

Stribley, Sara

From: Doyle Brown [Doyle.Brown@mdc.mo.gov]
Sent: Friday, March 02, 2007 8:08 AM
To: Lorenz, Patricia; Stribley, Sara
Subject: Ornithologist

Sara,

You had asked about a good orthrologist for Keystone (perhaps, Patti may need one for REX-West, still). Here is a name of one MDC has used in the past.

Steve Kinder
424 Calhoun St.
Chillicothe, MO 64601
(660) 646-6516

Thanks, Doyle

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.5
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

3/2/2007

Stribley, Sara

From: Lorenz, Patricia
Sent: Wednesday, February 28, 2007 7:57 AM
To: Barnes, Chad; Graber, Steve; Patti, Scott; Stribley, Sara; Johnson, Charlie
Subject: FW: Snake Survey Recommendations for REX-West

FYI.

From: Doyle Brown [mailto:Doyle.Brown@mdc.mo.gov]
Sent: Tuesday, February 27, 2007 3:51 PM
To: Lorenz, Patricia
Cc: Jeff Briggler
Subject: Snake Survey Recommendations for REX-West

Patti,

Prior to taking a few days off, Jeff gave me his comments regarding the Snake Survey and potential habitat along the route. His recommendations would be to go to the 25 locations, found with suitable habitat and search for emerging snakes when the Air Temperature reaches 70 degrees for two consecutive days and Soil Temperature reaches and exceeds 45 degrees. Probably around the first week of April.

This will bring them out and they should stay close. Sunny days are optimum and best times of the day are between 10:30 and 4:30. If nothing is found, then this alleviate additional concern for the snake at those location. However, please double-check for snakes as you do your last bird survey (prior to construction).

If you need clarification, please contact me.

Doyle

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.5
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

Stribley, Sara

From: Castle, Carla
Sent: Monday, February 26, 2007 10:53 AM
To: Doyle.Brown@mdc.mo.gov; Peggy.horner@mdc.mo.gov
Cc: Johnson, Charlie; Stribley, Sara
Subject: Keystone Pipeline Meeting Notes
Attachments: MDC Minutes 020607D.doc

Thank you for meeting with ENSR representatives for the Keystone Pipeline Project on February 6, 2007. Please find attached the Draft Minutes for your review. Please reply to all in this e-mail with comments. The meeting minutes will be finalized and posted to the Keystone Sharepoint website on Thursday, March 1st. Thank you for your time.

Janie Castle
Project Coordinator
ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
T (970) 493-8878
F (970) 493-0213
ccastle@ensr.aecom.com

**Draft – Missouri Department of Conservation; Jefferson City, MO
February 6, 2007. 2:00-4:00 pm**

Attendees:

Charles Johnson (ENSR)
Sara Stribley (ENSR)
Doyle Brown (MDC)
Peggy Horner (MDC)

Meeting Objectives

ENSR met with the MDC to discuss issues pertaining to wildlife and special status species that have been identified for the Project in Missouri. The goals of this meeting were to discuss: 1) the 2006 survey results; 2) the proposed 2007 survey protocols and survey locations; 3) other issues or concerns the MDC may have regarding the Project.

Project Overview

ENSR provided a brief overview of the Project and indicated that since the last meeting with MDC several re-routes are currently being evaluated, including the Chain-of-Rocks reroute.

Agency Issues, Concerns, and Recommendations:

Missouri Conservation Opportunity Areas (COAs): MDC presented ENSR with a letter identifying the Missouri COAs crossed by the Keystone Pipeline Project (see attached). The letter also details some of the Best Management Practices recommended for crossing these sensitive areas. The Project will potentially affect eight aquatic COAs and four terrestrial COAs along its current proposed route. The MDC explained that COAs are high priority areas where focused conservation efforts have been targeted.

HDD Drill Site at Missouri River Crossing: The MDC stated that it was concerned over the amount of available space for the REX and Keystone Pipeline Projects to both safely perform HDD drilling at the Missouri River Crossing.

Stream Crossing Mitigation: The MDC expressed concern regarding methodologies that would be used at creek crossings. Doyle will provide stream crossing BMPs and provide comments on specific stream crossings that would require additional mitigation.

Indiana Bat: ENSR updated MDC on the current habitat survey work that is being conducted in Missouri for the Indiana Bat. ENSR also gave a brief overview on the negotiations being held with the Missouri FWS regarding the Indiana Bat.

Bald Eagle and Raptors: ENSR informed MDC that aerial surveys are currently being conducted along the entire Project route to identify bald eagle winter roost and nest sites within 1-mile from the construction ROW at all major rivers crossed by the Project. ENSR is also gathering information regarding raptor nests located within the construction ROW. MDC indicated that Andrew Forbes (MDC) completed a bald eagle survey in 2006. Doyle will request this information and send it to ENSR. MDC had no further comments or concerns regarding the survey protocol for this species.

King Rail: The MDC has not reviewed the king rail habitat report that ENSR sent the previous week. ENSR will reconvene with the MDC to determine where surveys should be conducted for this species, based off of the MDC's review of the report.

Massasauga and Western Fox Snake: ENSR updated the MDC on current habitat survey work that is being conducted in Missouri for these two species. ENSR needs to provide the MDC with the 2006 massasauga and western fox snake survey report. ENSR would likely need to conduct snake surveys this spring, but would be limited to suitable hibernacula habitat locations; however, ENSR should work in coordination with Jeff Briggler to determine future survey efforts and construction monitoring requirements for the Project.

Topeka Shiner: ENSR reviewed the findings of the Topeka shiner report for Missouri. Only marginal Topeka shiner habitat was identified, and no species were detected during the surveys. The MDC stated that they did not see any need to do further survey work along the Project route. ENSR needs to get concurrence from Doug Novinger (MDC; aquatic biologist) on MDC's conclusion. MDC will coordinate with the USFWS to close the loop on this species.

Greater Prairie Chicken: The MDC has reviewed the greater prairie chicken phone survey questionnaire findings and stated that they believe no further efforts would be required for this species.

Decurrent False Aster: ENSR reviewed the survey protocol and schedule for the decurrent false aster with the MDC. MDC stated that surveys should be conducted again in 2008, even if plants are not found in 2007, due to the ephemeral nature of the plant's life cycle. If this species was found during occurrence surveys, MDC indicated that they would have to consult with the USFWS to determine proper mitigation for this species, if found. ENSR also may need to consult with the Missouri State Parks Department if plants are found within Confluence State Park in St. Charles County. Doyle will send ENSR contact information for the State Parks.

Running Buffalo Clover: ENSR reviewed the survey protocol and schedule for the running buffalo clover with the MDC. MDC stated that no further surveys would be required in 2008 if this species was not found 2007. If this species was found during occurrence surveys, MDC indicated that they would have to consult with the USFWS to determine proper mitigation for this species, if found.

Action Items:

Doyle Brown (MDC) to provide stream crossing BMPs and additional mitigation for specific stream crossings.

ENSR to send Jeff Briggler (MDC) the Missouri massasauga survey report as soon as possible for review.

Doug Novinger (MDC) to send ENSR his comments regarding the Topeka shiner reports. Doug will contact the MO-FWS to get their concurrence on report findings.

Andrew Forbes (MDC) to send ENSR information on recently completed (2006) bald eagle surveys in Missouri.

MDC to review king rail habitat assessment as soon as possible. After review, MDC and ENSR should discuss habitat findings and determine future survey efforts.

ENSR to contact Missouri State Parks Department (Confluence State Park in St. Charles County) regarding any issues or concerns that they may have.

Doyle Brown (MDC) to send ENSR contact information for the State Parks.

Stribley, Sara

From: Lorenz, Patricia
Sent: Friday, February 23, 2007 2:20 PM
To: Stribley, Sara; Johnson, Charlie
Subject: MO Topeka Shiner results
Attachments: PL_CS_USFWS_T. Shiner_021607.PDF

FYI, there will be spawning restrictions for the six streams in MO.

Patti Lorenz
Biologist
ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
T: (970) 493-8878 x189
F: (970) 493-0213
plorenz@ensr.aecom.com



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Columbia Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, Missouri 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

February 16, 2007

Ms. Patricia M. Lorenz
ENSR
1601 Prospect Parkway
Fort Collins, Colorado 80525

Dear Ms. Lorenz:

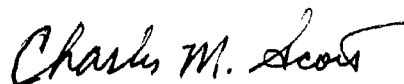
Please refer to your letter dated January 16, 2007, in which ENSR provided an Assessment of Potential Effects on Topeka Shiner Populations by the Construction of the Proposed Rockies Express Pipeline – West (REX West) project in Kansas and Missouri Based on Surveys of Aquatic Surveys of Aquatic Habitat and Fish. The report was also sent to both state and federal fishery biologists in Kansas and Missouri. Our comments pertain only to the section of pipeline that occurs in Missouri

Dr. William Stark of Fort Hayes University conducted the Topeka shiner investigations. Field surveys were conducted at stream-crossings along the proposed REX West in Kansas and Missouri to identify reaches of suitable Topeka shiner habitat, and to quantify type and abundance of fish species located at the designated survey areas, specifically to identify if Topeka shiners were present. A total of 21 sites were visited during the initial habitat survey. Of the 21 sites, two sites were determined to have marginal habitat and two sites were determined to have poor habitat. Fish surveys were conducted in September and no Topeka shiners were captured.

We agree with the determination that the REX West construction would have no foreseeable negative effects on the Topeka shiner in Missouri. Should plans for this proposed project be modified, or new information indicate that the Topeka shiner may be affected, consultation should be reinitiated with this office. We support the Missouri Department of Conservation's recommendation, previously provided to ENSR, pertaining to construction timing restrictions to protect fish spawning in six streams.

We appreciate the opportunity to review the proposed project. If you have further questions, please contact Mr. Rick L. Hansen at the address above, or by telephone at (573)234-2132, ext. 106.

Sincerely,



Charles M. Scott
Field Supervisor

cc: MDC; Jefferson City, MO (Attn: Doyle Brown)
MDC; St. Joseph, MO (Attn: Harold Kerns)
MDC; Columbia, MO (Attn: Doug Novinger)
KDWP; Pratt, KS (Attn: Nate Davis)
KDWP; Pratt, KS (Attn: Jim Hayes)
USFWS; Manhattan, KS (Attn: Vernon Tabor)
USFWS; Grand Island, NE (Attn: John Cochnar)

Stribley, Sara

Subject: FW: Greater Prairie Chicken

Attachments: GPC.jpg

From: Lorenz, Patricia

Sent: Thursday, February 22, 2007 11:25 AM

To: Stribley, Sara; Johnson, Charlie; Barnes, Chad; Graber, Steve; Patti, Scott

Subject: FW: Greater Prairie Chicken

FYI - No further GPC surveys.

From: Doyle Brown [mailto:Doyle.Brown@mdc.mo.gov]

Sent: Thursday, February 22, 2007 11:18 AM

To: Lorenz, Patricia

Cc: Johnson, Charlie

Subject: Greater Prairie Chicken

Patti,

I have consulted with Andy Forbes regarding the Greater Prairie Chicken (GPC) Survey and have his opinion. I first want to commend you on your thoroughness and tenacity in securing this data. This information was important in determining any additional steps required for further GPC presence or absence field work.

I have carefully considered your assessment and include here some earlier conversation you exchanged about ensuring species identification and awareness. While I do not believe any more is required to determine the presence of GPC, you may want to consider the following as a potential next step. MDC has a GPC costume used on early public awareness campaigns and while I do not have an actual picture, I took the liberty of including a "mock GPC costume" picture to provide some context for you. If you choose, you may be able to use our costume (with a security deposit) during the construction phase to ensure landowner understanding and empathy for the GPC. It may be important to GPC and the landowners to actually see the "lek ritual" of GPC and the costume would facilitate this.

So in closing, MDC does not believe any additional effort is required for GPC for this project. Thank you for your time and indulgence on this matter. Doyle

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.5
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

>>> "Lorenz, Patricia" <plorenz@ensr.aecom.com> 10/18/06 9:54 AM >>>
Great, thanks Andrew. The MDC website has a great link with GPC information. Could we distribute that information to landowners if they request additional information?

Patti

3/8/2007

Stribley, Sara

From: Lorenz, Patricia
Sent: Friday, February 16, 2007 10:16 AM
To: Barnes, Chad; Patti, Scott; Graber, Steve
Cc: Stribley, Sara; Johnson, Charlie
Subject: FW: Supplement to the King Rail Desktop Habitat Assessment

FYI.

It looks like we're going to have to do a few snake surveys as well. We'll have to get BHE lined up for that effort.

From: Doyle Brown [mailto:Doyle.Brown@mdc.mo.gov]
Sent: Friday, February 16, 2007 10:13 AM
To: Lorenz, Patricia
Subject: Re: Supplement to the King Rail Desktop Habitat Assessment

Patti,

Andy and I concur that "no additional review" is necessary for the four sites included on the supplemental information.

I should have an answer on the snakes from Jeff Briggler in the next two weeks. There are a few sites that should be looked at early in April when soil temperature begins to rise (A couple of 70 degree days will do it).

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.5
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

>>> "Lorenz, Patricia" <pgrigsby@ensr.aecom.com> 02/15/07 4:55 PM >>>
Doyle,

Please see the attached information. Thank you for all of your help.

Sincerely,

Patti Lorenz
Biologist
ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
T: (970) 493-8878 x189
F: (970) 493-0213
plorenz@ensr.aecom.com

3/2/2007

Stribley, Sara

From: Lorenz, Patricia
Sent: Thursday, February 15, 2007 9:16 AM
To: Patti, Scott; Barnes, Chad; Johnson, Charlie; Stribley, Sara
Cc: Graber, Steve
Subject: FW: King Rail Recommendations
Attachments: railREX.doc

FYI, it looks like king rail surveys will be required.

From: Doyle Brown [mailto:Doyle.Brown@mdc.mo.gov]
Sent: Wednesday, February 14, 2007 3:52 PM
To: Lorenz, Patricia
Subject: King Rail Recommendations

Patti,

Here is the comments from Andy Forbes related to the assessment for King Rail. I will try to get our feedback to you on the other surveys, as soon as possible.

Let me know if you need clarification.

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.5
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

CONFIDENTIAL

To Whom It May Concern:

I have reviewed the "A Desktop Assessment of Potentially Suitable King Rail Habitat within the Proposed Rockies Express Pipeline – West Project Right-of-Way in Buchanan, Carroll, and Chariton Counties, Missouri". Based upon the site descriptions of the 12 included wetland sites, I do not believe that there is any reason to be concerned about 9 of the 12 wetlands described in the report. There does not appear to be adequate habitat present at any of these sites to warrant any further survey work related to King Rails.

However, wetland sites #W4ACI029, #W4ACI032, and #S4ACI133 in Chariton Co. do appear to worth additional survey work. While these sites are relatively small and appear to provide marginal habitat at best, their association with a nearby river system warrants additional survey work. If/when access is granted to the remaining 5 wetlands, those that possess any significant emergent vegetation and associated open water/puddles should receive additional survey work as well.

My recommendations are as follows:

1) Survey the aforementioned three marginal sites for presence of King Rails, preferably during the first week of May, but late April (after the 20th) is also acceptable. Field observers should be able to distinguish King Rails from other rail species by sight and sound. Use a field protocol that includes the following:

- Establish survey points a location that maximizes detection probability (high spot, minimal noise in transit to point, etc.), spaced @400 meters apart. Based on what I've seen, the wetlands are small and likely won't need more than one survey point each.
- Conduct surveys at each point at least once, preferably two or three times prior to construction to help ensure that any individuals present are not missed.
- Conduct surveys at points within the two hours before or after sunrise OR sunset. This is generally the peak calling time for marsh species.
- At each survey point, survey for King Rails using a combination of passive listening and call-back surveys. A suggested sequence for this (adapted from standard protocol) follows:

- a) Upon arrival at survey point, listen for 5 minutes silently. Record any vocalizing or observed King Rails.
- b) Use a tapeplayer, CD player, etc., broadcast @30 seconds of King Rail vocalizations towards the center of the wetland. The 30 second interval can include a variety of King Rail vocalizations, but should include at least 3 repetitions of the species' primary advertising call. Wait @30 seconds in silence for response. Repeat one more time. Record any King Rails heard or seen.

2) If King Rails are detected on any of the surveys, I suggest either postponing construction work at the wetlands until after the breeding season concludes and birds are not present, or altering the path of construction so that the wetland is not affected by the activities, and the any potential nesting activity is not interrupted.

Andrew Forbes
Wildlife Ecologist, MDC

Stribley, Sara

From: Stribley, Sara
Sent: Friday, February 09, 2007 5:09 PM
To: 'Doyle Brown'
Cc: Johnson, Charlie
Subject: Keystone ENSR - massasauga and western snake report

Hi Doyle,

Just wanted to let you know that I sent the Keystone massasauga and western fox snake habitat survey report to your attention today. You should receive the report on Monday. If you could pass the report along to Jeff, that would be greatly appreciated! BHE is still in the field, working towards completing all of the habitat analysis, but this report should give you a good head start on analyzing the habitat the Project will be crossing. I know we have sent you a *ton* of information lately...but we probably need to discuss this report fairly soon so that we can line surveyors up for this upcoming April if need be! Thanks Doyle!

Sara

Sara Stribley

Environmental Coordinator

ENSR | AECOM

1601 Prospect Pkwy

Ft. Collins, Colorado 80525

P: 970.493.8878

F: 970.4930213

s.tribley@ensr.aecom.com

www.ensr.aecom.com

ENSR

1601 Prospect Parkway, Fort Collins, Colorado 80525
T 970.493.8878 F 970.493.0213 www.ensr.aecom.com

February 9, 2007

Doyle Brown
Policy Coordinator
Missouri Department of Conservation
2901 West Truman Blvd
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 winter of 2006 in Missouri for the state endangered eastern massasauga (*Sistrurus catenatus catenatus*) and western fox snake (*Elaphe vulpina vulpina*).

Eastern Massasauga and Western Fox Snake Report

This report summarizes the habitat surveys that were conducted between November 6 and 15, 2006, in **Buchanan, Carroll, Chariton, and St. Charles** counties in Missouri. The surveys were conducted at areas within the Keystone construction right-of-way identified as potential suitable winter hibernacula for the massasauga and western fox snake. The surveys were conducted in counties identified 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 massasauga and western fox snake 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. ENSR will be following up with you in to discuss the report in more detail and to consult on any further surveys that would be required for these two species.

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,



Charles Johnson
Senior Wildlife Biologist

CJ/sc

Enc. Assessment of Habitat for Eastern Massasauga and Western Fox Snake within the Proposed Keystone Pipeline in Missouri (x1)

Doyle Brown
February 9, 2007
Page 2

Keystone Pipeline Project Survey Report (Massasauga/Western Fox Snake)
Comment and Recommendation Form

Sect. #	Para. #	Specific Comments

Recommendations

Name

Title

Date

Stribley, Sara

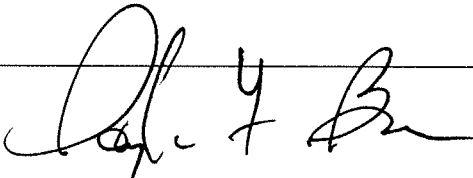
From: Stribley, Sara
Sent: Friday, February 09, 2007 3:41 PM
To: 'Doyle Brown'; 'Peggy Horner'
Cc: Johnson, Charlie
Subject: Thank you

Doyle and Peggy,
Charles and I just wanted to thank you for taking time to meet with us this past week! We will be distributing meeting minutes for your review in the next few days to ensure that we accurately represented the information we discussed at our meeting. We really appreciate your feedback and input, and your willingness to work with us so that we can get accomplished all that we need to do on a project of this size! Once again, if you ever have any concerns or questions, please feel free to give us a call or send us an email at any time! Thanks again.
Sincerely,
Sara

Sara Stribley
Environmental Coordinator
ENSR | AECOM
1601 Prospect Pkwy
Ft. Collins, Colorado 80525
P: 970.493.8878
F: 970.4930213
s.tribley@ensr.aecom.com
www.ensr.aecom.com

CONFIDENTIAL

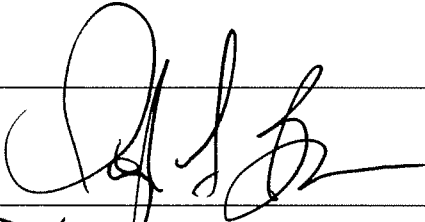
Keystone Pipeline Project Survey Schedule Concurrence Form

<input checked="" type="checkbox"/> CONCUR	Signature: 
	Name: Doyle Brown
<input type="checkbox"/> DO NOT CONCUR	Title: Policy Coordinator
	Date: Feb 6 2007

If you checked "DO NOT CONCUR," please provide reasons and specific directions in the space provided below on how survey schedule should be changed to meet your acceptance:

--

**Keystone Pipeline Project
Survey Protocol Concurrence Form**

<input checked="" type="checkbox"/> CONCUR	Signature: 
	Name: <u>Doyle Brown</u>
<input type="checkbox"/> DO NOT CONCUR	Title: <u>Policy Coordinator</u>
	Date: <u>Feb 6 2007</u>

If you checked "DO NOT CONCUR," please provide reasons and specific directions in the space provided below on how survey protocols should be changed to meet your acceptance:

CONFIDENTIAL

MISSOURI DEPARTMENT OF CONSERVATION

Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180

Telephone: 573/751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TDD)

JOHN D. HOSKINS, Director



February 6, 2007

Charles Johnson
ENSR International
1601 Prospect Parkway
Fort Collins, CO 80525-9769

RE: TransCanada (Keystone) Pipeline in Missouri

Dear Mr. Johnson:

The Missouri Department of Conservation (Department) is responsible for fish, forest, and wildlife resources in Missouri. As such, we actively participate in regulatory project reviews when projects might affect those resources, such as the Keystone Pipeline Project. The Department has been working with ENSR to evaluate environmental impacts and offer comments and recommendations to assist in avoiding or minimizing impact to sensitive ecosystems and watersheds.

Missouri's approach to conserving all wildlife, including "at-risk" species, is one that focuses on restoring and enhancing the natural communities where possible and practical. Part of the Department's approach to conservation of wildlife species in Missouri is the designation of aquatic and terrestrial Conservation Opportunity Areas (COAs) across the state. The Keystone project will intersect or potentially affect eight (8) aquatic COAs and four (4) terrestrial COAs along its proposed route (see table).

COAs represent landscape level geographies, often containing one or more watersheds for terrestrial issues and sub-watersheds or stream valley segments for aquatic issues. COAs are selected on criteria including, but not limited to, one or more of the following:

- 1) natural communities and land type associations;
- 2) rare or threatened species, both federal and state;
- 3) historical range and habitat for such species;
- 4) greatest opportunity for species recovery effort;
- 5) stream system of high integrity or minimal alterations (i.e. unchannelized); or
- 6) stream systems with a high number of aquatic species (often designated as a State Outstanding Stream)

COMMISSION

STEPHEN C. BRADFORD
Cape Girardeau

CHIP MCGEEHAN
Marshfield

CYNTHIA METCALFE
St. Louis

LOWELL MOHLER
Jefferson City

CONFIDENTIAL

Keystone Project
 February 6, 2007
 Page 2

For the Keystone project, the eight (8) aquatic COAs are watersheds, some of which have Topeka Shiner or had historic records of Topeka Shiner. Some of the streams are also designated as State Outstanding Streams. The terrestrial COAs (see Figure 1) also have some stream crossings where minimal impacts should be stressed; however, there are no spawning restrictions.

The best management practices would include timing the construction to avoid the spawning season, "necking down" to minimize the stream crossing, as much as practical, minimal riparian corridor clearing and ensuring reconstruction of crossings must ensure aquatic organism passage can still occur even at low flow conditions. Revegetation selected for reconstruction should be beneficial for wildlife with an emphasis on native prairie grasses and forbs. Procedures to limit and control the spread of aquatic and terrestrial invasive species need to be considered.

Symbol	COA Watershed or significant stream	Keystone Milepost (mp)	County	Comments
1	Malden Creek COA	767	Buchanan	stream crossing on Wolfpen Creek @ 768.5 mp
2	McGuire Creek COA	772	Clinton	stream crossing on an unknown tributary to Castile Creek @ 770 mp
	Castile Creek	773	Clinton	historic record of Topeka Shiner, with spawning restriction, however not a COA
3	Little Platte River COA	781	Clinton	Topeka Shiner
	Little Shoal Creek	786	Clinton	Topeka Shiner, and Outstanding State Water, however not a COA
4	Log Creek	795	Caldwell	Log Creek COA (4) is not crossed by the pipeline, however tributaries listed below, including Log Creek have spawning restrictions for Topeka Shiner
	Brush Creek	801	Caldwell	Topeka Shiner and State Outstanding Waters
	Crabapple Creek	804	Caldwell	Topeka Shiner and State Outstanding Waters
5	Towstring Creek COA	840 to 843	Carroll and Chariton	Wetland complexes, rare species, minimal channelization, Grand River crossing
A	Bunch Hollow	826 to 827	Carroll	High concentration of forest and grassland birds, communities of prairie, savanna, and forests
B	Duck Lake	862 to 864	Chariton	Actually an aquatic COA, decent riparian corridor
C	Duck Lake	866 to 867	Chariton	Species of conservation concern, sinuous stream system
6	Turkey Creek	960 to 962	Lincoln	Forested watershed, high biodiversity
7	Sugar Creek	971 to 976	Lincoln	High biodiversity, species of conservation concern
8	Lower Cuivre River	978	St. Charles	Functional stream,
D	Confluence Area	1000 to 1021	St. Charles	Terrestrial COA, T & E species, floodplain

Keystone Project
February 6, 2007
Page 3

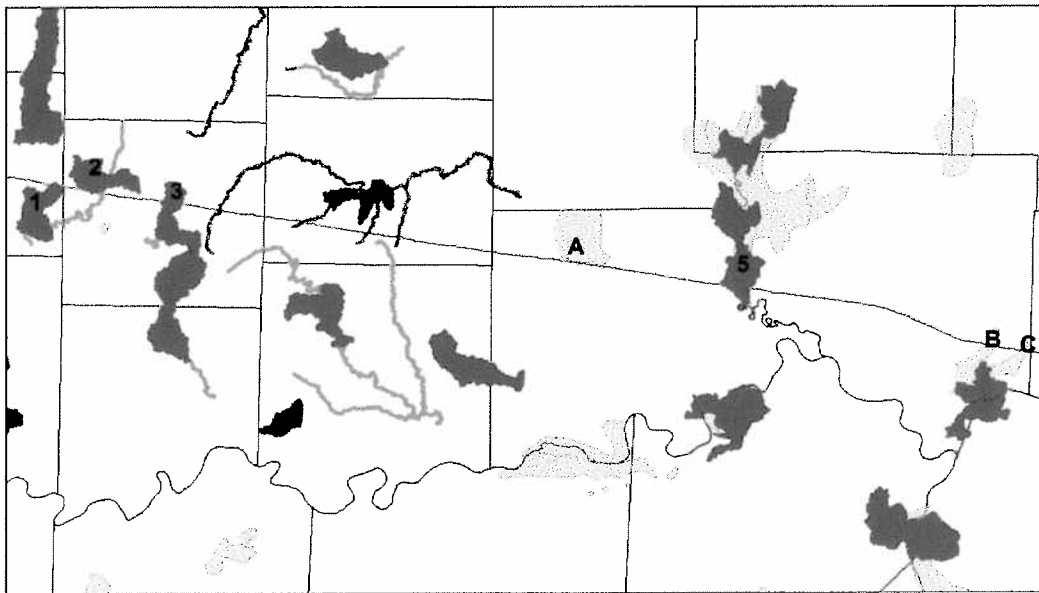






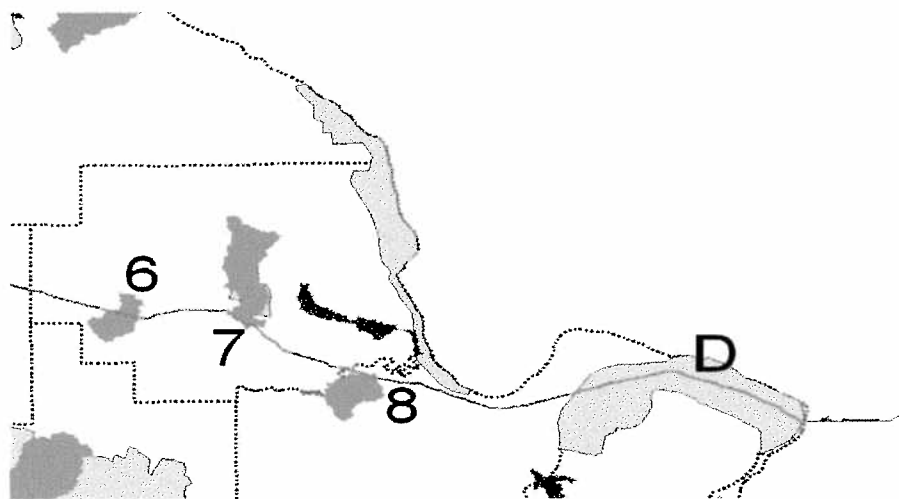


Figure 1 Conservation Opportunity Areas (COAs) in relation to Keystone

Legend

-  mdc_aquatic_coa
-  mdc_terr_coa
-  SPAWNRES
-  outstand
-  Keystone route MO
-  COUNTY

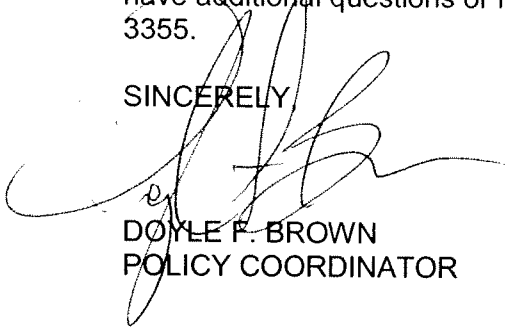


CONFIDENTIAL

Keystone Project
February 6, 2007
Page 4

I have included two profiles for the COAs in the Lincoln and St. Charles County areas. The profiles provide additional background on the importance of the geographies. If you have additional questions or need clarifications, please call me at 573-522-4115, ext. 3355.

SINCERELY

A handwritten signature in black ink, appearing to read 'Doyle F. Brown', written over the word 'SINCERELY'.

DOYLE F. BROWN
POLICY COORDINATOR

Cuivre River

Conservation Opportunity Area



Central Dissected
Till Plains



Cuivre River Hills Conservation Opportunity Area offers a glimpse of the Ozarks in north Missouri.

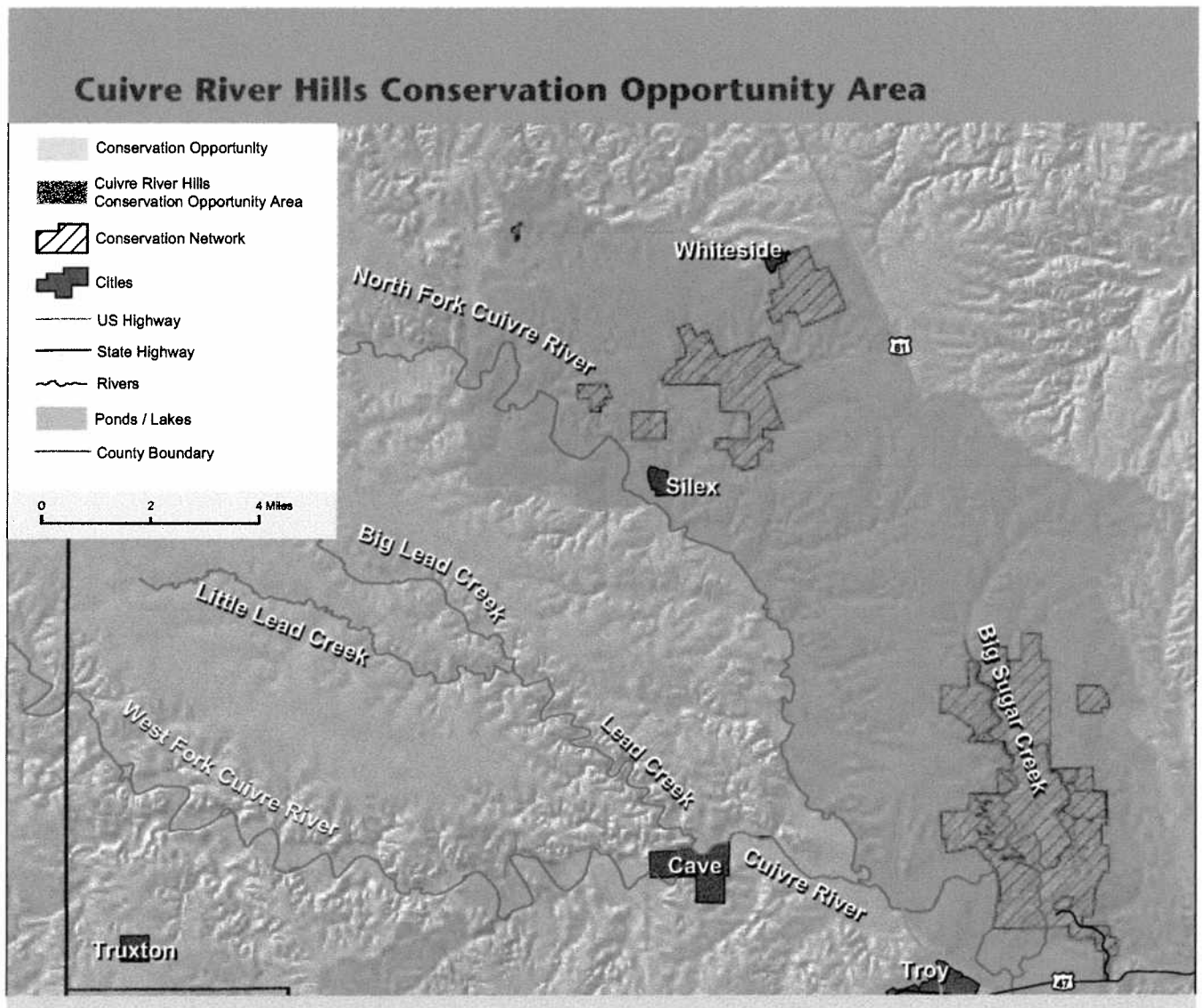
Druce Schuette, Missouri Department of Natural Resources

Cuivre River Hills Conservation Opportunity Area (COA) contains many natural features (caves, sinkholes, glades, springs and rocky creeks) found more often in southern Missouri. Prairies and oak savannas formerly occupied scattered hilltops and graded into oak woodlands and forests. Today, most prairies and bottomlands have been transformed into pasture and croplands. A few large blocks of second-growth timber remain in areas with rugged terrain.

The Cuivre River Hills provide habitat for over 20 species of conservation concern. Many Ozark plants and animals are found at their northern limits here, including ringed salamanders, marbled salamanders and spotted salamanders that breed in sinkhole ponds;

adder's tongue fern, slender heliotrope and Missouri orange coneflower in limestone glades; banded sculpin and northern studfish in streams; and widow's cross on rock outcrops. Large patches of natural habitat support 40 species of nesting neotropical migrant birds. Many other birds use the Cuivre River Hills as an important stopover place on their migration routes.

Big Sugar Creek runs through Cuivre River State Park. This Ozark-like stream is ranked as one of the best protected streams in northeast Missouri. Several decidedly Ozark fish, including banded sculpins and northern studfish, occur here at the northern edge of their range.



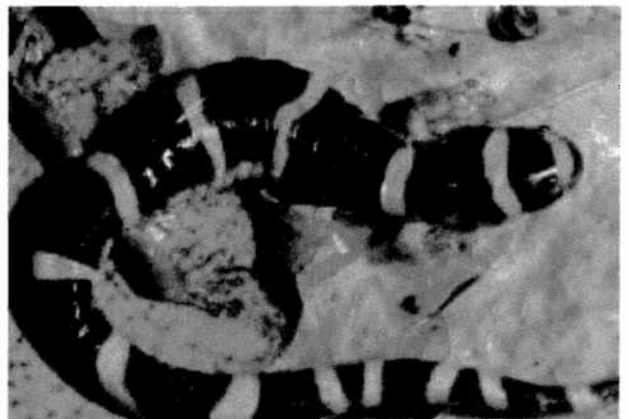
Funding Sources

Existing: DNR annual budget; MDC annual budget; Lincoln County SWCD State Cost Share Funds; NRCS Wildlife Habitat Incentive Program; NRCS Environmental Quality Incentives Program; Farm Service Agency Conservation Reserve Program

Promising Future Sources: MDC Wildlife Diversity Funds; MDC State Wildlife Grants; MCHF grants; USFWS Partners for Fish and Wildlife Program; NWTF Wild Turkey Super Fund; Quail Unlimited Quail Habitat Incentive Funds

Existing Conservation Network

Cuivre River State Park (Lincoln Hills Natural Area, George A. Hamilton Forest Natural Area, Big Sugar Creek Natural Area); Logan Conservation Area; White Conservation Area; Vonaventure Conservation Area; Kessler Conservation Area; Sandy Creek Natural Tunnel and Glade Natural Area; Girl Scout Camp Tuckaho



Bruce Schuette, Missouri Department of Natural Resources

Ringed salamanders are endemic to the Ozarks – they are found nowhere else in the world. The forested Ozark-like conditions of the Cuivre River Hills allow it to support the northernmost population of ringed salamanders.

Cuivre River Hills Conservation Strategies:

- Restore woodland, savanna, prairie, glade and forest natural communities and karst features.
- Work with willing private landowners to deliver conservation services. Encourage county and municipal officials to use watershed planning and "smart-growth" principles.
- Restore riparian corridors in the Big Sugar Creek watershed.
- Establish control programs for invasive exotic species (e.g. bush honeysuckle, garlic mustard, European buckthorn).
- Educate landowners and local citizens on the importance and value of conservation practices.
- Establish a Stream Team to monitor stream health and conduct projects on local creeks.



Deuce Schuetz, Missouri Department of Natural Resources

Lincoln Hills Natural Area includes a quarter-acre sinkhole pond within Cuivre River State Park. The pond contains aquatic plants, including pickerel weed and American lotus, and provides breeding habitat for several amphibians rarely encountered north of the Missouri River.

Priority Research and Inventory Needs

- Conduct a natural features inventory of Logan Conservation Area.
- Survey for Indiana bats.
- Continue surveys of plants and animals, especially invertebrates.
- Inventory the presence and extent of invasive exotic species.

Conservation Partners

Existing: Missouri Prairie Foundation (MPF); Girl Scout Council of Greater St. Louis; Natural Resources Conservation Service (NRCS); Lincoln County Soil and Water Conservation District (SWCD); Missouri Department of Natural Resources (DNR); Missouri Department of Conservation (MDC)

Potential: The Nature Conservancy; National Wild Turkey Federation (NWTf); Missouri Native Plant Society – St. Louis Chapter; Webster Groves Nature Study Society; St. Louis Audubon Society; Missouri Stream Teams; Missouri Conservation Heritage Foundation (MCHF); U.S. Fish and Wildlife Service (USFWS)

Prairie Restoration



Prairie and savanna openings once occurred on flatter hilltops of the Cuivre River Hills, but today are extremely rare. Prairie restorations at Cuivre River State Park have been some of the most successful in the St. Louis area, now providing a local seed source for other prairie restoration projects.

Bruce Schuette, Missouri Department of Natural Resources

Conservation Challenges

Several large blocks of woods are still found in rugged areas of the Cuivre River Hills Conservation Opportunity Area. Most prairies, savannas, open woodlands and glades, however, have been converted

to pasture and cropland. Potential obstacles to conservation success include urbanization and the rapid pace of development, invasive exotic species and limited budgets and staff time.

To learn more about the Cuivre River Hills Conservation Opportunity Area, please contact:



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

Missouri/Mississippi River Confluence

Conservation Opportunity Area



Central Dissected
Till Plains



For centuries, people have been drawn to the Confluence and its abundant resources.

Jim Rathert, Missouri Department of Conservation

In 1721, French explorer Father Pierre Francois de Charlevoix wrote of the confluence of the Mississippi and Missouri rivers, "I believe this is the finest confluence in the world. The two rivers are much the same breadth, each about half a league; but the Missouri is by far the most rapid, and seems to enter the Mississippi like a conqueror, through which it carries its white waters to the opposite shore without mixing them...."

The Missouri/Mississippi River Confluence Conservation Opportunity Area (COA) is the present day floodplain of the Missouri and Mississippi Rivers in Lincoln and St. Charles Counties. Both rivers are major migratory pathways for birds. The Mississippi River corridor is the longest and most traversed migratory route for birds in the northern hemisphere.

During peak migration, ducks, geese, shorebirds, large wading birds, raptors, warblers and other songbirds utilize habitats along the Confluence and the river corridor to rest, refuel and nest.

Large wetland complexes still occur along the Mississippi River and many local citizens are working to conserve the landscape's natural resources. Focusing on the wildlife restoration opportunities following the 1993 and 1995 flood events, citizens and conservation agencies are finding that floodplain landscapes can be restored. Many flood damaged properties have been bought by conservation agencies in the past decade. Restoration projects are showing promise in restoring backwater habitat and other wetland habitats in the Missouri/Mississippi River Confluence COA.

Missouri/Mississippi River Confluence Conservation Strategies

- Work with willing private landowners and public agencies to restore and conserve natural communities.
- Improve side channel and backwater habitats for aquatic animals.
- Restore areas that are most critical for conserving existing habitats; implement Best Management Practices to reduce runoff and sedimentation problems.
- Encourage local communities to maintain adequate green space to absorb flood waters on Missouri and Mississippi River floodplains.
- Work with local communities to inform and educate; use conservation as an economic stimulus by promoting the area's natural and cultural heritage.
- Improve the quality of life of the citizenry who live, work and recreate in the Missouri/Mississippi River Confluence through educational workshops, festivals, field days, Stream Team participation and expanding recreational opportunities.
- Control invasive exotic plants and animals.



Jim Raebert, Missouri Department of Conservation

A growing network of natural areas, outdoor recreation and education facilities, and historic sites radiate from the confluence of the Missouri and Mississippi rivers.

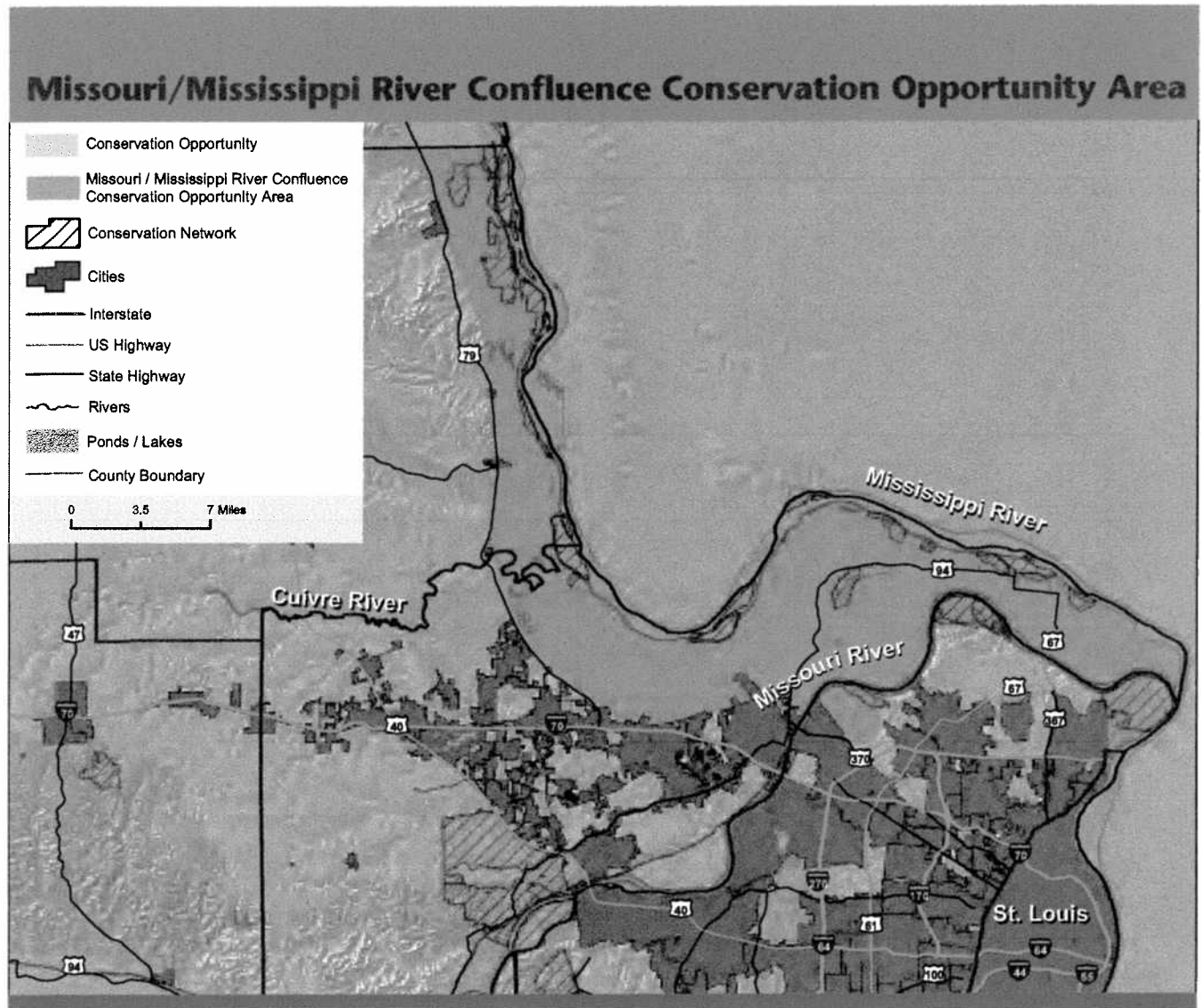
Priority Research and Inventory Needs

- Gather data on aquatic plants and animals; identify gaps in recent survey work.
- Gather data on wetland birds; look at Breeding Bird Survey data, waterfowl counts and Christmas Bird Count data.
- Build appropriate data layers (e.g., vegetative cover, road crossings, NPDES permits, pesticide use permits).
- Inventory non-native invasive species.
- Conduct topographical survey of levees.

Conservation Partners

Existing: The Nature Conservancy – Missouri Chapter (TNC); Ducks Unlimited (DU); Great Rivers Habitat Alliance; Confluence Greenway; Trust for Public Land; Pheasants Forever (PF); American Land Conservancy; Great Rivers Greenway District; Missouri Waterfowl Association; St. Louis Audubon Society; National Wild Turkey Federation (NWTF); Living Lands and Waters; Upper Mississippi River Conservation Committee; Mississippi Interstate Cooperative Resource Association; Stream Teams; River Resource Action Team; Missouri Botanical Garden; Missouri River Relief; Private Landowners; University of Missouri – Columbia; Southern Illinois University; St. Louis University; St. Charles County Parks and Recreation Department; City of St. Charles Parks & Recreation; St. Louis County Parks & Recreation; King's Lake Drainage District; Lincoln, St. Charles and St. Louis County Soil and Water Conservation Districts (SWCD); Farm Service Agency (FSA); Natural Resources Conservation Service (NRCS); Missouri Department of Natural Resources (DNR); Illinois Department of Natural Resources; Missouri Department of Conservation (MDC); U.S. Fish and Wildlife Service (USFWS); U.S. Department of Agriculture; U.S. Army Corps of Engineers (USACE); U.S. Geological Survey

Potential: Audubon Missouri; American Fisheries Society; Upper Mississippi Tallgrass Prairie Joint Venture; Open Space Council; Middle Mississippi River Partnership; Webster Groves Nature Study Society; National Park Service



Funding Sources

Existing: MDC annual budget; DNR annual budget; TNC annual budget; USACE Section 1135 Program; USACE Section 206 Program; USACE Missouri River Mitigation Program; FSA Conservation Reserve Program; NRCS Wetland Reserve Program; NRCS Environmental Quality Incentives Program; NRCS Farm and Ranch Land Protection Program; NRCS Grassland Reserve Program; NRCS Wildlife Habitat Incentive Program; USFWS Partners for Fish and Wildlife Program; USFWS North American Wetlands Conservation Act Grant; DU Conservation Easement Program; PF Wetland Restoration Project; Great Rivers Habitat Alliance restoration annual budget; SWCD State Cost Share Funds; Great Rivers Greenway annual budget; NWTf Wild Turkey Super Fund; The Trust for Public Land annual budget

Promising Future Sources: USFWS Non-Game Bird Funds; USFWS Migratory Bird Conservation Fund; Missouri Bird Conservation Initiative Grants; MDC Forest Legacy Program; MDC State Wildlife Grants; MDC Wildlife Diversity Funds; National Fish and Wildlife Foundation Grants; DNR Land and Water Conservation Fund

Yellow-crowned night-herons are rare summer residents in Missouri. They nest near streams, marshes and wooded wetlands.

Existing Conservation Network

Upper Mississippi Conservation Area (Westport Island Natural Area, Norton Wood Access); B.K. Leach Conservation Area; Columbia Bottom Conservation Area; Pelican Island Natural Area (Pelican Island Access); Cuivre Island Conservation Area; Marais Temps Clair Conservation Area; St. Stanislaus County Park; Prairie Slough Conservation Area (Prairie Slough Natural Area); Sandy Island Conservation Area; Upper Mississippi River Waterfowl Area; Edward "Ted" and Pat Jones – Confluence Point State Park; Jefferson National Expansion Monument; Sandy Island Natural History Area; Riverlands Environmental Demonstration Area; Dresser Island Access; Twin River Access; Private Duck Clubs



Jim Rathert,
Missouri
Department of
Conservation

Flood Protection



The Confluence is important for floodwater storage. During the flood of 1993, it is estimated that the Confluence held 260 billion gallons of water. Without this storage capacity, communities downstream (including the city of St. Louis) would have been far more affected by flooding.

Missouri Department of Conservation

Conservation Challenges

Today, large river systems and their floodplains serve many human interests including agriculture, water supply, commerce, urban expansion, recreation and housing. The Missouri and Mississippi Rivers have been altered by levees, dikes, locks and dams. They are channelized and have few islands, but many sandbars. The health and diversity of native aquatic

and terrestrial plants and animals have been negatively affected. Potential obstacles to conservation success include urban sprawl, public attitude, finding willing private landowners to implement restoration actions, limited funding and staff, highly degraded habitats and lack of education about floodplain issues.

To learn more about the Missouri/Mississippi River Confluence COA, please contact:



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

Stribley, Sara

From: Doyle Brown [Doyle.Brown@mdc.mo.gov]
Sent: Tuesday, January 30, 2007 7:13 AM
To: Stribley, Sara
Subject: Re: Meeting Confirmation

I got everything. Peggy will try to make the meeting, however she may have another committment. See you then.

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.5
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

>>> "Stribley, Sara" <sstribley@ensr.aecom.com> 01/29/07 6:19 PM >>>

Hi Doyle,

Just wanted to confirm our meeting on Tuesday, February 6th at 3:00 pm, and that you received the Keystone survey package information that we sent out last week? Charles Johnson and I will be attending the meeting. Please let me know if you would like me to bring any additional materials to our meeting!

Thanks Doyle,
Sara

Sara Stribley

Environmental Coordinator
ENSR | AECOM
1601 Prospect Pkwy
Ft. Collins, Colorado 80525
P: 970.493.8878
F: 970.4930213
sstribley@ensr.aecom.com
www.ensr.aecom.com

Stribley, Sara

From: Stribley, Sara
Sent: Monday, January 29, 2007 5:19 PM
To: 'Doyle Brown'
Subject: Meeting Confirmation

Hi Doyle,

Just wanted to confirm our meeting on Tuesday, February 6th at 3:00 pm, and that you received the Keystone survey package information that we sent out last week? Charles Johnson and I will be attending the meeting. Please let me know if you would like me to bring any additional materials to our meeting!

Thanks Doyle,
Sara

Sara Stribley
Environmental Coordinator
ENSR | AECOM
1601 Prospect Pkwy
Ft. Collins, Colorado 80525
P: 970.493.8878
F: 970.4930213
sstribley@ensr.aecom.com
www.ensr.aecom.com

ENSR

1601 Prospect Parkway, Fort Collins, Colorado 80525
T 970.493.8878 F 970.493.0213 www.ensr.aecom.com

January 17, 2007

Doyle Brown
Missouri Department of Conservation
2901 West Truman Boulevard
Jefferson City, MO 65102-0180

Dear Mr. Brown:

At this time, ENSR Corporation (ENSR) is providing you with information regarding the implementation of the 2007 biological survey program for the Keystone Mainline Pipeline Project in Missouri, and requesting your feedback and concurrence on certain proposed actions.

Project Description

As provided in previous communications, 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.

Biological Survey Program

In 2006, biological surveys were initiated for several species potentially located along the Keystone Mainline Project route in Missouri. ENSR sent these 2006 biological survey reports to the Missouri Department of Conservation (MDC), and the U.S. Fish and Wildlife Service (USFWS) in December, for review and evaluation. Additional surveys are planned throughout 2007 for the species surveyed in 2006, and for the majority of remaining sensitive species that may be located within the Keystone Mainline Project vicinity (see attached survey schedule). Sensitive species and survey locations have been determined through consultation with the MDC, the Missouri Natural Heritage Program, and the USFWS. Some survey areas have been refined based on information obtained through habitat surveys conducted in 2006. To facilitate your review of the 2007 Keystone Mainline biological survey program, ENSR is providing you with the following materials, and asking for your signed concurrence on several proposed actions:

Doyle Brown
January 17, 2007
Page 2

- Proposed Threatened and Endangered Species Survey Schedule (2006-2007) – This document is provided to give an overview of when and where species specific surveys have been, and will be conducted in Missouri. Please sign and return the survey schedule concurrence form as “concur” or “do not concur.” Please also provide specific comments in the area provided if you “do not concur,” in order for ENSR to promptly address concerns.
- Biological Survey March-Charts (2007) – These charts are provided as a visual tool to guide your assessment of the proposed Threatened and Endangered species surveys. The y-axis provides information on approximate survey windows. This axis shows the general timeframe in which ENSR proposes to complete the surveys for a specific species (based on nesting, spawning, flowering periods, etc.) The x-axis provides information on the Mainline milepost marker where appropriate habitat has been determined to exist for a species. This axis shows where ENSR proposes to complete species specific surveys.
- Survey Protocols – These documents provide detailed information on how specific surveys will be conducted for Threatened and Endangered species. Wherever possible, survey protocols were produced directly from state or federal agency feedback. Please sign and return the survey protocol concurrence form as “concur” or “do not concur.” Please also provide specific comments in the area provided if you “do not concur,” in order for ENSR to promptly address concerns.
- 1:100k U.S. Geological Survey (USGS) Topographic Maps of the Keystone Mainline in Missouri – Provided for geographic reference to the Project.

Additional copies of these materials are enclosed for distribution to other state wildlife representatives. Copies of these reports also have been sent to John Cochran (Nebraska USFWS – Project Lead). ENSR would also like to meet with you in early February to discuss this material in further detail, and you should have already been contacted by ENSR regarding a meeting date and time. If you have any questions regarding the enclosed materials, please contact me at (970) 493-8878 ext. 181 or email cjohnson@ensr.aecom.com.

Sincerely,



Charles Johnson
Senior Wildlife Biologist

CJ/ss

Ref: 10623-004

Enc: Proposed Threatened and Endangered Species Survey Schedule
Biological Survey March-Charts
Survey Protocols
1:100k USGS Topographic Maps

CONFIDENTIAL

Keystone Pipeline Project Survey Schedule Concurrence Form

<input type="checkbox"/> CONCUR	Signature:
	Name:
<input type="checkbox"/> DO NOT CONCUR	Title:
	Date:

If you checked "DO NOT CONCUR," please provide reasons and specific directions in the space provided below on how survey schedule should be changed to meet your acceptance:

--

CONFIDENTIAL

Keystone Pipeline Project Survey Protocol Concurrence Form

<input type="checkbox"/> CONCUR	Signature:
	Name:
<input type="checkbox"/> DO NOT CONCUR	Title:
	Date:

If you checked "DO NOT CONCUR," please provide reasons and specific directions in the space provided below on how survey protocols should be changed to meet your acceptance:

Keystone Pipeline Project
Proposed Survey Schedule for Missouri
2006-2007

Completed: 2006 Surveys					
Species & Status	Approximate Survey Dates	Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
Indiana Bat <i>Myotis sodalists</i> FE; MO-E	Oct-Dec.	Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, St. Charles.	Habitat evaluations will be initiated within the construction ROW to characterize potential roosting habitat quality for this species.	BHE Environmental	See attached study plan and survey protocol.
Raptors	March 28 - April 1	MP: 748.3-901 (Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain counties)	An aerial survey will be conducted to identify raptor nest sites and breeding territories within at least 0.25 miles of the proposed ROW.	Karen Caddis, Charles Johnson - ENSR Senior Wildlife Biologists	
King Rail <i>Rallus elegans</i> MO-E	Fall/Winter	Buchanan, Carroll, Chariton, Lincoln, and St. Charles counties	A desk top habitat evaluation will be conducted to determine functionally intact or extensive wetland complexes.	ENSR	Habitat field evaluations will be based on desktop analysis.
Massasauga <i>Sistrurus catanatus</i> FC; MO-E Western fox snake <i>Elaphe vulpine vulpine</i> MO-E	October 9-25	Buchanan, Carroll, Chariton, and St. Charles counties (see attached study plan)	Habitat evaluations will be initiated within the construction ROW to identify potential habitat for these species.	BHE Environmental	Potential snake surveys will be refined based on habitat surveys. See attached survey protocol.

**Keystone Pipeline Project
Proposed Survey Schedule for Missouri
2006-2007**

Completed 2006 Surveys					
Species & Status	Approximate Survey Dates	Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
Topeka shiner <i>Notropis Topeka</i> FE; MO-E	Sept 25 – Oct 4	Cilinton: 772.9 (Castile Creek), 780.8 (Little Platte River), 781.8 (Trib. of Little Platte River), 785.5 (Shoal Creek), 786.2 (Little Shoal Creek) Caldwell: 794.5 (Log Creek), 795.5, 796.2 (Trib. of Log Creek), 801.2 (Brush Creek), 801.7 (Trib. of Brush Creek), 803.5 (Trib. of Crabapple Creek), 804.5 (Crabapple Creek) Chariton: 872.2, 871.5 (E.F. Chariton River)	Habitat and fish surveys will be conducted to document habitat suitability; intermittent/ perennial flow; spawning habitat, and species presence.	William Stark, Ph.D. – ENSR aquatic biologist	See attached survey protocol.

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
Indiana Bat <i>Myotis sodalists</i> FE; MO-E	Habitat surveys: Jan-Feb Occurrence surveys: 15-May to 15-August	See attached study plan.	Complete habitat evaluations within the construction ROW to identify potential habitat for this species. Conduct occurrence surveys/ mist netting activities within identified survey areas for this	BHE Environmental	See attached study plan and survey protocol.

**Keystone Pipeline Project
Proposed Survey Schedule for Missouri
2006-2007**

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
Bald Eagle	January/February	Buchanan: 748.3 (Missouri River) St. Charles: 1021.5 (Mississippi River)	species. Aerial surveys will be conducted at major river crossings 1-mile from ROW to determine the locations of winter roost and nest sites.	Mike Phelan, Karen Caddis – ENSR wildlife biologists	See attached survey protocol. 2008 pre-construction surveys will not be required if construction occurs outside of the breeding/winter roost seasons for this species.
Raptors	March-April	MP: 748.3-1021.5 (Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, St. Charles counties)	Aerial survey to locate occupied nest sites and breeding territories within at least 0.25 miles of the proposed ROW.	Mike Phelan – ENSR wildlife biologist.	See attached survey protocol. 2008 pre-construction surveys will not be required if construction occurs outside of the breeding season.
Greater prairie chicken <i>Tympanuchus cupido</i> MO-E	Spring	Audrain: 904.1-904.3, 908.2-908.7, 909-909.1, 913.9-914.6, 915-915.2, 915.2-915.4, 915.4-916, 917-917.2, 917.9-918.3, 918.9-919.1, 919.1-919.3, 928-928.2	Contact land owners to determine whether this species has been observed within the project area.	ENSR	Potential surveys would be based on observation information from land owners.
Massasauga <i>Sistrurus catenatus</i>	Habitat surveys: Jan-Feb	Buchanan, Carroll, Chariton, and St.	Complete habitat evaluations within the construction ROW to	BHE Environmental	See attached survey protocol.

**Keystone Pipeline Project
Proposed Survey Schedule for Missouri
2006-2007**

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
<p>FC; MO-E</p> <p>Western fox snake <i>Elaphe vulpina vulpina</i></p> <p>MO-E</p>	<p>Occurrence surveys: April, May, June, and October.</p>	<p>Charles counties (see attached study plan)</p>	<p>Identify potential habitat for these species.</p> <p>Surveys will be conducted to determine presence of this species within the construction ROW.</p>		<p>No pre-construction surveys would be required in 2008 if surveys are completed in 2007.</p>
<p>Topeka shiner <i>Notropis Topeka</i></p> <p>FE; MO-E</p>	<p>Spawning season: 15-May to 31-July</p>	<p>Clinton: 772.9 (Castile Creek), 780.8 (Little Platte River), 781.8 (Trib. of Little Platte River), 785.5 (Shoal Creek), 786.2 (Little Shoal Creek) Caldwell: 794.5 (Log Creek), 795.5, 796.2 (Trib. of Log Creek), 801.2 (Brush Creek), 801.7 (Trib. of Brush Creek), 803.5 (Trib. of Crabapple Creek), 804.5 (Crabapple Creek) Chariton: 872.2, 871.5 (E.F. Chariton River) St. Charles: 985.3-1021.1</p>	<p>Based on the FWS and MDC review of the 2006 survey report, further surveys may be required.</p> <p>Further habitat and fish surveys may be conducted to document habitat suitability; intermittent/perennial flow; spawning habitat, and species presence.</p>	<p>William Stark, Ph.D. - ENSR aquatic biologist</p>	<p>See attached survey protocol.</p>
<p>Decurrent false aster <i>Boltonia decurrens</i></p>	<p>Flowering period: Late August - September 30.</p>		<p>One survey will be conducted during the flowering period to determine presence within the construction ROW.</p>	<p>Qualified ENSR biologist and/or contractor</p>	<p>See attached survey protocol. 2008 pre-construction</p>

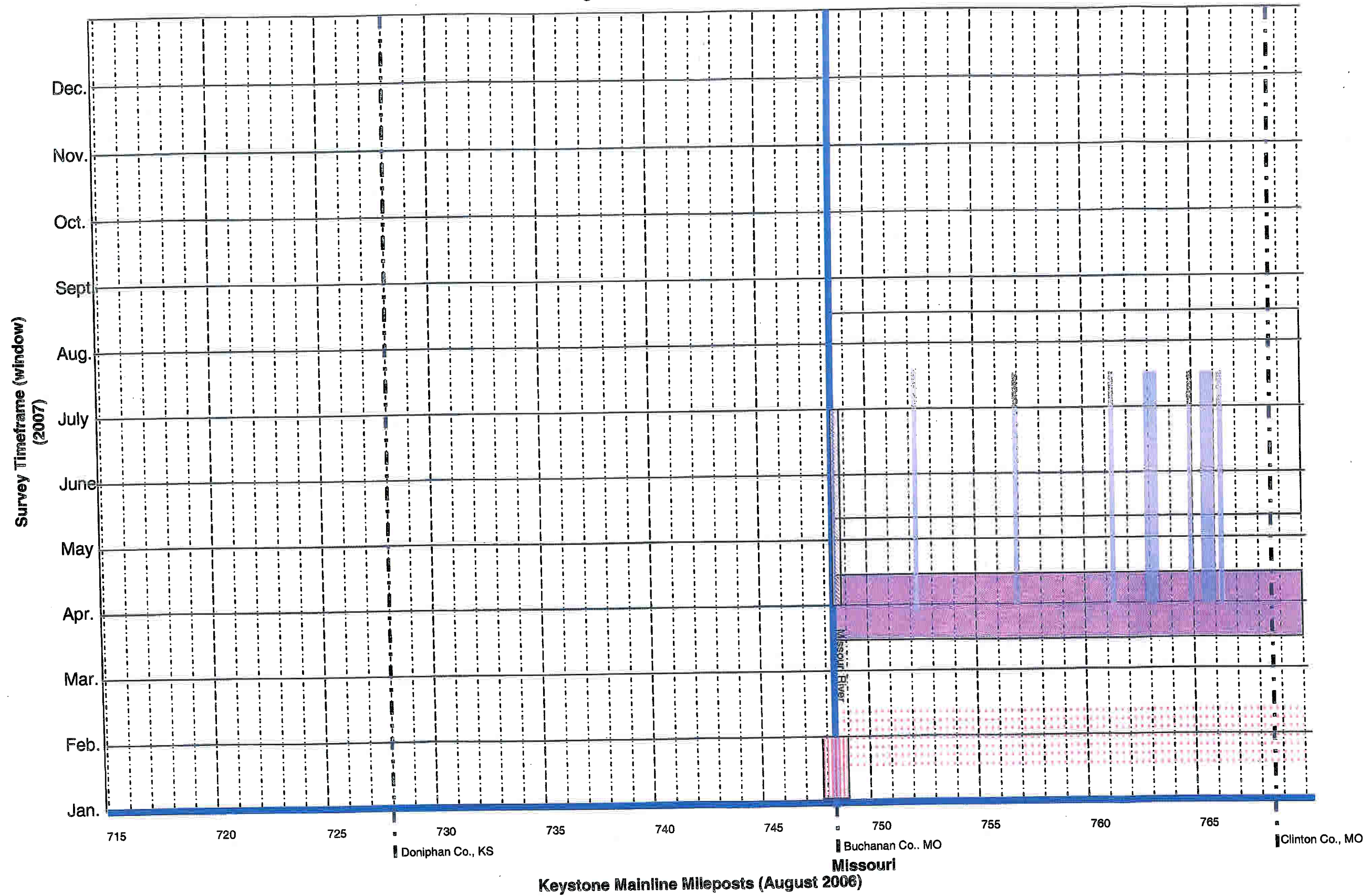
**Keystone Pipeline Project
Proposed Survey Schedule for Missouri
2006-2007**

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
FT; MO-E					surveys would only be required in areas where this species was observed in 2007.
Running buffalo clover <i>Trifolium stoloniferum</i> FE; MO-E	Flowering period: Mid April to May 31.	Buchanan: 748.3 (Missouri River). Chariton: 841 (Grand River), 862.2 (Chariton River), 867 (M.F. Little Chariton River), 871.7 (E.F. Chariton River), Lincoln: 957 (W.F. Cuivre River), 971 (Cuivre River). St. Charles: 981.6 (Cuivre River) 985-1021.5 (Missouri/Mississippi River Floodplain).	One survey will be conducted during the flowering period to determine presence within the construction ROW.	Qualified ENSR biologist and/or contractor	See attached survey protocol. 2008 pre-construction surveys would only be required in areas where this species was observed in 2007.

**Keystone Pipeline Project
Proposed Survey Schedule for Missouri
2006-2007**

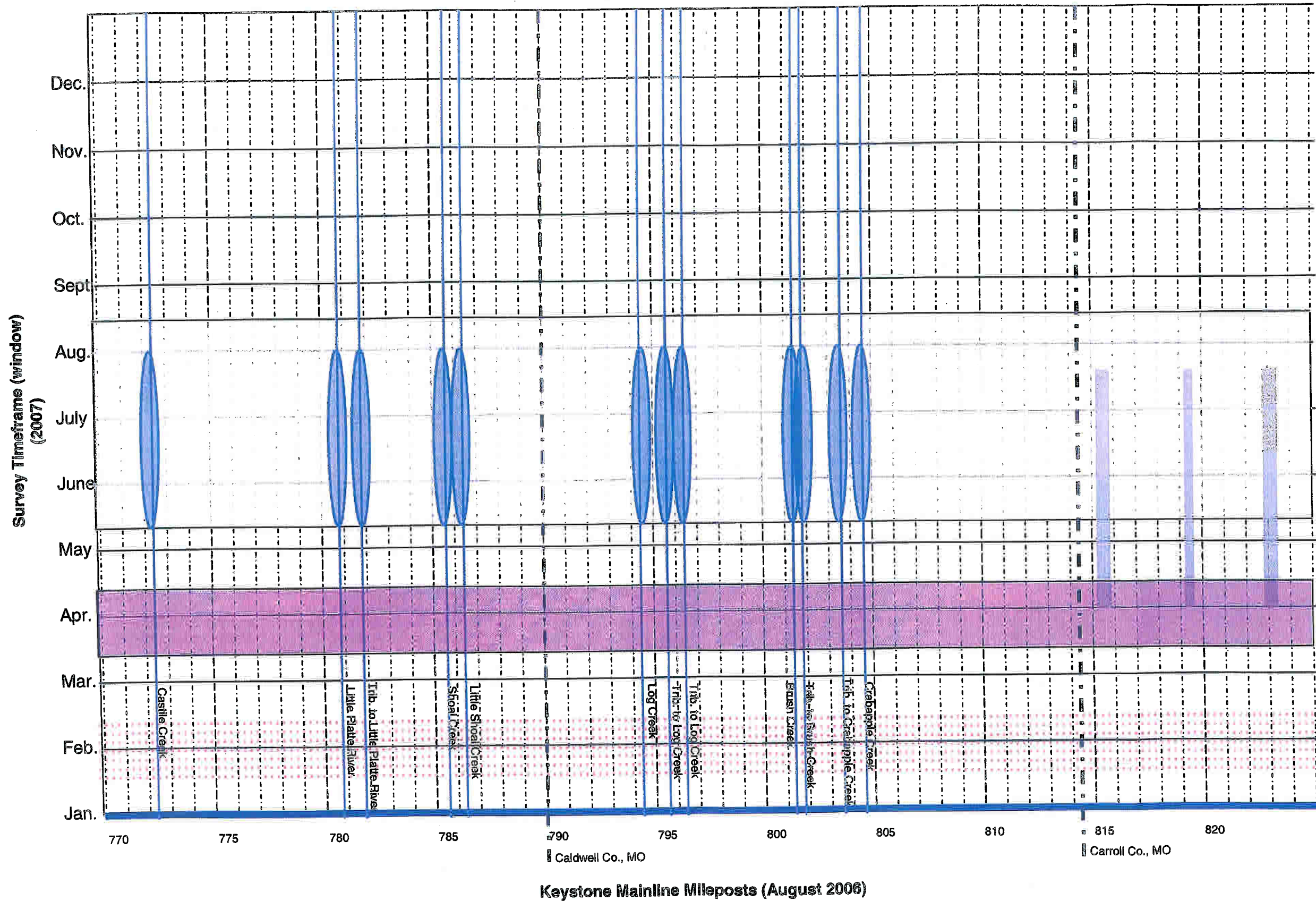
ID	Task Name	Qtr 1, 2006			Qtr 2, 2006			Qtr 3, 2006			Qtr 4, 2006			Qtr 1, 2007			Qtr 2, 2007			Qtr 3, 2007			Qtr 4, 2007
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	Completed Raptor Surveys (through Audrain Co.)			3/28	4/1																		
2	Indiana Bat Habitat Surveys								8/1														
3	Topeka Shiner Habitat Surveys									9/25	9/28												
4	Topeka Shiner Fish Surveys									10/2	10/4												
5	Snake Habitat Surveys									10/9	10/25												
6	King Rail Desktop Habitat Analysis									12/1	12/31												
7	Indiana Bat Habitat Surveys - Complete Surveys												2/28	1/29									
8	Snake Habitat Surveys - Complete Surveys												2/28	1/29									
9	Greater Prairie Chicken Phone Surveys												1/1	3/31									
10	Bald Eagle Winter Roost & Nest Surveys												1/29	2/10									
11	Raptor Surveys													3/15	5/1								
12	Massasauga & Western Fox Snake Surveys													4/2	6/30								
13	Running Buffalo Clover Surveys													4/15	5/31								
14	Indiana Bat Mist Net Surveys														5/15	8/15							
15	Decurrent False Aster Surveys																				8/25	9/30	

Keystone Pipeline Project
 Biological Survey March-Chart 2007



Indiana Bat Mist Net Surveys; to be conducted at specific woodlots determined from 2006 habitat analysis
 Bald Eagle (Winter Roost and Nest Sites)
 King Rail; survey areas to be refined
 Raptors
 Running Buffalo Clover
 Indiana Bat Habitat Surveys; conducted at woodlots not surveyed during 2006 field work

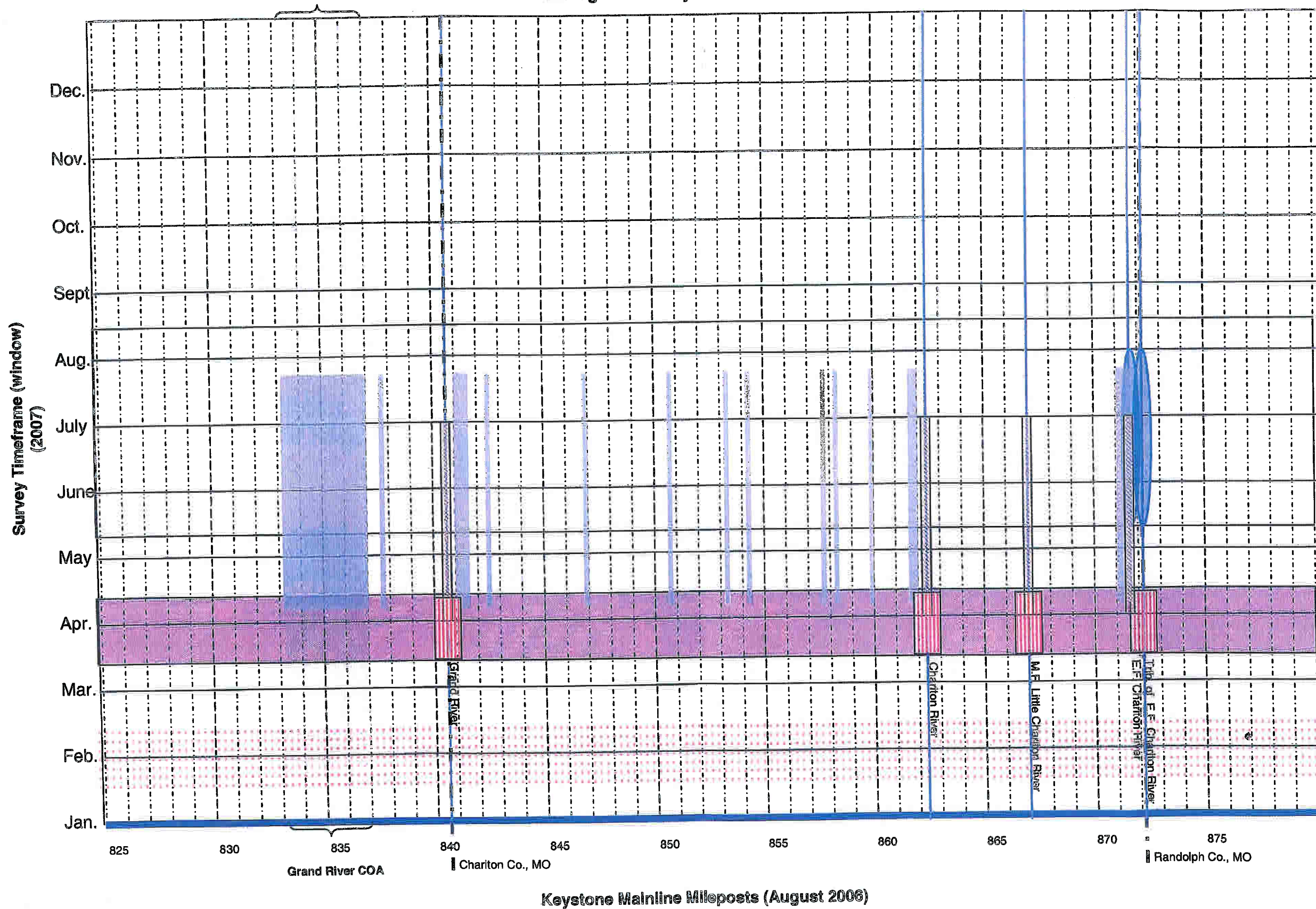
Keystone Pipeline Project
Biological Survey March-Chart 2007



Indiana Bat Mist Net Surveys; to be conducted at specific woodlots determined from 2006 habitat analysis
 Raptors
 King Rail; survey areas to be refined
 Topeka Shiner; potential follow-up surveys based on FWS and MDC review of 2006 survey report.

Indiana Bat Habitat Surveys; conducted at woodlots not surveyed during 2006 field work

Keystone Pipeline Project
Biological Survey March-Chart 2007



Indiana Bat Mist Net Surveys; to be conducted at specific woodlots determined from 2006 habitat analysis
 Bald Eagle (Nest Sites)
 Raptors
 King Rail; survey areas to be refined
 Running Buffalo Clover
 Indiana Bat Habitat Surveys; conducted at woodlots not surveyed during 2006 field work
 Topeka Shiner; potential follow-up surveys based on FWS and MDC review of 2006 survey report.