of the unit.

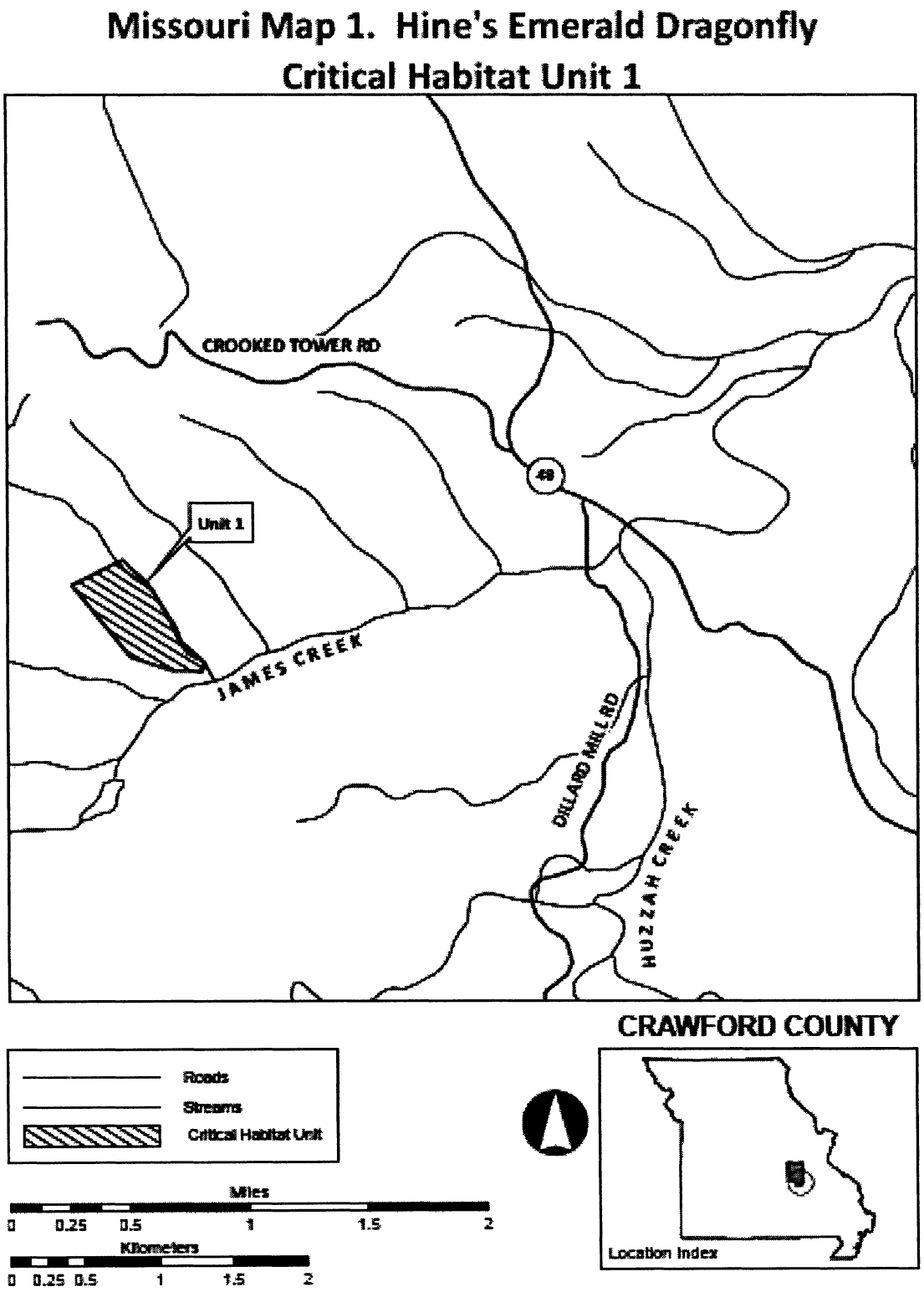
(ii) *Note*: Map of Michigan Unit 6 (Michigan Map 5) follows:



(12) Missouri Unit 1, Crawford County, Missouri.

(i) Missouri Unit 1: Crawford County. Located in T35N, R3W, Secs. 22 and 23 of the Viburnum West 7.5' USGS topographic quadrangle. Missouri Unit 1 is associated with James Creek and is located approximately 1.5 miles west of Billard, Missouri.

(ii) *Note*: Map of Missouri Unit 1 (Missouri Map 1) follows:



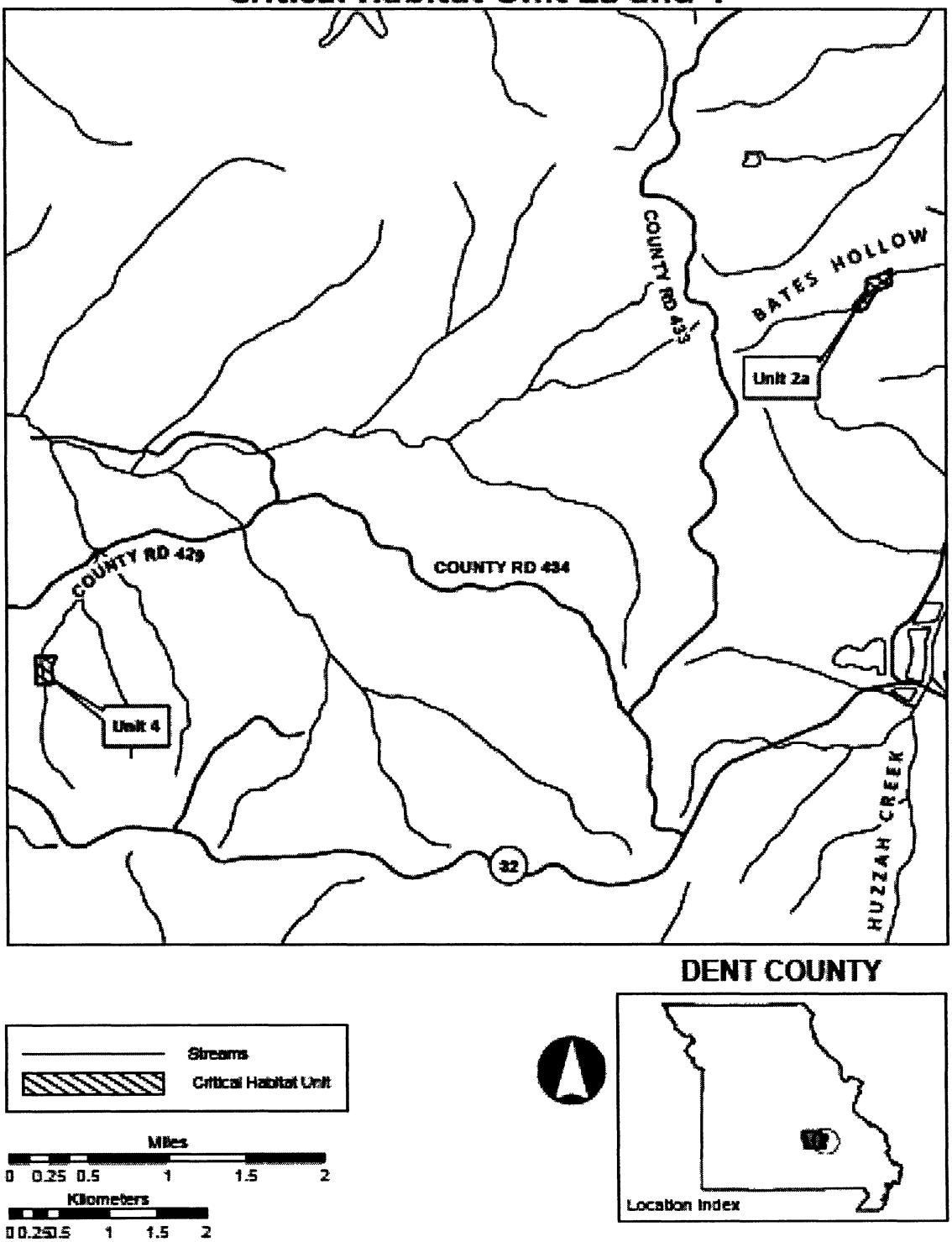
(13) Missouri Units 2a and 4, Dent County, Missouri.

(i) Missouri Unit 2a: Dent County. Located in T34N, R3W, Secs. 3 and 4 of the Howes Mill Spring 7.5' USGS topographic quadrangle. Missouri Unit 2a is associated with an unnamed tributary to West Fork Huzzah Creek and is located approximately 2.5 air miles north of the village of Howes Mill, Missouri adjacent to county road 438.

(ii) Missouri Unit 4: Dent County. Located in T34N, R4W, Secs. 15 and 22 of the Howes Mill Spring 7.5' USGS topographic quadrangle. Missouri Unit 4 is associated with a tributary of Hutchins Creek in Fortune Hollow and is located approximately 1 mile east of the juncture of Highway 72 and Route MM.

(iii) *Note*: Map of Missouri Units 2a and 4 (Missouri Map 2) follows:

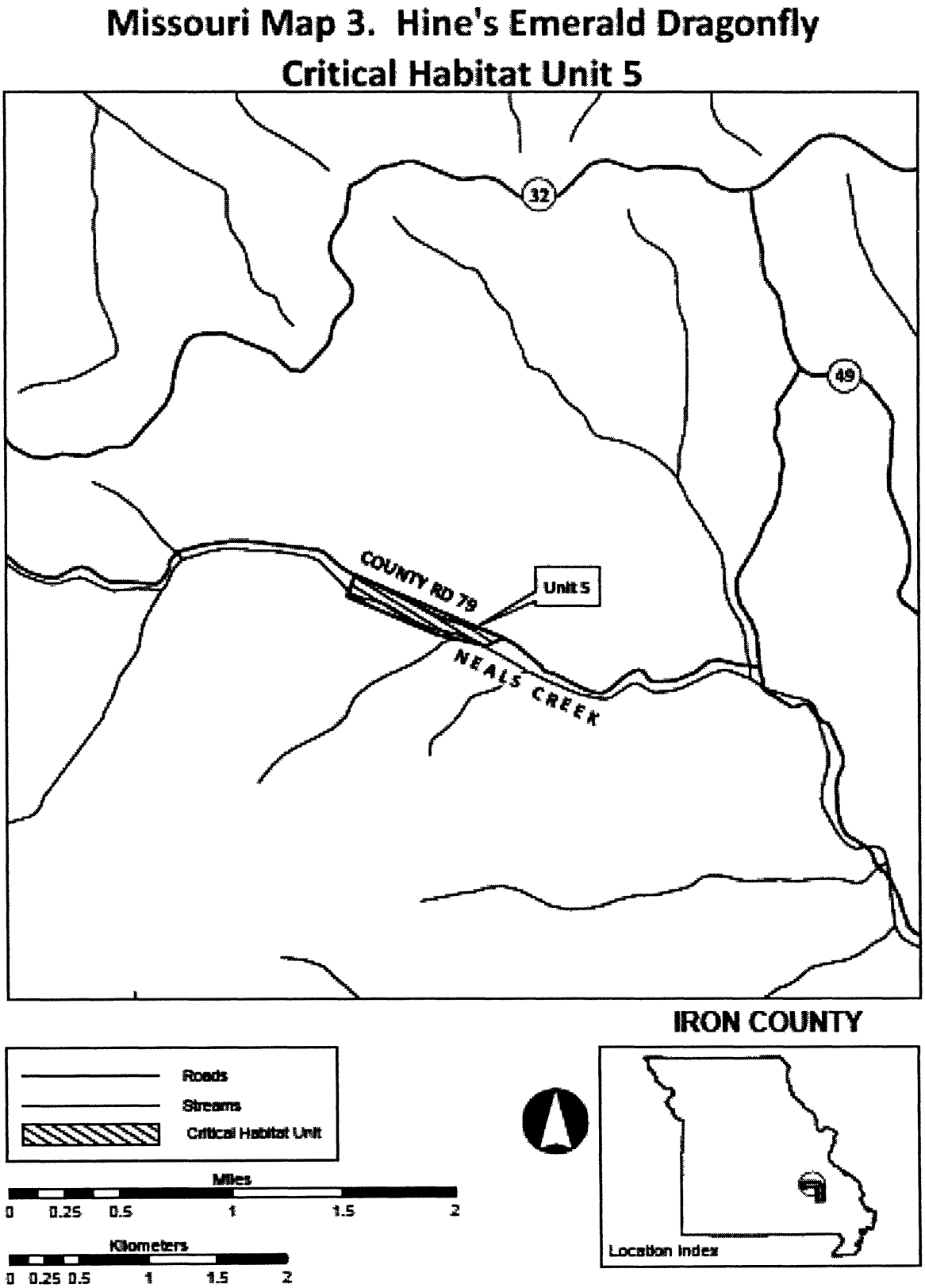
Missouri Map 2. Hine's Emerald Dragonfly Critical Habitat Unit 2a and 4



(14) Missouri Unit 5, Iron County, Missouri.

(i) Missouri Unit 5: Iron County. Located in T34N, R1W, Sec. 17of the Viburnum East 7.5' USGS topographic quadrangle. Missouri Unit 5 is located adjacent to Neals Creek and Neals Creek Road, approximately 2.5 miles southeast of Bixby.

(ii) *Note*: Map of Missouri Unit 5 (Missouri Map 3) follows:

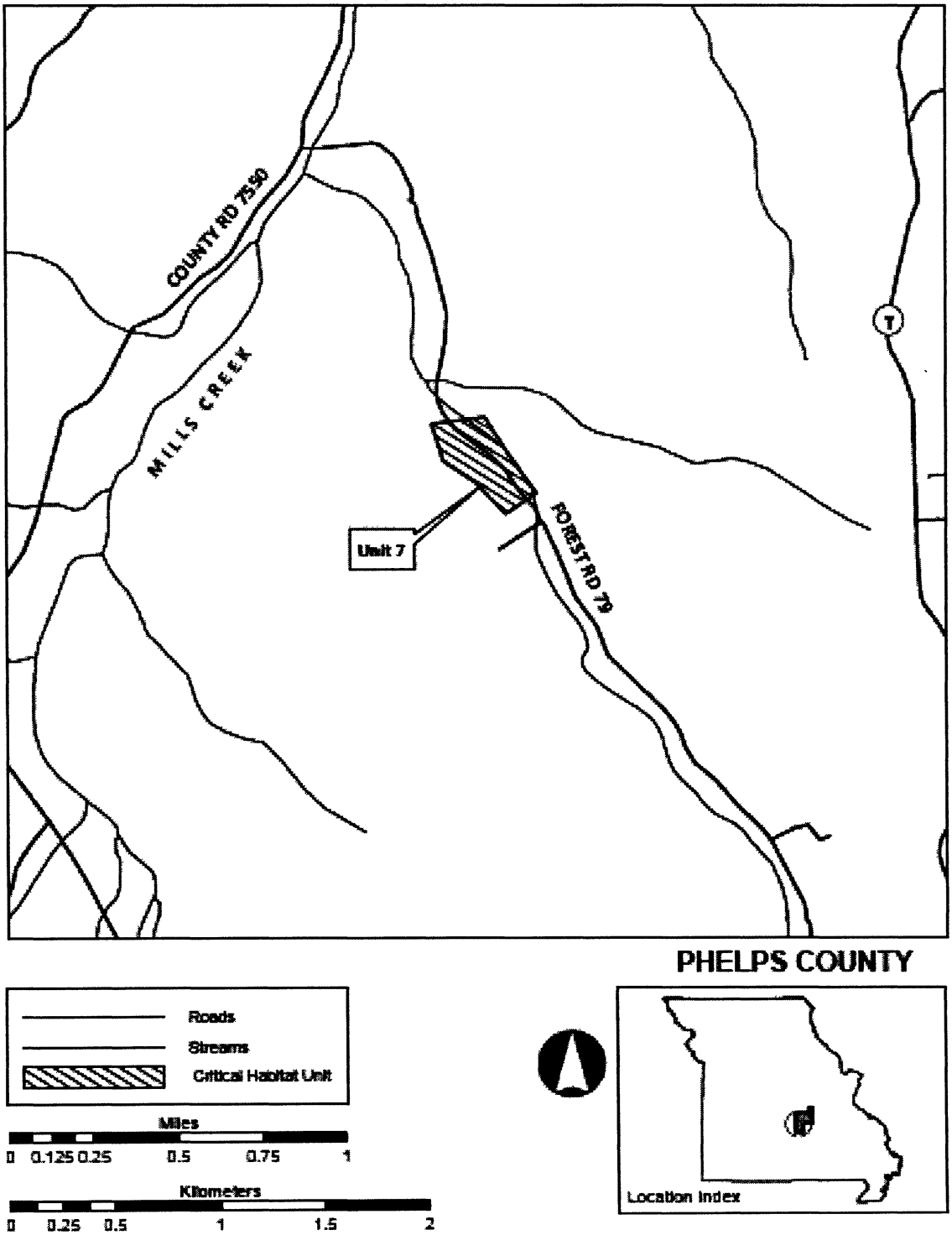


(15) Missouri Unit 7, Phelps County, Missouri.

(i) Missouri Unit 7: Phelps County. Located in T36N, R9W, Sec. 9 of the Kaintuck Hollow 7.5' USGS topographic quadrangle. Missouri Unit 7 is associated with Kaintuck Hollow and a tributary of Mill Creek, and is located approximately 4 miles south southwest of the town of Newburg.

(ii) *Note*: Map of Missouri Unit 7 (Missouri Map 4) follows:

Missouri Map 4. Hine's Emerald Dragonfly Critical Habitat Unit 7

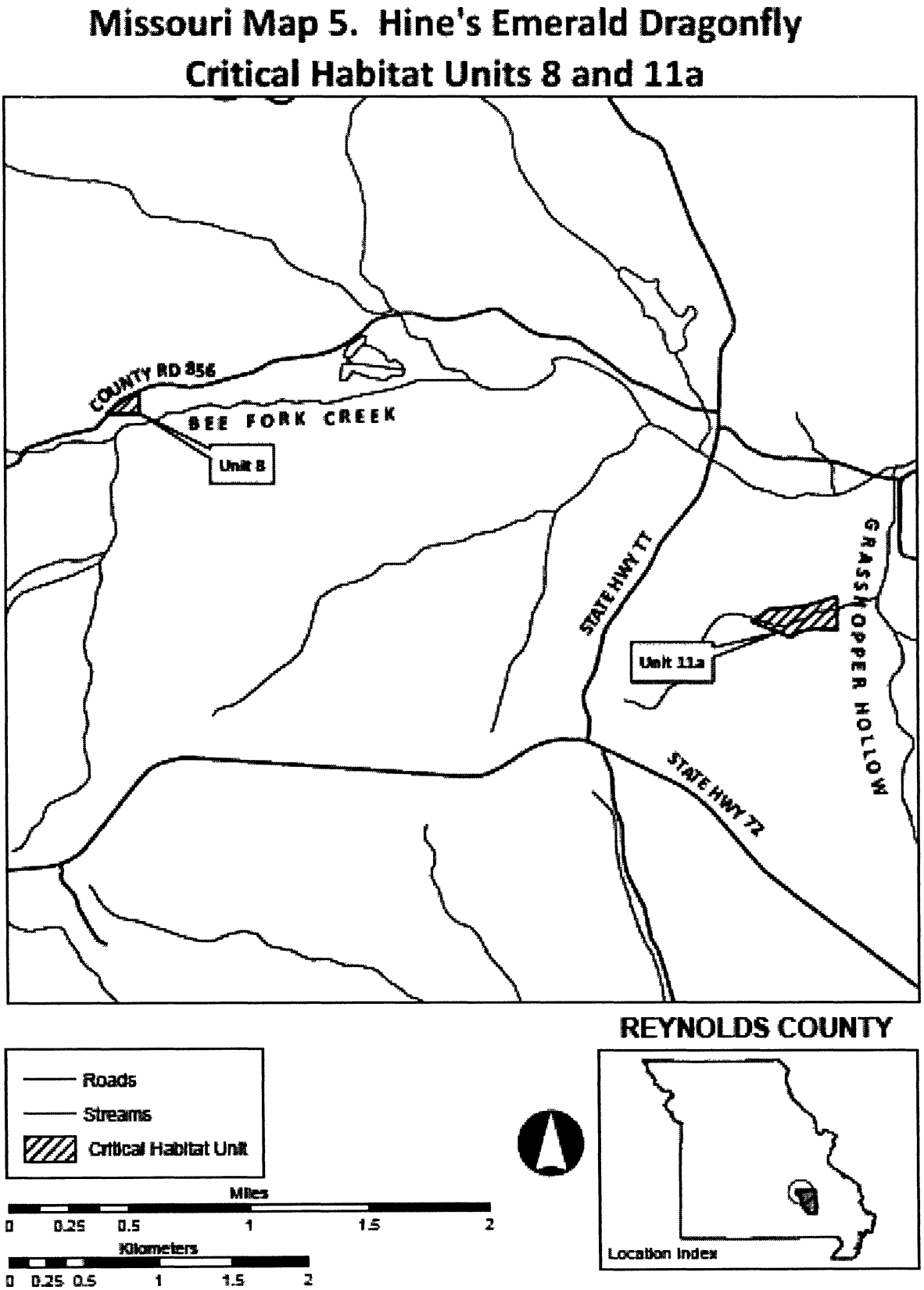


(16) Missouri Units 8and 11a, Reynolds County, Missouri.

(i) Missouri Unit 8: Reynolds County. Located in T32N, R2W, Sec. 22, southeast 1/4, southwest 1/4 of the Bunker 7.5' USGS topographic quadrangle. Missouri Unit 8 is adjacent to Bee Fork Creek and is located approximately 3 miles east of Bunker.

(ii) Missouri Unit 11a: Reynolds County. Located in T32N, R1W, Sec. 30 of the Corridon 7.5' USGS topographic quadrangle. Missouri Unit 11 is located approximately 1 mile east of the intersection of Route TT and Highway 72, extending north to the Bee Fork Church on County Road 854.

(iii) *Note*: Map of Missouri Units 8 and 11a (Missouri Map 5) follows:

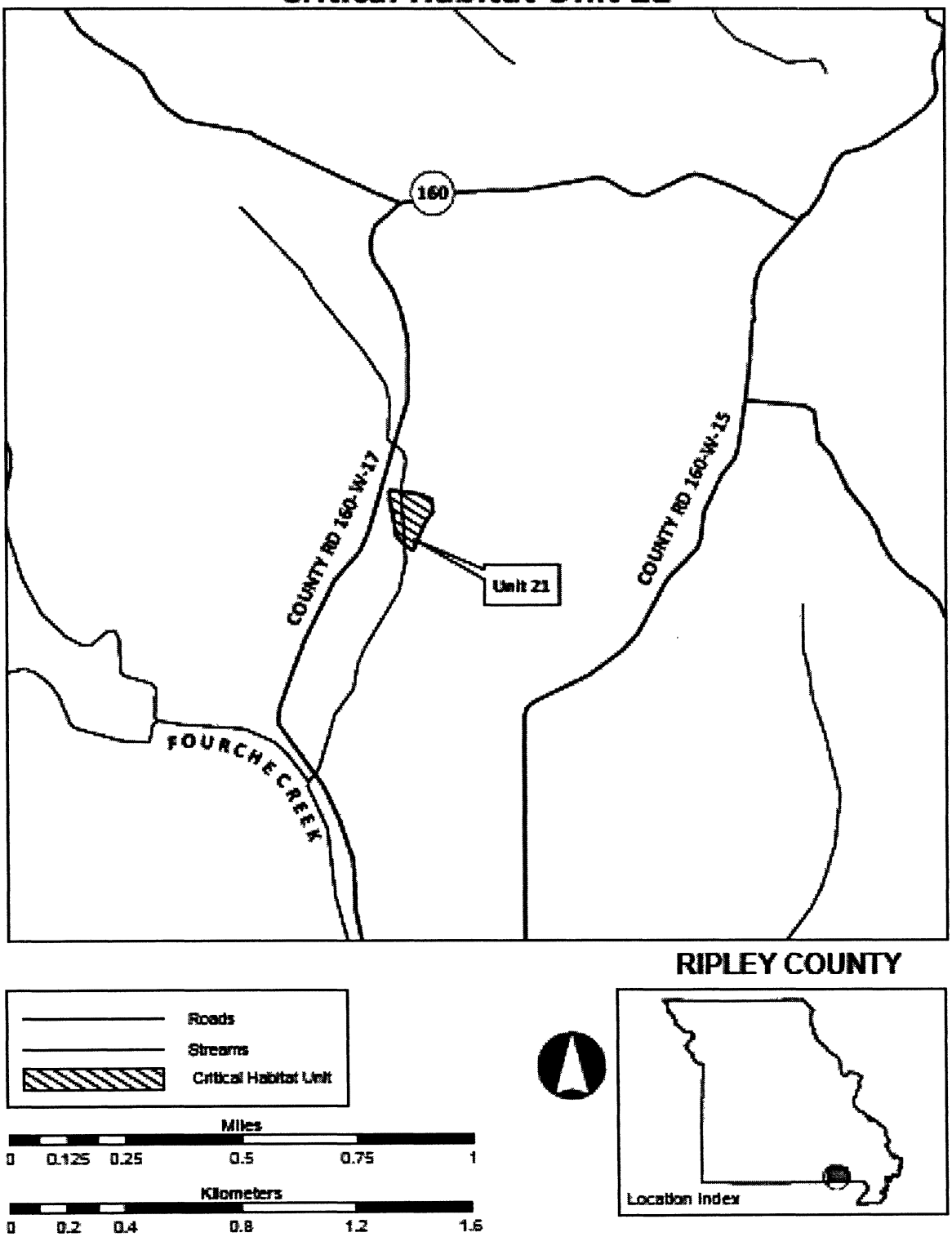


(17) Missouri Unit 21, Ripley County, Missouri.

(i) Missouri Unit 21: Ripley County. Located in T23N, R1W, Sec. 23 of the Bardley 7.5' USGS topographic quadrangle. Missouri Unit 21 is associated with an unnamed tributary of Fourche Creek and is located approximately 12 miles west of Doniphan.

(ii) *Note*: Map of Missouri Unit 21 (Missouri Map 6) follows:

Missouri Map 6. Hine's Emerald Dragonfly Critical Habitat Unit 21

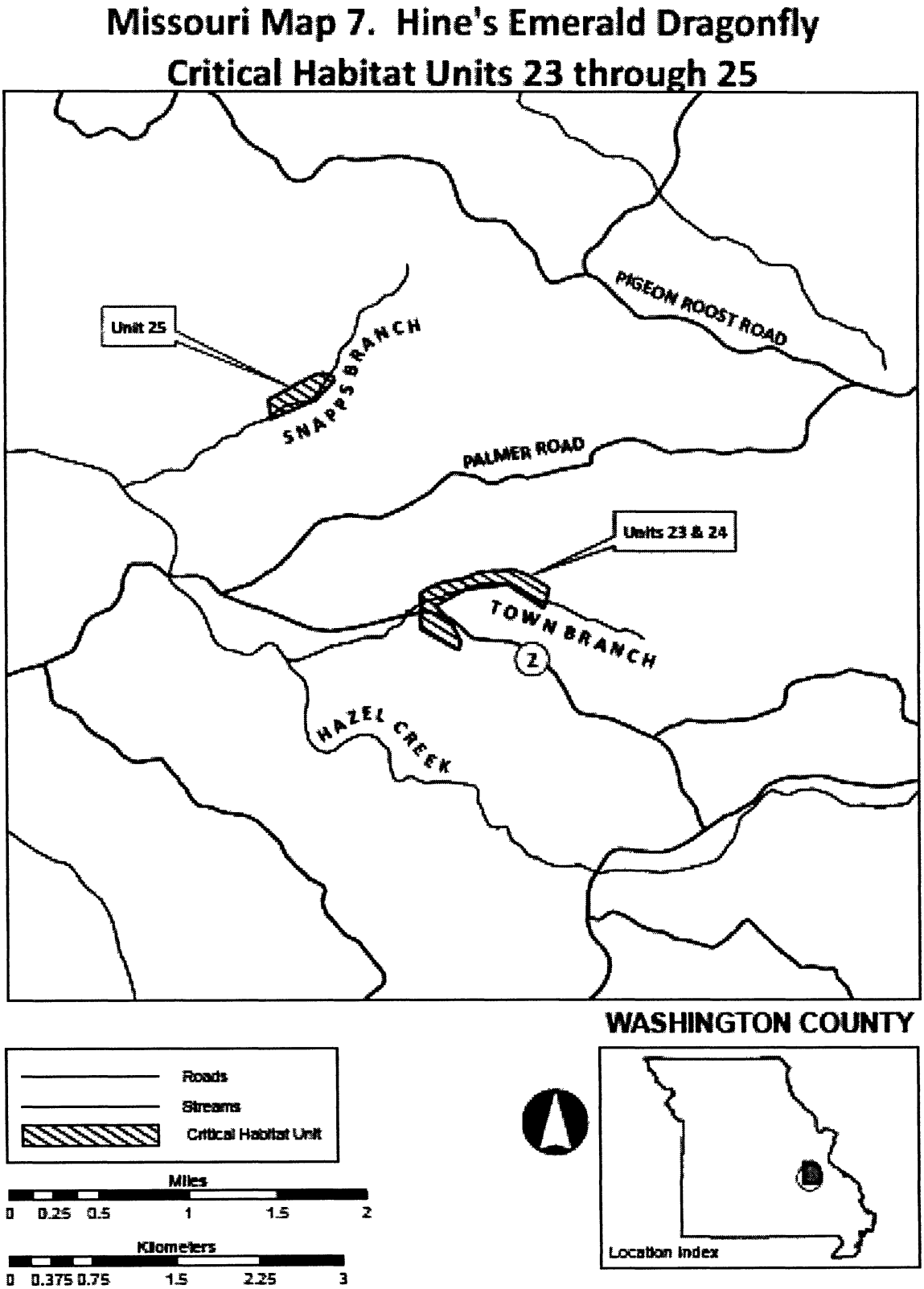


(18) Missouri Units 23 through 25, Washington County, Missouri.

(i) Missouri Units 23 and 24: Washington County. Located in T36N, R1W, Sec. 13 of the Palmer 7.5' USGS topographic quadrangle. Missouri Units 23 and 24 comprise the Towns Branch and Welker Fen complex and are located near the town of Palmer.

(ii) Missouri Unit 25: Washington County. Located in T36N, R1W, Secs. 2 and 11 of the Courtois 7.5' USGS topographic quadrangle. Missouri Unit 25 is associated with a tributary of Hazel Creek and is located approximately 1.5 miles northwest of the town of Palmer.

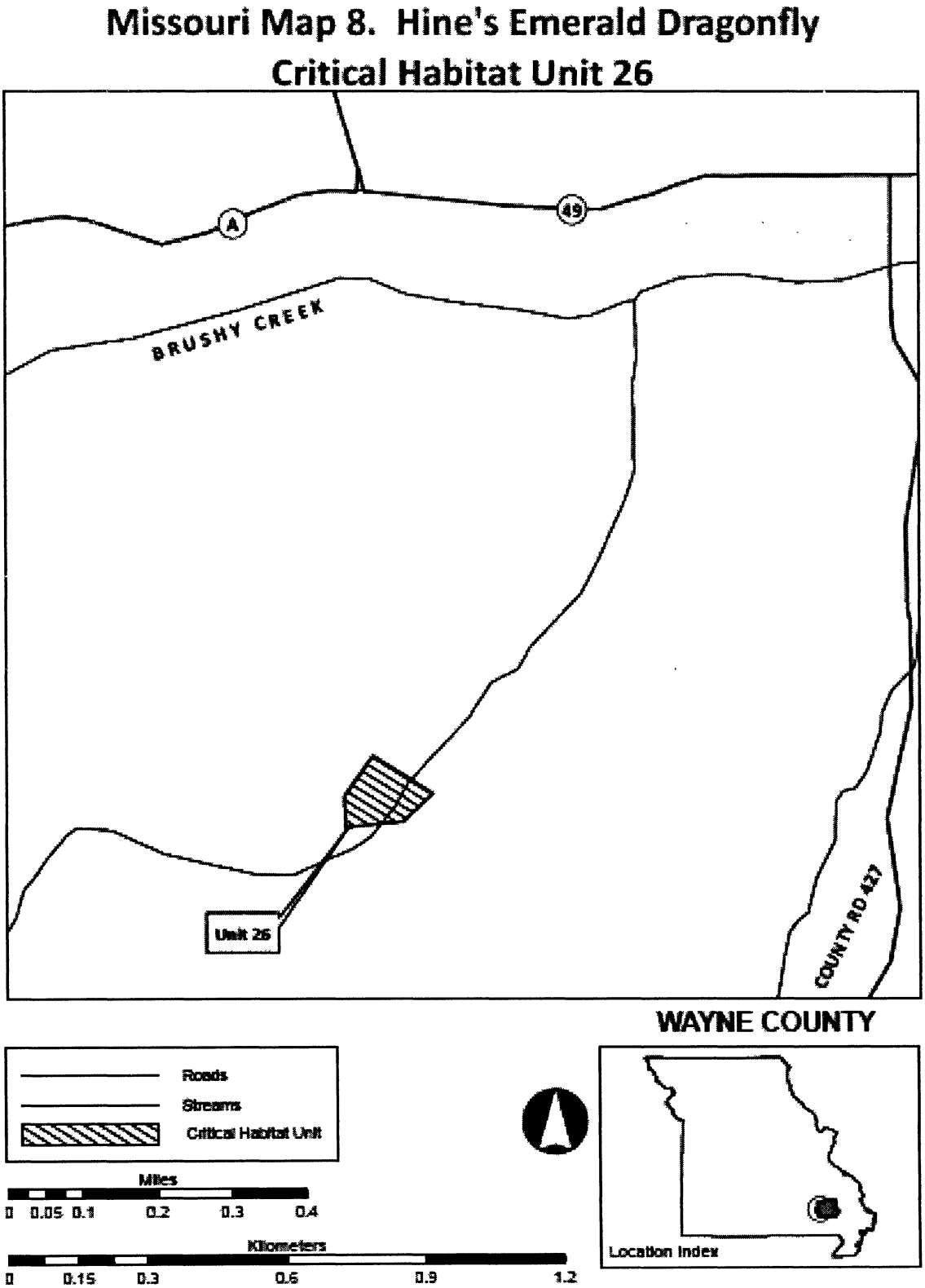
(iii) *Note*: Map of Missouri Units 23 through 25 (Missouri Map 7) follows:



(19) Missouri Unit 26, Wayne County, Missouri

(i) Missouri Unit 26: Wayne County. Located in T27N, R4E, Sec. 33 of the Ellsinore 7.5' USGS topographic quadrangle. Missouri Unit 26 is located near Williamsville and is associated with Brushy Creek.

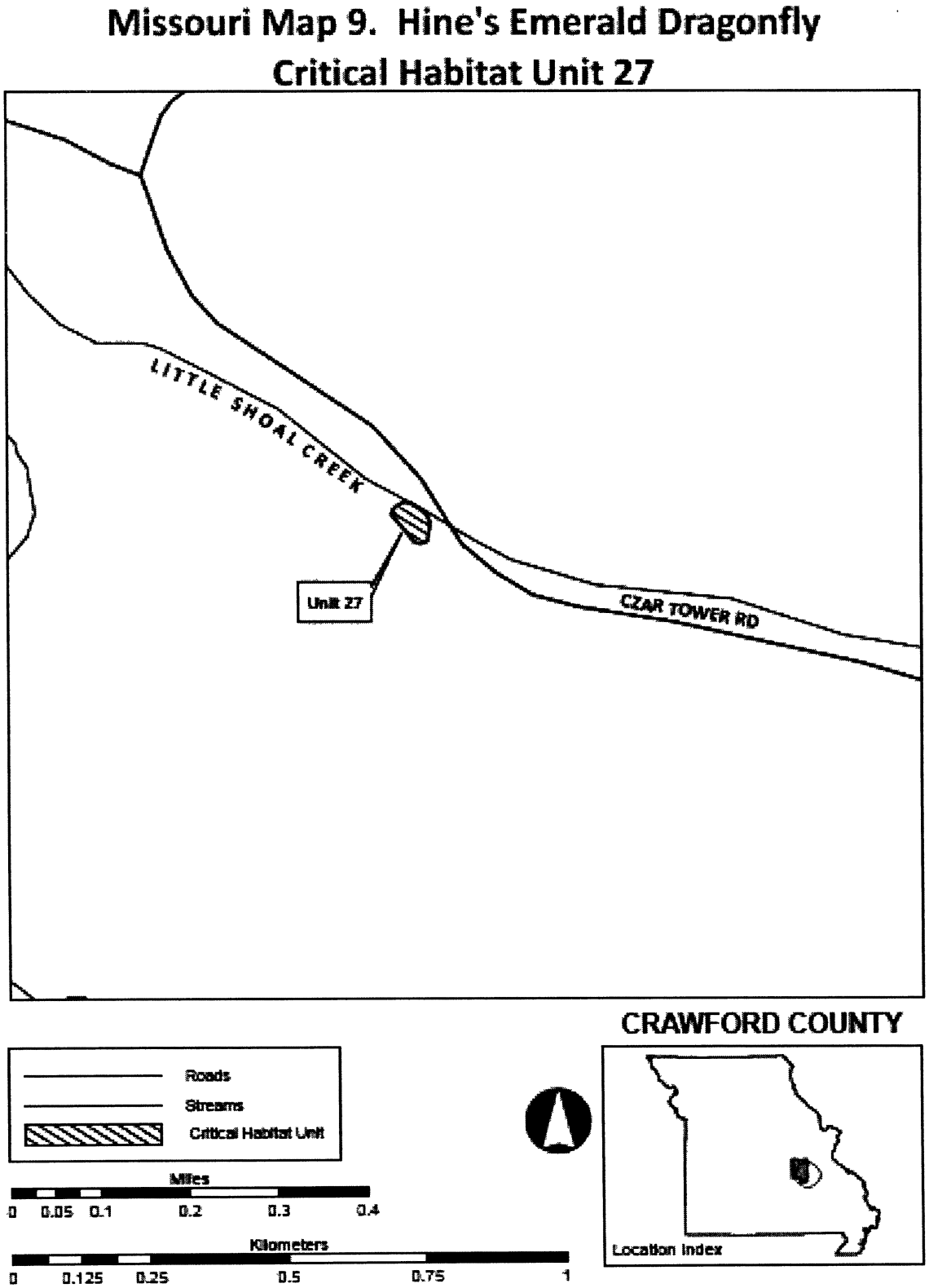
(ii) *Note*: Map of Missouri Unit 26 (Missouri Map 8) follows:



(20) Missouri Unit 27, Crawford County, Missouri.

(i) Missouri Unit 27: Crawford County. Located on the Courtois quadrangle in Township 36 north, Range 2 west, section 14, northeast 1/4, southwest 1/4, northwest 1/4.

(ii) *Note*: Map of Missouri Unit 27 (Missouri Map 9) follows:



(21) Wisconsin Unit 1, Door County, Wisconsin.

(i) Wisconsin Unit 1: Washington Island, Door County. Located in T33N, R30E, W1/2 and NE1/4 Sec. 4, SE1/4 Sec. 5 of Washington Island SE and Washington Island NE 7.5' USGS topographic quadrangles. Lands included are located adjacent to and west of Wickman Road, south of Town Line Road, East of Deer Lane and East Side Roads, north of Lake View Road and include Big Marsh and Little Marsh.

(ii) *Note*: Map of Wisconsin Unit 1 (Wisconsin Map 1) follows:

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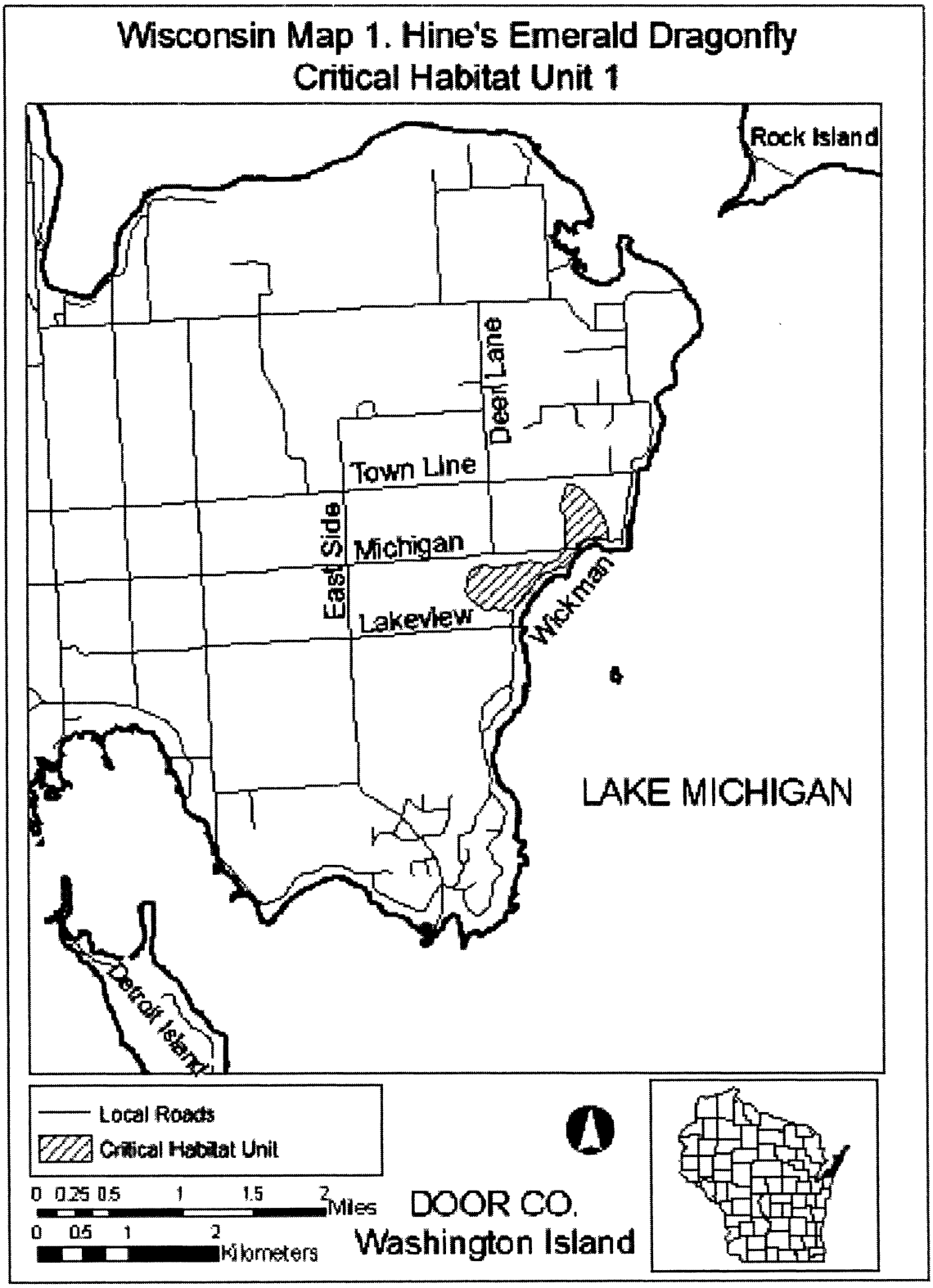
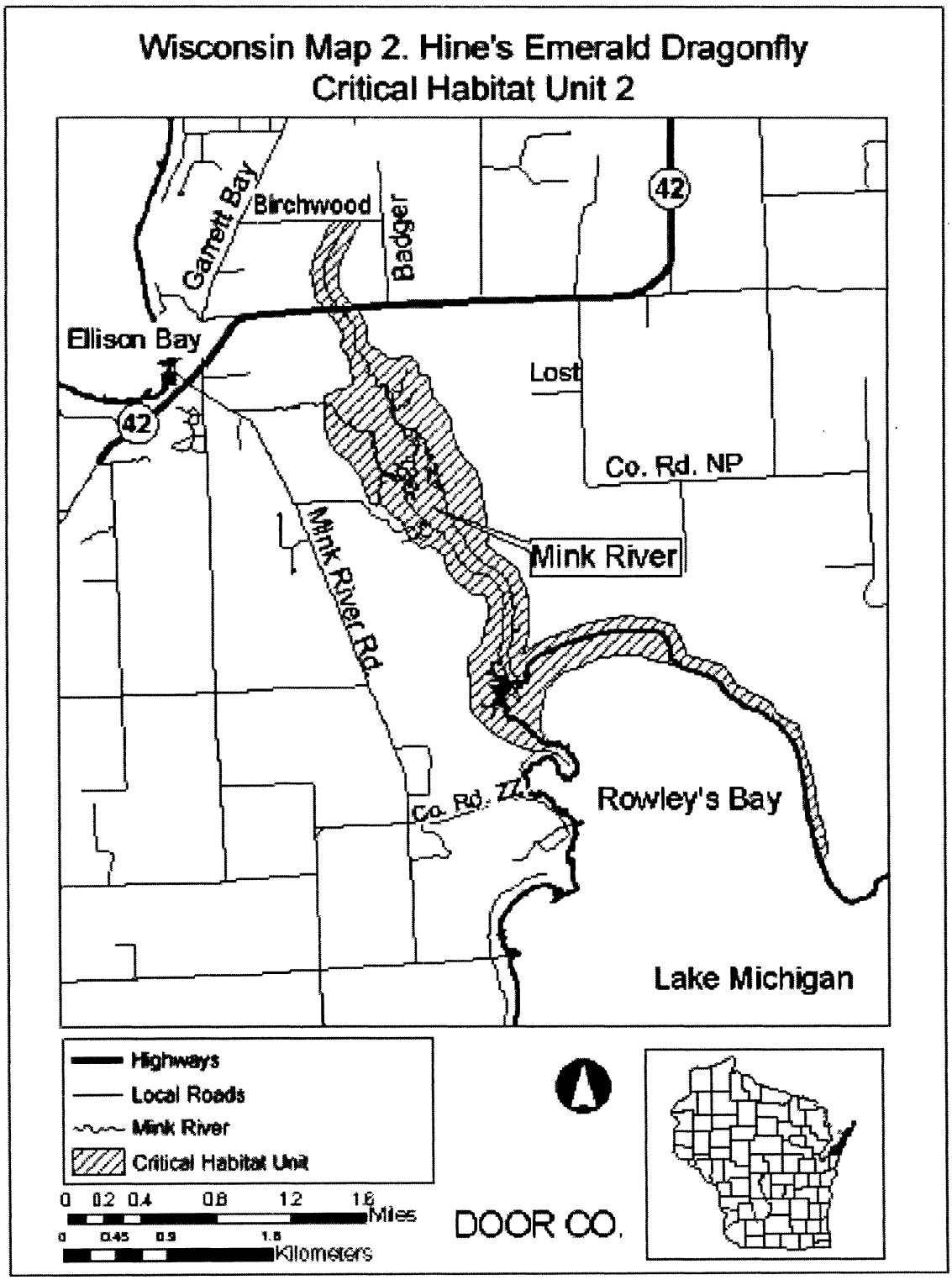


(22) Wisconsin Unit 2, Door County, Wisconsin.

(i) Wisconsin Unit 2: Door County. Located in T32N, R28E, SE 1/4 Sec. 11, NW 1/4 Sec. 13, NE1/4 Sec. 14 of the Ellison Bay 7.5' USGS topographic quadrangle, and in T32N, R28E, W1/2 Sec. 13, E 1/2 Sec. 14, NE1/4 Sec. 23, portions of each 1/4 of Sec. 24, N1/2 Sec. 25, and T32N, R29E, S1/2 Sec. 19, W1/2 Sec. 29, NE1/4 Sec. 30 of Sister Bay 7.5' USGS topographic quadrangle. Lands included are located east of the Village of Ellison Bay, south of Garrett Bay Road and Mink River Roads, North of County Road ZZ, west of Badger Road, County Road NP and Juice Mill Road, and includes the Mink River.

(ii) *Note*: Map of Wisconsin Unit 2 (Wisconsin Map 2) follows:



(23) Wisconsin Units 3 through 7, Door County, Wisconsin.

(i) Wisconsin Unit 3: Door County. Located in T31N R28E, S 1/2 S10, NE 1/4 S15 of Sister Bay 7.5' USGS topographic quadrangle. Lands included are located south of County Road ZZ, north of North Bay (Lake Michigan), west of North Bay Road, east of Old Stage Road and about two miles east of the Village of Sister Bay and include a portion of Three-Springs Creek.

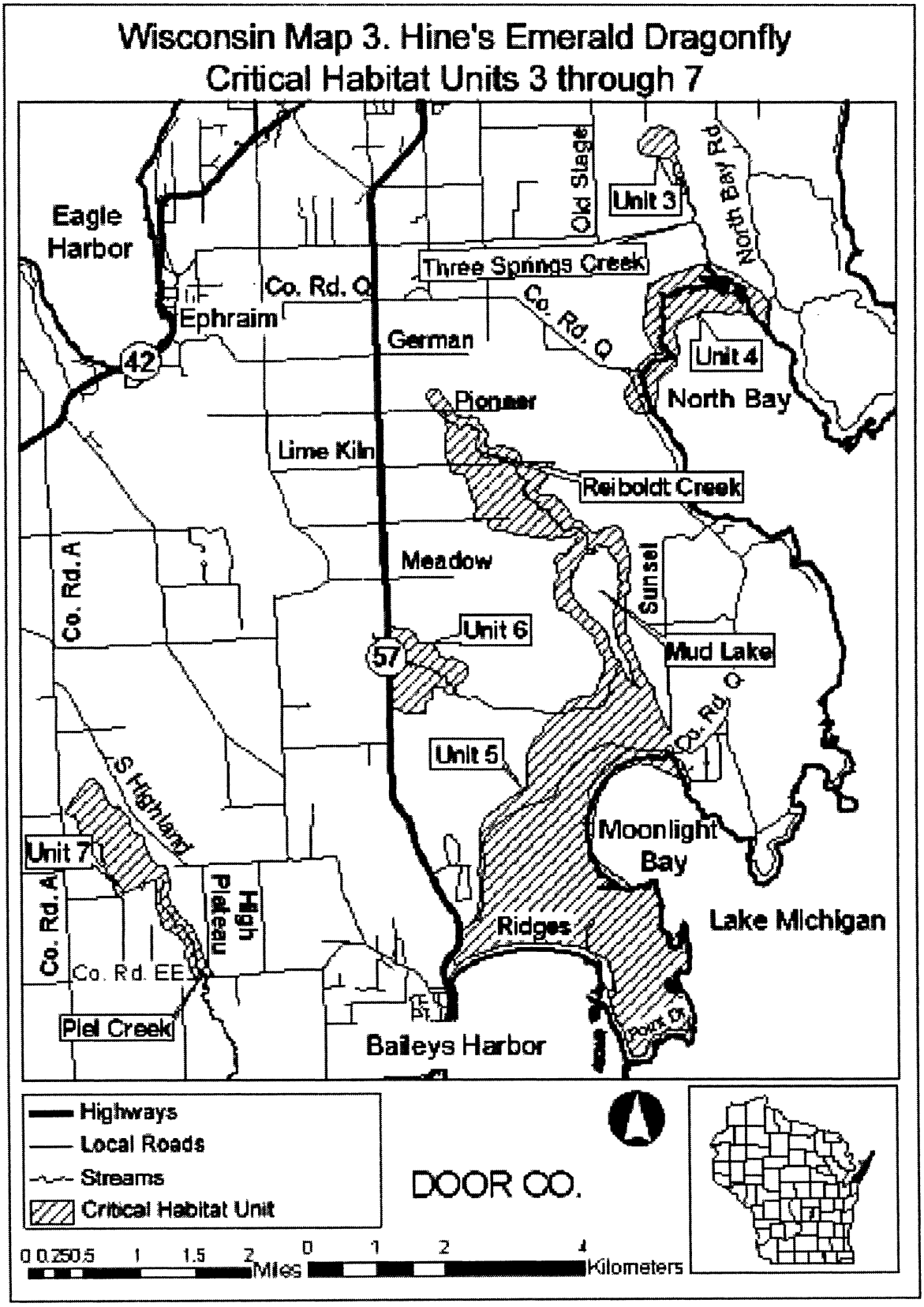
(ii) Wisconsin Unit 4: Door County. Located in T31N, R28E, SW1/4 and S1/2 Sec. 15, portions of each 1/4 of Sec. 22, and N1/2 of Sec. 23 of the Sister Bay 7.5' USGS topographic quadrangle. Lands are located along the north and northwest sides of North Bay (Lake Michigan).

(iii) Wisconsin Unit 5: Door County. Located in T31N, R28E, S1/2 Sec. 20, E1/2 Sec. 29, NW1/4 and S1/2 Sec. 28, N1/2 and SE1/4 Sec. 33, and W1/2 Sec. 34. It also is located in T30N, R28E, W1/2 Sec. 3, E1/2 and SW1/4 Sec. 4, SE1/4 Sec. 8, Sec. 9, N1/2 Sec. 10, W1/2 and SE 1/4 Sec.15, Sec. 16, and Sec. 17 of the Baileys Harbor East, and Sister Bay 7.5' USGS topographic quadrangles. Lands located south of German Road, east of State Highway 57, west of North Bay Drive, Sunset Drive and Moonlight Bay (Lake Michigan), north of Ridges Road and Point Drive and include Mud Lake and Reiboldt Creek.

(iv) Wisconsin Unit 6: Door County. Located in T30N, R28E, portions of each 1/4 of Sec. 5 of the Baileys Harbor East 7.5' USGS topographic quadrangle and Baileys Harbor West 7.5' USGS topographic quadrangle. Lands are located about 2 1/4 miles north of the Town of Baileys Harbor, east of State Highway 57, south of Meadow Road and are associated with an unnamed stream.

(v) Wisconsin Unit 7: Door County. Located in T30N, R27E, Sec. 11, SW1/4 Sec. 13, and N1/2 and SE 1/4 Sec. 14 of the Baileys Harbor West 7.5' USGS topographic quadrangle. Lands are located north of County Road EE, east of County Road A and west of South Highland and High Plateau Roads, about two miles northeast of Town of Baileys Harbor and are associated with the headwaters of Piel Creek.

(vi) *Note*: Map of Wisconsin Units 3 through 7 (Wisconsin Map 3) follows:



(24) Wisconsin Unit 8, Door County, Wisconsin.

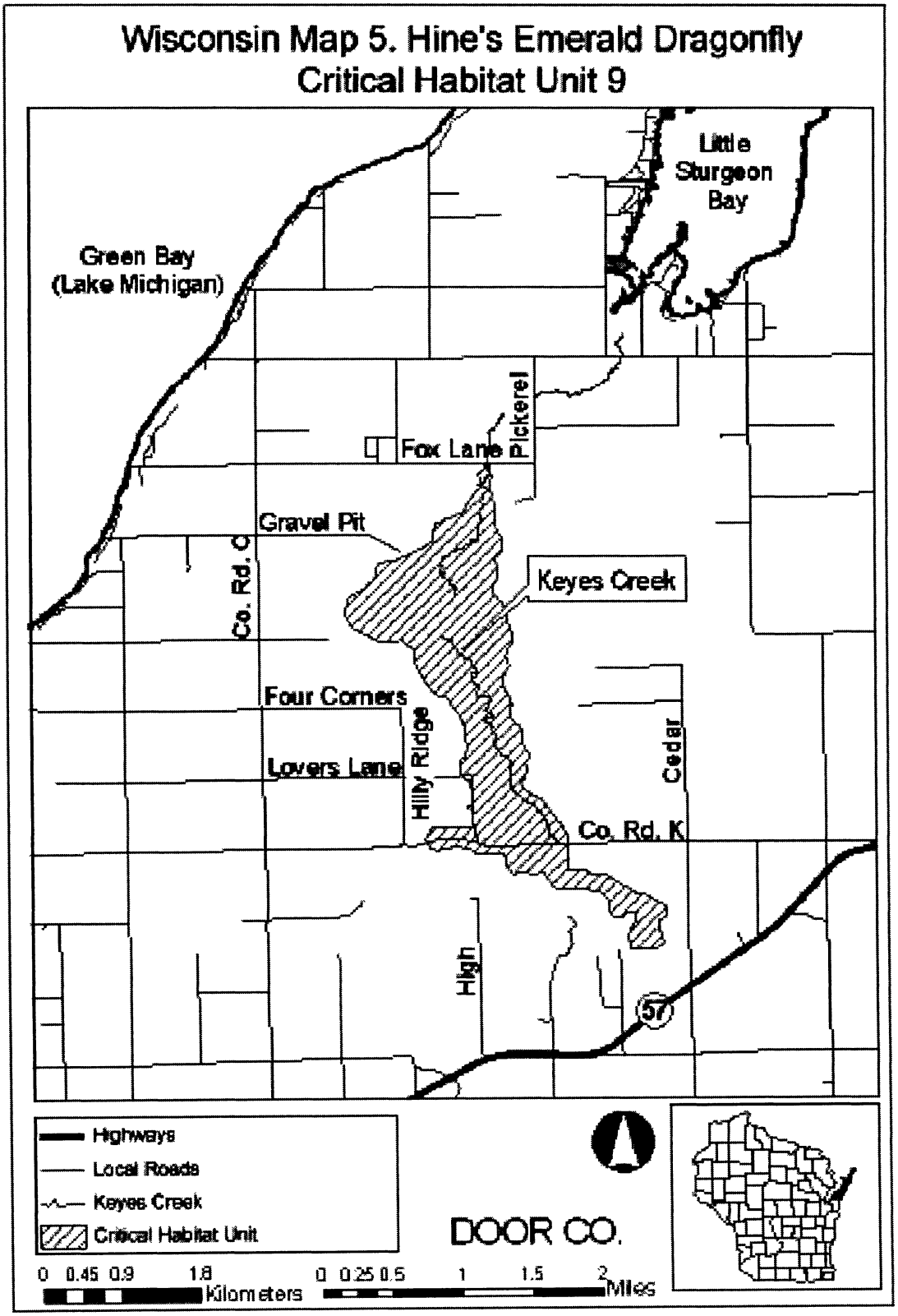
(i) Wisconsin Unit 8: Door County. Located in T28N, R27E, S1/2 Sec. 16, N1/2 Sec. 21 of the Jacksonport 7.5' USGS topographic quadrangle. Lands are located east of Bechtel Road, South of Whitefish Bay Road, west of Glidden Drive and include Arbter Lake.

(ii) *Note*: Map of Wisconsin Unit 8 (Wisconsin Map 4) follows:

(25) Wisconsin Unit 9, Door County, Wisconsin.

(i) Wisconsin Unit 9: Door County, Wisconsin. Located in T27N, R24E, SE1/4 Sec.16, E1/2 Sec. 20, portions of each 1/4 of Secs. 21, 28 and 33, NW1/4 and S1/2 Sec. 34. Also located in T26N, R24E, NW1/4 Sec. 3 of the Little Sturgeon 7.5' USGS topographic quadrangle. Lands are located west of Pickeral Road and Cedar Lane, north of State Highway 57, east of Hilly Ridge Road and County Road C, south of Fox Lane Road, about 1.5 miles southwest of Little Sturgeon Bay (Lake Michigan) and include portions of Keyes Creek and associated wetlands.

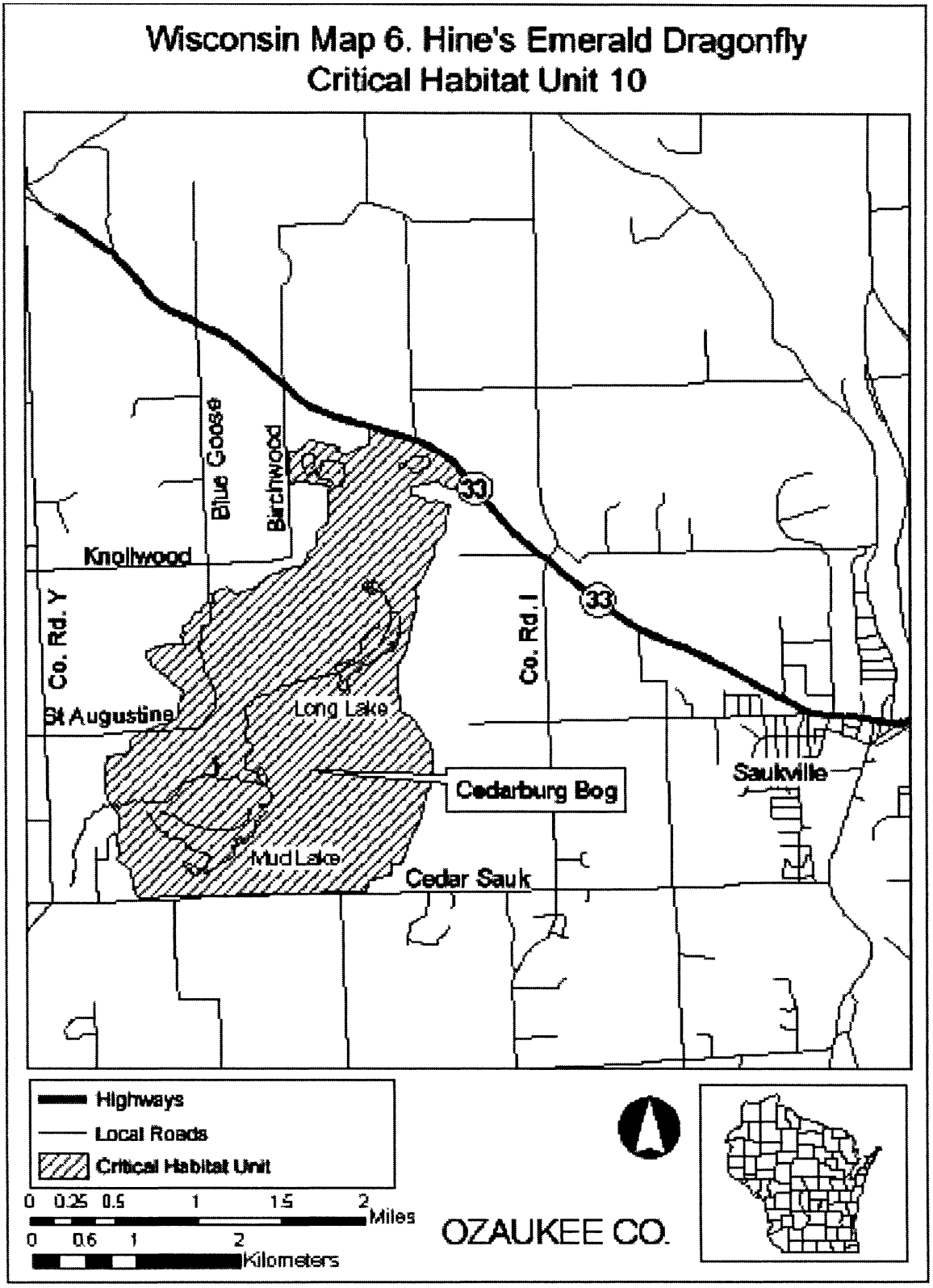
(ii) *Note*: Map of Wisconsin Unit 9 (Wisconsin Map 5) follows:



(26) Wisconsin Unit 10, Ozaukee County, Wisconsin.

(i) Wisconsin Unit 10: Ozaukee County. Located in T11N, R21E, E1/2 of Sec. 20, portions of each 1/4 of Sec. 21, W1/2 Sec. 28, Sec. 29, E1/2 Sec. 30, E1/2 and portions of NW1/4 and SW1/4 Sec. 31, Sec. 32, and W1/2 Sec. 33 of the Cedarburg, Five Corners, Newburg, and Port Washington West 7.5' USGS topographic quadrangles. Lands are located south of State Highway 33, east of County Road Y and Birchwood Road, north of Cedar Sauk Road about 2 miles west of Saukville, and includes the majority of Cedarburg Bog.

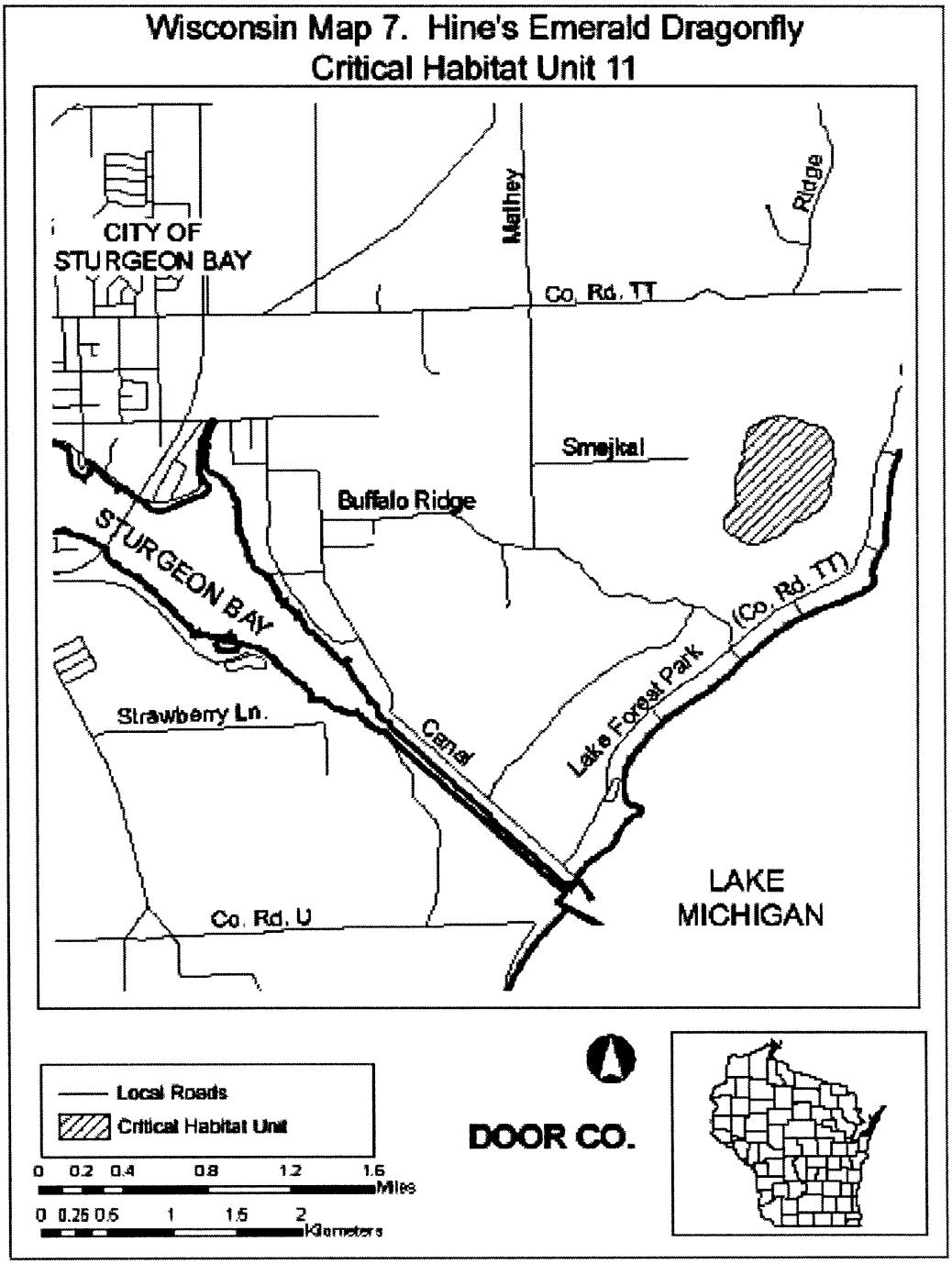
(ii) *Note*: Map of Wisconsin Unit 10 (Wisconsin Map 6) follows:



(27) Wisconsin Unit 11, Door County, Wisconsin.

(i) Wisconsin Unit 11: Door County. Located in T27N, R26E, SE 1/4 Sec. 11, Sec. 12, NW 1/4 Sec. 13, and NE 1/4 Sec. 14 of the Sturgeon Bay East 7.5' USGS topographic quadrangle. Lands are located south of County Road TT, east of Mathey Road, north of Buffalo Ridge Trail, west of Lake Forest Park Road (also County Road TT), about 11/2 miles west of the City of Sturgeon Bay, and include portions of Kellner's Fen.

(ii) *Note*: Map of Wisconsin Unit 11 (Wisconsin Map 7) follows:



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Dated: April 6, 2010

Thomas L. Strickland,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 2010–8808 Filed 4–22–10; 8:45 am]

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