United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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Department of Natural Resources
Division of Mining, Land & Water
FEB 20 2018
FEB 14 2018
Director's Office
Anchorage

In Reply Refer To:
2651 (LLAK9410)

Memorandum

To: AK Glennallen Field Office Manager (A020)

From: Jack Frost, Navigable Waters Specialist (AK9410) J. Frost

Subject: Reassessment of Navigability Reports Dated February 26, 2010 and August 20, 2010, for the Delta River System in the Tanana River Region, Alaska

Introduction

In the process of revising their 1983 Delta National Wild and Scenic River Management Plan, in 2010, the Glennallen Field Office (GFO) formally asked the Bureau of Land Management (BLM) Alaska State Office for a navigability finding for the water bodies within the Delta River National Wild and Scenic River (WSRS) Corridor. The BLM navigability section finalized a report for the GFO on Feb. 26, 2010, concluding that the Delta River from one-half mile north of Black Rapids upstream to its confluence with Phelan Creek to be non-navigable; Delta River from its confluence with Phelan Creek upstream to its confluence with Garrett Creek to be navigable;[1] and the remainder of the Delta River upstream from its confluence with Garrett Creek to and through Tangle Lakes, including Tangle River, to be non-navigable.

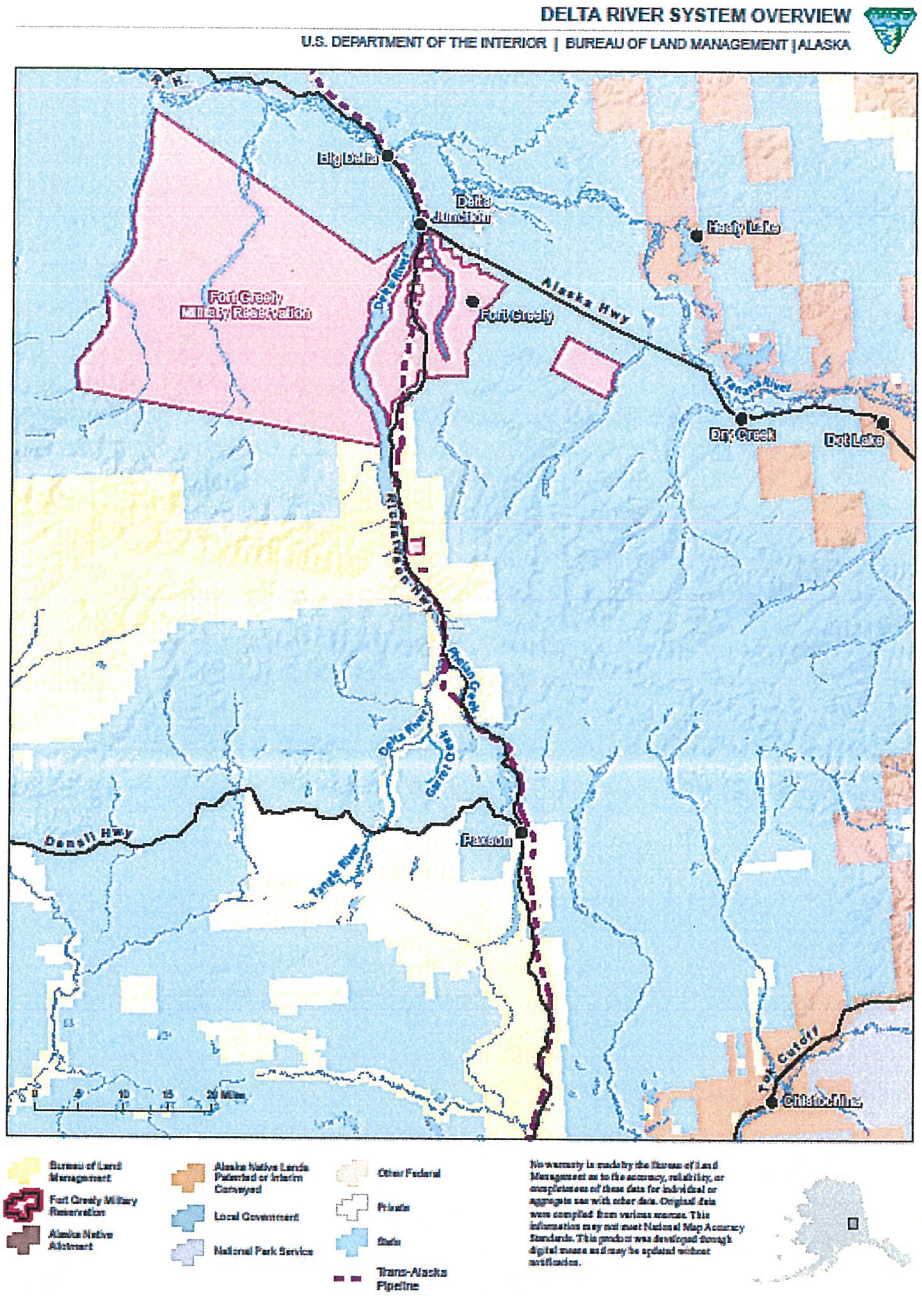
On May 13, 2010, the Anchorage District Office requested a second navigability finding for the remainder of the Delta River where the BLM manages the riparian lands not covered in the Feb. 26, 2010, report. Specifically, this report addressed the Delta River from one-half mile north of Black Rapids downstream to the southern boundary of Fort Greely Military Reservation. A

[1] The evidence for the navigable finding in this segment is explained in the BLM Feb. 26, 2010 "Delta River, Tangle River, and Tangle Lakes, National Wild and Scenic River Navigability Report." This report documented a large amount of post-statehood use by boats capable of carrying commercial loads. Prior to statehood, numerous miners, prospectors, and trappers are known to have used a variety of modes of travel and transportation, including foot, dog teams, and tractors on the west side of the Delta River. There is also evidence that they used boats on the Delta River. Even though this pre-statehood historical evidence of boat use is sparse, it strongly suggests that the miners, prospectors, and trappers used boats to transport freight, at least from Phelan Creek to Eureka Creek.

navigability report was completed on Aug. 20, 2010, finding that the Delta River in this segment was non-navigable.

In 2017, the BLM decided to review and gather new evidence relating to the Delta River System to update GFO's earlier request.[2] Because BLM already possessed a thorough historical record documenting the use of the Delta River System, it concluded that a field examination was necessary to fill informational gaps and complete the record of evidence necessary for a well-informed finding. Therefore, from Aug. 8-11, 2017, the BLM conducted a field examination of the Delta River System. The field report is an attachment to this document noting the physical characteristics of the Delta River System. Based on the evidence collected during the field examination and the available historical information, the BLM has decided to reconsider its past findings. Additionally, we are now able to conclude that the Delta River System is in its natural and ordinary condition today as it was on Jan. 3, 1959, the date of Alaska's statehood.

[2] This decision was made partly in response to new physical character evidence from the Aug. 8-11, 2017 fieldwork and a Notice of Intent to sue for quieting title to the submerged lands of the Delta River System, which had been filed by the State of Alaska in 2010. *See* Notice dated Dec. 14, 2010, from Elizabeth J. Barry, Chief Assistant Attorney General, to Ken Salazar, Secretary of the Interior, BLM records.



Segmentation

The Delta River System is a prime example where segmentation of a river system is appropriate, as explained in a Supreme Court ruling from *PPL Montana, LLC v Montana*.[3] The first segment of the Delta River System is located from the confluence of the Delta River with the Tanana River upstream on the Delta River to about Delta Junction or the northern boundary of Fort

[3] *PPL Montana, LLC v. Montana*, 132 S. Ct. 1215 (2012).

Greely. The second segment is from the southern boundary of Fort Greely upstream on the Delta River to the confluence of the Delta River with Phelan Creek. The third segment is from the confluence of the Delta River and Phelan Creek upstream on the Delta River to the confluence with Garrett Creek. The fourth segment is from the confluence of the Delta River and Garrett Creek upstream on the Delta River to the northern outlet of the Lower Tangle Lake. The fifth segment is from the northern outlet of Lower Tangle Lake to and through the Tangle Lakes and Tangle River system to its headwaters.[4] (See maps of the location for each of the five segments below.)

[4] The submerged lands of the Delta River within Fort Greely Military Reservation are not addressed in this finding.

DELTA RIVER SYSTEM SEGMENTS ONE AND TWO

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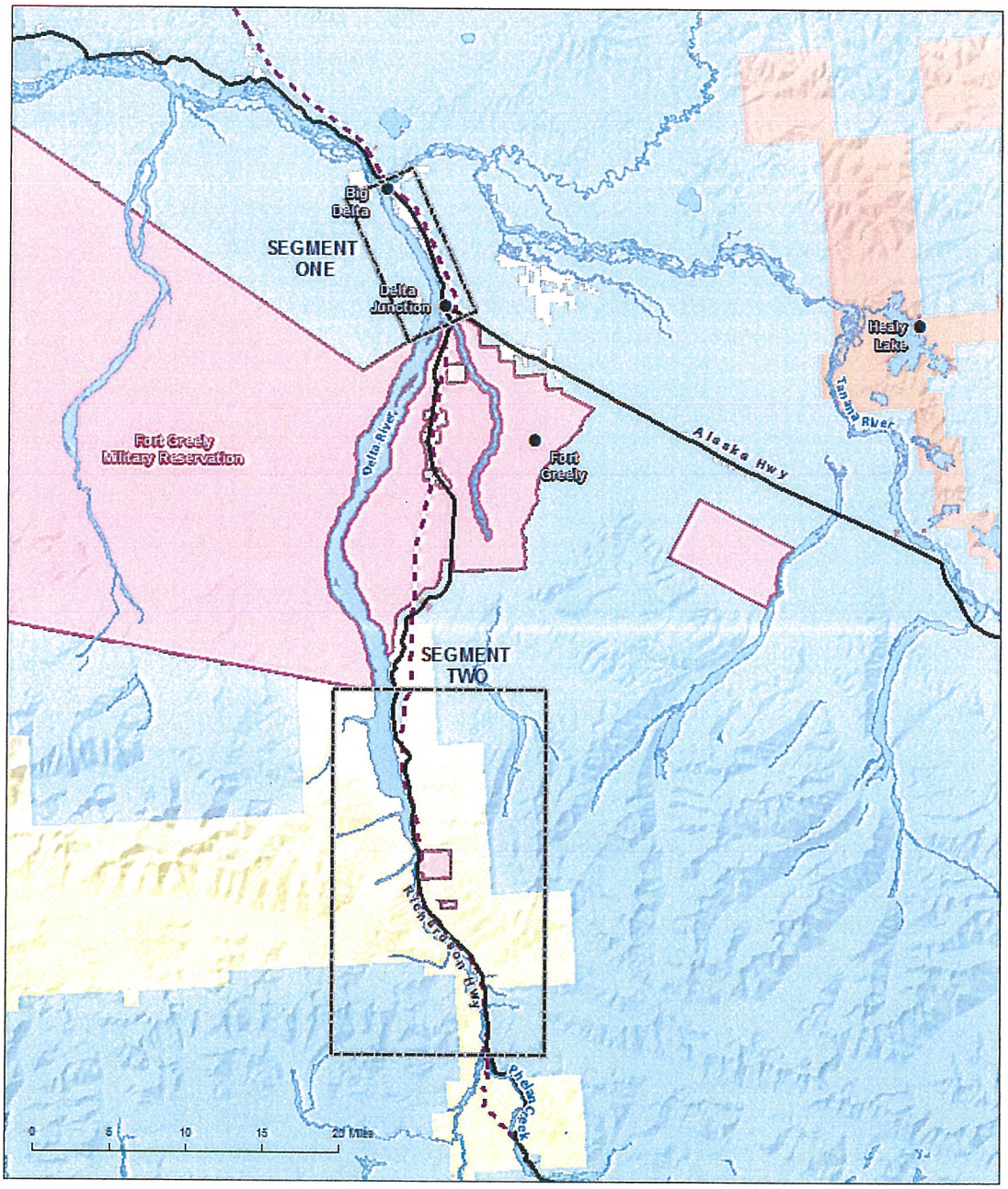

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DELTA RIVER SYSTEM SEGMENT THREE

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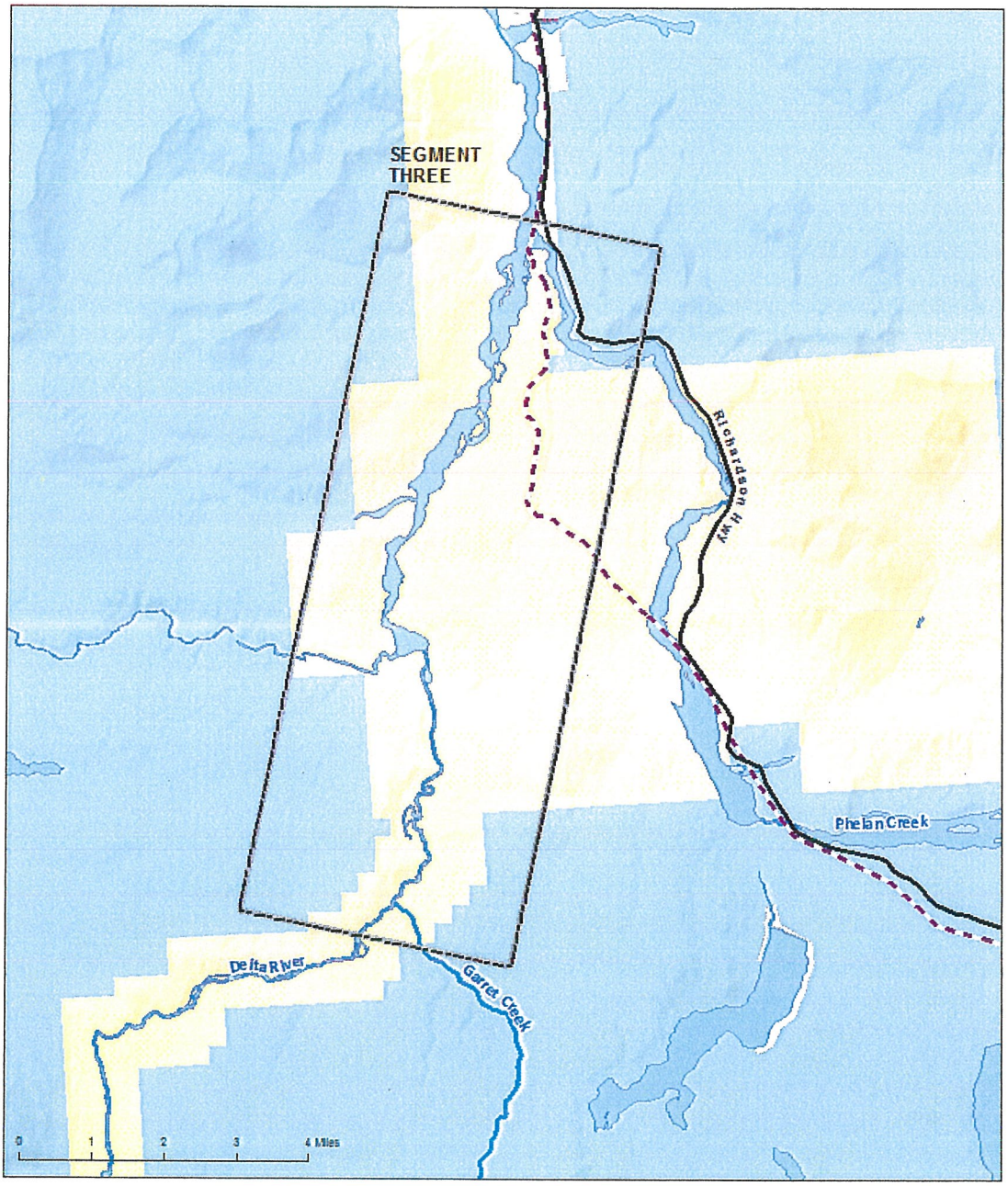

Bureau of Land Management

Fort Greely Military Reservation

Private

State

Trans-Alaska Pipeline

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DELTA RIVER SYSTEM SEGMENT FOUR

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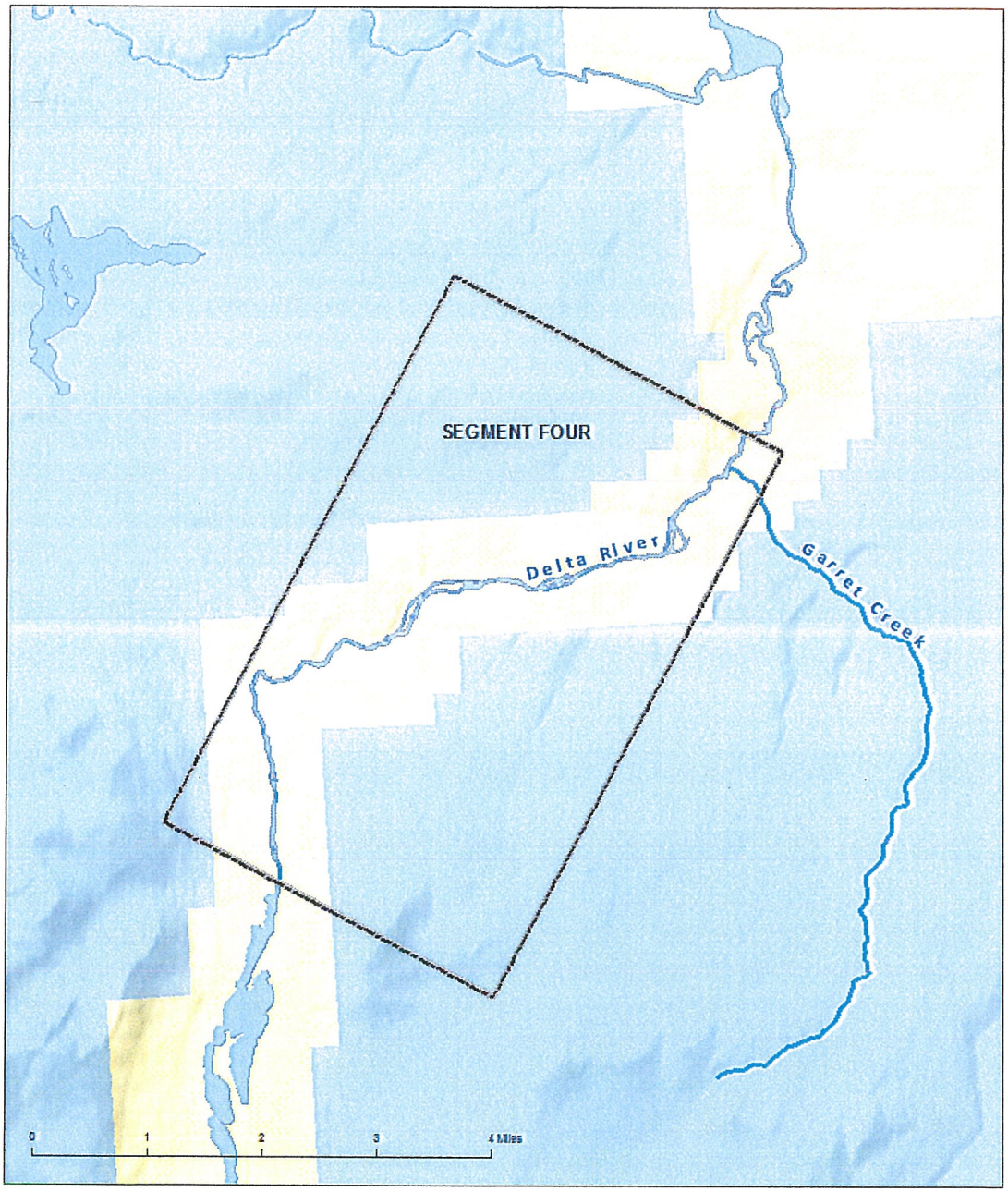

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State

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SEGMENT FIVE DELTA RIVER SYSTEM

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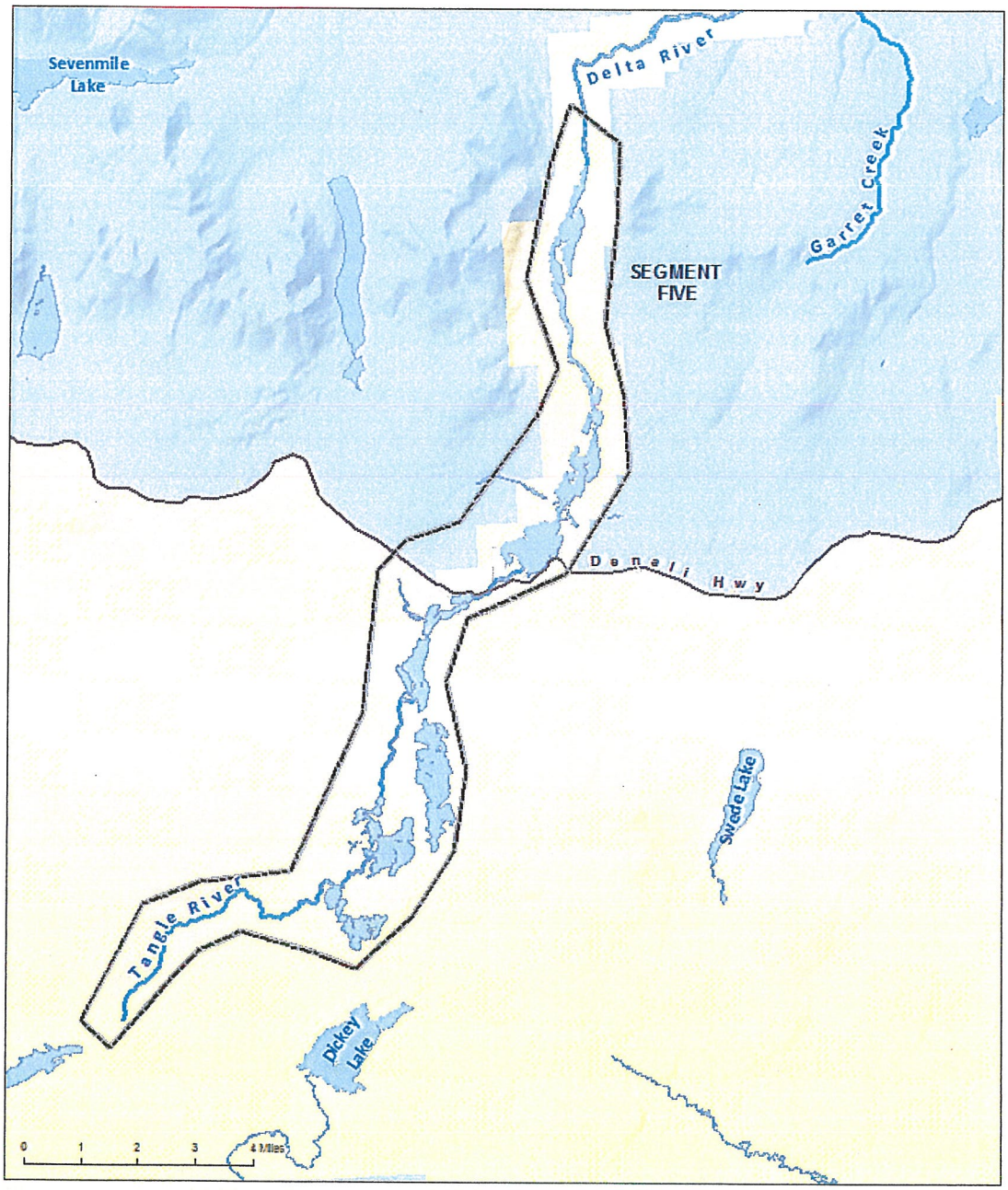

Bureau of Land Management

State

Private

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Land Status

The United States is the principal riparian landowner for the Delta River system. Over its course, the river flows through two major federal land withdrawals--the Delta River WSRS (Public Law 96-487) in its upper reaches and the Fort Greely Military Reservation (Public Law 106-65) in its lower reaches.

In 1980, with the passage of the Alaska National Interest Lands Conservation Act (ANILCA), Congress designated approximately thirty-eight miles of the Upper Delta River, in addition to the Tangle River and Tangle Lakes, for inclusion in the National WSRS. The Delta River WSRS System corridor encompasses approximately 37,000 acres of uplands. The Delta River from Lower Tangle Lake downstream to a point opposite of milepost 212 of the Richardson Highway, a distance of twenty miles, was "classified and designated" as a "wild river" under the Wild and Scenic Rivers Act.[5] The Delta River from milepost 212, located in section 24, township 18 north, range 10 east, Fairbanks Meridian, Alaska, of the Richardson Highway downstream to a point one-half mile north of Black Rapids, a distance of eighteen miles, was "classified and designated" as a "recreational river." The Tangle Lakes and Tangle River system, approximately twenty-four miles long, were not specifically classified.[6] In the original 1983 Delta River Management Plan, the BLM subsequently classified and managed the Tangle Lakes and Tangle River as a 'scenic' component of the National Wild and Scenic Rivers System.

The lands surrounding the Tangle Lakes are all within the WSRS boundaries and most lands remain in Federal ownership. The WSRS corridor specifically excludes patented lands located within its external boundaries.[7] These consist mostly of small tracts or trade and manufacturing sites along the Denali Highway and Round Tangle Lake.

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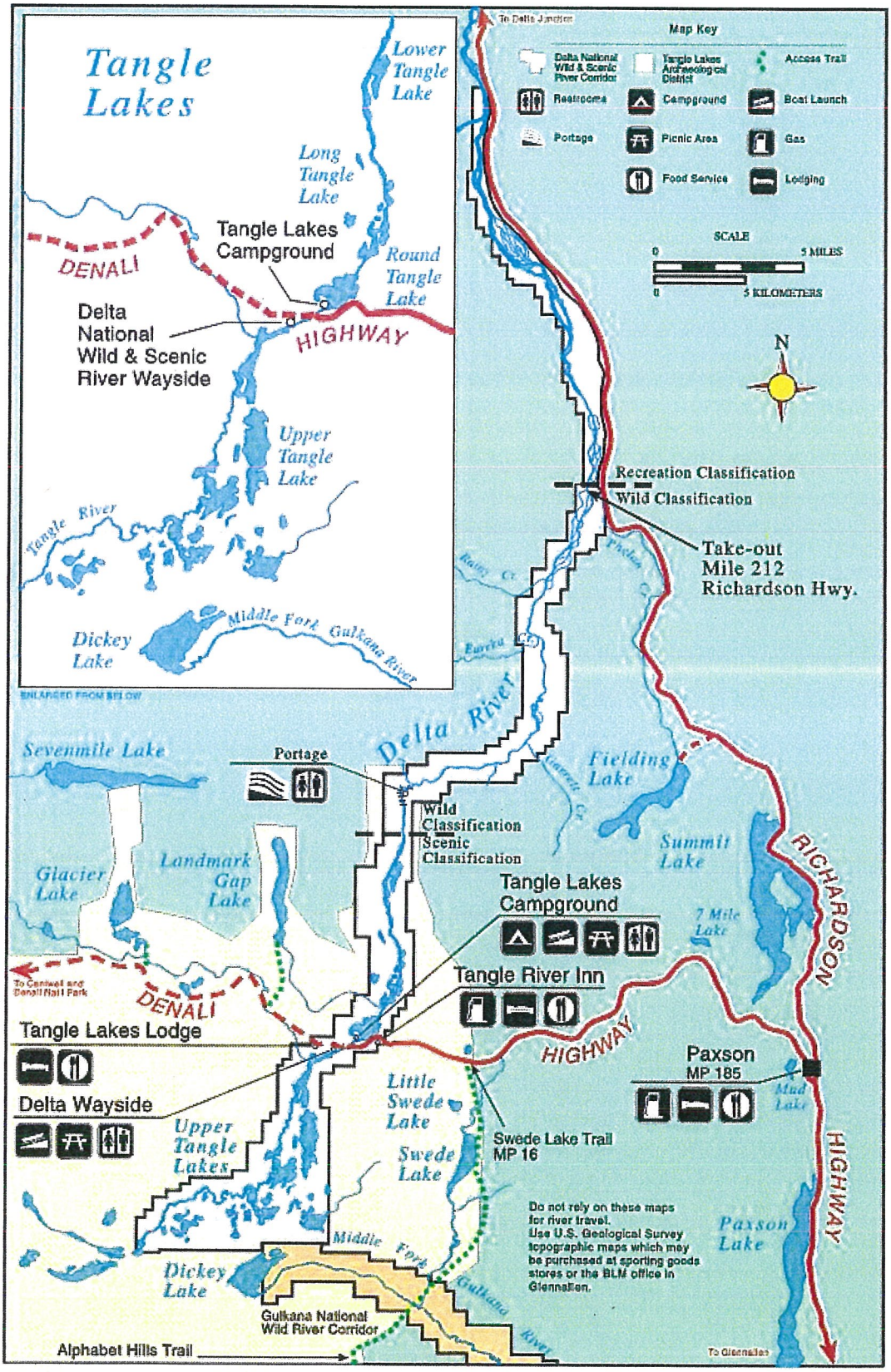
[5] Wild & Scenic Rivers Act, Public Law 90-542; 16 U.S.C 1271 et seq., Oct. 2, 1968.
[6] U.S., BLM 1994, 7.
[7] Patent Nos. 1223900, 1227361 (Round Tangle Lake), 1228443, 1231322 (Round Tangle Lake), 1231360, 50-65-0270 (Round Tangle Lake), 50-65-0295, 50-66-0204 (Round Tangle Lake), 50-66-0218 (Round Tangle Lake), and 50-67-0164, BLM Records, Alaska State Office, Anchorage (hereafter BLM records).



Map 1: Map of the Delta River Wild and Scenic Boundary

The Fort Greely Military Reservation encompasses the Lower Delta River in six townships: townships 11 to 14 south, range 9 east, Fairbanks Meridian, Alaska, and townships 11 and 12 south, range 10 east, Fairbanks Meridian, Alaska. Approximately twenty-four miles of the Delta River lies within the reservation, from river mile 18 to 42, just upstream of Big Delta. Originally known as the Army Arctic Test Center of Big Delta, the reservation was established in 1942. The first withdrawal of 14,900 acres was made on Dec. 15, 1944 pursuant to Public Land Order (PLO) No. 255. On Sept. 26, 1961, Congress expanded the reservation by over 572,000 acres through the passage of Public Law 87-327. On Nov. 6, 1986, Congress extended the withdrawal through Public Law 99-606, making the described area approximately 571,995 acres in size. Finally, on Oct. 5, 1999, Congress reauthorized the withdrawal for Fort Greely and the neighboring Yukon Range at Fort Wainwright for twenty-five years by the enactment of Public Law 106-65. The military reservation now covers approximately 640,000 acres.

Portions of the Delta River are also located within the Pipeline Utility Corridor (PLO No. 5150 of Dec. 28, 1971). The right-of-way for the Trans-Alaska oil pipeline runs along the river in townships 16, 17, and 18 south, range 10 east, Fairbanks Meridian, Alaska.[8] In 1973, by the Trans-Alaska Pipeline Authorization Act, Congress authorized an oil pipeline right-of-way. Lands up to fifty feet on either side of the centerline are included in the right-of-way.

The remainder of the riparian lands, mostly in the area of Big Delta and Delta Junction, are owned by the State of Alaska (State) and private parties. In the 1980s, the State received patents to most riparian lands along the lower reaches of the Delta River (townships 9 and 10 south, range 10 east, Fairbanks Meridian, Alaska).[9] In the early 1960s, the State also was granted only a relatively small amount of riparian land in section 8, township 9 south, range 10 east, Fairbanks Meridian, Alaska.[10] Other riparian lands in these townships were patented under the homestead laws in the 1950s.

Numerous homesteads, small tracts, and trade and manufacturing sites are clustered in the area of Big Delta and Delta Junction. A few trade and manufacturing sites are located along the Richardson Highway between Delta Junction and Paxson. Some, like Paxson and the Black Rapids Hunting Lodge, at Mile 228 Richardson, are the sites of historic roadhouses dating from the first decade of the twentieth century. Several trade and manufacturing sites and small tracts, dating from the 1950s and 1960s, are also located along the Denali Highway in the Tangle Lakes area.[11]

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[8] See file AA-5847, BLM records.
[9] See Patent Nos. 50-85-0140 and 50-86-0003, BLM records.
[10] See Patent No. 1234493, BLM records.
[11] Michael H. Schoder, DSD, Division of Cadastral Survey, to Gary Reimer, Anchorage District Manager, "Navigable Waters in the Delta River National Wild and Scenic River Corridor," Feb. 26, 2010, BLM records.

Past Navigability Findings

The BLM made its first administrative navigability finding for the Delta River in support of land conveyances to the State. In 1980, the agency found that the river is navigable near Delta Junction (township 10 south, range 10 east, Fairbanks Meridian, Alaska). A year later, it was found to be non-navigable in the adjacent downstream township (township 9 south, range 10 east, Fairbanks Meridian, Alaska), where it empties into the Tanana River. Both findings were incorporated into decisions to convey lands to the State.[12]

The BLM's various river management plans do not contain definite statements on the navigability of that portion of the Delta River in the WSRS, or more specifically, the question of who owns the lands underlying this reach of the river under title navigability law. The 1980 final management plan is virtually silent regarding the Tangle Lakes and Tangle River, but alludes to evidence of "past use" (which is not described) suggesting, "The Delta River may be determined to be navigable from section 3, township 20 south, range 10 east, Fairbanks Meridian, to an undetermined location downstream." The upstream point is several miles below the Delta River "Rapids." The 1983 plan contained statements to the effect that the Delta River system probably is not navigable under title navigability law. The revised plan of 1994 cites "preliminary findings" that the Tangle Lakes, Tangle River, and Delta River are not navigable.[13]

Other Federal Agencies

Applying commerce navigability standards (as opposed to title navigability standards, which the BLM applies), the U.S. Coast Guard (USCG) and the U.S. Army Corps of Engineers (USACE) have considered the navigability of the Delta River. These findings were made while investigating the proposed route of the Trans-Alaska Pipeline System (TAPS). In Oct. 1970, the USCG, Seventeenth District, concluded that the Delta River was non-navigable. So far, as is known, the agency continues to maintain this position.

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[12] John P. Cook, Land Report for Navigability Recommendations [T. 9 S., R. 10 E., FM], Oct. 22, 1982, and Elaine O. Wilde, decision, Aug. 20, 1985, file F-28921; and K. Leroy Cook, "Navigability Recommendations for Township 10 South, Range 10 E., F.M.," Dec. 27, 1979, Stanley H. Bronczyk, decision, May 17, 1984, file F-20453, BLM records. In 1984, the State requested the BLM's navigability section to re-examine its finding of non-navigability for township 9 south, range 10 east, Fairbanks Meridian, Alaska. The section declined because the riparian lands had already been conveyed out of federal ownership and, regardless of navigability, the State would not be charged for the submerged land acreage. See Dot Tideman, Realty Specialist, to File, Oct. 2, 1984, and C. Michael Brown, Chief, Navigability Section, to Rob Swanson, Alaska Division of Land and Water Management, Oct. 2, 1984, file F-28921, State selection files, BLM records.

[13] The BLM's plan was to develop, "if necessary," a cooperative management agreement with the State to manage the water bodies in the event that any of the lakes or the Delta River were determined to be navigable. BLM 1980, 10, 22, 33; and BLM 1994, 22.

On the other hand, the USACE has changed its position from "navigable" to "not navigable." In Sept. 1973, the USACE, Alaska District, considered the Delta River navigable from the Tanana River to at least the mouth of Phelan Creek (mile 64.9). It is not known on what evidence the USACE based this statement. However, in 1978, the USACE reversed its position, informing the BLM that "the Delta River is not considered a navigable stream by the Corps of Engineers, and therefore, work or structures in or affecting this river are not regulated by Section 10 of the River and Harbor Act of 1899."[14]

In reaching this conclusion, the USACE may have relied in part on the navigability investigations of its contractor, Grumman Ecosystems, Inc. In the early 1970s, Grumman studied numerous rivers, streams, and lakes on the TAPS route. After researching the Delta River's history and conducting field investigations, Grumman Ecosystems recommended to the USACE that the entire river be determined non-navigable. It was considered "not practically boatable" from its mouth at the Tanana River to the mouth of Eureka Creek (mile 71.7). While recognizing that the Upper Delta River was used as a canoe trail, Grumman concluded that the river "is not truly boatable, for upstream motorized transport would be nearly impossible at a low stage." The "potential for commercial shipment of freight [is] not probable," Grumman concluded.[15]

Physical Character

The Delta River-Tangle River system is approximately 110 miles long. The Tangle River, a headwater tributary of the Delta River, flows northerly twenty-four miles through a series of lakes known collectively as the Tangle Lakes to Lower Tangle Lake. From Lower Tangle Lake, the Delta River flows northerly eighty-six miles to empty into the Tanana River at its mile 318.

The river system lies in three topographic provinces. In the southern province, the Tangle Lakes are located in an alpine tundra environment of moraines, kettles, and rolling hills. The elevation of lakes in this area is approximately 3,000 feet. In the central province, the Delta River flows twenty-five miles through the Alaska Range, a stunning landscape of rugged mountains 7,000 to 10,000 feet high and deep glacial valleys. In the northern province, the river flows through the gravel lowlands of the Tanana Valley.[16]

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[14] Paul Chatari, Chief, Regulatory Functions Branch, Alaska District, Corps of Engineers, Anchorage, to Darryl L. Fish, Mar. 31, 1978, in BLM Apr. 1980.

[15] Grumman Ecosystems Corporation, 4-386, 387, 391, and 399. Delta River is not listed as navigable on the Coast Guard or Corps of Engineers' lists of navigable waters in Alaska.

[16] Barsdate and Alexander, 29; BLM 1980, 4. See also David Dapkus, Memo to Files, Nov. 12, 1975, Navigability Section files, BLM records.

Field Examination Data and Photographs

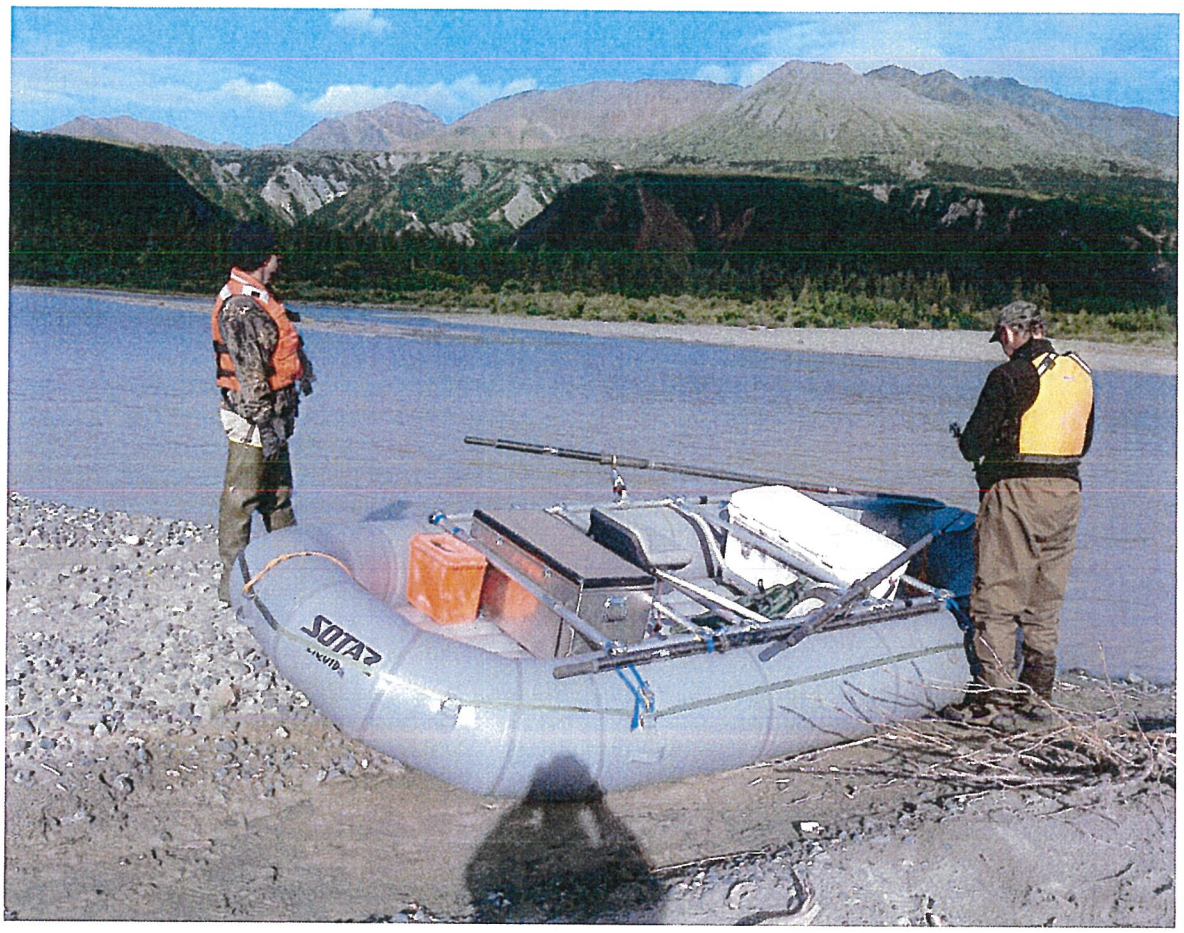

Figure 1: Mike Sondergaard (left) and Jack Frost (right) at the put in at Mile 212 of the Richardson Highway or near the confluence with Phelan Creek.

Delta River

The BLM employees Mike Sondergaard, Ralph Basner, and Jack Frost floated the Delta River on Aug. 10, 2017 in a 14' Sotar "Liquid" self-bailing raft (see Figure 1). The approximate weight of people and gear on board was in the 650-700 pounds range. The put-in site was mile 212 of the Richardson Highway (or near the confluence with Phelan Creek) or the usual take-out location for boaters floating downstream from the upper Delta River. At the put-in location, the depth at mid-channel was approximately 2.5 feet deep and the width was 435 feet wide with moderately fast moving water with riffles (see Figure 2). As we progressed downstream, the depth and widths varied but there was a continuous channel that averaged about three feet in depth for the entire 16-mile trip to our take-out near Camp Terry Creek (see Figures 3-5).[17]

[17] For a more complete account of our float on the Delta River, please refer to the "Delta River/Tangle River Field Trip, August 8-11, 2017" report, BLM records. A copy of this document is attached.

Figure 2: Delta River just downstream of Phelan Creek.

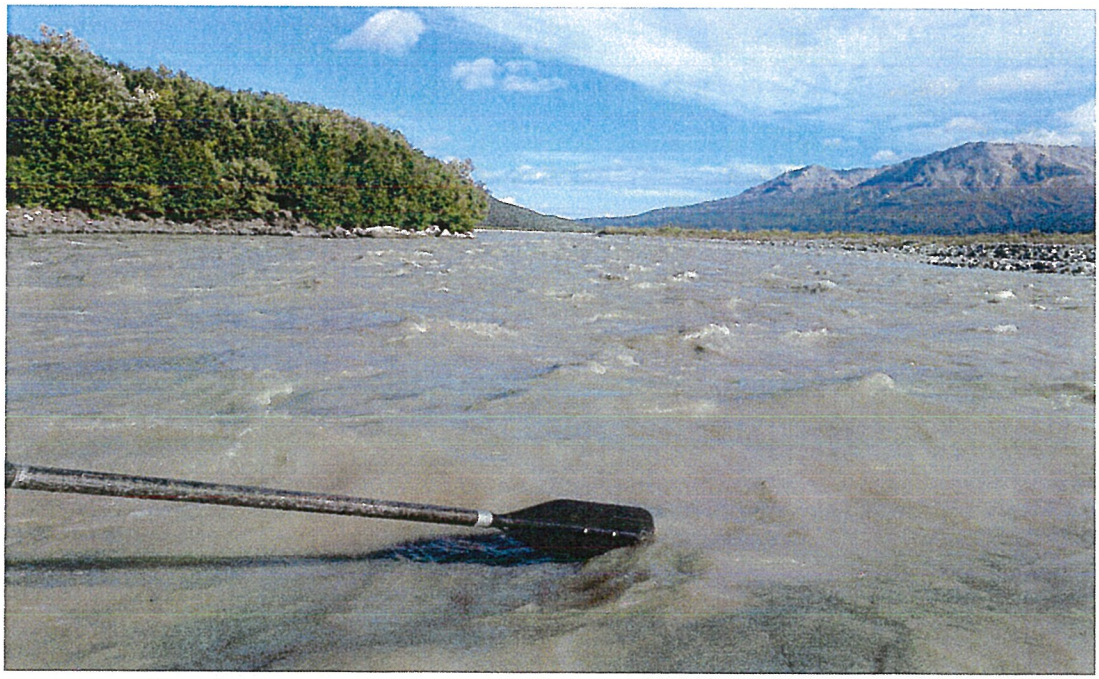

Figure 3: Increased flow from Millers Creek is noticeable just upstream of pump station 10.

Figure 4: Delta River looking downstream towards the upper end of the Black Rapids.

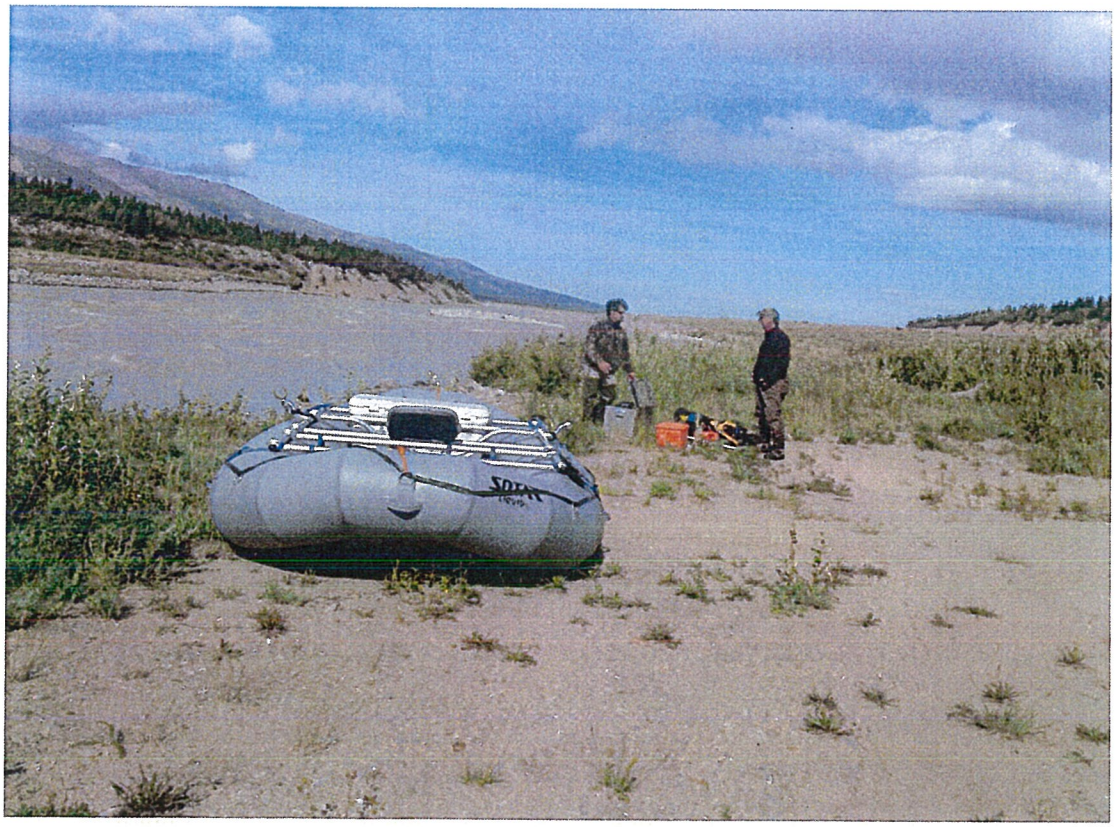

Figure 5: Take out on the Delta River near Camp Terry Creek.

Figure 6: Ralph Basner (left) and Kenny Steck (right) at the boat launch on Tangle Lake (south side of the Denali Highway).

Tangle Lakes and Tangle River

The BLM employees Kenny Steck, Ralph Basner, and Jack Frost canoed on Tangle Lake on Aug. 9, 2017. Kenny used a one-person canoe, Ralph and Jack a two-person canoe with minimal gear. We paddled the two-mile length of the weed-infested Tangle Lake to the mouth of the Tangle River. At this point, we had to abandon our canoes at the mouth and walk since the Tangle River was very shallow; approximately one-foot deep and 33 feet wide (see Figure 6). We continued walking upstream on the Tangle River and at about .2 miles; the river narrowed to about 15 feet wide and was still about one-foot deep. A short distance upstream from this location we were able to measure a depth just under two feet deep in a very narrow channel, about two to three feet wide, along a grass-lined bank (see Figure 7). At about one-half mile (from the mouth) the creek bottom had lots of cobble and small boulders. At about .6 miles, the creek widened to about 40 feet (in spots) with some channels approaching two feet in depth. Walking along the creek became a bushwhacking chore due to the dense willows, some over six feet high (see Figure 8). At .72 miles, the creek widened into a wide, marshy, almost lake-like body of water. We estimated the water depth to be in the range of one to two feet. At one point (at about the one-mile mark) the width was measured at 129 feet and marked by a slow, almost imperceptible current. The middle of the channel was recorded at 2 to 2.5 feet deep (see Figures 9-10). At about 1.2 miles (just upstream of the marshy stretch), the creek narrowed, became very shallow, and assumed a freestone bottom and faster current. Some exposed gravel bars were

apparent. Gravel and small cobble were predominate in this segment of the "river." Water depth measured from 6 inches to one-foot. Farther up the river, the depth was generally less than one-foot (see Figure 11). At approximate river mile 1.5 (the stream is 1.9 miles long) the depth appeared to average about one-foot. Above this point, we had every reason to believe that the remainder of the Tangle River, to just short of "Mud Lake", exhibited little change in character. The overall width was up to 75 feet wide. Google Earth photography shows a consistent width for the remaining .5 miles to Mud Lake. Dense brush made streamside travel increasingly difficult upstream to the unnamed lake known as Mud Lake (see Figures 12-13).[18] Finally, the BLM staff in the GFO stated that Mud Lake was an average of three feet deep and shallower near the inlet and the outlet of the lake with a consistent mud bottom.[19]

Figure 7: Ralph Basner at the mouth of the Tangle River flowing into the Tangle Lake.

[18] For a more complete account of our float on the Delta River, please refer to the "Delta River/Tangle River Field Trip, August 8-11, 2017" report, BLM records. A copy of this document is attached.

[19] Email correspondence from Jack Frost, BLM Navigable Waters Specialist to Kenneth Steck, BLM Recreation Technician, Nov. 7, 2017, BLM records.

Figure 8: Measurement of the Tangle River about .2 mile upstream of Tangle Lake. The depth was just under 2 feet and about 15 feet wide.

Figure 9: The Tangle River widens to about 40' and about two feet deep upstream of Tangle Lake.

Figure 10: The Tangle River upstream of Tangle Lake, in the marshy lake like section, is about is about .5 miles long and 2-2.5 feet deep as measured by Jack Frost.

Figure 11: The Tangle River widens into a marshy almost lake like character.

Figure 12: The Tangle River upstream of Tangle Lake at about mile 1.2, begins to narrow back down and become very shallow.

Figure 13: Tangle River upstream of Tangle Lake, at about mile 1.5 (looking upstream), the width is about 75', and is about one foot deep upstream towards Mud Lake (local name but unnamed on the USGS quadrangle map).

Figure 14: Measurement at about Mile 1.5, showing the Tangle River upstream of Tangle Lake, is about one foot deep.

State of Alaska Field Trip

Staff from the Alaska Department of Natural Resources, the Alaska Department of Law and two expert consultants participated in a field trip Aug. 21-23, 2017 on the Tangle and Delta rivers. In all, ten people with gear took part in the float trip using a 16-foot Aire Lion cataraft, a 15-foot Alaskan Outfitters self-bailing raft, and a 14-foot Sotar Elite paddle raft. The reported weight of each boat, gear, and people was 995 pounds in the cataraft, 1085 pounds in the self-bailing raft, and 1120 pounds in the paddle raft.

The state officials began their trip at Round Tangle Lake, and then proceeded to float downstream on the Tangle and Delta rivers to mile 212 of the Richardson Highway (river mile 71.5), the usual takeout location for most recreational floaters trying to avoid the notorious Black Rapids. At this location, the crew was reduced to eight people so that two of the crew could deal with the shuttling of the vehicles. The reported weight for each boat on this section was 595 pounds in the cataraft, 685 in the self-bailing raft, and 810 pounds in the paddle raft. From this point, the rafters floated the final 16-miles downstream on the Delta River through Black Rapids, to their take out at the U.S. Army Northern Warfare Training Center site at river mile 55.5.

The State's trip report documented several "stop and drag" events. These were defined as times when the 15-foot self-bailing raft (red raft) would contact the riverbed and stop its forward movement. At this point, one or more of the crew would need to exit the boat and help drag the boat over a rock or shallow gravel bar to continue floating downstream. The report documented

four events the first day. On day two, they encountered three more events before the Delta River Gorge, where they had to portage the boats, and three more events below the Delta River Gorge where they camped at the confluence with Eureka Creek. On day three, the field report did not document any "stop and drag" events.

The field trip report documents that the BLM operates two stream gages on the Delta River using real time telemetry where the information is sent to the NOAA River Forecast Center. The first gage is located above Garrett Creek (DELA2) and the second one is located downstream of the "take-out" below the Black Rapids. The State's report noted that they obtained preliminary stage data for DELA2 and the findings indicate that the stage level for the duration of their trip ranged from 3.38 to 3.45 ft. [20]

Roads and Trails

The Delta River System can be accessed by three highways, each built before Alaska's statehood. The Richardson Highway, Alaska's oldest highway, extending from Valdez to Fairbanks by way of Isabel Pass in the headwaters of the Delta River, follows much of the Delta River to the east. The Denali Highway, which intersects the Richardson Highway at Paxson, crosses the Delta River System at Tangle River and Round Tangle Lake. The Alaska Highway, linking Alaska with the continental states, intersects the Richardson Highway at Delta Junction, on the lower reaches of the Delta River.

There are three trails located at key spots on the Delta River System that allow boaters the ability to portage around falls or shallow areas that boats cannot be used or it is not safe to traverse. The first location is the falls and rapids section on the upper Delta River where canoers, rafters, and kayakers portage around the portion of the river that is not useable. The second trail is actually a road accessing the campground located at Round Tangle Lake for users to bypass a non-navigable section of the Tangle River between Round Tangle Lake and Tangle Lake on the south side of the Denali Highway. The third trail is located on the southern end of Tangle Lake (first lake south of the Denali Highway) where a short (less than 1,000 feet long according to Google Earth distance tool) well established trail connects Tangle Lake to Upper Tangle Lake.

Criteria

The Federal test of navigability is found in *The Daniel Ball*, 77 U.S. (10 Wall.) 557 (1870). There, the U.S. Supreme Court stated: "Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water."

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[20] Kristin Hess, Division Operations Manager, Division of Mining, Land and Water, Alaska Department of Natural Resources, via email to Katherine Van Massenhove, BLM, Acting Branch Chief Lands & Realty, "Delta River Float Trip Field Report - August 21-23,2017," BLM records, Jan. 16, 2018. This report is attached to this document.

In assessing the navigability of inland water bodies, the BLM relies upon this test as well as Federal statutes, Federal case law, and the advice of the Department of the Interior's Office of the Solicitor. Relevant Federal statutes include the Submerged Lands Act of 1953 and the Submerged Lands Act of 1988. The Supreme Court's most recent decision on title navigability, *PPL Montana, LLC v. Montana*, 132 S. Ct. 1215 (2012), summarizes and explains the proper interpretation of *The Daniel Ball* criteria. Additional guidance is provided in *Alaska v. Ahtna, Inc.*, 891 F.2d 1401 (9th Cir. 1989), *cert. denied,* 495 U.S. 919 (1990) [Gulkana River]; *Alaska v. United States,* 754 F.2d 851 (9th Cir. 1983), *cert denied,* 474 U.S. 968 (1985) [Slopbucket Lake]; and *Appeal of Doyon, Ltd.*, Alaska Native Claims Appeal Board RLS 76-2, 86 I.D. 692 (1979) [Kandik and Nation Rivers].

In cases concerning pre-statehood reservations, BLM uses the established criteria set out and applied in Alaska cases including *Alaska v. United States,* 545 U.S. 75 (2005) (*"Glacier Bay"*); *United States v. Alaska*, 521 U.S. 1 (1997) (*"Arctic Coast/Dinkum Sands"*); *Utah Division of Lands v. United States,* 482 U.S. 193 (1987) (Utah Lake); *Alaska v. United States*, No. 98-35310 (9th Cir. 2000) [Kukpowruk River]; *Alaska v. United States*, 102 IBLA 357 (1988) (Katalla River); and *United States v. Alaska*, 423 F.2d 764, 1 ERC 1195, (9th Cir. Dec. 21, 1970) (Tustumena Lake).

Conclusion

The conclusions reached in the navigability report dated Aug. 20, 2010 and most of those in the report dated Feb. 26, 2010 must be overturned based on new physical evidence collected during BLM's field examination on Aug. 8-11, 2017 and the State of Alaska's field examination on Aug. 21-23, 2017. Nevertheless, this report incorporates factual and historical information from the report dated Feb. 26, 2010 that is relevant to the issue of the navigability of the five segments of the Delta River System.

We conclude that the first segment of the Delta River System from the confluence with the Tanana River upstream on the Delta River to about Delta Junction or the northern boundary of Fort Greely does not require a navigability finding since the State is the riparian owner of the uplands. The State owns the submerged lands in this segment.

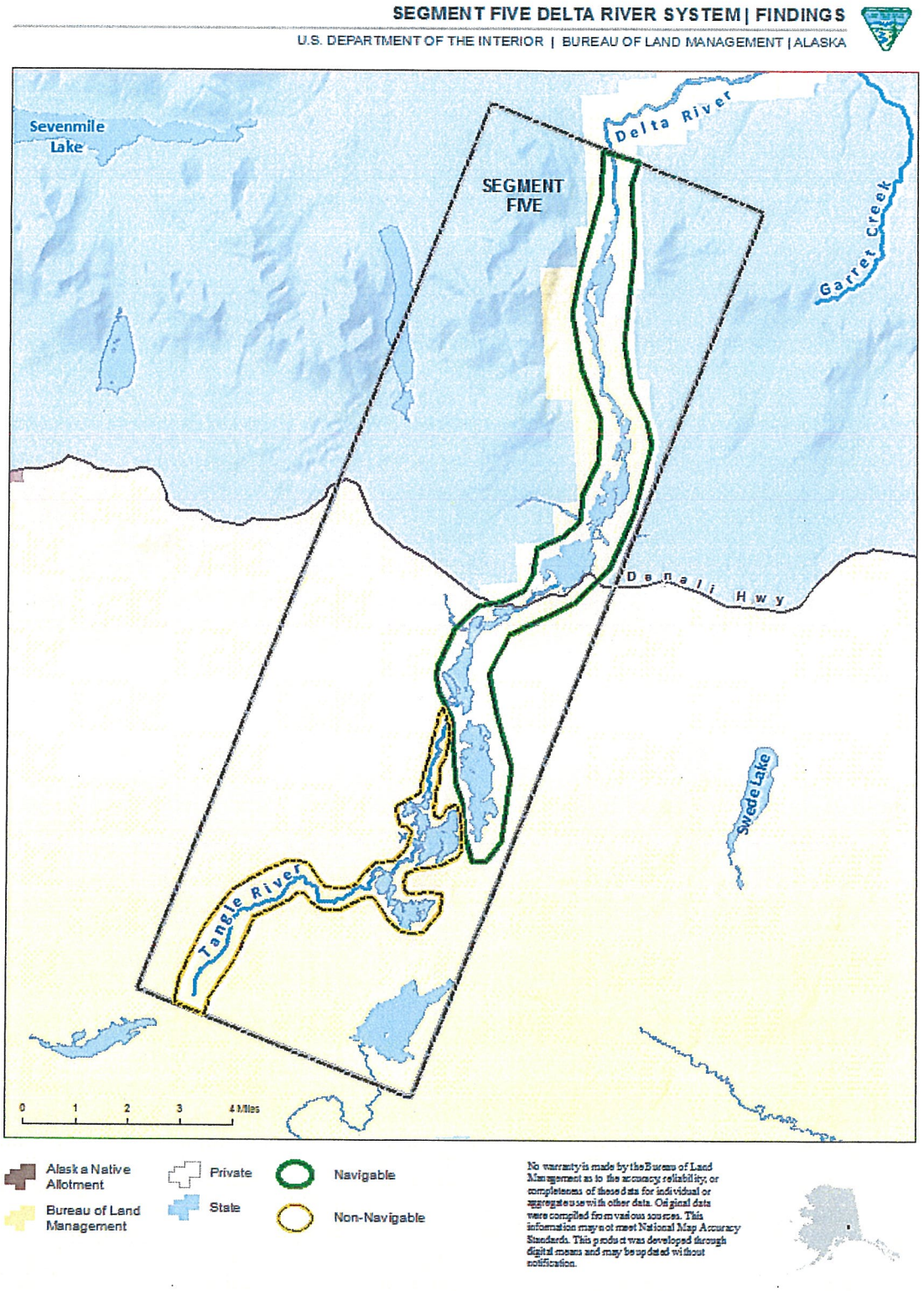
We conclude that the second segment of the Delta River System or the submerged lands from the southern boundary of Fort Greely, upstream on the Delta River, to the confluence of the Delta River with Phelan Creek, is navigable based on the river's susceptibility to travel, trade, and commerce at the time of statehood. The physical character of this segment on average is that the river channel is continuous in nature and averages at least three feet deep. Boats common at the time of statehood 18-24 feet long with motors carrying a load of at least 1,000 pounds could have been used here for commercial purposes. Additionally, this segment of the river is adjacent to the Richardson Highway (a pre-statehood highway), which presented boaters easy access to the Delta River.

We affirm the third segment of the Delta River System, or the submerged lands from the confluence of the Delta River and Phelan Creek, upstream on the Delta River to the confluence

with Garrett Creek, is navigable based upon the findings in the BLM Feb. 26, 2010 report. This report documented a large amount of post-statehood use by boats capable of carrying commercial loads. Prior to statehood, numerous miners, prospectors, and trappers are known to have used a variety of modes of travel and transportation, including foot, dog teams, and tractors on the west side of the Delta River. There is also evidence that they used boats on the Delta River. Even though this pre-statehood historical evidence of boat use is sparse, it strongly suggests that the miners, prospectors, and trappers used boats to transport freight, at least from Phelan Creek to Eureka Creek.

We conclude that the fourth segment of the Delta River System, or the submerged lands from the confluence of the Delta River and Garrett Creek, upstream on the Delta River to the northern outlet of the Lower Tangle Lake, is navigable based on the susceptibility to travel, trade, and commerce at the time of statehood. This segment is accessed by a pre-statehood road, the Denali Highway, allowing users the ability to access the upper river easily. In addition, the portage around the unusable section of the falls and rapids is of such a short duration that it does not defeat the river's overall navigability.

We conclude that a portion of the fifth segment of the Delta River System, or the submerged lands from the northern outlet of Lower Tangle Lake, upstream through Round Tangle Lake to Tangle Lake and Upper Tangle Lake, is navigable based on the susceptibility to travel, trade, and commerce at statehood (see Map 2 below). This segment is accessed by a pre-statehood road, the Denali Highway, allowing users the ability to access this part of the segment easily and a well-established trail between Tangle Lake and Upper Tangle Lake. The physical characteristics of the water bodies in this section, excluding the Tangle River, are such that they would have been able to accommodate boats commonly used for commercial purposes at the time of statehood, including those that were 18-24 feet long with motors carrying a load of at least 1,000 pounds. In addition, the section of the unusable Tangle River is of such a short duration, and has access to a pre-statehood road to portage around; that it does not defeat the water bodies overall navigability.



Map 2: Navigability Findings for Segment 5

The remainder of the Delta River System water bodies in the fifth segment from the confluence of Upper Tangle Lake and Tangle River upstream (including the unnamed lake commonly referred to as Mud Lake) to its headwaters is non-navigable (see Map 2 above). The Tangle River in this section is about two miles long, with cobble and gravel, mostly narrow, and it is extremely shallow, about one-foot deep, for most of its length. There is a short section at mile .72-1.2 where the Tangle River widens and becomes similar to a lake. The river in this section averages about 2-2.5 feet deep. However, upstream of this section the Tangle River narrows again and maintains a depth of about one-foot upstream to Mud Lake. The only craft that could have been used at the time of statehood, mostly by lining or portaging, on the Tangle River would have been very small unladen boats and canoes. Therefore, this segment was not and could not be used for commercial purposes at the time of statehood, nor could it be made commercially useful through reliance on portaging.

Attachments
Delta River/Tangle River Field Trip, August 8-11, 2017
Delta River Float Trip Field Report, August 21-23, 2017

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Delta River/Tangle River Field Trip, August 8 – 11, 2017

(Transcribed from Field Notes)

Participants:

Tangle River – Kenny Steck (Outdoor Recreation Technician, Glennallen Field Office); Jack Frost (Navigable Waters Specialist, Alaska State Office); and Ralph Basner (Navigable Waters Specialist, Alaska State Office)

Delta River – Mike Sondergaard, Hydrologist, Glennallen Field Office); Jack Frost (Navigable Waters Specialist, Alaska State Office); and Ralph Basner (Navigable Waters Specialist, Alaska State Office)

August 8:

9:45 AM – Frost arrived at Basner's Palmer residence.

10:00 AM – Departure for Glennallen (mostly sunny, 65 degrees)

12:30 PM – Arrive Glennallen (lunch)

1:15 – Checked in to Glennallen Field Office. Met with Kenny Steck, Outdoor Recreation Technician (907 822 7314, cell: 907 231 6945) who would be our "guide" for the Tangle River portion of the trip. Steck planned to meet us at the Delta River/Tangle Lakes boat Launch at 9:00 AM, August 9 with two canoes. He also outfitted us with proper fitting life jackets.

2:30 PM – Left Glennallen for Denali Hwy, and 10-Mile Cabin (BLM). We made stops at the lower bridge where the Gulkana River crosses and at the boat launch at Sourdough Campground to look at the character of the Gulkana River and discuss the importance of the Ninth Circuit court case in the late 1980's.

4:30 PM – Arrive BLM's 10-Mile Cabin (appropriately situated at Mile-10, Denali Hwy). The weather was warm and sunny.

August 9 (Tangle River):

8:45 AM – Arrive at Boat Launch on Tangle Lake.

9:00 AM – Steck arrived at the boat launch with two canoes. At 9:30 AM, we were underway for the 2-mile paddle down the lower Tangle Lake to the mouth of (upper) Tangle River. The larger canoe was crewed by Frost and Basner while Steck paddled the smaller one. The weather was mostly clear and warm (upper 60s).

Figure 1: Ralph Basner (left) and Kenny Steck (right) at the boat launch on Tangle Lake (south side of the Denali Highway).

10:20 AM – After paddling the length of the weed-infested lake (approximately 2 miles) we arrived at mouth of Tangle River, a marshy maze comprised of two smaller channels that meet with the southwest end of (lower) Tangle Lake. Following Steck's recommendation, we opted to ascend into the creek via the southerly channel. The channel is very shallow and, at one point, required dragging the canoes over a beaver dam. Once upstream of the beaver dam the creek narrows considerably into a flowing, freestone single-channel body of water. It quickly became obvious that we would have to beach the canoes and continue our inspection of Tangle River on foot. The depth of the creek (here) barely exceeded one-foot. The width (according to Frost's range finder) was 33 feet.

Figure 2: Ralph Basner at the mouth of the Tangle River flowing into the Tangle Lake.

Barely .2 miles upstream, the creek narrowed to (approx.) 15-feet wide and averaged approximately one-foot deep. A short distance farther up this 15-foot wide creek showed a depth just under two feet, in a narrow channel, about two to three feet wide, along the grass lined southern bank. Many grayling (some 14" or greater) were observed in certain stretches of the creek's clear flowing waters.

Figure 3: Measurement of the Tangle River about .2 mile upstream. The depth was just under 2 feet.

At about one-half mile (from the mouth) the creek bottom had lots of cobble and small boulders. At about .6 miles, the creek widened to about 40 feet (in spots) with some channels approaching two feet in depth. Walking along the creek became a bushwhacking chore due to the dense willows, some over six feet high.

Figure 4: The Tangle River widens to about 40'.

At .72 miles, the creek widened into a wide, marshy, almost lake-like body of water. We estimated the water depth to be in the range of one to two feet. At one point (at about the one-mile mark) the width was measured at 129 feet and marked by a slow, almost indecipherable current. The middle of the channel was recorded at 2 to 2.5 feet deep.

Figure 5: The Tangle River widens into a marshy almost lake like character.

Figure 6: The Tangle River in the marshy lake like section is about 2-2.5 feet deep as measured by Jack Frost.

At about 1.2 miles (just upstream of the marshy stretch), the creek narrowed and assumed a freestone bottom and faster current. Some exposed gravel bars were apparent. Gravel and small cobble predominate in this segment of the "river." Water depth measured from 6 inches to one-foot. Further, up the river, the depth was generally less than one-foot.

Figure 7: The Tangle River at about mile 1.2 begins to narrow back down and become very shallow.

At approximate river mile 1.5 (the stream is 1.9 miles long) the depth appeared to average about one-foot. Above this point, we had every reason to believe that the remainder of the Tangle River to just short of "Mud Lake" exhibited little change in character. The overall width was up to 75 feet wide. Google Earth photography shows a consistent width for the remaining .5 miles to Mud Lake. Dense brush made streamside travel increasingly difficult to Mud Lake. It was at this point that the three of us agreed that it would serve little purpose to continue-on upstream.

Figure 8: Tangle River at about mile 1.5 (looking upstream) is about one foot deep upstream towards Mud Lake.

Figure 9: Measurement at about Mile 1.5 showing the Tangle River to be about one foot deep.

From this point, we decided to turn around and return to the river mouth where our canoes were pulled-up on the bank. We arrived at this location at 2:30 under a hot blazing sun (at least for Denali highway standards). We arrived at the boat launch at 3:30 PM. After helping Steck load up the canoes, Frost and Basner proceeded to walk/drive most of the lower Tangle River (between lower Tangle Lake at the boat launch and the BLM campground at Round Tangle Lake). We took several photos and depth measurements. Average recorded depth was between 1 and 1.5 feet. The river was generally braided and shallow with width measured up to 187 feet (62.4 yards, according to Frost's rangefinder). Many stretches were no more than 6 inches to 12 inches deep.

Figure 10: Two young anglers just downstream of the boat launch on Tangle Lake. Tangle River is about 1-1.5 feet deep here.

Figure 11: View of the Tangle River just upstream of the bridge on the Denali Highway. River is shallow and rocky.

Figure 12: View of the Tangle River near the campground at Round Tangle Lake. River is very shallow and rocky.

Figure 13: Tangle River looking downstream as it approaches Round Tangle Lake. River is very shallow and rocky.

August 10 (Delta River)

We spent the previous night (again) at "10-Mile" cabin. Awoke at 6:30 AM and met GFO's Mike Sondergaard, Hydrologist at 7:30 at the Denali Hwy. – Richardson Hwy. intersection. Sondergaard had a 14-foot Sotar "Liquid" self-bailing inflatable raft in tow.

8:15 AM – Basner was dropped off and remained with the raft, at the mouth of Phelan Creek, situated at mile 212 of the Richardson Hwy. Frost and Sondergaard continued up the Richardson Hwy. to a point just below "Black Rapids" to spot the BLM truck and trailer at our "take out" point (approximately 16 river miles downstream from the mouth of Phelan Creek).

Figure 14: Mike Sondergaard (left) and Jack Frost (right) at the put in at Phelan Creek.

8:50 AM – Frost and Sondergaard returned to our "put in" point to re-join Basner at Phelan Creek.

9:15 AM – After preparation and gear sorting our rafting party pushed off to begin the float. The weather was slightly overcast but held promise of greater sunlight and warming temperatures. The river at the put in was approximately 2.5 feet deep (at mid-channel) and approximately 145 yards (435 feet) wide. At this point, the river was mostly comprised of riffles and moderately fast moving water.

Figure 15: Delta River just downstream of Phelan Creek.

100 yards downstream (all measurements noted in this report are from the put-in), the measuring stick showed three feet (deep). The river was approximately 100 yards wide at this point.

At approximately ½ mile, measured depth was at 4 feet.

At approximately 1 mile, measured depth was at 4 feet.

At approximately 2.5 mile, measured depth was at 2 feet.

Figure 16: Looking downstream on Delta River near the confluence with Ann Creek.

At approximately river mile 4, or the confluence of Millers Creek, measured depth was at 4 feet. Estimated 80 yards (240 feet) wide at this point. A noticeable increase of flow velocity was observed.

Figure 17: Stop just upstream of the confluence with Millers Creek.

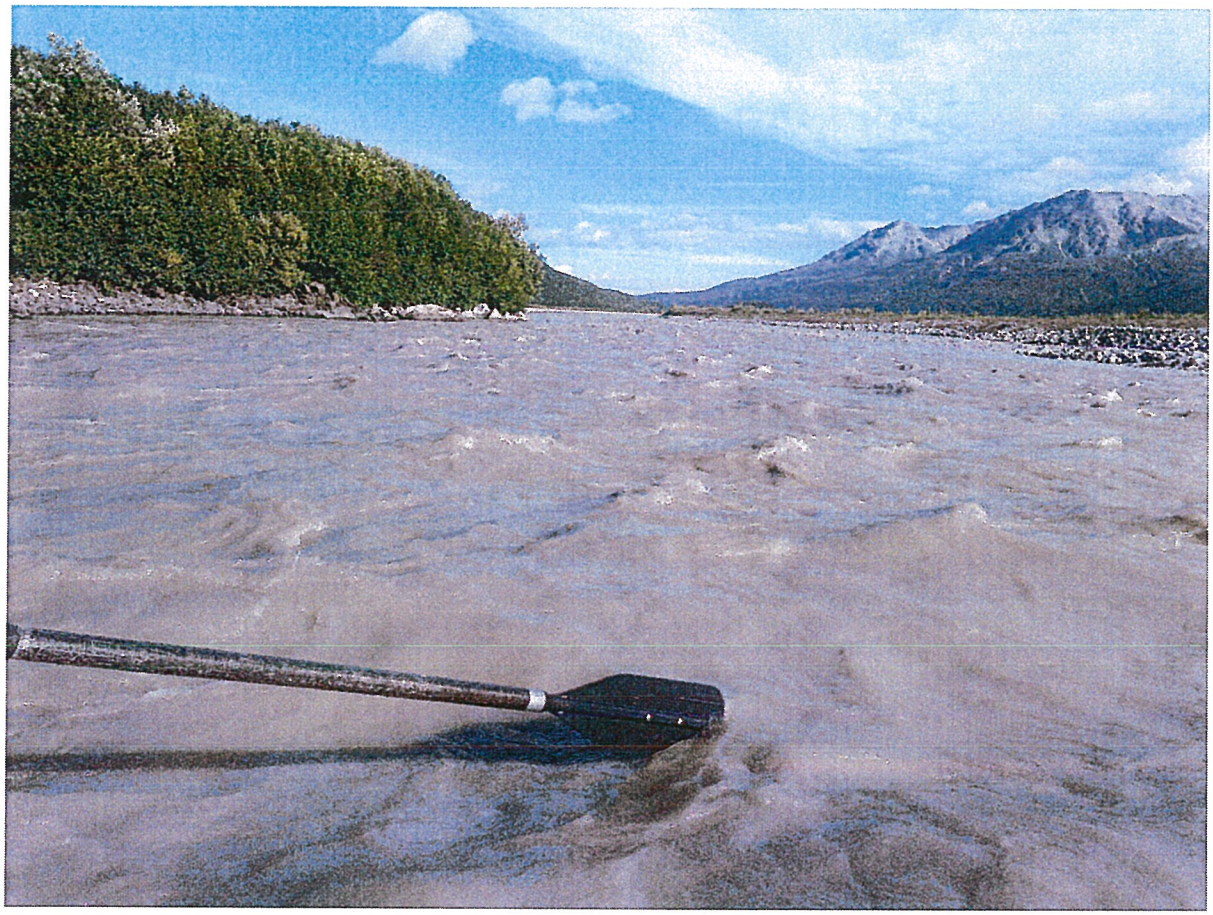

Figure 18: Increased flow from Millers Creek is noticeable.

At approximately 5 mile, measured depth was at 4 feet.

At approximately 5.5 mile, the river (fast moving but mostly riffles) began to show class 2 water (heavy riffles, easy rapids).

At approximate river mile 6, the inflow from Eel and Castner glaciers, the heavy riffles and class 2 – 3 water (4-feet deep) continued and the river had narrowed considerably (perhaps 45 yards). That this is a big and powerful river became increasingly evident.

Upon reaching Pump Station 10 (Approximate river mile 7), the river averaged 4-feet deep and characterized by continuous heavy riffles and class 2 -3 water.

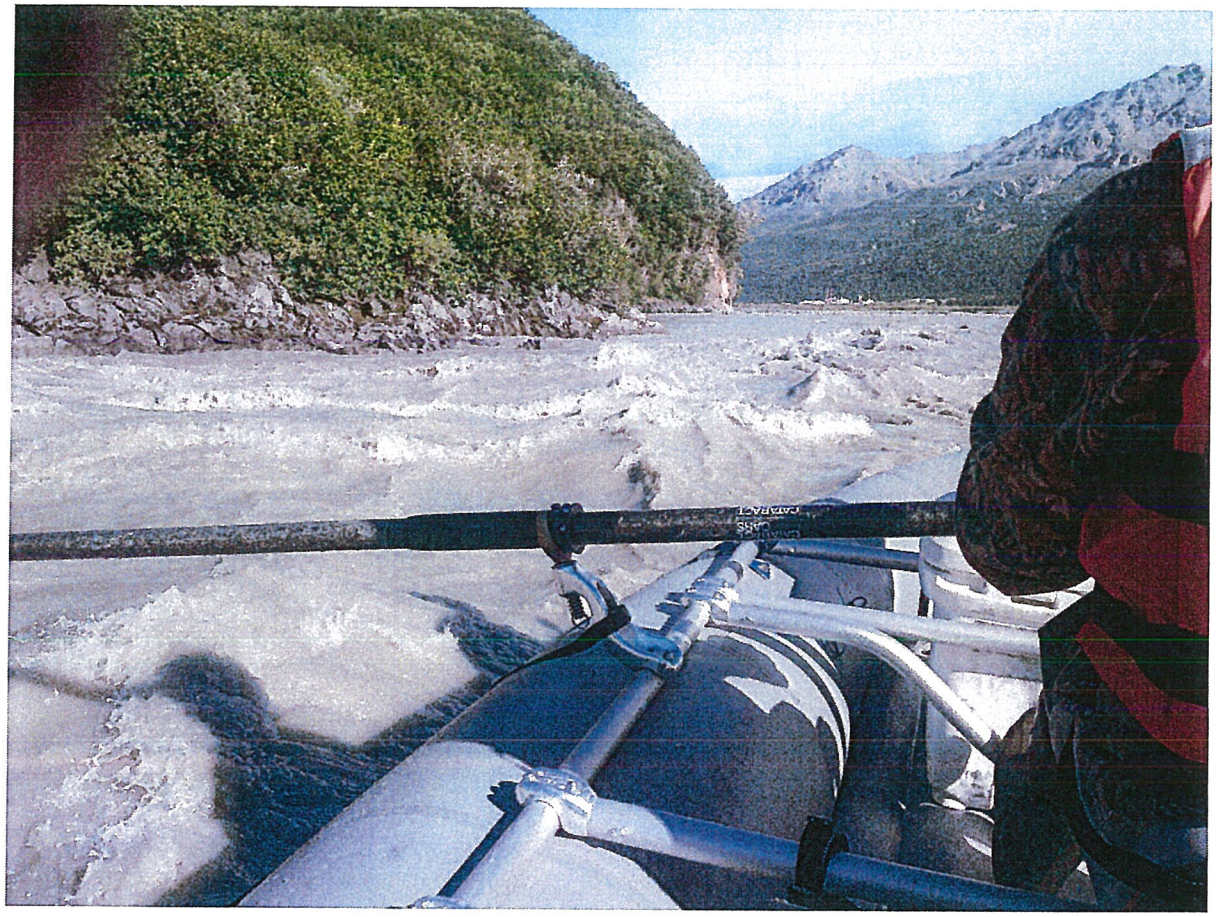

Figure 19: View of the Delta River looking downstream with pump station 10 in the background.

At around river mile 7, the water was mostly heavy riffles and 3 feet deep. Heavy southerly winds stirred up clouds of dust (glacial silt) making for poor visibility and hindered Sondergaard attempts to keep control of the raft.

At around river mile 10, the river was typically class 2-3 and 4-feet deep. River width was measured at 165 yards during one of our stops in this area. I believe this is the point where the left oar in the raft's rowing frame became wedged in the oarlock thereby locking the paddle in a horizontal position (rather than the desired vertical). At this point, essentially, Sondergaard was literally paddling with one oar. The rapid current and channel braiding in this section of river made it necessary for our out-of-control raft to make it to shore and fix the situation. Fortunately, after a minor "dunking" Basner was able to jump ashore and secure the raft at a point where Frost and Sondergaard could get out of the raft and pull it ashore for repair. After a few minutes trying to knock the oar loose with a rock, we succeeded in prying it loose and replaced the slightly damaged oar with the spare. Repairs completed we resumed our journey with full control of the vessel restored.

Figure 20: Delta River looking downstream at about river mile 10.

For the next couple of miles we encountered little change in river character: 5-feet deep interspersed with numerous shallow stretches, braiding, heavy riffles and approximately 60 to 65 yards wide.

By (approximate) river mile 13 to 14, big changes in character became evident. The river narrowed considerably. Big boulders and rocks (many the size of a car or even bigger) and steep rocky banks constricted the rapidly moving water into a narrow chute where standing waves and dangerous hydraulics predominate. This is class 4 water with a few short stretches pushing class 5. Clearly, we were entering the upper part of the Black Rapids. For the next couple of miles, big rocks, dangerous hydraulics, standing waves and fast moving water required deft maneuvering on the part of Sondergaard rowing skills. For Frost and Basner, "holding-on" became the priority and the picture taking ended. This is big water – not for the faint of heart!

Figure 21: Delta River looking downstream towards Black Rapids.

Figure 22: Delta River looking downstream towards the upper end of the Black Rapids.

By (approximate) river mile-15, the river widened and flattened out, somewhat. However, even here the single-channel current carried fast moving (and deep) water not to be taken lightly.

At river mile 16 (the take out point) Sondergaard pointed out our "target" and maneuvered the raft through the fast current to a pile of woody debris where Basner was able to jump to shore and secure the raft. Frost and Sondergaard helped to pull the raft up the bank and thus a successful ending to an exhilarating float down the mighty Delta River.

Figure 23: Take out on the Delta River.