NRC-14-0073

Response to License Renewal Environmental Request for Additional Information

Enclosure 2

SSSH-1 - Threatened and Endangered Species Survey and Assessment Report Addendum-Proposed Federally Listed Species-Fermi 2 Site

Threatened and Endangered Species Survey and Assessment Report Addendum Proposed Federally-Listed Species – Fermi 2 Site

DTE Electric Company

Cardno JFNew File No. #1308035.00; GEI File No. #1411180

Cardno JFNew
Shaping the Future

Document Information

Prepared for	DTE Electric Company
Project Name	Threatened and Endangered Species Survey and Assessment Addendum – Proposed Federally-Listed Species – Fermi 2 Site
Project Number	Cardno JFNew File No. # 148166100 GEI File No. # 1411180
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Date	November 14, 2014

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1 Executive Summary

In response to the United States Fish and Wildlife Service (USFWS) proposal to classify additional species as federally threatened or endangered in 2015, the DTE Electric Company (DTE) contracted with Cardno JFNew to conduct a species assessment for the Fermi Site in Monroe County, Michigan. Cardno JFNew reviewed existing information on the species proposed for USFWS listing and determined that two animal species, the rufa red knot (*Calidris canutus rufa*) and the Northern long-eared bat (*Myotis septentrionalis*), may have the potential to occur on the Fermi Site (USFWS 2014a and 2014b).

Prior to conducting field surveys, a literature review was completed to identify the habitats, geographical ranges, ecology, and optimal survey times for these two animal species. Field surveys for both animals were conducted on September 3 and 4, 2014, and consisted of pedestrian meander searches for these species and their preferred habitats. The Fermi Site survey focused on potential habitat areas for the red knot and northern long-eared bat, including potential future construction impact areas not related to license renewal activities. Cardno JFNew personnel conducting the survey were already familiar with the site from previous extensive site surveys conducted in 2013.

Based on completion of the site assessments, it is the professional opinion of Cardno JFNew and their subconsultant, GEI Consultants of Michigan, P.C. (GEI), that, while the species is not currently present nor known to have been present at the Fermi Site, potential roosting and foraging habitat for the Northern long-eared bat currently exists on the Fermi Site. Impacts to suitable habitat can be minimized, avoided, and possibly improved with proper planning, sequencing of tree clearing activities, and installation of bat housing structures at optimal locations. Specifically, this may be accomplished through the removal of potential roost trees during the winter months when bats are not present and providing compensatory roosting boxes for these bats in more suitable habitats on the property.

The rufa red knot is a long-distance migratory bird species that prefers marine coastal shorelines for foraging and resting during their migrations. There have been sightings of this species along various coastal shorelines within Michigan. Although the freshwater coastal shoreline areas of the property are located outside of potential future construction impact areas and not associated with Fermi 2 license-renewal-related activities, these areas were visually assessed for this species. It is the professional opinion of Cardno JFNew and GEI that, although the rufa red knot could incidentally utilize the freshwater coastal shoreline areas for resting or finding food (other than its preferred marine foods) during its long migrations, the species should not be impacted by any of the existing or proposed activities associated with the Fermi Site.

2 Introduction

DTE contracted with Cardno JFNew to conduct a literature review and field habitat assessments for one bat and one migratory bird species that the USFWS is proposing to list as threatened or endangered species. The two species are the rufa red knot, proposed as federally threatened, and the Northern long-eared bat, proposed as federally endangered. Neither species is currently listed, or proposed for listing, by the State of Michigan.

The Fermi Site survey focused on potential habitat areas for the red knot and northern long-eared bat, including potential future construction impact areas not related to license renewal activities. Cardno JFNew personnel conducting the survey were already familiar with the site from previous extensive site surveys conducted in 2013. The Fermi Site is located north of the City of Monroe, in Monroe County,

Michigan (Figure 1). This report serves as an Addendum to Cardno JFNew's *Threatened and Endangered Species Survey and Assessment for DTE Energy Fermi 2* report, dated October 16, 2013.

3 Methodology

The methodology for surveying and assessing the subject property for the two proposed federally-listed species was based upon currently available USFWS methodologies (USFWS 2014c) and guidelines, previous survey methodologies implemented by Black and Veatch (2009a and 2009b), and information on survey methods obtained during the literature review. The Fermi Site survey focused on potential habitat areas for the red knot and Northern long-eared bat, including potential future construction impact areas not related to license renewal activities (Figure 2). Prior to conducting field surveys, a literature review was conducted in order to focus the surveys on potentially suitable habitats for the two proposed federally-listed species.

3.1 Literature Review

Cardno JFNew reviewed relevant peer-reviewed literature and standard reference resources for each of the animal species. Information on preferred and optimal habitats, geographic ranges, ecology, and optimal survey periods was obtained for each species. This information was also used to identify key suitable habitat features if the surveys were conducted outside of the optimal time periods to visually observe the subject species. Literature and reference resources reviewed to support completion of the site survey and reference report are identified in Section 6.0 *Literature Cited and Reference Materials.*

3.2 Animal and Habitat Surveys

Visual meander surveys were conducted to determine the presence or absence of the subject species and to determine whether optimal or suitable habitats are present for those species within the Fermi Site, including potential future construction impact areas and other areas not related to license renewal activities. Potential Fermi Site habitats that could be associated with the red knot and the Northern long-eared bat were enumerated and divided into 24 different areas to document the completion of surveys and assessments across all areas (Figure 3). Upon assessing each of these 24 areas on the property, they were combined into respective habitat area types consistent with those presented in the Cardno JFNew *Threatened and Endangered Species Survey and Assessment for DTE Energy Fermi 2* report, dated October 16, 2013, to which this report is an addendum. This provided for a better means of presenting the field data and assessing potential uses and impacts.

3.2.1 Rufa red knot

Visual meander surveys for the rufa red knot focused on the coastal shoreline and wetland areas adjacent to the existing Fermi 2 facilities and undeveloped shoreline areas along the Lake Erie coastline of the property (Areas 16, 17, and 18). General descriptions of these coastal and wetland habitats were recorded.

3.2.2 Northern long-eared bat

For the Northern long-eared bat, individual trees and woodland areas that met criteria set forth in the literature (as potential roosting areas or trees) were identified and mapped using a sub-meter accuracy GPS unit, suitable roost trees were measured for diameter at breast height (DBH) and overhead canopy cover, understory densities were recorded, and proximity to flowing or standing water was noted. Methods and data collection followed similar protocols set forth by the USFWS guidelines for Northern long-eared bat (USFWS 2014c) and those previously utilized by Black and Veatch (2009a and 2009b) for

assessing potential Indiana bat habitat on the property. Representative photographs of potential roost trees within each of the areas were also taken.

4 Results

4.1 Literature Review

4.1.1 Rufa red knot

On September 30, 2013, the USFWS proposed to list the rufa red knot as a federally threatened bird species under the Endangered Species Act of 1973 (Act), as amended. In accordance with section 4(b)(5) of the Act, the USFWS is holding hearings and receiving public comment. It is anticipated that the USFWS will make a final ruling in the spring of 2015 as to whether this species should be listed as threatened or endangered. The federal register does not provide a due date for their final determination.

The rufa red knot is a medium-sized marine shoreline bird that breeds in the Canadian arctic, primarily Nunavut and portions of the Northwest Territories, and feeds primarily on marine invertebrates on beaches and in the tidal zone (Niles et al. 2008). It overwinters at scattered sites along the Atlantic seaboard from Quebec and the Maritimes south to Tierra del Fuego, Argentina. The migration takes each individual along a course of over 19,000 miles annually, with most individuals following the Atlantic coastline and with major stopover areas including the Delaware Bay (Delaware Riverkeeper Network et al. 2005).

Rufa red knots concentrate in huge numbers at traditional staging grounds during migration. Delaware Bay is an important staging area during spring migration, where the knots feed on the eggs of spawning horseshoe crabs. It is estimated that nearly 90 percent of the entire population of rufa red knots can be present on the bay in a single day (Harrington 2001). A few individuals have been noted using a more inland route, being spotted in Kentucky, the Great Lakes region, Manitoba, and Alberta (Morrison and Harrington 1992, Niles et al. 2008), and thus may be rarely found in Michigan as a stopover site.

A citizen based bird observation network, eBird, recorded eight sightings of rufa red knot in Pointe Mouillee, Monroe County, Michigan, between 7:58am and 10:00am on August 23, 2014 (eBird 2014). Review of those records and the timing of those reports indicate that it may have been multiple people reporting the same bird sighting. This database also indicates the sporadic presence of one or two individuals stopping along Great Lakes shorelines to rest during their migrations. No state or federal network or database of sightings for the rufa red knot was available at the time this report was prepared.

4.1.2 Northern long-eared bat

On October 2, 2013, the USFWS proposed to list the Northern long-eared bat as endangered under the Act. In accordance with section 4(b)(5) of the Act, the USFWS has held hearings and received public comment. Due to public comment over the proposed listing, the USFWS is keeping the public comment period open for an extended period of time. A final determination of whether to list the Northern long-eared bat as endangered is expected to be made by the USFWS on or before April 2, 2015.

The Northern long-eared bat has a large geographic range occurring in the eastern and north central United States and in Canada from the Atlantic Ocean west to the Yukon and British Columbia. During winter it hibernates in caves and mines, while in summer it generally roosts under bark and in cavities and crevices of both live and dead trees (USFWS 2014c). Suitable habitat when not hibernating consists of a wide variety of wooded/forested habitats with trees that have loose bark and crevices, as well as adjacent wetlands, agricultural fields, and pastures where they forage (Kurta 2005, Owen et al. 2003, Kurta and Miller 2002). This species has been documented in Michigan, though not on the Fermi Site, from mid-May through mid-August; however, it has been observed both before and after this time period (Kurta 2005, Foster and Kurta 1999). White-nose syndrome is causing catastrophic declines (>99%) in Northern

long-eared bat populations, as well as smaller impacts from other stressors, such as wind farm operations (USFWS 2014c).

Potentially suitable Northern long-eared bat summer habitat can consist of a variety of forested/wooded habitats where they forage, roost, and travel. Potential Northern long-eared bat summer habitat is characterized by the presence of potential roost trees, which can include live trees or snags greater than three inches diameter at breast height (DBH). Unlike the Indiana bat, the Northern long eared bat may utilize wooded areas that are dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may also be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat (USFWS 2014c).

Northern long-eared bat habitat may also include non-forested habitats that are adjacent to wooded habitats (e.g. agricultural fields, wetlands, old fields, pasture). Streams with tree-lined banks often provide commuting corridors, foraging sites, and sources of drinking water for Indiana bats, and can similarly provide habitat for Northern long-eared bats (Grindal et al., 1999, Murray and Kurta 2004, Hayes and Loeb 2007). This species has also been observed roosting in human-made structures such as buildings, barns, bridges, and bat houses. Review of the USFWS and Michigan Natural Features Inventory rare species explorer databases for threatened and endangered species did not return any results for the long-eared bat in Monroe County (personal communication November 5, 2014). No other federal, state, or local sources were found that showed the presence or sighting of long-eared bat in Monroe County.

The Northern long-eared bat utilizes habitats similar to those of the Indiana bat. For this reason, assessment, protection, and management techniques recommended and being used for the Northern long-eared bat are the same as those currently being used for the Indiana bat (USFWS 2014c).

4.2 Species-Specific and Habitat Surveys

On September 3 and 4, 2014, Cardno JFNew conducted species-specific and habitat meander surveys on the Fermi Site. Survey time primarily focused on habitats that were most likely to support or be utilized by the two subject species. This resulted in the majority of survey time being spent within the forested woodland, shrubland, and grassland areas of the property for the Northern long-eared bat and the coastal shoreline and emergent wetland areas of the property for the rufa red knot.

4.2.1 Rufa red knot

Habitats surveyed for the rufa red knot focused on the coastal shoreline and emergent wetland marshes immediately adjacent to Lake Erie, even though they are located outside the footprint of any future potential future construction impact areas, unrelated to license renewal. The entire shoreline and representative areas of the coastal marshes were walked and assessed for potential presence of this migratory species. No rufa red knots were observed within any of the habitat or potential future construction impact areas (unrelated to license renewal) on the Fermi Site. In addition, none of the optimal feeding or overwintering habitats identified in the literature for the rufa red knot were identified on the subject property (i.e. specifically no horseshoe crabs or other preferred foods).

The subject property provides only temporary landing and resting habitat for this species during its long migrations and does not provide suitable (least not optimal) feeding habitat for this species, which prefers saline dependent horseshoe crabs. No additional photographs were taken of the coastal or emergent wetland habitats since they lacked optimal features for the rufa red knot and representative photographs of these areas were already provided in the Cardno JFNew report, *Threatened and Endangered Species Survey and Assessment for DTE Energy Fermi 2,* dated October 16, 2013.

4.2.2 Northern long-eared bat

Habitat assessments for the Northern long-eared bat were conducted outside of the typical time periods for this species in Michigan (having been conducted past the end of August). Although bat sightings

would not be expected during midday hours, no bat species were observed within any of the habitats or potential future construction impact areas (unrelated to license renewal) on the Fermi Site. In addition, no visual signs of bat use were observed within any of the bat houses present on the property, based on thick cobwebs covering the slots and entrances to these boxes and the absence of fecal matter on the ground below the houses. In 2013, night surveys were conducted for frogs and toads as part of the Cardno JFNew report, *Threatened and Endangered Species Survey and Assessment for DTE Energy Fermi 2,* dated October 16, 2013. No bats were observed during the evening hours of July 2 and July 3, 2013, while conducting these other surveys.

It was determined that potential Northern long-eared bat habitat was present on the property due to the presence of woodlots and individual trees that meet criteria set forth in the literature. Specifically, suitable trees were identified with DBHs of greater than three inches and having exfoliating, peeling, or scaling bark that could provide potential roosting habitat. The majority of these trees are located outside of potential future construction impact areas not related to license renewal activities and will be discussed in Section 4.2.2.6 of this report.

Areas 1-5, 8, 10, 12, and 14 are associated with potential future construction impact areas as identified on Figure 3 and contained either bat houses or trees with current attributes which could provide potential roosting habitat at present. The future potential construction areas are not associated with the Fermi 2 license renewal. Trees within these areas were identified, measured, and summarized in Table 1. Areas 1 and 3 contained man-made bat houses that may have potential to provide roosting habitat. Additional information that was recorded and provided within Table 1 (for areas determined to contain potential roosting habitat) included distance to nearest woodlot or forested area, distance to open water, the range of tree diameters at DBH, and the range of percent exfoliating, peeling, or scaling bark of the different species of trees present within the assessment areas. Although individual tree data was recorded, it was not presented in the tables since the use of ranges for each species provided sufficient data and in a more readable format to determine whether potential roosting habitat existed in the various areas of the property. These nine areas represented five different habitat areas (as defined by Black and Veatch 2011 and Cardno JFNew 2013).

Representative photographs of the potential roosting trees or bat houses present within each potential area are provided in Appendix B. Descriptions of each of the corresponding habitat areas are provided below.

4.2.2.1 Area 1 – Shrubland and Grassland: Non-crop

This area is located in the southeast portion of the property and contains both shrubland and grassland habitats. The entrance road off of Pointe Aux Peaux is dominated by gray dogwood (*Cornus foemina*) and common buckthorn (*Rhamnus cathartica*), which do not represent suitable habitat. The open field area and scattering of trees consists mostly of herbaceous upland prairie species and larger cottonwood trees (*Populus deltoides*). These trees do not have exfoliating, loose, or scaling bark and do not appear to provide bat habitat. This area does contain two bat houses, as depicted in Figure 3, one in the central grassland portion of this area and the other along the northern shrubland portions of this area. However, they showed no recent use by any bats (due to the presence of cobwebs across their entry locations and the lack of fecal material on the ground).

4.2.2.2 Areas 2, 3, and 4 – Shrubland

These areas are located in the southwestern portions of the property and contain a mixture of shrubs, trees, and herbaceous vegetation. These areas also surround the two quarry lakes on the property.

Area 2 had two cottonwood trees in its southwestern end that were dead with only 10% exfoliating and peeling bark remaining. Numerous additional potential roosting trees were identified at the far northern and eastern ends of Area 2 straddling the northern and eastern line of the potential future construction impact areas not related to license renewal activities. A line of trees north and east of Area 2 that could

provide potential roosting habitat for the Northern long-eared bat was surveyed in, and is shown as a yellow line along the northern and eastern ends of Area 2 (Figure 3). These trees consist of a mixture of shagbark hickories (*Carya ovata*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*) and cottonwood. The area north of Area 2 was classified as Thicket despite containing numerous trees.

Within the southeast portion of Area 3 which is shrubland, there was a lone 24-inch DBH American elm amidst a dense understory of shrubs. Also within the southeast portion of Area 3, there was a large grouping of approximately 20 dead cottonwoods, green ash, and American elms in excess of 15 inches DBH that had 20-50% exfoliating, peeling, or scaling bark that could provide bat habitat. The understory beneath these trees was sparse and comprised mostly of herbaceous forested wetland species. Data for ten of the twenty trees in this grouping is provided in Table 1.

Area 4 was also identified as shrubland and contained four American elm trees in two groupings. These trees were located near the edge of the woodland/shrubland border and had a moderately dense understory.

4.2.2.3 Areas 3 and 5 – Grassland: Idle/Old Field/Planted

The northern portion of Area 3 is grassland and is located south of and adjacent to Critical Path Road and north of the northern quarry lake. This area is situated within areas classified as grassland and consists of mowed lawn containing five bat houses. The location of these bat houses appears to be within suitable habitat for bats, given the close proximity to the open waters of the quarry and open fields of Area 6. However, field assessments did not indicate any recent bat use of these houses, based on numerous cobwebs within the slots to the houses and lack of fecal material on the ground.

Area 5 is located in the southwest corner of the property and is bordered by a residential property to the west and Pointe Aux Peaux Road to the south. This area contained two dead cottonwood trees 12 inches DBH with 5-20% exfoliating bark.

The western grassland portions of Areas 8 and the central grassland portions of Area 9 do not contain potential roosting trees like their eastern and northern portions do, respectively, which will be discussed below. However, these grassland areas may provide feeding habitat for any nearby roosting bats.

4.2.2.4 Areas 8, 10, and 14 – Forested Woodlot

These woodland areas are within areas mapped as grassland, forested upland, and wetland portions of the property that have potential habitat for roosting trees. These areas include the eastern portions of Area 8, nearly all of Area 10, and only a small portion of Area 14. These areas contain numerous trees that are greater than 3 inches DBH and have greater than 10% of their trunk exfoliating, peeling, or scaling to provide potential refugia, except for Area 14 which only had one potential tree as habitat. Representative trees are listed in Table 1 and shown as yellow dots on Figure 3. A solid yellow line is also shown in Figure 3 to depict the outer boundary where additional potential roost trees extend further into the woodland area.

The eastern forested wetland portions of Area 8 contain numerous dying and dead cottonwoods, American elms, and green ash trees ranging from 6-12 inches DBH. These trees have exfoliating, peeling, or scaling bark that ranges from 5-30% of the tree and have a sparse understory. The understory is dominated by reed canary grass (*Phalaris arundinacea*).

The western portions of Area 8 and the southern and central portions of Area 9 are open fields lacking any trees that could provide habitat. The northern portions of Area 9 merge into Areas 10 and 11, which are again woodlots containing numerous potential roost trees. As noted above, a solid yellow line was drawn across the northern portion of Area 9 and the eastern portion of Area 10 on Figure 3 to depict the boundary of the potential roosting trees contained within these areas. To the west of that solid line is a cleared woodland area adjacent to a two-track road (Toll Street) which divides Area 10 from Area 11. American elm was the dominant tree species within both Areas 9 and 10 and consisted mostly of smaller

diameter trees ranging mostly between 5 and 11 inches in diameter. Most of these trees were dead, and the remaining bark was limited to 20% or less on most trees.

In the eastern end of Area 14 along the roadway, depicted as the boundary between coastal emergent wetlands and forested woodlands, there is an eight-inch DBH cottonwood with 20-30% exfoliating bark that is surrounded by other cottonwood trees that do not have exfoliating bark. This lone tree is located within 1,000 feet of other potential roosting trees and therefore could be utilized by the Northern long-eared bat for roosting.

4.2.2.5 Area 12 – Coastal Emergent Wetland

Area 12 includes that portion of the site between Toll Street and Lagoona Boulevard where potential future construction impacts unrelated to license renewal is proposed within coastal emergent wetlands. Eight potential bat roosting trees, all cottonwoods, occurred within Area 12, but appeared to be outside of the potential future construction work. Exfoliating bark on these dead and dying trees ranged from 5-15% percent. The understory was comprised of herbaceous non-native vegetation dominated by narrow leaf cattail (*Typha angustifolia*) and common reed (*Phragmites australis*).

4.2.2.6 Areas Outside of Proposed Impact and License Renewal Locations

As noted previously, the majority of the potential roosting trees for Northern long-eared bat are located in areas that are neither associated with proposed future construction areas, nor related to license renewal activities. Due to the location of these woodlots outside of any current or proposed activities, they were not assessed in great detail, and only brief descriptions are provided below.

- Area 19 is located along the eastern portion of Area 2. This area contained a mixture of shagbark hickory, American elm, and green ash within this forest lowland hardwood habitat. Figure 3 shows the location of only a few of the many trees present in that area, along with a line that depicts the boundary between potential roosting habitat within Area 19 and the lack of such habitat within Area 2 (except for the two lone trees identified in the central portions of Area 2).
- Area 20 is located along the northern portions of Area 2. This area contained several shagbark hickory trees within a thicket habitat comprised of a mixture of shrub and forested tree species. Figure 3 shows the location of only a few of the many trees present in that area, along with a line that depicts the boundary between potential roosting habitat within Area 19 and the lack of such habitat within Area 2 (except for the two lone trees identified in the central portions of Area 2).
- Area 21 is located between Areas 3 and 8 and is represented as a forested lowland hardwood habitat. This woodlot contained at least 20 trees, consisting of a mix of American elms, green ash, and shagbark hickory, which could provide potential roosting habitat for the Northern long-eared bat.
- Areas 22 and 23 contain forested woodlots located west of Areas 14 and 15 and on either side of the potential future construction impact area (Area 12) which is unrelated to license renewal. These forested areas contain numerous dead and dying trees with exfoliating bark that could provide habitat for bat species, inclusive of the Northern long-eared bat. Area 23, located north of area 12, also contains coastal emergent wetland. The majority of trees in both these areas consisted of green ash and American elm that were dead and in the process of losing their bark. The number of potential trees in all of these areas was estimated (Table 1) since these areas will not be impacted by potential future construction activities nor are associated with the Fermi 2 license renewal.

4.2.2.7 Areas Lacking Potential Habitat

There were also numerous areas on the property that were assessed and determined to not contain suitable trees, nor other habitat attributes suitable for the Northern long-eared bat. These areas included:

- Assessment Area 6, which was determined to not be suitable roosting habitat for the Northern long-eared bat since the individual trees in that farm row were more than 1,000 feet away from any woodlots or other water features that the bats would utilize.
- Area 9, which was grassland right-of-way and had no trees.
- Assessment Areas 7, 11, 13, 15-18, and 24, which lacked trees with sufficient exfoliating, peeling, or scaling bark that would be suitable for roosting bats. Areas 16-18 represented the coastal or emergent coastal wetland areas adjacent to Lake Erie.

5 Discussion and Summary

5.1 Federally-listed Animal Species

Federally-listed animal species are protected under the federal Endangered Species Act of 1973, as amended. At the present time, neither the rufa red knot nor the Northern long-eared bat is listed as either threatened or endangered by the USFWS or the State of Michigan.

5.1.1 Rufa red knot

The rufa red knot is proposed to be listed as a federally-threatened animal species by the USFWS due to increasing threats to its habitat and food supply, which could lead to extirpation of this unique shoreline bird that migrates thousands of miles each year between its wintering and summer habitats (USFWS 2014d). Optimal habitats and food supplies have diminished over the years, but these have been associated with the northeastern coastal areas of the United States and not specifically those of the Great Lakes, which this species rarely utilizes.

Optimal habitats for the rufa red knot were not identified during field assessments on the Fermi Site. It is Cardno JFNew's and GEI's professional opinion that activities associated with Fermi 2 on-going operations or with potential future construction activities (not related to Fermi 2 license renewal) will not adversely impact this species. The rufa red knot is extremely rare in Michigan, and if it did incidentally land on the site to rest or find food, it would most likely be restricted to coastal shoreline habitats where no construction activities are proposed.

5.1.2 Northern long-eared bat

The Northern long-eared bat has not been observed at the Fermi Site. However, the species has been documented to utilize trees much smaller in DBH than those of Indiana bats. For this reason, more suitable roost trees were identified by Cardno JFNew on the site in 2014 than those previously reported by Black and Veatch (2011), when their survey focused on the potential presence of habitat suitable for the Indiana bat. In 2008-2009, Black and Veatch (2009a and 2009b) utilized a nine-inch DBH as their minimum tree diameter, while Cardno JFNew in 2014 used a three-inch DBH. In addition, Indiana bats prefer a clear path flyway (open understory) to open fields or other openings, while literature indicates that the Northern long-eared bat is less limited by understory densities.

A review of the 2008-2009 field data, along with the recently-obtained 2014 field data, appears to substantiate Black and Veatch's (2011) professional opinions that there will be a decline in the number of suitable bat roost trees on the Fermi site over time. This is due in part to the continued loss of ash trees as a result of the Emerald ash borer infestation across the state. Numerous ash trees with no bark or less than 5% bark were observed, and due to their largely barkless condition, they were determined to no longer be of potential suitable habitat for roost trees.

Of the potential Northern long-eared bat roost trees identified within potential future construction impact areas, unrelated to license renewal, on the subject property, trees associated with the southeastern

portion of Area 3 within the shrubland habitat appeared to provide the greatest potential habitat for the Northern long-eared bats. This is based upon the large number of trees (approximately 20) contained within the yellow polygon depicted in Figure 3, a fairly open understory for ease of access into and out of this refugia, and close proximity to the quarry lakes to the west, in which the bats can forage for food. Another area of potential Northern long-eared bat habitat would be within forested lowland hardwoods associated with Area 8 (just west of Lagoona Boulevard). This area also contained over 15 trees with greater than 10% exfoliating, peeling, or scaling bark. This area has less of a direct access route to open water, as did the previous Area 3 tree groupings, which would likely result in more limited use by Northern long-eared bats.

Other potential areas for roosting habitat within potential future construction impact areas, unrelated to license renewal, include Areas 2, 4, and 5. However, these areas contain only two trees each and don't represent optimal or preferred habitats –especially in comparison to Areas 19-23, which are not located within any proposed impact or relicensing related activity areas on the Site. Area 5 would be less likely to harbor Northern long-eared bats as compared to areas 19-23 since this area is more than 1,000 feet away from forested areas that also contain a greater number of more suitable roost trees. Impacts to the potential habitats associated with Areas 2, 4, and 5 can be minimized or avoided by removal of said potential roost trees during time periods when bats would not be present (i.e. winter months).

As noted previously, white-nose syndrome is causing catastrophic declines (>99%) in Northern long-eared bat populations, as well as all other bat species, and has prompted the USFWS to propose federal listing of this bat species. The range of the Northern long-eared bat includes Michigan, and specifically the Fermi Site. Past surveys and studies conducted by Black and Veatch (2011) on the subject property indicated the presence of potential suitable habitat for the Indiana bat. However, while meeting with the USFWS on-site, they concluded that, despite the presence of some potential Indiana bat trees on the property, the combination of habitat features usually preferred by Indiana bat are generally lacking from the Fermi site. Therefore, Black and Veatch (2011) concluded that "it appears unlikely that the species would be adversely affected by the proposed transmission line construction, clearing in the laydown areas, or construction of buildings…"

It is Cardno JFNew's professional opinion that the Northern long-eared bat will likely be listed by the USFWS in 2015 and will subsequently receive consideration for listing by the State of Michigan. However, given the wider range of habitats that this species can utilize, as compared to that of the Indiana bat, requirements and methodologies for conducting field assessments are expected to be refined in the coming years. At the present time, based on an understanding of species biology and habitat preferences, it is Cardno JFNew's professional opinion that the Northern long-eared bat, if present, could utilize the forested portions of the property containing potential roosting trees coupled with open fields either within or adjacent to the Fermi Site during the summer months for roosting and feeding.

The 2013 U.S. Nuclear Regulatory Commission (NRC) Environmental Impact Statement for the Combined License (COL) for Fermi Unit 3 addresses the potential impacts to the Indiana bat and its habitats and determined that the proposed activities would have minimal impact to this species as long as DTE follows the protective measures in the *Rangewide Indiana Bat Protection and Enhancement Plan Guidelines* (USFWS 2009). Impacts to the Indiana bat could be minimized by limiting the clearing of potential roost trees to the months when the bats would not be expected on the site (USNRC 2013). These same strategies could be used for the Northern long-eared bat. Strategic placement and maintenance of bat houses prior to bat migration back to the region in the spring (following removal of any potential tree habitat in the winter months) may also provide additional roost opportunities for these species.

It is Cardno JFNew's and GEI's professional opinion that the potential future construction impact areas not related to license renewal activities are dominated by dead trees and will continue to lose their bark and potential to serve as habitat for bat roosting. Black and Veatch (2011) concluded the same from their earlier studies, wherein habitat for Indiana bat would continue to decline on the subject property.

Therefore, it is quite possible that by the time any potential future construction activities not related to license renewal commence, suitable bat habitat will be lacking in the identified habitat areas, as loose bark appropriate for habitat would no longer be present. With proper scheduling for tree removal and prevention of disturbances to surrounding habitat, impacts to this species and its potential habitat can be greatly minimized and avoided during potential future construction not related to license renewal activities.

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Threatened and Endangered Species Survey and Assessment Report Addendum – Proposed Federally-Listed Species
DTE Electric Company Fermi 2 Site

FIGURES


Area of Detail
Farmington Hills
Royal Oak
Livonia
Ann Arbor
Taylor
Clinton
Monroe
Adrian
Sylvania
Toledo
Fisher St
Langton Rd
Enrico Fermi Dr
Toll St
Lagoona Blvd
Brest Rd
Hazel St
Sycamore Rd
Erin St
Superior St
Saint Clair St
Huron St
Erie St
Dewey Rd
Ives Dr
Dixon Rd
Highland Rd
Goddard Rd
South St
Outer Boundaries of Assessment Area
Township: 06 S
Range: 10 E
Project No. J130508300
This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law
Figure 1: Location Map
Threatened and Endangered Species Survey & Assessment Addendum - Proposed Federally-Listed Species
Detroit Edison Fermi 2 & 3
Monroe County, Michigan
0 500 1,000 1,500 2,000 Feet
0 200 400 600 Meters
Cardno JFNew
11101 Mariah Avenue, West Olive, MI 49460 USA
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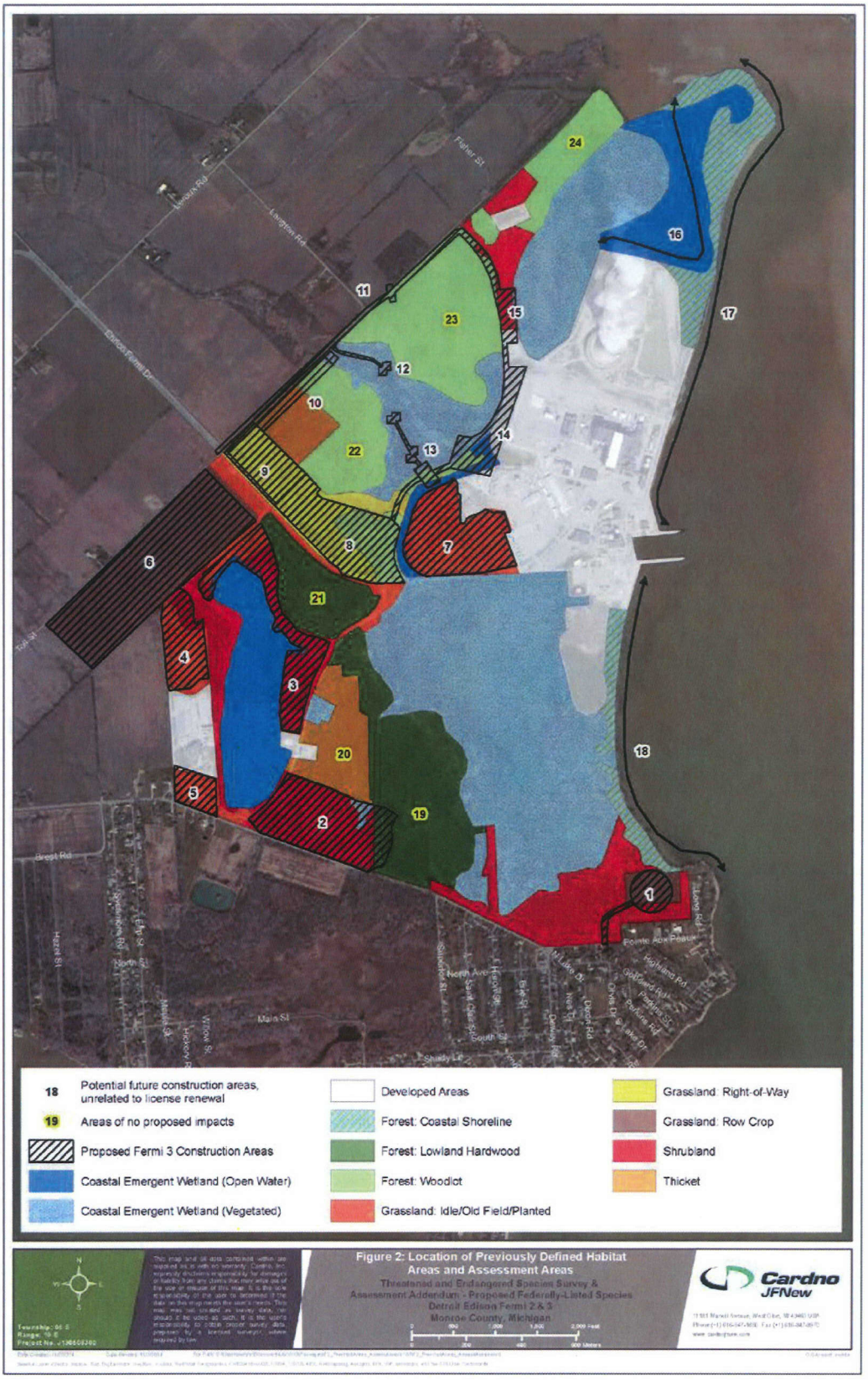
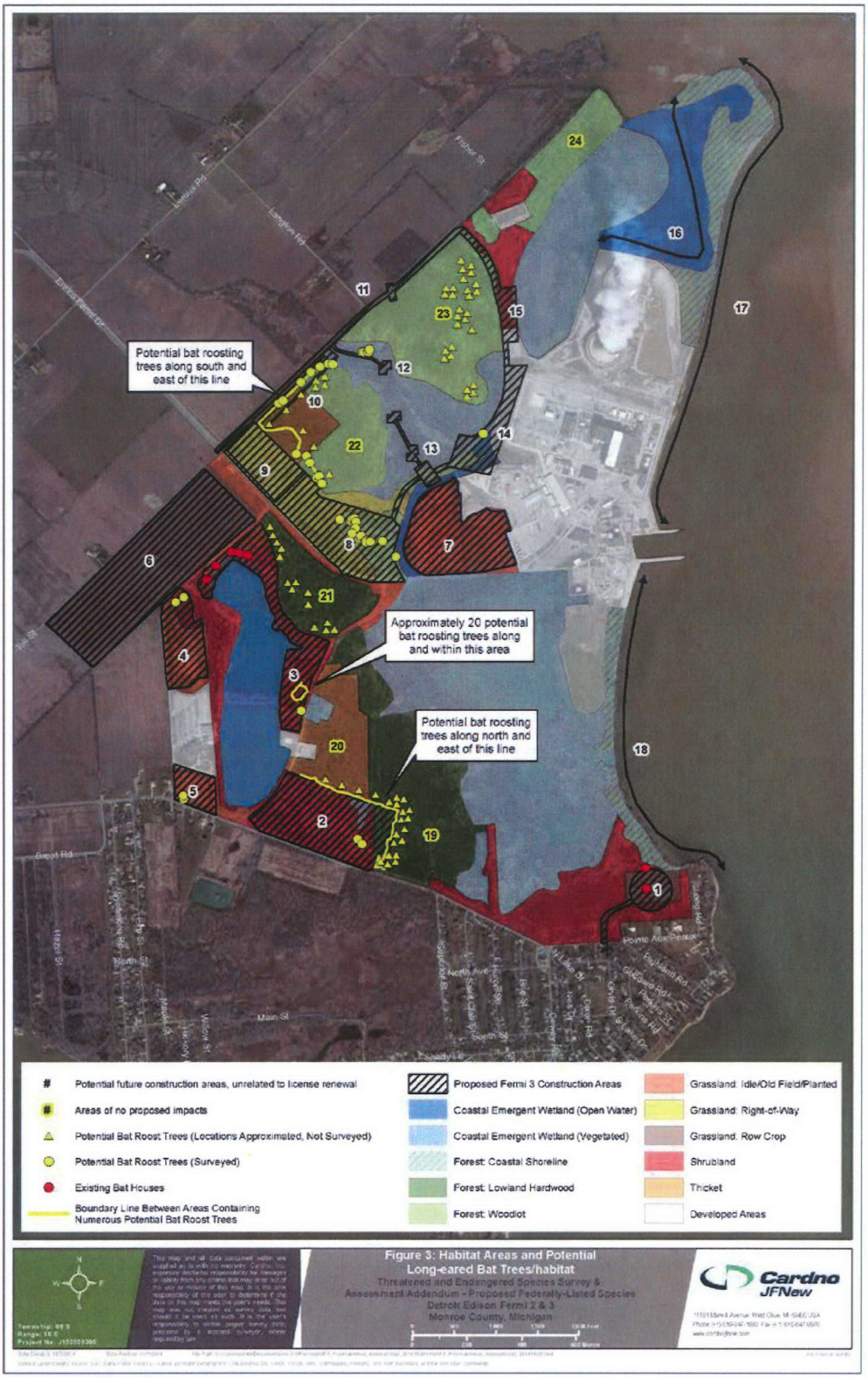
GIS Analyst: Steve Hyczak
Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS


18 Potential future construction areas, unrelated to license renewal
19 Areas of no proposed impacts
Proposed Fermi 3 Construction Areas
Coastal Emergent Wetland (Open Water)
Coastal Emergent Wetland (Vegetated)
Developed Areas
Forest: Coastal Shoreline
Forest: Lowland Hardwood
Forest: Woodlot
Grassland: Idle/Old Field/Planted
Grassland: Right-of-Way
Grassland: Row Crop
Shrubland
Thicket
Figure 2: Location of Previously Defined Habitat Areas and Assessment Areas
Threatened and Endangered Species Survey & Assessment Addendum - Proposed Federally-Listed Species
Detroit Edison Fermi 2 & 3
Monroe County, Michigan
Cardno JFNew


Potential bat roosting trees along south and east of this line
Approximately 20 potential bat roosting trees along and within this area
Potential bat roosting trees along north and east of this line
Potential future construction areas, unrelated to license renewal
Areas of no proposed impacts
Potential Bat Roost Trees (Locations Approximated, Not Surveyed)
Potential Bat Roost Trees (Surveyed)
Existing Bat Houses
Boundary Line Between Areas Containing Numerous Potential Bat Roost Trees
Proposed Fermi 3 Construction Areas
Coastal Emergent Wetland (Open Water)
Coastal Emergent Wetland (Vegetated)
Forest: Coastal Shoreline
Forest: Lowland Hardwood
Forest: Woodlot
Grassland: Idle/Old Field/Planted
Grassland: Right-of-Way
Grassland: Row Crop
Shrubland
Thicket
Developed Areas
Figure 3: Habitat Areas and Potential Long-eared Bat Trees/habitat
Threatened and Endangered Species Survey & Assessment Addendum - Proposed Federally-Listed Species
Detroit Edison Fermi 2 & 3
Monroe County, Michigan
Cardno JFNew

Threatened and Endangered Species Survey and Assessment Report Addendum – Proposed Federally-Listed Species
DTE Electric Company Fermi 2 Site

TABLES

Table 1 - Habitat Assessment Areas Containing Potential Long-eared Bat Roost Trees or Structures

Habitat Areas/Types	Grassland: Non-crop	Shrubland				Grassland: Idle/Old Field/Planted		Forested Woodlot			Coastal Emergent Wetland (Vegetated)	Thicket and Forest: Lowland Hardwood	Forested Woodlot	Forested Woodlot	Coastal Emergent Wetland (Vegetated)
Impact and Assessment Areas	1	1	2	3	4	3*	5	8	10	14	12	19 and 20	21	22 and 23	
Total No.# of Potential Bat Trees Identified within Area	0	0	2	21	5	0	2	16	13	1	8	17	>20	>60	
Representative Potential Roosting Trees and Their Metrics															
Cottonwood (*Populus deltoides*)			2	2			2	4		1	8		>2	>20	
Range of DBH (inches)			both 24"	15-24"			both 12"	7-10"		8"	6-10"		>3"	>3"	
Range of % Exfoliating, Peeling, or Scaling Bark (Percent)			10	30-50%			5-20%	10-20%		20-30%	5-15%		>5%	>5%	
American elm (*Ulmus americana*)				17	3			2	13			3	>10	>20	
Range of DBH (inches)				15-24"	5-12"			12-15"	5-12"			all 15"	>3"	>3"	
Range of % Exfoliating, Peeling, or Scaling Bark (Percent)				20-50%	5-30%			10-30%	5-20%			10-40%	>5%	>5%	
Green ash (Fraxinus pennsylvanica)				2				10	2			6	>10	>10	
Range of DBH (inches)				both 15"				6-12"	both 8"			6-15"	>3"	>3"	
Range of % Exfoliating, Peeling, or Scaling Bark (Percent)				50%				5-30%	5-10%			10-70%	>5%	>5%	
Shagbark hickory (*Carya ovata*)												8	>2	>2	
Range of DBH (inches)												5-11"	>3"	>3"	
Range of % Exfoliating, Peeling, or Scaling Bark (Percent)												10-40%	>5%	>5%	
Bat boxes present	2	0	0	0	0	5	0	0	0	0	0	0	0	0	
Canopy Cover (Sparse, Moderate, Dense)	Sparse	Sparse	Sparse	Sparse	Dense	Dense	Sparse	Moderate	Sparse	Dense	Sparse	Moderate	Dense	Sparse - Moderate	
Understory Density (Absent, Sparse, Moderate, Dense)	Absent	Sparse	Sparse	Sparse	Moderate	Moderate	Absent	Sparse	Sparse	Dense	Absent	Moderate	Moderate	Sparse - Moderate	
Distance to Open Water	<500'	>1,000'	1,000'	<500'	500-1,000'	<500'	500'	<1,000'	1,500-2,000'	<500'	<500'	<500'	<500'	<500'	
Distance to Woodlots/Forested Areas	<500'	<500'	<500'	Within	Within	<500'	>1,000'	Within'	Within	Within	<500'	Within	Within	Within	
Overall Potential to Provide Preferred/Optimal Habitat	Low	Low	Low	High	Low	Low	Low	High	Moderate	Low	Low	High	High	High	

Threatened and Endangered Species Survey and Assessment Report Addendum – Proposed Federally-Listed Species DTE Electric Company Fermi 2 Site

APPENDIX A

BLACK AND VEATCH (2011)

BLACK & VEATCH
Building a world of difference.

MEMORANDUM

Detroit Edison Company
Fermi 3 Environmental Studies
RE: Indiana Bat Reconnaissance Surveys at the Fermi 3 Site

B&V Project 163696
B&V File BV-2011-0030
October 7, 2011

To: Randy Westmoreland, Detroit Edison

From: Ed Shadrick, Black & Veatch

As part of environmental reviews conducted in association with the Fermi 3 Combined Operating License Application (COLA), areas expected to be impacted by construction were surveyed to characterize the wildlife present at the site. The surveys occurred over a number of years, starting in 2006 to August 2, 2011. In addition, focused surveys in 2008-2009 were conducted to evaluate the presence of threatened, endangered or other special status species using the site. This included efforts to screen for Indiana Bat (*Myotis sodalis*) habitat. The Indiana Bat is a federal endangered species. This memorandum provides condensed information on the methods used and the results of the wildlife surveys with respect to Indiana Bat on the Fermi site to date, including a site visit on August 2, 2011.

Qualitative Wildlife Surveys (2006-2007)

Reconnaissance surveys of the Fermi site were conducted between November 2006 and May 2008. The purpose of these investigations was to qualitatively assess the existing Fermi site ecological resources, including vegetation and wildlife. Previous wildlife and plant studies also have been conducted on the property. These previous studies and the 2006-2007 survey were conducted for the purpose of characterizing the existing conditions and ecological resources. These studies resulted in species lists based on observations made during the surveys. Because the earlier surveys and the 2006-2007 survey were qualitative in nature, quantitative surveys were undertaken in 2008-2009 to better characterize wildlife use of the site.

Quantitative Wildlife Surveys (2008-2009)

The objective of the 2008-2009 Fermi 3 terrestrial wildlife survey was to characterize wildlife use of the site, including any protected species, through a systematic and quantitative approach. The survey confirmed the findings of the previous studies by development of a wildlife species list, but also included information on abundance for the observed species. As a result, the quantitative approach provided a more comprehensive picture of wildlife presence and use than the qualitative studies. The basic approach of the 2008-2009 wildlife survey was to survey locations on the Fermi site with a higher probability of encountering wildlife, thereby developing the list of species present. Surveys coincided with periods when wildlife activity was expected to be higher (i.e., during breeding, semiannual migration or daily movements to and from foraging areas or roosting areas). The sampling methodology was based on widely used Visual Encounter Survey methods and is further described below.

<u>2008-2009 Wildlife Survey Methods</u>

Five transects, each approximately 1,200 feet long (total approximately 6,000 feet), were used to sample habitats expected to be frequently used by a variety of wildlife (approximately 7 percent of the Fermi site or 85 acres). The transect locations were chosen to reflect a proportional distribution of wildlife habitat across the site (e.g., woodland, prairie, lakeshore, etc.) and were placed in areas likely to increase the opportunities to observe wildlife (refer to Figure 3 in the *Fermi 3 Terrestrial Wildlife Survey Final Report* for transect locations). Emergent wetlands were not surveyed since Ducks Unlimited collected wildlife data during the wetland delineation.

Survey sessions were conducted quarterly (once in each three-month interval) starting in July 2008, to collect data on both resident and migrant or transient species using the site. Transects were sampled at different start times on alternating days to evaluate the range of activity periods used by different wildlife species (e.g., birds are usually active early or late, while some reptiles are most active around mid-day). Each survey session occurred over five days; however, transects were abandoned for a given survey session if the rate of total species encountered fell after three days of sampling.

Five sample points were located along each transect, at approximately 300-foot intervals (25 points). The time spent at each sampling point along the transects was limited to 10 minutes, although small adjustments were made in some cases to ensure that all species present and detectable were recorded (i.e., time was allowed to elapse until no new species were recorded for at least five minutes after the first five minutes at a point). Thus, a transect required approximately one hour to complete. The exception was the January 2009 survey session (see also the following paragraph), when weather conditions limited wildlife activity.

During the January 2009 survey session the level of activity and the number of individuals observed for most wildlife classes was very low. Therefore, transect sampling was conducted on a continuous basis (i.e., no point sampling within transects). Investigators walked each transect until wildlife or wildlife sign was observed, stopping long enough to record the species and obtain counts of individuals. After an observation, investigators remained at that location long enough to ensure no further observations before proceeding (approximately 5 minutes after the last observation). Where footprints were the only available sign of wildlife presence (i.e., mammals), fresh tracks after the first day were able to be distinguished because each transect was traversed daily. Often tracks for the same species were observed, meaning no new species were observed after a few days. In addition, since the only open water during this time was near the Fermi 2 cooling towers and the Lake Erie cooling water discharge, almost all activity by waterbirds (gulls, ducks, geese, etc.) was in this area. Only one species [Greater Scaup (*Aythya marila*)] not observed on transects was encountered on Lake Erie during the January 2009 survey session.

Stationary Observations

In addition to transect sampling, non-transect point sampling was conducted at six stationary locations where wildlife activity was believed to be frequent (e.g., Quarry Lakes, the edges of emergent wetland areas or the Lake Erie shoreline) (refer to Figure 3 in the *Fermi 3 Terrestrial Wildlife Survey Final Report* for stationary locations). Supplementary sampling also occurred in specific microhabitats along transects or near stationary sample points where these habitats were encountered (e.g., marshy shorelines for rails, bitterns or amphibians; dead or dying trees with exfoliating bark for Indiana Bat).

Data Recorded

Data recorded during each survey session included identification to the lowest taxon possible (usually species level) and the number of individuals observed or heard at each sampling point, whether on a transect or at a stationary point. A set distance for recording observations was not used. So if an individual could be identified to the species, genus or family level within the visible or auditory range of the observers at a sample location it was recorded, taking into account individuals previously recorded as much as possible. Thus, if an American Robin was heard at one point and again at the next point from the same general direction, it was counted once. Wildlife species observed between sampling points and not previously recorded during a given survey session were documented. Previously recorded species observed between transect points were not recorded. Wildlife species recorded included birds, mammals or mammal sign, reptiles and amphibians. Other species were recorded when encountered, although in most cases no measure of abundance was attempted (e.g., mosquitoes). Weather conditions did not prevent data collection during any survey sessions, although wildlife activity was reduced during the 2009 January and April survey sessions, in part because of lower air temperatures, resulting in some transects being abandoned for those survey sessions.

Focused Surveys

The following additional procedures were used for focused investigation of specific wildlife classes. These procedures normally were conducted concurrently with transect and sample point data collection during survey sessions. In some cases, focused surveys were performed in suitable habitats not on any transect during seasons when the target species was most active (e.g., spring pools in wooded habitats for salamanders).

Birds

All bird species observed or heard were recorded to the lowest taxon (usually species level). Individuals otherwise not identifiable to species were identified to the lowest possible taxonomic level (e.g., genus, family). Under normal circumstances, some secretive or cryptic species, such as Least Bittern, rails or owls, may not be easily detected during transect surveys. To assess the presence of these species, suitable habitats were walked within one hour of either dawn or dusk on up to two occasions during each survey session in an attempt to flush any individuals present. In addition, calls or other vocalizations for selected species were broadcast using recordings from Thayer Birding Software's

"Guide to Birds of North America" versions 2.5 (July and October 2008 and January 2009) and 3.9 (April 2009). Calls were broadcast using a Dell Latitude 410 laptop computer connected to a FoxPro Digital Wildlife Caller to elicit a response from the target species. Calls were broadcast for up to two minutes after a period of silence and up to four minutes allowed for a response. Broadcast calls were repeated at least twice.

Mammals

Any mammals observed or mammal sign (scat, tracks, rubs, discarded hair, etc.) assignable to a species were recorded during transect sampling. Counts were made only when direct observation was possible. Mammal sign for a species was recorded as a single occurrence, although more than one individual could leave sign in a given location (e.g., multiple deer rubs in the same general location).

Indiana Bat (Mammal)

Environmental overviews conducted by the U.S. Fish and Wildlife Service (FWS), the Michigan Department of Natural Resources (MDNR) and the Michigan Natural Features Inventory (MNFI) indicated that Indiana Bat may not be present in the project area, although the FWS indicated that the site lies within the species' range. Because suitable habitat may exist on the Fermi site, habitat traversed along transects was evaluated for potential use by this species. Specifically, trees 9 inches or larger diameter at breast height (DBH or 4.5 feet above the ground) that were dead or dying with peeling bark or live trees with exfoliating bark, in stands rather than isolated, with a clear flight pathway and exposed to at least morning sun were investigated for possible maternity colony use. Trees with this set of characteristics typically may be used as maternal colonies by Indiana Bat during the summer months. When potentially suitable roost habitat was encountered, visual surveys were conducted at dusk near potential roost trees to determine if bats of any species were present by viewing the roost trees against the sky to observe bats exiting or swarming around the roost tree. Only one Michigan hibernaculum is known, in Manistee County more than 200 miles northwest of the Fermi site.

Reptiles and Amphibians (Herptiles)

Any reptiles or amphibians (frogs or salamanders) encountered during transect sampling were recorded. Surface objects along transects, such as logs, large stones and litter or brush piles were turned or lifted to reveal any reptiles or amphibians underneath. All displaced materials were replaced after recording any herptiles. Areas that may contain suitable habitat also were searched in those seasons where activity levels make herptiles more conspicuous (e.g., spring mating). Additional pedestrian searches were conducted along the readily accessible shoreline of marshy areas to determine if these areas were being used by amphibians or water-loving reptiles. Searches for amphibian egg masses were conducted during the April 2009 survey session in accessible marsh edge habitats and vernal pools in wooded areas. Amphibian searches included listening for frog choruses near selected wetland or pond areas during the April 2009 survey session.

Indiana Bat Survey Results (2008-2009)

Indiana Bat fall migration to hibernacula typically occurs from August into September. Increased foraging activity may occur during July in preparation for migration. Spring emergence from hibernacula usually occurs starting in April into May, with most individuals having migrated to summer habitat by June[1]. Thus, while periods of the greatest movement (i.e., spring migration from or fall migration to hibernacula) were not expressly covered by scheduled survey periods, the presence and potential use of suitable summer roost habitat within the site was the primary focus of investigations for the bat species.

In the wooded portions of the Fermi site numerous trees are dying or fallen, a majority of which are ash trees (*Fraxinus* spp.) that have been infested with the Emerald Ash Borer. Many of the standing snags have lost their bark and were considered unsuitable Indiana Bat roost habitat, unless crevices or cavities in which the bats could roost were present. During the July 2008 and April 2009 surveys, several potential roost trees were located and revisited, in particular one large (circa 22 inches DBH) Shagbark Hickory (*Carya ovata*) located in the woods east of Quarry Lakes Road. The general locations of the candidate roost trees were in the woods east of the Quarry Lakes, the woods along Bullit Road in the northwestern portion of the site, and portions of the wooded edge adjacent to the restored prairie along Fermi Drive.

The selected candidate trees were re-visited during the July 2008 and April 2009 survey sessions, but no bats of any species were observed in association with any trees or elsewhere on the site. Indiana Bat summer roosting habitat is dependent on a selection of suitable trees since primary and alternative roost trees change frequently, although females tend to return to the same areas each year. Based on the observed conditions during the 2008 and 2009 survey sessions, it appears that Indiana Bat is not likely to roost on the site, although the site could be used intermittently for summer foraging if a colony exists nearby. Given that wooded areas with riparian features or standing water are relatively rare near the site and suitable roost trees near these areas are not abundant, this seems doubtful.

Indiana Bat Roost Tree Investigation (2011)

In preparation for further consultation with the FWS and MDNR, Ed Shadrick (Black & Veatch), with Randall Westmoreland and Jamie Steis (Detroit Edison) acting as additional observers, visited the Fermi site on August 2, 2011, to evaluate areas to be impacted by the proposed Fermi 3 construction that were not investigated during the 2008-2009 survey because of site layout changes that occurred after the survey was completed. The August 2, 2011 onsite survey was conducted on foot in selected locations to evaluate the presence of potential roost trees suitable for use by Indiana Bat. The areas investigated included the following locations:

- A relocated transmission corridor adjacent to an emergent wetland complex north of the restored prairie (Wetland C in the *DTE Fermi II Site, Monroe County Wetland Investigation Report* prepared by Ducks Unlimited, dated July 2008);
- The relocated access road and transmission corridor along Toll Road;

[1] U.S. Fish and Wildlife Service (USFWS). 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.

- Canal areas and a pond to be filled along Doxy Road;
- Temporary construction staging areas (laydowns) around the Quarry Lakes (south of Gator Road); and,
- Temporary laydown around Fox Road in the south-central portion of the site, east of Quarry Lakes Road.

Each location was walked while comparing standing trees with the characteristics considered suitable for Indiana Bat summer roost trees. During the August 2 investigation, six trees potentially suitable for summer roosts by Indiana Bat were located using a handheld GPS unit (Delorme Earthmate PN-40). The attached figure illustrates these potential roost tree locations. In addition, the location of a single large Shagbark Hickory in the woods east of Quarry Lakes Road encountered during the 2008-2009 wildlife surveys is included in the figure.

During all studies since 2008, potentially suitable roost trees were determined using a suite of habitat characteristics, drawn from the FWS' *Indiana Bat (Myotis sodalis) Draft Recovery Plan: First Revision* (2007; see also Footnote 1).

- Trees located in riparian, bottomland, and upland forests, with a slight preference for wooded areas with wet or moist soils;
- Roost trees usually are located in groupings, but wooded pastures, hog lots, fencerows, and residential yards also may be used; roost trees tend to be the largest in a grouping;
- Tree used are dead, dying or live trees with peeling or exfoliating bark in locations exposed to at least morning sun;
- Maternity roost trees tend to be larger relative to adjacent trees, typically more than 9 inches diameter at breast height (DBH); solitary males may use smaller trees down to 3 inches DBH;
- Access to a potential roost tree is not blocked by branches, vines or other obstructions that could cause increased exposure to predation;
- Also will use narrow cracks, split tree trunks or larger split branches sheltered from the weather.

Tree considered unsuitable as potential roosts were:

- smaller than 9 inches DBH;
- had lost more than 90 percent of the bark;
- had at least 90 percent of the bark, but it was tight to the trunk;
- were in shaded locations or isolated from other trees; or
- had a congested flight space at points of access/egress to potential roost locations on the tree.

Potential roost trees in each location were evaluated as low, moderate or high potential using the habitat characteristics as noted above. The results for each investigated area are summarized below by location.

The relocated transmission corridor near Wetland C. Trees with the highest potential for use during the August 2 site investigation were observed near the wetland just south of Toll Road; this area is considered high potential. Trees in the wetland were isolated and considered unsuitable; many dead trees had either no bark or very little bark remaining, others were considered too isolated and exposed to weather for use as a roost site. Trees in woods adjacent to Wetland C outside of the proposed transmission line right-of-way (ROW) may be suitable, but these would not be removed during transmission line construction. This location was considered high potential, but this determination was based on a single tree that may deteriorate and become unsuitable by the time construction of the transmission line would occur. Most trees in the area were too small or otherwise unsuitable for Indiana Bat summer roosts, a situation unlikely to improve with time.

The relocated access road and transmission corridor along Toll Road. There were very few suitable trees in the area to be cleared for transmission ROW, mostly smaller shrubs and a few saplings, some larger living trees with intact bark. The exception is the area near Wetland C, as noted above. Some larger trees may be suitable east of the transmission ROW, but these will not be removed or affected by construction. This location was considered low potential within the transmission ROW.

Canal areas and a pond to be filled along Doxy Road. Treed areas along the road were considered unsuitable since dead trees are regularly removed as a hazard. There were few trees of suitable size or meeting other roost tree characteristics in this area. This location was considered low potential.

Temporary construction laydowns around the Quarry Lakes. Some potential roost trees are present, but these were considered marginal and other locations were more likely to be preferred. There was significant canopy by shrubs, especially hawthorn (*Crataegus* sp.). Most potentially suitable trees lacked sufficient bark, or were partially blocked by branches. One Shagbark Hickory (*Carya ovata*) is present, but it was considered too small. This location was considered moderate to low potential.

Temporary laydown around Fox Road. The laydown area has a few trees of suitable size, but seldom in groupings and most are living trees are without peeling or exfoliating bark. Wooded areas north of the proposed laydown area could be used, although many of the trees near the laydown area are smaller than the preferred size. This latter area will not be affected by use of the laydown area and trees will not be removed. The laydown area location was considered low potential.

August 8, 2011 Site Meeting

On August 8, 2011, Detroit Edison conducted a site meeting and tour with representatives from the FWS, the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (EPA), Conservation Connects, and Black & Veatch. The primary purpose of the meeting was to familiarize regulators with the site to aid in pending permit application reviews by the respective agencies. As such, the meeting included a presentation of the measures taken by Detroit Edison to reduce wetland impacts related to the construction of Fermi 3. In addition, a condensed summary of investigations to evaluate use of the site by Indiana Bat was provided. During the site tour, several locations with candidate Indiana Bat roost trees identified during the August 2, 2011, site visit were re-visited to illustrate the results of the August 2 site investigation.

During the site tour, Ed Shadrick (Black & Veatch) and Burr Fisher (FWS) informally discussed the Indiana Bat habitat. Mr. Fisher indicated a general agreement with the results described in this memo.

Conclusions

Even with several studies conducted since 2006, Black & Veatch has not observed bats of any species. Site employees have reported anecdotal observations of bats at the Fermi site; however, no determination was made as to what species were observed. Although some trees suitable for Indiana Bat summer roosting habitat are present, the combination of habitat features usually preferred by Indiana Bat are generally lacking from the Fermi site. Therefore, it appears unlikely that the species would be adversely affected by the proposed transmission line construction, clearing in the laydown areas or construction of buildings in the canal and pond along Doxy Road. Furthermore, because of the continuing decline of roost trees on the Fermi site, it is likely that conditions for summer roosts will not improve before construction of the new Fermi unit is started.

- End Memo -

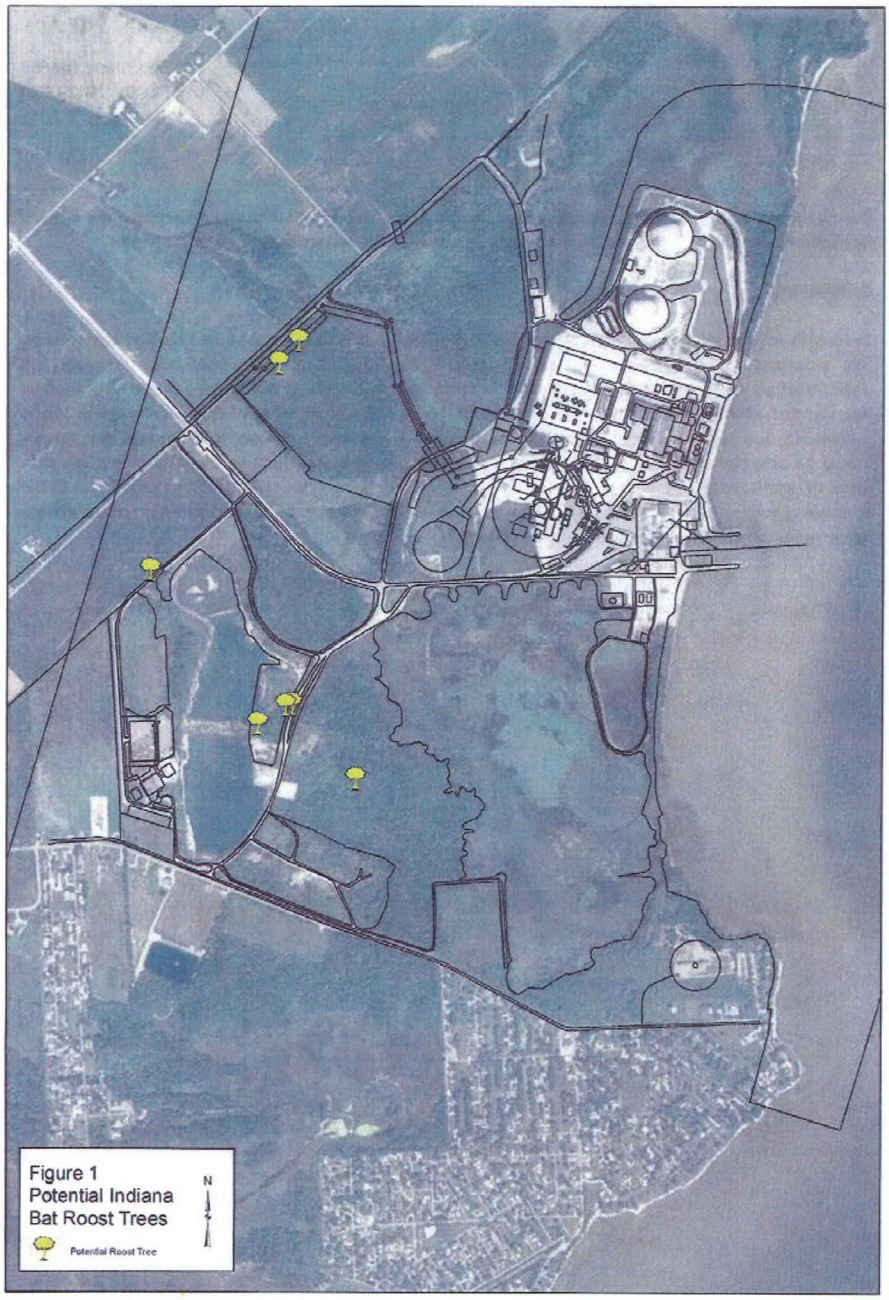
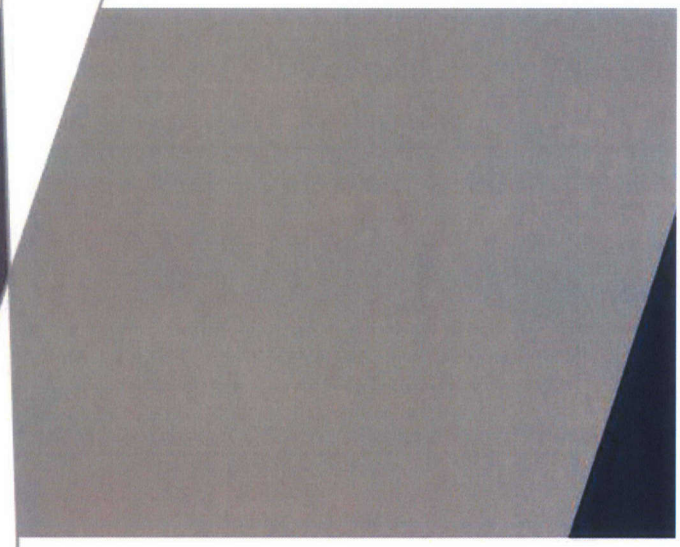


Figure 1
Potential Indiana
Bat Roost Trees
N
Potential Roost Tree

Threatened and Endangered Species Survey and Assessment Report Addendum – Proposed Federally-Listed Species
DTE Electric Company Fermi 2 Site

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS



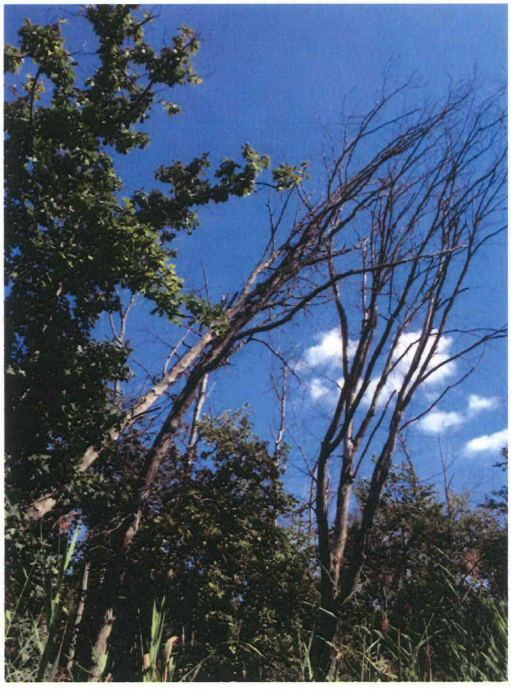
Photograph No. 1 – Two 24" DBH cottonwood trees with 10% exfoliating bark within central portion of Area 2 (Shrubland).

Photograph No. 2 – Bat house in central portion of Area 1 (Grassland: cropland).

Photograph Nos. 3 and 4 – Two 15" American elms with 10-20% exfoliating bark within eastern portion of Area 2 (Shrubland).

Photograph Nos. 5 and 6 – A 12" DBH shagbark and 12" DBH green ash within northeastern end of Area 2 (latter with 50% exfoliating bark).

Photograph No. 7 – 24" DBH American elm in the southeastern corner of Area 3.



Photograph Nos. 8 and 9 – Mixture of cottonwoods and green ash ranging from 15-24" DBH with 30-50% exfoliating bark within Area 3 (Shrubland).

Photograph No 10. – Mixture of American elm and green ash 15" DBH trees with 50% exfoliating bark within Area 3 (Shrubland).

Photograph No. 11 – Bat house (one of five) in northern end of Area 3.

Photograph No. 12 – 10" and 12" American elm with 5-10% exfoliating bark within Area 4 (Shrubland).

Photograph Nos. 13 and 14 – Two 12" DBH cottonwoods ranging from 5-20% exfoliating bark within Area 5 (Grasslands: Idle/Open Field/Planted).

Photograph Nos. 15 and 16 – 12" DBH American elm within western portion of Area 8 (left) and 10" DBH green ash with 5-10% exfoliating bark in eastern end of Area 8 (Forested: Woodlot).

Photograph No. 17 – Several green ash ranging from 6-11" DBH with 5-30% exfoliating bark within central part of Area 8 (Forested: Woodland).

Photograph No. 18 – 5" Dbh American elm with 10-20% exfoliating bark within central southern portions of Area 10.

Photograph No. 19 – 10" DBH American elm with 10-20% exfoliating bark in northern end of Area 10 looking back south.

Photographs 20 and 21 – Two 9"DBH American elms (left) with 5-15% exfoliating bark and lone 8" cottonwood (right) with 10-20% exfoliating bark within Area 12 (Coastal emergent wetland).

Photograph No. 22 – Typical view along coastal shoreline of Area 17 (Lake Erie to the east).