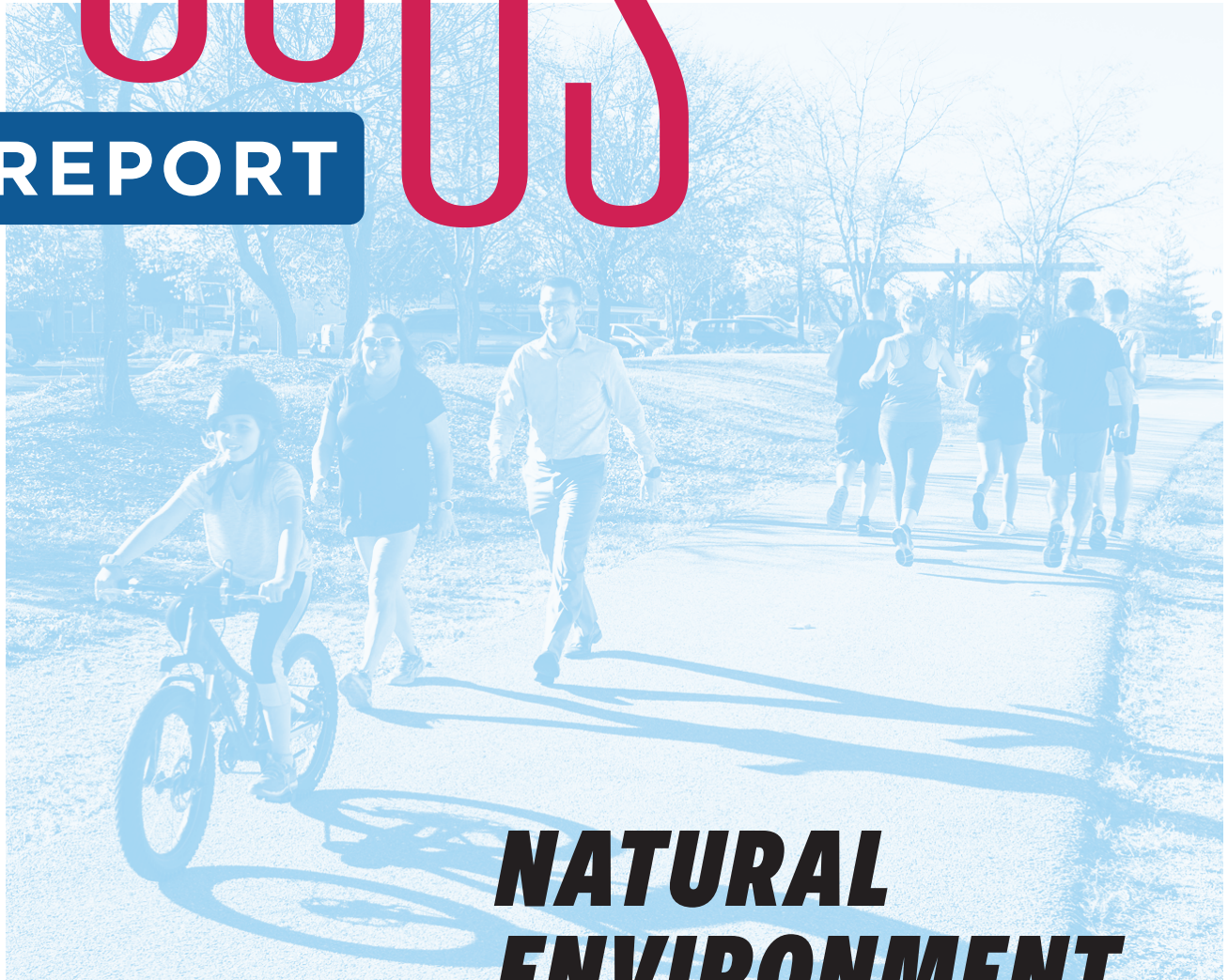


COMMUNITY FOCUS REPORT

2021 UPDATE

A series of white papers on the report's 11 primary topics will be published on a rolling basis ahead of the 2021 edition. For news, podcasts and more information, visit springfieldcommunityfocus.org.



NATURAL ENVIRONMENT

Appreciation for outdoors grows during pandemic, but so do climate-related challenges.

2021 UPDATE: **NATURAL ENVIRONMENT**

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BLUE RIBBONS Economic engine · Clean air and water · Forward-looking public institutions



RED FLAGS Extreme weather events · Invasive species and diseases · Concerns about water sources

Rich natural assets support economy, deserve protection

A healthy, picturesque natural environment of the region that includes and surrounds Springfield continues to be one of the community's greatest assets and attractions. Whether in direct economic and health benefits or an enhanced quality of life, Springfield benefits greatly from the natural environment.

Few areas in the country can boast lakes, rivers and streams suitable for fishing and swimming, as well as native prairies, mountains, woodlands and wetlands—all close by and easily accessible, as many of these areas are in the public domain and have low or no entrance fees. In 2019–20, local organizations and individuals continued their commitment to preserving and protecting these assets against the continuing erosion of legal and regulatory protection promulgated by the state legislature. The COVID-19 pandemic created a renewed appreciation for the solitude, peace and relative safety that safely distanced outdoor activities provide.

BLUE RIBBONS

In addition to making the aesthetics of wilderness and the personal

enjoyment of outdoor activities broadly accessible, Springfield's healthy natural environment represents an **economic engine** for our community. Hunting in Missouri represents a \$1.6 billion industry, with white-tailed deer hunting comprising \$1 billion alone, according to the Conservation Federation of Missouri.

In addition, fishing activities included 1.4 million anglers spending \$742.2 million in Missouri, which resulted in a \$1.3 billion economic output with 9,840 jobs supported, according to the U.S. Fish & Wildlife Service.

Greene County and nearby counties annually excel as successful hunting and fishing destinations. It is also important to note that abundant fish and game depend on high-quality habitat—clean water, accessible food, and safe shelter. Passive outdoor pursuits—birding, hiking, biking, walking, cave exploration, swimming/boating, off-road activities—also are best enjoyed in high-quality outdoor areas, such as the areas offered in and around Springfield.

Springfield is the home and world headquarters of one of the outdoors' largest retail chains—Bass Pro Shops/Cabela's—and features the chain's

Kayaking and other paddling activities enjoyed a surge in popularity as interest in safe outdoor recreation boomed during the pandemic in the Ozarks and elsewhere.

PHOTO COURTESY
OF WATERSHED
COMMITTEE
OF THE OZARKS



COVID-19 IMPACT



Efforts of a number of local grassroots organizations integral to the preservation and enjoyment of the area's natural environment were hard hit by the COVID-19 pandemic.

The Watershed Committee of the Ozarks, Ozark Greenways Inc., James River Basin Partnership, the Greater Ozarks Audubon Society, Ozarks Paddlers, and others have traditionally incorporated educational activities, hands-on learning, service projects, advocacy and activism in their work, frequently in concert with or funded with local government support.

As with most nonprofits, the environmental community faced serious challenges from the pandemic: Fund-raising events were canceled; face-to-face meetings, which foster member involvement and fellowship, were not held; and many educational and promotional efforts were canceled.

The first year of the pandemic was perhaps less devastating for environmental/conservation groups due to the fact that some face-to-face events and activities could go on in the outdoor settings, carefully following public-health guidelines, but the pandemic still had a significant negative financial impact on the largely volunteer-based organizations.

On the upside, the pandemic refocused people on the benefits of nature's healing elements. Outdoor visits and participation in outdoor activities reflected our need for nature. The Missouri Department of Conservation reported a slight increase in the sale of hunting and fishing permits in 2020. While MDC doesn't have parking-lot counters or trail counters at any of its nearby public-use areas (such as Busiek State Forest and Wildlife Area, Little Sac Woods Conservation Area, or Bois D'Arc Conservation Area), staff who manage those areas agree that public visitation was up significantly in 2020 and attributed this increase was in response to the pandemic.

Forward SGF planners report that COVID-19 is providing opportunities for communities and agencies to invest in outdoor classrooms, outdoor dining and other concepts that bring people closer to nature—not just recreationally, but for education and business. There will be opportunities to expand our current stock of outdoor settings over the next few years.

Civic interest appears to be strong for beautifying the city, growing our greenway and trail networks, increasing care and maintenance of city infrastructure and capitalizing on our access to outdoor recreation, open space and water resources.

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flagship store, visited by millions of outdoor enthusiasts each year, representing a major contribution to the Springfield economy.

Clean air and water remain a Blue Ribbon for the area. Springfield continues to enjoy abundant, inexpensive, clean water for drinking and recreating, and the community's air quality remains among the cleanest in the country. Since the 2019 Community Focus Report, City Utilities of Springfield has continued to increase its renewable energy portfolio, which currently stands at 40% of its generation capacity. Rebate programs, now in place for over 12 years, have saved enough electricity for 20,113 homes, enough gas for 17,771 homes and enough water for 14,339 homes annually.

Springfield continues to meet or exceed federal standards for Ground-Level Ozone and Particulate Matter less than 2.5 microns. In 2020, the Ozarks

Clean Air Alliance revised its Clean Air Action Plan, first published in 2009. Since its inception, the OCAA has administered \$3.3 million in grant funding to reduce air pollution from vehicles in southwest Missouri. This funding has supported projects for public and private fleets, resulting in the reductions of harmful emissions and diesel-fuel use.

Local organizations, working with local, state and federal government agencies, continue to seek ways to protect and improve our local water resources.

One such example is the ecological restoration project on South Creek. In 2019, the Environmental Protection Agency produced a report, "Nonpoint Source Success Story," outlining the achievements of water-quality improvement projects and practices along South Creek, site of a popular public greenway. Biological studies between 1989 and 2009 showed low aquatic life diversity

and absence of pollution-sensitive species in this section of South Creek. Ecological efforts by the City of Springfield and James River Basin Partnership focused on improving riparian zone protection and streambank and instream habitat conditions in a one-mile section of the creek. As a result, recent monitoring shows greatly improved aquatic habitats and increased macroinvertebrate populations, including sensitive species. The project shows that ecological restoration efforts along urban streams can be successful.

Another shining example is the recent draft of James River Basin Partnership's "James River Watershed Management Plan," submitted to the EPA in 2020 for approval. This is the first watershed plan for the entire James River Basin, from the river's headwaters in Webster County to its mouth at Table Rock Lake. The plan not only provides a map for water-quality

SUCCESS STORY



Through 2019, a wide variety of environmental education resources continued to be available to students throughout Springfield/Greene County.

Students in public, private and home schools benefited from the efforts of informal education partners providing hands-on, inquiry-based learning experiences to students and teachers at places such as the Watershed Center at Valley Water Mill Park, the Springfield Conservation Nature Center, the Springfield Botanical Gardens, the city's landfill, wastewater treatment plants and similar facilities. Environmental/conservation education was offered to all ages, preschool through adult. Trained volunteers and career professionals offered field trips, in-classroom programs, facility tours and a wealth of resources for both formal and informal instruction.

In 2020, the COVID-19 pandemic led to the elimination or severe restriction of in-person educational interactions. Educators, informal and formal, used technology to provide high-quality education-enrichment experiences such as virtual field trips and presentations. A limited offering of in-person experiences following recommended protocols

took place outdoors.

Springfield Public Schools supports three innovative programs fostering a greater appreciation for environmental stewardship and sustainability:

- **WOLF** is a learning opportunity for 46 fifth-grade students with a special interest in nature and the outdoors. The program offers an inquiry-based learning experience that allows students to explore a comprehensive curriculum through the context of environmental sciences and conservation. WOLF is a partnership with the Wonders of Wildlife Museum and Bass Pro Shops, with classrooms in the John A. & Genny Morris Conservation Education Center. Students spend a substantial amount of time out of the classroom exploring the great outdoors through field experiences.
- The planned AgAcademy, made possible by the Darr Family Foundation, will greatly expand agriculture education and opportunities for Missouri State University and Springfield students. The \$6.5 million gift will fund the construction of two buildings at the William H. Darr College of Agriculture—a classroom building to house a new

SPS magnet school and choice program for approximately 150 students in grades four through six and a companion building to house an animal education facility. The Darr Family Foundation's investment in Springfield students represents the largest known gift in Springfield Public Schools' history, allowing SPS to continue to expand choice programming for students. The addition of an agriculture magnet school is an important part of a broader effort to enhance workforce development by ensuring students are better prepared for a variety of college and career opportunities.

- The Environmental and Natural Resource Management Pathway Program at Hillcrest High School teaches students how to properly manage land, water, soil, plants and animals. These classes focus on how management affects the quality of life for both present and future generations. Students take a sequence of courses: Environmental Science, Watershed Science and Restoration Ecology. The Watershed Center of the Ozarks has partnered with SPS in writing the curriculum and implementing projects within that curriculum.

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protection and improvement, but it also details what kind of practices will be needed in both urban and rural settings to accomplish water protection goals. Once approved by the EPA, the plan will allow organizations to qualify for certain federal funds to complete watershed improvement projects and restoration activities. A milestone for the James River Basin Partnership, it will help the future quality of the James River and its tributaries.

Another new conservation program includes a workforce development component. The Watershed Conservation Corps, which started taking shape three years ago, is a program of the Watershed Committee of the Ozarks offering entry-level jobs to young adults looking for work within the field of conservation to improve our natural resources. Despite the 120 active and accredited private conservation corps programs within the U.S., there were no corps programs within a four-state area of Missouri, Arkansas, Kansas and Oklahoma in 2017.

The local corps can credit its early success to the interest and investment of Bass Pro Shops. A leader for conservation on the local, state and national level, Bass Pro offered the first year-round opportunity for the program to work on native prairie reconstruction at its national headquarters in northeast Springfield. More partnerships were formed with the National Park Service, the U.S. Forest Service and the Missouri Department of Conservation.

The corps continues to grow with projects to restore and preserve glade, prairie and forest habitats by removing invasive flora, and to construct and maintain sustainable multiuse trails to mitigate erosion in order to better protect our region's watersheds. Public and private project sites throughout southern Missouri and northern Arkansas include Mark Twain National Forest, George Washington Carver National Monument, Wilson's Creek National Battlefield, Pea Ridge National Military Park, Ozark National Scenic Riverways and Bass Pro Shops Base Camp. Corps crew members and leaders are now eligible to receive AmeriCorps Education Awards and,

LEGISLATIVE IMPACT

Recently, state legislators have put forward, and in some cases passed, legislation removing the ability of city and county governments to pass and enforce laws to curb environmental threats. Volunteer organizations have been working for decades with local governments to develop reasonable, cost-effective local solutions to water-quality problems. Such changes could impede local experts from responding quickly and effectively.

As environmental issues and the federal, state and local agencies and organizations that deal with them continue to be politicized, the potential exists for strong, consistent environmental safeguards and knowledgeable, experienced staff

leadership to be compromised.

At the state level, environmental regulations are being removed and state agencies are being stripped of the necessary funding to provide regulatory and protective services. State commissions that provide guidance in the areas of air and water quality are also seating representatives from the commercial interests that they oversee.

Legislation that rolls back fees, protections and authority of the protective agencies has become common, threatening the effectiveness of these agencies. In some instances, this attitude has trickled down to local government policies and positions, with elected officials not willing to risk disagreement with state legislators.



PHOTO COURTESY OF WATERSHED CONSERVATION CORPS

The Watershed Conservation Corps provides an opportunity for young adults seeking to work in the field of conservation to gain hands-on experience and earn money towards college.

depending upon individual hours served, may be awarded between \$350 and \$6,195 to pay for future educational expenses or to repay qualified student debt.

Another recent project of the Watershed Committee of the Ozarks is reshaping the use of a major water supply lake in northern Greene County. Fellows Lake is the crown jewel of our community's water supply. Years ago, human impacts severely affected the lake's water quality, a situation that led to the formation of the Watershed Committee of the Ozarks in 1984. Now, Fellows Lake is beginning a new chapter.

As the lease for the aging marina at the lake ended, CU decided that the time was right for a new facility and mission for the lake. The goal is for revenue

related to the operation of the marina to balance expenses and allow WCO the opportunity to connect with people using the lake. In 2019, the main 10-acre area at Fellows Lake was named Miller Park for retired CU General Manager Scott Miller. The newly dedicated park opened emerging opportunities, including a major soft-surface trail system called Dirt 66, interest in improved playground facilities from the local Kiwanis Club, and improved facilities to provide more use and enjoyment for the community. With the help of a specialized professional firm, the "Miller Park Recreation Master Plan" was created with input from CU and stakeholders. In 2020, City Utilities chose WCO to be its community partner to operate the marina,

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protect the resource and provide educational and recreational experiences to the community.

Springfield's natural environment also benefits from a number of **forward-looking public institutions** that integrate planning efforts that have embraced sustainable practices and policies and serve as leaders and models of these practices.

Innovative integrated planning was first reported in the 2015 Community Focus Report when Springfield—through the City of Springfield, Greene County and CU—was one of the first U.S. communities to use an integrated approach to environmental protection and stewardship. This approach addresses air quality, water quality, stormwater, wastewater, drinking water and solid waste; the need to replace aging infrastructure; and the need to install currently nonexistent infrastructure at an estimated total cost of \$1.6 billion.

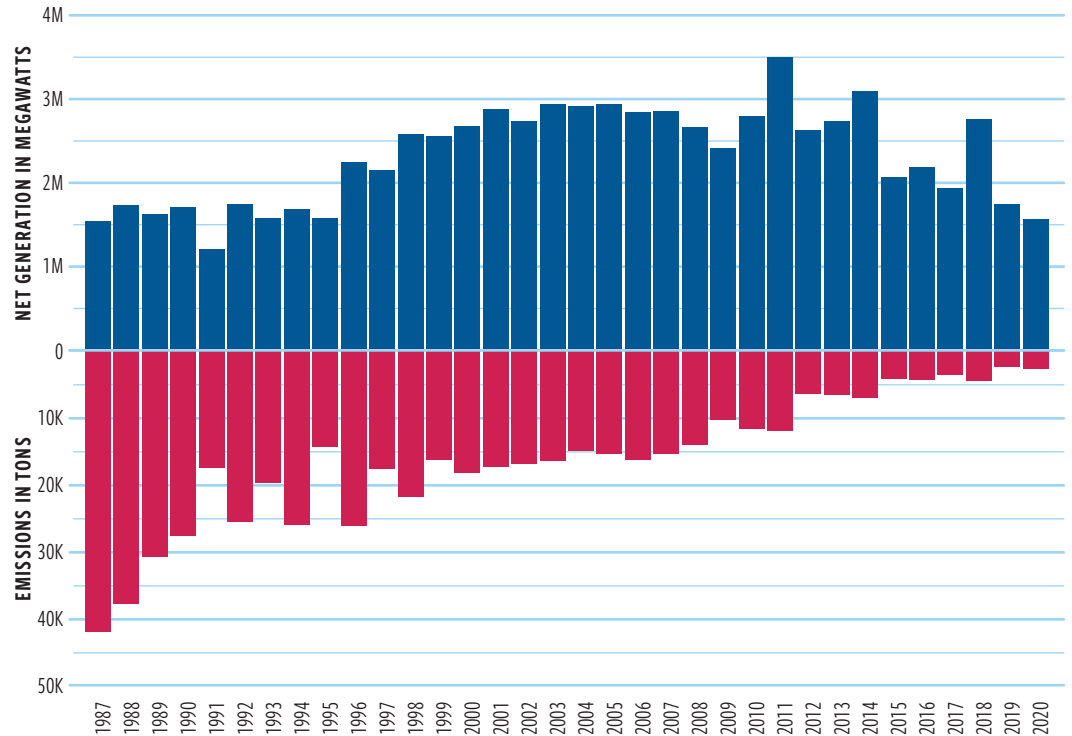
Missouri State University has been working to improve sustainability performance on campus and in the region. MSU has achieved silver level certification from the Association for the Advancement of Sustainability in Higher Education. The university is preparing future sustainability professionals through academic programs like the Sustainability minor, graduate certificates and a new Sustainability major expected in 2022.

In 2020, the university introduced a pollution-prevention technical-assistance program through a grant from the EPA. This program helps Missouri manufacturing companies minimize their environmental impacts by helping them identify and implement opportunities to reduce waste and conserve energy.

The Ozarks Headwaters Recycling and Waste Management District O was formed by state law in the mid-1990s to create 20 waste districts that operate to fund and encourage practices to divert solid waste from Missouri's landfills through recycling, reuse and overall lower generation of trash. During the reporting period (2019–20) the local waste district, which includes Greene, Christian, Dallas, Polk and Webster counties, awarded grants totaling more

KEY METRICS

Generation & Emissions from City Utilities' Coal-fired Plants, 1987–2020



SOURCE: CITY UTILITIES OF SPRINGFIELD

than \$720,000.

Citizens in Springfield and Greene County continued to support several infrastructure projects by renewing the 1/4-cent sales tax for capital improvement projects and the 1/8-cent transportation sales tax in 2019; approving a \$168 million school bond issue in 2019; and adopting sewer-rate increases in 2016 that support wastewater, stormwater and overall water quality protection efforts into 2025.

Springfield is currently in the process of creating a long-range plan, Forward SGF, and is incorporating the benefits of the community's healthy and accessible natural environment for citizens and visitors, as well as businesses seeking to relocate, expand or attract talent to their organizations.

RED FLAGS

As we experience the effects of a changing climate, **periodic weather extremes**, in comparison to our historically moderate weather, have become

the norm. Planning efforts, including significant capital requirements and adjustments in emergency response preparedness, are required as a result of events such as the extreme winter weather that gripped the region in February 2021.

Governments at all levels are dealing with "resiliency"—the ability to respond and recover from such events. Locally, Springfield is subject to tornadoes, flash flooding, high wind and ice storm events, as well as local first responders preparing to assist if a significant earthquake occurs on or near eastern Missouri's New Madrid Fault.

At the same time, it is the responsibility of these same agencies and governments to not only deal with the consequences of a changing climate, but to take steps to mitigate the causes through sustainable practices, policies and citizen education.

A growing list of **invasive species and diseases** continue to be both an immediate and long-term threat to local

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wildlife and plant species. Chronic wasting disease is a threat to the white-tailed deer population, and a number of invasive plant species are crowding out native plants, sending ripple effects through the populations of native birds, insects and other wildlife and plants that depend on the native species.

Zebra mussels are clogging our waterways. Emerald ash borers are attacking ash trees. Feral hogs have become not only a nuisance and threat to the health and economy of rural areas in the state, but also a divisive political issue. Hydrilla clogs ponds and other water bodies. While it may not be readily apparent that the loss of one particular species is a cause for concern, detailed research has proven that each species has a place in the overall health of an ecosystem and when one species is removed, it affects the entire ecosystem.

Though water quality remains a Blue Ribbon, **concerns about water sources** have remained a consistent Red Flag. Concerns regarding long-term water supplies were first articulated in the 2009 Community Focus Report. Short-term drought conditions have since presented themselves and been relieved by welcomed rain; however, the long-term concerns still remain and with them questions as to the appropriate role for Springfield.

While Springfield remains well positioned to deal with future drinking water requirements for our citizens, this is not the case throughout the region. Efforts to address the future water supplies continue on a regional basis through the work of the Southwest Missouri Water

group, a long-term undertaking initiated in 2003 that includes the U.S. Army Corps of Engineers and Missouri Department of Natural Resources. Springfield has been a strong support and participant in that effort.

Based on a three-phase study, the Corps published and posted a reallocation of water-storage report in July 2020 that evaluated current and future supply availability through 2060 and showed a gap between supply and demand regionally, should an extended drought occur. A final report is expected to be submitted to headquarters and the Pentagon this year.

Monitoring of Pearson Creek, a James River tributary just east of Springfield, has consistently shown challenges with bacterial contamination. Sampling since 2006 has shown excessive levels of *E. coli* bacteria at the two sites monitored, at Division Street and Old Sunshine. Pearson Creek enters the James River just above the Blackman Public Drinking Water Intake, where water is pumped from the river to the Blackman Water Treatment Plant.

CU water personnel have expressed concerns about the quality of water in Pearson Creek and the James River, especially relating to the microbial pathogen cryptosporidium, the hard cysts of which are difficult to treat with standard water treatment processes. These cysts have been detected in the river when flows are high, resulting in a CU policy not to use river water when it is high and cloudy. More studies are underway to try to isolate the sources of these organisms in Pearson Creek.

Nonregulatory organizations such as James River Basin Partnership and WCO depend on an informed and engaged public to provide water-quality protection. River users are typically some of the most engaged and active constituents for watershed-protection projects and activities, routinely involved in cleanups and education and outreach events. But public access to rivers in the James River Basin is problematic. There are several Missouri Department of Conservation access points on the James River at and below Springfield, but none above the city, although there are many good floating miles upstream.

Similarly, there are very few public accesses on the Finley River, another fine floating and fishing stream in nearby Christian County. At least two to three more accesses on the James and Finley Rivers are needed, along with ownership and management entities with strong programs to reduce crime and littering and provide ecological restoration at developed accesses.

The Natural Environment 2021 Update was produced by Barbara Lucks of the Ozarks Headwaters Recycling & Materials Management District Advisory Council, with input from: Angie Snyder, Doug Neidigh, Daniel Hedrick, Joel Alexander, Roddy Rodgers, Cara Shaefer, Errin Kemper, Laurie Davis, Mary Kromrey, Mike Kromrey, Caleb Sanders, Stacey Armstrong Smith, Francis Skalicky, Ronda Burnett, Cynthia Davies, Loring Bullard, Tim Smith, Brent Stock, Mike Clem, Marty Lueck, Anne Wallenmeyer and Natasha Longpine.