Appendix D

Required Operating Procedures, Stipulations, and Standard Lease Terms

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ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
AO	Authorized Officer
BLM	Bureau of Land Management
CFR	Code of Federal Regulation
CHA	critical habitat area
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
ft	foot/feet
FWH	Fish and Wildlife Habitat
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
OHV	off-highway vehicle
PRMP	Proposed Resource Management Plan
ROP	required operating procedures
ROW	right-of-way
T&E	threatened and endangered
U.S.	United States
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
VRM	Visual Resource Management

1.0 INTRODUCTION

These required operating procedures (ROPs) and oil and gas leasing stipulations were developed through the Ring of Fire planning process. To be necessary and effective, ROPs and stipulations are based on sound science, current land patterns and uses, resource protection requirements, and are consistent with the requirements of the land use plan, regulations, and laws.

1.1 Required Operating Procedures

ROPs are requirements, procedures, management practices, or design features that the Bureau of Land Management (BLM) adopts as operational requirements. They would apply to the action alternatives (Alternatives B, C, and D). ROPs would apply to all permitted activities, including Federal Land Management Policy Act (FLPMA) leases and permits, special recreation permits (SRPs), oil and gas operations, mining plans of operation, and right-of-way (ROW) authorizations. All vegetation management practices would be conducted consistent with these guidelines. Obviously, not all ROPs would apply to all permitted activities. ROPs have been developed to ensure that objectives identified within the Alaska Land Health Standards are met in carrying out permitted activities and management practices.

1.2 Oil and Gas Leasing Stipulations

Stipulations are specific to oil and gas exploration, development, and production. They constitute significant restrictions on the conduct of operations under a lease. For example, a stipulation that does not allow permanent facilities within one-fourth of a mile of a bird nest could result in a well being located far enough from the (lessee's) optimum site to prevent an oil reservoir from being fully developed. Such restrictions must be attached to the lease. As part of a lease contract, lease stipulations are specific to the lessee. All oil and gas activity permits subsequently issued to a lessee would comply with the lease stipulations appropriate to the activity under review.

The Authorized Officer (AO) may add additional, more-restrictive, stipulations as determined necessary through further National Environmental Policy Act analysis and as developed through consultation with other federal and state regulatory and resource agencies.

1.3 Exceptions, Modifications, and Waivers

Surface stipulations could be excepted, modified, or waived by the AO. An exception exempts the holder of the land use authorization document from the stipulation on a one-time basis. A modification changes the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently exempts the surface stipulation.

An environmental analysis document prepared for oil and gas development (e.g., Applications for Permit to Drill or sundry notices) would also address proposals to exempt, modify, or waive a surface stipulation. To exempt, modify, or waive a stipulation, the environmental analysis document would need to show that: 1) the circumstances or relative resource values in the area had changed following issuance of the lease; or 2) less restrictive requirements could be developed to protect the resource of concern; or 3) operations could be conducted without causing unacceptable impacts; or 4) the resource value of concern does not occur within the

lease area. The environmental analysis document would also determine the need for an RMP amendment.

1.4 Standard Lease Terms

The Standard Lease Terms are contained in Form 3100-11 (see Section 4), Offer to Lease for Oil and Gas, United States (U.S.) Department of the Interior, BLM, October 1992 or later addition (BLM 1992). Form 3100-11 is standard nationwide and is applied to every lease issued by the BLM. The Standard Lease Terms provide the lessee the right to use the leased land as needed to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands. Operations must be conducted in a manner that minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Federal environmental protection laws such as the Clean Water Act, Endangered Species Act (ESA), and National Historic Preservation Act (NHPA), will be applied to all lands and operations and are included in the Standard Lease Terms. If threatened or endangered (T&E) species; objects of historic, cultural, or scientific value; or substantial unanticipated environmental effects are encountered during construction, all work affecting the resource will stop and the land management agency will be contacted.

Standard Lease Terms provide for reasonable measures to minimize adverse impacts to surface resources. These include, but are not limited to, modifications to the siting or design of facilities, timing of operations, and specifications of interim and final reclamation measures. Standard Lease Terms may not require the lessee to relocate drilling rigs or supporting facilities by more than 200 meters, require that operations be sited off the leasehold, or prohibit new surface-disturbing operations for more than 60 days each year (43 Code of Federal Regulations [CFR] part 3101.I-2).

2.0 REQUIRED OPERATING PROCEDURES

2.1 Soils

2.1.1 Objective

Stabilizing disturbed soil as soon as possible minimizes soil erosion. Where permitted operations result in surface disturbance, land is returned as closely as possible to its pre-disturbed condition (Soils 1 through 12).

2.1.2 Requirements

Soils 1	Ditch roadways on the uphill side and install culverts or low water crossings at suitable intervals. Spacing of drainage devices will be dependent on road gradient and soil erodibility.
Soils 2	Design roads for minimal disruption of natural drainage patterns.
Soils 3	Roads shall avoid areas with unstable or fragile soils.
Soils 4	Place water bars across reclaimed roads having grades in excess of two percent. Spacing will be dependent on road gradient and soil erodibility.
Soils 5	Save all organic material for future use in an area separate from overburden.
Soils 6	Stockpile and save all overburden for respreading over tailings.
Soils 7	Shape and stabilize all overburden piles to prevent erosion.
Soils 8	Final shape of respread tailing and overburden will approximate the shape of the surrounding terrain.
Soils 9	Recontour and revegetate roads, well pads, and other disturbed areas 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 revegetate naturally; whichever provides the most effective means of reestablishing ground cover and minimizing erosion. Scarify the final land surface to provide seed traps and erosion control.
Soils 10	Seed and plant with native species. Where native species are not available in sufficient quantities or where they are incapable of maintaining or achieving the objective, or where non-native species are essential to the functional integrity of the site, non-native vegetation may be used with specific approval from the AO.
Soils 11	Respread vegetation removed during pipeline installation to provide protection, nutrient recycling, and seed source.
Soils 12	Operators will prevent and control noxious weed infestations. Noxious weeds in Alaska are listed under Alaska Statute 11 Alaska Administrative Code 34.020.

2.1.3 Objective

Minimize soil disturbance and compaction associated with overland moves, forestry operations, and seismic exploration (Soils 13 through 15).

2.1.4 Requirements

Soils 13	Whenever possible, overland moves that are part of permitted operations will occur when frost and snow cover is sufficient to minimize soil disturbance and compaction. For proposed operations during snow-free months, permittee will work with the AO on specifying vehicle types and methods to minimize vegetation and soil disturbance, such as use of air or watercraft, utilizing existing roads or trails, or use of low ground pressure vehicles.
Soils 14	Bulldozing of tundra mat and vegetation is prohibited unless project objectives call for scarification of the site to improve sprouting or seeding success. In situations where pipeline or electric line requires burial, use equipment designed specifically for trenching that minimizes disturbance of vegetation mat.
Soils 15	Off-highway vehicle (OHV) use associated with permitted activities will comply with trail limitations in the area. The use of OHVs associated with permitted activities will be allowed under appropriate stipulations as approved by the AO.

2.2 Fish and Wildlife Habitat

2.2.1 Objective

Maintain and protect fish and wildlife habitat (FWH) on public lands, and provide the habitat needs of fish and wildlife resources necessary to maintain or restore such populations (FWH 1 through 14).

2.2.2 Requirements

FWH 1	Utilize existing roads and trails whenever possible.
FWH 2	No road crossings are permitted in crucial spawning habitat unless no feasible alternative exists and it can be demonstrated that no adverse effects will occur.
FWH 3	Avoid stream crossings. When a stream must be crossed, make the crossing as close as possible to a 90 degree angle to the stream. Make stream crossings at stable sections in the stream channel.
FWH 4	Bridges and culverts will be large enough, or will be positioned, to 1) avoid altering the direction and velocity of stream flow, and 2) avoid interfering with migrating, rearing, or spawning activities of fish and wildlife. Bridges and culverts should span the entire non-vegetated stream channel.
FWH 5	Recontour and revegetate disturbed stream banks, or take other protective measures to prevent soil erosion into adjacent waters.
FWH 6	Roads, well pads, and other oil and gas facilities will not be allowed within 500 feet (ft) of fish-bearing rivers and lakes unless the lessee can demonstrate (through a site-specific analysis that considers species of fish present, slope, vegetation, and other conditions) that the impacts to fish habitat are minimal (Figures D-1 through D-3).
FWH 7	Exploratory oil and gas 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 (Figures D-1 through D-3).
FWH 8	Travel up and down streambeds is prohibited.
FWH 9	Water intakes will be screened and designed to prevent fish intake.
FWH 10	Timber sales will provide buffers to prevent disturbance of fish habitat and possible sedimentation into streams. Buffer widths will be dependent 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.
FWH 11	Prescribed burn ignition patterns will allow for stream buffers. Lighting at stream edge will be avoided.
FWH 12	Overhead powerline construction will be avoided in primary trumpeter swan breeding habitat (Figures D-5 and D-6).
FWH 13	Recreational developments, permits, or leases on lakes or lakeshores with historically active trumpeter swan nest sites or staging areas will not be allowed (Figures D-5 and D-6).
FWH 14	When possible, operations that require vegetation removal will avoid the migratory bird nesting period of April 15 to July 15. If no feasible alternatives exist, an assessment will be conducted to determine bird species present, significance of potential impacts, and possible mitigation measures.

2.2.3 Objective

Heavy concentrations of activities in sensitive wildlife and plant habitats will be avoided (FWH 15 and 16).

2.2.4 Requirements

FWH 15	Within one-fourth of a mile of bald eagle nests (Figures D-9 through D-11), the following uses will not be permitted from April 1 to August 31: a) surface disturbing activities; or b) FLPMA leases or permits. Aircraft associated with permitted activities will maintain an altitude of 1,000 ft within one-half mile of documented eagle nests. Exemptions to this ROP may be granted for mining operations where no feasible alternative exists and where mitigation measures can be identified to minimize impacts. Appropriate buffers around other raptor nests will be determined based on site-specific analysis. Stipulations regarding oil and gas exploration, development, and production are described in the Oil and Gas Leasing Stipulations section beginning on page 12.
FWH 16	In critical Dall sheep and mountain goat habitat (Figures D-12 and D-13), helicopters used in support of permitted activities will maintain one-half mile of horizontal and 1,500 ft vertical distance from goats and sheep. Heli-ski landing or skiing is not permitted in Dall sheep or goat critical ranges, as identified based on Alaska Department of Fish & Game (ADF&G) maps and refined by monitoring.

2.2.5 Objective

Fish and wildlife resources and habitat will be managed to ensure compliance with the ESA and to ensure progress towards recovery of listed T&E species (FWH 20).

2.2.6 Requirements

FWH 20	The planning area may now or hereafter contain plants or animals (or their habitats) identified as T&E or special status species. BLM may recommend modifications to proposals to further its conservation and management objective to avoid any BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activities that are likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat area (CHA). BLM will not approve any ground-disturbing activities that may affect any such species or CHA until BLM completes its obligations under applicable requirements of the ESA, 16 United States Code (U.S.C.) 1531 et seq., including completion of any required procedures for conference or consultation.

2.3 Riparian Areas and Water Resources

2.3.1 Objective

New structures will be located away from riparian or wetland areas if they conflict with achieving or maintaining riparian or wetland function. Existing structures are used so as not to conflict with riparian or wetland functions, or they are relocated or modified when incompatible (Water 1 and 2).

2.3.2 Requirements

Water 1	The design and location of permanent oil and gas facilities within 500 ft of fish-bearing waterbodies or within 100 ft 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.
Water 2	New road construction within floodplains will be avoided. Where necessary, roads will cross riparian areas perpendicular to the main channel.

2.3.3 Objective

Minimize disturbance to riparian areas and facilitate rehabilitation of riparian areas (Water 3 through 8).

2.3.4 Requirements

Water 3	Streams will be diverted around mining operations using an appropriately-sized bypass channel.
Water 4	All process waters and any groundwater seeping into the operating area will be diverted into the settling pond system for treatment prior to reentering the natural water system.
Water 5	Settling ponds will be cleaned out and maintained at appropriate intervals to comply with water quality standards. Fine sediment captured in settling ponds will be protected from washout and left in a stable condition at the end of each mining season to prevent unnecessary and undue degradation to the environment during periods of non-operation.
Water 6	Riparian areas located between a mined ore deposit and a water course will not be disturbed to serve as a buffer strip to protect integrity of stream banks, provide water temperature control, and provide filtration of sediment from surface runoff. All roads, bunkhouses, offices, equipment storage, and maintenance facilities will be sited in upland areas if possible. Overburden will be placed on the uplands if possible or on the upland side of the mine pit. Application of this ROP is not intended to preclude activities, which by nature, must occur within riparian areas, such as placer mining.
Water 7	Projects will be designed to protect water quality and comply with state and federal water quality standards.
Water 8	Streams that have been altered by channeling, diversion, or damming will be restored to a condition that will allow for proper functioning condition. 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.

2.3.5 Objective

Provide for maintenance of proper functioning condition in riparian areas and protection of water quality by minimizing impacts of other permitted activities and vegetation treatments (Water 10 through 16).

2.3.6 Requirements

Water 10	Structural and vegetative treatments in riparian and wetland areas will be compatible with the capability of the site, including the system's hydrologic regime, and will contribute to the maintenance or restoration of proper functioning condition.
Water 11	Refueling of equipment will not be conducted in riparian areas or within 500 ft of the active floodplain of any fish-bearing waterbody or within 100 ft 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.
Water 12	Water withdrawal from lakes may be authorized on a site-specific basis depending on size, water volume, depth, fish population, and species diversification.
Water 13	If operations occur in winter, crossing of waterway courses will be made using a low-angle 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.
Water 14	All permitted operations will be conducted in such a manner as to not block any stream or drainage system, and to comply with state and federal water quality standards. Application of this ROP is not intended to preclude activities, which by nature, must occur within riparian areas, such as hydropower dams or placer mining.
Water 15	Human use will be managed to meet and maintain water quality standards and avoid management problems and water quality impacts. Specific management practices will include education, construction of toilet facilities where appropriate, and encouragement in the use of portable toilet systems.
Water 16	Use of aerial fire retardant near lakes, wetlands, streams, rivers, sources of human water consumption, and areas adjacent to water sources will be avoided to protect fish habitat and water quality. If feasible, use of water rather than retardant is preferred in these areas.

2.3.7 Objective

Minimize disturbance to riparian areas from development of mineral material sites (Water 17 through 24).

2.3.8 Requirements

Water 17	When responding to a request for a material sale or identifying a source for materials on public lands, the highest priority shall be given to using existing upland material sources. Using materials from wetlands, lakes, and active or inactive floodplains will be avoided unless no feasible public upland alternative exists. Sales or permits for gravel extraction will not be permitted in known fish spawning or rearing areas.
Water 18	Where possible, braided or split stream types will be selected for material extraction. Meandering, sinuous, and straight steam channel types should be avoided.
Water 19	Generally, the largest river feasible should be selected for a gravel operation in a given area. Larger rivers have higher volumes of gravel and a wider floodplain more forgiving to in-channel disturbance. The proportionately smaller disturbance in large river systems will reduce the overall effect of gravel removal.
Water 20	Mining gravel from active channels will be avoided to reduce detrimental effects on water quality, aquatic habitat, and biota.
Water 21	When possible, avoid vegetated habitats.
Water 22	When scraping gravel in active or inactive floodplains, maintain buffers that will constrain active channels to their original locations and configurations.
Water 23	Material pits will be designed with high shorelines, water depth diversity, and islands.
Water 24	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 should be piled or broadcast so that it will not be washed away.

2.4 Wetlands

2.4.1 Requirements

Involve the following land management practices to avoid or minimize adverse impacts upon the hydrological, habitat, subsistence, and recreational values of public wetlands (Wetlands 1 through 3):

Wetlands 1	Activities in wetlands will comply with federal and state permit requirements for alteration of wetlands.
Wetlands 2	Utilize winter access whenever possible and avoid road or trail construction in wetlands.
Wetlands 3	In snow-free months, if wetlands cannot be avoided, low ground pressure vehicles will be used wherever possible.

2.5 Vegetation

2.5.1 Objective

Treatments to alter the vegetative composition of a site, such as prescribed burning, seeding, or planting, will be based on the potential of the site and will (Veg 1 through 7):

a) retain or promote infiltration, permeability, and soil moisture storage;

b) contribute to nutrient cycling and energy flow;

c) protect water quality;

d) help prevent the introduction and spread of noxious weeds;

e) contribute to the diversity of plant communities and plant community composition and structure;

f) maintain proper functioning condition; and

g) support the conservation of T&E, special status species, and species of local importance.

2.5.2 Requirements

Veg 1	Vegetation treatments will be designed to achieve desired conditions clearly described in individual burn plans or timber sales. 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.
Veg2	Vegetation treatments will be designed to prevent introduction of noxious weeds. Prescribed burn plans will contain a segment on known occurrence of noxious weeds within planned burning areas and strategies for post-burn monitoring or treatment.
Veg 3	Machinery used in timber sales will be inspected for noxious weed seeds.
Veg 4	Burn plans for large burns will prescribe conditions that result in a mosaic of burned or unburned areas within the burn unit. Smaller burns may not require a mosaic, dependent on objectives.
Veg 5	Timber sales will rely, to the extent possible, on natural regeneration through proper site preparation.
Veg 6	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.
Veg 7	Currently there is known habitat in the planning area for special status plant species. However, no specific population locations are known. If specific populations or individual special status species are located, measures will be taken to protect these populations or individuals through site-specific buffers or management prescriptions.

2.5.3 Objective

Minimize vegetation disturbance from permitted activities (Veg 8 through 14).

2.5.4 Requirements

Veg 8	Conduct ground operations during frozen conditions when possible (12 inches frost or 6 inches average snow cover).
Veg 9	Bulldozing of tundra mat or vegetation is prohibited unless there is no feasible alternative (lode mining), as approved by the AO. If trenching is required, utilize equipment that minimizes trench width.
Veg 10	Location of winter trails will be designed to minimize breakage or compaction of vegetation.
Veg 11	When ground operations are required in snow-free months, select routes that utilize naturally hardened sites and avoid the need for trail braiding.
Veg 12	Use of tracked or OHV 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.
Veg 13	Permanent oil and gas facilities will be designed and located to minimize the development footprint.
Veg 14	Rehabilitate firelines and bulldozer lines by spreading original soil and vegetation on the disturbed ground. In extreme cases where seeding or plugging may be necessary, use native vegetation and seeds. A rehabilitation plan should be developed by suppression forces working with Anchorage Field Office wildlife biologists and botanists.

2.6 Cultural and Paleontological Resources

2.6.1 Objective

Management practices will consider protection and conservation of known cultural resources, including historical and prehistoric sites (Cultural 1 through 3).

2.6.2 Requirements

Cultural 1	For oil and gas activities, cultural resource protection is covered under the standard lease terms.
Cultural 2	For other non-oil and gas permitted activities, cultural resource protection, and conservation will be consistent with: 1) Sections 106, 110, and 101d of the National Historic Preservation Act (NHPA), 2) procedures under BLM's 1997 Programmatic Agreement for Section 106 compliance, and 3) BLM's 1998 Implementing Protocol in Alaska between BLM and the Alaska State Historic Preservation Officer.
Cultural 3	If necessary, mitigation measures will be implemented according to a mitigation plan approved by the AO. Such plans are usually prepared by the land use applicant's contract archaeologist according to BLM specifications. Mitigation plans will be reviewed as part of Section 106 consultation for National Register of Historic Places 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 will be cost-effective and realistic.

2.6.3 Objective

Avoid damage to significant paleontological resources where possible, and mitigate unavoidable damage (Cultural 4 and 5).

2.6.4 Requirements

Cultural 4	For all actions, evaluate the impacts of proposed actions to known resources and avoid damage to already-identified significant paleontological resources by avoidance.
Cultural 5	If avoidance is not possible, perform scientific examination of the to-be-impacted significant resources followed by appropriate mitigation, which may include the professional collection and analysis of significant specimens by scientists.

2.7 Visual Resources

2.7.1 Objective

Manage oil and gas, mining, and other permitted activities to meet the Visual Resource Management (VRM) class objectives described below (VRM 1 through 6):

Class I – Preserve the existing character of the landscape; change to the characteristic landscape should be very low and not attract attention.

Class II – Preserve the existing character of the landscape; change to the characteristic landscape may be seen, but should be low and not attract the attention of the casual observer.

Class III – Partially retain the existing character of the landscape; change to the characteristic landscape should be moderate and may attract attention, but not dominate the view of the casual observer.

Class IV – Provides for action that would make major modifications to the existing character of the landscape; change to the characteristic landscape can be high, dominate the view, and be the major focus of the viewer.

2.7.2 Requirements

VRM 1	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.
VRM 2	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.
VRM 3	Permanent facilities will be screened behind trees or landforms if feasible so they will blend with the natural surroundings.
VRM 4	The modification or disturbance of landforms and vegetative cover will be minimized.
VRM 5	Permanent facilities shall be designed so their shapes, sizes, and colors harmonize with the scale and character of the surrounding landscape.
VRM 6	In open, exposed landscapes, development will be located in the opposite direction from the primary scenic views, if feasible.

2.8 Hazardous Materials and Waste Handling

2.8.1 Objective

Protect the health and safety of permittees, lessees, miners, oil field workers, and the general public by avoiding the disposal of solid waste and garbage near areas of human activity (Haz 1).

2.8.2 Requirement

Haz 1	Areas of operation will be left clean of all debris.

2.8.3 Objective

Minimize impacts on the environment from non-hazardous waste generation (Haz 2 through 6).

2.8.4 Requirements

Haz 2	All feasible precautions will be taken to avoid attracting wildlife to food and garbage.
Haz 3	Current requirements prohibit the burial of putrescible waste. All putrescible waste will be incinerated, backhauled, or composted in a manner approved by the AO. All solid waste, including incinerator ash, will be disposed of in an approved waste-disposal facility in accordance with United States Environmental Protection Agency (USEPA) and Alaska Department of Environmental Conservation (ADEC) regulations and procedures.
Haz 4	For oil and gas operations, all pumpable solid, liquid, and sludge waste will be disposed by injection in accordance with USEPA, 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.
Haz 5	For oil and gas operations, produced water will be disposed of into injection wells as approved by the Alaska Oil and Gas Conservation Commission under USEPA regulations and the Underground Injection Control 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.
Haz 6	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.

2.8.5 Objective

Minimize the impacts to fish, wildlife, and the environment from hazardous materials, oil spills, and other chemical spills (Haz 7 through 15).

2.8.6 Requirements

Haz 7	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.
Haz 8	A plan of operations will include 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.
Haz 9	For oil and gas operations and mining plans of operation, the operator will maintain Material Safety Data Sheet information on all hazardous substances used by the operator.
Haz 10	Before initiating any oil and gas or related activity or operation, including field research and surveys and/or seismic operations, lessees/permittees will develop a comprehensive spill prevention and response contingency plan per 40 CFR 112.
Haz 11	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.
Haz 12	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.
Haz 13	Fuel storage will not occur closer than 100 ft from any river, lake, stream, or wetland unless approved by the AO.
Haz 14	Liner material will be compatible with the stored product and will be capable of remaining impermeable during typical weather extremes expected throughout the storage period.
Haz 15	All fuel containers, including barrels and propane tanks, will be marked with the responsible party's name, product type, and year filled and purchased.

2.8.7 Objective

Minimize impacts on fish, wildlife, and the environment from contaminants associated with the exploratory drilling process (Haz 16).

2.8.8 Requirements

Haz 16	Surface discharge of reserve-pit fluids and produced water is prohibited unless authorized by applicable NPDES and ADEC, and approved by the AO.

3.0 OIL AND GAS LEASING STIPULATIONS

Table 1. Oil and Gas Leasing Stipulations

Objective	Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
Minimize disturbance to nesting trumpeter swans and their habitat (Figures D-5 and D-6).	**Stip-1:** Closed to drilling (exploration or development), pipeline construction, road construction, or location of permanent facilities May 1 to August 31. Allows off-season exploration activities or pipeline construction.	Area within one-fourth of a mile of trumpeter swan nesting or staging ponds, marshes, or lakes.	**Exception:** U.S. Fish and Wildlife five-year census data will be used to accurately identify nest sites that are used repeatedly. Upon site-specific review and monitoring, the AO may grant exceptions based on non-occupancy of specific nests. **Modification:** Season may be adjusted based on documented season of occupancy of specific nest sites. **Waiver:** None if nests are present in the lease area.
Maintain high value moose habitat and minimize disturbance in areas of winter concentration (Figures D-7 and D-8).	**Stip-2:** Closed to drilling (exploration or development), pipeline construction, and road construction activities October 15 to March 31. Open during this period to production activities. Open in off-season to all activities, subject to other stipulated areas.	Moose winter range.	**Exception:** Upon review and monitoring, the AO may grant exceptions based on actual moose use of site-specific area. Exceptions granted for work-over rigs on a case-by-case basis based on duration of activity and actual moose occupancy of the area. **Modification:** Season may be adjusted depending on climatic conditions, severity of winter, and documented occupancy of the area. **Waiver:** None if moose winter range is present in the lease area.
Protect active bald eagle nests (Figures D-9 through D-11).	**Stip-3:** Closed to drilling (exploration or development), pipeline construction, road construction, or location of permanent facilities April 1 to August 31. Allows off-season exploration activities or pipeline construction.	One-fourth of a mile buffer from historically active bald eagle nests.	**Exception:** Where data exists, the AO may grant exceptions based on review of eagle nest monitoring data. Nests unoccupied for three consecutive years may be considered for exception. **Modification:** Season may be adjusted based on actual nest occupancy. **Waiver:** None if bald eagle nests are present in area.
Minimize disturbance to calving caribou (Figure D-14).	**Stip-4:** No exploration or development activities May 1 to June 15. Production activities may occur (no workover rigs).	Caribou calving areas.	**Exception:** The AO may grant exception if a review indicates that calving caribou no longer occupy specific areas. Exceptions may be granted for work-over rigs on a case by case basis, depending on duration of activity and actual caribou occupancy of the area. **Modification:** Season may be extended or reduced based on actual occupancy of the area. Monitoring provided by annual ADF&G aerial counts. **Waiver:** This stipulation may be waived if caribou migratory patterns change and the areas are no longer used for calving.

Table 1 (continued). Oil and Gas Leasing Stipulations

Objective	Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
Minimize soil erosion.	**Stip-5:** Surface disturbing proposals involving construction on slopes greater than 25 percent would include an approved erosion control strategy, topsoil segregation/ restoration plan, be properly surveyed and designed by a certified engineer, and approved by BLM prior to construction and maintenance.	All slopes greater than 25 percent within the planning area.	**Exception:** If after an environmental analysis the AO determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, occupancy in the No Surface Occupancy area may be authorized. **Modification:** May be granted if a more detailed analysis (Order I soil survey) finds that surface disturbance could occur without accelerated erosion. **Waivers:** None.
Minimize impact on the human environment.	**Stip-6:** The operator will construct drill pads at least 500 ft and compressor stations at least 1,500 ft from occupied structures.		**Exception:** The AO may grant an exception if the operator obtains the consent of the owner of the structure. **Modification:** None. **Waivers:** None.
Protect T&E, special status species, and their habitats.	**Stip-7:** The lease area may now or hereafter contain plants, animals, or their habitats determined to be T&E, or special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activities that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activities that are likely to result in jeopardy to the continued existence of a proposed or listed T&E species or result in the destruction or adverse modification of a designated or proposed CHAs.	All BLM-managed lands.	**Exception:** None. **Modification:** None. **Waiver:** None.
Protect migratory, breeding, and brooding birds in the Palmer Hay Flats.	**Stip-8:** Closed to drilling (exploration or development), pipeline construction, road construction, or location of permanent facilities March 15 to October 31.	All BLM-managed lands within the Palmer Hay Flats.	**Exception:** AO may grant an exception if the birds are no longer in the area or if the lessee can demonstrate the primary bird habitat will not be impacted. **Modification:** Season may be adjusted based on documented season of occupancy. **Waiver:** None, if nests are present in the lease area.

4.0 STANDARD LEASE TERMS (BLM FORM 3100-11)

4.1 Rentals

Rentals shall be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

a) Noncompetitive lease, $1.50 for the first 5 years; thereafter $2.00;

b) Competitive lease, $1.50, for the first 5 years; thereafter $2.00;

c) Other, see attachment, or as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan, which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties shall be paid on the production allocated to this lease. However, annual rentals shall continue to be due at the rate specified in (a), (b), or (c) for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) shall automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

4.2 Royalties

Royalties shall be paid to proper office of lessor. Royalties shall be computed in accordance with regulations on production removed or sold. Royalty rates are:

a) Noncompetitive lease, 12 1/2 percent;

b) Competitive lease, 12 1/2 percent;

c) Other, see attachment; or as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties shall be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production shall be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee shall not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor shall lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year shall be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge shall be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (30 U.S.C. 1701). Lessee shall be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under Federal Oil and Gas Royalty Management Act or the leasing authority.

4.3 Bonds

A bond shall be filed and maintained for lease operations as required under regulations.

4.4 Diligence, rate of development, unitization, and drainage

Lessee shall exercise reasonable diligence in developing and producing, and shall prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves the right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if seemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee shall drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

4.5 Documents, evidence, and inspection

Lessee shall file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee shall furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee shall keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee shall keep open at all reasonable times for inspection by any authorized officer of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee shall maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports costs claimed as manufacturing, preparation, and/or transportation costs. All such records shall be maintained in lessee's accounting offices for future audit by lessor. Lessee shall maintain required records for six years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section shall be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

4.6 Conduct of operations

Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of

this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or ROWs. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short-term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects.

4.7 Mining operations

To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

4.8 Extraction of helium

Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessee or owner of the gas. Lessee shall include in any contract of sale of gas the provisions of this section.

4.9 Damages to property

Lessee shall pay lessor for damage to lessor's improvements, and shall save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

4.10 Protection of diverse interests and equal opportunity

Lessee shall: pay when due all taxes legally assessed and levied under laws of the State or the U.S.; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the U.S.; maintain a safe working environment in accordance with standard industry practices; and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices; and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to oil derived from these leased lands, lessee shall comply with Section 28 of the Mineral Leasing Act of 1920.

Lessee shall comply with Executive Order 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee, nor lessee's subcontractors shall maintain segregated facilities.

4.11 Transfer of lease interests and relinquishment of lease

As required by regulations, lessee shall file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which shall be effective as of the date of filing subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

4.12 Delivery of premises

At such time as all or portions of this lease are returned to lessor, lessee shall place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

4.13 Proceedings in case of default

If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease shall be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision shall not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver shall not prevent later cancellation for the same default occurring at any other time. Lessee shall be subject to applicable provisions and penalties of Federal Oil and Gas Royalty Management Act (30 U.S.C. 1701).

4.14 Heirs and successors-in-interest

Each obligation of this lease shall extend to and be binding upon, and every benefit hereof shall inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

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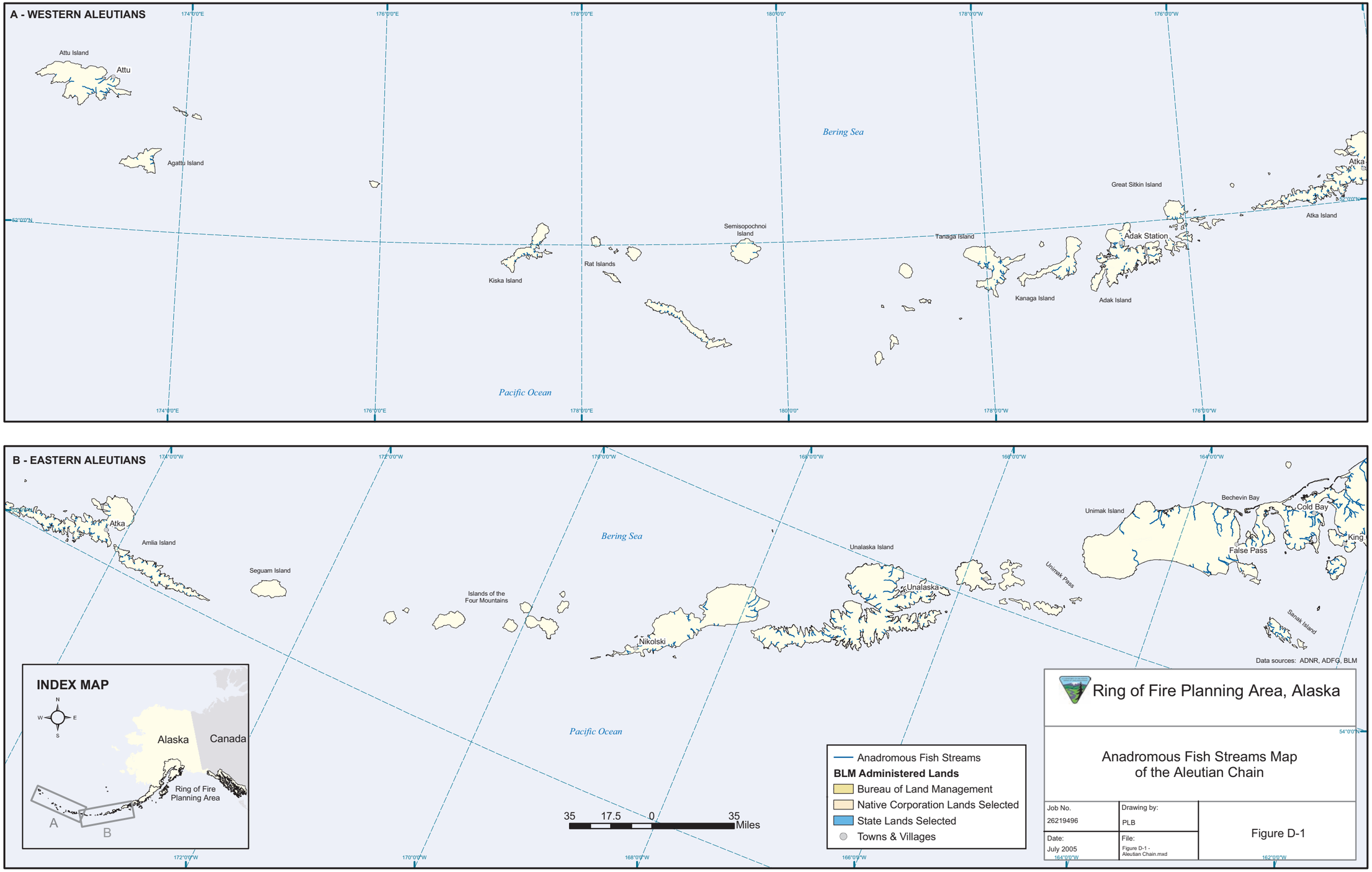
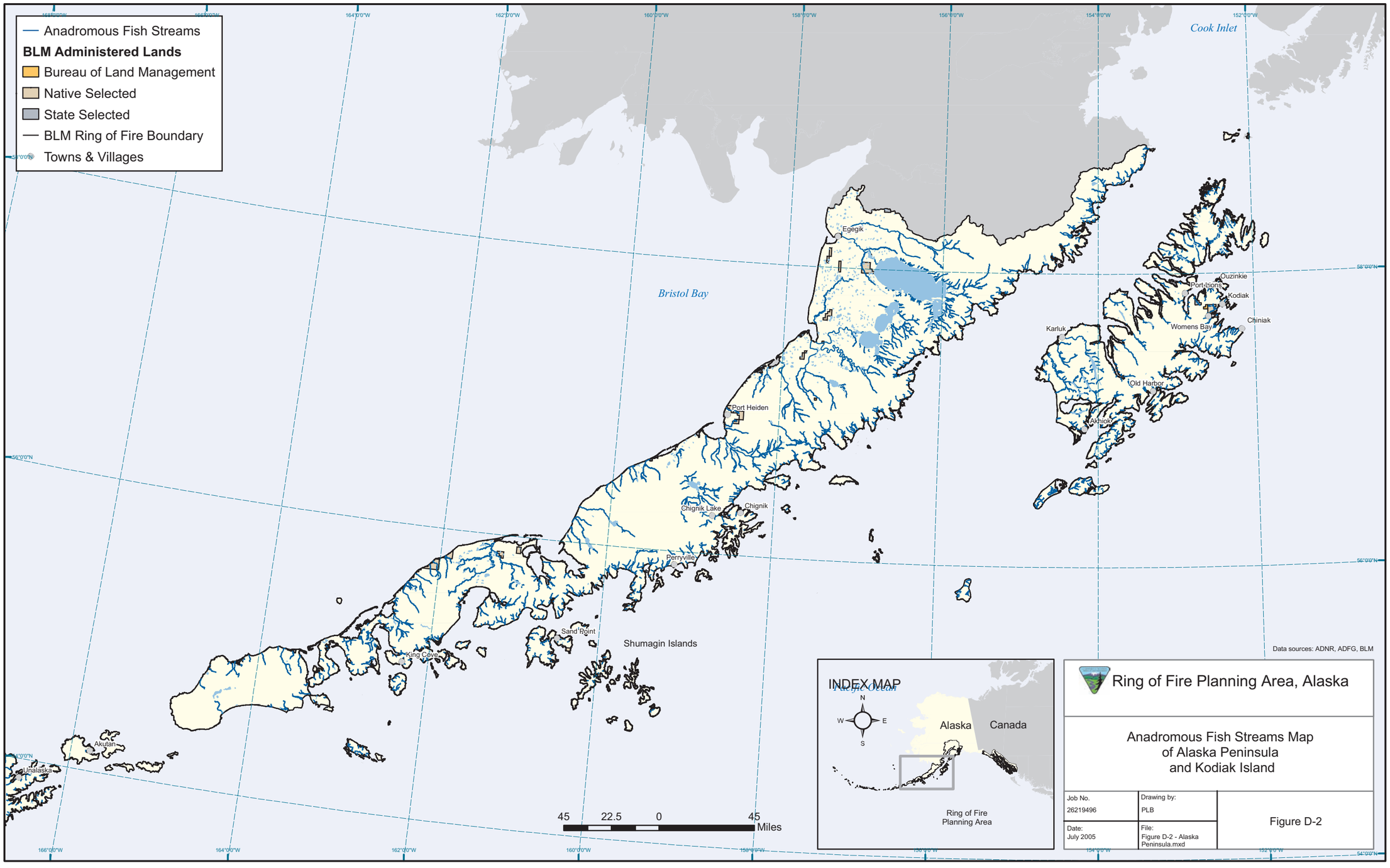
Figures



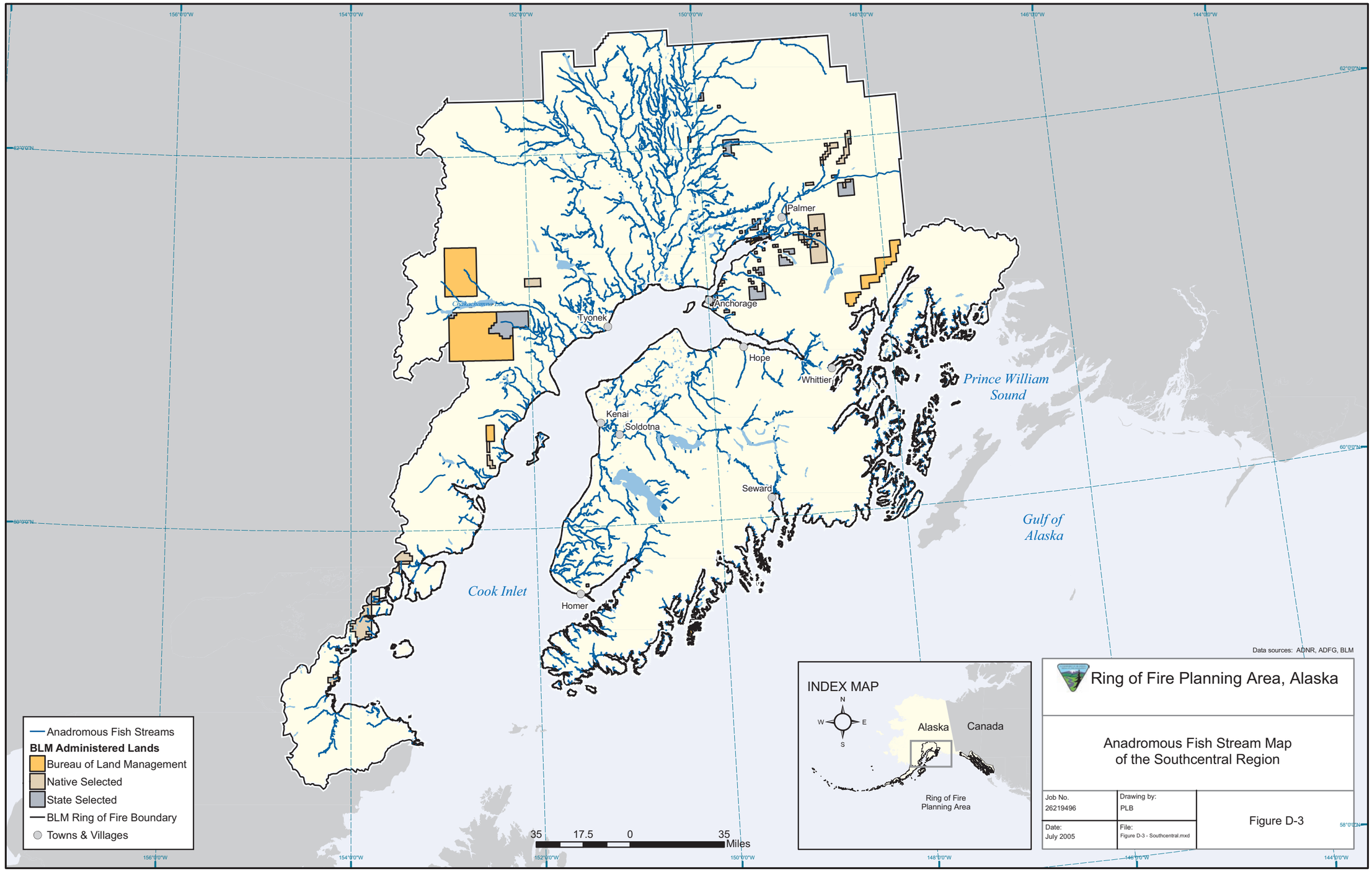
State of Alaska, Department of Fish and Game

Figure D-1, Anadromous Fish Streams Map of the Aleutian Chain



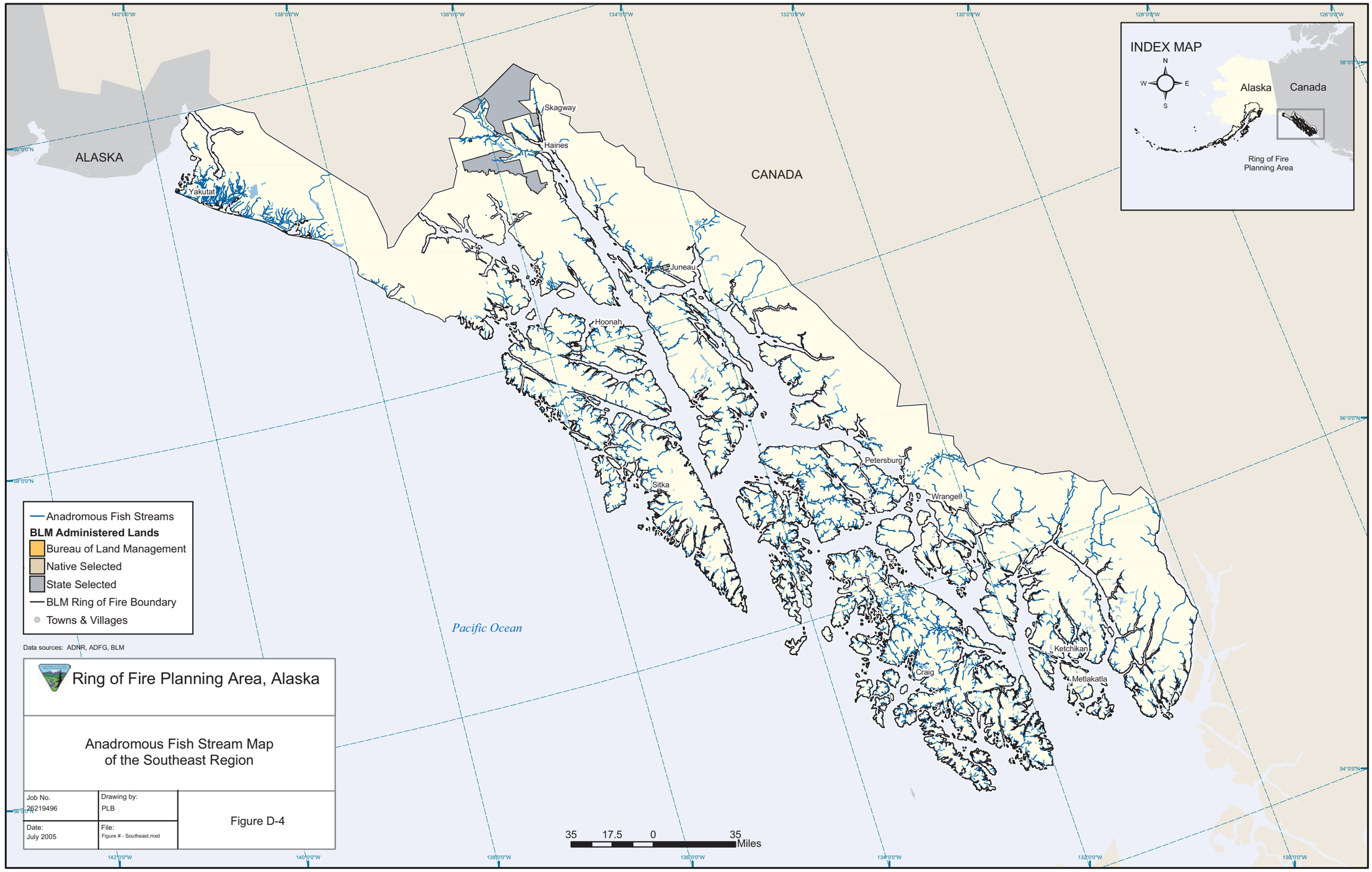
State of Alaska, Department of Fish and Game

Figure D-2, Anadromous Fish Streams Map of Alaska Peninsula and Kodiak Island



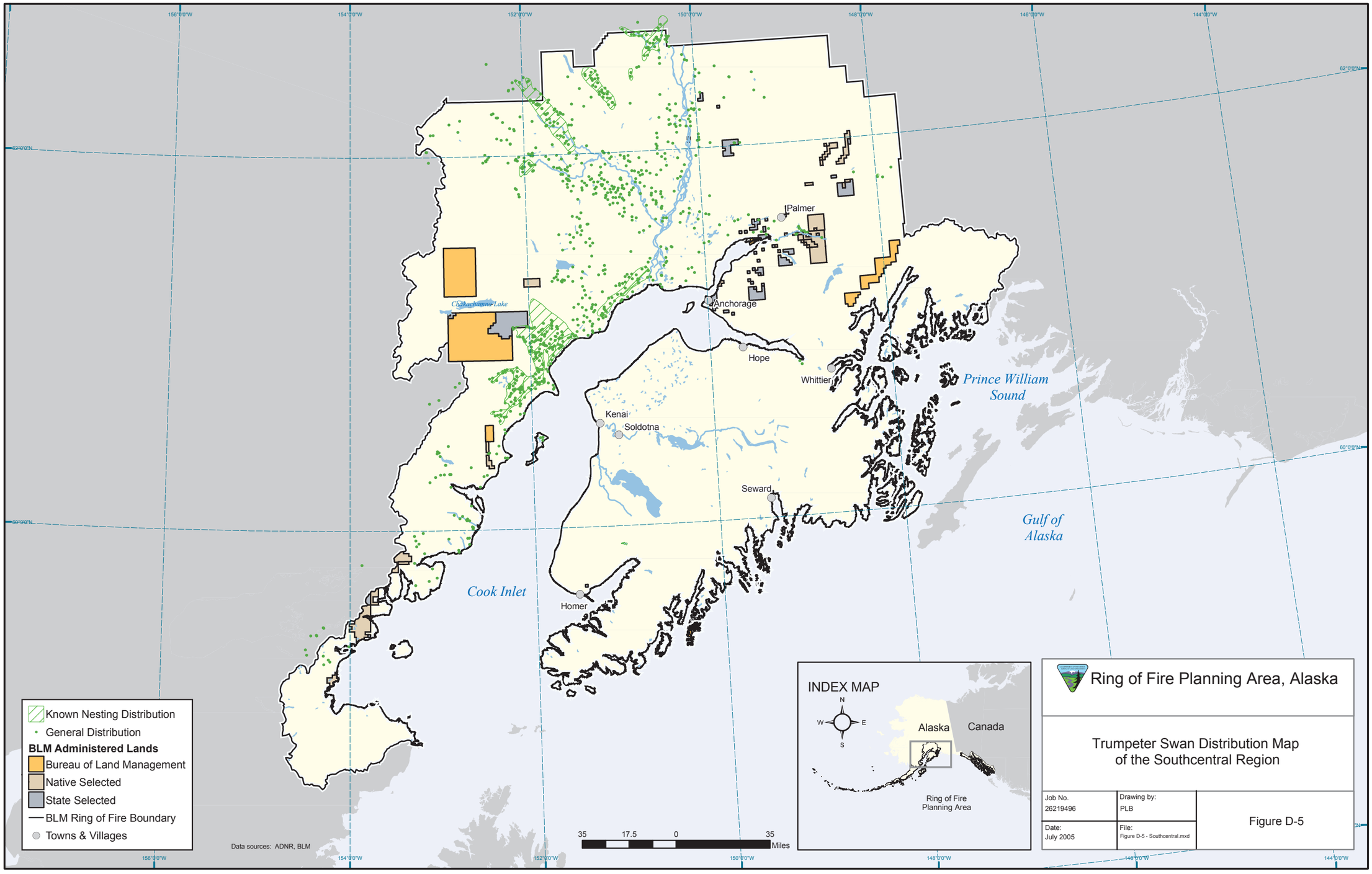
State of Alaska, Department of Fish and Game

Figure D-3, Anadromous Fish Stream Map of the Southcentral Region



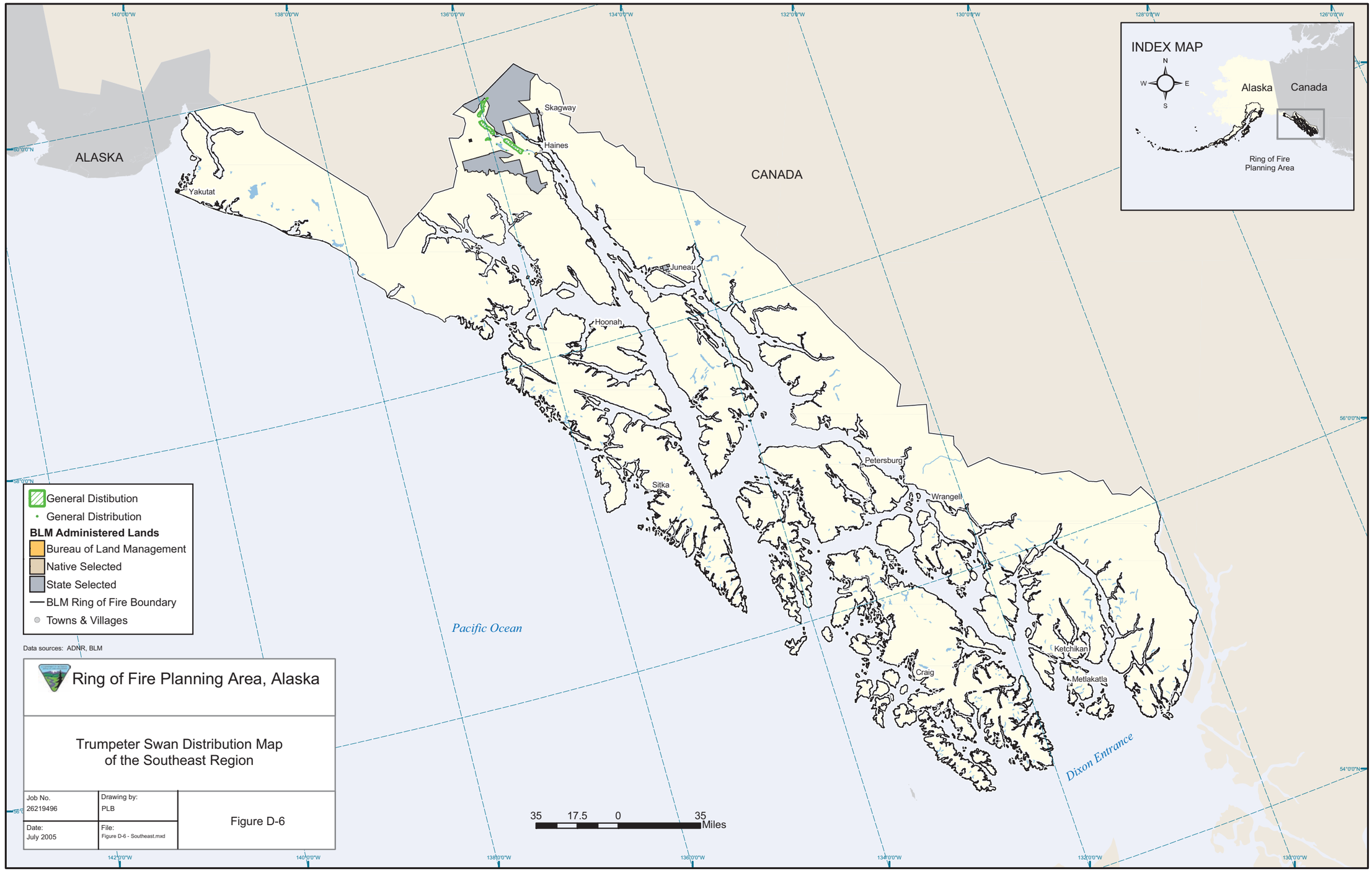
State of Alaska, Department of Fish and Game

Figure D-4, Anadromous Fish Stream Map of the Southeast Region



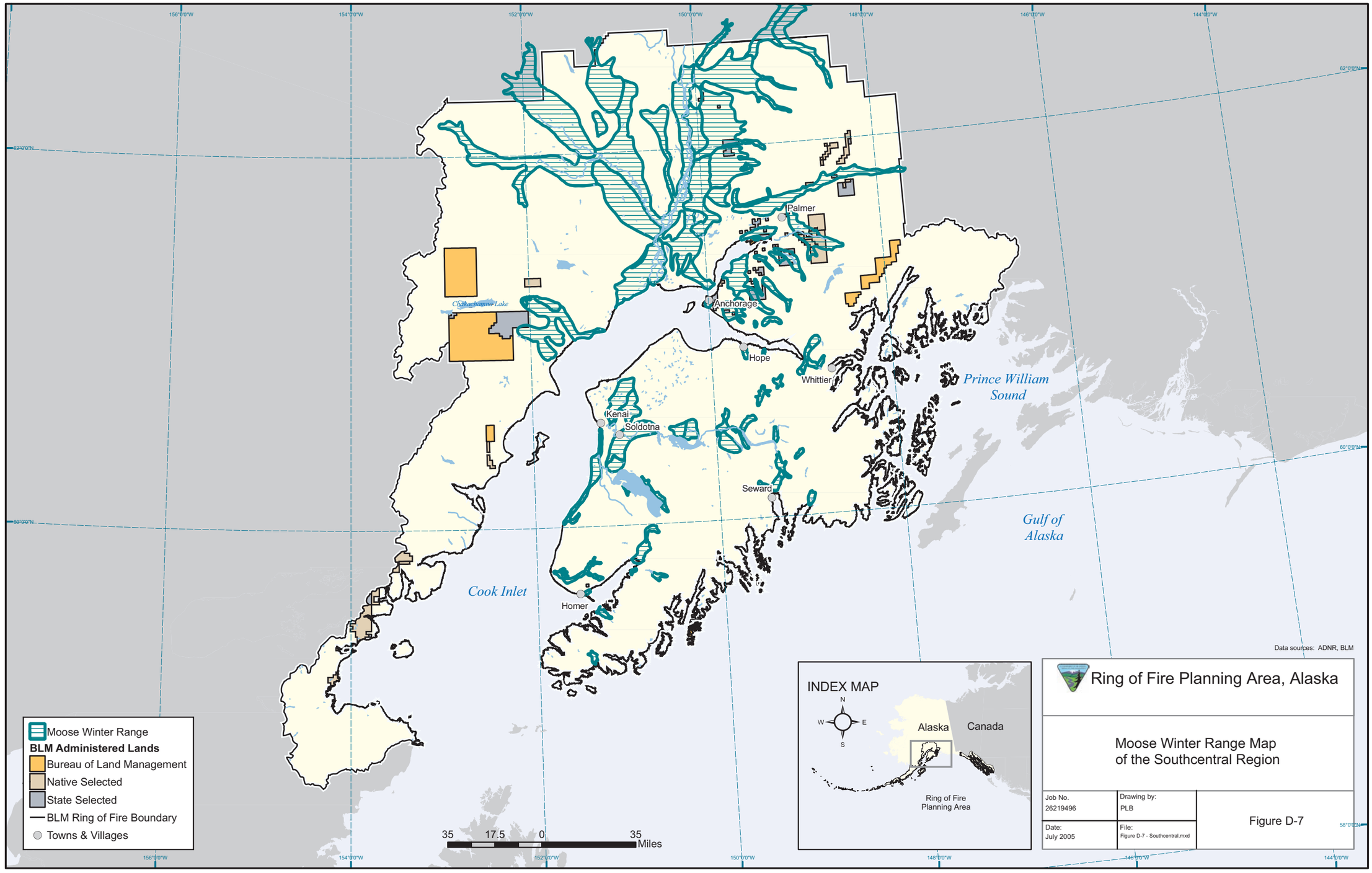
Bureau of Land Management

Figure D-5, Trumpeter Swan Distribution Map of the Southcentral Region



Bureau of Land Management

Figure D-6, Trumpeter Swan Distribution Map of the Southeast Region



Bureau of Land Management

Figure D-7, Moose Winter Range Map of the Southcentral Region

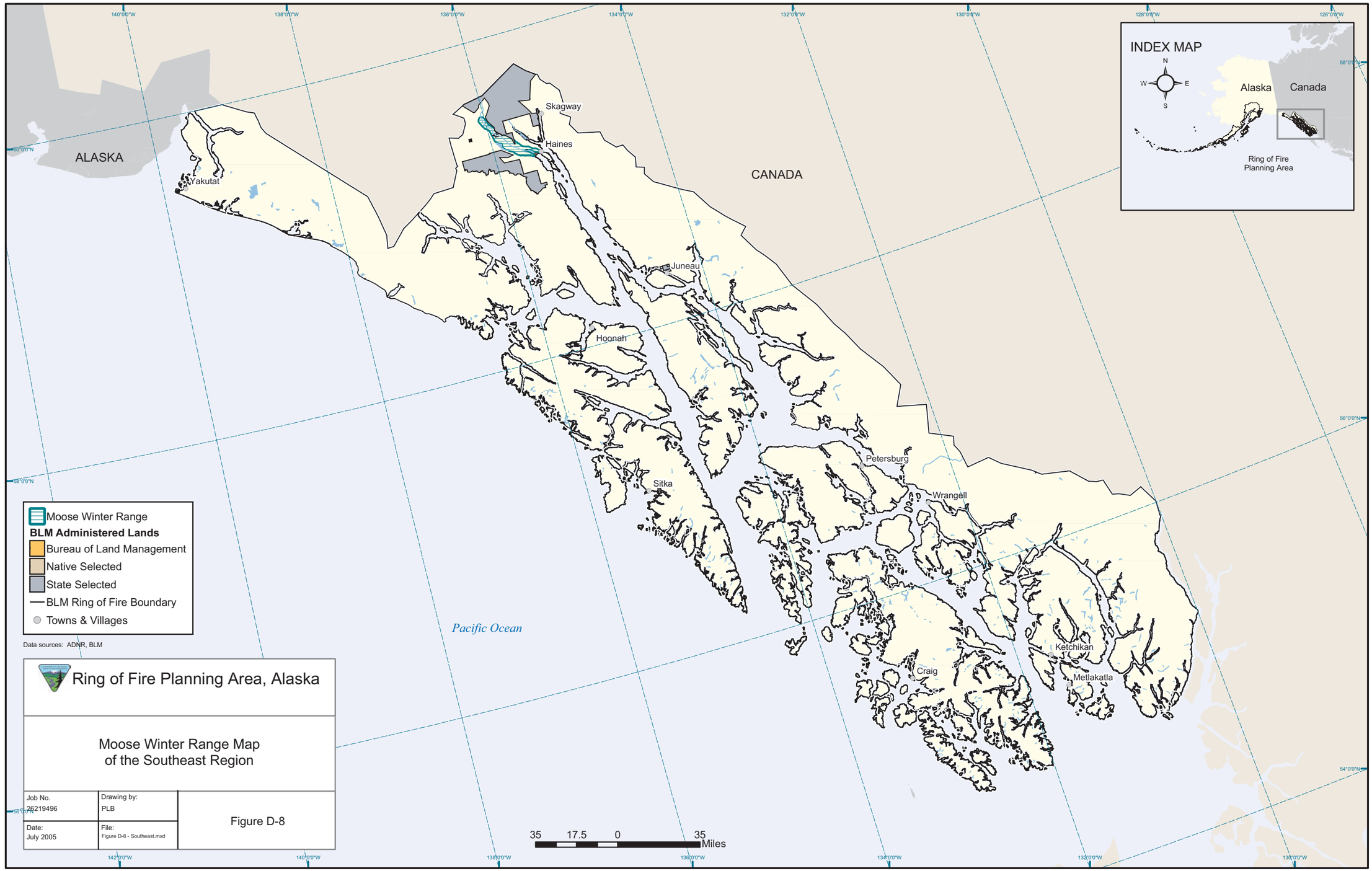


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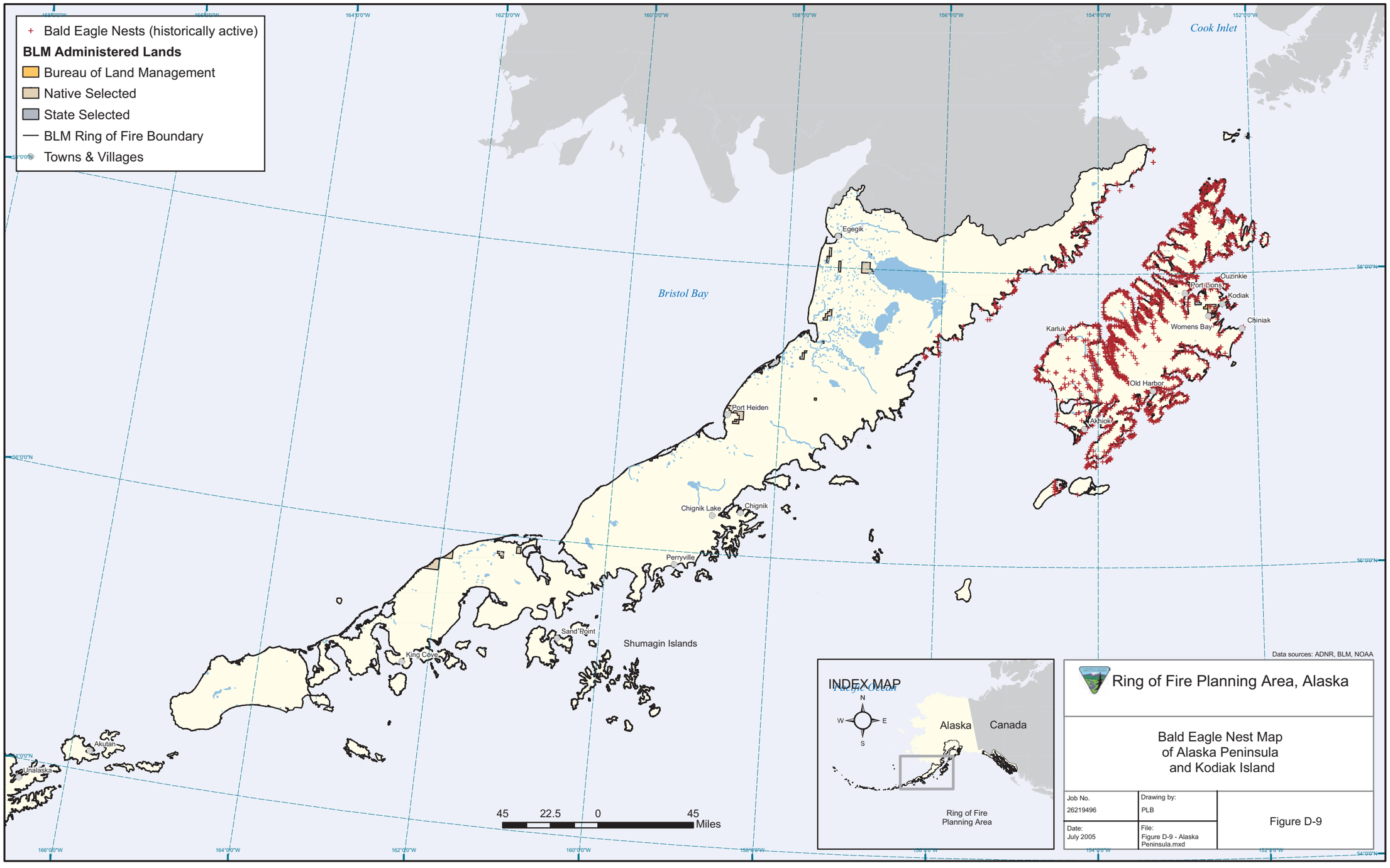
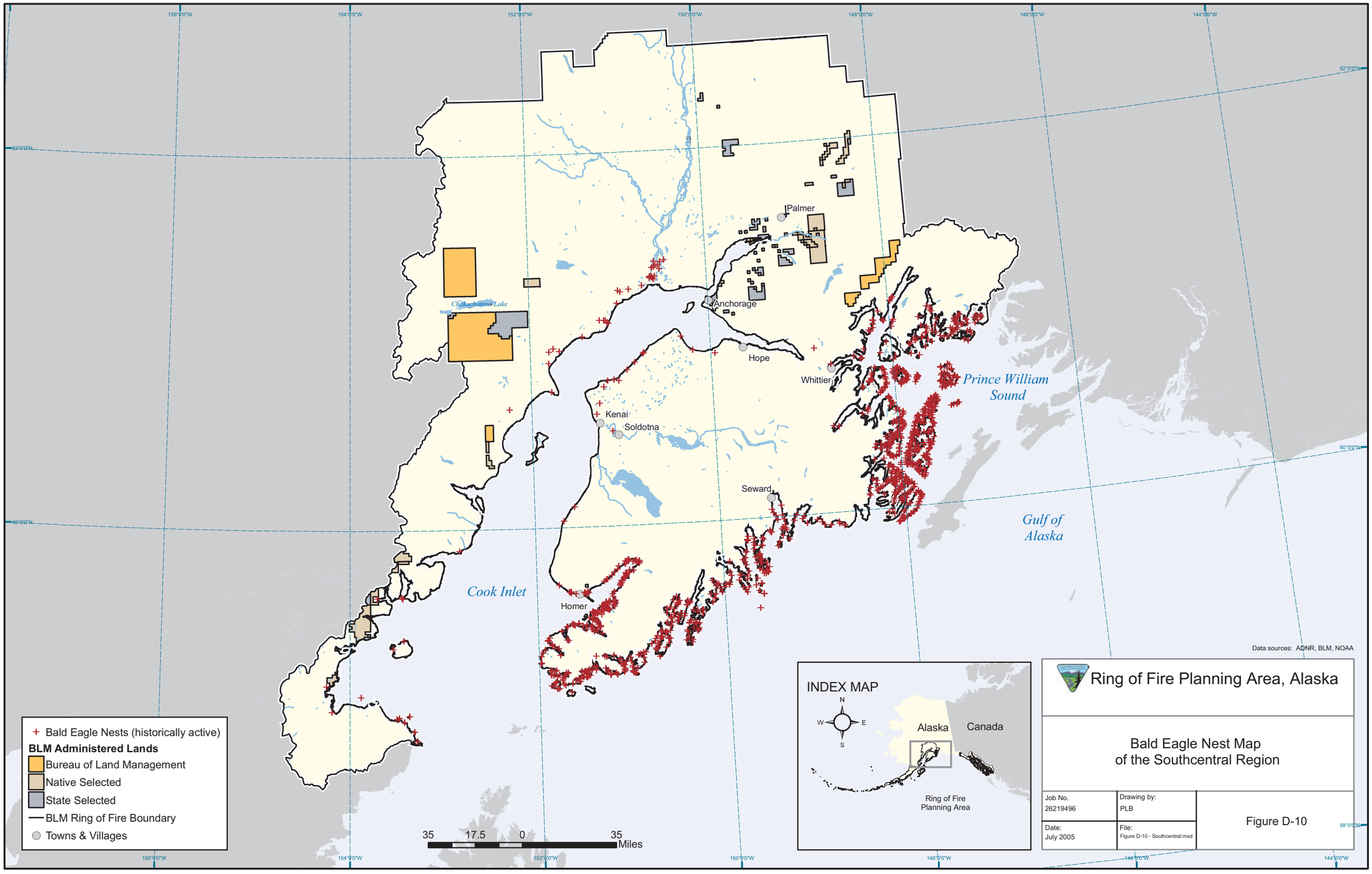
Figure D-8, Moose Winter Range Map of the Southeast Region



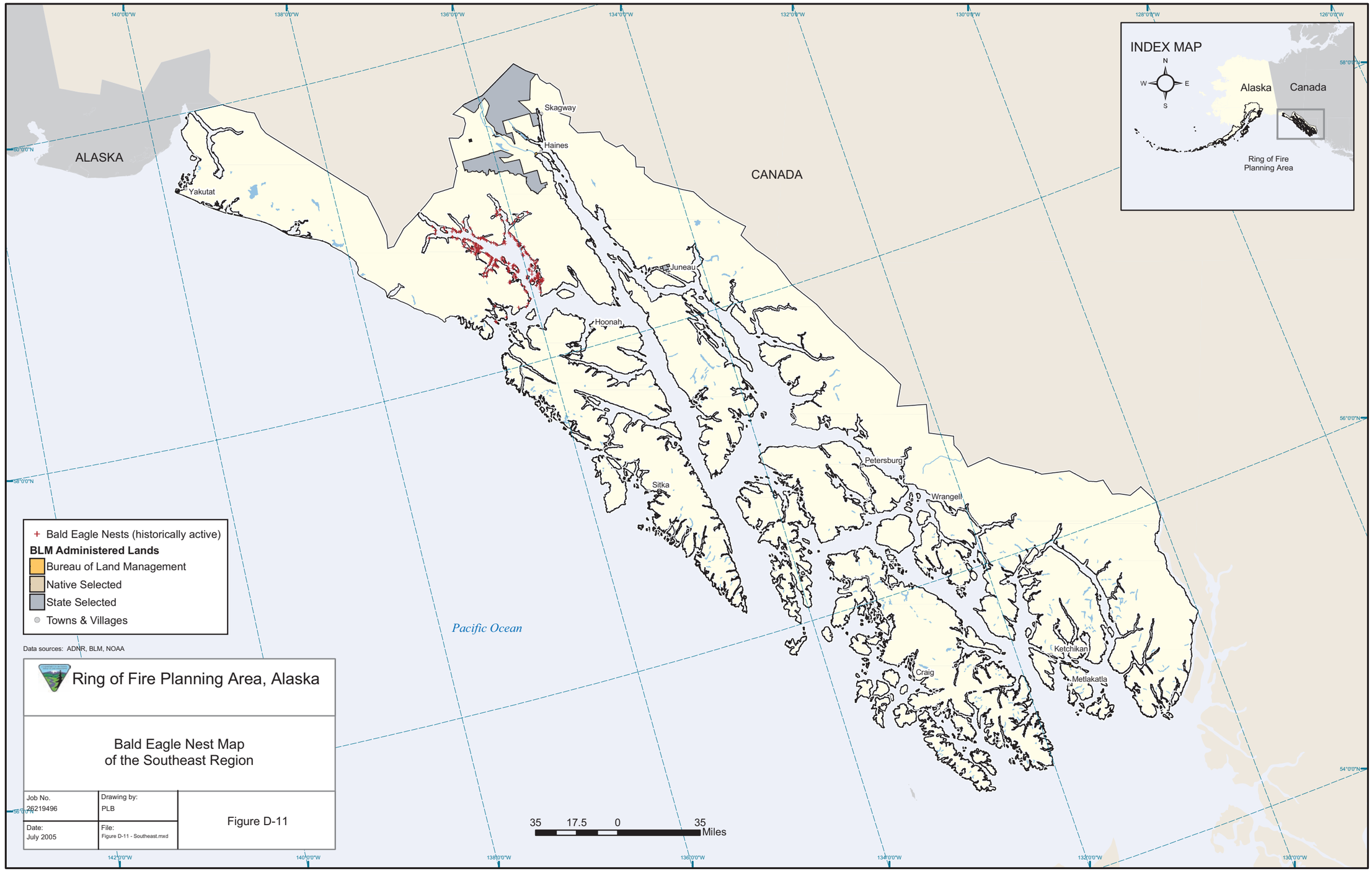
National Oceanic and Atmospheric Administration

Figure D-9, Bald Eagle Nest Map of Alaska Peninsula and Kodiak Island



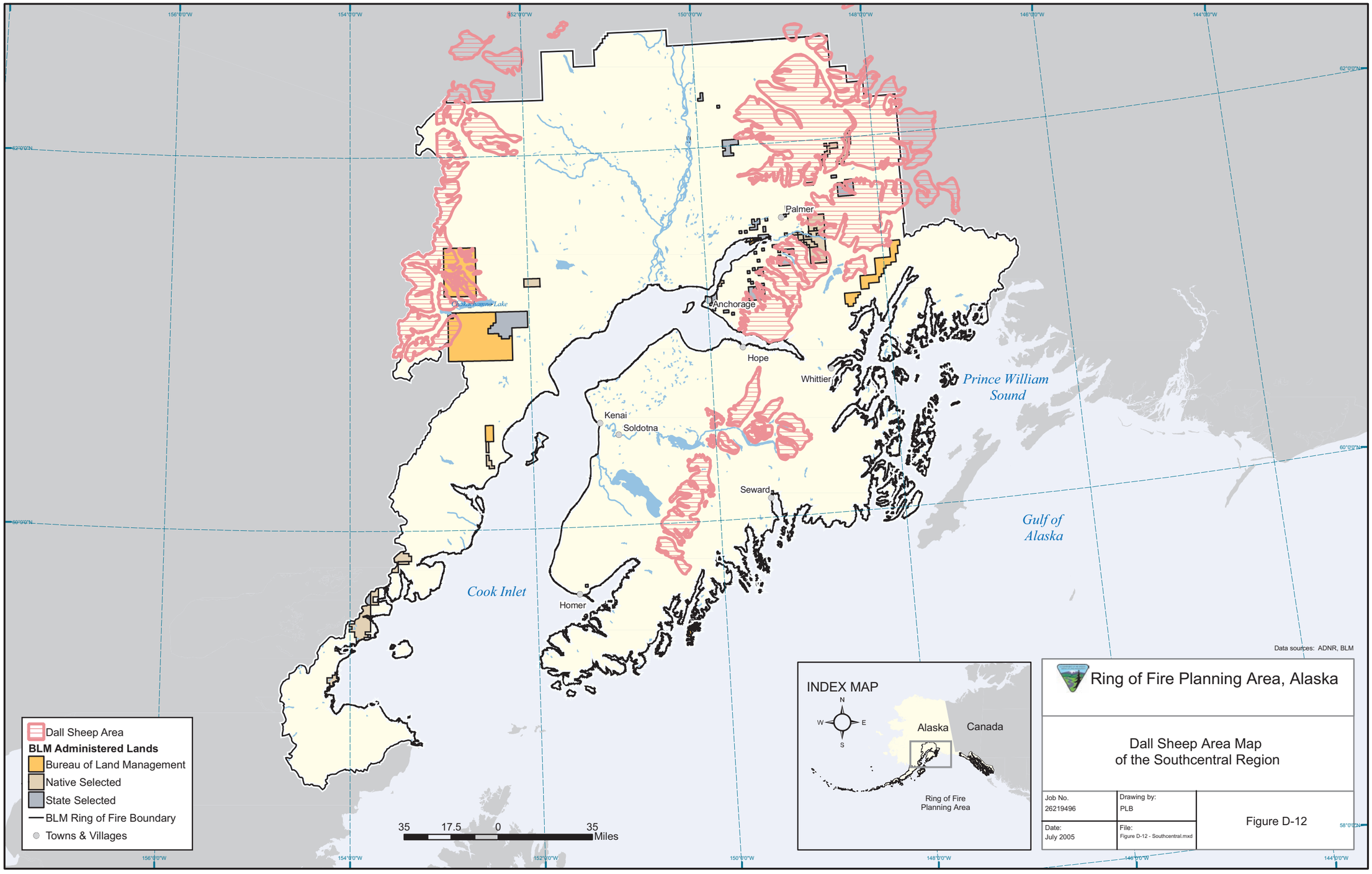
National Oceanic and Atmospheric Administration

Figure D-10, Bald Eagle Nest Map of the Southcentral Region



National Oceanic and Atmospheric Administration

Figure D-11, Bald Eagle Nest Map of the Southeast Region



Bureau of Land Management

Figure D-12, Dall Sheep Area Map of the Southcentral Region

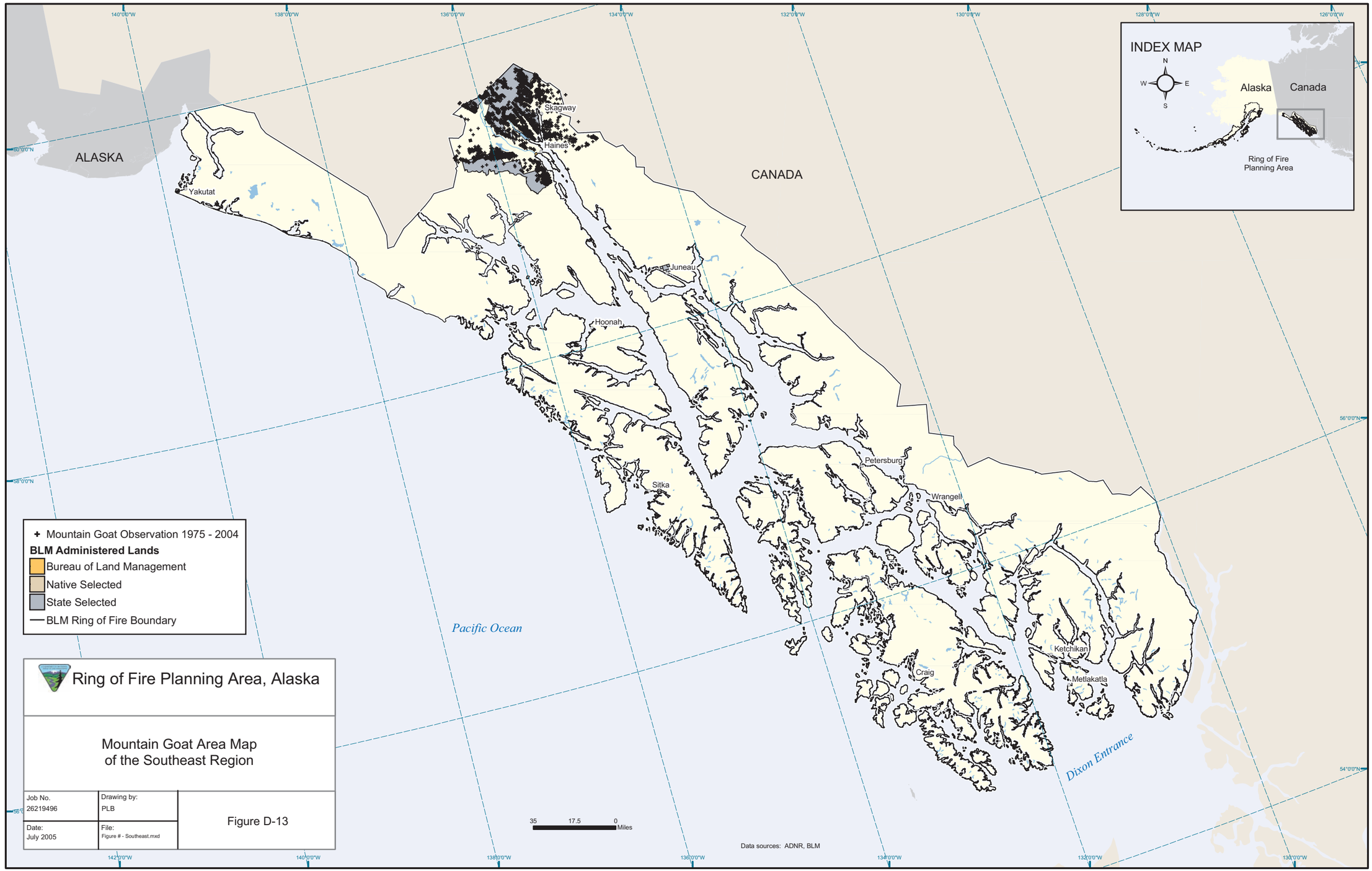


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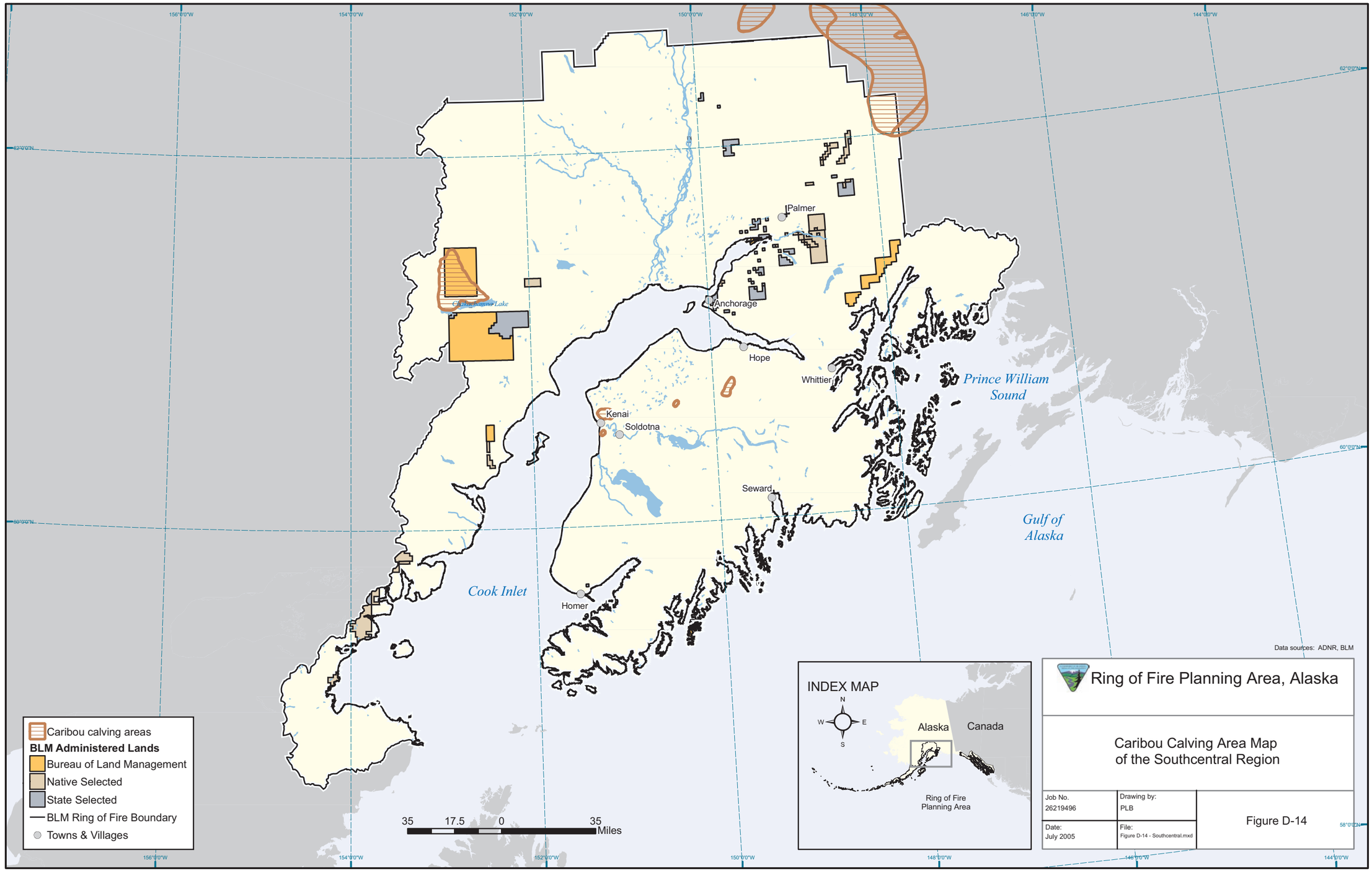
Figure D-13, Mountain Goat Area Map of the Southeast Region



Bureau of Land Management

Figure D-14, Caribou Calving Area Map of the Southcentral Region