

Santa Fe Trail Scenic and Historic Byway Conservation Plan

This plan works in concert with partners to facilitate the protection of the scenic and natural resources, historic and cultural assets, and recreational opportunities of the Santa Fe Trail Scenic and Historic Byway. This project was produced for the Santa Fe Trail Byway by Palmer Land Trust.

Data compiled and analyzed by Laurel Sebastian.

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Yvonne Barnes from Mountain Mapping & GIS compiled much of the data utilized in this document through the Federal Highways Administration Scenic Byways program (2011 Discretionary Grant Programs). Mountain Mapping & GIS's complete GIS data set for this and other Byways can be found on the Colorado Department of Transportation website (2013 CO Byway Data). Yvonne's contribution to conservation along the byways across Colorado does not go unnoticed.

Wyvonne Graham of the Santa Fe Trail Scenic and Historic Byway provided much of the background information and specific strategies (Appendix C) needed to complete this project. Her patience and reliable involvement is appreciated.

The diverse community of conservation organizations across the state of Colorado and the Southwest provided most of the data for this project. Those groups include the Colorado Department of Transportation, Colorado Parks and Wildlife, the Colorado Natural Heritage Program, the Colorado Department of Natural Resources, Colorado State University, the Colorado Office of Archeology and Historic Preservation, and New Mexico State University. Additionally, federal agency data was downloaded from the US Department of Agriculture, the US Geological Survey and the US Forest Service. ESRI geographic information systems were utilized for mapping and data analyses.

Lastly, our thanks goes out to those that will carry this plan forward, including the Santa Fe Trail Board of Directors, Palmer Land Trust, and San Isabel Land Protection Trust. Of course, private land conservation cannot occur without the interest and dedication of landowners. We thank those that have or will engage in land conservation. We hope this conservation plan sparks more collaboration in the future between landowners, Colorado businesses, government agencies, and nonprofit organizations.

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Introduction

The National Scenic Byways Program (NSBP) was established as a grassroots, collaborative effort to help recognize, preserve, and enhance unique roads throughout the United States. Roads are designated based upon certain criteria including archeological, cultural, historic, natural, recreational, and scenic qualities (About America's Byways). The same qualities that lead to NSBP designation can also lead to development pressures that may result in landscape alteration. Agriculture and tourism, two of Colorado's largest industries and two significant industries along the Santa Fe Trail Scenic and Historic Byway are both highly dependent upon intact landscapes and may be threatened by unplanned and undesirable development and land fragmentation. This plan was created to identify conservation priorities and to help increase the pace of conservation efforts along the Byway. With this plan complete, we may come closer to our mission of sustaining the health, diversity, and productivity of the Santa Fe Trail Scenic and Historic Byway resources to meet the needs of current and future generations.

Using feedback from the Byway Board of Directors, other reports created for the Byway (Santa Fe Trail Scenic and Historic Byway Corridor Management Plan, 2016), and data compiled by Mountain Mapping & GIS and Palmer Land Trust, a Conservation Plan was created to identify and describe the important features within the Byway corridor. This information was then analyzed using ESRI's geographic information systems (ArcMap) to identify potential priority areas for conservation along the Byway. Appendix A gives a description of the analyses used to produce the maps found within this Plan. Specific goals and strategies to consider during implementation of this plan are listed in Appendix C.

See Map – Santa Fe Trail Conservation Plan: Overview

Limitations

All data utilized for this project can be found in Appendices E and F. It should be noted that some of the data sets utilized were more robust than others and that data analysis is highly dependent upon the quality of data used. For example, Colorado Natural Heritage Program (CNHP) has completed extensive surveys in some counties, but not others. In this case, Las Animas County is adequately represented, but Prowers and Bent County have not been thoroughly evaluated (Counties Surveyed by CNHP 2015). As a result, the GIS data indicating biodiversity significance shows a lack of important habitats in Prowers County; however, this does not necessarily indicate a lack of significant biodiversity, instead it indicates a lack of detailed information. Additionally, this plan presents prioritization at a relatively broad-scale. Though it may be useful at the parcel-level, it is not intended for such evaluation and some detail may be lost at such a fine-scale. For these reasons and others, the suggestions found in this plan should be vetted on the ground before any actions are undertaken. This Plan evaluates multiple attributes in order to reach conservation priority conclusions; however, it cannot include all pertinent information and should be used in conjunction with other resources when it comes to conservation implementation.

Santa Fe Trail History

From 1821 when William Becknell and five companions from Missouri first transported goods to New Mexico for sale by wagon, until 1880 when the railroad made wagon caravans obsolete, the Santa Fe Trail was foremost a trade route. Goods traveled in both directions on the Trail creating strong commercial ties between Missouri and points east, and the Mexican frontier province of New Mexico. By 1846, the value of goods taken over the Trail surpassed \$1 million.



Santa Fe Byway signs and open mountain vistas

The Trail also served as a route for settlers immigrating as far west as California. It carried many men and some families searching for their fortunes in gold during the 1848 rush to California and following the 1858 gold discoveries in Colorado. The military had a continual presence on the Trail, first accompanying trade caravans as protection against Native American attacks then later in both the 1846 war between the United States and Mexico and the Civil War.

The Mountain Route afforded greater safety and access to water; however, this route was longer than the Cimarron Route. As the wagons pulled by oxen or mules crossed the prairies and high deserts, they traveled four abreast in large caravans (often over 100 wagons) for security. The route would meander or narrow depending upon water levels in rivers and creeks, the presence of Native Americans, and even the location of bison herds. Since the terrain generally allowed for variations in route depending upon conditions, the Trail usually resembled a wide swath rather than a well-defined, narrow strip. As such, distinct ruts as viewed from a pedestrian's perspective are only apparent in a few sections of the Mountain Route in Colorado.

Since then, the area has seen ranchers and farmers settle along the Arkansas River, and farm stands emerge in every town. It has grown to include city, state, and national parks that offer countless recreational options. The scenic prairie and mountain vistas remain as clear and breathtaking as they were when traders crossed the plains in the 1800s. The natural qualities include rare native grasslands, migratory songbird habitats, and endangered species. Any traveler or resident is bound to be struck by the historic, cultural, and natural richness of the Byway corridor.

In October 1991 the State of Colorado Byways Commission designated the Santa Fe Trail Scenic and Historic Byway Mountain Branch, a nearly 184-mile corridor, a Colorado Scenic and Historic Byway. It received National designation as one of America's Byway in 1998. Decades later, we are fully invested in maintaining the cultural richness and natural beauty of this remarkable Byway.



Daughters of the American Revolution (DAR) Marker in
Model Colorado, Hwy 350 near Trinidad

Conservation Planning

Colorado is the second fastest growing state in the US; the Department of Local Affairs (DOLA) estimates that Colorado's population will be near 8 million by 2040 (Population Totals Colorado). Conservation planning can identify lands of high ecological, scenic, and historic value, thereby encouraging development in more suitable areas. This ensures vibrant communities with park and recreation facilities, open spaces, agriculture, and other resources that make communities desirable.

Often, land conservation is completed by nonprofit organizations that have limited funding, staff and resources. Conservation planning can help these organizations prioritize their efforts, leading to enhanced efficiency and greater impact. With this plan complete, we may come closer to our mission: *to sustain the health, diversity, and productivity of the Santa Fe Trail Scenic and Historic Byway resources to meet the needs of current and future generations*. The intrinsic Byway qualities deemed most important for conservation include scenic, natural, recreational, historic, and cultural resources. By identifying and evaluating data associated with these qualities, this Plan seeks to help the Byway prioritize conservation efforts in the near future.

Intrinsic Quality Evaluation

The Conservation Plan identifies priority areas through a systematic process of evaluating the identified intrinsic qualities unique to the Byway. Using a weighted analysis, we evaluated multiple attributes such as wildlife habitat, scenic views, important historical sites, working agricultural lands, and proximity to other conserved lands to assign conservation value rankings to all land within a 2.5 mile buffer (5 miles wide) along the entire Byway route. Descriptions of the qualities selected and why they were deemed important to the Byway as well as an explanation of which data was used as a proxy for these qualities can be found below. An overview of the data weighting process for this conservation plan can be found in Appendix A, and the actual numerical values assigned are listed in Appendix B. Maps at the end of this document visually display the different attributes evaluated. The final product is the Conservation Priority Map, which displays the cumulative land value derived from the entire data set to determine final conservation priorities along the Byway.

The intrinsic qualities discussed throughout this plan reflect the central qualities of the Santa Fe Trail Byway that earned it a Colorado Scenic and Historic Byway designation. However, we did not incorporate every valued feature of the Byway corridor into our plan since not all desired data is readily available or relevant to our conservation goals. For example, the value of lands that have already been conserved will not be explored here, as they are already guaranteed permanent protection. Since the primary purpose of this project is to delineate priority areas for conservation, the maps do not display enough detail to function as complete Byway guides. Instead, this conservation plan is intended to guide the first steps of Byway conservation for years to come. We invite you to visit www.santafetrailCO.com for more information on Byway routes, features and history.

Cultural Qualities (Regional Significance)

The Trail's multi-cultural history is reflected in the diverse inhabitants of the communities found along the Byway, and in the richness of the cultural events hosted by these communities. The historic towns through which the Byway passes are scenic in their own right, from the Corazon de Trinidad National Historic District, with its period architecture and brick streets, to quaint rural farm towns with roadside stands at the farmers market. The richness of local culture is obvious in the Corazon de Trinidad National Historic District on any given Saturday morning. While your coffee brews at the Trinidad Farmer's Market, others stroll at Miners Memorial Park on Main Street to shop for next week's meals. Growers rise early to bring you the choicest produce from the area; mounds of cantaloupes, sweet corn, greens, and every variety of root crop abound. Vendors offer homemade jams, jellies, vinegars and pickles. Local nurseries boast a large selection of annuals and perennials that grow well in the area, including a full palette of bearded irises. Musicians drop by to intersperse conversations with melodies. A local dance group may even wow the crowd with a performance. While this is one example of the vibrancy of our agriculture and tourism based community, our bountiful culture does not stop there.

Significant Cultural Qualities include:

- Culturally diverse communities; traditional Hispanic celebrations such as Cinco de Mayo, Los Pastores, Santa Fe Trail Days, and Las Posadas
- The Koshare Indian Dancers and an extensive collection of Native American art at the Koshare Indian Museum in La Junta
- Numerous farm stands featuring local produce and crafts run by multigenerational farming families
- Community events such as rodeos, Santa Fe Trail festivals, County Fairs, and the Arkansas Valley Fair
- Culturally representative architecture, including adobe structures on private and public property
- Several large murals depicting the Santa Fe Trail and western history, painted on exterior walls of commercial buildings
- Numerous art galleries displaying western, regional, and local art
- A traditional adobe oven (horno) for public use at Trinidad Lake State Park

Though the cultural assets of the Santa Fe Trail are abundant and diverse, we are only able to map a subset of those qualities. For the purposes of conservation, we are particularly interested in those assets that would be negatively impacted by development or land use changes. Festivals, museums, and galleries, for example, do not usually depend on the preservation of particular open spaces. Historic districts are already protected by their historic designation. However, one of the key cultural aspects of the Byway region is inextricably linked to specific pieces of land: agriculture. Along the

Arkansas River, emerald fields of melons and corn stretch on for miles, providing the scenic, economic, and cultural foundations of the region. Without cropland, the core of our communities would be forever altered. Therefore, as part of this conservation plan, we have included the location of all irrigated parcels along the Byway. These data originated from Colorado Department of Natural Resources 2010 listings of irrigated farms in the Arkansas River watershed. In the Cultural Qualities map, we also displayed the streams that farmland depends upon, although that information is included in detail in the Natural Qualities analysis.

See Map – Santa Fe Trail Conservation Plan: Cultural Qualities - Agriculture



Santa Fe Trail King Coal Car Race - Trinidad, Colorado



Early Settlers Day in La Junta

Scenic Qualities (Regional Significance)

The Byway's scenic qualities range from magnificent vistas of Raton Pass, to the verdant croplands of the high plains, to the charming historic towns dotting the corridor. The southern half of the corridor exposes the traveler to the quintessential scenic qualities of southeastern Colorado's high plains: distant snowcapped peaks, expansive grasslands, and rolling hills of pinon pine and juniper. The eastern extent exposes the traveler to the beauty and solitude found in one of the nation's disappearing natural resources—native grasslands. Because much of the corridor is virtually undeveloped, the modern visitor can experience what traveling the Santa Fe Trail must have been like in the 1800s. These dramatic vistas, diverse ecosystems and isolated towns provide the Byway with the beauty, character and authenticity that have come to define it.

Significant Scenic Qualities include:

- Spectacular views of Fisher's Peak, the Spanish Peaks, the Sangre de Cristo Mountains, and Raton Pass
- Panoramic vistas of Comanche National Grassland and the Piñon Canyon Army Maneuvers Site
- Picturesque windmills and other evidence of homesteads and settlements
- The brick streets, striking architecture, and colorful character of Corazon de Trinidad National Historic District
- Exposure to small-scale agriculture, including rural communities and quaint, roadside farm stands selling locally-grown produce
- Clear viewsheds and open vistas that result from minimal commercial, industrial or residential development over much of the Byway

The diverse Byway assets listed above are all scenic, but many are not threatened by future changes. The views of Comanche National Grassland, for example, will remain similar to their current state, because the land is federally protected. Furthermore, the scenic qualities of farmland and historic sites are considered in our other sections. Therefore, we limited our consideration of scenic qualities to two factors in our final analysis: visibility of land from the byway, and visibility of iconic points. The first indicates whether land is visible from the road, and the second indicates which areas offer views of any of the points we've listed as iconic. That way, we may focus first on preserving the areas that one actually experiences during the Byway drive. Though each visitor may appreciate a different landscape, scenic views are included in the analysis of this Plan in an attempt to capture some of the most prominent scenes along the Byway. We do not quantify the views in this Plan, but only indicate where they exist.

See Map –Santa Fe Trail Conservation Plan: Scenic Qualities



Views from atop Raton Pass near the gateway entering from New Mexico

Historic Qualities (National Significance)

The Santa Fe Trail was designated a National Historic Trail in 1987 due to the numerous buildings, sites, and objects of historical significance within the Byway corridor. Five sites on the Byway have been designated a National Historic Site, Place, or District. An additional 14 sites have been identified by the National Park Service as having high potential for Historic Site designation. In total, 800 named historic sites dot the Byway, and even more have yet to be discovered or named. As these sites are located, mapped, or developed, they should be incorporated into revisions of the Corridor Management Plan and this Conservation Plan.

The Santa Fe Trail's history is not strictly confined to the past. While many sites are private, there are numerous opportunities for travelers to experience the rich and colorful history of the Trail and the trail corridor. Museums, historic sites, and other venues convey the history of the Trail through exhibits, interpretive displays, and living history presentations. It is the historic significance of the Santa Fe Trail, and the present day vitality of the Trail and trail corridor, that allow the Byway to serve as a destination unto itself.

Significant Historic Qualities include:

- Seven locations designated a National Historic Site, District or Place: Bent's Old Fort, Boggsville, the Otero Museum, the Baca House, Amache, Sand Creek, and the Corazon de Trinidad
- Five locations designated Santa Fe National Historic Trail Sites: Bent's Old Fort, Boggsville, Comanche National Grassland, John Martin Reservoir, and the Trinidad History Museum
- Thirty-six Daughters of the American Revolution trail markers situated directly on the Byway or accessible within the trail corridor
- As many as ten Santa Fe Trail crossings
- The junction of the Mountain Route and the Fort Union-Granada Road at Granada
- The Old Granada town site, a National Park Service high potential site
- Two significant statues, the Kit Carson statue (Kit Carson Park, Trinidad) and the Madonna of the Trail statue (Colorado Welcome Center, Lamar);
- Bent's New Fort, a high potential historic site
- Old Fort Lyon and New Fort Lyon, each a National Park Service high potential historic site
- Wagon ruts visible at several locations, including Iron Springs historic area, John Martin Reservoir, and Old Fort Lyon
- The Loving-Goodnight Cattle Trail, which operated simultaneously with the Santa Fe Trail and was historically significant in the region's cattle era;
- The Las Animas cemetery, featuring the graves of William Bent and John Wesley Prowers
- The Cruz Torres grave and the historic Dick Wootton Ranch on Raton Pass, each a National Park Service high potential historic site

- The Hole-in-the-Rock site, north of Thatcher, a National Park Service high potential historic site
- Stage stop sites and information kiosks at the Pinon Canyon Army Maneuvers Site
- A historic plaque located on the exterior wall of the Columbian Hotel building (Trinidad)
- 7.88 miles between Hoehne and Model, a National Park Service high potential route segment
- Five significant museums dealing with the history of the region: the Big Timbers Museum (Lamar), the Kit Carson Museum (Las Animas), the Otero Museum (La Junta), the Koshare Indian Museum (La Junta), and the Trinidad History Museum (Trinidad)
- Six Preserve America Communities: Baca, Bent, Crowley, Kiowa, Otero and Prowers
- The Koshare Indian Museum Kiva, a State Historic Site

To begin displaying the complex history, we incorporated Colorado Office of Archeology and Historic Preservation, and National Register of Historic Places data into our maps. Incredibly, there are over 800 named historic sites within the byway corridor, including homesteads, mines, churches, and trail segments. In addition we specifically mapped all Santa Fe Trail interpretive signs and 31 of the 36 Daughters of the American Revolution (DAR) historic trail markers. Furthermore, we mapped the land surrounding important historic sites (within 0.5 miles) since it is not only the sites themselves, but the surrounding landscapes that put those sites into perspective that are of conservation interest. Please note that many of the sites listed above, while important, lie outside the 2.5 mile buffer, and are not included in the mapping or analyses of this conservation plan.

See Map Santa Fe Trail Conservation Plan: Historic Qualities



Byway poster designed for the Trinidad Colorado Welcome

Archeological Qualities (National Significance)

Several significant archeological sites are found within and in proximity to the Santa Fe Trail corridor. These sites contain pictographs, petroglyphs, Native American teepee rings, fire circles, and other evidence of both prehistoric and settlement-era human activity. The numerous rock art sites document continuous habitation of the region for approximately 5,000 years. Significant archeological sites exist at Picket Wire Canyonlands, Picture Canyon, Comanche National Grassland, and Piñon Canyon. The Loudon-Henritze Archeology Museum (Trinidad) features exhibits on the area's geology, fossils, and archeology.

Significant Archeological Qualities include:

- Several rock art sites bearing pictographs and petroglyphs
- Numerous archeological sites on Comanche National Grassland. (A 1997 archeological survey documented more than 70 sites in the Timpas Creek area alone)
- Vogel Canyon, a State Archeological District
- Native American teepee rings and fire circles
- The Loudon-Henritze Archeology Museum (Trinidad)

While these sites are invaluable to our region, our conservation analysis does not contain any maps or analyses specifically dedicated to archeological sites. This is mostly due to the fact that, luckily, these sites are already conserved. Many public lands, including Comanche National Grasslands and Vogel Canyon, explicitly focus on protecting such archeological landmarks. Furthermore, other significant archeological sites are included in the historic databases explained above.

No maps available

Recreational Qualities (Regional Significance)

The Santa Fe Trail corridor provides numerous opportunities for both developed and undeveloped recreational activities. Sections of the corridor are destination locations or travel routes for recreation, wildlife viewing, hunting, and fishing. Vast tracts of public land support hiking, horseback riding, bicycling, camping, and other recreational activities. Several warm-water lakes and State Parks and State Wildlife Areas serve as multiple-use recreation areas. Many picnic areas, trailheads, municipal parks and golf courses also serve this area.

Any service, activity or facility that brings visitors into the region benefits the Byway corridor. Regardless of the reason visitors enter the corridor; they are exposed to Santa Fe Trail signs, interpretive information, and roadside attractions. This overlapping of services and benefits is especially evident in the relationship between the corridor's recreational and other qualities. For example, a trail connection is being built between John Martin Reservoir and Boggsville, allowing visitors to easily engage in the history and beauty of both sites. Similarly, the Timpas picnic area, featuring a well-marked trail and Santa Fe Trail information, serves recreationists and historians alike. The interconnectedness of the corridor's intrinsic qualities must be recognized and used by the managers of these resources.

Significant Recreational Qualities include:

- John Martin Reservoir, the largest body of water in southeast Colorado, provides boating, swimming, camping, fishing, hunting, hiking, picnicking and sight-seeing opportunities. An information center, information kiosks, a DAR marker and SFT wagon ruts can also be found at the reservoir
- Trinidad Lake State Park, featuring camping, boating, hunting, fishing, picnicking, wildlife watching, hiking, and a lighted, handicapped accessible trail
- Pinon Canyon Army Maneuvers Site, which welcomes recreationists on its 16,000 plus acres when the army is not training at the site
- Comanche National Grassland, a multiple use area, featuring hiking, hunting, fishing, horseback riding, camping, wildlife viewing, Trail ruts, Trail markers and Trail-related exhibits. Comanche National Grassland is a Santa Fe National Historic Trail Site; Significant sites on the Grassland include:
 1. The Sierra Vista Overlook, featuring spectacular views of the grasslands, the distant Spanish Peaks and the SFT route; sandstone SFT markers; a bench; two information kiosks (one sheltered); and a hiking trail to the Timpas Picnic Area via the SFT.
 2. The Timpas Picnic Area, featuring picnic facilities; three information boards; SFT markers; a loop trail; handicapped parking; accessible picnic tables; and parking for horse trailers, RVs and buses.

3. The Vogel Canyon Picnic Area, situated on a spur of the SFT, featuring sections of a stagecoach road; the ruins of a stage station; picnic facilities; horse trailer parking and hiking trails.

- Numerous public and private property locations providing hunting opportunities. Hunting is an important part of the local economy and culture. For example, hunting and fishing on Comanche National Grassland brings over \$127,000 into the local economy annually
- Camping areas on public and private land
- Santa Fe Plaza (La Junta) and Clarence Couch/C.A.V.I. Park (Las Animas), small city parks on the Byway
- The Purgatoire Trail, between Trinidad and El Moro
- The trail corridor from Trinidad to Raton Pass, which the National Park Service has identified as having potential as a long-distance, high-quality hiking trail



Santa Fe Trail Bike With Pike event, and horseback riding in the foothills

While we hope some of the maps created for this project provide visual aids for accessing recreational areas, we did not map the full spectrum of recreational amenities. Again, this is because the most important recreational amenities exist on conserved land, or are already included in other sections. The city, state and national parks along the Byway are remarkable, but are already guaranteed to remain open for public use. Birding areas, historic sites, and scenic vistas are key to recreation in the region, but fall first under other categories of this plan. In our analyses, we chose to focus instead on the preservation of land adjacent to existing parks. Such conservation could lead to the expansion or connection of public parks or otherwise conserved land. Even in cases where newly conserved land around parks remains private, such preservation would protect the views that make our parks so spectacular. Also, larger parcels of conserved land offer better habitat than more fragmented landscapes, enhancing the wildlife viewing opportunities along the Byway. Three maps included in this plan inform our understanding of recreational opportunities along the Byway. The first map displays the public accessibility of various properties throughout the corridor, as that is a

common prerequisite for recreation. Second, we display a map of ownership across the corridor, as ownership type is an important factor in the recreational amenities offered.

See Map – Santa Fe Trail Conservation Plan: Public Access

See Map – Santa Fe Trail Conservation Plan: Land Ownership

Natural Qualities (Regional Significance)

Last but not least is the quality that unifies every other: the local ecosystem. Southeast Colorado is rich with a diversity of natural values. In this unique part of Colorado, prime agricultural land gives way to expanses of native grassland. The landscape changes dramatically as elevation increases in the vicinity of Raton Pass and gives way to a piñon pine and juniper shrubland. These natural resources of the Santa Fe Trail lie at the core of our conservation goals. The region's ecosystem influenced the lives of historic inhabitants and inspired archeological pictographs. Today, natural resources provide our essential needs, enliven our recreational experiences and color our scenic vistas. The continued health of the Santa Fe Trail's flora and fauna depend upon conserved land for their survival. While much of the Santa Fe Trail remains wide open and undeveloped today, we hope to conserve the Byway's most biologically rich areas before pressure mounts.

In places, rivers have carved canyons and valleys, where striking geology and unusual rock formations can be found. Numerous warm-water lakes dot the landscape, providing critical wildlife habitat. Significant waterfowl populations live within and migrate through the Santa Fe Trail corridor. The area's rivers and lakes support relatively lush vegetation and numerous wildlife populations. Even at a distance, one can discern the meandering paths of rivers by following the ribbons of cottonwoods and willows nurtured by the waterway. These resources also make Southeast Colorado a particularly important area for migratory birds, as evidenced by archaeological digs of prehistoric birds in the region. Other wildlife is abundant throughout the region, supported by the extensive public land holdings managed by various agencies. Comanche National Grassland alone provides habitat for approximately 275 bird species, 60 mammal species, 40 reptile species, 11 fish species, and 9 amphibian species.

However, native grasslands like the Santa Fe Trail's shortgrass prairie are the least conserved and most altered landscapes on the planet. Luckily, eastern Colorado has one of the largest expanses of intact prairies that remain in the United States. With thoughtful consideration of development and conservation, we can ensure it endures.

Significant Natural Qualities and Areas include:

- Rare prairie ecosystems at Comanche National Grassland, Pinon Canyon Army Maneuvers Site, and on private parcels
- Diverse riparian zones along the Arkansas and Purgatoire Rivers, and tributary streams;
- The transitional ecosystems of Fisher's Peak and the Spanish Peaks
- Dinosaur tracks at Picket Wire Canyonland showcasing the biodiversity of the past
- John Martin Reservoir and Trinidad Lake State Park and the adjacent State Wildlife Areas
- James M. John State Wildlife Area, which covers 8,200 acres
- Lake Dorothy State Wildlife Area, covering over 4,800 acres of habitat offering picnic, observation, hiking and rest areas for human visitors

- Higbee State Wildlife Area, covering 871 acres
- Several Cretaceous/Tertiary boundary sites in Las Animas County
- Prime farmland designation in Prowers, Bent, Otero and Las Animas counties

Again, we only mapped those qualities directly within the Byway corridor. Due to the hard work of several conservation agencies across the state, we have access to incredible data detailing various natural qualities. To begin our mapping and analyses, we included the Western Association of Fish and Wildlife Agencies' Critical Habitat Assessment Tool (WAFWA CHAT). In Colorado, CHAT includes habitat important to Colorado Parks and Wildlife Species of Economic and Recreational Importance and Species of Concern. Similarly, the Colorado Natural Heritage Program's (CNHP) Potential Conservation Areas were mapped to display minimum areas deemed necessary for the long-term survival of targeted species. We also included bird diversity information, because birds are of particular recreational and ecological interest. Our bird data originated from the New Mexico State University Center for Applied Spatial Ecology's bird biodiversity prediction, and is based on habitat type and quality. Lastly, we included Colorado Department of Transportation listings of all bodies of water, including lakes, rivers, streams and irrigation ditches (on the Cultural Qualities – Agriculture map), because waterways tend to be particularly biologically diverse and threatened by development (Montgomery, 1996).

The maps below reflect this information. First is the Critical Habitat map based on the WAFWA CHAT. The second map displays Colorado Natural Heritage Program's Potential Conservation Areas. The third shows bird diversity and rough Colorado Birding Trail locations.

See Map – Santa Fe Trail Conservation Plan: Critical Habitat Assessment

See Map – Santa Fe Trail Conservation Plan: Potential Conservation Areas

See Map – Santa Fe Trail Conservation Plan: Bird Diversity and Trails



A jackrabbit on the southern Colorado prairie

Final Conservation Plan Prioritization

This Plan culminates in a final Conservation Priorities map, which overlays all of the priorities discussed above. For example, an area found to have historical, agricultural and recreational value is of higher priority than an area with only one asset of interest. Areas of highest conservation priority or concern are red, and areas of least concern are green. We excluded areas that are already protected or public and therefore do not necessitate conservation consideration. Conserved areas include those protected in public parks and private conservation easements. The protected and unprotected areas are differentiated in the Conservation Gaps map. For full explanation of the conservation analysis, please refer to Appendix A.

See Map – Santa Fe Trail Conservation Plan: Conservation Gaps

See Map – Santa Fe Trail Conservation Plan: Conservation Priorities

One additional map estimates current population change within the Byway corridor. This information may give a basic idea of which areas are most likely to face development pressure in the coming years. By conserving lands before or during population growth, we can ensure landscape scale conservation is a part of smart growth.

See Map – Santa Fe Trail Conservation Plan: Population Change

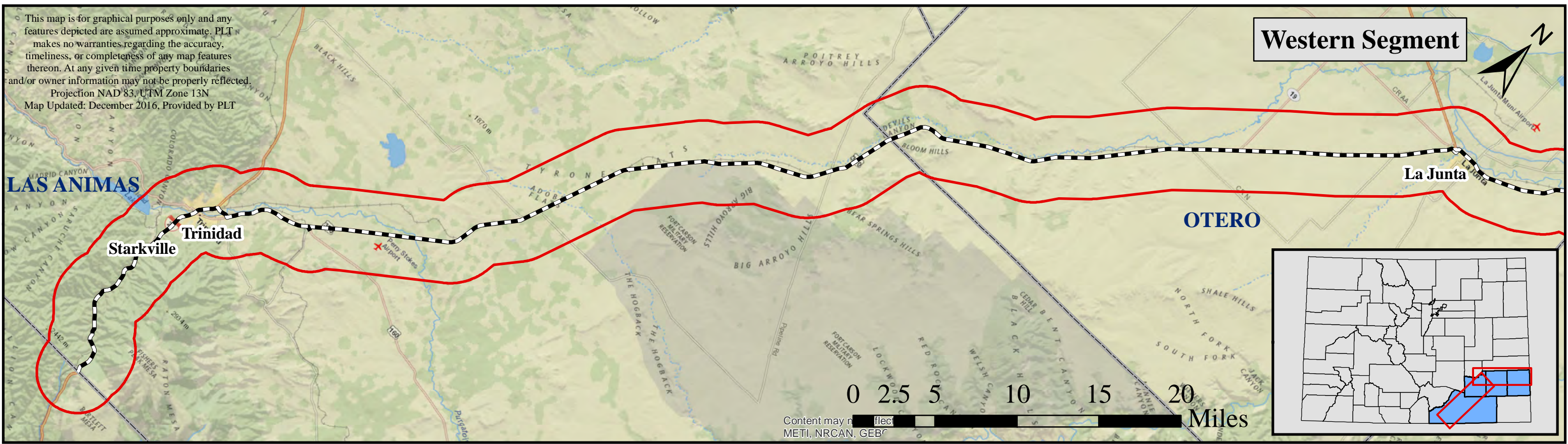
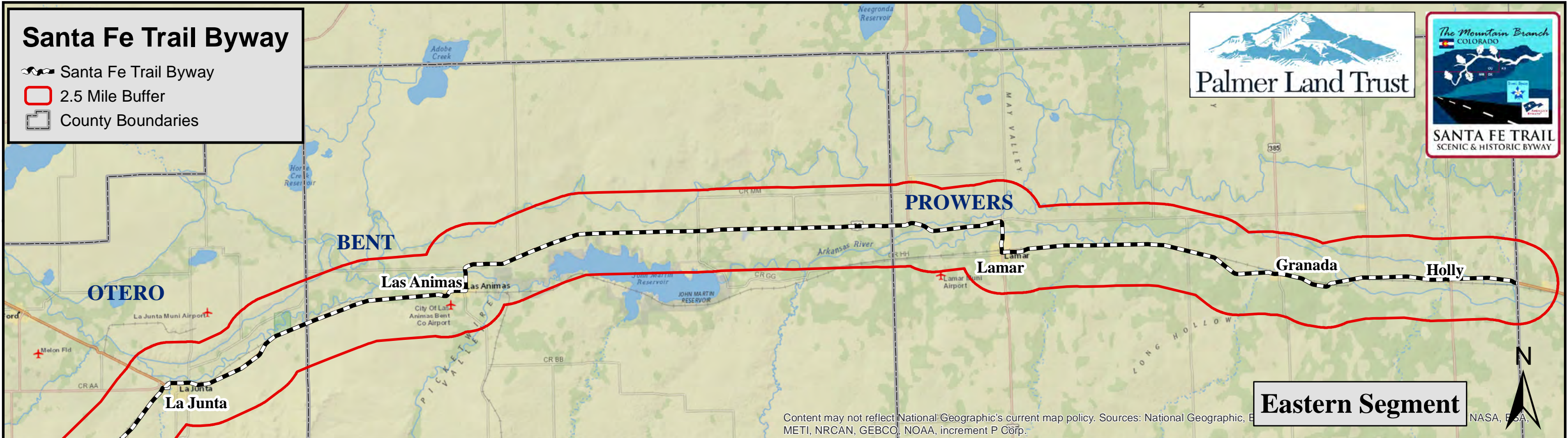
Conclusion

While we acknowledge development is a necessity for the anticipated growth of our communities, we believe that this growth can be managed to help protect the resources that make Colorado a great place to visit and reside. By preserving high priority landscapes we can help ensure biological communities remain intact, water resources in the region are protected, agriculture continues to be a viable and sustainable industry in the region, and the cultural and historical assets of the region are preserved forever. The Conservation Priorities map is the culmination of all data gathered for this project. This map can be used by organizations to effectively identify and evaluate potential conservation projects to ensure the most efficient conservation strategy is followed. We invite all to take part in the work that lies ahead.

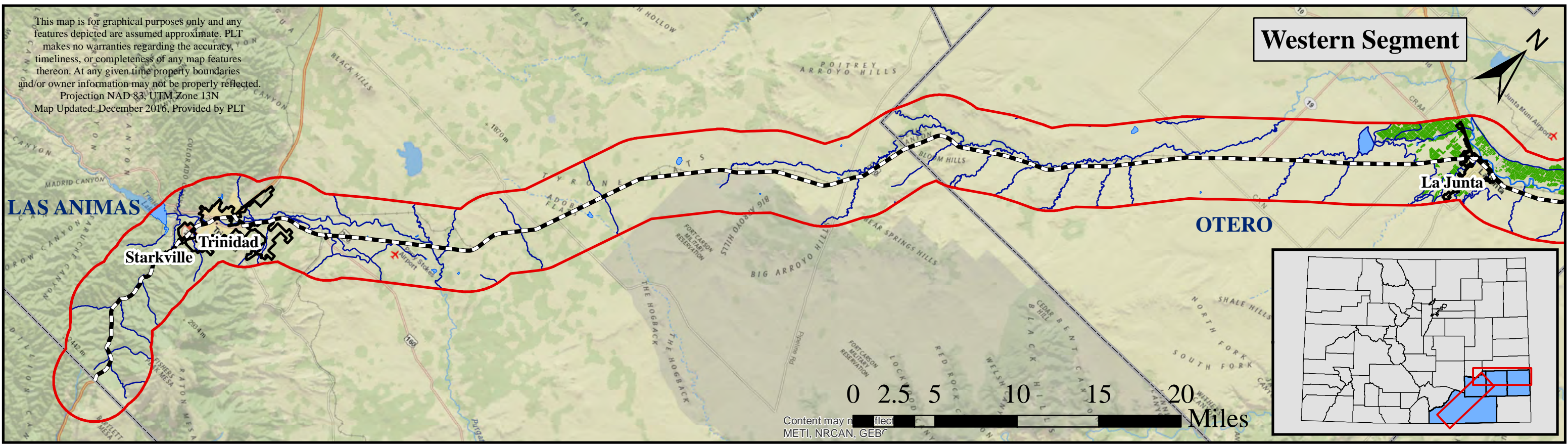
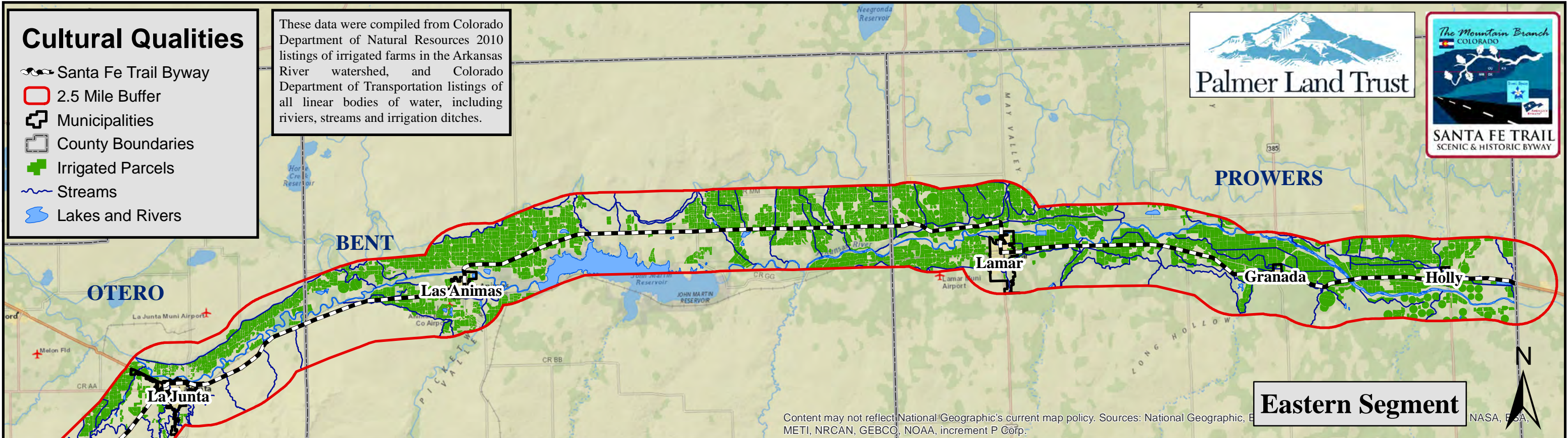
The Santa Fe Trail Scenic & Historic Byway is layered with important elements that make it unlike anywhere else in the world. Scenic views, historic sites, irrigated croplands and natural biodiversity are all important parts to the Byway ecosystem and economy, and each element deserves equal conservation consideration. Taken together, all the elements of this Conservation Plan attempt to preserve something that is special to everyone — our sense of place. What will the Santa Fe Trail look like in ten or twenty years? How will development impact our enjoyment of the place where we live? While we can never predict the change awaiting our communities, we can make every effort to plan for a bright future. Our conservation work is never done, but with the Santa Fe Trail Scenic & Historic Byway Conservation Plan in place, we have a roadmap to direct our efforts along the Trail's most visible and important thoroughfare. We invite all to take part in the work that lies ahead.

Maps

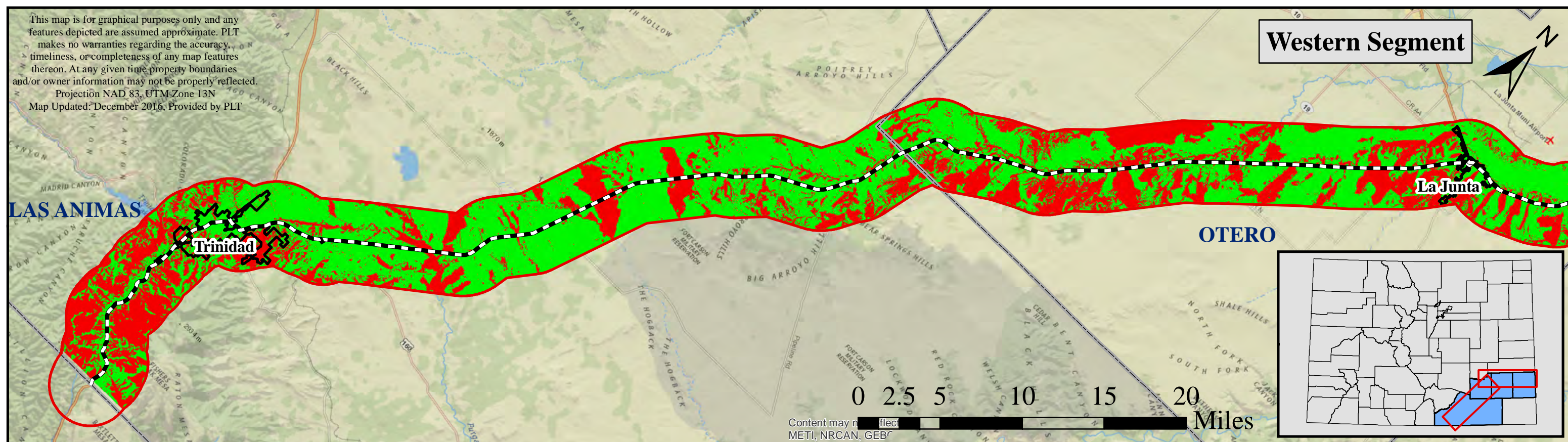
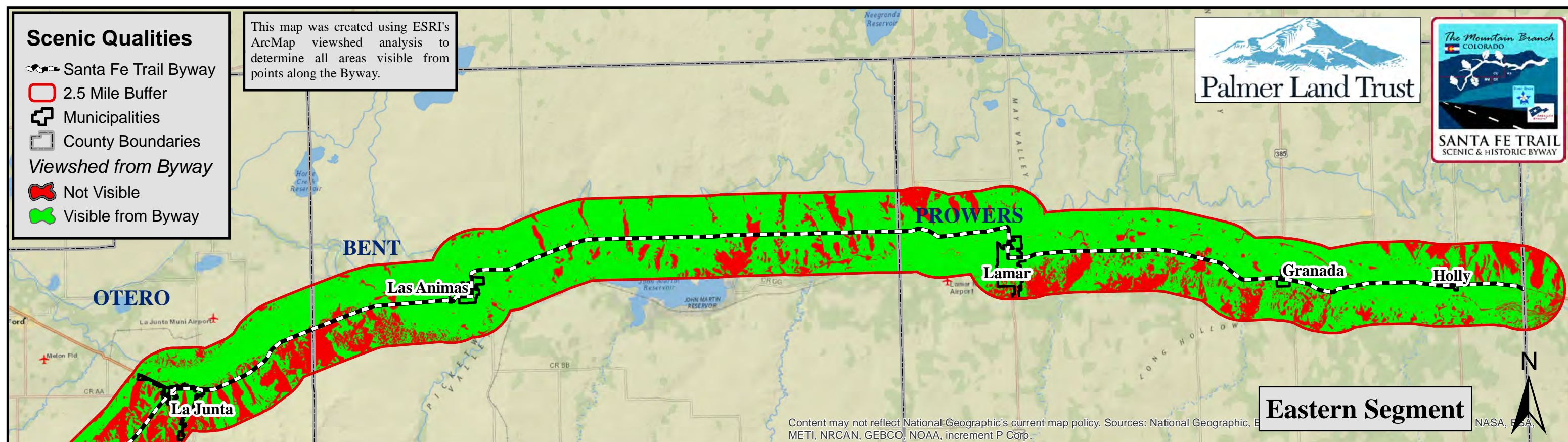
Santa Fe Trail Conservation Plan: Overview



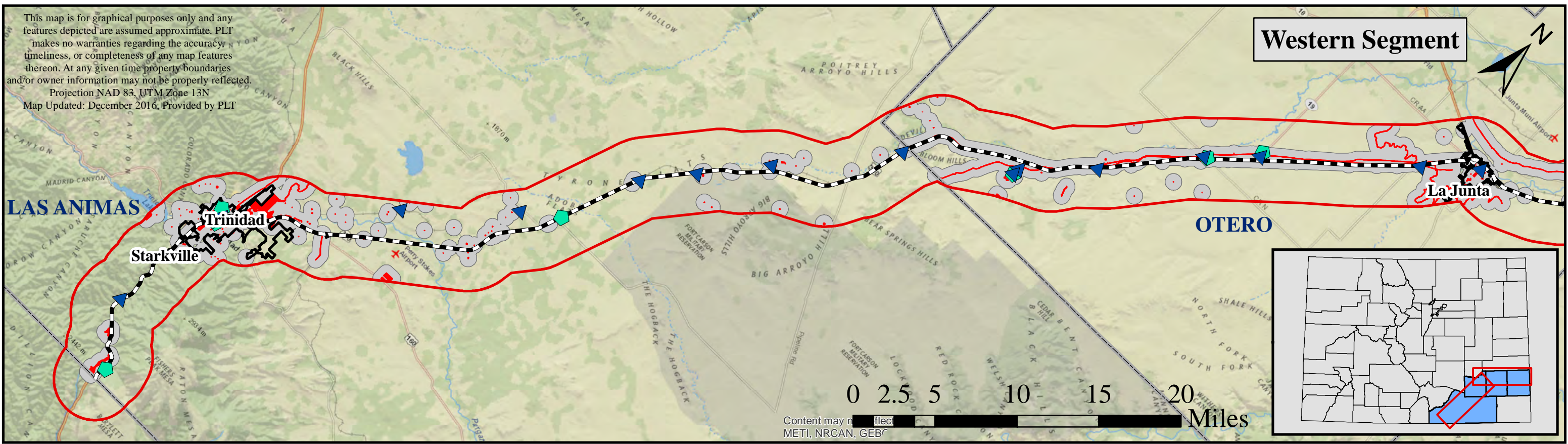
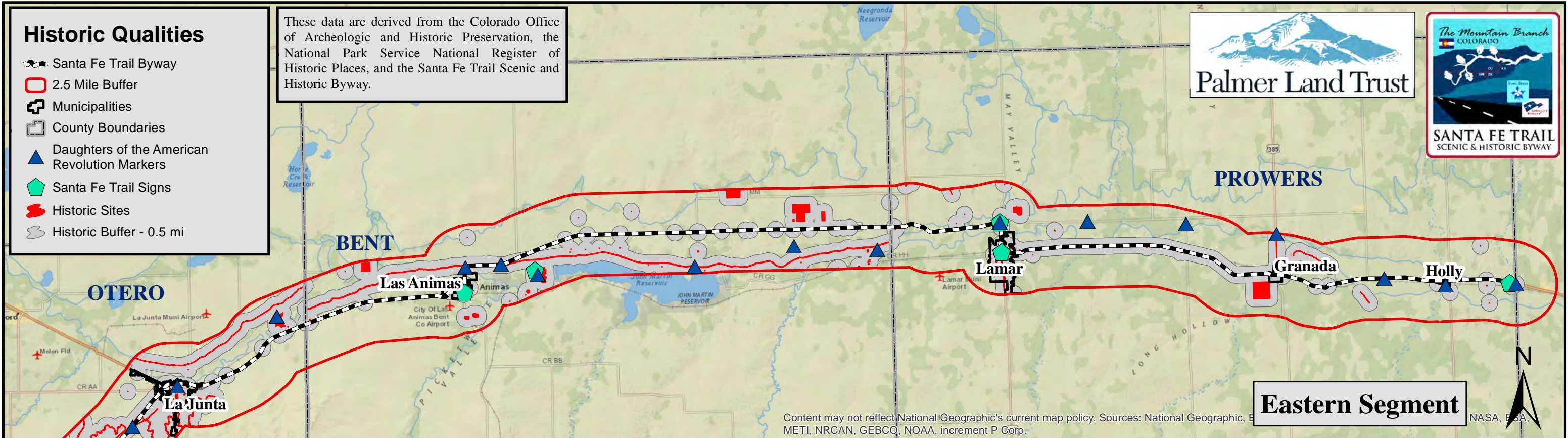
Santa Fe Trail Conservation Plan: Cultural Qualities - Agriculture



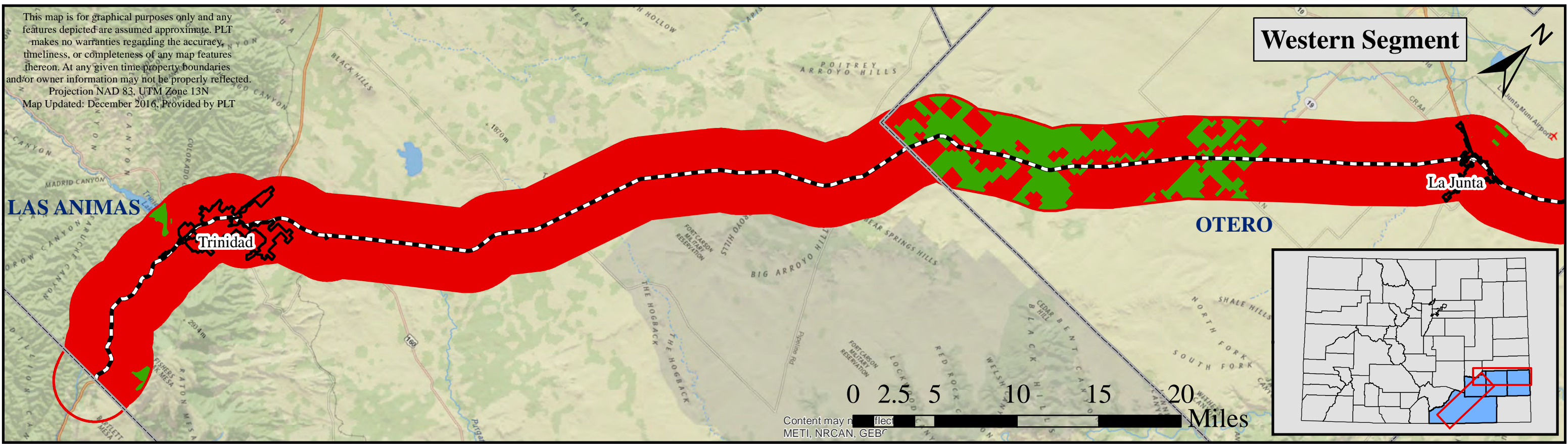
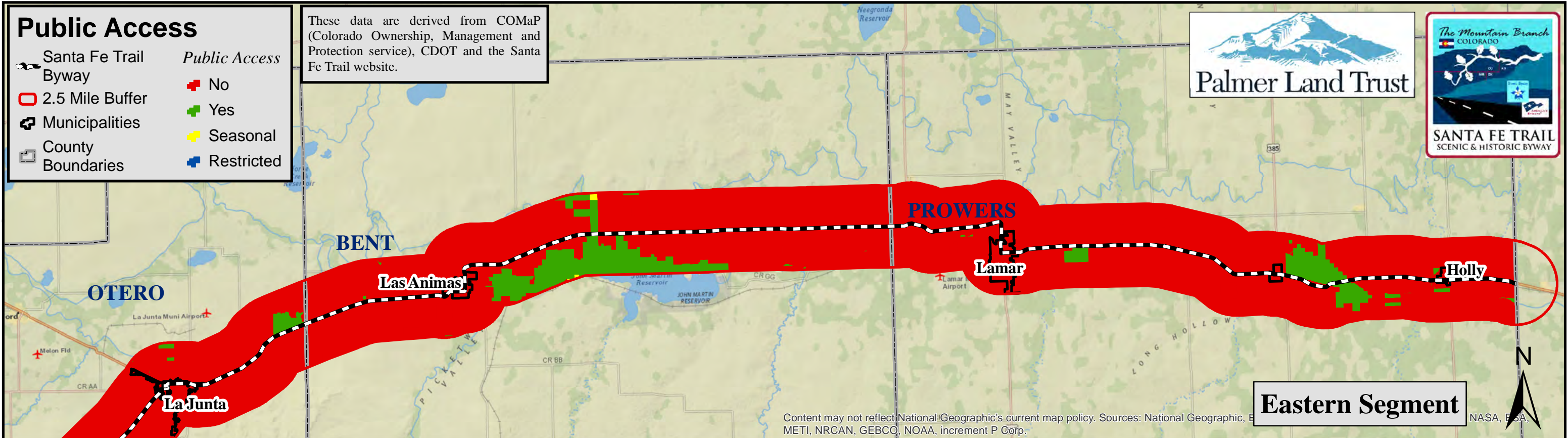
Santa Fe Trail Conservation Plan: Scenic Qualities



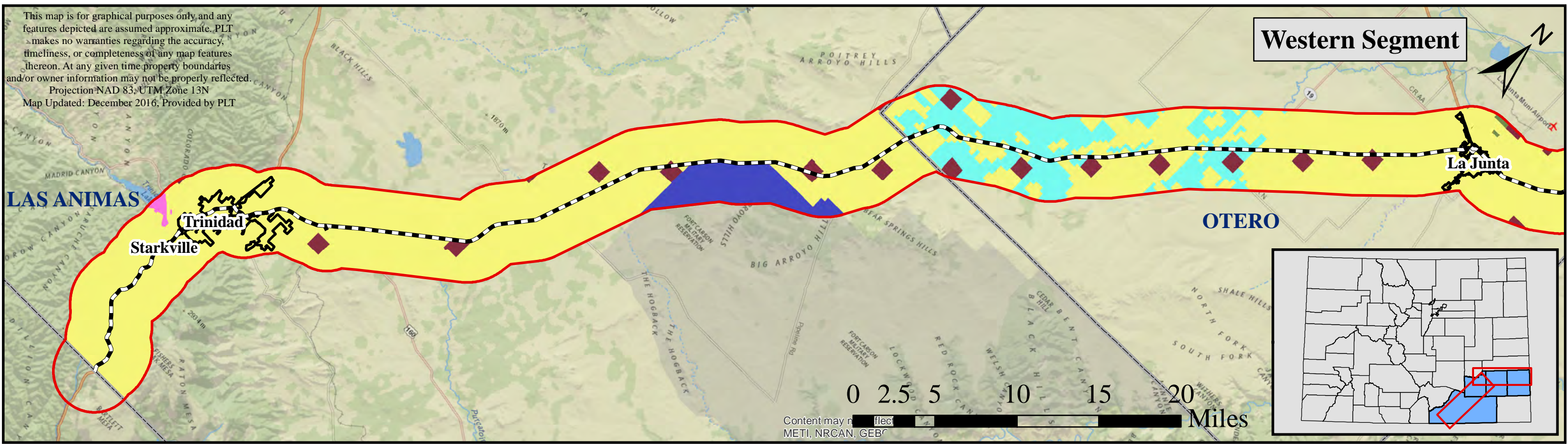
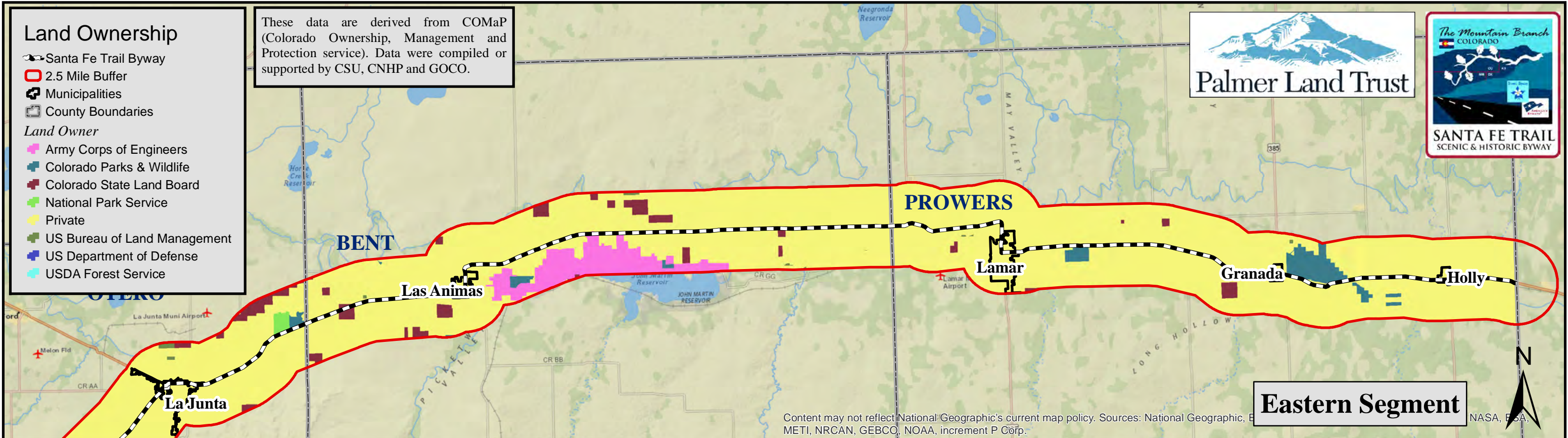
Santa Fe Trail Conservation Plan: Historic Qualities



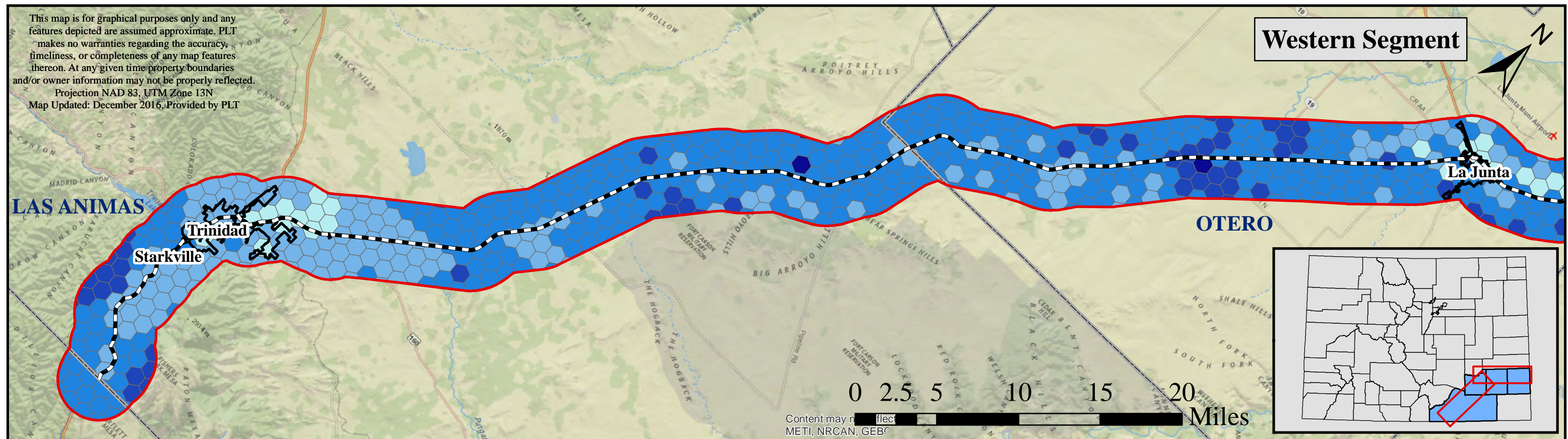
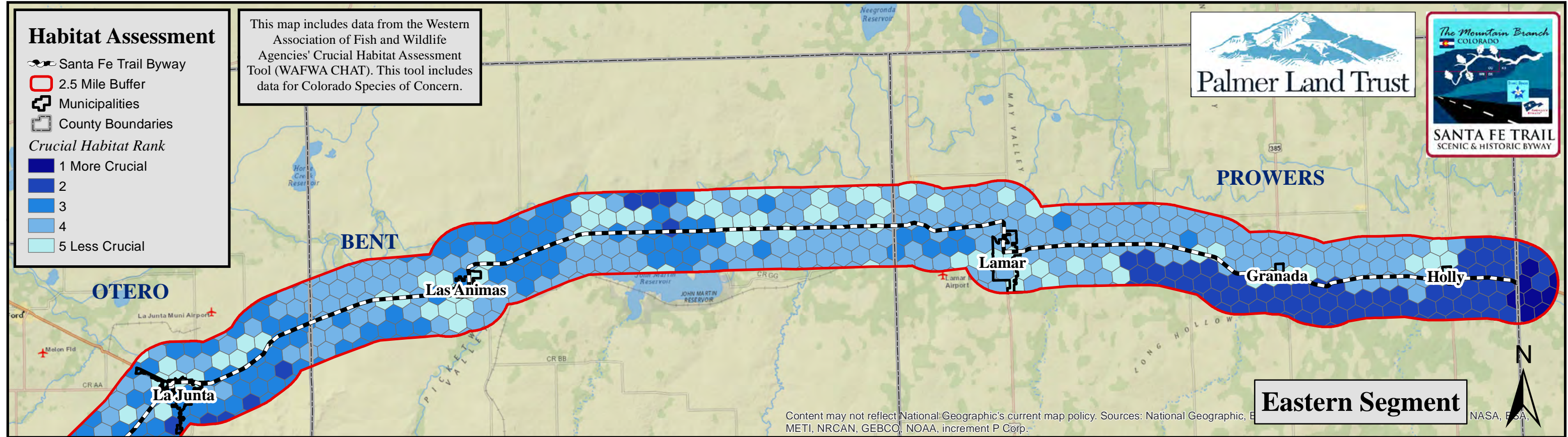
Santa Fe Trail Conservation Plan: Public Access



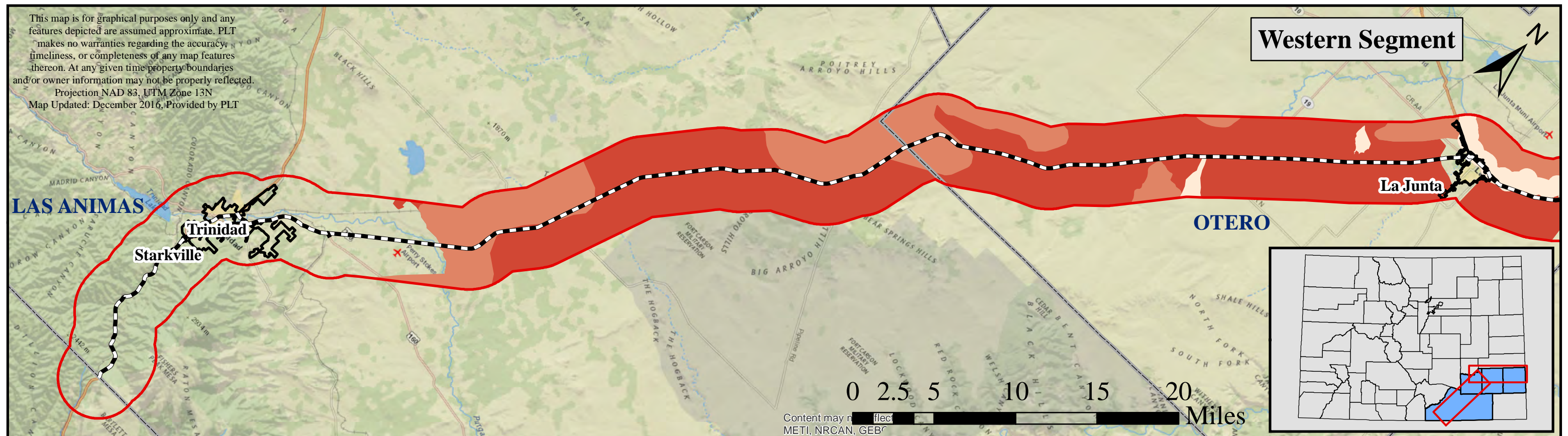
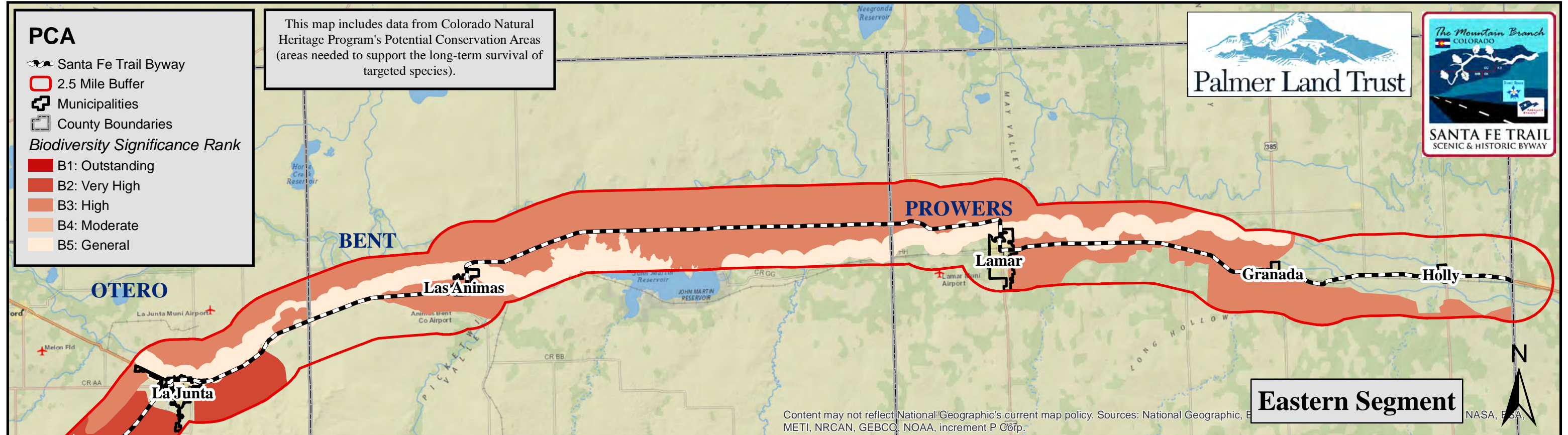
Santa Fe Trail Conservation Plan: Land Ownership



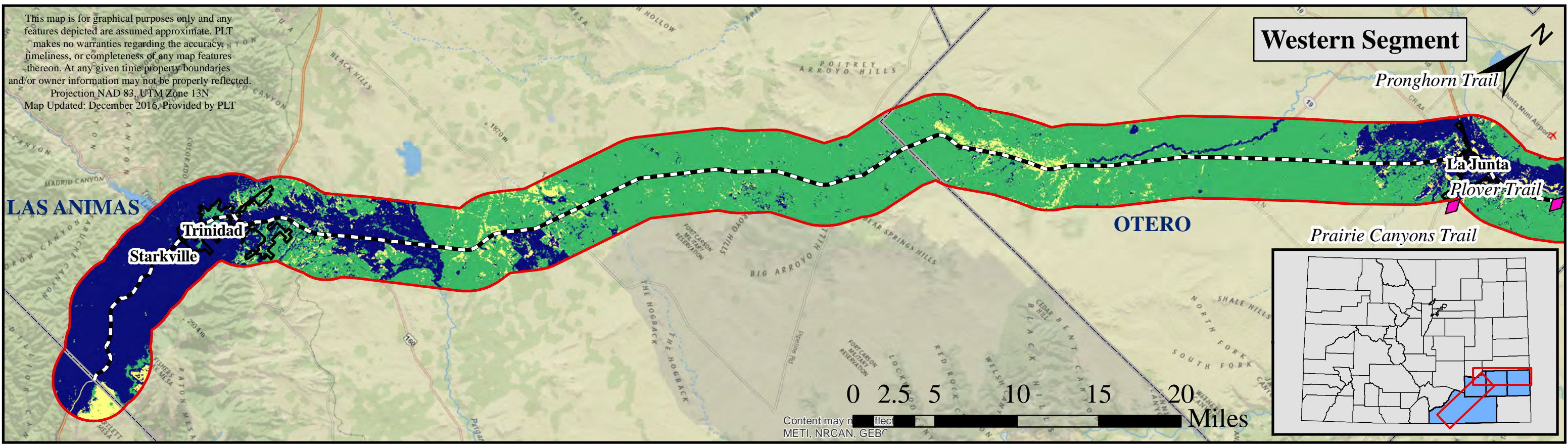
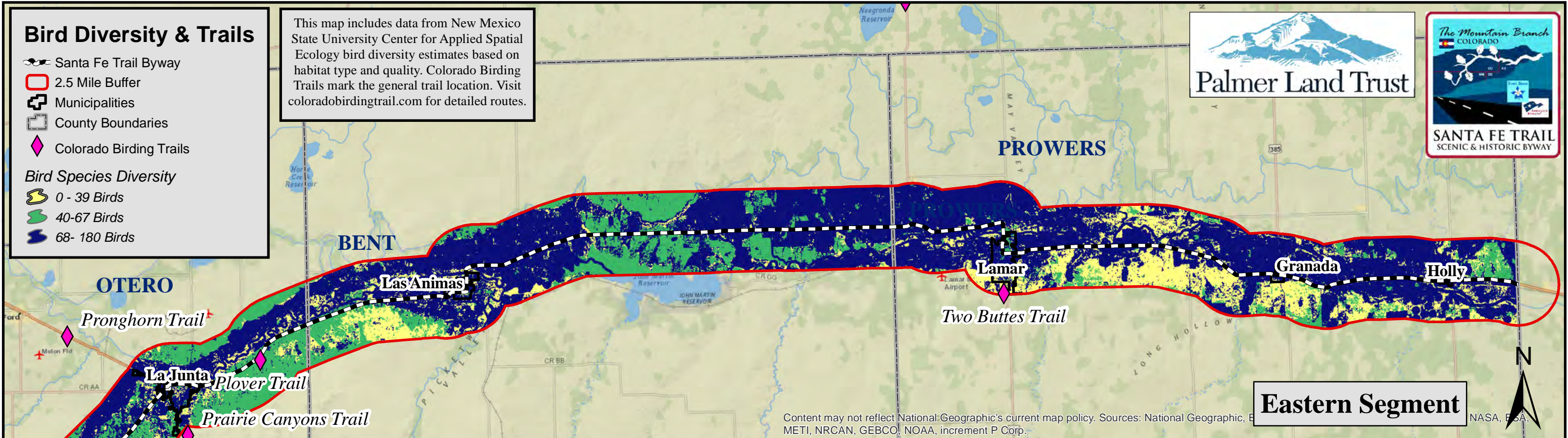
Santa Fe Trail Conservation Plan: Crucial Habitat Assessment



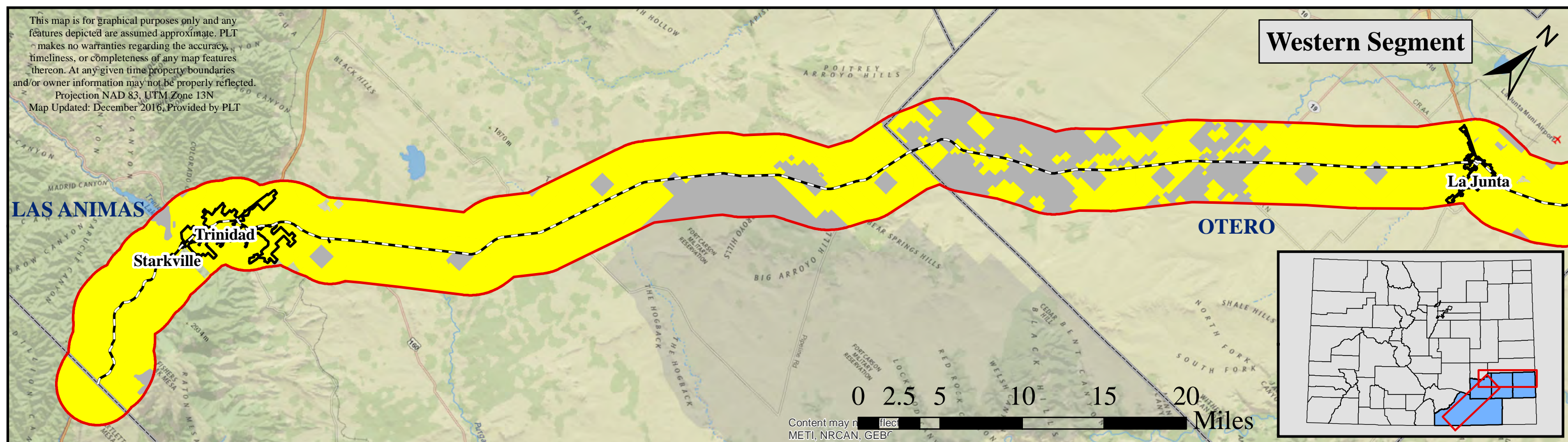
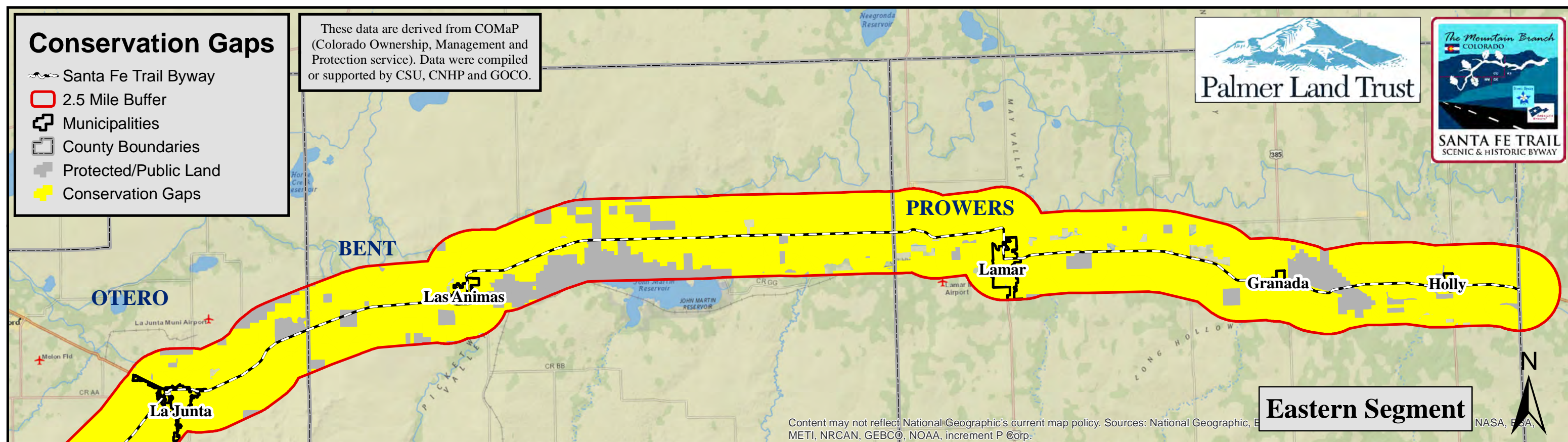
Santa Fe Trail Conservation Plan: Potential Conservation Areas



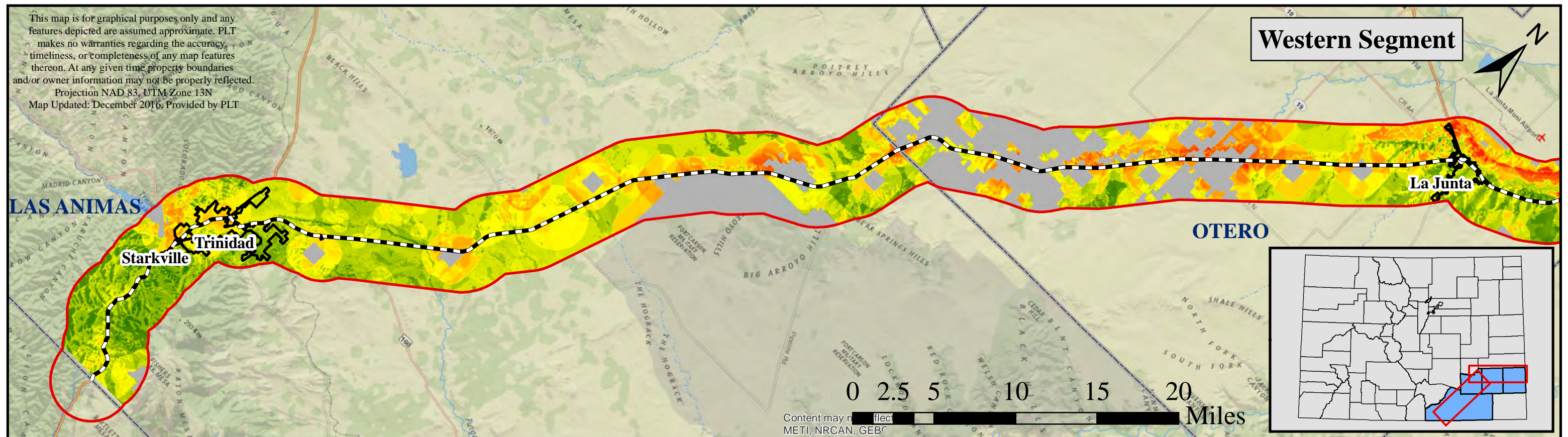
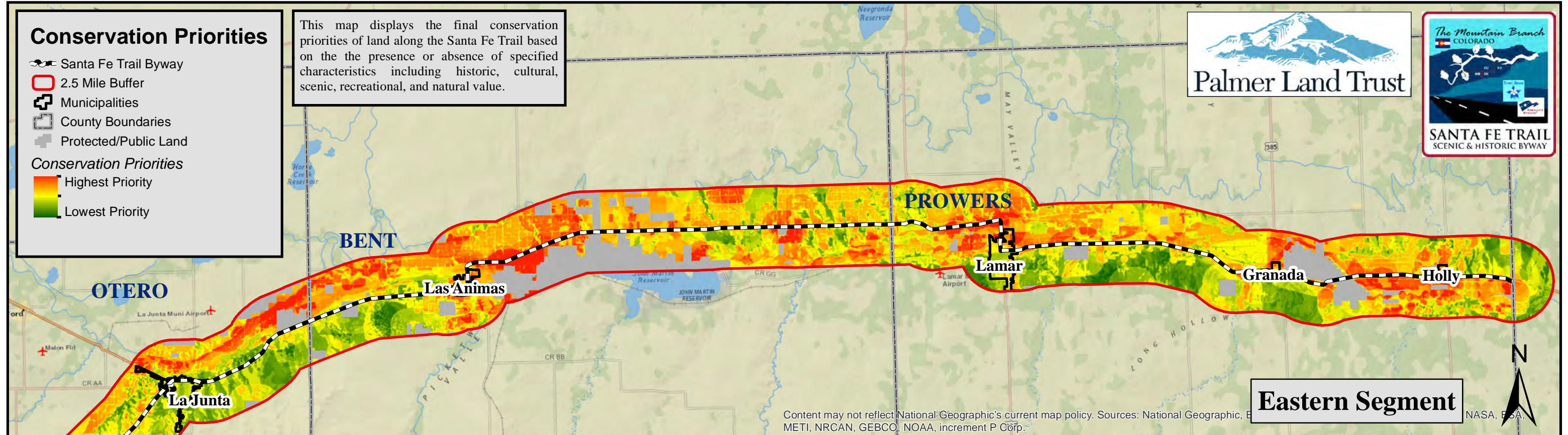
Santa Fe Trail Conservation Plan: Bird Diversity & Trails



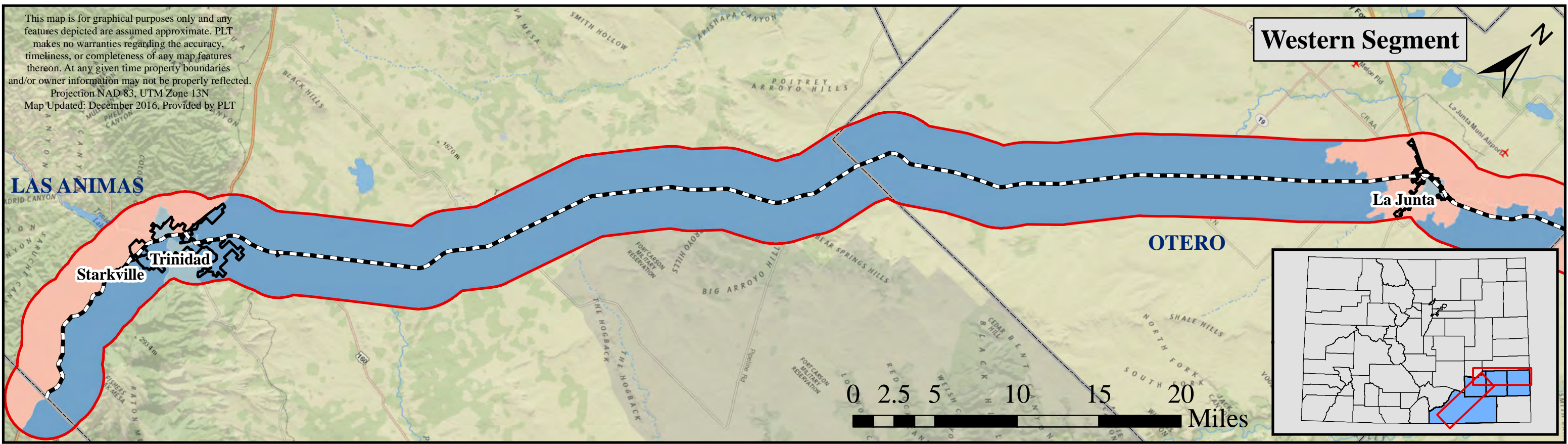
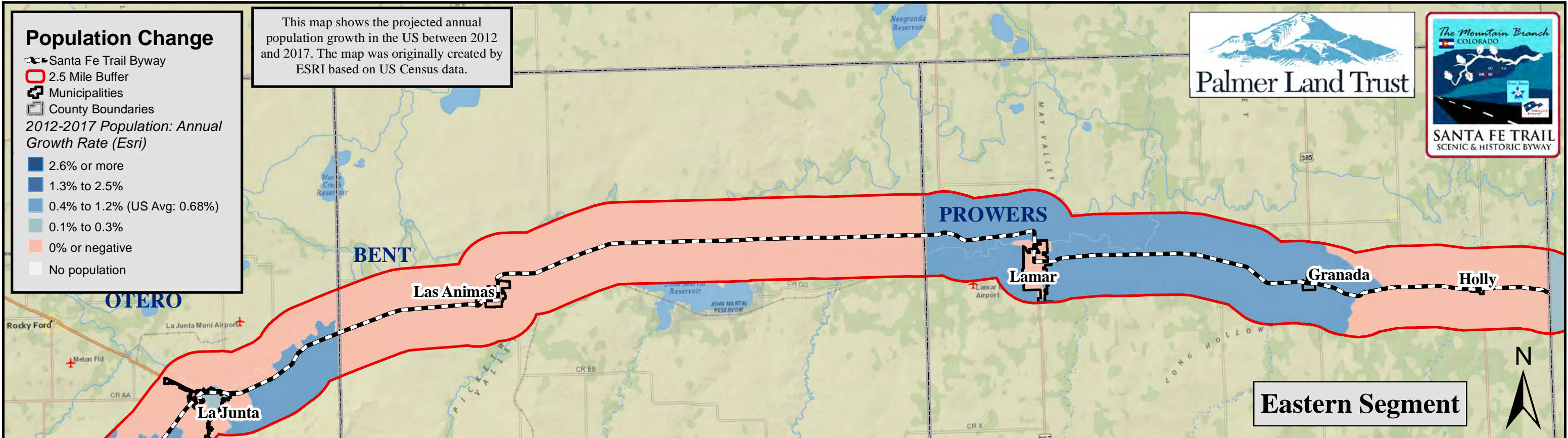
Santa Fe Trail Conservation Plan: Conservation Gaps



Santa Fe Trail Conservation Plan: Conservation Priorities



Santa Fe Trail Conservation Plan: Population Change



Appendix

Appendix A: Data Analysis

By ranking the specific assets discussed in this plan, we are able to determine priority areas for land conservation. To determine the conservation value, each quality of importance was assigned a specific numerical value, and then those values were tallied together. Weights are cumulative; for example, lands with historic, cultural, and natural qualities are assigned a higher value than those with only historic value. Each category had an equal weight of three points overall, creating a total possible land value of 15, although the highest earned conservation value was 13.7. Descriptions of the assignments for each quality can be found below, and a chart summarizing those points can be found in Appendix B.

Conserving Cultural Qualities

In our prioritization analyses, we assigned a relative value of three (3) to all irrigated parcels within the 2.5 mile Byway buffer. That value reflects the importance of agriculture as a central component of our cultural fabric. Again, while we recognize other vital qualities of our culture, many do not relate clearly to land conservation.

Conserving Scenic Qualities:

While scenic qualities are difficult to map, our conservation analyses focus on two particularly important scenic qualities. First, we mapped all areas within 2.5 miles of the Byway that are visible from any point along the Byway. All areas in the corridor are therefore coded as visible or not visible from the road. That way, we may focus first on preserving the areas that one actually experiences during the Byway drive. Second, we mapped all areas that offer views of some of the Byway's most iconic features. ArcMap, our program of choice, is able to compare the elevation of points of interest, like mountains, and the elevation of all surrounding areas to determine what is visible and what is blocked by intermediate features. To delineate which Byway areas offer signature scenic views, we added the sample of points below into our analysis, and any land within site of those landmarks was coded as so. For each peak listed, we included 2-3 points on that feature to include the visibility of the lower slopes as well as the highest peaks. In our final prioritization analysis, areas that are visible from the Byway were assigned one (1) point, and areas that offer iconic views were assigned two (2) points. Therefore, areas that offer both scenic resources tallied three (3) points total. The features included in the viewshed analysis of iconic points are:

1. Fischer's Peak
2. Raton Pass
3. The Spanish Peaks
4. The Sangre de Cristo Mountains including:
 - Humboldt Peak, Greenhorn Mtn., Blanca Peak, Culebra Peak, Vermejo Peak, and Mt. Adams, Rio Alto Peak, Deer Peak, Hardscrabble Mtn., and Mount Linsey.

Conserving Historical Landmarks:

For our conservation purposes, we are interested not only in historically significant sites themselves, but also the landscapes that put those sites into perspective. In our analyses, we created a half-mile buffer around all named historic sites in our database, and assigned a value of one (1) to all land within that buffer. In addition we specifically mapped all Santa Fe Trail interpretive signs and 31 of the 36 Daughters of the American Revolution (DAR) historic trail markers. We placed a two mile buffer around the interpretive signs, as those are locations we have already determined as highly significant areas visitors will hopefully enjoy at length. We placed a one mile buffer around all DAR markers, as they are particularly important historic landmarks for the Byway. Land within either of those two buffers is assigned one (1) point for each. Together, any piece of land could possess a total of three (3) points for its historic significance in the final prioritization analysis.

Conserving Archeological Qualities:

Our conservation analysis does not contain any maps or analyses specifically dedicated to archeological sites. This is mostly due to the fact that, luckily, these sites are already conserved. Many public lands, including Comanche National Grasslands and Vogel Canyon, explicitly focus on protecting such archeological landmarks. Furthermore, many significant archeological sites are included in the historic databases and analyses explained above.

Conserving Recreational Resources:

Our analysis of recreational resources reflects the desire to expand conserved areas around existing recreational resources. In our final prioritization analysis, we assigned two (2) points to land that lies within one mile of conserved land, and one (1) additional point to land that could connect two parks. Park connectors are defined as lands that lie with the one mile buffer of two or more parks, meaning that parcel could connect two protected properties.

Conserving Natural Qualities:

Again, our natural qualities analyses include data from the Western Association of Fish and Wildlife Agencies' Critical Habitat Assessment Tool (WAFWA CHAT), Colorado Natural Heritage Program's (CNHP) data on Potential Conservation Areas (PCAs), the New Mexico State University Center for Applied Spatial Ecology's bird biodiversity prediction map, and riparian data from Colorado Department of Transportation.

In Colorado, WAFWA CHAT includes habitat important to Colorado Parks and Wildlife Species of Economic and Recreational Importance and Species of Concern. CHAT ranks areas from 1 to 5, with 1 possessing the most important habitat. In our analyses, we assigned four (4) points to areas of CHAT rank 1, down to zero (0) points for areas of CHAT rank 5.

In the Santa Fe Trail corridor, three PCA biodiversity significance categories were present: B2: Very High, B3: High, and B5: General Biodiversity Interest. However, due to overlap, all B5 areas also

corresponded with either B2 or B3 areas, and we ranked only the highest category for each area. Areas under B2 classification received two (2) points, B3 (1) areas received one point, and all other areas were assigned zero (0). While CNHP has not thoroughly assessed all Byway counties, they have mapped PCAs along the entire corridor.

Our third natural resource, bird diversity, was divided into three categories. The number of bird species predicted to inhabit any given area range from 0 to 180. To simplify this incredible variation, we broke the diversity count into three equally distributed classes and assigned a point value to each class. Areas with 0-39 species received zero (0) points, areas with 40-67 received one (1) point, and areas with 68-180 birds received two (2) points. Lastly, we combined stream, river and lake data, created a buffer of .25 miles on either side of every body of water, and assigned one (1) point to areas within that buffer.

Because the natural qualities are numerous, but are not necessarily more important than other Byway qualities, the nine (9) possible points were divided by 3, leaving a 3 (three) possible points for natural qualities in the final prioritization analysis.

Appendix B: Data Weights

Land Quality	Value Assigned
Cultural	3
Irrigated agricultural land	3
Scenic	3
Visible from the Byway	1
Views of iconic mountains	2
Historic	3
Within 0.5 miles of a historic site	1
Within 1 mi of a DAR marker	1
Within 2 miles of a SFT interpretive sign	1
Recreational	3
Within 0.5 miles of conserved land	2
Within 0.5 miles of 2+ conserved lands (possible connector)	1
Natural (divided by 3 to even weight)	3 (= 9÷3)
WAFWA Critical Habitat (0-4)	
CHAT Rank 1	4
CHAT Rank 2	3
CHAT Rank 3	2
CHAT Rank 4	1
CHAT Rank 5	0
Potential Conservation Area (0-4)	
B1: Outstanding Biodiversity Significance	4
B2: Very High Biodiversity Significance	3
B3: High Biodiversity Significance	2
B4: Moderate Biodiversity Significance	1
No specified biodiversity significance	0
Bird Diversity (0-2)	
Species diversity count 68 – 180	2
Species diversity count 40 – 67	1
Species diversity count 0 – 39	0
Within 0.25 miles of streams, river and lakes	1
Total Points	15

Appendix C: Conservation Goals and Implementation Strategies

Goal 1: Maintain and improve the integrity of the Byway corridor to provide a beautiful and rich experience for residents and visitors

- *Conserve, restore, sustain and enhance Colorado Santa Fe Trail scenic and historic sites, viewscapes, forests, grasslands, ranches, farmlands and open spaces throughout the Byway corridor.*
 - Collaborate with land trusts to use conservation easements, deed restrictions, and long-term leases to protect culturally, scenically or historically important land in priority areas.
 - Work collaboratively and creatively with conservation organizations to tie vital water rights to agricultural land
 - Pool adjacent or proximate conservation projects to enhance funding opportunities and preserve greater tracts of land.
 - Identify opportunities to replicate successful land exchange and acreage enhancement models.
 - Encourage parcel analysis along the Santa Fe Trail Scenic and Historic Byway; and assist in securing Federal Highway Administration byways funding to protect priority parcels.
 - Work with local government authorities to strategically limit power lines and other possible obstructions to important views.
 - Direct habitat protection resources at priority species and ecological communities.
 - Protect previously identified, globally significant habitat areas.
 - Assist stakeholders in improving biological data resources.
- *Support the local economy to ensure a strong and sustainable community*
 - Promote local agriculture and agritourism including farm to table restaurants and farm stands
 - Improve the economic viability of beginning and established farmers through technological improvements, community organization and financial support.
 - Support local products from hot sauce to hemp oil
 - Encourage the continuation of traditional art, including cowboy bands, Native American and Spanish dancers, artists, craftspeople and other entertainers.
 - Collaborate with managing authorities of our public lands and owners of our private lands to market, enhance and conserve DAR markers, historic sites and ranches, stagecoach stops and watering holes, monuments, and historic buildings to maintain the remains of the Santa Fe Trail and continue a way of life that has been a Santa Fe Trail tradition for generations.

Goal 2: Increase opportunities to experience natural, recreational, and agricultural areas.

- Identify new opportunities to connect people with the outdoors and emphasize those that are already in place.
- Promote birding, hiking, and driving tours that showcase the area's assets.
- Advertise the diversity of wildlife areas, parks, and open spaces for hunting, fishing and general recreation
- Support conservation projects that protect and link open space areas, and encourage infrastructure to make those areas accessible
- Support experiential learning opportunities and education about the region's rich natural resources (see goal 4).
- Use protected open spaces to help cultivate a conservation ethic.
- Collaborate with stakeholders to establish and promote local cottage industries for their historic resources to contribute to sustainability and promote the Santa Fe Trail Way of Life.

Goal 3: Provide strong leadership and management of the Santa Fe Trail Scenic and Historic Byway conservation initiatives.

- Provide a well-qualified Board of Directors, partnerships, leaders and community volunteers who take an active part in conserving our lands and way of way of life on Colorado's Santa Fe Trail.
- Identify resource needs and potential sources, including grants and partnerships, to deliver more effective conservation education.
- Ensure that conservation efforts support and enhance the ability of the Byway to maintain the State and National designations it so highly values.
- Identify professional education specialists throughout the byway.
- Pursue new and improve existing partnerships with State and Federal agencies, non-governmental organizations, and the education community.
- Work with land trusts, government and non-government stakeholders, land managers, property owners, businesses, schools and individuals to assure we conserve our resources for future generations.



Byway leaders at Colorado Preservation Inc.'s Most Endangered Places Conference

- Provide effective education about safe and ethical recreation use and the ecological and social values derived from wilderness.
- Seek collaboration with resource management groups to expose youth to the functions and importance of such industries.
- Continue conservation messaging in our brochures, interpretive signs, website, and at partnering organization locations
- Work with partners to educate our communities and landowners about the value of restoring environmental services in their communities.
- Incorporate materials about the threats of climate change and resource depletion
- Develop criteria for selecting appropriate partnerships that can assist in the achievement of conservation education (programs, materials, funding, etc.)
- Establish new and strengthen existing linkages with external partners working with underserved groups
- Ensure that funds are identified for the development of new partnerships and/or improvement or enhancement of existing ones.
- Support conservation education research efforts of partners.
- Advocate incorporation of conservation education into program direction and into Byway planning efforts



Appendix D: Santa Fe Trail Stakeholders

Ownership across the Byway is as diverse as its intrinsic qualities. Because no single agency, organization or individual has the jurisdictional authority or the resources to successfully protect and manage the national treasure that is the Byway corridor, multi-agency cooperation, inter-jurisdictional communication and viable partnerships between public and private sector entities are of critical importance. The intrinsic qualities of the corridor are protected under a variety of Federal, State and local regulations, policies and guidelines. These include, but are not limited to, the National Historic Trails Act, National Park Service Comprehensive Management and Use Plan guidelines, Federal and State Historic Preservation regulations and policies, wetlands protection regulations, Colorado Scenic and Historic Byway provisions, Colorado State Statutes, and local zoning and code regulations. A significant amount of the trail is also protected and managed as private property. Looking forward, the conservation of this corridor must be a collaborative effort that hopefully includes all of those parties or more. The chart below outlines many important agencies and their general resource areas of interest.

Organization or Agency	Resource Areas of Interest					
	Scenic	Recreation	Cultural/ History	Business/ Ag	Natural Resources	Community
Federal or State						
National Scenic Byways	X	X	X	X	X	X
Colorado Scenic Byways	X	X	X	X	X	X
Bureau of Land Management	X	X	X	<input type="checkbox"/>	X	<input type="checkbox"/>
National Park Service	X	X	X		X	<input type="checkbox"/>
Colo. Division of Wildlife		X		<input type="checkbox"/>	X	<input type="checkbox"/>
Army Corps of Engineers	X	X			X	
Colorado State Parks	X	X	X		X	
Local Government						
Las Animas County	X	X	X	X	X	X
City of Trinidad	X	X	X	X	X	X
Otero County	X	X	X	X	X	X
City of La Junta	X	X	X	X	X	X
Bent County	X	X	X	X	X	X
City of Las Animas	X	X	X	X	X	X
Prowers County	X	X	X	X	X	X
City of Lamar	X	X	X	X	X	X
City of Granada	X	X	X	X	X	X
City of Holly	X	X	X	X	X	X
Non-Governmental Organizations						
Trinidad Chamber				X		X
La Junta Chamber				X		X
Las Animas Chamber				X		X
Lamar Chamber				X		X
Holly Chamber				X		X
Bent County Historical Society			X	X		X
Friends of Historic Trinidad	X	X	X		X	
Canyons and Plains	X	X	X		X	X
Southeast CO Regional Heritage Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X	X
National Scenic Byway Foundation	X	X	X	X	X	X
Palmer Land Trust	X	X	X	X	X	
Santa Fe Trail Association	X	X	X		X	X
DAR	X		X		X	X
Trinidad Historical Society		X	X	X		X
Pioneer Historical Society		X	X	X		X
History Colorado		X	X	X	X	X

Appendix E: References

- "About America's Byways." *U.S. Department of Transportation Federal Highway Administration*. n.d. Web. <http://www.fhwa.dot.gov/byways/about>
- "Colorado Scenic Byway 2013 GIS Conservation Data." *Colorado Department of Transportation*. Jan. 2015. Web. <https://www.codot.gov/content/programs/CO%20Scenic%20Byway%202013%20GIS%20Conservation%20Data/>
- "Counties Surveyed by Colorado Natural Heritage Program." *Colorado Natural Heritage Program*. April 2015. Web. http://www.cnhp.colostate.edu/images/maps/CountySurvey_Map11_2015.pdf
- "Grasslands: Greater Protections Needed in America's Heartland." *The State of the Birds 2011. North American Bird Conservation Initiative*. 2011. Web. <http://www.stateofthebirds.org/2011/habitats/grasslands>
- Montgomery, Gerald. "Riparian Areas Reservoirs of Diversity." *Natural Resources Conservation Service*. USDA NRCS, Feb. 1996. Web. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/rca/?cid=nrcs143_014206
- "Population Totals Colorado Substate." *Colorado Demography*. Oct. 2015. Web. <https://demography.dola.colorado.gov/population/population-totals-colorado-substate/#population-totals-for-colorado-and-sub-state-regions>
- "Santa Fe Trail Scenic and Historic Byway Corridor Management Plan." *Santa Fe Trail Scenic and Historic Byway- Mountain Branch Organization*. 2016. Web. <http://www.santafetrailscenicandhistoricbyway.org/cmpcover.html>
- "Securing Colorado Byways Through Strategic Planning and Resource Protection (SB-2011-CO-56582)." *National Scenic Byways Program*. U.S. Department of Transportation Federal Highways Administration. 2011. Web. http://wwwcf.fhwa.dot.gov/hep/scenic_byways/grants/funded/advanced_search/detail.cfm?id=5658

Appendix F: Data Origination

Bureau of Land Management

http://www.blm.gov/co/st/en/BLM_Programs/geographical_sciences/gis/GeospatialData.html
County boundaries

Colorado Department of Local Affairs

<https://demography.dola.colorado.gov/gis/gis-data/#gis-data>
Municipal boundaries

Colorado Natural Heritage Project (CNHP)

<http://www.cnhp.colostate.edu/download/gis.asp>
Potential Conservation Areas (PCAs): CNHP's best estimate of the primary area required to support the long-term survival of targeted species or natural communities

Colorado's Ownership, Management and Protection service (COMaP): Detailed dataset including property ownership, management, conservation status of land across Colorado. Created in collaboration with Colorado State University <https://comap.cnhp.colostate.edu/>

Colorado Office of Archeology and Historic Preservation

<http://www.historycolorado.org/archaeologists/compass>
Historic sites: all named historic sites listed by the CO Office of Archeology and Historic Preservation. Also accessible through the Mountain Mapping Byway Project.

Colorado Department of Natural Resources

<http://cdss.state.co.us/GIS/Pages/Division2Arkansas.aspx>
Irrigated farmland, 2010

Esri ArcGIS

http://server.arcgisonline.com/ArcGIS/rest/services/Demographics/USA_Projected_Population_Change/MapServer
Projected Population Change: estimates of change from 2012 to 2017

Mountain Mapping Byway Project

Santa Fe Trail Scenic and Historic Byway official route
Santa Fe Trail Scenic and Historic Byway 2.5 mi buffer
Historic data
Many of the sources listed here in Appendix F can also be found in the Mountain Mapping Byway Project for the Santa Fe Trail

New Mexico State University Center for Applied Spatial Ecology

<http://case.nmsu.edu/case/es/data.html>
Bird diversity: predicted diversity based on habitat type and quality

Palmer Land Trust

Available upon request info@palmerlandtrust.org

Scenic Views: Important peaks and lakes around the Byway used for viewshed analysis

All secondary files edited or created for analysis

Western Association of Fish and Wildlife Agencies Critical Habitat Assessment Tool (WAFWA CHAT)

<http://wafwachat.org/data/download>

WAFWA CHAT: a combination of natural resource metrics used to determine the relative importance of the habitat offered in a certain area

US Geological Survey (USGS)

<https://viewer.nationalmap.gov/basic/>

Elevation: digital elevation models used in viewshed analyses