Biological Opinion and Incidental Take Statement for Indiana bat (*Myotis sodalis*) at the Cianci Builders-Young Explorers Daycare, Twinsburg, Summit County, Ohio.

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INTRODUCTION

This document transmits the U.S. Fish and Wildlife Service's (Service) Biological Opinion (BO) based on our review of the proposed issuance of a Clean Water Act section 404 permit by the U.S. Army Corps of Engineers Buffalo District (Corps) to Cianci Builders (Applicant), for the proposed Young Explorers Daycare, to be located in Twinsburg, Summit County, Ohio, and its effects on the Indiana bat (*Myotis sodalis*) per section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The Corps' application number for the project is 2014-00719. The Corps' request for formal consultation was received on September 15, 2014, and formal consultation was initiated on September 15, 2014.

This biological opinion is based on information provided in the July 2014 Pre-Construction Notification (PCN) (Davey Resource Group (Davey) 2014), a site inspection by the Service, and telephone conversations and e-mails among the Service, Corps, Applicant, Davey, and other sources of information. A complete administrative record for this consultation is on file at the Service's Ohio Ecological Services Field Office (OHFO).

CONSULTATION HISTORY

The Corps determined that the Cianci Builders, Young Explorers Daycare project is likely to adversely affect the Indiana bat, and submitted a request for initiation of formal consultation to the Service on September 15, 2014. In a September 16, 2014 response, the Service concurred with the Corps determination, and agreed that the initiation package was complete in accordance with 50 CFR §402.14, and that the timeframe for formal consultation had begun effective September 15, 2014 (Table 1).

Table 1. Consultation History for the Cianci Builders, Young Explorers Daycare Project

Date	Event
July 29, 2014	Service receives effects determination and request for informal consultation from Corps relative to Indiana bat.
August 8, 2014	Service informs Corps that seasonal tree clearing restriction from November 15 – March 15 is necessary to receive concurrence with a not likely to adversely affect determination.
September 4, 2014	Site visit by Service, Applicant, and Davey confirms presence of suitable roosting and foraging habitat.
September 10, 2014	Conference call among Service, Applicant, City of Twinsburg, Congressman David Joyce's office to discuss consultation on this project.
September 15, 2014	Corps initiates formal consultation.
September 16, 2014	Service determines that initiation package is complete.
September 18, 2014	Service provides draft BO to Corps and Davey for comment.
September 23, 2014	Comments on Draft BO received from Davey.
September 25, 2014	Comments on Draft BO received from Corps.

BIOLOGICAL OPINION

Description of the Proposed Action

The Applicant is proposing to construct a daycare/preschool (Young Explorers) on a 1.5-acre site in Twinsburg, Summit County, Ohio (41.31281° N, -81.44754° W). The site is located east of Maple Drive, north of Aurora Road, and is bounded on the west by Twin Hills Parkway. The property contains undeveloped forested area, scrub/shrub vegetation and a 0.227-acre forested wetland. The project site contains suitable roosting and foraging habitat for the Indiana bat. The project would require filling in the wetland and clearing of most or all of the forest on site. Off-site water quality impacts would be minimized by construction of a stormwater detention basin. Any permit that may be issued for the project will also include purchase of a minimum of 0.454 forested credits at the Trumbull Creek Wetland Mitigation Bank, located along the Geauga-Ashtabula county line, Ohio. Project construction, including clearing of forested habitat, is scheduled to begin October 1, 2014. Maps of the project site and additional details regarding site conditions and project plans are included in Davey (2014).

Conservation Measures

The Applicant has committed to the following conservation measures to avoid, minimize, and compensate for the potential for incidental take (Appendix A):

- Clear approximately 1.25 acres of the project site (Appendix B) after September 30, 2014 and before March 15, 2015.
- Clear approximately 0.25 acre of project site (Appendix B) after November 15, 2014 and before March 15, 2015.
- Any tree clearing not completed by March 15, 2015 will occur only from November 15 – March 15 of any year.
- Prior to any vegetation clearing, donate $22,500 to Summit Metro Parks for the purposes of purchasing and protecting approximately 1.5 acre of forested land in accordance with "Species Mitigation Agreement" (Appendix A). The applicant shall provide written proof of the receipt of the donation from the Summit Metro Parks to Michael W. Smith, U.S. Army Corps of Engineers, Regulatory Branch, 1776 Niagara Street, Buffalo, New York 14207 prior to any vegetation clearing.

The Applicant is responsible for implementing these conservation measures. At the completion of the project, it is expected that approximately 1.5 acres of forested and scrub/shrub habitat, including 0.227 acre of forested wetland, will be cleared and graded for development.

Action Area

In 50 CFR §402.02 "action area" is defined as, "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area is not limited to the footprint of the action and should consider the effects to the environment resulting from the action. Within a set action area, all activities that can cause measurable or

detectable changes in land, air, and water or to other measurable factors that may elicit a response in the species or critical habitat are considered.

Habitat removal and construction will occur within the 1.5-acre project area. In addition, elevated noise levels during site preparation and construction will affect area within 800 feet of the project site. Generally, construction equipment produces sound of 85 dBA at 50 feet (FHWA 2006). The background noise level of the surrounding commercial and residential properties and interstitial wooded habitat varies, but is likely approximately 65 dBA (Corbisier 2003). Sound level drops approximately 5 dB with a doubling of distance. Therefore, sound from construction activities would return to background (65 dBA) approximately 800 feet from the project site. The entire action area is approximately 68 acres and includes the wooded project site, commercial and residential development, and partially wooded lots within the residential development (Figure 1).

Figure 1. Action area. The action area includes the 1.5-acre project site (bordered in yellow) and an 800 foot buffer (bordered in green).

STATUS OF THE SPECIES

Unless noted otherwise, the information in this section is summarized from the Indiana Bat (Myotis sodalis) Draft Recovery Plan: First Revision 2007 (Service 2007).

The Indiana bat is a medium-sized insectivorous bat in the *Myotis* genus with a head and body length that ranges from 41 to 49 mm (1.6 to 1.9 inches (in)). There are no recognized subspecies.

The Indiana bat closely resembles the little brown bat (*Myotis lucifugus*), but is distinguished from this species by its shortened toe hairs and a slightly keeled calcar.

The Indiana bat was officially listed as an endangered species on March 11, 1967 (32 FR 4001) under the Endangered Species Preservation Act of October 15, 1966 (80 Stat. 926; 16 U.S.C. 668aa[c]). The Endangered Species Act of 1973 extended full protection to the species. Thirteen winter hibernacula (11 caves and two mines) in six states were designated as critical habitat for the Indiana bat in 1976 (41 FR 41914). No critical habitat occurs within or near the action area. The Service published a final recovery plan (Service 1983) which outlines recovery actions. Briefly, the objectives of the plan are to: (1) protect hibernacula; (2) maintain, protect, and restore summer maternity habitat; and (3) monitor population trends through winter censuses.

The Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision (Service 2007) was developed to update the original recovery plan, and though still draft provides the most current information on the status of the population recovery goals, and recovery program. The Draft Recovery Plan (Service 2007) states that the recovery program for this species has four broad components: 1) range-wide population monitoring at the hibernacula with improvements in census techniques; 2) conservation and management of habitat (hibernacula, swarming, and to a degree, summer); 3) further research into the requirements of and threats to the species; and 4) public education and outreach (Service 2007). This recovery program continues to have a primary focus on protection of hibernacula (Service 1983) but also increases the focus on summer habitat and proposes the use of Recovery Units (RU) (Service 2007). The recovery program for the Indiana bat delineates four recovery units: the Ozark-Central, Midwest, Appalachian Mountains, and Northeast RUs. "Recovery Units serve to protect both core and peripheral populations and ensure that the principles of representation, redundancy, and resiliency are incorporated" (Service 2007). The proposed project would occur within the Midwest RU.

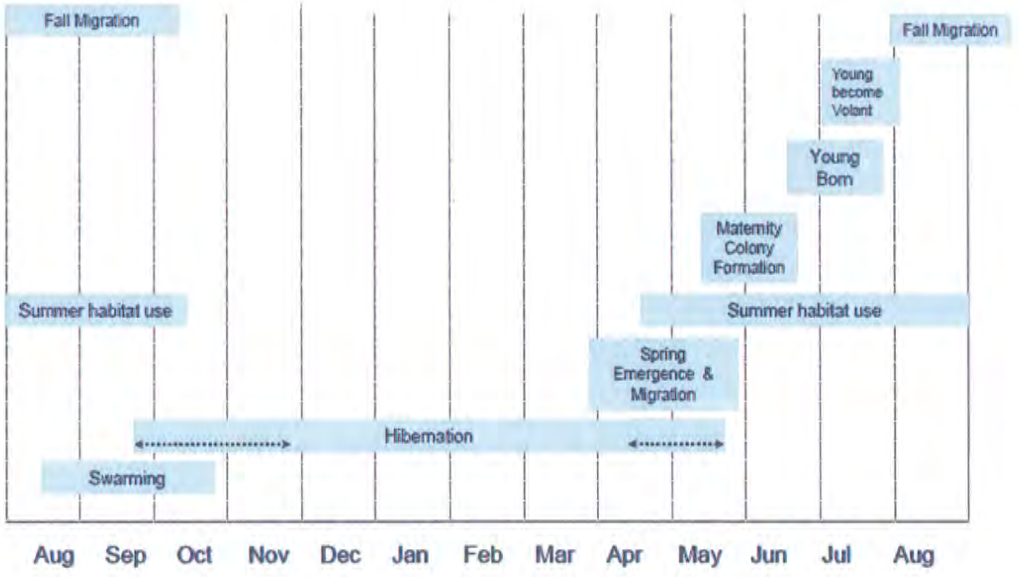
The species range includes much of the eastern half of the United States, from Oklahoma, Iowa, and Wisconsin east to Vermont, and south to northwestern Florida. The Indiana bat is migratory, with the above described range including both winter and summer habitat. The winter range is associated with regions of well-developed limestone caverns. Major populations of this species hibernate in Indiana, Kentucky, and Missouri. Smaller winter populations have been reported from Alabama, Arkansas, Georgia, Illinois, Maryland, Mississippi, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Virginia, and West Virginia. More than 85% of the entire known population of Indiana bats hibernates in only nine caves.

Life History

The Indiana bat hibernates in caves and mines in the winter, often with other species. Indiana bats have been known to reach hibernation cluster densities of 300-484 bats per square foot (Service 2007). It is generally accepted that Indiana bats, especially females, are philopatric; that is, they return annually to the same hibernacula (LaVal and LaVal 1980). During hibernation, Indiana bats arouse naturally, as do all hibernating mammals (Thomas et al. 1990). Most Indiana bats hibernate in caves or mines where the ambient temperature remains below 10°C (50.0°F) but infrequently drops below freezing (Hall 1962, Myers 1964, Humphrey 1978).

The timing of spring emergence from hibernacula may vary across the range of the Indiana bat, depending on latitude and weather (Hall 1962). Females tend to emerge earlier than males, usually from the end of March to mid-April. Males usually exit by the beginning of May. Female Indiana bats may leave immediately for summer habitat or linger for a few days near the hibernaculum. Males and non-reproductive females may summer near hibernacula, or migrate to summer habitat some distance from their hibernaculum. In spring when fat reserves and food supplies are low, migration provides an additional stress and, consequently, mortality may be higher immediately following emergence (Tuttle and Stevenson 1978). Indiana bats can migrate hundreds of kilometers from their hibernacula (Service 2007). In the Midwest RU, the maximum documented migratory distance is 574.5 km (357 mi) (Winhold and Kurta 2006).

Figure 2. Indiana Bat Annual Chronology

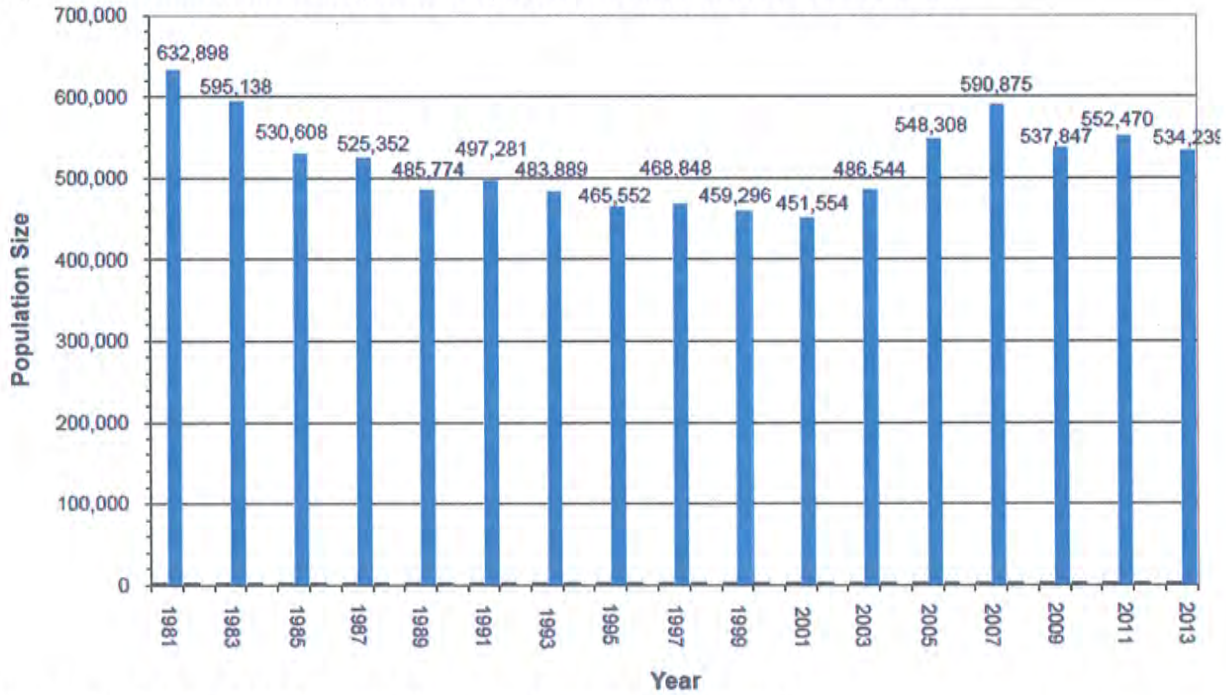


After arriving at their summer range, female Indiana bats form maternity colonies comprised of groups of adult females and their offspring from that year that can vary greatly in size. Whitaker and Brack (2002) estimated the average size of a maternity colony is approximately 80 adult female Indiana bats. Female Indiana bats, like most temperate Vespertilionids, give birth to one young each year (Mumford and Calvert 1960, Humphrey et al. 1977, Thomson 1982). The thermoregulatory advantages of colonial roosting have been clearly demonstrated. Maternity roosts are thought to provide an environment where adequate metabolism and body temperatures can be maintained by both mother and young, allowing for optimal prenatal and postnatal growth. Kurta and Rice (2002) reported that most births occurred in mid- to late-June, with lactation occurring throughout July and lasting 3 to 5 weeks, and pups becoming volant (able to fly) between early July and early August. Maternity colonies typically use 10 to 20 trees each year, but only one to three of these are primary roosts used by the majority of bats for some or all of the summer (Callahan 1993, Callahan et al. 1997). Roost trees, although ephemeral in nature, may be occupied by a colony for a number of years until they are no longer suitable. Indiana bats appear to have a fission-fusion society as demonstrated by frequent roost changing (Kurta et al. 2002, Kurta 2005). Once the young become volant, the maternity colony begins to disperse.

Indiana bats have been confirmed roosting in at least 33 species of trees. They appear to select trees based on the condition and not the species of the tree. Roost trees usually have peeling or exfoliating bark or cracks or crevices. These characteristics are common in dead and dying trees. However, live shagbark hickories also have these characteristics and are frequently used. Maternity roost trees are usually a larger size (>16 inches dbh) to accommodate a large number of bats. They are usually located within trees that have a significant amount of solar exposure. This helps to accommodate the thermoregulatory needs of the pups.

Maternity colonies begin disbanding during the first two weeks in August, although some large colonies may maintain a steadily declining number of bats into mid-September (Humphrey et al. 1977, Kurta et al. 1993). Members of a maternity colony do not necessarily hibernate in the same hibernacula, and may migrate to hibernacula that are over 300 km (190 mi) apart (Kurta and Murray 2002, Winhold and Kurta 2006). Upon arrival at hibernacula, Indiana bats mate and build up fat reserves by foraging, usually in close proximity to the cave. This period of activity prior to hibernation is called swarming. During autumn, when Indiana bats swarm and mate at hibernacula, male bats roost in nearby trees during the day and fly to the cave at night. In Kentucky, Kiser and Elliott (1996) found male Indiana bats roosting primarily in dead trees on upper slopes and ridgetops, within 2.4 km (1.5 mi) of their hibernaculum. During September, in West Virginia, male Indiana bats roosted within 5.6 km (3.5 mi) of their cave, in trees near ridgetops, and often switched roost trees from day to day (C. Stihler, West Virginia Division of Natural Resources, pers. comm., 1996). One Indiana bat in Michigan roosted 2.2 km (1.4 mi) away from the hibernaculum during fall swarming, and another chose trees at a distance of 3.4 km (2.1 mi) (Kurta 2002).

Figure 3. Indiana bat Rangewide Population Estimates from 1981-2013.



Andy King, U.S. Fish and Wildlife Service, Bloomington, Indiana Revised 8-26-2013

Status and Distribution

Reasons for listing. The Indiana bat was one of 78 species first listed as being in danger of extinction under the Endangered Species Preservation Act of 1966 because of large decreases in population size and an apparent lack of winter habitat (Service 1983, 1999). The 1967 Federal document that listed the Indiana bat as "threatened with extinction" (32 FR 4001, March 11, 1967) did not address the five factor threats analysis later required by Section 4 of the 1973 Act. The subsequent recovery plans do address threats to the species in greater detail. Threats to the species discussed in the 2007 Recovery Plan (Service 2007) include the following: destruction/degradation of hibernation habitat (caves and mines); loss and degradation of summer habitat, migration habitat, and swarming habitat (especially forested habitats); disturbance of hibernating bats; predation; competition; inadequacy of existing regulations, particularly regulations that protect summer roosting habitat; natural catastrophes in hibernacula, such as flooding; and, environmental contaminants.

New threats. Since 2006, white-nose syndrome (WNS) has emerged as a new threat that may have serious implications for Indiana bat recovery. WNS primarily affects hibernating bats. Affected bats usually exhibit a white fungus on their muzzles, ears, and wings (Blehert et al. 2009). The fungus associated with WNS has been identified as *Pseudogymnoascus destructans (*formerly *Geomyces destructans)*, a previously undescribed species (Minnis and Lindner 2013). The fungus thrives in the cold and humid conditions of bat hibernacula (Service 2011). The skin infection caused by *P. destructans* is thought to act as a chronic disturbance during hibernation (USGS 2010). The fungus invades living tissue, causing cup-like epidermal erosions and ulcers (Meteyer et al. 2009, Puechmaille et al. 2010). These erosions and ulcers may in turn disrupt the many important physiological functions that wing membranes provide, such as water balance (Cryan et al. 2010). Infected bats exhibit premature arousals, aberrant behavior, and premature loss of critical fat reserves which is thought to lead to starvation prior to spring emergence (Frick et al. 2010). It has been determined that *P. destructans* is the primary cause of death (Lorch et al. 2011).

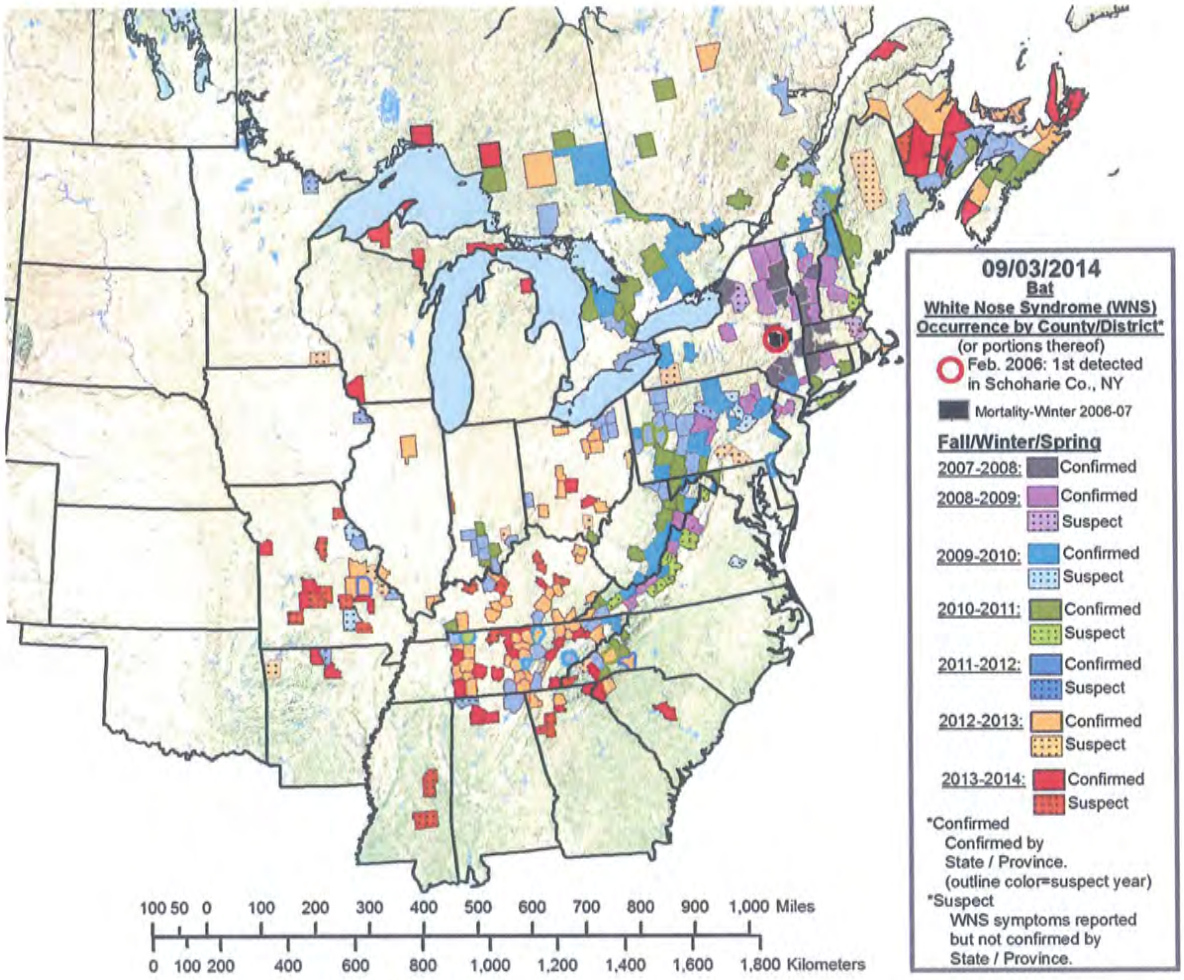
It is believed that WNS is primarily transmitted through bat-to-bat contact. In addition, people may unknowingly contribute to the spread of WNS by visiting affected caves and subsequently transporting fungal spores to unaffected caves via clothing and gear (Service 2011). Within the U.S., WNS has been confirmed on the Indiana bat, cave myotis (*Myotis velifer*), gray bat (*Myotis grisescens*), little brown bat (*Myotis lucifugus*), eastern small-footed bat (*Myotis leibii*), northern long-eared bat (*Myotis septentrionalis*), southeastern bat (*Myotis austroriparius*), tri-colored bat (*Perimyotis subflavus*), and big brown bat (*Eptesicus fuscus*).

First documented in a New York Cave in 2006, WNS has since spread to 25 states and five Canadian provinces (Service 2014) (Figure 4), including over 50 known Indiana bat hibernacula. Affected hibernacula typically exhibit significant mortality (Service 2013). WNS has resulted in significant population declines in the Northeast and Appalachian RUs. Between 2007 and 2011, the Northeast RU lost 70 % of its Indiana bat population (Service 2013). WNS is spreading rapidly throughout the rest of the Indiana bat's range. WNS continues to be found at an increasing number of sites throughout the Midwest RU. In March 2011, the first case of WNS was confirmed in Ohio, in an abandoned mine in Lawrence County. Currently, 16 counties in Ohio, including Summit County, have been confirmed as WNS positive (ODNR 2014). Declines

in Indiana bat populations are apparent. As the disease spreads, further declines in populations are expected. The Service, with the help of States, researchers, and others, is continuing to research this evolving threat. Methods are being evaluated to stop the spread of WNS and to minimize mortality where it currently exists.

Another emerging risk to bat species is the recent increase in the number of wind turbines being constructed and operated. To date, six Indiana bat fatalities have been documented at wind energy facilities. While it is assumed that other Indiana bat mortalities have occurred at wind facilities, these fatalities represent the only documented takings at wind facilities to date.

Figure 4. Range of White Nose Syndrome



Map by: Lindsey Heffernan, PA Game Commission

Take of Indiana bats has been authorized in BOs for other actions. In the Midwest RU between 2009 and 2013, BOs have been issued for projects including road and bridge projects, bike trails, hazard tree removal, culverts, timber harvest, military training and land management, forest management plans, railroads, wind power projects, and prescribed burns. Generally, these projects result in take through habitat modification and loss, or lethal take of only a few individuals over a short time frame. These types of projects generally have short term effects.

Take of individuals that may occur from these projects is generally reflected in the baseline of the population estimates generated through the biannual winter surveys.

Population Status. From 1965 to 2001, there was a decline in the range-wide population of the Indiana bat (Service 2007). Despite the discovery of many new, large hibernacula during this time, the range-wide population estimate dropped approximately 57% from 1965 to 2001. The population estimate increased from 2001 – 2007 (451,554 to 590,875 bats) (Service 2013) and then declined again from 2007 – 2009 (590,875 to 534,239 bats). The most recent (2013) population estimate indicates that the range-wide population totals approximately 534,239 Indiana bats (Service 2013). The Midwest Recovery Unit (RU) (Indiana, Kentucky, Ohio, Tennessee, Alabama, SW Virginia and Michigan) supported approximately 56.3% of the 2013 total population estimate (Table 2).

Recovery Unit Trends. Until 2007, the Northeast RU was the fastest growing population of all the RUs (Thogmartin et al. 2012), peaking at 53,763 Indiana bats in 2007 (Service 2013). But the Northeast RU population lost approximately 70% of its Indiana bats between 2007-2011 (Table 2). This decline is attributable to the onset and rapid spread of WNS. Indiana bat population estimates for 2013 indicate that the Northeast RU has increased in the eighth year post-WNS infection (Service 2013), though it is unclear if this increase represents true population growth, immigration from other areas, or other factors. Continued monitoring of population status will yield more conclusive trends as WNS moves through the population over time.

The Appalachian RU also exhibited a strongly increasing trend between 1983 and 2011 (Thogmartin et al. 2012), peaking at 32,468 in 2011 (Service 2013). WNS was first documented in the Appalachian RU in 2008 at several sites in Pennsylvania, but did not spread to the largest hibernacula in West Virginia and Tennessee until 2010 or later. Population estimates for 2013 indicate a decline of 45.8% in the Appalachian RU from 2011 estimates (Service 2013). Appalachian RU-wide population declines due to WNS were not documented until five years post-WNS.

The Midwest RU population estimates increased between 1983 and 2009. However, wide confidence intervals around the estimates preclude definitive statements about population increase during that time period (Thogmartin et al. 2012). The population estimate peaked in 2007, at 320,342 Indiana bats (Service 2013). WNS was first detected in multiple states within the Midwest RU in 2011. 2013 population estimates indicate a roughly stable population estimate compared to 2011 estimates (Service 2013). Significant declines have been observed at some individual hibernacula, while significant increases have been observed at others (Service unpublished 2014). Surveys conducted in 2014 at Ohio's largest hibernaculum, which supported approximately 9,000 Indiana bats in 2012, indicate that the total bat population has declined dramatically since 2012 (Lott, 2014 pers. comm.). In addition, 2014 survey results from the Lawrence hibernaculum in Ohio did not detect any Indiana bats (Schultes 2014). Declines in all bat species are also being observed in hibernacula in Indiana. Surveys conducted during the winter of 2013-2014 at 11 hibernacula indicate that numbers of all-bat species combined, declined by 69% compared to numbers from two years ago (Johnson 2014 unpublished data). The Midwest RU has not yet documented RU-wide declines from WNS to the extent that the

Northeast saw in the first 3 years post-infection. It is possible that the Midwest RU may behave similarly to the Appalachian RU, in that there may be a time lag between when WNS is first observed and when RU-wide impacts are observed.

Table 2. 2013 Range-wide Population Estimate for the Indiana Bat (*Myotis sodalis*) by RU.4

IBat Recovery Unit	State	2005	2007	2009	2011	2013	% Change from 2011	% of 2013 Total
Ozark-Central	Illinois	55,090	53,823	53,342	55,956	57,074	2.0%	10.7%
	Missouri*	139,038	138,831	136,624	138,379	139,772	1.0%	26.2%
	Arkansas	2,067	1,821	1,480	1,206	856	-29.0%	0.2%
	Oklahoma	2	0	0	13	5	0.0%	0.0%
	Total	**196,197**	**194,475**	**191,446**	**195,554**	**197,707**	**1.1%**	**37.0%**
Midwest	Indiana	206,610	238,068	213,244	225,477	226,365	0.4%	42.4%
	Kentucky	65,611	71,250	57,325	70,598	62,233	-11.8%	11.6%
	Ohio	9,769	7,629	9,261	9,870	9,259	-6.2%	1.7%
	Tennessee	3,221	2,929	1,657	1,791	2,337	30.5%	0.4%
	Alabama	296	258	253	261	247	-5.4%	0.0%
	SW Virginia	202	188	217	307	214	-30.3%	0.0%
	Michigan	20	20	20	20	20	0.0%	0.0%
	Total	**285,729**	**320,342**	**281,977**	**308,324**	**300,675**	**-2.5%**	**56.3%**
Appalachian	West Virginia	13,417	14,745	17,965	20,296	3,845	-81.1%	0.7%
	E. Tennessee	8,853	5,977	11,058	11,096	13,200	19.0%	2.5%
	Pennsylvania	835	1,038	1,031	519	120	-76.9%	0.0%
	Virginia	567	535	514	556	418	-24.8%	0.1%
	North Carolina	0	0	1	1	1	0.0%	0.0%
	Total	**23,672**	**22,295**	**30,569**	**32,468**	**17,584**	**-45.8%**	**3.3%**
Northeast	New York	41,745	52,779	33,172	15,654	17,772	13.5%	3.3%
	New Jersey	652	659	619	409	448	9.5%	0.1%
	Vermont	313	325	64	61	53	-13.1%	0.0%
	Total	**42,710**	**53,763**	**33,855**	**16,124**	**18,273**	**13.3%**	**3.4%**
Rangewide Total:		**548,308**	**590,875**	**537,847**	**552,470**	**534,239**	**-3.3%**	**100.0%**
	2-yr. Net Change:		**42,567**	**-53,028**	**14,623**	**-18,231**		
	2-yr. % Change:		**7.8%**	**-9.0%**	**2.7%**	**-3.3%**		

*A previously unknown Indiana bat hibernaculum was discovered in Missouri in 2012. This new Priority 1 site contained approximately 123,000 bats when photographically surveyed in January 2013. Based upon first-hand accounts of very large clusters/numbers of hibernating bats being observed at this site for several decades prior to its discovery by bat biologists, the Service decided to add the same number of bats as was found in 2013 to each previous biennium through 1981. Incorporating the newly discovered bat numbers in this manner, improved the accuracy of the Missouri, Ozark-Central Recovery Unit and rangewide population estimates over those reported in previous years and avoided an artificial spike in population trends.

The Ozark RU declined by 81% between 1983 and 1999, to a low of approximately 34,000, but then increased significantly to 73,261 in 2005 (Thogmartin et al. 2012). The population hovered around 70,000 through 2011. In 2012-2013 a new Priority 1 (P1)[1] Indiana bat hibernacula was discovered in the Ozark RU, supporting approximately 110,000 Indiana bats. Based on multiple

[1] A hibernacula where > 10,000 Indiana bats overwinter.

reports of large numbers of bats using the hibernacula for multiple decades the population estimates for previous years were revised. Presence of WNS was suspected in the Ozark RU in 2010, but not confirmed until 2012. Population estimates for 2013 indicate that the population remains stable with 197,707 Indiana bats. According to the most recent data, WNS has spread throughout Missouri. Some all-bat hibernacula populations have declined 50-90% and declines have been observed in hibernating bats of multiple species (Marquardt, 2014 pers. comm.).

According to the Service's Regional and National WNS coordinators (R. Geboy, J. Coleman, J. Reichard, and C. Kocer, personal communication), it is fully anticipated that Indiana bat populations in each of the RUs infected with WNS will experience WNS declines on par with the declines observed in the Northeast RU. Based on similarities in climate, population dynamics, and hibernation periods and behavior between the Indiana bat RUs, we have no reason to expect that Indiana bat populations in the Midwest, Appalachian, and Ozark RUs would behave any differently than the Northeast RU when exposed to WNS. In Ohio, recent censusing at two hibernacula have documented a dramatic decline in Indiana bats. A survey of the Lawrence County hibernaculum revealed a decline of 100% of Indiana bats in two years (Schultes 2014). 2014 survey results for the Preble County hibernaculum are preliminary but observations indicate a substantial decline at this site as well (Keith Lott, pers. comm.). In the next few years we anticipate large declines in the Indiana bat populations within each RU as WNS continues to spread and additional bats are infected.

Recovery Needs

To recover the Indiana bat, it is important to ensure genetic representation, redundancy (populations distributed across the landscape) and resiliency (sufficiently large populations). To do this, we must address the following needs:

1. Maintaining the current winter and summer range of Indiana bat. The key steps of conserving and managing Indiana bats across the species range include establishing Indiana bat RUs, and maintaining self-sustaining Indiana bat populations in each RU.

2. Conserving and managing winter colonies and hibernacula. The key steps in conserving and managing winter colonies and hibernacula include: Maintaining both large and small hibernating populations; maintaining or providing appropriate physical structure, airflow, and microclimate of the hibernacula; maintaining forest habitat surrounding hibernacula; avoiding disturbance of hibernating bats which can lead to excessive arousal and premature depletion of fat reserves; and minimizing disturbance of bats during the swarming period that can lead to disruptions in mating and foraging activity.

3. Conserving and managing maternity colonies. The key steps in conserving and managing maternity colonies include: locating maternity colonies in each RU via spring emergence radio tracking or summer surveys; Ensuring a sufficient number of self-sustaining maternity colonies persist in order to support the regional population (i.e., RU population) by managing and controlling threats acting singly and cumulatively upon the fitness of maternity colonies; and, maintaining the ecological processes that ensure the continued availability of roosting, foraging, and commuting habitat needed to support maternity colonies.

4. Conserving migrating Indiana bats. The key steps in conserving and managing migrating Indiana bats include: understanding Indiana bat migration, including migratory routes, behaviors and differences between fall and spring migration; maintaining safe and suitable migration pathways across the species range; conserving and managing important stopover habitat, if such habitat is deemed necessary; identifying limiting factors and managing threats during migration, including minimizing/managing fatalities due to wind energy.

5. Managing the effects of WNS. There is currently no effective treatment for WNS. The key steps of managing the impacts of WNS may include: avoiding/minimizing the transmission of *P. destructans*; implementing measures to control *P. destructans* should effective, non-harmful measures become available; and restoring and protecting populations affected by WNS, with emphasis on populations that are seemingly more resilient to the disease.

Environmental Baseline

The 68-acre action area is located in a mixed-use area of Summit County, Ohio, and includes the 1.5-acre project site and surrounding 800-foot buffer. The 1.5 acre project site consists of undeveloped forested area, scrub/shrub vegetation and a 0.227-acre forested wetland and contains suitable Indiana bat roosting and foraging habitat. The surrounding properties within the action area are partially wooded and non-wooded residential and commercial properties, and associated roads and parking lots. Wooded areas are typically fragmented within residential lots. Limited forested connectivity exists among forested areas in the action area and larger forested parcels outside of the action area.

Status of the Species in the Action Area

In order to assess the potential for the Indiana bat to occur within the action area, the Service must formulate reasonable assumptions. These assumptions must be made in order to analyze the potential effects of the action. It is important to note that the Service has been mandated by Congress to provide the benefit-of-the-doubt to federally-listed species (H.R.Conf. Report No. 697, 96th Cong., 2d Session, 1979). That is to say, the Service must err on the conservative side (the side of the species) when making reasoned assumptions.

Summer: A post-lactating Indiana bat was captured 1.7 miles north of the action area in August 2004 (Mike Johnson, MPSSC, pers. comm.), indicating the likely presence of a maternity colony within close proximity to the action area.

The Service estimates that the maternity colony north of the action area is composed of approximately 80 adult female Indiana bats. This estimate is based on the following factors: (1) most documented maternity colonies are typically made up of 50 to 100 adult female bats, and (2) Whitaker and Brack (2002) estimated the average size of a maternity colony is approximately 80 adult female Indiana bats. Additional young (up to one juvenile per year per female bat) are likely present during the summer maternity season.

Female Indiana bats have been documented to travel 2.6 miles from their roosting habitat to forage (Murray and Kurta 2004). The female Indiana bat north of the action area was captured while foraging, therefore we assume that the primary and secondary roost trees for the maternity colony are located within a 2.6-mile radius from the capture location. This 2.6-mile radius would include the action area. No suitable primary maternity roost trees have been identified on the 1.5-acre project site, and we assume that the primary maternity roost tree is not located there; however we find it reasonable to assume that one or more female bats may be using the property for roosting and/or foraging, and that their use may be sporadic.

Spring Staging and Fall Swarming: Eight Indiana bats have been captured swarming near two sandstone ledges in Liberty Park, approximately 1.5 miles west of the action area, in the fall of 2004 (Mike Johnson, MPSSC, pers. comm.). Swarming and staging surveys of bats at the entrances to the sandstone ledges during spring and fall 2003-2009 have documented a variety of bat species utilizing the ledges for hibernation. Little brown bats, northern long-eared bats, big brown bats, and tri-colored bats have been documented by emergence surveys at the ledges in spring, indicating that the ledges are serving as a hibernaculum for these species (Mike Johnson, MPSSC, pers. comm.). Because Indiana bats have only been captured during the fall and not during the spring, and because the interior of the ledges cannot be accessed to determine conclusively if Indiana bats are hibernating there, the Service cannot definitively state that these ledges are serving as a hibernaculum for Indiana bats. But we assume that they are hibernating there based on the presence of Indiana bats swarming in the fall (Mike Johnson, MPSSC, pers. comm.), the presence of visibly suitable hibernation habitat, and the presence of other hibernating bat species that are commonly found to share hibernacula with Indiana bats at other locations (Brack et al. 2003). Multiple studies have documented Indiana bats roosting and foraging within 1.5 miles of hibernacula during the fall swarming period. Because the action area lies within 1.5 miles of the hibernaculum the Service believes it is reasonable to assume that a small number of Indiana bats use wooded portions of the action area for roosting and foraging during the spring staging and fall swarming seasons.

In summary, suitable Indiana bat roosting and foraging habitat is present in the action area. The project site is approximately 1.7 miles south of a summer capture of a post-lactating Indiana bat, and 1.5 mile west of Liberty Park, which we believe contains an Indiana bat hibernaculum. We assume that Indiana bats use the project site during the fall swarming and spring staging period, as well as during the summer. Given the small size of the action area and its overall developed land uses, the number of Indiana bats that use the action area is likely low, although we cannot determine exact numbers.

Factors Affecting Species Environment in the Action Area

The entire action area, with the exception of the project site and two undeveloped adjacent residential lots, is "built out" with commercial and residential development. It is likely that these past developments resulted in a loss of suitable Indiana bat roosting and/or foraging habitat. These developments have also resulted in fragmentation of the remaining roosting and foraging habitat in the action area.

Effects of the Action

In evaluating the *effects of the action*, section 7 of the Act and the implementing regulations (50 CFR §402) require the Service to consider both the direct and indirect effects of the action on the species. *Direct effects* are those effects that have immediate impacts on the species or its habitat while *indirect effects* are those that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur.

The *effects* evaluation is necessary to make the required determination under 7(a)(2), of insuring the Federal action does not jeopardize the continued existence of the species, or result in the destruction or adverse modification of designated critical habitat. *Jeopardize the continued existence* of a species means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. The following analysis will evaluate the effects of the proposed project in relation to the reproduction, numbers and distribution of the Indiana bat within the action area, and then further evaluate these effects in the context of the overall range-wide species status and cumulative effects to the species.

Beneficial Effects

The Applicant proposes to donate $22,500 to Summit Metro Parks to purchase and protect suitable Indiana bat habitat. This conservation measure will help ensure that approximately 1.5 acres of Indiana bat roosting and foraging habitat is preserved, and remains suitable for fall swarming, spring staging, and summer maternity roosts.

Direct Effects

The Applicant has proposed to begin tree clearing activities on approximately 1.25 acres of the project site on October 1, 2014, after the summer maternity season but during the fall swarming period. Prior to November 15, 2014, we believe Indiana bats are using suitable habitat within the project area for roosting and foraging prior to entering hibernation. Potential direct effects to the limited number of Indiana bats that may be using the 1.25 acres of suitable habitat include injury, mortality, and harm caused by displacement from roosting and foraging habitat.

Injury and mortality may occur if roost trees are cut down when occupied by Indiana bats. As roost trees are cleared with mechanized equipment, they may fall on top of roosting bats, injuring or killing the bats. Additional adverse effects from tree clearing during the fall swarming season may include harm caused by displacement from 1.25 acres of foraging habitat. Foraging during fall swarming is critical to Indiana bats, to build up fat stores prior to winter hibernation. Loss of this foraging habitat during the fall swarming season may cause reduced foraging efficiency and reduced fitness (i.e., reduced fat stores) prior to hibernation. Habitat removal will also fragment surrounding suitable habitat in the action area, reducing the quality of that habitat for Indiana bat roosting and foraging.

Indiana bats remaining in the action area but outside of the clearing footprint during construction may be harmed by the effects of noise disturbance from clearing, grading and construction activities. As a result, Indiana bats in the action area will be exposed to noise levels that they may not have experienced in the past, depending on the proximity of their roost sites to other human activities nearby. The current ambient noise within the action area varies depending on the proximity to existing activities. The impact of increased noise may occur up to 800 ft from the project site. Any bats roosting in the action area that are unaccustomed to this disturbance may leave their roosts, expending additional energy to find alternative suitable roosts, thereby reducing fat stores available to get through hibernation.

Considering the small amount of habitat to be cleared during the fall swarming season (1.25 acres) and the assumed small number of bats using the project area, it is likely that only a small number of Indiana bats may be injured, killed, or harmed. The Service estimates that up to two Indiana bats may be injured, killed, or harmed by tree clearing activities associated with project.

Indirect Effects

Fall Swarming/Spring Staging Habitat. Once construction is complete, 1.5 acres of suitable roosting and foraging habitat likely used by Indiana bats as spring staging and fall swarming habitat will be lost. When Indiana bats emerge from hibernation, they have typically depleted most of their fat reserves and must forage to have sufficient energy to migrate to summer habitat. Upon finding that former spring staging habitat within the project area has been lost, bats may have to travel to alternate areas to forage. Somewhat decreased fitness of a small number of Indiana bats may result. Similarly, when bats find that fall swarming habitat has been lost, they may have to find alternate areas to forage and mate, prior to hibernation, and decreased fitness of some individuals may result. However, because large amounts of forested habitat remain within 5 miles of the presumed hibernaculum, the Service anticipates that any indirect adverse effects from loss of spring staging and fall swarming habitat will be insignificant.

Summer Habitat. Loss of 1.5 acres of suitable roosting and foraging habitat likely used by Indiana bats during the summer will be lost. When Indiana bats return to their summer home-ranges, they may have to travel to find alternate roosting and foraging habitat. However, the project site did not contain any suitable primary maternity roost trees. In addition, because large amounts of forested habitat remain within the 5 mile-radius assumed to include the home range of the maternity colony, the Service anticipates that individuals of the colony will successfully locate new alternate roosts shortly after returning to their summer home range. The Service anticipates that any indirect adverse effects from loss of summer roosting and foraging habitat will be insignificant.

Summary of Effects

The Service anticipates that Indiana bats will incur both direct and indirect effects from the proposed construction of the Young Explorers Daycare. Direct effects include injury and/or mortality from clearing suitable roosting habitat during the fall swarming season, as well as harm caused by reduced fitness associated with displacement from suitable roosting and foraging habitat during the fall swarming season. Indirect effects are expected to be insignificant, and

include loss of 1.5 acre of suitable roosting and foraging habitat used by Indiana bats in spring, summer, and fall. We believe that it is likely that up to two Indiana bats may be taken by the proposed project due to the direct effects from tree clearing during the fall swarming season. Therefore, we expect a very minimal reduction in numbers of Indiana bats due to the proposed action. It is unlikely that this minimal reduction in numbers will significantly affect the Indiana bat population hibernating at Liberty Park. In addition, if female bats are taken, the small number taken is unlikely to affect the viability of the maternity colonies to which they belong. The preservation of 1.5 acres of forest will help provide roosting and foraging habitat for Indiana bats during the spring, fall, and summer seasons.

Cumulative Effects

Cumulative effects are effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur in the action area (50 CFR 402.02). Most of the action area outside of the proposed site is already dedicated to permanent uses including residential communities and commercial facilities. Two wooded, undeveloped residential lots totaling approximately 1.25 acres are located immediately east of the project site. It is likely that forest structure in these two lots is similar to the project site, and therefore, that suitable Indiana bat roosting and foraging habitat is present. Given that these lots are part of an existing residential development, it is reasonable to assume that a single family home will be built on each of these two lots in the foreseeable future, and that all or a portion of the suitable Indiana bat habitat will be removed. The National Wetlands Inventory does not identify wetlands on this site and for the purposes of this analysis we will assume that future development of these lots will not require a section 404 permit from the Corps.

It is possible that tree clearing associated with these activities could injure, kill, or harm individual Indiana bats, depending on the amount of trees cleared and the time of year that tree clearing occurs. However, the scale of these impacts would not result in habitat loss that would significantly impact the quantity or distribution of suitable habitat within the action area and would not result in population-level impacts. Therefore, we do not anticipate significant cumulative effects from the proposed action, combined with other reasonably foreseeable non-Federal actions.

Conclusion

Jeopardy analysis

Implementing regulations for section 7 of the ESA (50 CFR 402) defines "jeopardize the continued existence of" as, "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."

Jeopardy determinations for Indiana bats are made at the scale of the listed entity, which is the range wide distribution of the species (32 FR 4001). The jeopardy analysis in this BO follows a hierarchal relationship between units of analysis that characterize effects at the lowest level or smallest scale, and then aggregated to the highest level or largest scale of analysis.

As described in the effects of the action section in this BO, we anticipate the take of up to two Indiana bats through injury, mortality and/or harm. It is our opinion that the impact of the taking on the Indiana bat population swarming at the Liberty Park hibernaculum is not likely to appreciably reduce the likelihood of survival and recovery compared to the baseline condition. Because the project is unlikely to reduce the likelihood of survival and recovery of this population unit, the project is also unlikely to reduce appreciably the likelihood of survival and recovery of Indiana bats at the Midwest RU and range-wide scales.

After reviewing the current status of the Indiana bat, the environmental baseline for the action area, the effects of the proposed Young Explorers Daycare, and the cumulative effects, it is the Service's biological opinion that the construction and operation of the Young Explorers Daycare, as proposed, is not likely to jeopardize the continued existence of the Indiana bat.

No critical habitat for Indiana bats is designated within or near the action area. Physical impacts to suitable habitat from the proposed actions are anticipated to be localized and not likely to impact critical habitat at broader geographic scales. Therefore, it is the Service's biological opinion that the actions as proposed, are not likely to destroy or adversely modify Indiana bat critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Applicant for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps fails to enforce the terms and conditions of the incidental take statement the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [150 CFR §402.14(i)(3)].

Amount or Extent of Take Anticipated

The Service anticipates that incidental take of Indiana bats will be difficult to detect for the following reasons: the species is highly mobile; the species occurs in habitat (e.g., trees) that

makes detection difficult; and finding dead or moribund bats is unlikely due to a small body size and the likely scavenging of specimens by predators. However, based on the proposed project as described within and the conservation measures provided, we anticipate that incidental take of up to two Indiana bats will occur in the form of injury, mortality and/or harm due to the direct effects caused by clearing of 1.5 acres of roosting and foraging habitat on the project site during the fall swarming period and the temporary effects to adjacent areas from construction noise.

Effect of the Incidental Take

In the accompanying biological opinion, the Service determined that, based on the proposed project and the conservation measures described within, this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of Indiana bats. These measures are nondiscretionary:

1. Implementation of all conservation measures proposed by the Applicant.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps and Applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. The Corps will include implementation of the conservation measures as detailed in Appendix A as a special condition of the Nationwide Permit Authorization.

2. The Applicant will implement the proposed conservation measures included in Appendix A.

3. The Applicant will report any dead bats located within the construction limits, regardless of species, to OHFO [(614) 416-8993], and subsequently transport them (frozen or on ice) to OHFO. No attempt should be made to handle any live bat, regardless of its condition; report bats that appear to be sick or injured to OHFO. OHFO will make a species determination on any dead or moribund bats.

In conclusion, the Service anticipates that up to two Indiana bats will be taken and 1.5 acres of forested roosting and foraging habitat will be permanently lost. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and

review with the Service the need for possible modification of the reasonable and prudent measures.

REINITIATION NOTICE

This concludes formal consultation with the Corps on the construction and operation of the proposed Young Explorers Daycare in Twinsburg, Summit County, Ohio. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if. (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. A final listing decision for the proposed northern long-eared bat (*Myotis septentrionalis*) is expected by April, 2015. If and when the northern long-eared bat is listed, consultation must be reinitiated if additional tree clearing will occur. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. For this biological opinion the incidental take would be exceeded when any of the following occur: 1) more than two Indiana bats are taken or 2) more than approximately 1.5 acre of wooded habitat is cleared. For further coordination please contact Jeromy Applegate, (614) 416-8993 ext. 21 of this office.

Signature: F D M C

Title: Acting Field Supervisor

Date: 10-01-14

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Appendix A: Conservation Measures

DAVEY
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September 30, 2014

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RE: **Endangered Species Reporting**—*Indiana Bat Biological Opinion Conservation/Mitigation. Cianci Builders, Twin Hills Parkway, Twinsburg, Summit County, Ohio (Corps Id 2014-00719)*

Dear Mr. Applegate:

Listed below are the conservation and mitigation measures required for the Biological Opinion for Indiana bat (*Myotis sodalis*) at the Twin Hills Parkway development in Twinsburg.

CONSERVATION MEASURES

1. Of the 1.5-acre site, 0.25 acre of forested habitat will be temporarily preserved in a natural state to allow potential bats in the area to use a portion of this site for roosting, foraging, swarming, and/or staging habitat. When the temporary preservation area is cleared, Cianci Builders will follow the winter clearing dates of November 15 through March 1.
2. In order to ensure adequate time to meet the project's construction deadlines, site preparation and development will need to begin October 1, 2014. The main construction taking place at this time would consist of tree removal, grading, and construction of the building's foundation. To prevent any disturbance to the 0.25 acre of habitat remaining on the site, a silt fence and orange construction fencing will be used to demark buffer areas to prevent construction equipment from degrading or disturbing this temporary preservation area.

MITIGATION MEASURES

1. To mitigate the potential loss of bat habitat identified on the Twin Hills Parkway project site, preservation of Indiana bat habitat will occur at Summit Metro Parks. As stated in Section 2 of the Species Mitigation Agreement (Appendix A), mitigation will involve the following:

   A. The purchase of forested land adjacent to Liberty Park where Indiana bats have historically been known to exist. In the event that the property adjacent to Liberty Park is not consummated, Metro Parks shall substitute the purchase of another property that is acceptable to USFWS.

   B. The property boundaries purchased with the mitigation fee funds will be marked with carsonite posts and identified as a Summit Metro Parks conservation area.

At $15,000 per acre, with a 1:1 ratio, the total amount of compensation provided to Metro Parks will be $22,500. The total sum will be provided to Metro Parks upon completion and approval of the Section 7 Consultation conducted by USFWS and USACE.

The area being proposed for preservation is high quality habitat adjacent to the Liberty Park conservation area. The focal point of Liberty Park consists of a series of sandstone ledges. These ledges are unique in that they have formed true caves with well-developed subterranean habitats. Several of these caves have been documented in the past to support extensive hibernacula for a number of bat species, including the Indiana bat. In addition to the hibernacula, the park and surrounding areas support excellent fall swarming areas, summer maternity habitats, foraging areas, and well defined flight corridors for nearly all of Ohio's bat species. By providing preservation through Summit Metro Parks, any potential impacts to bat habitat on the Twin Hills Parkway site will be sufficiently mitigated through the proposed preservation.

If you have any questions or need additional information, please contact me at 330-673-5685, ext. 8111.

Sincerely,

Amy Allen, Biologist
Natural Resource Consulting

SPECIES MITIGATION AGREEMENT

SUMMIT METRO PARKS
AND

_____

This SPECIES MITIGATION AGREEMENT ("Agreement") is entered as of 9/23/2014, 2014 by and between Cianci Builders (hereafter "Permittee") and Summit Metro Parks ("Implementer").

I. OBLIGATIONS OF THE PERMITTEE

The following requirements are the Permittee's obligations to Implementer ("Permittee's Obligations"):

A. The Permittee is obligated by the U.S. Fish and Wildlife Service (USFWS) to mitigate impacts to 1.5 acres of Indiana Bat (*Myotis sodalis*) habitat at a 1:1 ratio.

B. In order to satisfy its obligations to USFWS, the Permittee hereby agrees to pay to Implementer $15,000 per acre of required habitat (the "Mitigation Fee") for Implementer to conduct the mitigation activities defined in Section II of this Agreement. At a 1:1 ratio, said Mitigation Fee shall not exceed $22,500. Permittee shall make a non-refundable $500 deposit (the "Deposit") to Implementer, thereby guaranteeing that Implementer shall not offer the mitigation opportunity shown in Attachment A and described in Section IIA below to any other party, and said Deposit shall be deducted from the Mitigation Fee. The Deposit shall not be refunded to Permittee for any reason other than Implementer's failure to purchase the mitigation property shown in Attachment A or a substitute property as described in Section IIA.

C. The Mitigation Fee will be payable to Implementer within thirty (30) days of the execution of this Agreement and approval of the terms of this Agreement by USFWS.

D. The Permittee and Implementer are aware that this Agreement will be used by the USFWS to document the implementation of the mitigation activities required by the Permittee.

E. Except for Implementer's obligations as described in this Agreement, it is the Permittee's sole responsibility to comply with all other requirements of the USFWS, and any other applicable regulatory agency or other requirements.

F. Permittee will provide Implementer a copy of any correspondence received from any regulatory authority regarding the obligations specified in this Agreement within ten (10) business days of receipt thereof.

II. OBLIGATIONS OF THE IMPLEMENTER

The following requirements are Implementer's obligations to Permittee ("Implementer's Obligations"):

A. Implementer agrees to accept the Mitigation Fee and to direct it solely toward the purchase of forested land, as shown in Attachment A, adjacent to Liberty Park where Indiana Bats (Myotis sodalist) have historically been known to exist. In the event that Implementer's purchase of the property shown in Attachment A is not consummated, Implementer shall substitute the purchase of another property that is acceptable to USFWS. Such substitution would not result in a change in the Permittee's Mitigation Fee.

B. The property boundaries purchased with the Mitigation Fee funds will be marked with carsonite posts and identified as a Summit Metro Parks Conservation Area.

C. The Permittee may submit the executed copy of this Agreement to the USFWS to document its compliance with the Permittee's mitigation requirements.

D. Implementer will have no other obligations or responsibilities to Permittee other than those listed within Section II of this Agreement.

E. Implementer may purchase the property shown in Attachment A or a substitute property as described in Section IIA above prior to final USFWS approval and execution of this Agreement. In such an event, Implementer shall use the Mitigation Fee to reimburse itself after said purchase.

SUMMIT METRO PARKS

Signed By: _____
Keith D. Shy, Director

Date: 9/23/14

Address:
Summit Metro Parks
975 Treaty Line Road
Akron OH 44312

Telephone: (330) 865-8040

Permittee:

Signed By: _____

Date: 09/17/14

Address: 12840 LASER DRIVE
CHESTER TWP, OH 44026

Telephone: 216-390-0947

U.S. Fish and Wildlife Service:

Signed By: _____

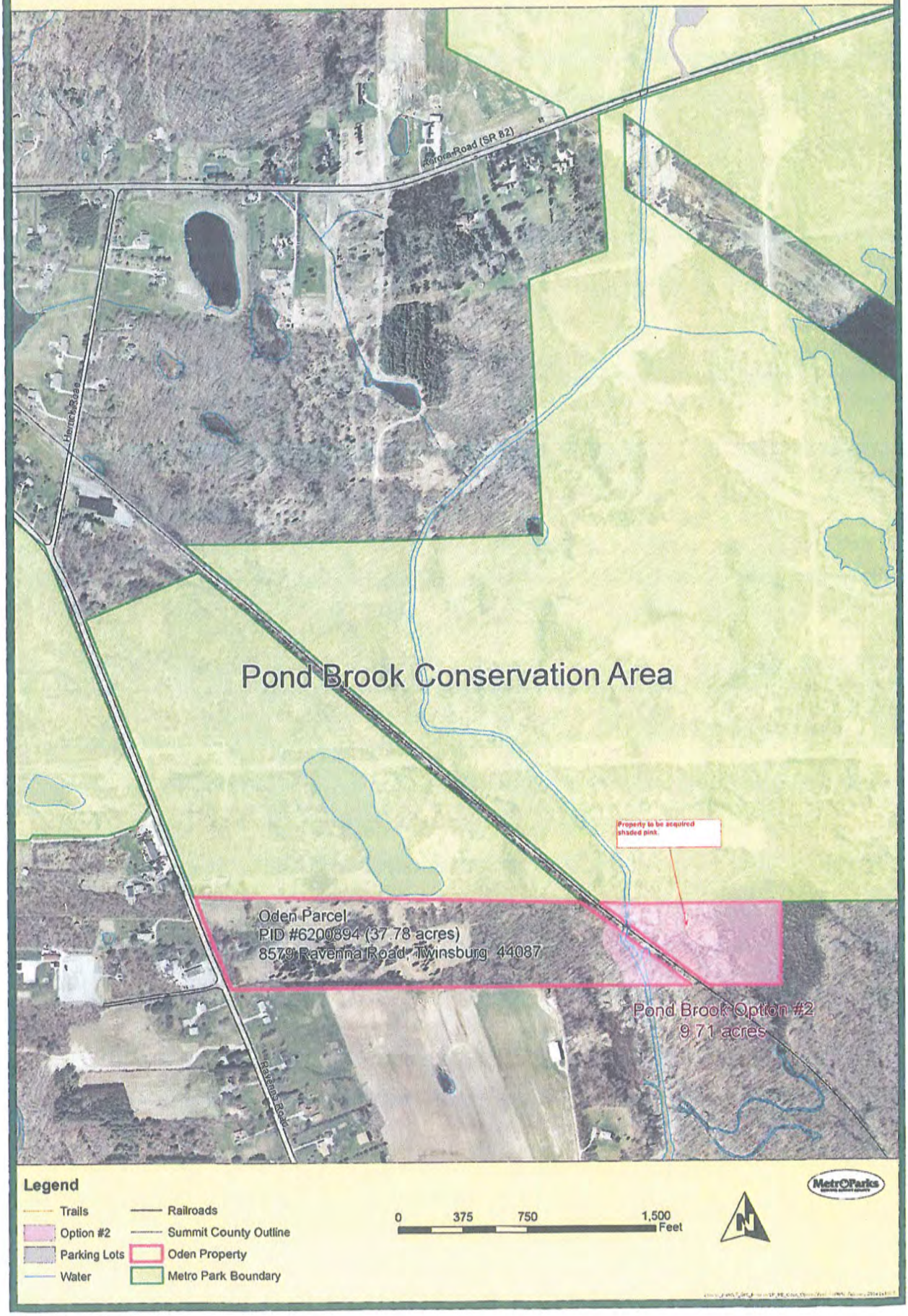
Date: 9/18/2014

Address: 4625 Morse Rd, Suite 104
Columbus, OH 43230

Telephone: 614-416-8993

Attachment A

Liberty Park - Pond Brook South of SR 82



Appendix B: Temporary Tree Preservation Map

Prepared for
Cianci Builders
1.5 Acres, Twin Hills Parkway
Twinsburg, Ohio
Prepared by
DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company
Data used to produce this map were collected on June 26, 2014; revised September 29, 2014
NOTE: Wetlands sizes and stream lengths could change upon overlay of a boundary survey, especially where these features extend outside of or are in close proximity to the shown study limits. Wetlands acreage and stream lengths are calculated for the portion that occurs in the shown study limits.
White Oak Drive
Twin Hills Parkway
= Study area
= Temporary tree preservation area (0.25 acre)
N
W
E
S
GRAPHIC SCALE
0
50
100
(IN FEET)