

Appendix G

Biological Resources

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AGL	above ground level
BMP	Best Management Practice
DTA	Donnelly Training Area
GIS	Geographic Information System
ITAM	Integrated Training Area Management
JPARC	Joint Pacific Alaska Range Complex
LRAM	Land Rehabilitation and Maintenance
MFE	Major Flying Exercise
MOA	Military Operations Area
MSL	mean sea level
RTLA	Range and Training Land Assessment
SOP	Standard Operating Procedure
TFTA	Tanana Flats Training Area
USARAK	U.S. Army Alaska
USFWS	U.S. Fish and Wildlife Service
YTA	Yukon Training Area

APPENDIX G BIOLOGICAL RESOURCES

G.1 BIOLOGICAL RESOURCE EXISTING MITIGATION MEASURES, BEST MANAGEMENT PRACTICES (BMPs), AND STANDARD OPERATING PROCEDURES (SOPs)

[Table G-1](#) lists biological resource mitigations, best management practices (BMPs), and standard operating procedures (SOPs) that have been identified in previous U.S. Army Alaska (USARAK), U.S. Air Force (Air Force), and U.S. Navy (Navy) documents and that are applicable to one or more Joint Pacific Alaska Range Complex (JPARC) actions. Certain of these were originally developed for specific areas, and the language will need to be adapted to apply to specific JPARC definitive or programmatic actions subsequent to internal review.

Table G-1. Biological Resource Mitigation Measures, Best Management Practices (BMPs), and Standard Operating Procedures (SOPs) – Existing and Proposed from Past Documents

No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
Mitigation Measures				
1.	Birds - Flight Avoidance	Reducing potential noise impacts to peregrine falcons and other resources by increasing existing flight avoidance efforts on the Yukon, Charley, and Kandik Rivers, within appropriate areas of Yukon Military Operations Areas (MOAs) 1, 2, 3, and 4 and by extending the avoidance period from April 15 to September 15.	Fairbanks Area of Interest	Air Force 1997, 2010
2.	Live Fire – Other Wildlife	Continued compliance with U.S. Army Alaska (USARAK) Regulation 350-2, which requires units that discover wildlife (large mammals) on training ranges or in training areas while conducting live-fire exercises to immediately cease firing and report the location and number of animals to the Range Control office.	USAG-AK lands	USARAK 2011 , USARAK 2009a
3.	Cranes – Overflights	Pilots will be made aware of sandhill crane roosts along the Delta River and in the Donnelly Training Area (DTA) during spring and fall migration, and advised to alter travel paths during these times. This advisory will reduce the potential for disturbance of those areas.	All military lands and installations in Alaska and other lands and airspace in Alaska that could be affected	USARAK 2009b
4.	Eagles – Construction	Survey construction sites, based on USFWS criteria, to ensure construction and occupancy of facilities would not impact eagle nesting and feeding habits.	All military lands and installations in Alaska and other lands and airspace in Alaska that could be affected	USARAK 2009b
5.	Bison	Continue to limit firing within 1,500 meters of bison.	Fort Wainwright, DTA	USARAK 2008a

Table G-1. Biological Resource Mitigation Measures, Best Management Practices (BMPs), and Standard Operating Procedures (SOPs) – Existing and Proposed from Past Documents (*continued*)

No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
6.	Wildlife – Overflights	Protect “at-risk” wildlife populations by restricting overflights during critical lifecycle periods. “At-risk” populations and temporal and spatial protection parameters to be established through consultation with management agencies, and the smallest practicable and effective area mitigated.	All MOAs	Air Force 1997
7.	Caribou – Overflights	Protecting the Delta caribou herd by establishing a minimum overflight altitude of 3,000 feet above ground level (AGL), over calving areas, in appropriate areas of the Birch and Eielson MOAs from May 15 to June 15.	Fairbanks Area of Interest	Air Force 1997, 2010
8.	Dall Sheep – Overflights	Protecting Dall sheep by establishing a minimum overflight altitude of 5,000 feet AGL over lambing areas and spring mineral licks, in appropriate areas of Yukon 1, 2, 3, and 4, Buffalo, Eielson, and Fox MOAs (nominally May 15 to June 15), and over rutting areas (nominally from November 15 to December 15).	Fairbanks Area of Interest	Air Force 1997, 2010
9.	Invasive Species	Continue collaborative invasive species management efforts with local area agencies and entities and include recommendations from these efforts in the development of garrisons’ invasive species programs.	Fort Wainwright, DTA	USARAK 2008a
10.	Supersonic	Minimizing potential impacts associated with supersonic operations by conducting supersonic operations at or above 5,000 feet AGL or 12,000 feet above MSL, whichever is higher.	Fairbanks Area of Interest	Air Force 1997, 2010
11.	Resource Protection	Reducing potential impacts to subsistence and other resources by restricting the use of Yukon 5 to major flying exercises (MFEs) only and to sport hunting by conducting no MFEs during January, September or December.	Fairbanks Area of Interest, all MOAs	Air Force 1997, 2010
12.	Vegetation	Conduct only hand clearing of trees greater than 1 inch in diameter or 5 feet in height within 50-foot vegetation buffer areas along either side of ephemeral and intermittent streams or other specifically designated areas.	USAG-FWA lands	USARAK 2008b
13.	Vehicles and Streams	No tracked or wheeled maneuvering is permitted within a 50-meter buffer around all streams, lakes, and any open, flowing water during the summer unless crossing at a 90-degree angle to the stream. Fish spawning streams will not be crossed during summer.	USAG-FWA lands	USARAK 2005a, USARAK 2009a
14.	Native Species	Consideration will be given to native species as part of any revegetation initiative.	Fort Wainwright, DTA	USARAK 2008a
15.	Wildlife – Noise	Continue to conduct a detailed study to assess the effects of noise on wildlife. This would help natural resources and range managers to coordinate training schedules that minimize impacts to wildlife populations.	Fort Wainwright	USARAK 2004

Table G-1. Biological Resource Mitigation Measures, Best Management Practices (BMPs), and Standard Operating Procedures (SOPs) – Existing and Proposed from Past Documents (*continued*)

No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
16.	Bison	USAG-FWA and USARAK have agreed not to conduct activities or operations in or near bison habitat during mid-February to early September when bison are present to minimize adverse effects on bison (USARAK 1999).	USAG-FWA lands	USARAK 2006a
17.	Wildfires – Vegetation, Habitats	When fire risk index is moderate or higher (when weather and fuels conditions are conducive to quick fire ignition and spread), use of pyrotechnics (including smoke, trip flares, or tracers) prohibited unless used in container that completely contains all burning elements of the device.	USAG-FWA lands	USARAK 2006a
18.	Aircraft, River Corridor Protection	Aircraft are required to maintain a minimum flight altitude of at least 1,500 feet AGL over the Chena River Recreation Area from May 1 through September 30.	Fort Wainwright, Fort Greely	USARAK 1999
19.	Aircraft, Habitat Protection	Avoiding the creation of aircraft noise around the Gulkana and Delta National Wild and Scenic Rivers, Tangle Lakes area, Richardson Highway, and trumpeter swan nesting areas within the Fox MOA eastern boundary.	Fairbanks Area of Interest	Air Force 2010
20.	Aircraft, Habitat Protection	Reducing aircraft noise in the Salcha River and Harding Lake areas within the northwest boundary of the Birch MOA.	Fairbanks Area of Interest	Air Force 2010
Best Management Practices (BMPs) and Standard Operating Procedures (SOPs)				
21.	Marine Wildlife	The majority of aircraft activities that might affect seabirds are concentrated within the Temporary Maritime Activities Area (TMAA) where the potential for bird aircraft strikes exists. Pursuant to Navy instruction (OPNAVINST 3750.6R – Navy 2009), measures to evaluate and reduce or eliminate this hazard to aircraft, aircrews, and birds are implemented during activities in the TMAA.	Gulf of Alaska Temporary Maritime Activities Area	Navy 2011
22.	Marine Wildlife	Monitoring of seabird populations and colonies by conservation groups and researchers is conducted intermittently within coastal areas and offshore islands with limited support from various military commands.	Gulf of Alaska Temporary Maritime Activities Area	Navy 2011
23.	Construction Re-seeding	Permanent seeding is used to control runoff and erosion on disturbed areas by establishing perennial vegetative cover from seed. It is used to reduce erosion, to decrease sediment yields from disturbed areas, and to provide permanent stabilization. Re-seed areas directly affected by construction with native grass or other appropriate vegetation. Seed and vegetation sourcing should be scrutinized to assure native compliance.	USAG-FWA lands	USARAK 2005b, USARAK 2008b
24.	Preserving Natural Vegetation	The principal advantage of preserving natural vegetation is the protection of desirable trees, vines, bushes, and grasses from damage during project development. Vegetation provides erosion control, storm water detention,	USAG-FWA lands	USARAK 2005b

Table G-1. Biological Resource Mitigation Measures, Best Management Practices (BMPs), and Standard Operating Procedures (SOPs) – Existing and Proposed from Past Documents (*continued*)

No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
		biofiltration, and aesthetic values to a site during and after construction activities.		
25.	Bird Habitat	In accordance with the Fort Wainwright's adherence to the Migratory Bird Treaty Act (MBTA), clearing of vegetation would occur before May 1 or after July 15 to minimize impacts on ground and tree nesting birds. Clearing of vegetation may occur from May 1 to July 15 if surveys confirm that no active nests are present in the project area.	Fort Wainwright	USARAK 2007a
26.	Streambank Stabilization and Repair	Conduct stream bank stabilization and repair. Construct or maintain hardened sites on stream banks or shorelines where bridging training habitually occurs. Harden shoreline for habitual amphibious training. Conduct stream bank habitat improvement. Utilize land rehabilitation and maintenance standard practice such as streambank repair (interior Alaska or South Central Alaska), revegetation, and soil stabilization practices (temporary and permanent).	USAG-FWA lands	USARAK 2007b
27.	Watershed Soil Rehabilitation	Conduct soil rehabilitation in the training areas to improve training realism and support long-term sustainability. Utilize the land rehabilitation and maintenance standard practice of revegetation by employing a number of methods, including but not limited to aerial seeding, band fertilizer, broadcast fertilizer, broadcast seeding, chiseling, drill seeding, fabrics & netting, filter stripping, grassed waterways, mulching, hydro-seeding, soil amendments such as limestone & gypsum, moldboard plowing, offset disking, straw mulch, crimped straw mulch, disked sub-soiling, tandem disking, critical area treatment, grass sods, grass stolons, rhizomes, or topsoiling. Employ techniques to prevent or reduce the effects of wind erosion and control dust on and off roads. Methods include but are not limited to windrows, revegetation, aggregate application, windbreaks, surface roughness, wind strip cropping, ridging or roughening the soil surface to trap moving soil particles, and applying water or other emulsions to exposed soil.	USAG-FWA lands	USARAK 2007b
28.	Wildlife Species including Threatened and Endangered	Continued annual surveys and monitoring for wildlife species including moose, bears, bison, caribou, furbearer, small mammals, breeding birds, migratory birds, swans and other waterfowl, fish, whales (including belugas in Eagle River), and other rare, threatened, and endangered fish and wildlife species that may be present at these installations.	USAG-FWA lands	USARAK 2007b, USARAK 2006b
29.	Fish and Wildlife Management	Prepare, review, and update fish and wildlife management plans, to include the fish and wildlife management activity plan and habitat management plan. Also forestry and integrated wildland fire management plans.	USAG-FWA lands	USARAK 2007b, USARAK 2006b

Table G-1. Biological Resource Mitigation Measures, Best Management Practices (BMPs), and Standard Operating Procedures (SOPs) – Existing and Proposed from Past Documents (*continued*)

No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
	Plan Preparation, Review, and Update			
30.	Forest Management	Coordinate related projects (such as forestry practices, inventory, and monitoring; firewood cutting; and fuel hazard reductions) with fish and wildlife management activity plan and habitat management plan.	USAG-FWA lands	USARAK 2007b
31.	Wildfire Monitoring	Conduct monitoring of wildland fires on military lands. Wildfire monitoring includes identification and reporting, monitoring progress as the wildland fire progresses, and wildfire incident coordination.	USAG-FWA lands	USARAK 2007b
32.	Cover and Concealment	Create, upgrade, repair, protect, or maintain cover and concealment by planting, protecting, and maintaining trees and shrubs or removing vegetation and foliage to accommodate large vehicles. Utilize land rehabilitation and maintenance (LRAM) standard practices such as vegetation cutting and clearing (mechanical and hand), prescribed burning, vegetation protection, and revegetation.	USAG-FWA lands	USARAK 2007b
33.	Fuel Hazard Reduction / Fire – Fuel Breaks	Utilize LRAM standard practices such as vegetation cutting and clearing (mechanical and hand), prescribed burning, vegetation protection, and revegetation when maintaining fuel breaks, conducting firewood sales, improving training and habitat areas, timber harvests and stand improvements, and suppressing wildfires.	USAG-FWA lands	USARAK 2007b
34.	Habitat Protection	Prepare, coordinate, and review regulations and (GIS [geographic information system] environmental limitations) overlays that protect sensitive and important wildlife habitat by indicating areas where maneuver training is and is not allowed. These would tier off the continued annual surveys and monitoring for wildlife species such as moose, swans, etc.	USAG-FWA lands	USARAK 2007b, USARAK 2008b, USARAK 2006a
35.	Invasive Species Control	Conduct invasive species control to control exotic and invasive species from spreading. Control invasive species to protect natural species and improve training realism. Utilize LRAM standard practices such as vegetation cutting and clearing (mechanical and hand), prescribed burning, and biological and chemical controls. Continued vegetation management, including invasive species monitoring and management.	USAG-FWA lands	USARAK 2007b, USARAK 2008b, USARAK 2006b
36.	Land Restoration	Application of the Integrated Training Area Management (ITAM) program to inventory and monitor, repair, maintain, and enhance training lands.	USAG-FWA lands	USARAK 2008b

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No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
37.	Surface Water, Construction	All construction staging, fueling, and servicing operations would be kept at a minimum of 100 feet from surface waters.	USAG-FWA lands	USARAK 2008b
38.	Vegetation	Continued implementation of Range and Training Land Assessment (RTLTA) and LRAM programs to minimize and rehabilitate vegetation damage, and to gather long-term monitoring data.	USAG-FWA lands	USARAK 2008b
39.	Vegetation	Implement invasive species prevention measures during construction activities such as washing of construction equipment prior to on-site construction activities and require gravel pits to be free of invasive species.	USAG-FWA lands	USARAK 2008b
40.	Vegetation	Retain 75-foot vegetation buffer areas along either side of ephemeral and intermittent streams or other specifically designated areas. A 100-foot buffer would be maintained along Essential Fish Habitat	USAG-FWA lands	USARAK 2010
41.	Vegetation	Revegetate areas that are not recovering naturally through the LRAM program.	USAG-FWA lands	USARAK 2008b
42.	Wetlands	No fill or construction materials would be stockpiled in wetlands or waters of the U.S. without obtaining necessary permits. All equipment operation would be confined to the project footprint to prevent unnecessary damage to adjacent wetlands and vegetation.	USAG-FWA lands	USARAK 2008b
43.	Wetlands	Stabilizing of all disturbed areas resulting from project construction using native vegetation to minimize erosion and subsequent sedimentation of wetlands and streams.	USAG-FWA lands	USARAK 2008b
44.	Wetlands, Construction	All cuts, fills, and disturbed areas resulting from project construction would be stabilized using native or other appropriate vegetation to minimize erosion and subsequent sedimentation of wetlands and streams.	USAG-FWA lands	USARAK 2008b
45.	Wildlife and Fisheries	Continued compliance with Federal and State laws and regulations relating to fish and wildlife conservation or management.	USAG-FWA lands	USARAK 2008b
46.	Wildlife and Fisheries	Continued development and implementation of an information and education program for personnel using USAG-FWA lands.	USAG-FWA lands	USARAK 2008b, USARAK 2006b
47.	Wildlife and Fisheries	Continued monitoring of effects of military training on select wildlife species (especially herd animals and waterfowl) and fisheries during vital seasons such as breeding, rearing of young, and migration.	USAG-FWA lands	USARAK 2008b
48.	Wildlife and Fisheries	To the greatest extent practicable, vegetation clearing would be avoided during the May 1 through July 15 USFWS Region 7 guidelines to reduce impacts to nesting migratory birds. Visible bird nests would be identified and avoided.	USAG-FWA lands	USARAK 2008b

Table G-1. Biological Resource Mitigation Measures, Best Management Practices (BMPs), and Standard Operating Procedures (SOPs) – Existing and Proposed from Past Documents (*continued*)

No.	Biological Subtopic	Mitigation, BMP, or SOP Description	Overlap with JPARC Location	Reference
49.	BMPs currently in place to respond to new or increasing impacts.	Continued implementation of the INRMP, which helps maintain natural resource sustainability. The INRMP contains specific actions to inventory, maintain, and improve wildlife and fisheries resources and their habitat.	USAG-FWA lands	USARAK 2008b
50.	Invasive Species Management	Conduct removal of invasive wildlife species from military lands, such as pike.	USAG-FWA lands	USARAK 2007b, USARAK 2006b
51.	Wildlife Harvest	Provide support to conduct wildlife harvest by setting population goals, supporting check stations, and enforcing state and federal laws, regulations, and policies during hunting seasons.	USAG-FWA lands	USARAK 2007b
52.	Wildlife Protection and Conflict Avoidance	Put in place measures to protect wildlife species and to promote conflict avoidance through policies and regulations.	USAG-FWA lands	USARAK 2007b
53.	Vegetation	Use of the RTLA program and LRAM program to inventory land conditions, monitor vegetation trends, repair damaged areas, and minimize future damage.	USAG-FWA lands	USARAK 2008b
54.	Special Interest Areas	Designate and manage appropriate areas as special interest areas.	USAG-FWA lands	USARAK 2007b
55.	Fish and Wildlife	Harassment of fish and wildlife is prohibited. Any action which disturbs fish and wildlife is considered harassment by Federal and Alaska state law. Harassment includes such things as pursuit with vehicles or aircraft, feeding and shooting of wildlife. Individuals who harass fish and wildlife are subject to prosecution. In addition, impact and training areas may be temporarily closed to artillery fire and aerial bombardment during periods of significant fish and wildlife use. The Alpha Impact Area at Fort Wainwright is closed 15 May through 30 June for moose calving.	USAG-FWA lands	USARAK 2009a
56.	Fish Habitat	Installation ITAM best management procedures are incorporated to minimize impact on fish habitat related to stream crossing and associated disturbance and/or erosion during maneuver training.	Fort Wainwright, DTA	USARAK 2008a

¹ Wording of measures to be adapted for specific JPARC locations, where applicable, subsequent to review.

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