Chapter 6: Compliance, Consultation and Coordination

The regulations for implementing the National Environmental Policy Act (NEPA) require that "to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies" required by a variety of other federal laws (40 CFR 1502.25(a)). The law also requires that "the draft environmental impact statement shall list all federal permits, licenses and other entitlements which must be obtained in implementing the proposal" (40 CFR 1502.25(b)). In addition, chapter NR 150, Wis. Adm. Code, requires an EIS to include "a description and evaluation of required state or federal approvals. Where an environmental analysis is prepared on a proposal involving multiple state or federal regulatory actions, it will address each of the approvals and indicate conformance or nonconformance of the project with applicable statutes, rules and regulations. Local zoning actions will also be addressed if appropriate." This chapter includes information to meet this requirement. The chapter also includes information on the extensive public participation involved in the development of the *Wisconsin Statewide Karner Blue Butterfly HCP*, as well as information on the distribution of the draft HCP/EIS documents.

A. Environmental Review and Consultation

1. Endangered Species Act

Section 9: Take. When a species is listed as endangered or threatened by the USFWS, the Federal ESA prohibits any "taking" of that species. As defined in the ESA, "take" means:

> *to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct* (section 3[18]).

"Harass" and "harm" are further defined in federal regulations. "Harass" means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). "Harm" means an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). For discussion of this definition, please see *Bruce Babbitt, Secretary of the Interior, et al., v. Sweet Home Chapter of Communities for a Greater Oregon, et al.*, 115 S.Ct. 2407 (1995).

In general, the federal laws that protect the Karner blue butterfly take precedence over state and local statutes and apply equally to activities of public agencies, private enterprises and individuals. Violations are punishable by fines of up to $100,000 per individual ($200,000 per organization) and imprisonment of up to one year.

Section 10: Habitat Conservation Plans. In recognition that take cannot always be avoided, section 10(a) of the ESA includes permitting provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. An incidental take permit can be issued for an area in which several projects will occur, for activities connected to a single project, or for take as small as a single specimen. The issuance of such a permit is preceded by preparation of an HCP adhering to section 10(a) and appropriate federal regulations, including 50 CFR Parts 13 and 17. These requirements apply to all permit applications, regardless of the magnitude of the proposed take, the scale of the project, or the proposed permit period.

The administration of the incidental take permit program is guided by USFWS conservation planning guidelines. In September 1996, the USFWS finalized guidelines in a document titled *Handbook for Habitat Conservation Planning and Incidental Permit Processing* (USFWS 1996). These guidelines reflect that the U.S. Congress intended this process to reduce conflicts between listed species and nonfederal development or land use, and to provide a framework that would encourage "creative partnerships" between the private sector, state and municipal governments, and federal agencies in the interest of endangered and threatened species and habitat conservation. The guidelines state, "[t]his is critically important, for Congress was not instituting merely a permit procedure but a process that, at its best, would integrate nonfederal development and land use with conservation goals, resolve conflicts between endangered species protection and economic activities on nonfederal lands, and create a climate of partnership and cooperation." In referencing applicable regulations involved in the guidelines, the USFWS explained that "because the process applies to a wide variety of projects and activities, the USFWS declined to promulgate exhaustive, 'cookbook' regulations. . .detailing every possible element that could be required in conservation plans." Rather, the section 10(a) permit regulations reiterate the ESA requirements and provide a legal framework for issuance and management of permits. Beyond that, it is USFWS policy to promote "flexibility and ingenuity" in working with permit applicants and developing HCPs under the section 10 process.

Mandatory elements of an HCP, as required by section 10(a) and discussed in the HCP guidelines, include:

- The impact which will likely result from such taking;
- What steps the applicant will take to minimize and mitigate such impacts, the funding

that will be available to implement such steps, and the procedures to deal with unforeseen circumstances;

- ☞ What alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and

- ☞ Such other measures that the Director (USFWS) may require as being necessary or appropriate for purposes of the plan.

The DNR has submitted an application for a section 10(a) incidental take permit to the USFWS which includes a draft HCP, this draft EIS, an Implementing Agreement and partner conservation agreements. The HCP was developed to address the regulatory requirements of section 10(a) noted above.

Section 4: Karner Blue Butterfly Recovery Plan. Section 4 of the ESA requires that the USFWS develop and implement plans for the survival and recovery of a listed species, unless it is determined that such a plan will not promote the conservation of the species. To ensure that HCPs do not jeopardize the recovery of the species, the ESA establishes criteria for their approval. Specifically, the ESA requires that an approved HCP must demonstrate that permitted activities "will not appreciably reduce the likelihood of the survival *and* recovery of the species in the wild."

Federal Recovery Teams are appointed by the USFWS to prepare recovery plans. The status of the development and implementation of these plans must be reported biennially to U.S. Senate and House Committees. A recovery plan is currently being developed under USFWS guidance for the Karner blue butterfly (USFWS 1997). A Recovery Team, consisting of academic scientists, resource management professionals and forestry representatives with a variety of expertise, was formed to develop recovery strategies and recommendations. The Karner Blue Butterfly Technical/Agency Draft Recovery Plan is expected to be available in 1999. Although HCPs cannot mandate recovery on private lands, several of the Wisconsin Karner Blue Butterfly HCP partners and participants are involved in recovery efforts; these recovery efforts are reviewed in Part F of Chapter II (pages 147-151). HCP partner and DNR acreage commitments to recovery are noted in Table 2.20 (page 150) and Table 2.21 (page 151), respectively. Participating partners are committing to recovery activities on more than 23,000 acres of land. In addition, HCP partners will be assisting in recovery, through education and outreach commitments, development and implementation of Karner blue butterfly management guidelines and collection of ecological data on the Karner blue butterfly and its habitat.

Section 7: Federal Consultation. Section 7 of the ESA requires all federal agencies to consult with the USFWS to insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any federally-listed threatened or endangered species. Such consultations require preparation of a biological assessment by the federal action

agency. The USFWS then prepares a biological opinion and incidental take statement. The biological opinion summarizes the information on which the opinion is based, discusses effects of the action on the species, and evaluates whether the action will jeopardize the species. The incidental take statement authorizes take of that species and presents terms and conditions under which the activities will be conducted.

Under section 7 of the ESA, issuance of an ITP by the USFWS for implementation of an HCP is a federal action subject to section 7 compliance. Therefore, the USFWS must conduct an internal (intra-USFWS) formal section 7 consultation on permit issuance. This internal consultation will be completed prior to issuance of an ITP. The resultant Biological Opinion and Incidental Take Statement will authorize take of the Karner blue butterfly in accordance with an approved HCP and ITP. The authorization will extend to actions that other federal agencies may fund, authorize, or carry out *that are captured in the HCP and the incidental take permit*.

2. National Environmental Policy Act

The USFWS must comply with the National Environmental Policy Act of 1969, as amended (NEPA) (42 USC 4331 *et seq.*), and the regulations of the Council on Environmental Quality, (40 CFR Part 1500) which require federal agencies to evaluate the effects of the proposed actions on the human environment and include public participation in planning and implementing their actions. A proposed project that is a "major federal action significantly affecting the quality of the human environment" requires preparation of an environmental impact statement (EIS) and is subject to the public review process established in federal regulations. An "action" includes the review and approval or denial of a permit.

This document includes an EIS (primarily Chapters III-IX) prepared to identify and evaluate potential impacts of the proposed USFWS action specified in Chapters I-II.

3. Wisconsin Environmental Policy Act

The Wisconsin Environmental Policy Act (WEPA) is a state law designed to encourage environmentally sensitive decision-making by state agencies (s. 1.12, *Wis. Stats*.; NR 150, Wis. Adm. Code). It spells out the state's environmental policy and requires state agencies, including the DNR, to consider the environmental effects of their proposed actions within the limits of their statutory authorities. WEPA also establishes the principle that broad citizen participation should be a part of environmental decision-making. WEPA imposes procedural and analytical responsibilities on state agencies, but does not apply to local governments or private parties unless their actions involve state agency regulation or funding.

The DNR's procedures for implementing WEPA are outlined in chapter NR 150, Wis. Adm. Code. This code states that "it is the intent of the Natural Resources Board to declare a policy that will encourage productive and enjoyable harmony among people and their environment; to promote efforts which will prevent or eliminate damage to the environment; and to enrich the understanding of the important ecological systems and natural resources of the state" (NR 150.025(1)(a), Wis. Adm. Code). A key part of NR 150 is the Action Type List. Here, all DNR actions are placed into one of four categories involving various levels of environmental analysis and public involvement. The DNR uses the type list to determine the minimum review process appropriate for a particular proposed DNR action.

The HCP is a long-range resource management plan. Under NR 150, Wis. Adm. Code, development of the HCP and permit application is considered a Type 2 action (i.e. an action that has the potential to cause significant environmental effects and that may involve unresolved conflicts in the use of available resources) (see s. NR 150.03(6)(a)5.a., Wis. Adm. Code). As a result, preparation of an HCP and permit application require development of an environmental assessment (EA) under state law. The DNR determined that the proposal is a major action significantly affecting the quality of the human environment. Therefore, the full WEPA EIS process under ss. NR 150.21 to NR 150.24 is required and replaces preparation of an EA (s. NR 150.20(1)(c)3, Wis. Adm. Code). The Wisconsin Karner Blue Butterfly HCP is statewide in nature, covers numerous acres of land and affects multiple landowners. In addition, a partnership effort like this has not previously been pursued in Wisconsin. The EIS included in this document (primarily Chapters III-IX) was prepared in compliance with the provisions of NR 150, Wis. Adm. Code, to identify and evaluate potential impacts of the proposed state actions.

Federal and state regulations allow for the joint preparation of an EIS when a proposed project constitutes both a federal and state action. The EIS in this document complies with both NEPA and WEPA requirements.

4. Coordination with Federal, State and Local Agencies

This section briefly describes the relationship between the Wisconsin Karner Blue Butterfly HCP and federal, state and local plans, activities, laws and regulations. It is intended to provide an overview of the many programs and policies currently in place.

Wisconsin Nongame, Endangered and Threatened Species Laws. Section 29.175, *Wis. Stats.*, authorizes the DNR to "conduct investigations of nongame species in order to develop scientific information relating to population, distribution, habitat needs and other biological data in order to determine necessary conservation measures." On the basis of these scientific determinations, the DNR may promulgate rules and develop conservation programs designed to ensure the continued ability of nongame species to perpetuate themselves.

The DNR has not proposed that the Karner blue butterfly be listed as a threatened or endangered species under Wisconsin's endangered species law. However, under section 29.415(3)(a), *Wis. Stats.*, the state endangered and threatened species list identifies wild animals and wild plants on the federal list of endangered and threatened native species.

Prior to 1996, section 29.415(4)(a), *Wis. Stats.*, prohibited the taking of listed species. In April 1996, Wisconsin Governor Tommy Thompson signed 1995 Assembly Bill 585 amending s. 29.415, *Wis. Stats.* to allow for the incidental take of state-listed species via issuance of a permit. Similar to federal law, the DNR must review proposals for incidental take and must conclude that the taking will not appreciably reduce the likelihood of the survival and recovery of the endangered or threatened species in question, the plant and animal community it is a part of, or the habitat critical to its existence. A state permit is not required if a federal permit has been issued in consultation with the DNR. A state permit is not needed to cover take of the Karner blue butterfly as it is not a state listed species. However, state permit authorization is necessary to cover the potential incidental take of other state listed species.

As part of the HCP development process, the DNR conducted a consultation process for state listed species (see pages 318-321). Implementing the HCP may have varying impacts on other rare species known to occur, or potentially occurring, on partner lands; some species may benefit, others may be harmed, and still others may be unaffected. Further, some effects are expected to be short-term, others longer-term. As with Karner blue butterflies, some species will experience localized, short-term take if the HCP is implemented, but the population as a whole may benefit.

Anticipated impacts to state listed species known to occur, or likely to occur, on partner lands in the high potential range are grouped into three categories:

- those where neither positive or negative impacts are expected,
- those where negative impacts, if any, are expected to be short-term or not significant to the species' state or regional population, and
- those where negative impacts could be significant for one or more of the proposed management activities.

These categories and the manner in which the DNR, under the state endangered species laws, is proposing to address each is briefly discussed below.

Species for which HCP Implementation is Not Expected to Result in Positive or Negative Effects. Most of the rare species known to occur, or likely to occur over the next ten years, on partner lands within the high potential range are not expected to experience any significant impacts, positive or negative, as a result of implementing the HCP. Typically, this

is due to the fact that these species' habitat needs are not associated with the Karner blue butterfly, pine/oak barrens or dry, sandy soils. Species falling into this category are listed in Table 4.1 (pages 257-258).

The DNR does not intend to authorize any incidental take of the species listed in Table 4.1 (pages 257-258) because no significant adverse effects are anticipated as a result of HCP implementation. Any actions resulting in the take of these species will need to be reviewed on an individual basis.

Species for which HCP Implementation is Expected to Have Little, if Any, Long-term Negative Effects. Several of the rare species known to occur, or likely to occur, on partner lands within the high potential range are closely associated with the Karner blue butterfly and are expected to experience similar positive benefits through the implementation of the HCP. As with the Karner blue butterfly, some of these species are dependent upon disturbance of their existing occupied habitat which, although resulting in the taking of individuals or populations, benefits the species over the long-term. Other species in this group are those for which any taking would be limited, both in terms of frequency of occurrence as well as the magnitude of the taking. That is, although there will likely be no positive benefit to the species, any takings will be not be substantial and are not expected to result in any long-term harm to the species distribution or status in the state. Species falling into this category are listed in Table 5.2 (page 321)

It is the DNR's conclusion that any incidental take of the species listed in Table 5.2 (page 321) which may result from HCP implementation:

- ☞ is not likely to jeopardize the continued existence and recovery of these listed species, or the whole plant-animal community of which they are a part, within the state;

- ☞ is not likely to result in the destruction or adverse modification of habitat determined by the DNR to be critical to the species' continued existence within the state; and

- ☞ is justified by the benefit to public health, safety or welfare.

As such, *it is the DNR's intent to authorize the incidental take of these species in the Karner blue butterfly's high potential range, or other areas approved by the DNR, in the following situations*:

- ☞ incidental take that results from management actions conducted in the course of implementing the HCP,

- ☞ incidental take that take place on partners lands, and

- ☞ incidental take that results from management actions conducted by the partners.

Species for which HCP Implementation is Expected, for at Least Some Management Activities, to Result in Incidental Take that May Not Meet the Above Listed Criteria. For some species, certain management activities and guidelines described in the HCP may cause the loss of populations or individuals that may have a significant impact on the species in Wisconsin. For these species, given their life history needs and the nature of the management activity, further review is necessary to ensure that impacts are minimized and that any incidental takings are acceptable. It is quite possible that, as a result of this further assessment, the activities (and subsequent takings) may be authorized, but blanket authorization is not appropriate at this time. Thus, for selected activities and selected species, review on a case-by-case basis is warranted. Species falling into this category and requiring further review are identified in Table 5.3 (page 321).

Taking of species listed in Table 5.3 (page 321) will not be authorized. The DNR will provide partners with a listing of known element occurrences of these species on partner lands. Partners will be responsible for determining if any of the known element occurrences are located on lands planned for management. Management activities proposed where any of these species occur will require individual consultation with the DNR to resolve any potential incidental takings and will likely require some form of annual monitoring and reporting. There are relatively few known occurrences of these species on partner lands.

As new information becomes available and management guidelines are developed and revised, the DNR may re-evaluate decisions relative to take authorization. As guidelines are completed, they will be shared with HCP partners and the DNR may reconsider options for incidental take.

Section 29.415(7)(b), *Wis. Stats.*, authorizes the DNR to enter into agreements with federal agencies, other states, political subdivisions of this state, or private persons with respect to programs designed to conserve endangered or threatened species of wild animals or wild plants. The *Wisconsin Statewide Karner Blue Butterfly HCP* and associated Implementing Agreement and conservation agreements are an example of such an arrangement.

Wisconsin Public Forests Law: Chapter 28, *Wis. Stats.,* outlines the DNR's responsibilities for managing Wisconsin's state forests. For more than 50 years, the 569,000 acres of state forest had been managed primarily for "silviculture and the growing of recurring forest crops." In May 1996, the *1995 Wisconsin Act 257* was signed into law, repealing and recreating section 28.04 of this chapter. Under this new law, the DNR shall manage:

> *... the state forests to benefit the present and future generations of residents of this state, recognizing that the state forests contribute to local and statewide*

economies and to a healthy natural environment. The department shall assure the practice of sustainable forestry and use it to assure that state forests can provide a full range of benefits for present and future generations. The department shall also assure that the management of state forests is consistent with the ecological capability of the state forest land and with the long-term maintenance of sustainable forest communities and ecosystems. These benefits include soil protection, public hunting, protection of water quality, production of recurring forest products, outdoor recreation, native biological diversity, aquatic and terrestrial wildlife, and aesthetics. The range of benefits provided by the department in each state forest shall reflect its unique character and position in the regional landscape.

The statute further directs that in managing these forests, the DNR shall recognize that not all benefits can or should be provided in every area of a state forest and that management may consist of both active and passive techniques. Implementation of the *Wisconsin Statewide Karner Blue Butterfly HCP* is an example of assuring sustainable forestry goals in a manner that maintains biological diversity.

Section 28.04, *Wis. Stats.*, also requires the DNR to develop forest management plans for each state forest. Chapter NR 44, Wis. Adm. Code, outlines the procedures for developing property master plans for DNR properties, including public participation aspects of this planning process.

Activities included in the Wisconsin Karner Blue Butterfly HCP will be incorporated into new forest master plans as they are developed (see Parts C, D, F and H in Chapter II for information on planned activities).

County Forest 10-Year Land Use Master Plans. In 1963, the Wisconsin Legislature amended the County Forest Law to require counties to develop comprehensive land use plans for periods of 10 years (s. 28.11(5)(a), *Wis. Stats.*). This law applies to 28 counties, including the eight counties involved in the *Wisconsin Statewide Karner Blue Butterfly HCP* process (see Table 1.1, page 9).

Although the 28 county forests are all located throughout the northern half of the state, they have vast differences in forest types, flora, fauna, wildlife, fisheries, geology, demographics, economics and cultural influences. Section 28.11, *Wis. Stats.*, describes the purposes of the county forest 10-year plans as:

To provide the basis for a permanent program of county forests and to enable and encourage the planned development and management of the county forests for optimum production of forest products, together with recreational opportunities, wildlife, watershed protection and stabilization of stream flow,

> *giving full recognition to the concept of multiple use to assure maximum public benefits; to protect the public rights, compensate the counties for the public uses, benefits and privileges these lands provide; all in a manner which will provide a reasonable revenue to the towns in which such lands lie.*

Management goals on each county forest are aimed at providing multiple use public benefits such as: economic revenues to towns and counties; optimum production of forest products; provision of recreational use opportunities; management of wildlife and its habitat; and protection of watersheds. The current 10-year plans serve as a general guide to achieve these purposes for each county forest. Specific goals and management strategies for forests may be different, reflecting the individual capabilities of each to provide these benefits. For instance, timber production goals may differ according to variances in timber types and acreages; recreation goals may differ based on local use demands and the physical ability of each forest to meet those demands; wildlife management goals may differ with habitat types, and so on.

There are 51 plants, 81 animal, 39 natural communities and eight geologic features that have been found on county forest lands that are considered endangered, threatened, rare or of special concern (Natural Heritage Inventory, Bureau of Endangered Resources, Wisconsin DNR, pers. comm.). Collectively, the threatened and endangered resources found throughout county forests are of great significance. The DNR maintains records and observations of these resources. Specific information is generally kept confidential to help protect the resources, but the information is shared with the county forests for management purposes.

Endangered and threatened resources are included in a list of 30 legally required issues which must be addressed in individual county forest plans. Each county forest master plan lists endangered and threatened species known to occur within its boundaries and identifies current management practices for their protection. DNR wildlife managers facilitate this by providing population and habitat surveys and technical advice needed for wildlife management planning. The HCP includes conservation of the Karner blue butterfly on county forest lands. County forest management with consideration for the Karner blue butterfly is described in more detail in Parts C and D of Chapter II and more specifically in individual partner conservation agreements.

County forest 10-year plans were completed by each of the counties and approved by the DNR in 1995 and 1996. For additional information on County Forest Master Plans, readers are referred to the individual county plans and the *Statewide Analysis of County Forest 10-Year Comprehensive Land Use Plan Approvals* (prepared by the DNR to comply with NR 150, Wis. Adm. Code).

Taxation of Forest Croplands: Owners of private forest lands can participate in deferred tax programs under chapters 70 and 77, *Wis. Stats.* Voluntary participation in these programs requires that private landowners follow "sound forestry practices" as prescribed in a formal management plan or, as in the case of industrially owned lands, a management commitment (NR 46, Wis. Adm. Code). Currently, over 2.5 million acres are enrolled in these tax programs

statewide.

There are three separate, but similar in purpose, tax law opportunities. These laws are typically referenced as the Forest Crop Law (FCL), the Woodland Tax Law (WTL) and the Managed Forest Law (MFL). Lands enrolled in these programs are committed for a management period of 25 or 50 years in FCL and MFL, or 15 years in WTL. The MFL is the most recent law and is intended to gradually replace WTL and FCL. The MFL is the only law that allows for current entry, however, the purpose embodies the intent of all three and is stated in chapter 77, *Wis. Stats*., as:

> *... to encourage the management of private forest lands for the production of future forest crops for commercial use through sound forestry practices, recognizing the objectives of individual property owners, compatible recreational uses, watershed protection, development of wildlife habitat and accessibility of private property to the public for recreational purposes.*

Significant private forest land acreage, much of which is owned by HCP partners, is located within the Karner blue butterfly high potential range. Some of these private lands are presently enrolled in one of Wisconsin's forest tax laws. Although forest management commitments and/or plans have been developed for these tax law lands, management considerations for the Karner blue butterfly can be incorporated by HCP partners and via voluntary participation by small forest landowners.

Part F of Chapter II (pages 135-140) describes how the HCP will involve small private landowners (voluntary group) in Karner blue butterfly conservation. A key component of the HCP is the education and outreach effort to small private forest landowners provided by the Wisconsin Woodland Owners Association (an HCP participant), several HCP partners and DNR foresters involved in forestry stewardship programs. In addition, cooperation in education and outreach is expected from the Natural Resources Conservation Service and the Farm Service Agency. The process for larger forest landowners to become partners to the HCP is also described in Part F of Chapter II (pages 130-135).

Local Government Land Use Plans and Zoning Ordinances. Local units of government, through their planning and zoning authorities, are the primary land use decision makers in Wisconsin. There are 72 counties, 188 cities, 395 villages and 1,266 towns in the state. There have been numerous laws giving these governing bodies the authority to undertake land use activities. Most land use planning and zoning-related activity occurs at the discretion of local governments with minimal or no state level review or oversight. This section briefly explains local government planning and zoning authorities. For more detailed information on the array of local government land use activities in Wisconsin, readers are referred to the report *Land Use Issues Facing Wisconsin* (Wis. Strat. Growth Task Force 1995).

City and village plan commissions (or committees) may prepare and adopt a master plan (as can towns having village powers), and counties may prepare a development plan (ss. 59.97, 60.22, 61.35 and 62.23, *Wis. Stats.*). Both types of plans may be considered a land use plan, but neither their preparation nor implementation is compulsory at any level. Elected officials and local leaders can use a land use plan like a road map to effectively take a community from where it is today to where it wants to be in the future (Last 1996). Plans may consist of goals, objectives, policies, standards and a map indicating areas for various uses. In Wisconsin, a land use plan is, technically, only advisory. Local government officials may review such a plan before making a zoning decision, but they are not required to do so by law (Last 1996).

Cities, villages, counties and towns may adopt comprehensive zoning ordinances (ss. 59.97[4], 60.61, 60.62, 61.35 and 62.23, *Wis. Stats.*). Counties must adopt floodplain and shoreland/ wetland zoning ordinances (ss. 59.971, 59.974, 61.354, 62.234 and 87.30, *Wis. Stats.*). Zoning ordinances are a form of land regulation comprised of text (the regulation specifications) and a map (the delineated districts). The districts are established to allow for development where the principal use is usually residential, commercial, agricultural, industrial, recreational, or conservancy -- although mixed use zones may also be included. Standards and zoning ordinances normally list uses that are permitted, uses that are permitted with conditions and uses that are prohibited.

Unlike a plan which is advisory to owners of property and local government officials, a zoning ordinance requires elected officials to operate according to the standards for each district specified in the ordinance (Last 1996). Also, a property owner's actions must be consistent with local ordinances or the owner may face enforcement action. Land use activities proposed as a part of the Wisconsin Karner Blue Butterfly HCP are subject to local plans and zoning ordinances. Local zoning officials will maintain their responsibilities for monitoring compliance with and enforcing their respective zoning ordinances. Figure 6.1 (page 348) depicts the status of zoning in Wisconsin counties and towns.

Take of the Karner blue butterfly not specifically authorized in the *Wisconsin Statewide Karner Blue Butterfly HCP* and ITP is prohibited regardless of how an area is zoned. Local governments desiring authorization to take Karner blue butterflies in the course of their activities can apply to become a partner to the HCP and, if approved, receive a Certificate of Inclusion from the USFWS to cover the incidental take of Karner blue butterflies. The process for becoming a partner to the HCP is described in Part F of Chapter II (pages 132-135).

Native American Indian Tribes. There is a significant Native American population, distributed throughout the state in eleven tribes, including Chippewa, Ho-Chunk, Menominee, Oneida and Potawatomi. Many Native Americans reside on autonomous reservations, located mostly in the northern half of the state. Figure 6.2 (page 349) shows the location of Native American tribal reservations in Wisconsin. At this time no tribes are partners in the HCP process.

Joint Secretarial Order Number 3206, titled "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities and the Endangered Species Act," was issued on June 5, 1997 by the U.S. Departments of Interior and Commerce. Among other responsibilities, agencies of these departments have a responsibility to carry out endangered species trust responsibilities in a manner that harmonizes federal trust responsibility to the tribes, acknowledges tribal sovereignty and minimizes potential for conflict and confrontation.

Two Native American Indian Tribes are within the high potential range of the Karner blue butterfly, the Menominee Tribe and the Ho-Chunk Nation. The USFWS's Green Bay Field Office presented information on the Karner blue butterfly and the HCP to the Menominee Tribe early in the HCP process. The Menominee Tribe is included on the HCP mailing list. All the Native American Indian Tribes received information on the HCP early in the HCP process. Information on the HCP will be provided to all the Wisconsin Tribes during the public review period for this action. In addition, the USFWS will contact the Ho-Chunk Nation and Menominee Tribe during the review period to provide information on partnerships to the HCP and to solicit comments on the HCP. Tribal concerns and comments made during this period will be considered by the USFWS. While most tribal lands are not within the range of the Karner blue butterfly, the USFWS recognizes their interest in ecosystem conservation.

Partners in the HCP/EIS Process. In addition to federal, state and local compliance and coordination, the HCP has gained the approval or acceptance of the various partners currently involved in the HCP (see Table 1.1, page 9). This approval process varied between partners and entailed approvals of the chief executive officer, company president and/or corporate or other governing board. Entering into a legally-binding conservation agreement with the DNR is the final step in the partner approval process (i.e. signing a conservation agreement demonstrates acceptance of the HCP). The process for new parties to become partners to the HCP is described in Part F of Chapter II (pages 132-135).

5. Compliance with Anti-Trust Laws

Several of the *Wisconsin Statewide Karner Blue Butterfly HCP* partners are engaged in the same or similar business activities. In fact, some are competitors. Whenever there are discussions among entities involved in similar activities or businesses, there is a concern whether or not an opportunity is, or might be, created to control prices by controlling the availability of products. A violation of the federal anti-trust prohibitions (15 USC, ss. 1, *et seq.*) may occur even though unintended and no matter how noble the cause of a given project.

To assist in addressing this concern regarding anti-trust laws, the HCP Partnership developed an Anti-trust Policy under which the partners would operate. The policy was distributed and announced at all HCP meetings. The policy is included in Appendix C.

6. Coordination to Complete HCP Documents

The development of a statewide conservation plan involving multiple landowners, such as the *Wisconsin Statewide Karner Blue Butterfly Habitat Conservation Plan*, relies on the involvement and coordination of numerous individuals and organizations. This section briefly explains participation and coordination efforts during HCP development. The cooperation and coordination demonstrated during HCP development is a hallmark of the Wisconsin HCP process and is expected to continue if an ITP is issued.

The HCP Articles of Partnership (Appendix C) provided a framework for cooperation and coordination. Partners and participants routinely participated in HCP meetings. Several teams, comprised of partners, participants and others, assisted the partners throughout the development of the HCP (see Part B of this Chapter, pages 352-355). The DNR, as the lead applicant, coordinated the activities of the partnership using administrative funds contributed by several partners. The USFWS served in an advisory capacity at HCP meetings and worked closely with the DNR on document development.

The regulations for implementing NEPA require agencies to prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies whenever possible. Significant efforts were made by the USFWS, the DNR and the HCP partners to ensure that this draft EIS met the requirements of both NEPA and WEPA. An internal DNR consultation process was used to ensure compliance with the state's endangered species laws, and a description of this consultation process was folded into the draft EIS (see pages 255-258 and 318-321). In addition, the DNR provided the partners a model conservation agreement to be used as a common basis for the development of each partner's individual conservation agreement.

Numerous partners and participants, as well as the USFWS, assisted in drafting, reviewing and editing the final HCP, draft EIS and Implementing Agreement documents. These individuals and their qualifications are identified in Chapter VII (pages 359-363). In addition to the individuals identified in Chapter VII, other individuals (staff and management) in each partner's organization or agency also reviewed draft documents. Some partners also obtained outside legal counsel to assist in the development of conservation agreements.

The HCP partners were committed to using the best available information in developing the HCP, draft EIS, the DNR's Implementing Agreement and individual conservation agreements. Several partners collaborated on Karner blue butterfly-related research during the course of HCP development. For example, several forest industry partners and the DATCP sponsored research on the effects of herbicides on Karner blue butterflies (see pages 114-118). A group of utility companies funded development of ROW management guidelines (see Weaver-Boos Consultants [1996]). The results of other nonpartner research efforts were routinely shared with and reviewed by the HCP Biological Team. A monitoring team, involving HCP participants and an agency biometrician, developed the effectiveness monitoring protocol (Appendix G).

It is the intention of the partners to implement the HCP and their individual conservation agreements in a manner that complements their existing land management activities. As such, existing practices and programs were closely examined during development of the HCP, and the partners worked together to develop acceptable modifications. Partners spent considerable time developing common conservation guidelines and protocols (e.g., see Appendices F and G). Some partners have chosen to use these guidelines in their management activities, some have developed their own approaches, and others have chosen to do a mix of what is included in HCP guidelines and their own approach. In all cases, however, partner commitments are spelled out in their individual conservation agreements. The blend of approaches allows flexibility in implementing the HCP and fosters compliance with anti-trust laws, yet allows the partners to ensure coordination across the landscape in ways that are meaningful to conservation.

In addition, the landowner inclusion and non-partner participation strategy outlined in Part F of Chapter II (pages 129-141) was developed so it could be implemented concurrently with existing private land stewardship programs (e.g., as new participants are brought into Wisconsin's Managed Forest Law program, they can be informed of Karner blue butterfly conservation opportunities).

Figure 6.1. Zoning in Wisconsin Counties and Towns (Source: Wis. Taxpayer's Alliance, 1991)

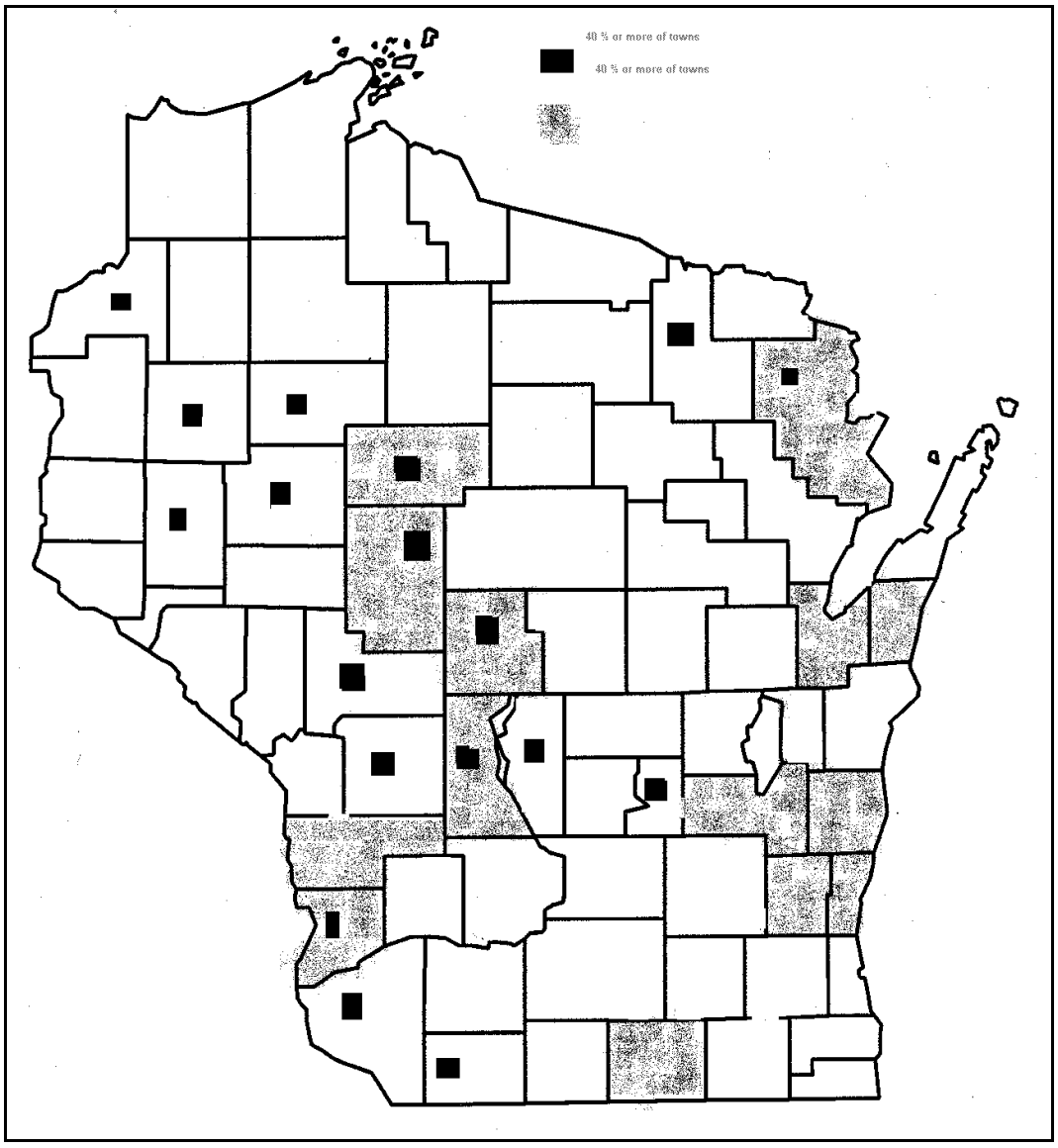
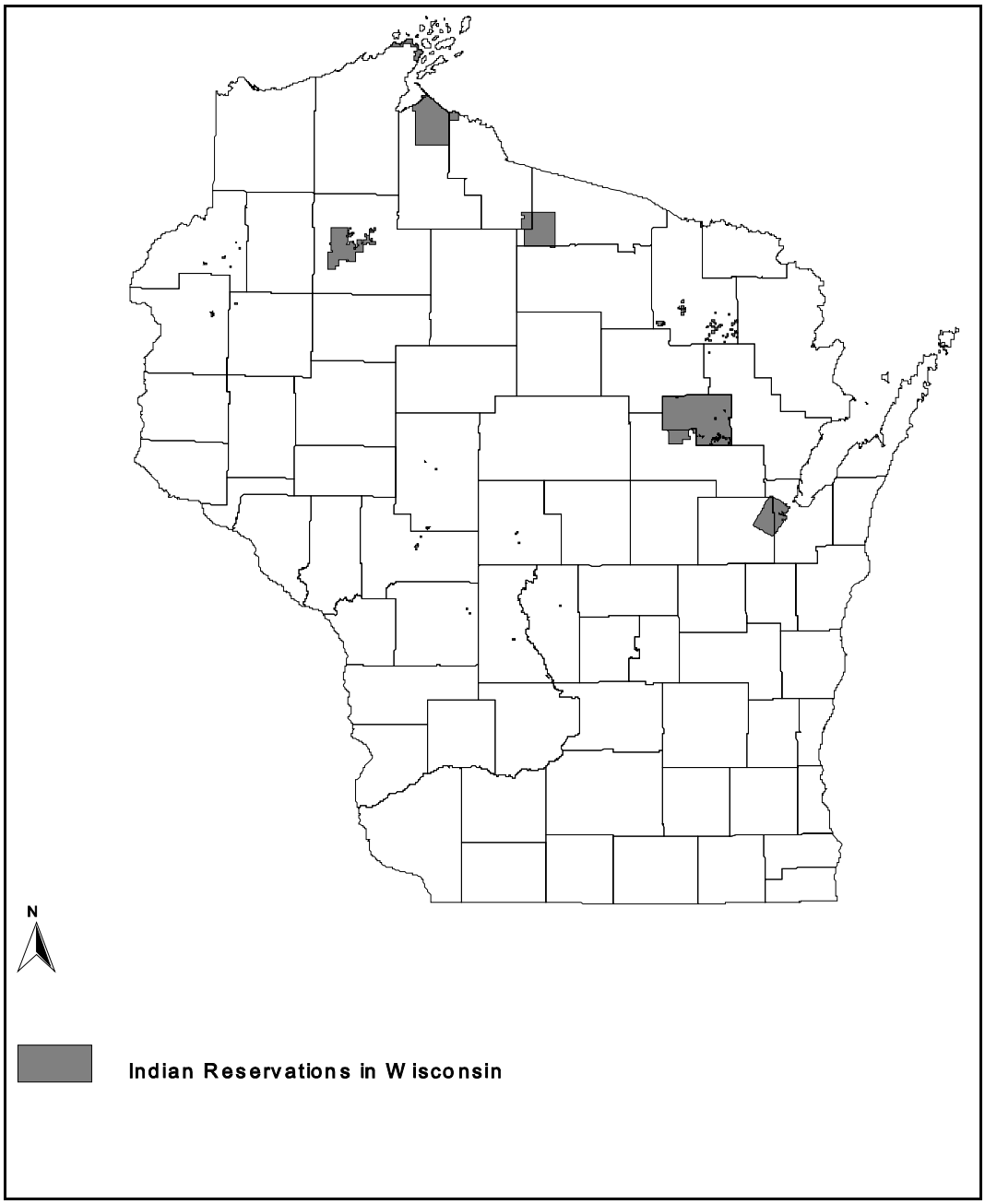


Figure 6.2. Location of Native American Tribal Reservations in Wisconsin



B. Public Involvement

1. Scoping of Issues

As part of the public input element of the HCP and EIS process, the DNR and USFWS hosted three scoping meetings in June 1995, allowing interested parties to identify issues to be addressed in developing an HCP for the Karner blue butterfly and in evaluating the plan's environmental impact. These meetings took place on June 27 in Wisconsin Rapids, June 28 in Siren, and June 29 in Eau Claire. All meetings ran from 3:00 p.m. to 6:00 p.m. In addition to the three public scoping meetings, interested parties were invited to submit written comments to the USFWS by August 30, 1995.

Notification and Attendance. Potentially interested and affected parties were notified of the three scoping meetings in several ways. The USFWS published a Notice of Intent in the June 5, 1995 *Federal Register* and direct mailed a copy of the news release about the meetings to approximately 1,000 potentially interested organizations and individuals. The DNR included an announcement of the meetings in the June 14, 1995 edition of the *Wisconsin Outdoors and Conservation News* which is distributed to the news media statewide. In addition, various partners involved in the planning team made telephone calls to organizations and individuals they thought should be aware of the scoping meetings.

A total of 49 people attended the three meetings with 18 in Wisconsin Rapids, 16 in Siren, and 15 in Eau Claire. Most of those attending represented organizations owning and/or managing lands with potential Karner blue butterfly habitat. There were only a handful of individual private landowners at the meetings. The broadcast media were represented at all three meetings. A list of scoping meeting participants is included in Appendix E.

Meetings Format. The meetings began with an explanation of the HCP and EIS by DNR and USFWS staff. Background presentations were then given on the biology of the Karner blue butterfly and the potential habitat and land ownership information available (at that time). Staff also introduced management opportunities and strategies which could be considered as the plan was put together.

Following an open question and answer session, attendees were invited to view the displays on the butterfly and its habitat, pick up the informational handouts and visit informally with the representatives of the HCP Partnership. Attendees were given a reminder of the August 30, 1995 deadline for submittal of written comments.

What the Scoping Meetings Told the HCP Partnership. Several important themes emerged from the three meetings in addition to many individual questions and concerns.

- It appears, based on the very limited attendance and the types of questions raised, that very few private landowners are aware of the whole issue. They don't know about the butterfly, they don't know what its being listed as endangered means to them, and they do not know about the HCP/EIS process or how it relates to them.

- There is skepticism about the validity of the endangered status of the Karner blue butterfly in Wisconsin, particularly when people see wild lupine so abundant.

- People want to know what, if anything, will happen to them or any other landowner if they engage in a take without a permit.

- It is hypocritical for the government to be encouraging private landowners to be "coming to the table" as part of the HCP when the Wisconsin Department of Transportation and County and Town Highway departments and others are mowing down lupine (and, presumably, Karner blue butterflies) on a regular basis.

Specific Questions Raised. The following questions were generated at one or more of the sessions. All were responded to as fully as possible by the HCP Partnership representatives.

- What are the recovery goals for the Karner blue butterfly?

- Do we know the current population levels and trends in Wisconsin?

- What are the restrictions on a private landowner who has lupine? or Karner blue butterflies?

- Do you need a permit to do right-of-way maintenance?

- Are there better ways to do right-of-way maintenance in terms of protecting the butterfly?

- What are the consequences of a take without a permit?

- What is the liability of a landowner who has Karner blue butterflies which subsequently disappear?

- How will we address agricultural situations such as pasturing?

- Will we know which lands are included and not included under a permit?

- Have we looked at "mitigation banking" such as large right-of-way owners covering for the small landowner?

- Have we looked into transplanting butterflies into unoccupied habitat?

- Are there commercial sources of lupine seed for those interested in trying to create suitable habitat?

- How much is all of this going to cost and what values do Karner blue butterflies have?

- What is the schedule for completing the incidental take permit process?

Specific Comments. There were relatively few comments or statements offered beyond those captured in the key themes described above. Meeting attendees did not identify specific subject matter for the EIS per se.

Some observations offered were:

- The further we can keep this whole process away from Washington, D.C., the better in terms of local support.

- The dynamic nature of the habitat for the Karner blue and the results of the HCP could entangle private landowners who presently do not have Karner blue butterflies, thereby putting them into a take situation.

- You need incentives to encourage landowners to do the "right thing". The present law (ESA) causes people to panic and act contrary to their own and the endangered species' interest.

Conclusion. The scoping meetings helped the HCP Partnership better understand the level of awareness and the concerns of those not currently involved in the process. The Partnership worked hard throughout the HCP development process to broaden participation and address the issues raised at the scoping meetings.

2. Use of HCP Committees

The development of the Wisconsin Karner Blue Butterfly HCP involved close coordination between the DNR, USFWS, various counties, state and local agencies and other interested parties. The process has involved public input for scoping and review of state and federal actions and implementing agreements.

Beyond the public meetings required by federal, state and local laws, a Communications Committee comprised of HCP partners and participants met numerous times during the planning process. The Communications Committee was responsible for providing accurate and timely information to the public. Communications Committee members are listed below.

Communications Committee

Nancy Bozek, Wisconsin Woodland Owners Association
Jim Christenson, Wisconsin DNR
Earl Gustafson (Co-chair), Wisconsin Paper Council
Jack Hamilton (Co-chair), ANR Pipeline
Cate Harrington, The Nature Conservancy
Dave Kunelius, Wisconsin DNR
Colette Matthews, Wisconsin County Forest Association
Jim Olson, Sierra Club
Beverly Speer, Sierra Club

Other HCP Partners and Participants participated on Administration, Biological, Funding and Implementation Committees and Teams. Membership of these committees and teams is listed below.

Administration Team

Dave Lentz (Chair), Wisconsin DNR
Earl Gustafson, Wisconsin Paper Council
Miles Benson, Consolidated Papers, Inc.
Sharon Haines, International Paper
Mike Luedeke, Burnett County Forest

Biological Team

Andy Bidwell, University of Wisconsin-Stevens Point
Cathy Bleser, Wisconsin DNR
Sue Borkin, Milwaukee Public Museum
Mark Boyce, University of Wisconsin-Stevens Point
Nancy Braker, The Nature Conservancy
Jenny Brown, University of Wisconsin-Stevens Point
Catherine Carnes, USFWS
Tom Celebrezze, University of Wisconsin-Madison
James Christianson, Wisconsin DNR
Brad Duncan, Wisconsin DNR
Dr. Thomas Givnish, University of Wisconsin-Madison
David Hall, Wisconsin DNR
Bill Hallstrom, Audubon Society

Daniel Hartman, Consolidated Papers, Inc.

Biological Team, Continued

Carl Hensley, Wisconsin DNR
Maragaret Jones, U.S. EPA
Richard King, Necedah National Wildlife Refuge
Kathryn Kirk, Wisconsin DNR
Paula Kleintjes, University of Wisconsin-Eau Claire
Cynthia Lane, University of Minnesota
David Lentz, Wisconsin DNR
Lou Locke, Wisconsin Audubon Council
Colette Matthews, Wisconsin County Forests Association
Judi Maxwell, University of Wisconsin-Madison
Doug Olson, National Biological Service
Jim Olson, Sierra Club
Ursula Petersen, Wisconsin DATCP
Juris Repsa, Georgia-Pacific Corp.
Fred Souba, Jr. (Co-chair), Johnson Timber
Beverly Speer, Sierra Club
Ann Swengel, independent butterfly researcher/scientist
Larry Wargowsky, Necedah National Wildlife Refuge
Dreux J. Watermolen, Wisconsin DNR
Tim Wilder, Fort McCoy
Gene Wood, Georgia-Pacific Corp. (consultant)
Darrell Zastrow (Co-chair), Wisconsin DNR

Funding Committee

Sharon Haines, International Paper
Tom Hunt (Chair), Aliant
Peter McKeever, The Nature Conservancy
John Shafer, ANR Pipeline
Mary Kay Sherer (Committee Advisor), Wisconsin DNR

Implementation & Oversight Planning Team

Doug Barncard, Thilmany
Gary Birch, Wisconsin DOT
Nancy Braker, The Nature Conservancy
Bob Hess (alternate), Jackson County Forest
Dave Lentz (Chair), Wisconsin DNR
Mike Luedeke, Burnett County Forest
Pam Rasmussen, Northern States Power Co.

Ad Hoc Committees. A number of ad hoc committees were formed during the drafting of the HCP and EIS documents to address specific issues of importance to the HCP partners and participants. For example, ad hoc teams made recommendations on document format and content and formulated recommendations on how best to estimate "take." Another ad hoc team developed recommendations for monitoring and oversight of HCP implementation.

3. Individual Partner Efforts

In addition to the scoping meetings and the work of the Communications Team discussed above, individual partners and participants have undertaken a number of information and education efforts for the general public and specific audiences as part of the HCP process. For example, the DNR included an article on the HCP process in the summer 1995 issue of its *Niche* newsletter. Management guidelines were developed by a team of DNR staff and pesticide use guidelines were drafted by the DATCP. The DNR provided training in identification and management for 120 foresters and other resource managers. Other educational efforts included the development and presentation of a Karner blue butterfly slide show and a 3,000-piece mailing of information regarding the federal listing of the Karner blue butterfly and its consequences for landowners. Through the DNR's private landowner contact program, several voluntary cooperative management agreements have been signed.

Part F of Chapter II (pages 142-145) includes a discussion additional efforts planned by HCP partners.

C. Document Distribution

The draft HCP, incidental take permit application and draft EIS were shared with the following list of public agencies, private enterprises and individuals.

Federal Agencies

- Council on Environmental Quality
- Department of Agriculture
  - Forest Service
  - Natural Resources Conservation Service
- Department of Defense
  - Fort McCoy
  - Volk Field Air National Guard Combat Readiness Training Center
- Department of the Interior
  - Fish and Wildlife Service
    - Necedah National Wildlife Refuge
  - National Park Service
  - Geological Survey
- Environmental Protection Agency
- Federal Highway Administration

State Agencies

- Wisconsin Governor's Office
- Wisconsin Department of Agriculture, Trade and Consumer Protection
- Wisconsin Department of Administration
- Wisconsin Department of Natural Resources
- Wisconsin Department of Transportation
- University of Wisconsin (Madison)
  - Department of Wildlife Ecology
  - Department of Botany
  - Department of Entomology
  - Department of Forestry
- University of Wisconsin-Stevens Point
  - College of Natural Resources
- University of Eau Claire
  - Department of Biology

Wisconsin Counties

Adams County
Barron County
Burnett County
Chippewa County
Clark County
Dunn County
Eau Claire County
Green Lake County
Jackson County
Juneau County
Marinette County
Marquette County
Menominee County
Monroe County
Oconto County
Outagamie County
Polk County
Portage County
St. Croix County
Sawyer County
Shawano County
Washburn County
Waupaca County
Waushara County
Wood County

Organizations

Aliant
ANR Pipeline
Consolidated Papers, Inc.
Dahlberg Light and Power
Dairyland Power Coop
Georgia-Pacific Corporation
International Paper
Johnson Timber Corporation
Lakehead Pipe Line Company
Mosinee Paper Corporation
The Nature Conservancy
Northern State Power
Northland Cranberries
Northwest Wisconsin Electric Company

Organizations, Continued

Polk-Burnett Electric Company
Sierra Club
Society of Conservation Biologists
Thilmany International Paper
Wisconsin Audubon Council
Madison Audubon Society
Wisconsin Central Light
Wisconsin Counties Association
Wisconsin County Forest Association
Wisconsin County Highway Association
Wisconsin Environmental Decade
Wisconsin Electric
Wisconsin Farm Bureau Federation
Wisconsin Gas Company
Wisconsin Paper Council
Wisconsin Public Service Company
Wisconsin River Power Company
Wisconsin State Cranberry Growers
Wisconsin Towns Association
Wisconsin Woodland Owners Association

Chapter 7: List of Preparers

A. Major Contributors

Individuals who contributed significantly to the drafting and editing of the HCP and EIS documents and their qualifications are listed briefly in this section.

Dreux J. Watermolen received his B.A. from St. Norbert College and pursued graduate studies at the University of Wisconsin-Green Bay. Over the past 13 years he has worked in the parks and recreation, fisheries management, and water resources management programs at the DNR. In 1994, Dreux began his present position in the Bureau of Integrated Science Services, and currently leads the DNR's Land Use Team. His background includes research experience with amphibians, reptiles, and a variety of invertebrates. His scientific interests have focused on the zoogeography and ecology of the Wisconsin fauna.

Cathy Bleser received her B.S. in Biology in 1984, and B.A in Journalism in 1981, both from the University of Wisconsin-Madison. Cathy has worked with the DNR's Bureau of Endangered Resources for over 10 years, and currently serves as the coordinator for rare butterfly and moth conservation. Since 1990, she has coordinated the state's Karner blue butterfly survey, management, and protection programs. In addition to her state efforts, Cathy also serves on the Karner Blue Butterfly Federal Recovery Team.

Darrell Zastrow received his B.S. in Forest Management from the University of Wisconsin-Stevens Point in 1982. He completed the Program of Advanced Studies in Silviculture and was certified as a Silviculturist in 1993. Darrell has 16 years of experience with the DNR, with 10 of those as a field forester and six as a Forest Ecologist/Silviculturist. In the field, he has assisted a wide variety of public, private, and tribal forest landowners in meeting their management goals and objectives. Most recently, his responsibilities focus on the development of statewide guidelines for integrating ecological considerations into the management of forest resources.

Jim Christenson received his B.S. in Business Administration from the University of Wisconsin-Eau Claire in 1968, and his J.D. from the University of Wisconsin-Madison. Jim has almost 25 years of experience in public sector law, and, excepting one year as the Assistant District Attorney of Dane County, all of his service has been for the DNR. Jim has provided legal counsel and representation in all facets of natural resource and house counsel law, with an emphasis in areas of fish and wildlife, forestry, endangered resources, and land management.

David R. Lentz received his B.S. in Natural Resource Management from the University of Wisconsin-Stevens Point in 1975. He has five years experience with the DNR, first as a Fisheries Biologist and then as the coordinator of the Karner blue HCP development process. Prior to this, Dave was in private sector industrial management for 12 years. He spent half of this time in the management and reclamation of open pit mining, and the other half in total quality management in manufacturing, focusing on group facilitation and team dynamics. He has been active in both the American Society of Quality Control and the Madison Area Quality Improvement Network.

Danielle Wood received her B.S in Landscape Architecture from Purdue University in 1992, and her M.S. in Urban and Regional Planning from the University of Wisconsin-Madison in 1996. Over the past five years, she has worked in a variety of positions related to land use planning in both the private and public sectors. Most recently, she has served as the drafting assistant for the Wisconsin Karner Blue Butterfly HCP.

George Albright received his B.S. in Fisheries from the University of Michigan in 1972. With more than 23 years experience in the DNR, George has worked with both WEPA and NEPA. He has worked on the preparation and review of environmental impact documents on a wide variety of projects and programs in both the private and the public sectors. Currently, he serves as the Chief of the Environmental Analysis and Liaison Section in the DNR's Bureau of Integrated Science Services.

Kathryn Kirk received her B.S. in Sociology from the University of Illinois in 1972, B.S. in Biology from the University of Wisconsin-Lacrosse in 1991, and her M.S. in Conservation Biology and Sustainable Development from the University of Wisconsin-Madison in 1993. She has worked for several years as a field biologist, first for the USFWS and then for the Nature Conservancy. Kathy's experience in plant and animal surveys include biological inventory and population survey coordination, as well as habitat and inventory studies. Currently, she serves as a conservation biologist for the DNR's Bureau of Endangered Resources.

Nicole Merryfield received her B.A. in Sociology with a focus on Environmental Studies from the University of Wisconsin-Madison in 1994. Since then, she has been working for the DNR. In the Bureau of Forestry, Nicole worked in forest management coordinating workshops, developing and implementing a monitoring program, and assisting on programs related to state lands. Following her tenure with the Bureau of Forestry, Nicole worked as data coordinator for the Karner blue butterfly HCP.

Gary Birch received his B.S. in Forestry from the University of Wisconsin-Madison in 1974. He has 24 years of experience as a biologist, five with the U.S. Forest Service and 15 with the DNR. He has extensive experience developing environmental impact statements and other

environmental review documents. Gary is currently a biologist with the Wisconsin DOT.

Ursula Petersen received her B.S. in Conservation of Natural Resources from the University of Michigan at Ann Arbor and her M.S. in Botany/Zoology from the University of Wisconsin-Madison. Ursula has participated and been employed in ecological education, species and habitat mapping and surveying, and behavioral ecology research. Since 1991, she has managed the DATCP's Endangered Species Program of protecting listed species and their habitats from pesticide injury.

Michael Luedeke received his B.S. in Mathematics from Xavier University in 1971, and his M.S. in Forest Management from the University of Wisconsin-Madison in 1977. Since 1990, he has served as the Burnett County Forest and Parks Administrator. Previously, Mike worked in Burnett County as a DNR field forester for 10 years. Other experience includes three years as a forest analyst for the Northwest Regional Planning Commission and two years as a statistical assistant at the USDA Forest Products Lab.

Thomas C. Hunt received his B.S. in Soil Science, M.S. in Landscape Architecture, and Ph.D. in Land Resources from the University of Wisconsin-Madison. Tom has spent the last 20 years working in land resources-related development, primarily as a restoration ecologist. His experience ranges from legislative policy development to in-field restoration and management activities. During development of the HCP, Tom was the Manager of Land Resources at Wisconsin Power and Light Company (now known as Aliant). Tom has also been involved with GIS development and regulatory affairs.

Fred Souba, Jr. received his B.S. in Forest Management and Administration from the University of Minnesota in 1973. From 1990 to 1998, Fred worked for Johnson Timber Corp. As Vice President, Fred was responsible for all aspects of manufacturing, wood procurement, and forest management on 20,000 acres. Prior to this, he served as Operations Manager for Nekoosa Papers, with responsibilities for nursery operations, woodland services, and forest management activities on 450,000 acres in Wisconsin and Michigan. Areas of expertise include forest operations, forest inventory design, forest management and planning, and GIS applications for forestry and wood procurement. Fred is currently employed by Consolidated Papers, Inc.

Daniel Hartman received his B.S. in Forest Science from West Virginia University at Morgantown in 1969. He has 25 years of experience in various aspects of private forestry with Consolidated Papers, Inc. Currently, Dan serves as the Services Manager for Consolidated's Timberlands Division. Responsibilities related to this position include greenhouse operations, forestry research, forest management, GIS operations, surveying programs, public relations, equipment acquisition and maintenance programs, and site preparation, tree planting, and herbicide application programs.

Nancy Bozek received her B.S. in Forestry from the University of Wisconsin-Stevens Point in 1982. For the past two years, she has served as the Executive Director of the Wisconsin Woodland Owners Association. In this capacity, Nancy fulfills a variety of roles ranging from forestry education to serving on the Governor's Council on Forestry. Prior to this, she has held several positions with federal and state government, with work in environmental, biological, and sociological resource management.

Gary Janecek received his A.A. in Supervisory Management, and a Diploma in Mechanical Drafting and Design. He has 26 years of experience in the electrical utility industry. Currently, Gary serves as the Right-of-Way Specialist for the Polk-Burnett Electric Co. For 12 years, Gary was Line Clearance Supervisor for Northern States Power Co. with responsi-bilities for 2,000 miles of distribution and 900 miles of vegetation maintenance of transmission right-of-way. Prior to that, he has 10 years experience as a transmission line designer and four years as a mechanical draftsman.

Pam Rasmussen received her B.B.A. in Biology and Business Administration from the University of Wisconsin-Eau Claire in 1987. She currently serves as the Analyst and Planning Coordinator of environmental affairs and lands for Northern States Power Company. Pam has eight years of experience in the environmental aspects of utility management. She has been involved in transmission line permitting and environmental review, statewide electric planning coordination, and hydropower plant licensing. Prior to this, Pam worked briefly as a Crew Leader for the Wisconsin Conservation Corps.

Christopher (Kit) Hart received his B.S. in Fisheries Biology from Colorado State University in 1987, and his M.S. in Forest Ecology from Mississippi State University in 1994. He currently is the Wildlife Biologist for the South Central Region for Georgia-Pacific Corp. Prior experience includes work with the Prince William Sound Aquaculture Corp. in Cordova, AK and the Colorado Division of Wildlife in Fort Collins, CO. Some of Kit's other titles include Chair of the Habitat Management Committee, Executive Board member of the Black Bear Conservation Committee, and Technical Advisory Board member of the Mississippi Nature Conservancy.

Nancy Braker received her B.A. in Biology from Carleton College in 1981, and her M.S. in Entomology from the University of Minnesota in 1986. Since 1989, Nancy has served as the Director of Science and Stewardship for the Wisconsin chapter of the Nature Conservancy. She is responsible for the Conservancy's land management and science issues in Wisconsin, including 58 preserve sites and statewide work on various conservation topics. Prior to her appointment in Wisconsin, Nancy worked for the Nature Conservancy in Minnesota, Massachusetts, and Rhode Island.

Catherine Carnes received her B.S. in Biology from the University of Wisconsin-Stevens Point in 1972, and her M.S. in Biology from Buffalo State College in 1981. Cathy is currently the USFWS Karner Blue Butterfly Recovery Coordinator, and has worked extensively on issues related to conservation and recovery of the species. She has been with the USFWS since 1987, and served as the USFWS Endangered Species Coordinator for Wisconsin for the past four years. Prior to this, Cathy worked in the wetland regulatory program at the Army Corps of Engineers for four years. From 1975 to 1983, Cathy worked in limnological field and laboratory work at both UW-Madison and the Great Lakes Laboratory at Buffalo State College.

Lisa Mandell received her B.S. in biology and Spanish from the College of William and Mary in 1979. She has worked for the USFWS since 1980 in a variety of capacities. Lisa currently serves as the Regional Permits/HCP Coordinator and as the Regional NEPA Coordinator for the states of Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio and Wisconsin.

Janet Smith received her B.S. in Wildlife Management from Colorado State University in 1972. During the 27 years she has worked for the USFWS, she has reviewed many environmental impact documents on a wide range of projects proposed, funded, permitted or licensed by federal and state agencies. Janet has held her current position as Field Supervisor of the USFWS Green Bay Ecological Services Field Office since 1983.

Earl Gustafson received his B.A. in Journalism from the University of Wisconsin-Eau Claire. He currently is the Energy and Projects Manager for the Wisconsin Paper Council, the trade association representing pulp, paper, and allied industry in Wisconsin. Earl's responsibilities cover a broad range of public policy issues, including forestry. Prior to this, Earl served as a Public Information Officer for both the DNR (in Milwaukee) and the Department of Business Development (in Madison).

Gene Wood received his B.S. in Forestry from Virginia Tech in 1963, and his M.S. and Ph.D. in Agronomy from Penn State in 1966 and 1971, respectively. Since 1989, he has held a professorship in Forest Wildlife Ecology in the Department of Aquaculture, Fisheries, and Wildlife at Clemson University. Gene has concurrently provided consulting services to the forest products industry on listed species since 1987. Prior to this, he spent 15 years as a Forest Wildlife Ecologist with the Belle W. Baruch Forest Science Institute in Georgetown, South Carolina, and seven years as a faculty member in the School of Forest Resources at Penn State.

B. Other Contributors

A number of other participants in the Wisconsin Karner Blue Butterfly HCP process contributed to the development of the HCP and EIS documents by providing information, reviewing and editing portions of the document, contributing ideas in HCP meetings and discussions, and in other ways too numerous to list. These individuals are listed in this section.

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Bill Gilbert, Georgia Pacific Corp.
Jack Hamilton, ANR Pipeline
Cate Harrington, TNC
Diane Hennesey, Wisconsin DNR
Bob Hess, Jackson County Forest
Dave Kunelius, Wisconsin DNR
Cynthia Lane, University of Minnesota
Tom Lochner, Wisconsin Cranberry Growers
Louis Locke, Wisconsin Audubon Council
Alan Madsen, Northwest Wisconsin Electric Coop.
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Shawn Puzen, Wisconsin Public Service Corp.
Dana Slade, Lakehead Pipe Line
Beverly Speer, Sierra Club
Ann B. Swengel, North American Butterfly Association
Paul Zimmerman, Wisconsin Farm Bureau Federation

Chapter 8: References Cited

This chapter lists references cited in both the Wisconsin Karner Blue Butterfly HCP (Chapters I and II) and the EIS (Chapters III-IX). References are listed alphabetically by primary author.

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Chapter 9: Glossary of Terms and Acronyms

This glossary is intended to clarify technical terms and acronyms and provide a context in which words with unclear or multiple connotations are used.

Adaptive management: A formal, structured approach to dealing with uncertainty in natural resource management, using the experience of management as an ongoing, continually improving process; the underlying operating principle of the Wisconsin Statewide Karner blue Butterfly Habitat Conservation Plan.

Audit: independent evaluation of various aspects of partner performance under their legally-binding conservation agreements.

Autecology: the ecology of a species or of individual organisms in relation to the environment. (see also "synecology")

Barrens: areas of sandy soil that are dominated by grasses, low shrubs, and small trees, and are subject to frequent disturbance. In general, the barrens community takes the form of pine barrens in northern and central Wisconsin and oak barrens in southern and west-central Wisconsin. Bracken grasslands are also part of the barrens community.

Biological opinion: a document which includes: (1) the opinion of the USFWS as to whether or not a federal action is likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion was based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat.

Biotope: a region with uniform environmental conditions, as well as populations of plants and animals.

Bivoltine: a species that completes two generations per year.

Compensatory mitigation: a form of mitigation in which impacts are compensated for by replacing or providing substitute resources or environments; land banking a particular habitat type; one of four conservation strategies being applied in the statewide HCP.

Canopy: the coverage of branches and foliage formed collectively by the crowns of trees or shrubs.

Canopy cover: the proportion of overstory (trees) or understory (shrubs) canopy that blocks out sunlight.

Changed circumstances: changes in circumstances affecting a species covered by an HCP and ITP that can be reasonably anticipated by the plan developers during plan development and negotiation. (see also "unforeseen circumstances")

Congressional Federal Register (CFR): the official publication and proceedings of the United States Congress.

Conservation agreement: legally-binding contract between the DNR and HCP partners outlining lands and activities included in the Karner blue butterfly conservation effort, public outreach and education efforts partners agree to implement, partner monitoring, reporting, and auditing responsibilities, the period for which the agreement binds the partners, and partner obligations to modify land management practices through adaptive management. Conservation agreements form the basis of the DNR's application for a statewide incidental take permit; also called a "species and habitat conservation agreement."

DATCP: the Wisconsin Department of Agriculture, Trade and Consumer Protection, a state agency; an HCP partner.

Dispersal: both the movement of individuals between and within habitat sites.

Dispersal corridor: a corridor of open canopy through woodlands, connecting areas of suitable habitat and/or subpopulations.

Disturbance: activities, such as burning, mowing, or tree harvesting, that interrupt natural plant succession and allow for early successional species to persist or colonize an area.

DNR: the Wisconsin Department of Natural Resources, a state agency; an HCP partner and the lead applicant for an incidental take permit.

Documented range: an area including all the known Karner blue butterfly element occurrences in Wisconsin; an area mapped by the HCP Biological Team in 1996 and used as the basis for conservation planning.

Driftless Area: a region that includes southwestern Wisconsin, and immediately adjacent parts of Illinois, Iowa, and Minnesota. Continental ice sheets during the Pleistocene Epoch surrounded this area, but did not cover it.

Easement: a right, such as a right-of-way, to make use of the real property of another.

Ecosystem: a biotic community and its abiotic environment, considered together as a unit. Ecosystems are characterized by energy flow that leads to trophic structure and material cycling (exchange of matter between living and nonliving parts); short for ecological system.

Ecosystem management: a system to assess, conserve, protect, and restore the composition, structure, and function of ecosystems, to ensure their sustainability across a range of temporal and spatial scales and to provide desired ecological conditions, economic products, and social benefits; a management philosophy adopted by the DNR.

Element occurrence: a discrete record of occupation as tracked by the DNR's Natural Heritage Inventory database; some occurrences may be combined into single populations or metapopulations pending further research on dispersal and behavior.

Endangered species: under federal law, any species or subspecies which is in danger of extinction throughout all or a significant portion of its range; under Wisconsin law, any species whose continued existence as a viable component of the state's wild animals or plants is determined by the DNR to be in jeopardy on the basis of scientific evidence.

Endangered Species Act (ESA): law enacted by the U.S. Congress in 1973 to protect plant and animal species that are in danger of, or threatened with, extinction.

Environmental assessment (EA): a public document that briefly provides evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; a document prepared to comply with the Wisconsin Environmental Policy Act.

Environmental impact statement (EIS): a public document that provides an analysis of potential impacts of actions which potentially significantly affect the human environment; a document required by Section 102(2)(C) of the National Environmental Policy Act or by the Wisconsin Environmental Policy Act.

Exotic species: flora or fauna that are imported or not naturally occurring in a particular region, such as Wisconsin.

Extirpation: the elimination of a species from a particular area.

Federally-listed species: a plant or animal species listed as endangered or threatened by the USFWS under the federal ESA.

Forest land: an area of which at least one acre in size and contains at least ten percent tree cover.

Fragmentation: the breaking up of large and continuous ecosystems, communities, and habitats into smaller areas surrounded by altered or disturbed land or aquatic substrate.

Geographic information system (GIS): a system of computer hardware and software that can input, manipulate, and analyze large amounts of geographically referenced data to support decision making processes.

Habitat conservation plan (HCP): a formal plan, prepared pursuant to Section 10 of the federal Endangered Species Act, that specifies what the effects of landowner activities are likely to have on listed species, the measures that will be taken to minimize and mitigate these effects, the funding available to implement the measures, the alternatives that the applicant considered and reasons why such alternatives were not implemented, and any other measures the USFWS may require; Chapters I and II of this document.

Harass: an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

Harm: an act which actually kills or injures wildlife.

HCP: habitat conservation plan; a plan prepared under Section 10(a) of the Endangered Species Act. (see "habitat conservation plan")

Herbicide: a chemical use to control unwanted plants.

High potential range/habitat: the region of Wisconsin containing all Karner blue butterfly documented element occurrences and extending beyond the documented range to include areas with similar habitat, soils, and climate, where the Karner blue butterfly is most likely to occur. (see also "documented range")

Implementing agreement (IA): legally-binding agreement between the USFWS and the applicant for an incidental take permit under Section 10(a) of the Endangered Species Act; in this conservation effort, an agreement between the USFWS and the DNR.

Implementation Oversight Committee (IOC): a subset of HCP partners and non-partner cooperators which primarily exists to represent the partners' interests during the permit period; an institutional structure that advises the DNR, makes decisions on behalf of the partners, actively plans and provides services, and makes HCP-related recommendations to the partnership and the DNR.

Incidental take: take of a federally-listed species which occurs incidental to, and is not the

purpose of, other legal activities.

Incidental take permit (ITP): a permit issued by the USFWS, under Section 10 of the ESA, which allows the incidental take of an endangered species.

Incidental take statement (ITS): an authorization by the USFWS to a federal agency for a determined amount of take of a federally-listed species.

Inclusion: the process, outlined in the HCP, of obtaining Incidental Take Permit coverage.

Intentional take: an activity which results in the take of a federally-listed species which is not incidental to other legal activities (i.e. a violation of Section 9 of the ESA).

Known habitat: those areas that have been surveyed and in which wild lupine has been found in an abundance which can support Karner blue butterflies.

Known-occupied habitat: an area that currently supports Karner blue butterflies in association with wild lupine.

Land conversion: the change of land from rural or low intensity uses to urban or high intensity uses, such as agricultural land developed for a subdivision.

Landscape: an area composed of adjacent and interacting ecosystems that are related because of geology, land forms, soils, climate, biota, and human influences.

Landscape planning: planning at the landscape scale to allow for analysis and improvement of management activities that sustain ecosystem capability and achieve ecosystem management objectives.

Larvae: the wingless, early stage of a newly hatched insect before undergoing metamorphosis; caterpillar.

Local population: a group of individuals living in the same habitat patch, a continuous area of resources specific to the species surrounded by unsuitable habitat.

Management with consideration: a level of conservation focus in which the biological goal is for Karner blue butterfly habitat gains to equal or exceed losses occurring through natural succession or otherwise.

Management to enhance/feature: a level of conservation focus in which the biological goal is for Karner blue butterfly habitat gains to equal or exceed losses. Additional measures are taken, however, to promote viable Karner blue butterfly populations despite potential economic costs.

Metapopulation: a population of populations; each individual population within a metapopulation is referred to as a local population. Several metapopulation models have been suggested (e.g., Boorman and Levitt 1973, Gilpin and Hanski 1991, Thomas 1995)

Mitigation: methods of reducing adverse impacts of a project by: (1) limiting the degree or magnitude of the action and its implementation; (2) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (3) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (4) compensating for the impact by replacing or providing substitute resources or environments.

Morphology: the form and structure of an organism or any of its parts.

National Hierarchical Framework of Ecological Units: an information system defining the landscape as ecological units with particular physical and biological components.

Natural Heritage Inventory (NHI): an integrated system of computer databases, maps, and manual files that document the historical and current occurrence of rare plants, animals, and natural communities in Wisconsin. The Natural Heritage Inventory is maintained by the DNR's Bureau of Endangered Resources.

National Environmental Policy Act (NEPA): a federal law, enacted by the U.S. Congress in 1969, which establishes the nation's environmental policy, sets goals, and provides means for carrying out the policy. (PL 91-190, 42 USC 4321-4347 [January 1, 1970] as amended by PL 94-52 [July 3, 1975], and PL 94-83 [August 9, 1975]).

Native species: flora or fauna naturally occurring in a particular region, such as Wisconsin.

Nongame species: any species of wild animal not classified as a game fish, game animal, game bird, or furbearing animal in s. 29.01, *Wis. Stats.* Nongame animals include a wide variety of protected and unprotected species.

Nonpoint source pollution: pollution occurring in which the sources cannot be traced to a single point such as a discharge pipe. Nonpoint water pollution sources include soil erosion from farmland, forestry, and construction sites, chemicals from urban streets, and nutrients from storage piles and barnyards.

Nonvoluntary coverage: non-partner landowners and land users involved in activities and in locations that may significantly affect the Karner blue butterfly are required to obtain coverage for their actions by acquiring a Certificate of Inclusion as either a single project or as a partner.

"No Surprises" rule: USFWS rule, titled "Habitat Conservation Plan Assurances" and dated

February 23, 1998 (CFR 63(35):8859-8873), intended to provide economic and regulatory certainty for non-federal property owners with approved and properly implemented HCPs in the event of "unforeseen circumstances." (see also "changed circumstances" and "unforeseen circumstances")

Overstory: the layer of vegetation in the woodland setting that consists of the tree cover.

Participant: any parties desiring involvement in the Wisconsin Statewide Karner Blue Butterfly HCP process, but not wishing to be partners.

Partner: a landowner or user desiring to be included into the Karner blue butterfly conservation strategy for the term of the ITP; more than likely, a landowner or user intending to engage in various uses or activities over time on larger land holdings (e.g., large forest owner or entity engaged in right-of-way construction or maintenance). A partner is responsible to abide by the HCP Articles of Partnership, enter into a conservation agreement with the DNR, and perform duties and responsibilities as required of other partners.

Partner group: a subdivision of the general partnership of this HCP in which those included have similar characteristics, such as land management practices or conservation strategies (e.g., forest industry, utilities, etc.).

Partnership: the 27 public and private entities involved in the application for an incidental take permit through the development of this HCP, as well as future entities applying for and obtaining partner status.

Permanent take: an impact to Karner blue butterfly habitat, through land management or land use activities, that precludes Karner blue butterfly occupation of the site for a minimum of five years.

Pesticide: a chemical used to control unwanted insects or plants.

Potential range/habitat: habitat that will meet certain biotic and abiotic conditions to support wild lupine at any point in time, but not currently doing so.

Pupae: the inactive stage of metamorphosis of many insects, following the larval stage and preceding the adult form.

Recovery: activities, under the provisions of Section 4 of the ESA, engaged in with the intent of recovering a population of an endangered or threatened species.

Recovery plan: a plan developed under Section 4 of the ESA for the conservation and recovery of a federally-listed species; a federal responsibility.

Right-of-way (ROW): the strip of land over which facilities such as highways, railroads, or power lines are built that is usually a leased right of passage over the property of another.

Roundwood: logs, bolts, and other round sections cut from trees (including chips from roundwood).

Sampling: the process of selecting a set of elements to estimate the characteristics of a population.

Sand prairie: an community consisting of xeric prairie vegetation that is dominated by sandy soils.

Savanna: a community that was historically part of a larger ecotone complex bordered by the prairies of the west and the deciduous forests of the east. This ecotone was a mosaic of plant community types that represented a continuum from prairie to forest. Savannas were the communities in the middle of this continuum. Characteristically, savannas have less than fifty percent crown cover.

Saw logs: the central stem between the stump and the top portion of a tree; saw logs are harvested for industrial roundwood products.

Senescent: a plant at the stage from maturity to dormancy or death.

Shifting mosaic: a land management strategy where, for this HCP, habitat patches appropriate for the Karner blue butterfly are shifted across the broader landscape to allow for colonization from older patches as they are lost to natural succession. Land management activities would plan disturbance patterns in accordance with this concept.

Silviculture: the theory and practice of controlling the establishment, composition, growth, and quality of forest stands in order to achieve management objectives.

Single project permittee: a landowner or user confronted with the presence of Karner blue butterflies regarding a project, but not expecting to address the issue on a long-term basis or on other lands or regarding other activities (e.g., development of a commercial establishment).

Special concern species: species that appear to be threatened because they are uncommon, restricted to unique or highly specialized habitat, or vulnerable to loss for various reasons; a classification used by the DNR for management purposes, but which is not defined in state statute or administrative code and therefore has no regulatory significance.

Species and habitat conservation agreement: A legally-binding agreement between the Wisconsin DNR and an HCP partner outlining the specific conservation strategies which the partner will undertake as a condition of the statewide incidental take permit coverage. Referred to in this HCP as a conservation agreement. (see also "conservation agreement")

Spring flight: the first and smaller of the two Karner blue butterfly flight periods in Wisconsin. Karner blue butterfly eggs overwinter and hatch in the spring; adults emerge in late spring to early summer (between May and late June).

State-listed species: a plant or animal species listed as endangered and threatened by the Wisconsin DNR under the state endangered species laws.

Succession: progressive changes in species composition, organic structure, and energy flow of a natural community over time.

Summer flight: the second and larger of the two Karner blue butterfly flight periods in Wisconsin, occurring between early July and mid-August.

Synecology: the study of the environmental interrelationships among communities or organisms. (see also "autecology")

Take: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.

Tension zone: the most pronounced environmental gradient in Wisconsin; located in a narrow band that runs from northwestern to southeastern Wisconsin. Many species of plants and animals reach the limit of their ranges in this zone. Although climate is a major reason for the tension zone, soil type and other factors also play a role.

Threatened species: under federal law, any species or subspecies which is likely within the foreseeable future to become endangered throughout all or a significant portion of its range; under Wisconsin law, any species which appears likely, within the foreseeable future, on the basis of scientific evidence to become endangered.

Timberland: forest lands capable of growing at least 20 cubic feet of commercial wood per year.

Understory: vegetative growth under the canopy layer on a woodland site.

Unforeseen circumstances: changes in circumstances affecting a species or geographic area covered by an HCP that could not reasonably have been anticipated by the plan developers, at the time of the HCP's negotiation and development, and that result in a substantial and adverse change in the status of the covered species; generally, catastrophic events of unprecedented nature. (see also "No Surprises" rule and "changed circumstances")

U.S.D.A.: the United States Department of Agriculture, a federal agency

USFWS: the United States Fish and Wildlife Service, a federal agency; agency with

responsibility for implementing and enforcing provisions of the Endangered Species Act.

U.S.G.S.: the United States Geological Survey, a federal agency.

Viable population: a population that is of sufficient size and distribution to be able to persist for a long period of time in the face of demographic variations, random events that influence the genetic composition of the population, and fluctuations in environmental conditions, including catastrophic events.

Vehicle miles of travel (VMT): a measure of traffic and highway use; the total number of miles travelled in one year

Voluntary coverage: those non-partner landowners that are not required to obtain a Certificate of Inclusion and are covered in the Wisconsin Statewide Karner Blue Butterfly HCP and ITP without further process.

Watershed: the land area that drains into an individual lake or river.

Wisconsin Environmental Policy Act (WEPA): a state law designed to encourage environmentally sensitive decision making by state agencies (s. 1.12, *Wis. Stats.*). This law describes Wisconsin environmental policy and requires state agencies to consider the environmental effects of their proposed action to the extent possible under their other statutory authorities.

Wis. Adm. Code: Wisconsin Administrative Code; a compilation of rules made by state agencies having rule-making authority; a component of Wisconsin state law.

***Wis. Stats.*:** Wisconsin Statutes; Wisconsin's state laws.