Control Number: 38230

Item Number: 1414

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SOAH DOCKET NO. 473-10-4398
PUC DOCKET NO. 38230

APPLICATION OF LONE STAR TRANSMISSION COMPANY, LLC FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE CENTRAL A TO CENTRAL C TO SAM SWITCH/NAVARRO PROPOSED CREZ TRANSMISSION LINE	§	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

REBUTTAL TESTIMONY

OF

SHANNON DORSEY

ON BEHALF OF

APPLICANT

LONE STAR TRANSMISSION, LLC

AUGUST 31, 2010

1414

TESTIMONY INDEX

EXHIBITS

EXHIBIT	DESCRIPTION
SD-R-1	Resume and Qualifications
SD-R-2	Horizon Environmental Habitat Assessment

I. INTRODUCTION, QUALIFICATIONS, AND EXPERIENCE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Shannon Dorsey. My business address is 1507 South IH 35, Austin, Texas 78741.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Horizon Environmental Services, Inc. as a Principal, Ecology Group Manager.

Q. PLEASE DESCRIBE THE BUSINESS OF HORIZON ENVIRONMENTAL SERVICES, INC. ("HORIZON").

A. Horizon is based in Austin, Texas, and provides environmental services nationally. We are composed of senior level professional personnel with many years of applied experience and specific training in environmental assessments, permitting, and management. Horizon's capabilities and experience are very broad in the area of National Environmental Policy Act ("NEPA") compliance support, particularly as related to multidisciplinary Environmental Reports ("ER"), Environmental Assessments ("EA"), and Environmental Impact Statements ("EIS"), jurisdictional wetlands and other "waters of the U.S.," Nationwide and Individual section 404 and section 10 Permits, and endangered species assessments, surveys, and permits for incidental take.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS AND BUSINESS EXPERIENCE.

A. I completed a B.A. in Biology at the University of Texas in 1992. I completed a M.S. in Biology (Wildlife Management) at Southwest Texas State University (recently renamed Texas State University) in 1995.

I am currently pre-certified by Texas Department of Transportation ("TxDOT") in the areas of protected species determinations-habitat, impact evaluation assessments, biological surveys, hazardous materials initial site assessment, and Nationwide Permits. I have attended TxDOT Section 404 and Erosion and Sediment Control Workshops and CLE NEPA workshops and I meet the requirements of a Qualified Environmental Professional (ASTM Practice E-1527 and 40 CFR 312). I am a federally-permitted biologist with U..S. Fish and Wildlife Service ("USFWS") to conduct species specific surveys for the golden-cheeked warbler ("GCW", black-capped vireo ("BCV"), interior least tern, Houston toad, and red-cockaded woodpecker.

I am a Principal with Horizon and have over 16 years of environmental consulting experience and currently serve as our Ecological Group Manager. I have managed several hundred projects throughout the United States, including residential and commercial construction, lignite mine creation, electric transmission line routing, right-of-way ("ROW") assessment and permitting, oil and gas exploration and development, and pipeline facility construction, as well as many other various land development type projects. I have also prepared numerous real estate Environmental Site Assessments ("ESA"). Currently I am on the Texas Mining and Reclamation Associations Environmental Committee, and I am a Certified Professional Wetland Scientist (No. 1760) and Registered Environmental Professional (No. 5194).

I provide additional details about my qualifications in my resume, which I have attached as Exhibit SD-R-1.

Q. HAVE YOU PREVIOUSLY PERFORMED WORK RELATED TO TRANSMISSION LINE ADMINISTRATIVE PROCEEDINGS?

A. Yes. I have helped prepare and/or supervise the preparation of Routing Studies, ERs, EAs, endangered species surveys, wetlands delineations, habitat assessments, and cultural resources surveys related to electric transmission lines and substations in Texas.

II. PURPOSE OF TESTIMONY AND SUMMARY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the Habitat Assessment performed by Lone Star in preparation for filing its CCN application and to respond to portions of the Direct Testimony of Public Utility Commission ("PUC") Staff witness Brian Almon.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. Lone Star has proposed several routes that avoid impacts to threatened or endangered species habitat. Should the PUC order a route that may affect threatened or endangered species habitat areas, Lone Star will perform species-specific surveys according to established USFWS protocols to determine whether the areas are occupied by such a species and determine whether any avoidance or mitigation efforts are necessary. Lone Star will also obtain all appropriate permits and undertake any required mitigation actions, and has already begun the consultation process with USFWS in this regard.

Q. WAS YOUR TESTIMONY AND THE INFORMATION YOU SPONSOR PREPARED BY YOU OR BY KNOWLEDGEABLE PERSONS UPON WHOSE EXPERTISE, JUDGMENT AND OPINIONS YOU RELY IN PERFORMING YOUR DUTIES?

A. Yes, it was.

Q. IS THE INFORMATION CONTAINED IN YOUR TESTIMONY TRUE AND CORRECT AND WITHIN YOUR PERSONAL KNOWLEDGE?

A. Yes, it is. In addition, I am a custodian of Horizon's records for the Habitat Assessment conducted by Horizon for this project ("the Records"). These Records were kept by Horizon in the regular course of business, and it was the regular course of business of Horizon for its employee or representative, with knowledge of the Records and the CCN Application, to make the Records or transmit information thereof to be included in such Records. The Records were made at or near the time or reasonably soon thereafter, and the Records are the originals or exact duplicates of the originals.

Q. DO YOU HAVE ANY WORKPAPERS UPON WHICH YOU RELIED TO PREPARE YOUR TESTIMONY?

A. Yes, I do. They consist of the Lone Star CCN Application and direct and rebuttal testimonies of the Lone Star witnesses, as well as the testimonies of certain intervener witnesses referenced in my testimony.

III. HABITAT ASSESSMENT

Q. WHY DID HORIZON PREPARE A HABITAT ASSESSMENT?

A. Burns & McDonnell, Lone Star's routing consultant for the Project, subcontracted with Horizon to prepare the Habitat Assessment and to assist in evaluating the alternative routes for the Project, including the routes that Lone Star later designated as its Preferred Routes. I have attached the Habitat Assessment to my testimony as Exhibit SD-R-2.

Q. PLEASE DESCRIBE THE PURPOSE OF THE HABITAT ASSESSMENT.

A. The purpose of the Habitat Assessment was to identify areas along the alternative routes, including the routes that Lone Star ultimately designated as its Preferred Routes, that provided potentially suitable habitat for the federally endangered golden-cheeked warbler ("GCW") and/or black-capped vireo ("BCV").

Q. WHAT INFORMATION DOES THE HABITAT ASSESSMENT PROVIDE?

A. The Habitat Assessment provides a general description of the proposed project, a description of the study methodology, study results, such as whether or not habitat for the target species was identified, figures that depict any areas determined to provide potentially suitable habitat, and management recommendations.

Q. WHO PARTICIPATED IN PREPARATION OF THIS HABITAT ASSESSMENT?

A. A team of Horizon professionals was assembled to work at my direction. These professionals were involved in both data acquisition and report preparation. As the Senior Project Manager, I conducted the field work and oversaw the day-to-day acquisition/compilation and report preparation work efforts. Other persons with primary responsibility included Ken Carothers (Project Manager/Biologist), Scott Flesher (Environmental Specialist/GIS Specialist), and Ashley Caldwell (Report Editor). Information and input was also provided by Burns & McDonnell and Lone Star.

Q. PLEASE DESCRIBE THE STEPS TAKEN IN PREPARING THE HABITAT ASSESSMENT.

A. The steps taken by Horizon in preparing the Habitat Assessment included reviewing available information applicable to the proposed project from Lone Star, a review of USGS topographic maps, and a review of recently flown aerial photography. This initial review was then followed by a detailed helicopter survey along the alternative routes. The aerial photography was studied to determine probable areas of potentially suitable habitat prior to conducting the helicopter surveys. This determination was made based largely on areas that provided some level of canopy cover; however, it was not intended to make any suitability determinations, rather this was intended to become familiar with

the project area prior to conducting any field work. All potential route links were uploaded into Horizons sub-meter accurate Trimble GPS system, and map booklets were created that were intended to assist in navigation along each of the alternative routes. After all preparations were made, Scott Flesher and I conducted two helicopter surveys of all route links to visually observe habitat characteristics along all alternative routes. When areas of potential habitat were encountered along any of the routes, the helicopter was flown slowly, and many times held in a hover position, so that GPS coordinates could be collected and I could visually examine the suitability of the habitat. This was accomplished as close as 20 feet above the canopy in all areas that provided potentially suitable habitat for either species. The first helicopter survey was conducted during October 2009 and the second was conducted in March 2010. The second helicopter survey was conducted to observe reroutes and the addition of new route links that were made after the first helicopter survey. After the helicopter surveys and after review of the collected data, a report was drafted that described the methodology and results of the Habitat Assessment.

Q. ARE YOU AWARE THAT INTERVENING PARTIES TO THIS CCN APPLICATION HAVE RETAINED OTHER BIOLOGISTS TO EVALUATE POTENTIALLY SUITABLE HABITAT FOR THE GCW AND BCV ALONG SPECIFIC SEGMENTS OF PROPOSED ROUTES?

A. Yes I am.

Q. ARE YOU AWARE THAT THESE OTHER BIOLOGISTS HAVE STATED THAT MORE POTENTIALLY SUITABLE HABITAT THAN WHAT YOUR

HABITAT ASSESSMENT IDENTIFIED IS PRESENT ALONG CERTAIN ROUTE LINKS OF THE PROJECT?

A. Yes I am.

Q. CAN YOU ADDRESS THEIR TESTIMONY AND CONCLUSIONS?

A. Dr. John Baccus and Mr. John Cornelius testify that they conducted field work along route RR to support their conclusions. However, as discussed in Mr. Van Dyne's rebuttal testimony, these witnesses identified habitat in locations that are not on Lone Star's proposed transmission line routes. Ms. Linda Laack's testimony, concerning certain properties affected by Lone Star's proposed northern routes, leaves in doubt some key facts. Ms. Laack's survey reports do not show that she followed required USFWS protocols, which are necessary in any evaluation submitted to the USFWS to establish the presence or absence of occupied habitat. On the ground surveys of this nature covering this amount of ground cannot be performed in accordance with USFWS protocol in such a short time. These surveys require a great deal of time for the surveyor to accurately determine the location of the GCW or BCV and to verify that "double counting" does not occur. Without proper mapping efforts and more detailed survey efforts, the exact number of GCWs and BCVs cannot be relied upon and no methodology was included in Ms. Laack's reports to establish that she did not "double-count" individuals. Additionally, a single detection of a GCW occurrence does not verify that the species in question has actually established a territory and is actively utilizing the area. It is very common for a biologist to hear or visualize one of these species on one occasion and never hear or see it again during subsequent return trips to the original detection site. This along with other factors is the reason that USFWS protocol must be followed,

including at least five site visits to all habitat areas, six visits with audio playback of a GCW vocalization on final visit if negative results are encountered, in order to establish occupation of an area.

Q. DO THESE WITNESSES' TESTIMONIES INVALIDATE LONE STAR'S METHODOLOGY ?

A. No. As I stated earlier, our assessment included a desktop survey (review of USGS topographic maps, aerial photography, etc.) followed by a detailed helicopter survey. Horizon's survey effort was accurate, provides scientifically credible results, and fully supports the level of effort that is normally provided for routing studies, and uses a methodology that has been accepted by USFWS on many occasions. Horizon's methodology is therefore very suitable for use in selecting a transmission line route. It is possible that these additional areas identified by Dr. Baccus, Mr. Cornelius, and Ms. Laack provide potentially suitable habitat for the GCW, though I believe that they are not conclusive, and should not be assigned much significance for the reasons I just explained. As detailed in the Rebuttal Testimony of Allen Wynn, detailed field surveys will be conducted once the Commission has selected a route. Horizon's Habitat Assessment was intended to identify areas that provide potentially suitable habitat, so that additional on-the-ground habitat surveys may be conducted once the Commission selects a route. As Mr. Wynn explains in his rebuttal restimony, Lone Star will discuss with USFWS what measures, if any, are required to avoid any adverse effects.

Q. ARE YOU FAMILIAR WITH THE TESTIMONY OF JESSE MCLEAN REGARDING THE USE OF THE DIAMOND MODEL C AND LOOMIS MODEL

L FOR DETERMINING POTENTIALLY SUITABLE HABITAT FOR THE GCW?

A. Yes I am.

Q. PLEASE EXPLAIN WHY HORIZON CHOSE TO CONDUCT HELICOPTER SURVEYS RATHER THAN CONDUCTING THE HABITAT ASSESSMENT THROUGH THE USE OF THESE COMPUTER GENERATED MODELS ABOUT WHICH MR. JESSE MCLEAN TESTIFIED.

A. While Horizon agrees that these models can be useful in locating areas that may provide suitable habitat for the GCW, we believe that there are specific inadequacies in using such computer generated models. These models are at best useful only as a starting point for conducting a habitat assessment for the GCW. Of the most concern to me, is the fact that these models rely primarily on canopy cover or vegetation density in determining habitat suitability. The GCW has very specific habitat requirements in addition to canopy cover or vegetation density that need to be met in order for a stand of wooded area to be considered suitable for the GCW. Specifically, the GCW requires a combination of mature Ashe juniper and hardwood trees, and trees required for nesting habitat are generally at least 15 feet tall with a trunk diameter of about five inches at four feet above the ground, and an essential element is that juniper trees within the habitat stand have shedding bark, at least near the base of the tree. It is my opinion that while both of these models can identify areas that provide wooded habitat, they would need to be ground-truthed to make determinations if these specific habitat elements are present. Neither model is able to make these determinations. Rather, both models rely heavily on vegetation density, not composition.

Q. ARE YOU EXPERIENCED IN OBTAINING INCIDENTAL TAKE PERMITS FROM THE USFWS?

A. Yes. I have prepared numerous habitat conservation plans and conducted formal consultation with the USFWS to obtain incidental take permits for clients that needed this service. An incidental take permit is also referred to as a 10(a) permit.

Q. IN YOUR OPINION, WILL AN INCIDENTAL TAKE PERMIT BE NECESSARY FOR THE LONE STAR PROJECT?

A. As part of the CCN process, informal consultation with the USFWS has already taken place. If it is determined that the PUC-ordered route would impact potentially suitable habitat for the USFWS, or any other federally listed species, it will be necessary to consult with the USFWS to determine the appropriate avoidance, minimization or mitigation measures required to insure compliance with the ESA, which may include obtaining an incidental take permit and providing mitigation for any impacts to listed endangered species and/or their habitat. This consultation process is described in greater detail in Mr. Wynn's rebuttal testimony.

Q. IN YOUR OPINION, WOULD IT BE POSSIBLE TO OBTAIN AN INCIDENTAL TAKE PERMIT IF THE PROJECT WERE TO IMPACT ANY OF THE AREAS IDENTIFIED BY HORIZON OR ANY OF THE INTERVENING PARTIES AS SUITABLE HABITAT FOR THE GCW, AND IF SO, WHAT WOULD BE INVOLVED IN ORDER TO DO SO?

A. Based on my past experience, I believe that Lone Star will be likely to obtain an incidental take permit from USFWS for the proposed Project if habitat is to be impacted for the GCW. As discussed in more detail in Mr. Wynn's rebuttal testimony, Lone Star is

prepared to conduct additional habitat assessment field studies along the entire ordered route as well as presence/absence surveys within all areas subsequently identified as potentially suitable habitat for the GCW or BCV. This will allow Lone Star to obtain data that details exactly how much habitat will be impacted by the Project. Through consultation with USFWS biologists, avoidance, minimization and/or mitigation measures will be built into the project design to minimize impacts wherever possible. Lone Star may be required to prepare a habitat conservation plan ("HCP") and provide mitigation for any impacts to either species and/or their habitat. HCPs are planning documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded. The result of a HCP is that any impacts to the listed species are offset. USFWS policy under the Endangered Species Act ("ESA") states that mitigation measures may take many forms, including, but not limited to, payment into an established conservation fund or bank; preservation (via acquisition or conservation easement) of existing habitat; enhancement or restoration of degraded or former habitat; establishment of buffer areas around existing habitats; modifications of land use practices, and restrictions on access. Which type of mitigation measure is appropriate for a specific HCP is determined on a case by case basis, and is based upon the needs of the species and type of impacts anticipated.

IV. CONCLUSION

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. It is my opinion that Lone Star and its consultants have more than adequately addressed the existence of potential endangered species habitat on more than 1000 miles of

proposed alternative routes for the Project. Initial consultation with USFWS and many other state and federal agencies has also occurred in an effort to gain concurrence on the areas that need to be assessed in more detail once a final route is ordered. While several routes are proposed that provide the option of avoiding impacts to threatened or endangered species habitat, should the PUC order a route that impacts these habitat areas, species specific surveys will be conducted according to established USFWS protocol in an effort to determine if these areas are occupied by the species, and appropriate permits and/or mitigation actions will be initiated by Lone Star.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Horizon™
Environmental Services, Inc.

Shannon M. Dorsey, PWS

Principal/Senior Project Manager

Education

M.S., Wildlife Management, Southwest Texas State University, 1995

B.A., Biology, University of Texas at Austin, 1992

Certifications – Qualifications – Training

Certified Professional Wetland Scientist (PWS) No. 1760

Registered Environmental Professional (REP No. 5914)

Qualified Environmental Professional under ASTM Practice E 1527-05 and 40 CFR 312 "All Appropriate Inquiries" (AAI) Rule

US Army COE Approved Wetland Delineation Training

Areas of Relevant Expertise

FERC Environmental Inspection and Permitting

NEPA Compliance

Phase I ESAs (ASTM Practice E 1527-05)

Phase II ESA Sampling

Wildlife Management

Wetland Delineation and Section 404 Permitting

Threatened/Endangered Species Permitting

Years of Experience

With This Firm: 14

With Other Firms: 2

Relevant Experience Summary

- Section 404/10 Permitting
- Expert Witness Testimony
- CWSRF EID Preparation
- FERC Filings
- Public Meetings
- Phase I ESAs
- Expert Testimony
- Threatened/Endangered Species Survey and Section 10(a) Permitting
- Aquatic Ecology
- Wildlife Ecology
- Wetland Delineation
- Wetland Mitigation
- Wildlife and Game Management

Experience Summary

Shannon Dorsey is a graduate of Southwest Texas State University's master's program in Wildlife Biology. A Principal and Senior Project Manager, Mr. Dorsey has had extensive experience in the field of wildlife biology, project management, permitting, and consulting. He has been involved with native wildlife and endangered species, conducting both habitat assessments and presence/absence surveys and territorial mapping for several local and nationwide species. Mr. Dorsey has prepared dozens of Section 10(a)(1)(B) permits (Endangered Species Act incidental take of endangered species). Mr. Dorsey also brings a lifetime of outdoor recreation and hunting experience to the project. As a Texas hunting lease holder in west Texas, Mr. Dorsey has spent the past 25 years actively managing his personal hunting leases in regards to wildlife management and game production. Mr. Dorsey is an accomplished big game hunter, and he has utilized his education in wildlife management in this regard to better understand what does and does not impact hunting success and game management. Mr. Dorsey is also a certified as a "Professional Wetland Scientist" (PWS No. 1760) by the Society of Wetland Scientists Certification Program, Inc. He is skilled and experienced in on-site investigations that include habitat assessment, wetland determinations and delineations, Phase I Environmental Site Assessments and Phase II sampling, recognition of karst characteristics, recharge features, and suitable endangered species habitats. Mr. Dorsey has extensive experience in FERC filing and compliance for both 7(c) and non-7(c) projects as well as training pipeline personnel in Environmental Compliance. Mr. Dorsey serves as the manager of Horizon's Ecology Department and oversees ecological and due diligence investigations. Mr. Dorsey is a Registered Environmental Professional (REP No. 5914) and Horizon Principal with more than 16 years of consulting experience.

Horizon™
Environmental Services, Inc.

18 November 2009

Mr. Mark Van Dyne
Burns & McDonnell
9400 Ward Parkway
Kansas City MO, 64114

RE: Lone Star Transmission's Central A to Navarro West Proposed Electrical Transmission Project
HJN 090109

Dear Mark,

This letter provides the results of an endangered species habitat assessment conducted by Horizon Environmental Services, Inc. (Horizon) for the construction of a proposed transmission line between the Central A and Navarro West substations by Lone Star Transmission. Specifically, Horizon was contracted to identify areas along Lone Star Transmission's Central A to Navarro West proposed transmission line route segments that contain habitat for the golden-cheeked warbler (GCW) (*Dendroica chrysoparia*) and/or black-capped vireo (BCV) (*Vireo atricapilla*). Horizon evaluated the approximately 1,171 miles of potential route segments between the proposed Central A and Navarro West substations as part of the current routing studies that Burns & McDonnell are conducting for the proposed project on Lone Star Transmission's behalf (Appendix A, Figure 1). Because of the significantly large area to be assessed, Horizon employed the use of a Robinson 44 helicopter in order to evaluate all of the potential route segments. The use of a helicopter for habitat assessment purposes is an effective way to view vegetative components and habitat elements from the air, without having to physically access large tracts of private property. Horizon conducted the field reconnaissance on 27-29 October 2009 and spent approximately 48 person-hours in the field evaluating the proposed routes and adjacent areas. In addition to the helicopter survey, Horizon conducted a pre-field literature review of existing state and federal agency resources as well as recent aerial photographs of the proposed route segments.

1.0 GENERAL SITE DESCRIPTION

The project area begins on its west end in Scurry County, Texas, and extends east through portions of Scurry, Mitchell, Fisher, Nolan, Jones, Taylor, Shackelford, Callahan, Stephens, Eastland, Palo Pinto, Erath, Comanche, Hood, Somervell, Bosque, Johnson, Hill, McLennan and Navarro Counties. The vegetation along the potential route segments is variable due to the linear extent of the project and the numerous land uses; however, in general the project area traverses in an east-to-west direction through 3 ecoregions of Texas: the Rolling Plain, Cross Timbers and Prairies, and Blackland Prairie ecological regions.

The Rolling Plains are part of the Great Plains region of the central United States (Miller, 1975). The region is gently rolling to moderately rough topography. Soils vary from coarse sands along outwash terraces adjacent to streams, to tight clays or red-bed clays and shales. The primary land use within the Rolling Plains is livestock, with the majority being cattle. The Cross Timbers and Prairies ecoregion is the primary ecoregion of North Texas. Most of the region is rolling to

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hilly, with rapid surface drainage (Miller, 1975). Soils within the region are brown, neutral to slightly acid dandy or clay loams. This region is land use consist large ranches which predominantly raise cattle and goats. Blackland Prairie was historically a region of tall-grass prairies; however today much of the Blackland Prairie has been converted into agricultural uses in Texas. Topography is gently roiling to nearly level, and is well dissected with rapid surface drainage (Miller, 1975). Blackland soils are fairly uniform dark-colored calcareous clays interspersed with some gray acid sandy loams. It should also be noted that mesquite (*Prosopis glandulosa*) has invaded the majority of these 3 ecoregions and has replaced the historically grass prairies.

The following vegetation types are present along portions of the proposed route segments: scattered Ashe juniper (*Juniperus ashei*), plateau live oak (*Quercus fusiformis*), post oak (*Quercus stellata)*, blackjack oak (*Quercus marilandica*), cedar elm (*Ulmus crassifolia*), sugar hackberry (*Celtis laevigata*), and mesquite. Assorted understory and ground cover vegetation includes Texas persimmon (*Diospyros texana*), yaupon (*Ilex vomitoria*), agarita (*Berberis trifoliolata*), prickly pear cactus (*Opuntia* sp.), greenbriar (*Smilax* sp.), cat's claw acacia (*Acacia* sp.), and assorted grasses.

2.0 THREATENED OR ENDANGERED SPECIES

Literature and agency file searches were conducted to identify the potential occurrence GCW and BCV in the vicinity of the routing study. The search included information from the US Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD) Texas Natural Diversity Database (TXNDD). The following counties are listed to have the potential occurrence of federal listed endangered GCW and BCV, produced by the USFWS Austin, Texas, Ecological Services office as of 12 October 2009: Nolan, Taylor, Shackelford, Callahan, Stephens, Eastland, Palo Pinto, Erath, Comanche, Hood, Somervell, Bosque, Johnson, Hill, and McLennan Counties.

Examination of the TXNDD indicated several documented occurrences within the general vicinity of the project area. However, only 5 documented occurrences or buffers of occurrences of GCW and BCV were indicated on or within a 0.5-mile radius of the proposed route segments (Appendix A, Figure 2). A description and general information for interpretation of the TXNDD is provided in Appendix B.

GCW habitat in central Texas typically consists of mature Ashe juniper and broad-leaved oak woodlands, with a high percentage of canopy coverage within and adjacent to incised canyons of central Texas. Some segments of the proposed routes were identified during the field reconnaissance to meet the criteria as potential suitable habitat for the GCW. These areas consist of portion of segments **ef, ww, rr, and ii** along the proposed Central C to Sam Switch section. Appendix A, Figures 3-7 show areas identified during the field reconnaissance to be potentially suitable habitat for GCW.

BCV typically nest in distinctive and dense scrubby mottes (to about 6 feet high) interspersed in open grassland within central Texas. Common vegetation within these mottes includes shin oak (*Quercus sinuate* var. *breviloba*), plateau live oak (*Quercus sinuate var. breviloba*), evergreen sumac (*Rhus virens*), Texas persimmon (*Diospyros texana*), agarita (*Berberis trifoliolata*), and Ashe juniper. Due to a lack of scrubby vegetation within an open canopy along the proposed

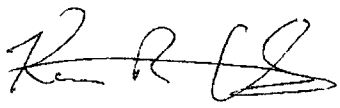
route segments, it is Horizon's opinion that no potentially suitable nesting habitat for the BCV is present. Marginally suitable habitat was observed by Horizon on some of the immediately adjacent properties, and portions of the route do provide potential habitat for transient or migrating BCV.

It is Horizon's opinion that there are segments of the proposed transmission line that provide habitat for the GCW. It is Horizon's opinion that suitable nesting/breeding habitat for the BCV is not present.

3.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

Horizon has performed a habitat assessment for the federally listed endangered species GCW and BCV to learn if there are any recorded occurrences or potential habitat on the proposed routes. Horizon evaluated the property to the extent that was reasonably possible within the scope of work.

For Horizon Environmental Services, Inc.



18 November 2009

Kenneth R. Carothers
Senior Project Manager

Date

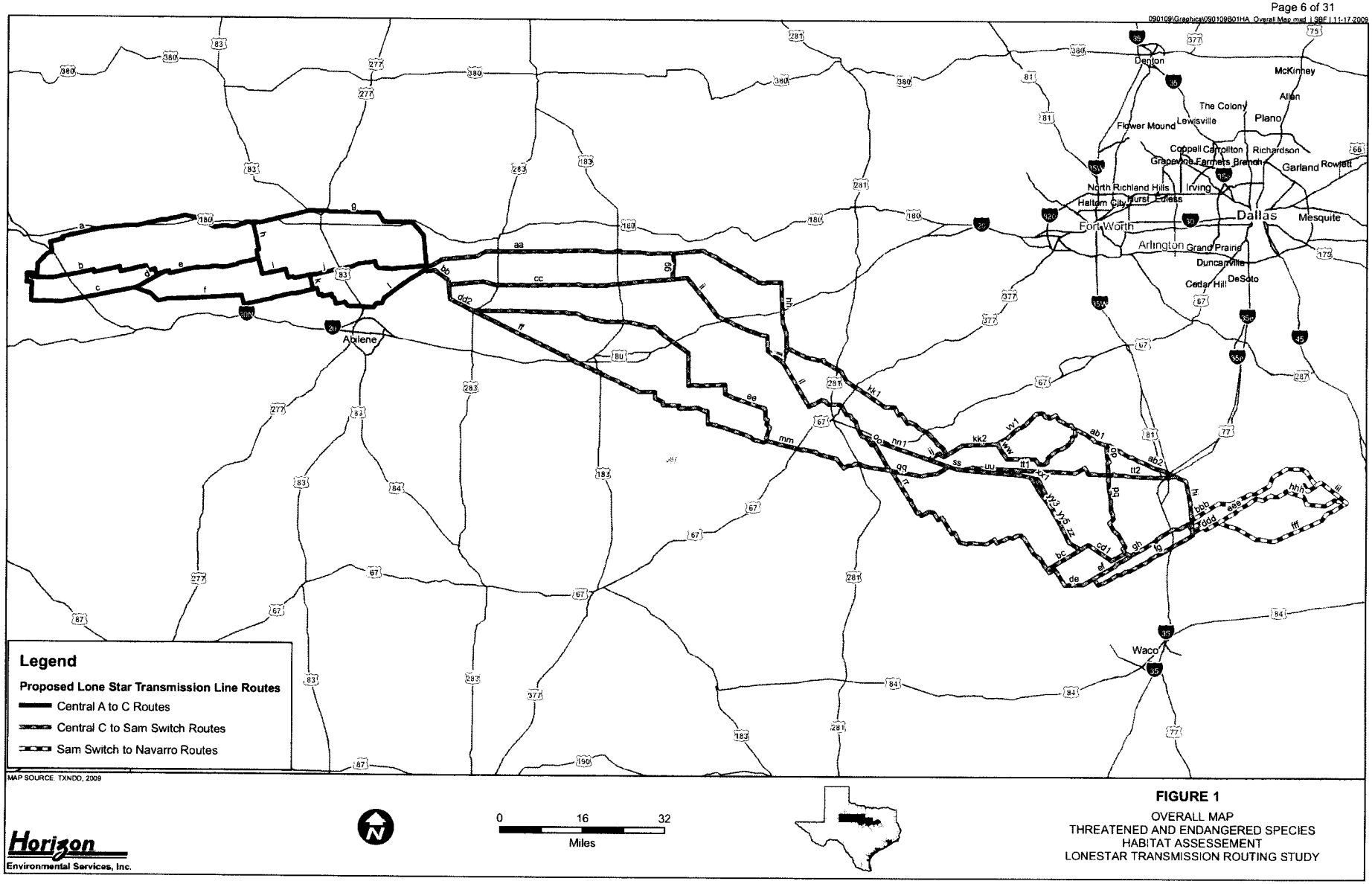
4.0 REFERENCES

(Miller) J.E. Miller. Texas Plants: A Checklist and Ecological Summary. The Texas A&M University System The Texas Agricultural Experiment Station1975.

(NDD) Texas Parks and Wildlife Department Natural Diversity Database. T/E and Rare Species Elemental Occurrences. Wildlife Division, Habitat Assessment Program, Austin, Texas. Dorinda Scott, 17 November 2009.

(USFWS) US Department of the Interior, Fish and Wildlife Service. Southwest Region Ecological Services Office. Endangered Species, Lists of Species by County for Texas, Scurry, Mitchell, Fisher, Nolan, Jones, Taylor, Shackelford, Callahan, Stephens, Eastland, Palo Pinto, Erath, Comanche, Hood, Somervell, Bosque, Johnson, Hill, McLennan and Navarro Counties, <http://www.fws.gov/southwest/es/EndangeredSpecies/ lists/default.cfm>. Accessed 12 October 2009.

APPENDIX A
PROJECT FIGURES



Horizon Environmental Services, Inc.

FIGURE 1

OVERALL MAP
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

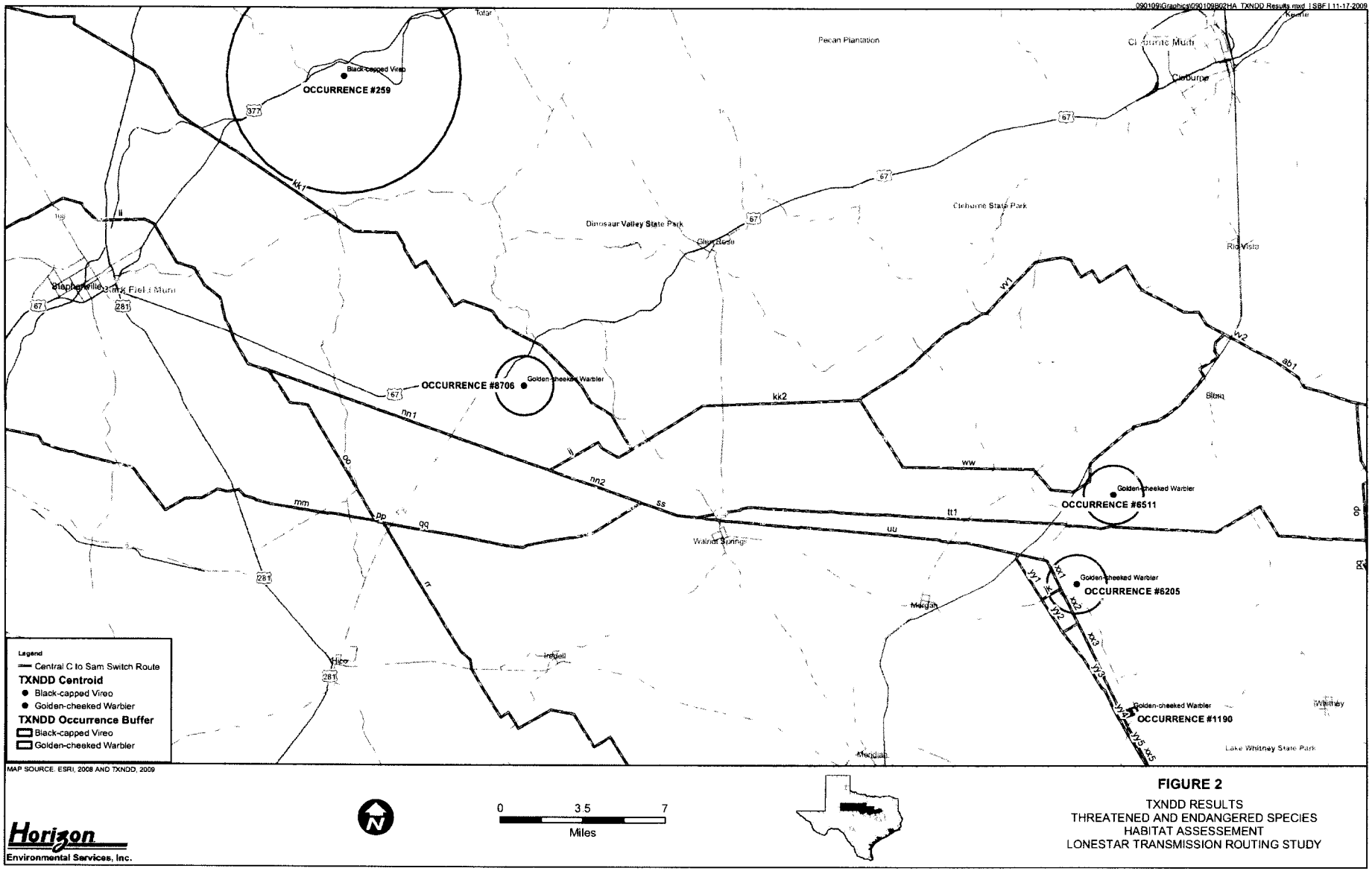
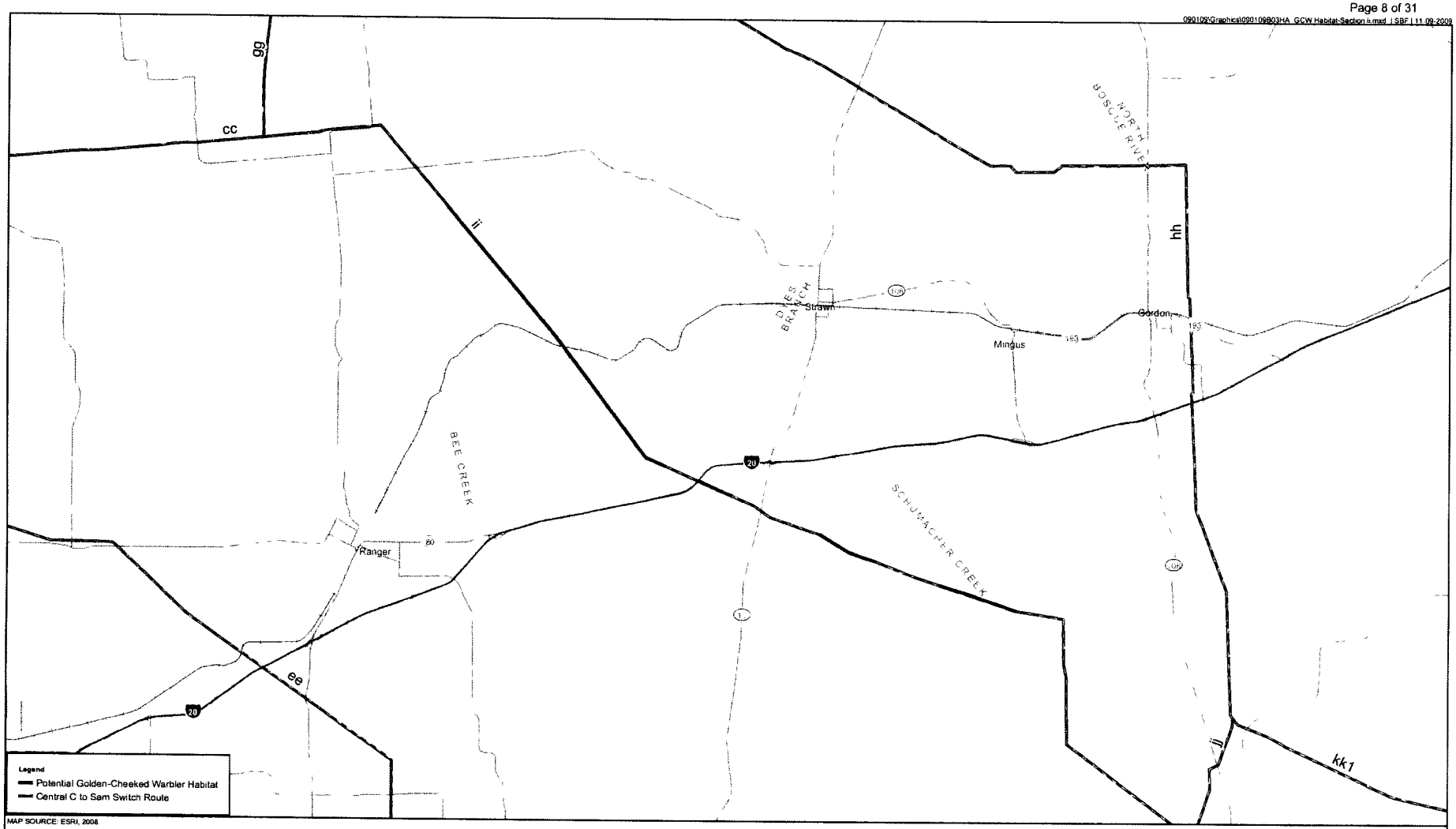


FIGURE 2

TXNDD RESULTS
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSMENT
LONESTAR TRANSMISSION ROUTING STUDY

Horizon Environmental Services, Inc.



Horizon Environmental Services, Inc.

FIGURE 3

SECTION ii
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

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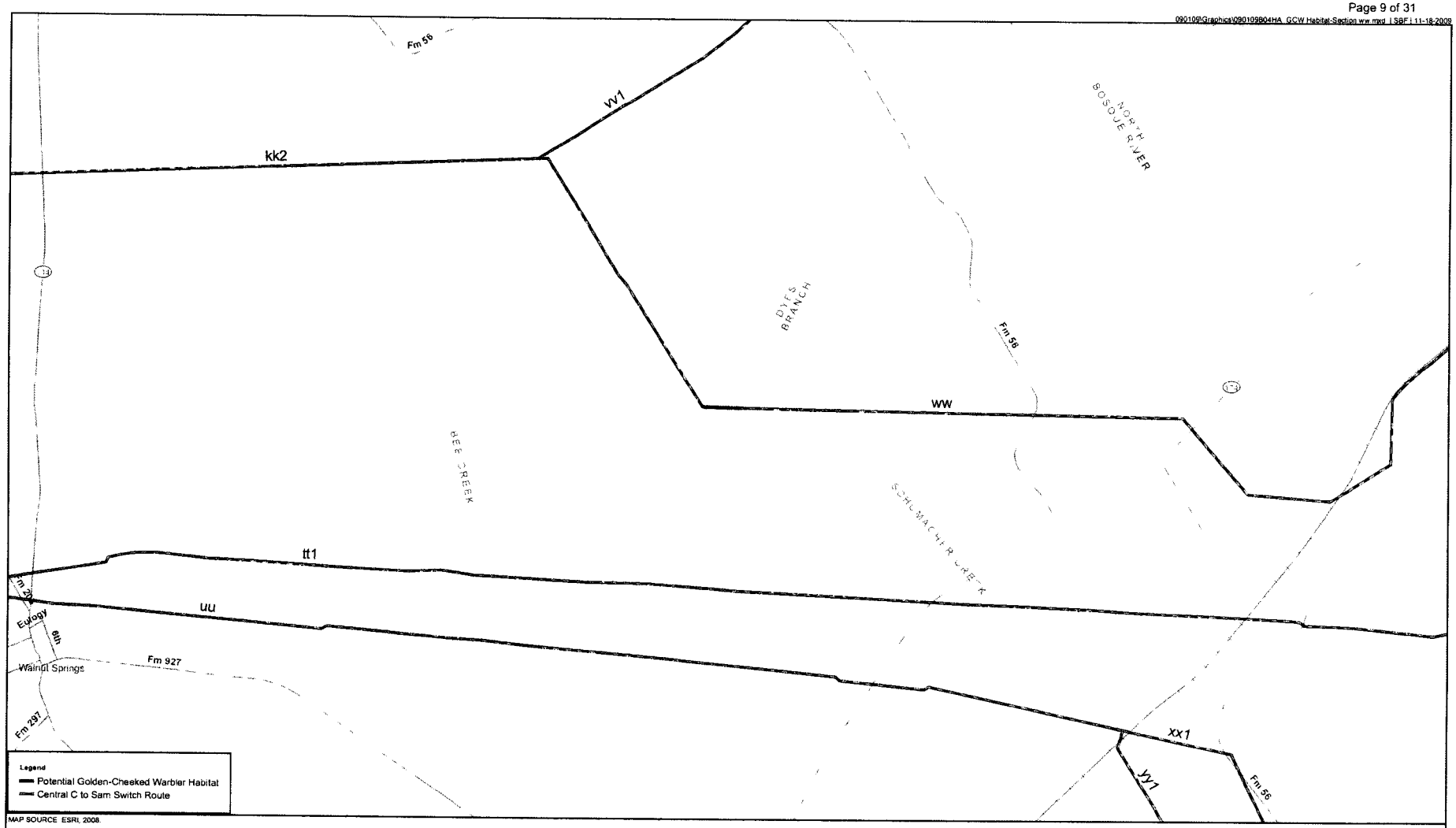

Horizon Environmental Services, Inc.

FIGURE 4

SECTION ww
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

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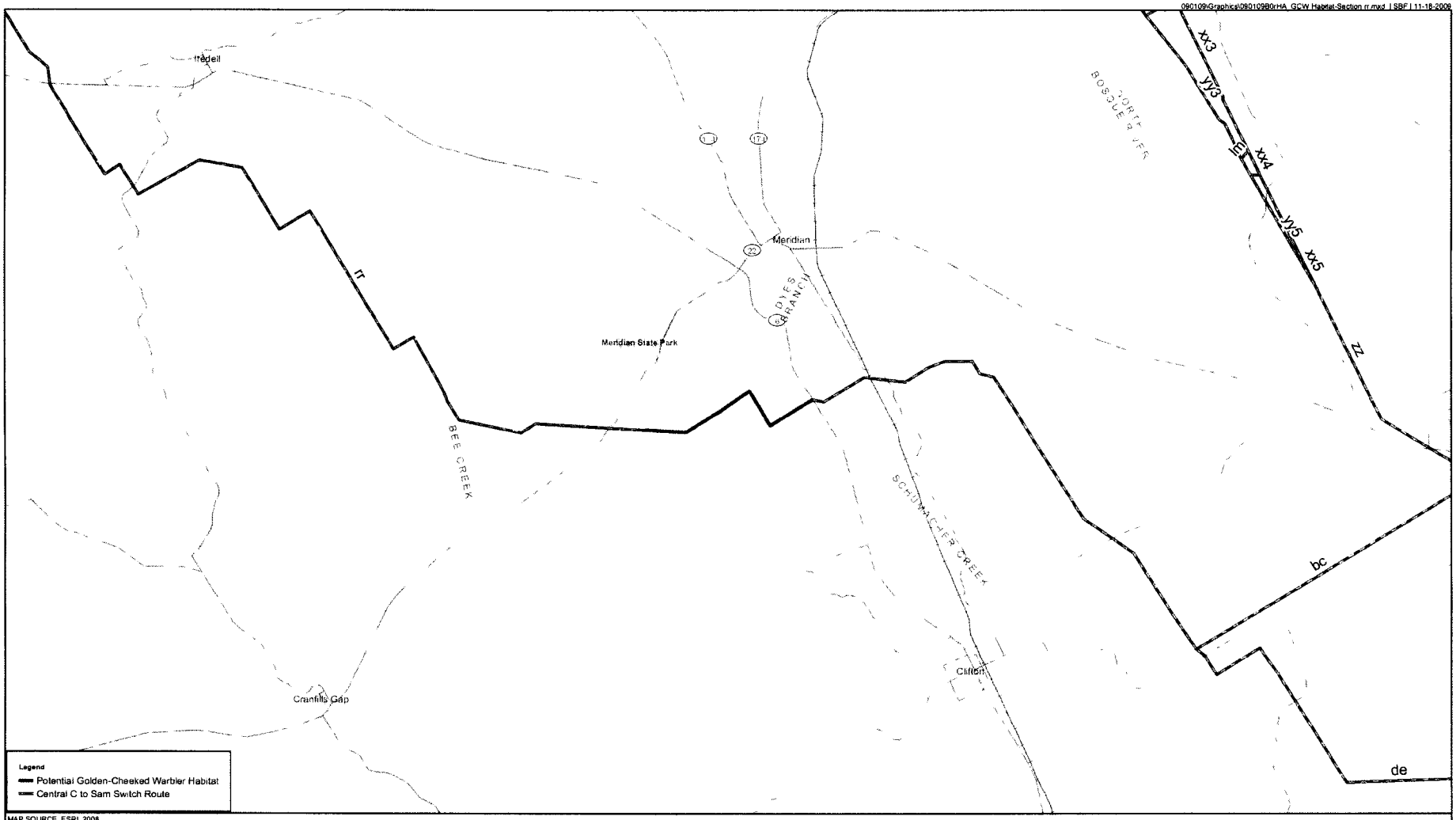


FIGURE 5

SECTION rr
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

Horizon
Environmental Services, Inc.

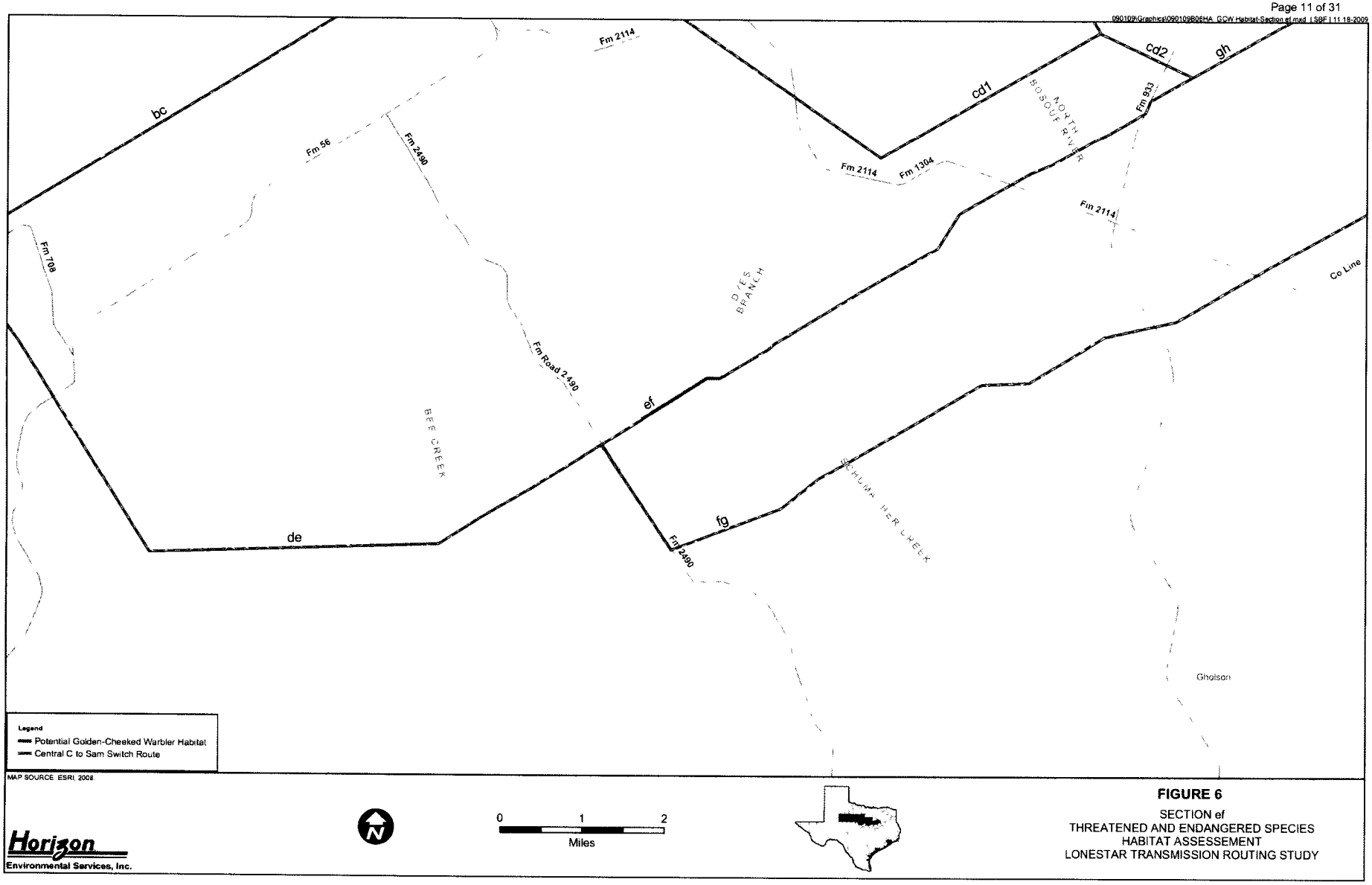


FIGURE 6

SECTION ef
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

APPENDIX B
TXNDD INTERPRETATION

Texas Wildlife Diversity Database: Shapefile Data Interpretation and Use

In our database every element occurrence representation (EORep) is represented geographically as a polygon. The polygon is a combination of the geographic location of the reported observation and the locational uncertainty of the observation.

Data Conversion

Most of the data that was part of our previous database was maintained geographically as a point location consisting of a latitude and longitude. The point was one of three symbols, a circle, a triangle, and a square, that represented the "precision" of the occurrence. The three categories were seconds (circle) which was the highest precision, minutes (triangle) which was the mid precision and meant that the location could not be more accurately mapped based on available information than +/- 1 minute, and general (square) which was the least precise and used only when the location description was especially vague.

When the data from the previous database was converted to the new system the point data was converted to polygon data by taking the latitude and longitude and applying a buffer to that point location. The buffer that was applied to a point was based on the precision of that record. Records with a second precision received a buffer of 100 m radius, records with a minute precision received a buffer of 2000 m radius, and records with a general precision received a buffer of 8000 m radius. Now instead of point data, each record is a polygon in which the imprecision and uncertainty of the data is graphically represented.

Some of the data that was in the previous database was mapped on paper topographic maps as polygons with meaningful boundaries. Before the conversion to the new database each of the records with a boundary on a topographic map had that boundary digitized using ArcGis. When the conversion occurred those digital boundaries were used to represent those records in place of the point stored in the database. Because the care and precision with which the boundaries were initially mapped is unknown, each of the records with a boundary had a 100 m radius buffer applied to the boundary to achieve the final shape.

Data Interpretation

When viewing the shapefile data that has been provided, interpretation is not necessarily intuitive. Each record consists of at least one polygon, be that polygon a simple circle or a more complex boundary. However, a record may consist of numerous shapes that all combine to represent a single occurrence. An occurrence may consist of many observations over many years. What an occurrence of a species has in common is geographic proximity to other observations of that same species. By combining observations over time we develop a better representation of that species in a specific area. Distances used to decide if an observation should be part of an occurrence or not

can be found as part of the species information on the NatureServe Explorer web site (http://www.natureserve.org/explorer/) under the heading of EO Separation Distances.

When interpreting an occurrence as it is displayed on screen in a GIS application or on a map, the representation of that occurrence is the smallest feature that could be drawn that we are confident contains that occurrence inside its boundaries. Therefore, when analyzing an EORep, we are confident that the element in question (plant, animal, ...) could be found within the boundary of the EORep on the day it was observed. We cannot be certain where within that EORep the element occurred or what the distribution of the element was within the EORep. We only know that for the day(s) in question, the element could be found within the boundaries of the EORep. Further, the boundary of any EORep is not necessarily meant to indicate the total real extent of the element. The EORep is only meant to geographically represent the observation(s) in the best, most accurate way possible based on the available data. The absence of information on the map should not be interpreted as an absence of rare, threatened, or endangered species in that location. These data cannot provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features in any area. Nor can these data substitute for on-site evaluation by qualified biologists. The Texas Wildlife Diversity Database information is intended to assist users in avoiding harm to rare species or significant ecological features.

Refer all requests for data or maps back to the Texas Wildlife Diversity Database to obtain the most current information. The Texas Wildlife Diversity Database is a dynamic database that changes almost daily. You are encouraged to request updates to data at least quarterly for ongoing long term projects.

If you have any questions about use or interpretation of the data please call Bob Gottfried (512)912-7044 or email to bob.gottfried@tpwd.state.tx.us.

Element Occurrence Record

Scientific Name: Dendroica chrysoparia **Occurrence #:** 227 **Eo Id:** 6511

Common Name: Golden-cheeked Warbler **Track Status:** Track all extant and selected historical EOs

TX Protection Status: E

Global Rank: G2 **State Rank:** S2B **Federal Status:** LE

Location Information:

Watershed:

12060202 - Middle Brazos-Lake Whitney

County Name:	State:	Mapsheet:
Hill	TX	32097-A4, Lakeside Village
Bosque	TX	

Directions:

EAST OF LAKE WHITNEY/BRAZOS RIVER, JUST SOUTH OF MOUTH OF NOLAN RIVER

Survey Information:

First Observation: 1998-04-02 **Survey Date:** **Last Observation:** 1998-05-13

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: NEAR MOUTH OF NOLAN RIVER ON EDGE OF SMALL CANYON DRAINING TO BRAZOS RIVER; OVERSTORY OF ASHE JUNIPER, PLATEAU LIVE OAK, TEXAS ASH, AND CEDAR ELM; CANOPY COVER CA. 70%, TREE HEIGHT 15-25 FEET

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: ONE TERRITORY

Managed Area:

Managed Area Name

Reference:

Element Occurrence Record

Citation:

ESPEY, HUSTON & ASSOCIATES, INC. 1998. FINAL REPORT. MID-BRAZOS PROJECT - LAKE WHITNEY 1998 ENDANGERED SPECIES INVESTIGATIONS. AUGUST 1998.

Specimen:

Element Occurrence Record

Scientific Name: Dendroica chrysoparia
Occurrence #: 228 **Eo Id:** 6205
Common Name: Golden-cheeked Warbler
Track Status: Track all extant and selected historical EOs
TX Protection Status: E
Global Rank: G2 **State Rank:** S2B
Federal Status: LE

Location Information:

Watershed:

12060202 - Middle Brazos-Lake Whitney

County Name:	State:	Mapsheet:
Bosque	TX	32097-A4, Lakeside Village
Hill	TX	32097-A5, Morgan

Directions:

WEST OF LAKE WHITNEY/BRAZOS RIVER, JUST NORTH OF LAKESIDE VILLAGE COMMUNITY ON "POWELLDALE MOUNTAINS"

Survey Information:

First Observation: 1998-04-22 **Survey Date:** **Last Observation:** 1998-04-22
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description: MATURE JUNIPER/OAK WOODLAND ON EAST SIDE OF HILL JUST WEST (?) OF RADIO TOWER, ABUNDANCE OF TEXAS OAK NEAR TOP OF THE HILL

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: TWO SINGING MALES

Managed Area:

Managed Area Name

Reference:

Element Occurrence Record

Citation:

ESPEY, HUSTON & ASSOCIATES, INC. 1998. FINAL REPORT. MID-BRAZOS PROJECT - LAKE WHITNEY 1998 ENDANGERED SPECIES INVESTIGATIONS. AUGUST 1998.

DLS ASSOCIATES. 1996. ENDANGERED SPECIES INVESTIGATION MID-BRAZOS PROJECT - LAKE WHITNEY, HILL AND BOSQUE COUNTIES, TEXAS. JULY 1996.

Specimen:

Element Occurrence Record

Scientific Name: Dendroica chrysoparia
Occurrence #: 229 **Eo Id:** 1190
Common Name: Golden-cheeked Warbler
Track Status: Track all extant and selected historical EOs
TX Protection Status: E
Global Rank: G2 **State Rank:** S2B **Federal Status:** LE

Location Information:

Watershed:

12060202 - Middle Brazos-Lake Whitney

County Name:	State:	Mapsheet:
Bosque	TX	31097-H4, Allen Bend

Directions:

WEST OF LAKE WHITNEY/BRAZOS RIVER, SOUTH SIDE OF CEDRON CREEK AND WEST OF FM 56

Survey Information:

First Observation: 1996-04-13 **Survey Date:** **Last Observation:** 1996-05-03
Eo Type: **Eo Rank:** **Eo Rank Date:**
Observed Area:

Comments:

General Description: MATURE JUNIPER/OAK WOODLAND CA. 30 FEET IN HEIGHT WITH OVER 70% CANOPY COVER

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: 3 TERRITORIES

Managed Area:

Managed Area Name

Reference:

Citation:

DLS ASSOCIATES. 1996. ENDANGERED SPECIES INVESTIGATION MID-BRAZOS PROJECT - LAKE WHITNEY, HILL AND BOSQUE COUNTIES, TEXAS. JULY 1996.

Element Occurrence Record

Specimen:

Element Occurrence Record

Scientific Name: Dendroica chrysoparia **Occurrence #:** 246 **Eo Id:** 8706

Common Name: Golden-cheeked Warbler **Track Status:** Track all extant and selected historical EOs

TX Protection Status: E

Global Rank: G2 **State Rank:** S2B **Federal Status:** LE

Location Information:

Watershed:

12060204 - North Bosque

12060202 - Middle Brazos-Lake Whitney

County Name:	State:	Mapsheet:
Somervell	TX	32097-B8, Chalk Mountain
Erath	TX	32097-B7, Glen Rose West

Directions:

Survey Information:

First Observation: **Survey Date:** **Last Observation:**

Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description:

Comments:

Protection Comments:

Management Comments:

Data:

EO Data:

Managed Area:

Managed Area Name

Reference:

Element Occurrence Record

Citation:

Specimen:

Element Occurrence Record

Scientific Name: Vireo atricapilla
Occurrence #: 23 **Eo Id:** 259
Common Name: Black-capped Vireo
Track Status: Track all extant and selected historical EOs
TX Protection Status: E
Global Rank: G2G3 **State Rank:** S2B
Federal Status: LE

Location Information:

Watershed:

12060202 - Middle Brazos-Lake Whitney

County Name:	State:	Mapsheet:
Erath	TX	32098-C1, Bluff Dale
Hood	TX	32097-C8, Paluxy
		32098-D1, Bluff Dale NE
		32097-D8, Tolar

Directions:

BLUFF DALE, ERATH COUNTY

Survey Information:

First Observation: **Survey Date:** 1985-05-16 **Last Observation:** 1985-05
Eo Type: **Eo Rank:** C **Eo Rank Date:**
Observed Area:

Comments:

General Description: OAK-JUNIPER WOODLAND

Comments:

Protection Comments:

Management Comments:

Data:

EO Data: A SINGLE SINGING MALE FOUND IN SUITABLE HABITAT; AREA HAS BEEN JUNIPER CONTROLLED; NO NESTING CONFIRMED

Managed Area:

Managed Area Name

Element Occurrence Record

Reference:

Citation:

MARSHALL, J. T., R. B. CLAPP AND J. A. GRZYBOWSKI. 1985. STATUS REPORT: VIREO ATRICAPILLUS WOODHOUSE (BLACK-CAPPED VIREO). REPORT TO USF& WS, ALBUQUERQUE, NEW MEXICO. 48pp.

GRZYBOWSKI, J. A., 1985. FINAL REPORT: POPULATION AND NESTING ECOLOGY OF THE BLACK-CAPPED VIREO (VIREO ATRICAPILLUS). PART II NESTING ECOLOGY... UNPUBLISHED REPORT SUBMITTED TO USF& WS. REGION 2. 50pp.

MARSHALL, J. T., R. B. CLAPP AND J. A. GRZYBOWSKI. 1984. INTERIM STATUS REPORT: VIREO ATRICAPILLUS WOODHOUSE, BLACK-CAPPED VIREO. USF& WS, ALBUQUERQUE, NM.

GRZYBOWSKI, JOE 1701 LENOX NORMAN, OK 73069 PH-405/360-0182(HOME) 341-2980 EXT. 2196 (WORK-ACADEMIC YR.)

SEXTON, CHUCK. NO DATE. ABILENE, PECOS, BIG SPRING, AND SHERMAN 1:250,000 MAPS SHOWING BLACK-CAPPED VIREO LOCALITIES.

Specimen:

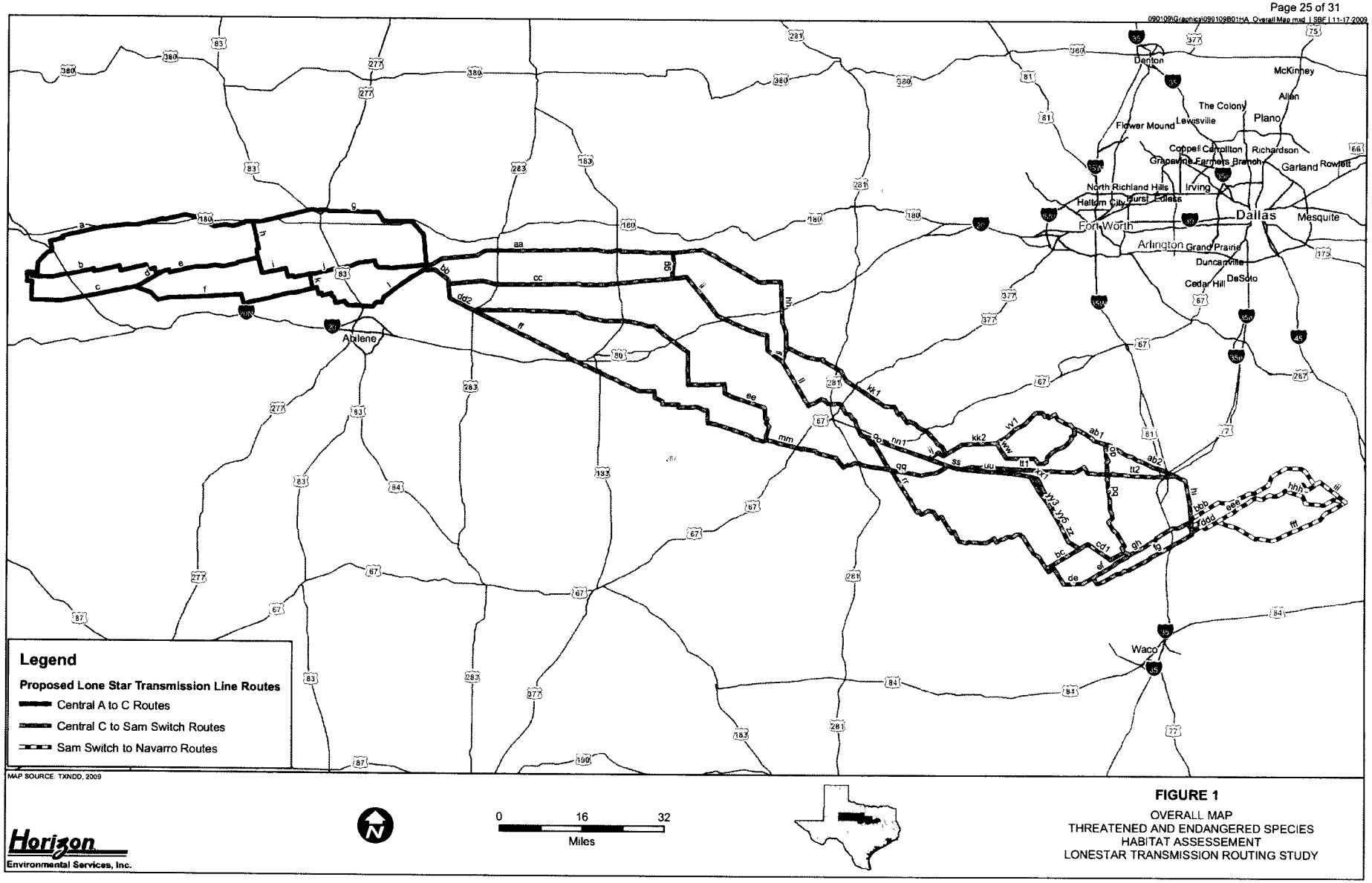


FIGURE 1

OVERALL MAP
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

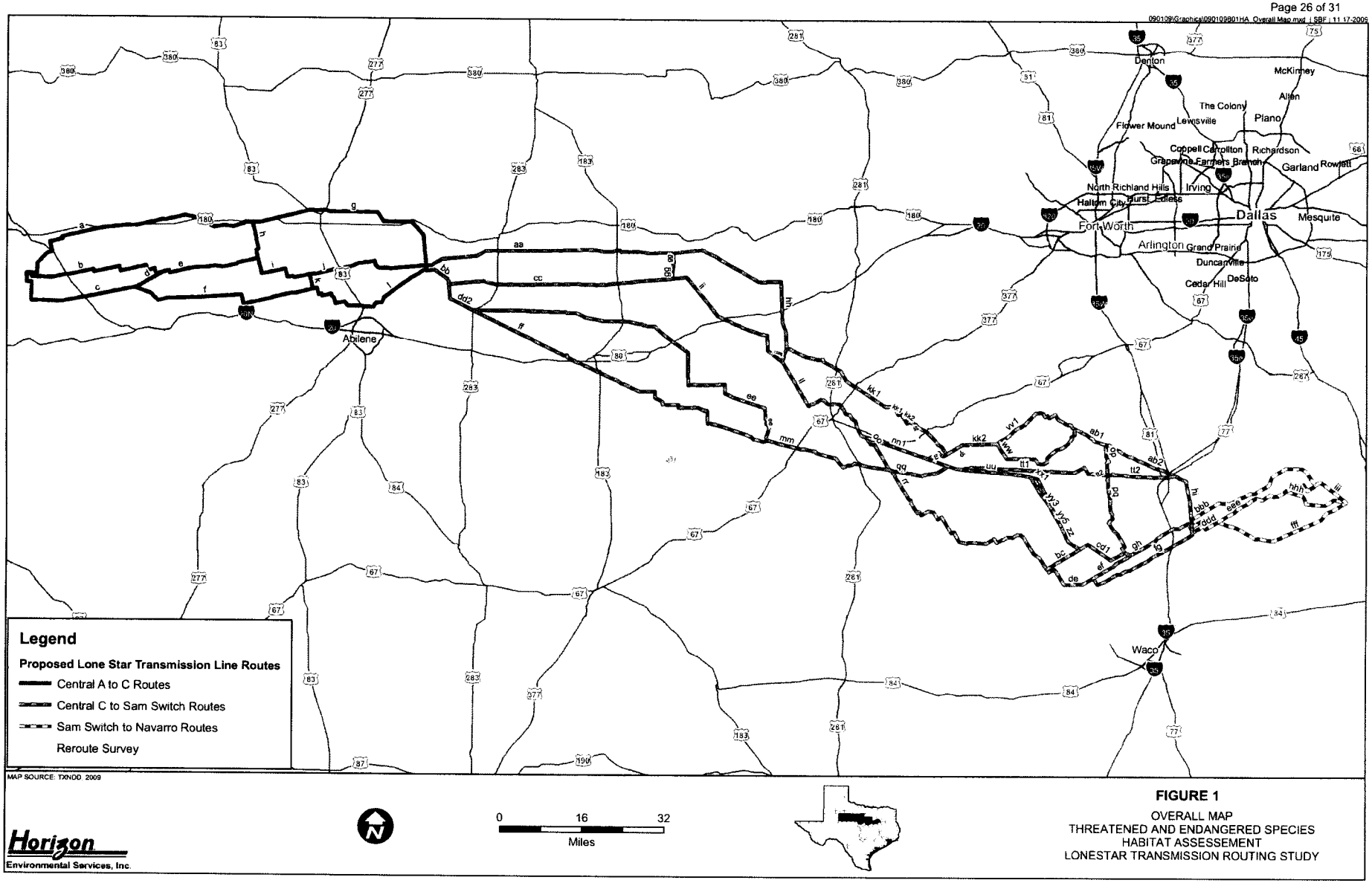


FIGURE 1

OVERALL MAP
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

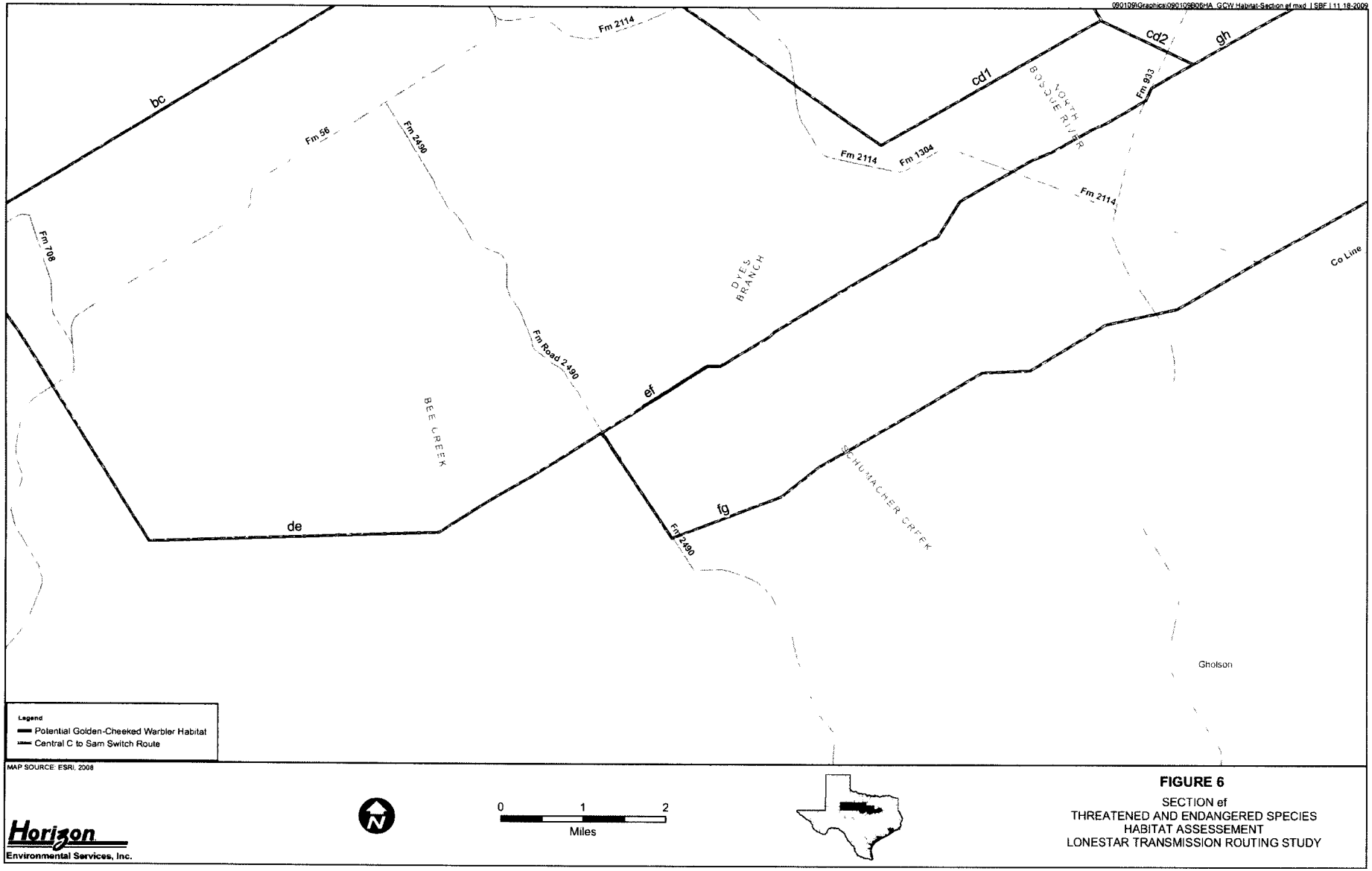


FIGURE 6

SECTION ef
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

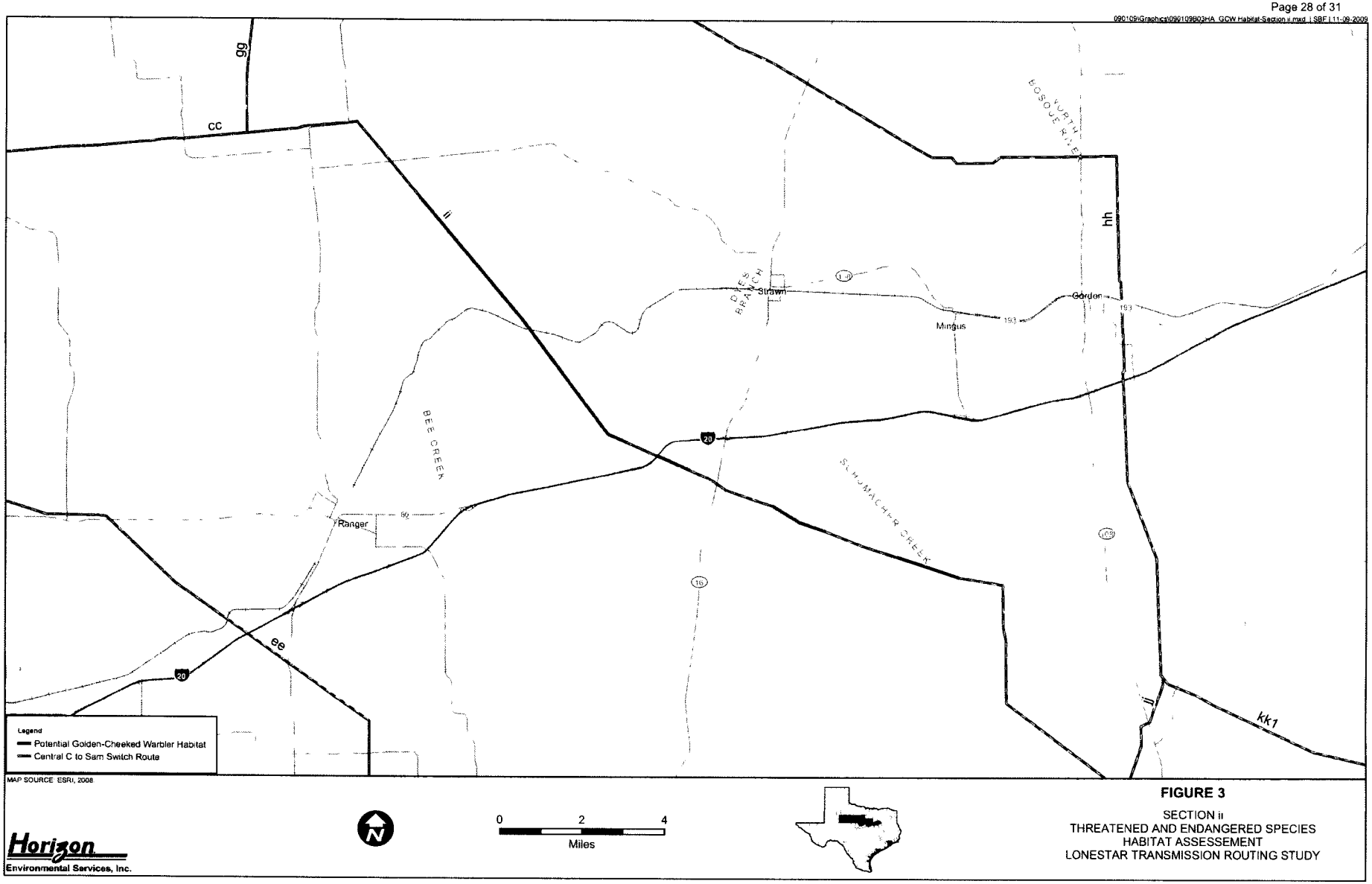


FIGURE 3

SECTION ii
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

Horizon Environmental Services, Inc.

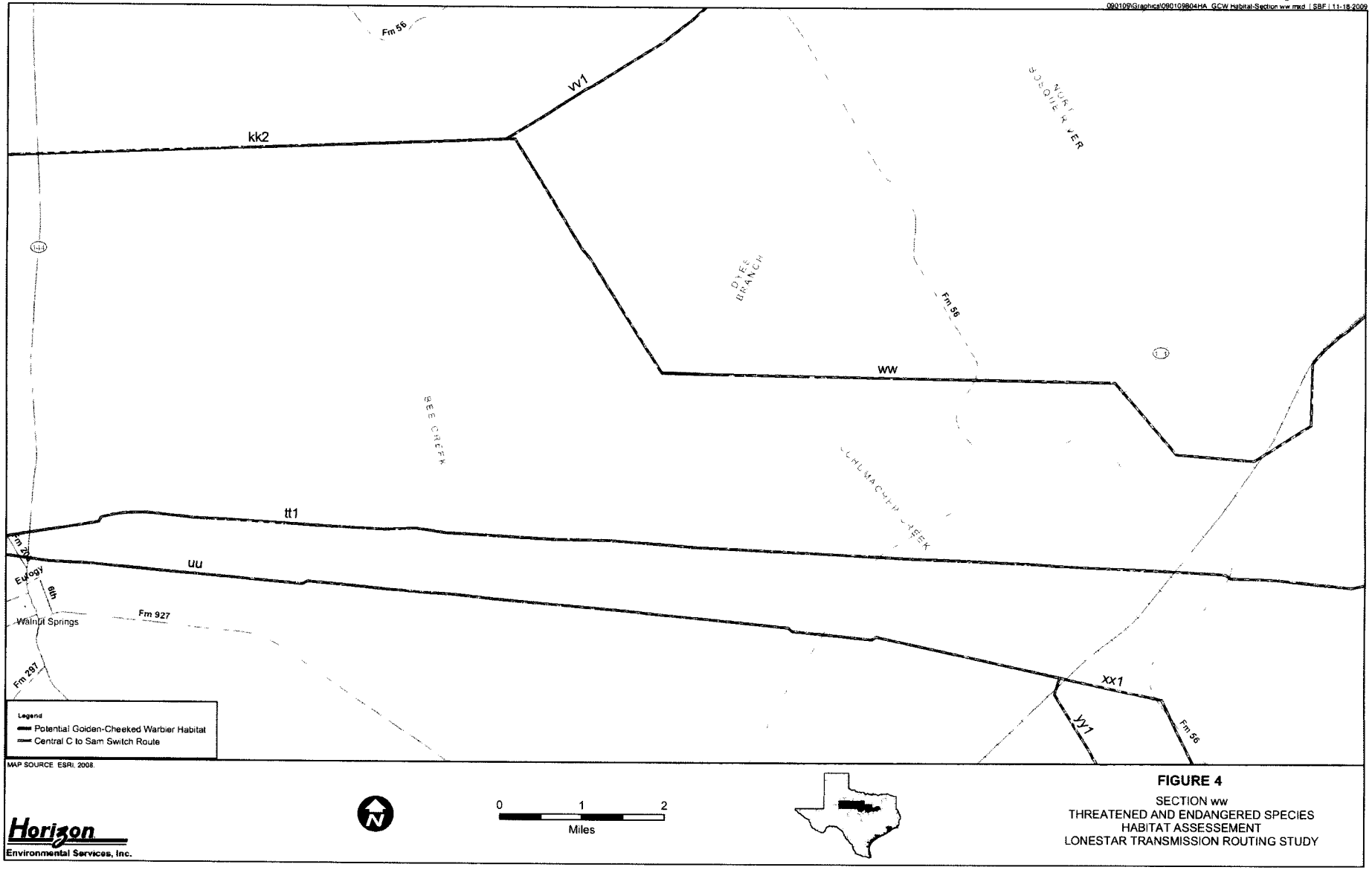
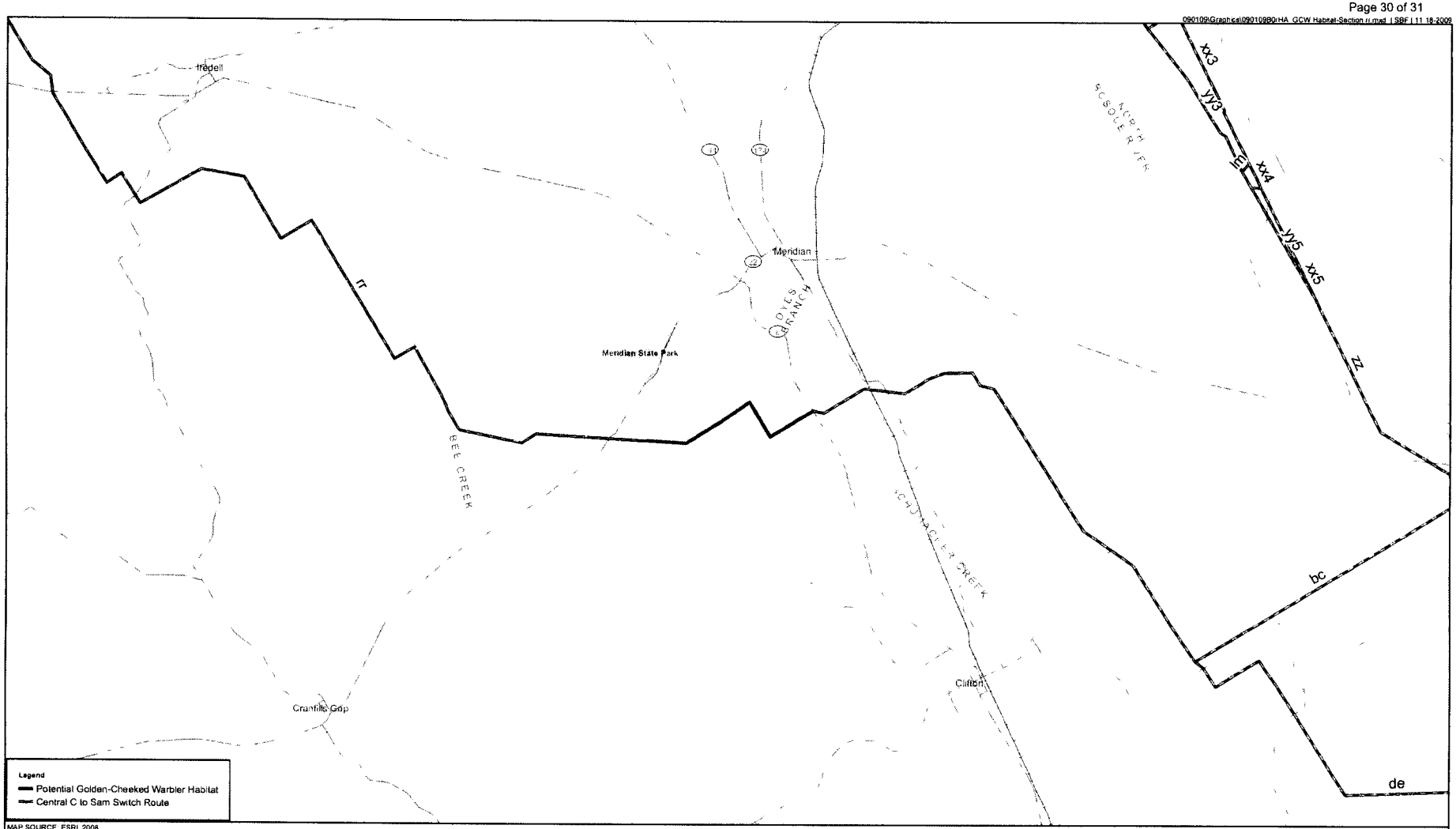


FIGURE 4

SECTION ww
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

090109\Graphics\090109B0rHA_GCW Habitat-Section rr.mxd | SBF | 11-18-2009

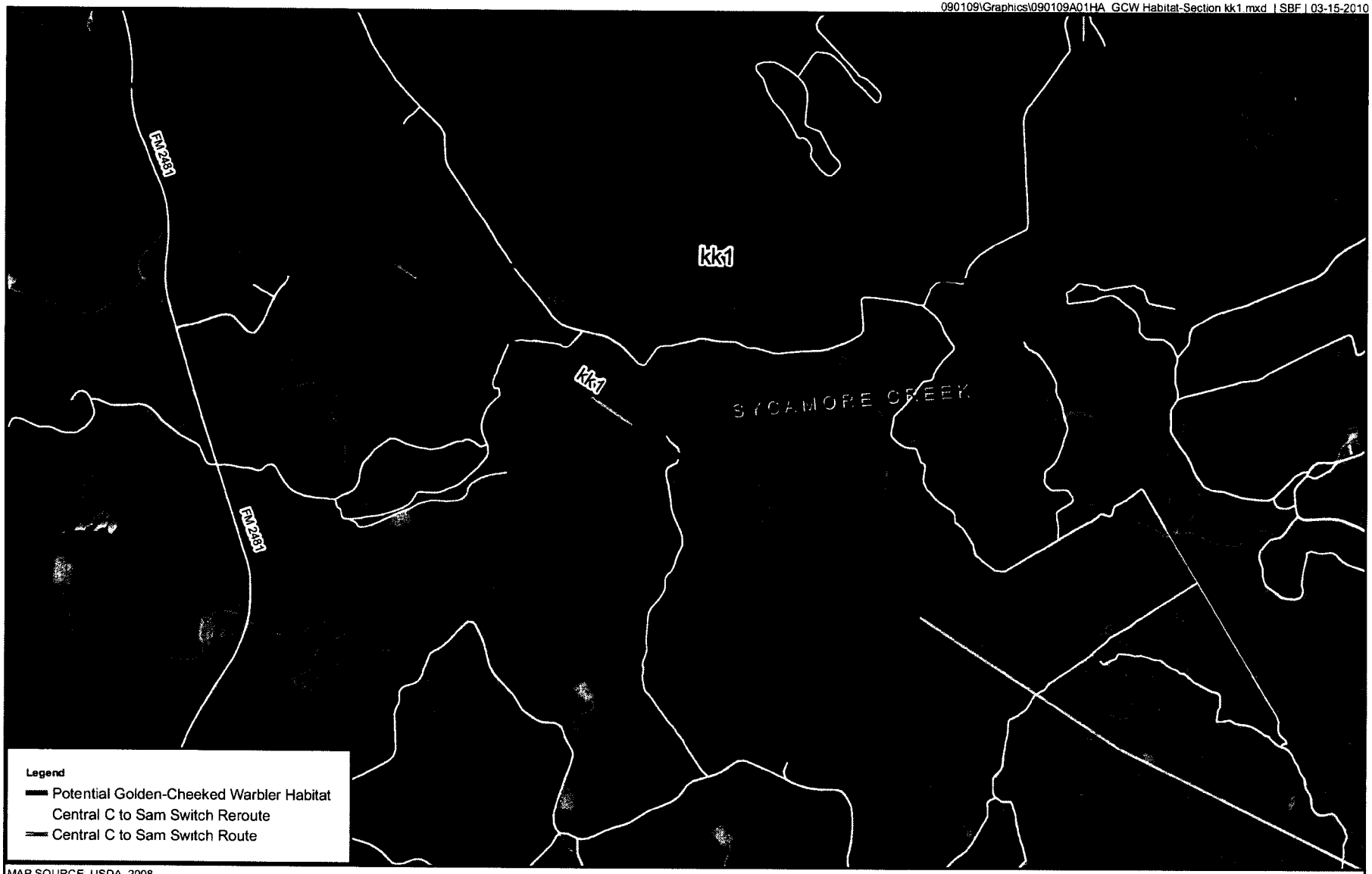


Horizon Environmental Services, Inc.

FIGURE 5

SECTION rr
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY

090109\Graphics\090109A01HA_GCW Habitat-Section kk1.mxd | SBF | 03-15-2010



MAP SOURCE: USDA, 2008

0 1,000 2,000
Feet

Horizon
Environmental Services, Inc.

FIGURE 7

SECTION KK1
THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSEMENT
LONESTAR TRANSMISSION ROUTING STUDY
ERATH COUNTY, TEXAS