

Appendix D2 – BLM Required Operating Procedures

Appendix D2 BLM ROPs

ROP	Applicable?
ROP Soils-1a All topsoil will be saved in a separate area from overburden for future use.	x
ROP Soils-1b All overburden will be stockpiled and saved for resspreading over tailings.	x
ROP Soils-1c All overburden piles will be shaped and stabilized to prevent erosion.	x
ROP Soils-1d Final shape of resspread tailing and overburden will approximate the shape of the surrounding terrain.	x
ROP Soils-1e Disturbed stream banks will be recontoured, revegetated, or other protective measures will be taken to prevent soil erosion into adjacent waters.	x
ROP Soils 1-f Roads, well pads, and other disturbed areas will be recontoured and revegetated as per an approved reclamation plan or Plan of Operations. Revegetation will occur through seeding of native seed or by providing for soil conditions that allow the site to re-vegetate naturally, whichever provides the most effective means of reestablishing ground cover and minimizing erosion. The final land surface will be scarified to provide seed traps and erosion control.	x
ROP Soils 1-g Surface disturbing proposals involving construction on slopes greater than 25% will include an approved erosion control strategy, topsoil segregation/restoration plan, be properly surveyed and designed by a certified engineer and approved by the BLM prior to construction and maintenance.	x
ROP Soils-2a Roadways will be ditched on uphill side and culverts or low water crossings installed at suitable intervals. Spacing of drainage devices and water bars will be dependent on road gradient and soil erodibility.	N/A
ROP Soils-2b Roads will be designed for minimal disruption of natural drainage patterns.	N/A
ROP Soils-2c Roads will be designed to avoid areas with unstable or fragile soils.	N/A
ROP Soils-2d Water bars will be placed across reclaimed roads. Spacing will be dependent on road gradient and soil erodibility as shown in the following table.	N/A
ROP Veg-1a Vegetation treatments will be designed to achieve desired conditions clearly described in individual burn, project, or activity plans. Desired conditions will be based on the ecological capability of a given site and will be expressed as cover types or seral stages within cover types, based on management objectives.	N/A
ROP Veg-1b Vegetation treatments will be designed to prevent introduction of noxious and invasive weeds. Project, burn, or activity plans will contain a segment on known occurrence of noxious weeds within planned treatment area and strategy for post-burn monitoring or treatment.	N/A
ROP Veg-1c Seeding and planting non-native vegetation may be used in those cases where native species are not available in sufficient quantities; where native species are incapable of maintaining or achieving the objective; or where non-native species are essential to the functional integrity of the site, with specific approval from the AO.	N/A
ROP Veg-1d In order to eliminate, minimize, or limit the spread of noxious and invasive weeds, only certified feed and mulch (hay cubes, hay pellets, straw, etc,) will be permitted on BLM lands.	N/A
ROP Veg-1e Operators must prevent and control noxious and invasive weed infestations. Noxious weeds in Alaska are listed under Alaska Statute 11 AAC 34.020 or other statewide lists that may be developed in the future.	x
ROP Veg-2a Where feasible, existing roads and trails will be utilized.	x

ROP	Applicable?
ROP Veg-2b Bull-dozing of tundra mat and vegetation is prohibited unless there is no feasible alternative (e.g. lode mining), as approved by the AO. If trenching is required, use equipment that minimizes trench width. Clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.	x
ROP Veg-2c Location of winter trails will be designed to minimize breakage or compaction of vegetation.	x
ROP Veg-2d The location of winter ice roads will be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.	x
ROP Veg-2e Whenever possible, overland moves that are a part of permitted operations will occur when frost and snow cover is sufficient to minimize soil disturbance and compaction. The exact dates will be determined by the AO.	x
ROP Veg-2f When ground operations are required in snow-free months, routes that utilize naturally hardened sites will be selected to avoid the need for trail braiding. The permittee will work with the AO on specifying vehicle types and methods to minimize vegetation and soil disturbance, such as use of air or water craft, utilizing existing roads or trails, or use of low ground pressure vehicles.	x
ROP Veg-2g Permanent oil and gas facilities will be designed and located to minimize the development footprint.	N/A
ROP Veg-2h Off-highway Vehicle use associated with permitted activities will comply with OHV designations in the area. The use of OHVs associated with permitted activities will be allowed under appropriate stipulations as approved by the AO.	x
ROP Veg-2i Permitted livestock grazing will be conducted in a manner that maintains long term productivity of vegetation. Animals will not be picketed in riparian areas. In areas of low grass production, operators will pack in weed-free hay or concentrated feed.	N/A
ROP Veg-2j Require Special Recreation Permit holders, reindeer herders, dog mushers, and other BLM permit holders to use certified weed-free products on BLM lands.	N/A
ROP Water-1a Projects will be designed to protect water quality and comply with Federal and State water quality standards.	x
ROP Water-1b Management practices will include public education and construction of toilet facilities where appropriate.	N/A
ROP Water-2a Activities in wetlands will comply with Federal and State permit requirements for alteration of wetlands.	x
ROP Water-2b Utilize winter access whenever possible and avoid road or trail construction in wetlands.	x
ROP Water-2c In snow-free months, if wetlands cannot be avoided, low ground pressure vehicles will be used wherever possible.	x
ROP Water-3a Streams must be diverted around mining operations using an appropriately sized bypass channel.	N/A
ROP Water-3b All process water and ground water seeping into the operating area must be diverted into the settling pond system for treatment prior to re-entering the natural water system.	N/A
ROP Water-3c Settling ponds will be cleaned out and maintained at appropriate intervals to comply with water quality standards. Fine sediment captured in the settling ponds will be protected from washout and left in a stable condition at the end of each mining season	N/A

ROP	Applicable?
to prevent unnecessary or undue degradation to the environment during periods of non-operation.	
ROP Water-3d Riparian areas between the mined ore deposit and the watercourse will be maintained in order to serve as a buffer strip between mining operations and watercourses: to protect integrity of stream banks, provide water temperature control, and for filtration of sediment from surface run-off. All roads, bunkhouses, offices, equipment storage, and maintenance facilities should be sited in upland areas. Overburden should be placed on the uplands or on the upland side of the mine pit. This is not intended to preclude activities which by nature must occur within riparian areas, such as placer mining.	N/A
ROP Water-3e Streams that have been altered by channeling, diversion, or damming will be restored to a condition that will allow for proper functioning of the riparian zone and stream channels. Active streams will be returned to the natural water course or a new channel will be created at its lowest energy state (valley bottom) that approximates the old natural channel in shape, gradient, and meander frequency using a stable channel design. The new channel will be designed consistent with the capabilities of the reclaimed site.	N/A
ROP Water-3f Riparian vegetation, if removed during operations, will be reestablished.	x
ROP Water-3g The value of prime riparian habitat will be considered for protection and mitigation during development of any mineral resources that may impact riparian resources.	x
ROP Water-4a All permitted operations will be conducted in such a manner as not to block any stream, or drainage system and to comply with State (Alaska Dept. of Environmental Conservation) and Federal (Environmental Protection Agency) water quality standards. This is not intended to preclude activities which by nature must occur within riparian areas, such as hydropower dams or placer mining.	x
ROP Water-4b New road construction within floodplains will be avoided. Where necessary, roads will cross riparian areas perpendicular to the main channel.	N/A
ROP Water-5a Structural and vegetative treatment in riparian and wetland areas will be compatible with the capability of the site, including the system's hydrologic regime, and will contribute to maintenance or restoration of proper functioning condition.	x
ROP Water-5b Refueling of equipment will not be conducted in riparian areas or within 500 feet of the active floodplain of any fish-bearing waterbody or within 100 feet from non-fish bearing waterbodies. The AO may allow storage and operations at areas closer than the stated distance if properly designed to account for local hydrologic conditions. Spill cleanup equipment will be available at all permitted sites.	x
ROP Water-5c Crossing of waterway courses will be made using a low-angle (perpendicular) approach. Snow and ice bridges will be removed, breached, or slotted before spring break-up. Ramps and bridges will be substantially free of soil and debris.	x
ROP Water-5d New structures will be located away from riparian or wetland areas if they conflict with achieving or maintaining riparian or wetland function. Existing structures will be used in a way that does not conflict with riparian or wetland functions or be relocated or modified when incompatible.	x

ROP	Applicable?
ROP Water-5e The design and location of permanent oil and gas facilities within 500 feet of fish-bearing waterbodies or within 100 feet of non fish-bearing waterbodies will only be approved on a case-by-case basis if the lessee can demonstrate that impacts to fish, water quality, and aquatic and riparian habitats are minimal.	N/A
ROP Water-6a Projects requiring withdrawal of water will be designed to maintain sufficient quantities of surface water, and contributing groundwater, to support fish and wildlife and other beneficial uses.	X
ROP SS-1a The planning area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status. BLM may recommend modifications to proposals to further its policy of avoiding BLM-approved activity that will contribute to a need to list such a species. BLM may either require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed, threatened, or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the ESA as amended, 16 U.S.C. 1531 et seq., including completion of any required procedure for conference or consultation.	X
ROP SS-1b Within the breeding range of Spectacled eiders, habitat in the project area will be assessed to determine if eiders are likely to use the area for nesting or brood rearing. The following activities will be prohibited within 650 feet (200 meters) of spectacled eider nest sites. 1) Ground level activity (by foot or vehicle) from May 20 through August 1, 2) Construction of permanent facilities, placement of fill, or alteration of habitat, and 3) Introduction of high noise levels within 200 meters of nest sites (from activities at potentially greater distances), May 20 through August 1. These may include but are not limited to: airports, blasting, and compressor stations.	X
ROP SS-1c Within the breeding range of Kittlitz's murrelet, habitat in the project area will be assessed to determine if murrelet's are likely to use the area for nesting. If nests are found, minimize ground-level disturbance and activity within identified areas of suitable habitat during June–August.	X
ROP SS-1d Where practical, use will be redirected, as necessary, to protect Federal and State listed and candidate Threatened and Endangered species habitat, to enhance indigenous animal population, and to otherwise maintain public land health through avoidance of sensitive habitat	X
ROP SS-1e Where populations or individual sensitive status plant species are located, take measures to protect these populations or individuals through site-specific buffers or management prescriptions.	X

ROP	Applicable?
ROP SS-2a In accordance with the guidance below, before the approval of facility construction, aerial surveys of breeding pairs of the following species shall be conducted within any area proposed for development within the breeding range of these species. Spectacled and/or Steller's Eiders (a) Surveys will be conducted by the lessee for at least three years before authorization of construction, if such construction is within the FWS North Slope Eider survey area, and at least one year outside that area. Results of aerial surveys and habitat mapping may require additional ground nest surveys. Spectacled and/or Steller's eider surveys will be conducted following accepted BLM-protocol during the second week of June. b) If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant will consult with the FWS and BLM in the design and placement of roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation will address timing restrictions and other temporary mitigating measures, construction of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and introduction of high noise levels. c) To reduce the possibility of spectacled and/or Steller's eiders from striking aboveground utility lines (power and communication), such lines will either be buried in access roads, or suspended on vertical support members, to the extent practical. Support wires associated with communication towers, radio antennas, and other similar facilities, will be clearly marked along their entire length to improve visibility for low flying birds. Such markings will be jointly developed through consultation with FWS. Yellow-billed Loon a) Aerial surveys will be conducted by before authorization of construction of facilities proposed for development that are within 1 mile of a lake 25 acres or larger in size. These surveys along shorelines of large lakes will be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August. b) Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default, standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot buffer around the remainder of the shoreline. Development would be prohibited within buffers.	x
ROP SS-3a An ecological land classification map of the development area will be developed before approval of facility construction. The map will integrate geomorphology, surface form, and vegetation at a scale, level of resolution, and level of positional accuracy adequate for detailed analyses of development alternatives. The map will be prepared in time to plan one season of ground-based wildlife surveys, if deemed necessary by the AO, before approval of exact facility location and facility construction.	x
ROP SS-4a All ore processing (mill sites, tailings piles, containment ponds, etc.) must occur outside of watersheds that drain into these lakes.	N/A
ROP SS-4b All surface water discharge and drainage from mining operations must be re-directed outside of watersheds that drain into these lakes.	N/A
ROP SS-4c All chemicals including fuels will be stored outside of watersheds that drain into these lakes.	N/A

ROP	Applicable?
ROP SS-4d A person, claimant, operator, applicant or other proponent proposing to use or develop the lands, waters or resources within watersheds that drain into these lakes must demonstrate to the satisfaction of the AO that such use or development will not modify the lakes or their watersheds in such a way that it results in adversely: altering the hydrological, chemical, physical or biological integrity of the lakes; or impacting or diminishing the habitat quantity and quality of the aquatic and riparian ecosystems and watershed functions so that fish populations of the lakes are reduced below their natural potential.	x
ROP FW-1a The best available technology will be used to prevent permanent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes in areas where ground nesting populations are sensitive to increased predation.	x
ROP FW-2a No road crossings will be permitted in crucial spawning habitat, unless no feasible alternative exists and it can be demonstrated that no adverse effects will occur. State designated stream crossings will be used whenever possible.	N/A
ROP FW-2b Vehicular travel up and down streambeds, except by boat, is prohibited during the open water season (May-September).	x
ROP FW-2c Rivers and streams will be crossed at shallow riffles from point bar to point bar whenever possible.	x
ROP FW-2d Avoid stream crossings. When a stream must be crossed, the crossing will be as close to possible to a 90-degree angle to the stream. Stream crossings will be made at stable sections in the stream channel.	x
ROP FW-2e Stream and marsh crossings will be designed and constructed to ensure free passage of fish, maintain natural drainage, and minimal adverse effects to natural stream flow. Note: Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.	x
ROP FW-2f All water intakes will be screened and designed to prevent fish intake.	x
ROP FW-2g Drilling is prohibited in fish-bearing rivers and streams, as determined by the active floodplain, and fish-bearing lakes, except where the lessee can demonstrate on a site-specific basis that impacts would be minimal or it is determined that there is no feasible or prudent alternative.	N/A
ROP FW-3a Within the WAH caribou calving and insect relief areas (Map 3-12), mineral exploration activities will not be authorized from May 20-August 15 unless the AO determines that caribou no longer occupy the specific area of the proposed operations. This seasonal restriction can also be modified based on actual caribou occupancy of area.	N/A
ROP FW-3b Whenever possible, operations that require vegetation removal will avoid the migratory bird-nesting period of May 1 to July 15 (Area specific dates: May 20-July 20 for Seward Pen; June 1-July 31 for Northern region; and May 1-July 15 for interior). If no feasible alternatives exist, assessment will be conducted to determine bird species present, significance of potential impacts, and possible mitigation measures (FWS Advisory: Recommended Time Periods for Avoiding Vegetation Clearing in Alaska to Protect Migratory Birds. September 2005).	x
ROP FW-3c Within defined WAH caribou calving areas, the following uses will not be permitted during peak calving (May 20-June 20): 1) surface disturbing activities; 2) FLPMA leases or permits that exceed 14 days of activity; and 3) mining exploration. Aircraft associated with permitted activities will maintain an altitude of at least 2,000 feet above	N/A

ROP	Applicable?
ground level (AGL) (except for takeoffs and landings), unless doing so would endanger human life or violate safe flying practices. This ROP would not apply to Alternative B.	
ROP FW-3d Within defined WAH insect relief areas, aircraft associated with permitted activities will maintain an altitude of at least 2,000 feet AGL (except for takeoffs and landings) from June 20-August 15, unless doing so would endanger human life or violate safe flying practices.	N/A
ROP FW-3e Exploration and prospecting activities for solid leasable minerals, locatable minerals, and salable minerals will be prohibited between October 31 and April 1 in caribou wintering habitat in the Nulato Hills ACEC unless the operator, applicant, or permittee can demonstrate to the satisfaction of the AO that the activity can be conducted in a manner that will not result in undue disturbance to wintering caribou. This ROP would apply under Alternative D only.	N/A
ROP FW-4a Bridges and culverts will be designed to avoid altering the direction and velocity of stream flow or interfering with migrating, rearing, or spawning activities of fish and wildlife. Bridges and culverts should span the entire non-vegetated stream channel.	N/A
ROP FW-4b Pipelines and roads will be designed to allow the free movement of wildlife and the safe, unimpeded passage of the public while participating in traditional subsistence activities. Listed below are the currently accepted design practices: 1) Above ground pipelines will be elevated a minimum of seven feet as measured from the ground to the bottom of the pipeline at vertical support members; 2) In areas where facilities or terrain may funnel caribou movement, ramps over pipelines, buried pipelines, or pipelines buried under roads may be required by the AO after conferring with Federal, State, and local government regulatory and resource agencies as appropriate, based on agency legal authority and jurisdictional responsibility; and 3) A minimum distance of 500 feet between pipelines and roads will be maintained when feasible.	N/A
ROP FW-6a Power lines will be constructed in accordance with standards outlined in "Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006" (APLIC 2006). The holder will assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof will be provided by a raptor expert approved by the AO. BLM reserves the right to require modifications or additions to all power line structures, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions will be made by the holder without liability or expense to the United States.	x
ROP FW-7a This ROP applies to the Kivalina River, Ungalik River, Shaktoolik River, Inglutalik River, Koyuk River including the East Fork, Tubutulik River, Kuzitrin River, Agiapuk River, Pah River, and Noatak River. This ROP would apply under Alternative D only. Any proposal to use or develop the lands, waters, or resources within 300 feet of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: 1 will not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; 2 will not diminish the quality and diversity of habitats needed to sustain the production of	x

ROP	Applicable?
fish and wildlife populations at their natural potential; or 3 is outside the flood-prone width of these rivers.	
ROP Sub-1a BLM will consider using the following actions to eliminate, minimize, or limit the effects of permitted activities on subsistence use; 1) BLM may recommend modifications to proposed activity to further its policy of effective subsistence management, 2) Permittees will be required to provide information to potentially affected subsistence communities regarding the timing, siting, and scope of the proposed activity, and 3) Permittees will be required to consult with potentially affected subsistence communities to receive input regarding way to minimize impacts to subsistence, and the permittee will be required to provide documentation of their consultation efforts to the BLM.	x
ROP C-1a For permitted activities, cultural resource protection and conservation will be consistent with 1) Sections 106, 110, and 101d of the Historic Preservation Act, 2) procedures under BLM's 1997 Programmatic Agreement for Section 106 compliance, and 3) the BLM's 1998 implementing Protocol in Alaska between BLM and the Alaska State Historic Preservation Officer.	x
ROP C-1b If necessary, mitigation measures will be implemented according to a mitigation plan approved by the AO. Mitigation plans will be reviewed as part of Section 106 consultation for National Register eligible or listed properties. The extent and nature of recommended mitigation will be commensurate with the significance of the cultural resource involved and the anticipated extent of the damage. Reasonable costs for mitigation will be borne by the land use applicant. Mitigation must be cost effective and realistic.	x
ROP C-2a For all actions, the BLM will evaluate the impacts of proposed actions to known resources and avoid damage to already-identified significant paleontological resources by avoidance.	x
ROP C-2b If avoidance is not possible, the applicant will perform scientific examination of the to-be-impacted significant resources followed by appropriate mitigation. This may include the professional collection and analysis of significant specimens by scientists.	x
ROP VRM-1a To the extent practicable, all permanent facilities will be located away from roadsides, rivers, or trails, thereby using distance to reduce the facility's visual impact.	x
ROP VRM-1b Access roads and permanent facilities will be designed to meet the visual resource objective using such methods as minimizing vegetation clearing, and using landforms to screen roads and facilities.	x
ROP VRM-1c Permanent facilities will be designed to be screened behind trees or landforms if feasible so they will blend with the natural surroundings.	x
ROP VRM-1d The modification or disturbance of landforms and vegetative cover will be minimized.	x

ROP	Applicable?
ROP VRM-1e Permanent facilities will be designed so their shapes, sizes, and colors harmonize with the scale and character of the surrounding landscape.	x
ROP VRM-1f In open, exposed landscapes, development will be located in the opposite direction from the primary scenic views, if feasible.	x
ROP FM-1a Permittees and casual users will be held financially responsible for any actions or activity that results in a wildland fire. Costs associated with wildland fires include but are not limited to damage to natural or cultural resources and costs associated with any suppression action taken on the fire.	x
ROP FM-1b The Federal government will not be held responsible for protection of permittees' structures or their personal property. It is the responsibility of permittees and leasees to mitigate and minimize risk to their personal property and structures from wildland fire, if allowed by their permit.	x
ROP FM-1c Gas powered equipment will be equipped with manufacturer approved and functional spark arrestors.	x
ROP FM-1d To avoid the potential impacts to aquatic life the use of fire retardant is prohibited except when necessary to protect: Human life Permanent year-around residences National Historic land marks Structures on or eligible for the National Register of Historic Places Government Facilities, and Other designated sites or structures or if necessary to protect high value resources on adjacent lands under other than BLM administration or ownership Even if one of the above listed resources is being threatened, water will be used instead of fire retardant whenever possible or appropriate. The use of fire suppressant foams is prohibited.	N/A
ROP FM-1e Use of tracked or off-road vehicles in fire suppression or management activities will be conducted in a manner that does not cause erosion, damage to riparian areas, degradation of water quality or fish habitat, or contribution to stream channel sedimentation.	N/A
ROP FM-1f Use of heavy equipment and other motorized vehicles off road requires approval of AO or designee.	x
ROP FM-1g Rehabilitate areas burned by fires as needed, guided by the fire specific rehabilitation plan provided by the Field Office to the suppression agency.	N/A
ROP FM-1h Helicopters used for any activity during snow free conditions, which requires landing in wildland fuels, should have the exhaust/cooling system located high on the fuselage. Helicopters, which have exhaust/cooling systems that are located low on the fuselage and expels the exhaust straight back or downward, should only be landed in areas with no fuel such as areas of bare soil, gravel bars, or other areas of low combustability.	N/A
ROP Forest-1a Timber sales will rely to the extent possible, on natural regeneration through proper site preparation.	N/A
ROP Forest-1b Timber sales will include buffers to prevent disturbance of fish habitat and possible sedimentation into streams. Buffer widths will be dependant on harvest method, season of harvest, equipment used, slope, vegetation, and soil type. Winter operations will be encouraged in order to minimize impacts to riparian areas.	N/A
ROP MM-1a When responding to a request for a material sale or identifying a source for materials on public lands, the highest priority will be given to using existing upland material sources that meet suitability and economic needs. Using material from wetlands, lakes, and active or inactive floodplains will be avoided unless no feasible public upland	N/A

ROP	Applicable?
alternative exists. Sales or permits for in-stream gravel extraction will not be permitted in known fish spawning reaches of the active river or stream channel.	
ROP MM-1b Avoid habitats critical to local fish or wildlife populations (i.e. Fish spawning and over wintering, calving areas, raptor nesting sites).	N/A
ROP MM-1c Avoid key geomorphic features such as the beach barrier dune, river cut banks and associated riparian zones, root zones of spits, tombolos and barrier islands, springs, active channels of small, single channel rivers, and wetlands.	N/A
ROP MM-1d When possible, avoid vegetated habitats. If mining in vegetated areas, all overburden, vegetative slash, and debris will be saved for use during site reclamation to facilitate vegetative recovery. This material will be piled or broadcast so that it will not be washed away.	N/A
ROP MM-1e When scraping gravel in active or inactive floodplains, maintain buffers that will constrain active channels to their original locations and configurations.	N/A
ROP MM-2a The site can provide mineral material meeting the technical and volumetric requirements of the project and still maintain space for any required buffers.	N/A
ROP MM-2b Amount of site preparation and rehabilitation required will be considered to minimize the following: haul distance, vegetation and overburden removal, river training structures bank and other erosion protection devices, length of access route, crossing of active drainage or channels and wet working conditions in the pit.	N/A
ROP MLA-1a Existing access routes will be used where possible. Alternatives to and/or upgrading of existing access will be planned in consultation with the AO.	N/A
ROP MLA-1b All tailings, dumps, mining improvements, deleterious materials and substances, solid waste including scrap steel derelict mining machinery and parts will be disposed of to prevent unnecessary or undue degradation in accordance with applicable Federal and State Laws and in consultation with the AO.	N/A
ROP MLA-1c Hazardous substances used for exploration or mining will be contained and backhauled for disposal at a proper facility for that material. Used petroleum products may be converted onsite or contained and backhauled for proper disposal. The storage of fuels and petroleum products will be in a location approved by the AO in accordance with permit requirements of the State of Alaska Department of Environmental Conservation.	N/A
ROP MLA-1d Sanitation efforts including the disposal of gray water and kitchen wastes will be approved by the AO in accordance with the State of Alaska Department of Environmental Conservation General Mine Permit or plan specifically developed in consultation with that Agency.	N/A
ROP MLA-1e Water quality of both surface and underground waters will be regulated by terms and conditions of The U.S. Environmental Protection Agency's National Pollution Discharge Elimination Permit (NPDES). Note that in the future, implementation of the NPDES program regulating water quality of both surface and ground waters may be regulated by 18 AAC, Chapter 70 (Alaska Water Quality Standards) and 18 AAC, Chapter 83 for surface waters.	N/A
ROP Hazmat-2a All feasible precautions will be taken to avoid attracting wildlife to food and garbage.	x

ROP	Applicable?
ROP Hazmat-2b Current requirements prohibit the burial of garbage. All putrescible waste will be incinerated, backhauled, or composted in a manner approved by the AO. All unburnable solid waste will be backhauled and disposed of in an approved waste-disposal facility in accordance with U.S. Environmental Protection Agency (EPA) and Alaska Department of Environmental Conservation (ADEC) regulations and procedures.	x
ROP Hazmat-2c No disposal of domestic wastewater is allowed into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by the National Pollution Discharge Elimination System (NPDES) or State permit.	x
ROP Hazmat-2d Wastewater must be managed in accordance with Title 18 Alaska Administrative Code, Chapter 72, (18 AAC 72) Wastewater Disposal. Wastewater is defined as Human Waste (sewage), and Gray Water (water which has been used for personal hygiene, washing clothing or equipment, or sanitizing cooking and eating materials). If the standards for Pit Privies found at 18 AAC 72.030 cannot be met, all wastewater must be collected and transported to a state approved disposal facility. Upon closure of the campsite the Pit Privy must be completely back-filled with the surface area covered and re-graded to approximate original appearance.	x
ROP Hazmat-2e Pit privies will be located a minimum of at least 100 feet from the high-water mark of streams, rivers, or lakes. Pit privies will be sprinkled with lime and then backfilled with a minimum of two feet of over-material when the pit has reached capacity or the operation is terminated. All Pit privies must comply with ADEC Standards.	N/A
ROP Hazmat-2f For oil and gas operations, all pumpable solid, liquid, and sludge waste will be disposed by injection in accordance with EPA, ADEC, and the Alaska Oil and Gas Conservation Commission regulations and procedures. The AO may permit alternate disposal if the lessee demonstrates that subsurface disposal is not feasible or prudent and the alternative method will not result in adverse environmental effects.	N/A
ROP Hazmat-2g For oil and gas operations, produced water will be disposed of into injection wells as approved by the Alaska Oil and Gas Conservation Commission (AOGCC) under EPA regulations and the Underground Injection Control (UIC) program. The AO may permit alternate disposal methods if the lessee demonstrates that subsurface disposal is not feasible or prudent and the alternative method will not result in adverse environmental effects.	N/A
ROP Hazmat-3a For oil and gas operations and mining Plans of Operation, a Hazardous Materials Emergency Contingency Plan will be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan will include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. The plan will include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of Federal and State contacts.	N/A
ROP Hazmat-3b The applicant will provide BLM a disclosure of the components in any hydraulic fracturing materials to be used, the volume and depths at which such materials are expected to be used, and the volume capacity of the vessels to be used to store such materials.	N/A
ROP Hazmat-3c For oil and gas operations and mining Plans of Operation, the operator will maintain Material Safety Data Sheet (MSDS) information on all hazardous substances used by the operator.	N/A

ROP	Applicable?
ROP Hazmat-3d Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees will develop a comprehensive spill prevention and response contingency plan per 40 CFR 112 .	N/A
ROP Hazmat-3e For oil and gas operations, mining operations, and other leases and permits, sufficient oil-spill cleanup materials (absorbents, containment devices, etc.) will be stored at all fueling points and vehicle-maintenance areas and will be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.	N/A
ROP Hazmat-3f Fuel and other petroleum products will be stored at a location approved by the AO and within an impermeable lined and diked area capable of containing 110 percent of the stored volume or within approved alternate storage containers.	x
ROP Hazmat-3g Fuel storage will not occur closer than 100 feet from any river, lake, stream, or wetland unless approved by the AO.	x
ROP Hazmat-3h Liner material will be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.	x
ROP Hazmat-3i Fuel and other petroleum products and hazardous materials will be stored in containers designed to hold that product. All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled and purchased.	x
ROP Hazmat-3j Hazardous materials/toxic substances, as defined by EPA (i.e., used oils/petroleum products, batteries), will be handled and disposed of in accordance with EPA and ADEC guidelines.	x
ROP Hazmat-3k All fuel spills will be cleaned up immediately, taking precedence over all other matters, except the health and safety of personnel. Spills will be cleaned up utilizing absorbent pads or other ADEC approved methods.	x
ROP Hazmat-3l Notice of any reportable spill (as required by 40 CFR 300.125 and 18 AAC 75.300) will be given to the AO as soon as possible, but no later than 24 hours after occurrence and such other Federal and State officials as are required by law to be given such notice including ADEC at (907) 478-9300.	x
ROP Hazmat-3m Surface discharge of reserve-pit fluids and produced water is prohibited unless authorized by applicable NPDES, ADEC, and Borough permits and is approved by the AO.	N/A



United States Department of the Interior



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In Reply Refer To:
1221, 1740 (931) P

Instruction Memorandum No. AK IM 2025-013
Expires: 09/30/2028

To: All BLM Alaska Employees

From: State Director

Subject: Invasive Plant Prevention and Management

Program Area: Applies to all program areas

Purpose: The purpose of this instruction memorandum (IM) is to provide consistent implementation-level direction to prevent the introduction and spread of invasive plant species on BLM managed lands. There is a need for a standard set of stipulations and a priority invasive plant list to ensure 1) invasive species requirements are implemented consistently across the state to protect BLM managed lands; 2) authorized land users are aware of their role in proactive invasive species management; and 3) there is compliance with applicable policy and guidance. This policy applies to external and internal authorized activities and is intended to complement any existing land use plan requirements.

Administrative or Mission Related: This IM is mission related.

Policy/Action: This IM applies to all BLM-authorized activities.^{1,2} It provides a standard stipulation template (Attachment 1) to be used on external BLM authorizations and on internal BLM projects as design features. This IM also defines BLM Alaska priority invasive plants for prevention and management efforts (Attachment 2).

Timeframe: This IM is effective immediately.

¹Per the 3809 Handbook, Section 4.4.2, pre-determined stipulations for mine operations are not allowed, however, these stipulations may be considered through the NEPA analysis and required as conditions of approval, to prevent unnecessary or undue degradation.

² Per the 2809 Handbook, Section 10.B.4, BLM may grant Federal Highway Administration/State of Alaska Department of Transportation right-of-way uses (termed highway easement deeds) via a letter of consent for highway or highway materials. While BLM may subject these to conditions of approval (COA)s to protect the adjacent public lands from activities which may cause off right-of-way adverse effects, such as revegetation with non-native species, COAs should not duplicate or conflict with those already required by FHWA/DOT.

Budget Impact: This policy is expected to reduce costs to BLM Alaska in the future. Without proactive management of invasive species, costs to BLM associated with invasive species management would likely increase due to the increased spread of unmanaged invasive plant species. Prevention and early detection have proven to be more successful and cost-effective approaches to managing invasive species than allowing them to establish. Authorized users may incur costs for necessary treatment and control prescriptions.

Background: The John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 amended the Fish and Wildlife Coordination Act to provide direction (in 16 USC 666c–1) for each department to develop a strategic plan for protecting water, oceans, coasts, and wildlife from invasive species. This amendment directs the Secretary of the Interior through the BLM to take into consideration the economic and ecological costs of action or inaction during the development of strategic plans. In response, DOI updated Part 524 of the Departmental Manual on Invasive Species Management in 2020 (DOI 524 DM 1), which directs the Bureaus to implement measures to prevent the introduction, establishment, and spread of invasive plant species; detect and rapidly respond to invasive species; and eradicate or control populations of invasive plant species that are established. DOI 524 DM 1 also directs the Bureaus to use best management practices in all activities to reduce risks associated with invasive plant species, which include but are not limited to natural resource management, construction or development, fire management, permitting, and monitoring.

Authority: Fish and Wildlife Conservation Act (1934), as amended through P.L. 116-188; Federal Noxious Weed Act (1974); Federal Lands Policy and Management Act, 43 U.S.C. § 1737 (1976); Executive Order 13112 (1999), as amended by Executive Order 13751 (2016); Plant Protection Act, 7 U.S.C. § 7701 (2000); John D. Dingell, Jr. Conservation, Management, and Recreation Act (2019).

Manual/Handbook Sections Affected: This policy is in conformance with the Integrated Vegetation Management Handbook (H-1740-2), BLM Manual 6100-National Landscape Conservation System Management (2012), and Department Manual on Environmental Quality Programs Series 31: Part 524 - Invasive Species (2020).

Coordination: This IM has been coordinated with Field and District Offices, AK-930 Division of Resources, AK-940 Lands and Realty, Alaska Fire Service, and HQ-220 Division of Forestry, Rangeland, and Vegetation Resources.

Contact: If you have any questions regarding this IM, contact Ann Erickson, BLM Alaska Botany, Forestry, Range Programs Lead, 907-271-1985, aerickson@blm.gov.

Kevin J. Pendergast
BLM Alaska State Director

2 Attachments

- 1 – Standard Stipulation and Design Feature Template for BLM AK Priority Invasive Plant Prevention and Management (4 pp)
- 2 – BLM Alaska Priority Invasive Plant List (2 pp)

Attachment 1 - Standard Stipulation and Design Feature Template for BLM AK Priority Invasive Plant Prevention and Management

I. For All BLM External and Internal Authorized Activities^{1,2}, including Saleable Mineral Authorizations, Leasable Mineral Authorizations, Right-of-Way Grants, Timber Authorizations, Special Forest Product Permits, Grazing Authorizations, and Special Recreation Permits. For both surface disturbing³ and non-surface disturbing activities unless otherwise specified:

A. Responsibilities: The permit/grant/contract holder, hereafter known as the *holder*, is responsible for costs and coordination related to invasive species management to ensure that activities of the holder do not result in the introduction, establishment, or spread of Bureau of Land Management (BLM) Alaska (AK) Priority Invasive Plants (PIP) (Attachment 2) for applicable periods of the permit.

B. Initial Inspection: For surface disturbing activities only, the holder shall conduct a survey of PIP prior to conducting any on site project work to establish a baseline of any pre-activity infestations within the project area. Survey areas shall include all access roads or ancillary features associated with the area of operations, as defined by the plan of operations. Any PIP found during the initial inspection shall be reported to the AO. Authorizations may still be issued at the discretion of the AO with the development of appropriate preventative measures. When the activity is small in scale and scope or non-surface disturbing, the use of best available data (AKEPIC database) may satisfy this initial inspection requirement to establish a baseline of pre-activity infestations, as determined by the AO. Any holder not completing an initial inspection assumes responsibility for all PIP infestations within the project area.

C. Preventative Measures: The holder shall develop project-specific preventative measures based upon standard best management practices for preventing the introduction and spread of invasive species. See list of suggested resources for developing project-specific preventative measures in Section III. Preventative measures shall include but may not be limited to the following:

1. The holder shall ensure that all equipment, vehicles (e.g., trucks, trailers, watercraft, aircraft), and gear is free of visible soil, seeds, and vegetative parts before deploying to the project site and before moving from areas of known PIP infestations.
2. The holder shall not park or stage equipment, supplies, or materials in areas known to be infested with PIP. When feasible, activities shall commence from known un-infested areas and progress toward known infested areas.
3. The holder shall only use feed (e.g., hay), bedding (straw), mulch, erosion control materials, and seed that is certified as weed-free through the [Alaska DNR Weed-Free certification programs](#). Other sources, including stockpiled items from the site, may be approved by the AO on a case-by-case basis. If Alaska certified weed-free products are unavailable, then Alaska-grown material is preferred. Documentation must be provided to the BLM indicating that certified weed-free products are unavailable.

¹ Per the 3809 Handbook, Section 4.4.2, pre-determined stipulations for mine operations are not allowed, however, these stipulations may be considered through the NEPA analysis and required as conditions of approval, to prevent unnecessary or undue degradation.

² Per the 2809 Handbook, Section 10.B.4, BLM may grant Federal Highway Administration/State of Alaska Department of Transportation right-of-way uses (termed highway easement deeds) via a letter of consent for highway or highway materials. While BLM may subject these to conditions of approval (COA)s to protect the adjacent public lands from activities which may cause off right-of-way adverse effects, such as revegetation with non-native species, COAs should not duplicate or conflict with those already required by FHWA/DOT.

4. For operations in waterbodies, when moving equipment or personnel through waterbodies on the way to the project site or before transporting watercraft and aquatic gear (i.e. hip boots, waders, and bait containers) to the authorized use area, the holder shall:
 - a) Remove any aquatic plants, animals, and mud attached to watercraft and equipment,
 - b) Drain water from boat, motor, bilge, live wells, and bait containers, and
 - c) Spray all watercraft and equipment with high pressure water or dry for at least 5 days
5. If the operation involves floatplanes, permittee shall:
 - a) Inspect and remove aquatic plants from floats, wires or cables, and water rudders, transom, bottom, chine, wheel wells and float step area and
 - b) Pump water from floats.
 - c) Before takeoff, do not taxi through heavy plant growth and do raise/lower water rudders to clear off plants.
6. After takeoff, raise/lower water rudder several times to free aquatic plant fragments while over the water being left or over land

D. Monitoring (for surface disturbing activities only): The holder shall survey the project area during the growing season for occurrence of PIP during the life of the permit/grant/contract. If evidence of PIP is documented, treatment and additional monitoring may be determined necessary by the AO. Formal monitoring for non-surface disturbing activities is not required. Casual observations should be reported to the AO.

1. Surveys shall include lands encompassed by all access roads or ancillary features associated with the holder's area of operations, as defined by their plan of operations.
2. **Specific to Saleable Materials (Mineral Materials):** Prior to any new disposals, the holder will implement an invasive species inspection, monitoring, and treatment program for PIP as follows:
 - a) Material shall be inspected in the area of origin prior to movement once per growing season by the holder. If material is stockpiled on BLM lands it must also be inspected annually. If gravel/borrow area contains any PIP, then:
 - (1) Area upon which gravel/borrow material is mined must be treated to prevent seed formation, seed ripening, or dissemination of the seed or propagative parts capable of producing a new plant.
 - (2) When opening a new gravel pit or expanding an existing gravel pit with PIP present, topsoil and material should be removed and stockpiled. Infested material should not be moved off property or placed in vehicle traffic areas.

³**Surface disturbing activities** are actions that alter the land surface in ways that affect natural site conditions and public land values. This includes activities that disturb the mineral soil resource, surface geologic features, or vegetation beyond natural conditions. See applicable BLM manual, handbook, or land use plan for definitions.

E. Treatment: If treatment is necessary to eradicate infestations that result from the activities of the holder (i.e., BLM A.O. has documented establishment or spread of PIP above the baseline established in initial inspection from failure to implement preventative measures) (Section I.B.), permittee-proposed treatment methods must receive concurrence from the AO. If the holder fails to perform the necessary treatment, the BLM may initiate treatment at the expense of the holder. The holder shall reimburse the BLM the cost of the treatment. The BLM will proportionally apply any cost incurred among all authorized users of the site.

F. Reporting: For surface disturbing activities, reports that document: 1) initial inspection and 2) monitoring should be provided annually by December 31 to the AO and include:

1. Inspector's name, title
2. Inspection date
3. List of invasive species identification resource(s) referenced
4. Map showing total area surveyed and any PIP GPS locations.
5. For any PIP infestations detected include:
 - a) Species identification for each PIP
 - b) Estimation of infestation size (number of plants or acreage)
 - c) Photographs showing the general extent of infestation and close-up photographs of individual plants.
 - d) Any treatment methods/strategies proposed for BLM approval.

For non-surface disturbing activities, incidental observations of PIP should be reported to AO.

II. Resources for Invasive Species Identification and Project-specific Preventative Measures:

A. Invasive Species Identification

Alaska Exotic Plants Information Clearinghouse (AKEPIC) Database (<https://akepic.portal.axds.co/#map>) and Elodea Survey Web App (<https://arcg.is/TqaWC1>)

Flagstad, L.A., H. Cortés-Burns, and C. Greenstein. 2019. Identification of non-native plants in Alaska. Alaska Natural Heritage Program, University of Alaska Anchorage. 219 pp. Available: <https://accs.uaa.alaska.edu/invasive-species/publications/>

U.S. Department of Agriculture, Forest Service. 2020. Selected Invasive Plants of Alaska. Alaska Region R10-TP-164. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd874598.pdf

B. Preventative Measures

Alaska Department of Transportation and Public Facilities (DOT&PF). 2014. Disposal and Control of Invasive Plant Species. Prepared for Alaska DOT&PF Southeast Region. Prepared by Three Parameters Plus, Inc. Fairbanks, AK. 64 pp. Available: https://dot.alaska.gov/stwddes/desenviron/assets/pdf/resources/se_invasive_final.pdf

Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices For Transportation and Utility Corridors. Cal-IPC Publication 2012-1. California Invasive Plant Council, Berkeley, CA. Available at <https://www.cal-ipc.org/resources/library/publications/tuc/>

Fleming, J. 2005. Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species. USDA Forest Service. Available: https://www.fs.usda.gov/t-d/pubs/pdf/hi_res/05511203hi.pdf

Graziano, G., S Seefeldt, and L. Clayton. 2014. Best Management Practices: Controlling the Spread of Invasive Plants During Road Maintenance. PMC-00342. Available: <http://cespubs.uaf.edu/publications/>

U.S. Department of Interior, Bureau of Reclamation. 2021. Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species. Available: <https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2021.pdf>

U.S. Fish and Wildlife Services Region 7. 2018. Guidelines for Preventing the Spread of Aquatic Invasive Species. Available: <https://www.fws.gov/sites/default/files/documents/Aquatic%20Invasive%20Species%20Prevention%20Guidelines%20508.pdf>

Attachment 2 –BLM Alaska Priority Invasive Plant List

BLM Alaska has developed this list of state-wide priority invasive plant species to help direct invasive species management within AK BLM lands (Table 1). BLM may update this list annually by March 15 to include and prioritize other invasive species of concern to BLM. The BLM Alaska Priority Invasive Plant (PIP) List was developed based upon the North American Invasive Species Management Association (NAISMA) and Alaska Department of Natural Resources Certified Weed Free Products Program guidance (<http://plants.alaska.gov/invasives/weed-free-gravel.htm>) with recommendations from the Alaska Weed-Free Material Committee and the University of Alaska, Alaska Center for Conservation Science. The BLM Alaska PIP List includes 32 plants from the Alaska Weed Free Gravel Certification List of Species (NAISMA list) that are currently known to be present in Alaska and adjacent regions, as identified through analysis of known distribution (AKEPIC, 2025 and 2025a) and consultation with the US Fish and Wildlife Service Regional Invasive Species Program Coordinator, University of Alaska Center for Conservation Science, USDA Forest Health Protection program, USDA Agricultural Research Service, US Geological Survey, National Park Service, and University of Alaska Fairbanks Cooperative Extension Service (Carlson et al. 2008; Nawrocki et al. 2011).

Table 1. BLM Alaska Priority Invasive Plant List

Scientific Name	Common Name
<u>Terrestrial Species</u>	
<i>Arctium minus</i>	common burdock
<i>Avena fatua</i>	wild oats
<i>Berteroa incana</i>	hoary alyssum
<i>Carduus nutans</i>	musk thistle
<i>Centaurea maculosa</i>	spotted knapweed
<i>Cirsium arvense</i>	Canada thistle
<i>Conium maculatum</i>	poison hemlock
<i>Convolvulus arvensis</i>	field bindweed
<i>Elymus repens</i>	quackgrass
<i>Euphorbia esula</i>	leafy spurge
<i>Galeopsis</i> sp.	hempnettle
<i>Hesperis matronalis</i>	dame's rocket
<i>Hieracium aurantiacum</i>	orange hawkweed
<i>Hieracium caespitosum</i>	yellow (meadow) hawkweed
<i>Hypericum perforatum</i>	St. Johnswort
<i>Leontodon autumnalis</i>	hawkbit/fall dandelion
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Linaria dalmatica</i>	dalmatian toadflax
<i>Linaria vulgaris</i>	yellow toadflax
<i>Lythrum salicaria</i>	purple loosestrife
<i>Melilotus albus</i> , <i>M. officinalis</i>	sweetclover, white sweetclover, yellow sweetclover
<i>Phalaris arundinacea</i>	reed canarygrass
<i>Fallopia X bohemica</i>	Bohemian knotweed

<i>Fallopia convolvulus</i> , syn. <i>Polygonum convolvulus</i>	black bindweed/wild buckwheat
<i>Fallopia japonica</i> var. <i>japonica</i>	Japanese knotweed
<i>Fallopia sachalinensis</i>	giant knotweed
<i>Prunus padus</i> , <i>P. virginiana</i>	European bird cherry, choke cherry
<i>Ranunculus acris</i>	tall buttercup
<i>Jacobaea vulgaris</i>	tansy ragwort
<i>Sonchus arvensis</i>	perennial sowthistle
<i>Tanacetum vulgare</i>	common tansy
<i>Verbascum thapsus</i>	common mullein
<i>Vicia cracca</i>	bird vetch
<u>Aquatic Species</u>	
<i>Elodea</i> sp.	waterweed

Alaska Exotic Plant Information Clearinghouse (AKEPIC). (2025). AKEPIC Database (<https://akepic.portal.axds.co/#map>). Alaska Center for Conservation Science, University of Alaska, Anchorage. Accessed (April 1, 2025).

AKEPIC. 2025a. Elodea Survey Web App. (<https://arcg.is/TqaWC1>). Alaska Center for Conservation Science, University of Alaska, Anchorage. Accessed (April 1, 2025).

Carlson, M.L., I.V. Lapina, M. Shephard, J.S. Conn, R. Densmore, P. Spencer, J. Heys, J. Riley, and J. Nielsen. 2008. Invasiveness Ranking System for Non-Native Plants of Alaska. USDA Forest Service, R10-TP-143. 218 pp. Available: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_037575.pdf

Nawrocki, T.W., H. Klein, M.L. Carlson, L.A. Flagstad, J. Conn, R. DeVice, A. Grant, G. Graziano, B. Million, and W. Rapp. 2011. Invasiveness Ranking of 50 Non-Native Plant Species for Alaska. Report prepared for the Alaska Association of Conservation Districts. Alaska Natural Heritage Program, University of Alaska Anchorage. Anchorage, Alaska. 253 pp. Available: <https://accs.uaa.alaska.edu/invasive-species/publications/>