

## **APPENDIX AA**

### **Analysis of Subsistence Impacts**

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## Alaska Stand Alone Gas Pipeline

### ANILCA § 810 Analysis of Subsistence Impacts

As required by the Alaska National Interest Lands Conservation Act (ANILCA) § 810, an analysis of impacts upon subsistence uses was published in Appendix L of the Final Environmental Impact Statement (FEIS) for the Alaska Stand Alone Gas Pipeline (ASAP) (FEIS, 2012). The following findings were made:

1. Under the proposed action, there would be no significant effects on subsistence uses and needs and on access to subsistence resources, and thus the proposed action would not significantly restrict subsistence uses, and
2. Analysis of the cumulative case determined that reasonably foreseeable developments (RFD) near the proposed action *may result in a significant restriction* to subsistence uses for nearby communities. Reduction in the *availability* of substance resources due to increased competition from sport hunters accessing game on federal lands via proposed roads and rights-of-way and changes in animal movements was the primary concern.

In accordance with ANILCA, 16 USC § 3120(a) (1), hearings were held in Allakaket, Anaktuvuk Pass, Barrow, Cantwell, Kaktovik, Minto, Nenana, Nuiqsut, Stevens Village, and Wiseman in the spring of 2012.

Subsequent to the publication of the FEIS, significant changes were made to the proposed pipeline route and design. These changes necessitated additional analysis of environmental impacts, which are described in the Draft Supplemental Environmental Impact Statement (DSEIS). This ANILCA § 810 Evaluation focuses on the changes described in the DSEIS as well as changes in subsistence resources and resource uses in the vicinity of the project area.

#### A. Subsistence evaluation factors

Section 810(a) of ANILCA, 16 USC § 3120(a), requires that an evaluation of subsistence uses and needs be completed for any federal determination to “withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands.” As such, an evaluation of potential impacts to subsistence under ANILCA § 810(a) must be completed for the ASAP DSEIS. ANILCA requires that this evaluation include findings on three specific issues:

- a. The effect of use, occupancy, or disposition of public lands on subsistence uses and needs;
- b. The availability of other lands for the purposes sought to be achieved; and
- c. Other alternatives that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes (16 USC § 3120(a)).

To determine if a significant restriction of subsistence uses and needs may result from the alternatives presented in the DSEIS, including their cumulative effects, the following factors are specifically considered:

1. The reduction in the *abundance* of subsistence resources caused by a decline in the population or abundance of harvestable resources. This may include fish, wildlife, edible plants, house logs, firewood, or drinking water. Forces that may cause a reduction include adverse impacts to habitat, direct impacts to the resource, increased harvest, and increased competition from non-subsistence users;

2. Reduction in the *availability* of resources used for subsistence caused by alteration of their distribution, migration patterns, or location; and
3. Legal or physical limitations on *access* to subsistence resources.

If the analysis determines that the proposed action or the alternatives may significantly restrict subsistence uses, additional requirements include notifying the State of Alaska and appropriate regional and local subsistence committees and conducting ANILCA 810 hearings in potentially affected communities.

Information from Chapters 3 and 4 of the ASAP DSEIS are the primary sources for this 810 evaluation. Chapter 3.16 of the DSEIS describes the proposed action's affected environment. Chapter 4.20 describes the potential adverse effects of the various alternatives to subsistence resources and subsistence activities.

## **B. ANILCA Sec. 810(a) Evaluations and findings for all alternatives and the cumulative case**

The following evaluations are based on information relating to the environmental and subsistence consequences of the proposed ASAP project. The evaluation and findings focus on potential impacts to subsistence resources, on access to subsistence resources, and on economic and cultural issues that relate to subsistence.

### **1. Evaluation and Finding for Alternative 1: Proposed Action**

Under the Proposed Action, the Alaska Gas Development Corporation (AGDC) would construct, operate, and maintain the following:

1. Gas conditioning facility near Prudhoe Bay,
2. Approximately 733 miles of 36-inch diameter buried natural gas transmission pipeline,
3. Approximately 30 miles of 12-inch diameter buried natural gas lateral pipeline,
4. 40 mainline and 1 lateral block valves,
5. 5 pig launcher and/or receiver facilities, and,
6. Other permanent facilities.

The pipeline system would be designed to transport natural gas that would be accessible to and useable by urban centers, government entities, and natural resource development projects. Analysis of the Proposed Action considers the effects of construction, operation, and maintenance of these facilities to subsistence resources and uses.

Under the Proposed Action, the pipeline would cross approximately 230 miles of Bureau of Land Management (BLM)-managed lands within the Dalton Highway Utility Corridor near Gates of the Arctic National Park and Preserve, approximately 1 mile of BLM-managed lands south of Healy, approximately 1 mile of BLM-managed lands near Denali National Park and Preserve (NPP), and approximately 7 miles of BLM-managed lands southwest of Cantwell.

#### **a. Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs**

The Proposed Action spans 4 geographic regions: North Slope, Interior, Tanana, and Southcentral. Twenty-eight communities within these regions would be directly affected by the Proposed Action (Table 1). Eight of these communities (Nuiqsut, Anaktuvuk Pass, Wiseman, Coldfoot, Bettles, Rampart, Stevens Village, and Minto) have active subsistence use areas that overlap the proposed right-of-way. It is likely that Livengood, Manley Hot Springs, Nenana, Healy, McKinley Village, Four-Mile Road, Anderson, Ferry, Cantwell, Trapper Creek, Talkeetna, Chase, and Susitna subsistence use areas overlap the proposed right-of-way as well, although subsistence use area mapping has not been done for these communities.

Table 1. Federally qualified subsistence communities potentially affected by the Proposed Action. Communities denoted in bold are communities with subsistence use areas overlapping the proposed pipeline right-of-way.

North Slope Region	Interior Region	Tanana Region	Southcentral Region
Barrow	<b>Wiseman</b>	Tanana	Cantwell*
<b>Nuiqsut</b>	<b>Coldfoot</b>	Livengood*	Trapper Creek*
Kaktovik	Evansville*	<b>Minto</b>	Talkeetna*
<b>Anaktuvuk Pass</b>	<b>Bettles</b>	Nenana*	Chase*
	Alatna	Healy*	Susitna*
	Allakaket	McKinley Village*	
	<b>Rampart</b>	Four-Mile Road*	
	<b>Stevens Village*</b>	Anderson*	
	Beaver	Ferry*	
		Manley Hot Springs*	

\* Spatial data not available

AGDC identified 5 mitigation measures in the 2012 FEIS and 2 additional measures in the 2016 DSEIS to address impacts to subsistence during construction and/or operation:

1. Identify locations and times when subsistence activities occur [with input and involvement by local residents], and minimize work during these times and in these areas to the maximum extent practicable;
2. Schedule work to avoid conflict with subsistence activities when possible;
3. Notify workers that subsistence activities are ongoing in the area and direct them to avoid actions that may affect the activities (e.g. not removing trapline markers, etc.);
4. Coordinate with whaling groups and agencies to employ appropriate mitigation measures to avoid and minimize disturbance of noise and vessel traffic to subsistence species and activities;
5. Avoid and minimize impacts on whale movements, and avoid conflicts with whalers;
6. Consult with potentially affected communities and appropriate subsistence user organizations to discuss potential conflicts with subsistence marine mammal hunting, and
7. Prohibit [employees and subcontractors from] hunting, trapping, shooting, and camping within the leased [right-of-way] area (USACE 2016).

This ANILCA 810 Evaluation assumes that these mitigation measures will be fully implemented during all phases of construction and operation.

*Construction*

Construction-related activities such as clearing the right-of-way, trenching, drilling, and the presence of machinery, pipeline transport, workers, and infrastructure on and along the pipeline right-of-way would cause temporary displacement of wildlife, specifically moose, caribou, and furbearers. Due to the short-term nature and timing of these activities, construction-related impacts to resource *availability* will not be significant. AGDC lists and describes critical time periods tied to specific habitats/areas (e.g. denning, calving) they will avoid during construction (ASAP DSEIS Mitigation Measures 1 and 2). Specifically, AGDC will avoid construction during caribou migration. If AGDC adheres to these mitigation efforts during construction, wildlife resource *availability* will not be appreciably affected.

The ASAP DSEIS lists “construction mortality” as a potential impact under the Proposed Action. Construction-related wildlife mortalities are anticipated to be infrequent or nonexistent and will not significantly affect the *abundance* of wildlife for subsistence use.

The ASAP DSEIS lists “habitat loss and alteration” as a potential impact under the Proposed Action. Vegetation clearing will occur in localized areas and is not anticipated to have a region-wide impact on the quality of habitat for wildlife populations in the vicinity of the Proposed Action. Thus, wildlife resource *abundance* will not be significantly reduced. Small-scale habitat alteration may impact furbearers, which could reduce the *availability* of subsistence resources to local trappers, specifically for those communities immediately adjacent to the proposed pipeline right-of-way. These communities include Wiseman, Coldfoot, Livengood, Nenana, Anderson, Healy, McKinley Village, Cantwell, and Trapper Creek. Localized changes in furbearer distribution are not anticipated to have a significant effect on furbearer *availability* for subsistence use.

Vegetation clearing may impact local berry picking areas, particularly for those communities immediately adjacent to the proposed pipeline right-of-way. These communities include Wiseman, Coldfoot, Livengood, Nenana, Anderson, Healy, McKinley Village, Cantwell, and Trapper Creek. These use areas are not well documented or mapped, but they are important to local residents and their locations are often very specific. The right-of-way would likely pass through some of these areas. Therefore, the Proposed Action may significantly affect resource *availability*. Close coordination with communities that results in realigning the right-of-way around berry patches or otherwise preserving the *availability* of these resources would result in this aspect of the Proposed Action not significantly affecting resource *availability*.

The ASAP DSEIS lists “temporary reduction in harvester *access* to the proposed project area” as a potential impact under the Proposed Action. Implementing the mitigation measures described above, specifically those that instruct AGDC to communicate with local residents and representative subsistence groups, will result in construction activities not significantly restricting *access* to subsistence resources.

#### *Operation and maintenance*

Long-term effects of infrastructure (particularly linear infrastructure such as roads and pipeline) on migratory caribou herds have been documented (Lawhead et al. 2006 and others). Subsistence users and representatives of local stakeholder groups (e.g. Western Arctic Caribou Herd Working Group, Federal Resource Advisory Councils, NPR-A Subsistence Advisory Panel) consistently emphasize their concerns that infrastructure will alter caribou migration patterns. The buried pipeline described as part of the Proposed Action is unlikely to alter caribou movements. A significant reduction in *availability* of caribou for residents of the North Slope and Central Brooks Range is not anticipated.

New access roads would be constructed and maintained in support of pipeline operations. AGDC would discourage non-authorized use through signage and physical barriers, but efforts to deter users are unlikely to be fully successful. Subsistence advisory groups consistently request increased enforcement of hunting regulations along the Dalton Highway, and BLM law enforcement coordinates with communities and State agencies to address this issue. Non-authorized use of these roads by non-local hunters could increase competition for wildlife populations, thereby reducing *abundance* and *availability* of subsistence resources.

The proposed right-of-way is generally aligned with TAPS between Livengood and Prudhoe Bay. Because TAPS already provides access roads in this area and given the proximity of the proposed right-of-way to the Dalton Highway, increased access by non-local hunters is not anticipated to significantly restrict current subsistence use patterns. Likewise, the proposed right-of-way is generally aligned with the Parks Highway between Healy and Willow. No change in the *availability* and *abundance* of resources resultant from unauthorized use is anticipated in these areas.

The DSEIS highlights the section of the proposed right-of-way traversing the eastern edge of Minto Flats as a section that could experience increased use by residents of Fairbanks. *Abundance* and *availability* of

moose, waterfowl, and furbearers could be impacted. The majority of Minto Flats is State land, therefore the Proposed Action will not directly impact subsistence activities on Federal lands. However, the Proposed Action's impacts on State land in Minto Flats is considered an indirect effect and is thus included here as an effect that may significantly restrict *abundance* and *availability* of subsistence resources for the village of Minto.

**b. Evaluation of the Availability of Other Lands for the Purpose Sought to be Achieved**

Other lands are available for pipeline construction. However, the proposed pipeline route would minimize total pipeline length, reduce the amount of challenging terrain, avoid and/or minimize impacts to existing rights-of-way (and maximize co-location of rights-of-way where desirable), and avoid parks, preserves, refuges, and wilderness areas.

**c. Evaluation of Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes**

Alternative 3 (No Action) completely eliminates the use of public lands.

Alternative 2 (Denali National NPP Route Variation) would increase the use of public lands by the proposed project by routing 7 miles of pipeline through Denali NPP. An aboveground pipeline from MP 0 to 62 would likely impact migratory caribou to a greater degree than a buried pipeline (see section B.2.a of this analysis) and has the potential to significantly impact *availability* of this resource for residents of the Central Brooks Range and the North Slope.

Section 2.6 of the ASAP DSEIS, Alternatives Considered but Eliminated from Detailed Analysis, discusses other alternatives that were considered but eliminated due to economic or technological disadvantages, or because they did not meet the purposes and need of the proposed action to transport natural gas from the North Slope to Cook Inlet.

The proposed action in the 2012 FEIS included construction and operation of two compressor stations, one of which would be located on public lands near Wiseman. While the effects of this compressor station were not explicitly described in the 2012 ANILCA 810 Evaluation, they were discussed during 810 hearings. The revised design presented in the proposed action of the DSEIS does not have compressor stations, thus alleviating potential subsistence impacts to local residents.

**d. Findings**

This evaluation concludes that Alternative 1 (Proposed Action) may result in a significant restriction to subsistence uses for the community of Minto due to increasing competition for subsistence resources, specifically moose (decreasing *abundance*).

This evaluation concludes that Alternative 1 (Proposed Action) may result in a significant restriction to subsistence uses for the communities of Wiseman, Coldfoot, Livengood, Nenana, Anderson, Healy, McKinley Village, Cantwell, and Trapper Creek due to clearing of vegetation in the vicinity of these communities which may be long-standing traditional berry picking areas. Vegetation clearing would decrease resource *abundance*.

**2. Evaluation and Finding for Alternative 2: Denali National NPP Route Variation**

Alternative 2 retains the major components and objectives of the Proposed Action (Alternative 1), but differs in the following:

- Use of Dock Head 2 at West Dock,

- Construction of an aboveground pipeline from milepost (MP) 0 to MP 62,
- Route alignment through Denali NPP between MPs 535.8 and 543, and
- Aerial suspension of the pipeline across the Yukon River.

Use of Dock Head 2 would not take place on or near Federal lands, and this component is not addressed in the ANILCA § 810 analysis. The route modification and suspension of the pipeline across the Yukon River would occur on Federal lands and the construction of an aboveground pipeline for the first 62 miles may impact subsistence uses on nearby Federal lands. Effects of these modifications are addressed below.

The aboveground portion of the alternative proposes to elevate the pipeline on vertical support members through the extent of the Arctic Coastal Plain from milepost 0 to approximately milepost 62.

The Denali NPP route variation would route the pipeline through approximately 7 miles of the park (DSEIS Fig. 2.4-1). In the northern portion of this route, the pipeline would be constructed within the existing Parks Highway corridor.

Under Alternative 2, AGDC would use an aerial suspension bridge to suspend the pipe across the Yukon River. This suspension bridge would be constructed within 1.5 miles of the Dalton Highway Yukon River Bridge.

#### **a. Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs**

##### *Realignment*

Construction and maintenance-related disturbance would be similar to those described in Alternative 1. These activities would take place in an existing highway right-of-way, and would therefore be less likely to disrupt animal movements. Aligning the pipeline with the Parks Highway right-of-way would reduce impacts to habitat (i.e. vegetation clearing) for subsistence game animals.

The effect on the distribution of important subsistence species such as moose would be lessened under this alternative. The realignment would not significantly impact subsistence resource *abundance* or *availability* and would not reduce *access* to subsistence resources.

##### *Yukon River suspension bridge*

Rampart and Stevens Village are most likely to be affected by construction and operation of a suspension bridge. The bridge would be built within the subsistence use areas for both communities (Brown 2016, Sumida 1988). Specifically, residents of Stevens Village identified the wetlands on the north side of the Yukon River from the Dalton Highway Bridge to the Ray River as a berry picking area. They will fish for Yukon River salmon west of the Dalton Highway, and the proposed suspension bridge would be constructed within a large furbearer harvest area. While the bridge would be constructed within Rampart's subsistence use area, specific resource use activities (e.g. moose hunting) were not identified in the vicinity of the proposed bridge.

According to the DSEIS, approximately 30 acres of wetland habitat would be impacted if a suspension bridge is built. Depending on the location of this disturbance, it could impact berry picking areas identified by Stevens Village. This was one of three berry picking areas identified by residents in Brown (2016). Therefore, disturbance of this site has the potential to significantly impact subsistence resource *abundance* and *availability*.

While disturbance of 30 acres of wetland habitat will not impact furbearer *abundance*, it may alter the distribution of furbearers and impact furbearer *availability* for residents of Stevens Village. The extent to

which resource *availability* would be impacted depends on the extent to which traplines are present in the vicinity of the area that would be cleared, which has not been determined.

#### *Aboveground pipeline (MP 0-62)*

While construction of an aboveground pipeline between MPs 0 and 62 will not take place on BLM-managed lands, it does have the potential to impact subsistence users by altering movements of migratory caribou. The Central Arctic Herd is a vital subsistence resource for Nuiqsut, Kaktovik, Anaktuvuk Pass, Arctic Village, Venetie, Wiseman, and Coldfoot. The pipeline would bisect their range.

Construction of an elevated pipeline would cause minor temporary impacts to individual animals. AGDC proposes construction of the pipeline from MPs 0 to 62 during winter, which would minimize impacts to migrating caribou. Temporary displacement of individual animals would be expected along the segment of pipeline during construction. Construction would not significantly impact caribou *abundance* or *availability*, nor would it impede *access* to caribou by subsistence users.

The presence of an aboveground pipeline would cause greater impacts to wildlife (specifically caribou) than burial of the pipeline. Multiple studies, summarized by Lawhead et al. (2006), have demonstrated that linear infrastructure features impact caribou movement. Discussion and literature summaries of infrastructure impacts on caribou movement, as well as concerns expressed by local residents during public meetings, are discussed and summarized in Section 4.10.5.2.3 of the ASAP DSEIS. Impacts to caribou and associated resource *availability* issues were addressed in the 2012 ASAP DEIS ANILCA 810 Evaluation. These concerns persist.

An additional aboveground feature on the North Slope in close proximity to the Dalton Highway and the Trans-Alaskan Pipeline System pipeline (TAPS) may significantly impact caribou *availability* for Nuiqsut, Kaktovik, Anaktuvuk Pass, Arctic Village, Venetie, Wiseman, and Coldfoot.

#### **b. Evaluation of the Availability of Other Lands for the Purpose Sought to be Achieved**

Other lands are available for pipeline construction which would avoid Denali NPP. However, the proposed pipeline route through Denali NPP would maximize co-location of linear rights-of-way and reduce impacts to wildlife habitat.

#### **c. Evaluation of Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes**

Alternative 1 (Proposed Action) would decrease the use of public lands by routing 7 miles of pipeline around Denali NPP.

Alternative 3 (No Action) completely eliminates the use of public lands.

Section 2.6 of the ASAP DSEIS, Alternatives Considered but Eliminated from Detailed Analysis, discusses other alternatives that were considered but eliminated due to economic or technological disadvantages, or because they did not meet the purposes and need of the proposed action to transport natural gas from the North Slope to Cook Inlet. Nine of the twenty-nine alternatives summarized in Table 2.6-1 of the ASAP DSEIS met the purpose and need. None of these alternatives would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes.

#### **d. Findings**

This evaluation concludes that the Denali National NPP Route Variation Alternative *may result in a significant reduction* in subsistence uses for the community of Stevens Village due to potential reduction

in *abundance* of berries in a known berry picking area and potential reduction in *availability* of furbearers if a trapline is present in the vicinity of the proposed Yukon River suspension bridge.

This evaluation concludes that the Denali National NPP Route Variation Alternative *may result in a significant reduction* in subsistence uses for the communities of Nuiqsut, Kaktovik, Anaktuvuk Pass, Arctic Village, Venetie, Wiseman, and Coldfoot due to potential reduction in the *availability* of caribou if an aboveground pipeline is constructed between MPs 0 and 62.

These findings are in addition to the conclusions reached in the analysis for the Proposed Project. This evaluation concludes that the Denali National NPP Route Variation Alternative *may result in a significant restriction* to subsistence uses for the community of Minto due to increasing competition for subsistence resources, specifically moose (decreasing *abundance*).

This evaluation concludes that the Denali National NPP Route Variation Alternative *may result in a significant restriction* to subsistence uses for the communities of Wiseman, Coldfoot, Livengood, Nenana, Anderson, Healy, McKinley Village, Cantwell, and Trapper Creek due to clearing of vegetation in the vicinity of these communities which may be long-standing traditional berry picking areas. Vegetation clearing would decrease resource *abundance*.

### **3. Evaluation and Finding for Alternative 3: No Action Alternative**

Alternative 3 of the ASAP DSEIS is the No Action Alternative. Selection of this alternative would result in continued current management of BLM lands under the Utility Corridor Resource Management Plan (RMP) (1991), Central Yukon RMP (1986), and the East Alaska RMP (2007). Under this alternative, the pipeline and supporting infrastructure would not be built. Project-related impacts from construction, operation, and maintenance of the pipeline and supporting infrastructure would not occur under the No Action Alternative.

#### **a. Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs**

Present *abundance* and *availability* of subsistence resources under the No Action Alternative would not change. Physical and legal *access* to subsistence resources and subsistence use areas would be maintained.

#### **b. Evaluation of the Availability of Other Lands for the Purpose Sought to be Achieved**

The proposed pipeline and supporting infrastructure would not be built under the No Action Alternative. Therefore, evaluating other lands for the pipeline route is not applicable.

#### **c. Evaluation of Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes**

The proposed pipeline and supporting infrastructure would not be built under the No Action Alternative. Therefore, evaluating other alternatives that would reduce impacts to lands and resources used for subsistence is not applicable.

#### **d. Findings**

This evaluation concludes that *the No Action Alternative will not result in a significant reduction* in subsistence uses. This finding applies to the communities listed in Table 1.

### **4. Evaluation and Finding for the Cumulative Case**

The cumulative case evaluates the impact of the Proposed Action (Alternative 1) in conjunction with past, present, and reasonably foreseeable future activities in the ASAP project area. Possible reasonably foreseeable actions are summarized in Section 4.26.7 of the ASAP DSEIS.

**a. Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs**

One of the most frequently cited concerns about the potential construction and operation of the ASAP system is the adverse impact on the distribution (*availability*) of subsistence resources. Displacement of essential resources such as caribou may render these resources inaccessible to subsistence users. While a buried pipeline and associated infrastructure alone may not have a significant impact on the distribution of subsistence resources, it may have a significant effect when combined with reasonably foreseeable large-scale projects such as the Ambler Mining District access project. Communities that rely on the migratory Central Arctic caribou herd (Nuiqsut, Kaktovik, Anaktuvuk Pass, Arctic Village, Venetie, Wiseman, and Coldfoot) may be significantly impacted under the cumulative case.

When considered in conjunction with reasonably foreseeable projects, there would likely be significant increases in road access to Federal lands by non-local hunters. The extent to which non-local hunters would utilize roads to access lands that would, in some cases, be hundreds of miles from the nearest city (i.e., Fairbanks) is debatable, but access will increase nonetheless. Most of the Federal land in the vicinity of the Proposed Project area are Federal parklands, which are closed to sport hunting. However, access to contiguous Federal lands managed by the BLM and the U.S. Fish and Wildlife Service (USFWS) would potentially increase under the cumulative case. Specifically, these lands would include those managed as Kanuti and Yukon Flats National Wildlife Refuges and BLM-managed lands in the mid to upper Koyukuk River drainage. Communities accessing these lands as part of their subsistence use areas include Wiseman, Coldfoot, Bettles, Evansville, Allakaket, Alatna, Hughes, and Stevens Village. The *abundance* of subsistence resources, particularly moose, may be significantly reduced.

**b. Evaluation of the Availability of Other Lands for the Purpose Sought to be Achieved**

The pipeline right-of-way would not change under the Cumulative Case. The evaluation of alternative lands under Alternative 1 (Proposed Action) would therefore apply to the Cumulative Case.

**c. Evaluation of Other Alternatives that Would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes**

The evaluation of other alternatives under Alternative 1 (Proposed Action) would apply to the Cumulative Case.

**d. Findings**

This evaluation concludes that the Cumulative Case *may result in a significant restriction* to subsistence uses for the communities of Nuiqsut, Kaktovik, Anaktuvuk Pass, Arctic Village, Venetie, Wiseman, and Coldfoot due to potential changes in *availability* of caribou (consequent of cumulative development) as a subsistence resource.

This evaluation concludes that the Cumulative Case *may result in a significant restriction* to subsistence uses for the communities of Wiseman, Coldfoot, Bettles, Evansville, Allakaket, Alatna, Hughes, and Stevens Village due to potential changes in *abundance* of wildlife, particularly moose, as a consequence of increased sport hunter access.

### **C. Subsistence determinations under the ANILCA Sec. 810**

ANILCA § 810(a) provides that no “withdrawal, reservation, lease, permit, or other use, occupancy, or disposition of the public lands which would significantly restrict subsistence uses shall be affected” until the federal agency gives the required notice and holds a hearing in accordance with ANILCA § 810(a)(1) and (2), and makes the three determinations required by the ANILCA § 810(a)(3)(A), (B), and (C). The three determinations that must be made are: 1) that such a significant restriction of subsistence use is necessary, consistent with sound management principles for the utilization of the public lands; 2) that the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other such disposition; and 3) that reasonable steps will be taken to minimize adverse impacts to subsistence uses and resources resulting from such action [16 U.S.C. § 3120(a)(3)(A), (B), and (C)].

The BLM has found in this ANILCA 810 Evaluation that Alternative 1 (Proposed Action), Alternative 2 (Denali NPP Alignment), and the Cumulative Case in this SDEIS may significantly restrict subsistence uses. Therefore, the BLM will undertake the notice and hearing procedures required by the ANILCA § 810(a)(1) and (2) in conjunction with release of the DSEIS in order to solicit public comment from the potentially affected communities and subsistence users.

The determination that the requirements of ANILCA § 810(a)(3)(A), (B), and (C) have been met will be analyzed in the Final ANILCA § 810 Evaluation, and will be presented in the Final Supplemental Environmental Impact Statement (FSEIS), and will consider testimony and input from the communities in which subsistence hearings will be held.

### **D. References**

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Lawhead, B. E. et al. 2006. A literature review and synthesis on the effect of pipeline height on caribou crossing success. BLM Alaska Open File Report 106.

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