KASIGLUK RIVER

HUC 30502, Zone 2, Kuskokwim River Region

FINAL

INTERIM SUMMARY REPORT

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PREFACE

The research and writing of this study is funded by the U.S. Department of the Interior, Bureau of Land Management (BLM) through the Navigability Assistance Agreement (Cooperative Agreement # LO9AC15466). The State of Alaska (State) and the BLM established an assistance agreement in 2004 to facilitate the preparation of navigability reports that could be used for a variety of purposes, including the process for determining who owns title to the land under inland water bodies. Under the Statehood Compact, land under navigable waterways is reserved to the State. Navigability is based on historic use of water bodies for travel, trade and commerce up to the time of Statehood (1959), or recent use of the water bodies that demonstrates susceptibility to travel, trade and commerce in 1959.

The Navigability Assistance Agreement began as a pilot project focused on researching the history of use of water bodies in the Kuskokwim River region. The scope of work for the Assistance Agreement calls for identifying potentially navigable water bodies where the United States is an upland landowner or may otherwise have a potential interest in the submerged lands; gathering information from BLM records and a 1985 regional history of the Kuskokwim River region; writing narrative histories of each water body summarizing land status, land conveyance decisions, past navigability determinations, physical character of the water body, and a history of use on the water body. These reports are prepared in stages. The first stage (Phase I-A) consists of land status. An interim summary report (Phase II-B) is generally limited to information in the files of the U.S. Department of Interior and a regional history of the Kuskokwim River region written by C. Michael Brown in 1985. A final summary report (Phase IV) incorporates expanded research in materials located in other state and federal agency files, the holdings of various libraries and archives in Alaska, and interviews with people who have knowledge of use of the water body.

The present report represents work at the Phase II-B level. The research and writing of this report was conducted by State employees working under the guidance of an Assistance Agreement Management Team composed of representatives of BLM and the State. The management team sets priorities, reviews the reports on water bodies at various stages, and decides at what point enough research, analyses and writing has been completed on each specific water body. The management team directed the authors of these reports to refrain from drawing conclusions about the water body's navigability or susceptibility to navigability. Rather, the management team directed the authors to provide an overview at the end of the report summarizing the types of evidence of historic and contemporary use and highlighting those areas (such as portions of the water body) where gaps in knowledge remain and additional research might be warranted.

Documents that are key to understanding agency decision making or the point of view of an interested party are indicated as Attachment 1, Attachment 2, etc., which appear after the corresponding endnotes. These documents are listed in the Table of Attachments and can be viewed in their entirety in a separate PDF file that supplements this report.

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Attachments (in PDF format)

Attachment 1. Patrick C Beckley, Memorandum on Inland Navigable Waters, Akiak Selection Area, December 10, 1975, BLM files, FF-014824.

Attachment 2. Robert Sorensen, Letter to Ivan Ivan, Kokarmiut Corporation January 14, 1976, BLM files, FF-14824-A.

Attachment 3. Curtis V. McVee, Notice of Proposed Easement Recommendations for the Village of Akiak, May 17, 1977, BLM Files, FF-014824-EE.

Attachment 4. Judith A. Kammins, Decision: Lands Proper for Village Selection Approved for Interim Conveyance(IC) for Kwethluk Incorporated, March 7, 1979, BLM files, FF-014883-EE.

Attachment 5. Robert D. Arnold, IC No. 213 to Kwethluk Corporation and IC No. 214 to the Calista Corporation, July 12, 1979, BLM files, FF-014883-A.

Attachment 6. Fred E. Wolf, Memorandum on Final Easements for Kokarmiut Corporation (Village of Akiak), June 22, 1982, BLM files, FF-014824-EE.

Attachment 7. Ann Johnson, Decision: Section 12(b) Application Rejected in Part; Lands Proper for Village Selection; Approved for IC or Patent, June 29, 1982, BLM files, FF-014824-EE.

Attachment 8. Robert D. Arnold, IC No. 610 to Kokarmuit Corporation and IC No. 611 to Calista Corporation, December 29, 1982, BLM files, FF-014824-A.

Attachment 9. Wayne A. Boden, Memorandum on Navigable Waters in Group Survey No. 268 (Window 1836), May 8, 1989, BLM files, FF-014824.

Attachment 10. Letter from C. Michael Brown to Michael B. Reardon, December 13, 1995, and C. Michael Brown, Navigability Status Report for Bogus Creek, Tuluksak River, Little Kasigluk River, Kisaralik River, Akulikutak River, Kwethluk River, Eek River, and Gweek River in the Kuskokwim River Region, December 13, 1995, BLM files, 2628 (980).

Attachment 11. Laura Lagstrom, Navigability Report: Kasigluk River (Window 2700), November 4, 1997, copy in Alaska Department of Natural Resources (DNR), Division of Mining, Land & Water (ML&W), Public Access Assertion and Defense Unit (PAAD), Kasigluk River file.

Attachment 12. Laura Lagstrom, Memorandum on Field Trip for Window 2700, November 4, 1997, BLM files, FF-14883-A.

Attachment 13. Laura Lagstrom, Navigability Report: Right Bank Tributary of the Kasigluk River (mouth in Sec. 13, T. 8 N., R. 66 W., SM) and its Right Bank Tributary (mouth in Sec. 17, T. 8 N., R. 65 W., SM) Window 2700, November 4, 1997, copy in DNR/ML&W/PAAD, Kasigluk River file.

Attachment 14. Gust C. Panos, Memorandum on Navigability Review for Waters in Window 2700, November 7, 1997, BLM files, FF-017100.

Attachment 15. Laura Lagstrom, Memorandum on Field Trip for Window 2029 Part 1, December 4, 1997, BLM file, FF-014824.

Attachment 16. Laura Lagstrom, Memorandum on Interviews for Selected Lands within Window 2029 Part 1, December 8, 1997, BLM file, FF-014824.

Attachment 17. Gust C. Panos, Memorandum on Navigability Review for Waters in Window 2029 Bethel (Group 284) Part 1, January 13, 1998, BLM files, FF-14824-EE.

Attachment 18. Letter from Jane Anvik, Director of the Alaska Division of Lands, to Gust C. Panos, Chief of the BLM Branch of mapping Sciences, RE: Survey Window 2700, June 3, 1998, copy in DNR/ML&W/PAAD Unit files, Kasigluk River file.

Attachment 19. Letter from Jane Anvik, Director of the Alaska Division of Lands, to Gust C. Panos, Chief of the BLM Branch of mapping Sciences, RE: Survey Window 2029/IC Nos. 142, 213, 610, 633 and 675, June 3, 1998, copy in DNR/ML&W/PAAD Unit files, Kasigluk River file.

Attachment 20. Letter from Laghette Stabrizham for Gust Panos, Chief of BLM Branch of Mapping Services, to Jane Angvik, June 25, 1998, BLM files, 9600 (920); copy also in DNR/ML&W/PAAD Unit files, Kasigluk River file.

Attachment 21. Denny Benson, Notice of Proposed Easements and Request for Easement Nominations for Lands Selected and will be Conveyed to Kokarmuit Corporation for the Village of Akiak, October 3, 2005, BLM file, FF-014824-EE.

Attachment 22. Krissell Crandall, Corrected IC Nos. 1935 and 1936, October 4, 2005, BLM file, FF-014824-EE.

Attachment 23. Master Title Plats (MTP's) for the Kasigluk River, October 4, 2006, BLM files.

Attachment 24. K.J. Mushovic, Final Easement memorandum for Lands to be Patented to Kokarmuit Corporation for the Village of Akiak, January 25, 2006, BLM files, FF-014824.

Attachment 25. Laura Lagstrom, Memorandum on Interviews for selected lands on the Right Bank Tributary of the Kasigluk River whose mouth is located in Sec. 13, T. 8 N., R. 66 W., SM, and its Right Bank Tributary whose mouth is located in Sec. 17, T. 8 N., R. 65 W., SM, and for selected lands on the Kasigluk River," October 30, 1997, BLM files, FF-14883-A (75.4), copy also in DNR/ML&W/ PAAD Unit, Kasigluk River file.

KASIGLUK RIVER

HUC 30502, Zone 2, Kuskokwim River Region

II-B Interim Summary Report

I. Introduction

The Kasigluk River is located in the Yukon-Kuskokwim Delta Region, within Zone 2 of HUC 30502 (Figure 1). The Kasigluk River empties into the Kuskokwim River via the Kuskokuak Slough. The Eskimo name of Kasigluk River was reported in 1949 by J.M. Hoare of the U.S. Geological Survey who also originally reported the length of the Kasigluk River as 60 miles.[1]

The Kasigluk River originates at the 1,400 foot elevation in the Kilbuck Mountains, about 60 air miles southeast of Bethel.[i] The Kasigluk River flows northwest for 111 miles[ii] to the Kuskokuak Slough passing through a cut in Greenstone Ridge Townships (Ts.) 3 and 4 N., Range (R.) 63 W., Seward Meridian (SM). The confluence of the Kuskokuak Slough and the Kuskokwim River is located about 18 miles northeast of Bethel at an elevation, according to USGS quadrangle maps, of about 25 feet.

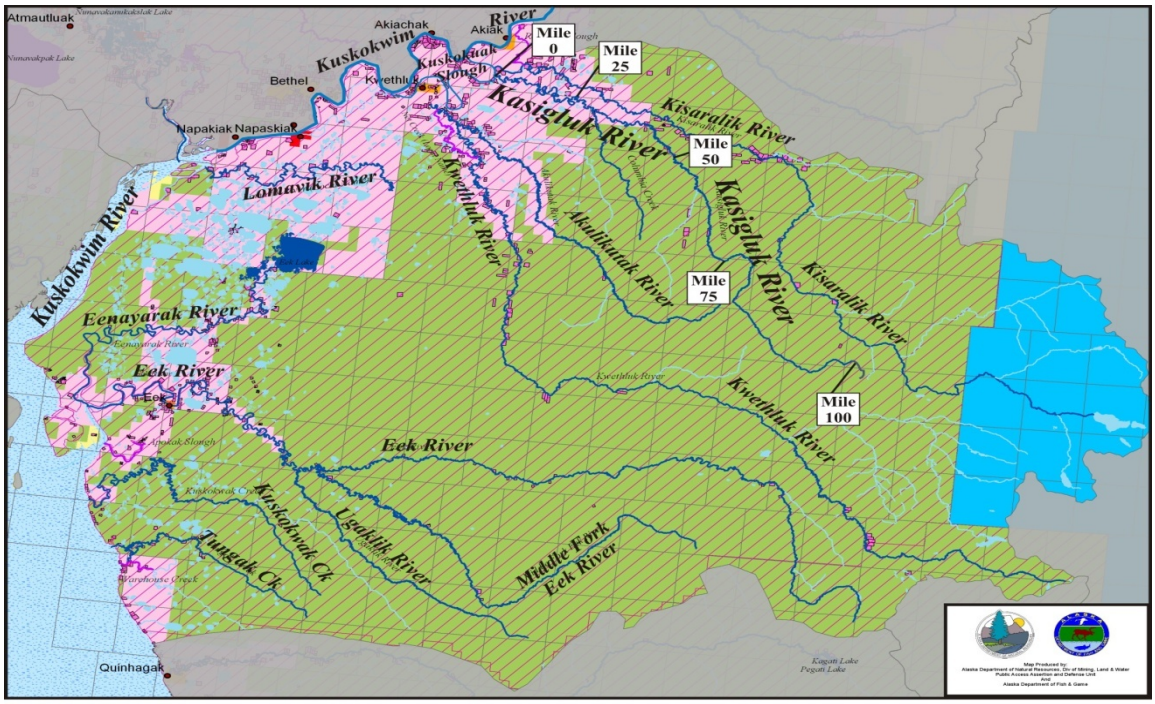

Figure 1. Map showing the location of the Kasigluk River within Zone 2 of HUC-30502 of the Kuskokwim River Region.

[i] Air mile measurements taken using the Spatial Data Management System (SDMS) of the BLM-Alaska.
[ii] Different sources estimate the length of the river at 60-111 miles. The length of the Kasigluk River and the Miles used in this report are based on Geographic Information Systems (GIS) calculations using the National Hydrography Data Set derived from United States Geological Survey (USGS) quadrangle maps.

The Kasigluk River is one of ten water bodies that drain the Kilbuck Mountains and the southcentral portion of the Yukon Delta National Wildlife Refuge (Yukon Delta NWR). The lower part of the Kasigluk River is located about 18 miles east of Bethel, about seven miles east of the Native village of Kwethluk and about five miles south of the Native village of Akiak. Bethel is the nearest regional hub. The only overland access to the Kasigluk River area is the Akiak-Crooked Creek Trail (RST-21), which starts at Akiak, runs south to the confluence of the Kwethluk River and Crooked Creek in T. 2 N., R. 63 W., SM.

The Kasigluk River comprises 13 townships:

T. 4 N., R. 62 W., SM	T. 7 N., R. 65 W., SM
T. 3 N., R. 63 W., SM	T. 8 N., R. 65 W., SM
T. 4 N., R. 63 W., SM	T. 8 N., R. 66 W., SM
T. 4 N., R. 64 W., SM	T. 9 N., R. 66 W., SM
T. 5 N., R. 64 W., SM	T. 8 N., R. 67 W., SM
T. 6 N., R. 64 W., SM	T. 9 N., R. 67 W., SM
T. 7 N., R. 64 W., SM	

II. Land Status

The Kasigluk River is surrounded by federal, Native village and regional corporation lands, and Native allotments (Figure 2-5). The upper and middle portions of the Kasigluk River flow through the Yukon Delta NWR and the lower portion of the river is surrounded by Native lands and the Yukon Delta NWR. There are numerous Native allotments located throughout the federal and Native lands.

The lower portion of the Kasigluk River is located within lands selected by Native village and regional corporations under the Alaska Native Claims Settlement Act (ANCSA) of 1971 (Figure 2). Lands abutting the lower portion of the Kasigluk River were selected in the 1970s and conveyed to Kwethluk Village Corporation and Calista Corporation by IC Nos. 213 and 214 in 1979 and to the Kokarmiut Corporation of Akiak and Calista Corporation by IC Nos. 610 and 611 in 1982. None of these Native corporation lands had been patented by the end of 2009.

Twelve Native allotments are located along the Kasigluk River. Six Native allotments occur along the lower portion of the Kasigluk River within the lands selected by Kokarmiut, Inc. for the village of Akiak (Figure 2). All six of those allotments were certificated (three in the 1990s and three in the 2000's). Six Native allotments are located along the middle and upper middle portions of the Kasigluk River (Figures 3-4) within the Yukon Delta NWR. All six of these allotments have been certificated (all in the 2000s).

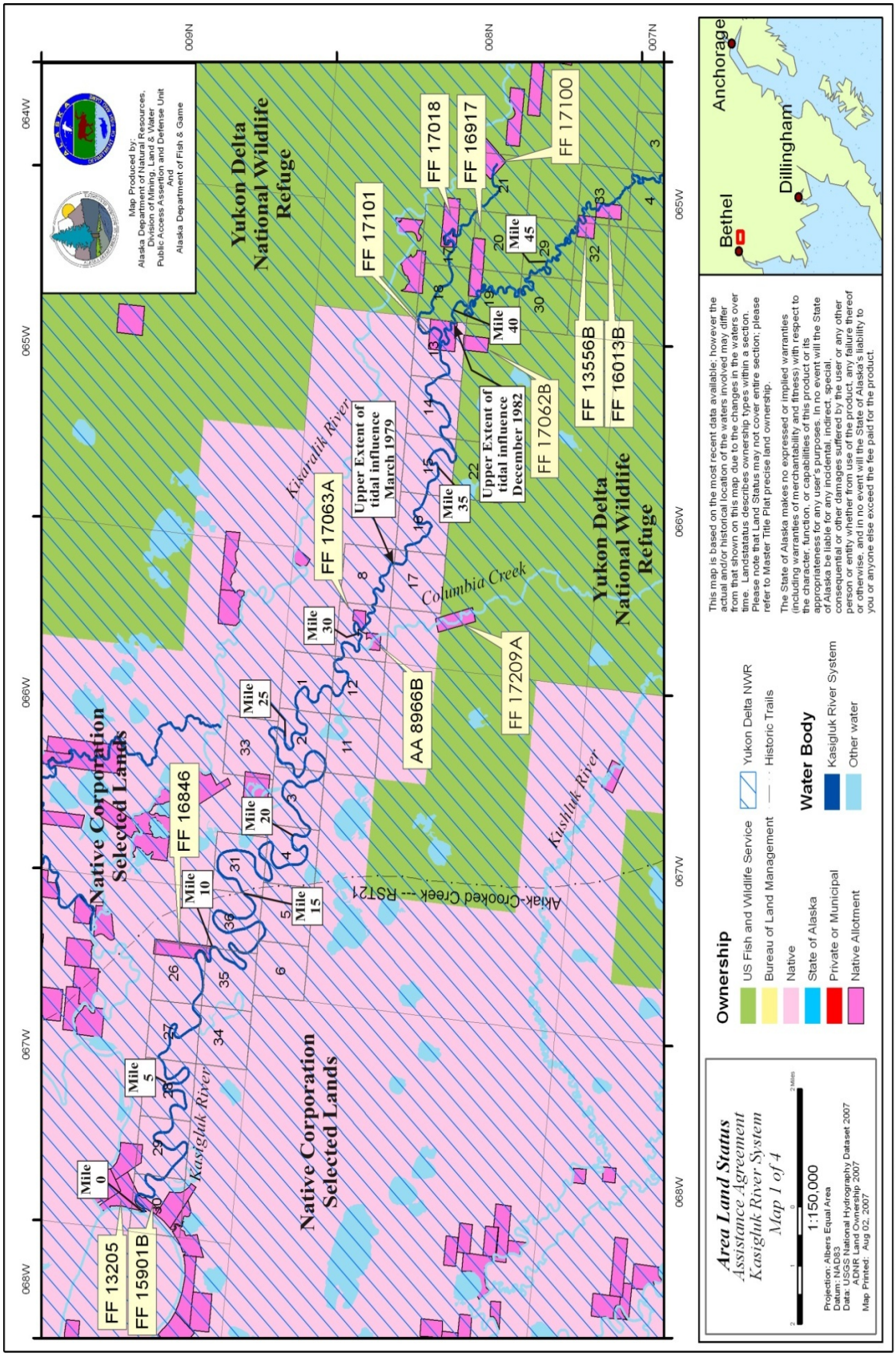

Figure 2. The lower portion of the Kasigluk River showing lands selected by Native corporations and Native allotments.

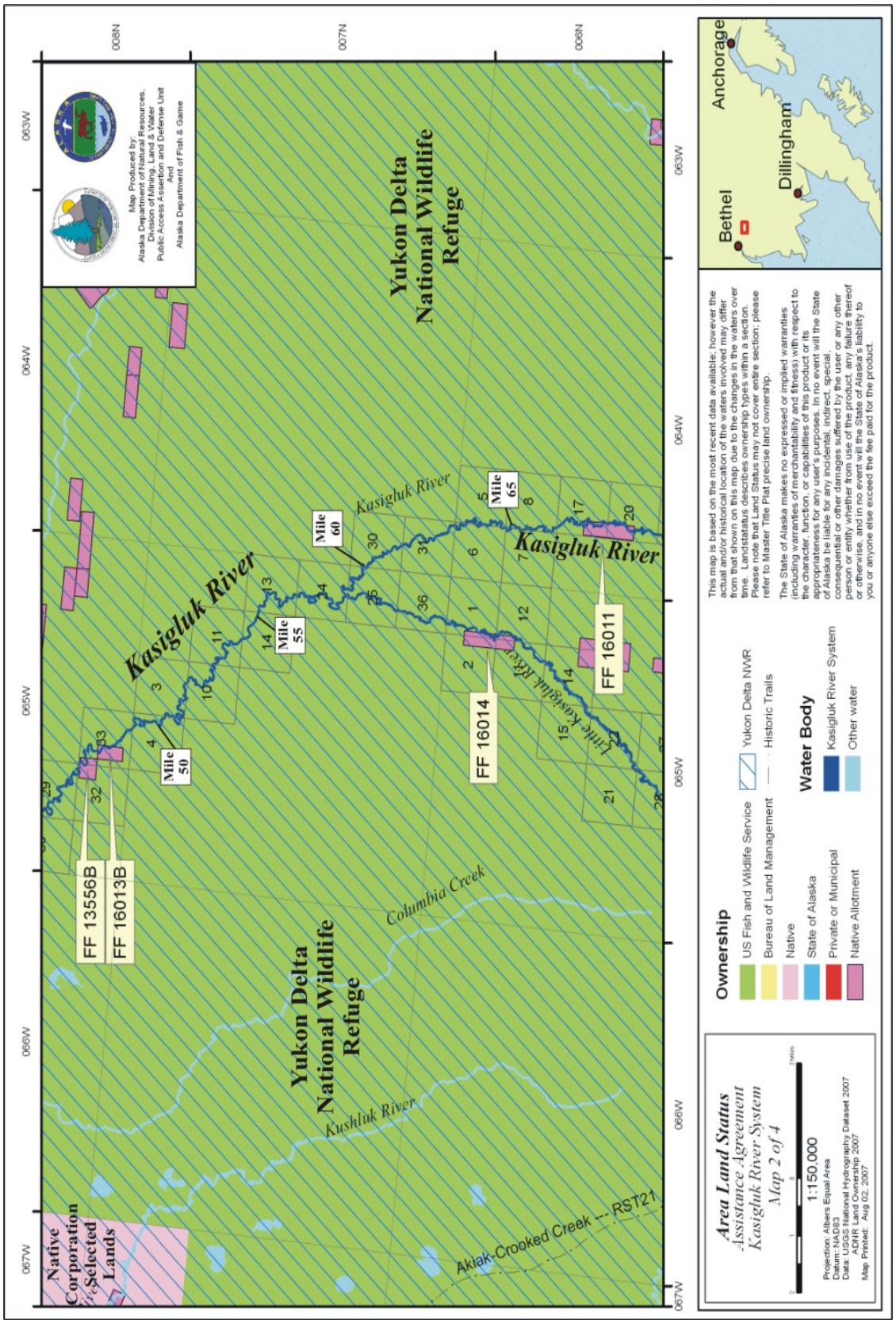

Figure 3. The lower-middle portion of the Kasigluk River showing lands selected by Native corporations and Native allotments.

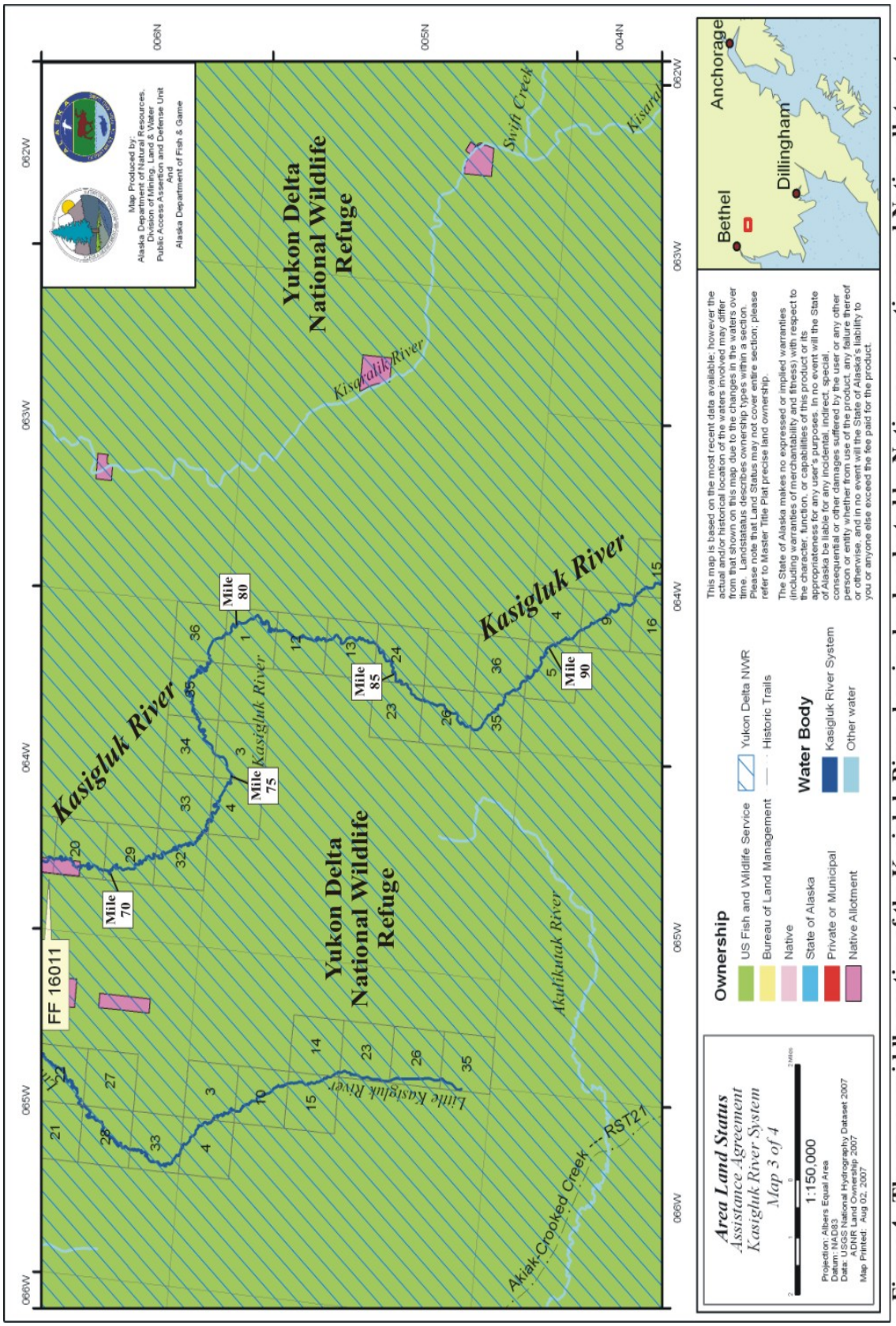

Figure 4. The upper-middle portion of the Kasigluk River showing lands selected by Native corporations and Native allotments.

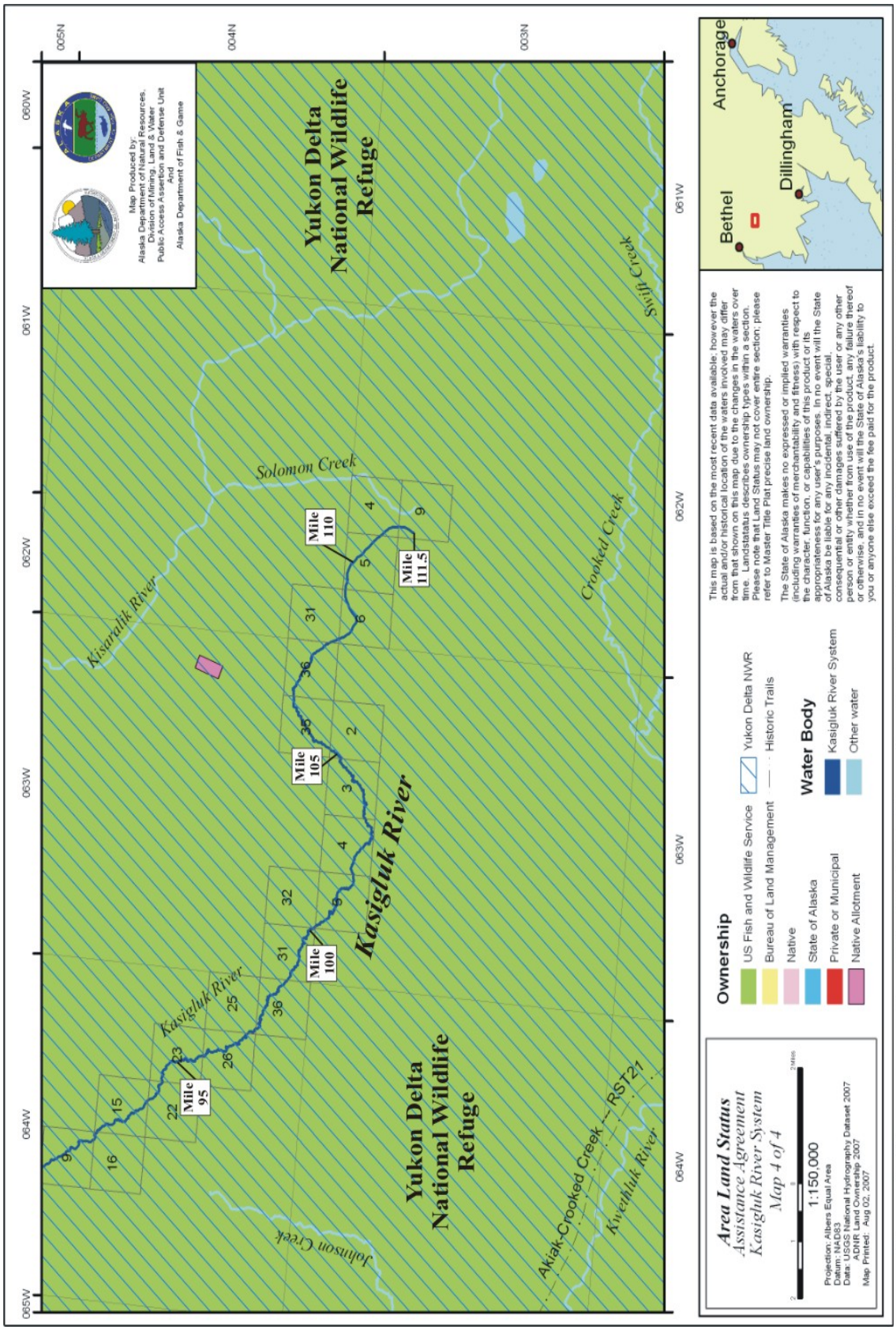

Figure 5. The upper portion of the Kasigluk River showing lands selected by Native corporations and Native allotments.

The middle and upper most portions of the Kasigluk River are located within the Yukon Delta NWR (Figures 2-5). The Yukon Delta NWR was withdrawn from unreserved public lands managed by the BLM in 1972 (Public Land Order 5184, March 9, 1972) and transferred to the federal refuge system under the Alaska National Interest Lands Conservation Act (ANILCA, PL 96-487) of 1980. Title to federal refuge lands in Alaska is held by the United States and the U.S. Fish and Wildlife Service (USF&WS) is the manager of the Yukon Delta NWR.

III. BLM Navigability Determinations

After Congress passed the Alaska Native Claims Settlement Act (ANCSA), Kwethluk Incorporated and Kokarmiut Incorporated of Akiak selected ANCSA lands along the lower Kasigluk River. Most of the Kasigluk River's lower reaches are located in an area conveyed to the village of Akiak. Only a short segment is located on lands selected by the Kwethluk village corporation. The BLM began actively seeking information on navigable waters on the Kasigluk River in the 1970s as part of its adjudication of Native land selections.

A memorandum on inland navigable waters for the Akiak village selection area in December of 1975 did not mention the Kasigluk River as navigable or subject to tidal influence. The Akiak selection area included up through river mile 39 of the Kasigluk River. The report noted rivers that were considered navigable as well as one river that was said to be specifically non-navigable.[2] (Attachment 1)

The first mention of navigability with regard to the Kasigluk River came as a response to the Kokarmiut Corporation of Akiak's village selection application. In a letter dated January 14, 1976, the BLM informed the Kokarmiut Corporation of Akiak that "an administrative determination has not been made on those portions of the Kasigluk River… you have identified as being navigable." BLM files do not reveal which portion(s) of the river that the village corporation considered navigable.[3] (Attachment 2)

On May 17, 1977, BLM staff recommended that the Kasigluk River was navigable due to tidal influence or because of travel, trade and commerce to the west boundary of Sec. 36, T. 9 N., R. 67 W., SM.[4] (Attachment 3) The 1985 BLM Kuskokwim Regional Report states that this proposal "was subsequently dropped."[5]

The BLM first conveyed lands along the Kasigluk River to Kwethluk Incorporated. The Kasigluk River was not mentioned as navigable or tidally influenced in the BLM's March 7, 1979 Decision to Interim Convey (DIC), but maps attached to the DIC show the portions of the river in the selection area as "pending determination of tidal influence" in Secs. 5 and 6, T. 8 N., R. 67 W., SM.[6] (Attachment 4).

The BLM issued IC Nos. 213 and 214 on July 20, 1979, and conveyed lands along a portion of the Kasigluk River to Kwethluk Incorporated and Calista Corporation for the surface and subsurface estates, respectively. The river was not mentioned as tidal or

navigable, and the maps attached to the ICs do not show the river as either tidal or navigable. As a result, the submerged lands under the Kasigluk in Secs. 5 and 6, T. 8 N., R. 67 W., SM, were excluded from the ICs.[7] (Attachment 5)

In a memorandum dated June 22, 1982, "Final Easements for Kokarmiut Corporation (Village of Akiak)," the BLM identified the Kasigluk as a tidally influenced water body in the Akiak selection area in T. 9 N., R. 65 W.; Ts. 8-10 N., R. 66 W.; Ts. 8-11 N., R. 67 W.; and Ts. 9-11 N., R. 68 W., SM. The agency determined the Kasigluk River to be tidally influenced, but the extent of tidal influence was not specified and was to be determined at the time of survey. The river was not mentioned in the navigable waters section of the document.[8] (Attachment 6)

The BLM's DIC issued on June 29, 1982 determined that water bodies that were navigable or "pending a tidal determination at the time of survey" should be excluded from Akiak conveyance lands. Maps attached to the DIC show the Kasigluk River to be pending determination of tidal influence throughout Ts. 8-9 N., Rs. 66-67 W., SM.[9] (Attachment 7)

On December 28, 1982, the BLM issued IC Nos. 610 and 611 which conveyed 102,993 surface acres to the Kokarmiut Corporation (Village of Akiak) with the subsurface estate conveyed to the Calista Corporation. The ICs excluded certain submerged lands as follows:

> Excluded . . . are the submerged lands, up to the ordinary high water mark, beneath all water bodies determined by the Bureau of Land Management to be navigable because they have been or could be used in connection with travel, trade and commerce, or are pending a tidal determination at the time of survey. Those water bodies are identified on the attached navigability maps, the original of which will be found in case file FF-14824-EE.

The Kasigluk River is shown on the attached IC maps as "pending determination of tidal influence" throughout the Kokarmiut Corporation conveyance area. If the Kasigluk River is found to be tidally influenced, then the submerged lands will be excluded from the conveyance in T. 9 N., Rs. 66-67 W. and T. 8. N., Rs. 66-57 W., SM.[10] (Attachment 8)

The BLM has surveyed the conveyed lands, but had not issued patents to the village corporations by the end of 2009. The BLM surveyors meandered and segregated the river from the uplands in Ts. 8 and 9 N., R. 67 W., SM. through Ts. 8 and 9 N., R. 66 W., SM. The surveys were done in the late 1970's and early 1980's. In all but one township the meanders were done in the field by auto-surveyor (helicopter) methods; in T. 9 N., R. 67 W., SM., the survey was done by the photogrammetric (aerial photo interpretation) method.

On May 8, 1989, the BLM issued a navigable waters memorandum based upon the one-man kayak criteria of navigability. In the memorandum, the agency listed the Kasigluk River as a navigable water body less than three chains wide in Sections 31 and 33, of T. 9 N., R. 66 W., SM and throughout T. 9 N., R. 67 W., SM. [11] (Attachment 9)

In a letter to the manager of the Yukon-Delta NWR, dated December 13, 1995, a BLM Navigable Waters Specialist wrote that the BLM had decided in 1982 that the Kasigluk River was non-navigable and that the river was not excluded from the conveyances. The Navigable Waters Specialist stated that photo-interpreters working with Cadastral Survey had identified the Kasigluk River as not tidal, but the water body was wider than 3 chains throughout much of T. 9 N., R. 67 W, SM. For that reason, the agency decided to meander the submerged lands and segregate them on the survey plats. [12] (Attachment 10)

In a navigability report dated November 4, 1997, BLM Navigable Waters Specialist Laura Lagstrom determined that the Kasigluk River was navigable within Native allotments FF-17100[iii], FF-17062-B, FF-16917 and FF-16013. The determination was based upon interviews and a field inspection of the river conducted in September of 1997, and used the criteria of travel, trade and commerce with a boat capable of carrying a 1,000 pound load. Lagstrom also suggested that the Kasigluk River was navigable further upstream to the mouth of the Little Kasigluk by the same criteria, but a formal determination was only stated for the Native allotments. [13] (Attachment 11)

In a field trip memorandum issued on the same date, Lagstrom also mentioned that the Kasigluk River had been previously determined tidal up to the confluence of the Kasigluk River and its Right Bank Tributary (river mile 39). [14] (Attachment 12)

In a second report dated November 4, 1997, Lagstrom evaluated a right bank tributary of the Kasigluk River (named by residents in the Yu'pik dialect as the *Chicoyuilnuk* or *Tsikoyulugok* meaning "The River That Never Freezes") and a right bank tributary of the *Chicoyuilnuk*. Lagstrom declared the tributary known as *Chicoyuilnuk*, which heads southerly through Native allotment FF-17018,[15] to be navigable. The allotee accessed her allotment by boat from the Kasigluk River. Lagstrom determined the right bank tributary of the *Chicoyuilnuk*, located in the same allotment, to be non-navigable.[16] (Attachment 13)

On November 7, 1997, the BLM issued a navigability memorandum describing avulsive events on the Kisaralik River that affected the Kasigluk River. The Kisaralik River had recently cut through its banks and created a new channel that connected the Kisaralik and Kasigluk Rivers through a tributary of the Kasigluk in Secs. 8 and 17, T. 8 N R., 65 W., SM. This tributary, known in the local Yupik dialect as *Chicoyuilnuk*, is located on

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[iii] FF-17100 appears to have moved from an earlier location to Secs. 15, 16, 21, and 22, T. 8 N., R. 65 W., SM. All references to this Native allotment until present day (especially considering navigability determinations) will reference FF-17100's old position in Sec. 13, T. 8 N., R. 66 W., and Sec. 18, T. 8 N., R. 65 W., SM. A map of the initial location is in Attachment 14.

Yukon-Delta NWR lands. Five Native allotments are present along this section of the Kasigluk. In the memorandum, the BLM determined the tributary navigable where it crossed Native allotment FF-17018[17] in Secs. 16 and 17, T. 8 N., R. 65 W., SM. The agency also determined the Kasigluk River navigable within four other Native allotments in the vicinity. The farthest upstream allotment (FF-16013)[18] was located in Sec. 33, T. 8 N., R. 65 W., SM. This memorandum also stated that the Kasigluk had been meandered due to tidal influence throughout T. 8-9 N., Rs. 66-67 W., SM, which was consistent with the tidal determination from IC 610. [19] (Attachment 14)

In 1997, the BLM described people using the Kasigluk River to access Columbia Creek. In a December 4, 1997 Field Trip memorandum, Lagstrom described flying over the lower section of Columbia Creek: "The mouth of Columbia Creek was 2/3 blocked by vegetation… a short distance upstream a beaver dam was visible.[20] (Attachment 15)

The BLM determined Columbia Creek non-navigable from its mouth (river mile 0) through the Native allotment AA-8966-B (river mile 1). Columbia Creek, the agency concluded, was too shallow for navigation except a few weeks out of the year around spring breakup and fall rains during periods of high water. During these high water periods several people made use of the Kasigluk River to access the mouth of Columbia Creek.[21] (Attachment 16)

In a navigable waters memorandum dated January 13, 1998, the BLM stated that the Kasigluk River had been meandered due to tidal influence through Ts. 8-9 N., Rs. 66 and 67 W., SM (IC No. 610). [22] (Attachment 17)

The State responded to the BLM's November 7, 1997 Navigability memorandum with a letter dated June 3, 1998. In the State's letter, the Director of the Division of Lands wrote that she agreed with the BLM "that the Kasigluk River is meanderable through Ts. 8 & 9 N., Rs. 66 & 67 W., S.M. because it is tidally influenced." The State added that "We agree that the Kasigluk is navigable through T. 8 N., R. 65 & 66 W., S. M." The State also commented: "The State asserts that the waters flowing through the above parcels [FF-17062, FF-16917, FF-16013, FF-17018 and FF-17100] fall within the federal guidelines of navigability and the submerged lands should be meandered during this survey and any future surveys in this area."[23] (Attachment 18)

In a second letter from the State dated June 3, 1998, the Director of the Division of Lands addressed the BLM navigability memorandum for Survey Window 2029, dated January13, 1998. The State agreed that "the Kasigluk River and an unnamed stream in T. 5 N., R. 72 W., S.M. are meanderable" and that the Kasigluk, Lomavik, Akulikutak and Kushluk rivers and Net Creek are navigable. In addition, the State noted that the BLM's January 13, 1998 memorandum did not address waters on Native allotments within lands already interim conveyed. Even though Calista Corporation opposed making navigability redeterminations on submerged lands associated with Native allotments within ICs, the State argued that Native allotments selected within ICs remain in federal ownership until conveyed to the individual allotees and do not constitute previously conveyed lands. Therefore, the BLM should have evaluated waters adjacent

to or crossing selected allotments within Survey Window 2029 consistent with the Department of Interior's policy summarized in the March 16, 1976 memorandum from Associate Solicitor Hugh C. Garner and the Ninth Circuit Court decision Alaska v. Ahtna, Inc. 891-F.2d 1401 (9th cir., 1989.[24] (Attachment 19)

In its reply to the State dated June 25, 1998, the BLM stated that its November 7, 1997 navigability report "shows waters crossing five of these allotments" (FF-17062, FF-16917, FF-16013, FF-17018 and FF-17100) along the upper Kasigluk River and its tributaries "to be navigable."[25] (Attachment 20)

On October 3, 2005, a BLM notice for proposed easements listed the Kasigluk as a "major waterbody."[26] (Attachment 21) The BLM issued Corrected IC Nos. 1935 and 1936 on October 4, 2005, which excluded Native allotments from IC Nos. 610 and 611.[27] (Attachment 22) One allotment straddled the Kasigluk River in Sec. 13, T. 8 N., R. 66 W., SM (FF-17101).[28] The water body is shown as meandered and segregated through this allotment on the MTPs.[29] (Attachment 23)

In another easement memorandum dated January 25, 2006, the BLM again determined the Kasigluk River to be a "major waterbody." The maps attached to the memorandum show the Kasigluk River as "pending determination of tidal influence" throughout the conveyed area.[30] (Attachment 24) On the MTPs, the Kasigluk River has been meandered, and segregated and excluded from land conveyances. It is unclear whether the Kasigluk River has been segregated due to navigability or tidal influence.

Summary of Navigability Determinations:
Navigability determinations for the Kasigluk River are summarized below in Table 1 and shown in Figure 7. In a 1979 DIC and IC Nos. 213 and 214 issued for the Kwethluk village selection area, the BLM determined the Kasigluk River non-navigable and not tidally influenced, but the maps attached to the DIC and ICs show the Kasigluk River as pending determination of tidal influence in Secs. 5 and 6, T. 8 N., R. 67 W., SM. In 1982, the BLM determined the Kasigluk River to be tidally influenced through the Akiak village (Kokarmiut Corporation) selection area, pending determination of tidal influence. In 1995, a BLM navigability specialist wrote in a letter that the lower Kasigluk River was not tidally influenced, but had been originally surveyed due to it being wider than 3 chains (198 feet). The BLM maps as recent as 2006 show the portions of the Kasigluk River within the lands conveyed to Akiak village to be pending determination of tidal influence. In 1997, the BLM determined portions of the upper part of the river navigable across four Native allotments: FF-17100, FF-17062, FF-16917 and FF-16013. (Attachment 13) The farthest upstream allotment determined navigable was located in Sec. 33, T. 8 N., R. 65 W., SM (FF-16013).

Table 1. Summary of Navigability Determinations on Kasigluk River.

Dates	River Section	Type Decision and Substance	Navigability Criteria
12/10/75 Attachment 1	Lower	Navigable Waters Memo: Kasigluk River not mentioned as navigable or tidally influenced.	Travel, Trade, and Commerce/Tidal
5/17/77 Attachment 3	Lower	Notice of Proposed Easement Recommendations: The BLM staff recommended the Kasigluk be determined navigable to west boundary of Sec. 36, T. 9 N., R. 67 W., SM (river mile 11)	Travel, Trade, and Commerce, or Tidal Influence
3/7/79 Attachment 4	Lower	DIC for Kwethluk Village Corporation: Kasigluk River shown as pending determination of tidal influence on map through Secs. 5-6., T. 8 N., R. 67 W., SM. (river mile 29)	Pending Determination of Tidal Influence
7/20/79 Attachment 5	Lower	IC Nos. 213 and 214: Kasigluk River shown on maps as pending determination of tidal influence on map in Secs. 5-6., T. 8 N., R. 67 W., SM. (river mile 29)	Pending Determination of Tidal Influence
6/22/82 Attachment 6	Lower	Final Easement Memo, Akiak Selection Area: Kasigluk River declared tidally influenced in selection area.	Travel, Trade, and Commerce; Tidal
6/29/82 Attachment 7	Lower	DIC for Akiak: Kasigluk River shown to be pending determination of tidal influence throughout Sec. 16, T. 8 N., Rs. 66-67 W., SM on the map (river mile 32).	Pending Determination of Tidal Influence
12/28/82 Attachment 8	Lower	IC Nos. 610 and 611: Kasigluk River shown as pending determination of tidal influence in conveyance area through Sec 13., T. 8 N., R. 66 W., SM (river mile 39).	Pending Determination of Tidal Influence
5/ 8/89 Attachment 9	Lower	Navigable Waters Memo: Kasigluk listed as navigable and less than three chains wide in Secs. 31 and 33, T. 9 N., R. 66 W., SM through T. 9., N R. 67 W., SM.	One-man Kayak Standard
11/4/97 Attachment 11	Lower	Kasigluk River Navigability Report: Kasigluk found navigable within Native allotments FF-17100, FF-17062-B, FF-16917 and FF-16013.	Travel, Trade, and Commerce. Boat with 1,000 lb, load
11/4/97 Attachment 12	Lower	Field Trip for Window 2700: Kasigluk River was mentioned as having been determined tidal up to its confluence with the Right Bank Tributary (river mile 39).	Tidal Influence
11/4/97 Attachment 13	Lower	Kasigluk Right Bank Tributary Navigability Report: Tributary reported navigable within Native allotment FF-17018.	Travel, Trade, and Commerce, boat with 1,000 lb. load.
11/7/97 Attachment 14	Lower	Navigability Memo: Kasigluk determined Navigable within Native allotments FF-17100, FF-17062, FF-16917, FF-16013 (Sec. 33, T. 8 N., R. 65 W, SM). Kasigluk meandered due to tidal influence (as shown in IC No. 610)	Travel Trade and Commerce. Boat with 1,000lb load
12/4/97 Attachments 15 & 17	Lower	Columbia Creek Navigability Report and Memo: Columbia Creek found non-navigable, but implies use of Kasigluk River.	Travel, Trade, and Commerce. Boat with 1,000 lb load
1/13/98 Attachment 17	Lower	Navigable Waters Memo: Stated that the Kasigluk River had indeed been meandered due to tidal influence (river mile 39).	Tidal Influence
1/25/06 Attachment 24	Lower	Final Easement Memo: Kasigluk listed as a major water body, map shows the river as pending determination of tidal influence through the Akiak IC (river mile 39).	Pending Determination of Tidal Influence

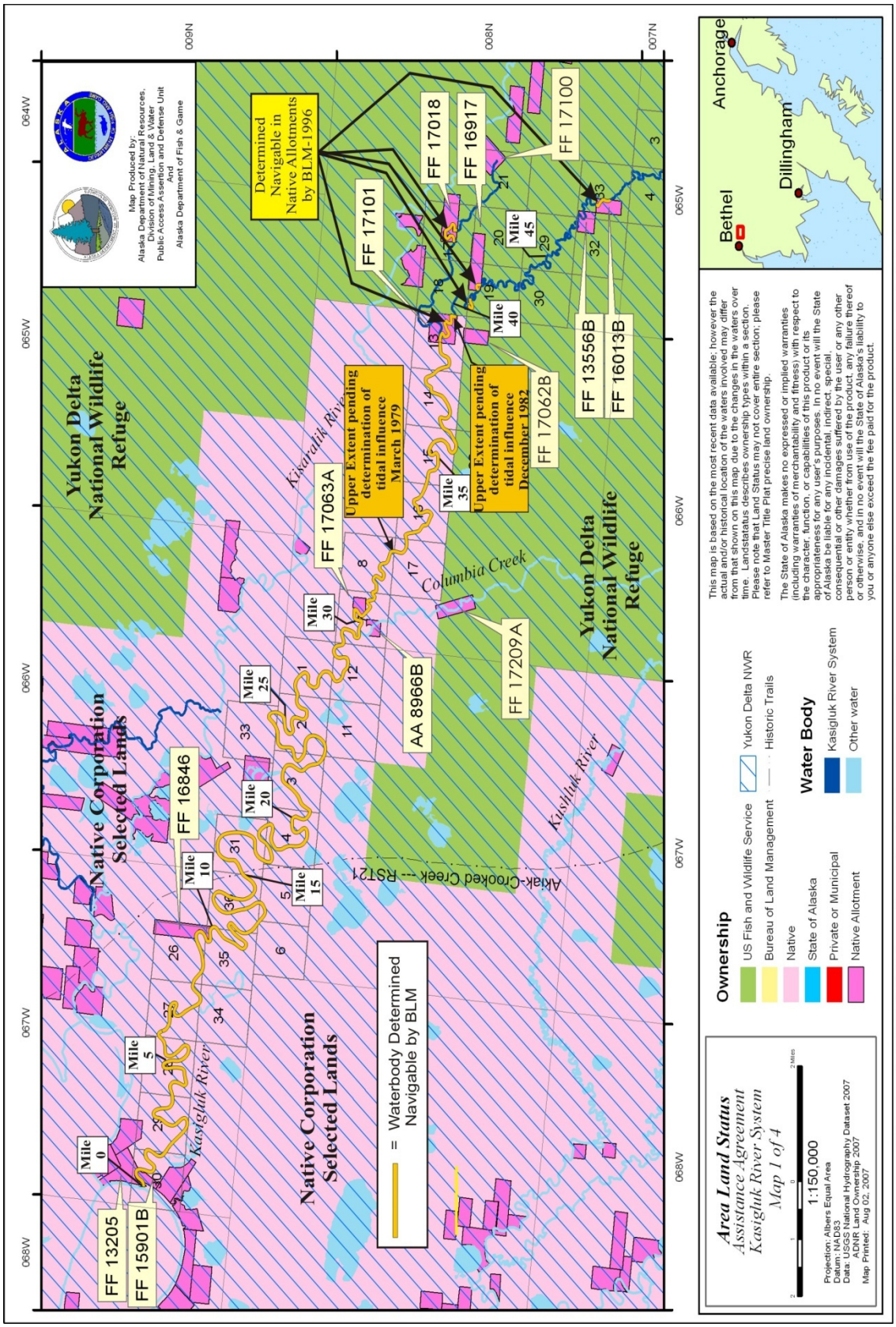

Figure 6. BLM tidal and navigability determinations on the lower portion of the Kasigluk River.

IV. Physical Character of the Waterway

The Kasigluk River is 111.5 miles long[iv] and drains an area of approximately 250-395 square miles. The river heads in the Kilbuck Mountains at Sec. 9, T. 3 N., R. 62 W., SM., 580 feet above sea level. There are no lakes or glaciers that head the Kasigluk River. The river flows generally northwest for 111.5 miles into the Kuskokuak Slough of the Kuskokwim River in Sec. 6, T. 8 N., R. 69 W., SM, 20 miles above Bethel. Much of the Kasigluk River is a narrow, meandering and clear. It contains sand bars and isolated areas of shallow depths. The river has three major tributaries: Columbia Creek, a right bank tributary (called *Chicoyuilnuk* by the local population) and Little Kasigluk River. The Kasigluk River varies in width, ranging from 20 to 50 feet wide. The river's depth varies. It is shallow in its upper reaches and 2 to 11 feet at its mouth, depending on the location measured and the season. The Kwethluk has an average gradient of 18-23 feet per mile. It is a meandering river over most of its course, which lies within the Kuskokwim Flats.[31]

Vegetation along the river for approximately the first 27 miles from the mouth is tundra with willow and alder growing along the bank. From river mile 27 to river mile 58 birch and spruce trees become dominant. From river mile 58 to river mile 110 the river proceeds through a narrow valley and there is no information available on the kind of vegetation along the banks.[32]

The Kasigluk River has three major tributaries. Columbia Creek is a 22 mile long left-bank tributary in the lower reaches of the river. It meanders northeast with a 19-foot per mile gradient draining about 69 square miles.[33] The width of Columbia Creek was reportedly about 6 feet at the mouth, which lies in Sec. 7, T. 8 N., R. 66 W., SM, (Kasigluk river mile 30). The creek widens out to about 10 feet by mile 2. Depth was reported at 2-3 feet after spring breakup and fall rains, about 1 foot during June and July, and never over 5 feet.[34] The right-bank tributary (*Chicoyuilnuk* River) is also in the lower reaches. The *Chicoyuilnuk's* mouth lies in Sec. 13, T. 8 N., R. 66 W., SM (river mile 40), and it flows about 10 miles northwest to the Kasigluk River. Aerial inspection showed the main river to be 15-20 feet wide and reports placed the depth at 2-3 feet deep during low water and 5-7 feet deep during the May thaw.[35] The Little Kasigluk River is a 16-mile long left-bank tributary in the middle-lower portion of the Kasigluk River. The Little Kasigluk flows northeasterly to its confluence between river mile 55 and river mile 60 of the Kasigluk River. The Little Kasigluk is a narrow meandering river with a gradient of 34 feet per mile and drains 73 square miles.[36]

The upper portion of the Kasigluk River (Figures 3-5) is approximately 51 miles in length and extends from the headwaters at river mile 111.5 to river mile 58, at the confluence of

[iv] Different sources estimate the length of the river at 60 to 111.5 miles. The length the Kwethluk River and the river miles used in this report are based on GIS calculations using the National Hydrology Data Set derived from U.S. Geological Survey 1:63,000 quadrangle maps.

the Kasigluk River and Little Kasigluk River.[v] The river heads in mountains at an elevation of 580 feet above sea level. The stream channel in this portion of the river is a single gravel channel flowing through a winding, narrow and shallow valley. The stream is clear for the first 60 miles below the headwaters during ordinary flow times. No detailed information is available about the width and depth in the upper-most portion of the river; it is reportedly shallow with riffle areas.[37] Near the confluence of the Little Kasigluk River and the Kasigluk River, the Kasigluk River meanders through hills which are between 50 and 150 feet high. The gradient in this section was reported as less than 20 feet per mile with a channel width of about 15-20 feet.[38] Around river mile 50 a field inspection by air revealed that the Kasigluk River became "noticeably shallower with some sandbars, logs and sweepers lining the banks."[39] The only notable tributary in this section is the Little Kasigluk River which joins the Kasigluk River between river mile 55 and river mile 60.

The lower-middle portion of the Kasigluk River (Figures 2-3) is 31 miles in length (river mile 27 to river mile 58). In this section, the river widens to 50 feet and the gravel which makes up the riverbed goes from medium gravel and coarse gravel to medium gravel and fine gravel. The area above Columbia Creek was reported to be a major spawning area for salmon, northern pike, grayling, rainbow trout and possibly humpback whitefish.[40] Along the stretch the of the Kasigluk River from river mile 38 to river mile 50, estimates of bank to bank width range from 20 to 55 feet depending on the source and time of year. Depths along this portion were described as 2-4 feet during summer and during regular water mark periods, and up to 11 feet for about 2 weeks in September during the fall rains.[41] This information was compiled from a series of interviews with Native allotees and their relatives. The interviewees stated that the river can be anywhere between 12 and 35 feet wide, and between 1 and 7 feet deep. The river was the deepest and the width the widest between August and September for the space of a few weeks.[42] (Attachment 25)

The lower portion of the Kasigluk River (Figure 2) is 27 miles in length and extends from river mile 27 to the mouth at river mile 0 (Figure 7). The river bed in this section becomes primarily mud with some fine gravel mixed in. The flow of the river was 240 cubic feet per second (cfs) when it was first surveyed in June of 1977 during a flood stage. A later recording in August of the same year reported the Kasigluk River as having a flow of 120 cfs. This area was also habitat for northern pike and grayling.[43]

A BLM document issued in 1979 indicated that the Kasigluk River is pending determination of tidal influence from its mouth (river mile 0) upstream through Sec. 8, T. 8 N., R. 66 W., SM (river mile 32) (Attachment 4). Other BLM documents issued in 1982 (Attachment 7) and in 1998 (Attachment 17) indicate pending determinations of tidal influence through Section 13, T. 8 N., R. 66 W., SM (river mile 39.5).

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[v] Kenneth T. Alt's miles and sections for the Kasigluk River, which was used by both Roger Clay and Laura Lagstrom, are off by ~7 miles in this section compared to the aforementioned GIS calculations in the area of the confluence of the Little Kasigluk River and the Kasigluk River.

Figure 7. A view of the mouth of the Kasigluk River as seen from Kuskokuak Slough, July 1974. Photo by Wayne R. Dawson, Native allotment Field Report, FF-15901, April 11, 1975, BLM files, FF-15901, NARA/Anchorage.

The Kasigluk River is within the transitional climate zone, which is between the maritime and continental climatic zones. This transition zone in the Yukon-Kuskokwim Delta area extends 100-150 miles inland.[44] No weather-gathering stations are located along or near Columbia Creek. The nearest station is at Bethel, about 27 miles from the river. The average annual precipitation at the Bethel weather station is around 16 inches.[45]

The only known hydrological data gathered on the Kasigluk River dates from the 1970s. An ADF&G crew measured the stream flow of the middle portion of the Kasigluk River (between river miles 0 and 27) in June and August of 1977. The flow was 240 cfs in June during a flood stage and 120 cfs in August when the water level had returned to normal. The temperature of the water on August 15, 1977 was 46 degrees Fahrenheit.[46]

There have been no reported major obstructions along the Kasigluk River. There has been one reported major avulsive event. A Navigability Review Memorandum issued on November 4, 1997 stated that in Sec. 8, T. 8 N., R. 65 W., SM, the Kisaralik River created a small stream flowing into the Right Bank Tributary (*Chicoyuilnuk* River) of the Kasigluk River.[47] (Attachment 12) The first evidence of this avulsive event appeared in 1981 NASA aerial photos.

V. Evidence of Use of the Waterway

Early Native Use of the Kasigluk River

Human occupation of the Kuskokwim area goes back 11,000 years to nomadic hunters of Pleistocene animals. These hunters were supplanted about 1,900 B.C., when Eskimos from the north moved into the lower Kuskokwim drainage, bringing with them the so-called Arctic Small Tool tradition.[48] Permanent occupation of the interior Kuskokwim Delta with chronological continuity began about AD 600.[49] Their descendents, the *Kusquqvagmiut* (also known as Yup'ik Eskimos or mainland southwest Alaskan Eskimos), have inhabited the Kuskokwim River and its tributaries down to the present as far inland as the village of Aniak. By 1880, their population was estimated at 3,100.[50]

The *Kusquqvagmiut* have lived a traditional subsistence lifestyle that spans many centuries. Subsistence is a form of production and consumption in which hunting, fishing and collecting plants are the primary sources of food and other necessities of life. Traditional Alaska Native subsistence practices involve harvesting, distributing and consuming resources. These activities include important social and religious components, one of the most important of which is the distribution and exchange of subsistence products within families, between families and bands, and with Native groups outside their territory. Each Native culture in Alaska has its own set of customs and values governing the transfer of subsistence goods, falling into categories such as ceremonial, sharing, partnership, trade and commercial exchange. The values which promote ceremonial feasting and distribution of subsistence resource goods have persisted in all Alaska groups.[51]

The *Kusquqvagmiut* traveled by water craft to access, harvest, and transport subsistence resources to their village sites, and to distribute the harvested resources.[52] As contact with Russian fur traders, American missionaries, traders and miners increased in the nineteenth and twentieth centuries, the Native subsistence system of distribution and exchange gradually changed. While the *Kusquqvagmiut* continued to sustain themselves through their hunting, fishing, and gathering efforts, their involvement in the fur trade brought about significant changes.[53] Contact with American traders increased the interaction between subsistence production and commercial exchange, including the sharing and trading of commercial and subsistence goods.[54]

Eskimos have used skin boats on the tributaries of the lower Kuskokwim River for hundreds of years to return from the mountains after spring hunts. Prehistoric hunting camps, lookouts and ancient stone fences were used to guide the caribou to areas where they could be harvested are scattered throughout the Kuskokwim Mountains in the headwaters of the Kwethluk, Kasigluk and Kisaralik rivers.[55] The core caribou hunting areas of Kwethluk hunters have been and continue to be at the headwaters of the Kisaralik, Kwethluk, Kasigluk, Akulikutak and Aniak rivers. The spring hunting camp in the mountains was an important part of the seasonal round for generations of Kwethluk and Akiak Natives. Before white men and motor boats, the Eskimos took their families by dogsled to the headwaters of the Kisaralik, Kasigluk and Kwethluk rivers in the early

spring. After spending weeks there catching parka squirrels and caribou, they constructed large skin boats. After breakup, they floated down the river in the skin boats, transporting meat, skins, sleds, dogs, tools and their families from their spring hunting sites on the upper left bank tributaries to their summer village sites near the Kuskokwim.[56]

These large shallow-draft skin boats, known as *angyaqatiit* (bearskin boat), were made for a single journey and disassembled at the end of the trip. This broad raft-like craft was well suited for shallow, fast-moving streams. "They called it *angyaqatak* [from *angyaq*, 'open skin boat,' plus *qatak*, 'about to be'] because they were building them only to return home," according to Kwethluk elder Paul John. "They went up to the mountains in spring without boats, but their plan was to come back down river after breakup. While they were up there hunting, they tried to harvest enough caribou or bears to make a boat with their skins."[57] The *angyaqatiit* were almost as wide as they were long, and often carried a family group. Their broad beam promoted safe travel in the fast-moving waters of shallow mountain streams. The boat was almost round and did not easily capsize in rapids. The vessel was made so it would not easily get crosswise with the current and fill with water. The wide beam enabled the boat to carry a heavy load. The raft-like hull shape gave it equal stability in all orientations. In rapids and turbulent currents, the *angyaqatiit* was much more stable than a kayak, but harder to steer, as the added stability meant that it resisted changing positions. Two people, one in the front and one in the back, used wide paddles to guide the boat away from rocks or logjams as they floated down stream.[58]

Some built *angyaqatiit* at their camping places high in the mountains, but others packed their spring harvest out of the high country and past the places where the current was impassable below their hunting camps. Then they would begin boat construction. The boat frames were made from cottonwood, alder and willow. Since there were few trees in the mountains, wood had to be collected, sometimes at quite a distance from where they made the boat. They would split the wood to make the pieces useful. When wood was scarce, some men took apart their flat-bottomed sleds and used the slats for boat ribs. The men cut logs into one-inch-thick planks for the sides and bottom of the frame. The keel was made from a long, straight piece of wood running the length of the bottom. Sections of trunks or tree roots with a natural curve were used for the bow and stern pieces. The boat frame was then lashed together with rawhide line or, more recently, cord (Figure 8). When the frame was complete, men covered it with bear, moose or caribou skins that had been soaked in water and sewn together with waterproof stitches, then folded over the gunwales and lashed to the frame. The fur side of the skin rested against the frame to protect the skin from chafing against rough spots in the wood. This also helped with buoyancy, as waterlogged fur would weigh down the boat. After the boat frame was covered, the men heated caribou fat or tallow and used the rendered oil to paint the seams, making them watertight. If the seams were not painted, they would work loose, and the boat would fill with water.[59]

Boat size varied, depending on the success of the hunt and the load to be carried downstream. An *angyaqatak* covered with one moose skin could carry the moose's meat

along with the person who harvested it. Larger boats could be covered with two moose skins or the skins of brown bear, black bear, or caribou. If their load was large and they had enough skins hunters would make more than one boat. They would also put their dogs in and bring them along, or if possible they would take the dogs on foot following the river. As they traveled down the river, men were on the lookout for logjams and downed trees blocking their path. When pushed by the current, boats could fill with water and sink.[60]

Figure 8. *Angyaqatak*, skin boat built in 2007 on the upper Kwethluk River and exhibited at the Anchorage Museum of History and Art for the Yupik Science Exhibit. Photo from *http://www.yupikscience.org/4rivrsspring/4-1.html*.

Some men also made *angyaqatiit* to return from fall camp in September, when they again hunted for caribou, moose, and bear in the mountains. They went to fall camp in mid-August, walking beside the river and carrying their provisions in backpacks slung on wooden yokes; a yoke is a frame designed to fit across somebody's shoulders with balanced loads suspended on each end. They followed a trail up behind the village of Kwethluk along Three-Step Mountain, and up into the mountains without crossing a major river. Once home, the travelers disassembled the boats and used their materials for other things. They stripped the skins from the frame and stored them after drying them. Bearskins could also be used as bedding and they were highly valued both for trade and as gifts during the annual Messenger Feast.[61]

Recent Native Use of the Kasigluk River Documented in Native Allotment Files

The BLM began collecting information in the 1970s to adjudicate Native allotment applications filed by local Natives that have fished, hunted and picked berries along the Kasigluk River. The Natives accessed favorite spots along the river for hunting, trapping, fishing and berry picking. These favorite spots, through custom, developed into exclusive use areas. The federal government adjudicated many of these allotments and transferred title to the sites to the applicants. Fifteen individuals filed Native allotment applications for 15 parcels on the portion of the Kasigluk River between river mile 0 and river mile 70 and on tributaries of the river within the Yukon Delta NWR.

The 15 Native allotments are located along the Kasigluk River upstream of river mile 0 and along tributaries of the Kasigluk River such as Columbia Creek and the Right Bank Tributary of the Kasigluk River. Native allotment files for these 15 allotments indicate that seven of the allotments were used seasonally in the spring, three were used in the summer, four were used in the fall, nine were used in the winter, and one was used year round. Documents in two of these Native allotment files, including application forms and BLM field inspection reports, indicate the applicants accessed their parcels during the open season (when the water bodies are not frozen) by boat. In all of the other files, the means of access is not indicated. Given the terrain, customary modes of travel in the open season, and information provided by other people traveling along the river corridor, access to the parcels during the open season (spring, summer and fall) was by boats up to river mile 45. The Native allottee of the remaining parcel (FF-16011, at river miles 65-66) used his parcel only during the winter.

Alfred Lake of Akiak filed an application on November 10, 1970 for a 159.99-acre Native allotment (FF-13205) in Secs. 19, 20 and 30, T. 9 N., R. 67 W., SM, on the right bank of the mouth of the Kasigluk River (river mile 0). Lake began using the parcel seasonally in 1935 from June till August to fish and pick berries.[62] Lake's claim of a fish camp on the parcel was subsequently verified by the BLM Field Inspector.[63] Neither the allottee's application nor the inspection report contained an indication of how Alfred Lake accessed his parcel.

Frank Demantle Sr. of Akiak filed an application on March 16, 1972 for a Native allotment split into two parcels. The parcel on the Kasigluk River is 39.97-acres (FF-15901-B) and lies in Sec. 30, T. 9 N., R. 67 W., SM, on the left bank of the mouth of the Kasigluk River (river mile 0). Demantle began using the parcel seasonally in February 1940 during the winter months as his winter hunting and fishing grounds.[64] Demantle claimed a fish camp on the parcel, which the BLM field examiner was unable to locate.[65] No indication of access was given on the allotment application or the field exam documents. In the Statements of Witness submitted for the Native allotment application, Frank Demantle[66] and a friend, Timothy Williams,[67] noted that there was a dock or boat landing on the parcel.

Henry W. Jackson (deceased) of Kwethluk filed an application on March 27, 1972 for a 159.95-acre Native allotment (FF-16846) in Secs. 23, 24, 25, 26, 35, and 36, T. 9 N.,

R. 67 W., SM, around river mile 10 on the right bank of the Kasigluk River (Figure 9). Jackson claimed use and occupancy year round since November of 1964 for trapping, hunting, fishing, berry picking, and firewood.[68] There was no mention of how Jackson accessed his allotment.[69]

Figure 9. The Kasigluk River at river mile 10, July 1974. Henry W. Jackson's Native allotment (F-16846) is on the far side of the river. Photo by Clifford D. Ells, BLM files, FF-1646, National Archives and Records Administration (NARA), Anchorage.

Albert Olick Sr. (deceased) of Kwethluk filed an application on April 5, 1974 for a Native allotment split into two parcels. The parcel on the Kasigluk River is 39.97 acres (AA-8966-B) and lies in Sec. 7, T. 8 N., R. 66 W., SM, straddling Columbia Creek near its confluence with the Kasigluk River, near river mile 30 of the Kasigluk River. Albert Olick claimed use and occupancy of the land since September of 1950 for spring camping, fall hunting and winter trapping.[70] There is no information in the BLM Native allotment file of how Olick accessed his allotment.[71]

Joseph Guy of Kwethluk filed an application on March 28, 1972 for a Native allotment split into two parcels. The parcel on the Kasigluk River is 39.99 acres (FF-17063-A) and

lies in Sec. 7, T. 8 N., R. 66 W., SM, on the right bank of the Kasigluk River, just past river mile 30. Guy claimed seasonal use and occupation of the land for hunting, trapping, camping and berry picking between July and March since July 1952.[72] There is no mention in the BLM Native allotment file as to how Guy accessed his parcel.[73]

David F. Fisher (deceased) of Kwethluk filed an application on March 30, 1972 for a Native allotment split into two parcels. The parcel near the Kasigluk River (FF-17209-A) is 119.98-acres and lies in Secs. 18, 19, and 20, T. 8 N., R. 66 W., SM, straddling Columbia Creek around 1.5 miles from its mouth. Fisher claimed use and occupancy of the parcel during the winter for the use of hunting and trapping since February 1930.[74] There was no mention in the BLM allotment file as to how Fisher accessed the parcel.[75]

Wilson Nicolai of Kwethluk filed an application on March 28, 1972 for a 159.98-acre Native allotment (FF-17100) in Secs. 21 and 22, T. 8 N., R. 65 W., SM, at river mile 39 and on the right bank tributary of the Kasigluk River. Wilson Nicolai claimed use and occupancy seasonally during the fall months for fishing and hunting since August 1957.[76] This location and evidence of use was substantiated in a July 23, 1974 field examination.[77] In a letter dated April 23, 1975, Mr. Nicolai claimed that his allotment was slightly north of where originally surveyed and in a rectangular configuration rather than square, but still within Secs. 21and 22, T. 8 N., R. 65 W., SM.[78] In a note to the case file regarding William Nicolai's Native allotment (FF-17100), the surveyors discovered that the allotment locations of William Nicolai and Wilson Nicolai had been switched.[79] The supplemental field report placed Wilson Nicolai's allotment in Sec. 18, T. 8 N., R. 65 W., and Sec. 13, T. 8 N., R. 66 W., SM, at the confluence of the Kasigluk River (river mile 39.5) and its right bank tributary.[80]

James Guy, Sr. (deceased) of Kwethluk filed an application on March 28, 1972 for a Native allotment split into two parcels. The parcel near the Kasigluk River is 80-acres (FF-17062-B) and is in Sec. 19, T. 8 N., R. 65 W., SM, near river mile 39.5 and just upstream of Native allotment FF-17101. The location of Guy's allotment was changed on November 7, 1997 (Attachment 13) in U.S. Survey 12296 to Secs. 13 and 24, T. 8 N., R. 66 W., SM, a short distance from the Kasigluk River. Guy claimed seasonal use of the allotment for hunting, trapping and berry picking during the winter and spring seasons since November 1942.[81] There was no mention in the Native allotment file of how he accessed his parcel. A note in the file mentioned that a winter trail crossed the parcel.[82]

David K. Nicolai (deceased) filed an application on March 27, 1972 for a 160-acre Native allotment (FF-16917) in Secs. 17, 18, 19, and 20, T. 8 N., R. 65 W., SM, on the right bank of the Kasigluk River just upstream of river mile 40. David Nicolai claimed seasonal use and occupancy of the land for hunting, fishing, and berry picking in the winter and spring since November 1914.[83] No mention was made of how he accessed his parcel.[84]

Elizabeth A. Howard of Bethel filed an application on March 28, 1972 for a 159.99-acre Native allotment (FF-17018) in Secs. 20 and 21, T., 8 N., R. 65 W., SM, on the right bank tributary of the Kasigluk River. The allotment was later moved approximately half

a mile north of where it was described in the application so that it fell in Secs. 16 and 17 of the same township.[85] Howard claimed use and occupancy in the spring for hunting, fishing, trapping and berry picking since April 1945.[86] Howard claimed that she returned home from the allotment using an unspecified type of raft in both the original Native allotment application,[87] and the field examination that followed.[88] In the Native allotment Field Report which followed the change in the allotment's location, it was reported that Howard accessed the allotment by boat in the spring and summer and by dogsled (later snow machine) in winter.[89]

William J. Nicolai (deceased) of Kwethluk filed an application on March 28, 1972 for a 159.99-acre Native allotment (FF-17100) in Sec. 18, T. 8 N., R. 65 W., and Sec. 13, T. 8 N., R. 66 W., SM, at the confluence of the Kasigluk River and its right bank tributary just before river mile 40. William Nicolai claimed seasonal use and occupancy of the land for hunting, trapping and berry picking from May through September since May 1954.[90] This parcel was later switched with the parcel claimed by Wilson Nicolai after it became apparent that the two allotments may have been mixed up at the time of the original field survey.[91] No mention was made of how William Nicolai accessed his parcel. A trail was mentioned as being near or on the parcel.[92]

David I. Jackson of Kwethluk filed an application on March 18, 1971 for a Native allotment split into two parcels. The parcel on the Kasigluk River is 79.89-acres (FF-13556-B) and is located in Secs. 32 and 33, T. 8 N., R. 65 W., SM, on the left bank of the Kasigluk River between river mile 45 and river mile 50. Jackson claimed use and occupancy for trapping from February to March since 1957.[93] No mention was made of how Jackson accessed this parcel.[94]

Alexander A. Nicori Sr. (deceased) of Kwethluk filed an application on March 20, 1972 for a Native allotment split into two parcels. Parcel B is 80 acres on the Kasigluk River (FF-16013-B). It is located in Sec. 33, T. 8 N., R. 65 W., SM, on the left bank of the Kasigluk River just upstream from FF-13556-B, between river mile 45 and river mile 50. Nicori claimed year round use and occupancy of Parcel B for fishing, hunting and berry picking since February 1931.[95] There is no mention in the Native allotment file as to how Nicori accessed his parcel.[96]

Johnnie Michael (deceased) of Kwethluk filed an application on March 20, 1972 for a 159.97-acre Native allotment (FF-16011) in Secs. 17 and 20, T. 6 N., R. 64 W., SM, on the left bank of the Kasigluk River between river miles 65 and 70. Michael claimed seasonal use and occupancy for hunting and trapping from September to April since November 1939.[97] No mention was made of how Michael accessed his parcel, but he stated that he had never been to his Native allotment during the summer.[98]

Evan Olick Sr. (deceased) of Kwethluk filed an application on March 20, 1972 for a 159.97-acre Native allotment (FF-16014) in Secs. 1, 2, 11, and 12, T. 6 N., R. 65 W., SM, on the left bank of the Little Kasigluk River. Evan Olick claimed winter use and occupancy for hunting and trapping since November 1935.[99] There is no mention in the Native allotment file as to how Evan Olick accessed his parcel.[100]

Other Natives Traveling on the Kasigluk River

The BLM's ANSCA files contain interviews with other Natives from Kwethluk who have traveled the Kasigluk River and its tributaries since 1959. Those interviewed do not have Native allotments along the Kasigluk River. They are related to or are friends of allotment holders along the river and have used the Kasigluk River for subsistence purposes over the years.

John Owen, a Realty Specialist with the Organized Village of Kwethluk, boated the Kasigluk for one week in September of 1996. The trip was for the purpose of moose hunting, and he took an 18-foot aluminum Lund boat with a 30-horsepower propeller motor. His load for the trip included two people along with all of their camping gear. The trip took them as far as Secs. 11, 13 and 14, T. 7 N., R. 65 W., SM (river mile 56). [101] (Attachment 25)

Richard Long, a Tribal Operations Specialist with the Organized Village of Kwethluk, boated the Kasigluk River in September 1996. He took an 18-foot Lund with a 40-horsepower propeller motor up the Kasigluk River to the Little Kasigluk "Y" in Sec. 24, T. 7 N., R. 65 W., SM (river mile 58.5). He told a BLM interviewer that he believed the river could support a boat carrying 1,000 pounds used for travel, but not for trade and commerce. [102] (Attachment 25)

Wassillie Evan of Kwethluk reported that he had taken a 20-foot aluminum boat with a 45-horsepower propeller motor up the Kasigluk River in September 1996. His load upriver consisted of three people and camping gear, and the return trip included carrying two moose and two black bear they had harvested. The trip took him as far as the "Y" at the Little Kasigluk in Sec. 24, T. 7 N., R. 65 W., SM (river mile 58.5). Evan stated that he believed someone with knowledge of the main river channel could take a boat loaded with 1,000 pounds to the junction of the Little Kasigluk River.[103] (Attachment 22)

Ray Guy also told a BLM interviewer that he has boated up the Kasigluk River to the junction with the Little Kasigluk River in Sec. 24, T. 7 N., R. 65 W., SM., to hunt (River Mile 58.5). [104] (Attachment 11)

Government Use and Studies of the Kasigluk River since 1959

State and federal employees began gathering data in the mid-1970s on the Kasigluk River, including traveling on the river by boat.

In June and August of 1975, employees of the Alaska Department of Fish and Game (ADF&G) boated the Kasigluk River in order to study fish species and sport fishing use in the Kuskokwim River drainage area.[105] They took a 24-foot aluminum riverboat with an outboard propeller motor. Their load included two or three biologists, sampling gear, fuel and camping gear.[106] (See Attachment 11) The biologists conducted their sampling

on the lower and middle portions of the river, traveling up to the junction with the Little Kasigluk River (river mile 58.5).[107]

Michael Coffing, of the Division of Subsistence of the ADF&G in Bethel, went up the Kasigluk River in June or July of 1996 with an 18-foot Hewescraft powered by a 40-horsepower propeller motor. His load was comprised of two people, himself, 54 gallons of gas, and a week's worth of camping gear. The extent of his travels took Coffing as far as Sec. 18, T. 8 N., R. 65 W., SM (river mile 40).[108] (Attachment 25)

Coffing provided a description of general use of the Kasigluk River in his 1991 report on subsistence in Kwethluk village. He described the Kasigluk River as one of several rivers in the Lower Kuskokwim River region that was used for the harvesting of fish and large game. Some residents of Kwethluk chose to establish their spring camps on the Kasigluk River in order to harvest whitefish, pike, waterfowl, and muskrats. Coffing also noted that local residents harvested salmon from the Kasigluk River using a rod and reel as opposed to nets. Moose and caribou were the two species of large game most commonly hunted by Kwethluk residents along the Kasigluk River. Coffing described how Natives would hunt for a short period of time, and return home at periodic intervals to restock or take care of personal matters before returning to the hunt. Caribou hunting for the area occurred at the headwaters of the Kwethluk, Akulikutak, Kasigluk, Kisaralik, Eek, and Aniak rivers. Coffing also noted that "Caribou are generally not available to hunters using boats along rivers which empty into the Kuskokwim River near Kwethluk, such as the Kwethluk, Kasigluk, or Kisaralik rivers," but hunters used boats to travel up river to access the foothills where they carried out their hunts on foot.[109]

Recreational and Commercial Rafting on the Kasigluk River

No information has been found regarding commercial or recreational rafting on the Kasigluk River. Mike Reardon of USF&WS in Bethel stated in 1997 that he had not issued any commercial or recreational permits for the Kasigluk River.[110] (Attachment 25)

VI. Summary

The BLM showed the Kasigluk River as pending determination of tidal influence in 1979 and 1982 from its mouth (river mile 0) upstream through Sec. 13, T. 8 N., R. 66 W., SM (river mile 39.5), in lands selected by the Kwethluk Corporation and the Kokarmiut Corporation of Akiak. In 1995, a BLM navigability specialist wrote that the lower Kasigluk River was not tidally influenced, but had been originally surveyed due to it being wider than 3 chains (198 feet). The BLM maps as recently as 2006 show the portions of the Kasigluk River within the Kwethluk and Kokarmiut corporations' selected lands to be pending determination of tidal influence.

The BLM determined portions of the Kasigluk River and a right bank tributary navigable in 1997 within four Native allotments: FF-17100 (river mile 3 of the Right Bank Tributary), FF-17062-B (River Mile 39.5), FF-16917 (river mile 41) and FF-16013-B (river mile 48). The BLM navigability determinations for these four Native allotments were based on the criterion of travel, trade and commerce for a boat capable of carrying 1,000 pounds. No other BLM determinations of navigability have been made for the rest of the Kasigluk River. The submerged lands adjacent to the Native village land selections and the Native allotments were meandered and segregated at the time of survey.

The Kasigluk River below river mile 68 has no whitewater or obstructions. Water levels range from 1 to 7 feet deep, and fluctuate during the open season with the highest levels occurring late in the season. Users have reported that power boats can travel as far upriver as river mile 68. An avulsive event that occurred in the early 1980s channels a small portion of the Kisaralik River during periods of seasonal high water into the Kasigluk River at river mile 32 through a Right Bank Tributary known as the *Chicoyuilnuk* River.

The BLM maps indicate that the Kasigluk River is pending determination of tidal influence from its mouth (river mile 0) upstream to river mile 39.5.

There are two major types of use of the Kasigluk River during the historic period up to the time of statehood. The first type of use prior to statehood involved Native people floating down the river after spring hunts using skin boats built of wood frames and covered with the hides of caribou, moose and bear. The headwaters of the Kasigluk River are in the core caribou, moose and bear hunting areas used by villagers from Kwethluk and Akiak.

The second type of use prior to statehood involved local Natives ascending the river in boats with outboard motors each year during spring, summer or fall for the purpose of accessing exclusive use areas (later identified as Native allotments), where resources were seasonally abundant. Native allotment files indicate that local Native people engaged in traditional subsistence activities--fishing, hunting and berry picking--at those sites since 1914. The file of only one of these Native allotees, Elizabeth Howard, specified that she used a boat in the spring and summer to reach her Native allotment on a Right Bank Tributary above river mile 39 of the Kasigluk River. The files of twelve other allotees indicate that they used their parcels as far up river as river mile 68 during the open season prior to statehood, but the files do not specify a means of access. During the two decades prior to statehood, the customary means of travel on rivers in the area by local Natives was a 16 to 20-foot wooden skiff with a propeller driven outboard motor.

There are two major types of use of the Kasigluk River since statehood. The first type of use since statehood involves Native people from Kwethluk, Akiak and Bethel traveling up the Kasigluk River in wooden or aluminum skiffs with outboard motors to use their Native allotments for subsistence fishing, hunting, and berry picking. The first example represents travel by Natives travelling up and down the river for subsistence purposes.

As in the case of pre-statehood use, only one Native allotment file--that of Elizabeth Howard--specified use of a boat in the spring and summer to reach her Native allotment on a Right Bank Tributary above river mile 39 of the Kasigluk River. The files of twelve other allotees indicate that they used their parcels as far up river as river mile 68 during the open season after statehood, but the files do not specify a means of access. During the period since 1959, the customary means of travel on rivers in the area by local Natives was a 16 to 20-foot wooden or aluminum skiff with a propeller driven outboard motor.

The second type of post-statehood use of the Kasigluk River consists of state officials who travelled the river in the 1970s and 1990s to conduct resource surveys along the river. A team of ADF&G biologists in a 24-foot aluminum river boat with an outboard propeller motor traveled up the Kasigluk River to river mile 58.5 in 1975 while studying fish species and sport fishing use. Another ADF&G employee traveled up the Kasigluk River in 1996 to river mile 40. He and two other people used an 18-foot Hewescraft boat powered by a 40-horsepower propeller motor.

There is no information about use of the Kasigluk River above river mile 68. There is little information available about the physical characteristics of the river above that point. Additional research could focus on the character of the upper portion of the river and whether it has been used by local Natives or other parties.

Endnotes

[1] Donald J. Orth, *Dictionary of Alaska Placenames*. Geological Survey Professional Paper 506. United States Geological Survey, Washington, D.C.: U.S. Government Printing Office, 1971, p. 499.
[2] Patrick C Beckley, Memorandum on Inland Navigable Waters, Akiak Selection Area, December 10, 1975, BLM files, FF-014824.
[3] Robert Sorensen, Letter to Ivan Ivan, Kokarmiut Corporation January 14, 1976, BLM files, FF-14824-A.
[4] Curtis V. McVee, Notice of Proposed Easement Recommendations for the Village of Akiak, May 17, 1977, BLM files, FF-014824-EE.
[5] C. Michael Brown, *Alaska's Kuskokwim River Region: A History*, Anchorage, AK: Bureau of Land Management State Office, 1985, p. 527.
[6] Judith A. Kammins, Decision: Lands Proper for Village Selection Approved for Interim Conveyance for Kwethluk Incorporated, March 7, 1979, BLM files, FF-014883-EE.
[7] Robert D. Arnold, Interim Conveyance for the Calista Corporation, July 12, 1979, BLM files, FF-014883-A.
[8] Fred E. Wolfe, Memorandum on Final Easements for Kokarmiut Corporation (Village of Akiak), June 22, 1982, BLM files, FF-014824-EE.
[9] Ann Johnson, Decision: Section 12(b) Application Rejected in Part; Lands Proper for Village Selection; Approved for Interim Conveyance or Patent, June 29, 1982, BLM files, FF-014824-EE.
[10] Robert D. Arnold, Interim Conveyance No. 610, December 29, 1982, BLM files, FF-014824-A.
[11] Wayne A. Boden, Memorandum on Navigable Waters in Group Survey No. 268 (Window 1836), May 8, 1989, BLM files, FF-014824.\

[12] Letter from C. Michael Brown to Michael B. Reardon, December 19, 1995, and Navigability Status Report for Bogus Creek, Tuluksak River, Little Kasigluk River, Kisaralik River, Akulikutak River, Kwethluk River, Eek River, and Gweek River in the Kuskokwim River Region, December 13, 1995, BLM files, 2628 (980).
[13] Laura Lagstrom, Navigability Report: Kasigluk River (Window 2700), November 4, 1997, copy in DNR/ML&W/PAAD Unit files, Kasigluk River file.
[14] Laura Lagstrom, Memorandum on Field Trip for Window 2700, November 4, 1997, BLM files, FF-14883-A.
[15] Native allotment certificate 50-2004-0113.
[16] Laura Lagstrom, Navigability Report: Right Bank Tributary of the Kasigluk River (mouth in Sec. 13, T. 8 N., R. 66 W., SM) and its Right Bank Tributary (mouth in Sec. 17., T. 8 N., R. 65W., SM) Window 2700, November 4, 1997, copy in DNR/ML&W/PAAD Unit files, Kasigluk River file.
[17] Native allotment certificate 50-2004-0113.
[18] Native allotment certificate 50-2001-0034.
[19] Gust C. Panos, Memorandum on Navigability Review for Waters in Window 2700, November 7, 1997, BLM files, FF-017100.
[20] Laura Lagstrom, Memorandum on Field Trip for Window 2029 Part 1, December 4, 1997, BLM files, FF-14824.
[21] Laura Lagstrom, Memorandum on Interviews for Selected Lands within Window 2029 Part 1, December 8, 1997, BLM files, FF-014824.
[22] Gust C. Panos, Memorandum on Navigability Review for Waters in Window 2029 Bethel (Group 284) Part 1, January 13, 1998, BLM files, FF-14824-EE.
[23] Letter from Jane Anvik, Director of the Alaska Division of Lands, to Gust C. Panos, Chief of the BLM Branch of mapping Sciences, RE: Survey Window 2700, June 3, 1998, copy in DNR/ML&W/PAAD Unit files, Kasigluk River file.
[24] Letter from Jane Anvik, Director of the Alaska Division of Lands, to Gust C. Panos, Chief of the BLM Branch of mapping Sciences, RE: Survey Window 2029/ICs 142, 213, 610, 633 and 675, June 3, 1998, copy in DNR/ML&W/PAAD Unit files, Kasigluk River file.
[25] Letter from Laghette Stabrizham for Gust Panos, Chief of BLM Branch of Mapping Services, to Jane Angvik, June 25, 1998, BLM files, 9600 (920); copy also in DNR/ML&W/PAAD Unit files, Kasigluk River file.
[26] Denny Benson, Notice: Proposed Easements and Request for Easement Nominations for Lands Selected and will be Conveyed to Kokarmuit Corporation for the Village of Akiak, October 3, 2005, BLM files, FF-014824.
[27] Krissell Crandall, Corrected Interim Conveyance Nos. 1935 and 1936, October 4, 2005, BLM files, FF-014824.
[28] Native allotment certificate 50-2006-0005.
[29] MTPs for Kasigluk River, October 4, 2006, BLM files.
[30] K.J. Mushovic, Final Easement memorandum for Lands to be Patented Kokarmuit Corporation for the Village of Akiak, January 25, 2006, BLM files, FF-014824.
[31] Roger Clay, *A Compilation of Hydrologic Data on the Kuskokwim Region*, Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys, Water Resources Section, Navigability Project, Anchorage, December 1983, pp. 193; and Kenneth T. Alt, *Inventory and Cataloging Western Alaska Waters*, Alaska Department of Fish and Game, Sport Fish Division, 1977, p. 31.
[32] Alt, *Inventory and Cataloging Western Alaska Waters*, pp. 31-32.
[33] Clay, *A Compilation of Hydrologic Data on the Kuskokwim Region*, p. 105.
[34] Laura Lagstrom, Navigability Report: Columbia Creek in Native Allotment AA-8966-B, attached to Memorandum on Interviews for selected lands within Window 2029 Part 1, December 8, 1997, p. 2, BLM files, FF-14883 (75.4).
[35] Lagstrom, Navigability Report: Right Bank Tributary of the Kasigluk River (mouth in Sec. 13, T. 8 N., R. 66 W., SM) and its right bank tributary (mouth in Sec. 17, T. 8 N., R. 66 W., SM), November 4, 1997, p. 2.
[36] Clay, *A Compilation of Hydrologic Data on the Kuskokwim Region*, p. 221.
[37] Alt, *Inventory and Cataloging Western Alaska Waters*, p. 32.

[38] Lagstrom, Memorandum on the Field Trip for Window 2700, November 4, 1997, pp. 2-3.
[39] Lagstrom, Navigability Report: Kasigluk River, Window 2700, November 4, 1997, p. 4.
[40] Alt, *Inventory and Cataloging Western Alaska Waters, p. 31*.
[41] Lagstrom, Navigability Report: Kasigluk River, Window 2700, p. 2.
[42] Laura Lagstrom, Memorandum on Interviews for selected lands on the Right Bank Tributary of the Kasigluk River whose mouth is located in Sec. 13., T. 8N., R. 66W., SM., and its Right Bank Tributary whose mouth is located in Sec. 17, T. 8N., R. 65W., SM., and for selected lands on the Kasigluk River, 10/30/1997, PAAD Files, Kasigluk River, p. 4-6
[43] Alt, *Inventory and Cataloging Western Alaska Waters*, p. 31.
[44] Harza Engineering Company, *Bethel Area Power Plan Feasibility Assessment*, Appendix B, December 1982.
[45] http://www.citytowninfo.com/places/alaska/bethel
[46] Alt, *Inventory and Cataloging Western Alaska Waters*, p. 31.
[47] Lagstrom, Filed Trip for window 2700, November 4, 1997, BLM files, FF-14883-A.
[48] James W. Vanstone, "Mainland Southwest Alaska Eskimo," in *Handbook of North American Indians, Volume V, Arctic*, David Damas, editor, Smithsonian Institute, Washington, D.C., 1984, pp. 227-229.
[49] Robert D. Shaw, *Cultural Resources Survey Preceding Construction of a Water and Sewer System in Kwethluk, Alaska*, a report done under contract to the Alaska Native Tribal Health Consortium, Anchorage, 2002, p. 10.
[50] Vanstone, "Mainland Southwest Alaska Eskimo," pp. 227-229.
[51] Steve Langdon and Rosita Worl, *Distribution and Exchange of Subsistence Resources in Alaska.* Alaska Department of Fish and Game Technical Paper Number 55, Arctic Environmental Information and Data Center, University of Alaska, Anchorage, 1981, pp. ii, 1.
[52] Vanstone, "Mainland Southwest Alaska Eskimo," p. 299.
[53] Vanstone, "Mainland Southwest Alaska Eskimo," p. 299.
[54] Langdon and Worl, *Distribution and Exchange of Subsistence Resources in Alaska.* pp. 28 and 96.
[55] Robert Ackerman, "Southwestern Alaska Archaeological Survey," *National Geographic Research Reports-1978 Projects*, Vol. 19, 67-94; Robert Ackerman, T*he Archaeology of the Central Kuskokwim Region*. A final Research Report to the National Geographic Society, Arctic Research Station, Laboratory of Anthropology, Washington State University, Pullman, 1981; Michael W. Coffing, *Kwethluk Subsistence: Contemporary Land Use Patterns, Wild Resource Harvest and Use, and the Subsistence Economy of a Lower Kuskokwim River Area Community*, Alaska Department of Fish and Game Division of Subsistence: Juneau, Alaska, December 1991, p. 156.
[56] John McDonald, "Alaskan River," KYUK Video Productions, Bethel Broadcasting, Inc., Bethel, 1983; John McDonald (of Bethel) to Rolfe Buzzell, E-mail, January 30, 2009.
[57] Ann Fienup-Riordan, *Yuungnaqpiallerput, The Way We Genuinely Live: Masterworks of Yup'ik Science and Survival*, University of Washington Press, Seattle, 2007, pp. 159-160.
[58] Ibid., p. 160.
[59] Ibid., pp. 160-161.
[60] Ibid., pp. 161-163.
[61] Ibid., pp. 163-164.
[62] Alfred Lake, Native allotment Application and Evidence of Occupancy, November 10, 1970, BLM files, FF-013205, National Archives and Records Administration (NARA), Anchorage.
[63] Wayne R. Dawson, Native allotment Field Report for the Native Allotment Application of Alfred Lake, April 11, 1974, BLM files, FF-013205, NARA/Anchorage.
[64] Frank Demantle, Native allotment Application and Evidence of Occupancy, March 16, 1972, BLM files, FF-015901, NARA/Anchorage.
[65] Wayne R. Dawson, Native allotment Field Report for the Native Allotment Application of Frank Demantle, April 11, 1975, BLM files, FF-015901, NARA/Anchorage.
[66] Frank Demantle, Statement of Witness: Native allotment Application, November 29, 1978, BLM files, FF-015901, NARA/Anchorage.
[67] Timothy Williams, Statement of Witness: Native allotment Application, December 4, 1978, BLM files, FF-015901, NARA/Anchorage.

[68] Henry W. Jackson, Native allotment Application and Evidence of Occupancy, March 27, 1972, BLM files, FF-016846, NARA/Anchorage.
[69] Clifford D. Ells, Native allotment Field Report for the Native allotment Application of Henry W. Jackson, January 1, 1975, BLM files, FF-016848, NARA/Anchorage.
[70] Albert Olick Sr., Native allotment Application and Evidence of Occupancy, April 5, 1974, BLM files, AA-008966, NARA/Anchorage.
[71] Donald T. McWilliams, Native allotment Field Report for the Native allotment Application of Alber Olick Sr., December 10, 1976, BLM files, AA-008966, NARA/Anchorage.
[72] Joseph Guy, Native allotment Application and Evidence of Occupancy, March 28 1972, BLM files, FF-017063, NARA/Anchorage.
[73] Clifford D. Ells, Native allotment Field Report for the Native allotment Application of Joseph Guy, January 1, 1975, BLM files, FF-017063, NARA/Anchorage.
[74] David Fisher, Native allotment Application and Evidence of Occupancy, March 30, 1972, BLM files, FF-017209, NARA/Anchorage.
[75] Jen Labay, Native allotment Field Report for the Native allotment Application of David Fisher, February 14, 1975, BLM files, FF-017209, NARA/Anchorage.
[76] Wilson Nicolai, Native allotment Application and Evidence of Occupancy, March 28, 1972, BLM files, FF-017101, NARA/Anchorage.
[77] Charles E. Drummond, Native allotment Field Report for the Native allotment Application of Wilson Nicolai, December 17, 1974, BLM files, FF-017101, NARA/Anchorage.
[78] Wilson Nicolai, Letter to the Realty Officer in the Bureau of Indian Affairs, April 23, 1975, BLM files, FF-017101, NARA/Anchorage.
[79] Betty J. Lockard, Note to Case File: FF-17101, FF-17100, August 4, 1998, BLM files, FF-17101, NARA/Anchorage.
[80] Karen J. Collie, Supplemental Land Report, June 17, 1998, BLM files, FF-17101, NARA/Anchorage.
[81] James Guy Sr., Native allotment Application and Evidence of Occupancy, March 28, 1972, BLM files, FF-017062, NARA/Anchorage.
[82] Charles E. Drummond, Native allotment Field Report for the Native allotment of James Guy Sr., December 9, 1974, BLM files, FF-017062, NARA/Anchorage.
[83] David K. Nicolai, Native allotment Application and Evidence of Occupancy, March 27, 1972, BLM files, FF-016917, NARA/Anchorage.
[84] Charles E. Drummond, Native allotment Field Report for the Native allotment of David K. Nicolai, December 9, 1974, BLM files, FF-016917, NARA/Anchorage.
[85] Karen Collie, Native allotment Field Report for the Native allotment of Elizabeth Howard, August 24, 1989, BLM files, FF-017018, NARA/Anchorage.
[86] Elizabeth A. Howard, Native allotment Application and Evidence of Occupancy, March 28, 1972, BLM files, FF-017018, NARA/Anchorage.
[87] *Ibid.*
[88] Charles E. Drummond, Native allotment Field Report for the Native allotment of Elizabeth Howard, December 17, 1974, BLM files, FF-017018, NARA/Anchorage.
[89] Karen Collie, Native allotment Field Report for the Native allotment of Elizabeth Howard, August 14, 1989, BLM files, FF-17018, NARA/Anchorage.
[90] William J. Nicolai, Native allotment Application and Evidence of Occupancy, March 28, 1972, BLM files, FF-017100, NARA/Anchorage.
[91] Betty J. Lockard, Note to Case Files: FF-17101, FF-17100, August 4, 1998, BLM files, FF-017101, NARA/Anchorage.
[92] Charles E. Drummond, Native allotment Field Report for the Native allotment of William J. Nicolai, November 27, 1974, BLM files, FF-017100, NARA/Anchorage.
[93] David I Jackson, Native allotment Application and Evidence of Occupancy, March 18, 1971, BLM files, FF-013556, NARA/Anchorage.
[94] Clifford D. Ells, Native allotment Field Report for the Native allotment of David I. Jackson, December 13, 1974, BLM files, FF-013556, NARA/Anchorage.
[95] Alexander A. Nicori Sr., Native allotment Application and Evidence of Occupancy, March 20, 1972, BLM files, FF-016013, NARA/Anchorage.

[96] Sarah C. Baker, Native allotment Field Report for the Native allotment of Alexander A. Nicori Sr., January 23, 1975, BLM files, FF-016013, NARA/Anchorage.
[97] Johnnie Michael, Native allotment Application and Evidence of Occupancy, March 20, 1972, BLM files, FF-016011, NARA/Anchorage.
[98] Sarah C. Baker, Native allotment Field Report for the Native Allotment of Johnnie Michael, January 23, 1975, BLM files, FF-016011, NARA/Anchorage.
[99] Evan Olick Sr., Native allotment Application and Evidence of Occupancy, March 20, 1972, BLM files, FF-016014, NARA/Anchorage.
[100] Sarah C. Baker, Native Allotment Field Report for the Native allotment of Evan Olick Sr., BLM files, FF-016014, NARA/Anchorage.
[101] Lagstrom, Memorandum on Interviews for selected lands on the Right Bank Tributary of the Kasigluk River whose mouth is located in Sec. 13., T. 8 N., R. 66W., SM., and its Right Bank Tributary whose mouth is located in Sec. 17, T. 8 N., R. 65 W., SM., and for selected lands on the Kasigluk River, pp. 4-6.
[102] *Ibid.*
[103] *Ibid.*
[104] Lagstrom, Navigability Report: Kasigluk River (Window 2700), November 4, 1997.
[105] Alt, *Inventory and Cataloging Western Alaska Waters*, pp. 31.
[106] Lagstrom, Navigability Report: Kasigluk River (Window 2700), November 4, 1997.
[107] Alt, *Inventory and Cataloging Western Alaska Waters*, pp. 31-32.
[108] Interview with Michael Coffing, in Lagstrom, Memorandum on Interviews for selected lands on the Right Bank of the Kasigluk River whose mouth is located in Sec. 13, T 8 N., R. 66 W., SM, and its Right Bank Tributary whole mouth is located in Sec. 17, T. 8 N., R. 65 W., SM, and for selected lands on the Kasigluk River, p. 5.
[109] Michael W. Coffing, *Kwethluk Subsistence*, pp. 32, 107, 146, 149 158, and 161.
[110] Interview with Mike Reardon of the Yukon Delta NWR, June 19, 1997, by Lagstrom, Memorandum on Interviews for selected lands on the Right Bank Tributary of the Kasigluk River whose mouth is located in Sec. 13., T. 8 N., R. 66 W., SM., and its Right Bank Tributary whose mouth is located in Sec. 17, T. 8 N., R. 65 W., SM., and for selected lands on the Kasigluk River, p. 5