

Stribley, Sara

Subject: Keystone ENSR - Meeting with MDC
Location: Jefferson City, MO

Start: Tue 2/6/2007 3:00 PM
End: Tue 2/6/2007 5:00 PM

Recurrence: (none)

Meeting Status: Meeting organizer

Required Attendees: Doyle Brown

Hi Doyle,

ENSR would like to meet with you in early February to review the biological surveys that are planned for the Keystone Pipeline Project in 2007 and 2008 in Missouri. Would the following meeting date and time work for you?

Date: Tuesday, February 6, 2007

Time: 3:00 pm

Location: Jefferson City, MO - MDC Office

ENSR is planning on sending you a package by next week containing all of the information regarding the upcoming biological surveys for the Project in Missouri. We are hoping to use the information contained in this package as the template for discussions at the February meeting. Please feel free to invite other MDC representatives if needed. Please let me know at your earliest convenience if you would or would not be able to attend this meeting.

Thanks and Happy New Year,
Sara

Sara Stribley
ENSR | AECOM
1601 Prospect Parkway
Fort Collins, Colorado 80525
970-493-8878 ext 168
sstribley@ensr.aecom.com

FOR INTERNAL KEYSTONE PROJECT USE ONLY

TransCanada – Keystone Pipeline Contact Summary Form

Location of Meeting ENSR

Date/Time of Meeting 1/4/07

Keystone Team
Member(s) Sara Stribley

Contact Information:

Name	Andrew Forbes
Title	Biologist
Organization	Missouri Dept. of Conservation
Address	P.O. Box 180 Jefferson City, MO 65102
County	
Phone	573-751-4115
E-mail address	Andrew.Forbes@mdc.mo.gov

Meeting Information:

Type of Contact (phone, in-person, etc.): E-mail

Issue: King Rail Surveys

Concern Level: High ___ Moderate ___ Low ___

Description:

Patti Lorenz and I had a teleconference with Andrew regarding what would be required for king rail surveys. Andrew had initially sent us the FWS March Bird Protocol to follow for surveys, and we discussed with him that it was not feasible to do this type of research-oriented survey for a linear project such as the REX and Keystone Projects. Andrew stated that he didn't think either project affected much suitable habitat for the king rail. Suitable habitat includes areas near big rivers or extensive wetlands, semi-permanent wetlands with lots of emergent vegetation and cattails and with open water. No farm ponds or farmed wetlands would be considered suitable habitat. Patti suggested that we send a small report to Andrew showing pictures, maps, and datasheets from our wetland surveys (Keystone and REX) of any areas that meet suitable criteria for Andrew to review. We will then reconvene with him to determine further survey requirements. Andrew agreed that this would be acceptable.

Issue: _____

Concern Level: High ___ Moderate ___ Low ___

Description:

December 19, 2006

Doyle Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102

Dear Mr. Brown:

At this time, ENSR Corporation (ENSR) is providing you with a survey report detailing information collected along the Keystone Pipeline Project during the fall of 2006 in Missouri for the federally endangered Topeka shiner (*Notropis topeka*).

Project Description

TransCanada is planning to construct and operate an approximately 1,845-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). The proposed Project would consist of approximately 1,078 miles of new pipeline constructed from the U.S.-Canada border in Cavalier County, North Dakota, to terminals and refineries in Wood River (Madison County) and Patoka (Marion County), Illinois. This pipeline is referred to as the Keystone Mainline. Approximately 283 miles of the Keystone Mainline would parallel the proposed Rockies Express Pipeline - West (REX-West) Project in Kansas and Missouri. In addition, TransCanada proposes to construct a 292-mile pipeline extension (Cushing Extension) that would extend from the Keystone Mainline south from the Nebraska/Kansas border to Cushing, Oklahoma. TransCanada proposes to begin construction of the Keystone Mainline in early 2008, with the system in-service by the end of 2009. Work on the Cushing Extension will begin in late 2009 or early 2010, with a Cushing Extension in-service date of 2010. The project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations, though these facilities will be constructed by local utility companies, not Keystone.

Topeka Shiner Survey Reports

Attached for your review is a report summarizing the Topeka shiner habitat and fish surveys that were conducted on September 14 through 17, October 2 through 4, and December 5, 2006, in **Clinton**, **Caldwell**, and **Chariton** counties, Missouri. The surveys were conducted at stream crossings identified as potential habitat for the Topeka shiner through consultation with the Missouri Department of Conservation (MDC), Missouri Natural Heritage Program (MONHP), and U.S. Fish and Wildlife Service (USFWS).

Based on your review of the survey findings, we are asking for your input and recommendations on further survey efforts for the Topeka shiner that would be required by the MDC. We have provided a "Comments and Recommendations" form to aid in your assessment of the report findings. Please return this form to ENSR at your earliest convenience in order for us to promptly address any concerns. Dr. William Stark (aquatic biologist and report author) will be following up with you in early January to discuss the report in more detail and to consult on any further surveys that would be required for this species.

Doyle Brown
December 19, 2006
Page 2

Additional copies of this report have been sent to John Cochnar (Nebraska USFWS - Project Lead) and Doug Novinger (MDC). If you have any questions regarding the enclosed materials, you may also contact me at (970) 493-8878 ext. 181 or by email at cjohnson@ensr.aecom.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles Johnson", followed by a horizontal line.

Charles Johnson
Senior Wildlife Biologist

CJ/sc

Enc. A Field Survey of Suitable Habitat and Fish Sampling for the Topeka Shiner (*Notropis topeka*)
for the Keystone Pipeline Project in Kansas and Missouri (x1)

Doyle Brown
December 19, 2006
Page 3

Keystone Pipeline Project Survey Report (Topeka Shiner)
Comment and Recommendation Form

<u>Sect. #</u>	<u>Para. #</u>	<u>Specific Comments</u>

<u>Recommendations</u>

Name

Title

Date

December 19, 2006

Doug Novinger
Missouri Department of Conservation
1907 Hillcrest Drive
Columbia, MO 65201

Dear Mr. Novinger:

At this time, ENSR Corporation (ENSR) is providing you with a survey report detailing information collected along the Keystone Pipeline Project during the fall of 2006 in Missouri for the federally endangered Topeka shiner (*Notropis topeka*).

Project Description

TransCanada is planning to construct and operate an approximately 1,845-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). The proposed Project would consist of approximately 1,078 miles of new pipeline constructed from the U.S.-Canada border in Cavalier County, North Dakota, to terminals and refineries in Wood River (Madison County) and Patoka (Marion County), Illinois. This pipeline is referred to as the Keystone Mainline. Approximately 283 miles of the Keystone Mainline would parallel the proposed Rockies Express Pipeline - West (REX-West) Project in Kansas and Missouri. In addition, TransCanada proposes to construct a 292-mile pipeline extension (Cushing Extension) that would extend from the Keystone Mainline south from the Nebraska/Kansas border to Cushing, Oklahoma. TransCanada proposes to begin construction of the Keystone Mainline in early 2008, with the system in-service by the end of 2009. Work on the Cushing Extension will begin in late 2009 or early 2010, with a Cushing Extension in-service date of 2010. The project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations, though these facilities will be constructed by local utility companies, not Keystone.

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Doug Novinger
December 19, 2006
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Charles Johnson
Senior Wildlife Biologist

CJ/sc

Enc. A Field Survey of Suitable Habitat and Fish Sampling for the Topeka Shiner (*Notropis topeka*)
for the Keystone Pipeline Project in Kansas and Missouri (x1)

Surveyor Qualifications

Doug Novinger
December 19, 2006
Page 3

Keystone Pipeline Project Survey Report (Topeka Shiner)
Comment and Recommendation Form

<u>Sect. #</u>	<u>Para. #</u>	<u>Specific Comments</u>

<u>Recommendations</u>

Name

Title

Date

Stribley, Sara

From: Johnson, Charlie
Sent: Friday, December 08, 2006 1:24 PM
To: Stribley, Sara
Subject: FW: Topeka Shiner at North Elm
Follow Up Flag: Follow up
Flag Status: Red

FYI - Important

From: Lorenz, Patricia
Sent: Friday, December 08, 2006 11:17 AM
To: Johnson, Charlie
Cc: Patti, Scott; Barnes, Chad
Subject: RE: Topeka Shiner at North Elm

As of this date, we will have to stay out of N. Elm Creek during the spawning period (May 15 - July 31) and also move fish when we do construct through the stream crossings. Bill finished surveys on 12/5/06 and found no Topeka shiners in the MO streams. Therefore, MO is cleared for 2007 Topeka shiner issues.

We will receive all of Bill's data next week. At that time, we will include the results from this weeks surveys and complete the 2006 Survey report. I spoke with Bill and he would like to give all of the agencies ~10 days to review the report. He volunteered to contact all agency reps involved. We can then work on setting up a meeting to discuss what the actual requirements will be for the 2007 crossing of N. Elm Creek.

I spoke with Nate last week about the permits for Kansas and are currently working on getting him information for the riparian mitigation bank.

Patti

From: Johnson, Charlie
Sent: Friday, December 08, 2006 8:50 AM
To: Lorenz, Patricia
Cc: Patti, Scott; Barnes, Chad
Subject: FW: Topeka Shiner at North Elm

Patti, have you or someone from this office started the state permit process for Kansas. If not, we should probably get started on this process with Nate Davis. Have the survey reports for REX (e.g., TS, Bats) been sent to the agencies for review/concurrence??

From: Patti, Scott
Sent: Friday, December 08, 2006 6:18 AM
To: Lorenz, Patricia
Cc: Johnson, Charlie
Subject: Topeka Shiner at North Elm

Are we saying that we simply cannot cross North Elm, even with the salvage, between May 15 and July 31? Or can we cross as long as we salvage?

12/11/2006

Scott J. Patti
Senior Project Manager
ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
Phone: 970/493-8878
Cell: 970/218-8041
FAX: 970/493-0213
spatti@ensr.aecom.com



November 7, 2006

Mr. Charles M. Scott
Field Supervisor
Missouri Ecological Services Field Office
U.S. Fish & Wildlife Service
Department of the Interior
101 Park DeVille Drive, Suite A
Columbia, MO 65203-0007

Subject: Indiana Bat Habitat Surveys for the Keystone Pipeline Project

Dear Mr. Scott:

We wish to confirm several points regarding assessment of effects to Indiana bats and their habitat on the Keystone Pipeline right-of-way (ROW) in Missouri.

First, based on phone conversations with Rick Hansen in your office and with you on September 18, 2006, we understand that the Service is comfortable with the approach for the assessment of Indiana bat habitat developed earlier in September for the REX-West Pipeline Project in Missouri, and that approach should be repeated for the Keystone project in Missouri. The approach is summarized later in this letter.

Second, it is our understanding that Indiana bat habitat assessment need not be repeated for areas where the Keystone and REX West pipelines are parallel and adjacent (within ~200 ft). We have already completed an on-site assessment for 109 woodlots where the REX West ROW crosses woodlots in Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, and western Audrain counties.

In areas where the two pipelines are not adjacent, either in the counties listed above, or in eastern Audrain, Montgomery, Lincoln, and St. Charles counties, we propose to follow the same approach as used on the REX-West Pipeline Project. In brief, the approach consisted of a desk-top analysis, followed by field work:

- Identify all woodlots crossed by the pipeline ROW.
- Eliminate from further assessment those woodlots crossed by less than 200 ft. of the ROW
- Eliminate from further assessment those woodlots with less than 13% forest cover within 3.5 km of the center of the woodlot crossing.
- Visit each of the remaining woodlots and determine the number of potential roost trees (PRTs) per hectare. Ratio this number to the optimum number of 14 or greater PRTs per hectare. If the ratio is 0.60 or greater, then further investigation of the site is warranted.

This habitat assessment field work for the Keystone Pipeline Project is tentatively scheduled to begin in late November. Once the field work is completed, we will consult with the Service about the findings.

November 7, 2006
Page 2

If the USFWS concurs with this approach, this letter can be used to indicate your concurrence and authorization for Keystone/BHE to proceed. Please sign and return one copy of this letter to us. To expedite finalization of this approval, you may fax a signed copy of this letter to us at (513) 326-1178 or scan a signed copy and e-mail it to vhand@bheenvironmental.com. We would still appreciate receiving a signed original copy at your convenience.

BHE Environmental, Inc.



Vincent C. Hand, Ph.D.
Director, Natural Resources Management

<input checked="checked" type="checkbox"/> CONCUR	Signature <i>Rick L Hansen</i>
	Name (print) <i>Rick L Hansen</i>
<input type="checkbox"/> DO NOT CONCUR	Title <i>Acting Field Supervisor</i>
	Date <i>21 November 2006</i>

Castle, Carla

From: Johnson, Charlie
Sent: Monday, October 16, 2006 9:42 AM
To: Tillquist, Heidi; Ellis, Scott
Cc: Castle, Carla; Dufresne, Doree
Subject: FW: BHE-ENSR study plan for your review

Study plan to Missouri for reptile (massasauga & western fox snake) habitat assessment.

From: Melanie Gregory [mailto:mgregory@bheenvironmental.com]
Sent: Monday, October 16, 2006 6:21 AM
To: doyle.brown@mdc.mo.gov
Cc: Jeff Briggler; Johnson, Charlie; Vince Hand; Lorenz, Patricia
Subject: BHE-ENSR study plan for your review

Mr. Brown;

Attached to this email are a pair of study plans addressing two proposed pipeline projects that cross Missouri. ENSR has contracted BHE Environmental to conduct an analysis of both pipelines to assess suitability of the project corridors as habitat for either the eastern massasauga or western fox snake. The attached study plans describe our proposed methods. Maps showing the approximate pipeline corridor locations are also included.

Please review the study plans and return your concurrence, and any questions or comments you may have, to BHE. Hard copies of these study plans are also being sent via FAX.
We appreciate your attention to this matter.

Sincerely,



BHE Environmental, Inc.

Melanie L. Gregory

Biologist

11733 Chesterdale Road

Cincinnati, OH 45246

Office: 513.326.1500

Direct: 513.326.1168

Mobile: 513.348.7833

Fax: 513.326.1178

mgregory@bheenvironmental.com

www.bheenvironmental.com

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10/16/2006



October 16, 2006

Missouri Department of Conservation
P.O. Box 180
Jefferson City, Missouri 65102-0180

**RE: Study Plan: Protected Snake Habitat Assessment on the Rockies Express
Pipeline Project (REX-West) Corridor**

To Whom It May Concern:

BHE Environmental, Inc. (BHE) has been contracted to conduct a habitat assessment for protected snake species that may occur along the proposed REX-West Pipeline Project in Missouri. The State of Missouri classifies the eastern massasauga (*Sistrurus catenatus catenatus*) and the western fox snake (*Elaphe vulpina*) as state endangered. Neither of these species is currently federally listed, but the massasauga is a Federal Candidate species.

The Missouri Department of Conservation (MDC) has indicated that Buchanan, Carroll, and Chariton counties may contain habitat for massasaugas and western fox snakes. BHE was contracted by ENSR Corporation (ENSR) to conduct a habitat assessment for these protected snake species within these counties along the REX-West Pipeline Project. A detailed study plan is provided below.

Study Plan

Remote Habitat Assessment

The massasauga and western fox snake are associated with wetlands, and habitat requirements for the two species are very similar. Both are typically found in wet prairies, wet meadows, and open areas at the margins of wetlands. Presence and density of crayfish burrows, which are used as hibernacula, are also important indicators of habitat suitability. Recent research indicates that eastern massasaugas and western fox snakes range widely through the landscape during the warm season but tend to hibernate in relatively small, specific areas. This suggests that suitable hibernacula for these snakes are limited; both species have been found to hibernate in areas with a high water table, but tend to avoid wetlands where surface soil is saturated. Closed forests and dense vegetation are also typically avoided, as are expanses of open water.

In fall 2006, USGS topographic maps, aerial photography, National Wetlands Inventory (NWI) maps, and wetland delineation information were used to identify regions of the REX-West Pipeline Project area where suitable habitat for the eastern massasauga and western fox snake may occur.

For purposes of the remote assessment, potential habitat is defined as any part of the construction corridor in which a wetland is known to occur in association with an open

area, e.g., a field next to a wetland. Wetlands that are completely forested were eliminated as potential habitat, as were areas of prolonged inundation or year-round open water.

On-Site Habitat Assessment

Potential snake habitat identified during the remote habitat assessment will be field verified. During field verification, habitat will be categorized as either likely to support protected snake species (i.e., meets habitat requirements), or not likely to support protected snake species (does not meet habitat requirements).

Habitat categorization will be based upon these requirements:

- Presence of seasonally or temporarily saturated ground, or proximity to a body of water such as a lake or pond.
- Presence of adjacent open areas such as fields or meadows.
- Presence and density of potential hibernacula such as crayfish burrows.

As presence of suitable hibernacula appear to be the limiting factor to these snakes' occurrence, categorization of "likely to support" will be highly dependent upon presence of potential hibernacula such as crayfish or small mammal burrows, submerged root masses, or other means by which snakes can access subsurface saturated ground. If potential hibernacula are sparse (fewer than 1 per 10 meter²), or if surface soil is saturated, the area will be categorized as "not likely to support" protected snake species.

Areas identified during the remote assessment that were not accurately represented in aerial photos or NWI maps (i.e., have since been altered) and are no longer suitable for these species will be eliminated from further study.

All areas categorized as "likely to support" protected snakes identified during the on-site survey will be described on a Site Description Data Sheet (attached) and the location recorded with GPS equipment. Photographs will be taken of all sites visited during the on-site habitat assessment and field verification.

Following the on-site habitat assessment, ENSR and BHE will reconvene with MDC to review results, and discuss potential future monitoring efforts. If further survey or monitoring of snake habitat on the construction corridor is necessary, it will be coordinated through MDC, with agency input.

If this plan is acceptable, please reply by e-mail, or sign this letter in the space provided below and return it by fax to me at 513.326.1178.

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MDC/REX-West
October 16, 2006
Page 3

Should you have any questions or comments about the proposed study plan, please feel free to contact me by phone at 513.326.1175 or by e-mail at vhand@bheenvironmental.com.

Sincerely,



Vincent C. Hand, Ph.D.
Director, Natural Resources Management

Attachments

_____ I concur with the methods presented in this study plan

_____ I do not concur with the methods presented in this study plan
please provide additional guidance or explanation

_____ Signature

_____ Date

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Table showing location of wetland features by county and pipeline milepost numbers.

County	West milepost	East milepost
Buchanan	537.8	537.9
Buchanan	537.9	538.1
Buchanan	537.4	537.5
Buchanan	540.2	540.3
Buchanan	540.7	541.0
Buchanan	541.0	541.2
Buchanan	548.1	548.2
Buchanan	548.7	549.0
Buchanan	550.1	550.3
Buchanan	550.9	551.0
Buchanan	551.4	551.5
Buchanan	551.5	551.6
Buchanan	550.7	550.8
Buchanan	552.6	552.7
Buchanan	553.9	554.0
Buchanan	556.7	556.8
Carroll	608.37	608.47
Carroll	613.07	613.17
Carroll	618.07	618.17
Carroll	619.57	
Carroll	620.47	620.57
Carroll	621.27	621.37
Carroll	625.97	
Carroll	627.77	627.87
Chariton	629.57	629.67
Chariton	629.57	629.67
Chariton	629.97	630.07
Chariton	630.57	
Chariton	637.87	637.97
Chariton	637.97	638.07
Chariton	639.07	

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Chariton	639.47	
Chariton	640.27	640.37
Chariton	641.37	641.47
Chariton	642.47	642.57
Chariton	642.67	642.77
Chariton	645.77	
Chariton	645.97	646.07
Chariton	646.37	
Chariton	646.87	646.97
Chariton	649.87	649.97
Chariton	650.27	650.37
Chariton	650.47	650.57
Chariton	650.87	651.07
Chariton	651.37	651.47
Chariton	655.47	
Chariton	658.67	658.77
Chariton	659.97	660.07

Entries where only one milepost is provided indicate a wetland feature where the length along the pipeline right of way is less than ~ 300 ft.

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Site Description Data Sheet

Surveyor(s): _____ Date of Survey: _____

Location of Survey (Lat/Lon or UTM): _____

State: Missouri or Illinois County: _____

REX-West or Keystone Name of Feature/Wetland (assign): _____

General description of site: _____ Photo Number(s): _____

Is standing water present? Y / N

Ground appears to be saturated: frequently temporarily/seasonally rarely

Was a test pit dug? Y / N If yes, depth to saturated soil (cm): _____

Estimated distance to nearest permanent body of water (m): _____

Type of water body: lake/pond stream river

Are crayfish burrows present? Y / N If yes, estimated density ($\#/m^2$): _____

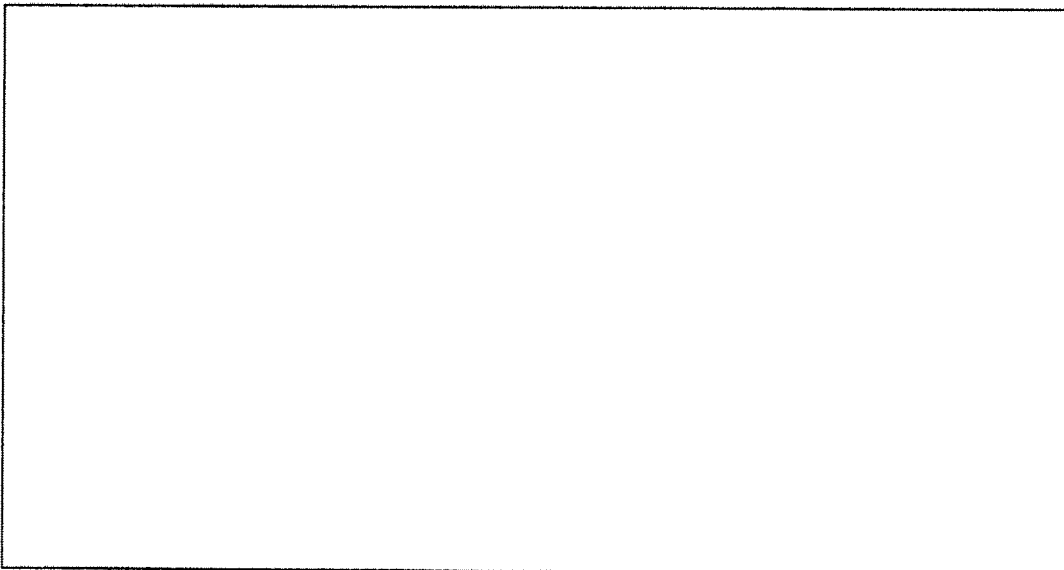
Describe other potential hibernacula present: _____

Are there trees in the area? Y / N If yes, estimated percent canopy closure: _____%

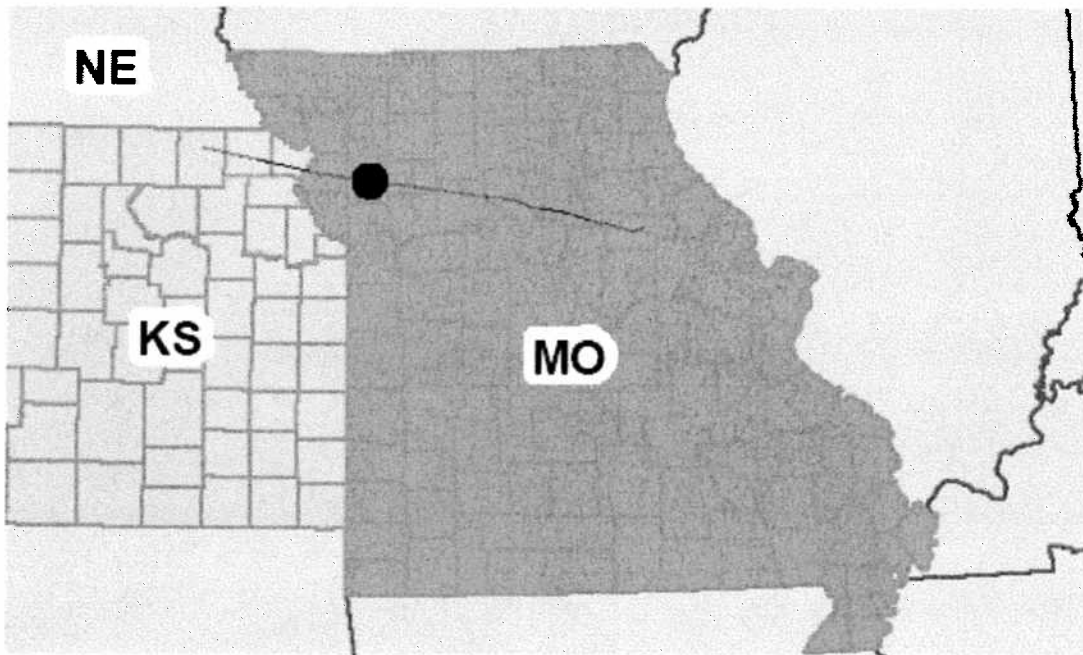
Dominant species (3): _____

Notes:

Sketch of Survey Area (indicate mileposts):



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Blue line indicates REX-West pipeline corridor location.



October 16, 2006

Missouri Department of Conservation
P.O. Box 180
Jefferson City, Missouri 65102-0180

RE: Study Plan: Protected Snake Habitat Assessment on the Keystone Pipeline Project

To Whom It May Concern:

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The Missouri Department of Conservation (MDC) has indicated that Buchanan, Carroll, Chariton, and St. Charles counties may contain habitat for massasaugas and western fox snakes. BHE was contracted by ENSR Corporation (ENSR) to conduct a habitat assessment for these protected snake species within these counties along the Keystone Pipeline Project area. A detailed study plan is provided below.

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Following the on-site habitat assessment, ENSR and BHE will reconvene with MDC to review results, and discuss potential future monitoring efforts. If further survey or monitoring of snake habitat on the construction corridor is necessary, it will be coordinated through MDC, with agency input.

If this habitat assessment plan is acceptable, please reply by e-mail, or sign this letter in the space provided below and return it by fax to me at 513.326.1178.

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MDC/Keystone
October 16, 2006
Page 3

Should you have any questions or comments about the proposed plan, please feel free to contact me by phone at 513.326.1175 or by e-mail at vhand@bheenvironmental.com.

Sincerely,



Vincent C. Hand, Ph.D.
Director, Natural Resources Management

Attachments

_____ I concur with the methods presented in this study plan

_____ I do not concur with the methods presented in this study plan
please provide additional guidance or explanation

_____ Signature

_____ Date

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County	West Milepost	East Milepost
Buchanan	743.9	744.0
Buchanan	744.7	744.9
Buchanan	746.8	
Buchanan	747.3	747.4
Buchanan	747.4	747.5
Buchanan	747.6	747.8
Buchanan	750.7	750.8
Buchanan	752.5	752.6
Buchanan	752.7	752.8
Buchanan	754.3	754.4
Buchanan	755.2	755.3
Buchanan	756.6	756.8
Buchanan	756.8	756.9
Buchanan	757.3	
Buchanan	757.8	757.9
Buchanan	758.0	
Buchanan	758.9	759.0
Buchanan	760.2	760.3
Buchanan	760.5	
Buchanan	761.1	761.2
Buchanan	761.4	761.5
Buchanan	763.0	763.1
Carroll	810.5	810.6
Carroll	814.2	
Carroll	814.8	
Carroll	817.5	
Carroll	819.4	819.5
Carroll	823.2	823.3
Carroll	823.8	823.9
Carroll	824.5	824.6
Carroll	824.7	

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Carroll	825.0	825.1
Carroll	825.9	826.0
Carroll	827.3	827.4
Carroll	827.7	827.8
Carroll	828.8	828.9
Carroll	834.1	834.3
Carroll	835.0	
Carroll	835.5	
Chariton	836.4	836.5
Chariton	836.9	837.0
Chariton	841.8	841.9
Chariton	842.2	842.3
Chariton	843.2	
Chariton	843.3	843.4
Chariton	844.2	844.3
Chariton	845.2	845.3
Chariton	845.4	845.5
Chariton	845.8	845.9
Chariton	845.8	845.9
Chariton	846.7	
Chariton	847.7	847.9
Chariton	848.5	848.6
Chariton	848.9	
Chariton	849.1	
Chariton	852.1	852.2
Chariton	852.4	852.5
Chariton	852.7	852.8
Chariton	853.3	
Chariton	853.5	853.6
Chariton	854.8	
Chariton	856.2	856.3
Chariton	856.6	856.8
Chariton	856.9	857.0

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Chariton	857.3	857.4
Chariton	857.8	857.9
Chariton	861.4	861.5
Chariton	862.0	
Chariton	866.5	866.8
St. Charles	984.7	
St. Charles	977.6	977.7
St. Charles	978.1	
St. Charles	980.8	981.5
St. Charles	982.3	982.8
St. Charles	983.4	984.2
St. Charles	984.4	984.9
St. Charles	986.9	987.2
St. Charles	988.7	
St. Charles	991.2	
St. Charles	997.7	998.0
St. Charles	998.7	998.8
St. Charles	999.4	
St. Charles	1001.9	1002
St. Charles	1005.2	
St. Charles	1008.9	1009.2
St. Charles	1011.6	
St. Charles	1012.0	1012.1
St. Charles	1013.8	1013.9

Entries where only one milepost is provided indicate a wetland feature where the length along the pipeline right of way is less than ~ 300 ft.

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Site Description Data Sheet

Surveyor(s): _____ Date of Survey: _____

Location of Survey (Lat/Lon or UTM): _____

State: Missouri or Illinois County: _____

REX-West or Keystone Name of Feature/Wetland (assign): _____

General description of site: _____ Photo Number(s): _____

Is standing water present? Y / N

Ground appears to be saturated: frequently temporarily/seasonally rarely

Was a test pit dug? Y / N If yes, depth to saturated soil (cm): _____

Estimated distance to nearest permanent body of water (m): _____

Type of water body: lake/pond stream river

Are crayfish burrows present? Y / N If yes, estimated density ($\#/m^2$): _____

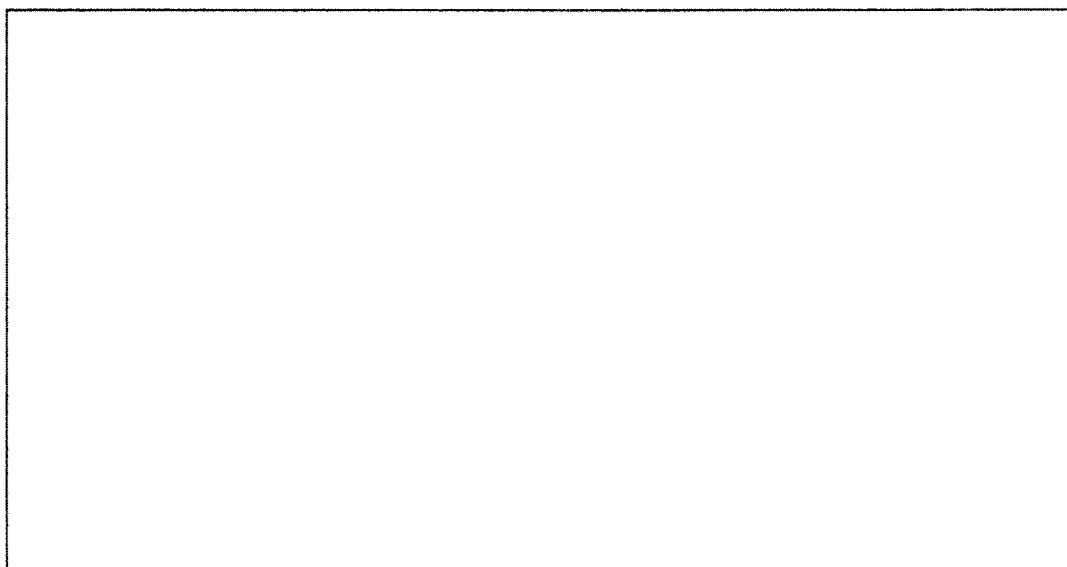
Describe other potential hibernacula present: _____

Are there trees in the area? Y / N If yes, estimated percent canopy closure: _____%

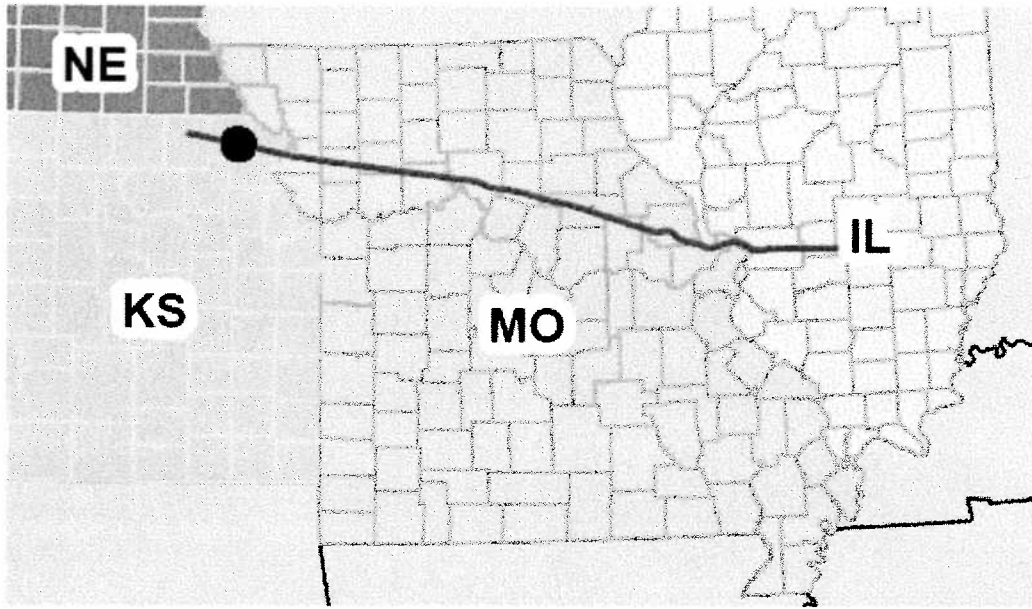
Dominant species (3): _____

Notes:

Sketch of Survey Area (indicate mileposts):



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Blue line indicates Keystone pipeline corridor location.



BHE CONTACT REPORT

11733 CHESTERDALE ROAD - CINCINNATI, OH 45246
Phone: 513.326.1500 - Fax: 513.326.1178

Contact made by: Melanie Gregory		Date & Time: email & voice mail exchange 9/25 - 10/6/2006
Person contacted: Jeff Briggler and Doyle Brown		Title: Biologists
Company/Agency: Missouri Department of Conservation		
Address:		E-mail:
Telephone:	Fax:	
Cell phone/pager:		
Project: ENSR Keystone and REX-West pipelines		
Subject: Surveys for eastern massasauga rattlesnake (EMR) and western fox snake in MO		

NOTES:

9/26 initial contact to Jeff Briggler by MLG via email.

10/2 MLG voice mail to JB, requesting input on study plan.

10/2 MLG email to JB, requesting input on study plan.

10/3 auto-response from JB, out of office until 10/6.

10/3 MLG voice mail to Doyle Brown, call to discuss study plan.

10/6 response from JB: he is out of the office through 10/13; send him the study plan and he'll review it.

10/6 rec'd vm from DB: he is in the office periodically, can try to call back.

Stribley, Sara

From: Andrew Forbes [Andrew.Forbes@mdc.mo.gov]
nt: Tuesday, August 15, 2006 8:06 AM
To: Stribley, Sara
Subject: RE: Keystone Pipeline Project ENSR - Bird Survey QuestionsfromMDC/ENSR Meeting July 19, 2006

I'd suggest contacting universities in MO. There are likely lots of wildlife students who are looking for opportunities to get experience like that. I can't think of anyone in particular off the top of my head, but I'll let you know if a name comes to mind.

Andrew Forbes
Ornithologist
Missouri Dept. of Conservation/Audubon Missouri
phone: 573-447-2249
fax: 573-447-2428

>>> "Stribley, Sara" <sstribley@ensr.aecom.com> 08/14/06 12:19 PM >>>

Hi Andrew,

ENSR is looking to potentially start some surveys this fall, and I was wondering if you know of any specialists who can conduct surveys for the King Rail and other bird species in Missouri? Thanks for your help!
Sara

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
70.493.8878 ext. 168
stribley@ensr.aecom.com

-----Original Message-----

From: Andrew Forbes [mailto:Andrew.Forbes@mdc.mo.gov]
Sent: Monday, July 31, 2006 8:33 AM
To: Stribley, Sara
Cc: Johnson, Charlie
Subject: Re: Keystone Pipeline Project ENSR - Bird Survey Questionsfrom MDC/ENSR Meeting July 19, 2006

Sara,

I'll do my best to respond to your questions-

Barn Owls- Yes, they have the potential to occur in all of those counties, and I would recommend checking any potential nesting structure within the pipeline ROW.

Greater Prairie-chickens- There were a couple of birds still hanging on in Audrain Co. through the 90s, and there may be a small population on private land that we don't know about. I would recommend conducting surveys.

King Rail- The USFWS protocol will be a good tool for your use. You might consider allocating extra survey effort to marshes that either look very desirable to the species, and/or have an exceptional number of other marshbirds present. Recent studies conducted in midwest by David Lemnetz with the Arkansas Coop. Unit suggest that sites have to be visited 9 times to have sufficient confidence that the birds are not there.

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Northern Harrier- No, I do not agree. While Harriers are far more common during migration in Missouri, they do breed here as well, mostly in northern and western Missouri. Definitely worth surveying for.

Let me know if you need any more information. Thanks for checking with me, I appreciate it!

Sincerely,

Andrew Forbes
Ornithologist
Missouri Dept. of Conservation/Audubon Missouri
phone: 573-447-2249
fax: 573-447-2428

>>> "Stribley, Sara" <sstribley@ensr.aecom.com> 07/28/06 5:27 PM >>>

Hi Andrew,

There were a few questions that arose from ENSR's meeting with the MDC regarding bird surveys for the Keystone Pipeline Project, and I was hoping that you might be able to provide some guidance?

Barn Owl: Does the barn owl occur throughout Missouri in all counties crossed by the pipeline route (Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, St Charles)? Should surveys be conducted across all counties at old structures/barns/grasslands within the ROW, or should we focus our surveys to particular counties/areas? According to MO NHP occurrence data, I think we originally only had St. Charles County down as an area to survey for this species?

Greater Prairie Chicken: It was suggested at the meeting that ENSR contact landowners along the pipeline route in Audrain County to determine if they have sighted or heard any greater prairie chickens on their land. Before we begin contacting these landowners, do you have any additional information regarding GPC occurrences in Audrain County? Have there been any recent sightings in Audrain, and is there a need to conduct surveys in this county?

King Rail: It was suggested at the meeting that we coordinate with you regarding this species. We have the FWS marsh bird survey protocol that you provided to us, and surveys are proposed for Buchanan, Carroll, Chariton, Lincoln, and St. Charles counties. We will also be looking to see if the proposed route crosses through the Grand River COA. Please feel free to provide any more information regarding surveys or requirements for this species, or let us know how we can coordinate with you.

Northern Harrier: The information provided at the meeting was that this species is a non-breeding migrant to the state and that surveys would not be necessary. Do you concur with this information?

Thanks very much for your help and input! Please feel free to contact me if you have any questions or need me to provide you with any more information!

Sincerely,
Sara

Sara Stribley
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