



2026 Department of War

# Environmental Awards

Natural Resources Conservation – Team  
Squirrel Team 6, Minot Air Force Base, North Dakota

## Introduction

Remotely located in north-central North Dakota, 40 miles south of the U.S./Canadian border, Minot Air Force Base (AFB) operates in an environment of climatic extremes and ecological sensitivity. Prolonged winters, dry summers, and episodic flooding place continual stress on the installation's built and natural infrastructure. Minot AFB lies within the prairie pothole region, one of the most biologically productive wetland complexes in North America. It is a critical component of the Central Flyway, supporting nearly 10M migratory birds biannually enroute to northern breeding grounds. While this landscape provides essential ecosystem services, it also presents persistent operational challenges.

Situated within this ecologically dynamic landscape, Minot AFB plays a central role in the nation's strategic deterrence mission. Amid the open agricultural matrix where "Only the Best Come North," the installation

hosts two Air Force Global Strike Command (AFGSC) components: 5th Bomb Wing (5 BW) and the 91st Missile Wing (91 MW). These two Wings make up two-thirds of the United States' nuclear triad. The 5 BW operates a fleet of B-52 Stratofortress bombers capable of delivering conventional and nuclear payloads anywhere in the world. The 91 MW operates, maintains, and secures Minuteman III intercontinental ballistic missiles (ICBM) through a geographically dispersed network of launch and missile alert facilities. This mission set covers 5,304 acres of installation land distributed across more than 8,500-square-miles of missile field. This creates a uniquely complex environment where land access, environmental compliance, and infrastructure integrity are inseparable from mission readiness.

Supporting these mission sets is the 5th Civil Engineer Squadron (5 CES), whose responsibilities span the full breadth of

installation and missile field operations. These functions include project planning, infrastructure development and sustainment, housing, emergency management, fire protection, utilities, environmental compliance, and natural resources stewardship. These functions directly affect the safety, readiness, and quality of life of 12,389 individuals, including 5,707 military personnel, 5,644 family members, and 1,038 civilians and contractors. Annually, Minot AFB contributes more than \$606M to the local economy. Operating across the main installation and a geographically dispersed missile field, 5 CES must ensure environmental protection while maintaining uninterrupted mission support. The Natural Resources Team (NRT), informally referred to as “Squirrel Team 6,” is a critical group of 14 personnel from the 5th Civil Engineer Squadron's Operations, Pest Management, and Environmental elements, augmented by specialists from the 5th Bomb Wing Safety Flight, and plays a vital role in this effort. This team integrates wildlife hazard management, land-use planning, and ecosystem stewardship into daily operational decision-making.

## Background

The 14 individuals comprising of this team are a multidisciplinary group of subject-matter experts and mission-focused professionals who collectively responded to an emerging and unprecedented natural resources challenge. While several team members possess formal wildlife and environmental expertise, many others volunteered beyond their primary roles. Team members worked to develop, implement, and support natural resource management strategies under compressed timelines associated with an accelerated Sentinel weapons system standup. This adaptive, cross-functional approach enabled the team to address complex wildlife, infrastructure, public safety, and operational readiness.

To execute its mission effectively, the team maintains close coordination with a network

of federal, state, academic, and non-governmental partners. They include the U.S. Fish and Wildlife Service, North Dakota Game and Fish Department, U.S. Department of Agriculture, and Colorado State University Center for Environmental Management of Military Lands (CSU-CEMML). Partnerships extend to academic institutions including the University of North Dakota and Minot State University, and non-governmental organizations including the National Wild Turkey Federation and Monarch Joint Venture. Through sustained collaboration, the team ensures that all projects and management actions comply with applicable Air Force Instructions and state and federal wildlife, air, water, and waste regulations, while also streamlining regulatory coordination and permitting processes.



### Squirrel Team 6

Members of the Minot AFB NRT informally referred to as “Squirrel Team 6.” Front row left to right: Dr. Lynda LaFond, MSgt Kyle Gahring, SrA Tremaine Parks, SrA Trevor Whitmire, 2nd Lt Ian Pittman, Maj Dylan Bechen, Dustin Weishaar, and Frank Hamill. Second row left to right: Derek Kuhnhenh, Jesse Busenbarrick, Jennifer Hensley-Gandreti, Bruce King, Nicholas Zaun, and Wade Mueller.

Under typical conditions, wildlife and human activities coexist with minimal conflict. Alternately, when climatic conditions and habitat availability align, certain wildlife populations can rapidly expand, transforming a previously stable system into one that threatens infrastructure, public health, and mission execution. During the award period, a combination of extended growing seasons, reduced winter mortality, and landscape-level habitat conditions resulted in multiple wildlife population surges that exceeded the capacity of conventional management approaches. Recognizing that unmanaged wildlife

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conflicts could degrade installation safety, disrupt daily operations, and compromise mission-critical infrastructure, the team shifted from routine stewardship to an adaptive, risk-based management posture.

## Accomplishments

### Deactivating the Dakrats

Richardson's ground squirrels (*Urocitellus richardsonii*), locally termed "Dakrats", are burrowing rodents native to North Dakota that construct extensive underground burrow systems that may reach 3 to 6 feet in depth and extend 12 to 45 feet from surface openings, significantly altering soil structure and surface stability. While the species has experienced regional population decline and is designated as a North Dakota Species of Greatest Conservation Need, Richardson's ground squirrels thrive in urban lawn where reduced predation pressure and abundant forage can allow localized populations to increase rapidly. At Minot AFB, these conditions created a situation in which conservation considerations had to be balanced against escalating risks to infrastructure integrity, public health, and operational safety. Unchecked burrowing activity undermined roads, sidewalks, utility corridors, and security infrastructure, while increased human to wildlife interactions elevated the risk of zoonotic disease transmission and injury.

During the award period, a convergence of unusually long growing seasons, mild winter temperatures, and minimal winter precipitation aided in high Richardson's ground squirrel survival, resulting in a population expansion across Minot AFB. The team's line-transect surveys estimated the population to exceed 300,000, overwhelming traditional control measures and placing immediate strain on installation resources. The surge was acute within the 613-acre installation housing area, home to 5,644 residents, which historically had not fallen within the direct management purview of the natural resources program. When squirrel densities increased, incidents of

property damage escalated, including gnawing through vehicle wiring and building insulation, while widespread fecal contamination degraded common-use areas. The situation reached a critical threshold when a young child was bitten and scratched by a ground squirrel, an incident that drew national media attention and underscored the escalated public health and force protection risks.

Responding to the crisis required a task force of experts from wildlife, operations, customer service, housing, safety, and public health, all focused on reducing the squirrel population to ensure personnel and mission safety. Members of the task force were dubbed "Squirrel Team 6" and rapidly expanded their operational scope, coordinated access to residential areas, and implemented an intensive 200 man-hours management campaign that resulted in the removal of more than 9,500 ground squirrels within three months. Although reduction in the population was needed for safety and security of personnel and the mission, small numbers of animal rights advocates took to social media with their objections. To address these concerns, housing managers and public affairs distributed educational material outlining why the population needed to be reduced, that removal was accomplished by trained personnel using the most ethical means possible, and that control and not eradication of the population was the primary goal.



### Tiny Tundra Terrors

Five Richardson's juvenile ground squirrels emerge from a burrow.

Each step was challenging, as a control initiative of this scale on non-installation land was unprecedented. Minot shared these challenges and lessons learned with internal stake holders such as Minot Public School and external stakeholders such as Grand Forks AFB and the City of Minot within the region.

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In this, the team members truly embraced the civil engineer motto to ‘Lead the Way,’ creating a squirrel management model that could be adapted in urban areas regionally.

#### Arming the Public

Following initial population reductions, the team recognized that ground squirrel reinvasion occurred rapidly, particularly from adjacent unmanaged spaces. Limitations in authority and access prevented team personnel from implementing direct management actions within privately fenced residential backyards, where persistent squirrel activity continued to pose safety and nuisance concerns. In response, the team developed and authored a comprehensive 12-page ground squirrel mitigation playbook for installation residents. Originally published in July 2025, this document provided clear instruction on exclusion techniques through vegetation management, humane and ethical trapping methods, and the proper handling and disposal of remains in accordance with applicable regulations. The playbook served as the foundation for a resident self-help program with the team procuring 250 trapping devices at a cost of \$8,800 for public use. To ensure safe and effective implementation, the team conducted individual instructional courses to more than 60 residents from June to September 2025, providing hands-on training in trap use and reinforcing safety, ethical standards, and disease-prevention practices. These trainings laid the groundwork for structured courses with the team. Starting in August 2025, the team began actively developing a training video, slides, and additional individual training for military personnel and residents who want to aid in efforts to control the squirrel population.

#### Intruder Alert

When ground squirrel populations expanded beyond residential areas, spillover into mission critical infrastructure zones posed a direct threat to installation security and operational continuity. Burrowing activity

undermined perimeter and interior security features within protected areas, compromising sensor performance and generating frequent wildlife-triggered alarms. With approximately \$3.9B in nuclear and conventional assets requiring safeguarding, the reliability of these security systems is non-negotiable. In response, the team implemented an integrated protection strategy that combined exclusion, infrastructure reinforcement, and targeted population reduction. In May to August 2025, the team installed 1.5 miles of exclusion fencing to prevent reinvasion into sensitive zones and enabled recalibration of approximately 16,000 feet of Protection Level 1 fencing. Concurrent localized eradication efforts resulted in a 96% reduction of ground squirrel populations within the Weapons Storage Area, effectively eliminating wildlife-triggered alarms and restoring full sensor functionality. Team members also deployed to geographically dispersed ICBM facilities to address localized squirrel encroachment originating from adjacent agricultural lands, ensuring that wildlife hazards did not compromise security operations or delay mission execution across the missile field.

#### **Repairing the Damage**

While essential, population reduction was the first step; extensive burrowing had caused widespread damage requiring prompt remediation. As ecosystem engineers, ground squirrels had significantly altered soil structure in open areas, residential spaces, grasslands, and tree shelterbelts, leaving thousands of voids that created hazardous conditions for pedestrians, recreational users, and maintenance personnel. Unfilled burrows compromised the stability of playgrounds, sidewalks, driveways, ballfields, and utility corridors, presenting ongoing safety risks and limiting access to community and training spaces. Remediation was a coordinated effort among pest management, operations, and housing, which secured a clear avenue to identify compromised infrastructure and prioritize repair of areas that were mission

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critical or had high public safety risk. From June to August 2025, the team restored ground stability by backfilling over 91,000 cubic feet of burrows with a specialized sand slurry system into subsurface cavities.



### **Backfilling Burrows**

5th CES pest management backfills ground squirrel burrows with a sand and water slurry.

Intense grazing and soil disturbance from the high density of ground squirrels left large areas of exposed soil and pronounced soil mounding, creating ideal conditions for the establishment and spread of invasive plant species. When ground squirrels preferentially consumed native and other palatable plants, unpalatable invasive species rapidly colonized disturbed areas, displacing native plant communities and degrading habitat quality across residential and operational landscapes. Although invasive species management at this scale exceeded existing natural resources program funding and planned objectives, the team proactively leveraged external partnerships to address the issue. Through collaboration with Monarch Joint Venture and the U.S. Fish and Wildlife Service in February 2024, the team secured a \$2,000 grant to restore 15 acres of invasive-dominated land to native grassland, reestablishing ecosystem function and providing enhanced habitat for pollinators. In addition to the ecological benefits, the team identified the restored grassland as an outdoor educational resource, serving as a learning opportunity, for more than 1,100 school-aged children. It includes lessons on plant and animal life cycles, nature driven math questions such as seed success rates and the Fibonacci sequence, the benefits of pollinators with opportunities to watch

pollinators at work, art in nature, and more. Due to this success, the team started visiting classrooms to teach more than 100 students about the importance of grasslands for duck nesting habitat, monarch butterfly life cycles and their dependence on milkweed, the construction of bird houses, and the basics in identifying animal sign.

When invasive plant species gained a foothold in disturbed areas, the team identified a growing risk of encroachment into the active airfield grasslands, where vegetation composition directly influences wildlife presence and aviation safety. Broadleaf invasive plants provide forage and cover that increase the attractiveness of airfield environments to migratory birds, elevating the risk of wildlife-aircraft strikes during critical flight operations. To address this emerging hazard, the team coordinated an installation-first vegetation management strategy. Using a 120-foot agricultural boom sprayer in July 2025, the team treated approximately 320 acres of airfield grasslands with a selective, long-residual herbicide effective for 3 to 5 years.

In addition to soil and vegetation impacts, extensive ground squirrel burrowing resulted in the loss of trees across residential areas and shelterbelts, diminishing landscape function and quality of life for installation personnel and their families. Recognizing that many Airmen and dependents originate from forested regions and value tree cover for shade, aesthetics, and community well-being, the team prioritized tree placement as part of its recovery strategy. Through coordination with local corporate partners, the team secured a \$20,000 grant in August 2025 to install 100 trees within installation housing areas. To further repair and fortify shelterbelts that function as critical wind and snow breaks, the team partnered with the National Wild Turkey Federation to obtain 1,000 additional trees for targeted planting. These efforts complemented the removal of more than 5,100 tons of invasive Russian olive during

the award period, allowing native and compatible tree species to reestablish.

### **Ensuring Natural Infrastructure Integrity**

During the planning phase of the \$8.5B Sentinel ICBM modernization program in October to December 2023, the team identified emerging risks associated with expanded construction footprints and increased impervious surfaces. Anticipated land disturbance and infrastructure development were expected to significantly alter surface hydrology leading to increased stormwater runoff, placing additional demand on wetlands and drainage systems that were originally designed more than 67 years ago. To prevent flooding, erosion, and costly delays, the team evaluated whether existing stormwater and wetland infrastructure could meet future mission demands.

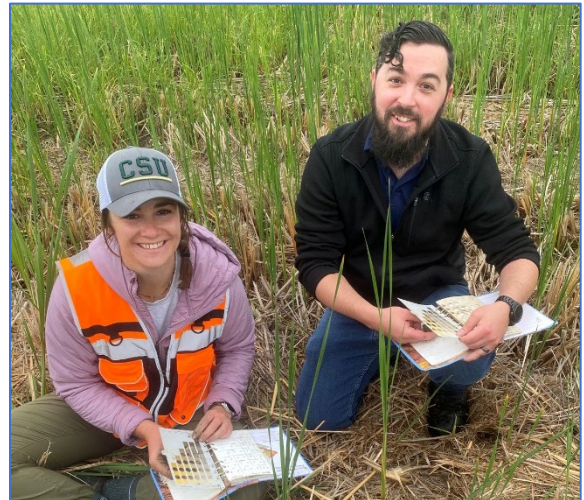


### **Dredging the Drain**

Excavator operator, Nicholas Zaun, removes 7,500 yards of sediment and plants blocking surface water drainage.

To assess vulnerabilities, the team oversaw a comprehensive stormwater survey from June – August 2025 that encompassed 4,501 acres of the installation. The assessment identified 11 key deficiencies that posed a risk to compliance with Section 402 of the Clean Water Act, including inadequate elevation gradients, debris accumulation, and drainage blockages caused by sediment buildup. In response, the team rapidly coordinated corrective actions, repairing damaged mortar structures and dredging more than 2,100 feet of drainage ditch within 30 days of deficiency identification. These actions removed

approximately 7,500 cubic yards of accumulated material which restored proper hydraulic gradients and enabled the installation of stabilization features including riprap and boulders to prevent further erosion.



### **Wetland Surveys**

Wetland delineators Jacqueline Maher (left) and Frank Hamill (right) evaluate a soil sample for evidence of redoximorphic features and wetland hydrology.

In parallel, the team recognized that landscape-level changes driven by regional agricultural drainage practices, drought cycles, and altered water tables had fundamentally changed surface water distribution across the installation. During Sentinel planning, discrepancies between on-the-ground conditions and existing National Wetlands Inventory data became apparent, with prior wetland surveys – conducted only 15 years earlier – no longer reflected current conditions. To address this gap, the team collaborated with CSU-CEMML to complete a 100% wetland inventory of Minot AFB in June and July of 2025. Team members conducted intensive fieldwork, including soil analyses, plant community identification, and hydrologic assessments, resulting in the identification of 119 previously undocumented wetlands and the addition of 257 acres to the installation’s wetland inventory. The updated data informed Sentinel facility planning and \$151M in Long-Range Stand Off weapon systems upgrades, reducing permitting uncertainty and ensuring development could proceed without unexpected environmental constraints.

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### Optimizing Resources

During the award period, sustained summer precipitation created highly favorable breeding conditions for mosquitoes and biting midges, transforming a seasonal nuisance into a significant public health and readiness concern. The team's regional mosquito surveillance identified the active circulation of West Nile virus. This zoonotic disease can cause severe illness and prolonged workforce absenteeism, posing a direct threat to readiness. Recognizing that widespread illness among personnel and dependents would directly degrade readiness and operational effectiveness, the team implemented a coordinated, multi-layered response in collaboration with Public Health officials. In July and August 2025, the team conducted two aerial adulticide applications over Minot AFB and two neighboring civilian communities, providing point-source protection for more than 90,000 residents across the region. To further protect the installation, the team augmented aerial treatments with targeted ground-based pesticide fogging in high-risk areas.

### Curtailing Cormorants

An emerging aviation safety hazard was identified by the team when more than 40 double-crested cormorants established residency along the rocky embankments of the installation's wastewater treatment lagoons, an unacceptable risk due to the proximity of these water features to active flight operations. Through direct observation and assessment, the team determined that cormorants were attracted to and eating approximately 160 salamanders daily. To reduce this attractant and associated wildlife-aircraft strike risk, the team implemented targeted amphibian removal using fyke nets and sieves, disrupting the food sources and prompting cormorant dispersal. This action contributed to the installation-wide reduction, dispersal, or relocation of approximately 85,000 animals across 71 species during the award period. Collectively, these efforts protected 10,800 annual flying hours and 3,828 takeoffs

and landings involving 27 B-52 Stratofortress aircraft and seven UH-1N Huey helicopters, safeguarding more than \$2.2B in aviation assets while ensuring uninterrupted flight training and operational readiness.

### Managing Food Waste in Residential Areas

A foundational principle of effective wildlife management is the reduction of human food attractants, which are often overlooked during routine planning and seasonal activities. During the award period, the team identified an unexpected wildlife attractant following a snow-free Halloween, when decorative pumpkins and gourds remained accessible across the installation. These food resources drew birds and ground squirrels into residential and operational areas, increasing the potential for renewed wildlife conflicts. In response, the team developed and implemented PROJECT PUMPKIN, an innovative community-based initiative that partnered with local farms to collect and repurpose edible holiday decorations to livestock feed. Through this effort, more than 4,000 pounds of pumpkins were removed from the installation over four weeks, eliminating a concentrated food source for wildlife while simultaneously reducing landfill waste. This initiative exemplifies the team's commitment to adaptive management, community engagement, and maintainable practices that support long-term mission readiness.



### **Pounds and Pounds of Pumpkins**

A full pumpkin collection bin sits within Minot Air Force Base's housing area.