# USAG Alaska 2019 Natural Resource Management Report
# To the Bureau of Land Management

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## Introduction

Effective communication and coordination between the Bureau of Land Management (BLM) and the Army has been identified as a need in the recent document entitled "Memorandum of Understanding between the U.S. Department of the Interior, Bureau of Land Management Alaska, and the U.S. Army Garrison Alaska concerning the management of lands in Alaska withdrawn by Public Law 106-65 for military use". This document, with brief project descriptions of Fort Wainwright actions in support of natural resources management, serves as the annual report for calendar year 2019 to the BLM as stipulated by that memorandum.

The Natural Resources Program at the United States Army Garrison (USAG) Alaska is guided by the Integrated Natural Resources Management Plan (INRMP), which establishes policies, programs, prescriptions, projects, and procedures that the Army uses to manage natural resources on training lands in Alaska. The INRMP contains goals and specific objectives necessary to (1) sustain "no net loss" in the capability of military lands to support mission requirements, (2) support stewardship of natural resources, (3) ensure compliance with applicable environmental laws, and (4) maximize public access within the constraints of the military mission while protecting public safety and conserving the environment. The INRMP reflects mutual agreement of the Army, U.S. Fish and Wildlife Service (USFWS) and the Alaska Department of Fish and Game (ADFG) concerning the conservation of the natural resources under their respective legal authorities. The INRMP consolidates other related Army natural resource planning documents in one place, including the Ecosystem Management Plan, Integrated Wildland Fire Management Plan, Endangered Species Management Plan, Forestry Management Plan, Watershed Management Plan, and Outdoor Recreation Management Plan. The INRMP also incorporates the applicable BLM Resource Management Plans for Yukon and Donnelly Training Areas. The INRMP for Fort Wainwright was last updated in 2013 (https://usartrak.isportsman.net/regulations.aspx), and is scheduled for update in 2020.

The Army's Integrated Training Area Managemetn (ITAM) programs are housed within the United States Army Alaska (USARAK) Sustainable Range Program and are guided by the ITAM work plan, which is updated annually. The ITAM program is also integrated into the INRMP. ITAM provides sustainable range management directly to the Army mission of USARAK, while coordinating with the USAG Alaska environmental staff. The goals of the ITAM program are to support the installation's training mission by providing maneuver land and decision support capability based on the integration of training requirements, land conditions, maneuver ranges, and land management requirements.

For overall questions concerning environmental goals and polices, please contact Dan Rees, Natural Resources Program Manager, USAG Alaska Directorate of Public Works Environmental Division, at (907)-361-9318 or by email daniel.c.rees.civ@mail.mil

**Acronyms**

AFS: Alaska Fire Service

ADFG: Alaska Department of Fish and Game

ADNR: Alaska Department of Natural Resources

ATV: All-Terrain Vehicle

BLM: Bureau of Land Management

BRTA: Black Rapids Training Area

CEMML: Center for Environmental Management of Military Lands

CRREL: Cold Regions Research and Engineering Laboratory

CSU: Colorado State University

DTA: Donnelly Training Area

FIA: Forest Inventory and Analysis

FLIR: Forward Looking InfraRed

FWI: Fire Weather Index

GRTA: Gerstle River Training Area

RFMSS: Range Facility Management Support System

SDSFIE: Spatial Data Standard for Facilities, Infrastructure, and Environment

SDSWCD: Salcha-Delta Soil & Water Conservation District

SERDP: Strategic Environmental Research and Development Program

UAA: University of Alaska Anchorage

UAF: University of Alaska Fairbanks

UAS: Unmanned Aircraft System

USAG: United States Army Garrison

USFWS: United States Fish and Wildlife Service

TFTA: Tanana Flats Training Area

YTA: Yukon Training Area

***Environmental GIS Tasks***

- **iSportsman Maps** (CSU/CEMML): A new map template was formatted to standardize all map series for customer consumption which include, but not limited to; Wood Cutting, Christmas Trees, General Access, Reference, Moose Hunting, Bear Baiting, and iSportsman Brochures. Each map series are updated annually and published on iSporstman (https://usartrak.isportsman.net/).

- **SDSFIE Data Updates** (CSU/CEMML): The attribution of all data layers is continuing to be updated with the objective of improving compliance with the Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) 4.0 format (a DoD IT standards requirement), provide more information for all data users, and prepare for land withdrawal review. Additionally, a series of new data layers was created. Data layers are updated annually.

- **Wildfire and Training Analysis** (CSU/CEMML): The goal of this project is to describe the relationship between Fire Weather Index (FWI) and training restrictions which will improve costs assessment associated with prescribed burning, 350-2 fire waivers, and imposed training restrictions. Analysis updated annually.

- **Permafrost Thaw Risk Study** (CRREL/UAF): For this Strategic Environmental Research and Development Program (SERDP) funded study, field measurements of soil composition, soil temperature, depth to permafrost, habitat processes, and animal sounds at locations are being analyzed in combination with remote sensing data products. The goal of the study is to model post fire recovery for ecosystems and habitats at potentially vulnerable permafrost areas. Final report will be completed January 2021.

- **LiDAR Data Products** (CSU/CEMML): A series of LiDAR derivatives are being updated to improve current models, mapping, and spatial reference. These data layers include slope, aspect, curvature, wetness elevation index, landforms, standard deviation of LAS, etc. Final products available by July 2020 and updated by December 2020.

- **Alaska Known Sites Database** (CSU/CEMML): An up to date version of Alaska Known Sites Database was produced through field data collection, bringing in data from other databases, and imagery mapping and verification. Updated annually.

- **Tanana Flats Soil Survey** (SDSWCD): The entirety of TFTA was mapped for soils to 2.5 acre minimum mapping unit and NRCS Order 3 level mapping. Completed December 2019.

- **Habitat Mapping** (CSU/CEMML): Habitat map accuracy assessment points collected in 2018 in DTA were analyzed using a Matching and Similarity Model. Analysis showed wetland delineating was accurate to approximately 77% in DTA. 296 accuracy assessment points were surveyed in YTA and TFTA. 2019 field data has not yet been analyzed, but will be completed October 2020.

- **YTA Surface Water Planning Level Survey** (SDSWCD): 240,000 acres of hydrology features were mapped in the YTA. Data was developed and packaged into an ESRI geodatabase mapped at 1m resolution. Also, stream monitoring stations were installed

and maintained at two locations on the South Fork Chena River in the YTA. Mapping was completed October 2019, and stream monitoring station data downloaded annually.

- **YTA Stream Flow and Measurement Study** (CRREL/UAF): Steam flow and stream chemistry measurement were taken at Moose Creek and Stewart Creek, specifically focusing on surface water nitrogen and carbon in the microbiome. The goal of this SERDP funded study is to model the relationship between flow and nitrogen and carbon concentrations to calculate change from the watershed. Project will be completed January 2021.

- **YTA Stream Flow and Vertebrate Study** (CREEL/UAF): Stream Flow, landscape features, water chemistry, micro and macro invertebrate structure, and vertebrate fish species data collected in Moose Creek and Stewart Creek are being used to help inform models that will one day be used to describe steams as they relate to changing climates. Also a SERDP funded study, these models should help create tools for land managers in decision making as it relates to streams and fish. Project will be completed January 2021.

***Invasive Plants***

- **Invasive Plant Surveys** (CSU/CEMML): Nineteen invasive plant populations found before 2019 were monitored to determine if the area occupied was increasing or decreasing. Sixteen populations of White Sweet Clover (*Melilotus officianalis*), all located in DTA, were visited. No invasive plants were found at 5 populations and appeared to be eradicated by previous control efforts. Two populations had significant infestations and were treated with herbicide. Nine populations were pulled. Three population of Bird Vetch (*Vicia cracca*) were monitored in 2019. All three were pulled. One new population of Perennial Sowthistle (*Sonchus arvensis*) was found and pulled in YTA. Surveys and control actions are carried out annually.

- **Main Cantonment Elodea Study** (USFWS): Small Arms Range pit was used to test Environmental DNA (eDNA) detection rates of elodea (Spp.) in a controlled environment. Elodea was successfully detected using eDNA sampling techniques. No current estimate on the completion date.

***Forestry***

- **YTA Tire Village Timber Sale Site Preparation and Reforestation** (SDSWCD): 11.4 acres of previously harvested areas were replanted to white spruce at 100-foot spacing. Project completed 30 September 2019.

- **TFTA FIA Plot Surveys** (CSU/CEMML): Forest Inventory and Analysis (FIA) plot surveys were completed on seven plots in the TFTA in 2019.

- **Main Cantonment, YTA, DTA Wildfire Hazard Fuel Reduction** (BLM AFS): 17 acres of forested lands were thinned, and pile burned to an approximate 12’ X 12’ spacing

around high use military training sites in the YTA and the Main Cantonment of Fort Wainwright. 44,200 acres were burned using prescribe fire on military training ranges and impact areas in the YTA, Main Cantonment, DTA to reduce the potential of military training wildfire starts. Projects were completed November 2019 and are ongoing annually.

***Wetlands***

- **Wetland Surveys** (CSU/CEMML): In 2019, 498 wetland determination sites were surveyed. These data were used to delineate and classify wetlands and vegetation across 20,670 acres of training lands. An additional 10,378 acres of previously mapped area was re-surveyed and re-mapped to reflect current hydrology. Report will be completed October 2020.

- **Wetlands Data Collection** (CSU/CEMML): A series of scripts was developed that automate tasks including comparing an access and wetlands geodatabase, populating fields in a feature class from an access database, and importing data to a feature class from ArcGIS Online. This process has improved how we make decisions on where to collect data. Improvements are continually updated.

***Range and Training Land Assessment (RTLA)***

- **Main Cantonment, YTA, TFTA RTLA** (CSU/CEMML): Survey crew completed Sustainable Range Program Assessments for Training Land Sustainability at 1560 data points representing 938 acres of training lands. This data was used to calculate Land Condition rating, Accessibility, Sufficiency for primary use, and suggest future maintenance needs. RTLA also produced a GIS assessment of training land use, as recorded in the Range Facility Management Support System (RFMSS). All data has been analyzed and the RTLA 2019 annual report was completed January 31, 2020.

- **DTA RTLA** (CSU/CEMML): Survey crew completed Sustainable Range Program RTLA, and all assessments and data was collected utilizing five different types of assessments: Training Land Sustainability (4404 acres), Maneuverability (4404 acres), Maneuver Damage and Hazard (579 acres), Training Asset Accessibility (roads and trails within DTA East that are accessible with a 4 x 4 passenger vehicle), and Military Maneuver Exercise Monitoring (data was pulled directly from the RFMSS webpage). All data has been analyzed and the RTLA 2019 annual report was completed January 31, 2020.

***Land Rehabilitation and Maintenance (LRAM)***

- **Main Cantonment, YTA, TFTA LRAM** (CSU/CEMML): Hand crew conducted a variety of vegetation maintenance activities. Approximately 700 acres of training lands

were accessed and maintained through mowing, seeding or chainsaws (mostly in removing hazard trees). The crew also completed about 40 KM of trails and linier maintenance activities. The LRAM Crew 2019 annual report was completed January 31, 2020.

- **TFTA Winter Road Recreational User Damage Assessment** (CRREL): The Blair Lakes winter access trail was assessed before and after moose hunting season to quantify recreational vehicle damage to a newly created trail. No completion date reported.

- **DTA LRAM** (CSU/CEMML): Hand crew completed maintenance projects consisting of the removal of blow down hazard trees and standing trees with structural defects within falling range of a training facility, site, or maneuver trail, clearing and/or thinning of vegetation to achieve line of sight for a training purpose, landing zone maintenance, and removal of vegetation for maneuver trail maintenance and/or creation. A total of 34.24 acres were maintained within DTA; 7.72 of those acres were on trails. The LRAM Crew 2019 annual report was completed January 31, 2020.

- **FWA FP Well 10 Reconfiguration** (SDSWCD): Hydro axed 27.4 acres around FP Well 10. Levelled piles were masticated and spread material to contour with existing ground surface. Cut and filled existing ground to create 3 pads totaling approximately 7 acres. Exposed soils vegetated with a 50-25-20-5 fescue/hairgrass/alpine bluegrass/annual rye mix and fertilized with a 60-60-30-10 blend of fertilizer. Project completed August 2019.

- **DTA Twin Lakes UAS Strip Upgrade** (SDSWCD): Extended Unmanned Aircraft System (UAS) airstrip from 800' to 1000' and paved the center 50' of the 1000' runway including the taxiway. Project completed September 2019.

- **DTA Oklahoma IA Debris Pile Support** (SDSWCD): Round piled debris from 2017/2018 firebreak clearing and supported AFS burning operations across 341 acres of firebreak from the Delta River to Delta Creek in DTA-West (approximately 29 miles). In many cases round piles from previous years were re-piled into larger piles for easier burning. Equipment was also used to re-pile already burned piles to re-burn material that was not completely consumed. Project completed March 2019.

- **DTA Carla Lake Fuel Break Clearing** (SDSWCD): Hydro axed 75 acres of downed and damaged spruce material. In addition used excavators to pull shear bladed material from debris piles along the edges of the firebreak that was too large to hydroax and re-piled in the center of the firebreak so that it could be burned by AFS. Project completed March 2019.

- **DTA Delta Creek IA Fuel Break Clearing** (SDSWCD): Cleared 3.1 miles of fuel break, 100 feet wide (38.1 acres) between Delta Creek and Arctic Creek in TA 545. Provided burn support for 14 days. Project completed March 2019.

- **DTA TA 532 Maneuver Trail Access Improvement** (SDSWCD): Improved 11,707' of access trail near Weasel Lake in TA 532. Mulched 15,166'of trail 15' each side. Stockpiled 5000 cubic yards of gravel. Project completed October 2019.

- **DTA TA 523 Rehabilitation and Reconfiguration** (SDSWCD): Hydroaxed berm material on approximately 6 acres in TA 523 Bondsteel complex. Reshaped areas using dozer and excavator. Seeded and fertilized 6 acres with 20 lbs per acre of Arctared Red Fescue/Nortran Tufted Hairgrass/Annual Rye grass mix and 291 lbs per acre of 60-60-30-10 blend fertilizer. Project completed September, 2019.

- **DTA TA 501 Dismounted Maneuver Thinning** (SDSWCD): Thirty-two acres of trees thinned on 5.5 miles of trail. Salvageable timber decked and slash (tops and stumps) hydro axed and/or chipped and spread on trails. A total of 40.4 acres of tank traps filled on Buffalo DZ and seeded to a 20lb per acre mix of red fescue, tufted hairgrass and annual rye. Seeded areas fertilized with 291 lbs per acre of 60-60-30-10 fertilizer. Project completed September, 2019.

- **YTA TA 305/306 Maneuver Trail Maintenance** (SDSWCD): Created 900' bypass trail, including all drainage cutouts and culvert installations, to avoid area of unacceptable grade for military traffic. Graded 1.5 miles of North Beaver Creek Road. Added course fill on 1922' of North Beaver Creek Road. Seeded and fertilized 1.6 acres of disturbed areas with 20 lbs per acre fescue / hairgrass / bluegrass / annual rye mix and 291 lbs per acre of 60-60-30-10 fertilizer. Project completed September, 2019.

- **YTA DET 460 Trail Maintenance and Erosion Stabilization** (SDSWCD): Treated 78.3 acres of roadside brush in the YTA with Streamline herbicide using a boomless spray truck and ATV sprayers. Project completed August, 2019.

- **YTA Stuart Creek IA Fuel Break Clearing** (SDSWCD): A fuel break was hydroaxed from Brigadier Road to South Fork of the Chena River along Vole Creek Trail 3.7 miles long by 100 feet wide for a total of 44 acres. Project completed January 1, 2019

***Fish and Wildlife***

- **DTA West Bison Habitat Management** (SDSWCD): In the summer of 2019, an ATV was used to fertilize 70.6 acres with a 60-60-30-10 blend and sprayed 100.6 acres of brush using Streamline herbicide. Completed 7 July 2019.

- **YTA Salmon eDNA sampling** (CSU/CEMML): Thirty sites in four streams were surveyed within the YTA (South Fork of the Chena River, Horner Creek, Hunts Creek, and 98-mile Creek) for salmon in September 2019 using eDNA methods and visual observation. Only one sample site in Horner Creek had a potential Chinook salmon detection, the 29 other sites had no salmon detections. USFWS set minnow traps during the same time in the South Fork of the Chena upstream of the Stuart Creek Impact Area and captured one live juvenile Chinook salmon. Completed October 2019.

- **TFTA Small Mammal Study** (CSU/CEMML): Small mammal trapping data was collected in 2017 and 2018 throughout the TFTA. The final report will be submitted in June 2020.

- **GRTA Acoustic Survey Bat Survey** (CSU/CEMML): Five ultrasonic acoustic recording devices at higher elevations (550-1030 m) were deployed to detect bat activity in GRTA during August-October 2019. Most bats were detected during August and early September at two sites next to a lake at 550 m. There were 2 detections of bats at the higher elevation sites above tree line. The final report will be submitted in June 2020.

- **Bat Roost and Habitat Use** (CSU/CEMML): Acoustic and telemetry data collected during 2014 and 2018 was analyzed to describe and identify temporal and spatial roost and habitat use pattern of bats throughout USAG Alaska training lands. The data includes 56,362 recorded bat calls at 404 sites, 87 bats netted at 11 forest sites, and 22 bats tracked to 19 tree roosts and 13 anthropogenic roosts. Genetic analysis of 48 bat tissue samples identified all bats as little brown bats (*Myotis lucifugus*). The final report to be submitted in June 2020 will include detailed activity pattern throughout USAG Alaska training lands. An additional report will focus on recommended field work guidelines. The final report will be submitted in June 2020.

- **DTA Songbird Habitat Use** (CSU/CEMML): Songbird point count data collected during 2017 and 2018 at 200 sites in DTAE and at 40 sites in DTA-West were surveyed to identify temporal and spatial habitat use pattern of songbirds. In DTA-East, data collection focused on habitats near primary and secondary roads. The final report to be submitted in June 2020 will include detailed habitat use pattern throughout DTA-East for ground and tree nesting songbirds and species identified using DTA-West. The final report will be submitted in June 2020.

- **YTA/DTA Breeding Bird Survey (BBS) and Alaska Landbird Monitoring Survey** (ALMS) (UAA): BBS rout and ALMS plots surveyed and reported on in June 2019.

- **TFTA Spruce Bark Beetle Survey** (CSU/CEMML): Insect traps were set at 17 sites to survey for spruce bark beetle (*Dendroctonus rufipennisand*) and ips beetles (*Ips spp.*) in the TFTA from May-July 2019. Both spruce bark beetle and ips beetles were detected at several sites. Highest trap counts for both insects occurred in the first half of June. The final report will be submitted in October 2020.

- **Main Post Birch Leaf Miner Survey** (CSU/CEMML): Insect traps were set at 26 sites to survey for leaf miner in the Main Cantonment and adjacent Training Areas from June-July 2019. The final report will be submitted in June 2020.

- **Main Cantonment, YTA Bat Surveys** (UAA): Bat detectors were alternated between Main Cantonment and YTA at two site clusters on each of the MP and two site clusters in the YTA from 17 May – 10 June, and again from 22 July – 10 September. Result and final report will be available in May 2020.

- **Wood Frog Surveys** (UAA): To survey for amphibians in the YTA and DTA in 2018 and 2019, acoustic recorders were deployed in March, 26 audio/visual surveys were conducted in both training areas at historically surveyed locations, and eDNA samples were collected at 7 location near the survey sites. Result and final report will be available in May 2020.

- **Ruffed Grouse Surveys** (UAA): Conducted in the fall 2018 and spring 2019, respectively, historic drumming and brood routs were surveyed. Results and final report will be available in May 2020.

- **Raptor Surveys** (UAA): Helicopter based surveys occurred in April and May of 2018 and 2019 on USAG Alaska training lands. Species, location, and habitat data was recorded and included in a program database. Final report available May 2020.

- **DTA Sandhill Crane Study** (UAA): A methodological study was conducted at several observation points along the Delta River in DTA in 13 – 22 September to compare Forward Looking InfraRed (FLIR) thermal imaging bi-oculars to both ornithological radar detections and audio/visual detections. Final report available May 2020.

- **TFTA Winter Chinook salmon eDNA Pilot Study** (CSU/CEMML): A methodological management pilot study was conducted to determine the cost-effectiveness of using eDNA to estimate Chinook salmon detection rates in the winter in a low-density environment. Solely using eDNA as a detection method became cost effective at or above approximately 50 sampling sites, and was a more efficient detection method because no juvenile Chinook salmon were caught using traditional methods. A final report completed October 2018 and a scientific publication is currently in review.

- **YTA Fish Surveys** (UAA): Four streams in YTA were surveyed from 7 – 9 August for fish and fish habitat. In Moose Creek, adult Chum salmon were observed and Chinook salmon eDNA was detected; in Knokanpeeover and French Creek, low densities of grayling were found with no salmon detections; and no fish were detected in Kanpeeover Creek. Report will be available May 2020.

- **BRTA Comparative Sheep Study** (CSU/CEMML): A methodological study compared class-specific abundance estimates derived from both road and aerial surveys. Results indicated that road surveys do not provide reliable inference about daily abundance or the seasonal trends of Dall's sheep within the survey area. Report will be available May 2020 and a scientific manuscript will be submitted May 2020.

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