2020 SECRETARY OF DEFENSE ENVIRONMENTAL AWARDS

MINNESOTA ARMY NATIONAL GUARD
NATURAL RESOURCES CONSERVATION, TEAM

Program Management
Technical Merit
Orientation to Mission
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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), the site comprises 53,000 acres that also support more than 600 plant species, 233 migratory and resident bird species, 51 mammal species, 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, during the past two years, the approach to achieving NRC goals has shifted to become even more comprehensive and integrated. The NRC team that has emerged reflects the new goals presented by the Army, to better align training area management with stewardship.

At Camp Ripley, the NRC Team is composed of staff from three departments: Environmental Natural Resources, Integrated Training Area Management (ITAM), and the Department of Public Works (DPW). Together, this team advances the shared goals of conservation and training promotion in a uniquely effective way. By working across their directorates, this team has been able to identify the places where their mandates overlap and where their resources can further multiple land management priorities. Their work has helped Camp Ripley remain at the forefront of conservation practices while sustaining more than 365,000 annual man-days of training.

The Conservation-Training Enhancement Team includes:

Josh Pennington, Environmental Supervisor	Jim Tatro, DPW Supervisor
Lee Anderson, GIS Specialist	Joe Kallis, Roads Supervisor
Nancy Dietz, Animal Survey Specialist	Bill Williamson, Grounds Supervisor
Brian Dirks, Animal Survey Coordinator	Patrick Neumann, Cultural Resources Manager
Craig Erickson, GIS Manager	Katie Retka, Natural Resource Specialist
Jason Linkert, LRAM Coordinator	Brian Sanoski, ITAM Coordinator
Jake Kitzmann, Natural Resources Manager	Adam Thompson, RTLA Coordinator

The Conservation-Training Enhancement Team 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. Among the milestones accomplished over the past two years is a new forest management plan, which has allowed the team to align timber harvest trails with maneuver trails; match accessibility needs with habitat thinning needs; and eradicate invasive species to the benefit of both Soldiers and wildlife. The team has also implemented a new Memorandum of Understanding (MOU) with the Nature Conservancy (TNC) to expand prescribed fire management beneficial for both habitat and training access. The team cooperatively manages innovative wildlife monitoring with radio telemetry tracking of key species and has proactively expanded pollinator habitat and prairie restoration efforts.

The Conservation-Training Enhancement Team brings a comprehensive skill set to NRC planning and implementation, which ideally situates them to achieve training compatible with environmental protection. One of the team'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 environment and creates a key communication channel for the team.

The team is also supported by several GIS specialists. In fact, the MNARNG's GIS manager is directly assigned to the Environmental Office while also overseeing the GIS specialists for ITAM and Facilities Management. This organizational structure integrates GIS support automatically for the team across their respective departments. Recently developed GIS tools include a dashboard utilized by Environmental, Operations and Range Control staff to monitor planning and implementation of prescribed fire. It also includes an Army Compatible Use Buffer (ACUB) dashboard that calculates percent completion toward desired end-state and identifies interested landowner parcels. 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 U.S. Department of Agriculture Natural Resources Conservation Service, state and local partners.

Environmental, ITAM, DPW, GIS, Operations, and Range Control staff all work collectively on various projects throughout the year. Planning and implementation of prescribed fire is an annual event at Camp Ripley. Planning is carried out by Environmental and ITAM to meet shared needs, while on-the-ground support is implemented by DPW.

The Environmental and ITAM office team members are collocated in a shared office space, which assists their coordination. They 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. The team is thus able to achieve mutual benefits without overstepping the unique roles and responsibilities assigned to the MNARNG's separate directorates. Coordination has helped the team achieve these projects in an incredibly cost-effective manner 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 team structure, the environmental team members are able to review those plans with ITAM and implement them to meet shared needs; DPW team members are the on-the-ground support for implementing prescribed fire. Environmental goals are supported when ITAM conducts erosion control and repair using native seed mixes harvested at Camp Ripley. The training areas are improved while also creating critical pollinator habitat, and ITAM Team members consult with Environmental Team members to delineate those restoration areas. Working collectively, the team achieves efficiencies (and avoids redundancies) across departments that would be otherwise impossible.

The planning documents for the team reflect this integration. 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 ensure training remains at the forefront of all NRC planning. The team's collaboration also helped to maintain regulatory compliance. An interagency agreement with the Department of Natural Resources (DNR), for instance, provides the team 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, the team has created 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 internship agreements with Central Lakes College (CLC) and St. Cloud State University (SCSU) that provide critical fieldwork support.

The team has benefitted from the low cost intern support and the agreements with DNR and TNC to provide assistance at low- or no-cost. The ITAM team members manage a native seed collection program. During the past two years, approximately 4,000 pounds of seed has been collected for team use, saving $60,000 in avoided purchasing costs. The team has also acquired $12,000 in National Public Lands Day grants that they used to implement jointly planned habitat improvements.

The team has targeted several project areas in the past two years to achieve concurrent enhancement of habitat and training land quality. One goal has been the **conservation and management of grassland communities** for training, while protecting the biological integrity of native plants. In the past two years, the team repaired more than 500 acres of maneuver damage and 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 the team to confirm the biological integrity of seed sourcing in the rehabilitation of these sites. These habitat improvements directly benefit fragile species like Blanding's turtle. Reducing pressure on those wildlife populations in turn insulates MNARNG training from wildlife-related impediments.

The team's 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. Despite the importance of pollinators, little is known about their distribution in Minnesota. One at-risk pollinator is the monarch butterfly, which migrates over 3,000 miles from Mexico to Canada each year, relying on habitat in the United States along the way. Monarchs are now being considered for listing as an endangered species.

Team-led prairie planting event. Soldiers, citizens, community groups, and school groups visit Camp Ripley for educational and recreational activities headed up by the NRC team. Through these projects, the team demonstrates an ongoing commitment to fostering environmental conservation throughout the community.

For the first time since 1994, the team initiated monarch surveys in 2018 in support of the species status assessment. The survey includes vegetation assessments along survey tracts, documenting monarch activities, and identifying and recording the various stages of monarch life cycles. Each of the three survey

activities are done at regular intervals throughout the active months. Areas identified through these surveys will implement best management practices (BMPs) in the future, to include avoiding disturbance in areas populated with the monarch's sole food source and host plant, milkweed, when larvae are present. During the past two years, the team partnered with the DNR to coordinate native bee surveys. ITAM team members assisted in identifying grassland sites with the least potential for training interruptions, which allowed the surveys to proceed during 2018-19. Transects of 24 elevated pan traps were set at each site. Specimens of 137 and 177 wild bees were collected and sent to a bee survey specialist with the DNR Minnesota Biological Survey (MBS). Habitat alterations that fragment food supply, nests, and hibernation sites can cause significant decline in bee populations, so the team is cooperating on projects to eradicate non-native species. Together, the team identifies areas to increase forbs in native grasslands where damage is unlikely to occur from military training.

Control of invasive species is the flip side to the team's habitat enhancements. The control and eradication of non-native and invasive vegetation serve both training and habitat quality goals, so the team collaborated to develop an annual interagency agreement with SCSU for three summer internships. The interns are trained and licensed to apply herbicide treatments in priority areas identified by Environmental and ITAM Team members. 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 were treated in the past two years through this program. Common tansy, spotted knapweed, and buckthorn are invasive plant species that impact military training requirements and also have a negative impact on native plant species. The team hosts an SCSU graduate student who has research plots at Camp Ripley to evaluate the effects from treatments such as repetitive chemical application and prescribed fire on invasive species.

The team had established a golden eagle tracking program several years ago. A third eagle (Gyllen) was transmitted in February of 2019 after the first two eagles' (Ripley and Victor) transmitters had reached end-of-life. Distances traveled over time, habitat use, management strategies and more are utilized and shared by data collection through this program.

Prescribed fire is a powerful tool for land management, and through partnership with TNC, the team is able to achieve the both ITAM and environmental goals without overstepping the funding boundaries for their departments. Per the 2019 MOU, TNC is able to assist the team in managing vegetation in maneuver and bivouac areas, as well as mitigating wildfire risk in training areas. 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. The team worked with TNC to obtain a $150,000 landscape stewardship grant from the U.S. Forest Service to apply prescribed fire on more than 4,000 acres within the Camp Ripley landscape. ITAM Team members identify training areas and rotations for prescribed fire activities, with Environmental and DPW Team members taking the lead on application. In all, the team manages approximately 14,000 acres of the installation with prescribed fire each year.

The combined impact of these land management techniques are high quality training lands—and high quality habitat. The team also cooperates on **wildlife monitoring.** Though the Environmental Team members are the lead for species contact and research, the ITAM and DPW Team members play a key role in identifying areas suitable for placing bait sites and areas where the animals are present.

The team is currently monitoring eight black bears with radio telemetry collars. A new monitoring initiative has been implemented for Blanding's turtle hatchlings, which are outfitted with transmitters to track their movement and generate data on habitat use, survival rates, distances travelled, and more. The team established a golden eagle tracking program several years ago, following the movements of one eagle named Ripley around North America. Two weeks after Ripley went offline, "Victor" was trapped and outfitted with a transmitter; he is now being tracked in the same fashion, generating details about migration patterns. This information is used to manage training around eagle presence and to demonstrate that their management strategies continue to support eagle habitat needs.

Another key habitat is the installation's 28,000 acres of forests. In 2019, the team developed and implemented a new **forestry management plan,** which defines short-term (10-year) management goals based on the combination of natural resources and military training objectives. The team collaborated to develop a GIS viewer for forestry practices that includes military training layers, wildlife, threatened and endangered species habitat, sensitive habitats, and past and proposed forest management activities. This tool enables them to view projects and visualize the full spectrum of operational and environmental impacts to proposed actions.

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The team works to achieve ITAM priorities for land navigation training areas that have a mature growth stage forest with at least a non-optimal training condition of 50% visibility at 35 meters, with snags in no more than two transects. They also work to concurrently achieve the environmental 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. The team has identified a 200-acre parcel for proposed harvest and another 200 acres for planting and browse protection. These project areas are then included in vegetation management objectives and work plans to ensure invasive species do not outcompete targeted species. Project sites are also wrapped into prescribed fire planning.

While all of the team's 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. One example is the team's mutual goals of erosion control and infrastructure protection. Historically, DPW installed culverts as flooding, saturated roadbeds, or washouts transpired, but now, as DPW is integrated into the team, they coordinate with ITAM and Environmental Team members prior to culvert installation. The team conducts a wetland delineation and watershed analysis to determine appropriate culvert size, type, location, elevation, flow rate, and BMPs are evaluated and applied. Today all culverts are installed by the team to ensure proper inlet/outlet protection, elevation, and upstream/downstream stabilization, as well as to meet all state and local Wetland Conservation Act (WCA) regulations.

Camp Ripley's ACUB program has protected more than 28,000 acres from incompatible development since 2005. In 2018, Camp Ripley Senior Commander, Brigadier General Lowell Kruse, participated in the dedication ceremony of 200 acres along the Mississippi River that was protected from development through the ACUB and Sentinel Landscape program.

By integrating Environmental, ITAM, and DPW, the team has been able to resolve survey needs to open 311 acres that was previously restricted from training. The team also cooperated to target timber harvests and treat woody encroachment in areas where the MNARNG sought increased tank maneuver space. Several miles of additional maneuver space was enabled without having to expand the training area or extend into another training area. Synchronizing timber harvests and maneuver trail improvement projects saved project funding and prevented the encroachment of additional maneuver space in adjacent training areas.

The integrated team has helped to create a new level of continuity for operations throughout Camp Ripley, reinforcing shared goals and objectives. The layers of GIS support that connect their offices helps to create a comprehensive data resource that supports them all. Over the past year, the team completed a special delineation of their training site, identifying all roads, trails, and maneuver lanes within the integrated GIS system. By properly identifying all these assets, the team is able to ensure that only the appropriate budgets for a given project are tapped--but also that mutual goals for those sites can be recognized. Similar delineations also assisted the Camp Ripley ACUB program this year, as the team completed new noise modeling to support a revision of the ACUB boundary and incorporation of an additional 22,000 acres to target for acquisition.

The team has emphasized training to communicate their shared goals to the Soldiers using Camp Ripley. They jointly developed a new Soldier field card that integrates 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 Team members can facilitate.

Through partnerships and engagement with ARNG working groups, conservation organizations, and municipal outreach, the team continues to promote their techniques and experiences to

benefit the broader military and conservation communities. Indeed, the very model of integrated partnership this team has achieved sets an example for other state Guards to follow.

Working across departments, the team has been particularly effective in conducting outreach and education about environmental stewardship and the opportunities the MNARNG offers for the community. During the past two years, the team was awarded $12,000 in grant funding from the National Environmental Education Foundation and Department of Defense Legacy Resource Management Program. They used this funding to purchase native forb and grass seed for a prairie reconstruction project.

In partnership with the University of Minnesota Extension office and the Minnesota Master Naturalist program, the team hosted National Public Lands Day volunteers who helped remove invasive species and plant native species at the project site. The ITAM Team members assisted with preparation of the project site, to include stump removal, mowing, herbicide treatment, disking, and harrowing; Environmental Team members were then able to prepare the site with a prescribed fire application.

The site created in the volunteer event established perennial vegetation and foraging habitat beneficial to gamebirds, songbirds and pollinators while also filtering stormwater runoff and providing recreational and educational opportunities. The prairie landscape is part of Minnesota's cultural history and a significant piece of Minnesota’s landscape. It is also the most critically declining landscape throughout all of the state. Less than one percent remains of the tallgrass prairie biome that was once a predominant feature of Minnesota’s native landscape. This restoration showcases the MNARNG’s commitment to environmental quality and also provided an educational opportunity on the important functions of a native grassland.

Over the past two years, the team has given more than 50 presentations, tours, and briefs to nearly 3,000 visitors, Soldiers, and community groups, both at Camp Ripley and within the local community. Hunting opportunities are provided by the team each year, which coordinates access, scheduling, and wildlife surveys. The team assists with the annual Earth Day celebration and the annual Water Festival, which hosts approximately 500 sixth graders in Morrison County.

The team’s long-standing partnership with CLC has expanded over the past two years as well, as the team has offered educators attending the college’s CASE academy access to field research sites and overviews of the many disciplines within the environmental program. This joint effort offered educators insights into better preparing their students for work in this field and provided them with a field testing site to conduct their curriculum. Through these projects, the team demonstrates an ongoing commitment to fostering environmental conservation throughout the community.