



Missouri Bird Conservation Initiative Newsletter

Working together to conserve bird populations and their habitats

Note from the Chair

by **Bill Mees**

Missouri Bird Conservation Initiative Chair

One year ago, I wrote the 2020 version of this introduction to the newsletter. Last year we informed readers, partners and friends that we would not host an annual conference due to the COVID-19 pandemic. In my note to you, I anticipated August 2021 when (I thought) we may all gather together for a great conference full of camaraderie uniting around bird conservation.

Well, not so fast. With Missouri making national headlines because of our statistics on the surging COVID-19 outbreak, a face-to-face conference is postponed once again. However, after over a year of experience, Zoom is proving to be our best option to share with you information from our myriad of speakers. And so it is for the MoBCI Annual Conference: an electronic face-to-face. Because there will not be a poster session, we are using the newsletter platform to highlight the work our FY21 grant recipients have accomplished in these trying times, all for the benefit of birds. Not only will we highlight grant projects, but one can read on to learn about the history of Missouri's turkey populations and also witness some breathtaking photography from our partners.

2021 marks Missouri's 200th anniversary of statehood. MoBCI, in no small part through

INSIDE THIS ISSUE:

Note from the Chair <i>Bill Mees</i>	1
Partner's Bird Conservation Overview, Audubon Center at Riverlands <i>Tara Hohman</i>	3
Ha Ha Tonka State Park's Bank Branch Glade Restoration: A Success for Birds and the Ecosystem <i>Jacob Bryant</i>	6
Wild Turkey Restoration in Missouri: Where Are We Now? <i>Reina Tyl</i>	8
Loess Bluffs National Wildlife Refuge Bottomland Prairie Enhancement Project Continues <i>Darrin Welchert</i>	11
Glade Maintenance and Restoration in Solomon Hollow Glade and Ava Glades Natural Areas <i>Antoinette Sitting Up Perez</i>	15
Bird Habitat Enhancement in the Cole Camp Prairies Conservation Opportunity Area/Audubon Important Bird Area with Assistance from MoBCI <i>Jerod Huebner</i>	16
Youth Habitat and Education Program grant recipient consolidates Art and Habitat Creation in St. Charles <i>Jenny Kettler</i>	17
2021 MoBCI Conference	19
MoBCI Member Organization Roster	20
Financial Report	22
MoBCI Grant Call for Proposals	Appendix

our grants program and information sharing, is dedicated to restoring our historic landscapes and ecosystems that supported so many bird species historically, in the present, and into the future. Millions of birds have been lost primarily because of habitat destruction, and habitat protection and restoration guide MoBCI's project selection process.

MoBCI evaluated a total of seven project submissions and referred five to the Missouri Department of Conservation with a recommendation to provide full funding which will total \$86,500. The funding provided to each of the projects will be matched dollar for dollar and, in most cases, the match exceeds the grant award. Those dollars translate into hundreds of acres of habitat improvement.

This past year MoBCI received three applications for the Jerry Wade Youth Habitat Education Program (YHEP). Each project creates and enhances native habitats, builds schoolyard gardens and will also expose hundreds of young people to the benefits of habitat improvement. This budding grant program is largely supported by donations from our friends and partners. The grant application is available online at mobci.net. In the past we have awarded two YHEP grants, but perhaps with the increase in interest in outdoor classrooms, we received three applications and are funding all of them: one in Van Buren Schools, another in Carl Junction outside of Joplin in collaboration with the Missouri Prairie Foundation, and another in St. Charles, a project featured in the newsletter. See the article in the newsletter about the Foundry Art Centre YHEP grant project and all of the great work going on in St. Charles!

One person planting natives is like a drop of water, but all the thousands of us across the state doing the same thing becomes a torrent. Hasn't Douglas Tallamy made a similar proposal in his book *Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard?* The theme of this year's conference is about the significant decline in bird populations and what small acts we can do as individuals to make a difference. MoBCI is proud of the 76 organizations, large and small, national, state and local partners that are all affiliates of MoBCI. These 76 organizations each have a positive impact on

birds. Let's step down from the affiliate role and look at individual members: now we're talking about hundreds, even thousands, of individuals who play an integral role in bird conservation every day. Just think of the impact on avian habitats if all of the MoBCI affiliates and their members decided to landscape their homes with native plant species, for example. Planting natives is just one of the 7 simple steps each of us can take. Other strategies to combat avian decline will be discussed throughout the conference. Our individual actions can encourage our friends and neighbors to take their own steps to make a difference. A torrent could become a tsunami. Won't the birds be happy?

I hope to see you on the computer screen soon,
Bill Mees, Chair
MoBCI Steering Committee

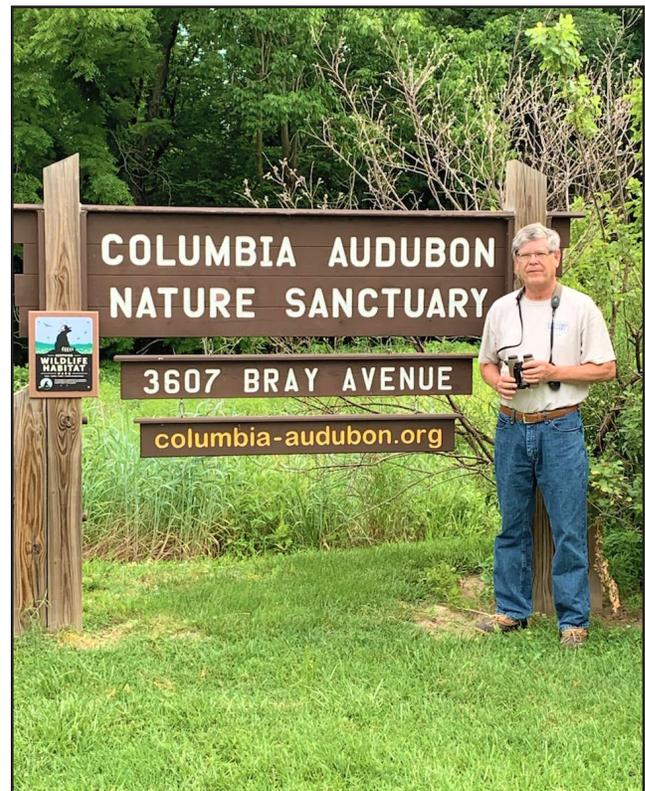


Photo by Jan Mees

Bill Mees has dedicated many years to the service of the Columbia Audubon Society. Here he is at the Columbia Audubon Nature Sanctuary located in central Columbia. This was the site of a MoBCI grant for prairie restoration for the benefit of wildlife and park users.



The Audubon Center at Riverlands during our annual Aah-dubon! event in July.

Partner's Bird Conservation Overview, Audubon Center at Riverlands

by Tara Hohman

Conservation Science Associate, National Audubon Society



Audubon

The Audubon Center at Riverlands (ACR) is playing an important role in bird conservation along the Mississippi River. We are located in the Riverlands Migratory Bird Sanctuary that falls within the Great Rivers Confluence Important Bird Area right between the confluence of the Mississippi and Missouri and Mississippi and Illinois Rivers. smack dab in the middle of the Mississippi Flyway, over 300 migratory and residential bird species have visited Riverlands! Since opening our doors in 2011, we have partnered with the Rivers Project Office of the U.S. Army Corps of Engineers (Corps) on numerous projects focused on using science to protect birds and their habitats.

In 2012, ACR and the Corps initiated bottomland forest avian monitoring focused on nearly 50,000 acres of floodplain forest managed by the Corps along the Upper Mississippi River. These annual surveys occur over an 8 to 10 week period in spring and summer, spanning 180 river miles and occurring on over 25 river islands and adjacent lands. The surveys start on Maple Island at the Riverlands Migratory Bird Sanctuary in West Alton, and end north of Louisiana, Missouri. We knew little about the bird populations or habitat conditions of these forests prior to monitoring. Today, due to these surveys, combined with scientific analyses performed by Audubon quantitative ecologists, we are gaining valu-



Photo by Tara Hohman

Audubon bottomland forest technician kayaks to a survey site.



Photo by Tara Hohman

A Dickcissel sings during a grassland bird survey on Riverlands Migratory Bird Sanctuary.

able insight on bottomland forest bird trends and habitat preferences.

We continue these surveys with a goal of informing best forest management practices and identifying other ways to mitigate bird population declines. We also aspire to expand the surveys further up the Mississippi River through similar collaborations with other federal and state agencies and conservation organizations. The survey protocol is detailed in our Avian Stewardship Plan, which guides our avian monitoring efforts in the St. Louis area and supports the Upper Mississippi River Systemic Forest Stewardship Plan. This survey season we are setting a new record for sites and points surveyed.

Thanks to funding from MoBCI, we are also supporting the Corps' restoration of 1,200 acres of prairie marsh at the Riverlands Migratory Bird Sanctuary. The Corps initiated this effort in 1988 to bring back an example of presettlement grassland habitat found in the Great Rivers Confluence area. The Riverlands' prairie marsh is one of the largest grasslands in the St. Louis region today.

Our goals include improved conditions for breeding, migrating, and overwintering birds as well as sustained production of native grassland seed and plants to promote healthy grassland habitat, which can support bird populations long-term. Summer grassland bird surveys,

which began last year, were designed to gauge the restoration's impact and inform the management necessary for promoting breeding grassland birds. Through MoBCI we have been able to enhance 60 acres of wet prairie at Riverlands. Currently we have an additional 21 acres that will receive a new diverse seed mix later this year as well as another pending 65 acres.

We are also contributing to bird conservation through two community science driven projects, the Great Rivers Trumpeter Swan Watch and Riverlands Nest Box Monitoring. "Swan Watch" started in 2011 through a partnership with the ACR, USACE, St. Louis Audubon Society, Audubon Society of Missouri (now Missouri Birding Society), and the Trumpeter Swan Society to aid in the recovery of North America's largest waterfowl species.

Trumpeter Swans were once nearly extinct and remain a species of concern in our region. Today, a large population of "Trumpeters" typically migrates to Riverlands in early November and stays through mid-February. During this period, volunteer community scientists from the St. Louis Audubon Society and ACR conduct a series of bi-weekly swan counts. Data from these surveys are helping land managers understand the habitat conditions Trumpeter Swans need, as well as to continually track their population trends. The overwintering population of Trumpeter Swans at Riverlands



Photo by Roger Ottwell

Trumpeter swans on Riverlands Migratory Bird Sanctuary taking off in the early morning to forage in surrounding farm fields.

has reached as high as 2,300! This past winter we had a high count of 870 swans.

We've also initiated a Nest Box Monitoring program focused on Eastern Bluebirds and American Kestrels at Riverlands. Bluebirds were once in steep decline due to the lack of natural tree cavities. This species, and other secondary cavity nesters, continue to rely on supplementary nest boxes. Eastern Bluebird populations have rebounded thanks to conservation efforts, but this species, along with other cavity nesters, still rely on appropriately maintained and available nest boxes.

We installed eight bluebird boxes in 2019 at Riverlands. Throughout the breeding season, community scientists from the ACR and area Master Naturalist groups monitor and report on nesting status twice a week. The protocol complies with the Cornell Lab of Ornithology's NestWatch program, thus adding to a broader network of knowledge to improve the status and trends in the reproductive biology of birds. The Eastern Bluebird and Tree Swallow are two species that have utilized the nest boxes each year. This current breeding season we've witnessed six successful Tree Swallow nests and two successful Eastern Bluebird nests.

Populations of the American Kestrel, North America's smallest falcon, are in decline for unknown reasons. Since kestrels are year-round residents in Missouri, they provide an



Photo by Tara Hohman

USACE Intern holds a male kestrel chick awaiting to be banded.

opportunity to promote their population while contributing data on to larger efforts focused on kestrel demographics and conservation.

ACR and the Corps installed 10 kestrel boxes at Riverlands in early 2020. Funded through St. Louis Audubon Society's Creley Memorial Conservation Grant, and in partnership with World Bird Sanctuary and Ameren Missouri, community scientists are monitoring the breeding success of kestrel pairs once a week during the breeding season. We enter the data collected into the Peregrine Fund's American Kestrel Partnership, a network of community and professional scientists focused on understanding and conserving kestrels. Two pairs of kestrels have nested in the Sanctuary for both survey seasons; this season they successfully fledged 5 chicks each, a new record for us at Riverlands! While a seemingly small step, this is a huge leap in our work to understand kestrel behavior and use of Riverlands, as well as for the kestrel population in our region.

For more information or questions regarding our conservation programs, please contact Conservation Science Associate Tara Hohman at tara.hohman@audubon.org. 

Ha Ha Tonka State Park's Bank Branch Glade Restoration: A Success for Birds and the Ecosystem

by Jacob Bryant

Park Naturalist, Ha Ha Tonka State Park, Missouri Division of State Parks



In an ongoing effort to restore glades at Ha Ha Tonka State Park and within the Ha Ha Tonka Oak Woodland Natural Area, MoBCI awarded an \$8,800 grant to Missouri State Parks to expand glade restoration efforts through cedar removal across 14 acres of dolomite glades. Beginning in November 2020, a two-person stewardship crew funded by the MoBCI grant worked with park staff to cut and burn cedars from the project area. This area is located in the now-expanded Bank Branch burn unit (122 acres) and provides an impeccably scenic view of contiguous woodlands and hollows from high above.

The effort primarily occurred during the winter months, but stretched into March and April 2021. Cedars were felled, limbed, stacked, and burned on site. Work continued until the grant funds were exhausted. The impacts of Covid-19 were not anticipated at the time of the grant application submission, and as such, work on the glade occurred slower than anticipated due to the need for social distancing and the logistics of moving crews to and from the work area. Out of the proposed project area, all but the extreme southwest portion of the glade was cleared. We tried to burn the unit in March 2021 following the cedar removal, but atmospheric conditions did not meet the criteria set forth by our burn plan. This unit will remain a top priority in our 2021/2022 fire season.

Widely recognized for harboring significant woodland bird populations, Ha Ha Tonka SP

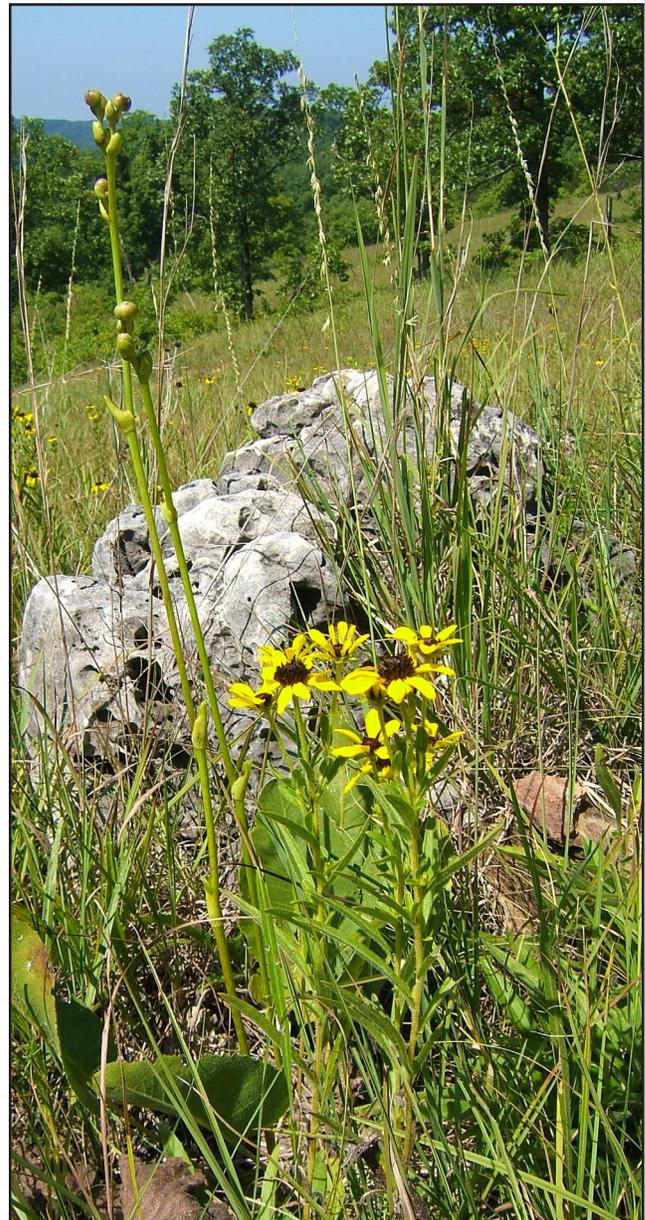


Photo by Allison J. Vaughn

The Bank Branch burn unit is a large expanse of a glade and woodland complex that park staff originally began restoring in the early 1990s. Here, Missouri coneflower (*Rudbeckia missouriensis*) grows next to a Gasconade dolomite boulder in the middle of the glade that provides a breeding home to field sparrows and prairie warblers. The MoBCI grant is expanding the restoration efforts to additional acreage to better serve wildlife.

ranks high in bird species richness in parks with 167 birds documented throughout the years. The Lake of the Ozarks Chapter of the Missouri Master Naturalists conducted pre-treatment bird surveys on the project glade and woodlands in August 2020 and post-treatment surveys in June of 2021. Their results have been submitted to eBird, which will be included in the 2022 updates to the online bird checklist, SPARKS, hosted by the Missouri Birding Society. The table of the species present during pre- (2020) and post-treatment (2021) surveys is shown at right.

The Bank Branch burn unit is an incredibly diverse area of woodlands, glades, small seeps on the glades, and the eponymous creek that drains into the Niangua Arm of Lake of the Ozarks. The creek is permanently flowing, and several wetland birds have been documented such as belted kingfishers, great blue herons, and Louisiana waterthrush. But the glades and woodlands which comprise the terrestrial systems throughout the park are similar to previously restored areas that host grassland/shrubland birds like prairie warblers, yellow-breasted chats, and field sparrows, to name a few. It has been interesting to see the restoration efforts at Ha Ha Tonka SP that began in 1983 with the first prescribed fire in the woodlands and the bird populations that follow. Among the signature birds for the park, summer tanager, prairie warbler, and red-headed woodpeckers stand out as occurring commonly. With increased urbanization in the Lake of the Ozarks area and even around the park's boundary, these oases of intact, restored, and diverse landscapes become ever more important to help bird populations persist into the future. 

SPECIES	2020	2021
American Crow	x	x
American Goldfinch	x	x
Barred Owl		x
Belted Kingfisher	x	
Black Vulture	x	x
Blue Gray Gnatcatcher		x
Blue Jay	x	x
Carolina Wren	x	x
Cerulean Warbler		x
Chickadee spp.	x	x
Common Yellowthroat		x
Downy Woodpecker	x	x
Eastern Bluebird		x
Eastern Phoebe	x	x
Eastern Towhee		x
Eastern Wood Pewee	x	x
Great Blue Heron		x
Great Crested Flycatcher		x
Hairy Woodpecker	x	x
House Finch		x
House Wren		x
Indigo Bunting	x	x
Kentucky Warbler		x
Mallard		x
Mourning Dove	x	x
Northern Cardinal	x	x
Northern Flicker	x	
Northern Parula		x
Purple Finch		x
Red-Bellied Woodpecker	x	x
Red-Eyed Vireo	x	
Red-Headed Woodpecker	x	x
Red-Tailed Hawk	x	x
Ruby-Throated Hummingbird	x	x
Sharp-Shinned Hawk		x
Summer Tanager	x	x
Tufted Titmouse	x	x
Turkey Vulture	x	x
White-Breasted Nuthatch	x	x
White-Eyed Vireo		x
White-Throated Sparrow		x
Worm-Eating Warbler		x
Yellow Warbler		x

Table 1 (right). Missouri Master Naturalist Surveys of Bank Branch burn unit. Species present during pre- (2020) and post-treatment (2021).

Wild Turkey Restoration in Missouri: Where Are We Now?

Reina Tyl

Wild Turkey and Ruffed Grouse Biologist, Missouri Department of Conservation



The wild turkey is one of the most popular game species in Missouri and a cherished natural resource. Missouri is home to the eastern subspecies of turkey. Each year, more than 100,000 hunters pursue this species, generating considerable revenue for the state's economy.

Historically, turkeys were abundant throughout the state, except in the prairies of western and northern Missouri, with numbers estimated to be between 250,000–400,000 birds. However, the species was quickly brought to the brink of extirpation following European settlement due to unregulated harvest and habitat loss.

Beginning in the mid-1920s, the Missouri Fish and Game Department began releasing pen-reared or game-farm turkeys to increase wild populations. This practice ended in the early 1940s after failing to curb the population decline. A moratorium on turkey hunting was implemented in 1938. Shortly thereafter, in the 1940s, the Caney Mountain Refuge in southwest Missouri was purchased as an experimental turkey management area. Through intensive habitat management, the turkey population began to grow. Although early results on the Caney Mountain Refuge were encouraging, results of turkey population surveys in the early 1950s estimated there were fewer than 2,500 turkeys in only 14 Missouri counties.

It was evident that the only solution for restoring turkey populations was to capture and relocate wild-captured birds into areas with suitable habitat. To increase numbers of

wild birds and provide a source population for relocations, in the early 1950s MDC began intensively managing five refuges in the southern Ozarks where small populations of turkeys existed. One of these areas was Peck Ranch where intensive management efforts resulted in an increase in turkey numbers from 9 birds in 1954 to 100 birds in 1957.

Although the experience on Peck Ranch showed that turkey populations could be increased with habitat management and protection from harvest, relocating flocks to areas devoid of turkeys would accelerate restoration efforts. However, biologists lacked an efficient method of capturing wild turkeys. In 1953, modification of the cannon net trap, which was originally developed for capturing geese, allowed biologists to trap-and-transfer large groups of turkeys to new areas.

Finding suitable release sites became the next hurdle. After communities submitted a restocking request, biologists evaluated suitability of turkey habitat in the area. At that time, optimal habitat was believed to be a ratio of 70% forest and 30% open lands over a minimum of 15,000 acres. Because of the large area required for a turkey release, citizens within the restocking area had to agree to protect—not harvest—the birds while populations were becoming established.

Although MDC's turkey restoration effort began in earnest in 1954, it was the success of a private land release in Ste. Genevieve County in 1960 that accelerated restocking efforts. Following this release, requests from the public began pouring in as interested



A wild turkey hen examines her surroundings in an open woodland during summer. The herbaceous vegetation in the understory of this woodland provides excellent cover for nesting and rearing wild turkey broods.

communities wanted turkeys released in their area. Initially, restoration efforts were focused in southern Missouri based on thinking at the time that turkeys would only persist in areas with substantial forest cover. However, during the early 1960s, a successful release of turkeys in Adair County, which had less than 20% forest cover, changed biologists' views of turkey habitat requirements. Because of the Adair County success, turkeys began being released throughout northern and western Missouri.

Missouri's trap-and-transfer efforts were mostly completed by the late 1970s. Over 2,600 turkeys had been translocated to more than 200 sites in 91 counties. The restoration effort resulted in establishing turkey populations in all counties of the state and is considered by many to be one of the greatest success stories in wildlife management history.

Turkey populations continued to grow almost exponentially during the 1980s and 1990s as populations expanded into unoccupied habitats throughout the state.

However, as the landscape became saturated with turkeys, population growth began to slow down. Missouri's turkey population peaked in abundance during the early 2000s. This peak in abundance was followed by a few years of poor production in the late 2000s, which led to statewide population declines. Production improved during the early 2010s which led to increased turkey abundance in many areas; however, starting in 2016, turkey production once again took a turn for the worse.

The abundance trends of Missouri's turkey population are typical of restored wildlife populations. Immediately following population restoration efforts, while densities are relatively low, wildlife populations often grow exponentially for a period of time resulting in an overshoot of the carrying capacity. When the number of turkeys on the landscape exceeds the number of turkeys that the landscape can sustain, the population experiences a period of decline. After this decline, the number of turkeys on the landscape begins to oscillate around a lower level of abundance than the peak abundance. Moving forward, fluctuations in turkey numbers from year-to-year, or on a several year cycle, will be normal and can be expected.

In this post-restoration era of wild turkey population dynamics, fluctuations in turkey abundance appear to be primarily driven by production. When we have a few years of better production, turkey numbers have stabilized or increased, and when we have seen poor production, turkey numbers have declined. Recently, we have been in a period of poor production across most of the state, which has led to lower turkey abundance than what folks were used to seeing as recently as 5 years ago.

Ultimately, this declining trend in abundance—driven primarily by production—is

not a Missouri-specific issue. Many of our neighboring states, and states across the range of the eastern turkey, have seen long-term production declines which are contributing to abundance declines in those states as well. There are several factors that have potentially contributed to this long-term declining trend in production. We have seen increasing populations of some turkey nest and poult predators. There has been broad-scale losses of quality nesting and brood-rearing habitat in north Missouri as herbaceous habitats have been put into agricultural production. In the more forested areas of the state, an abundance of closed-canopy forests due to inactive timber management has prevented the growth of herbaceous vegetation in the understory, which provides food and cover for turkeys. We are seeing an increase in extreme weather events during the spring and summer, including more frequent flooding events. Additionally, there is evidence that insect abundance—the main source of food for young poults—is in decline.

While our ability to control the weather and have large-scale impacts on predator populations is limited, we can make improvements to habitat that can buffer turkeys from these negative influences. Improving the quality of nesting and brood-rearing habitat not only benefits turkeys, but this type of cover can positively impact many other bird species as well. In general, this type of cover will be areas dominated by native warm season grasses and forbs that have enough bare ground in between clumps of plants to facilitate easy poult movement. These areas provide escape cover from predators, shelter from bad weather, and abundant insects for food. If you have specific questions about how to improve turkey habitat on your property, or property that you manage, contact your local MDC Private Land Conservationist. 

Loess Bluffs National Wildlife Refuge Bottomland Prairie Enhancement Project Continues

Darrin Welchert

Loess Bluffs NWR Wildlife Biologist/ Acting Refuge Manager, U.S. Fish and Wildlife Service



Since 2014, the Loess Bluffs National Wildlife Refuge (LBNWR) has been actively restoring 325 acres of former agricultural fields to prairie with the assistance of volunteers and non-profit conservation groups such as MoBCI. These fields have been planted with native grasses and some forbs at a rate of 20–25 acres per year since 2016. In addition, LBNWR continues to monitor invasive reed canarygrass (*Phalaris arundinaceae*) (RCG) and its effects on grassland birds in the grasslands, more specifically

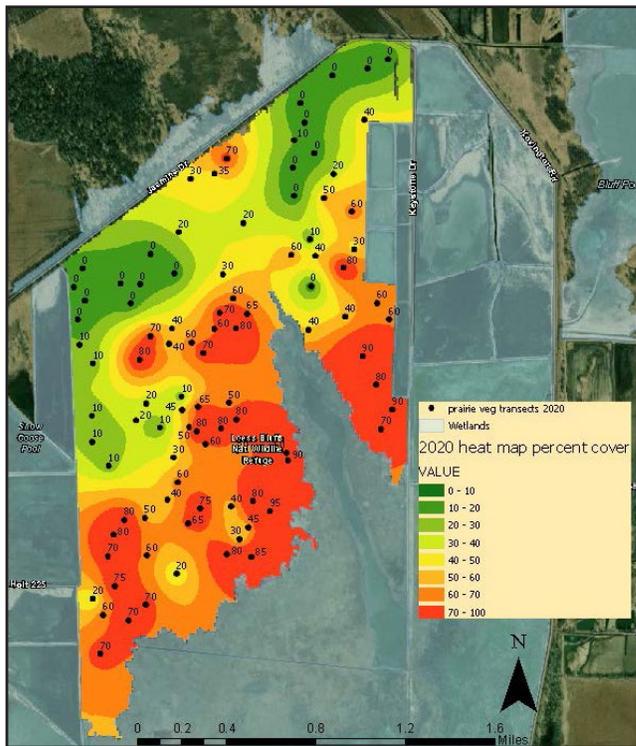
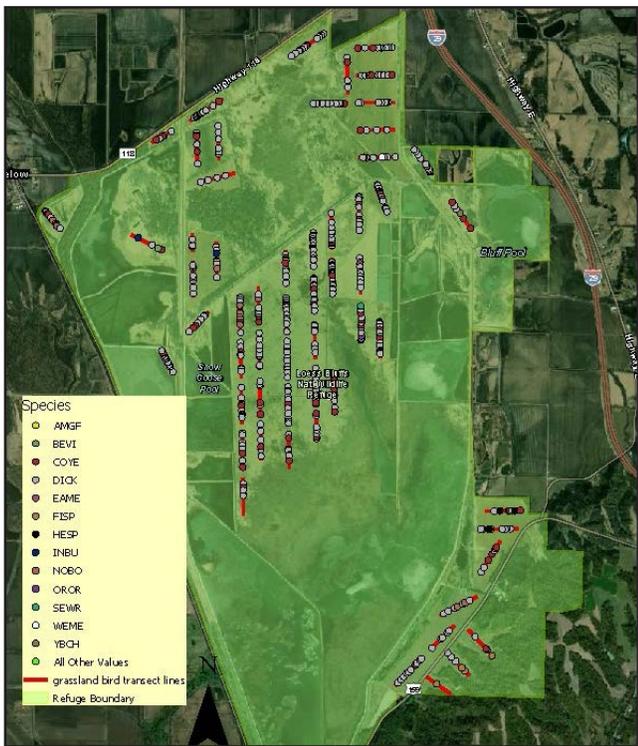
in the wet bottomland prairie. To help restore this area, we are controlling RCG through the use of aerial herbicide applications and have been doing so since 2016.

This project is two-fold: first, LBNWR sought grant funding to reduce and control invasive RCG through aerial herbicide applications of at least 250 acres in the bottomland prairie in the fall of 2020 while native plants are dormant. Second, our goal was to increase native grasses and forbs in the restored prairie of LBNWR for the benefit of migratory birds, pollinators,

Reseeding the Loess Bluffs National Wildlife Refuge in the early months of 2021.



Photo by U.S. Fish and Wildlife Service



Grassland bird monitoring transects and Kriging heat maps of reed canarygrass cover values informed aerial herbicide control.

mammals, amphibians and reptiles. The goal is to maintain or increase the percentage cover of native prairie vegetation relative to invasive/exotic vegetation, to maintain the floristic diversity of native grassland ecosystems, to minimize the percentage cover of invasive/exotic vegetation (especially in regards to reed canary grass), to monitor and model the invasive species presence in prairie habitats and ultimately to maintain the structural diversity of native grassland ecosystems. LBNWR was awarded a MoBCI grant to help with all of these objectives in 2020/2021.

We used grant funds and match to defray the costs for aerial spraying applications in fall of 2020, and to provide labor (biological technician) to coordinate volunteers to help collect native seed from existing refuge prairies, and to process and plant seed in the fall and winter of 2020/2021. Funds also helped purchase native seed to supplement seed harvesting efforts to enhance 20 acres of restored prairie in winter of 2020/2021.

The biological technician also performed follow-up monitoring efforts to conduct Breeding Bird Surveys and follow-up prairie inventory to detect success. In addition, Friends of Loess Bluffs National Wildlife Refuge and Missourians for Monarchs have pledged to plant 1,000 milkweed stems per year as part of their “10,000 Milkweed Stems in 10 Years” project.

Loess Bluffs National Wildlife Refuge was established in 1935 as a refuge feeding and breeding ground for migratory birds and other wildlife. This refuge is located in far northwest Missouri in between Kansas City, Missouri and Omaha, Nebraska. Loess Bluffs National Wildlife Refuge is comprised of 7,440 acres of woodland, wetland, grassland and riparian habitat in northwest Missouri. The refuge oversees approximately 3,800 acres of managed wetlands, a diverse mix of open water wetlands, semi-permanent cattail marshes, and seasonally flooded moist-soil units. Grasslands comprise approximately

2,800 acres on the refuge. The largest portion is 1,448 acres of wet bottomland prairie, with the remainder consisting of restored agricultural fields and remnant Loess Hill prairie. The project proposal for aerial herbicide control occurred in the wet bottomland prairie, based on summer 2020 monitoring results and Kriging heat maps.

LBNWR contains 3 main prairie types: wet bottomland, wet-mesic/mesic and Loess Hills prairie. Historically, the state of Missouri contained over 15 million acres of prairie which has now been reduced to less than 70,000 acres. Wet bottomland prairie is currently listed as a critically imperiled habitat community type in Missouri, estimated to have less than 0.4% remaining (MMWG 2014). LBNWR is one of the few places in Missouri with a representative site of wet bottomland prairie, and may be the largest contiguous piece left in Missouri. Grasslands, including the wet bottomland prairie on the refuge, are threatened by the encroachment of woody vegetation as well as the invasion of exotic plants such as reed canarygrass. Early spring burning and past selective herbicide/burning on certain areas appear to have had little to no effect on the reduction of RCG. The invasion of RCG through the widespread flood events like those of 1993 and 2011 has altered the historic condition of the wet prairie on LBNWR. This issue is in direct conflict with National Wildlife Refuge Improvement Act of 1997 that states USFWS shall “ensure that the biological integrity, diversity, and environmental health of the System are maintained...” (601 FW 3; also known as the “Integrity Policy”).

Grassland birds are also at risk in the Midwest. Their populations have shown significant declines in North America due primarily to loss of suitable habitat. They

require diverse habitats with a variety of vegetation height and species composition to best enable them to successfully forage, nest and breed. Studies have shown conflicting results on whether the invasion of exotic species such as RCG poses a threat to bird populations relying on these grassland habitats (Spyreas et al. 2010). Further analysis of grassland bird population models in comparison to broad plant composition and structural changes should be conducted to determine the effects of treatment (i.e., chemical, mechanical, haying, grazing, prescribed fire) of RCG on grassland bird populations. Grassland-dependent birds adapted to the microhabitats resulting from frequent disturbance in the tallgrass prairies. Grassland species are best supported with diverse vegetative cover which varies in height and species composition in order to provide the most available nesting, breeding, and foraging habitat. For example, grasshopper sparrows and dickcissels prefer tall grasses up to 125 cm in height (Dechant 1999, Holmes 2010). Dickcissels also require a significant amount of forb cover for nesting and feeding (Dechant 1999). Short-eared owls tend to require dense grasslands with 30–60 cm in height (Wiggins et al. 2006).

Current management goals at LBNWR are consistent with the mission of the National Wildlife Refuge System to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States. Goals 5–7 of LBNWR’s Habitat Management Plan (HMP) are to annually manage the varying prairie habitat types found on the refuge to provide nesting habitat for and “for the benefit of grassland species such as grasshopper sparrow, dickcissel, short-

eared owls, prairie massasauga and other associated species” and are listed as priority resources of concern.

Intensive intervention is required to sustain the remaining areas of prairie found on the refuge. Current management actions outlined in the LBNWR HMP to accomplish these goals and prevent harmful infestations include: implementing a future grazing and/or haying plan, maintaining the 2 to 5-year rotational prescribed burning program, incorporating chemical treatments and mechanical manipulation where appropriate, and monitoring vegetation and wildlife. In 2016, LBNWR staff initiated annual grassland vegetation surveys to establish a baseline and follow-up of RCG infestations compared to native species and developed Kriging heat maps from the results (Figures 1–3.) As a result of the monitoring efforts, LBNWR chemically treated RCG through aerial applications in the fall of 2016 and 2017 after native species such as prairie cordgrass went dormant but the RCG was still active. A total of 500 acres in the wet prairie was chemically treated over a period of 2 years. In addition, grassland bird transects were established using methods similar to Ripper and Duke (2017, Missouri River Bird Observatory) to gain a better understanding of grassland bird abundance and diversity and its relationship with LBNWR’s prairie restoration and enhancement efforts. Overall, the RCG infestations decreased in the wet prairie and the native species increased significantly and correlated with a positive growth in grassland bird populations in the prairie.

In order to provide quality wet bottomland prairie habitat on LBNWR the proportion of RCG found in this habitat and adjacent areas will need to be greatly reduced. This habitat requires regular disturbance in order

to maintain its biological integrity. Further work is still critical to improve the bottomland prairie of LBNWR, through enhancing the prairie via supplemental forb plantings, RCG control, and monitoring. 

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Glade Maintenance & Restoration in Solomon Hollow Glade and Ava Glades Natural Areas

Antoinette Sitting Up Perez

District Wildlife Biologist, U.S. Forest Service



In 2020, the Ava/Cassville/Willow Springs (ACW) and Houston/Rolla/Cedar Creek (HRCC) Ranger Districts of the Mark Twain National Forest received a MoBCI grant totaling \$20,000 to restore and maintain glade habitat in the Ava Glades and Solomon Hollow Natural Areas (NA). Both have distinctive glade habitats. Of the two, Ava Glades NA has more expansive limestone/dolomite glades, while Solomon Hollow has the rarer, less extensive yet no less important, sandstone glades. Glades are grassland habitats as part of larger woodland systems with an array of colorful and rare wildflowers and wildlife.

The Missouri State Wildlife Action Plan identifies glade and grassland birds of the Ozark Highlands as conservation targets including the greater roadrunner, yellow-breasted chat, painted bunting, prairie warbler, field sparrow and brown thrasher. Yellow breasted chat, prairie warbler and field sparrows have been documented in both natural areas. By conducting regular bird surveys, we have documented 32 species in the Solomon Hollow NA and 45 species in Ava Glades NA.

MoBCI grant funding has allowed us to start herbicide treatment for Tree of Heaven and Sericea lespedeza along with cedar removal in the natural areas. A Challenge Cost Share Agreement with AmeriCorps was funded by MoBCI and finalized in May 2021. Work is planned to begin in the fall and winter 2021. Two hundred acres of the landscape have been treated in the Ava Glades NA thus far,

including 119 acres of cedar removal in the McClurg Glade area and 81 acres of herbicide treatment in the target areas. Prescribed burning is an essential tool for maintaining healthy functioning glade habitat. The Ava Glades NA was recently added to the Missouri Natural Areas System as a 5,251 acre signature site for large-scale limestone and dolomite glade communities. Visits to the Ava Glades NA will likely entail seeing painted buntings as they are relatively common on the glades there. The Forest Service will complete prescribed burns within the two natural areas on a 3–5 year rotation for several years and then assess the fire needs as needed. We appreciate the funding received from MoBCI and partners who have helped in this endeavor to restore and maintain our outstanding glade habitat and to encourage bird use through ecosystem restoration. 🙌

Cedar Removal Area at McClurg Glade Ava Glades NA.



Photo by U.S. Forest Service



Marker's Prairie awash in pale purple coneflower in springtime.

Bird Habitat Enhancement in the Cole Camp Prairies Conservation Opportunity Area/ Audubon Important Bird Area

Jerod Huebner

Director of Prairie Management, Missouri Prairie Foundation



The Missouri Prairie Foundation has received grant funding from MoBCI to assist with prairie restoration, woody removal and exotic species treatment. In 2020-2021, funding from a MoBCI grant allowed for the following prairie management activities to enhance prairie habitat for grassland birds: treatment of the aggressive invasive sericea lespedeza on MPF's Drovers' Prairie, Goodnight Henry Prairie; and Marker's Prairie (owned by private individuals); Eastern red cedar removal and subsequent seeding to natives for on-going prairie reconstruction work at Marker's Prairie; prescribed burning at Friendly, Drovers', and Marker's prairies, and brush removal and treatment at Drovers' and Goodnight Henry prairies.

During the duration of the grant, MPF completed the following prairie management activities:

- Prescribed burning on Marker's Prairie (82 acres), Friendly Prairie (20 acres) and Drovers' (40 acres) prairies
- Sericea lespedeza treatment on Drovers' (80 acres), Marker's (162 acres), and Goodnight Henry Prairie (40 acres)

- Brush removal across 2 acres at Goodnight Henry Prairie and over 3 acres at Drovers' Prairie
- Seeded areas where tree and brush removal took place at Marker's (12.5 acres)
- Cedar removal on Marker's (12.5 acres)
- Mead's milkweed monitoring on Marker's

Great headway has been made in the Cole Camp Prairies Conservation Opportunity Area over the last couple years as a result of MoBCI and other partners. Thanks to the MoBCI grant and selections committee for their support and helping to make this work possible. Planned work for 2021 will see the removal of all the remaining cedars from Marker Prairie. MPF is also excited to begin restoration work on its new 400 acre acquisition in this COA, Lordi Marker Prairie, which spans one mile connecting MPF's Friendly and Drovers Prairies.

The Marker's prairie is private and is not open to the public. All other prairies listed above are owned by the Missouri Prairie Foundation and are open for the public to enjoy. Visit www.moprairie.org for directions and regulations. 

Youth Habitat and Education Program grant recipient consolidates Art and Habitat Creation in St. Charles



Jenny Kettler

Education and Program Director, Foundry Art Centre

This mission of the **Foundry Native Garden** is to offer a native habitat for butterflies and pollinators located a stone's throw from the Missouri River and the KATY Trail. It is located to the left of the main entrance of the Foundry Art Centre in downtown St. Charles in a 12x15 ft. patch of land. It is free and open to the public. Through this project, the Foundry Art Centre has reached many people in the community and created a home for pollinators, specifically birds, bees and butterflies.

In the summer of 2021, at Monet's Magical Monarchs camp session (June

14-18) children planted more than 16 native plant species, embellishing the garden with black-eyed Susans, milkweed, garden stones, birdhouses and more! They watched Painted Lady butterflies transform from caterpillar to full-flight before releasing them into the garden. More than 35 kids and adults from Foundry Art Camp participated. Each plant and garden stone represents the Centre's commitment to artistry and conservation in an urban landscape. This project is part of the Foundry Art Centre's larger mission to display ecological art, or eco-art. This genre of art



Partners in the YHEP grant project: Foundry Art Centre, the City of St. Charles, Home Depot, and Bill Mees of MoBCI.



Photo by Missouri Department of Conservation

aims to educate, restore, and preserve the functions and resources of Earth's ecosystems. Eco-artists address environmental concerns, natural processes, or natural phenomena in a way that informs or interprets relationships with nature. Eco-art is often directly placed in the environment, and eco-artists tend to have an intimate relationship with nature. Their work usually holds a firm stance on policies and cultures that influence the conditions of Earth's ecosystems.

Accomplishments:

- More than 250 kids, volunteers, community members, and individuals from the public have had the opportunity to enjoy the garden and learn more about the pollinator habitat.
- An unutilized area is now home to over 16 different types of plants including: hairy wild petunia, yellow coneflower, slender mountain mint, wild bergamot,

purple coneflower, fame flower/rock pink, gray-head coneflower, shrubby St. John's wort, New Jersey tea, aromatic aster, yellow wild indigo, blue wild indigo, shining blue star, American beautyberry, common milkweed, and black-eyed Susans.

- Increased education in the community of pollinator plants and butterflies in the greater St. Charles area.
- More than \$3,000 in grants and donations supported the project including the following partners: City of Saint Charles, Missouri Department of Conservation, Missouri Prairie Foundation, Missouri Bird Conservation Initiative YHEP Grant, St. Louis Composting, The Home Depot, Missouri Master Naturalist, Master Naturalist St. Charles Confluence Chapter and Missouri Wildflowers Nursery. 🦋

Foundry Arts Centre students and staff work together to plant a native pollinator garden as part of a YHEP grant.



Photo by Missouri Department of Conservation



MISSOURI BIRD CONSERVATION INITIATIVE 2021 ANNUAL CONFERENCE (Virtual)

AUGUST 27–28, 2021 • ONLINE VIA ZOOM
REGISTER ONLINE AT WWW.MOBCI.NET/CONFERENCE

CONFERENCE THEME

20/20 Vision: A serious look at declining bird populations and practical things that everyone can do to address this concern

SCHEDULE

FRIDAY, AUGUST 27

7:00 pm–7:15 pm	<p>Welcoming remarks and introduction of keynote speaker. John Burk</p>
8:00 pm–9:00 pm	<p>Keynote speaker: Mark Robbins – Collection Manager at the University of Kansas Biodiversity Institute.</p> <p>Mark will provide an overview of why birds are important, discuss the issue of disappearing birds, as well as what is being done and what more could be done to address this issue.</p>

SATURDAY, AUGUST 28

8:00 am–9:00 am	<p>Welcome and highlights of the year. (Bill Mees: Chair, MoBCI Steering Committee)</p> <ul style="list-style-type: none"> • General Assembly Meeting. • Silent Auction Begins • Partner organizations vote on Steering Committee members.
9:00 am–10:15 am	<p>3, 20-Minute presentations on recent research:</p> <p>Focus on Grassland Birds. Ethan Duke, Missouri River Bird Observatory.</p> <p>Focus on Wetland/Shorebirds. Midcontinent shorebird conservation initiative: a hemispheric collaboration to benefit shorebirds and their habitats. Doreen Mengel, Wetland Ecologist and MU Research Specialist</p> <p>Focus on Shrubland Birds. Cara Joos Ph.D. Science Coordinator, Central Hardwoods Joint Venture, American Bird Conservancy.</p>
10:15 am–10:30 am	Break

10:30 am–11:30 am	<p>3, 20-Minute presentations on bird management challenges:</p> <p>Focus on Grassland Birds. Audubon Conservation Ranching Program. Chris Wilson, National Audubon Society Director of the Audubon Conservation Ranching Initiative.</p> <p>Waterfowl in North America—a success story of conservation partnerships. Dr. Mike Brasher, Waterfowl Scientist, Ducks Unlimited</p> <p>Focus on Forest Birds: Improving carrying capacity for habitat limited birds in the Missouri Ozarks. Jane Fitzgerald, Central Hardwoods Joint Venture Coordinator, American Bird Conservancy.</p>
11:30 am–12:30 pm	<p>Lunch will be a time for folks to participate in the Silent Auction, which concludes at 1pm. An ongoing loop of photos of MoBCI projects will be broadcast.</p>
12:30pm–1:50 pm	<p>3, 20-Minute presentations on calls to action featuring “The 7 Simple Actions for Birds” where every individual can contribute at their very local level to positively impact birds.</p> <p>Johnson Community College: A Model for Protecting Birds from Glass Collisions. Krystal Anton, Zero Waste Coordinator, Center for Sustainability, Johnson Community College.</p> <p>BirdSafe Missouri: Kansas City and St. Louis Programs presented by Dana Ripper, Co-Founder and Director of Missouri River Bird Observatory and Jean Favara, Vice President of Conservation, St. Louis Audubon Society ~12:50 -1:10 and 1:10-1:30.</p> <p>Bring Conservation Home: Gardening for Birds and Other Wildlife. Dan Pearson, St. Louis Audubon Society.</p>
1:50 pm–2:15 pm	<p>The American Bird Conservancy’s Cat Program to Mitigate Predation by Cats. Cara Joos, ABC/ Central Hardwoods Joint Venture</p>
2:15 pm–3:00 pm	<p>Interactive panel discussion session where the audience discusses issues covered and provides next steps to be considered by the organization.</p>
3:00 pm–3:30 pm	<p>Wrap-up and closing comments summarize ways we can make a difference for birds</p> <p>Bill Mees – major call to action to spread these topics we’ve discussed to each MoBCI partners’ respective audiences. It’s now or never, and we ALL have to make some changes if we want to see bird declines slow down at all. RALLY THE TROOPS!</p>

MoBCI Foundation Financial Report

FY 2021 Highlights • August 22, 2021

Dave Erickson

MoBCI Foundation Treasurer

The financial activities of the Missouri Bird Conservation Initiative (MoBCI) are handled by an independent organization—the MoBCI Foundation which is an incorporated 501 (c) 3 not-forprofit foundation. The MoBCI Foundation's sole purpose is to provide financial support to MoBCI.

- MoBCI Foundation financial assets are contained at three locations. The Central Bank of Boone County hosts a checking account which serves as the organization's operating account. PayPal handles electronic fund transmittals almost entirely related to Conference registration, donation, and auction operations. Investments are held at the Vanguard Group where MoBCI has two accounts—one for the Jerry Wade Youth Habitat Education Program (YHEP) and a second for the organization's operating reserves.
- During the period, June 27, 2020 to August 22, 2021, the operations account at Central Bank of Boone County began with \$896.61, had \$4,245.20 in deposits (mostly transfers from investments to cover YHEP grants and organization operations during COVID inactivity), and \$2,454.04 in expenditures (itemized

as report details). Current Central Bank balance is \$2,687.77.

- PayPal activities were limited during the past year because the 2020 MoBCI Conference was canceled due to COVID. Recent donations provide the PayPal Account with a balance of \$96.12.
- Because of equity exposure, investment returns of the past year at Vanguard Group were very favorable in both the Jerry Wade YHEP fund and Operating Reserve fund. The Jerry Wade YHEP Fund has a current balance of \$41,951.75, and currently has \$10,304.22 in unrealized gains. In addition, three redemptions of \$500 each were made to fund three YHEP grants. The Operating Reserve fund has a current balance of \$4,191.59, and \$2,030.63 in unrealized gains. In addition, a redemption withdrawal of \$2,500 was made during the course of the year to cover operating expenses in the absence of revenue from the canceled 2020 MoBCI Conference.
- The total of all MoBCI assets is \$48,927.23, and the organization remains in good financial health. Donations and auction proceeds from the 2021 Conference will be vital to organization's future financial condition.

Jerry Wade Youth Habitat & Education Program

MoBCI offers grants to promote bird habitat conservation projects that provide an educational component for youth.

These grants may be awarded to private and public organizations, or to individuals who partner with organizations. Eligible activities include projects that protect, enhance or restore bird habitats on any lands in Missouri. All projects should be habitat based and include a specific educational component for youth.

For more information or to apply for a Youth Habitat and Education Program grant, please visit: mobci.net/yhep. 



MoBCI Foundation Financial Statement • 6/27/2020–8/22/2021

FY START TOTAL	Checking Account—Central Bank of Boone County	CURRENT ACCOUNT																																																			
\$896.61	<p>(Checking Balance June 27, 2020)</p> <p>FY 2021 Deposits</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">05/10/21</td> <td style="width: 60%;">Deposit transfer from YHEP Investment Acct. for Foundry Art Centre Grant</td> <td style="width: 25%; text-align: right;">\$500.00</td> </tr> <tr> <td>05/10/21</td> <td>Deposit transfer from Reserves Investment Acct. to Operating Acct.</td> <td style="text-align: right;">\$2,500.00</td> </tr> <tr> <td>05/10/21</td> <td>Correct \$0.20 checking balance transfer error from FY 20 to FY 21 reporting</td> <td style="text-align: right;">\$0.20</td> </tr> <tr> <td>07/22/21</td> <td>Deposit transfer from YHEP Investment Acct. for Van Buren R-I Schools YHEP Grant</td> <td style="text-align: right;">\$500.00</td> </tr> <tr> <td>08/06/21</td> <td>Deposit transfer from YHEP Investment Acct. for Carl Junction R-I Schools YHEP Grant</td> <td style="text-align: right;">\$500.00</td> </tr> <tr> <td>08/20/21</td> <td>Deposit 2 donation checks from donors</td> <td style="text-align: right;">\$245.00</td> </tr> <tr> <td></td> <td style="text-align: right;">Deposits Total</td> <td style="text-align: right;">\$4,245.20</td> </tr> </table> <p>FY 2021 Expenditures:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">09/25/20</td> <td style="width: 60%;">Douglas A. Miller—2020 Newsletter Design Ck 166</td> <td style="width: 25%; text-align: right;">-\$350.00</td> </tr> <tr> <td>03/11/21</td> <td>GoDaddy—Standard SSL Renewal ACH from Checking</td> <td style="text-align: right;">-\$79.99</td> </tr> <tr> <td>04/12/21</td> <td>GoDaddy—Economy Linux Hosting with cPanel Renewal ACH from Checking</td> <td style="text-align: right;">-\$107.88</td> </tr> <tr> <td>04/13/21</td> <td>GoDaddy—Net Domain Renewal ACH from Checking</td> <td style="text-align: right;">-\$20.17</td> </tr> <tr> <td>05/10/21</td> <td>Foundry Art Centre—YHEP grant payment to Grantee Ck 167</td> <td style="text-align: right;">-\$500.00</td> </tr> <tr> <td>05/10/21</td> <td>Conservation Federation of Missouri—Affiliate dues Ck 168</td> <td style="text-align: right;">-\$300.00</td> </tr> <tr> <td>05/19/21</td> <td>The UPS Store—1/2 annual P.O. Box rental, split with MBS—Ck 169</td> <td style="text-align: right;">-\$96.00</td> </tr> <tr> <td>06/04/21</td> <td>Van Buren R-1 Schools—YHEP grant payment to Grantee Ck 170</td> <td style="text-align: right;">-\$500.00</td> </tr> <tr> <td>07/22/21</td> <td>Carl Junction R-1 Schools—YHEP grant payment to Grantee Ck 171 (clearance pending)</td> <td style="text-align: right;">-\$500.00</td> </tr> <tr> <td></td> <td style="text-align: right;">Expenditures Total</td> <td style="text-align: right;">-\$2,454.04</td> </tr> </table> <p>(Checking Balance August 22, 2021)</p>	05/10/21	Deposit transfer from YHEP Investment Acct. for Foundry Art Centre Grant	\$500.00	05/10/21	Deposit transfer from Reserves Investment Acct. to Operating Acct.	\$2,500.00	05/10/21	Correct \$0.20 checking balance transfer error from FY 20 to FY 21 reporting	\$0.20	07/22/21	Deposit transfer from YHEP Investment Acct. for Van Buren R-I Schools YHEP Grant	\$500.00	08/06/21	Deposit transfer from YHEP Investment Acct. for Carl Junction R-I Schools YHEP Grant	\$500.00	08/20/21	Deposit 2 donation checks from donors	\$245.00		Deposits Total	\$4,245.20	09/25/20	Douglas A. Miller—2020 Newsletter Design Ck 166	-\$350.00	03/11/21	GoDaddy—Standard SSL Renewal ACH from Checking	-\$79.99	04/12/21	GoDaddy—Economy Linux Hosting with cPanel Renewal ACH from Checking	-\$107.88	04/13/21	GoDaddy—Net Domain Renewal ACH from Checking	-\$20.17	05/10/21	Foundry Art Centre—YHEP grant payment to Grantee Ck 167	-\$500.00	05/10/21	Conservation Federation of Missouri—Affiliate dues Ck 168	-\$300.00	05/19/21	The UPS Store—1/2 annual P.O. Box rental, split with MBS—Ck 169	-\$96.00	06/04/21	Van Buren R-1 Schools—YHEP grant payment to Grantee Ck 170	-\$500.00	07/22/21	Carl Junction R-1 Schools—YHEP grant payment to Grantee Ck 171 (clearance pending)	-\$500.00		Expenditures Total	-\$2,454.04	\$2,687.77
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MoBCI Member Organizations

As of August 2021, the following 76 organizations have signed a Memorandum of Agreement to participate in the Missouri Bird Conservation Initiative:

Academy of Science of St. Louis
American Bird Conservancy/
Central Hardwoods Joint Venture
Audubon Center at Riverlands
Audubon Missouri
Audubon Society:
• Chariton Valley Chapter
• Columbia Chapter
• Grand River Chapter
• Greater Kansas City Chapter,
Burroughs Audubon Society
• Greater Ozarks Chapter
• Midland Empire Chapter
• River Bluffs Chapter
• St. Louis Chapter
Avian Conservation Alliance
Bellefontaine Cemetery & Arboretum
Birding Society of Missouri
City of Des Peres Parks & Recreation Department
Clay County Dept. of Parks,
Recreation & Historic Sites
Coldwater Outing and Game Preserve
Conservation Federation of Missouri
Ducks Unlimited
Eleven Point River Conservancy
Forest Park Forever
Forrest Keeling Nursery
Great Rivers Habitat Alliance
Greenbelt Land Trust of Mid-Missouri
Kansas City Wildlands/Bridging The Gap
LaBarque Watershed Stream Team Association
L-A-D Foundation
Litzsinger Road Ecology Center
Mark Twain National Forest, USDA Forest Service
Massasauga Flats, LLC
Missouri Army National Guard
Missouri Conservation Heritage Foundation
Missouri Department of Conservation
Missouri Department of Natural Resources,
Division of State Parks

Missouri Department of Transportation
Missouri Falconers Association
Missouri Master Naturalists:
• Boone's Lick Chapter
• Hi Lonesome Chapter
• Osage Trails Chapter
• Springfield Plateau Chapter
Missouri Native Plant Society:
• Hawthorn Chapter
• Osage Plains Chapter
Missouri Native Seed Association
Missouri Park and Recreation Association
Missouri Prairie Foundation
Missouri Quail & Upland Wildlife Federation
• Grouse Chapter
Missouri River Bird Observatory
Mussel Fork Legacy Marsh LLC
National Wild Turkey Federation, MO Chapter
North American Grouse Partnership, MO Chapter
Ozark National Scenic Riverways
Ozark Regional Land Trust, Inc.
Pheasants Forever
Platte Land Trust
Quail and Upland Wildlife Federation Inc.
Quail Forever
Sierra Club, Ozark Chapter
The Nature Conservancy, Missouri Field Office
Truman State University
U.S. Fish & Wildlife Service:
• Big Muddy National Fish & Wildlife Refuge
• Ecological Services
• Great River/Clarence Cannon National
Fish & Wildlife Refuge
• Loess Bluffs National Fish & Wildlife Refuge
• Mingo National Fish & Wildlife Refuge
• Missouri Private Lands Office
• Swan Lake National Fish & Wildlife Refuge
University of Missouri-Columbia
Watershed Institute, Inc
and The Watershed Land Trust
Webster Groves Nature Study Society
Wild Birds for the 21st Century
Wild Bird Rehabilitation Inc.
Wildcat Glades Conservation & Nature Center
Wings Over Weston
World Bird Sanctuary

To find out more about the Missouri Bird Conservation Initiative and how you can participate as a member organization, visit our website: www.mobci.net 



MISSOURI BIRD CONSERVATION INITIATIVE

Missouri Bird Conservation Initiative Grant Program FY2023 Call for Proposals Proposals due September 30, 2021 Work Period July 1, 2022 – June 30, 2023

The Missouri Bird Conservation Initiative (MoBCI) serves as a conduit in providing financial support from the Missouri Department of Conservation (other partners provide funding at times) to private and public organizations, or to individuals who have partnerships that carry out bird habitat conservation projects in Missouri. **MoBCI financial support is to be specifically spent on bird-habitat improvement projects that meet the needs of native birds that use native habitats in Missouri and must address bird conservation goals/objectives.** Eligible activities include projects that protect, enhance, or restore bird habitats in priority areas (defined below) in Missouri. All projects should be habitat-based and not strictly designed for monitoring; however, monitoring can be a component of the project (<10% of the MoBCI request); some component to monitor effectiveness is recommended. MoBCI grant funds cannot assist applicants with administrative overhead costs and cannot be used to purchase equipment. While MoBCI funds cannot be used to fund staff salaries to supervise volunteers or hourly crews, they can fund the training of volunteer or hourly crews who will be conducting the work. Applicants can include their administrative overhead as match provided it is directly related to the bird habitat improvement project or monitoring of the project being proposed through this current Call for Proposals.

Strong priority in the review scoring will be given to projects that address habitats found in MO's Natural Community/Habitat Management Tiers from the Comprehensive Conservation Strategy (Appendix A) and partnerships generated through MoBCI. Priority habitats are founded on the Conservation Opportunity Areas (COAs) identified in the 2015 State Wildlife Action Plan, https://mdc.mo.gov/sites/default/files/2020-04/SWAP_0.pdf, which was revised in 2020 but is pending approval by USFWS and USFS and was not publicly available when this Call for Proposals was released. Habitat priority tiers can be found in an interactive online map at the following link:

<https://mdcgis.maps.arcgis.com/apps/webappviewer/index.html?id=6c7434bc026c469da59fe90889b37095>. Users can zoom into their location and determine whether it is within a priority tier

and click on the location and find out what tier it is in and the name of the COA or other geographies that make up the priority tiers. Higher scores will be given to projects occurring within higher priority tiers. Due to budget constraints, few projects will be funded in tiers 3 – 6. If your project is on land found in a priority tier (e.g., priority geography, natural area, other COA), please include the name of that geography within your proposal.

Projects should benefit an array of bird species (e.g., grassland, forest, wetland, or glade birds). An acceptable project may target one or more high priority bird species, but should include benefits to other bird species, involve habitat and ecosystem level planning and management, and engage partners with shared goals and objectives. Missouri's priority species are outlined in the Missouri Bird Conservation Plan's Technical Section (Appendix B; <https://mdc.mo.gov/sites/default/files/2020-04/MOBirdConservationPlanTech.pdf>, page 16). A checklist of Missouri species and communities of conservation concern can be found at https://education.mdc.mo.gov/sites/default/files/downloads/2021_SOCC.pdf, bird species are listed on page 43. The State Wildlife Action Plan also has a list of Species of Greatest Conservation Need found in Appendix A on pages 36-39 in the 2015 State Wildlife Action Plan. (https://mdc.mo.gov/sites/default/files/2020-04/SWAP_0.pdf).

Applicants need to establish partnerships to qualify for receipt of these funds. Partnerships can enable leveraging of funds as well as providing expertise of others. Partners often educate each other and result in increased conservation of wild bird populations and habitats needed to support them beyond the life of the project being funded.

Grant awards

The Missouri Department of Conservation (Grantor) will consider all selected projects during its FY23 budget process. There will be no total minimum or maximum amount of funding provided to MoBCI. Individual grant awards are available for a minimum award of \$1,000 to a maximum award of \$25,000 annually. MoBCI grants require a one-to-one match of [local, state, or federal] funds that DO NOT originate from the Missouri Department of Conservation (including Wildlife Diversity Funds, Habitat Challenge match, or any other Department sources).

The match may include acquired realty, partner financial contributions, monitoring and evaluation costs, stewardship costs, volunteer time, etc. Projects which include a significant amount of overhead as match (i.e., indirect administrative expenses) are strongly discouraged. Donated or acquired property or easements may be included as part of the project match for a maximum of 5 years if the following conditions are met:

- A copy of the appraisal is included (not included in the page length limit) to document the valuation (must be provided from a non-recipient of the property or easement);
- A table documenting each year and value that the property/easement has been used as match toward MoBCI funding, the cumulative value already used as match toward MoBCI funding, and

the current year’s requested match provided by the property/easement to document the total use of the property/easement as match and relation to its total value (see example in Table 1).

- The property/easement may not be used as match if the cumulative value of the match claimed toward MoBCI projects exceeds the value of the property/easement.
- At least 50% of the match toward MoBCI funding should be from sources other than donated or acquired property or easements.

Match Plan Partner	Proposal I	Proposal II	Proposal III	Proposal IV	Proposal V	Total \$
XYZ Easement	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$62,500
Totals	\$62,500	\$50,000	\$37,500	\$25,000	\$12,500	\$0

Table 1. An example of a spend-down table for the “XYZ Easement” valued at \$62,500 used as match over five years.

Application and Review Process

Grant applications **must** follow the format listed in the *General Requirements* section below (see Appendix C for Sample Proposal). The MoBCI Grant Subcommittee will review, score (based on the ranking criteria below), and provide funding recommendations to the MoBCI Steering Committee. The MoBCI Steering Committee will make recommendations for final approval to the Missouri Department of Conservation (MoBCI grant administrator).

Proposals will be ranked by the MoBCI Grant Subcommittee based on

- Priority and non-priority bird species addressed (15 points)
- Priority tier & habitats conserved (e.g., Tier 1 or 2; Priority Geography/Natural Area, other COA, Quail Restoration Landscape; see interactive map link above) (20 points)
- Purpose of grant (detailing goals and objectives) and project description/narrative (15 points)
- Partnerships developed (20 points)
- Capacity of the organization(s)/individual to accomplish the project (10 points)
- Budget: detailed to include costs for individual tasks by each partner and overall cost/acre (15 points)
- Bonus for first-time MoBCI proposal from an organization (5 points).

General Requirements

(Failure to follow these requirements or failure to include any of these elements will result in your proposal being disqualified.)

- Maximum length is six pages for the entire proposal, including maps, etc., and at least an 11-point font.

- Grant Title
- Purpose of Grant (Clearly define goals, objectives, or activities to be achieved with applicable time lines.)
- Project Location (include map)
- Is this the first time you have submitted a MoBCI Grant Proposal? Yes or No
- Project Description including narrative and any pertinent tabular information.
- Habitat types, birds, and other wildlife benefited.
- Project Calendar (work period is July 1, 2022 through June 30, 2023)
- Measurable Outcomes (Identify specific and measurable outcomes that will be used for tracking progress.)
- Measurable Deliverables (Describe products or services that will be provided by the grantee. Note: Mandatory deliverables will include 3-5 good quality digital photographs of people conducting project actions and 1-2 photos clearly illustrating habitat improvements. Semi-annual and annual financial and progress reports are also mandatory deliverables.)
- Budget should include a table including Grant Request Amount and columns for funds requested from MoBCI and funds provided as matching dollars (see Table 2). A detailed narrative of how the funding will be used is also necessary.

Task	MoBCI Funds Requested	Match Source & Amount	Total Costs
Cut and remove cedar trees	\$7,500	\$3,500 (paid by landowner)	\$11,000
Burn crew		\$2,500 (from partnership volunteer hours)	\$2,500
Pre- and post-monitoring of birds		\$1,500 (from Missouri University)	\$1,500
Sum of Costs	\$7,500	\$7,500	\$15,000
		Summary cost per acre: \$200/acre	

Table 2. Sample budget table for restoring glade habitat.

- Reporting and monitoring plan (Describe process for monitoring and reporting progress and identify a point-of-contact with e-mail address.)
- Lead organization, point-of-contact and their capacities (Provide names, titles, addresses, electronic addresses and phone numbers of parties who can answer questions relating to the agreement; if applicable, include a list of NGO Board members and officers.)
- List of partners involved in the project and point-of-contact for those other partners (same as above for Lead Organization).
- Fiscal Responsibility/Management (Describe fiscal management and identify grantee fiscal agent.)

A proposal that was funded under slightly different guidelines follows this Call for Proposals to assist you with preparation of your submission.

Deadlines

All grant proposals **must be received by Susan Hazelwood at hazelwoods@missouri.edu no later than 5:00 p.m. September 30, 2021. Only electronic applications in pdf format will be accepted.** Please put “**MOBCI GRANT PROPOSAL (Your organization’s name)**” in the subject line of your submission email. The MoBCI Grants Subcommittee will notify applicants of their status within three months of due date and indicate recommendation for funding made to Missouri Department of Conservation or reasons for rejection and/or suggestions for making the proposal more competitive. Grantees will be required to complete a cooperative agreement with the funding agency (i.e., Missouri Department of Conservation).

To learn more about MOBCI go to **www.mobci.net**.

For Grant Assistance Contact:

Susan Hazelwood, Grants Committee Chair
3750 Miller Dr., #1308
Columbia, MO 65201
Phone: (573) 819-9252
Email: hazelwoods@missouri.edu

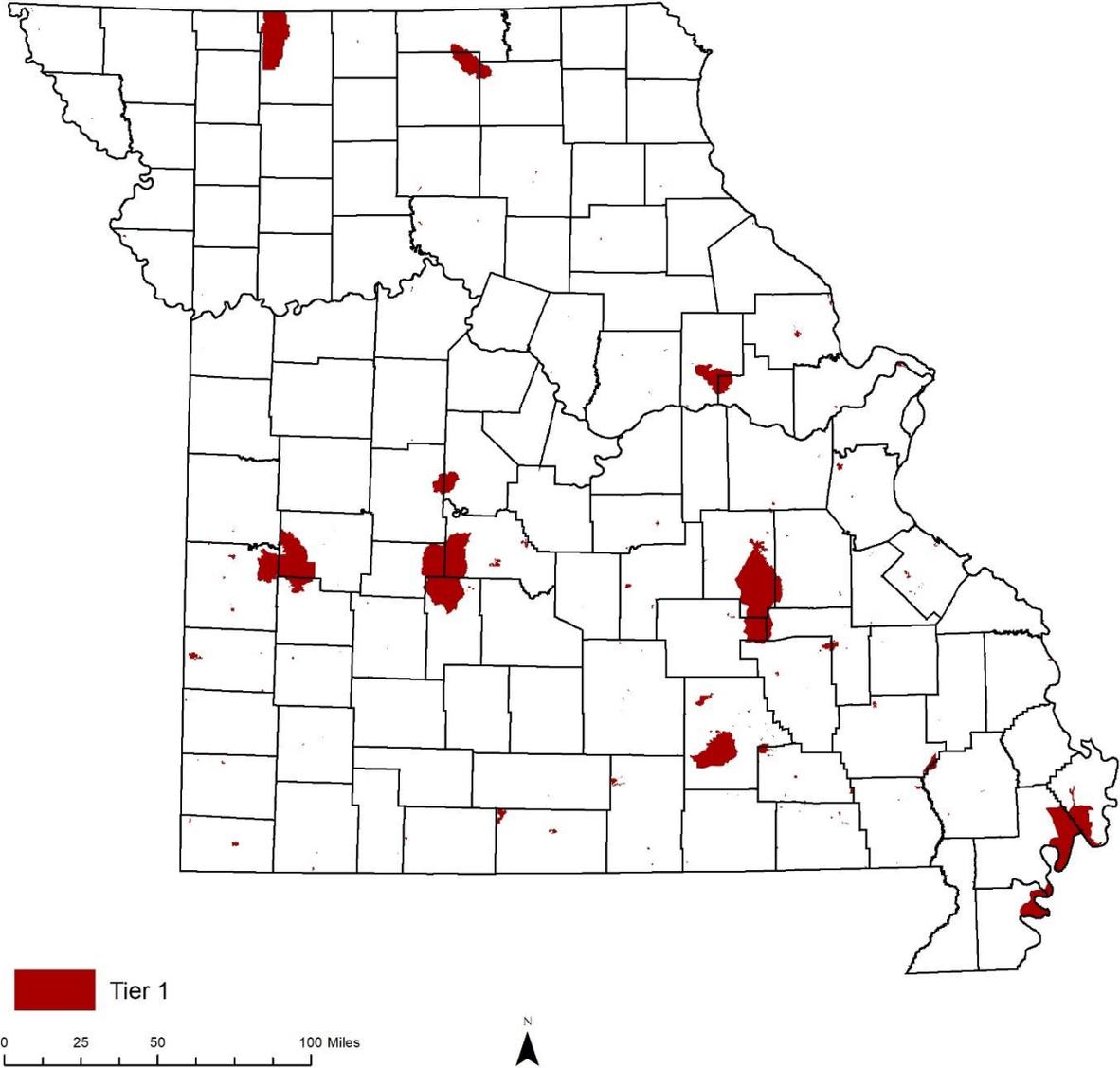
Norman Murray
Missouri Department of Conservation
P.O. Box 180
Jefferson City, Missouri 65102
Phone: (573) 522-4115 ext. 3353
E-mail: Norman.Murray@mdc.mo.gov

Appendix A: Natural Community/Habitat Management Tiers from the Comprehensive Conservation Strategy (revised 2020):

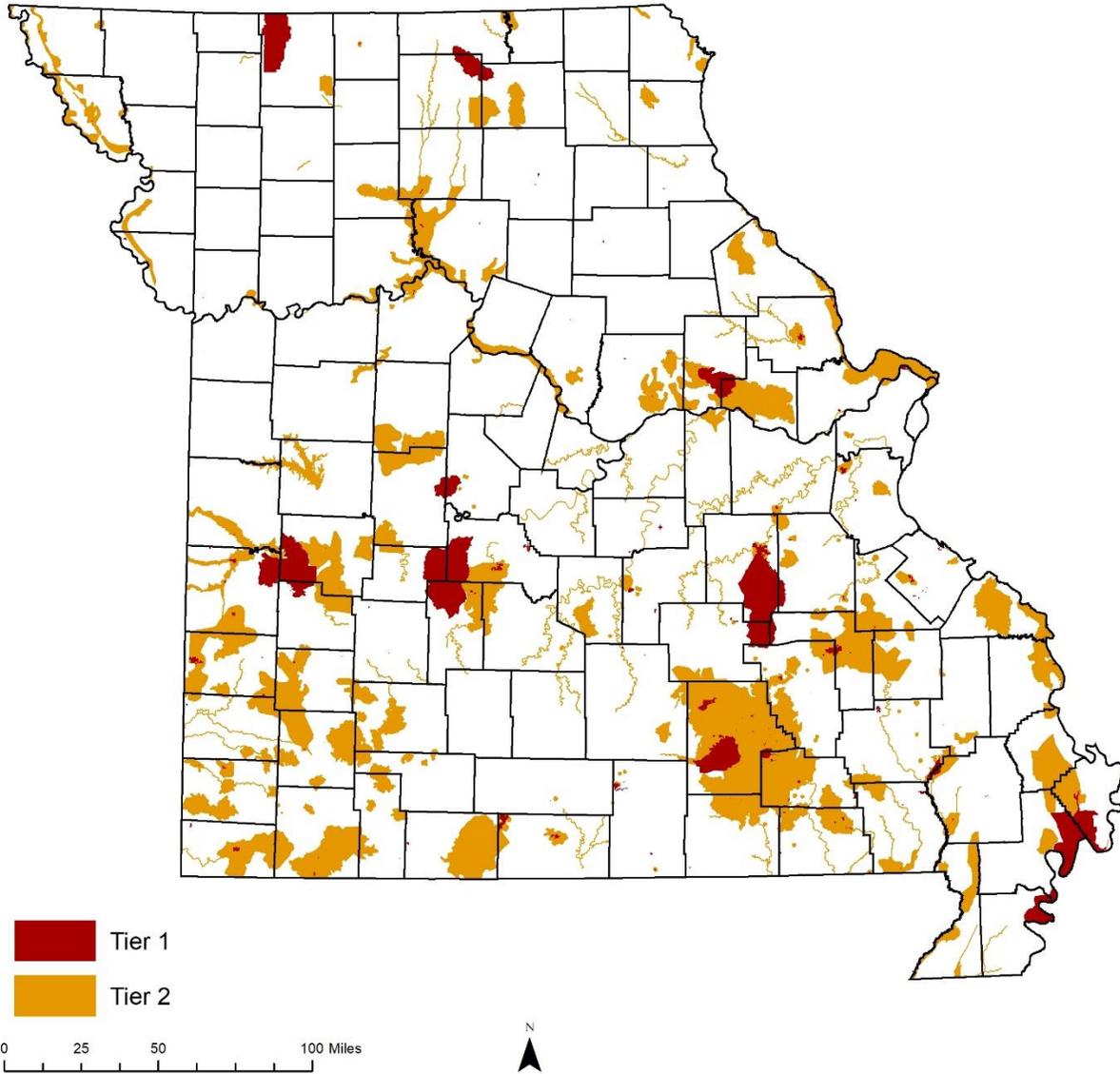
<https://mdcgis.maps.arcgis.com/apps/webappviewer/index.html?id=6c7434bc026c469da59fe90889b37095>

1. The Priority Geographies (PGs) ***and*** Natural Areas (NAs)
2. Conservation Opportunity Areas (COAs) not located within PGs or NAs
3. Priority Forest Landscapes (PFLs); Quail Restoration Landscapes (QRLs); Priority Watersheds (PWs) that overlap COA Stream Reach Watersheds for Reference; Comprehensive Conservation Wildlife Strategy (CWCS)/Aquatic GAP landscapes within PWs and COA Stream Reach Watersheds for Reference; MO and MS River Alluvium and Riparian (Bootheel); and Department lands adjacent to conservation landowner cooperatives not located within PGs, COAs, or NAs
(NOTE: Many, or a large portion of these focal landscapes are represented in PGs/COAs.)
and
Remaining Missouri communities of conservation concern with state rank = SH, S1, S2
(NOTE: Many, or a large portion of these communities of concern are represented in PGs/NAs/COAs)
and
Remaining natural communities harboring federally threatened and endangered (T&E) species, state endangered species, or select high priority species of conservation concern (typically those with state rank = S1 or S2) when the habitat management contributes to the recovery or persistence of the species
(NOTE: Many, or a large portion of these communities harboring T&E species are represented in PGs/NAs/COAs)
4. Remaining PWs and CWCS/Aquatic GAP landscapes not located in the above-listed priority landscapes
5. Maintenance of high quality natural communities
6. Areas striving toward natural community restoration/management that have high restoration potential

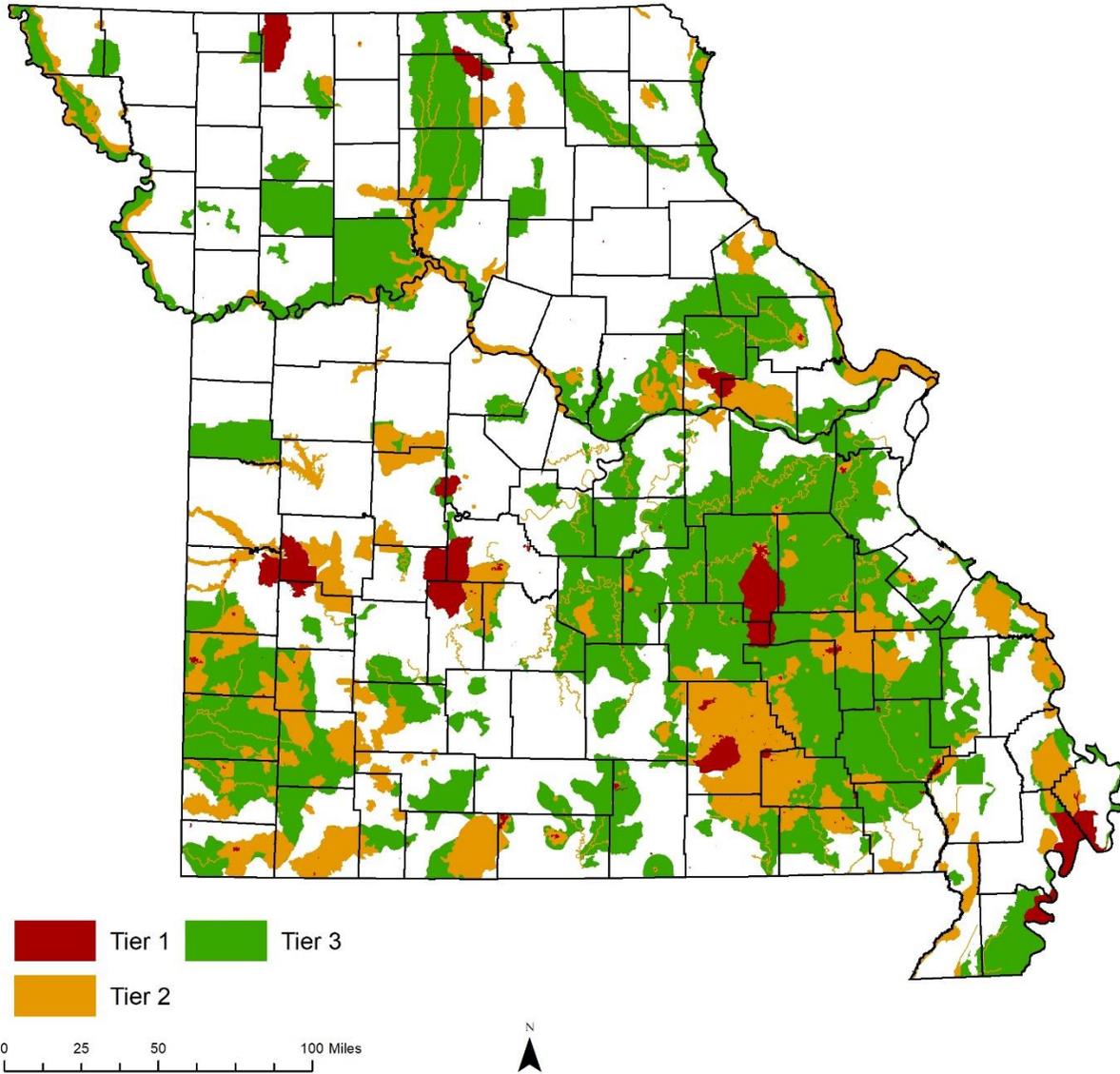
MDC Tiered Approach to Natural Community and Habitat Management



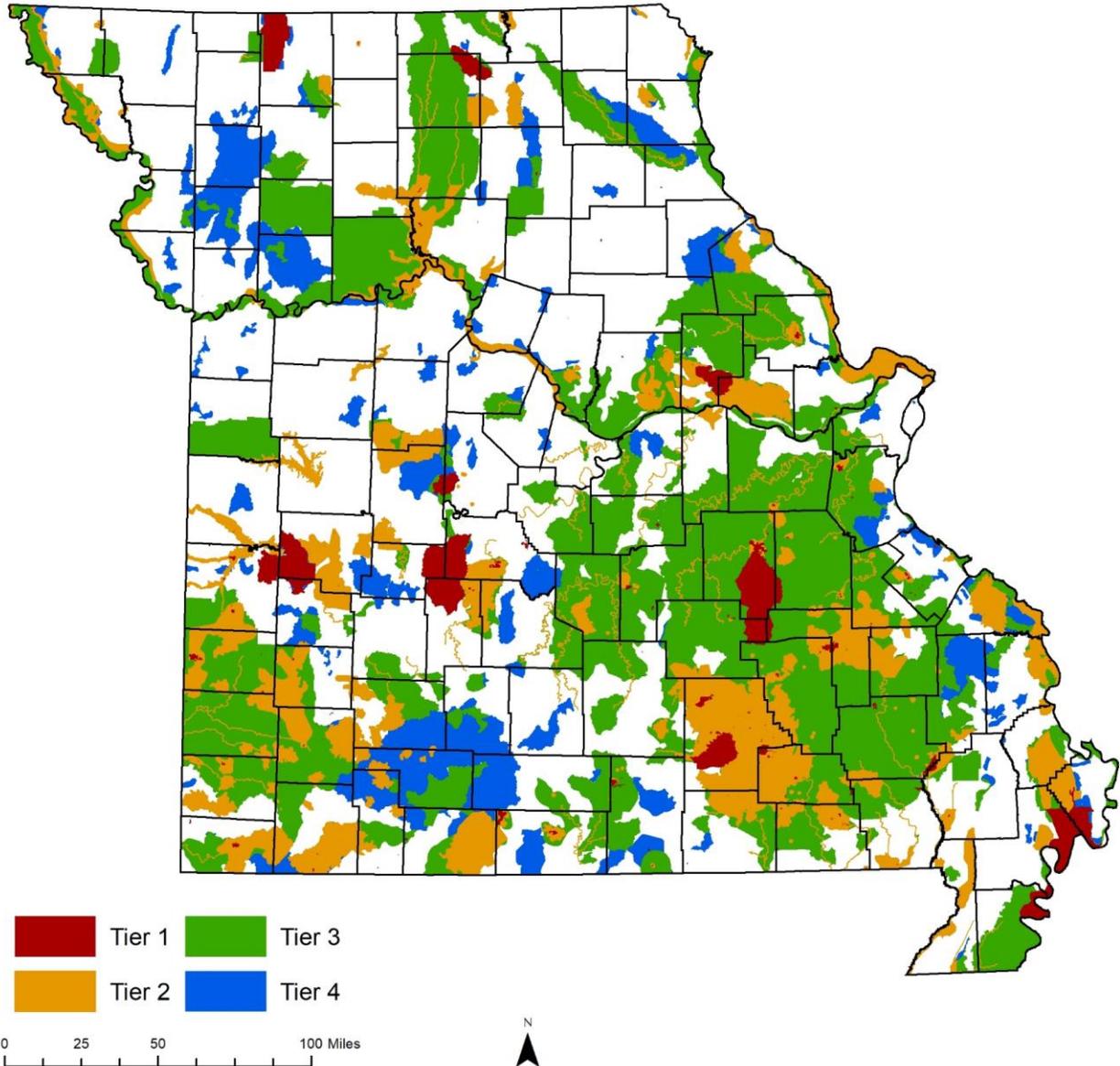
MDC Tiered Approach to Natural Community and Habitat Management



MDC Tiered Approach to Natural Community and Habitat Management



MDC Tiered Approach to Natural Community and Habitat Management



Appendix B: Missouri Bird Conservation Plan's priority bird species.

	Common Name	MO Concern Score ¹	Population Trend, MO	Threats to Breeding, MO	Relative Density - Breeding, MO	Population Size, Global	Breeding Distribution, Global
Natural Community							
GRASSLAND BIRDS							
	Eastern Kingbird	15	5	3	4	2	1
	Grasshopper Sparrow	15	5	4	3	2	1
	Henslow's Sparrow	17	2	4	5	4	2
	Bobolink	11	1	4	2	2	2
	Eastern Meadowlark	17	5	4	5	2	1
	Dickcissel	16	4	3	5	2	2
SAVANNA, WOODLAND, AND YOUNG-FOREST BIRDS							
	Northern Bobwhite	16	5	4	4	2	1
	Yellow-billed Cuckoo	16	5	3	5	2	1
	Chuck-will's-widow	16	5	3	4	2	2
	Eastern Whip-poor-will	18	5	3	5	3	2
	Chimney Swift	16	5	4	4	2	1
	Red-headed Woodpecker	17	5	3	5	3	1
	Eastern Wood-Pewee	14	3	3	5	2	1
	Bewick's Wren	17	5	5	3	2	2
	Brown Thrasher	15	4	3	5	2	1
	Eastern Towhee	15	4	3	4	2	2
	Field Sparrow	17	5	3	5	2	2
	Yellow-breasted Chat	13	3	3	4	2	1
	Orchard Oriole	13	2	3	5	2	1
	Blue-winged Warbler	15	3	3	4	3	2
	Prairie Warbler	18	5	3	5	3	2
FOREST BIRDS							
	Blue Jay	14	4	3	4	2	1
	Wood Thrush	14	3	3	4	2	2
	Worm-eating Warbler	15	2	3	5	3	2
	Prothonotary Warbler	13	3	3	2	3	2
	Kentucky Warbler	15	2	3	5	3	2
	Cerulean Warbler	18	5	4	4	3	2
WETLAND BIRDS							
	Green Heron	15	5	3	3	3	1
GENERALIST BIRDS							
	Common Grackle	16	5	4	5	1	1
SPECIAL CIRCUMSTANCE BIRDS²							
	Ruffed Grouse	-					
	Greater Prairie-Chicken	-					
	King Rail	-					
	Bachman's Sparrow	-					
	Brown-headed Nuthatch *extirpated	-					

¹ MO Concern Score = sum of other five scores: MO Population Trend, MO Threats to Breeding, MO Relative Density, Global Population Size, and Global Distribution.

² Special Circumstance Birds were not scored due to extremely low breeding populations caused by various circumstances. See SPECIAL CIRCUMSTANCE BIRDS section of the Missouri Conservation Bird Plan for more info.

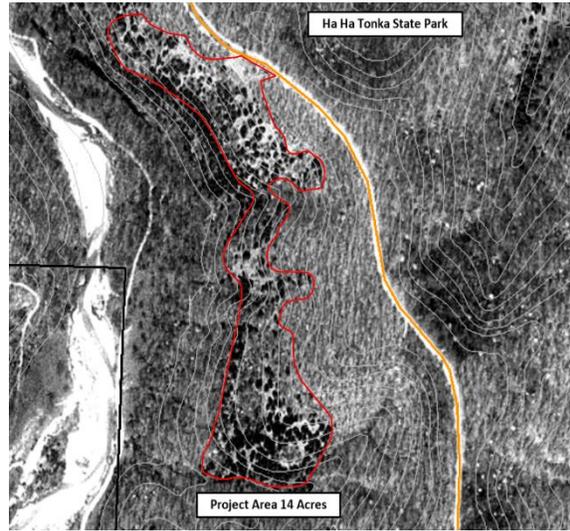
Appendix C: SAMPLE MOBCI GRANT PROPOSAL

Grant Title: Ha Ha Tonka State Park Bank Branch Glade Restoration

Purpose of Grant: Grant funding of \$8,607.20 would allow Missouri State Parks to hire a two-person crew for the purpose of restoring 14 acres of dolomite glades and their associated woodland edges through cedar removal.



2019 Leaf-off Color Aerial



90's Black and White Aerial

Project Location: Ha Ha Tonka State Park (3,751.74 acres) is located 3.7 miles via US Hwy 54 and State Rd D, from the town of Camdenton in Camden County. State Rd D bisects the park, and the facility is surrounded by privately owned property of similar land types. The facility contains two Missouri Natural Areas (NA). The Ha Ha Oak Woodland NA consists of 2,995 acres of woodlands, glades, and a large sinkhole possessing glacial relict populations. The 70-acre Ha Ha Tonka Karst NA highlights the park's significant karst resources. Missouri State Parks designated the entire park as an Ecological Stewardship Management Area. This allows for the occurrence of stewardship management activities including prescribed fire, cedar removal projects, and hardwood thinning. Currently 52.73% of the park's woodlands and glades are actively managed with fire and cedar removal projects.

Ha Ha Tonka State Park is within the boundaries of the Upper Niangua Conservation Opportunity Area (COA) and has been designated as an area for active ecosystem restoration activities in the Woodland and Glade Restoration Strategic Conservation Initiative (2008). The facility is also located in the Niangua River Watershed Important Bird Area (IBA) and is highlighted in The Nature Conservancy's (TNC) Ecoregional Assessment for its contribution to the greater conservation goals of the Niangua Basin. Ha Ha Tonka State Park is within the boundaries of the Central Hardwoods Joint Venture Project's Bird Conservation Region (BCR-24) which prioritizes conservation of woodland, grassland-shrubland, and forest interior birds such as Blue Winged Warbler, Kentucky Warbler, Orchard Oriole, Yellow-breasted Chat, Field Sparrow, and Bewick's Wren.

A contributing factor for these designations is the vital role the park's managed woodlands and glades play in the life histories of birds, plants, and other forms of wildlife. Continental Priority species such as American Woodcock, Red-headed Woodpecker, Worm-eating Warbler, and Prairie Warbler are common inhabitants in the park's managed ecosystems. Ha Ha Tonka State Park's woodlands, glades, and karst

features have been nominated in 1976 and in 2012 for National Natural Landmark status, sponsored by the National Park Service. The Missouri Bird Conservation Initiative (MoBCI) awarded three grants for cedar removal, woodland restoration, and fireline construction to Ha Ha Tonka State Park since 2010.

Project Description: This project will be completed on a 14 acre glade complex and their associated woodland edges, situated above Bank Branch. The project area is adjacent to 110 acres of diverse glades and woodlands currently under fire management within the Bank Branch Burn Unit. The project glades are not currently under fire management, and they all possess dense to scattered cedars creating a barrier to native flora growth. The entire glade restoration project will occur in the 2,995 acre Ha Ha Tonka Oak Woodland NA.

The fire-mediated woodlands and glades of the Niangua Basin have existed for thousands of years. Unlike in other regions of the Ozark Highlands, private landowners in the Niangua River watershed have managed their lands with frequent fires since settlement, thus maintaining some of the best remaining examples of this native landscape type. Based on Floristic Quality Indices, a standard guide by which species richness is calculated, Ha Ha Tonka State Park and Bennett Spring Savanna (TNC) possess the highest quality woodlands and glades in the Niangua Basin; scientific research projects frequently occur in both sites. In 1995, 1999, and 2009 researchers conducted extensive bird surveys in the Ha Ha Tonka Oak Woodland NA. The results of the survey suggest that the natural communities managed with fire host a wide array of songbirds, several of which are declining throughout their range and have been identified by Partners in Flight (PIF) as priority species for management objectives. Large populations of breeding Yellow-breasted Chats, Prairie Warblers, Northern Bobwhite Quail, and Field Sparrows were detected in 2012 on the park's glades and surrounding woodlands in the MoBCI grant project areas. This shows a marked increase in populations from the 1995 survey which was conducted after only four prescribed fire events in the area.

Park staff wish to initiate glade restoration efforts on the glades adjacent to Bank Branch to expand the acres treated in order to enhance bird habitat and encourage species richness. The removal of cedars and the following treatments of fire would allow sufficient light to the glades in turn, rejuvenating endemic flora. This correlates to thriving bird, invertebrate, and other vertebrate populations. Currently cedars dominate the land in the project areas, however there are stands of little bluestem, big bluestem, Indian grass, and scattered glade coneflowers restricted to the open pockets between the cedars with no exotics present. The suppression of native flora by the cedars has also allowed understory species such red bud to begin colonizing the cedar shaded portions of the glades. Cedar removal will involve cutting and burning the cedars on site. Prescribed fire will be applied to the area in winter 2021 as a part of the newly expanded Bank Branch Burn Unit (122 acres).

The cedar tree colonization of this glade resulted in their dense to scattered thickets unresponsive of grassland-shrubland birds. Funding would allow for the hiring of a two-person crew, for 400 hours each, to assist park staff with clearing the cedars from the glades. Cedar removal will enhance habitat for grassland-shrubland birds identified in the Partners in Flight Priority List and Central Hardwoods Joint Venture priority list (Prairie Warbler, Blue-winged Warbler, Yellow-breasted Chat, Field Sparrow, Northern Bobwhite). Cedar trees will be cut at the base, placed in windrows, and burned on site while green to mitigate soil damage that comes with burning red needle stage trees. The glades will be burned after the clearing project in winter 2021 during the regularly scheduled prescribed fire for this burn unit. A partnership between The Lake of the Ozarks Chapter of the Missouri Master Naturalists and Missouri State Parks will provide for three birding events in the area by the Missouri Master Naturalists to increase the bird occurrences in the area for the SPARKS checklist program and to track bird occurrence in the

glade complex. This partnership will represent the first collaboration between Ha Ha Tonka State Park and The Lake of the Ozarks Chapter of the Missouri Master Naturalists.

The glade restoration project will begin in winter 2020 and continue through spring 2021, or as funding is available. Grant funding will be matched by the salary and fringe of one fulltime Interpretive Resource Specialist III (IRS III) for 100 hours, who will direct and oversee the project, and one part-time stewardship crew member funded by the Stewardship budget from the Resource Management and Interpretation Program for 400 hours.

Habitat Types and Wildlife Benefited: Restoration of glades identified for this project will result in a larger, more contiguous tract of habitat for both grassland-shrubland and woodland birds, such as those listed on Partners in Flight's Yellow List (Eastern Kingbird, Prairie Warbler, Prothonotary Warbler) and Red List (Golden Winged Warbler). Along with the Partners in Flight priority bird species, breeding populations of the Central Hardwoods Joint Venture priority species including Prairie Warblers, Wild Turkey, and Yellow-breasted Chat are well represented in the surround NA, such as in the glade impacted by the 2010 MoBCI grant. Summer Tanager, Field Sparrow, Bobwhite Quail, Great Crested Flycatcher, Brown Thrasher, and Indigo Bunting are common inhabitants on the park's restored glades. Northern Bobwhite Quail, and other birds that depend on glades and adjacent woodlands are identified in Missouri's Comprehensive Wildlife Strategy as species targeted for conservation actions. Of these, Prairie Warbler and Field Sparrow are recognized as conservation priority species for the physiographic region; 5% of the global populations of these birds breed in the Ozark-Ouachitas (Fitzgerald & Pashley, 2000). The restored glades at Ha Ha Tonka State Park possess characteristics desirable to grassland-shrubland birds such as old growth structure, floristically rich ground layer, and in some areas, a developed shrub layer dominated by oak and sassafras that is managed by regularly occurring fire. Restoration potential of areas indicated in this proposal will directly impact migratory songbirds as well as species which depend on grass-forb structure for their breeding cycles. Confirmed breeding birds from other restored glades and feathered edges of the surrounding woodlands include Field Sparrow, Prairie Warbler, Kentucky Warbler, Yellow-breasted Chat, Eastern Wood Peewee, Northern Flicker, and Orchard Orioles.

Federally endangered gray bat populations at Ha Ha Tonka State Park continue to increase with active management in the surrounding ecosystems and restrictions on caving activities. Thriving populations of invertebrates, namely pollinating insects upon which these and other bat species prey, coincide with the park's managed woodlands and glades. Increasing acreage under active management will also aid in burgeoning bat populations.

The prescribed fire program at Ha Ha Tonka State Park will continue to maintain and restore existing terrestrial natural communities for the sustainability of the park's diverse ecosystems. The glades serve a vital role in the life histories of grassland-shrubland birds, woodland birds, and other endemic fauna. Glade restoration projects involving cedar removal will allow for more contiguous landscape management that will benefit wildlife. Management activities involving prescribed fire remain a stewardship priority to Missouri State Parks.

Public Benefits: Visitation at Ha Ha Tonka State Park averages 550,000 visitors annually. To provide visitors with the highest quality landscapes in which to view native plants and animals as once existed over thousands of acres in Missouri remains a priority to the Missouri State Park system. Restoring these areas will enhance wildlife viewing and research opportunities. The biodiverse character of the project area will likely result in significant invertebrate populations; a two year bee survey on a nearby glade has netted rare and unusual bees with specimens collected on the now-abundant glade flora. Furthermore,

restoration of warm season grasses to the glades directly impacts water quality and quantity in Bank Branch, a tributary of the Niangua River.

Measurable Outcomes: Progress of acres treated with cedar removal will be measured quantitatively by the restoration of herbaceous ground flora following the cedar removal.

Measurable Deliverables: The IRS III for Ha Ha Tonka State Park will serve as project leader. The project leader will provide interim and final written reports detailing the scope of work, bird data, and reports accumulated by the Missouri Master Naturalist volunteers. Photo documentation of work in progress will accompany the report and the IRS III will create a poster if warranted for the 2021 MoBCI Conference.

Grant Request Amount: This grant request is for \$8,607.20 to fund a two-person stewardship crew for 400 hours and supplies for cedar removal.

2-person crew x 400 hrs. x \$10.00/hr.	=	\$8,000.00
Part-time fringe rate 7.59% x \$8,000 wages	=	\$607.20
TOTAL Grant Request	=	\$8,607.20

Match will be provided by salary and fringe for one of Ha Ha Tonka State Park’s seasonal stewardship crew members for 400 hours and one full time IRS III for 100 hours. The Missouri Master Naturalists will provide third party in-kind match in the form of bird monitoring and reports on three occasions during the grant cycle. No funds will be transmitted from Missouri Master Naturalists to DNR.

1 person crew x 400 hrs. x \$10.00/hr.	=	\$4,000.00
Part-time fringe rate 7.59% x \$4,000 wages	=	\$303.60
1 IRS III x 100 hrs. x \$19.66/hr.	=	\$1,966.00
Full-time fringe rate 50.68% x \$1,966 wages	=	\$996.37
Supplies (bar oil, chainsaw chains, fuel)	=	\$200.00
4 Missouri Master Naturalist Volunteers x 30 hrs. x \$10/hr.	=	\$1,200.00
TOTAL Match	=	\$8,665.97

Reporting and Monitoring Plan: Vegetative monitoring transects, installed in 2020 will be sampled across the project areas and data analyzed using Floristic Quality Analysis. Plots will be sampled following each prescribed fire event on the glades. Bird surveys conducted by the Missouri Master Naturalists will occur in July 2020, August 2020, and again in early June 2021 following the cedar removal. The project contact person, Jacob Bryant (Jacob.bryant@dnr.mo.gov), will provide the reports to the MoBCI Committee to track progress in the project areas.

Budget:

Task	Performed By	Cost Estimate		Contribution		
		Supplies	Labor	MoDNR	MoBCI	Mo Mast. Nat. In Kind
Cutting cedars and burning stacked piles.	Ha Ha Tonka Staff	\$200	\$7,265.97	\$7,465.97		
	MoBCI Crew		\$8,607.20		\$8,607.20	

Monitoring bird response to restoration efforts.	Lake of the Ozarks Mo. Master Naturalists	\$0	\$1,200.00			\$1,200.00
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Lead Organization:

Missouri Department of Natural Resources
Missouri State Parks
P.O. Box 176
Jefferson City, MO 65102
Phone: 573.522.3260

Project Coordinator:

Jacob Bryant
Ha Ha Tonka State Park
1491 State Road D
Camdenton, MO 65020
573.346.2986

Grant Manager:

Rachel Senzee
P.O. Box 176
Jefferson City, MO 65102
573.522.8773

Additional Partners:

Lake of the Ozarks Chapter of the Missouri Master Naturalists, Tricia Barrett

Fiscal Responsibility/Management: Project funds will be administered by Missouri State Parks-Financial and Resource Management (FIRM) Section in association with planning implementation by Missouri State Parks' Natural Resources Management Section, Ozark Regional Office, and Ha Ha Tonka State Park.