Turkey Mountain Master Plan

Preservation — Restoration — Recreation

Prepared in February 2020 for

George Kaiser Family Foundation

on behalf of

River Parks Authority

by

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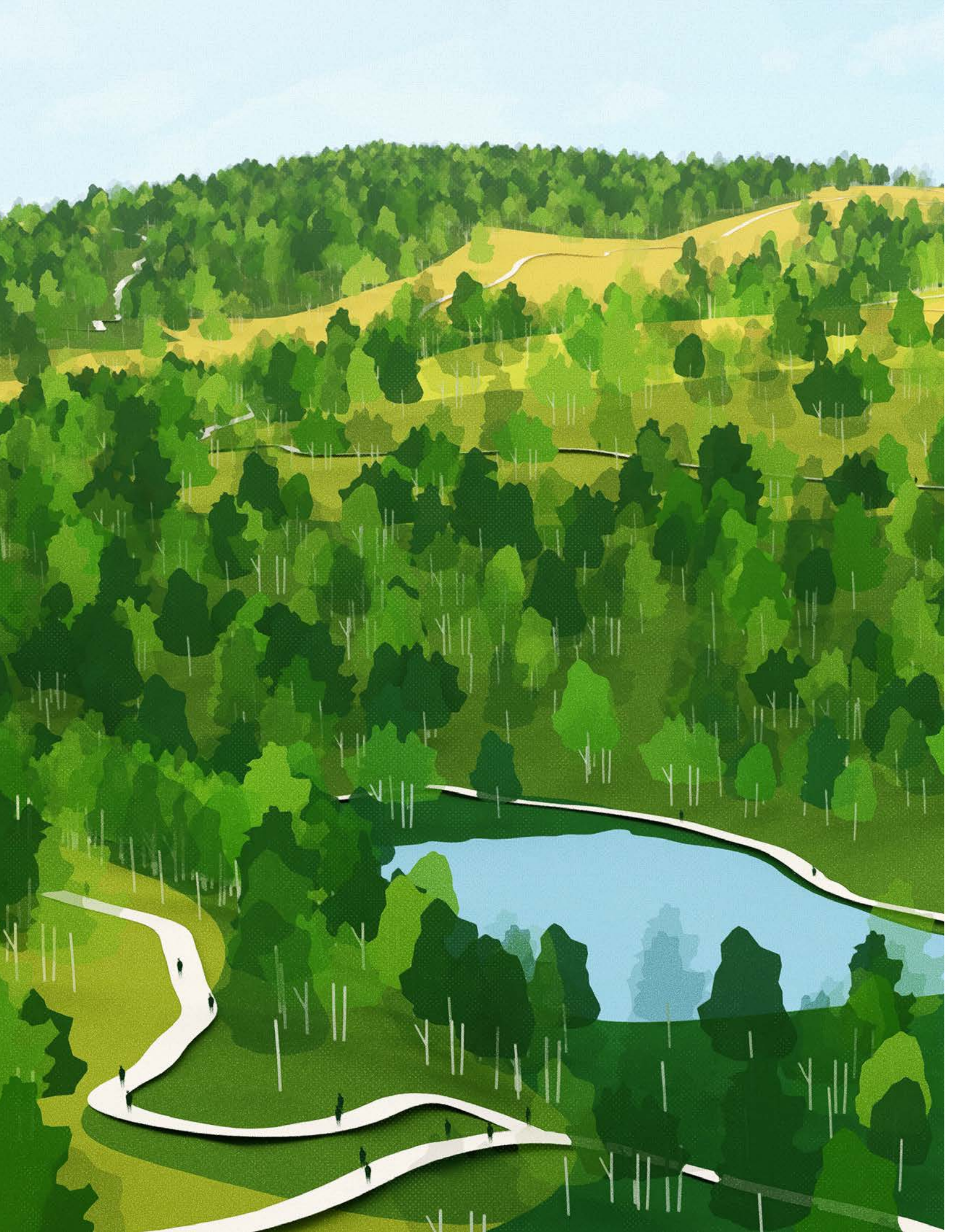

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Foreword

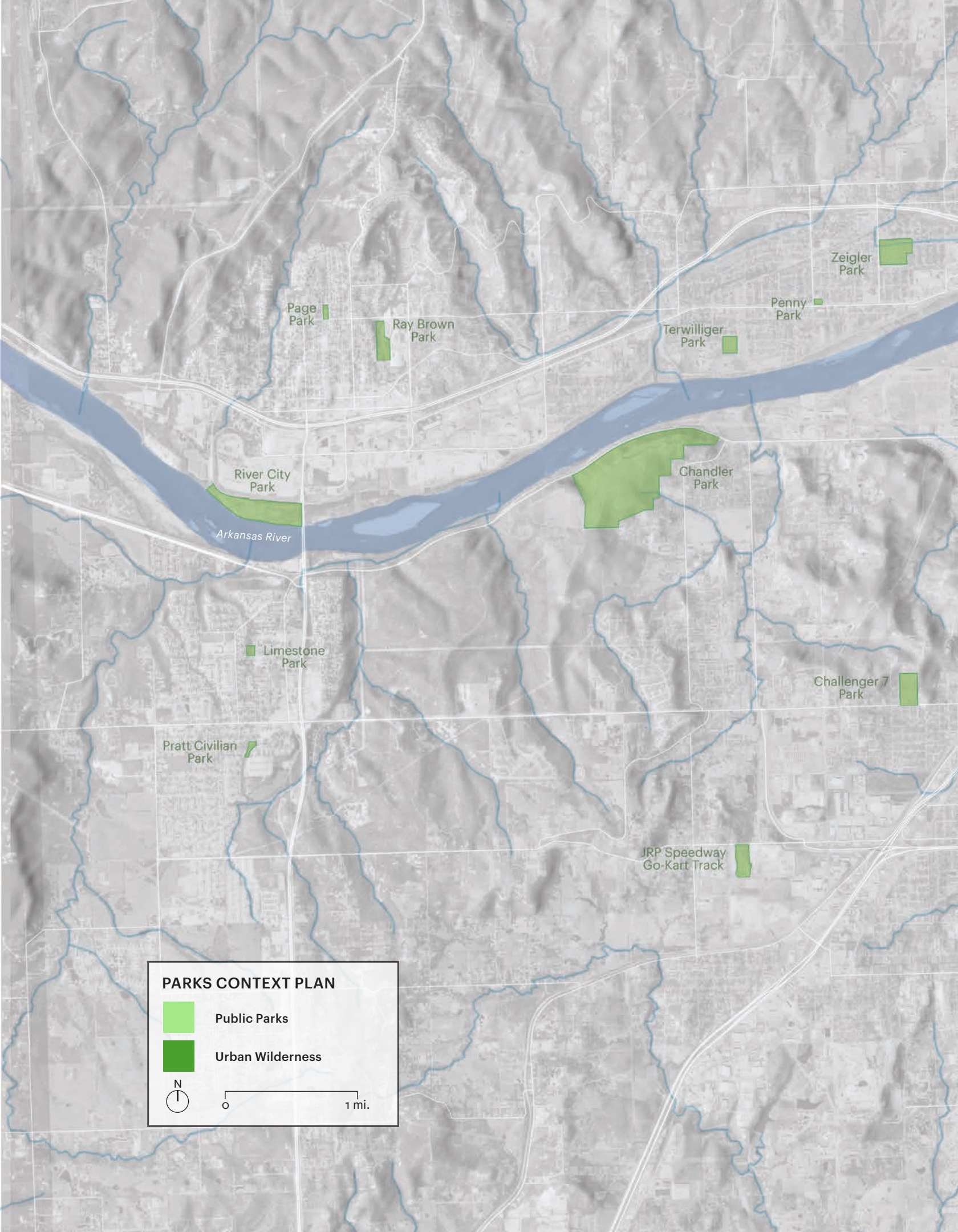
Urban Wilderness for Posterity

The preservation of Turkey Mountain began long before the inception of a master planning process. Since the 1970s, outdoor enthusiasts from the local community who recognized its natural beauty, built trails, fought development, and protected the existence of a wild place in Tulsa.

The Master Plan formalizes and builds upon these efforts by outlining a path towards safeguarding this irreplaceable resource in perpetuity while permitting improvement and expansion of recreational facilities.

On behalf of the George Kaiser Family Foundation and the River Parks Authority, Michael Van Valkenburgh Associates has drawn on extensive community input, on-the-ground site analysis, lessons from expert ecologists, engineers, and land managers, and best practices in outdoor and adventure recreation to create an ambitious plan that realizes the full social and ecological potential of Tulsa's urban wilderness for future generations.

—The Turkey Mountain Master Plan Team


Zeigler Park
Page Park
Ray Brown Park
Penny Park
Terwilliger Park
River City Park
Chandler Park
Arkansas River
Limestone Park
Challenger 7 Park
Pratt Civilian Park
JRP Speedway Go-Kart Track
PARKS CONTEXT PLAN
Public Parks
Urban Wilderness
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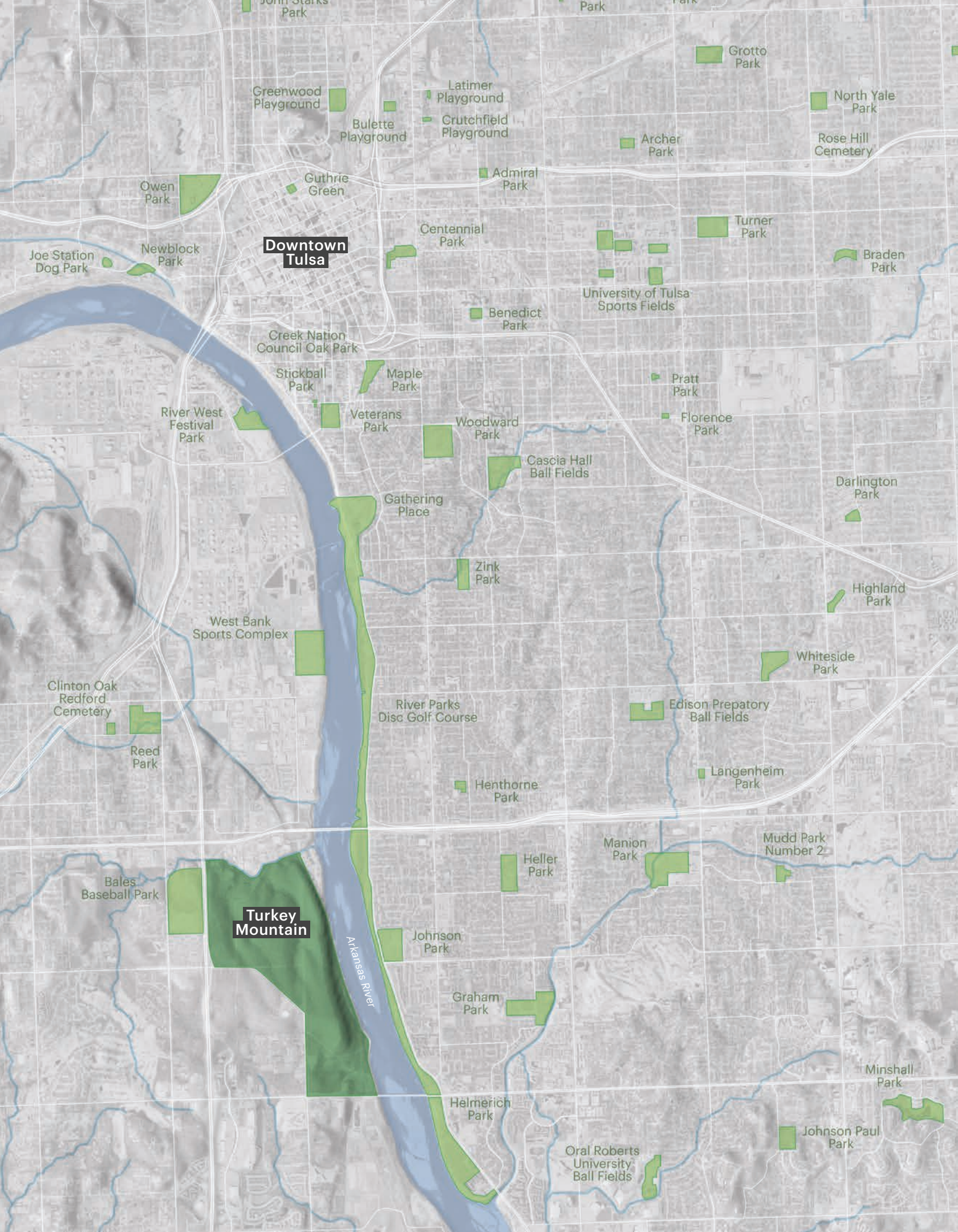

Grotto Park
Greenwood Playground
Latimer Playground
Crutchfield Playground
Bulette Playground
North Yale Park
Archer Park
Rose Hill Cemetery
Owen Park
Guthrie Green
Admiral Park
Turner Park
Centennial Park
Joe Station Dog Park
Newblock Park
Downtown Tulsa
Braden Park
University of Tulsa Sports Fields
Benedict Park
Creek Nation Council Oak Park
Stickball Park
Maple Park
Pratt Park
River West Festival Park
Veterans Park
Florence Park
Woodward Park
Cascia Hall Ball Fields
Darlington Park
Gathering Place
Zink Park
Highland Park
West Bank Sports Complex
Whiteside Park
Clinton Oak Redford Cemetery
River Parks Disc Golf Course
Edison Prepatory Ball Fields
Reed Park
Langenheim Park
Henthorne Park
Manion Park
Mudd Park Number 2
Heller Park
Bales Baseball Park
Turkey Mountain
Johnson Park
Arkansas River
Graham Park
Minshall Park
Helmerich Park
Johnson Paul Park
Oral Roberts University Ball Fields

Context

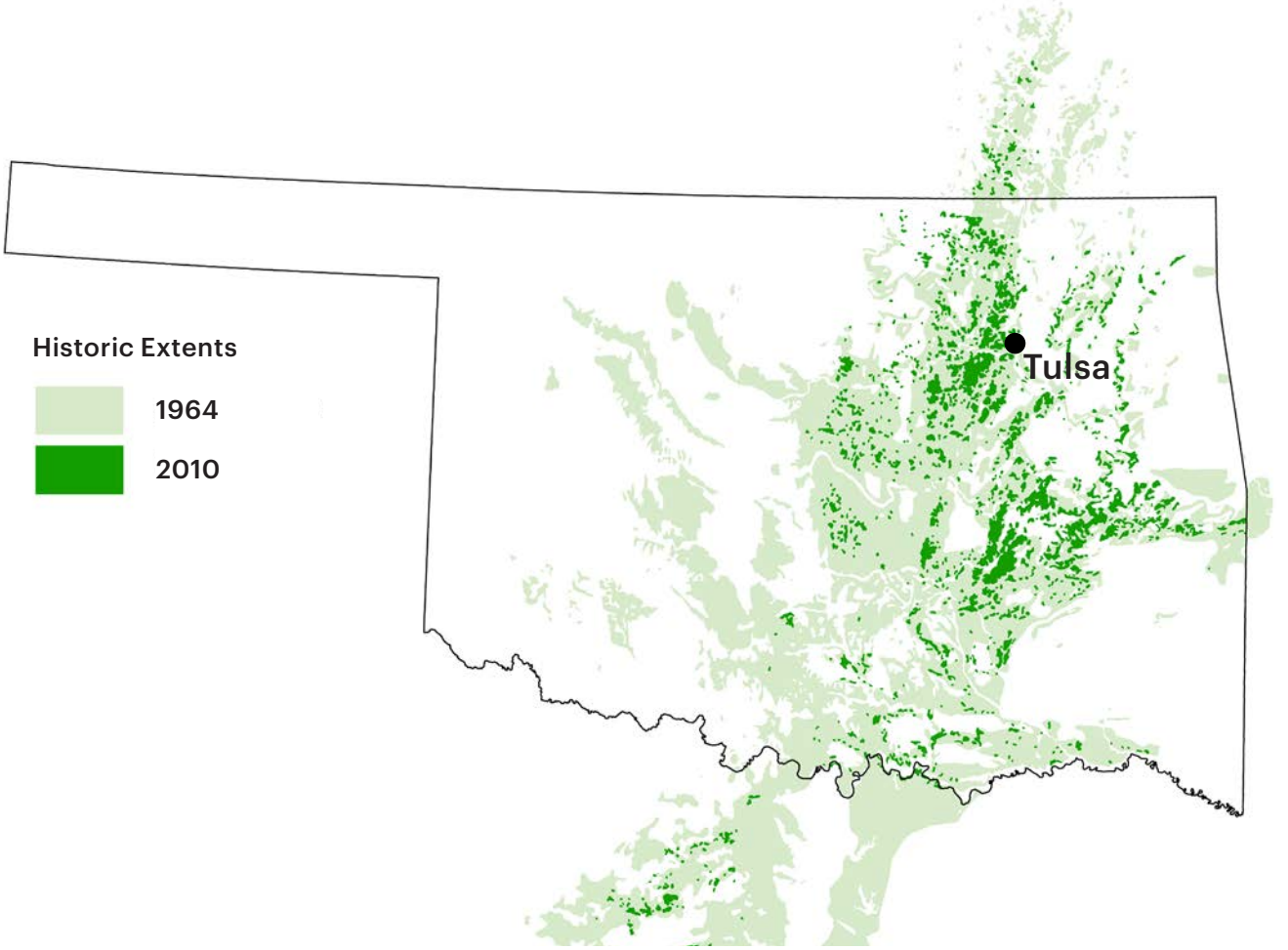
Turkey Mountain was once part of an expansive, unique ecoregion known as the Cross Timbers, where frequent disturbance by fire and cattle grazing helped maintain a delicate equilibrium between competing ecological forces and created a patchwork of landscapes.

Ecologically, the site is now a remnant. It has been fragmented by urban development and bounded by highways, railroad tracks, and channelized waterways, all of which isolate it from the larger forces of disturbance that formerly kept it healthy.

Turkey Mountain's location within the city of Tulsa means it has become extremely well-used. Biking, running, horseback riding, and hiking, as well as the occasional large event like Basecamp, make it an important community resource, but without active management and sustainably constructed trails, Tulsans could love Turkey Mountain to death. Once a regional destination for mountain bikers, as trail conditions have worsened, and new trail systems have been constructed in competing areas, Turkey Mountain has lost its place among the best biking destinations in the Midwest.

The Cross Timbers

An Imperiled, Fire-Dependent Ecoregion



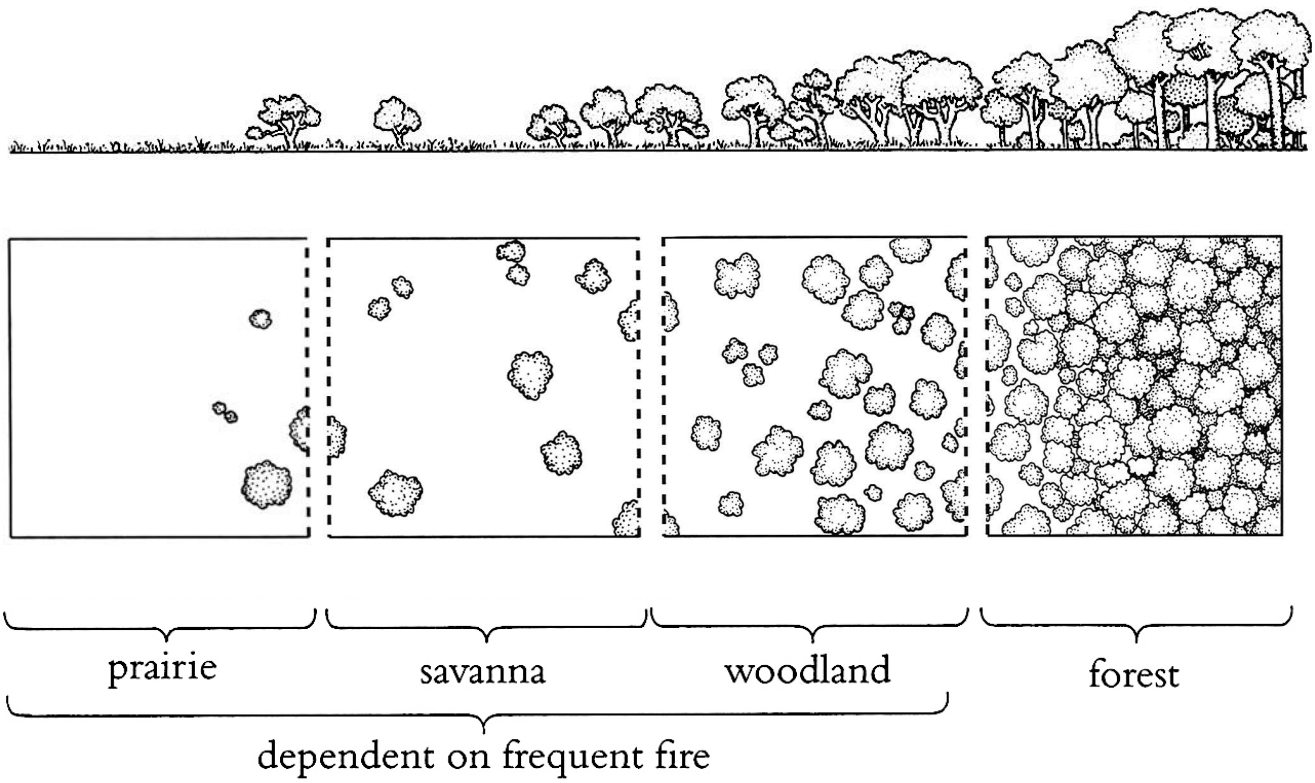
Oklahoma Forestry Services Resource Assessment, 2010

Between Prairie and Forest

Tulsa is located within a unique ecoregion known as the Cross Timbers, where oak-hickory forests of the Ozark Mountains intermingle with Midwest prairie grasses to create a mosaic of forest, woodland, savanna, and prairie.

Oak savanna is the rarest and most endangered landscape of the Cross Timbers mosaic. A contiguous, 50-million-acre band of oak savanna once extended through the Midwestern U.S. from Canada to Mexico. Now only 30,000 acres remain in patches of 100 acres or less.

In 2010, Oklahoma Forestry Services assessed what remains of the Cross Timbers and discovered that much of its former diversity, including oak savanna has disappeared. The map above contrasts the extent of the Cross Timbers in 1964 (in light green) and the remnants that are left today (in dark green). Urban sprawl and the associated fragmentation of formerly open land, inadequate land management, and fire suppression have each contributed to the rapid disappearance of this native Oklahoma landscape.



The Tallgrass Restoration Handbook (1997), edited by Stephen Packard and Cornelia F. Mutel

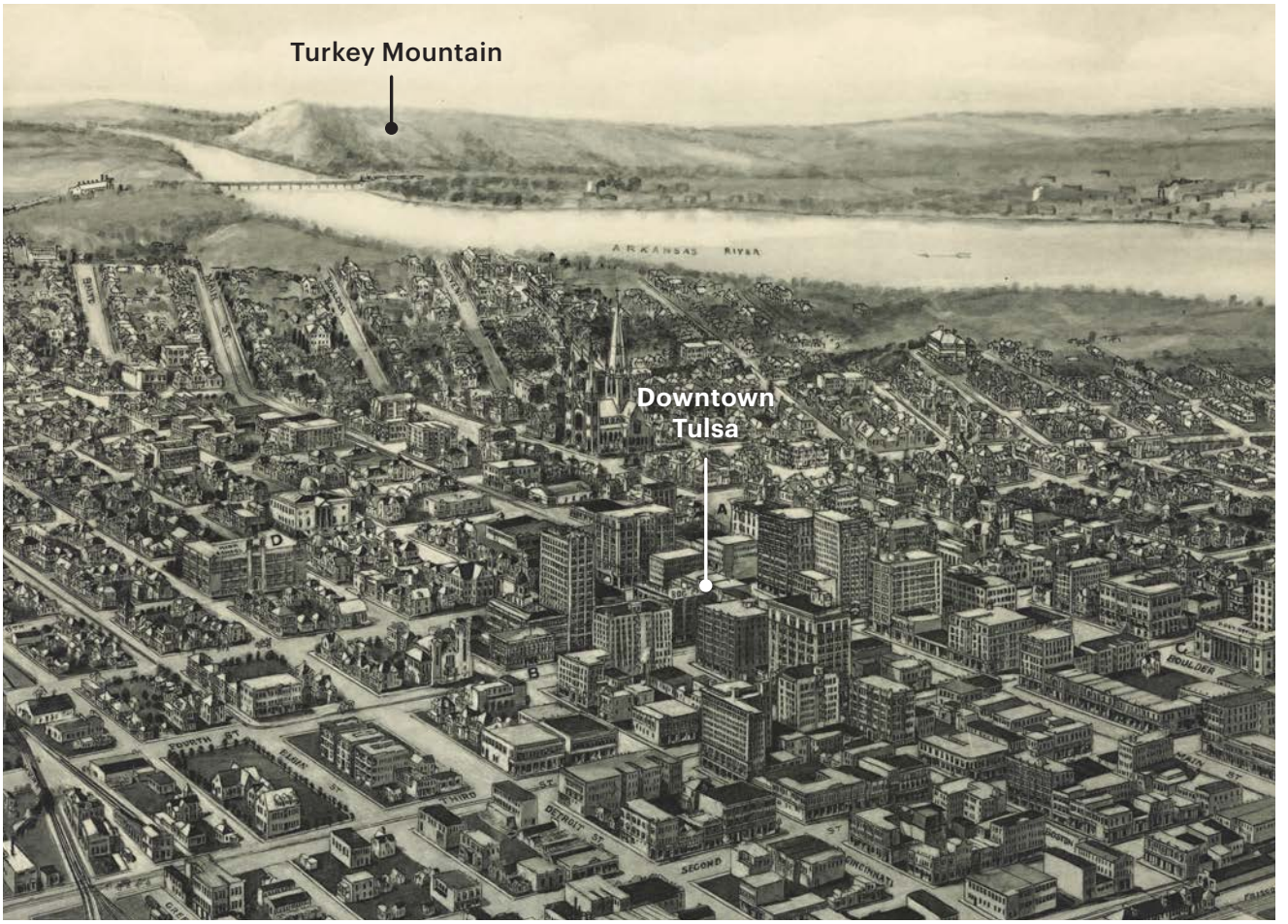
Fire Adaptation and Dependence

Since the Cross Timbers evolved with periodic fire, its survival now depends on it. Native oaks and hickories have fire-adapted bark that protect them from fire damage and many flowering prairie plants reproduce and flower more extensively in the wake of fires. Frequent fire kills invasive species like lespedeza that lack the fire-adaptation of native plants, and prevents red cedars from encroaching past their native range into the prairies and savannas.

Low-Intensity Control Burn in Oak Savanna

Urbanizing the Wilderness

Oil Drilling and the Growth of Tulsa



Aero View of Tulsa, 1918 (detail)

A Landscape of Resources

Oil drilling began in the Tulsa region in 1901 and proliferated for the first few decades of the twentieth century. Records show that extensive prospecting and drilling had a significant impact on the Turkey Mountain site. Period aerial renderings and photographs of comparable sites nearby indicate that oil prospectors likely clear cut Turkey Mountain as they erected derricks to extract oil from the shale and sandstone below. As Tulsa urbanized, previously uncultivated land was developed while road and rail infrastructure extended into the surrounding landscape. These newly constructed barriers fragmented the landscape, preventing the spread of natural fires and other types of disturbance that kept the Cross Timbers landscape in healthy equilibrium, marking the start of Turkey Mountain's ecological decline.

Oil Derricks on Arkansas Riverfront, c. 1908

Official Opening Ceremony of Turkey Mountain, 1980

Winter Mountain Bikers

Yoga at Basecamp Festival

Family Hiking from Main Trailhead

Trail Maintenance by Volunteers

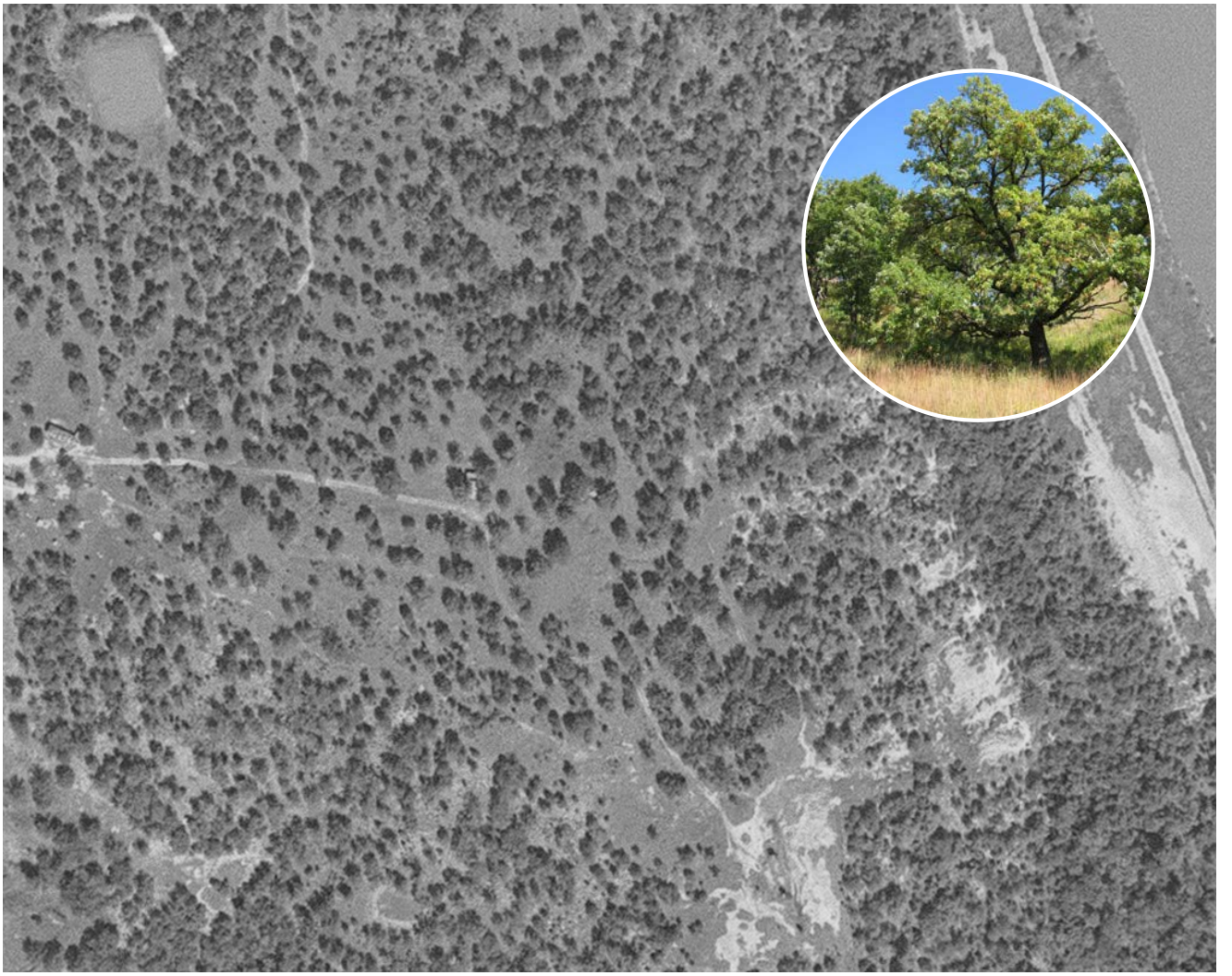
Tulsans Reclaim Turkey Mountain

In the 1970s, a local community of mountain bikers and outdoor enthusiasts recognized the natural resource they had in their back yard and began cutting their own trails throughout the undeveloped land. Since its official opening in 1980, Turkey Mountain has often received philanthropic donations that have put much of this urban wilderness, which was once private land, in the hands of the River Parks Authority.

The Turkey Mountain Master Plan is the next major step toward restoring this preserved open land and making it accessible and enjoyable for all Tulsans for generations to come.

A Remnant Landscape

The Effects of Fire Suppression



1967 Aerial Photograph of Turkey Mountain

Turkey Mountain in 1967 vs Today

In the absence of regular fires, the prairies and savannas that were once a part of the Turkey Mountain site grew into woodland and eventually forest. Many of the understory species that contributed to this growth are invasive. This absence of land management led to a homogenous landscape, reducing the formerly diverse range of ecologies and experiences of Turkey Mountain to a degraded and monoculture condition.

2016 Satellite Image of Turkey Mountain

Listening to Existing Users

Public Engagement and Feedback

Turkey Mountain Public Meeting #1, March 7, 2019

Many Stakeholders

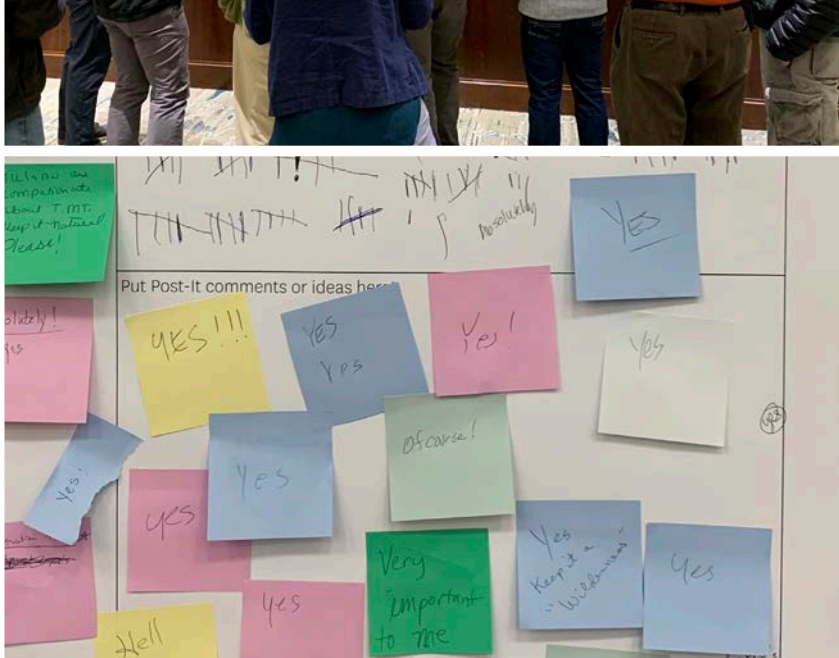
Turkey Mountain sees tens of thousands of users every month. Multiple sources—an online survey that received over 3,000 responses, a series of public meetings, stakeholder meetings for groups such as bikers, runners, horseback riders, and nature advocacy groups, and input from the River Parks Authority, which operates the site today—made it clear that Tulsans enjoy many different experiences of nature on Turkey Mountain, and more than anything they want to preserve it for future generations.

The Biggest Challenge

Over months of public engagement, MVVA learned that the top priority for existing users was to "keep Turkey Mountain wild." At the same time, the civic-minded Tulsa community wanted to make sure that the land was open and accessible to everyone. The core challenge for the Master Plan was to satisfy these two conflicting desires—"keep it remote," but also "make it accessible".


Fast Traffic
No Sidewalk or Bike Lane
W 61st St
U.S.


ARKANSAS RIVER


Put Post-It comments or ideas here
YES!!!
Yes
Yes!
Yes
Of course!
Very important to me
Yes
Keep Turkey WILD!
Hell Yes
YES
CRITICAL!

Assessing Site Conditions

Analysis with Expert Consultants

Mooser Creek Restoration Assessment

Initial Site Inventory

Prescribed Burn Research Facility

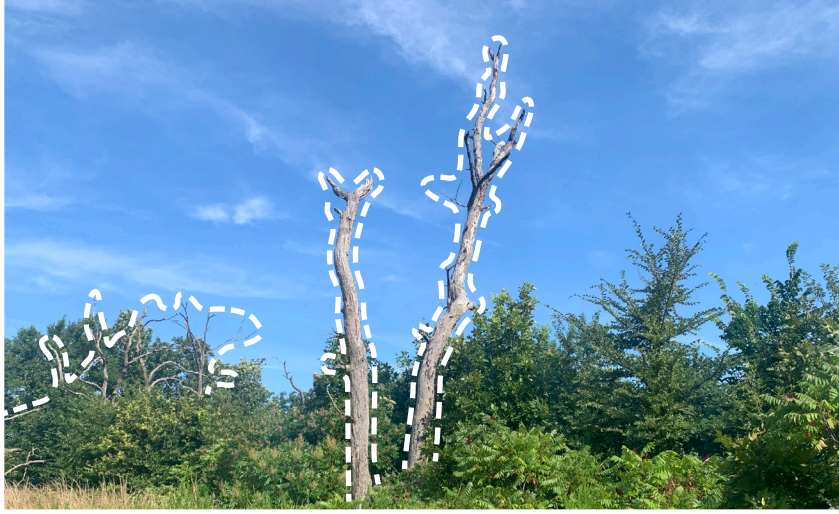
Biosolids Plant Site Tour

On-Site Work

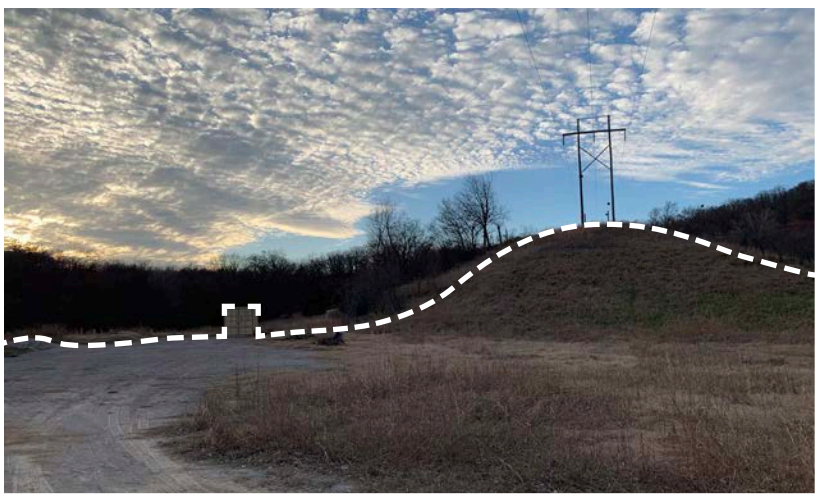
Locals and expert consultants performed on-site assessments and made recommendations. Hiking through Mooser Creek in waders with wetlands engineers who specialize in restoring fish habitat, learning about the sandstone and shale soils from a retired geologist who leads tours, and comparing the effects of various prescribed burn management strategies at Oklahoma State University's research facility nearby in Stillwater, OK each deepened an understanding of Turkey Mountain's challenges and future potential.

Geology Site Walk

Overgrown Understory Prevents Easy Wayfinding



Invasive Species Outcompete Native Oaks



Degraded and Underutilized Sites

Inaccessible Creek

Poor Drainage

Trail Erosion

Trail Widening

Trail Cupping

Visiting Precedents

Lessons from Outdoor Recreation Destinations

Summit Bechtel Reserve, West Virginia

Best Practices in the Outdoors

Research trips across the Midwestern and Eastern United States provided examples of some of the best adventure recreation facilities in the country and their simultaneous urban wilderness management plans.

Interviews with organizations that facilitate collaboration among landowners to preserve urban wildernesses; construction managers who oversee the development of large multi-use sites; the operators of outdoor recreation facilities that serve tens of thousands of users; and consultants who conduct controlled burn management and research, restore creek and wetland habitat, build bike trails, and run equestrian centers, yielded lessons for a future Turkey Mountain Urban Wilderness.

Key components of the Master Plan were forged from an understanding of the challenges these other sites face, and what makes them work so well.













KUBOTA