

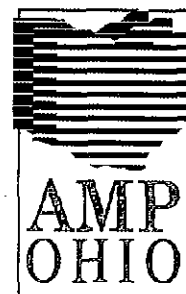
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23 July 2009

PUCO



American Municipal
Power-Ohio, Inc.

Jon Pawley
Ohio Power Siting Board
180 E. Broad Street
Columbus, Ohio 43215

**Re: City of Hamilton Substation No. 4 to Substation No. 13 138 kV Transmission
Line Letter of Notification Application (Case No. 09-0552-EL-BLN);
Kirtland Snake and Eastern Box Turtle Presence/Absence Survey Final Report**

Dear Mr. Pawley:

Please find attached a copy of the Kirtland Snake and Eastern Box Turtle Presence/Absence Survey Final Report. This report was prepared as a supplement to the City of Hamilton's Substation No. 4 to Substation No. 13 138 kV Transmission Line Letter of Notification Application. The report concludes Kirtland snakes do not occur within the project boundaries. Similarly, Eastern box turtles were not found. If Eastern box turtles are found, they would represent an unsustainable relic population.

If I can answer any questions about the report, please contact me at rmeyer@amp-ohio.org or (614) 337-6222.

On behalf of the City of Hamilton,

Randy Meyer

cc: Alan McIntire, City of Hamilton
April Bott, Bott Law Group

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FINAL REPORT
PRESENCE/ABSENCE SURVEY
KIRTLAND'S SNAKE (*CLONOPHIS KIRTLANDII*) and EASTERN BOX
TURTLE (*TERRAPENE CAROLINA*)

**Proposed Site of Transmission Line and Substation 13 at University
Commerce Park Hamilton, Ohio**

Submitted to:

**American Municipal Power-Ohio, Inc.
2600 Airport Drive
Columbus, OH 43230**

**Submitted by:
Jeffrey G. Davis**

July 2, 2009

**Jeffrey G. Davis
625 Crescent Road
Hamilton, Ohio 45013**

1.0 INTRODUCTION

1.1 Purpose

This report presents the findings of an Eastern Box Turtle (*Terrapene carolina*) and Kirtland's Snake (*Clonophis kirtlandii*) Presence/Absence Survey performed at a site where the city of Hamilton, Ohio proposes the construction of an electric substation (Substation 13) and the addition of transmission lines. Kirtland's Snake is a State Endangered Species and the Eastern Box Turtle is a Species of Special Concern in Ohio. OAC 4906-11(D)(1) requires "a description of an applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the area likely to be disturbed by the project".

The Presence/Absence Survey was performed for American Municipal Power-Ohio, Inc. subsequent to a Habitat Survey that resulted in finding habitat suitable for both species at the subject site.

1.2 Site Description

The approximate center of the subject site is located at approximately 39.38508°N 84.55945°W within the southeast quarter of the Hamilton, Ohio USGS Quadrangle. It is situated in the floodplain of the Great Miami River (Figure 1). Site elevation is approximately 600 feet above mean sea level at the point where substation 13 will be constructed and less than 10 feet higher along the transmission line. It is bordered to the north by Carver Place and Knightsbridge Drive, to the east by Pleasant Ave. (State Route 127), and to the west by University Blvd. The City owns the land south of the site and there are no existing roads to the immediate south.

1.3 Eastern Box Turtle and Kirtland's Snake Natural History

Eastern Box Turtles (Figure 2) have a high domed carapace (top shell) and a hinged plastron (lower shell). The ground color of both is predominantly black or dark brown with pale yellow splotches to bold golden yellow markings. Thick colorful scales cover the front surface of the forelimbs. The straight line length of the carapace seldom exceeds 13 cm. Females have brown eyes and a flat plastron while males have red eyes and a concave plastron that allows them to maintain their position on the female's carapace when copulating. The species inhabits old fields, forests, and forest edges in wet to damp areas or areas where ample water is available. Snails, slugs, earthworms, mushrooms, and various fruits comprise the bulk of their diverse diet. Box Turtles hibernate from mid October through mid April under leaf litter in shallow depressions. Mating occurs during spring and nesting takes place in May or June. Reproduction does not occur every year but females can lay fertile eggs as many as seven years after mating as a result of the storage of viable spermatozoa in their spermatheca. Hatching

occurs in August and juveniles are secretive and rarely seen. Their diet is similar to that of adults.

Kirtland's Snakes (Figure 3) are small snakes, seldom exceeding 40 cm in length. Their scales are strongly keeled. The top of the head is enamel black, the chin is white, and the dorsum is brick red to reddish-brown with two rows of black spots down each side. The belly is coral pink with black half moon-shaped markings on each belly scale. They are inhabitants of wet to damp grasslands and lightly wooded areas. They are also often found in low, wet urban areas where debris is available to them for cover. Much of their time is spent in earthworm and crayfish burrows where ample moisture is available. Their diet consists largely of earthworms and slugs. Hibernation occurs in the same burrows they inhabit during the warmer parts of the year. Post-hibernation activity begins in April and with the onslaught of cool weather in October they retreat underground. Mating occurs in spring shortly after emergence and females give birth to live young in July or August. Juveniles have the same diet as adults.

2.0 METHODS

2.1 Site Reconnaissance, Literature Search, and Museum Search

A Habitat Survey was conducted at the subject site on 21 March 2009 to locate any habitat considered suitable for Eastern Box Turtles and Kirtland's Snakes. Every museum with Ohio reptile specimens was checked for voucher specimens for both species from near the subject site. Museums included in the search are listed in Table 1. A literature search was conducted to find any citations that discuss either species in Butler County as well.

2.2 Habitat Evaluation

The Habitat Survey resulted in the subject site being determined as providing habitat suitable for Eastern Box Turtles and Kirtland's Snakes based on finding moist soils; snails, earthworms, and a Redback Salamander (*Plethodon cinereus*) as possible food resources; and for snakes a good deal of debris that could serve as cover for snakes. A Presence/Absence survey was recommended.

2.3 Presence/Absence Survey

A proposal to conduct a Presence/Absence Survey for Kirtland's Snake and Eastern Box Turtles was submitted to AMP-Ohio on 12 April 2009. The proposal was accepted and during the first week of May, vegetation was cleared and thirty coverboards were placed at the subject site. Ten were placed in the depression where Substation 13 will be built (Figure 4) and another 20 were scattered along an existing power line (Figure 5). The latter 20 were within 100 feet, on either side, of the power line. Coverboards consisted of metal road signs (i.e. stop signs) and 2 ft. X 4 ft. corrugated roofing tin

(Figure 6a and 6b). The proposal called for 30 cover boards at the subject site. The City was offered the option of using old road signs as a means of limiting survey costs. Only seven road signs were made available to me so I provided the other 23 coverboards (corrugated roofing tin). Within three days, 22 of the 23 sheets of roofing tin had been stolen, presumably to be sold as scrap metal. None of the road signs were taken. They were marked as city property and selling them as scrap would have been difficult. The stolen coverboards were replaced with ¼ and ½ inch plywood measuring 2 ft. X 2 ft. and 2 ft. X 4 ft (Figure 6c). Thirteen site visits were made one to three times each week starting on 07 May and ending on 01 July, 2009 to turn the coverboards and look for Kirtland's Snakes. Visual searches for Box Turtles were made by walking the subject site on each visit. Dates of site visits are reported in Table 2.

3.0 RESULTS

3.1 Presence/Absence Survey

Fifty-two Eastern Garter Snakes (*Thamnophis sirtalis*) were found under coverboards at the site but no Kirtland's Snakes were found. Where Kirtland's Snakes are found, Garter Snakes are always found, but the opposite is not always true. No Eastern Box Turtles were found at the subject site. Numbers of Eastern Garter Snakes observed per site visit are reported in Table 2 and localities where they were observed are illustrated in Figure 7.

4.0 CONCLUSIONS

Subject site visits were made between early May and early July when the probability of finding Kirtland's Snakes is highest. Because Eastern Garter Snakes and Kirtland's Snakes share habitat and 52 of the former were found but none of the latter were found, I am confident that Kirtland's Snakes do not occur at the subject site. Likewise no Eastern Box Turtles were found and I am equally confident that if any do occur at the subject site, they would represent an unsustainable relic population.

Construction at the subject site will not disturb either the Eastern Box Turtle or Kirtland's Snake.

FIGURES

Figure 1. Aerial Photograph of subject site. Yellow box (SS 13) approximates the proposed location of substation 13 where 10 coverboards were placed. Twenty additional coverboards were placed inside the east-west transmission line, outlined in red.

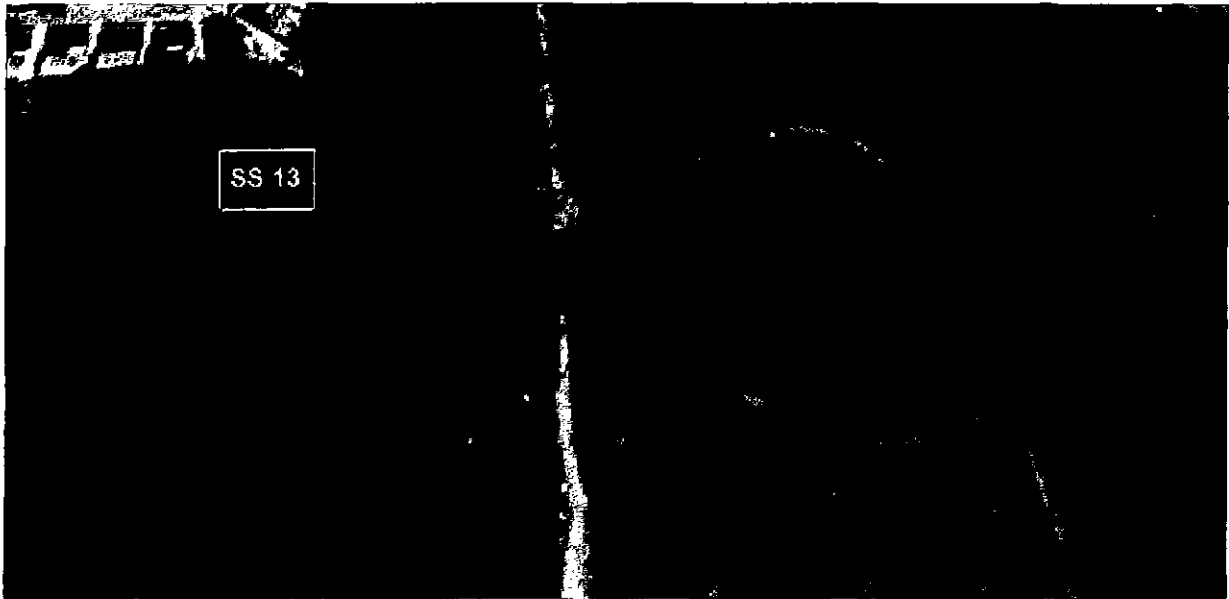


Figure 2. Eastern Box Turtle (*Terrapene carolina*)



Figure 3. Kirtland's Snake (*Clonophis kirtlandii*).

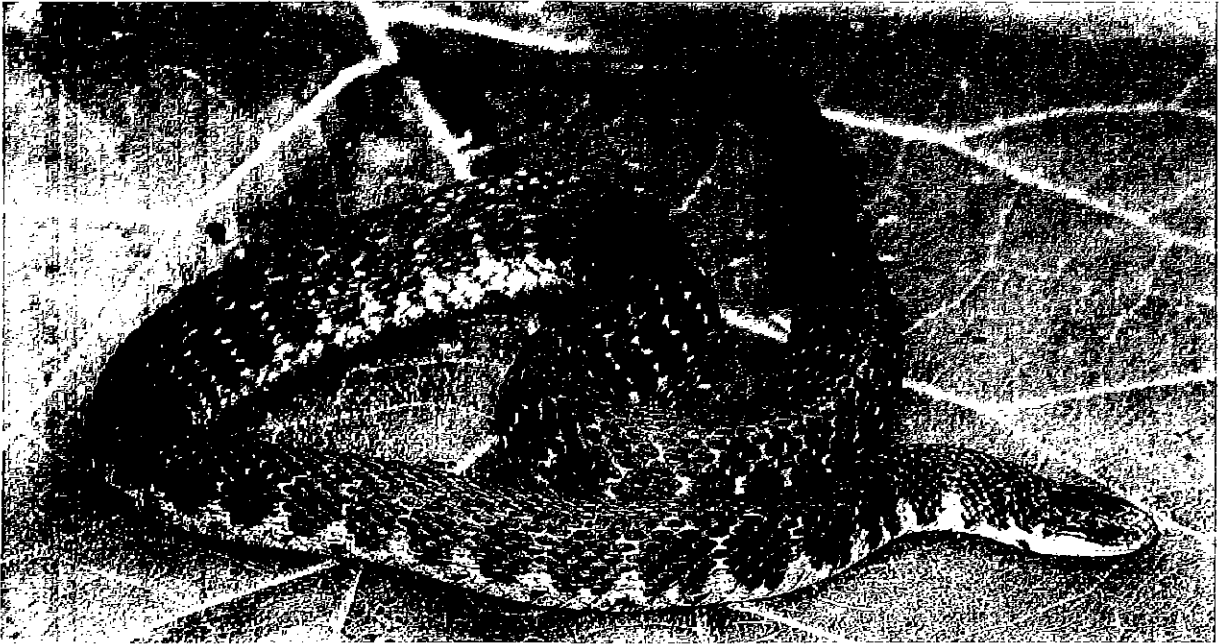


Figure 4. Substation 13 will be built in this slight depression. This photo corresponds to the area labeled "SS 13" in Figure 1. The area is dominated by thick, tall grasses.



Figure 5. Transmission line that extends from east to west across the subject site. Substation 13's position will be to the left of the bottom of this photograph.



Figure 6a. Seven coverboards consisted of old road signs provided by the city of Hamilton.



Figure 6b. Twenty-three coverboards consisted of 2 ft. X 4 ft. sheets of corrugated roofing tin.

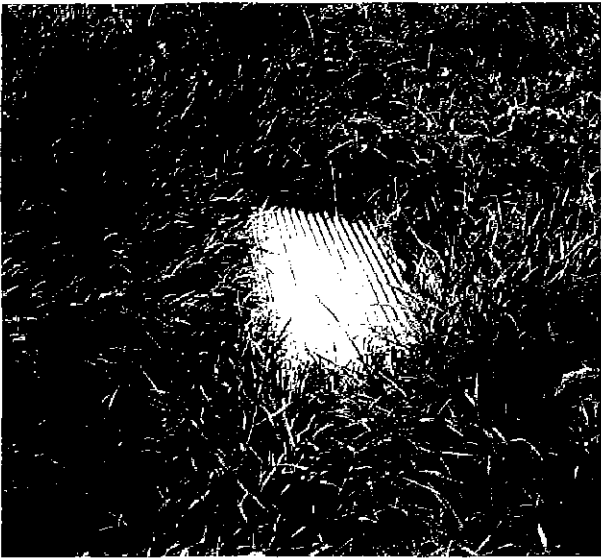


Figure 6c. Twenty-two corrugated roofing tin were stolen and replaced with equal sized plywood.

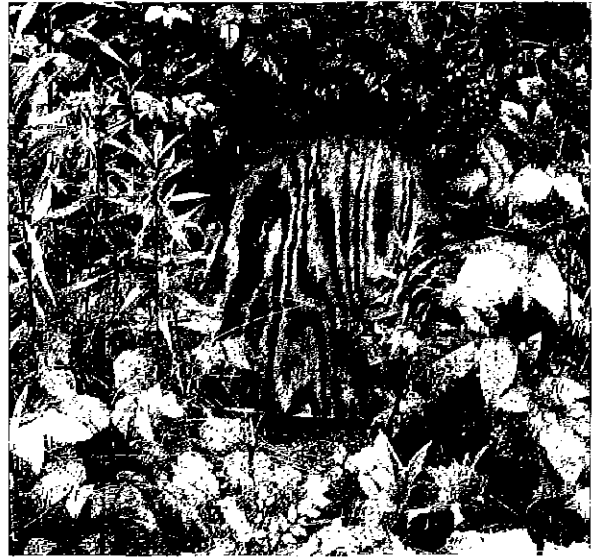
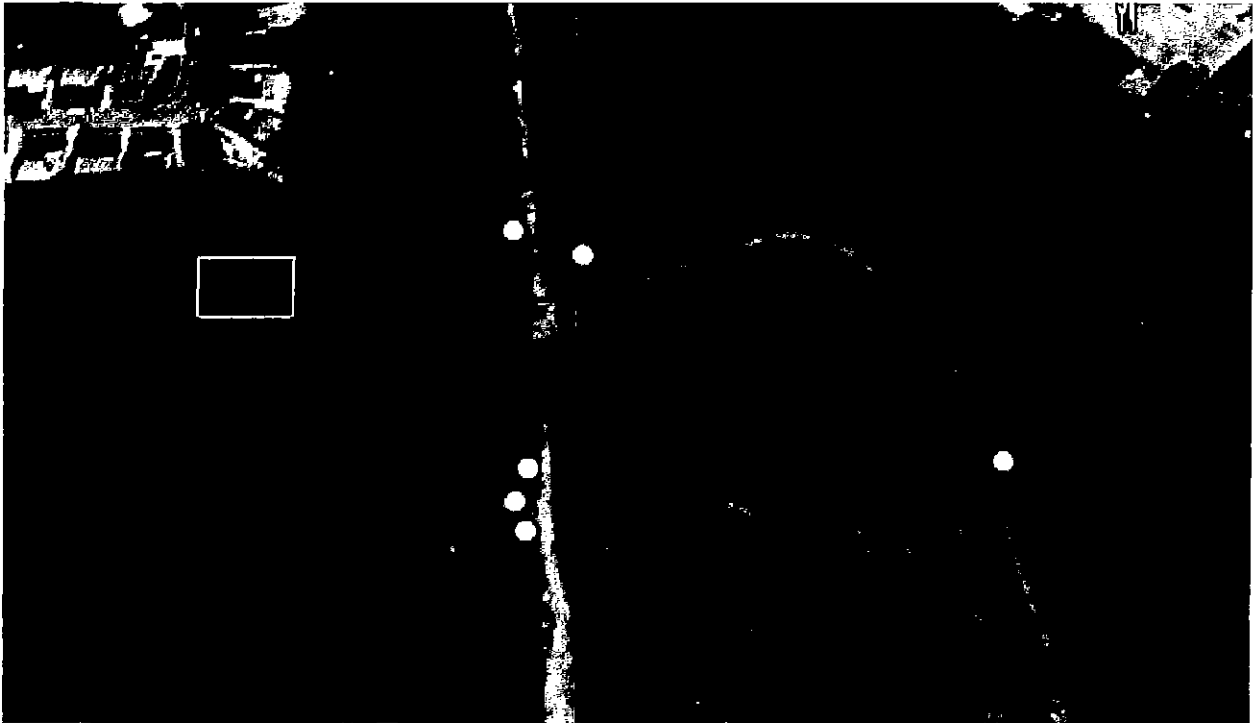


Figure 7. Localities at the subject site where Eastern Garter Snakes were observed. Red dots represent approximate sites where one of more snakes were observed within the study area. Yellow dots represent where one or more snakes were observed under debris around former house sites.



TABLES

Table 1. Museums searched for Eastern Box Turtle and Kirtland's Snake voucher specimens from the vicinity of the study site.

American Museum of Natural History	New York NY
Carnegie Museum of Natural History	Pittsburg PA
Cincinnati Museum Center	Cincinnati OH
Cleveland Museum of Natural History	Cleveland OH
Field Museum of Natural History	Chicago IL
Miami University	Oxford OH
Ohio State University Museum	Columbus OH
University of Michigan Museum of Zoology	Ann Arbor MI
United States National Museum (Smithsonian)	Washington DC
University of Kansas Museum	Lawrence KS

Table 2. Dates of subject site visits and the number of Eastern Garter Snakes observed.

Date of Site Visit (2009)	No. of E. Garter Snakes observed
May 07	1
May 13	3
May 17	3
May 22	4
May 24	3
May 26	6
May 30	4
June 06	2
June 10	7
June 15	5
June 19	4
June 25	7
July 01	3