

# NATURE

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Adam McLane © Kristy Stoyer/TNC

## Harnessing the Power of Nature

Nature-based solutions can be defined as the sustainable management and use of nature for tackling challenges such as climate change, water and food security, biodiversity protection, human health, and disaster risk management.

What that means is that nature offers us a powerful set of tools for addressing many of the environmental threats that face our communities. In Missouri, we are investing in nature-based solutions to show how we can work with nature, instead of against it—and when we do, everyone wins.

This update highlights some nature-based solutions that are taking place across Missouri—from our cities to our rural communities, and points in between.

Thank you for your support!

A handwritten signature in black ink, appearing to read 'Adam McLane'.

Adam McLane  
Missouri State Director



TNC staff and volunteers plant trees at Jubilee Community Church © Kristy Stoyer/TNC

## St. Louis EcoUrban Assessment Tool

In 2018, The Nature Conservancy in Missouri launched its first Cities Program with a goal to reduce local stormwater and flooding challenges, improve water and air quality, and enhance habitat for both people and nature through equity-centered green infrastructure and nature-based solutions in the St. Louis region.

“In order to be successful, our conservation work must be intersectional,” says Rebecca Weaver, TNC’s cities program manager in Missouri. Informed by the findings from the Environmental Racism in St. Louis report, TNC collaborated with local partners to create the St. Louis EcoUrban Assessment Tool that aims to visualize the intersections between several social, economic, ecological and public health challenges in the region and identify which communities are most impacted by those challenges, in order to prioritize efforts.

The interactive tool includes GIS data on air quality, asthma rates, flooding and stormwater issues, food access, tree canopy coverage and other environmental and socioeconomic factors.

“The tool aims to move beyond challenge-mapping and includes community asset mapping to point to where there are organizations, initiatives and projects already under way to address these issues, or where partnerships can be built,” Weaver says.

During the tool’s development, the group had a core set of questions to help guide them, some of which include: Where are frontline communities (low-income communities and communities of color) facing the highest risks of flooding? Where are frontline communities facing the heaviest burdens of air pollution? And where will nature-based solutions and community partnerships be most impactful at addressing these issues?

“This tool not only lends itself to TNC’s decision making, but could be used by partners and other community stakeholders to inform their own work,” says Weaver.

You can learn more and access the tool at [nature.org/EcoUrbanToolSTL](https://nature.org/EcoUrbanToolSTL)



Low-water crossing that restricts fish passage © Barbara Charry/TNC



Upgraded crossing that mimics natural stream processes and doesn't restrict flow © U.S. Fish and Wildlife Service

## Crossings That Benefit People and Nature

If you've driven through the Ozarks, you've most likely encountered a low-water crossing. This is where the road dips across a creek bed, allowing vehicles to cross the stream. While there are many different types of low-water crossings, most are not good for nature or for people.

"Poorly designed low-water crossings can be a big threat to our aquatic species," says Drew Holt, The Nature Conservancy's Western Ozark Waters coordinator in Missouri. "They act as literal roadblocks for fish and other organisms, preventing them from traveling up or downstream

**"Poorly designed low-water crossings can be a big threat to our aquatic species."**

*Drew Holt, Western Ozark Waters coordinator*

to access the food, cool water and spawning sites they require."

But these crossings also pose

a potential threat to people. "During heavy rain events and flash floods, low-water crossings become impassable or unsafe to travel on, and communities can become separated from the emergency services they require," says Holt.

According to Missouri's State Emergency Management Agency, from 2015 through 2019, 40 of Missouri's 50 flooding deaths—80 percent—were people who had been in vehicles. Less than a foot of moving water is enough to push a vehicle, and two feet of water can cause a car to float.

The Nature Conservancy in Missouri has been working with partners, including the Missouri Department of Conservation, U.S. Fish and Wildlife Service and local county governments to identify and prioritize low-water crossings to replace or modify based on their social, environmental and economic benefits.

Some of the characteristics they are looking to replace are crossings that restrict natural stream flow, particularly during floods; shallow crossings that have water depths too low for many organisms to move through them and that lack streambed material; and perched, or raised crossings that are above the level of the streambed.

Crossings should be large enough to allow fish, wildlife, flood waters and debris to pass through, and they should be open bottomed or sunk in the streambed to allow sediment to move along the streambed and water depths that are similar to the surrounding stream.

Using nature-based solutions to upgrade low-water crossings that are fish-friendly and mimic natural stream processes not only improves the health of the stream and enhances river-related recreation but also improves safety and mobility for our communities.