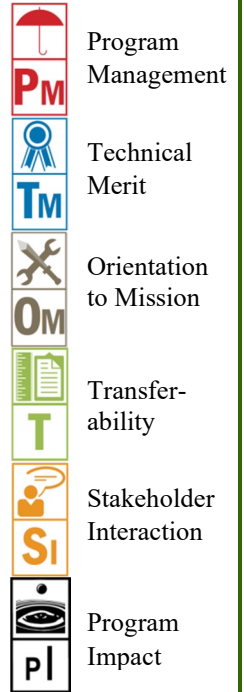


# SECRETARY OF THE ARMY ENVIRONMENTAL AWARDS 2023

## MINNESOTA ARMY NATIONAL GUARD NATURAL RESOURCES CONSERVATION, LARGE INSTALLATION

Camp Ripley has long been recognized as one of the most ecologically pristine training sites in the nation, sustaining training for the Minnesota Army National Guard (MNARNG) on 53,000 acres that also support more than 600 plant species, 233 migratory and resident bird species, 51 mammal species, and 23 reptile and amphibian species, incredible habitat diversity, and 18 miles of untouched Mississippi River frontage. While natural resources conservation (NRC) activities have always been a priority for the MNARNG, the NRC program has increasingly sought ways to integrate all MNARNG directorates in the joint venture of training enhancement and environmental stewardship, in alignment with Army goals. At Camp Ripley, the NRC Program is composed of staff from three departments: Environmental Natural Resources, Integrated Training Area Management (ITAM), and the Department of Public Works (DPW). Together, these directorates advance shared goals to promote training and conservation in concert, identifying where their mandates overlap and where their resources can multiply land management priorities. As a result, Camp Ripley remains at the forefront of conservation practices while sustaining over 365,000 annual man-days of training.



Among recent milestones accomplished at Camp Ripley is the restructuring and technological innovation of the forestry management program. A new forestry viewer has been launched on Camp Ripley's GIS platform, incorporating all past and present timber harvest data, native species, wildlife data, training requirements, and more, all developed in-house with ESRI tools. The training site has newly partnered with the National Defense Center for Energy and Environment to host a bat house structure research project; out of that project, a second opportunity arose for Camp Ripley to take part in an Environmental DNA (eDNA) study of turtles. This study enhances ongoing efforts at Blanding's turtle conservation. The NRC also hosts an annual internship program with Central Lakes College (CLC) that provides students with experience conducting wildlife monitoring surveys and vegetation management.

Camp Ripley's NRC program has accomplished a level of integration that is virtually unmatched, collaborating on projects that simultaneously improve quality of habitat through training enhancement, and vice-versa. Beyond the MNARNG itself, a Memorandum of Understanding (MOU) with the Nature Conservancy (TNC) has expanded prescribed fire management



The training site has also just completed construction of three new stormwater infiltration basins; in conjunction with two already in place, these retention ponds will capture 95% of stormwater runoff in the cantonment, preventing sediment or other contaminants from reaching the Mississippi River adjacent to the post.



beneficial for both habitat and training access. The NRC program continues to partner with the Minnesota Department of Natural Resources (DNR), Minnesota State Colleges and Universities, TNC and US Fish and Wildlife Service (USFWS) to monitor wildlife with radio telemetry and proactively expand pollinator habitat and prairie restoration efforts.



Camp Ripley NRC staff bring a comprehensive skill set to bear, situating them to coordinate across directorate missions more effectively. One of the MNARNG's administrative innovations is the creation of a Training Area Coordinator (TAC) position, supported through the ITAM program and responsible for briefing all military and civilian personnel on regulations, safety, and environmental management. This position essentially bridges the gap between the soldiers and the Environmental Office and creates a key communication channel. GIS staff are also assigned to the NRC program; the MNARNG's GIS manager is directly assigned to the Environmental office while also overseeing the GIS specialists for ITAM and Facilities Management. With this organizational structure, GIS support is automatically integrated across these respective departments. Aside from the new forestry viewer, specialized dashboards are in use for planning and implementation of prescribed fire, the Army Compatible Use Buffer (ACUB), and a public-facing website in support of the Sentinel Landscape program.



The collocated Environmental and ITAM staff meet weekly to review their projects and priorities. This kind of coordination is essential, for instance, in managing programs like forestry, where Environmental needs for thinning or habitat can be reviewed with ITAM for overlap on training access points or timing of operations. Coordination achieves cost savings as well. As an example, the ITAM department's goals are met by the application of prescribed fire, but those activities are not staffed or funded by ITAM budgets. Through the cross-directorate structure, the Environmental office reviews those plans with ITAM and implement them to meet shared needs; DPW Team members are the on-the-ground support for actually implementing prescribed fire. Environmental goals are supported when ITAM conducts erosion control and repair using native seed mixes that they harvest at Camp Ripley; the training areas are remediated and ITAM staff consult with Environmental staff to delineate restoration areas targeted for critical pollinator habitat. Working collectively, the NRC program achieves efficiencies (and avoids redundancies) across departments that would be otherwise impossible.



Camp Ripley's planning documents reflect this integration along with a view toward future sustainability. ITAM goals are directly reflected in the Integrated Natural Resources Management Plan (INRMP), such that goals within the plan are linked to ITAM objectives. This helps to ensure that training remains at the forefront of all NRC planning. The upcoming update to the INRMP in 2023 will incorporate targeted plans for climate change resiliency; the Army Climate Adaptation Tool is being used to establish targets and metrics for these sorts of projects. Under the current INRMP, the NRC program produces an annual report for the MNARNG and all shareholders that outlines program goals and progress achieved. A new Forest Management Plan was also integrated into the current INRMP, creating a holistic approach to forest and timber management. Three primary objectives—conservation of hardwood hills, sand plains, and military training—were identified in that plan, enabling the NRC program to demonstrate how each project links directly to those objectives.



Camp Ripley won \$250,000 in the Readiness and Environmental Protection Integration (REPI) Challenge award this year to establish resiliency corridors within the Sentinel Landscape footprint. Working with TNC and the University of Minnesota Duluth, NRC staff completed mapping of natural resources features identifying areas of resiliency that could aid in regional response to climate change.



These kinds of collaborations help Camp Ripley to set standards for NRC compliance. An interagency agreement with the Minnesota Department of Natural Resources (DNR) provides the training site with a full-time, DNR-funded forester that can assist ITAM on timber assessment and run timber sales as well as Environmental on forestry goals. As a result, Camp Ripley has a particularly robust forestry-timber program that generates \$80,000 to \$90,000 each year to fund conservation while expanding training ranges as needed and improving ecological health. The Team is further bolstered by the internship agreements with CLC that provide critical fieldwork support. The installation benefits from the low costs of these partnerships without sacrificing quality of work. Camp Ripley also has its own native seed collection program, collecting several hundred pounds of seed each year at a cost savings of around \$30,000 annually.



One goal for Camp Ripley has been the **conservation and management of grassland communities** for training while protecting the biological integrity of native plants. The ITAM program repaired more than 500 acres of maneuver damage in the past two years and has performed maintenance on more than 1,000 acres of grasslands used for military training. This work has been conducted with the seed collected on the installation, a program that also allows Camp Ripley to confirm the biological integrity of seed sourcing in the rehabilitation of these sites. Several hundred pounds of native seed are harvested in-house each year, particularly big bluestem, gramma grass, Indian grass, little bluestem, and switch grass. These habitat improvements directly benefit species of greatest conservation need like Blanding's turtle; reducing pressure on those wildlife populations in turn insulates MNARNG training from wildlife-related impediments.



Grassland restoration work also benefits **pollinator species**, which have faced multiple challenges in the region, including habitat loss, impacts of pesticides, pathogens, and changing climate. Habitat alterations that fragment food supply, nest sites and hibernation sites can cause significant decline in bee populations, for instance, so NRC and ITAM staff coordinate on projects to eradicate non-native species. Together, they identify areas to increase forbs in native grasslands where damage is unlikely to occur from military training. Around 100 acres of prairie have been enhanced over the past two years.



**Control of invasive species** is the flip side to these habitat enhancements. The control and eradication of non-native and invasive vegetation serve both training and habitat quality goals, and Camp Ripley maintains an annual interagency agreement with CLC for summer internships. These interns are trained and licensed to apply herbicide treatments in priority areas identified by Environmental and ITAM staff. The LRAM coordinator oversees this program and creates the workplan for the interns. In addition, interns are available to assist in treating poison ivy for military units and Range Control staff; they also assist DPW in spraying woody vegetation along boundary lines and fences. More than 900 acres of invasive vegetation was treated in the past two years through this program. Common tansy, spotted knapweed, leafy spurge and buckthorn are invasive plant species that impact military training requirements and also have a negative impact on native plant species. Over the past two years, beetles have been introduced for leafy spurge and knapweed with assistance from the Minnesota Department of



Agriculture, amplifying the effects of mechanical and chemical removal.



**Prescribed fire** is a powerful tool for land management, and through partnership with TNC, Camp Ripley achieves the goals for both ITAM and Environmental without overstepping the funding boundaries for their departments.



Per an MOU enacted in 2019, TNC is able to assist the Team in managing vegetation in maneuver and bivouac areas as well as mitigating wildfire risk in training areas. The DNR and USFWS also participate in fire activities.



Prescribed fire is also critical in

maintaining native plant species. The majority of native plant communities at Camp Ripley are comprised of fire dependent species. ITAM staff identify training areas and rotations for prescribed fire activities, with Environmental and DPW staff taking the lead on actual application. In all, the NRC program manages around 14,000 acres of the installation with prescribed fire each year to reduce hazardous fuel loads. Over the past two years, they have expanded ecological and training enhancement fire applications to promote jack pine and similar species in conjunction with aspen thinning. The NRC program has also been working with neighboring landowners through the Sentinel Landscape program to enact burn regimes outside of the training site; this measure both protects Camp Ripley from fires that may start off-post and aligns habitat goals on a more regional level. This year, Camp Ripley hosted a three-day fire school for Natural Resources Conservation Service (NRCS) employees and private landowners in partnership with the Forest Stewards Guild.

The combined impacts of these land management practices are high-quality training lands—and high-quality habitat. The NRC program conducts extensive **wildlife monitoring**. A long-term effort to track black bears using radio telemetry collars is ongoing. Eight females are currently tracked with den monitoring over the winter; this year, Camp Ripley was able to re-launch school field trips and group visits to the den sites. Each den visit had 25 to 30 participants who learned about conservation and research in action. The NRC program also successfully trapped and collared three grey wolves last fall. Last year, Camp Ripley partnered with the National Defense Center for Energy and Environment to construct a bat house for roosting research, looking at the effectiveness of such structures to lure bats out of buildings. This is a two-year project, with potential benefits for endangered Northern Long Eared Bat present on the installation. Acoustic lures are used to draw bats to the boxes where sensors record occupancy.

While working with the bat program managers, NRC staff learned they were also funding a project to conduct eDNA surveys for turtles. The project team broadened their current study to include Camp Ripley. Already, the installation monitors Blanding’s turtles, a state-threatened species, using transmitters to track hatchlings and collect data on habitat use, survival rates,



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Camp Ripley took part in an Environmental DNA (eDNA) study of turtles. This study enhances ongoing efforts of Blanding's turtle conservation.

distances travelled, and more. Nests are also monitored each spring and protected from predators and traffic. The eDNA survey is enhancing these efforts, determining presence and absence of turtle species in Camp Ripley's waterways and ponds. With this information, the NRC program will be even better positioned to identify and preserve habitat now in use by turtles.



**Forests** comprise some 28,000 acres of Camp Ripley habitat, which is managed according to the forestry management plan



with short-term (10-year) management goals based on combined environmental and military objectives. The new GIS viewer multiplies the impact of this plan, by operationalizing years of data to empower projects. The forestry viewer includes military training layers, wildlife, threatened and endangered species habitat, sensitive habitats, and past and proposed forest management activities. This tool enables the NRC program to view projects and visualize the full spectrum of operational and environmental impacts to proposed actions. A proposed parcel for timber harvesting, for instance, can be visualized in relation to past harvests, correlated to the forest management plan's goals, and screened for any potential species impacts. Built in-house with ESRI tools, the GIS platform is entirely customized to Camp Ripley's unique needs, keeping forestry in full alignment with other program areas.



The NRC and ITAM programs are actively promoting mature growth forest with at least a non-optimal training condition of 50% visibility at 35 meters, with snags in no more than two transects; these conditions are preferred for land navigation training. They also work to concurrently achieve the Environmental office goal of mature forest growth specific for native plant communities in a manner that supports mature interior forest wildlife. These goals combine to target forest thinning using a selective matrix of small patch cuts and group tree selection. Between 200 and 300 acres are selected each year for timber harvests. Camp Ripley contracts with the DNR to conduct annual forest inventory updates, timber appraisals, and administration of timber sales. A new partnership with NRCS and the Morrison Soil and Water Conservation District (SWCD) has provided Camp Ripley with \$400,000 in additional funds to hire a private land forester, collocated with the Environmental Office. This forester is working directly with private landowners in the Sentinel Landscape to incorporate similar forest stewardship and prescribed fire measures beyond the installation.



Camp Ripley boasts pristine **water resources** and wetlands. The ITAM coordinator is a certified wetlands delineation specialist, allowing the MNARNG to conduct that work entirely in-house now as well as to protect those resources from training and erosion impacts. The training site has also just completed construction of three new stormwater infiltration basins; in conjunction with two already in place, these retention ponds will capture 95% of stormwater runoff in the cantonment, preventing sediment or other contaminants from reaching the Mississippi River adjacent to the post. Under a grant from the state and in partnership with Morrison SWCD, the NRC program completed an inventory of culverts and developed a new



watershed management plan over the past two years. Elevation profiles were compiled for all culverts so that when replacement is necessary, the ideal elevation will prevent drainage issues or watershed impacts. This measure ties into climate change resiliency as well; as Camp Ripley experiences more frequent severe storm events, stormwater management has become more essential. More than 250 culverts are already constructed, and with the inventory, the NRC and ITAM staff can now prioritize needed repairs or enhancements. Another new mapping project has captured all lake contours on post and created a new recreational fishing map for visitors. The NRC program also launched a water quality monitoring program with Minnesota Pollution Control Agency (MPCA). Using a calibrated sensor that measures dissolved oxygen, pH, specific conductivity, and temperature, the four major recreational water bodies are sampled monthly from June to September.

While all of the NRC program undertakings are designed to enhance both conservation and training lands, consistently demonstrating the compatibility of stewardship and mission, they have also launched several new initiatives over the past two years with immediate benefits to the MNARNG’s training capabilities. During an airfield assessment this year, for example,



The NRC program undertakings are designed to enhance both conservation and training lands, consistently demonstrating the compatibility of stewardship and mission. Such was the case when an airfield assessment deemed the runways out of compliance, leading to a clear-cut and replanting project.

inspectors found the runways out of compliance, as tree height and overrun limited the approach for C130 planes. Using forestry funds, the NRC program conducted a 33-acre clearcut; following this, DNR funds were accessed to conduct native grass and forb planting in support of pollinator species. With two grant awards of \$50,000, 50 acres of the airfield that had been overrun with woody growth were replanted with upland and wetland forb mixes. In another example, Camp Ripley required expansion of a gravel pit on post into an area that incorporated a wetland. Because the training site has cultivated such trust with regulatory agencies, the NRC program was able to coordinate with the SWCD to buffer the wetland

rather than performing mitigation. This was done entirely in-house with the help of ITAM; all the gravel for erosion control, moreover, is provided from that gravel pit.

Protecting Camp Ripley from encroachment is another key mission support provided by the NRC program. The Camp Ripley ACUB continues to thrive. Over the past two years, an 840-acre conservation parcel was acquired via fee title from the City of Baxter, using REPI funding and state conservation matching funds. The city contributed \$50,000 to write a management plan and create trails and greenspace abutting the Mississippi River in primary noise contours. The city continues to own and maintain this greenspace, providing an excellent natural resource to the public. Camp Ripley’s ACUB partner, the Minnesota Board of Water and Soil Resources,





received \$2.1 million from the Lessard-Sams Outdoor Heritage Council to acquire easements this year, the largest single state allocation for an ACUB program to date. In total, over 30,000 acres surrounding the training site are under perpetual protection from future development. The NRC program maintains an ACUB dashboard that calculates percent completion toward desired end-state and identifies interested landowner parcels. This ties into a public website that shows the geographic boundary of the Camp Ripley Sentinel Landscape along with the variety of conservation practices and funding opportunities available to private landowners through ACUB, the US Department of Agriculture NRCS, state and local partners.



By integrating multiple directorates with NRC programmatic overlap, Camp Ripley creates outstanding continuity for operations throughout Camp Ripley, reinforcing shared goals and objectives. The layers of GIS support that connect their offices, moreover, helps to create a comprehensive data resource that supports them all. The NRC program has emphasized training to communicate their shared goals to the soldiers using Camp Ripley. They jointly develop updates to soldier field cards that integrate critical information from ITAM, Environmental, and DPW in a single resource. The ability of Environmental and DPW to communicate with soldiers is greatly enhanced by the face-to-face contact ITAM staff can enable. Through partnerships and engagement with ARNG working groups, conservation organizations, and municipal outreach, Camp Ripley continues to promote their techniques and experiences to benefit the broader military and conservation communities. Indeed, the very model of integrated partnership this installation has achieved sets an example for other state Guards to follow.



In addition to the many partnerships and interagency collaborations detailed above, Camp Ripley continues to prioritize public outreach and education. National Public Lands Day events are held annually to provide an opportunity for visitors to directly take part in conservation efforts. Last fall, the Minnesota Master Naturalists volunteered in the training site's Ruffed Grouse Management Area, a 400-acre parcel with 4.3 miles of walking trails. The NRC program aims to improve ruffed grouse habitat by enhancing young forest and nesting-friendly undergrowth. The volunteers also assisted in the gravel pit area by planting and caging native shrubs and trees to protect them from deer browsing. As pandemic restrictions have eased, the NRC program has resumed group visits and school tours, making use of Camp Ripley's environmental classroom to offer presentations and demonstrations on conservation. This year, over 1,000 schoolchildren visited the installation. Hunting opportunities are provided by the NRC and ITAM staff each year, which coordinates access, scheduling, and DNR wildlife surveys. Last year, Camp Ripley took over coordination and implementation of a public archery hunt from DNR. The three-day hunt—the only three days that training stops on post—is the largest organized archery hunt in the state, with 2,500 permits issued. Working with Bureau of Land Management, Camp Ripley constructed two campsites on islands adjacent to the installation. These sites were published in the Mississippi River Water Trail guide as primitive camping locations for outdoor adventurers.

The NRC program also assists with the annual Earth Day celebration and the annual Water Festival, which hosts around 500 sixth graders in Morrison County. Aside from the internships provided, CLC uses Camp Ripley exclusively for its field-based curriculum, with expanded research projects and outdoor laboratory fieldwork taught on site. NRC staff coordinate with faculty to align lesson plans with the fieldwork needed on post. Through these projects, the Team demonstrates an ongoing commitment to fostering environmental conservation throughout the community.