

Marmaton/Wah'Kon-Tah Conservation Strategies:

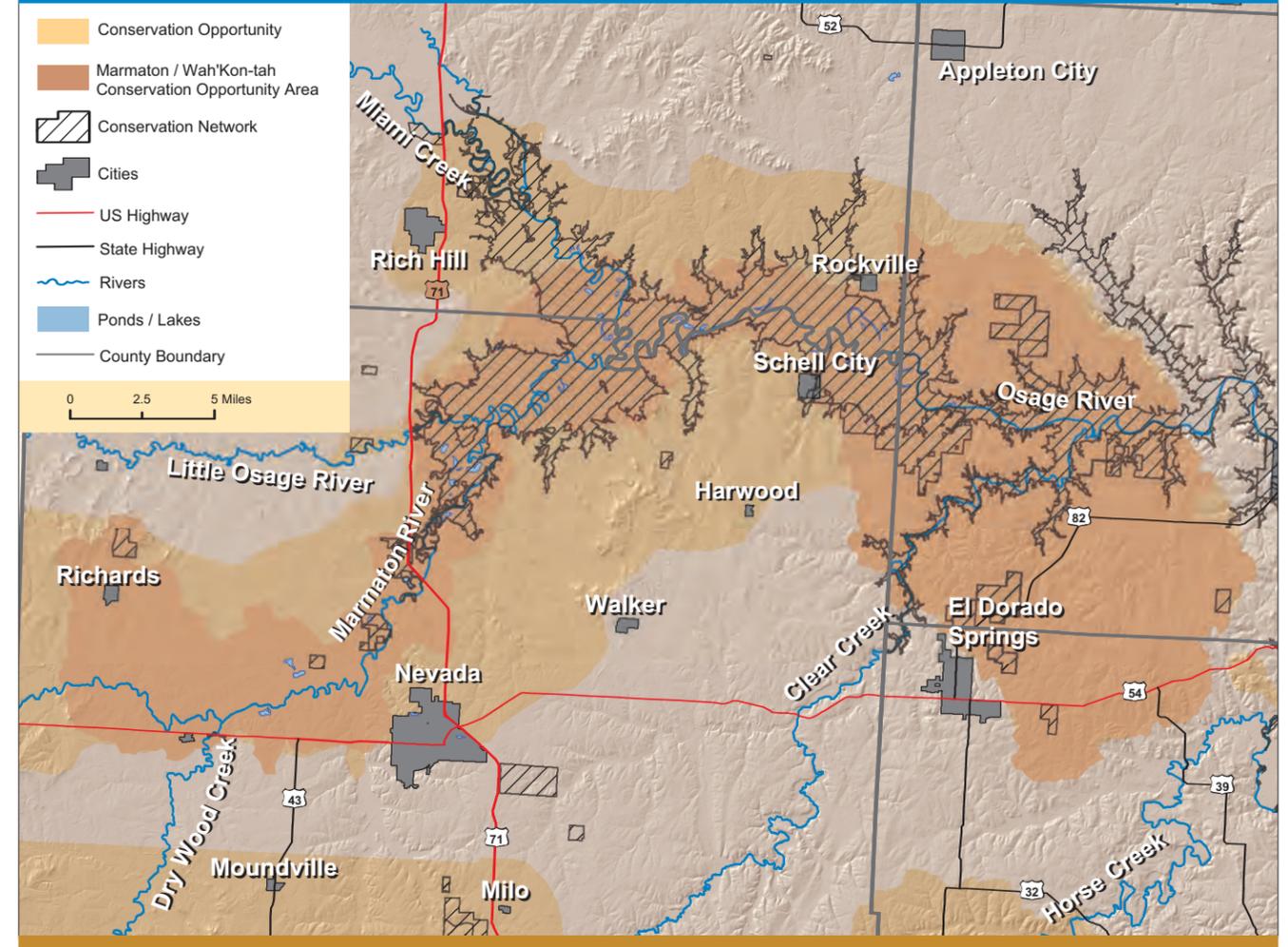
- Conserve and restore native grassland habitats, including prairies, savannas and glades, for declining grassland plants and animals.
- Conserve and restore bottomland natural communities, restoring hydrology where appropriate.
- Promote public awareness of best management practices; increase participation in natural community restoration, increase landowner knowledge and contribute to diversifying the regional economy.
- Maintain or reduce the amount of land affected by invasive plants.



Missouri Department of Conservation

The Marmaton River, Muddy Creek, Marais des Cygnes River and Little Osage River come together to form the Osage River.

Marmaton/Wah'Kon-Tah Conservation Opportunity Area



Priority Research and Inventory Needs

- Determine Ecological Landtype phases.
- Compile bird counts and breeding bird surveys into a central database.
- Assemble all relevant geospatial datasets.
- Construct a database of all vegetation monitoring.
- Identify the number of acres of suitable nest and brood rearing cover for declining bird species to establish conservation restoration goals.

Conservation Partners

Existing: The Nature Conservancy – Missouri Chapter (TNC); Missouri Prairie Foundation (MPF); Audubon Missouri; Ducks Unlimited (DU); Missouri Conservation Heritage Foundation (MCHF); Missouri Department of Conservation (MDC)

Potential: National Wild Turkey Federation (NWTF); Quail Unlimited; Grasslands Coalition; Natural Resources Conservation Service; U.S. Fish and Wildlife Service (USFWS)

Funding Sources

Existing: TNC annual budget; MPF annual budget; MDC annual budget; MDC Private Lands Cost Share Program; Farm Service Agency Conservation Reserve Program; DU Conservation Projects Program; MCHF Stream Stewardship Trust Fund

Promising Future Sources: MDC State Wildlife Grants; MDC Wildlife Diversity Funds; MDC Landowner Incentive Program; Missouri Bird Conservation Initiative Grants; NWTF Wild Turkey Super Fund; Soil and Water Conservation Districts State Cost Share Funds; Missouri Conservation Heritage Foundation Grants; USFWS Partners for Fish and Wildlife Program



Jim Rathert, Missouri Department of Conservation

Sedge wrens live in marshes, wet meadows and grasslands. They eat insects and spiders.

Existing Conservation Network

Four Rivers Conservation Area (Horton Bottoms Natural Area); Schell-Osage Conservation Area (Schell-Osage Prairie Relicts Natural Area); Linscomb Wildlife Area; Taberville Prairie Conservation Area (Taberville Prairie Natural Area); Douglas Branch Conservation Area; Flight Lake Conservation Area; Monegaw Prairie Conservation Area; Big Drywood Creek Conservation Area; Wah'Kon-Tah Prairie; Marmaton River Bottoms Wet Prairie Preserve (Marmaton River Bottoms Natural Area); MO-KO Prairie; Stilwell Prairie; Schwartz Prairie; Harry S. Truman Lake; Cephas Ford Access; Taberville Access

Wah'Kon-Tah Prairie



Wah-Kon-Tah Prairie captures a fragment of the "sea of grass" that pioneers must have experienced when they first encountered the Great Plains. Named to honor the Osage tribe, Wah'Kon-Tah means "Great Spirit" or "Great Mystery." The prairie is jointly owned by The Nature Conservancy and the Missouri Department of Conservation.

Jim Rathert, Missouri Department of Conservation

Conservation Challenges

The Marmaton/Wah'Kon-Tah Conservation Opportunity Area reflects the impacts of row crop agriculture, conversion to cool season pasture, clearing of timbered lands and invasion of prairies by woody plants due to fire suppression. The formerly clear, permanent, slow flowing streams and creeks have become sediment-laden and often seasonal as a result of changes to their upland

watersheds. Primary threats to native plants and animals include habitat destruction, habitat fragmentation, altered water flow and fire regimes and invasive exotic species. Other potential challenges to conservation success include encouraging landowner participation, economics, altered hydrology and natural processes and limited staff time.

To learn more about the Marmaton/Wah'Kon-Tah Conservation Opportunity Area, please contact:



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

Marmaton/ Wah'kon-Tah

Conservation Opportunity Area



From above, a marsh at Four Rivers Conservation Area appears like a maze of blue and green.

Missouri Department of Conservation

The Marmaton/Wah'Kon-Tah Conservation Opportunity Area (COA) includes the last unplowed wet prairie expanse in Missouri, extensive wetlands and some of the best remaining bottomland woodlands in the region. A 15-mile stretch of wet prairies, bottomland woodlands and marshes occur where four rivers converge to form the Osage River. Tallgrass prairies and prairie headwater streams can be found in the uplands, some of the best remaining examples of tallgrass prairie landscapes.

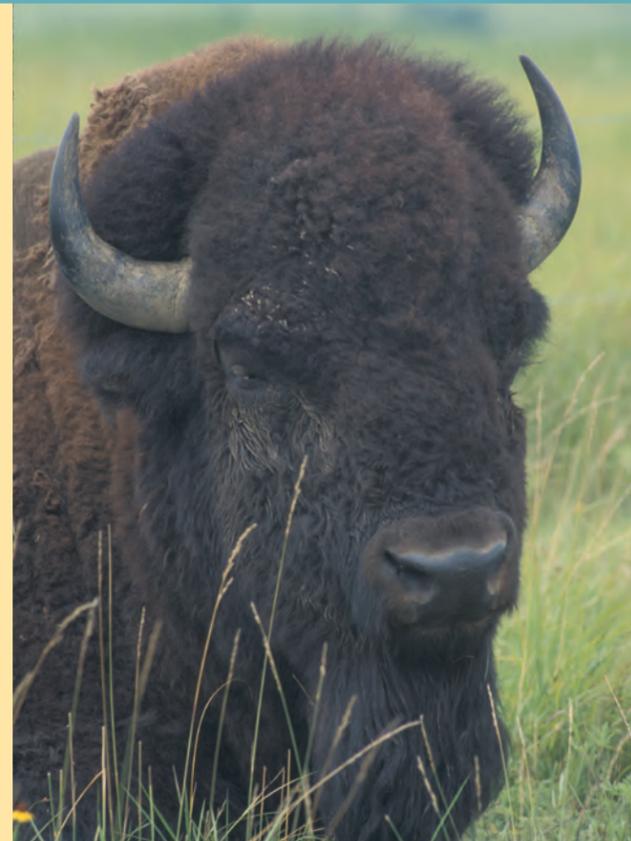
The Marmaton/Wah'Kon-Tah landscape is home to animals that thrive in bottomland habitats: western painted turtles, Texas brown snakes, pied-billed grebes, least bitterns, American bitterns, black-crowned night-herons, mallards, red-winged blackbirds, beavers and

muskrats. Others animals prefer the upland prairies and savannas, including prairie mole crickets, western chorus frogs, northern crawfish frogs, prairie kingsnakes, greater prairie-chickens, upland sandpipers, dickcissels and scissor-tailed flycatchers.

Because of shallow, acidic soils, much of the Marmaton/Wah'Kon-Tah uplands were unsuitable for row crop agriculture. Several large areas have remained in high quality tallgrass prairie. Extensive areas along the Marmaton River were too wet to intensively develop, and although the river's hydrology is greatly altered, many significant wetlands remain. The Marmaton River bottomlands offer one of the best opportunities to restore and manage bottomland woodlands.

Western Cherokee Grasslands Conservation Strategies

- Restore native prairie on public and private land; maintain existing clusters of native prairie remnants.
- Provide connectivity between native prairie habitats.
- Manage prairie remnants and grasslands to encourage structural diversity.
- Restore grassland habitat for grassland birds.
- Promote conservation practices on private lands through outreach and education.
- Remove trees-lines and forests from historic prairies.
- Establish a “burn cooperative” to help conduct prescribed burns on private land.
- Manage for quality woodland, savanna and prairie mosaics where appropriate.
- Establish a Special Area Land Treatment (SALT) project along the Little North Fork River.
- Control populations of problem exotic plants (e.g. sericea lespedeza).



Jim Rathert, Missouri Department of Conservation

The Missouri Department of Natural Resources has reintroduced bison and elk to Prairie State Park. Although no longer roaming wild, these large grazers played an important role in shaping Missouri's prairie landscape.

Priority Research and Inventory Needs

- Conduct patch-burn grazing research.
- Support research for methods of exotic species control.



Tom Johnson, Missouri Department of Conservation

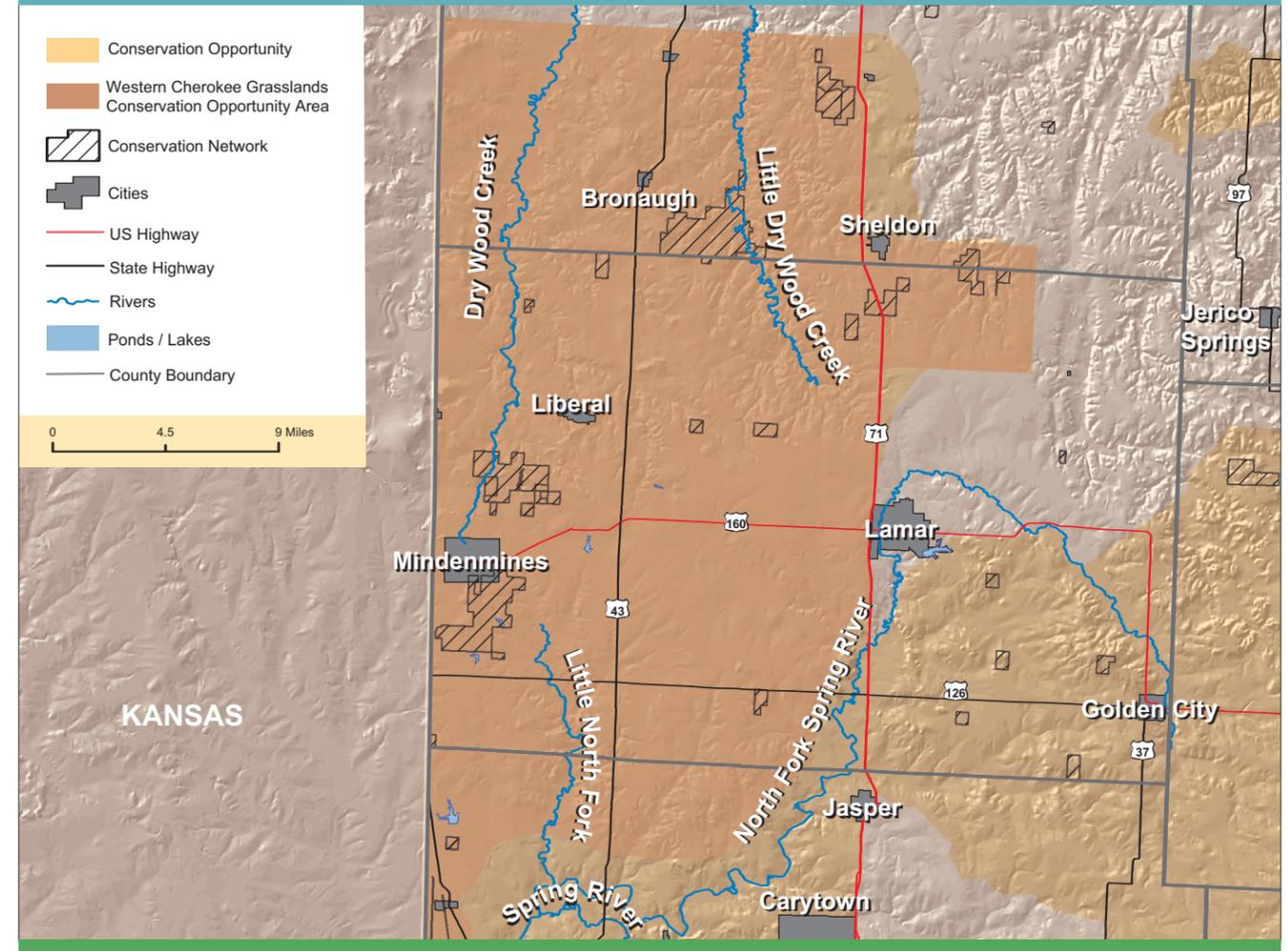
Conservation Partners

Existing: The Nature Conservancy – Missouri Chapter; Grasslands Coalition; Missouri Prairie Foundation (MPF); Ozark Regional Land Trust; Quail Unlimited (QU); Audubon Missouri; Missouri Southern University; U.S. Fish and Wildlife Service (USFWS); Missouri Department of Natural Resources (DNR); Natural Resources Conservation Service (NRCS); Missouri Department of Conservation (MDC)

Potential: National Wild Turkey Federation (NWTf); Ducks Unlimited

The northern crawfish frog is a species of conservation concern that is restricted to native prairie or former prairie areas. They require crayfish burrows for shelter and temporary wetlands for breeding. The Western Cherokee Grasslands support the core habitat requirements of the northern crawfish frog and are important to the recovery of this species in Missouri.

Western Cherokee Grasslands Conservation Opportunity Area



Funding Sources

Existing: DNR annual budget; TNC annual budget; MPF annual budget; MDC annual budget; MDC Private Lands Cost Share Program; Soil and Water Conservation Districts State Cost Share Funds; National Fish and Wildlife Foundation Grant; FMC Corporation; USFWS Section 6 Funds

Promising Future Sources: Missouri Bird Conservation Initiative grants; NRCS Grassland Reserve Program; NRCS Environmental Quality Incentives Program; NRCS Wildlife Habitat Incentive Program; Farm Service Agency Conservation Reserve Program; USFWS Partners for Fish and Wildlife Program; QU Quail Habitat Incentive funds; NWTf Wild Turkey Super Fund; MDC State Wildlife Grants; MDC Wildlife Diversity Funds; MDC Landowner Incentive Program

Existing Conservation Network

Prairie State Park (East Drywood Creek Natural Area, Regal Prairie Natural Area, Tzi-sho Prairie Natural Area); Shawnee Trail Conservation Area; Bushwhacker Lake Conservation Area; Osage Prairie Conservation Area and Natural Area; Bethel Prairie Conservation Area; Buffalo Wallow Prairie Conservation Area; Comstock Conservation Area; Davis Memorial State Forest; Drywood Conservation Area; Mo-No-I Prairie Conservation Area; Mon-Shon Prairie Conservation Area; Redwing Prairie Conservation Area; Clear Creek Conservation Area; Wah-Sha-She Prairie Natural Area; Little Osage Prairie Natural Area; Latner Prairie; Edgar & Ruth Denison Prairie; Edward B. & Marie O. Risch Conservation Area; Hunkah Prairie Natural Area

Renewal by Fire



For the past 10,000 years, Native Americans and lightning created fires that helped maintain Missouri's prairies. Land managers today use prescribed fire for many of the same reasons that Native Americans did: to maintain healthy, open prairies that support thriving plant and animal populations.

Cliff White, Missouri
Department of Conservation

Conservation Challenges

The Western Cherokee Grasslands provides an opportunity to restore large blocks of native grassland in southwestern Missouri. Potential obstacles to conservation success include a lack of landowner participation, insufficient landowner cost share programs for fescue conversion, limited

funding and staff time, inadequate education and outreach to private landowners, ability of multiple agencies and interests to work together and a lack of information about the economic benefits of native grasslands.

To learn more about the Western Cherokee Grasslands Conservation Opportunity Area, please contact:



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

Copyright © 2005 by the Conservation Commission of the State of Missouri

Western Cherokee Grasslands

Conservation Opportunity Area



Osage
Plains



Many native prairie remnants remain in the Western Cherokee Grasslands Conservation Opportunity Area.

Missouri Department of Natural Resources

Once dominated by a sea of tallgrass prairie, the Western Cherokee Grasslands is now a patchwork of pasturelands, crop fields, formerly mined lands and native prairie remnants. Prairie State Park, at nearly 4,000 acres, conserves Missouri's largest remaining tallgrass prairie. The Missouri Department of Conservation, the Nature Conservancy and Missouri Prairie Foundation own scattered prairies throughout the landscape. Although public lands help conserve significant prairie resources, over 95 percent of the Western Cherokee Grasslands is in private ownership. The existing conservation network, along with privately owned native prairie remnants, makes Western Cherokee Grasslands one of the best places to manage and restore functioning tallgrass prairie landscapes.

The Missouri Natural Heritage database indicates eight "hotspots" for species of conservation concern within the Western Cherokee Grasslands Conservation Opportunity Area (COA). Remaining native prairie patches support populations of northern harriers, Henslow's sparrows, grasshopper sparrows, dickcissels and Bell's vireos – all designated as priority grassland birds. Mead's milkweed, a federally threatened prairie plant, occurs here along with the greater prairie-chicken, southern prairie skink and plains spotted skunk.

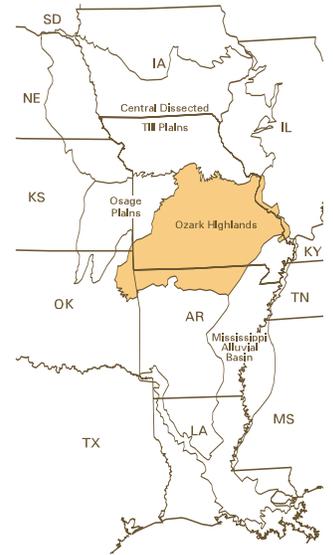
Drywood Creek drains the northern two-thirds of the COA. A one-mile stretch, designated as the East Drywood Creek Natural Area, runs through Prairie State Park. Characteristic prairie fish include red shiner, sand shiner and suckermouth minnow.

Ozark Highlands

From the air, much of the present day Ozark landscape appears forested. Trees, however, don't necessarily add up to forests. The Ozark landscape is a complicated association of forests, woodlands, savannas, glades, cliffs, caves, springs, rivers, streams, sinkhole ponds and fens. This diverse landscape is home to a variety of plants and animals.

Though the Ozark Highlands appear mountainous, this landscape is really a broad plateau that has endured years of erosion. The result is a thoroughly dissected plateau that has allowed plenty of time for plants and animals to adapt and change. Over 200 endemic species are present. Most Ozark streams are spring-fed and carry few suspended materials like silt or clay. Water moves underground easily and can surface again as springs, fens, or at the mouths of caves.

The Ozark Highlands offer many opportunities to conserve wildlife and their habitats.



Photos: Greer Spring and Eastern Collared Lizard, Jim Rathert, Missouri Department of Conservation

Ozark Highlands

Animal Targets of the Ozark Highlands

Forest

Ringed Salamander • Long-tailed Salamander • Dark-sided Salamander • Four-toed Salamander • Ozark Zigzag Salamander • Wood Frog • Yellow-billed Cuckoo • Pileated Woodpecker • Acadian Flycatcher • Carolina Chickadee • Wood Thrush • Prothonotary Warbler • Ovenbird • Louisiana Waterthrush • Cerulean Warbler • Yellow-throated Warbler • Worm-eating Warbler • Kentucky Warbler • Swainson's Warbler • Purple Finch • Golden Mouse • Swamp Rabbit

Woodland

Ozark Swallowtail • Buck Moth • Three-toed Box Turtle • Northern Scarlet Snake • Northern Fence Lizard • Chuck-will's-widow • Whip-poor-will • Great Crested Flycatcher • Summer Tanager • Pine Warbler • Orchard Oriole • Plains Spotted Skunk

Savanna

Eastern Tiger Salamander • Broad-headed Skink • Northern Bobwhite • Brown Thrasher • Blue-winged Warbler • Prairie Warbler • Field Sparrow • Bachman's Sparrow

Prairie

Regal Fritillary • Prairie Mole Cricket • Grassland Crayfish • Northern Crawfish Frog • Great Plains Skink • Ornate Box Turtle • Lined Snake • Bullsnake • Swainson's Hawk • Greater Prairie-chicken • Upland Sandpiper • Scissor-tailed Flycatcher • Loggerhead Shrike • Bell's Vireo • Henslow's Sparrow • Grasshopper Sparrow • Dickcissel • Eastern Meadowlark • Prairie Vole • Hispid Cotton Rat

Glade/Cliff

Eastern Collared Lizard • Greater Roadrunner • Painted Bunting

Wetland

Hine's Emerald Dragonfly • Gray Petaltail • Saline Spring Tiger Beetle • Great Plains Toad • Plains Spadefoot • Yellow Mud Turtle • Least Bittern • American Bittern • Black-crowned Night Heron • Little Blue Heron • Sora • King Rail • Virginia Rail • Marsh Wren • Rusty Blackbird

Cave

Pink Planarian • Enigmatic Cavesnail • Tumbling Creek Cavesnail • Hubricht's Long-tailed Amphipod • Onondaga Cave Amphipod • Ozark Cave Amphipod • Salem Cave Crayfish • Bristly Cave Crayfish • Caney Mountain Cave Crayfish • Ozark Cavefish • Southern Cavefish • Grotto Sculpin • Cave Salamander • Grotto Salamander • Gray Bat • Eastern Small-footed Myotis • Northern Myotis • Indiana Bat

River and Stream

Chert Pebblesnail • Black Sandshell • Curtis's Pearlymussel • Neosho Mucket • Pink Mucket • Rabbitsfoot • Salamander Mussel • Scaleshell • Sheepnose • Snuffbox • Spectaclecase • Western Fanshell • Freshwater Shrimp • Belted Crayfish • Big Creek Crayfish • Coldwater Crayfish • Long-pincered Crayfish • Mammoth Spring Crayfish • Meek's Crayfish • St. Francis River Crayfish • Williams's Crayfish • A Heptageniid Mayfly • Westfall's Snaketail • Ozark Stonefly • Pygmy Stonefly • Ozark Clubtail • Net Spinning Caddisfly • Ozark Emerald • Gilded River Cruiser • Longhorn Forestfly • Alabama Shad • Arkansas Darter • Arkansas Saddled Darter • Bluestripe Darter • Bluntnose Shiner • Channel Darter • Checkered Madtom • Eastern Slim Minnow • Flathead Chub • Least Darter • Longnose Darter • Neosho Madtom • Niangua Darter • Ozark Chub • Ozark Shiner • Paddlefish • Pallid Sturgeon • Plains Minnow • Plains Topminnow • Sicklefins Chub • Southern Brook Lamprey • Stargazing Darter • Sturgeon Chub • Topeka Shiner • Western Slim Minnow • Yoke Darter • Eastern Hellbender • Ozark Hellbender • Midland Smooth Softshell



Bleeding Shiner



Ringed Salamander

Bonne Femme Karst Conservation Strategies

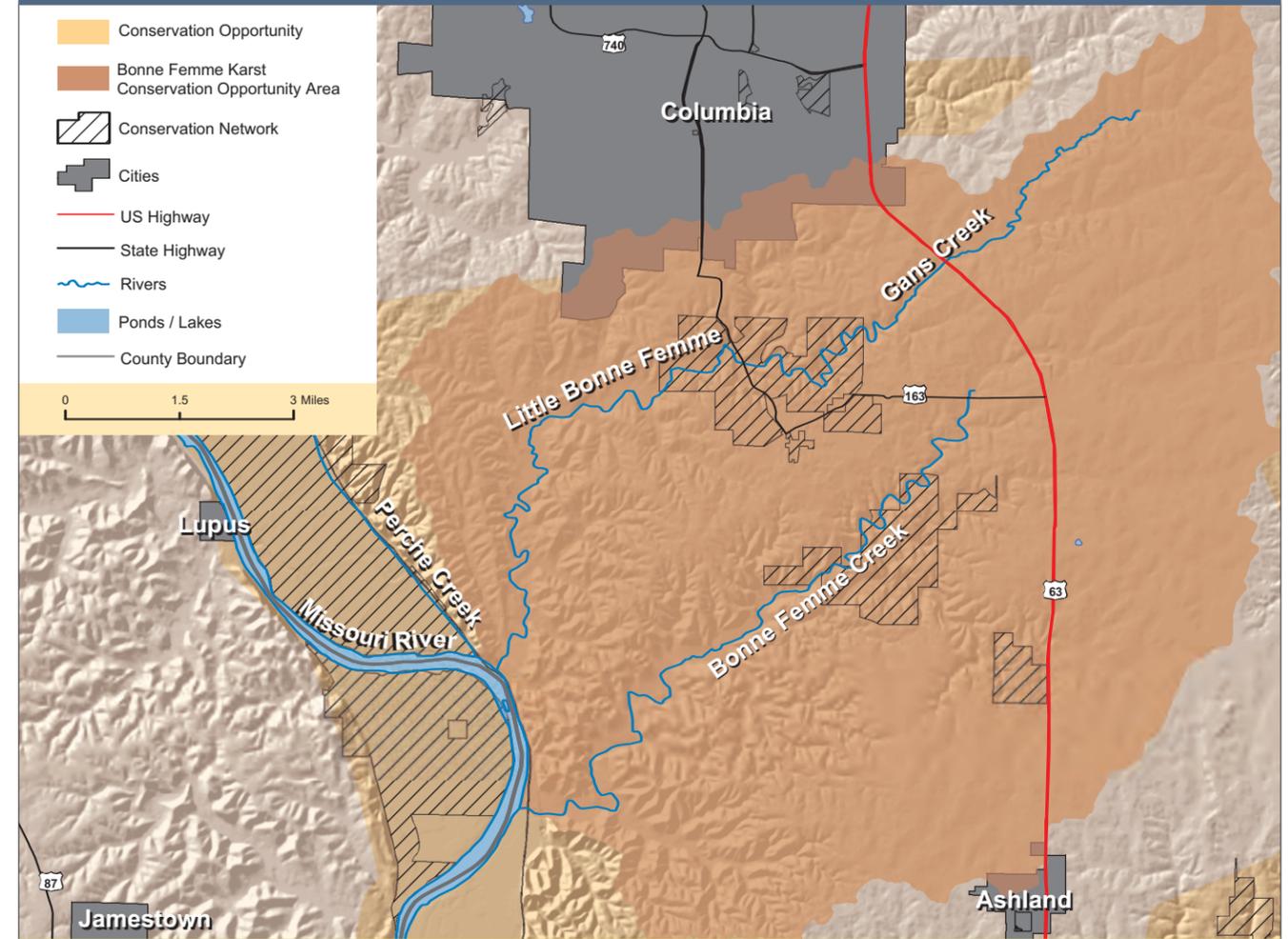
- Establish or improve forested stream banks.
- Reduce water pollution and water flow changes that threaten streams.
- Control and eradicate unwanted invasive and exotic species.
- Restore and improve the condition of existing forested natural communities.
- Reduce tall fescue and other non-native cool-season pasture forage coverage in favor of native grasslands, forests and woodlands.



Rocke Campbell, Missouri Department of Natural Resources

The Devil's Icebox is a double sinkhole that offers a view of the underground stream and cool, refreshing air. Devil's Icebox Cave contains over seven miles of underground passageways.

Bonne Femme Karst Conservation Opportunity Area



Priority Research and Inventory Needs

- Inventory cave life in Hunter's Cave and Spring Cave.
- Investigate the habitats and life histories of cave species of conservation concern.
- Expand water quality monitoring capabilities and guidelines.
- Update land use inventory through remote sensing technology.
- Test for the presence of harmful bacteria in water samples.
- Gather water flow information.

Conservation Partners

Existing: Bonne Femme Watershed Project; Friends of Rock Bridge State Park; Greenbelt Land Trust; Columbia Audubon Society; Audubon Missouri; Chouteau Grotto; Missouri Stream Teams (17 chapters); Missouri Forestkeepers; Sierra Club; Boone County Smart Growth Coalition; Show-Me Clean Streams; Community Storm Water Project; Natural Resources Conservation Service; Boone County Soil and Water Conservation District; U.S. Geological Society; Boone County; City of Columbia; U.S. Department of Agriculture – Agricultural Research Service; U.S. Fish and Wildlife Service (USFWS); Environmental Protection Agency; Missouri Department of Natural Resources (DNR); Missouri Department of Conservation (MDC)

Potential: Private landowners; Missouri Master Naturalist Program – Boone's Lick Chapter; National Wild Turkey Federation (NWTf); Missouri Native Plant Society; Missouri Environmental Education Association; Ozark Regional Land Trust; Missouri River Communities Network

The pink planarian is a flatworm found only in Devil's Icebox Cave. The cave also supports a maternity colony of the federally endangered gray bat.



Scott W. Schulte, Missouri Department of Natural Resources File Photo

Funding Sources

Existing: DNR annual budget; DNR 319 Grant; USFWS Partners for Fish and Wildlife Program; MDC annual budget; MDC Private Lands Cost Share Program; MDC Wildlife Diversity Fund
Promising Future Sources: Quail Unlimited Quail Habitat Incentive funds; NWTf Wild Turkey Super Fund; DNR 319 Grants; MDC State Wildlife Grants

Existing Conservation Network

Rock Bridge Memorial State Park; Katy Trail State Park; Three Creeks Conservation Area; Charles Green Conservation Area; Nifong Park; University of Missouri: South Farm, Bradford Farm, Equine Center

Sinkholes: Windows to the Underground



Sinkholes riddle the Bonne Femme Karst Conservation Opportunity Area. These shallow depressions form when cave roofs collapse. Water can enter underground cave systems very quickly through sinkholes. Often used as illegal dumping sites, refuse in sinkholes can lead to pollution of the local water supply.

Ann Koenig, Missouri Department of Conservation

Bonne Femme Karst

Conservation Opportunity Area



Ozark Highlands



The rock bridge at Rock Bridge State Park was created when a portion of cave roof collapsed.

Roxie Campbell, Missouri Department of Natural Resources

Conservation Challenges

The Bonne Femme watershed faces many threats from its close proximity to the growing cities of Columbia and Ashland. Additional obstacles include limited staff time and budgets, variable attitudes of landowners, uncertain local political support, restrictive management plans on public lands, expense of water quality monitoring and existing high real estate values.

To learn more about the Bonne Femme Karst Conservation Opportunity Area, please contact:



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

People have long been drawn to the cool, clear waters of Bonne Femme and Little Bonne Femme Creeks. A grist mill and whiskey distillery once operated along the stream flowing from Devil's Icebox Cave. Today, small farms and residential neighborhoods surround the nearby city of Columbia.

The western half of the Bonne Femme watershed (the area of land that drains to the creek) is dominated by forest and woodland cover. Bonne Femme's forests and woodlands support over 65 species of migrating birds. Glades and sinkhole ponds add diversity to the landscape. A broad prairie plain occupies the eastern half of the watershed. Agricultural cropland has replaced most of the

original native prairie.

Like many cave-rich landscapes, surface water drains into the ground to form underground rivers and streams. Water quality on the surface can affect cave life below the ground. There are 42 known caves in the Bonne Femme Karst Conservation Opportunity Area (COA). Devil's Icebox Cave is ranked 3rd in the state for its high biological diversity. The cave is home to federally endangered Indiana bats, gray bats and the endemic pink planarian (known only to live in the stream of Devil's Icebox Cave). An existing initiative, the Bonne Femme Watershed Partnership, strives to "use watershed planning as a tool to prevent further water resource degradation."

Bryant Creek Conservation Strategies

- Restore forest cover along stream banks.
- Establish forested buffers around caves and springs.
- Increase “connectivity” in forested lands.
- Increase the use of voluntary permanent long-term conservation easements.
- Implement recovery actions for hellbender conservation.
- Improve quality, productivity and sustainable economic returns of upland woodlands.
- Reduce erosion, sedimentation and water pollution in Bryant Creek.



Jim Raubert, Missouri Department of Conservation

The **Ozark hellbender** is an aquatic salamander found in only a few Missouri and Arkansas streams – including Bryant Creek. A candidate for the federal Endangered Species list, hellbender numbers are rapidly declining. They require cool, clean, well-oxygenated waters to survive.

Priority Research and Inventory Needs

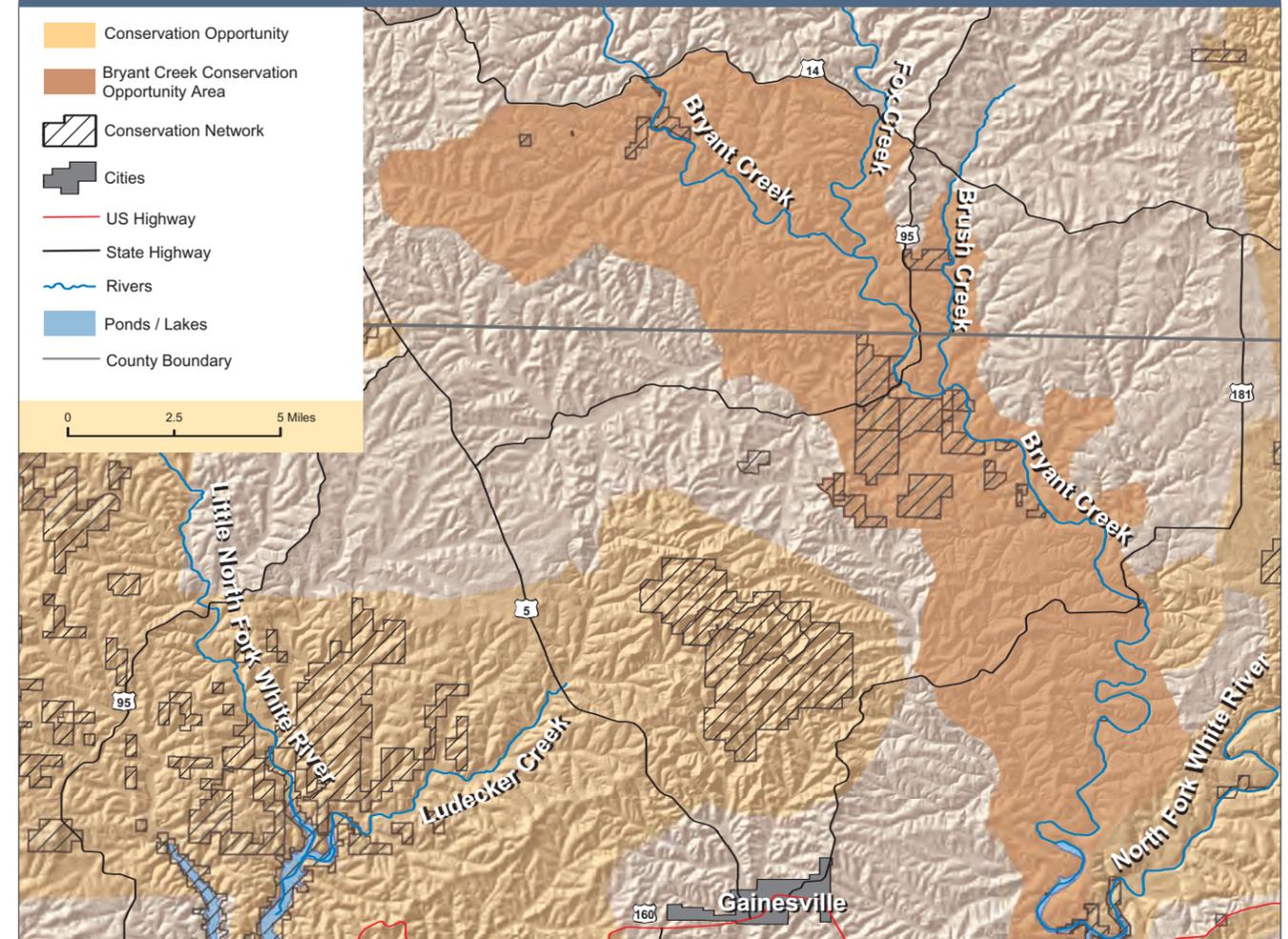
- Conduct a biological inventory of the Bryant Creek COA.
- Use satellite and aerial imagery to review forest cover.
- Establish a baseline for water quality.
- Establish a baseline for measuring sedimentation of streams; determine the impacts of sedimentation on stream health.
- Locate sinkholes, losing streams and other natural features that impact Bryant Creek’s water quality.

Conservation Partners

Existing: Ozark Regional Land Trust; Missouri Stream Team #191; Ozark Botanical Garden, Inc.; The Nature Conservancy – Missouri Chapter (TNC); private landowners; Missouri Department of Conservation (MDC)

Potential: Audubon Missouri; Missouri Conservation Heritage Foundation (MCHF); private landowners; U.S. Fish and Wildlife Service (USFWS)

Bryant Creek Conservation Opportunity Area



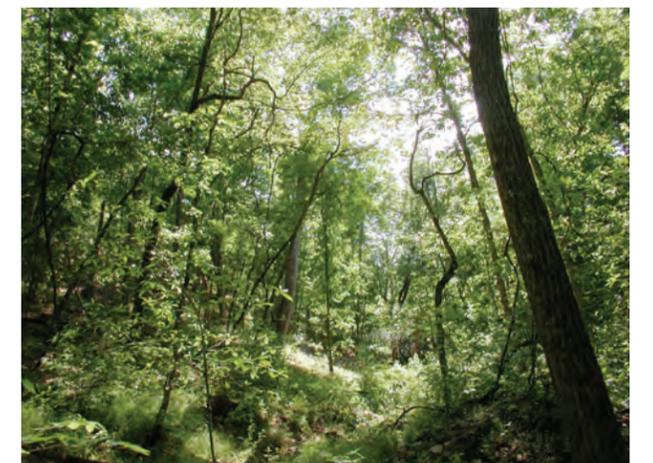
Funding Sources

Existing: TNC annual budget; MDC annual budget

Promising Future Sources: MDC Landowner Incentive Programs; MDC Forest Legacy Program; MDC State Wildlife Grants; MDC Wildlife Diversity Funds; MDC Private Lands Cost Share Program; MCHF Stream Stewardship Trust Fund; MCHF grants; USFWS Partners for Fish and Wildlife Program

Existing Conservation Network

Alma Peterson Azalea Memorial Preserve; Williams Memorial Woods Preserve; Rippee Conservation Area (Bryant Creek Natural Area); Cook Access; Sycamore Access; Warren Bridge Access; Norfolk Lake; Alford Forest Preserve; Hawk Hill Community Land Trust; Elixer Conservation Lands; Ozark Regional Land Trust easements totaling 1,121 acres



Catherine Hopkins, Ozark Regional Land Trust

Forested stream banks prevent excess soil from muddying Bryant Creek. Many Ozark fish and crayfish require clear streams with little sedimentation to live in and reproduce.

Missouri Stream Teams



Missouri Stream Team #191 is comprised of several area residents who volunteer their time to monitor water quality and stream invertebrates of Bryant Creek. In partnership with the Missouri Stream Team program, an annual clean-up of Bryant Creek was initiated in 2003. In 2004, 35 volunteers collected trash along 27 miles of the creek in the day-long event.

Catherine Hopkins, Ozark Regional Land Trust

Conservation Challenges

The Bryant Creek Conservation Opportunity Area provides extensive forest cover, significant wildlife habitat and relatively good water quality. Obstacles to keeping it that way include insufficient landowner outreach and

incentives, fragmentation of the landscape, regional economic challenges, water quality issues outside the Conservation Opportunity Area that affect Bryant Creek, introduced species and insufficient staff time.

To learn more about the Bryant Conservation Opportunity Area, please contact:



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

Copyright © 2005 by the Conservation Commission of the State of Missouri

Bryant Creek

Conservation Opportunity Area



Ozark
Highlands



Bryant Creek's clear waters harbor 15 Ozark endemic fish and crayfish – species found only in the Ozarks.

Catherine Hopkins, Ozark Regional Land Trust

Bryant Creek runs through 39 miles of hilly, rocky, oak-pine forests in a remote and sparsely populated area of the Ozarks. These large tracts of forest contain streams, springs, caves, fens, sinkhole ponds and cliffs, providing habitat important to a variety of plants and animals. Historically, pine-oak woodland dominated higher elevations, grading into mixed-oak forests with areas of cane thickets along the lower slopes and bottomlands. Bryant Creek is one of the few remaining places in Missouri where native cane thickets can still be found. Some of Bryant Creek's valley bottoms and broad ridges have been cleared and converted to fescue pasture. Land which has undergone this conversion no longer

provides the same benefits to wildlife and water quality.

There is significant interest in conservation and a commitment by many individual private landowners along Bryant Creek to protect the stream and wildlife living here. The nonprofit Ozark Botanical Garden, Inc. conducts educational workshops to raise awareness of the botanical diversity of this area. Alford Forest, Inc. is managed in a sustainable manner to improve forest health while gaining economic benefit. By setting aside reserve areas, Alford Forest helps conserve sensitive ravines and bottomlands along Bryant Creek. These and other local efforts for conservation benefit the Bryant Creek Conservation Opportunity Area (COA).

Cape Hills Conservation Strategies

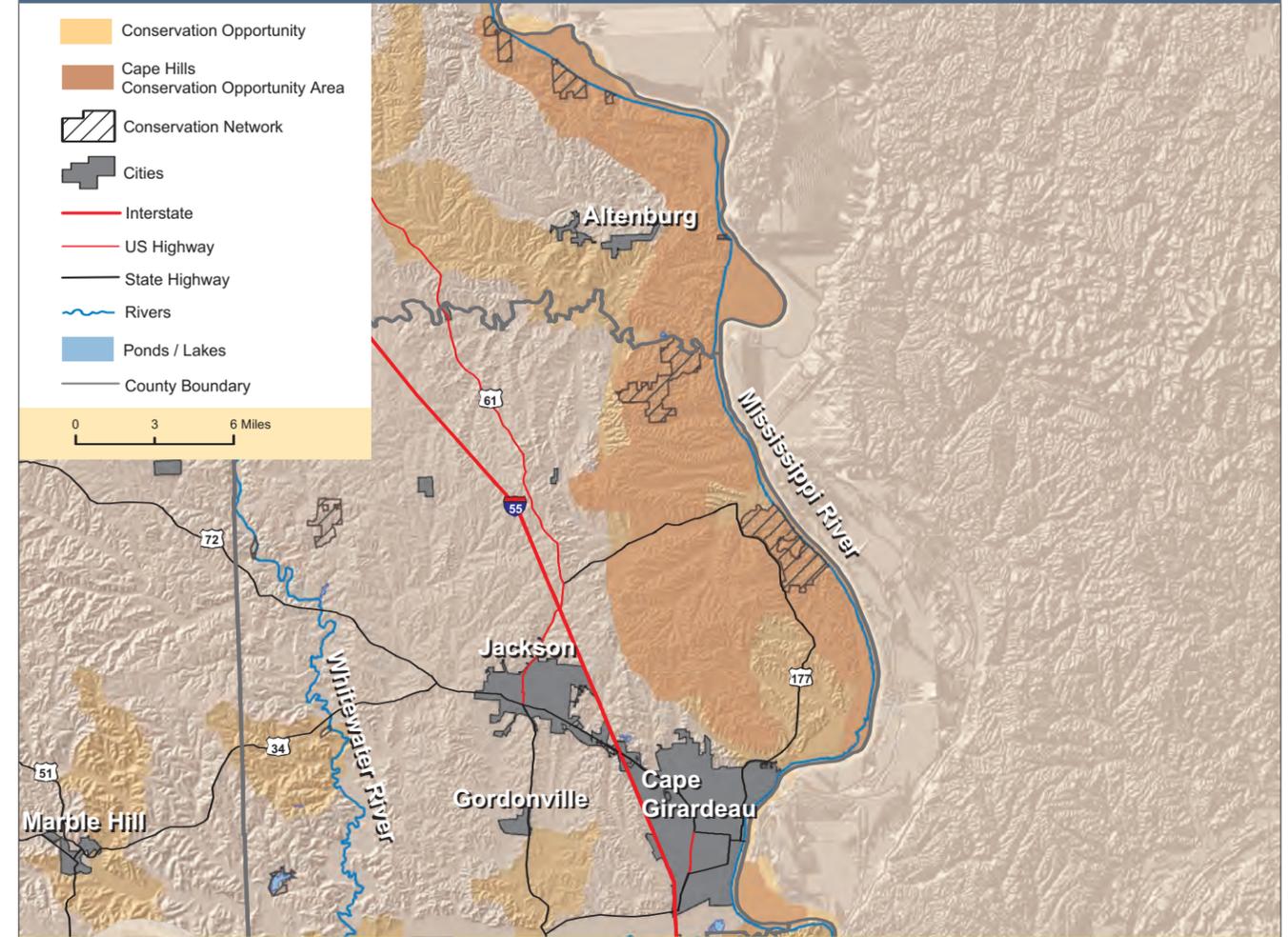
- Conserve forests, woodlands, springs, bottomland forests, canebrakes and wetland features.
- Promote reforestation to provide source habitats for forest interior birds.
- Promote reforestation of Mississippi River floodplains and bottomlands.
- Promote "Best Management Practices" to decrease forest habitat fragmentation, erosion, stream nutrient enrichment and gravel load transport in streams.
- Maintain efforts to eradicate invasive exotic plants and animals.
- Protect existing mussels, native fish and invertebrates.
- Promote the exchange of information through private landowner assistance programs, outreach and education efforts and the Cape Girardeau Conservation Campus Nature Center programming.



Tower Rock is a small limestone island carved by the Mississippi River. It is a designated Missouri Natural Area and National Historic Site.

Missouri Department of Conservation

Cape Hills Conservation Opportunity Area



Priority Research and Inventory Needs

- Monitor the spring cavefish population and water quality within its habitat.
- Monitor interior least tern colonies on Mississippi River islands and sandbars.
- Monitor Mississippi kites.
- Monitor timber rattlesnake populations and determine locations for proper protection.
- Conduct surveys for reptiles and amphibians.
- Continue avian surveys in cooperation with the Four-Season Audubon Society and the Wildlife Society at Southeast Missouri State University.
- Identify and further inventory karst features.
- Monitor canebrake restorations.
- Conduct additional inventories and mapping of species of conservation concern.
- Survey invasive plants and animals.

Conservation Partners

Existing: Four-Seasons Audubon Society; Audubon Missouri; Perryville High School Stream Team; Southeast Missouri State University (SEMO); Missouri Department of Natural Resources (DNR); Missouri Department of Conservation (MDC)

Potential: The Nature Conservancy – Missouri Chapter; Missouri Speleological Society; Central Hardwoods Joint Venture; National Wild Turkey Federation (NWTF); Ozark Regional Land Trust; Sierra Club – Ozark Chapter; Little Egypt Grotto; U.S. Fish and Wildlife Service (USFWS); National Resource Conservation Service (NRCS)



Kites are seldom seen perching; they capture most of their prey – insects and small birds – in flight. The Mississippi kite is a medium-sized, falcon-shaped hawk that is uniformly gray with black wing-tips and a black, unbarred tail. They are rare in Missouri, but do nest in low numbers, mainly in southeastern Missouri along the Mississippi River.

Jim Rathert, Missouri Department of Conservation

Funding Sources

Existing: DNR annual budget; MDC annual budget; SEMO annual budget; MDC State Wildlife Grants; Soil and Water Conservation Districts State Cost Share Funds; Farm Service Agency Conservation Reserve Program; NRCS Wildlife Habitat Incentive Program; NRCS Environmental Quality Incentives Program

Promising Future Sources: MDC Landowner Incentive Fund; MDC Wildlife Diversity Fund; USFWS Partners for Fish and Wildlife Program; USFWS North America Wetlands Conservation Act grants; National Fish and Wildlife Foundation grants; NWTF Wild Turkey Super Fund; Missouri Bird Conservation Initiative Grants

Existing Conservation Network

Trail of Tears State Park (Vancill Hollow Natural Area, Indian Creek Wild Area); Apple Creek Conservation Area; Juden Creek Conservation Area; Red Rock Landing Conservation Area; Seventy-Six Conservation Area; Tower Rock Conservation Area and Natural Area; Kelso Sanctuary Natural Area

The Mighty Mississippi



The Big River/Wetlands System Field Station in Cape Girardeau monitors aquatic species associated with the Mississippi River and its floodplain. Ongoing research topics include pallid sturgeons, other rare fishes, mussels and invertebrates.

Jim Rathert, Missouri
Department of Conservation

Cape Hills

Conservation Opportunity Area



Ozark
Highlands



American beech, tulip poplar, cucumber magnolia and a luxuriant ground cover occupy this Appalachian Mountain-like forest in the deep, rugged river breaks of Vancill Hollow Natural Area.

Missouri Department of Natural Resources

Conservation Challenges

Threats to the Cape Hills Conservation Opportunity Area include forest fragmentation, urban and industrial development, establishment of populations of exotic plants and animals and

further modification of floodplain and mainstem river systems to the detriment of aquatic species. Additional challenges include streambank erosion and gravel buildup within stream systems.

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



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

The Cape Hills Conservation Opportunity Area (COA) borders the Mississippi River near Cape Girardeau. Featuring hardwood forests of white oak, black oak, tulip poplar and hickory, the Cape Hills support a distinctive type of forest found more often in the Appalachian Mountains than in the Ozarks. These forests are characterized by larger trees and a greater diversity of plants. The moist ground is covered with ferns and wildflowers.

Forested natural communities vary from a band of bottomland forests along the river to less fertile chert and limestone forests and woodlands elsewhere. Bottomland forests along the Mississippi River contain large sweet gums and willows but are significantly

fragmented. Northern portions of the Cape Hills include many caves and sinkholes. Other natural features include springs, glades and limestone bluffs.

The Cape Hills COA includes the only population of spring cavefish in Missouri. The Mississippi River provides habitat for rare fish (pallid sturgeon, flathead chubs, blue suckers) as well as imperiled mussels (rock pocketbooks) and big river invertebrates (freshwater shrimp). Sand bar islands are important for nesting interior least terns, a federally endangered bird that relies on sand or gravel islands for protection from predators. The Cape Hills are also essential for populations of forest interior birds, migrating birds and waterfowl of the Mississippi Flyway.