



2022 Secretary of Defense

Environmental Awards

Natural Resources Conservation, Small Installation
Wright Patterson Air Force Base

Introduction

Wright-Patterson Air Force Base, colloquially Wright-Patt, is located in the heartland of the American Midwest and remains a leader in military aviation development from the time airplane inventors Wilbur and Orville Wright made history to today's aerospace age. Hosted by the 88th Air Base Wing, the installation encompasses 8,145 acres of land and is the largest single-site employer in Ohio employing 31,292 personnel—8,070 active duty and 23,222 civilians. Wright-Patt provides operational support for more than 100 associated units, supporting on average 47,000 aircraft operations every year and providing a total economic impact to Ohio of \$5.65B annually.

Occupying the same location where the Wright Brothers perfected their flying machine over a century ago, Wright-Patt is home to Air Force Materiel Command's headquarters; a vast, worldwide logistics system; a world-class laboratory research function; and the foremost acquisition and development center in the Department of the Air Force. Wright-Patt's Natural Resources Program excels at maintaining a variety of native habitat types among the 2,500 acres of undeveloped land. Wright-Patt is home to 12 federal and state threatened and endangered species, 100 acres of prime farmland located within the approach of the active airfield, along with a diverse assemblage of flora and fauna, many of which thrive within and along the base's 44 wetlands covering approximately 21 acres, 26 streams

at a total jurisdictional length of over 61,000 linear feet, and 130 acres of open water. Wright-Patt manages vital natural resources, including the largest tallgrass prairie in Ohio encompassing 114 acres of a State Natural Landmark—Huffman Prairie—directly adjacent to the National Historic Landmark Wright Brothers Huffman Prairie Flying Field—the birthplace of aviation and a component of the Dayton Aviation Heritage National Historical Park.

Background

The Natural Resources Program is part of the 88th Civil Engineer Group and consists of degreed experienced subject matter experts adept at effectively managing the complexities of the program via Wright-Patt’s Integrated Natural Resources Management Plan (INRMP)—the principal tool to manage natural resources in accordance with the Sikes Act. The INRMP defines natural resources management goals and objectives that are consistent with the military mission. The current INRMP annual review and conservation metrics update were conducted on 14 July 2021. The INRMP was reviewed and mutually agreed upon by the Ohio Department of Natural Resources (ODNR), the U.S. Fish and Wildlife Service (USFWS), and the 88th Air Base Wing Commander, documenting progress toward INRMP objectives.

The Natural Resources Program has far-reaching responsibilities across the installation achieving positive outcomes through strategic use and management of financial, natural, and human resources. The most significant accomplishments achieved during FY20-21 were: (1) restoring, expanding, and managing existing native prairie habitat, (2) preserving, promoting, and enhancing pollinators, (3) facilitating urban forestry, (4) restoring and conserving habitats of federal and state threatened and endangered species, and (5) working with mission partners on community education, public participation,

and outdoor recreation events. Wright-Patt is the leading stakeholder in multiple working groups, including the Natural Resources Working Group, Pollinator Working Group, Ohio Bat Working Group, and Tree Board Working Group. Wright-Patt closely coordinates activities throughout the year with numerous mission partners per INRMP requirements, to include ODNR Division of Forestry, USFWS, U.S. Department of Agriculture, the National Park Service (NPS), the Air Force Wildland Fire Branch, Columbus Metro Parks, the Miami Conservancy District, Ohio EPA’s Regional Air Pollution Control Agency, the Propolis [Pollinator] Project, Air Operations, Flight Safety, Security Forces, Pavements/Grounds, Entomology, and the 445th Airlift Wing, to name a few.



Bird/Wildlife Aircraft Strike Hazard

A C-17 Globemaster military transport aircraft approaches Wright-Patt’s Area A airfield. The Wright-Patt INRMP integrates the activities described in the Bird/Wildlife Aircraft Strike Hazard (BASH) Plan. To minimize BASH, the Natural Resources Team works with Air Operations, Flight Safety, Security Forces and USDA-Wildlife Services to implement a comprehensive BASH Plan that involves prevention, monitoring, and reduction of bird and wildlife strikes.

In line with the installation Environmental Management System, Wright-Patt’s skillful management of resources has positive second- and third-order impacts that support the missions of more than 100 associated units—mission areas that include operating the installation; deploying expeditionary Airmen in support of the Global War on Terrorism; and defending the base, its people, and the Nation.

Accomplishments

Recognition of Wright-Patt's Natural Resources Program in the Major Graded Area of Managing Resources-Stewardship, Facilities and Environment during a 2021 Unit Effectiveness Inspection (UEI) validates the range and relevance of Wright-Patt's INRMP execution. The July 2021 UEI Capstone highlighted the program's "Strengths," emphasizing that the "prairie and forest restoration programs [at Wright-Patt] are supported by a comprehensive Integrated Natural Resources Management Plan." The Capstone underscores Wright-Patt's success as having "implemented a comprehensive array of preservation and habitat restoration initiatives without excessive use of [Department of the Air Force] financial resources," and achieving benchmark status as the "first DoD installation to have the designation as a Bee City USA." Bee City USA affiliates are committed to the conservation of native pollinators. Objectives include increasing native habitats, providing nesting sites, reducing the use of pesticides, and conducting outreach.

Huffman Prairie Renewal & Revitalization

Wright-Patt's INRMP execution ensures continuous support of present and future mission requirements while preserving, improving, and enhancing ecosystem integrity. The Natural Resources Program manages and preserves 114 acres of the State Natural Landmark, known as Huffman Prairie, in conjunction with the USFWS, NPS, Columbus Metro Parks personnel, and community volunteers. Huffman Prairie is the largest remaining native tallgrass prairie in Ohio, with an amazing display of wildflowers and wildlife. Management actions include prescribed burns, invasive species removal, native seed harvesting, seed planting, and flora and fauna surveys. Each year Wright-Patt conducts a rotational burn on approximately a quarter of the prairie. This burn ensures the health and sustainability of

the habitat and properly manages the prairie for Bird/Wildlife Aircraft Strike Hazard (BASH) threats. Wright-Patt also provided personnel (27 man-days) support to mission partners at Eglin and Beale AFBs during FY20-21 wildfires and prescribed burns, effectively conserving over 7,500 acres.



Prescribed Burn at Huffman Prairie State National Landmark

A firefighter from Wright-Patt's 788th Civil Engineer Squadron conducts an annual prescribed burn at Huffman Prairie State Natural Landmark. Each year the Natural Resources Program conducts a rotational burn on approximately a quarter of the prairie. This ensures the health and sustainability of the habitat and properly manages the prairie for BASH threats.

Open daily to the public, Huffman Prairie invites birdwatchers, botanists, and other naturalists to observe over 128 species of birds, 19 species of mammals, 23 species of prairie indicator plants, and 165 species of insects. It attracts enthusiasts from across the region to marvel at the flora and fauna present at the site. This landmark has required years of collaborative management to sustain, and the outcome has been remarkable. Since the early 1800s, the prairie has been a place of new plant and animal species discovery, and it continues to be a favorite hunting ground for both young and old botanists.

Likewise, Wright-Patt actively manages an Agricultural Outlease Program encompassing nearly 100 acres of prime farmland located within the approach of the airfield. The program is financially sustainable—taxpayer funding is neither requested nor required to manage the land. The lease generates \$22,000

annually in reimbursable funds, which are utilized to further the INRMP’s management objectives.



Huffman Prairie State Natural Landmark

A member of the public enjoys a guided stroll through Huffman Prairie State Natural Landmark. Each year the Wright-Patt Natural Resources Team provides guided tours of the prairie for base personnel and the public. This popular annual event highlights this scenic natural landmark and the work that Wright-Patt executes to protect and enhance natural environments on the installation. Note the replica model of the catapult in the background—used for reliable controlled launch and to enable aircraft to reach maximum flying speed—the Huffman Prairie Flying Field and catapult were integral in the development of Wilbur and Orville Wright’s first practical airplane.

Preserving, Promoting & Enhancing Pollinators

Actions at Wright-Patt to promote the health of honeybees and other pollinators are recognized as the benchmark for DoD installations. Wright-Patt partners with Ohio Department of Agriculture, NPS, Propolis, and community partners to establish a research and educational bee yard at Huffman Prairie. Since its 2017 inception as the first military installation designated as “Bee City USA,” several DoD installations and nearby municipalities have reached out to Wright-Patt to obtain guidance on planting pollinator habitats and earning a “Bee City USA” designation.

Research at the bee yards has shown that honeybees at Wright-Patt exhibit, through

natural selection, a rare chewing behavior to protect them from the varroa mite—one of the most serious threats to honeybee colonies worldwide. Propolis now manages 16 Wright-Patt colonies used for research. This partnership has played an important role in ongoing research with local universities, extensive community outreach, the sustainability of the Huffman Prairie State Natural Landmark, and Wright-Patt’s Bee City USA designation.



Two members of the Wright-Patt Veterinary Clinic plant a monarch habitat outside of their facility with the aid and direction of personnel from the Natural Resources Team. This is one of several monarch habitats on the installation that serves as an outreach tool for the Natural Resources Program’s robust pollinator awareness initiatives.

The INRMP includes the expansion of Huffman Prairie and the creation of native habitats throughout the installation. Wright-Patt works extensively to promote and conserve native pollinator habitats by involving the base population and youth centers in planting monarch waystations (habitats focused on plants necessary to maintain Monarch butterfly populations) and pollinator plots. The Natural Resources Program also works closely with the Entomology Department to minimize the use of pesticides and herbicides near pollinator habitats and beehives. Local beekeepers are utilized to catch feral bee colonies rather than destroy them, which prevents the bees from swarming in developed areas of the

installation. The ongoing management of Huffman Prairie and an additional 165 acres of pollinator plots managed by Wright-Patt ensures that suitable habitat for pollinators remains in perpetuity.

Using Urban Forestry to Improve Mission Readiness

Concerted actions have resulted in a designated “Tree City USA” for 25 years at Wright-Patt, and four consecutive years of “Growth Awards” from the Arbor Day Foundation for outstanding efforts maintaining the health of its forest resources. Wright-Patt’s cooperative efforts among mission partners, including the USFWS, NPS, local Soil and Water Conservation Districts, and ODNR, have resulted in a healthy forested landscape across the installation—Wright-Patt’s urban forest canopy, riparian areas, and critical habitats for federally threatened and endangered species.



Mr. David Liette, President of Military Housing Operations at The Properties at Wright Field, and Charley McMaster, Maintenance Director (now retired) at The Properties at Wright Field, oversee a tree planting event at Wright-Patt. The planting event was the result of a proposal and subsequent award to plant 100 street trees in the residential area of the installation that had experienced tornado damage in May 2019. This event aided in earning Wright-Patt a Growth Award from Tree City USA, as presented by the Arbor Day Foundation, recognizing Wright-Patt’s high level of tree care and community engagement to build a sustainable community forestry program.

Wright-Patt continually works to increase mission readiness through improved forested landscape to the benefit of its mission and

mission partners through reduced energy consumption, improved air and water quality, and enhanced outdoor leisure experiences in the community. In FY20, the Natural Resources Program secured a \$30,000 grant through the Arbor Day Foundation to plant 100 street trees throughout the housing area of the base. The trees were planted in areas that experienced tree loss and destruction from tornadoes that touched down in 2019.

During the period of performance, Wright-Patt also planted over 600 native tree seedlings across 6,000 acres of the installation, improving soil and water quality, and to provide habitats friendlier to endangered or threatened species, such as bat populations. Additionally, Wright-Patt worked with the USFWS to plant over 400 native trees in key locations, focusing on enhancing riparian areas. Wright-Patt also conducts an annual tree risk assessment, ensuring the sustainability of the installation’s urban forest through proper evaluation and tree care.

In FY21, Wright-Patt secured a \$3,000 National Environmental Education Foundation grant for a habitat enhancement project at the historic Wright Brothers Memorial (WBM). Nearly a dozen volunteers helped plant 27 trees to sustain the urban tree canopy. This project is one component of a much larger enhancement project for the memorial. Wright-Patt partners with local schools each Arbor Day to plant trees per the WBM Sustainable Reforestation Plan. The Natural Resources Program also worked extensively with the installation’s Cultural Resources Program to secure a multi-year landscape contract for the site, further ensuring the sustainability of natural and cultural resources. While the natural resources of the site are important, Wright-Patt also preserves the cultural integrity and significance of the grounds at the WBM. The site is home to six 500 BC to 300 AD Adena Mounds. The habitat enhancement plan honors the history of the Indigenous people

with a component of the plan that includes a native food forest. Centuries ago, the Native American mounds served as sacred sites, and Wright-Patt's tribal stakeholders today continue to view them as such. Wright-Patt regularly consults with several federally recognized tribes and actively pursues means to preserve and protect the mounds from land development, relic hunters, and natural effects to honor the Adena people and their culture.

Invasive Species Removal to Increase Threatened & Endangered Habitat Restoration

Education and outreach for base personnel and residents are great tools for the early detection of invasive pest species. Throughout the year, Wright-Patt distributes a variety of bulletins and informational sheets concerning invasive pest species encroachment—emerald ash borer, Asian longhorned beetle, gypsy moth, and spotted lantern fly are all pests confirmed in the area. Additionally, Wright-Patt aggressively manages invasive plant species across 100 acres through foliar herbicide applications, cut-treat, and large-scale mechanical removal actions—invasive honeysuckle, buckthorn, Callery pear, and tree-of-heaven are well established within natural areas of the installation and known federal/state threatened and endangered species habitats.

Wright-Patt coordinates efforts throughout the year with USFWS, state fish and wildlife agencies, and multiple other stakeholders to effectively implement INRMP requirements and achieve its objectives. Wright-Patt is working jointly with ODNR, USFWS, and Columbus Metro Parks on a program to reintroduce wood frogs to the installation's wetland areas. The concept was approved by ODNR in 2021, with execution of the reintroduction program scheduled to begin in 2022. Stakeholders will collect wood frog egg masses, or frogspawn, from local Columbus Metro Parks habitats, and USFWS will deliver the eggs to Wright-Patt to complete the

reintroduction—preserving their important association in the ecosystem food chain as predator and prey.

Wright-Patt facilitated a research project of wildlife corridors and isolated wildlife populations to identify habitat fragmentation and loss and acquire valuable research knowledge. The installation continues to work closely with mission partners to conduct herpetology (amphibians/reptiles) surveys in conjunction with USFWS in areas of historical and traditional state and federally listed species habitats to meet INRMP objectives. Likewise, Wright-Patt coordinates efforts to identify and protect candidate and at-risk wildlife species and significant wildlife resources.

Leading in Public Education, Community Participation & Outdoor Recreation

Wright-Patt's success in enhancing natural areas is a testament to the work of building strong partnerships—11 cities in the surrounding area represent significant population centers. Wright-Patt has strived to develop and maintain partnerships with volunteers and stakeholders in these communities, resulting in environmental enhancement projects that improve the quality of life for base residents and surrounding communities for years to come.

Wright-Patt's extensive outreach during its annual Pollinator Expo is attended by hundreds of people and is a collaborative effort comprised of over 30 state-based organizations. Wright-Patt also hosts an event at the base's Prairies Youth Center. During a 2021 education event, 25 children received a presentation from Wright-Patt's beekeeper about the importance of pollinators for our food crops. Wright-Patt also hosts summer "Prairie Walks." The general public is invited to take tours of the Huffman Prairie State Natural Landmark with a local naturalist and subject matter expert on the Huffman Prairie, where they learn about the work being done to protect the prairie and learn about the

numerous species that call it home. Wright-Patt is home to six Monarch Waystations (habitats focused on plants necessary to maintain Monarch butterfly populations). These habitats are a result of the installation's Earth Day outreach program, which continues to provide critical habitat for Monarch populations.



Participants observe a live honeybee “demo” hive at Wright-Patt’s annual Pollinator Expo. The Natural Resources Team and community partners celebrate Wright-Patt’s designation as the first military installation to be designated as a “Bee City USA!” Wright-Patt is dedicated to promoting the vitality of pollinator populations and this collaborative event exemplifies the strong partnerships the Natural Resources Program strives to develop and maintain. Bee City USA is a program for communities to pledge their commitment to reverse the threats currently facing pollinators and to raise awareness and enhance habitats for the bee population.

In 2021 Wright-Patt implemented an online permit sales platform, called iSportsman, to significantly increase opportunities for base personnel to obtain easy access to recreational hunting and fishing permits, as well as firewood permits. The web-based iSportsman

service also allows Security Forces to collect important user data and conduct real-time checks for safety via area check-in/checkout—improving Wright-Patt’s security posture. Furthermore, Wright-Patt acquired two hydraulic hunting stands in FY 21 to aid handicapped/disabled hunters in enjoying the exhilaration of the outdoors and the many benefits of hunting—physical exercise, mental preparedness, and nutritional food. These stands provide access to outdoor recreation on base to those who were previously unable to participate.

Sustainment and enhancement of the installation’s natural areas are an effort in collaboration and innovation. Management of these natural resources on Wright-Patt’s 8,145 acres of land provides recreational opportunities for nearly 50,000 people (including dependents) working and living at the installation and the surrounding community. Working with mission partners, such as ODNR, Fairborn City Schools, local cities, and townships, and the NPS, Wright-Patt improves the quality of life for the local community. Native prairies, wetlands, and forests are all protected and enhanced to benefit the associated ecosystem and the visitors who recreate in them. Expert management of Wright-Patt’s natural resources allows for numerous recreational opportunities, many of which are enjoyed by the public—hunting, fishing, wildlife watching, hiking, and biking are a few of the many recreational opportunities available on the installation supported by Wright-Patt’s Natural Resources Program.