USAG Alaska 2020 Natural Resource Management Report to the Bureau of Land Management

U.S. Army Garrison Alaska

January 2020

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Introduction

United States Army Garrison Alaska acknowledges the Athabascan people as the original stewards of these lands and expresses appreciation to live, work, recreate, and train on the Dena homeland.

Effective communication and coordination between the Bureau of Land Management (BLM) and the Army has been identified as a need in the "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Bureau of Land Management Alaska, and the U.S. Army Garrison Alaska concerning the management of lands in Alaska withdrawn by Public Law 106-65 for military use".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 report contains brief project descriptions of United States Army Garrison Alaska (USAG Alaska) actions in support of natural resources management and serves as the annual report for calendar year 2020 to the BLM as stipulated by 106-65 memorandum: providing a report on vegetation and habitat actions. To continue improving communicating among federal and state agencies, stakeholders, and tribes, this document contains USAG Alaska managed lands that are not included in the 106-35 memorandum.

The Natural Resources Program is guided by the USAG Alaska Integrated Natural Resources Management Plan (INRMP), a requirement of the Sikes Act (USC §670), 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 USAG Alaska was last updated in 2020 and is reviewed and updated annually.

The Army's Integrated Training Area Management (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 questions concerning environmental goals and polices, please contact:

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Acronyms

AFS Alaska Fire Service
ADFG Alaska Department of Fish and Game
ADNR Alaska Department of Natural Resources
APHIS Animal and Plant Health Inspection Service
ATV All-Terrain Vehicle
BLM Bureau of Land Management
BRTS Black Rapids Training Site
CEMML Center for Environmental Management of Military Lands
CRREL Cold Regions Research and Engineering Laboratory
CSU Colorado State University
ADOF Alaska Division of Forestry
DPW ENV Directorate of Public Works Environmental Division (USAG Alaska)
DTA Donnelly Training Area
FIA Forest Inventory and Analysis
FWI Fire Weather Index
GRTA Gerstle River Training Area
GTT Geospatial Task Tracker
LiDAR Laser imaging, Detection, and Ranging
LRAM Land Rehabilitation and Maintenance
RFMSS Range Facility Management Support System
RTLA Range and Training Land Assessment
SDSFIE Spatial Data Standard for Facilities, Infrastructure, and Environment
SDSWCD Salcha-Delta Soil & Water Conservation District
SERDP Strategic Environmental Research and Development Program
UAF University of Alaska Fairbanks
USAG Alaska United States Army Garrison Alaska
USDA WS United State Department of Agriculture Wildlife Services
USFWS United States Fish and Wildlife Service
TFTA Tanana Flats Training Area
WASH Ladd and Allen Army Airfield Wildlife Aircraft Strike Hazard
YTA Yukon Training Area

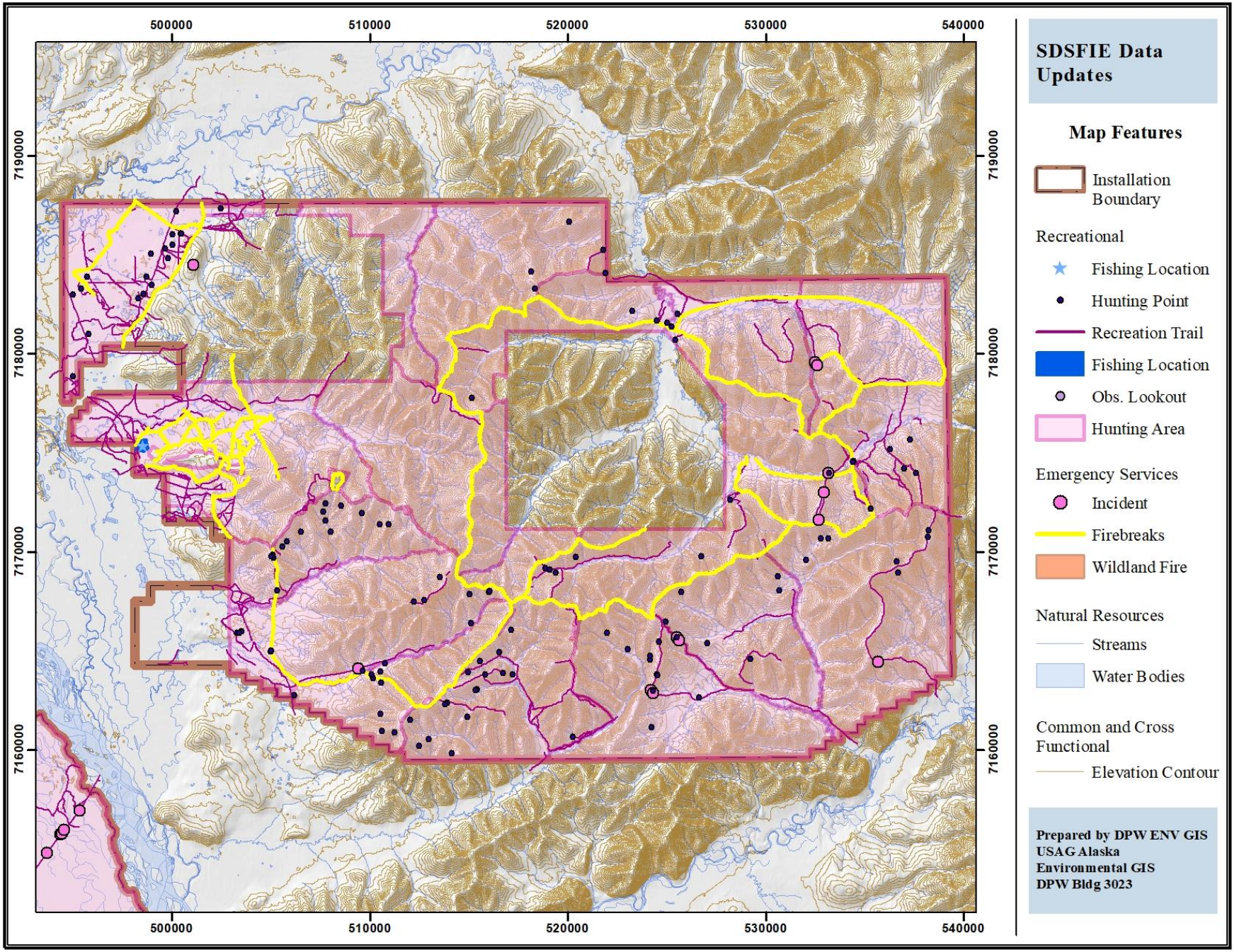
Environmental GIS

The USAG Alaska Geographic Information System (GIS) is a foundational capability of natural resource management. GIS is a computer-based tool capable of assembling, storing, manipulating, and displaying geographically referenced information, (i.e., data identified according to their locations). The system can be used to analyze and model (manipulate, overlay, measure, compute, and retrieve) the digital spatial data and display the new map products and tabular resources information showing the results of the spatial analysis. GIS technology integrates common database operations such as query and statistical analysis with the unique visualization and geographic analysis benefits offered by maps. These abilities distinguish GIS from other information systems.

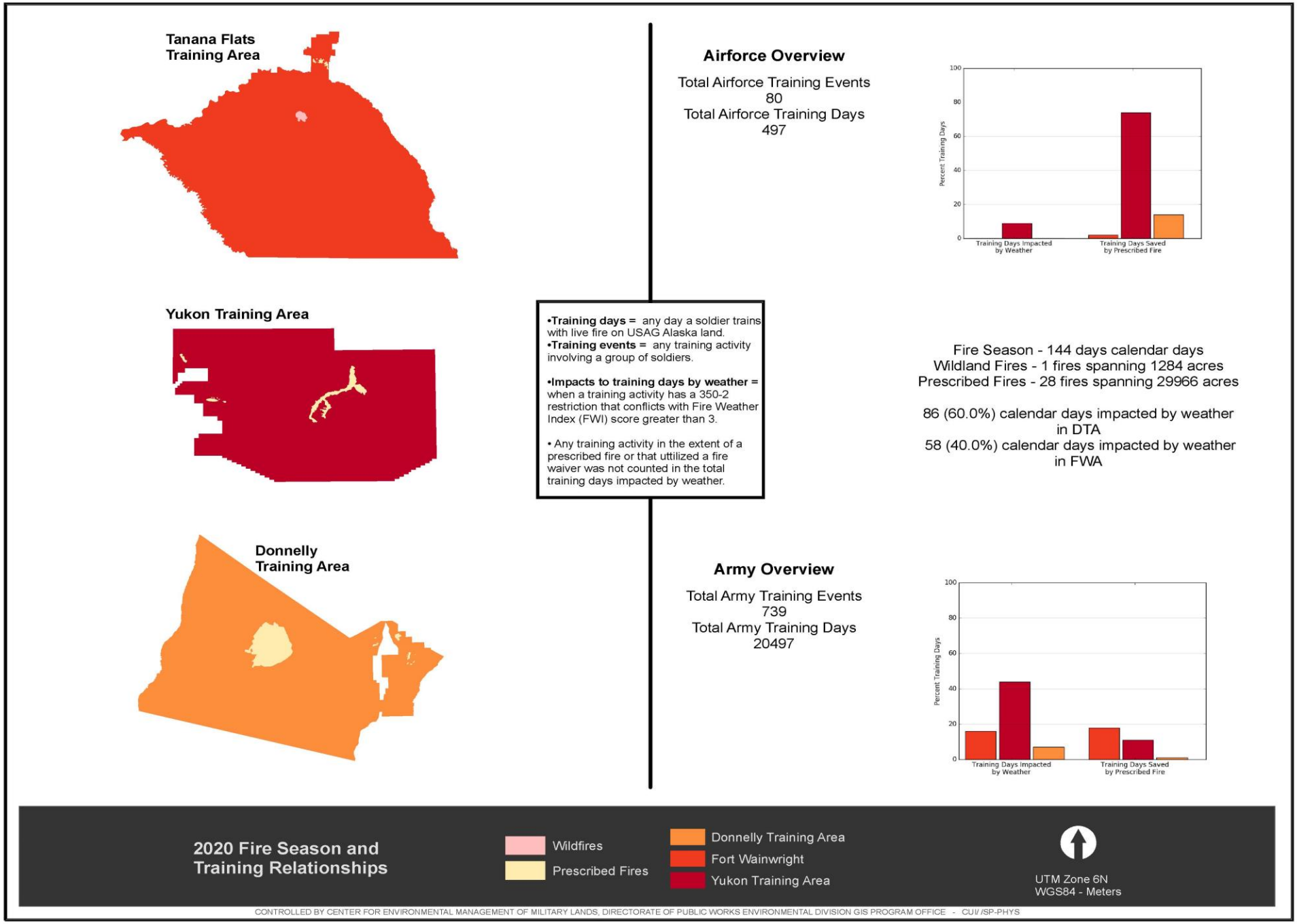
USAG Alaska Fort Wainwright DPW Environmental personnel, with assistance from USAG Alaska Fort Wainwright 516th Signal Brigade, manage the GIS application server. The server supports GIS users from USAG Alaska Fort Wainwright and Fort Greely DPW, and USARAK TSA-AK Range Control at Fort Wainwright, Donnelly Training Area, and Joint Base Elmendorf Richardson (JBER).

Each of the three primary GIS users (DPW Environmental, DPW Real Property, USARAK TSA AK) are responsible to be data stewards for their data layers. DPW Environmental is responsible for natural resource data layers, such as soils, water, vegetation, forestry, and wildlife resources. DPW Real Property is responsible for real property data layers such as boundaries and infrastructure, while USARAK TSA AK maintains data layers for range and training activities.

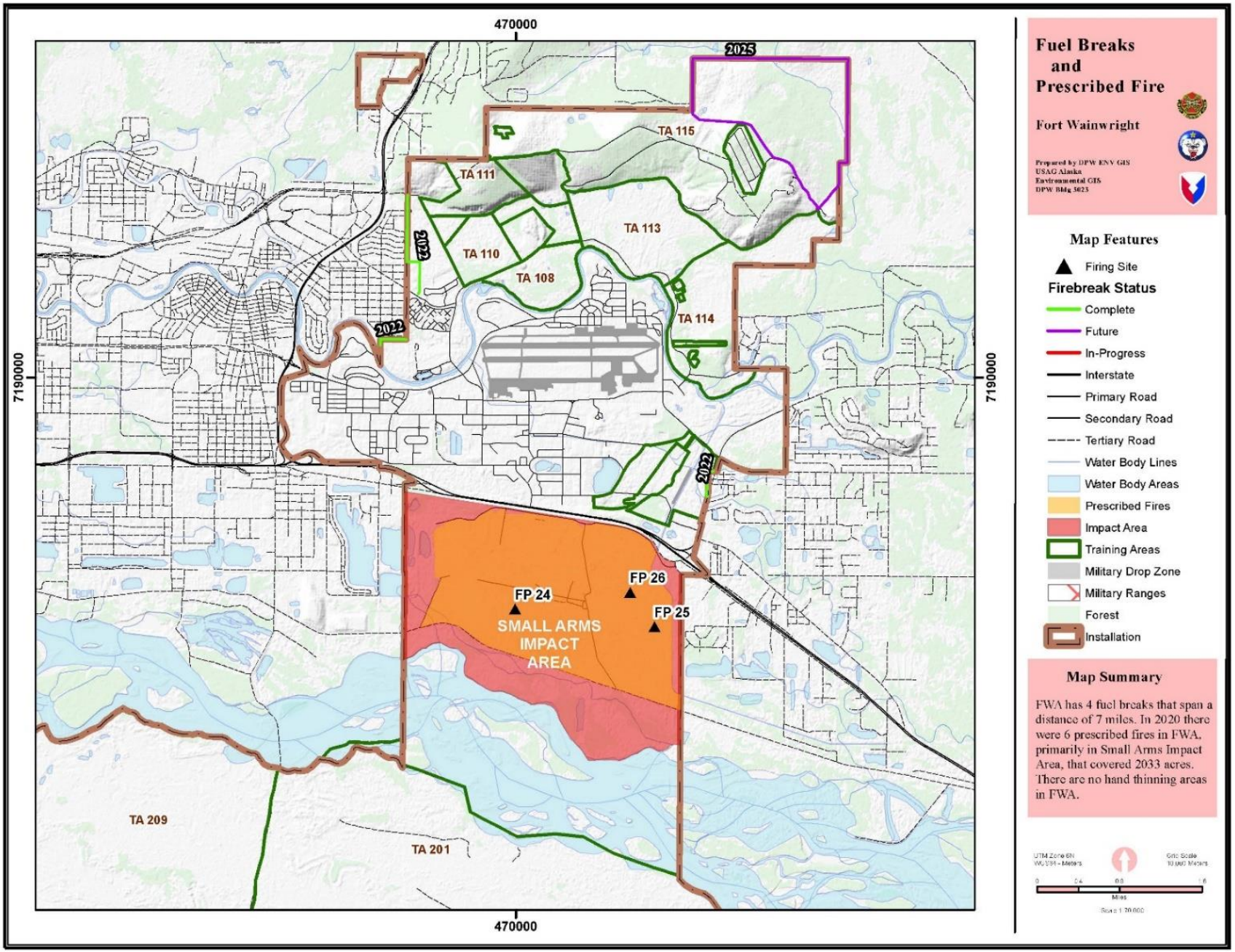
The following describe the DPW GIS Natural Resources 2020 completed tasks relevant to BLM and Sikes Act partners. The tasks are displayed as maps or graphics with a brief description. For more information or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.



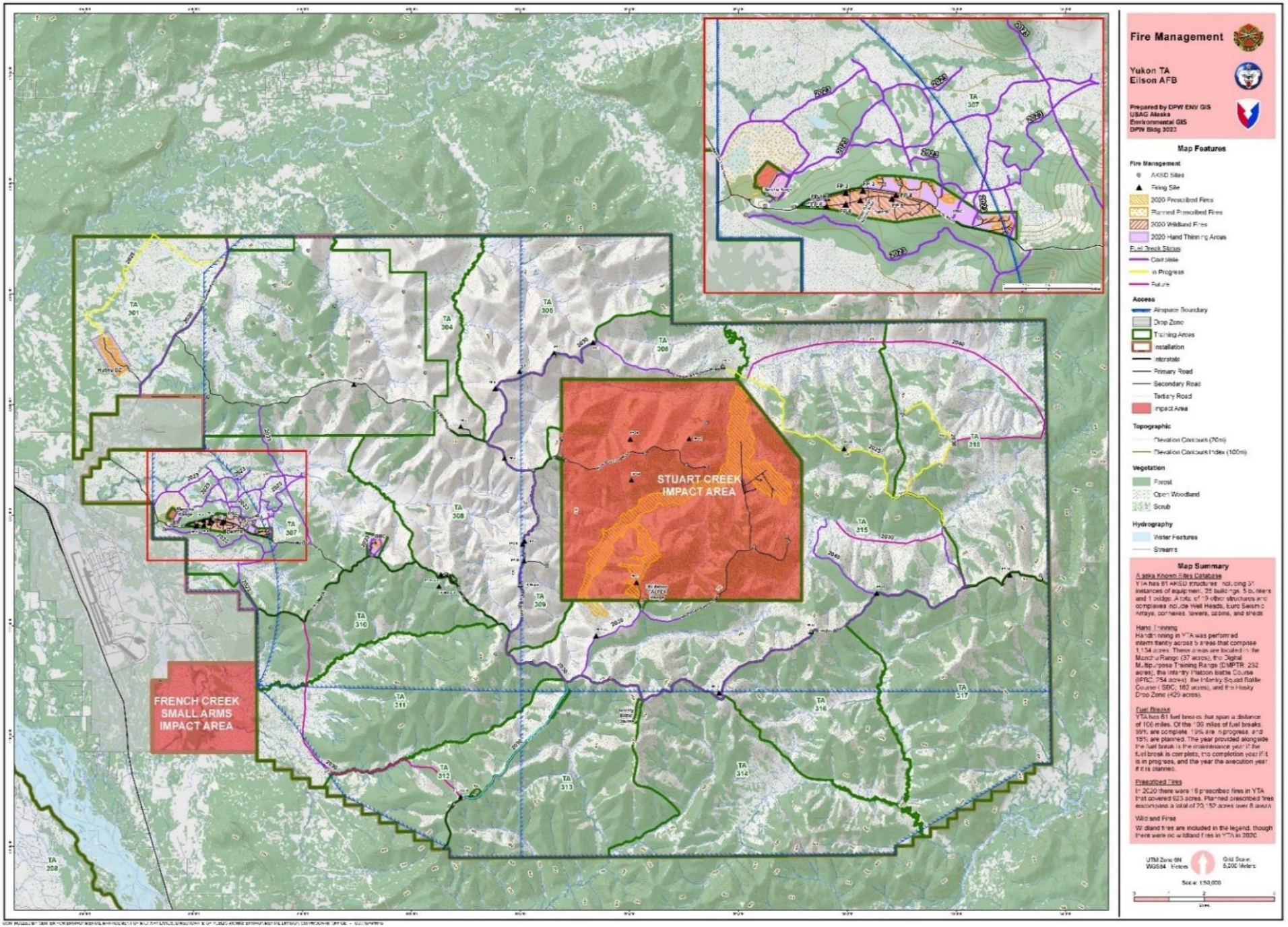
Updates to the geometry and attribution of all data layers were completed with the objective of improving compliance with the Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) 4.0 format (a DoD IT standards requirement), to provide more information for all data users and prepare for land withdrawal review. Additionally, a series of new data layers was created. Data layers are updated annually.



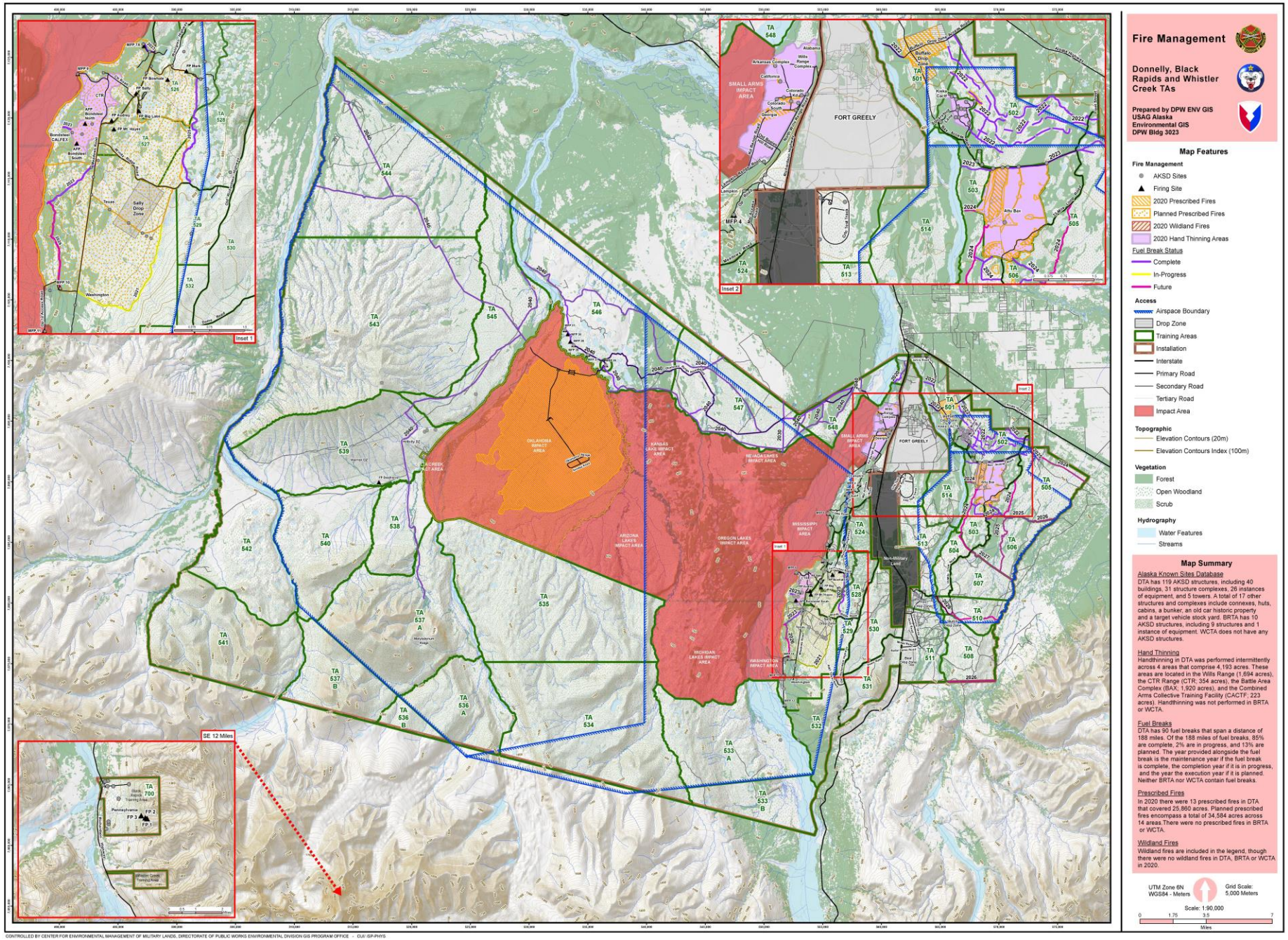
The goal of this project is to describe the relationship between Fire Weather Index (FWI) and training restrictions, which will improve costs assessment associated with prescribed burning, 350-2 fire waivers, and imposed training restrictions. Analysis updated annually.



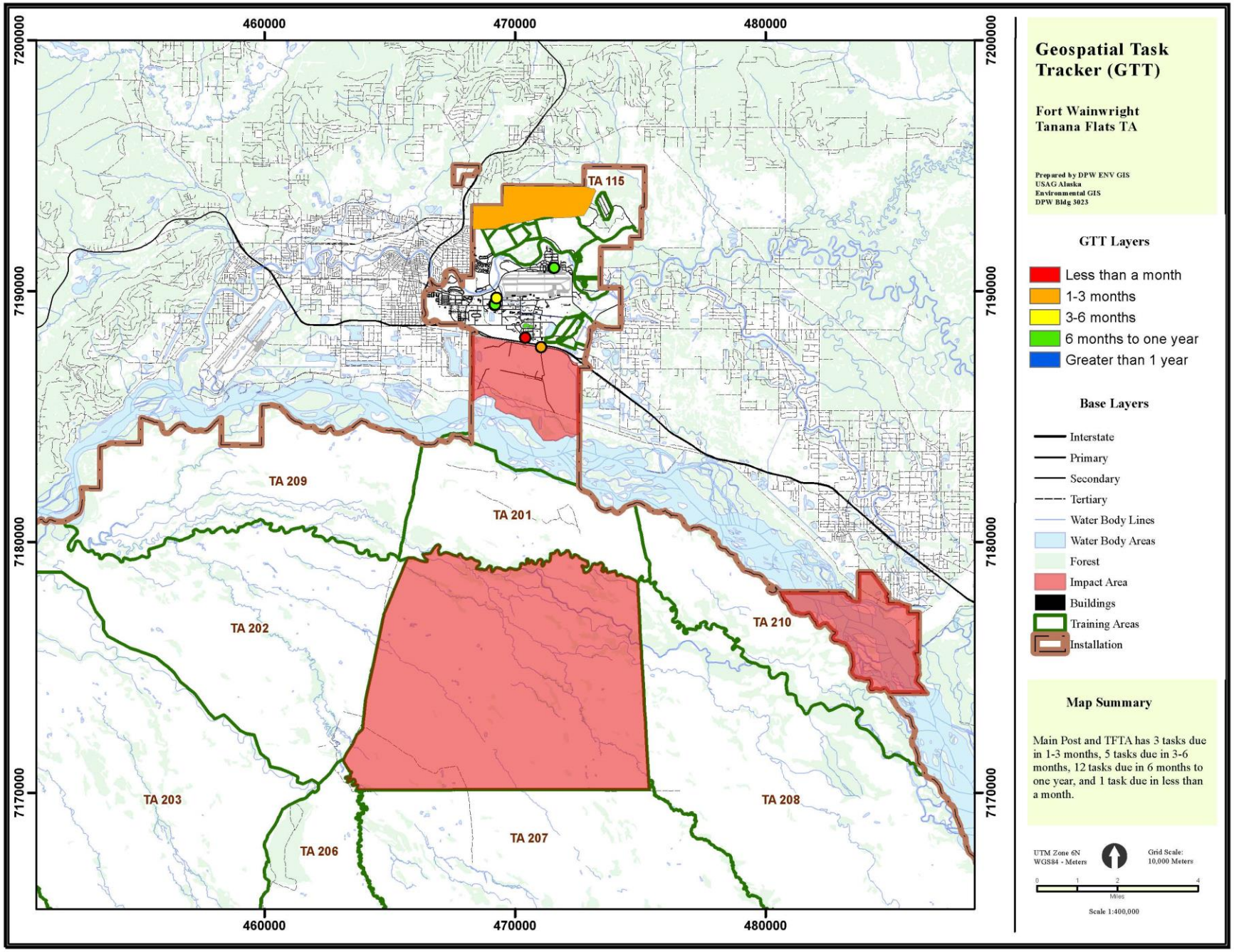
12 acres of forested lands were thinned, and pile burned to an approximate 12' X 12' spacing around high use military training sites in the YTA, DTA and the Main Cantonment of Fort Wainwright. 26,783 acres were burned using prescribe fire on military training ranges and impact areas in the YTA, Main Cantonment, DTA to reduce the potential of military training wildfire starts. Projects were completed November 2020 and are ongoing annually.



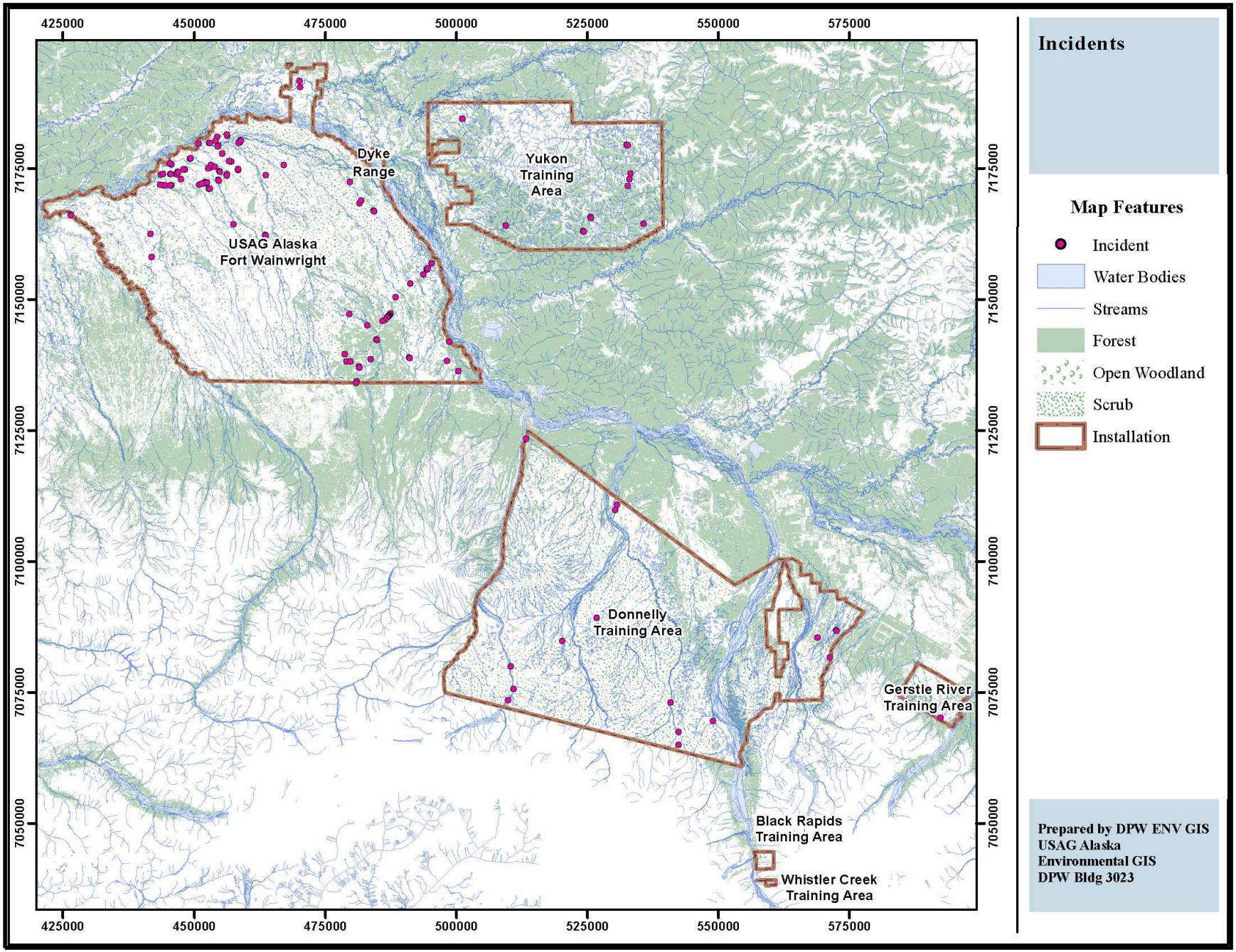
An up-to-date version of Alaska Known Sites Database (AKSD) was produced through field data collection, bringing in data from other databases, and imagery mapping and verification. AKSD features were displayed in Fire Reference maps. Updated annually.



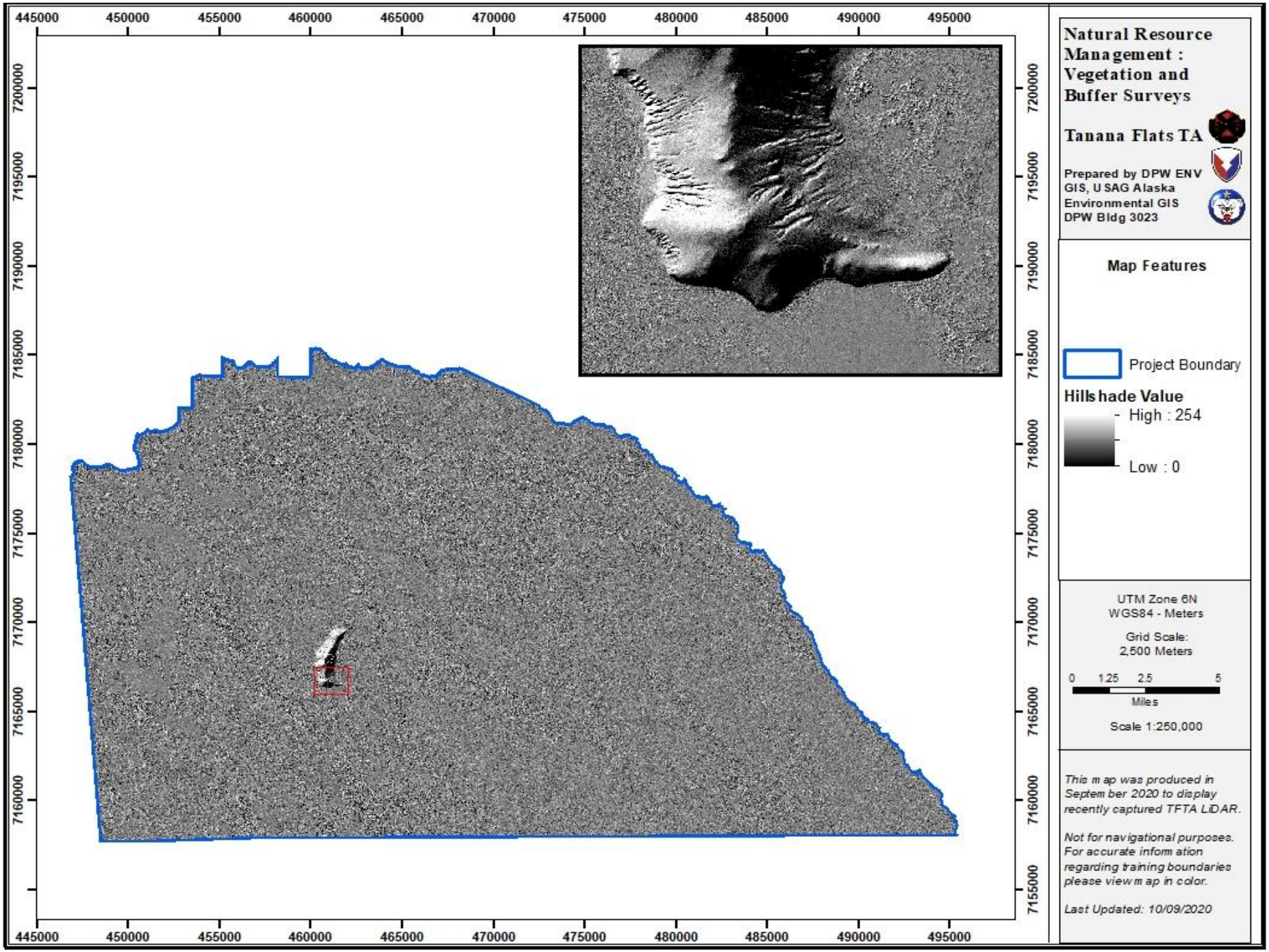
A map was created for each Training Area relaying fire related reference information, including hand thinning areas, fuel break, AKSD sites, recent wild/prescribed fires, and firing sites. Each map is utilized by subject matter experts to provide guidance on fire management practices. Updated annually.



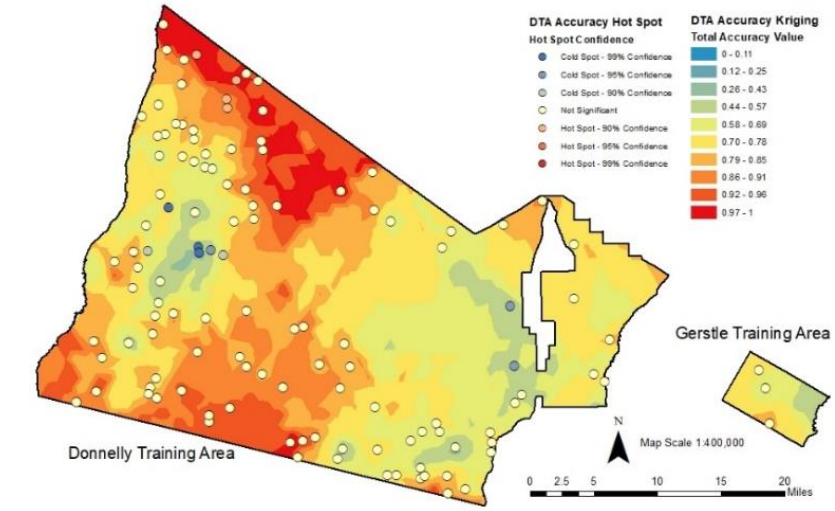
A relational database was created that tracks natural resource related activities across the training lands. Displaying entries in the geospatial task tracker provides an overview of current natural resource tasks, and helps users manage upcoming deadlines. Maps and database are updated continuously.

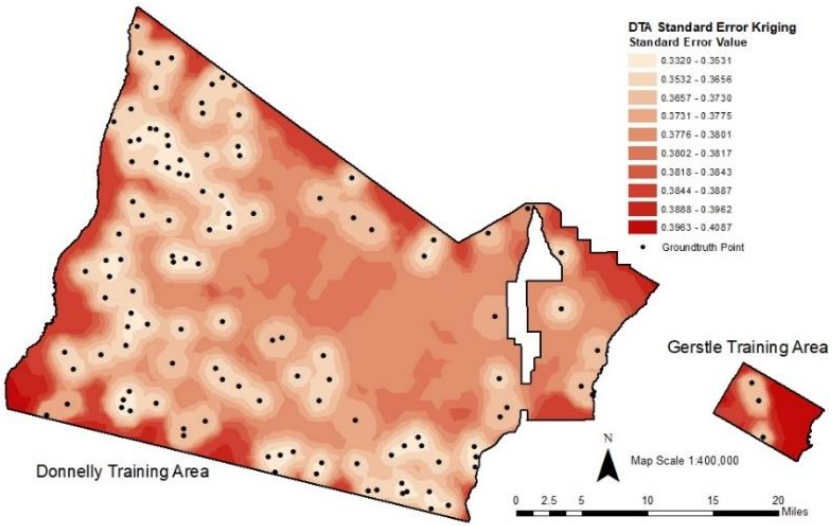


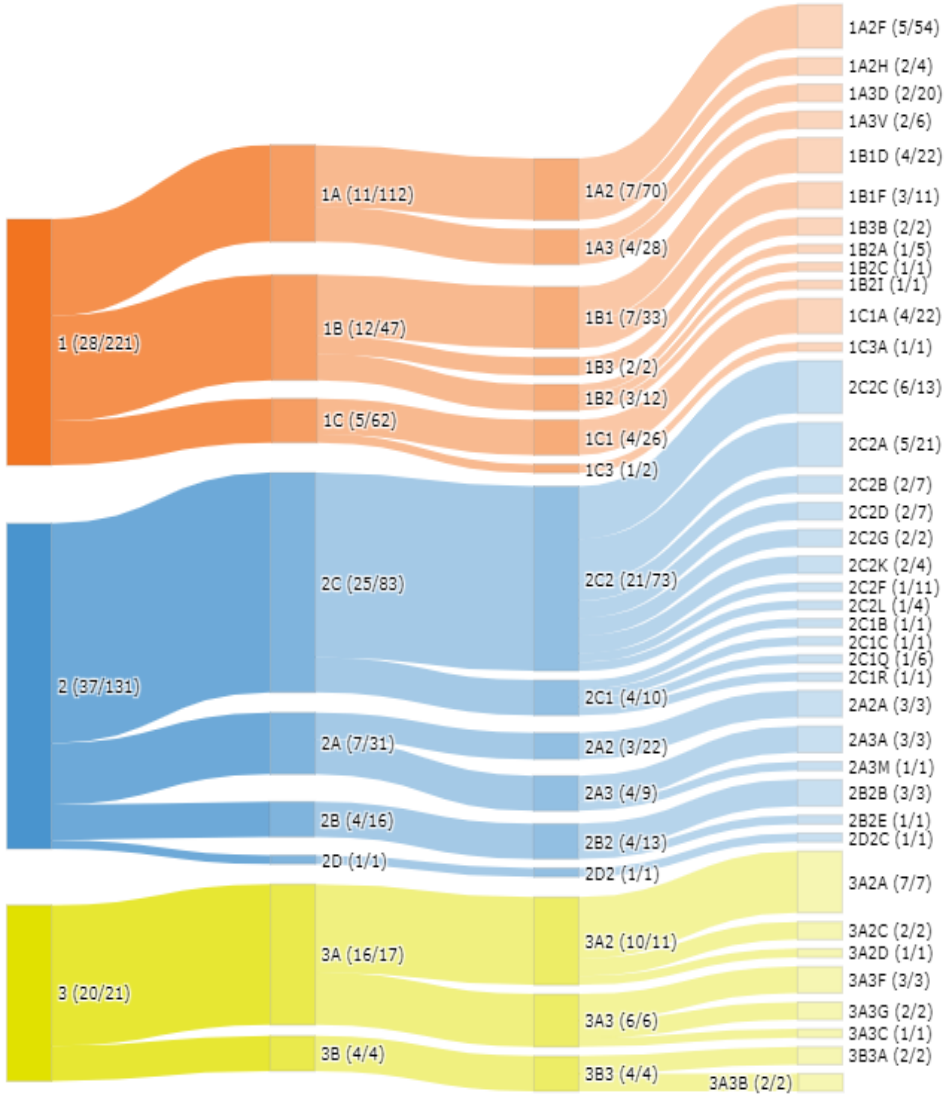
A mobile data collection system was created to track impacts to natural resources across the training lands. Existing and removed trash will be tracked using this system. Data gathered is then processed, stored, and displayed. This project is in progress while maps, database, app updates, and coordination strategies are updated continuously.



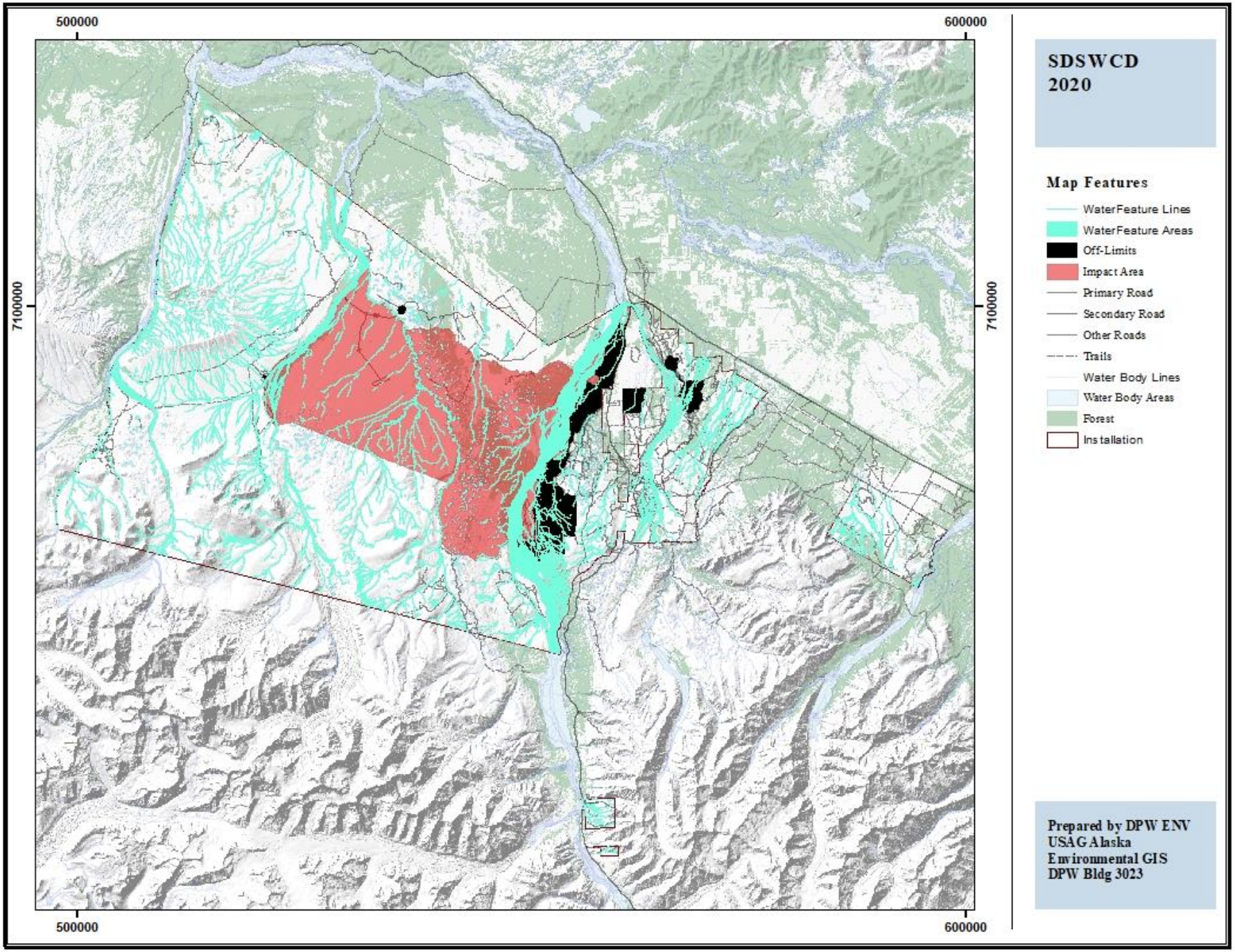
A series of LiDAR derivatives for recently flown areas are being created and updated to improve current models, mapping, and spatial reference. These data layers include slope, aspect, curvature, wetness elevation index, landforms, standard deviation of LAS, etc. Final products will be available December 2021.



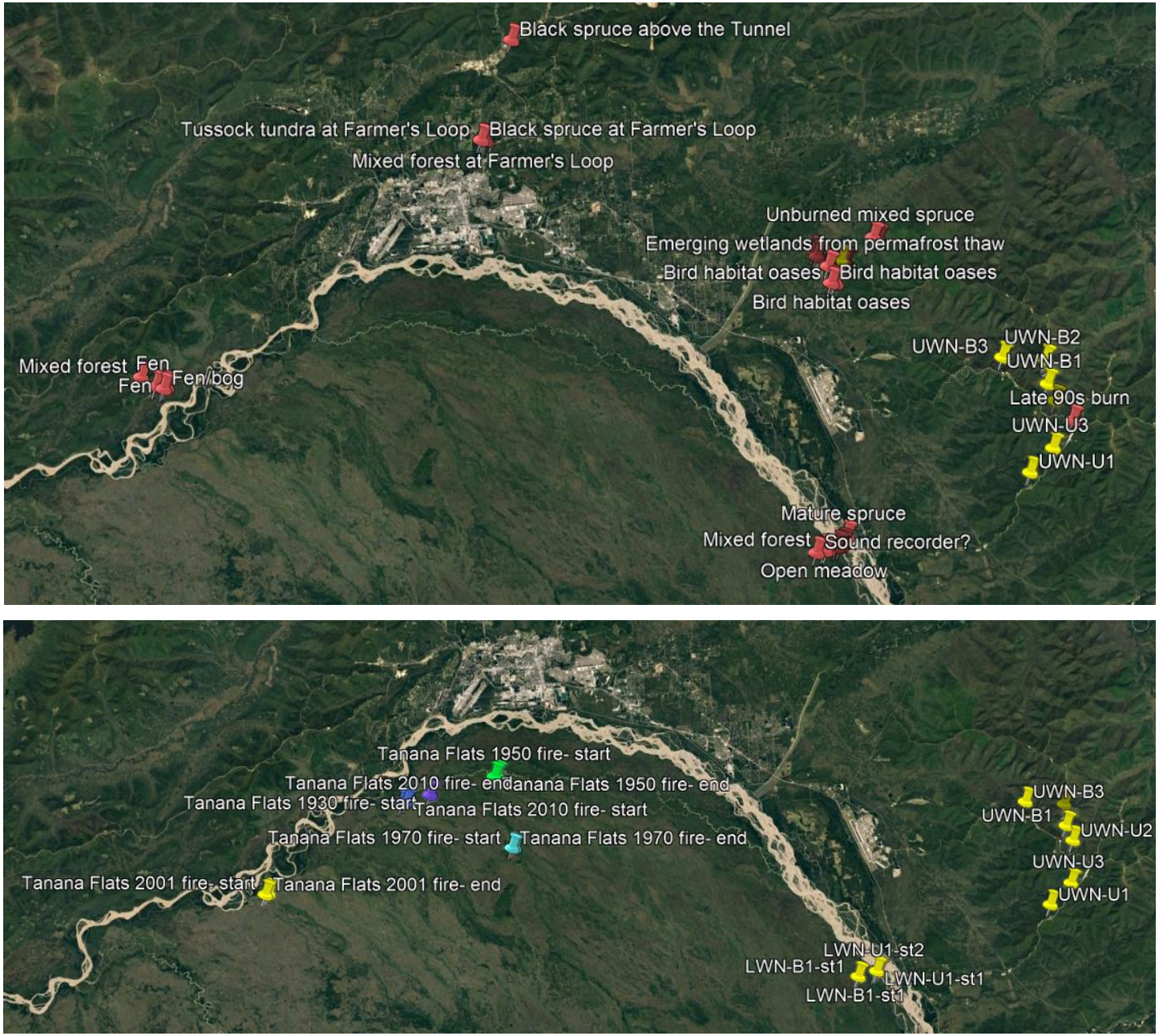




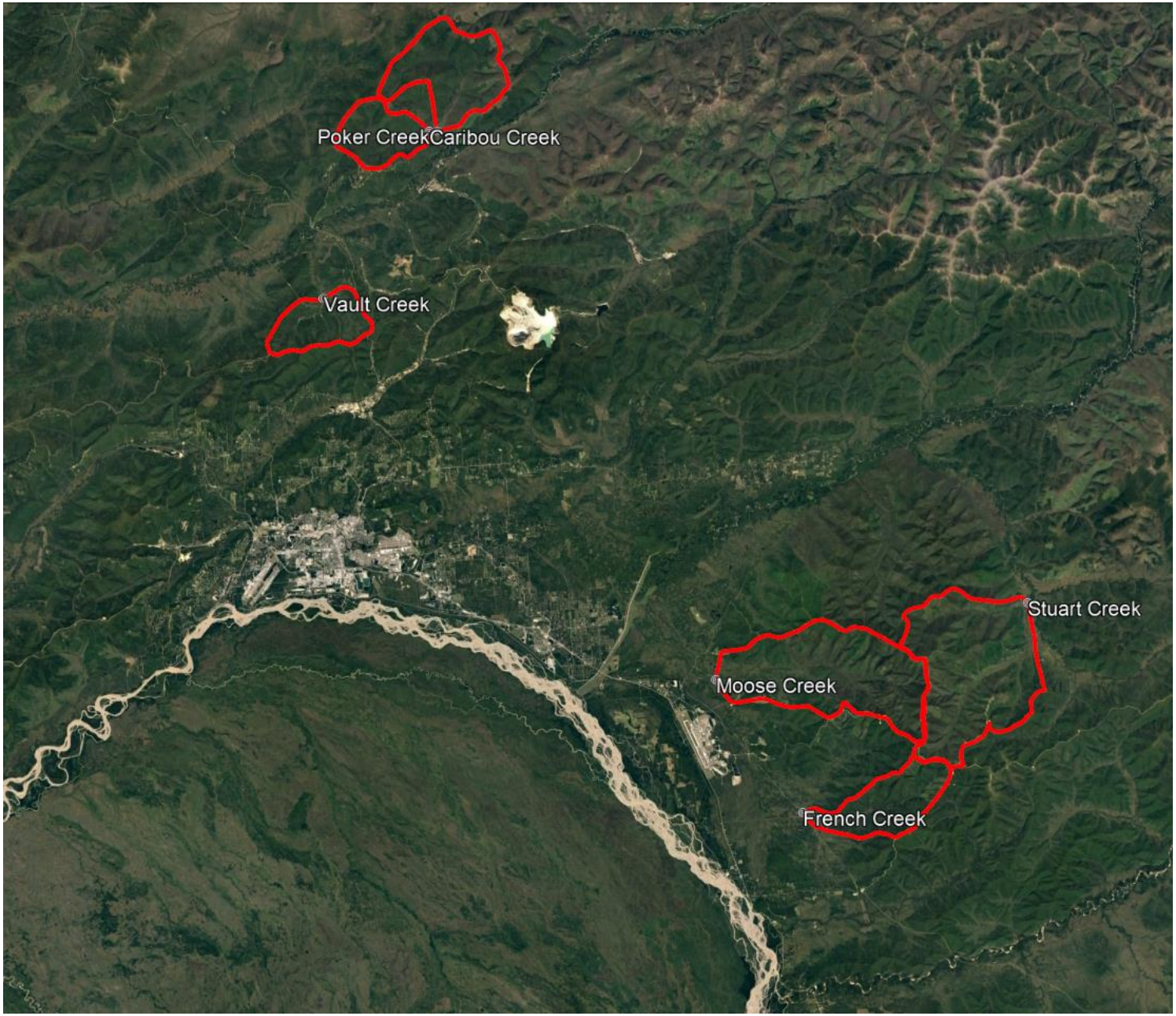
Accuracy assessment to determine the accuracy of the vegetation classification map across DTA, GRTA, TFTA and YTA. The classified vegetation data was compared to ground truth sample points using a Python script that yielded individual accuracy values, which were interpolated to visualize the map's accuracy across the training areas. The report provided assessments of each vegetation classification type, as well as recommendations to improve vegetation classification and accuracy assessments in the future.



From LiDAR data, hydrology features were more accurately mapped for 93,348 acres in Donnelly Training Area East. Data was developed and packaged into an ESRI geodatabase mapped at 1m resolution. Completed September 2020. More updates will be provided in 2021.



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 to model post fire recovery for ecosystems and habitats at potentially vulnerable permafrost areas The study results will include field measurements at a variety of locations on the Training Ranges as well as a forward looking ecosystem trajectory model to the year 2100. Final report will be completed July 2021.



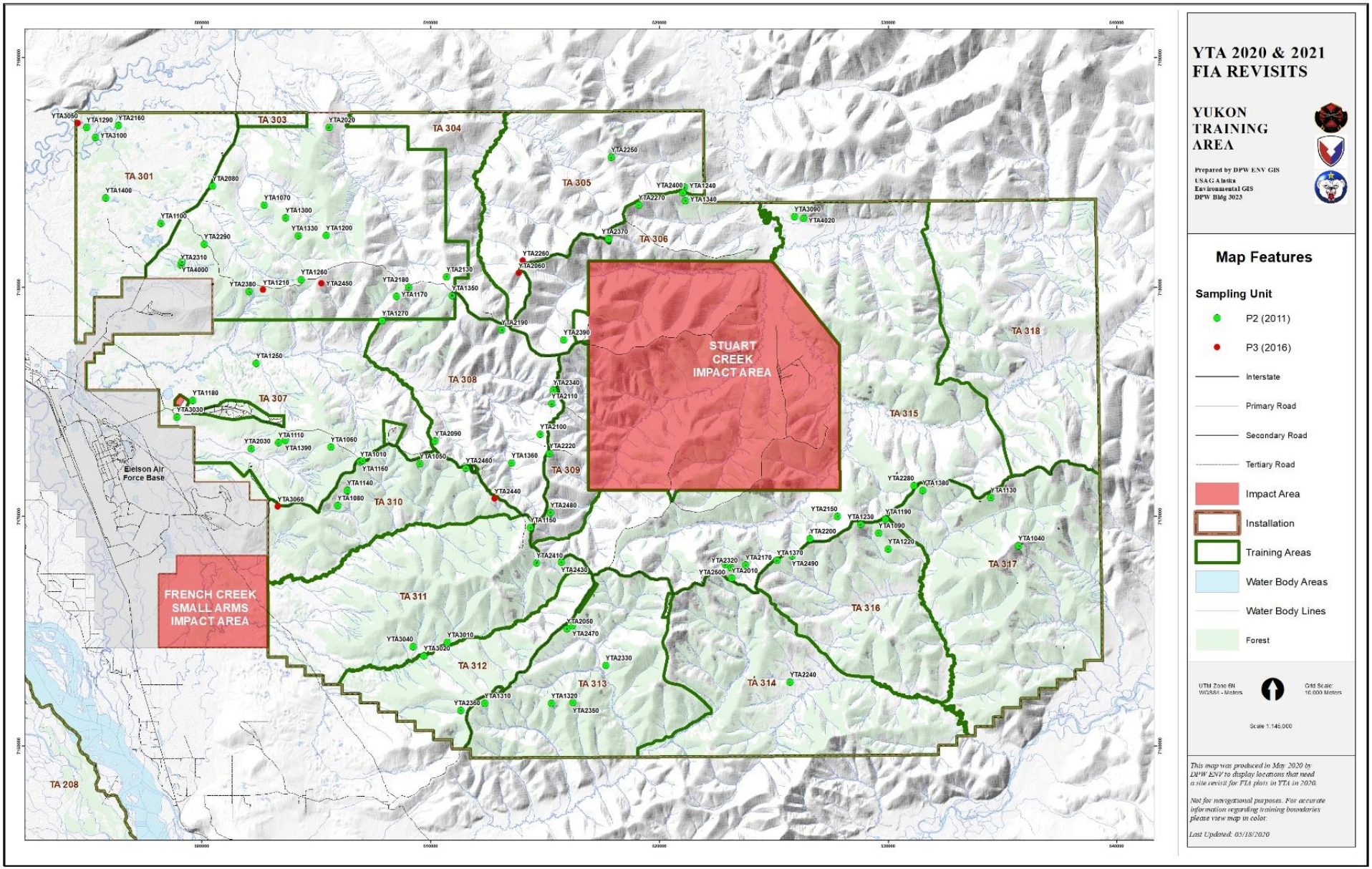
Stream flow and stream chemistry measurement were taken at Moose Creek and Stewart Creek, specifically focusing on surface water nitrogen and carbon in the microbiome. The goal of this SERDP funded study is to model the relationship between flow and nitrogen and carbon concentrations to calculate change from the watershed. Project will be completed January 2022.

Forestry

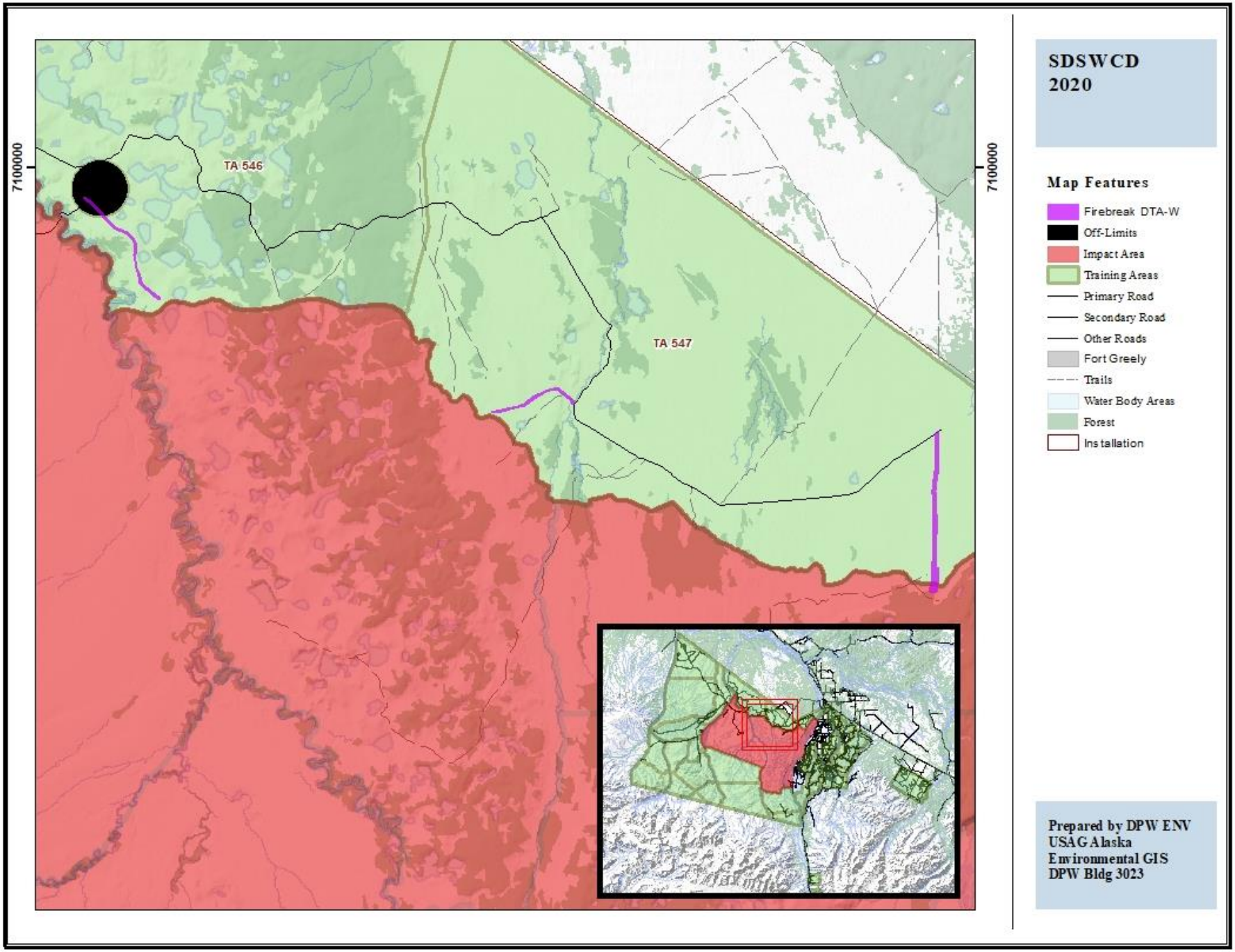
USAG Alaska manages 374,678 acres of forest. Forest inventory and forest stand maps are maintained for all USAG Alaska managed lands. USAG Alaska sells firewood and money is deposited into the DoD Forestry Account. USAG Alaska issues approximately 200 firewood permits annually and cuts approximately 50 acres (1000 cords) per year primarily to support military training and wildfire management. Secondary benefits are for forest health and wildlife habitat.

The goals of USAG Forestry Program include (1) maintaining a diverse forest to enhance a varied military training environment, (2) maintaining ecosystem functionality and manage vegetation and timber in support of ecosystem management objectives, (3) maintaining and enhancing the health, productivity, and biological diversity of forest and woodland ecosystems, (4) reducing wildland fire risk, (5) maintaining forestry operations and standards as defined by the State of Alaska Forest Practices Act, (6) maintaining forest inventory, (7) Operating a firewood program within the limits of annual allowable harvest within each major training area as defined by the State of Alaska Forest Practices Act.

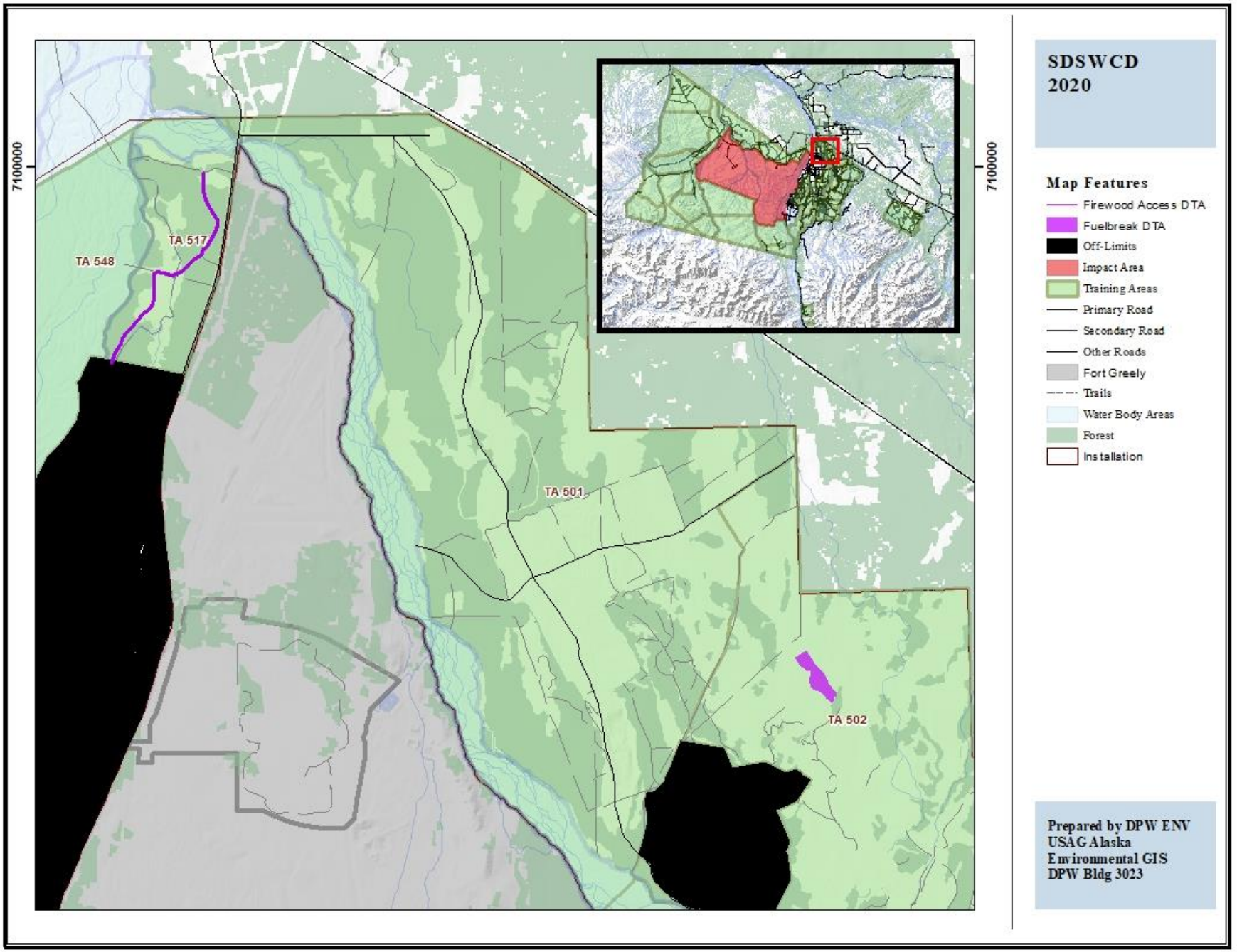
The following describe the Forestry 2020 completed tasks. The tasks are displayed as maps or graphics with a brief description. For more information or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.



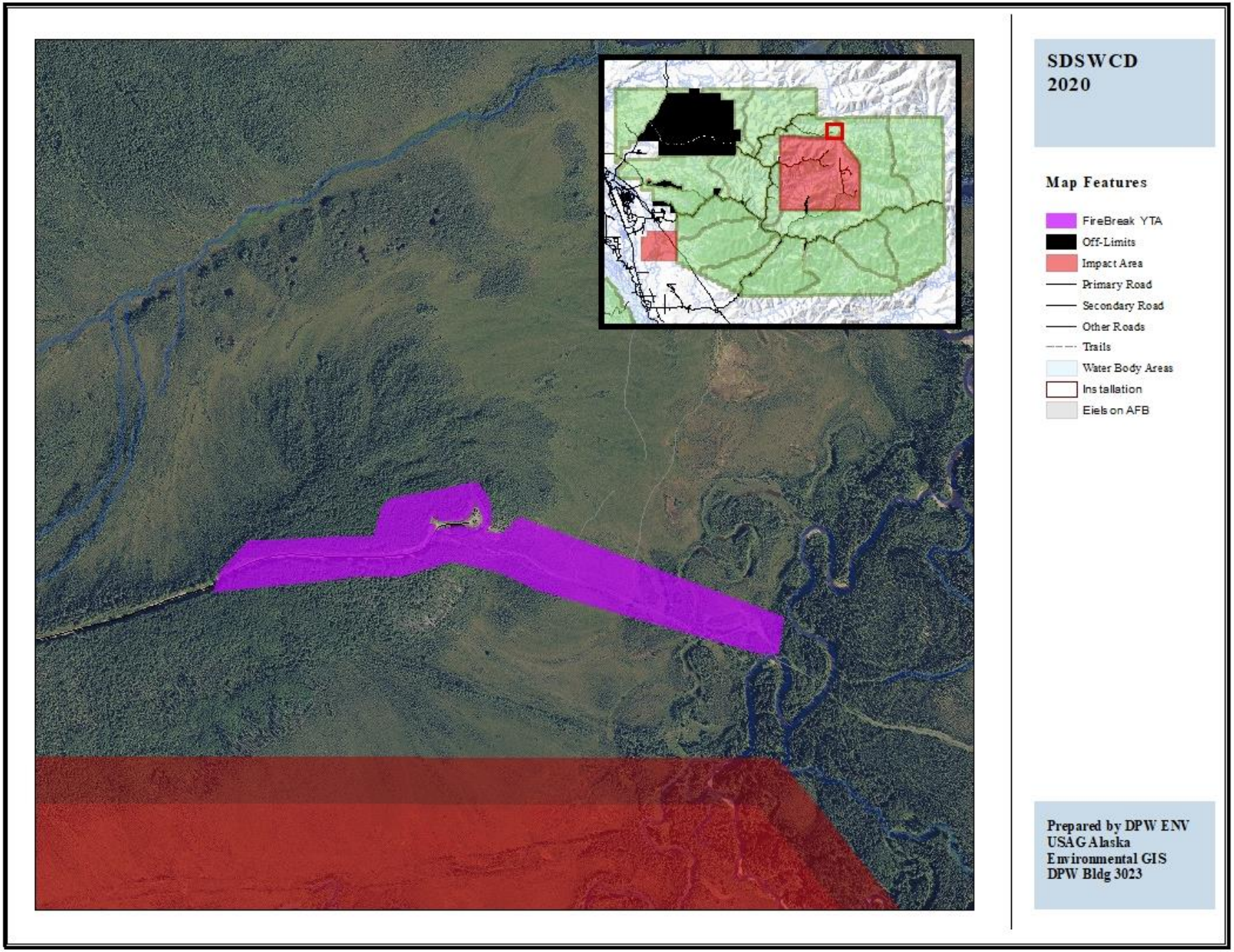
Forest Inventory and Analysis (FIA) plot survey plots in the YTA scheduled for 2020 and 2021. The surveys provided summaries of tree species composition, size class distribution, understory species composition, canopy cover, crown size and position, stem density, basal area, mean annual growth, regeneration composition and density, and merchantable volumes by species. The project will be completed October 2021.



39.5 acres of vegetation were cleared on existing firebreak and created two new firebreaks at 5.1 acres and 7.3 acres using two skidsteer drum mulcher hydroaxes in the Donnelly Training Area. Project completed February 2020.



Using brush saws, young spruce was removed from a 16.3 acre firebreak in TA 502. Using a hydro-ax, 1.6 miles (1.8 acres) of access trail was created in TA 517 for firewood sale and firebreak management activities. Project completed September 2020.



38.9 acres were cleared of new firebreak using masticating hydroax. 1560 ft. of access road was improved into project site which included creating gravel on site. These areas were also seeded to complete the project. Project Completed October 2020. Additionally, 1000 alders were planted in two firebreaks in the DMPTR/ISBC area of the YTA. Project Completed October 2020.

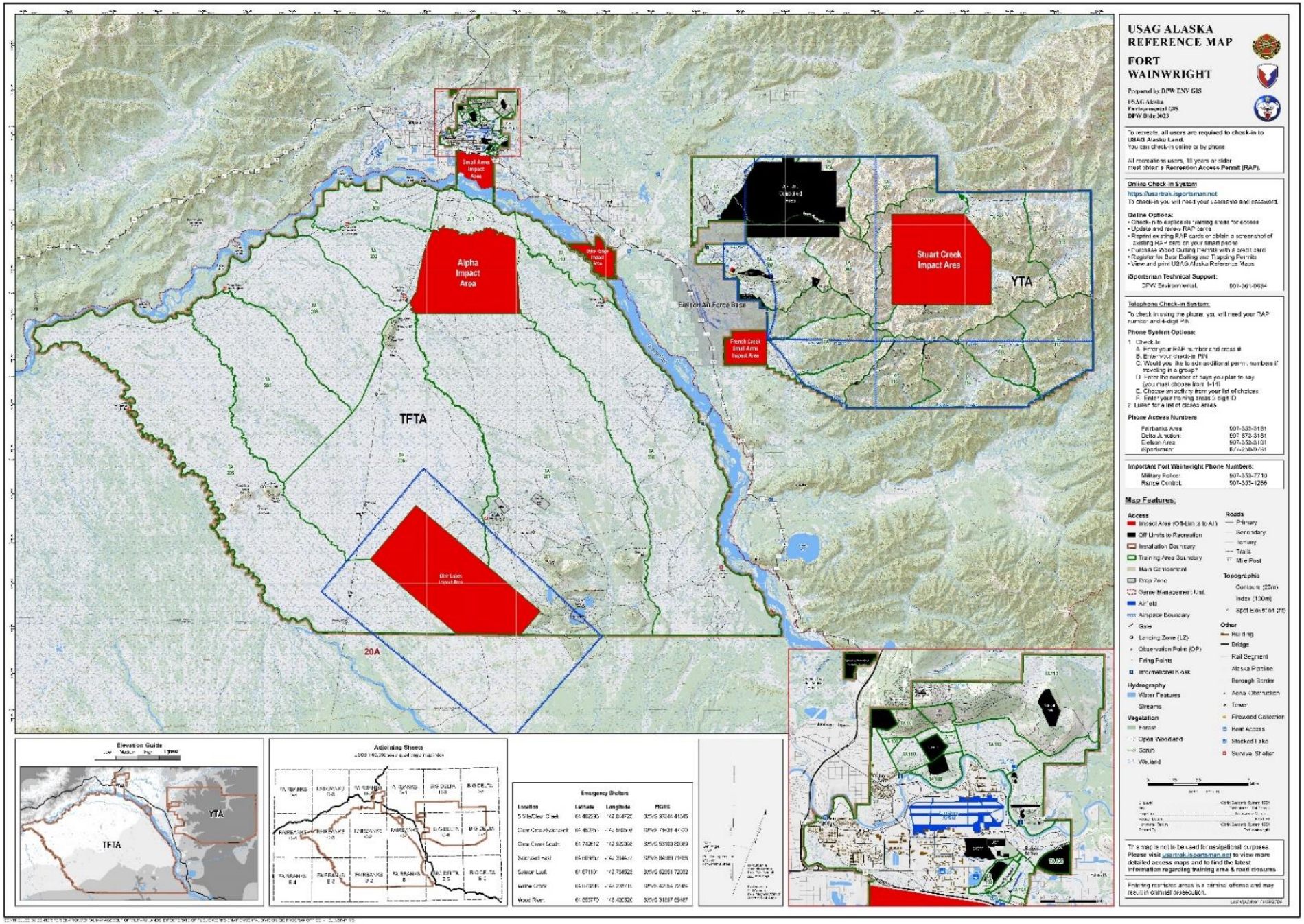
Recreation

Training areas on USAG Alaska lands are open to fishing, hunting, and trapping when the training areas are not being used for military training. Hunters, trappers, and fishermen must follow state regulations and USAG Alaska Regulation 190-13 (Enforcement of Hunting, Trapping, and Fishing on Army Lands in Alaska). USAG Alaska currently uses the USAG Alaska iSportsman website (https://usartrak.isportsman.net) to (1) inform the public where they are able to recreate, (2) when accessible training areas are available for recreation, (3) record when recreationists access USAG Alaska managed lands.

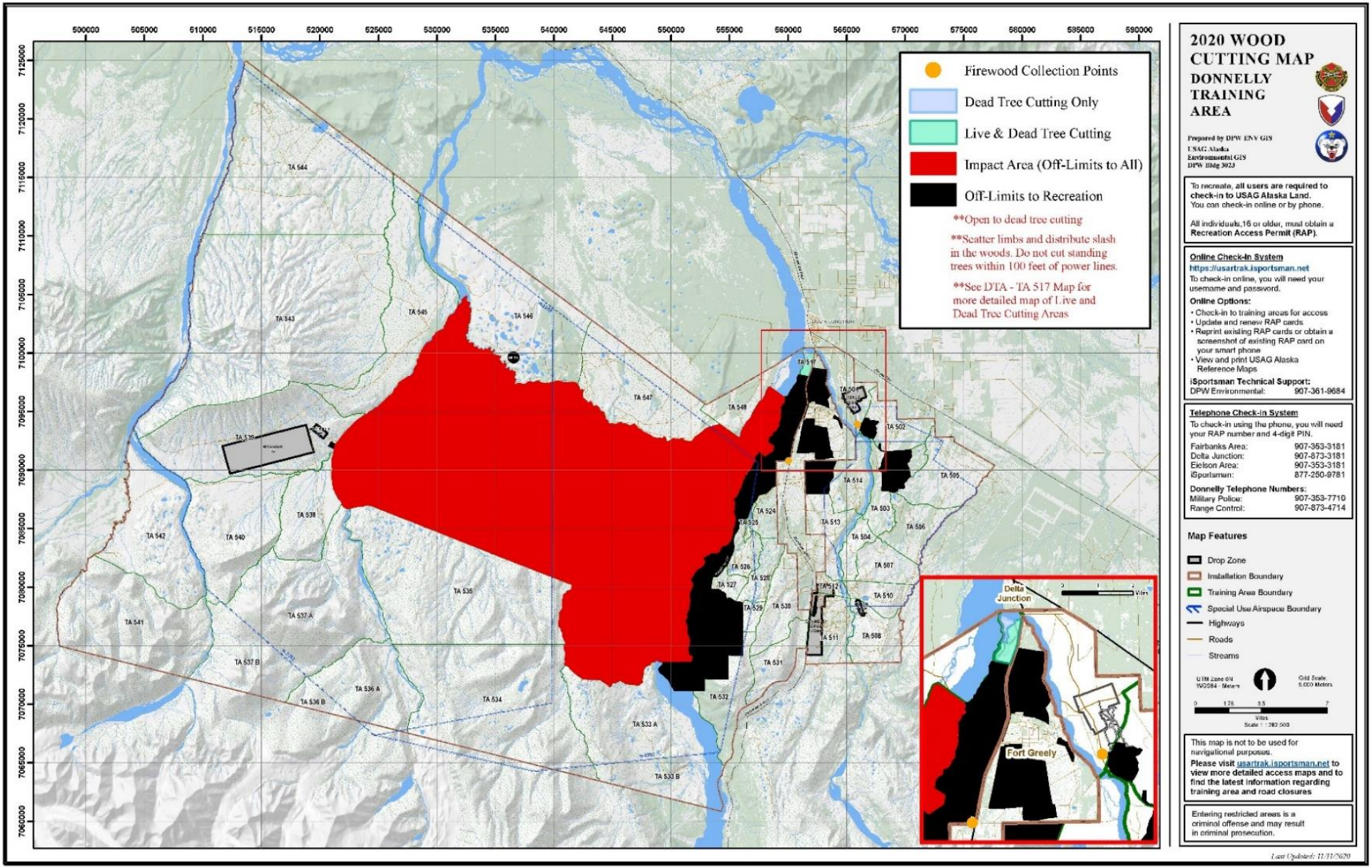
The goals of USAG Recreation Program include (1) providing for sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources, (2) providing high quality, sustainable hunting, trapping, and fishing opportunities to Soldiers, civilians, and the public, (3) making the program self-sustainable, potentially by implementation of hunting, trapping, and fishing fees, (4) increasing hunting, trapping, and fishing opportunities for disabled veterans, (5) supporting ADFG population goals on USAG Alaska lands, (6) providing professional enforcement of natural resources related laws, and (7) providing for the same fee schedule for all participants, except for senior citizens, children, and the handicapped.

Recreation management has a long legacy on USAG Alaska managed lands. Hunting, fishing, and trapping on USAG Alaska managed lands are regulated by both the State of Alaska, through its hunting and trapping regulations and the federal government through Army-wide and installation specific regulations. The ADFG issues various regulations for fisherman, hunters, and trappers in Alaska. Army Regulation 200-1, and USAG Alaska Regulation 190-13 and the ADFG annual Hunting and Fishing Regulations are the primary means of establishing controls on fishing, hunting, and trapping as well as other natural resources-related activities on USAG Alaska managed lands. USAG Alaska Regulation 190-13 pertains to hunting, trapping, fishing, and off-road recreational vehicle use on USAG Alaska managed lands. The USAG Alaska Recreation Supplements (updated at least every two years), and USAG Alaska iSportsman website content (updated continuously) condense these regulations into a user-friendly format and are distributed to the public.

The following describe the Recreation Program pertinent information. The tasks are displayed as maps or graphics with a brief description. For more information or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.

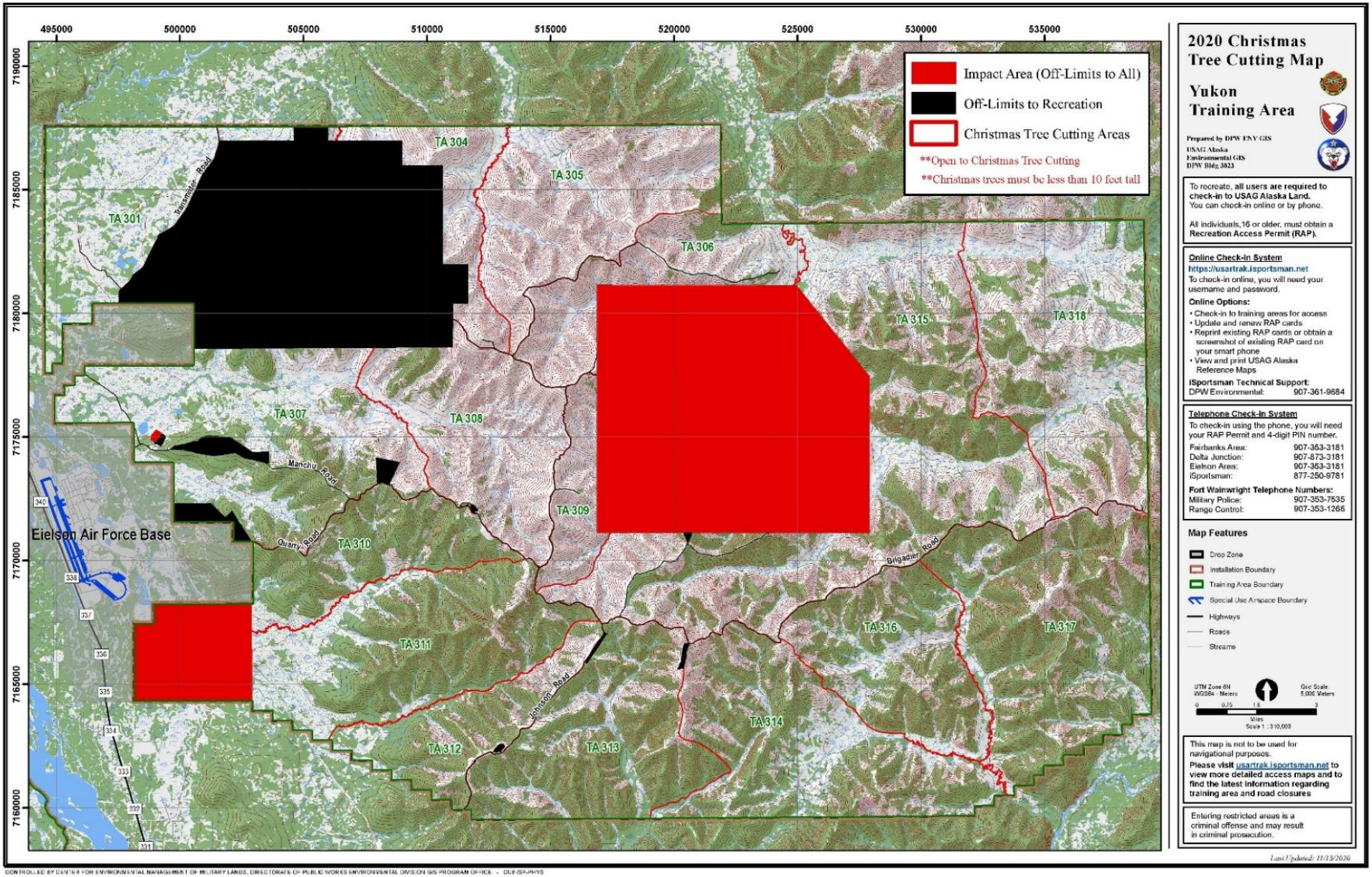


The existing recreation map template was reformatted to enhance readability and provide more precise instructions of all map series for customer consumption which include, but not limited to; Trail Maps, Wood Cutting, Christmas Trees, General Access, Reference, Moose Hunting, Bear Baiting, and iSportsman Brochures. Each map series are updated annually and published on the USAG Alaska iSportsman website.



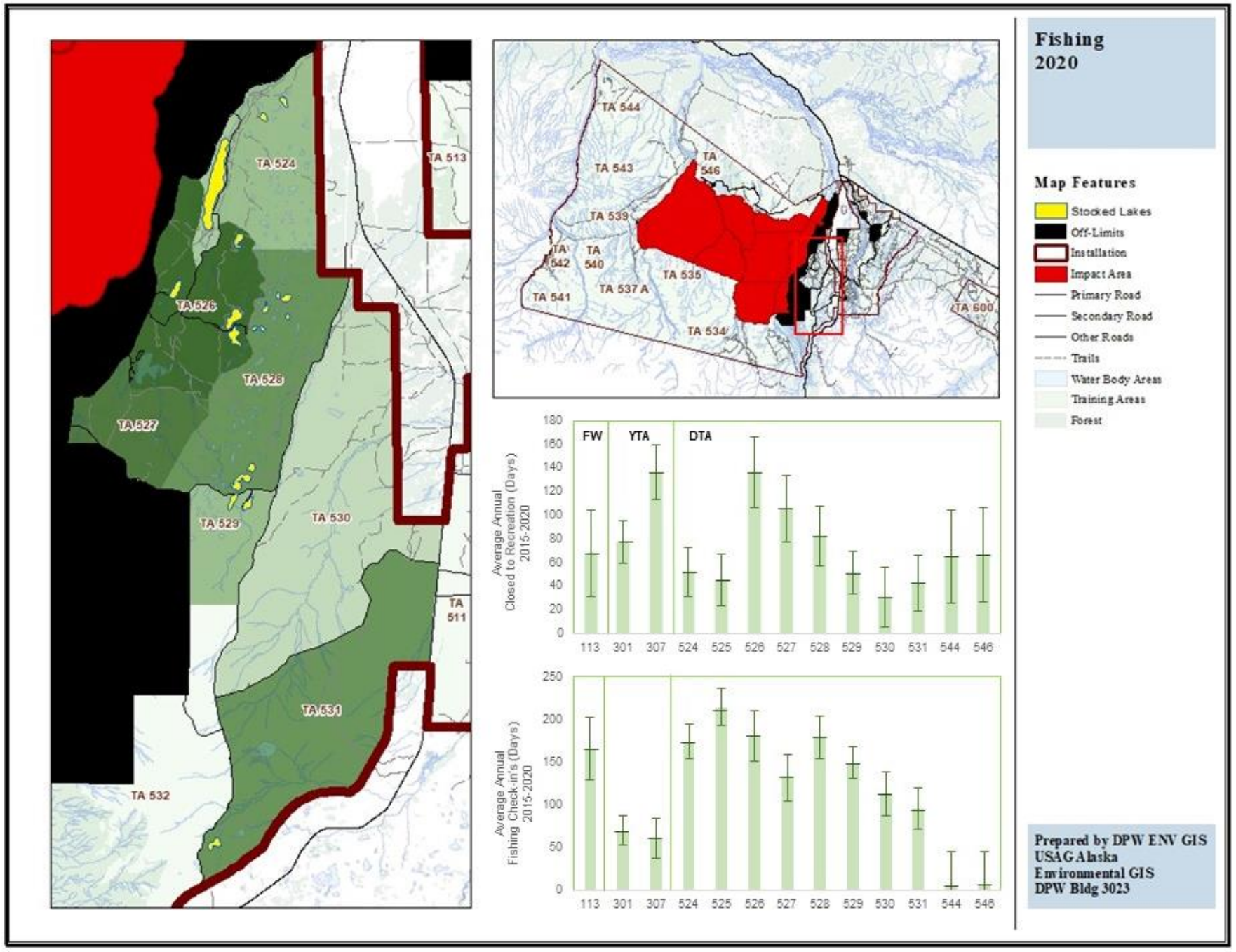
668 cords of firewood were harvested from Fort Wainwright lands in 2020.

Visit the [USAG Alaska iSportsman wood cutting page] for a complete set of maps.



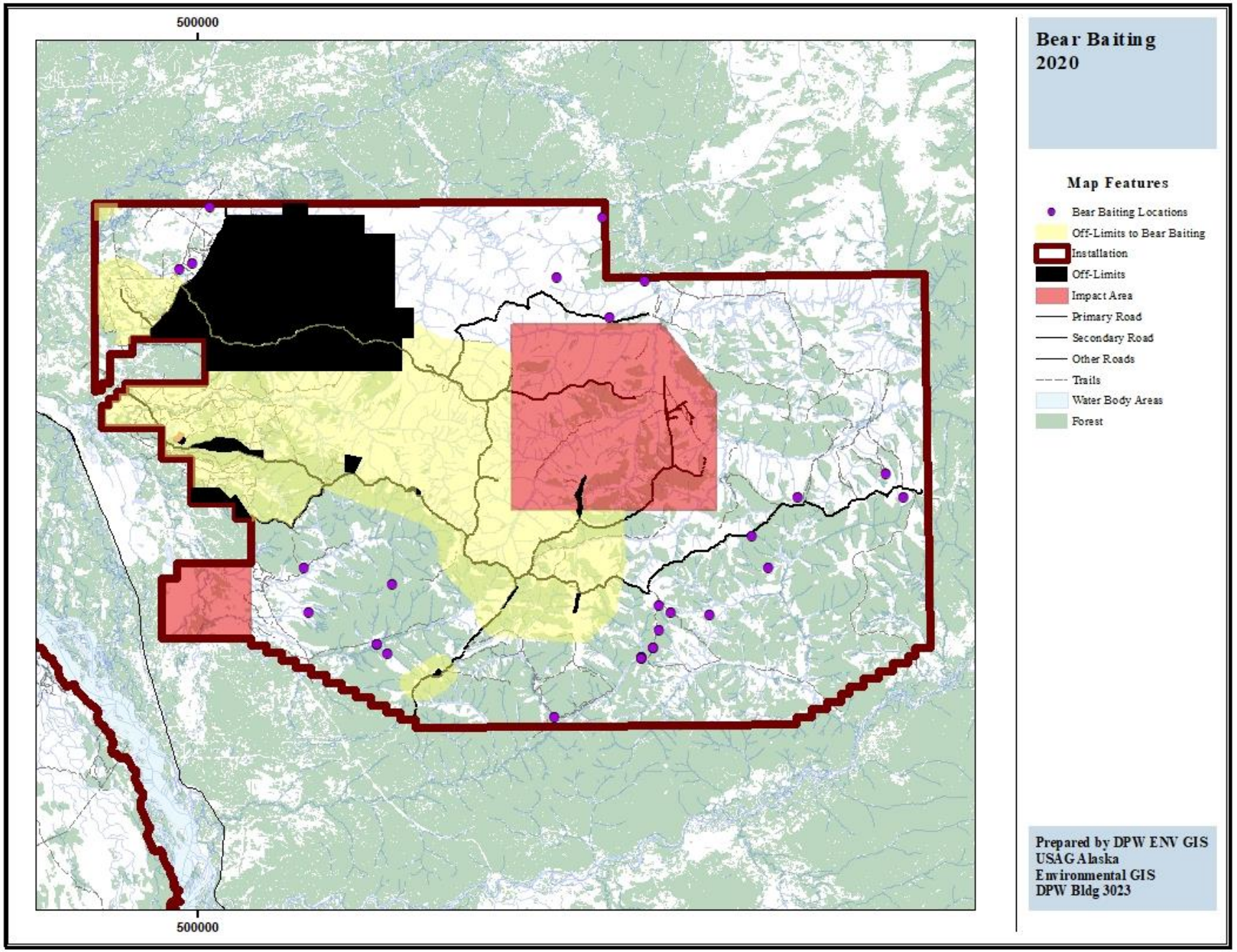
118 Christmas Tree Cutting Permits were issued in 2020.

Visit the [USAG Alaska iSportsman Christmas Tree Cutting page] for more info and a complete set of maps.



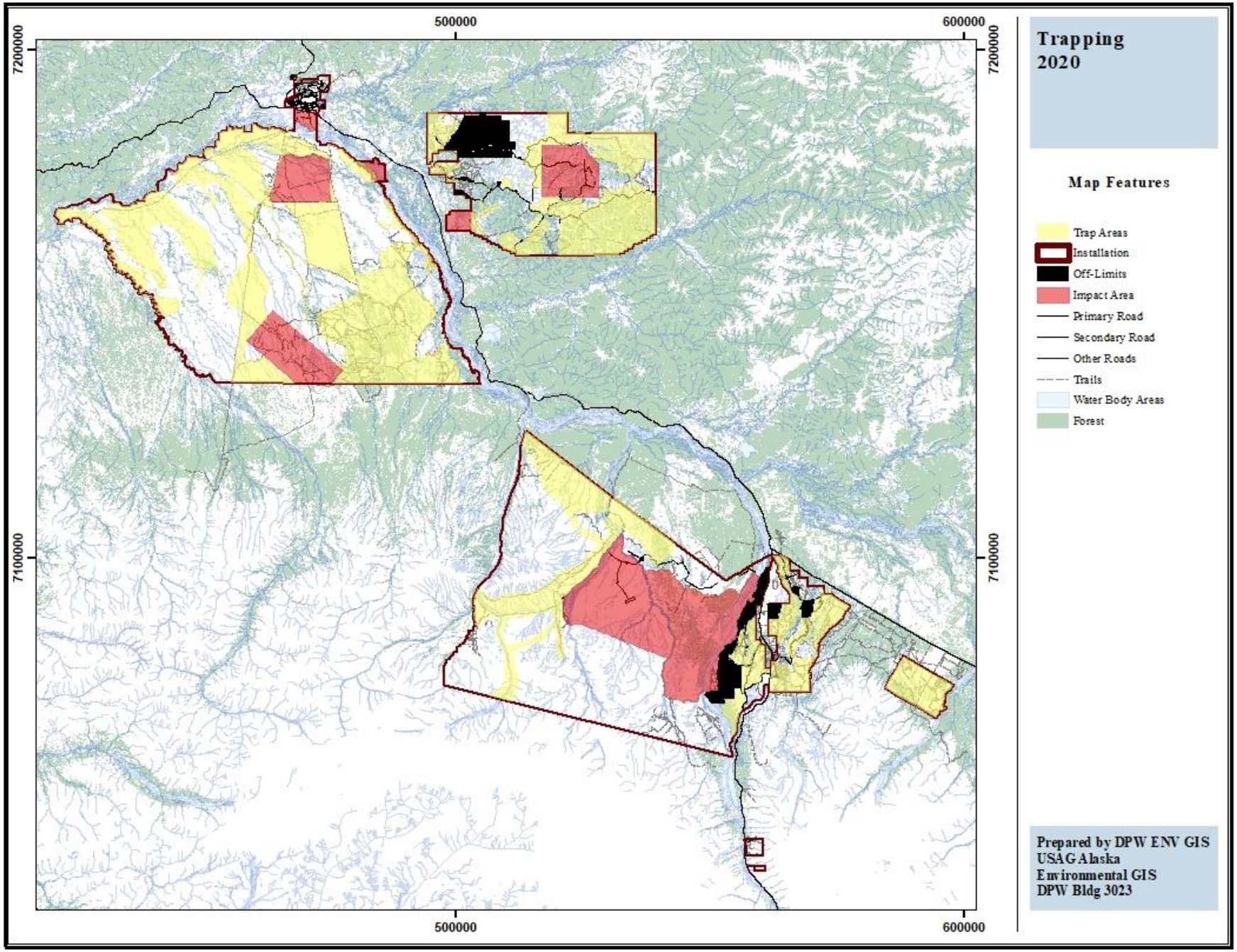
948 people checked into fish on USAG Alaska land in 2020. Training areas containing stocked lakes had the highest use.

Recreationists can review stocked lake information and location maps on the USAG Alaska iSportsman Fishing page.



There were 62 registered bear bait stations on USAG Alaska in Spring 2020 in the TFTA, YTA, DTA, and GRTA.

Recreationists can register bait stations on the [USAG Alaska iSportsman Bear Baiting page].



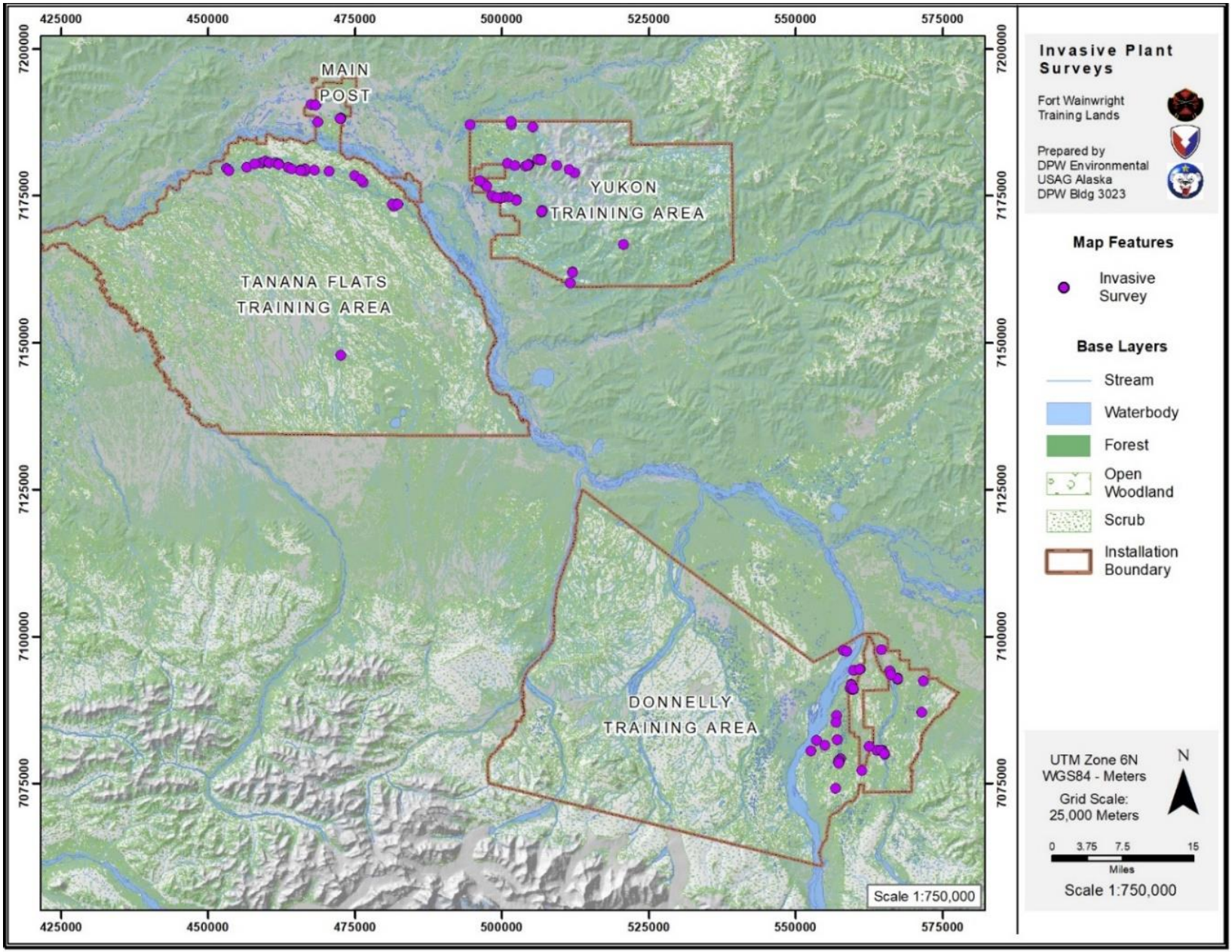
There are 66 registered trapping areas on USAG Alaska land with 50 active trappers in 2019-2020 and 45 active trappers in 2020-2021 (October 2020 – December 2020). Trappers are asked to complete a Trapper Questionnaire at the end of each trapping season, which includes harvest and conflict related questions. Recreationist can register trapping areas on the USAG Alaska iSportsman website

Invasive Species

USAG Alaska opportunistically surveys for invasive species focusing on high use areas and recent disturbance areas. This is accomplished by maintaining compliance with the Integrated Pest Management Plan (IPMP) and focusing control efforts on State listed Noxious Species. The state list of Noxious Species is annually reviewed and checked for presence on USAG Alaska managed lands. The U.S. Forest Service, State of Alaska, and Private Forestry entities monitor the cantonment areas and training lands for invasive insects and diseases annually.

Invasive species monitoring has been included as part of other surveys continually occurring within the installation, which include fisheries management, wetland surveys, flora and fauna planning level surveys, and a multitude of natural resource related surveys. Invasive species monitoring has also occurred informally through the Range and Training Land Assessment (RTLA) program and natural resources program. The RTLA program has quantitatively documented invasive plant species on training lands at plot locations, and pest control manages invasive plant species in cantonment areas. USAG Alaska lands currently have few faunal invasive species and the primary focus of these efforts are currently invasive vascular plants such as Elodea spp. Forest insects, diseases and invasive plant species are annually monitored on USAG Alaska managed lands by the US Forest Service. Annual Forest Health Survey Reports are available from the US Forest Service, State, and Private Forestry Forest Health website.

The following describe the Invasive Species 2020 completed tasks. The tasks are displayed as maps or graphics with a brief description. For more information or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.



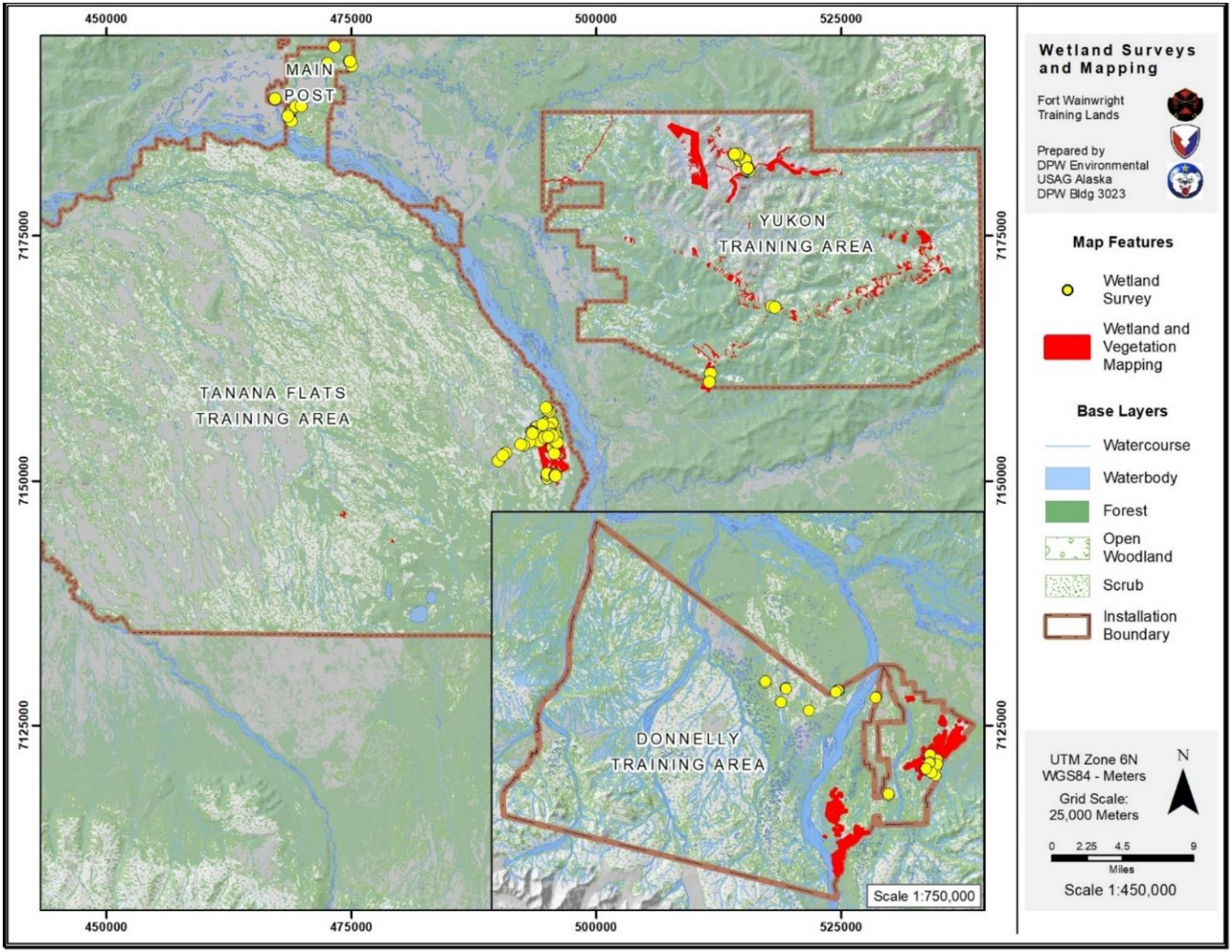
50 priority invasive plant populations were monitored and treated by either manual or chemical control. Populations of bird vetch *(Vicia cracca)*, white sweet clover *(Melilotus albus)*, perennial sow thistle *(Sonchus arvensis)*, and European bird cherry *(Prunus padus)* were documented. Seven sites with significant infestations, ranging from 0.1 to 1.5 acres, were treated with pesticide. 24 new populations were identified, including perennial sow thistle found along the Salchaket Slough in TFTA. A series of scripts were developed to improve invasive data collection and management. A database of invasive plant surveys was rebuilt in ArcGIS. These improvements will streamline fieldwork, guide prioritization of monitoring and treatment efforts, and enable efficient tracking of population changes and treatment effects.

Wetlands

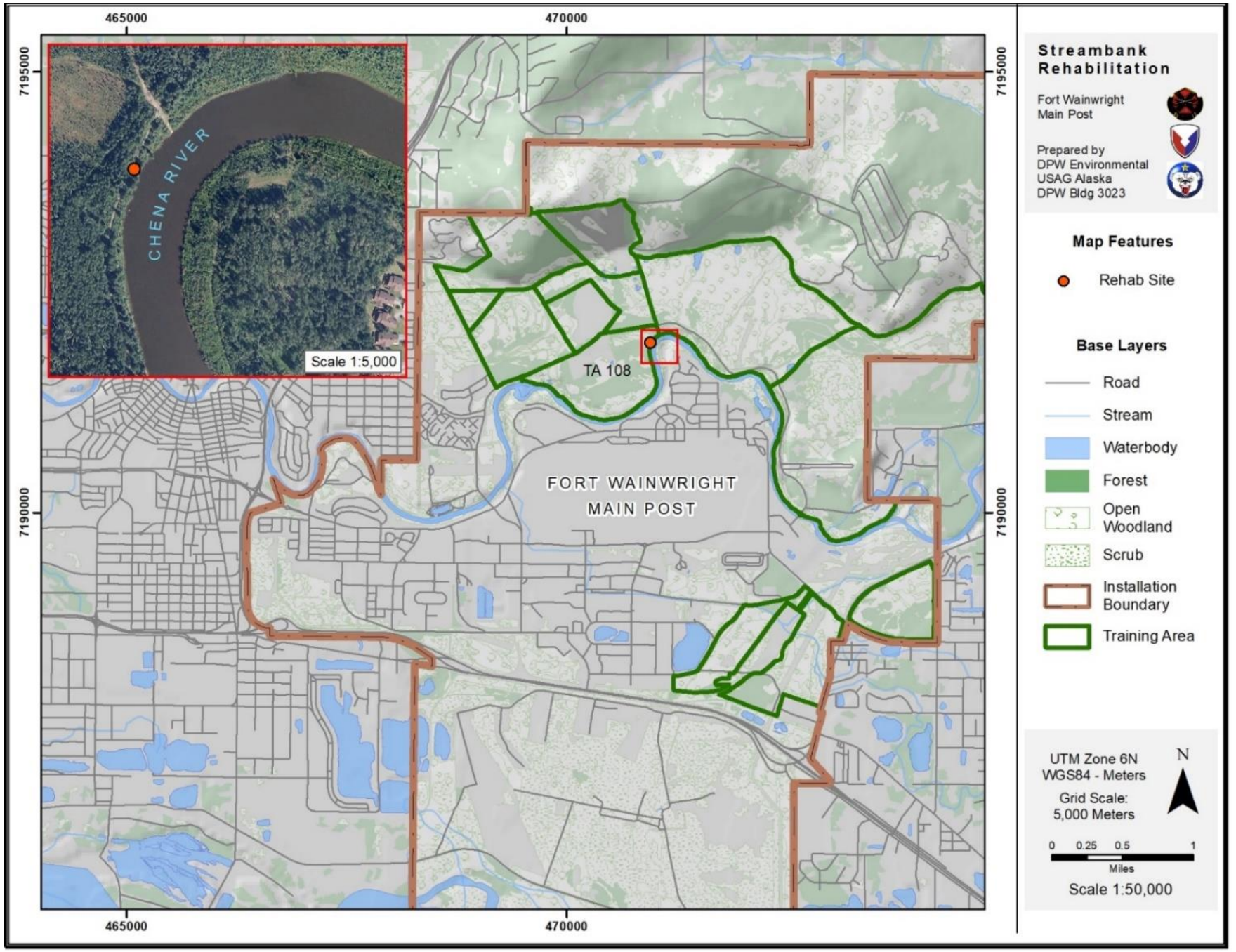
There are over 1 million acres of wetlands located across all major training areas on USAG Alaska managed lands. Military operations have minimal impact on wetlands in most watersheds in the Training Lands, while the most impacted wetlands are located on Main Post Fort Wainwright. USAG Alaska actively manages wetlands through the USACE Alaska Regulatory permit process. USAG Alaska's wetland and waterbody management program (WWMP) facilitates compliance with Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbor Act, and other environmental regulations. Wetland and waterbody management on USAG Alaska managed lands is implemented on the primacy that conduct of the military mission must comply with applicable laws and should not result in long-term damage to the environment. Training and testing that incorporates environmental stewardship make this possible and allow for the maintenance of a quality military training and testing environment, as well as protection of sensitive habitats, such as wetlands.

The goals of the USAG Alaska WWMP are to (1) ensure that USAG Alaska, USARAK, tenant organizations, and Missile Defense are in compliance with all applicable federal and state laws and regulations regarding wetlands, (2) provide wetland areas for realistic military training while maintaining ecosystem integrity and minimizing impacts to wetlands, (3) promote early coordination between installation staff and DPW Environmental to prevent adverse impacts to wetlands, (4) provide a customer-friendly process to initiate wetland permits for military exercises or construction.

The following describe the USAG Alaska WWMP 2020 completed tasks. The tasks are displayed as maps or graphics with a brief description. For more information (like permitting information) or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.



144 wetland determination sites were surveyed. These data were used to delineate and classify wetlands and vegetation across 8,640 acres of training lands. An additional 4,220 acres were mapped and classified based on 2019 survey data and recent LiDAR data products.



A 30 foot section of eroded streambank was rehabilitated along the Chena River on Main Post. A spruce tree revetment was installed to control erosion. Additionally, three informal trails along the Chena River were closed and revegetated with native species to prevent further recreational impacts to the streambank and adjacent wetlands.

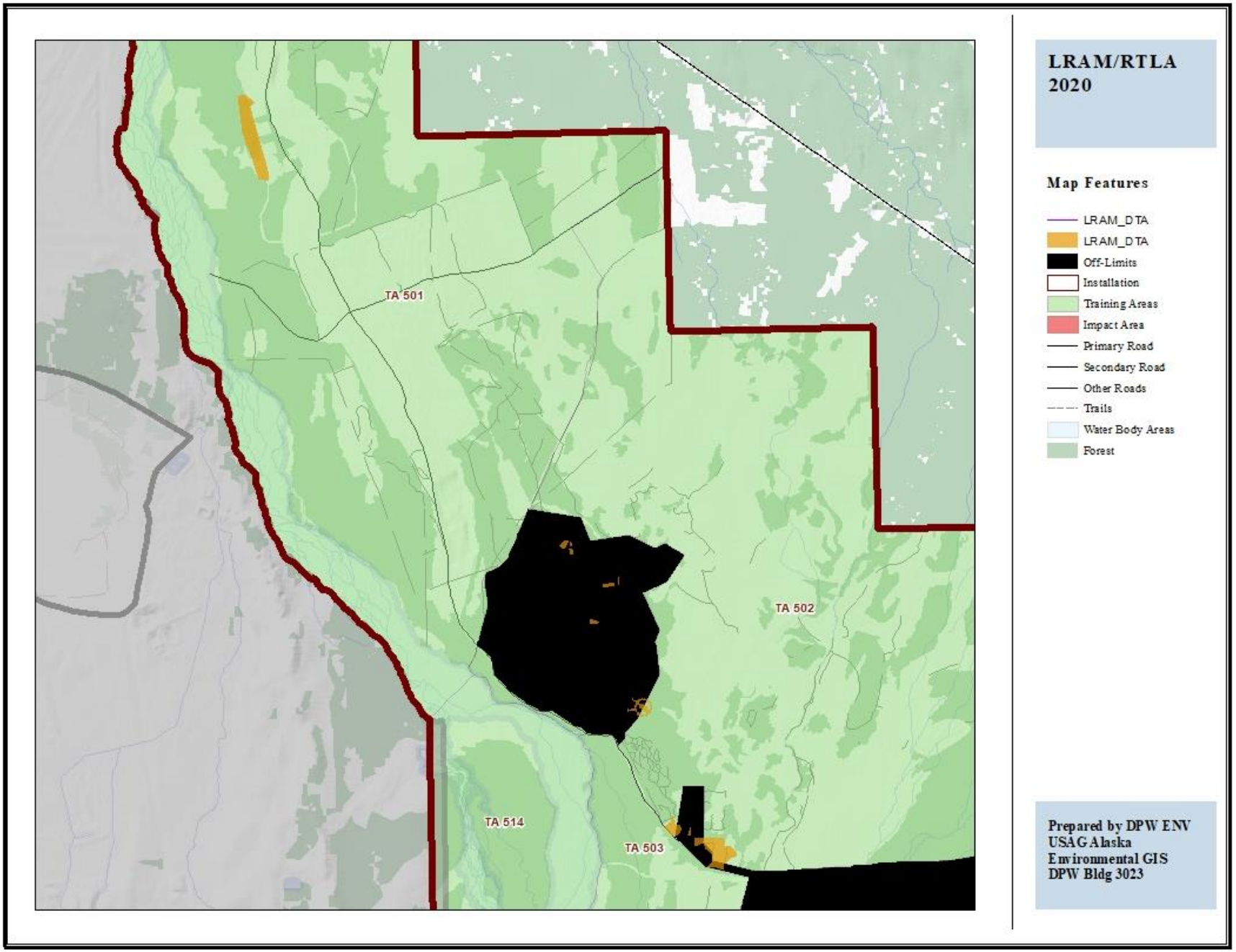
LRAM/RTLA

Integrated Training Area Management (ITAM) maintains the live maneuver training environment and sustains the Army's live training capability by repairing maneuver damage and creating a resilient and resistant training land base. ITAM fundamentally supports installation compliance with the Sikes Act and is a critical component of installation natural resource management. USAG Alaska's ITAM planning process generates land management projects from Senior Commander's requirements by integrating mission analysis and maneuver training tasks with terrain capability assessments, land condition requirements, and sustainable range awareness. The ITAM program is separated into five key components: (1) Training Requirements Integration, (2) The Range and Training Land Assessment (RTLA), (3) Land Rehabilitation and Maintenance (LRAM), (4) Sustainable Range Awareness, and (5) GIS (as mentioned in GIS section). ITAM works directly with USAG Alaska Natural Resources to ensure Sikes Act compliance.

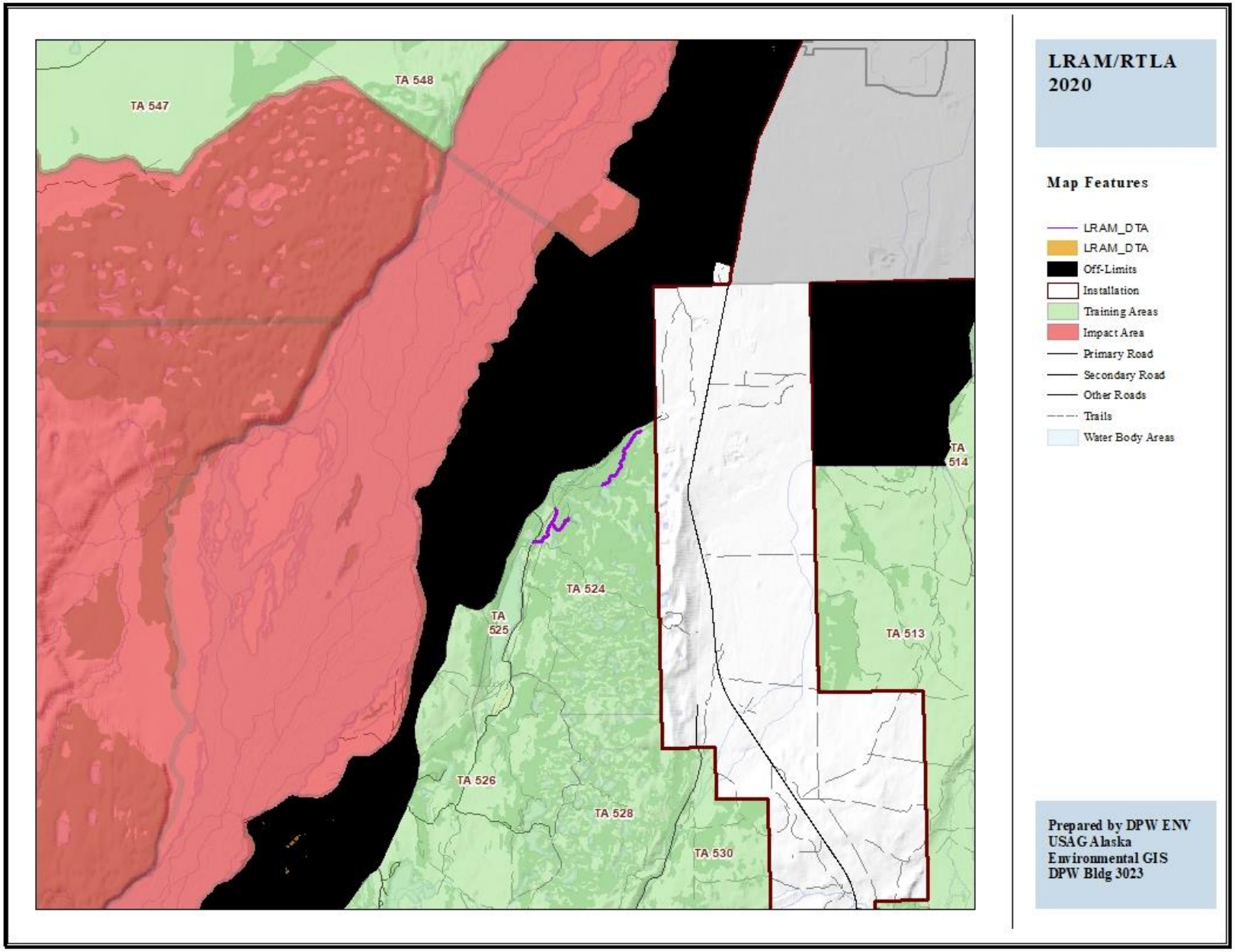
The LRAM purpose is to maintain awareness of training land conditions in order to apply mitigation when and where it is most needed. Through a regular program of monitoring, areas can be identified for repair before they become safety issues or require expensive engineering solutions. LRAMs responsibility is planning and conducting projects necessary to keep land usable for live training. LRAM projects are designed to: address safety hazards and repair training damage on maneuver land; maintain training lands that receive regular use and require maintenance to maintain operational conditions; reconfigure existing lands to optimize their availability for a variety of live training uses. LRAM vegetation management techniques include reseeding with native vegetation, and fertilizing when appropriate, masticating woody vegetation when clearing is needed and using woody debris to promote erosion control, tree removal by feller-buncher in accordance with timber salvage requirements, brushing or mowing where conditions allow, hand crew chainsaw and brush-cutter use where large heavy equipment is not appropriate, and promoting tree and shrub retention within and around project sites. Besides reseeding, revegetation methods also include willow live stating, vegetation matting, and tree/shrub planting.

The RTLA component is the primary ITAM effort in achieving the core mission of sustaining realistic live training. The RTLA component includes a mix of inventory and monitoring techniques, for several different assessments conducted either on a regular basis, or one time depending on need. The various assessments currently being used are listed in the annual ITAM work plan. Data analysis and report-writing occurs through the fall and winter, with annual reports available at each range control office.

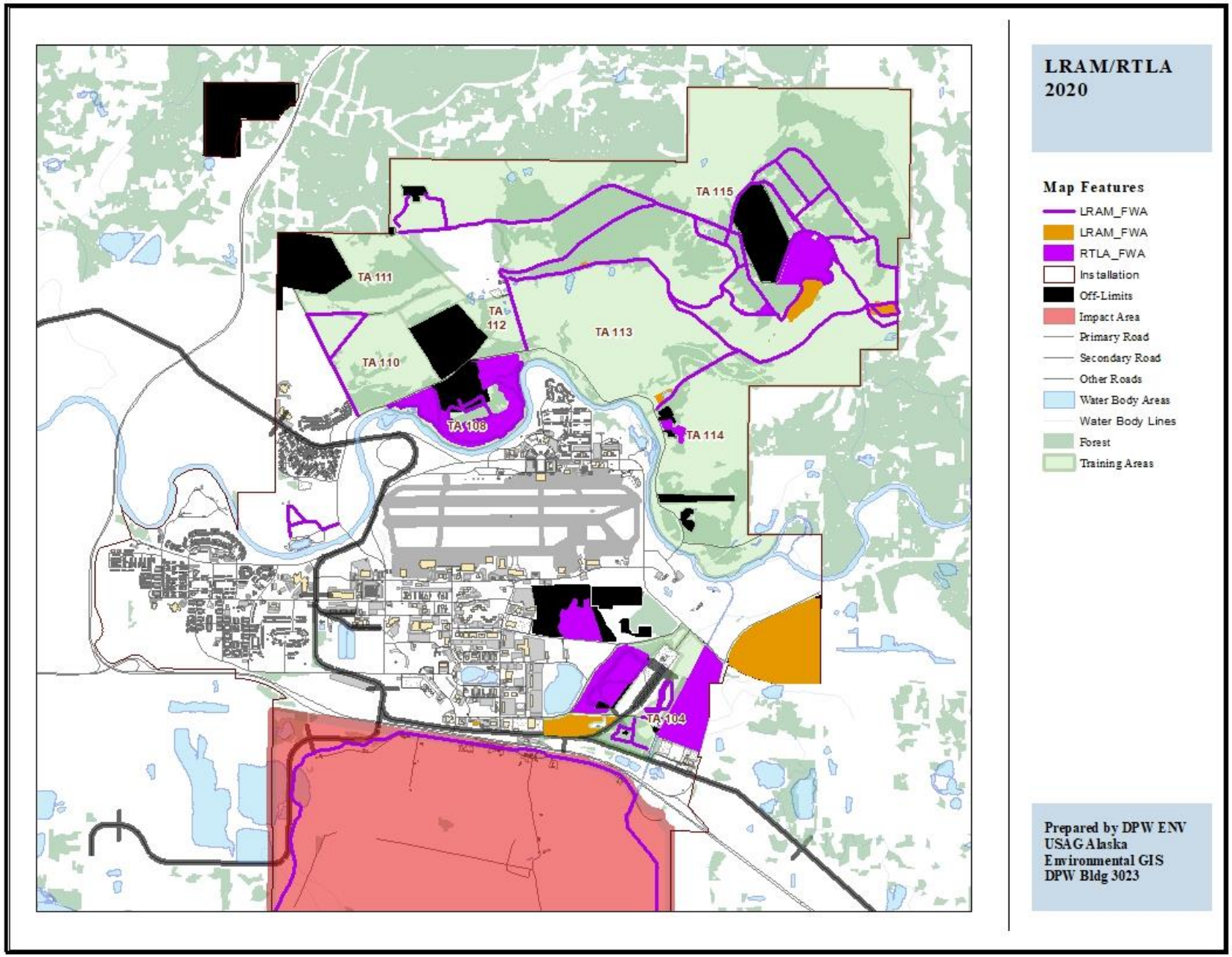
The following describe the USAG Alaska LRAM/RTLA 2020 completed tasks. The tasks are displayed as maps or graphics with a brief description. For more information or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.



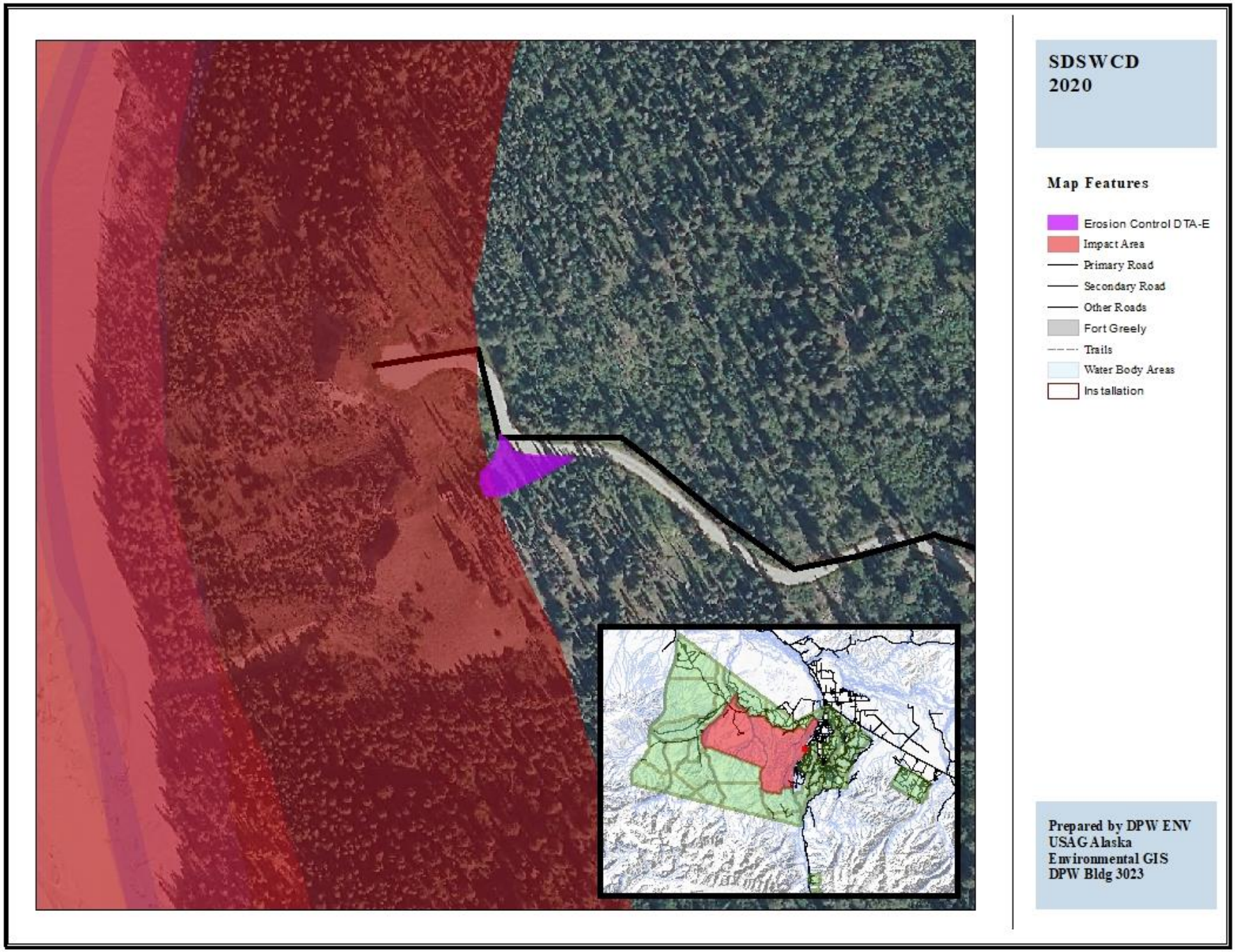
Survey crew completed Sustainable Range Program RTLA; data was collected utilizing four different types of assessments: Land Condition (1531 acres), Maneuverability (1531 acres), Maneuver Damage and Hazard (1988 acres) and Military Maneuver Exercise Monitoring (data was pulled directly from the Range Facility Management Support System webpage). All data has been analyzed and the RTLA 2020 annual report was completed January 31st, 2021.



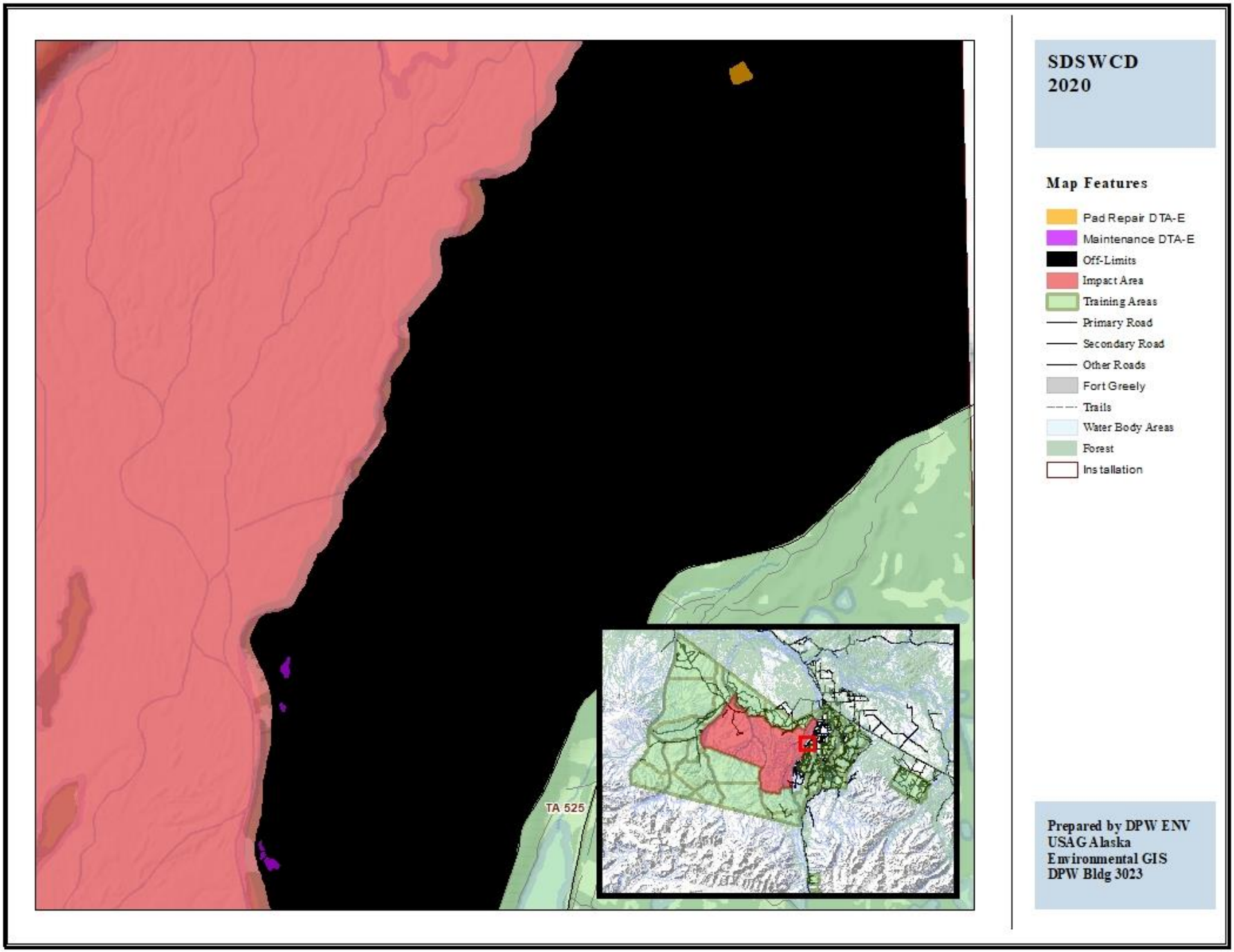
RTLA hand crew completed maintenance projects consisting of the removal of blow down hazard trees and standing trees with structural defects within falling range of a training facility, site or maneuver trail, clearing and/or thinning of vegetation to achieve line of sight for a training purpose, creation of one helicopter landing zone, removal of vegetation that has been damaged by vehicle maneuver activities, and removal of vegetation for vehicle maneuver trail maintenance and/or creation. All trees cleared that were over 6" DBH were cut into manageable lengths and hauled to a centralized firewood pick-up location for individuals who have purchased firewood permits. A total of 46.83 acres were maintained within DTA; 0.8 of those acres were on trails. The LRAM Crew 2020 annual report was completed January 31, 2021.



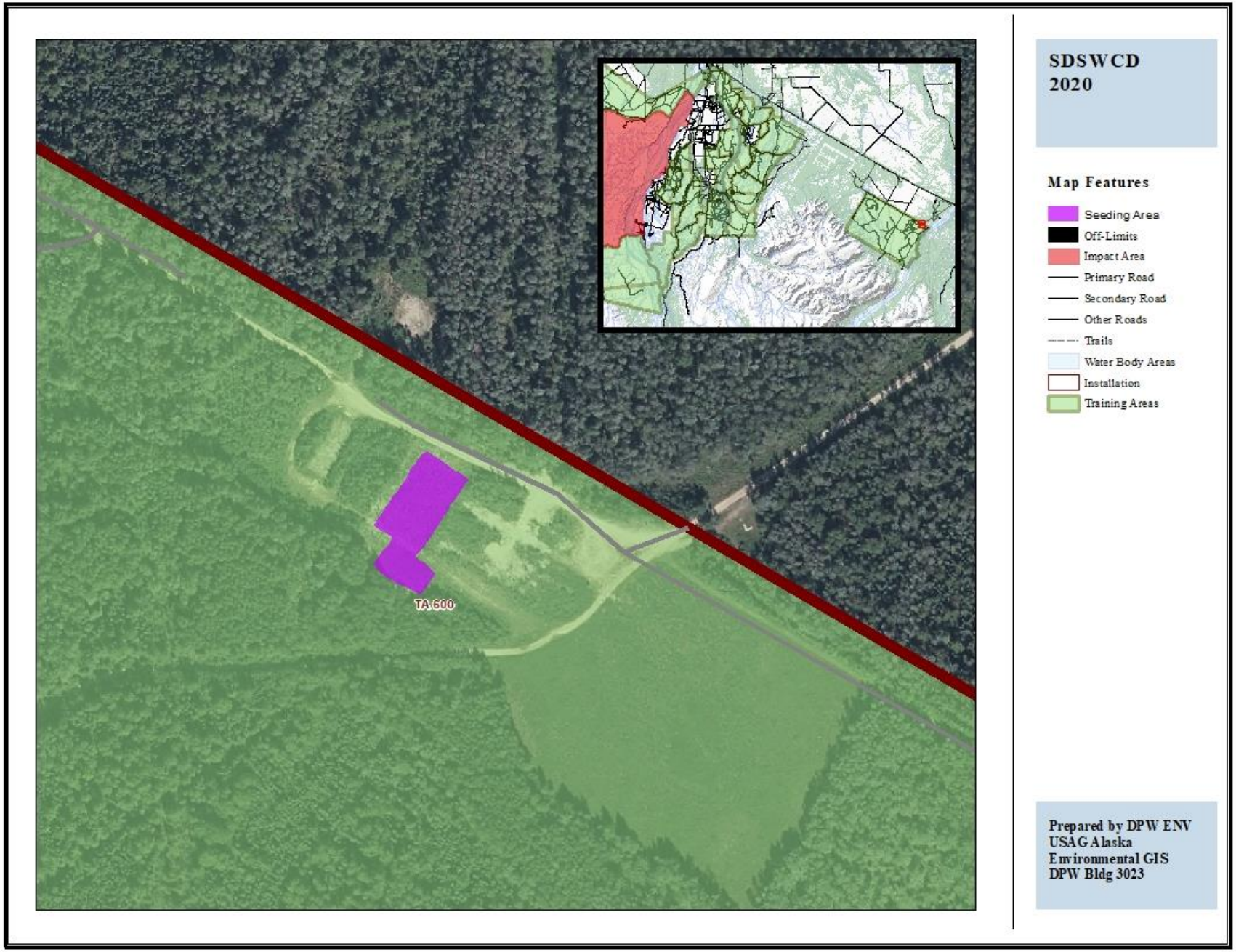
RTLA crew surveyed 1066 data points representing 1099 acres of training lands. This data was used to calculate Land Condition rating, Accessibility, Sufficiency for primary use, and suggest future maintenance needs. A GIS assessment of training land use tool was produced update the Range Facility Management Support System. All data has been analyzed and the RTLA 2020 annual report is in progress and will be completed by January 31, 2020. LRAM Hand Crew, maintained approximately 281 acres of training lands through mowing, seeding, or chainsaws. The crew also completed about 77 km of trails and linier maintenance activities.



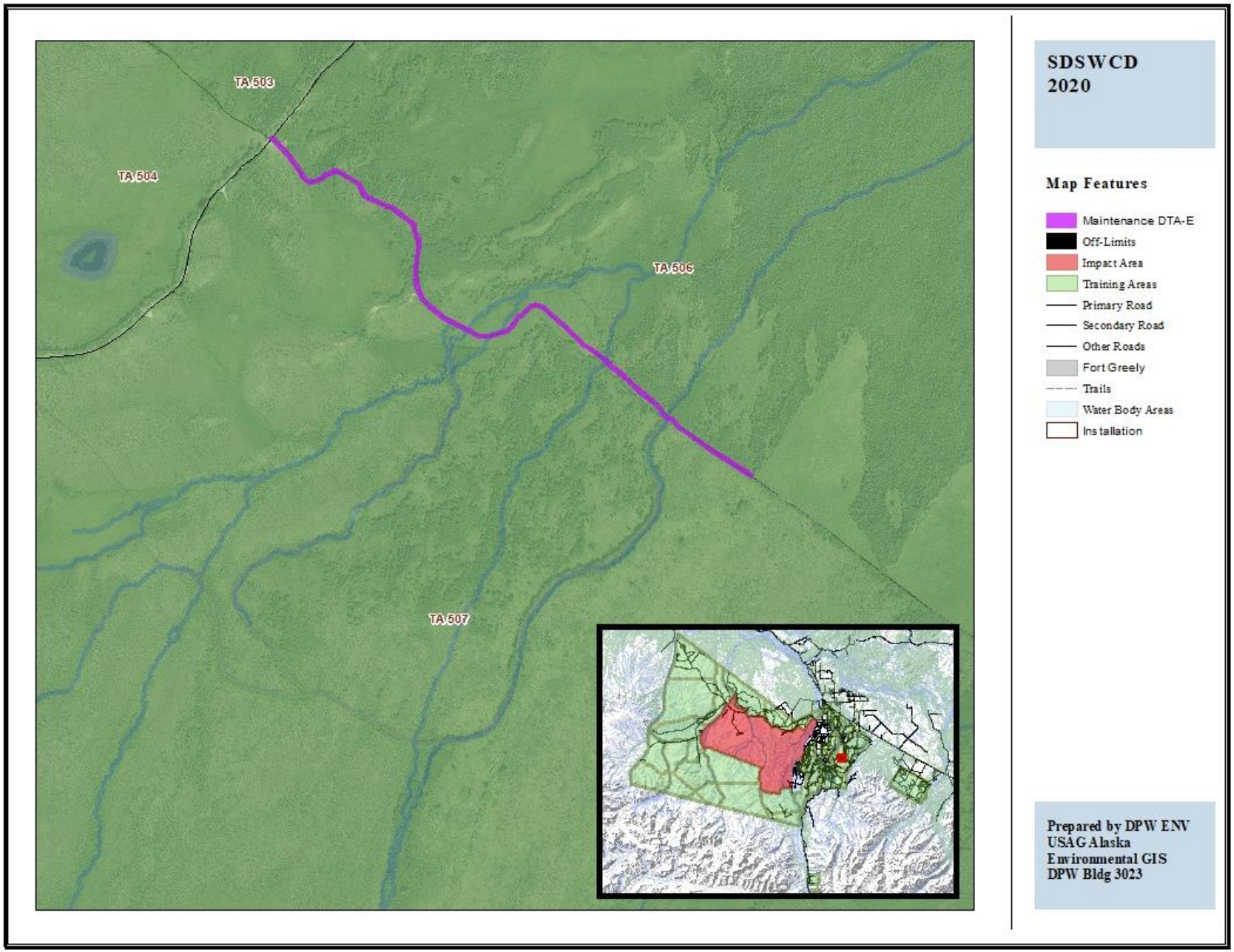
Slash on 2.4 acres was removed and treated from thinned areas. 2.4 acres were planted with 250 white spruce seedlings. Erosion control measures were established on 3,349 feet. Project Completed October 2020.



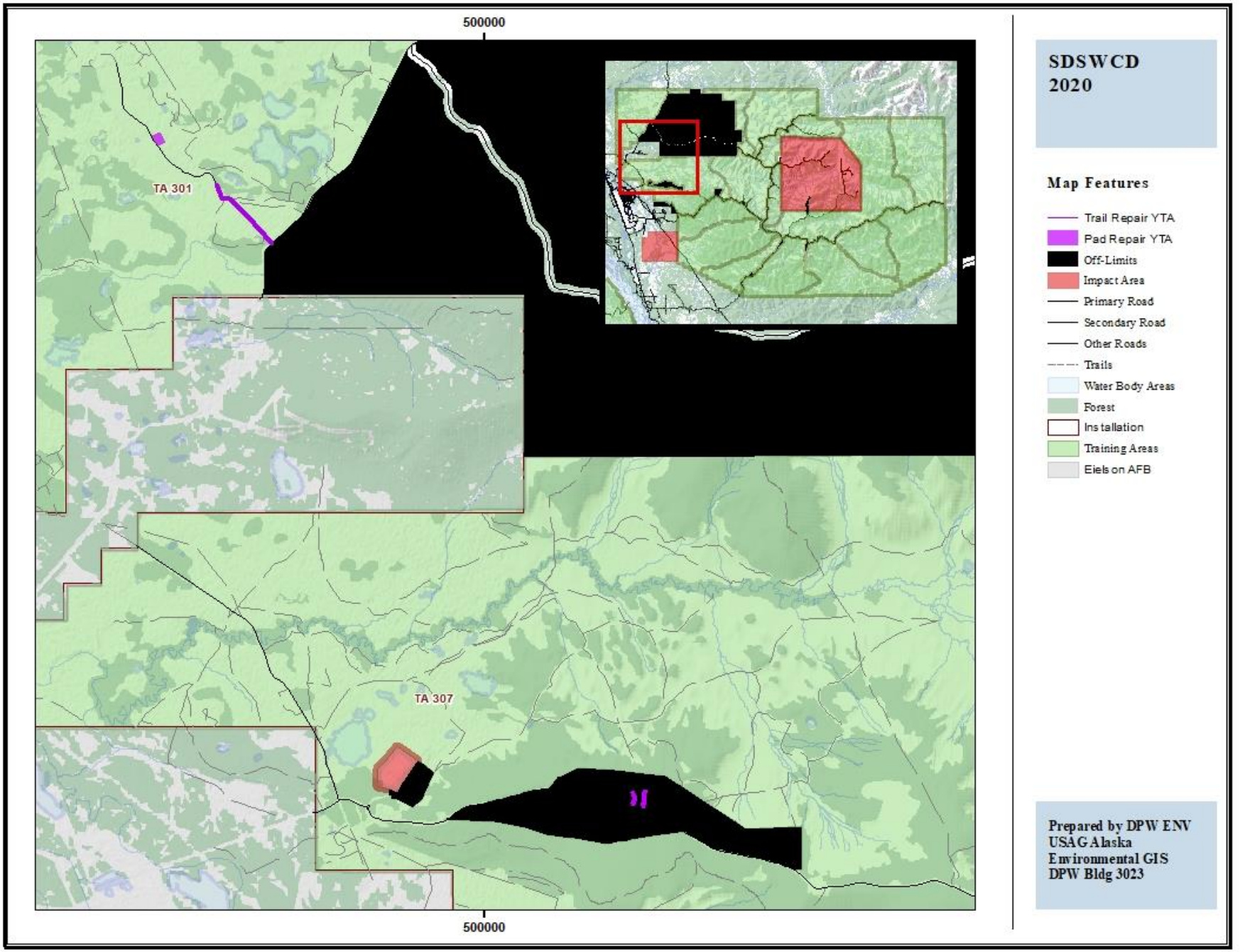
2.4 acre pad was mulched and re-shaped using hydro-ax and dozer. Overburden piles were mulched 40 ft beyond pad footprint. Mulched pad and overburden areas were seeded and fertilized to 20 lbs, per acre of fescue/hairgrass/annual rye mix. Project completed August 2020.



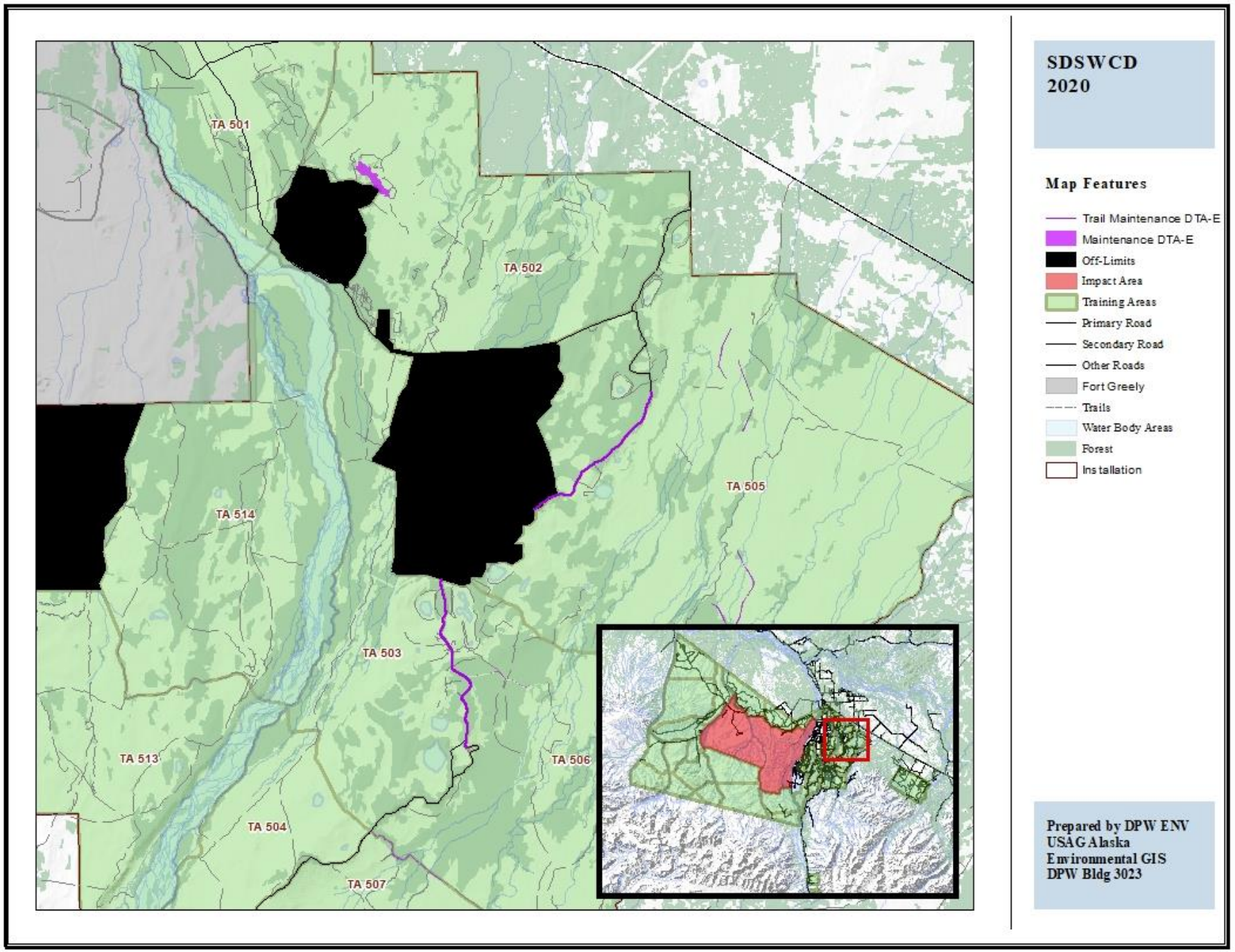
A 2 ft cover over the delineated landfills at the Gerstle River Test Site were added. Sites were revegetated using a 20 lb/acre mix of red fescue, alpine bluegrass, tufted hairgrass and annual rye. A geophysical survey using GPR to verify cover was 2 ft or greater over the delineated landfill was conducted and reports that show the survey markers delimiting the disposal cells and shows the latitude/longitude of each monument referenced on the facility record drawing were completed August 2020.



TA 502 HLZ (21.3 acres) was mowed. Vegetation was cleared from S. Granite Creek Access Road (between 33-Mile Loop Road and the gravel pit) on the north side only, 30 ft from center line (3917 feet long/1.5 acres). TA 505 lanes were re-masticated where needed (total is 3.0 miles/12.6 acres). Re-route bad section by cutting in a new lane (0.25 acres/350 feet long). Cleared vegetation back from TA506-507 boundary trail 20 ft each side of center line (1 mile/4.5 acres). CRTC M-1 trail (3.2 miles/7.7 acres) and a single width trail along the TA 501 North fuelbreak for UTV access (0.33 acres) were masticated. Project completed June 2020.



3090 ft of road repaired, 3.5 acres of pad expansion excavated and filled, and 1ft lift of 3 in minus aggregate with a driving surface of 22 were installed on the portion of trail to Husky DZ from intersection of Transmitter Road to the tree line at the Husky DZ clearing. Additional 3 ft minus aggregate were installed to the pad at Husky DZ to improve drainage and mitigate ponding. 2 culverts were also installed. Project completed July 2020.



Improved 3.5 miles of 33 Mile Loop by improving sub-base and installing surface cap, installed 14 culverts, re-worked and re-shaped on-site gravel pit on Buffalo DZ. Project completed September 2020.

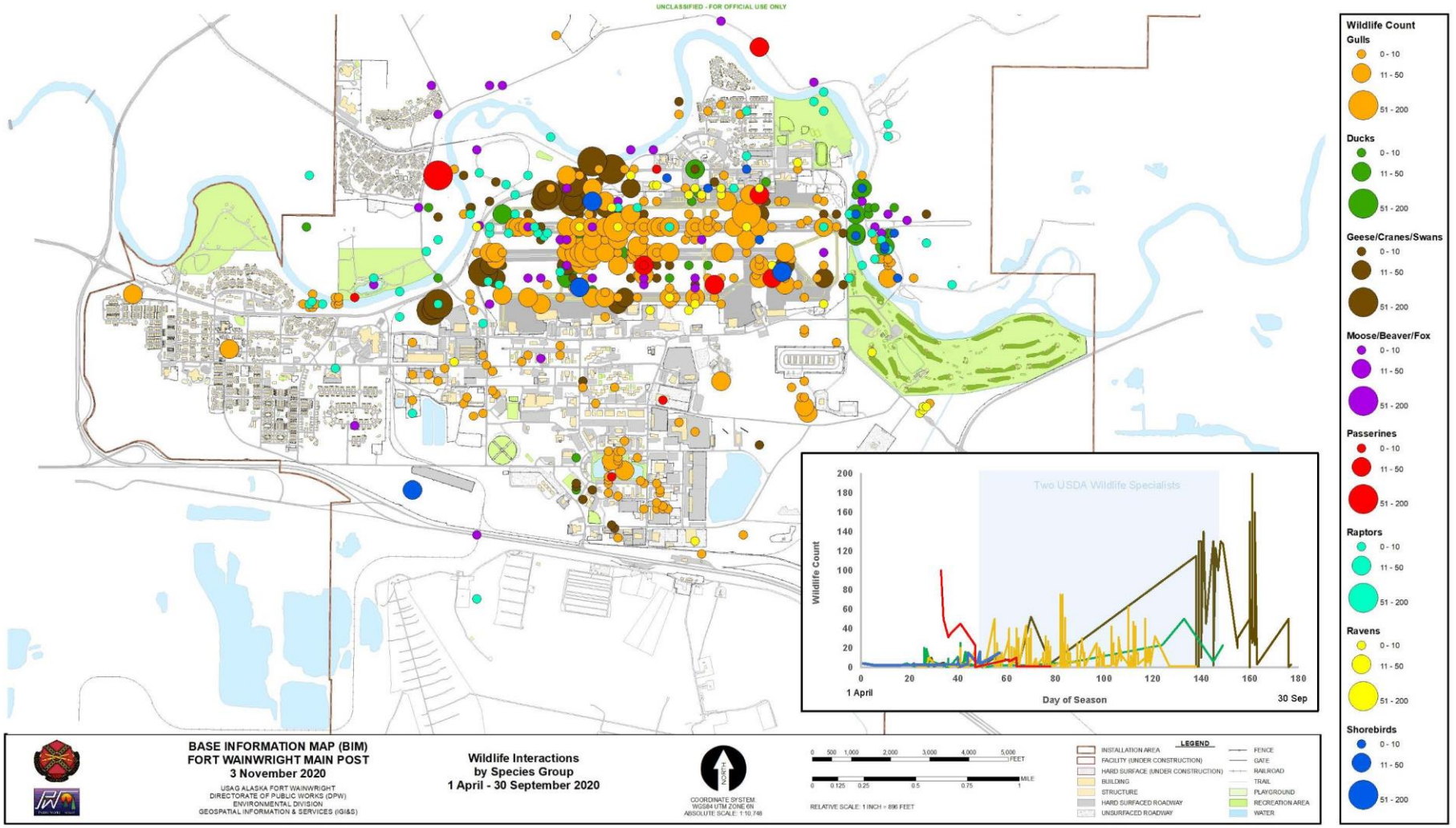
The Blair Lakes winter access trail was assessed before and after moose hunting season to quantify recreational vehicle damage to a newly created trail. 24 kilometers of electrical resistivity tomography measurements were made along the Road route. Some results will be part of the SERDP funded effort that will be completed in July, 2021.

Fish and Wildlife

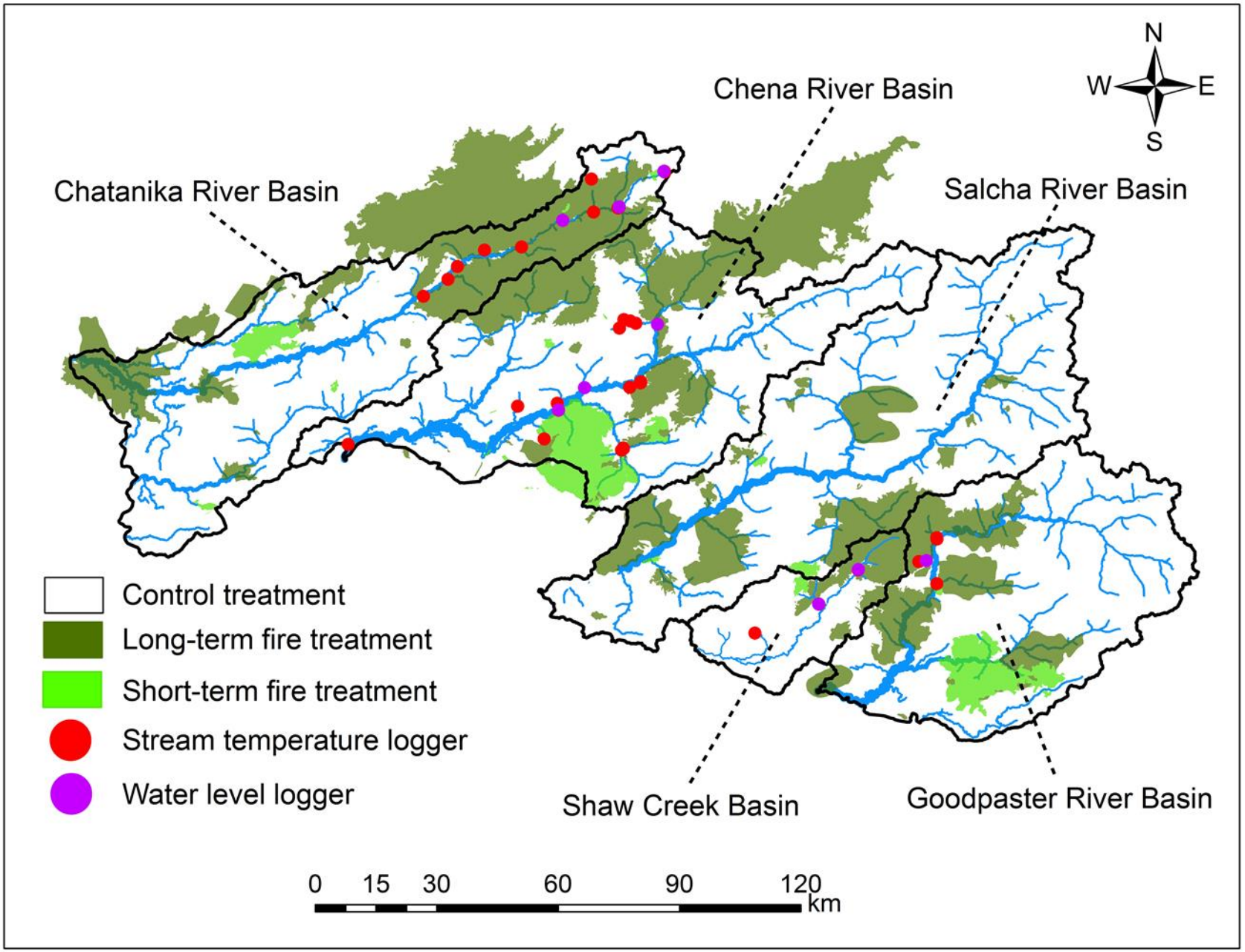
Fish and wildlife is a broad catigory encoumpassing game species, non-game species, fisheris management, migratory birds, wildlife strike hazards, fish and wildlife habitat, wildlife veiwing, lake staking, raptor nesting, and more. Various Fish and Wildlife work is done to more broadly improve fish and wildlife knowledge. Due to recent funding realities, fish and wildlife work is now mainly dedicated to permitting requirements which intern supports the military mission. Therefore, the following section is shorter than in years past.

USAG Alaska DPW Environmental, in cooperation with Ladd Army Airfield and Allen Army Airfield operations, entered into an agreement with U.S. Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services (APHIS WS) to manage permits and migratory birds on Main Post FWA in 2018. APHIS WS is contracted to work towards the goals of (1) reducing the number of birds attracted to the airfield, (2) assisting USAG Alaska to reduce Migratory Bird Treaty Act (MBTA) violations, specifically for nesting Cliff Swallows (*Petrochelidon pyrrhonota*) and Mew Gulls (*Larus canus*), and (3) conduct bird surveys and input on habitat management around the airfield. The Ladd and Allen Army Airfield Wildlife Aircraft Strike Hazard (WASH) Programs are designed to help minimize the risk of a strike to fixed- and rotary-winged aircraft or human health and safety posed by populations of hazardous wildlife on and around Ladd and Allen Army Airfields. An integrated approach of techniques, tactics, and entities is used to support the overall WASH Program.

The following describe the USAG Alaska fish and wildlife 2020 completed tasks. The tasks are displayed as maps or graphics with a brief description. For more information or higher resolution maps or graphics for each completed, ongoing, or future tasks, please contact the USAG Alaska Natural Resource office. For a detailed explanation and history of each program, please refer to the USAG Alaska INRMP.



The USDA conduced 6558 dispersal events on 30 bird species and 3 wildlife species from 1 April to 31 October 2020.



Stream Flow, landscape features, water chemistry, micro and macro invertebrate structure, and vertebrate fish species data collected in Moose Creek and Stuart Creek to help inform models that will one day be used to describe steams as they relate to changing wildfire regime and climate. 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 May 2022