

RESTORATION

Improving Pollinator Habitat on McConnell Air Force Base



McConnell Air Force Base (AFB) in Wichita, KS, is located along a key pollinator migration corridor. The historical military landscaping culture of using mowed turf grass and non-native plants neglects pollinators and does little to slow stormwater runoff and reduce costly impacts of erosion. In 2016, the U.S. Fish and Wildlife Service (USFWS) partnered with McConnell AFB to integrate native plants onto the base to both support pollinators and reduce maintenance costs resulting from stormwater damage. To achieve project success, partners needed to build understanding within the AFB and greater Wichita community that pollinator conservation was important and that changes to base landscaping would not increase grounds maintenance costs.



KEY ISSUES ADDRESSED

Non-native plant species traditionally used on McConnell AFB provided limited food and habitat for native pollinators. Moreover, even though the AFB is located along a key monarch butterfly (*Danaus plexippus*) migratory pathway, building a pollinator-friendly landscape had previously not been a priority. Additionally, high-velocity stormwater resulting from traditional landscaping can erode stream banks and base infrastructure, damage the local ecosystem, and increase grounds maintenance costs. To achieve success and promote a shift in landscaping practices, project partners worked with AFB personnel to understand the importance of native plants for both pollinators and stormwater management.

PROJECT GOALS

- Incorporate native Kansas plant species and ecosystem features to support pollinators, manage stormwater, and reduce maintenance costs
- Engage community members in project implementation and provide education on native pollinators and plants

REST AND REFUEL

McConnell AFB is a regional refueling base for military aircraft and a rest stop for monarchs during their annual migration across North America.



Monarch on Milkweed (*Asclepias* spp) Planted on the AFB/USFWS

PROJECT HIGHLIGHTS

Hosting Pollinators: The Kansas Air National Guard established lawn patches of buffalo grass (*Bouteloua dactyloides*) and three species of milkweed (*Asclepias* spp.) to host monarch caterpillars during summer. Monarchs have been observed in areas planted with milkweed. Three non-native flower beds were also converted into orderly patches of low-maintenance, visually appealing pollinator-friendly native plants.

Stormwater Management: Big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), barnyard grass (*Echinochloa crus-galli*), and swamp milkweed (*Asclepias incarnata*) plantings reduce stream flashes during heavy rainfall and increase landscape resistance to flooding. Additionally, the base constructed bioswales, or rain gardens, that act as giant “sponges” to reduce costly stormwater inputs into the base’s drainage system.

An Outdoor Classroom: To expand educational opportunities, partners involved military families and nearby schools to assist with native plantings. Outdoor activities such as butterfly surveying helped school children understand the importance of native pollinators. Additionally, homeschooled children of AFB personnel formed an after-school ecology club on the base to explore the new native landscape.

Collaborators

- See online for full list of collaborators

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LESSONS LEARNED

Partners selected native species appropriate to the region. Whenever possible, they collected wild-type seeds from local natural areas instead of using native plants selectively bred by suppliers.

Native Kansas perennial plants have key features not present in non-native species that help manage stormwater runoff. Deep root systems stabilize the streambank and dense stems and leaves reduce flow velocity to reduce stream flashes during heavy rainfall and make these areas more resistant to erosion.

The USFWS and partners adapted the language in their outreach materials to be better understood by the target audience. Focusing on the engineering and maintenance benefits of native plantings and landscape changes was key for securing buy-in from AFB personnel.

Partners used ample signage to publicize restoration projects and educate community members about the benefits of their work for both pollinators and the AFB. Additionally, partners distributed briefing materials for every major project to explain what issues were to be addressed through the incorporation of native plants.

NEXT STEPS

- Monitor riparian buffers for erosion from runoff and prevent encroachment of saplings and invasive plants
- Continue maintaining native plants on the AFB to support migrating and resident pollinators
- Communicate project success at conferences to promote the adoption of these management practices at other military installations

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Demonstration Prairie on McConnell AFB/Mike Jungen/USFWS