



August 2, 2010 (Revised August 20, 2010)

Ms. Karen Miller
Section Manager
Impact Assessment Section
Division of Ecosystems and Environment
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702

Dear Ms. Miller:

Subject: Agency Coordination Letter and
Threatened and Endangered Species Habitat Assessment
Proposed Rockford Solar Field Project
Rockford, Winnebago County, Illinois
CEC Project No. 101-114

On behalf of our client, Anderson Environmental and Engineering, Co. (AE&E), Civil & Environmental Consultants, Inc. (CEC) has prepared the following revised letter report documenting the results of our federally-listed and state-listed threatened and endangered species habitat assessment within the approximate 205-acre proposed Rockford Solar Field Project area (the Project Area), located in Rockford, Winnebago County, Illinois. The Project Area is located south of Chicago Rockford International Airport and the Kishwaukee River, north of the intersection of South Bend Road and Baxter Road (Figure 1). Opinions presented in this letter report were developed based upon site observations made on July 6 and 7, 2010, and available information.

1.0 BACKGROUND

CEC was retained by AE&E to review available information and conduct an endangered and threatened species habitat assessment within the Project Area. The proposed Rockford Solar Field Project will consist of a solar power generating facility constructed to provide affordable and renewable energy to residential, commercial, and industrial customers within the Rockford

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area. The threatened and endangered species habitat assessment is being conducted in association with a U.S. Department of Energy (DOE) Environmental Assessment being prepared for the Project Area.

Prior to conducting the site visits, CEC reviewed the U.S. Fish and Wildlife Service (USFWS) Midwest Region website (USFWS 2009) to determine which federally-listed endangered, threatened, and candidate species are known to occur, or potentially occur, in Winnebago County. CEC also reviewed the U.S. Geological Survey (USGS) topographic map for the Rockford, Illinois quadrangle prior to conducting the site visits. Additionally, CEC utilized the Illinois Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT) on July 13, 2010, to obtain information on known occurrences of federally-listed and state-listed species within the vicinity of the Project Area.

2.0 SITE OBSERVATIONS AND RESULTS OF DOCUMENT REVIEW

The USFWS (2009) listed the following federally-listed endangered and candidate species as occurring, or potentially occurring, in Winnebago County: Indiana bat (*Myotis sodalis*, endangered), eastern prairie fringed orchid (*Platanthera leucophaea*, threatened), and prairie bush clover (*Lespedeza leptostachya*, threatened). The IDNR/Illinois Natural Heritage Database (INHD) *Illinois Threatened and Endangered Species by County* list (IDNR 2008) identifies 50 state-listed threatened or endangered species as occurring, or potentially occurring, in Winnebago County.

CEC's search of the IDNR's EcoCAT for information on federally-listed and state-listed species within the vicinity of the Project Area on July 13, 2010 (Attachment I), resulted in the following species as having been documented within the vicinity: upland sandpiper (*Bartramia longicauda*, state-listed endangered). The EcoCAT search resulted in no records of federally-listed, proposed, or candidate species having been documented within the vicinity of the Project Area.

The Project Area was evaluated by CEC biologist Greg Gerke during site visits on July 6 and 7, 2010, to document existing vegetation communities and hydrological conditions. Each type of



habitat present within the Project Area was qualitatively evaluated for its potential to be suitable habitat for the Indiana bat, eastern prairie fringed orchid, and prairie bush clover. Each type of habitat present within the Project Area was also qualitatively evaluated for its potential to be suitable habitat for the additional state-listed species listed by the IDNR (2008) as occurring or potentially occurring in Winnebago County.

As shown on Figure 2, the Project Area primarily consists of active agricultural row crop fields. In addition to agricultural fields, the following vegetation communities were found to be present within the Project Area: old field vegetation, old field vegetation with scattered trees, upland deciduous forest, palustrine forested wetland, and palustrine emergent wetland. Representative photographs of each habitat type found within the Site during the site visits can be found in Attachment II.

Agricultural land within the Project Area consisted of soybean (*Glycine max*) fields located within the central portion of the Project Area and a corn (*Zea mays*) field located within the eastern portion of the Project Area.

One area of old field vegetation was located within the northwest portion of the Project Area. Areas of old field with scattered trees were located within the northeastern portion and the western portion of the Project Area. These areas were dominated by smooth brome (*Bromus inermis*), whorled milkweed (*Asclepias verticillata*), common milkweed (*Asclepias syriaca*), goatsbeard (*Aruncus dioicus*), white vervain (*Verbena urticifolia*), black-eyed susan (*Rudbeckia hirta*), summer grape (*Vitis aestivalis*), common plantain (*Plantago major*), yarrow (*Achillea millefolium*), tall fescue (*Schedonorus phoenix*), tall goldenrod (*Solidago altissima*), poison ivy (*Toxicodendron radicans*), spotted knapweed (*Centaurea stoebe*), Queen Anne's lace (*Daucus carota*), common mullein (*Verbascum thapsus*), annual sunflower (*Helianthus annuus*), bouncingbet (*Saponaria officinalis*), red clover (*Trifolium pratense*), evening primrose (*Oenothera biennis*), dotted smartweed (*Polygonum punctatum*), daisy fleabane (*Erigeron annuus*), and Virginia creeper (*Parthenocissus quinquefolia*). Scattered tree species observed within the old field areas included eastern red cedar (*Juniperus virginiana*), red elm (*Ulmus rubra*), boxelder (*Acer negundo*), honey locust (*Gleditsia triacanthos*), eastern cottonwood



(*Populus deltoides*), red mulberry (*Morus rubra*), staghorn sumac (*Rhus typhina*), green ash (*Fraxinus pennsylvanica*), and spruce (*Picea pungens*).

Upland deciduous forest was located within the western portion of the Project Area. Dominant canopy species included swamp white oak (*Quercus bicolor*), honey locust, black walnut (*Juglans nigra*), and red elm. Dominant understory vegetation included Amur honeysuckle (*Lonicera maackii*), silky dogwood (*Cornus amomum*), red mulberry, hawthorn (*Crataegus* sp.), Virginia creeper, common blue violet (*Viola sororia*), summer grape, Virginia wild rye (*Elymus virginicus*), hairy pagoda-plant (*Blephilia hirsuta*), garlic mustard (*Alliaria petiolata*), currant (*Ribes* sp.), wild ginger (*Asarum canadense*), poison ivy, tall goldenrod, stinging nettle (*Urtica dioica*), greenbrier (*Smilax* sp.), jumpseed (*Polygonum virginianum*), wingstem (*Verbesina alternifolia*), and white avens (*Geum canadense*).

Palustrine forested wetlands were located within the southern and western portions of the Project Area. Dominant canopy species included silver maple (*Acer saccharinum*), green ash, eastern cottonwood, boxelder, American elm (*Ulmus americana*), common hackberry (*Celtis occidentalis*), and swamp white oak. Dominant understory vegetation included buttonbush (*Cephalanthus occidentalis*) and spicebush (*Lindera benzoin*). Herbaceous species included moneywort (*Lysimachia nummularia*), stinging nettle, reed canary grass (*Phalaris arundinacea*), and poison ivy.

One palustrine emergent wetland was located within the southeastern portion of the Project Area. This wetland was dominated by ditch stonecrop (*Penthorum sedoides*), softstem bulrush (*Schoenoplectus tabernaemontani*), American water plantain (*Alisma subcordatum*), rice cut grass (*Leersia oryzoides*), narrowleaf cattail (*Typha angustifolia*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), river bulrush (*Schoenoplectus fluviatilis*), poison hemlock (*Conium maculatum*), and blunt spikerush (*Eleocharis obtusa*).



3.0 FEDERALLY-LISTED THREATENED AND ENDANGERED SPECIES DOCUMENT REVIEW AND HABITAT ASSESSMENT

3.1 Indiana Bat

The Indiana bat was originally in danger of extinction under the Endangered Species Preservation Act of 1966 and is currently listed as federally endangered and protected under the Endangered Species Act of 1973, as amended (USFWS 2007). The Indiana bat is a medium-sized, monotypic species within the genus *Myotis*. This species closely resembles the little brown bat (*Myotis lucifugus*) and the northern long-eared bat (*Myotis septentrionalis*). The Indiana bat typically has a distinctly keeled calcar, whereas little brown bats and northern long-eared bats do not. In addition, the hind feet of Indiana bats tend to be small and delicate with fewer, shorter hairs that do not extend beyond the toenails, as compared to the hind feet of little brown bats and northern long-eared bats (Natureserve 2010; USFWS 2007; Whitaker 1980).

The Indiana bat is a migratory species whose range includes the Midwest and eastern United States, from the western edge of the Ozark region in Oklahoma, to southern Wisconsin, east to Vermont and New Hampshire, and south to northern Florida. In summer months, this species is apparently absent south of Tennessee (Natureserve 2010; USFWS 2007). During winter, Indiana bats are restricted to suitable hibernacula, which are primarily located in the karst regions of the east-central U.S. These hibernacula are usually located in caves, although abandoned mines and a tunnel in a hydroelectric dam are also known to be utilized by this species as hibernacula (Whitaker 1980; USFWS 2007). Indiana bats require specific roost sites in caves or mines that attain appropriate temperatures to hibernate. Hibernating Indiana bats choose caves or mines that remain cold, but have a low risk of freezing (USFWS 2007).

Limited observations indicate that birth and development occur in very small, widely scattered colonies consisting of approximately 25 to 100 females and their young. Birth usually takes place during June with each female bearing a single offspring (Harvey et al 1999; USFWS 2006). About 25 to 37 days are required for development to the flying stage and the beginning of independent feeding. Male Indiana bats may be found throughout the entire range of the species



during the summer months and appear to roost singly or in small groups, except during brief summer visits to hibernacula (USFWS 2007).

This species typically breeds from late August to early October on the ceilings of large rooms near cave or other hibernacula entrances. Limited mating may also occur in the spring before the hibernating colonies disperse (Natureserve 2010; USFWS 2007). Hibernating colonies disperse in late March and most of the bats migrate to more northern habitat for the summer. However, migrations have been documented as occurring in a southerly direction as well and some males remain in the hibernating area during this period, forming active bands which wander from cave to cave (USFWS 2007).

Migration to the wintering caves usually begins in August and reserves of fat depleted during migration are replenished in large part during the month of September (Harvey et al 1999; USFWS 2007). Feeding activities continue at a diminishing rate in the fall. By late November, populations of this species have entered a definite state of hibernation (USFWS 2007).

The Indiana bat's diet consists of insects, with females and juveniles foraging in the airspace near the foliage of riparian and floodplain trees and males foraging in the densely wooded area at tree top height (Natureserve 2010; USFWS 2006).

Summer Indiana bat roosting and foraging habitat consists primarily of floodplain and riparian forests, though recently it has been found that upland forests are also used by Indiana bats for roosting. Upland forests, old fields, and pastures with scattered trees have also been documented to provide foraging habitat. Indiana bats typically use dead and dying trees as summer roost sites, although large trees with bark that is naturally shaggy or peeling away from the tree, such as shagbark hickory (*Carya ovata*) and white oak (*Quercus alba*), are also used and may be important as protection from severe weather (Natureserve 2010; USFWS 2007). The suitability of any tree as a roost site is determined by: its condition (dead or alive); the quantity of loose bark it has; the solar exposure and its location in relation to other trees; and its distance to and spatial relationship with water sources and foraging areas (USFWS 2007).



The most important characteristics of trees that provide roosts are structure-related and include exfoliating bark with space for bats to roost between the bark and the bole of the tree. Tree cavities, hollow portions of tree boles and limbs, crevices in the top of a lightning struck trees, and splits below splintered, broken tree tops have also been used as roosts. It has been found that Indiana bat maternity colonies use multiple roosts, in both living and dead trees, and that exposure of roost trees to sunlight and location relative to other trees are important factors in their suitability and use (USFWS 2007).

Indiana bats are thought to have historically been a savannah species because they prefer large trees in the open or at edges of forests, fragmented forest landscapes, open canopies, and forests with an open understory (USFWS 2007).

In Illinois, since 1995 Indiana bats have been known to inhabit 16 different caves and mines during the winter months. In the summer months, Indiana bats are found in both the glaciated and unglaciated portions of the state (USFWS 2007). According to the USFWS (2007) and IDNR (2008), summer occurrences of Indiana bats and maternity colonies have not been documented in Winnebago County, Illinois, nor have they been documented in adjacent counties in Illinois or Wisconsin. No records of Indiana bat hibernacula are currently or historically known from Winnebago County or adjacent counties in Illinois or Wisconsin. The nearest Indiana bat hibernacula to Winnebago County are located in Jo Daviess and La Salle Counties, Illinois, and Grant County, Wisconsin (USFWS 2007).

CEC biologist Greg Gerke conducted a habitat assessment and pedestrian survey of potentially suitable Indiana bat habitats within the Project Area during site visits conducted on July 6 and 7, 2010. As stated, the Project Area primarily consists of active agricultural row crop fields. In addition to agricultural fields, the following vegetation communities were found to be present within the Project Area: old field vegetation, old field vegetation with scattered trees, upland deciduous forest, palustrine forested wetland, and palustrine emergent wetland (Figure 2; Attachment II). No streams or rivers are present within the Project Area. However, the Kishwaukee River is located adjacent to the northwestern portion of the Project Area. The forested wetlands within the Project Area contained surface water during the site visits.



Additionally, the forested wetlands contained a fair number of potential roost trees and may provide potentially suitable foraging and roosting habitat for Indiana bats. Areas of upland deciduous forest within the Project Area are generally early successional, contained dense understory vegetation dominated by Amur honeysuckle, and had limited numbers of potential roost trees present, as seen in the photographs included in Attachment II.

No hibernacula or summer captures of this species have been documented within the vicinity of the Project Area or in adjacent counties in Illinois and Wisconsin (USFWS 2007; Attachment I). Additionally, as seen on Figure 2, the proposed limits of disturbance within the Project Area does not contain forested wetland or upland deciduous forest habitats. Therefore, it is determined that this project may affect, but is not likely to adversely affect, the Indiana bat or its habitat, especially if potentially suitable Indiana bat roost trees within the Site are removed between the October 15 to March 31 time period.

3.2 Eastern Prairie Fringed Orchid

Eastern prairie fringed orchid was listed by the USFWS as federally threatened on September 28, 1989 (54 FR 39857 39863) (USFWS 2010a). Specific threats identified by the Eastern Prairie Fringed Orchid Recovery Plan in 1999 were: 1) habitat destruction predominantly due to cropland and pasture; 2) fire suppression and woody vegetation encroachment; 3) impacts to pollinator populations, specifically that of hawkmoths; 4) competition from non-native plant species, including reed canary grass, purple loosestrife, and glossy buckthorn; 5) overutilization for commercial and scientific purposes; and 6) existing regulatory mechanisms (USFWS 1999).

The eastern prairie fringed orchid is a long-lived perennial herb from an underground tuber in the orchid family (Orchidaceae). It has a single unbranched stalk, with stems 8 to 40 inches tall and hairless alternate leaves which sheath the stalk. The creamy white colored flowers occur from late June through mid-July, while the fruiting period extends to late August or September when seeds disperse (USFWS 1999).



The historic range of the eastern prairie fringed orchid extended from eastern Iowa, Missouri and Oklahoma eastward across southern Wisconsin, northern and central Illinois, southern Michigan, northern Indiana and Ohio, and northwestern Pennsylvania to western New York and adjacent Ontario. Isolated, disjunct populations also occurred in Maine, New Jersey, and Virginia (USFWS 1999). Eastern prairie fringed orchid is currently known to occur in a total of 59 populations in six states, including Illinois, Iowa, Michigan, Maine, Ohio, and Wisconsin.

The primary habitat of eastern prairie fringed orchid consists of mesic tallgrass prairies, sedge meadows, fens, lake shores, and sphagnum bogs (USFWS 1999, Penskar and Higman 2000). Populations have also been found to a lesser degree in old fields and roadside ditches (USFWS 2004). Most of the populations of this species in the midwestern U.S. occur in silt-loam soils derived from loess or glacial till (USFWS 1999). Natural processes that maintain prairies, meadows, fens, and bogs in early successional or mid-successional phases may be important in maintaining sunny, open conditions required by this species (USFWS 1999). According to Penskar and Higman (2000), this species frequently persists in degraded tallgrass prairie remnants, and will colonize ditches, railroad rights-of-way, fallow agricultural fields, and similar habitats where artificial disturbance creates a moist mineral surface conducive to germination.

Penskar and Higman (2000) list the following species as being found with eastern prairie fringed orchid in wet/mesic tallgrass prairie habitats in Michigan: water sedge (*Carex aquatilis*), tussock sedge (*Carex stricta*), bluejoint (*Calamagrostis canadensis*), little bluestem, big bluestem, prairie cordgrass, shrubby cinquefoil (*Potentilla fruticosa*), dense blazing star (*Liatris spicata*), stiff yellow flax (*Linum medium*), redosier dogwood (*Cornus sericea*), silky dogwood (*Cornus amomum*), Virginia mountainmint (*Pycnanthemum virginianum*), fringed gentian (*Gentianopsis crinita*), Riddell's goldenrod (*Solidago riddellii*), smooth sawgrass (*Cladium mariscoides*), broadleaf cattail, rushes (*Juncus* spp.), and hardstem bulrush (*Schoenoplectus acutus*).

Illinois likely contained the largest pre-European settlement populations of eastern prairie fringed orchid. This species was originally known from tall grass prairies within 33 counties in the northern portions of the state. Currently, as many as 20 populations may occur in six counties in the Chicago area, with other single populations currently known from eastern and west-central



areas of the state (USFWS 1999). Fourteen populations are protected and managed. According to the IDNR (2008), populations of this species are known to occur in the following counties in Illinois: Cook, DuPage, Grundy, Hancock, Henry, Iroquois, Jackson, Kane, Lake, Lee, McHenry, and Will. According to the USFWS (1999) and IDNR (2008), the eastern prairie fringed orchid is not currently known to occur in Winnebago County, Illinois, or any adjacent Illinois counties. According to the USFWS (1999), this species is known to occur in Rock County, Wisconsin, which is adjacent to Winnebago County, Illinois.

CEC biologist Greg Gerke conducted a habitat assessment for eastern prairie fringed orchid within the Project Area on July 6 and 7, 2010. The Project Area does not contain typical habitat for eastern prairie fringed orchid, including mesic tallgrass prairies, sedge meadows, fens, lake shores, and sphagnum bogs. The Project Area does contain some old field habitats, which eastern prairie fringed orchid has been found to occur in on an infrequent basis (USFWS 2010b). However, old field habitats are not typical habitat for this species and, as seen in Section 2.0, old field habitats within the Project Area were dominated by non-native species that are not typically associated with eastern prairie fringed orchid. As stated previously, a palustrine emergent wetland is present within the southeastern portion of the Project Area. This wetland may be considered potentially suitable habitat for eastern prairie fringed orchid. However, based on a review of a recent aerial photograph, it appears that at a minimum, portions of this wetland were likely farmed recently. As seen in Section 2.0, the wetland is dominated by species which are early colonizers of wetlands and not species typical of sedge meadows, fens, or bogs. Additionally, as seen on Figure 2, the proposed limits of disturbance within the Project Area does not contain emergent wetland habitats. According to the IDNR's EcoCAT and the INHD, the occurrence of this species has not been documented within the Project Area or the immediate vicinity of it (Attachment I; IDNR 2008). Therefore, it is determined that this project may affect, but is not likely to adversely affect, eastern prairie fringed orchid or its habitat.

3.3 Prairie Bush Clover

Prairie bush clover was listed by the USFWS as federally threatened on January 9, 1987 (52 FR 781 785) (USFWS 2010b). Specific threats identified by the Prairie Bush Clover Recovery Plan



in 1988 were: 1) habitat destruction predominantly due to agriculture; 2) unknown species biology including genetic variability; 3) herbivory by insects and mammals; and 4) woody invasions (USFWS 1988).

The prairie bush clover is a perennial herb in the bean family (Fabaceae). It has a single branched or unbranched stem up to 1 meter tall and trifoliate leaves which are widely spaced on the stem. Both the leaves and the stems are covered in fine silky hairs, giving the plant a silvery appearance. The flowers vary in color and are white, yellowish-white, or light pink and have a magenta mark in the center of their keel. Flowering occurs from mid-July through early September, while the fruiting period occurs from late August to early October. Individual plants are estimated to live 10 years or more (USFWS 1988).

The historic range of the prairie bush clover included approximately 27 counties across Iowa, Illinois, Wisconsin, and Minnesota. Prairie bush clover is currently known from approximately 36 populations in 24 counties of northern Illinois, southern and western Wisconsin, southern Minnesota, and Iowa (USFWS 1988). Approximately 90 percent of all prairie bush clover plants occur within a “core area” that includes northern Iowa and adjacent southwestern Minnesota (CPC 2010b).

The primary habitat of prairie bush clover consists of tallgrass prairies with soils that may be either deeply underlain by till or sand, gravel, or rocks, most often including limestone, but also including sandstone, gneiss, or quartzite (USFWS 1988). According to the USFWS (1988), prairie bush clover is known to occur on both disturbed and undisturbed sites, and several sites have been previously mowed, burned, grazed, or historically farmed. The Center for Plant Conservation (CPC 2010b) states that this species is often found on north-facing slopes of dry upland prairies, where it occurs either in thin soil at the margin of rocks or in gravelly loamy soil (CPC 2010b). According to The Nature Conservancy (TNC 1995), this species is known to occur in dry gravel prairies and dry-mesic prairies with steep, well-drained, usually calcareous soils.



A list of commonly associated plant species in prairie bush clover populations include the following: big bluestem, little bluestem (*Schizachyrium scoparium*), sideoats grama (*Bouteloua curtipendula*), indiangrass (*Sorghastrum nutans*), prairie dropseed (*Sporobolus heterolepis*), porcupinegrass (*Hesperostipa spartea*), leadplant (*Amorpha canescens*), cutleaf anemone (*Pulsatilla patens*), several species of aster (*Aster ericoides*, *A. laevis*, *A. ptarmicoides*, and *A. sericeus*), white wild indigo (*Baptisia leucophaea*), stiff tickseed (*Coreopsis palmata*), pale purple coneflower (*Echinacea pallida*), flowering spurge, (*Heuchera richardsonii*), roundhead lespedeza (*Lespedeza capitata*), blazing star (*Liatris aspera*), hoary puccoon (*Lithospermum canescens*), narrowleaf stoneseed (*Lithospermum incisum*), grooved flax (*Linum sulcatum*), yellow sundrops (*Oenothera serrulata*), downy phlox (*Phlox pilosa*), white prairie clover (*Petalostemum candidum*), purple prairie clover (*Petalostemum purpureum*), silverleaf Indian breadroot (*Pedimelum argophyllum*), large Indian breadroot (*Pedimelum esculentum*), Missouri goldenrod (*Solidago missouriensis*), gray goldenrod (*Solidago nemoralis*), stiff goldenrod (*Oligoneuron rigidum*), birdfoot violet (*Viola pedata*), and prairie violet (*Viola pedatifida*) (TNC 1995). Natural processes, or now human management regimes, that maintain prairies in early successional or mid-successional phases may be important in maintaining sunny, open conditions required by this species as populations have been known to decline as woody species encroach areas of occupied habitat (USFWS 1988).

The known populations in northern Illinois contain a combined total of approximately 249 plants (CPC 2010b). According to the IDNR (2008), four occurrences of prairie bush clover are currently known from Winnebago County, Illinois. Since 1995, populations of prairie bush clover have been documented as occurring in the following Illinois counties: Cook, DuPage, Lee, McHenry, Ogle, and Winnebago (IDNR 2008; USFWS 1988). Rock County (Wisconsin) is also known to contain populations of prairie bush clover and is adjacent to Winnebago County, Illinois (USFWS 1988).

CEC biologist Greg Gerke conducted a habitat assessment for prairie bush clover within the Project Area on July 6 and 7, 2010. The Project Area does not contain tallgrass prairie vegetation, which is the only type of habitat where prairie bush clover is known to occur (USFWS 1988; USFWS 2010b). According to the IDNR's EcoCAT (Attachment I), the



occurrence of this species has not been documented within the Project Area or the immediate vicinity of it (Attachment I; IDNR 2008). Therefore, it is determined that this project may affect, but is not likely to adversely affect, prairie bush clover or its habitat.

4.0 STATE-LISTED THREATENED AND ENDANGERED SPECIES LIST FOR WINNEBAGO COUNTY

As stated, the IDNR/INHD *Illinois Threatened and Endangered Species by County* list (IDNR 2008) identifies 50 state-listed threatened or endangered species as occurring, or potentially occurring, in Winnebago County. Table 1 outlines the preferred habitat of each species and whether potentially suitable habitat for each species was observed by CEC within the Project Area. Bold text within Table 1 indicates that potentially suitable habitat for a species is present within the Project Area. Additional information regarding these species is provided in the sections following Table 1.

TABLE 1 STATE LISTED SPECIES HABITAT INFORMATION Proposed Rockford Solar Field Rockford, Winnebago County, Illinois					
Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Speckled Alder	<i>Alnus incana</i> <i>ssp. rugosa</i>	E	Banks of streams, swamps, and bogs; often with black spruce or eastern white cedar	No	No
Shadbush	<i>Amelanchier interior</i>	T	Mesic sand forests, dolomite stream bluffs, and bogs	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Western Sand Darter	<i>Ammocrypta clarum</i>	E	Sandy runs within medium to large rivers; prefers margins of stream channel and backwaters; intolerant of siltation and turbidity	No	No
Henslow's Sparrow	<i>Ammodramus henslowii</i>	T	Prairie habitats, undisturbed large grasslands and hayfields.	No	No
Bearberry	<i>Arctostaphylos uva-ursi</i>	E	Sand deposits and sandstone outcrops	No	No
Dragon Wormwood	<i>Artemisia dracunculus</i>	E	Dry sand and gravel prairies; loess bluffs along rivers	No	No
Woolly Milkweed	<i>Asclepias lanuginosa</i>	E	Dry gravel prairies	No	No
Forked Aster	<i>Aster furcatus</i>	T	Seepage zones along north-facing wooded bluffs and stream banks	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Upland Sandpiper	<i>Bartramia longicauda</i>	E	Prairies, pastures, and hayfields; sometimes found at airports	No	No
Kittentails	<i>Besseyia bullii</i>	T	Sand savannahs and gravel prairies; occurs along the Illinois, Mississippi, and Rock Rivers in Illinois	No	No
Daisyleaf Grape Fern	<i>Botrychium matricariifolium</i>	E	Successional sand forests and dry to moist old fields	Yes	Yes
Northern Grape Fern	<i>Botrychium multifidum</i>	E	Mesic forests, sand savannahs, and successional habitats	Yes	Yes
Dwarf Grape Fern	<i>Botrychium simplex</i>	E	Disturbed sand prairies and successional sand forests	No	No
Grass Pink Orchid	<i>Calopogon tuberosus</i>	E	Prairies, bogs, and fens	No	No
Sedge	<i>Carex echinata</i>	E	Wet meadows/sedge meadows	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Downy Yellow Painted Cup	<i>Castilleja sessiliflora</i>	E	Dry to mesic gravel and sand prairies	No	No
Redroot	<i>Ceanothus herbaceus</i>	E	Sand prairies and sand savannahs	No	No
Pipsissewa	<i>Chimaphila umbellata</i>	E	Dry to mesic upland sand forests	No	No
Northern Harrier	<i>Circus cyaneus</i>	E	Nests within large undisturbed grasslands (150 acres or more in size) and adjacent marshes with tall, dense vegetation	No	No
Sweetfern	<i>Comptonia peregrina</i>	E	Acidic sand prairies and savannahs	No	No
Spotted Coral-root Orchid	<i>Corallorhiza maculata</i>	T	Oak forests	No	No
Purple Wartyback	<i>Cyclonaias tuberculata</i>	T	In current areas within medium to large rivers in gravel, mixed sand and gravel, or gravel and mud substrates	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
White Lady's Slipper	<i>Cypripedium candidum</i>	T	Wet mesic prairies and fens	No	No
Cerulean Warbler	<i>Dendroica cerulea</i>	T	Tall trees within swamps, bottomlands, floodplains, and mixed woods	Yes	No
Spike	<i>Elliptio dilatata</i>	T	Small to large streams and lakes in mud or gravel substrates	No	No
Bearded Wheat Grass	<i>Elymus trachycaulus</i>		Mesic prairies and wet dolomite outcrops	No	No
Blanding's Turtle	<i>Emydoidea blandingii</i>	T	Marshes, bogs, fens, prairie wetlands, sedge meadows, vegetated areas of shallow lakes and ponds	Yes	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Gravel Chub	<i>Erimystax x-punctatus</i>	T	Small rivers within deep riffles and channels of moderate to very fast current over gravel or firm sand/gravel substrates	No	No
Iowa Darter	<i>Etheostoma exile</i>	T	Clear, well vegetated lakes, sloughs, and streams. Prefers quiet pools with a mud or clay bottom with detritus and brush	No	No
Starhead Topminnow	<i>Fundulus dispar</i>	T	Quiet shallow backwaters; glacial lakes; clear, well vegetated floodplain lakes; swamps and marshes; usually with sand and mud substrates	Yes	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Sandhill Crane	<i>Grus canadensis</i>	T	Nests in relatively large undisturbed freshwater marshes and prairie ponds	No	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	Undisturbed areas near large rivers and lakes. Nests located in high branches of old trees including pines, spruce, firs, cottonwoods, oaks, poplars, and beech	Yes	No
Tall Sunflower	<i>Helianthus giganteus</i>	E	Fens and sedge meadows	No	No
Ottoa Skipper	<i>Hesperia ottoe</i>	T	Sandy areas including sand prairies, sand dunes, and loess-sand hill prairies	No	No
Vasey's Rush	<i>Juncus vaseyi</i>	E	Wet prairies, sedge meadows, and stream banks	No	No
Pinweed	<i>Lechea intermedia</i>	T	Areas of dry, sterile, sandy soils	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Ground Juniper	<i>Juniperus communis</i>	T	Lake Michigan dunes, glacial till bluffs and ravines adjacent to the lakeshore	No	No
Trailing Juniper	<i>Juniperus horizontalis</i>	E	Sand dunes, sandy and gravelly soils, prairies, slopes, rock outcrops, and stream banks	No	No
Loggerhead Shrike	<i>Lanius ludovicianus</i>	T	Open country with scattered trees and shrubs, such as grasslands and pastures	Yes	Yes
Prairie Bush Clover	<i>Lespedeza leptostachya</i>	E	Dry or dry-mesic tallgrass prairies	No	No
Black Sandshell	<i>Ligumia recta</i>	T	Riffles or raceways of medium to large rivers in gravel or firm sand substrates	No	No
Weed Shiner	<i>Notropis texanus</i>	E	Clear, sand-bottom creeks with some submerged vegetation; rivers and sloughs	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Small Sundrops	<i>Oenothera perennis</i>	T	Sand and gravel prairies; dry rocky prairie slopes and knobs	No	No
Large-flowered Beardtongue	<i>Penstemon grandiflorus</i>	E	Dry sand prairies and gravel prairies	No	No
King Rail	<i>Rallus elegans</i>	E	Freshwater marshes, upland/wetland marsh edges, ricefields or similar flooded farmlands	Yes	No
Prairie Buttercup	<i>Ranunculus rhomboideus</i>	T	Disturbed and undisturbed dry gravel and dolomite prairies	No	No
Red-berried Elder	<i>Sambucus racemosa ssp. pubens</i>	E	Rocky forest slopes and occasionally bogs	No	No
American Burreed	<i>Sparganium americanum</i>	E	Muddy and peaty shores and shallow water	No	No



**TABLE 1 (Cont.)
 STATE LISTED SPECIES HABITAT INFORMATION
 Proposed Rockford Solar Field
 Rockford, Winnebago County, Illinois**

Common Name	Scientific Name	Status^{2,3}	Preferred Habitat¹	Potentially Suitable Habitat Within the Project Area?	Potentially Suitable Habitat Within Proposed Limits of Disturbance?
Rock Elm	<i>Ulmus thomasii</i>	E	Mesic forests with calcareous slopes and floodplain terraces	Yes	No
Highbush Blueberry	<i>Vaccinium corymbosum</i>	E	Wet acidic prairies and acidic bogs	No	No

¹ Preferred Habitat information obtained from: Britton and Brown 1970; Herket and Ebinger 2002; Nyboer and Ebinger 2004; Nyboer et al. 2006; WDNR 2009a; Hitchcock 1971; Yatskievych 2000; Shuford and Gardali 2008; and NatureServe 2010.

²Species listed by the IDNR as threatened (T)

³Species listed by the IDNR as endangered (E)

5.0 DAISYLEAF GRAPE FERN

5.1 Reason for Listing

Daisyleaf grape fern is listed as endangered in Illinois (IDNR 2008). Although more widely distributed in the northeastern United States, Canada, and Europe, this species is extremely rare in Illinois, with the only known occurrences being located in two northern Illinois counties (Herket and Ebinger 2002; USDA 2010).



5.2 Description

Daisyleaf grape fern is a perennial fern from fleshy roots that reaches heights up to 30 cm (Herket and Ebinger 2002; USDA 2010). The leaves appear in spring and die out by late summer (FNA 2010).

5.3 Distribution and Recent History in Illinois

Daisyleaf grape fern's known distribution in Illinois only includes three populations in Lee and Winnebago counties in northern Illinois. One of the two populations in Winnebago County is apparently no longer extant (Herket and Ebinger 2002). The last observation of the daisyleaf grape fern in Winnebago County was apparently in 1993 (IDNR 2008).

5.4 Habitat

As identified in Table 1, daisyleaf grape fern inhabits successional sand forests and old fields (FNA 2010; Herket and Ebinger 2002).

6.0 **NORTHERN GRAPE FERN**

6.1 Reason for Listing

The northern grape fern is listed as endangered in Illinois (IDNR 2008). Although more widely distributed in the northeastern and western United States (Rocky Mountains), Canada, Europe, and Asia, this species is rare in Illinois, with the only known occurrences being located in ten northern Illinois counties (Herket and Ebinger 2002; USDA 2010).



6.2 Description

The northern grape fern is a perennial evergreen fern that reaches heights up to 40 cm. The leaves remain green over winter and sporophores appear in spring (Herket and Ebinger 2002; FNA 2010).

6.3 Distribution and Recent History in Illinois

Although the northern grape fern has been documented in 10 counties in northern Illinois, extant populations in Illinois are now believed to only occur in Cook, Carroll, Jo Daviess, Stephenson, and Winnebago Counties (Herket and Ebinger 2002). One occurrence of the northern grape fern is known from Winnebago County, with the last observation being from 1987 (IDNR 2008).

6.4 Habitat

As identified in Table 1, the northern grape fern inhabits mesic forests, sand savannahs, and successional habitats (Herket and Ebinger 2002). This species is apparently also common in old field habitats (FNA 2010).

7.0 **CERULEAN WARBLER**

7.1 Reason for Listing

The cerulean warbler is listed as threatened in Illinois (IDNR 2008). This species is known to breed throughout much of the northeastern United States and spend its winters in northern South America (Natureserve 2010). Populations of this species have been documented throughout much of Illinois and Illinois is near the center of this species' historic breeding range and this species was historically common in Illinois. However, today the cerulean warbler is rare and patchily distributed in Illinois (Nyboer et al. 2006).



7.2 Description

The cerulean warbler is relatively small wood warbler, with a total length of approximately 11 cm (4.5 inches) (Bull and Farrand 1990; NatureServe 2010). The male of this species has a sky-blue head and back, with a dark band across its white breast and dark blue-gray streaking on its sides. Females have a greenish mantle, blue-green or bluish crown, a pale eyebrow, and a pale yellowish breast and throat. Juvenile males of this species are similar in coloration to females, but with some bluish and dark streaks above (Bull and Farrand 1990; NatureServe 2010).

7.3 Distribution and Recent History in Illinois

The cerulean warbler is currently most common in the southern and southwestern portions of Illinois, with scattered populations also known to occur in the northern and east-central portions of the state (Nyboer et al. 2006). One occurrence of the cerulean warbler was observed in Winnebago County in 2006 (IDNR 2008).

7.4 Habitat

As identified in Table 1, the cerulean warbler typically inhabits second growth or mature forests with tall trees within swamps, bottomlands, floodplains, and mixed woods. This species is often found in open woodland near streams and rivers (Bull and Farrand 1990; Nyboer et al. 2006). These birds are often found high in the treetops, where they are difficult to see in the thick foliage (Bull and Farrand 1990; NatureServe 2010).

8.0 BLANDING'S TURTLE

8.1 Reason for Listing

Blanding's turtle is listed as threatened in Illinois (IDNR 2008). It is distributed from southern Ontario to central Illinois and Iowa, west to Nebraska and Minnesota and east to Pennsylvania. Specific threats to Blanding's turtle are generally related to their life history characteristics,



including delayed sexual maturity, high temperature requirement for hatchling success, nest predation, small population size, low rates of juvenile recruitment, and low rates of migration among patches of habitat (Nyboer et al. 2006). Loss of nesting habitat is also a threat to populations of Blanding's turtle (NatureServe 2010).

8.2 Description

Blanding's turtle is a medium to large turtle, with an adult shell length ranging from approximately 12 to 30 cm (4.7 to 11.8 inches) (NatureServe 2010). This species possesses a bright yellow chin and throat and a smooth, black, helmet-shaped carapace (Behler and King 2000; NatureServe 2010). The tail and limbs are blue-gray, black or brown, usually with light brown or yellow spots. The head of the Blanding's turtle is large and flat and ranges in color from black to dark brown, sometimes with scattered yellow spots. The hind feet of this species are weakly webbed (NatureServe 2010).

8.3 Distribution and Recent History in Illinois

Blanding's turtle is known to occur in 17 counties in Illinois, generally within the northern portions of the state. Additional occurrence records which may no longer be extant are known from 14 counties in central and northern Illinois (Nyboer et al. 2006). Three occurrences of Blanding's turtle have been observed in Winnebago County, with the last observation being in 2007 (IDNR 2008).

8.4 Habitat

As identified in Table 1, Blanding's turtle inhabits marshes, bogs, fens, prairie wetlands, sedge meadows, vegetated areas of shallow lakes, and ponds (Nyboer et al. 2006). Blanding's turtle is also known to inhabit shallow, slow-moving rivers and pools adjacent to rivers, protected coves and lake inlets, oxbows, and waters with aquatic vegetation and a soft bottom (NatureServe 2010).



9.0 STARHEAD TOPMINNOW

9.1 Reason for Listing

The starhead topminnow is listed as threatened in Illinois (IDNR 2008). Specific threats to the starhead topminnow in Illinois include habitat degradation within the Wabash River valleys, specifically from oil pollution and the loss of floodplain swamp habitats (Nyboer et al. 2006).

9.2 Description

The starhead topminnow is a freshwater fish that ranges in size from approximately 47 to 55 millimeters (mm). The back and upper sides of this species are an olive tan color while the lower sides and belly are lighter and yellowish. A series of red-brown dots are located along the sides of the fish. A dark blotch is located beneath the eye (WDNR 2009).

9.3 Distribution and Recent History in Illinois

The starhead topminnow is known to occur in 17 counties in Illinois, generally within the central and northern portions of the state. Additional occurrence records which may no longer be extant are known from 9 counties in Illinois (Nyboer et al. 2006). Two occurrences of the starhead topminnow have been documented in Winnebago County, with the last observation being recorded in 1998 (IDNR 2008).

9.4 Habitat

As identified in Table 1, the starhead topminnow inhabits quiet shallow backwaters; clear, well vegetated floodplain lakes; and swamps and marshes usually with sand and mud substrates (Nyboer et al. 2006). This species prefers quiet, clear to slightly turbid, shallow backwaters that contain an abundance of submerged vegetation (WDNR 2009). The starhead topminnow is known to spawn in dense beds of aquatic vegetation (NatureServe 2010).



10.0 BALD EAGLE

10.1 Reason for Listing

The bald eagle is listed as threatened in Illinois (IDNR 2008). The bald eagle was previously listed as federally-threatened by the USFWS, but was removed from the federal list of threatened and endangered species by the USFWS on July 9, 2007 (Office of the Federal Register 2007). Specific threats to the bald eagle are related to past human activity and are primarily associated with loss of habitat, mortality from shooting and trapping, and environmental contamination (USFWS 1983).

10.2 Description

The bald eagle is a large blackish eagle with a white head and white tail and a yellow bill (Bull and Farrand 1990). Juveniles lack the white head and tail, and do not acquire adult plumage until at least age 4 (USFWS 1983). This species averages 79 to 94 cm (31.1 to 37 inches) in length and the wingspan averages 178 to 229 cm (70 to 90.1 inches) (NatureServe 2010).

10.3 Distribution and Recent History in Illinois

In Illinois during the late 1800's and early 1900's, the bald eagle was known to nest in the lower Wabash Valley and along the shores of Lake Michigan. Wintering was considered common in these areas of Illinois during this time period (USFWS 1983). During the National Wildlife Federation midwinter bald eagle counts from 1979-1981, the number of bald eagles counted within Illinois ranged from 149 to 599 (USFWS 1983). The bald eagle is known to occur in 47 counties in Illinois. Additional occurrence records which may no longer be extant are known from three counties in Illinois (Nyboer et al. 2006). As of 1999, at least 36 active bald eagle nests were identified in Illinois (Nyboer et al. 2006). Two occurrences of the bald eagle are known from Winnebago County, with the last observation being in 2005 (IDNR 2008).



10.4 Habitat

As identified in Table 1, the breeding habitat for the bald eagle includes undisturbed areas near large rivers and lakes, with nests located in high branches of old trees (Nyboer et al. 2006). Nest trees may include pines, spruce, firs, cottonwoods, oaks, poplars, and beech (NatureServe 2010). Nests may also occur on cliffs, and infrequently may be found on the ground. Adults generally use the same breeding area, and often the same nest, each year (USFWS 1983).

11.0 **LOGGERHEAD SHRIKE**

11.1 Reason for Listing

The loggerhead shrike is listed as threatened in Illinois (IDNR 2008). Loggerhead shrike populations are declining, making them a state-listed threatened species in Illinois. In Wisconsin, habitat loss, changing in farming practices, adverse weather, use of pesticides, and increased predation are the speculative causes of decline (Herrmann 2007). In 1971-1972, an Illinois Natural Heritage Survey study found that loggerhead shrike eggs and body tissues were accumulating DDE, a metabolite of DDT (Bailey 1999). The factors causing loggerhead shrike population declines are unclear. However, any one of these factors may be influencing loggerhead shrike populations, and furthermore, a combined interaction of these factors could exacerbate their impacts.

11.2 Description

The loggerhead shrike is a member of the shrike family (Laniidae) and is slightly smaller than robin-sized (8 to 10 inches long). It is big-headed, slim-tailed, pale gray above and white below, with a black face mask. It has a dark crown and slightly hooked beak. Its song is a variety of harsh and musical notes and trills. It is thrasher-like in that it has a series of double phrases. The northern shrike (*Lanius excubitor*) differs with its pale marks on its lower mandible and above its mask in addition to barring on its breast. Its mask does not extend over its bill unlike the loggerhead shrike (Bull and Farrand 1977; Peterson and Peterson 2002).



11.3 Distribution and Recent History in Illinois

The loggerhead shrike breeds from Canada south to Florida and Mexico and winters north to Virginia and northern California (Bull and Farrand 1977). In Illinois, it can be found year round in the southern portion of the state. It is found in the summer north to the central portion of the state, with isolated populations occurring in the northern areas (Peterson and Peterson 2002). Two occurrences of the loggerhead shrike are known from Winnebago County, with the last observation being in 1993 (IDNR 2008).

11.4 Habitat

The breeding habitat of this species generally consists of open areas with scattered trees, primarily including pastures, native tallgrass prairie and grasslands, old fields and orchards, roadsides, and fencerows (WDNR 2003, Bull and Farrand 1977, Lee 2001). Apparently, loggerhead shrikes have also been known to utilize riparian areas, open woodlands, agricultural row crop fields, wheat fields, hay fields, mowed roadsides, golf courses, parks, and cemeteries (Lee 2001; INHS 2008a). Suitable nest trees and perches from which to locate prey are essential components of loggerhead shrike habitat. They prefer areas with thorny trees and species such as hawthorn (*Crataegus* spp.), osage orange (*Maclura pomifera*), and honey locust, which they utilize to impale their prey. Loggerhead shrikes often perch on, and hunt from, utility lines and poles, treetops, and fencerows.

Suitable nest trees are typically thorny and/or have dense branches. Species known to be used as nest trees include eastern redcedar, hawthorn, osage orange, apple (*Malus* spp.), pine (*Pinus* spp.), spruce (*Picea* spp.), fir (*Abies* spp.), honey locust, multiflora rose (*Rosa multiflora*), and willow (*Salix* spp.). Nests are constructed of sticks and are typically located 3 to 12 feet above the ground in the crotch of a tree branch (Lee 2001). This species is migratory and arrives on its breeding grounds relatively early, from mid-March to mid-April (Lee 2001). It migrates south for the winter from mid-September to mid-October (INHS 2008a).



12.0 KING RAIL

12.1 Reason for Listing

The king rail is listed as endangered in Illinois (IDNR 2008). Specific threats to the king rail include habitat destruction and drainage of wetlands. Environmental contaminants and high predator densities may have also contributed to the decline of the king rail (NatureServe 2010).

12.2 Description

The king rail is a marsh bird characterized by a length that ranges from 38 to 48 cm (15 to 18.9 inches). The head, neck, and underparts of this species are rust colored and the back of this species is a mottled brown color. The bill is long and slightly curved (Bull and Farrand 1990).

12.3 Distribution and Recent History in Illinois

The king rail is known to occur in 10 counties throughout Illinois. Additional occurrence records which may no longer be extant are known from 7 counties in Illinois (Nyboer et al. 2006). Two occurrences of the king rail are known from Winnebago County, with the last observation being in 1995 (IDNR 2008).

12.4 Habitat

As identified in Table 1, the king rail inhabits freshwater marshes, upland/wetland marsh edges, rice fields or similar flooded farmlands (NatureServe 2010). Nests are usually placed in clumps of grass or sedges adjacent to a water surface (Nyboer et al. 2006) or attached to plants growing in shallow water (NatureServe 2010).



13.0 ROCK ELM

13.1 Reason for Listing

The rock elm is listed as endangered in Illinois (IDNR 2008). The range of rock elm generally extends from Minnesota east to New York and south to Tennessee and Missouri. Isolated populations also occur in other states outside of this area, including South Dakota, Nebraska, Kansas, and Arkansas. In Illinois, this species is considered very rare and has declined considerably due to habitat loss and Dutch Elm Disease (IDNR 2008; NatureServe 2010).

13.2 Description

The rock elm is a small to medium sized tree, reaching heights up to 30 m (Herket and Ebinger 2002). Leaves are alternate and simple, measuring 3 to 4 inches in length (Preston and Braham 2002).

13.3 Distribution and Recent History in Illinois

According to Herket and Ebinger (2002), this species is currently only known from two populations in Illinois, both located in Kendall County. Occurrence records for this species which appear to no longer be extant are known from seven additional counties in Illinois (Herket and Ebinger 2002). One occurrence of rock elm is known from Winnebago County and was last observed in 1988 (IDNR).

13.4 Habitat

As identified in Table 1, the rock elm is known to occur in Illinois in mesic forests with calcareous slopes and floodplain terraces (Herket and Ebinger 2002). This species is also reported as being known to inhabit a wide variety of sites, from loamy wet-mesic soils to dry limestone outcrops (Preston and Braham 2002).



14.0 CONCLUSIONS

No occurrences of federally-listed species are known from the Project Area or its vicinity (Attachment I). The only state-listed species that has been documented within the vicinity of the Project Area is the upland sandpiper (Attachment I), with the last reported occurrence of this species in Winnebago County being from 1988 (IDNR 2008). The breeding habitat of the upland sandpiper typically consists of open prairies, hay fields, and pastures (INHS 2008v; Bull and Farrand 1977). Airports and airfields are apparently commonly used as breeding habitat throughout the range of this species (INHS 2008b, SAS 2006). Areas of taller grass are necessary for nesting, while foraging typically takes place in areas of shorter grass and/or more open areas (INHS 2008, SAS 2006). Nests are usually located in areas of dense grass and consist of a shallow scrape that is lined with grass and typically concealed by taller arching grass (SAS 2006, INHS 2008). This species often utilizes fenceposts and utility poles as perches. As noted previously, the Project Area does not contain prairies, large hay fields, or pastures, and therefore does not contain typical habitat for the upland sandpiper. It is likely that the occurrence of this species from the vicinity of the Project Area was from the Chicago Rockford International Airport, which is located just north of the Project Area. Additionally, CEC biologist Greg Gerke has seen upland sandpipers many times and is also very familiar with the identification of this species by their vocalizations. Mr. Gerke did not observe or hear any upland sandpipers within the Project Area while conducting the July 6 and 7, 2010, site visits.

Potentially suitable habitat for the following state-listed species appears to be present within the Project Area: Indiana bat, daisyleaf grape fern; northern grape fern; cerulean warbler; Blanding's turtle; starhead topminnow; bald eagle; loggerhead shrike; king rail; and rock elm. Only the cerulean warbler; Blanding's turtle; bald eagle; and loggerhead shrike have been documented in Winnebago County since 2000. Although potentially suitable habitat is present within the Project Area for the 10 species listed above, within the proposed limits of disturbance (Figure 2) potentially suitable habitat is only present for the following state-listed species: Indiana bat, daisyleaf grape fern; northern grape fern; and loggerhead shrike.

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In order to reduce the potential for take of Indiana bats, potentially suitable Indiana bat roost trees within the Project Area will be removed during the October 15 to March 31 time period. Therefore, the proposed Rockford Solar Field Project may affect, but is not likely to adversely affect, the Indiana bat. The proposed Rockford Solar Field Project's effects on the remaining state-listed species within potential habitat within the Project Area are unknown at this time. It is noted that these state-listed species are not currently or historically known from the Project Area.

15.0 CLOSING

On behalf of our client, AE&E, as well as the DOE, we respectfully request your response to this letter and opinion about the potential effects the proposed project may have on state-listed species. If you have any questions or require additional information, please contact the undersigned at 513-985-0226.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

A handwritten signature in blue ink that reads "Daniel J. Godec".

Daniel J. Godec
Project Manager

A handwritten signature in blue ink that reads "James E. Zentmeyer".
James E. Zentmeyer
Principal

Attachments: Figure 1 – Site Location Map
Figure 2 – Habitat Assessment Map
Attachment I – IDNR Natural Heritage Database Search Results
Attachment II – Site Photographs

cc: Mr. Brad Brown – AE&E



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Ms. Karen Miller
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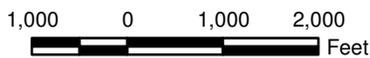
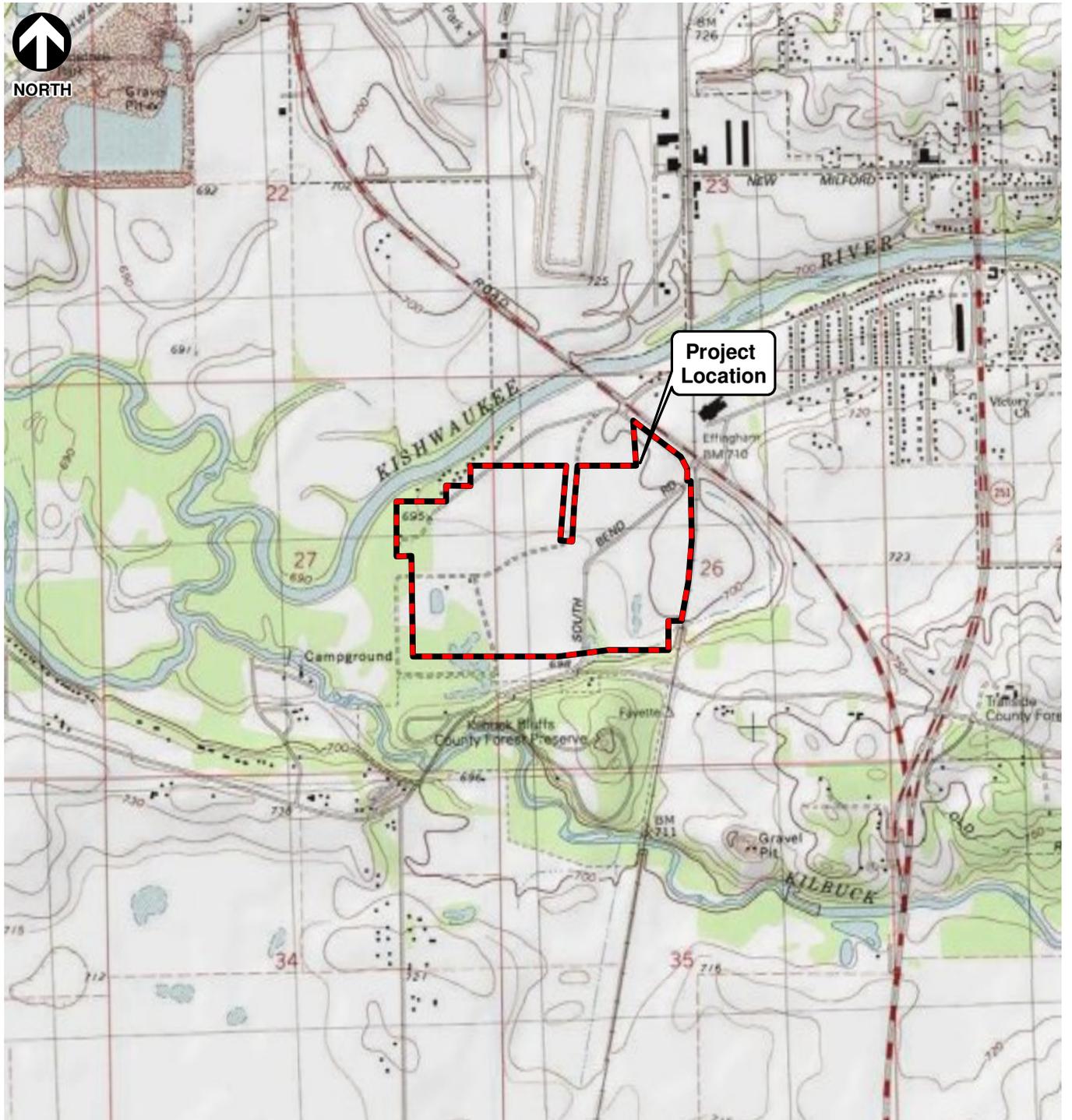


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FIGURES



NORTH



QUADRANGLE LOCATION

SOURCE: PORTION OF THE USGS 7.5-MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAP - ROCKFORD, ILL 1977.



Civil & Environmental Consultants, Inc.
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(513) 985-0226 (800) 759-5614

Pittsburgh, PA Chicago, IL Cleveland, OH Columbus, OH Detroit, MI
Export, PA Indianapolis, IN Nashville, TN St. Louis, MO Phoenix, AZ

Site Location Map

ROCKFORD SOLAR FIELD PROJECT

South Bend Road & Baxter Road
Rockford, Winnebago County, Illinois

DWN. BY: MJB
CHKD. BY: MAVB

SCALE:
1" = 2,000'

DATE:
08/20/2010

PROJECT NO:
101-114

FIGURE NO:
1

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- Proposed Limits of Disturbance
- Approximate Site Boundary



SOURCE: PORTION OF A THE ESRI IMAGE WEBSERVICE - "WORLD_IMAGERY" - "AERIALS EXPRESS CHICAGO 2007."



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Export, PA Indianapolis, IN Nashville, TN St. Louis, MO Phoenix, AZ

Habitat Assessment Map

ROCKFORD SOLAR FIELD PROJECT

South Bend Road & Baxter Road
Rockford, Winnebago County, Illinois

DWN. BY: MJB
CHKD. BY: MAVB

SCALE:
1" = 800'

DATE:
08/20/2010

PROJECT NO:
101-114

FIGURE NO:
2

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ATTACHMENT I

IDNR ECOCAT DATABASE SEARCH RESULTS

Applicant: Civil & Environmental Consultants
Contact: Maggie Vuturo Bosiljevac
Address: 4274 Glendale Milford Road
 Cincinnati, OH 45140

IDNR Project #: 1100359
Date: 07/13/2010

Project: Rockford Solar Field Project
Address: Belt Line Road, Rockford

Description: The Rockford Solar Field is planned to be located near the Chicago Rockford International Airport (RFD) on an estimated 200 acre parcel south of Runway 19 and the Kishwaukee River. This information request is associated with a US Department of Energy (DOE) Environmental Assessment of the property.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

- Bell Bowl Prairie INAI Site
- Kishwaukee River INAI Site
- Upland Sandpiper (*Bartramia longicauda*)

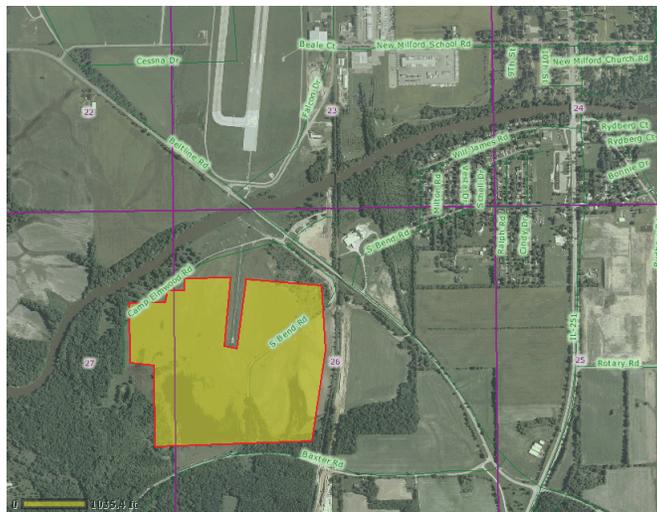
Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Winnebago

Township, Range, Section:

43N, 1E, 26 43N, 1E, 27



IL Department of Natural Resources Contact
 Impact Assessment Section
 217-785-5500
 Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.
2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law. Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

ATTACHMENT II
SITE PHOTOGRAPHS

Photographic Record



Photo 1 – View of upland deciduous forest within northwest portion of the Project Area.



Photo 2 – Representative view of forested wetland within the southwestern portion of the Project Area. Photo taken facing west.

Photographic Record



Photo 3 – Representative view of forested wetland within the southwestern portion of the Project Area. Photo taken facing west.



Photo 4 – View of old field habitat within Project Area.

Photographic Record



Photo 5 – Overview of the Project Area. Photo taken facing north.



Photo 6 – Representative view of forested wetland in northwest portion of Project Area. Photo taken facing south.

Photographic Record



Photo 7 – View of forested wetland in northwest portion of Project Area.



Photo 8 – View of forested wetland in southeast portion of Project Area.

Photographic Record



Photo 9 – View of forested wetland in southeast portion of Project Area.



Photo 10 – View of forested wetland in northwest portion of Project Area. Photo taken facing west.

Photographic Record



Photo 11 – View of forested wetland in southeast portion of Project Area. Photo taken facing north.



Photo 12 – View of emergent wetland in southeast portion of Project Area. Photo taken facing south.

Photographic Record



Photo 13 – View of emergent wetland in southeast portion of Project Area. Photo taken facing north.



Photo 14 – View of emergent wetland in southeast portion of Project Area. Photo taken facing east.

Photographic Record



Photo 15 – Representative view of pond in southwest portion of Project Area.



Photo 16 – Representative view of agricultural land. Photo taken facing south.

Photographic Record



Photo 17 – Representative view of upland forest. Photo taken facing north.



Photo 18 – Representative view of old field vegetation. Photo taken facing northwest.