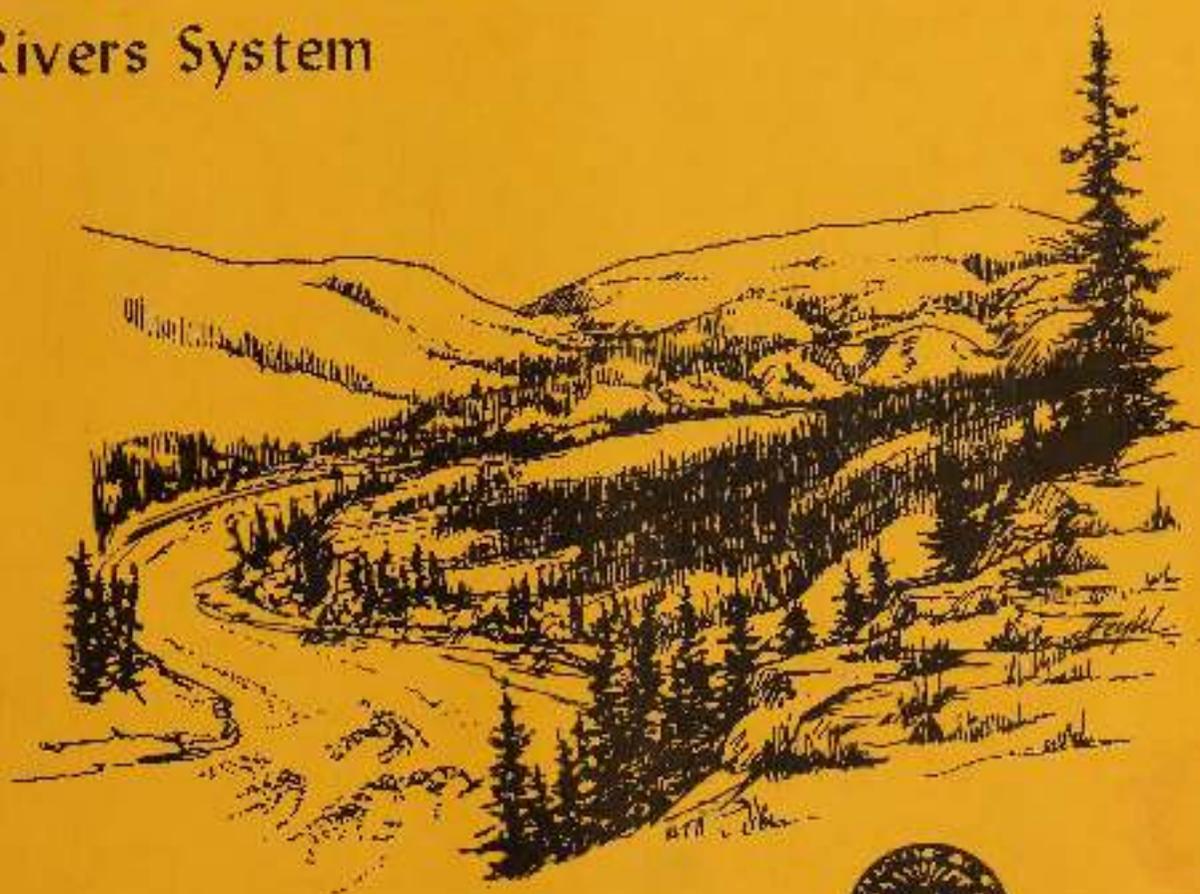




River Management Plan

Fortymile River

Component of the National Wild and Scenic
Rivers System



U.S. Department of the Interior
Bureau of Land Management
Fairbanks District, Alaska



December, 1983

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River Management Plan for the Fortymile National Wild and Scenic River



U. S. Department of the Interior
Bureau of Land Management
Fairbanks District
Fortymile Resource Area, Alaska

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Table of Contents

Part I Introduction	Page
Background	1
The Setting	3
River Corridor Description	8
Boundary Determination	20
Part II Management Considerations	
Management Objectives	31
Major Issues and Concerns	32
Management Constraints	43
Part III The Management Program	
Management Actions	45
Part IV Appendix	
Legal Description	57
Detailed Boundary Maps	
Illustrations	
Regional Map	5
River Corridor Map	23
Land Status Map	27
Boundary Index Map	71
Boundary Maps 1-16	73

Table of Contents

Page	Chapter
1	Introduction
15	Chapter 1: The History of the United States
35	Chapter 2: The American Revolution
65	Chapter 3: The Early Republic
95	Chapter 4: The Industrial Revolution
125	Chapter 5: The Civil War
155	Chapter 6: Reconstruction
185	Chapter 7: The Gilded Age
215	Chapter 8: The Progressive Era
245	Chapter 9: World War I
275	Chapter 10: The Roaring Twenties
305	Chapter 11: The Great Depression
335	Chapter 12: World War II
365	Chapter 13: The Cold War
395	Chapter 14: The Vietnam War
425	Chapter 15: The 1960s
455	Chapter 16: The 1970s
485	Chapter 17: The 1980s
515	Chapter 18: The 1990s
545	Chapter 19: The 2000s
575	Chapter 20: The 2010s
605	Chapter 21: The 2020s

Part I Introduction

Background

The Alaska National Interest Lands Conservation Act of December 2, 1980, (ANILCA, P.L. 96-487) established the Fortymile, and certain tributaries as shown in Table 1, as a component of the National Wild and Scenic Rivers System to be administered by the Secretary of the Interior through the Bureau of Land Management (BLM). Subject to valid existing rights, ANILCA classified and designated approximately 302 miles of stream in the Fortymile drainage pursuant to the Wild and Scenic Rivers Act (WSRA, P.L. 90-542).

The Wild and Scenic Rivers Act declared it a policy of the United States that "selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be protected in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

Specifically, Section 101a) of the Wild and Scenic Rivers Act states that:

"Each component of the national wild and scenic rivers system shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as it is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of those values....."

By classifying the various segments of the Fortymile as either "Wild", "Scenic", or "Recreational" (see Table 1) Congress mandated that those segments be managed according to the following objectives:

- Wild rivers shall "be free of impoundments and generally inaccessible except by trail with watersheds or shorelines primitive, and waters unpolluted. These represent vestiges of primitive America."
- Scenic rivers shall be managed to be "free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads."
- Recreational rivers shall be managed to be "readily accessible by road or railroad" and "may have some development along their shorelines, and....may have undergone some impoundment or diversion in the past."

One segment, however, was not classified in ANILCA; Congress choosing instead to delegate that task to the managing agency. Therefore, 90 days after this plan has been submitted to the President of the Senate and the Speaker of the House of Representatives, the 3 mile segment of the Mosquito Fork between the mouth of Angle Creek and the Taylor Highway bridge will be classified as recommended in Part III, Item 11 of this plan.

ANILCA also directed the Secretary of the Interior to establish detailed boundaries, prepare a management and development plan and to present this information to Congress by December 2, 1983. In response to these directives, this river management plan establishes the detailed boundaries and develops the management policies for the Fortymile National Wild, Scenic and Recreational River.

The Bureau of Land Management intends that these management policies be flexible in order to remain responsive to future management needs, while at the same time serving as a standard to assure the protection of the river's resources from possible future changes in resource quality and use.

The WSRA created a Federal reserved water right for such instream flows as necessary to prevent impairment of the purposes for which the river was designated. The Bureau of Land Management intends to work with the Alaska Department of Natural Resources towards the complex goal of qualification of the reservation.

Two Environmental Impact Statements (EISs), "Proposed Fortymile National Wild and Scenic River" and "A Proposal for Protection of Eleven Alaskan Rivers", were approved by the Department of the Interior in 1975 and 1980 respectively. These EISs addressed the environmental impacts of designating a portion of the Fortymile River as a component of the National Wild and Scenic Rivers System.

In addition, this plan has been developed in compliance with Title VIII of ANILCA so that the management policies will cause the least possible adverse impact to the local residents who depend upon the river corridor for subsistence needs.

The Setting

The Fortymile River is located in the interior of Alaska along the United States - Canada border approximately 150 air miles east of the Fairbanks area, 325 air miles northeast of the Anchorage area, and 70 miles west of Dawson, Yukon Territory.

The interior region is drained by the Yukon and Tanana Rivers. The Fortymile River is a northeasterly flowing tributary to the Yukon River. It is an international river with the lower 20 miles flowing through Yukon Territory, Canada to its confluence with the Yukon River approximately midway between Dawson, Yukon Territory and Eagle, Alaska. The Tanana River is immediately south of the Fortymile River basin.

The region experiences a subpolar continental climate with severe subarctic winters and warm summers. Extended periods of temperatures from 50°F to 60°F below zero are common and 75°F below zero has been recorded. Summers are short and warm with temperatures reaching the eighties, and occasionally the nineties. Freezup of rivers and marshes takes place in October. The rivers become icefree in early to mid-May in most years. The maximum amount of sunlight per day (June 21st) is approximately 22 hours; the minimum (December 21st) is approximately 4 hours.

Soils have formed in a variety of parent materials. Dominant soils on the uplands are usually shallow. Depending on elevation, aspect, soil type and temperature, the vegetation cover varies from herbaceous or low shrub to open forests of spruce, willow, quaking aspen, and white birch. Valley bottoms and toe slopes usually have soils formed in loamy sediments washed from the adjacent uplands. Permafrost is frequently near the surface on north slopes and valley bottoms. Often these soils are poorly drained, which is reflected by vegetation such as sedge tussocks, low shrubs, and stunted black spruce woodlands. Better drained south facing slopes are vegetated by open forests of spruce, white birch, and quaking aspen.

Gravelly soils immediately adjacent to the river are commonly free of shallow permafrost and support open or closed forests of white spruce, quaking aspen, balsam poplar, and willow.

There are no communities within the Alaskan portion of the Fortymile basin with a permanent population of 50 or more people. Chicken, the largest, is estimated to have a permanent population of about 25 people. It is estimated that less than 150 people reside year-round in the Alaskan portion of the basin. Summer population is somewhat higher, possibly reaching 800.

The Fortymile River basin is accessible by road, air and water. There are no rail facilities. The Alaskan Highway skirts the entire southern part of the region and provides access from Anchorage/Fairbanks and the lower 48 states. Direct access from the Alaskan Highway to the Fortymile River basin is provided by the Taylor Highway to Eagle and the cut-off road to Dawson, Yukon Territory. Primitive roads and fire lanes lead from the Taylor Highway to various parts of the Fortymile River basin but are generally impassable in summer. Scheduled and chartered air service provides access to Northway, Tananross, Eagle, and Chicken, which have improved airfields. Air access is also provided at primitive air strips and gravel bars throughout the area.

Three groups of Athapaskan Indians are associated with the region surrounding the Fortymile River basin: Han Kutchin, Tanana, and Nabesna.

The Fortymile area still provides for the subsistence needs of some residents. Fur trapping in winter is the principal subsistence activity.

Non-subsistence users fall into several categories. Most numerous are the Taylor Highway travelers, who are generally passive users of the river environment. Over 6,000 of these individuals from 48 states and 17 foreign countries stayed in developed campgrounds in the area during 1982. Suction dredging for gold has become a major activity in the basin. Dredgers are concentrated along the road system, and it is estimated that during 1982 the number of people using dredges in the area approached 400. Most dredging activity is located on the navigable streambed, and therefore under State management. However, the associated fuel caches and campsites tend to be on upland areas managed by the BLM. Recreational river floating in the area is thought to have declined since 1978, when increased prices for gold, and the popularization of the suction dredge, led to increased mining activity and a decline of the primitive setting along the road accessible stream segments. An estimated 250 individuals took recreational float trips in the Fortymile drainage during 1982.

Fortymile National Wild and Scenic River

Regional Map

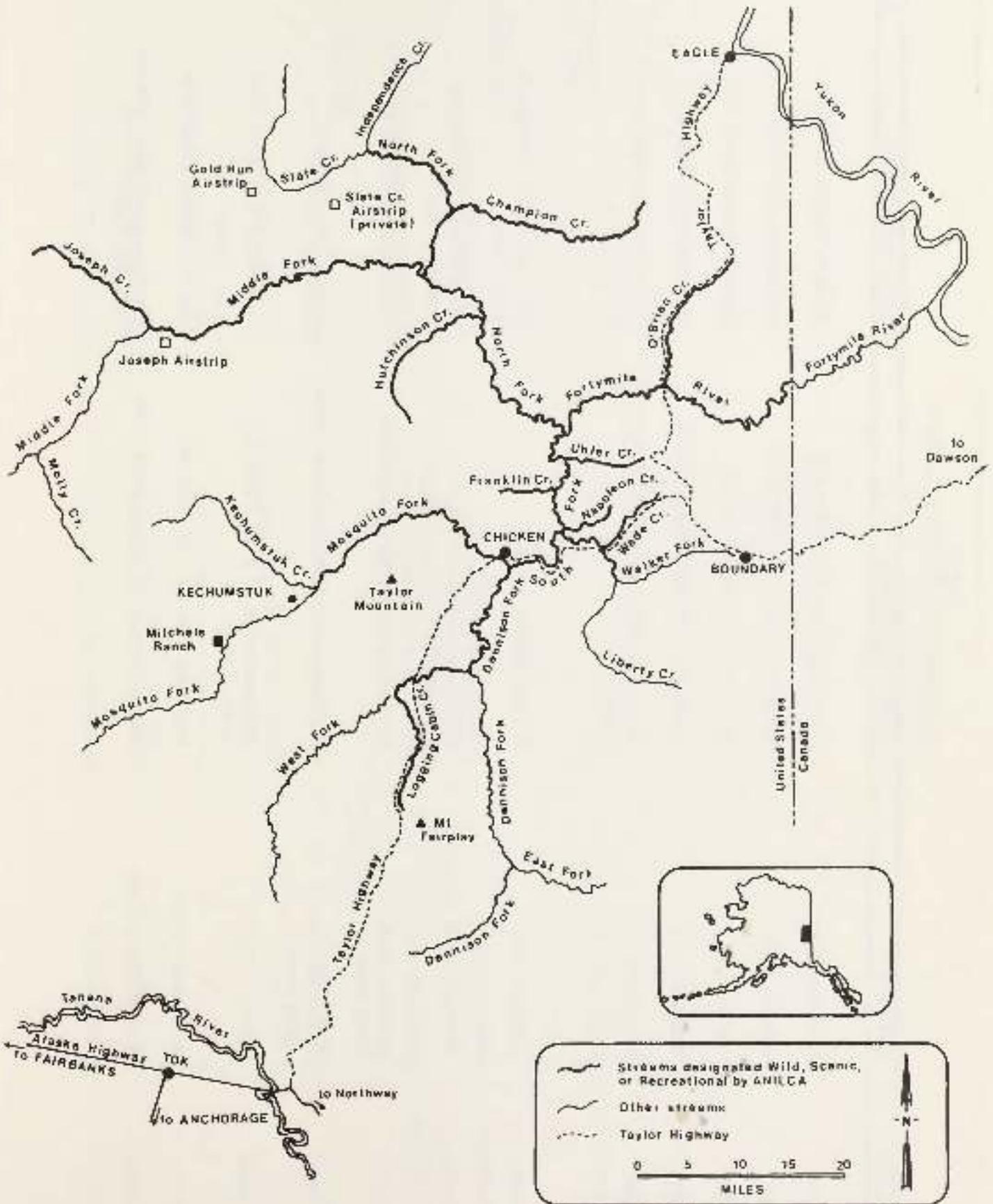


TABLE 1
DESIGNATED STREAM SEGMENTS

CLASS	STREAM	START UPSTREAM	END DOWNSTREAM	MILEAGE
Wild	Champion Creek	Headwaters Sec.1, T4S,R30E, FM	Confluence with North Fork	28
Wild	Joseph Creek	Headwaters Sec.33, T5S,R21E, FM	Confluence with Middle Fork	22
Wild	Middle Fork	Confluence with Joseph Creek	Confluence with North Fork	42
Wild	Mosquito Fork	Confluence with Kechumstuk Creek	Confluence with Inge Creek	30
Wild	North Fork	Confluence with Slate & Independence Creeks	Confluence with Main Stem & South Fork	57
				<u>Wild Total</u> 179
Scenic	Mosquito Fork	Taylor Highway Bridge	Confluence with Dennison & South Forks	5
Scenic	Dennison Fork	Confluence with West Fork of Dennison Fork	Confluence with South and Mosquito Fork	19
Scenic	Dennison Fork (West Fork)	Confluence with Logging Cabin Creek	Confluence with Dennison Fork	13
Scenic	Fortymile River (Main Stem)	Confluence with North and South Forks	Alaska-Yukon Border	39
Scenic	Franklin Creek	Headwaters Sec. 31 & 36, T28N, R17 & 18E, CRM	Confluence with South Fork	6
Scenic	Hutchinson Creek	Headwaters Sec.31, T7S,R28E, FM	Confluence with North Fork	19
Scenic	Logging Cabin Creek	Headwaters Sec. 11, T22N, R16E, CRM	Confluence with West Fork of Dennison Fork	17

Scenic	Napoleon Creek	Headwaters Sec. 1, T27N, 19E	Confluence with South Fork	7
Scenic	O'Brien Creek	Confluence with King Solomon Creek and Liberty Fork	Confluence with Main Stem	27
Scenic	South Fork	Confluence with Mosquito and Dennison Forks	Confluence with North Fork and Main Stem	27
Scenic	Uhler Creek	Headwaters Sec. 24, T8S, R31W, FM	Confluence with South Fork	9
Scenic	Walker Fork	Downstream of Liberty Creek	Confluence with South Fork	12
				<u>Scenic Total</u>
Recreational	Ward Creek	Confluence with Grace & Warner Creek, Sec. 26, T25N, R20E, CRM	Confluence with Walker Fork	10
Unclassified *	Mosquito Fork	Confluence with Ingle Creek	Taylor Highway Bridge	3
				<u><u>Grand Total</u></u>

* Refer to Parts II and III, Item 11.

River Corridor Description

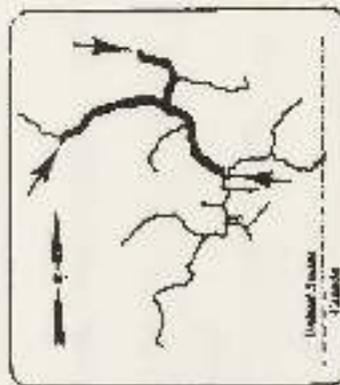
In order to facilitate discussion of specific locations along the designated streams, river miles are counted on each, starting at "mile 0" at the upstream limit of the designated area. For example, we refer to the location of the South Fork bridge as "South Fork mile 5.2" in the same way highway travelers would describe it as "Taylor Highway milepost 75.3."

WILD SEGMENTS:

The stream segments to which Congress applied a "wild" designation can be considered in two main groups: the larger "floatable" segments include the North Fork, Middle Fork below Joseph Creek, and Mosquito Fork between Kochumstuk Creek and Ingle Creek; the smaller tributary segments are Champion Creek and Joseph Creek.

North Fork and Middle Fork

The upper North Fork is a narrow, entrenched river, with few gravel bars. The uplands are dominated by open, moist tundra areas with little tundra. This section is extremely remote. It is reachable by helicopter, or fixed-wing aircraft into a private airstrip on a ridge above Slate Creek and a 3 mile portage to floatable water. This section can also be reached during periods of high water by floating down Slate Creek from the Gold Run airstrip, 17 miles upstream. The river is swift, with numerous small rapids, and requires normal to high water for boating. The stream gradient is approximately 18 feet per mile. There are several habitable cabins in this stretch used for winter trapping purposes.



In contrast, the Middle Fork below Joseph Creek is a clear, rushing river, flowing through a river bottom up to 1 mile across. Numerous substantial tributaries enter this section of river and extensive sand and gravel bars are often a feature around their mouths. The water quality is excellent and this section represents a truly wild river. Numerous class II rapids challenge the boater and outstanding scenic views, particularly to the south, are a feature of this section. The Middle Fork drains a large area and water levels are sufficient at all but the most extreme low levels to float canoes or rafts. The average gradient is 10 feet per mile. Wildlife is relatively abundant, with caribou, moose, and the occasional grizzly bear or wolf.

Several abandoned and deteriorated cabins are present on this section, and some were part of the Washington-Alaska Military Cable and Telegraph System (WAMCATS). The abandoned Indian village of Joseph, at the mouth of Joseph Creek, was an important relay point for the WAMCATS system, which paralleled the north side of the river.

Access is by aircraft into an airstrip in fair condition near Joseph. The airstrip is used occasionally for hunting or mineral exploration activities, as well as by river recreationists.

The character of the North Fork below mile 11.3 and the Middle Fork below mile 19 changes as the rivers become more sinuous, and large tributaries such as Champion Creek contribute substantial gravels and water. The sidehills become steep and rugged, with frequent outcrops of bedrock rising to 500 feet above river level.

Glistening folded rock strata in an otherwise forested valley form especially scenic vistas in the vicinity of the two forks' confluence. Attractive forests of spruce intermixed with birch and aspen line the river banks throughout, with most of the drainage free of fires in recent years. Wildlife is comparatively abundant in this section, with caribou the most easily observed large mammal.

The rivers are 30 to 70 feet across, with pools up to 20 feet deep interspersed with numerous rapids, including the Kink, rated class V or very difficult; "the Chute," a class III rapid just below the confluence, and "Bald Eagle Rapids" a class II to III rapid on the Middle Fork just above the confluence.

The Middle Fork has an average gradient of 10 feet per mile, while the North Fork in this section drops about 15 feet per mile. Canoes and rafts may be used on the North and Middle Forks during all but the lowest water, while motorboats are not known to travel above the Kink due to the portage required.

The Kink, located on the North Fork at mile 34.5, is a unique area in the Fortymile drainage. In 1898 a group of Danish prospectors blasted away a 100 foot rock ridge, draining a 2.8 mile long meander. The dry bed was worked for gold but proved to be poor ground, and was abandoned by 1906. While appearing an easy task to compete with today's technology, the Kink was a major engineering feat in that time and place. It was accomplished in a relatively uncharted wilderness without benefit of any developed transportation or communication system, the area is now on the National Register of Historic Places.

Today, all that is left of the operation is a lonely cabin overlooking the quiet lakes in the old river channel. These lakes are not typical of this section of the Fortymile; and, combined with the remote location, provide excellent wildlife habitat. The bird-life is particularly noticeable, with abundant waterfowl, including an occasional pair of trumpeter swans. Peregrine falcons, an endangered species, nest in the area.

The Kink is also the most dangerous whitewater on the Fortymile, requiring a portage. It is considered unrunnable except by experts at the lowest water level. The river drops 18 feet in a short series of falls. The high rock walls, rushing whitewater and somber spruce forests make the Kink a memorable stop on a float trip. Pleasant walking is to be had around the old river channel, and numerous sandy beaches provide excellent campsites. An airstrip in poor condition near the Kink is the legacy of a modern-day mining venture. This group of miners had considerable impact on the western end of the old river channel, establishing a long-term camp with resultant garbage accumulation, tree-cutting, and extensive diggings. The Kink remains a significant historic, recreation, and ecological resource of the Fortymile.

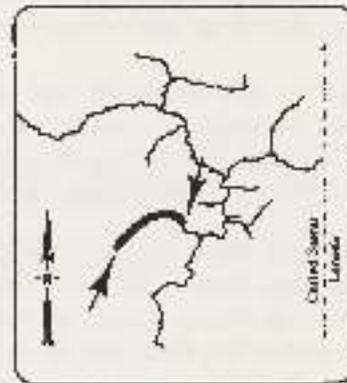
Numerous cabins, several of which are habitable, are located on the North and Middle Forks. Of particular historic interest are two cabins, one on each fork, which served as stations on WAMCATS. Parts of the actual wire and pole system are also visible along this section.

A climb to the top of the hills on either side of the river offers views of expansive spruce and tundra-covered uplands stretching into the distance. Visitors to this section will probably meet no other people.

Few Federal mining claims are located on the main banks of the North or Middle Fork. This is primarily due to low mineral values in the area, as well as the difficulty and expense of obtaining access to these sections. Suction dredging is very rare in this section, although occasionally occurring from the Kink downstream.

Mosquito Fork

The Mosquito Fork, from the mouth of Kechumstuk Creek to mile 3, flows through a wide valley. It is generally 10 to 25 feet wide with numerous gravel bars. The stream gradient is a gentle 5 feet per mile. This section affords vistas of the Mosquito Flats and the Kechumstuk valley. The feeling along this stretch is that of a vast wilderness, with the presence of man insignificant. Although this is a very short section of river, it is representative of the upper Mosquito Fork and the flats, and is not comparable to other portions of the Wild and Scenic river.



The abandoned Indian village of Kechumstuk is nearby. It consists of one habitable cabin, used for winter trapping, and numerous ruins.

The Mosquito Fork below mile 3 winds through high bluffs alternating with boggy, flat areas, and is from 15 to 45 feet wide with occasional pools 5 to 10 feet deep. The stream gradient increases to 8 feet per mile and there are numerous small rapids that are exciting in an open canoe. Occasional views to the south reveal 5,000 foot Taylor Mountain.

This section is quite remote, with little summer use, offering excellent opportunities for a primitive experience. There is a primitive winter road affording poor access to the upper Mosquito Fork. The only other access to the upper river is by helicopter, or by fixed-wing aircraft into Mitchell's Ranch, over 30 miles upstream. At low water the river is floatable only with difficulty; motorboat use is not known.

Overland access is available to the mining operation at Ingle Creek (mile 23.5), at the end of the Wild designation. This is a significant mining venture with historic values as well, and the only active mining operation on this section. Federal claims are located up Bullion, Moose and Gold Creeks, which flow into this section of the Mosquito Fork.

There are two abandoned cabins in this stretch; the one at mile 22 is an old ranchhouse on the Chicken-Tanana Crossing trail of the 1920's. Both sites are now ruins.

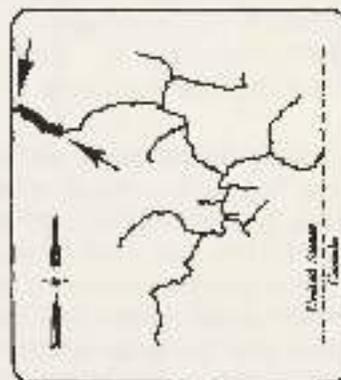
Champion Creek

Champion Creek flows from the alpine tundra of the Glacier Mountain area through the subalpine zone to its confluence with Little Champion Creek. From this point it meanders through the gravelly bottom of a "U" shaped drainage to the spruce forested banks of the North Fork. It is very difficult to gain access to the upper area of the Champion Creek drainage in summer, and summer use at this time is limited to a few walk-in hunters and geologic exploration personnel. During winter the area is used by trappers who travel primarily by snowmobile. Although the creek is at times floatable below Little Champion Creek, recreational use is probably limited to hikers starting from the North Fork or the Glacier Mountain trail.



Joseph Creek

Joseph Creek rises in the rocky alpine divide between the Charley, Goodpaster, and Fortymile River drainage basins. It is a steep stream in rugged terrain, and receives very little use. The lower stretches see some use by trappers in winter, but the upper portion is visited only by occasional helicopter-borne geologic exploration personnel and surveyors. Joseph Creek could conceivably be explored by recreationists on foot, or by lining boats upstream from the Joseph airstrip. It is probably the area of the wild, scenic, and recreational corridor that is most accurately a vestige of primitive America. There are no federal mining claims on Joseph Creek. One habitable cabin is located on a Native allotment near the mouth. The cabin is used by trappers in winter.

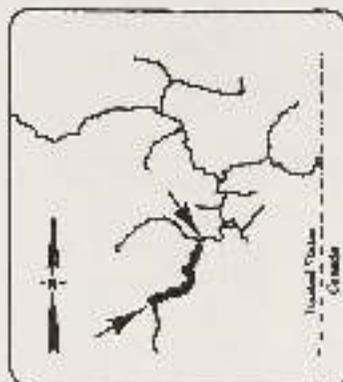


SCENIC SEGMENTS

The designated Scenic segments of the Fortymile drainage can be described in the same terms as the Wild segments. There are relatively large streams that lend themselves to floating by rafts and canoes, and there are smaller tributaries that are not used by watercraft. The situation is complicated by several streams that are occasionally floated in periods of particularly high flow. Floatable Scenic streams include the West Fork of the Dennison Fork from Logging Cabin Creek to the Dennison Fork, the Dennison Fork, the South Fork, and the Main Stem. Marginally floatable streams include the Walker Fork and O'Brien Creek. Unfloatable streams include Logging Cabin Creek, Napoleon Creek, Franklin Creek, Ular Creek, and Hutchinson Creek.

West Fork of the Dennison Fork and the Dennison Fork

The West Fork of the Dennison, from Logging Cabin Creek downstream to the Taylor Highway, is a meandering stream in a wide river valley. The river flows past numerous muskeg swamps, oxbow lakes, and gravel bars. It is floatable at normal or higher water levels, and is 15 to 40 feet wide. Average gradient is 8 feet per mile.



There are no Federal mining claims, and three cabins, used for winter trapping purposes, on this section. There is little recreational use other than sightseeing from the Taylor Highway.

Below the Taylor Highway bridge recreation use increases, and the river, until its confluence with the Main Stem of the Dennison Fork, is clear and quick-flowing, passing through thick spruce forest and occasional boggy low areas. Below the confluence, the river gains substantial water flow. It runs in a more entrenched canyon with rocky bluffs. Grassy hills are prevalent and the river increases its meandering, with shallow pools 5 to 10 feet deep. Average gradient is about 8 feet per mile.

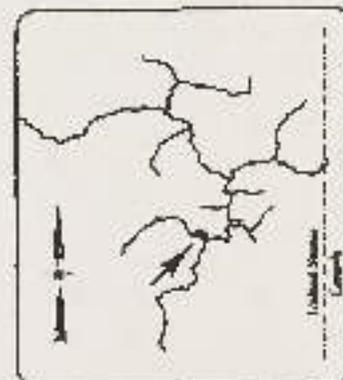
The Dennison flows through a portion of a 250,000 acre forest fire, which is interesting due to the regeneration that has occurred since the fire. The river bottom generally was spared burning, so enjoyable campsites are abundant. The river has a remote character; few signs of man are encountered while floating it. Numerous rapids make for enjoyable canoeing and rafting, although none are more difficult than class II. High water levels are required for easy floating, especially above the confluence, although the good access at the Taylor Highway, and its location as the closest section to Tok and the Alaska Highway, make this an attractive trip from a logistical standpoint.

There are two cabins along this stretch, both used for trapping. Numerous Federal mining claims are located along the West Fork although none are presently being mined. Suction dredging is rare as well, with occasional activity near the Dennison-Mosquito Fork confluence.

Mosquito Fork below the Taylor Highway Bridge

The Mosquito Fork below the highway bridge is similar to the Dennison Fork. It is more shallow, and has more sweepers, which make it difficult to navigate at low water.

The first mile of this section runs over a rocky bed through wet tundra flats. Canoes and rafts must constantly maneuver to avoid rocks at most water levels. The gradient here is about 8 feet per mile, and the stream is from 70 to 150 feet wide.



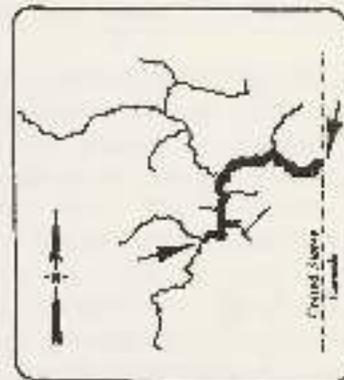
At mile 34 the bottom material becomes finer, and the stream spreads out into several channels as it skirts by the Chicken Airport. Several dry weather roads afford access to this area from Chicken, and some area residents get household water from the river here.

In the area around the mouth of Chicken Creek the river runs through nearly .5 mile of private land.

The Mosquito Fork returns to a more defined channel as it sweeps along Lost Chicken Hill near mile 35, re-entering private land for .5 mile near mile 35.5. The Mosquito Fork dredge, which is located above the confluence with the Dennison Fork, may be on this private land. The dredge is deteriorating from ice and log damage, but is an interesting stop for river users. It can also be reached by a 45 minute hike from the Taylor Highway.

South Fork and Main Stem

The first 5.2 miles of the South Fork are generally paralleled by the Taylor Highway, with access via the Mosquito Fork and the Mosquito Fork bridge (Mosquito Fork mile 32.3), the Chicken landing strip (Mosquito Fork mile 34.1), the South Fork bridge (South Fork mile 5.2), and continuously between South Fork miles 3 to 5. The community of Chicken is in close proximity to this section, and past and present mining activities dominate this stretch of river. Suction dredging, which occurs seasonally, and cat and sluice mining, particularly at South Fork mile 5 to mile 7, have a significant visual effect. Numerous Federal claims are located along this section.



There is one rapid of note at South Fork mile 3 called "Hoggate." The rapid is rated an easy class II at high water, but due to its context in a relatively placid reach it has caused problems for some boaters. There are three cabins above the South Fork bridge, one is habitable.

The South Fork bridge (South Fork mile 5.2) is a major staging area for both river floaters and suction dredgers camping downstream. The boat landing here is used for vehicle parking as well as long-term camping. The entire section is home to a sizeable visitor population during summer months, with resulting demand for trash and human-waste disposal, and water quality protection.

Boaters on this stretch will constantly encounter active suction dredging operations and camps, and hear the gasoline engines of the dredges.

Between mile 7 and mile 12 the South Fork becomes a more deeply entrenched meandering river, flowing in a northerly direction. The river is 30 to 60 feet wide, and depths are often in excess of 5 feet, with an average gradient of 10 feet per mile. There are minor rapids separating placid pools up to .5 mile in length. Steep outcrops of bedrock flank the river. Terraced gravel benches deposited on the prehistoric location of the Fortymile river are a source of placer gold. Short, swift flowing tributaries drain the slopes adjacent to the South Fork. During normal water years there is sufficient water to float canoes and rafts, and it is possible to operate small motorboats with care, particularly with jet units. There are several habitable cabins here as well as numerous ruins, some dating to the early 1900's.

Water quality in this stretch is affected locally by suction dredging and associated long-term camping. Below the confluence with the Walker Fork, muddied water from

car-mining operations on Wade Creek is regularly encountered. This water is often turbid enough to reduce visibility to less than 2 inches. This section has the highest concentration of suction dredgers apart from the South Fork bridge area, with a large number located around Napoleon Creek. During the summer of 1982 there were eight dredging camps in this section. Boaters are continuously within sight or sound of dredging activities or associated camps. This section has two Federal mining claims. From mile 12 to the North Fork confluence, the South Fork remains physically similar, but the impact of modern day man is significantly less, allowing a more primitive experience. The few suction dredgers in this section are soaced out and passed quickly by. The numerous tributary streams increase dilution of turbidity from upstream. There are few Federal mining claims on this section, although some tributary streams are heavily claimed.

This section has numerous cabins in various conditions from habitable to ruins, most notably in and around the abandoned town of Franklin, site of the first major gold discovery in Alaska. Old bucket line dredge remains are found near Uher Creek. The whole section has a feeling of history that does not seem to include on its primitive quality. There is no road access to this section, although an unmaintained trail is usable between Chicken and Franklin.

At South Fork mile 27 the North Fork adds its flow to form the main stem Fortymile River. This allows easier boating at low water levels and increased dilution of water-borne sediments. There are several major rapids, and numerous small rapids, contributing to an enjoyable, and sometimes challenging, canoe or raft trip. The steep, bare outcrops of rock flanking the river are noteworthy - a shining, glacier-like exposure of white marble downstream from the confluence of the North and South Forks, and colorful banded strata near Long Bar and O'Brien Creek, are favorites for photographers.

Access is good at the Fortymile Bridge (Fortymile mile 16) with additional access at Clinton Creek in the Yukon Territory, Canada. A popular trip is to continue through Canada to the Yukon River, and on to Eagle, Alaska, the terminus of the Taylor Highway.

The main stem has numerous cabins in various condition; and one, the Steele Creek roadhouse, is an impressive two story structure with historic values. Also of note is the abandoned town of Fortymile at the junction of the Fortymile and Yukon rivers in Canada, which was a major supply center during the gold rush era.

Suction dredging occurs along the entire stretch, although primarily near the O'Brien Creek bridge. Cat and sluice mining occurs along this section as well, although during the summer of 1982 there was only one active operation. The results of placer mining are extensive and noticeable. Federal mining claims in this stretch are numerous and will continue to be developed. These operations increase waterborne sedimentation, and are visually disturbing to recreational river users. Motorboat use occurs regularly in this section, mainly from the Fortymile bridge down.

Walker Fork

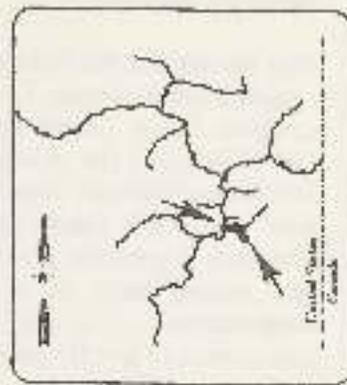
Walker Fork has been designated a scenic river downstream of its confluence with Liberty Creek. The stream initially flows through an open valley, with banks lined by good stands of spruce, and tundra covered hillsides. It is about 30 feet wide with deep holes on the outside of its sinuous curves. The bottom material is generally fine sand and silt clays, with some stretches of clean gravel.

The stream above the Walker Fork Campground at Walker Fork mile 4.5 can be reached on foot or by lining a boat upstream. It can also be accessed by floating down the upper Walker Fork from a mining access road near Boundary. The latter access would be practical only for skilled boaters during periods of high water, and has been rarely, if ever, attempted in recent years, due to serious danger from sweepers and sharp turns.

The Walker Fork below Wade Creek flows over a bottom of gravel and bedrock. It is hemmed in by steep spruce-cloaked canyon walls over 1,000 feet high between mile 5.5 and mile 9. The river averages about 70 feet across and drops as much as 30 feet per mile, making it the most precipitous of the floatable streams in the Fortymile area. Running this stretch is possible at high water, but even then much technical maneuvering is required to avoid the numerous rocks. There is one class II rapids (Trapper Falls) near mile 5 that would generally require a portage with an open boat.

Access is available at the Walker Fork campground at the site of Lassen Field, a historic airstrip that was typical of the strips that developed around Alaska's interior in the 1920's and 1930's.

There are no known Federal mining claims on this stretch of river.



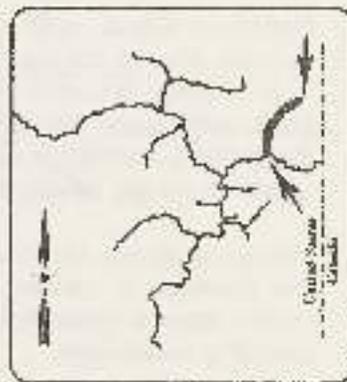
O'Brien Creek

O'Brien Creek is a winding stream flowing over a gravel bed, with a gradient of about 10 feet per mile. Its valley is relatively narrow, with vegetation typical of the area in general. The creek averages about 30 feet in width, and is generally confined by banks 3 to 5 feet high, which are stabilized by the tundra mat.

The Taylor Highway crosses the creek near its mouth, and parallels it for its length. There are several parcels of private land along the highway that are quite near the stream. Some private parcels have been developed for residential use, and one is the site of a small store and cafe. There are no known Federal mining claims on O'Brien Creek.

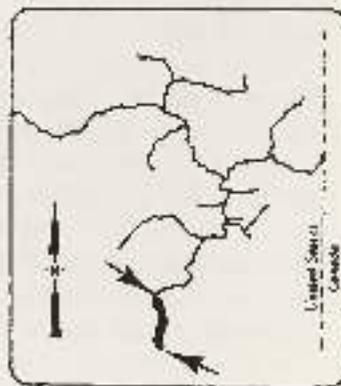
O'Brien Creek is floatable in canoes at moderate to high water levels, but the combination of the narrow channel, numerous gravel bars, sweepers, and sharp turns make this a hazardous and unusual undertaking.

Liberty Creek Campground is located just above the Liberty Creek-O'Brien Creek confluence.



Logging Cabin Creek

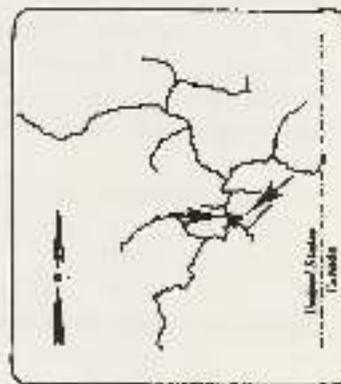
This section of the Wild and Scenic river includes all of Logging Cabin Creek. The Taylor Highway crosses over Logging Cabin Creek about 8 miles from its source and parallels it for much of its length. Logging Cabin Creek is a narrow, tightly-meandering stream flowing from the steep flanks of 5,500 foot Mount Fairplay. The area is sparsely covered by spruce growing out of wet tundra with thick willow and alder along the watercourse. This area is known to support a small population of grizzly bears.



Some hiking opportunities are possible in the area, but floating this segment below the Logging Cabin Creek bridge is conceivable only in extreme high water, and then with serious hazard due to over-hanging sweepers and tight turns. No floatboat use is known.

Napoleon Creek

Napoleon Creek flows from the rounded hills to the east of the Taylor Highway to join the South Fork below the Walker Fork. Its open valley is littered with the remnants of mining ventures, including cabins, trailers, snowmachines, pipeline supplies, and much more. The modern history of the Napoleon Creek area has been turbulent, involving disputes over mining and suction dredging rights.



The vegetation in the Napoleon Creek drainage reflects the mining history as willows, aspen, birch, and sage grow up on disturbed hillsides and tailing piles.

Napoleon Creek, with the exception of the upper reaches, is covered with many Federal mining claims. These claims have been actively worked in recent years, but little activity occurred there in 1982. Access to the claims is generally over the South Fork, with heavy equipment moved in over river ice. A road winds up the valley from the mouth, and this is used in all seasons when the claims are being actively mined. An overland route, which also crosses the Walker Fork, has been another winter access.

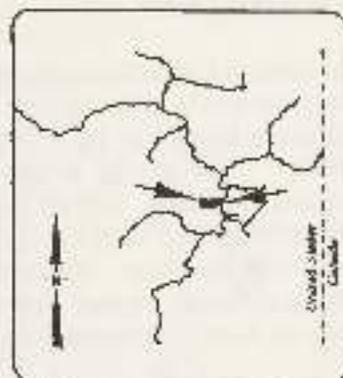
Recreational use of the area is generally limited to foot travel for casual exploration of the drainage in concert with a South Fork float trip. This use has been restricted in recent seasons because the nearby campsites have been used as base camps for suction dredging operations.

Franklin Creek

Franklin Creek flows east 6 miles to join the South Fork at mile 16.2. Hardwood and spruce forests cover the steep slopes above Franklin Creek, and occasional dry, grassy hillsides and rocky outcrops occur as well. Franklin Creek flows extremely high during spring run-off, and slows to a bare trickle in mid-July. It is not used by boats.

Walking upstream from the abandoned town of Franklin, about 2 miles of tailings from early day mining activities are encountered. A faint trail winds around the tailing piles, and through the willows and alders at their bases. Two old cabins are encountered at the upper end of the tailings; these are used occasionally by suction dredgers. Past the cabins the trail ends, and steep slopes and thick vegetation make further progress difficult. The creek bottom itself makes a suitable pathway at low water levels. Franklin is a popular stop for river users, and hiking along the creek is common.

There are several Federal mining claims located on upper Franklin Creek.



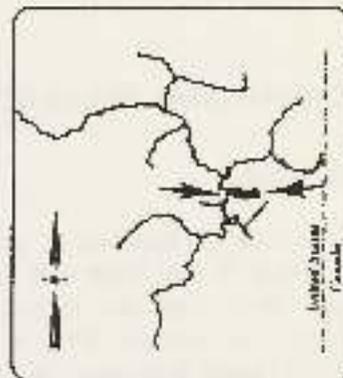
Uhler Creek

Uhler Creek is a narrow and shallow tributary to the South Fork. It is not used by boats of any type. It flows over a gravel bottom through a U shaped valley in its upper reaches, where there is extensive evidence of historical gold mining activity, including cabin ruins and vast tailing piles.

Upper Uhler Creek can be reached by trail from the Taylor Highway. The lower third of the stream runs in a gradually narrowing canyon, and eventually cuts down to bedrock.

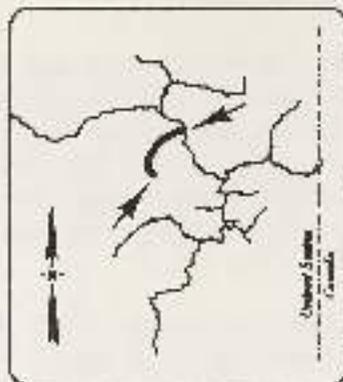
Recreational use of Uhler Creek is concentrated near its mouth, where an excellent campsite, cabin ruins, and mining relics make it a popular stop for river travelers. Hiking activity is limited by the brush and steep canyon sides in the lower stretch.

Federal mining claims are located the entire length of Uhler Creek, although none are actively mined at this time.



Hutchinson Creek

Hutchinson Creek is a tributary of the North Fork that flows northerly past rolling hills covered with tundra and black spruce to its mouth about 2 miles above the Kink. There is no known history of boating on Hutchinson Creek, due to its shallow flow most of the year, anchor and shift ice during the spring runoff, and its remote location. Recreational use is concentrated near the mouth, when visitors camping at the Kink come on foot to explore the area.



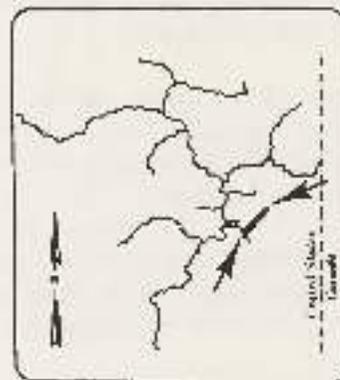
There has been some suction dredging near Hutchinson Creek's confluence with Montana Creek, where the remains of a defunct gold mining operation provide limited shelter and historical interest. The airstrip at Montana Creek is no longer serviceable, and access is gained by a poor trail from the Chicken area, or by bushwacking from the North Fork.

Hutchinson Creek is remote, and a visitor to its upper reaches would be very unlikely to meet any other users. Interest in gold mining on Montana Creek and Confederate Creek, which are tributaries of Hutchinson Creek, has waxed and waned in recent years, so this situation may well change. There are several mining claims on these tributaries.

RECREATIONAL SEGMENT

Wade Creek

Wade Creek is classified as a recreational river. It may be unique in the Wild and Scenic system because its course and bed are largely reflections of mining activity. A dredge, now in ruins near Wade Creek mile 3 (Taylor Highway milepost 87), operated on the creek for several years in the 1930's and 1940's, changing the course of the stream with hauling piles as it worked up the drainage.



Federal mining claims extend the entire length of Wade Creek, and there are several active operations on the creek and its tributaries. These operations have been the cause of considerable conflict due to the high turbidity levels of their effluent. The turbid water can make visibility downstream so poor that suction dredgers find it difficult to operate as far downstream as Uhler Creek. Recreational users of the South Fork and the Walker Fork campground are also disturbed by the silt laden water.

The Taylor Highway runs along Wade Creek, and the Walker Fork campground is situated at its mouth. Because of this, Wade Creek receives more visitor use than any other stream segment, although it has been so impacted by mining that in many places there is no clue as to the original stream course.

UNCLASSIFIED SEGMENT*

The Mosquito Fork - Mile 30 to Mile 33

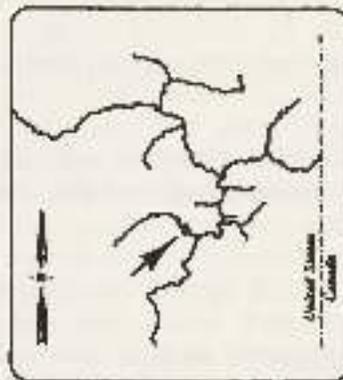
Congress did not classify the Mosquito Fork between Ingle Creek at mile 30 and the highway bridge at mile 33.

The river here is about 100 feet wide, with a gradient averaging 9 feet per mile. The bed is rocky, with larger rocks making canoeing or rafting increasingly difficult as water levels recede. Continuous maneuvering and sharp eyes are required.

The right bank is flat and covered with black spruce and wet tundra. The left bank is steep, with a mixed forest of aspen and spruce.

Access is available by dry weather road to the Ingle Creek mining operation, but there is essentially no recreational floating on this segment. Hikers, gold panners and picnickers sometimes wander upstream from the highway bridge.

* Refer to Parts II and III, Item 11.



Boundary Determination

LEGISLATIVE CONTROLS

ANILCA classified and designated that, subject to valid existing rights, the stream segments listed in Table 1 shall be administered pursuant to the Wild and Scenic Rivers Act.

ANILCA further amended the WSRA to authorize the establishment of a river corridor boundary which may include up to an average of 640 acres per river mile for all designated Alaskan Wild and Scenic Rivers. The corridor may not include any lands owned by the State or a political subdivision of the State, nor shall the boundary extend around any private lands adjoining the river in such a manner as to surround or effectively surround such private lands.

BLM POLICY

For the purposes of preparing a detailed boundary for the Fortymile National Wild, Scenic and Recreational River corridor the following policies were applied:

- The acreage limitation for the river corridor has been measured outward from the ordinary high water mark along the shoreline and does not include islands in the river nor the riverbed.
- Those portions of the Fortymile National Wild, Scenic, and Recreational River which in their natural and ordinary condition were used or were capable of being used as a "highway of commerce" as of Alaska Statehood in 1959 are considered navigable for title purposes. For those portions determined to be navigable, the State of Alaska retains ownership of the riverbed between ordinary high water marks and such lands are not included within the boundary of the river corridor.

A final determination of navigability has been made by the BLM and the findings are that, as of Statehood, the Fortymile River was susceptible to navigability from its' mouth upstream to the confluence of the North and South Forks; the South Fork was susceptible from the North Fork upstream to Chicken; and the North Fork was susceptible from the South Fork upstream to the Kink. The lands beneath these waters are excluded from the boundaries of the river corridor.

- While islands in the river corridor are not used to determine the total acreage for navigable sections of the river, islands which are stable, vegetated, and not subject to flooding are included within the boundary. All islands in the nonnavigable section of the river are also included in the boundary.
- A review of State selections and Federal mining claims has been made. If current BLM land records identify a land parcel as non-Federal or identify a prior right which will result in the transfer of a land parcel from Federal ownership, these parcels and their traditional access routes are excluded from the river corridor boundary. Examples of such prior rights are State and Native land selections, settlement claims, and Native allotments.

- Under this river management plan and consistent with the regulations found in Title 43 of the Code of Federal Regulations, Subpart 3809 (43 CFR 3809), reasonable access for miners to reach properly located and maintained mining claims will be provided. Inclusion of mining claims with the river corridor boundary of the Fortymile National Wild, Scenic, and Recreational River should not be construed as being an administrative action challenging the rights of claim holders under the U.S. Mining Laws. Lands within one-half mile of the bank of any Alaskan river classified a "wild" river have been withdrawn, subject to valid existing rights, from all forms of appropriation under the mining laws and the mineral leasing laws by Section 606 of ANILCA. When mineral patent has been applied for and requirements for patent met, the rights patented and reasonable access to enjoy those rights will be provided in accord with Section 9(a)(iii) of the WRA (16 U.S.C. 1280(a)(ii)).

Where wild segments intersect scenic segments, the withdrawal from mineral entry and leasing associated with the wild segment will be extended in a logical and prudent manner under the following general guidelines: where the segments are parallel or at an acute angle to each other, the withdrawal will generally not exceed one-half mile from the point of closest proximity of the two segments. Minor adjustments will be permitted for management purposes to bring the withdrawal into alignment with nearby corridor boundaries. Where the segments are perpendicular, the withdrawals related to the wild segment will be extended to intersect the ordinary high water mark of the closest bank of the scenic segment. Exceptions to this policy will be limited to isolated areas where the withdrawals can be justified for protection of specific resource values.

- Should any privately claimed or State selected lands not pass from Federal ownership, these lands and their access routes shall be encompassed by the adjacent river corridor boundary so long as such inclusions do not exceed the acreage limitations contained in Section 103(b) of ANILCA.

- Where private lands are adjoining, they will be excluded from the river corridor by a common external boundary, and access will be provided to the entire block via the most commonly used route.

- All non-Federal interests and their access have been identified on the maps appended to this report. Most are provided access by the Taylor Highway. Although the scale of the boundary maps sometimes prohibits a clear depiction, it is our intent that these parcels be excluded from the corridor boundaries.

- Federal lands within the protracted survey sections which are wholly or in part within one mile of the banks of the Fortymile National Wild, Scenic, and Recreational River were withdrawn from all forms of appropriation under the public land laws, from location and entry under the mining laws, and from leasing under the mineral leasing laws (Public Land Order 5170, as amended). It is proposed by this plan that this Public Land Order be modified to describe only those lands included within the final boundary of the river corridor and revoked for those lands not included within this boundary. The Public Land Order may be further revoked as described in Action 9.1, and 9.2. This policy in combination with the one-half mile withdrawal established by Section 606 of ANILCA will maintain the withdrawal of all Federal lands within the final wild river corridor boundary.

ADDITIONAL CONSIDERATIONS

In addition to being affected by these legislative controls and BLM policies, the boundary was adjusted to protect resource values such as falcon aeries, historic resources, and outstanding scenic views, so far as is consistent with the acreage limitations, and the varied goals for wild, scenic, and recreational segments. The final boundary was then further adjusted to reference protracted survey section lines (minimum 40 acre parcels) whenever possible in order to simplify the legal description of the boundary.

Therefore, based on the designated beginning and ending points and on the legislative controls policies and considerations described in the preceding discussion, the acreage contained within the Fortymile National Wild, Scenic and Recreational River Corridor Boundary is approximately 250,000 acres.

For further information on the boundary, see the legal description and the detailed maps in the Appendix of this plan.

Yukon-Charley Rivers
National Preserve

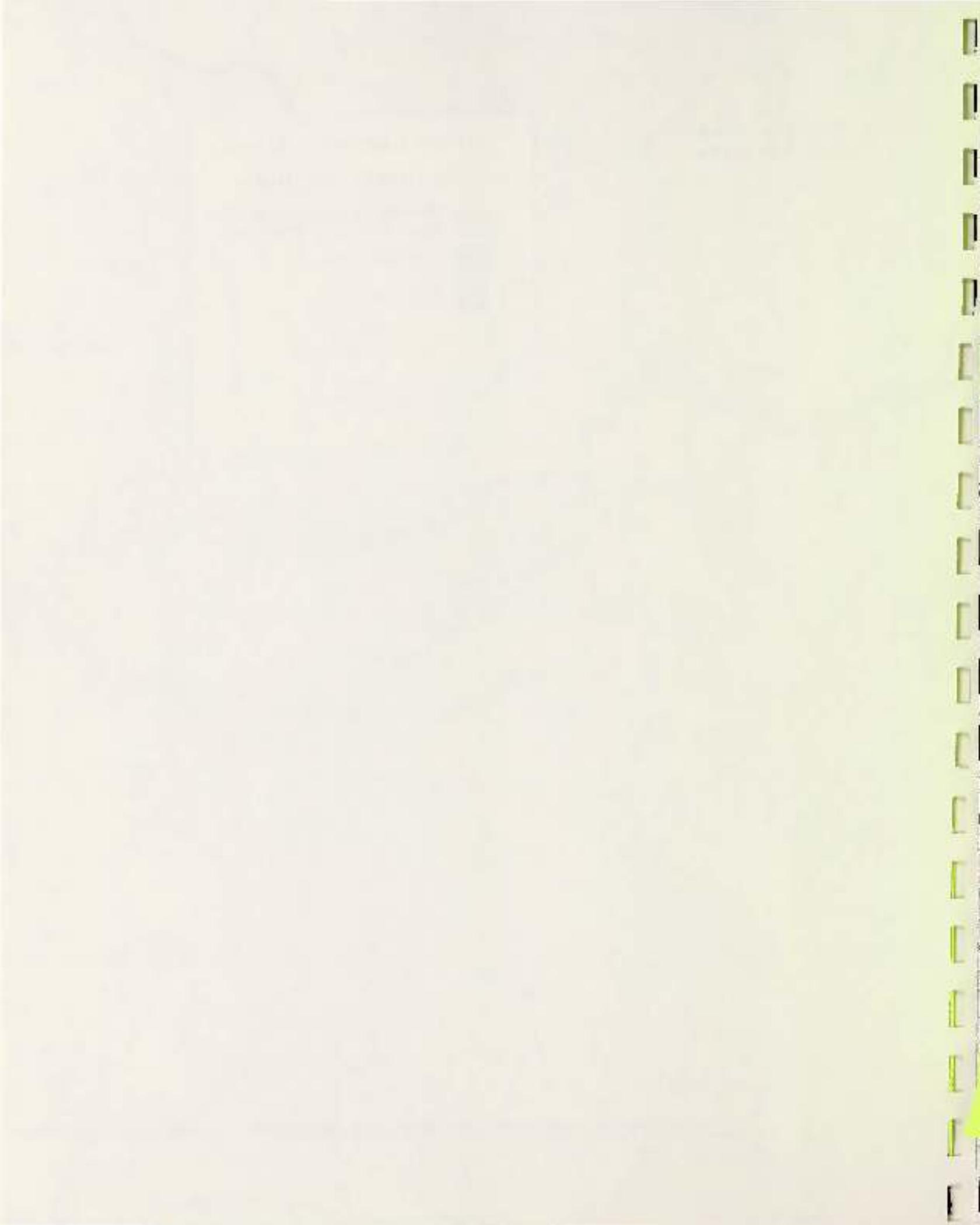
River Corridor Map Northern Portion

-  Fortymile Wild and Scenic River Corridor Boundary
-  Campground
-  Boat Landing

Scale
1:250,000
0 1 2 3 4 5
MILES



United States
Canada



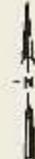
**River Corridor Map
Southern Portion**

 Fortymile Wild and Scenic
River Corridor Boundary

 Campground

 Boat Landing

Scale
1:250,000



Map legend and scale information box containing symbols for boundary, campground, boat landing, scale, and north arrow.

MATCH LINE

Diamond
Mountain

MOSQUITO
FORK (WILD)

Kechumstuk

Taylor
Mountain

FRANKLIN CREEK
(SCENIC)

Chicken

NAPOLEON
CREEK
(SCENIC)

SOUTH
FORK
(SCENIC)

WADE CREEK
(RECREATIONAL)

Walker Fork Campground

WALKER
FORK
(SCENIC)

To
Dawson

Boundary

DENNISON FORK
(SCENIC)

Taylor Highway

WEST FORK

West Fork
Campground

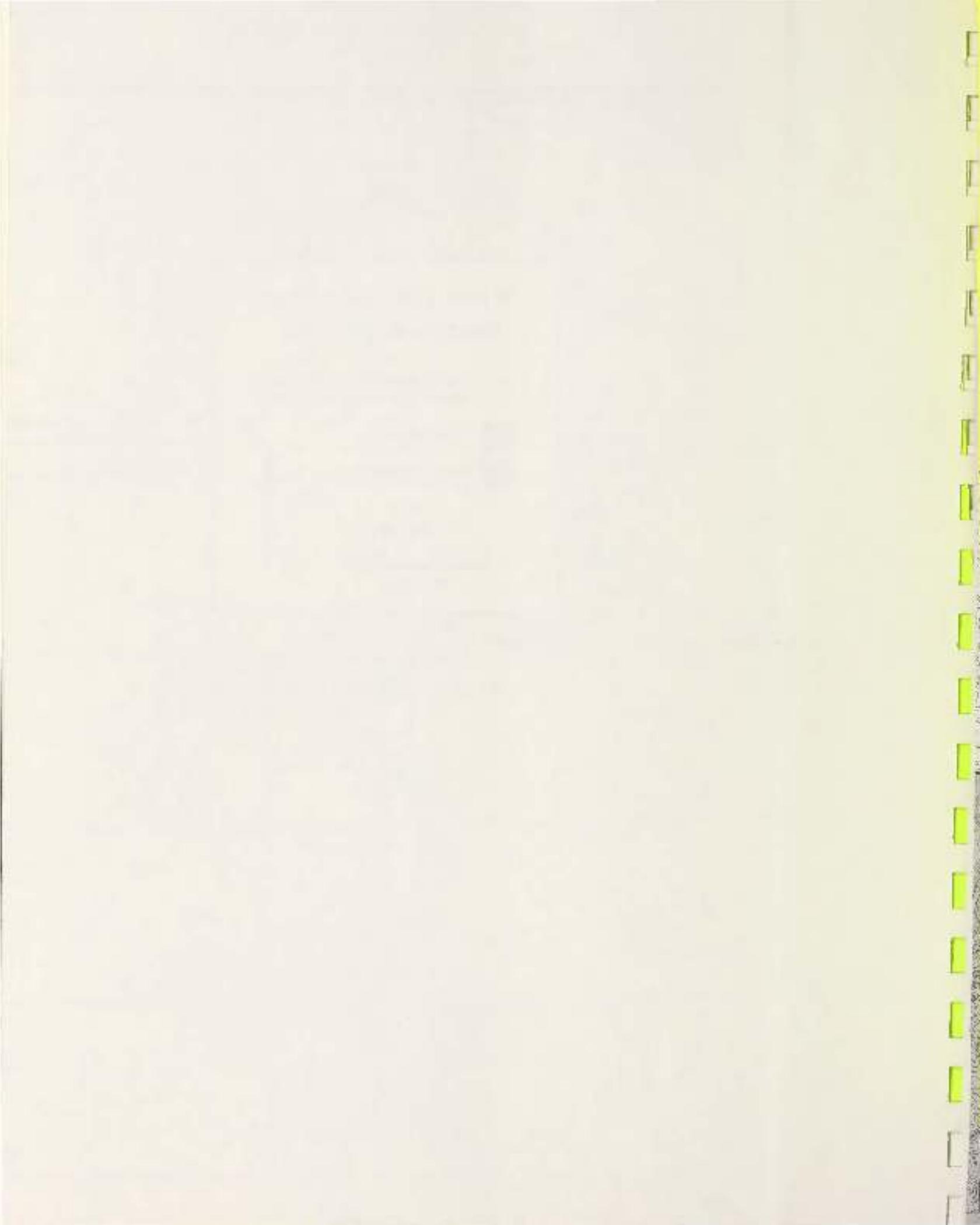
(SCENIC)

LOGGING CABIN CREEK
(SCENIC)

Mount
Fairplay

To
Tok

Alaska
Yukon



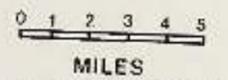
Yukon-Charley Rivers
National Preserve

Land Status Map
Northern Portion

- Native Selections and Interim Conveyances
- State Selections
- Federal Lands

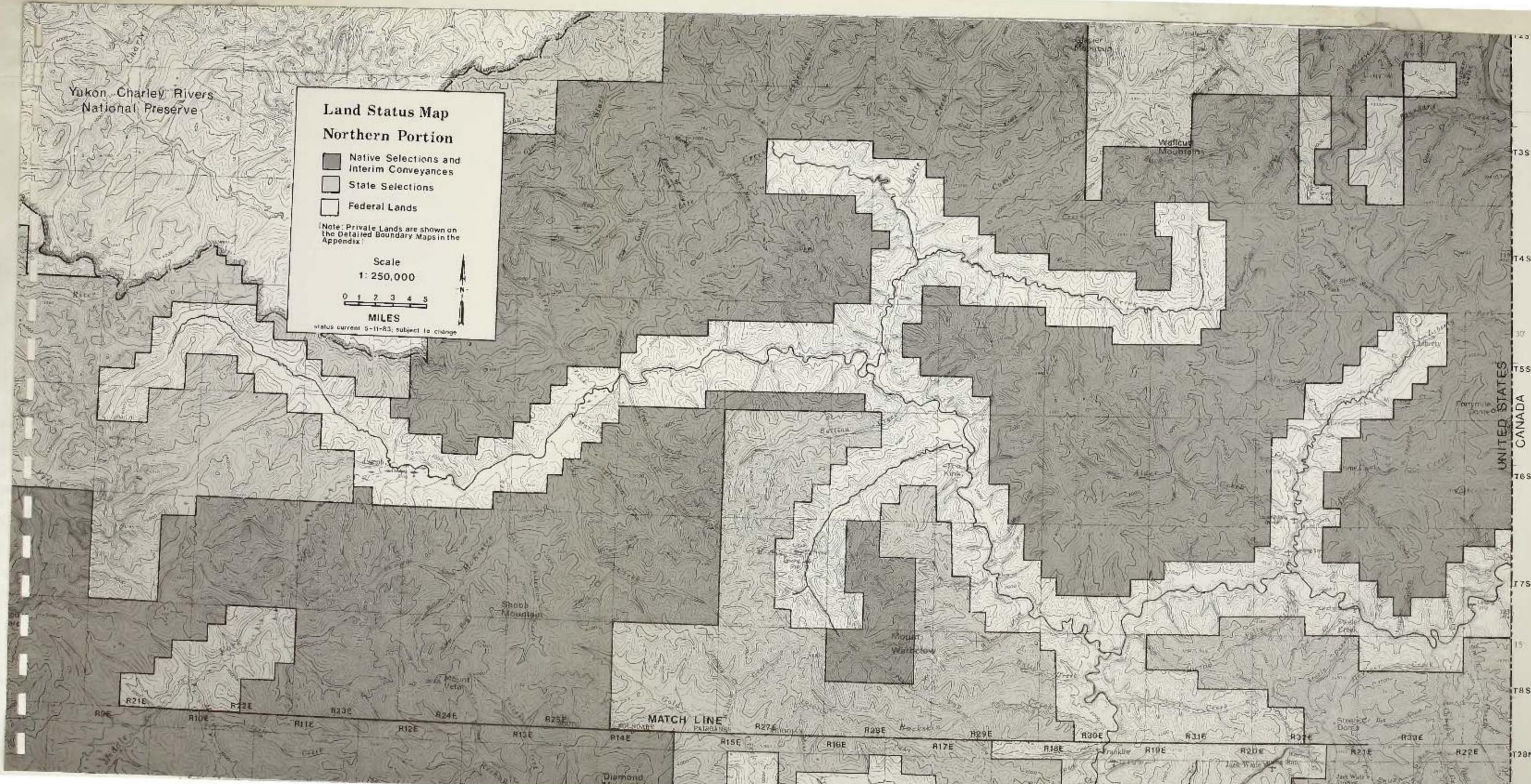
Note: Private Lands are shown on the Detailed Boundary Maps in the Appendix

Scale
1: 250,000



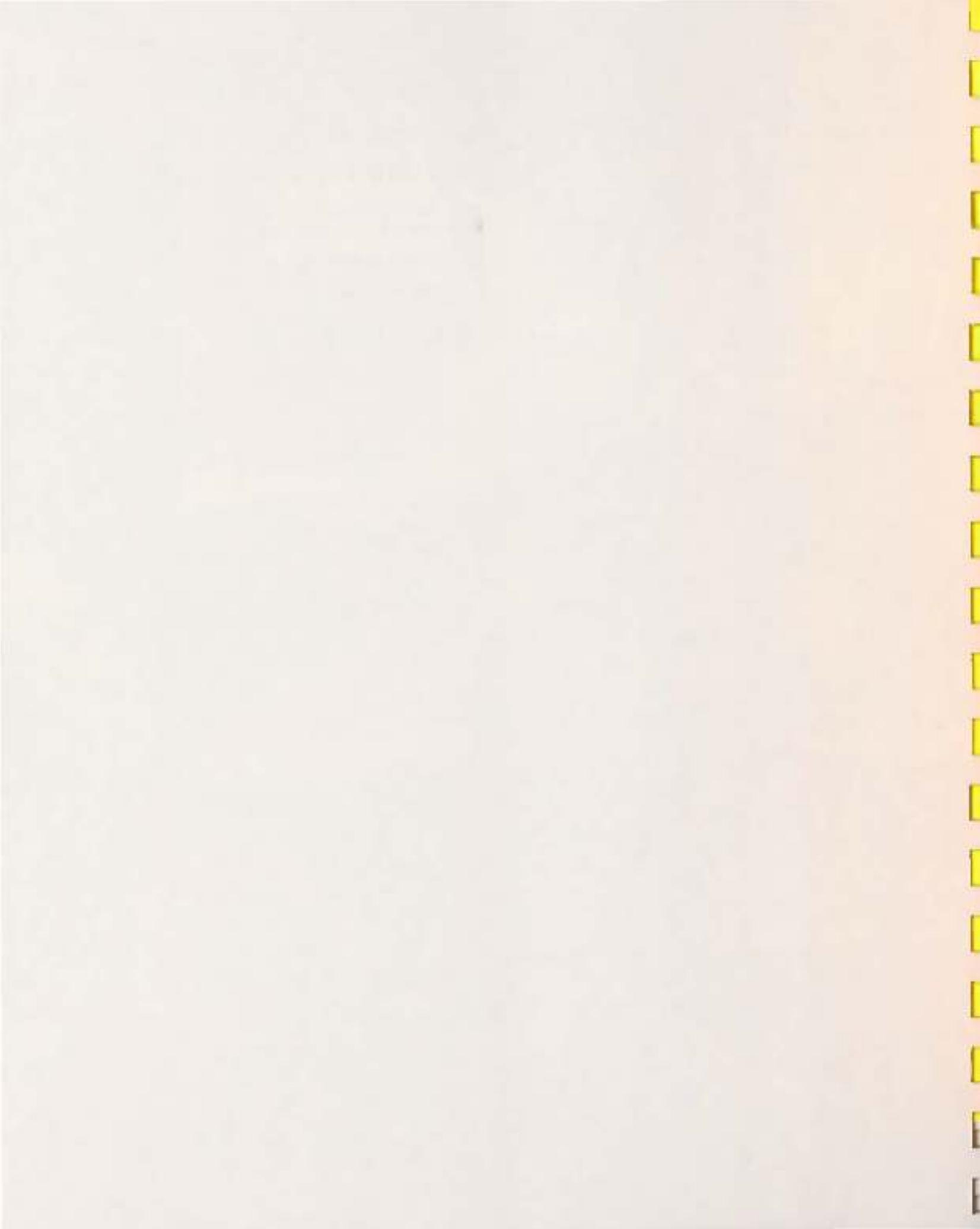
MILES

Status current 5-11-83; subject to change



UNITED STATES
CANADA

R09E R21E R22E R23E R24E R25E R27E R29E R30E R31E R32E R33E R34E
R10E R11E R12E R13E R14E R15E R16E R17E R18E R19E R20E R21E R22E
T35S T45S T55S T65S T75S T85S T28N

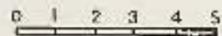


Land Status Map Southern Portion

-  Native Selections and Interim Conveyances
-  State Selections
-  Federal Lands

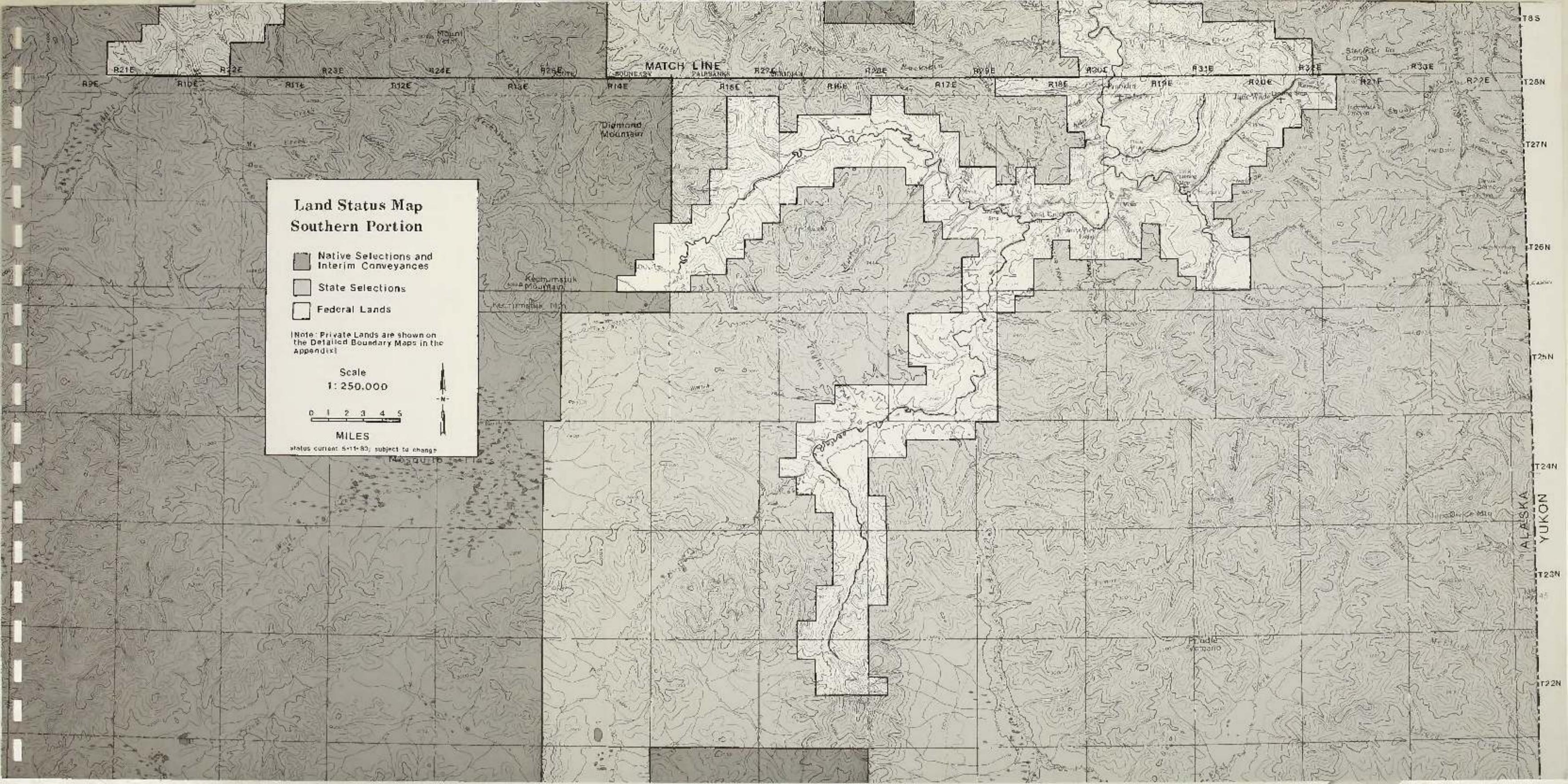
Note: Private Lands are shown on the Detailed Boundary Maps in the Appendix

Scale
1: 250,000



MILES

status current 5-11-83, subject to change





Part II Management Considerations

Management Objectives

When the Fortymile River and many of its tributaries were designated as a component of the National Wild and Scenic Rivers System through ANILCA, Congress intended that they would be preserved in a free-flowing condition, and that the river and its immediate environment would be protected for the benefit and enjoyment of present and future generations.

To this end, management actions for the Fortymile Wild and Scenic River will have the following objectives:

- To preserve the river and its immediate environment and its existing primitive setting which, although in places shows substantial evidence of man's activity, is pleasing to the eye.

Wild River segments will be preserved free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted; these represent vestiges of primitive America.

Scenic River segments will be preserved free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped but accessible in places by roads.

Recreation River segments will be more accessible, with more development than either Scenic or Wild segments.

- To preserve the free-flowing condition of the waters.
- To prevent degradation of water quality.
- To provide high-quality recreational opportunities associated with a free-flowing river for present and future generations.
- To provide recreational use of fish and wildlife resources, including hunting and fishing within the framework of appropriate Federal and State laws.
- To provide for a level of utilization of land and water resources which will leave the existing environment unimpaired for the use and enjoyment of future generations.
- To provide a variety of opportunities for interpretive, scientific, educational, and wildlife-wildlands oriented uses.
- To assure preservation of historic values.
- To assure preservation of archeological values.
- To protect valid existing rights, and future rights granted pursuant to appropriate Federal and State laws.
- To maintain and improve fish and wildlife habitat.

Are obj. 3 and 4
for classes?

Major Issues and Concerns

During the preparation of this document, the BLM asked the public and other governmental agencies to identify specific issues that should be considered in the plan. The following discussion of issues represents the input received in combination with information obtained through river management activities.

Each issue discussed addresses existing or potential conflicts. Most of these conflicts involve two or more user groups with differing perceptions and needs. Some issues represent conflicts with the objectives of Congress when it designated the Fortymile, and certain tributaries, as components of the Wild and Scenic Rivers System.

A major thrust of the management program developed in this plan is the resolution of the conflicts described in the issues in a manner consistent with the management objectives adopted for the Fortymile component of the Wild and Scenic River System.

While 11 areas of concern have been identified in the following issue statements, many other possible issues were considered during the planning process. Some were discussed in more comprehensive planning efforts, such as the Fortymile Fire Management Plan, which addressed management prescriptions for fire in the river corridor. Some do not pose a problem, and require no BLM action, such as hunting and fishing use. Still others, such as dam construction, are clearly prohibited by law (in this case, WSPA Section 7), and require no further policy development.

ITEM 1 - SURFACE TRANSPORTATION

ISSUE. What sort of vehicle use, and transportation and utility systems, can be allowed within or through the various river segments?

SITUATION: At the present time the Taylor Highway provides access to the Fortymile River in a number of locations including the West Fork of the Dennison, Mosquito Fork, South Fork, and on the main stem by O'Brien Creek. The road access is one of the attractions of the Fortymile float trip since both put-in and take-out points are accessible via roads.

In addition, ANILCA specifically provides for access to private lands and developments within or adjacent to any of the newly designated Parks, Preserves, Refuges, and Wild and Scenic Rivers in Alaska. Doyon, Ltd., the Native Regional Corporation of Interior Alaska, and the State of Alaska may come to own nearly all of the land around the Fortymile River. Doyon, Ltd., in conjunction with several mineral development companies, is evaluating the feasibility of developing a large open pit asbestos mine on these lands. ANILCA states that the classification of certain segments of the Fortymile as wild "shall not preclude such access across those river segments as the Secretary of the Interior determines to be necessary to permit commercial development in an environmentally sound manner, of asbestos deposits in the North Fork drainage."

The river basin has large deposits of minerals including gold, copper, and tungsten, as well as asbestos. Undoubtedly, as mineral development increases in the area, more road access will be required.

Winter and early spring are popular times for moving heavy equipment and supplies to mining operations along the river. The river ice can often be used as a trail more conveniently than an overland route, and long term resource damage is minimized by frozen ground and the protective snow and ice.

During the periods of high water, motorboats equipped with jet units can travel up and down many portions of the lower river segments. At low water levels, the numerous riffles and rapids prevent motorboat operation. Most suction dredge, and many placer mining operations along the river depend upon motorboat access during the summer.

When the rivers are frozen in winter, snowmobiles are used for transportation by trappers with some regularity on Champion Creek, the North Fork, South Fork, Main Stem, Middle Fork, Mosquito Fork and Dennison Fork. The total number of trappers on the Fortymile and its tributaries is low, but their area of operations extends through most of the river corridor.

Dogsleds and foot travel are also used in the area.

CONSIDERATIONS:

- The BLM can seek to influence the route of new roads to maintain the river's primitive qualities. The BLM might improve river access points along the Taylor Highway that could increase recreational use of the river. The BLM could limit certain types of access to specific seasons to mitigate effects on recreational and biological resources.

- Increased road access would undoubtedly influence recreational use on the river. Some segments of the Fortymile, now only accessible by air or poling boat, would be available to those with less time and money for an extended river trip. Such an increase in use would probably require additional facilities and use supervision, decreasing the primitive nature of these areas while increasing management costs. Recreational users desire some restrictions on road access if they will reduce the impact of man on the primitive river environment.

- The BLM is required to protect the primitive setting of the river corridor, especially on scenic and wild segments.

- Increased road access would facilitate greater development of natural resources in the Fortymile basin. This would create new jobs, invite new people to the area, and increase the recreational use of the river. Miners might then find it easier and more profitable to operate claims in presently inaccessible areas.

- Miners must have reasonable access to their claims. Should the BLM seek to limit access to specific time periods, routes, or areas, there might be increased costs, time and effort required of the affected individual or company.

- Recreational users would generally prefer to have no motorboat use on the river since most come to the Fortynmile for solitude and a primitive setting. Motorboat use diminishes these qualities for these users.
- Motorboat use decreases the feeling of solitude for the nonmotorized river users, but motorboat users find other means of access inconvenient and perhaps infeasible.
- Other users of the Fortynmile basin such as trappers and hunters may suffer from increased use and disturbance to presently remote areas if human intrusions increase with better access.
- Increased motorized use may affect wildlife along the river by keeping some species away from riverside habitats.
- Winter access to mining operations currently affects few, if any, recreational users. This type of use has caused little long-term damage to resources, although it can interfere with trapping activities. The effects of fuel and oil spills, trash dumping, and salvage of equipment that falls through the ice are sometimes noticeable the summer following a "winter melt."
- Snowmobile use is not perceived as an issue in the Fortynmile Area. This use has been common for some years, and resource damage is generally limited to the clearing of narrow trails.

ITEM 2 - AIRCRAFT USE

ISSUE: Should the BLM improve existing airstrips, or build new strips in the more remote areas of the river corridor?

SITUATION: At the present time the upper reaches of the Fortynmile are remote and receive little use. Airstrips are located at Joseph on the Middle Fork, or Slate Creek (a tributary of the North Fork), and at Mitchell's Ranch in the Mosquito Fork flats. Only the airstrip at Joseph is serviceable in most seasons. The strip at Mitchell's Ranch, which is outside the river corridor, may be on a Native Allotment, and is frequently too wet to be useable. The strip at Slate Creek is on private land and is not available to the general public. The strips are hazardous and attempted use should only be by very experienced and proficient pilots.

There are several other natural landing areas that have been used by aircraft, including gravel bars and the frozen river itself during winter.

CONSIDERATIONS

- Increased use would almost certainly develop if air strips were improved or constructed.
- Hunters would have greater access to isolated hunting areas with a possible impact on big game populations.

- People seeking an uncrowded and wild river trip can presently find such an experience on the upper Fortymile due to the limited access. Increased access would reduce the opportunity for a primitive recreation experience in these areas.

- Increased access could spread use out. Presently the airstrip at Mitchell's Ranch is unusable for much of the year due to its frequent wet condition. Improved air access to the Mosquito Fork would probably result in more use of this branch of the river that might otherwise be concentrated on the Middle Fork. Concentration of use on the air accessible stream segments is not presently an issue.

- Improved air access might reduce the overall cost of a Fortymile float trip and thus make it available to a larger segment of the public.

- The BLM has no funds available or anticipated for airstrip construction or maintenance.

- Airstrips might be developed by private interests, as lands bordering the river boundaries are conveyed to the private sector by the State and Federal Government.

ITEM 3 - WATER QUALITY

ISSUE: How should the BLM maintain or improve the water quality in the river corridor?

SITUATION: Because of the high incidence of glacier run-off in many Interior Alaskan rivers, a clear flowing stream is somewhat unique. Under natural conditions, the Fortymile River is a clear water stream except during periods of spring flooding, and following severe summer storms.

The maintenance and monitoring of water quality is a function of the Alaska Department of Environmental Conservation. The State of Alaska has designated these waters to be managed to their highest quality standard. This is not likely to change.

In recent years turbidity has increased substantially on several tributaries of the Fortymile as a result of placer gold mining effluent.

In addition, improper disposal of human sewage, primarily by long term campers associated with suction dredging along the river, poses potential health hazards for downstream river users.

CONSIDERATIONS:

- Recreationists may find their expectations for a clear water stream are not met if they happen to use the river during periods of high man caused turbidity. Man caused turbidity is often evident to the river user when they see mining effluent enter the stream, or see sudden increases in turbidity during dry periods. As a result, feelings of naturalness may be affected. In addition, river floaters may find underwater hazards hidden from view by muddy waters, greatly increasing the navigational problems.

during low water periods. The overall enjoyment of the river trip may be impaired. Suction dredgers prefer clear water for their underwater work. High turbidity may temporarily shut down their operations.

- Cat and sluice miners utilize water for washing gravel in their sluice boxes. High water quality is less likely to be a concern of this group, although very dirty water will adversely affect pump life and fine gold recovery.

- Contamination of the river waters by sewage poses a health hazard for all who use these waters.

ITEM 4 - MINERAL DEVELOPMENT

ISSUE: How can mineral development be managed to minimize adverse effects on the wild and scenic character of the river?

SITUATION: The first major gold strike in Interior Alaska occurred on the Fortymile, and mining has been an important part of the local economy ever since. With the rise of gold prices during the last few years, gold mining activity has increased considerably from the relatively idle years of the early 1970's. Mining activity within the river corridor is presently concentrated on Wade Creek, the South Fork down to Ullier Creek, and the main stem from Polly Creek downstream. The opportunity to view past and present gold mining efforts is one of the recreational attractions of the area.

In cat and sluice mining operations, heavy equipment is used to remove overburden and gold bearing gravels from the streambed and adjacent river terraces. The gold containing gravels are then washed in large sluice boxes and the gold is removed. The impacts from mining activities include increased sedimentation with an attendant lowering of water quality, which can diminish the perception of wildness and naturalness for river recreationists. In addition, aquatic flora and fauna would be affected by a lowering in water quality.

CONSIDERATIONS:

- The nature of gold mining, as it is practiced in the Fortymile area with heavy equipment, has caused conflicts with other area users who expect, or need, clear water. Settling ponds are effective for larger particles but the very fine clays can remain suspended in the stream for many hours.

- The destruction of surface vegetation and removal of topsoil and humus slows reclamation of disturbed sites and reduces the primitive nature of the scene. Recreationists are likely to perceive a loss of scenic quality as a result.

- The visual impact of denuded streambanks and terraces affects both river recreationists and people driving the Taylor Highway. Both are likely to sense a loss of scenic beauty and naturalness. The loss is temporary, and in a period of from 10 to 50 years the vegetation on suitably leveled sites will generally regain a relatively natural appearance.

● It is the usual practice of miners to occupy the site of their claims. The proliferation of cabins, equipment, and other mining related artifacts may diminish perceptions of a primitive setting for recreationists. At the same time, the miners feel they need to live at their claims, and today's junk may fascinate the visitors of tomorrow. In fact, some visitors are particularly drawn to the Fortymile by its rich mining history and store of artifacts.

● During the past few years suction dredging for gold has increased dramatically, especially on the South Fork and Main Stem of the Fortymile. A suction dredge consists of an engine mounted on floats that operates a pump. The pump is attached to a flexible hose, which is used on the bottom of the river like a giant vacuum cleaner to suck up gravel and gold from crevices in river bedrock. The gravel picked up is washed over a small sluice box usually located on the same floats as the engine.

● Suction dredges are quite noisy and create craters and piles of tailings along the stream bottom. These holes and ridges create an unnatural looking stream channel, and at times hinder navigation during periods of low water.

● Recreationists or others using the river for travel or transportation find such disruptions disturbing. Usually, spring floods in succeeding years smooth out these disturbances. Dredging contributes to an increase in turbidity for a short distance below the operation.

● Occasionally, a dredger will dig into the banks of the river to mine the older channels and terraces. This destabilizes the shoreline and increases bank erosion.

● Most dredges over 5-inch intake diameter are operated on claims located on the bed of the stream under Alaska State mining laws. These claims may be valid only if the stream in question was navigable at Stathouse. (See Item 10 for a more complete discussion.) Valid riverbed claims are those on State lands, and are excluded from the river boundaries, as discussed in the "Boundary Determination" section of this plan. However, the BLM has a clear responsibility to manage related activities, such as camping and vehicle use, that occur above the ordinary high water mark.

● There are people who find the mere presence of machinery and mining activity on a wild and scenic river contrary to the objectives of the Wild and Scenic Rivers Act. Some recreationists find the qualities of naturalness and solitude are compromised by the presence of suction dredgers on the river.

● There is a concern that cat and sluice mining, suction dredges, and long term camps might cause peregrine falcons to abandon their aeries. The relationship between use of a given area by man and the behavior of peregrines is not well understood at this time.

● The Wild and Scenic Rivers Act authorized the imposition of special regulations for mining in designated wild and scenic rivers to, among other things, safeguard against pollution and impairment of scenery. Such regulations would apply only to mining claims perfected after ANILCA (WSRA Section 9).

ITEM 5 -- FACILITIES AND VISITOR INFORMATION

ISSUE: What facilities for visitors should be provided in the river corridor? Facilities could include campgrounds, trail development, interpretive centers, signs, or registration boxes.

SITUATION: Today the BLM maintains three campgrounds, two boat landings, and several vehicle parking areas in the river area. Miners use the parking areas for equipment and fuel storage as well as vehicle parking.

Of the campgrounds, the West Fork Campground on the Taylor Highway at Milepost 49, and the Walker Fork Campground at Milepost 89 receive the vast majority of visitor use. The two provide a total of 46 developed camping sites. During the summer of 1982 these campgrounds hosted visitors representing 48 states and 17 countries. Estimated total use was over 7400 visitor days, with Alaska and California contributing the highest state totals. Canada, Germany and Switzerland have been the predominant foreign countries represented.

The campground at Liberty Creek, with seven sites, receives much less use. The 1982 estimate was 500 visitor days.

Very little use of developed campsites occurs before April 15 or after September 15.

The boat landings at the South Fork bridge and Fortymile bridge are in constant use during summer. They provide parking and access to the water for nearly all river users on the South Fork and main stem.

The vehicle parking areas that the BLM maintains along the Taylor Highway range from a .3 acre site at the Mosquito Fork bridge to several small turnouts along Wade and O'Brien Creeks. Maintenance of these sites is limited to trash collection.

The Chicken Guard Station at Taylor Highway Milepost 65 provides housing for a recreation technician, who handles the day-to-day maintenance workload in the campgrounds and parking areas. Other BLM technicians and resource specialists use the Guard Station as a base of operations for various management activities in the area. When the maintenance workload permits, the recreation technician mans the Guard Station to answer questions, and disseminate information on the river through brochures and mileage tables.

Visitor comments on registration forms and in letters generally reflect appreciation of the facilities and information services provided. Except for boat landing users, most visitors using the developed facilities are traveling the Taylor Highway for sightseeing and a visit to Eagle or Dawson.

CONSIDERATIONS:

- Many people expect interpretive programs or other information services when they come to a specially designated national area such as a wild and scenic river. Information such as maps, guides, and natural trails could be provided.

- Facilities and interpretation have both costs and benefits. They require additional manpower and expense. In addition, some feeling of primitiveness and self determination may be reduced by providing unsolicited information about the river's character and hazards. On the other hand, orientation and interpretation can sometimes mitigate management problems by influencing visitor behavior. Interpretation can also increase the enjoyment of a visit to the Fortymile River.

- Providing visitor information will generally only affect those individuals taking advantage of the service. The people most likely to use interpretive services are those recreationists with few previous visits, who plan their trip in advance, and travel long distances to reach the area. Too much interpretation could reduce the primitive setting for some people by increasing the amount of public use.

ITEM 6 - VISITOR MANAGEMENT

ISSUE: Should restrictions be placed on visitor use in the river corridor?

SITUATION: At the present time long term camping (over ten days in one location) is a major use of the river corridor. This is particularly true along the South Fork and main stem of the river all the way to the Canadian border. Most of these long term camps are associated with suction dredge gold mining in the river. Camping also occurs in a random manner along the Taylor Highway. Many areas, especially those directly adjacent to the river, present problems with collection of trash, destruction of stream-side vegetation, and a general appearance of disorder.

Long term camps have caused congestion and conflict at boat landings near the South Fork and Fortymile bridges. The Bureau received several complaints about this in 1980, which led to the closing of the Fortymile parking area to long term camping. A similar situation is developing at the South Fork.

Cleaning up the abandoned camps of long term campers has been a major activity for BLM river personnel. To cope with this problem, the BLM instituted a permit system for long term campers in 1982. Stipulations required that these campers maintain clean camps during their stay on the river, as well as to thoroughly clean up when they moved on.

Existing regulations require permits for all commercial recreation operations on public lands. Few of these commercial recreation use permits have been issued in the Fortymile area, but there is a good possibility that activities such as commercial float trips will increase in the future.

CONSIDERATIONS.

- Most long term campers object to the permit system as a needless and ineffective government interference into their affairs.

- Those utilizing the river or the Taylor Highway for shorter time periods object to the present condition of long term camps. These camps frequently occupy the best campsites along the river and preclude their use by anyone else. Some long term campers treat their campsites and adjacent land as private property although they are located on public lands. River travelers have been harrassed at gun point over use of public land. Camps frequently consist of visqueen shelters, several tents, and piles of equipment and gear.

- The establishment of permanent camps that are easily visible from the river conflicts with the objectives of the Wild and Scenic Rivers Act to the extent that these camps detract from the primitive and scenic values of the area.

- Long term camping is intimately tied to large scale suction dredging, and dredging itself affects the river environment, as described earlier. River users have complained about the noise and visual impact of the suction dredging.

- Commercial recreationists may one day conflict with private recreationists. Other wild and scenic rivers have found limitation of recreational use, with allocations between commercial and private interests, to be necessary to avoid resource damage.

ITEM 7 - HISTORIC AND ARCHAEOLOGICAL RESOURCES

ISSUE. How should the BLM protect or preserve significant historic and archaeological resources?

SITUATION: Archaeological resources in the area include historic and prehistoric sites of native occupation, caribou fences, and other evidence of scientific and social interest. Such resources are generally inconspicuous or buried, and have not received attention from pot hunters or vandals; only when a surface disturbing project is proposed do they become an issue. Two sites - the Kink and the Jack Wade Dredge - are on the National Register of Historic Places.

The Fortymile River was the scene of the first major gold strike in Alaska. Artifacts from this era can still be found along the river, along with those of more recent vintage. Many people visiting the Fortymile, as well as those who live in the area, derive great enjoyment from discovering and viewing historical objects.

Souvenir collectors often haul off interesting historical objects. In some cases, vandals have destroyed artifacts. In either case, the future enjoyment of these historical objects is lost.

Another aspect is natural deterioration of historical objects. Given enough time, most will be lost through this natural process.

CONSIDERATIONS.

- People who enjoy the historic background and heritage of the Fortymile River are adversely affected when artifacts are lost or destroyed. The flavor of experience is also

changed when objects are removed from the riverine context for display at a visitor center or museum. Signing and enforcement personnel have negative connotations, and intrude on the primitive river setting.

- The BLM is obligated to consider cultural values -- especially when Bureau approval is required for a surface disturbing project (Historic Preservation Act of 1966).

ITEM 8 - MANAGEMENT OF CABINS ON UNAPPROPRIATED PUBLIC LANDS

ISSUE: Should limitations be placed on the use, construction, or maintenance of cabins on public lands?

SITUATION: Cabins built by miners and trappers are found throughout the Fortymile drainage. Some of the cabins, such as the buildings at Franklin, were built during the original gold rush era in Alaska. Natural decay is slowly reducing many to ruins.

One unauthorized cabin was constructed at the Kink, in 1981-83. Several cabins have been constructed on Federal mining claims in recent years.

These cabins, with the exception of some on active mining claims, are generally available for public use, but sometimes are occupied by a single user who prevents their use by others. In addition, some occupants damage the buildings or leave them in an untidy condition. Those who wish to occupy a cabin during a river trip sometimes find them unavailable if taken over by long term users, or left in a less than satisfactory condition. However, long term occupancy of cabins generally leads to an increased maintenance effort by the user, which can extend the life of the structure while improving its comfort and appearance.

CONSIDERATIONS:

- If natural decay is permitted to continue unabated, all of these cabins will eventually be reduced to ruins due to the moist, cool climate. Their historical and utilitarian values would be lost to all users. Some users expecting a very primitive setting might feel that habitable cabins are out of place, and would prefer to see them allowed to decay.

ITEM 9 - MINERAL WITHDRAWAL

ISSUE: Should existing mineral withdrawals be lifted from portions of the river corridor?

SITUATION: Prior to ANILCA, administrative withdrawals from locations under the mining laws were placed on all sections within 1 mile of any designated stream segment.

CONSIDERATIONS:

- Any new claims or easels that might be established following a lifting of existing withdrawals would be subject to regulations the Secretary of the Interior might prescribe to, among other things, provide safeguards against pollution of the river and unnecessary impairment of the scenery (WSRA Section 91). If such regulations were implemented for the Fortymile component, they would not apply to claims perfected prior to ANILCA, but could address such problems as noise, visual impact, and water pollution on new claims to a greater degree than current mining regulations.

- There has been public sentiment expressed on both sides of the issue. Some people would like the opportunity to mine on suitable sites, even under additional regulations as discussed above. Some feel that additional mineral development is totally inappropriate, especially in wild and scenic stream segments.

ITEM 10 - MANAGEMENT OF LANDS UNDER NAVIGABLE WATERS

ISSUE: How can submerged lands be managed to complement the goals and objectives for management of the adjoining wild, scenic, or recreational river corridor?

SITUATION: Title to the lands beneath navigable water bodies was granted to the State of Alaska in 1969 (Alaska Statehood Act Section 6(b)). These State owned submerged lands have been excluded from the river corridor boundary because ANILCA amended the Wild and Scenic Rivers Act so that the corridor "boundary shall not include any lands owned by the State" (ANILCA Section 606 (a)).

CONSIDERATION:

- Navigability questions deal with facts and legal opinions, and cannot be determined on the basis of management requirements. It is clearly beyond the scope of this plan to arrive at a determination of navigability for the rivers of the Fortymile component of the Wild and Scenic Rivers System. However, the BLM has developed a navigability determination as a separate document.

- The administrative determination can be challenged in court by the State of Alaska or private parties.

- Navigability is an important question to many people, largely due to the fact that the suction dredge has made the gold bearing bed of the Fortymile and some tributaries valuable mineral property. The entire South Fork and Main Stem are covered by mining claims located under State law, with the implicit assumption that these streams are navigable, so that Federal withdrawals do not apply. The State's Department of Minerals and Energy Management has accepted the location notices for these claims with no judgement on their ultimate validity. Riverbed claims can be bought, sold, and leased. Such transactions have given many dredgers an emotionally volatile financial interest in the navigability question, and a feeling that they have accrued rights to access and campsites on the uplands, which are definitely in Federal management.

- State ownership of lands beneath navigable streams extends to the "ordinary high water mark" (Submerged Lands Act of 1953). Confusion over the definition of this terminology has caused some long term campers to question Federal authority to regulate particular campsites.

ITEM 11 - DESIGNATION OF THE MOSQUITO FORK FROM THE MOUTH OF INGLE CREEK, DOWNSTREAM TO THE TAYLOR HIGHWAY BRIDGE

ISSUE: Should this stream segment be classified as wild, scenic, or recreational?

SITUATION: Congress classified the Mosquito Fork a wild river above this segment, and a scenic river below it, but did not specify a classification for the Mosquito Fork from Ingle Creek (Mosquito Fork mile 29.6) to the Taylor Highway (Mosquito Fork mile 32).

CONSIDERATIONS:

- The Mosquito Fork is accessible by an improved road at Mosquito Fork mile 29.6 and by the Taylor Highway at Mosquito Fork mile 32. The effects of man are evident at the Ingle Creek mining operation, where tailing piles and a footbridge are obvious. This segment is very similar in character to the Mosquito Fork below the Taylor Highway bridge as described in Part I of this plan. The EIS prepared in 1972 recommended this portion for scenic classification.

Management Constraints

Constraining factors which influenced the development of this plan include:

- The provisions of the Wild and Scenic Rivers Act, the Federal Land Policy and Management Act, the Alaska National Interest Lands Conservation Act, the National Environmental Protection Act, the 1872 Mining Laws, the Endangered Species Act, and the Alaska Statehood Act. These and other laws provide a framework for the regulations and policy that direct the decision process leading to management actions.
- The existing responsibilities of the State of Alaska. The State is the responsible authority for fish and game management, surface water quality, mining under the State mineral laws, and the public roads in the area.
- Navigability. The State owns and is responsible for management of the bed of the river where the river was navigable for purposes of title in 1959. Therefore, some Federal management actions might be inappropriate on navigable sections, but appropriate on nonnavigable sections.
- The existing situation. Past and present uses of the area by man, remote location, funding and manpower limitations, and the physical attributes of the area, all constrain the range of management action.

Part III The Management Program

The following management actions are the result of a careful evaluation of the objectives, issues and concerns, and the constraints discussed in Part II of this report. Every reasonable attempt has been made to accommodate the concerns of the various user groups without compromising the values for which the river was designated. This management program will be evaluated periodically to determine what, if any, changes are necessary in order to insure the continued protection of the river's values.

Management Actions

ITEM 1 - SURFACE TRANSPORTATION

Action 1.1: New transportation and utility systems, and relocations of existing roads may be authorized in the scenic and recreational portions of the corridor if there is no reasonable alternative route available.

Discussion: Any authorized transportation system will be located and constructed in an environmentally sound manner and in a manner that does not interfere with or impede stream flow or transportation on the river. Locations and construction techniques shall be selected to minimize adverse effects on subsistence, scenic, recreational, fish, wildlife, and other values of the river area.

Action 1.2: New public road rights-of-way, and other authorizations for transportation and utility systems, may be authorized in the wild portions of the river corridor if three conditions are met:

- (1) such system would be compatible with the purposes for which the unit was established; and,
- (2) there is no economically feasible and prudent alternative route for the system, and
- (3) authorization would be in the public interest.

Section 605(b) of ANILCA provides for access to Doyon's asbestos deposits in the North Fork Drainage.

Discussion: One of the principal unique features of the wild segments of the Forty-mile corridor is a lack of easy access. It is this lack that allows the wild segments to remain "vestiges of primitive America." Transportation and utility systems may be compatible with maintenance of the primitive nature of the river corridor, but this must be assessed for each proposal individually, as described in section 1104 of ANILCA. If an individual application meets the criteria listed above, and other appropriate requirements of law, it shall be approved (ANILCA Section 1105).

Any authorized transportation system will be located and constructed in an environmentally sound manner, and in a manner that does not interfere with or impede stream flow or transportation on the river. Location and construction techniques shall be selected to minimize adverse effects on subsistence, scenic, recreational, fish, wildlife, and other values of the river area.

Action 1.3: Access to mining claims located prior to ANILCA will be managed under existing regulations in 43 CFR 3809.

Discussion: 43 CFR 3809 requires a "plan of operations" from all mining claimants planning surface disturbing activities in the river corridor. These plans must include a detailed description of access needs. The BLM will stipulate vehicle types, season of use, and reclamation procedures to minimize impacts. Overland off-highway access would be limited to light ground pressure vehicles except in winter, or when thorough exploration efforts have justified the requirement for construction of a summer road.

Action 1.4: The BLM will work cooperatively with the State of Alaska to identify all rights-of-way pursuant to RS2477 within the river boundaries for administrative purposes.

Discussion: When rights or title are granted directly by statute, such as the Alaska Long Line Communications Act, or RS2477, these rights can only be adjudicated in the court system. However, for the purposes of carrying out the Bureau's administrative duties, a determination may be made. Such a determination would not effect the legality of an RS2477 right-of-way, but would provide a basis for administrative actions such as acceptance of right-of-way applications or trespass actions.

Action 1.5: Off-road vehicle use, other than vehicles of less than 1500 pounds GVW, will be prohibited without a permit or approved plan of operations.

Discussion: The area manager will, by individual permit, give such rights as may be necessary to assure adequate and feasible surface transportation, access to State or privately owned land, properly located mining claims, other valid occupancy or for other purposes subject to reasonable regulations to protect the natural and other values of the river corridor (ANILCA Section 1110).

The location, time of year, and the type of vehicle shall be selected to minimize adverse effects on scenic, recreational, fish, wildlife, and other values of the river corridor.

Requests to authorize mining access will be considered as outlined in Action 1.3.

Action 1.6: Existing use of motorized boats on scenic and recreational segments will be permitted without specific authorization. Motorized boats will not be permitted on non-navigable wild segments except under the provisions of 43 CFR 3809. On navigable wild segments, a cooperative agreement with the State will be sought to limit the use of motorized boats.

Discussion: ANILCA directs the Secretary of Interior to permit motorboat use for otherwise legal traditional activities and for travel to and from villages and homesites (ANILCA Section 1110). The only identified traditional activity on wild river segments of the Fortymile component that involves the use of motorized boats is mining. Mining access is provided for by Action 1.3. There is no known use of wild segments by motorboats for access to villages or homesites.

ANILCA also provides for reasonable access to State and private lands. One parcel of private land is located within the wild segment boundaries at Joseph. Motorized boats do not provide reasonable access to Joseph. However, State lands underlie navigable streams, pursuant to the Statehood Act of 1959. Reasonable access must not be denied for these lands, and motorboats might prove to be the most reasonable form of access.

Existing use of wild segments by motorboats is very rare. Such use is generally limited to a small number of exploratory trips, and not pursued due to the difficulties encountered with rocks and gravel.

Extension of motorized use by technologies such as hovercraft and air boats would needlessly intrude on the "vestiges of primitive America" found in the river corridor. In the same vein, recurrence of difficult motorboat trips to "see how far up we can get" would be an unnecessary impact.

This action provides for valid access needs while protecting the wild and isolated nature of the wild segments for future generations.

ITEM 2 --- AIRCRAFT USE

Action 2.1: The BLM will not undertake maintenance of existing airstrips.

Discussion: Existing informal maintenance by airstrip users will be allowed through agreement with the BLM.

Action 2.2: New airstrips may be authorized in accordance with Actions 1.1, 1.2, and 1.3.

Discussion: Airstrips are considered a "transportation system" for the purposes of administration of access across and into conservation system units (ANILCA Section 102 (4)(B)).

Action 2.3: Existing use of gravel bars and winter snows by aircraft will be permitted subject to reasonable provisions to protect the values of the National Wild and Scenic River.

Discussion: Existing use seems to have a very small effect on river values.

ITEM 3 --- WATER QUALITY

Action 3.1: The BLM will work with the Alaska Department of Environmental Conservation so that use authorizations will include stipulations to control sewage and grey water disposal to meet established State and Federal standards.

Discussion: This action will insure that sewage from specifically authorized activities will not cause undue environmental damage.

Action 3.2: All plans of operations approved for placer mining will detail the operator's proposals for controlling water pollution, and must show that every reasonable attempt will be made to achieve established water quality standards. Plans will be reviewed in cooperation with the Alaska Department of Environmental Conservation. Suggestions for improvements which would bring inadequate plans into compliance with the standards will be offered.

Discussion: While the goal of drinking water quality effluent will be achieved by few, if any, major mining operations, the goal can be approached. Possibilities include

construction of substantial settling ponds with a 24-hour detention period, which can be flushed in the late evening to minimize the effects on downstream users, impervious pond liners, and recirculation of water.

ITEM 4 --- MINERAL DEVELOPMENT

Action 4.1: Mining claims properly located and maintained prior to inclusion in the Wild and Scenic River System will be managed under the mining laws and 43 CFR 3809. Plans of operations required under 43 CFR 3809 will address a logical sequence of mineral extraction for a minimum of 5 years or mine life, whichever is shorter. Changes may be made at any time subject to approval of a supplemental plan of operations.

Discussion: The Bureau will assess each proposed plan with the intention of achieving an optimum balance between reasonable and necessary operations and their effects on the environment. A plan of operations should present a logical sequence of discrete stages from exploration, through development, to extraction and ensuing reclamation. Professional prudence in the development of a mine, especially mechanized earth moving intensive placer ventures, necessitates emphasis on pre-development exploration. Activities to establish and delineate mineral commodities will be stressed before plans involving large scale stripping within 100 feet of the river bank will be authorized.

Within the boundaries of the Fortymile component, existing claims have potential to be developed in a manner that will minimize unnecessary and undue damage to the scenic values of the area. Where mineral values are delineated by exploration, mining on existing claims should not be restricted by a scenic buffer. Where, however, such values are not delineated, the river's unique scenic values make large scale stripping an unnecessary and undue activity when conducted within 100 feet of the river bank.

Action 4.2: Mining claim occupancy will be addressed in each plan of operations. Residential use of mining claims will be limited to that necessary for, and incidental to, actual mining activity.

Discussion: Plans of operations that do not clearly show a need for new residential structures incidental to a mining operation will not be approved. Mining claims are not a proper method of obtaining waterfront land for summer home use.

Action 4.3: Pending an agreement as outlined in Action 10.1, occupancy of the Federally owned uplands by developers of State riverbed mining claims will be managed under the guidelines developed for Item 6.

ITEM 5 --- FACILITIES AND VISITOR INFORMATION

Action 5.1: The BLM will continue to maintain the Walker Fork and West Fork Campgrounds within the corridor boundary. The Liberty Creek Campground will be outside the corridor boundary and available for State selection.

Discussion: This action will allow the BLM to provide adequately developed camping opportunities for the public. The BLM will continue to manage the Liberty Creek Campground if it is not conveyed to the State.

Action 5.2: The BLM will maintain the boat landings at the South Fork bridge and the Fortymile bridge as access points to the river. Parking will be allowed, but overnight camping will be limited, if necessary, to allow easy access to the river and parking areas.

Discussion: This action will assure adequate access to the South Fork and main stem from the Taylor Highway at existing developed sites. Additional access might be developed at the West Fork or Mosquito Fork bridges, but existing and anticipated demand does not justify the expenditures and maintenance commitment required.

Action 5.3: The BLM will develop interpretive displays near the South Fork bridge, Fortymile bridge, and Wade Creek to interpret the wild and scenic designation and the history of the area. The display at Wade Creek will be installed in cooperation with the mining claimants in the area to avoid conflicts with ongoing mining operations.

Discussion: These displays will include information on river conditions, floating times, encouraged behavior, prohibited actions, and local history. The goal will be to avoid signs and other development in the wild and scenic segments other than at access points. The management presence of the BLM will not unnecessarily intrude on the undeveloped nature of the river.

Action 5.4: The BLM will publish a brochure that will include historical interpretive materials, suggested land use practices, and provide information on safety hazards, including bears, weather, and rapids.

Discussion: These brochures would be available at the Chicken Guard Station, the South Fork and Fortymile bridges, and other selected locations.

Action 5.5: The Chicken Guard Station will be upgraded to provide quarters for management personnel, and as a focus for maintenance and visitor service activity.

Discussion: The Guard Station is ideally located for access to the river and the associated developed sites. Other facilities adequate to house employees during the summer field season exist at Eagle and Tok, but travel times and inaccessibility by river users make these locations impractical substitutes.

ITEM 6 — VISITOR MANAGEMENT

Action 6.1: Short term camping (less than 10 days in one location) in the river corridor will generally be allowed without specific authorization. Long term camping in the river corridor will be authorized by permit. Camping will be subject to such provisions as necessary to protect scenic, recreational, fish and wildlife, and other values of the river area.

Discussion: With this action, the Area Manager can limit controls to those necessary to protect river values. Camping will be limited at boat landings and near peregrine series. Campsites for long-term campers will be selected to be screened from the river, and campsite materials will be limited to avoid nail damage to trees, visqueen shanties, and other eyesores.

Action 6.2: Suction dredging on non-navigable stream segments will be limited as follows:

- Dredges with 5-inch intakes and smaller in diameter will be authorized.
- Dredging will be limited to scenic and recreational river segments.
- Dredging will be limited to the stream bed, and not authorized above the ordinary high water mark.
- Dredges will be muffled and housed to limit the A weighted sound level of 80 dB at a distance of 30 feet.
- Dredges should be moved periodically, as determined by the Area Manager, to insure equitable access to dredging opportunities.
- Dredging will be subject to such other rules as necessary to protect scenic, recreation, fish and wildlife, and other values of the river corridor. This could include specific reclamation procedures.

Discussion: The intake size limitation will limit environmental damage. Dredging is rare on wild segments, and the limitation to scenic and recreational segments will protect the primitive nature of the wild segments. By restricting dredge activities to the stream bed, the problems associated with small scale hydraulic mining above ordinary high water mark can be avoided. Use of A weighted sound levels is accepted industry practice. Sound levels above 80 dB are perceived as "loud" noise. Moving dredges every week or two will allow equal access to recreational opportunities and decrease the necessity for regulation of camping activities.

Action 6.3: Permits are required for all commercial guides or outfitters operating within the river corridor pursuant to 43 CFR 8372.

Discussion: The impact of commercial operators will be closely monitored to ensure that the values for which the river corridor was designated are maintained.

ITEM 7 -- HISTORIC AND ARCHAEOLOGICAL RESOURCES

Action 7.1: If artifacts are identified that have truly unique scientific or interpretive value that seem to be in significant danger from vandals or souvenir collectors, they will be salvaged for display in a supervised environment.

Discussion: Displays could be developed at Ft. Egbert in Eagle, at the Chicken Guard Station, or at the Tok Federal-State Visitor's Center. This would allow the protection of unique artifacts while leaving the majority of sawblades, tobacco tins, and so on to remain in context on the river for the discovery and enjoyment of river users. These actions will not affect gravesites in the Joseph and Kechumstuk area, which will be protected in situ, with input of the Native community.

Action 7.2: On the wild and scenic segments interpretive information will be placed at river access points outlining the nonrenewable nature of cultural resources and asking cooperation in their maintenance. Brochures and other off-site interpretation will be developed to encourage appreciation and respect for historic and archaeological resources.

Discussion: Such off-site interpretation will be as effective as on-site signing. The number of people required to physically patrol all cultural sites regularly would be quite large, and such supervision would invariably detract from the primitive setting of

the wild and scenic segments, Significant historic sites, related to the theme "Mining in Alaska," will be given priority for cultural interpretation.

Action 7.3: On-site interpretation of the mining history of the area will be developed on the recreational segment near Jack Wade.

Discussion: This action will require the cooperation of some or all of the mineral claimants on Wade Creek.

ITEM 8 -- MANAGEMENT OF CABINS ON UNAPPROPRIATED PUBLIC LAND

Action 8.1: Occupancy of existing cabins on unappropriated public land in the river corridor will be allowed, without any specific authorization, for short periods of time. Long-term occupancy -- beyond 10 days in summer, and a longer to-be-determined period in the winter -- will require authorization. All occupancy of cabins on unappropriated public land will be subject to such rules and regulations as are necessary to protect river values.

Discussion: A flexible permit system will allow the Area Manager to fairly apportion cabin occupancy. In general, long-term occupancy will be limited to subsistence users in winter.

Action 8.2: The BLM will not maintain cabins in the river corridor, except to occasionally pick up trash.

Discussion: These cabins are on wild and scenic portions of the river, where a primitive environment is stressed in BLM guidelines for management. Maintenance of these cabins would be beyond our current manpower capabilities. It seems appropriate to allow cabins that are not preserved by users to decay naturally.

Action 8.3: Construction by the public of new cabins not associated with perfected mining claims will not be authorized in the wild river segments.

Discussion: Cabins sufficient to meet the needs of recreational and subsistence users presently exist on the wild segments. New cabin construction would needlessly intrude upon the primitive nature of these segments. No perfected claims have been identified on the wild river segments.

ITEM 9 -- MINERAL WITHDRAWAL

Action 9.1: The lands within the river corridor boundaries along Wade Creek in Sections 24 and 25, T. 27N., R. 19E., CRM; and T. 27N., R. 20E., CRM, will be opened to mineral location and leasing, and any new mineral development on these lands will be administered under the guidelines developed for mineral entries made prior to inclusion in the Wild and Scenic Rivers System. (See Items 1,2,3,4,8.)

Discussion: Existing claims cover the length of Wade Creek. Since Wade Creek is already heavily impacted by mining, and State selections will approach existing claims

very closely, special regulations creating a different standard for new claim locators would be burdensome, and provide little, if any, mitigation of adverse effects on river values.

Action 9.2: Any lands within the boundaries of the component not affected by Action 9.1 or the withdrawals associated with wild river segments, and more than 100 feet from the river banks, may be opened to new mineral location or leasing only after regulations effecting the following restrictions are adopted to supplement 43 CFR 3809.

- Reclamation plans must be approved prior to surface disturbance. Reclamation plans must include provisions for stockpiling of topsoil, and returning the area to a natural appearance with a minimum of delay. Bonding will be required sufficient to insure implementation of the reclamation plan.
- Off-road access for land vehicles over 1,500 lb. GVW will be limited to winter.
- On-site noise levels, as measured from the river, will not exceed an A weighted level of 80 dB.
- Exploration, by drilling or other suitable means, of sufficient detail to establish to the authorized officer the values and extent of the mineral to be mined will be required prior to significant surface disturbance.
- All effluent from mining operations will meet appropriate State water quality standards.

Discussion: If new mining is to proceed without adversely impacting the values of the river corridor, it will have to be somewhat different from current practice. Section 8 of the WSRFA requires the Secretary of the Interior to adopt regulations to allow mining while protecting natural resources. The restrictions listed above are necessarily quite strict. However, they do leave an avenue open for future development and present a challenge to management and the mining community to develop mining methods compatible with the unique values of the Fortymile. The 100 foot riparian strip is particularly important, in that it will provide minimal protection for riparian vegetation, public use sites, and the scenic values along the river. This may prevent mining on some areas, but it is necessary to meet river management plan objectives.

ITEM 10 --- MANAGEMENT OF LANDS UNDER NAVIGABLE WATERS

Action 10.1: The BLM proposes to negotiate a formal agreement with the State of Alaska to address the following areas:

- Management authorities and responsibilities for lands prior to final navigability determination.
- State objectives and policies for the beds of navigable wild, scenic or recreational rivers.
- Rights of State mineral claimants, before and after final navigability determination.

- Administrative agreement on the location of the "ordinary high water mark."
- Guidelines for management of suction dredge operations on navigable riverbeds. These guidelines should include provisions for access and camping as well as appropriate dredge specifications and operation practices designed to minimize impacts on wild, scenic and recreational river values.
- The appropriateness of State mineral withdrawals on the beds of navigable streams.

ITEM 11 -- DESIGNATION OF THE MOSQUITO FORK FROM THE MOUTH OF INGLE CREEK, DOWNSTREAM TO THE TAYLOR HIGHWAY BRIDGE

Action 11.1: The Mosquito Fork, from the Mouth of Ingle Creek, downstream to the bridge at Taylor Highway milepost 64.2 will be classified and managed as a scenic river pursuant to the Wild and Scenic Rivers Act.

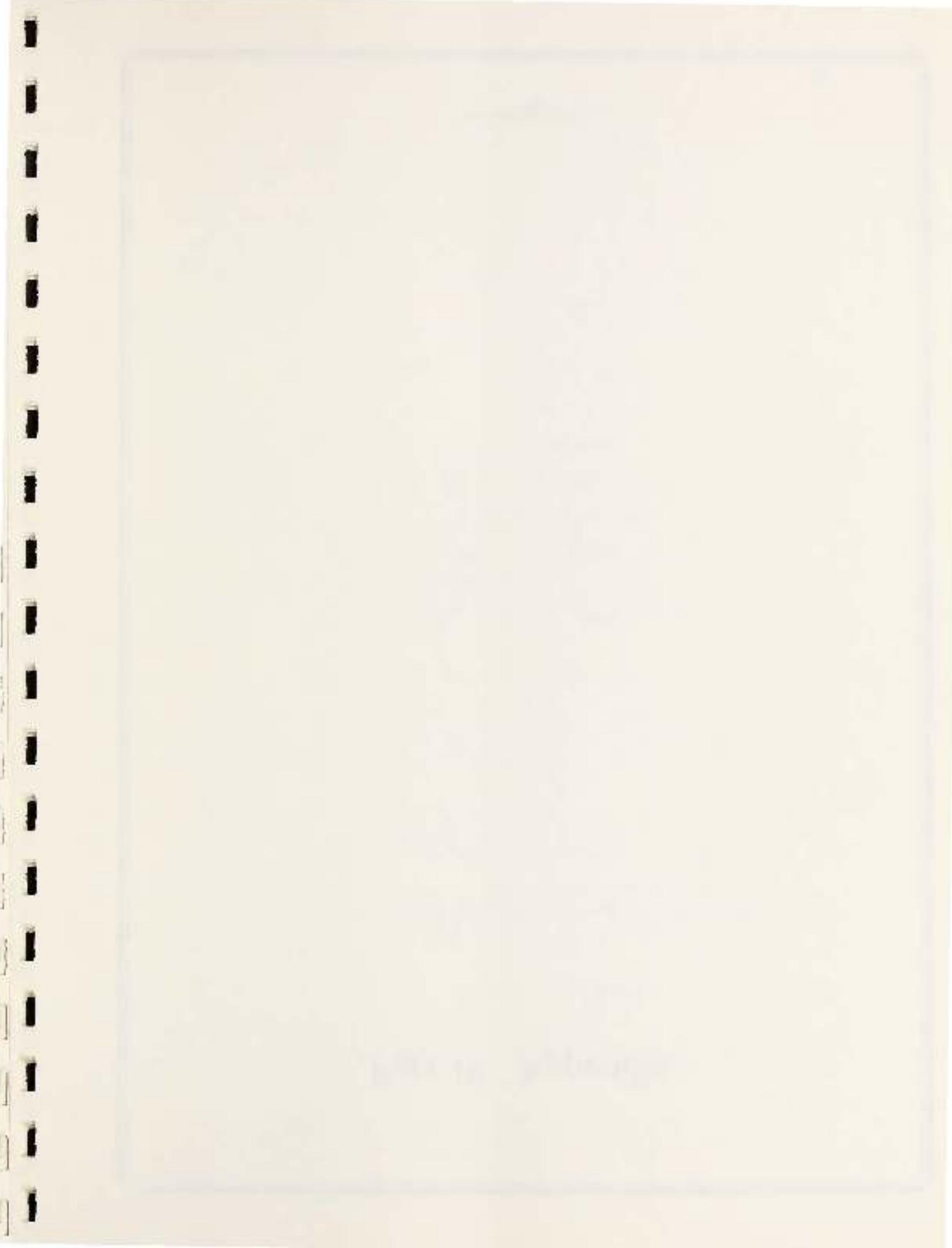
Discussion: The classification is consistent with the requirements of the Wild and Scenic Rivers Act, the Forty-mile National Wild and Scenic River EIS, and the stream characteristics and classification of the Mosquito Fork immediately above and below this segment.

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Part IV Appendix





The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

Copper River Meridian

- T.26N., R. 14 E., unsurveyed,
sec. 24, SE1/4NE1/4, SE1/4.
- T.26N., R. 15E., unsurveyed,
sec. 2, NW1/4NE1/4, NW1/4;
sec. 3, NE1/4, W1/2, W1/2SE1/4, NE1/4SE1/4;
sec. 4, E1/2;
sec. 7, SE1/4SW1/4, SE1/4;
sec. 8, S1/2NE1/2, S1/2;
sec. 9, NE1/4, NE1/4NW1/4, S1/2NW1/4, S1/2;
sec. 10, W1/2NE1/4, NW1/4, N1/2SW1/4, SW1/4SW1/4;
sec. 16, N1/2NE1/4, NW1/4;
sec. 17;
sec. 18, NE1/4, E1/2NW1/4, S1/2;
sec. 19;
sec. 20, N1/2, SW1/4.
- T.27 N., R. 15 E., unsurveyed,
sec. 24, NE1/4, E1/2NW1/4, SE1/4;
sec. 25;
sec. 26, NE1/4, SE1/4NW1/4, S1/2;
sec. 33, SE1/4SE1/4;
sec. 34, E1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, S1/2;
sec. 35, N1/2, SW1/4, N1/2SE1/4, SW1/4SE1/4;
sec. 36, N1/2NW1/4, SW1/4NW1/4.
- T.22 N., R. 16E., unsurveyed,
sec. 2, W1/2SW1/4, SE1/4SW1/4;
that part of sec. 3 lying east of the Taylor Highway;
that part of sec. 10 lying east of the Taylor Highway;
that part of N1/2NW1/4 sec. 11 lying east of the Taylor Highway.
- T.23 N., R. 16 E., unsurveyed,
sec. 1, that part of N1/2NE1/4 lying west of the Taylor Highway,
S1/2NE1/4, N1/2SE1/4, that part of S1/2SE1/4 lying east of the Taylor Highway;
sec. 12, that part of N1/2, and SW1/4 lying east of the Taylor Highway,
W1/2SE1/4;
sec. 13, NW1/4NE1/4, that part of W1/2 lying east of the Taylor Highway;
that part of sec. 14 lying east of the Taylor Highway,
that part of sec. 23 lying east of the Taylor Highway;
sec. 24, W1/2NW1/4;
sec. 26, W1/2NE1/4, that part of W1/2 lying east of the Taylor Highway;
that part of sec. 34 lying east of the Taylor Highway;
sec. 35, that part of N1/2NW1/4 lying east of the Taylor Highway,
SW1/4NW1/4, W1/2SW1/4.
- T.24N., R. 16E., unsurveyed,
sec. 1;
sec. 2, S1/2NE1/2, S1/2;
sec. 3, S1/2SW1/4, SE1/4;
sec. 4, SE1/4SE1/4;
sec. 9, E1/2E1/2;
sec. 10,

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- sec. 11, N1/2, NW1/4SW1/4;
- sec. 14, W1/2SW1/4, SE1/4SW1/4;
- sec. 15, N1/2, E1/2SW1/4, SE1/4;
- sec. 16, E1/2NE1/4;
- sec. 23, W1/2NW1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, SE1/4;
- sec. 24, SW1/4SW1/4;
- sec. 25, W1/2NW1/4, SE1/4NW1/4, N1/2SW1/4, that part of S1/2S1/2 lying west of the Taylor Highway;
- sec. 26, E1/2NE1/4;
- sec. 36, that part of E1/2 lying west of the Taylor Highway, E1/2NW1/4, NE1/4SW1/4.
- T. 25 N., R. 16 E., unsurveyed,
 - sec. 35, S1/2SE1/4;
 - sec. 36, S1/2NE1/4, S1/2.
- T. 27 N., R. 16 E., unsurveyed,
 - sec. 9, SE1/4SW1/4, S1/2SE1/4;
 - sec. 10, S1/2S1/2;
 - sec. 11, S1/2S1/2;
 - sec. 12, S1/2NE1/4, S1/2;
 - sec. 13, N1/2, N1/2S1/2;
 - sec. 14;
 - sec. 15;
 - sec. 16, NE1/4, NE1/4NW1/4, S1/2NW1/4, S1/2;
 - sec. 17, S1/2;
 - sec. 18, S1/2SE1/4;
 - sec. 19, E1/2, S1/2NW1/4, SW1/4;
 - sec. 20;
 - sec. 21, N1/2, W1/2SW1/4;
 - sec. 22, N1/2E1/2;
 - sec. 30, NE1/4NE1/4, W1/2NE1/4, W1/2, NW1/4SE1/4.
- T. 23 N., R. 17 E., unsurveyed,
 - sec. 6, SW1/4NW1/4, W1/2SW1/4;
 - sec. 7, NW1/4NW1/4.
- T. 24 N., R. 17 E., unsurveyed,
 - sec. 5, NW1/4;
 - sec. 6, N1/2, N1/2S1/2, SW1/4SW1/4;
- T. 25 N., R. 17 E., unsurveyed,
 - sec. 1;
 - sec. 2, E1/2, E1/2NW1/4, SW1/4;
 - sec. 3, SE1/4;
 - sec. 10, E1/2, E1/2W1/2, NW1/4SW1/4;
 - sec. 11;
 - sec. 12, W1/2W1/2;
 - sec. 13, W1/2E1/2, W1/2;
 - sec. 14;
 - sec. 15, N1/2NE1/4;
 - sec. 23;
 - sec. 24, W1/2E1/2, W1/2;
 - sec. 25, W1/2W1/2;
 - sec. 26;

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- sec. 27, E1/2, E1/2SW1/4;
 - sec. 30, SE1/4SW1/4;
 - secs. 31 to 34, inclusive;
 - sec. 35, W1/2NW1/4.
- T. 26 N., R. 17 E., unsurveyed,
- sec. 1, N1/2, N1/2SE1/2;
 - sec. 2, N1/2, NE1/4SE1/4;
 - sec. 3, N1/2NE1/4;
 - sec. 24, SE1/4;
 - sec. 25, E1/2, E1/2NW1/4, SW1/4NW1/4, SW1/4;
 - sec. 35, S1/2NE1/4, SE1/4SW1/4, SE1/4;
 - sec. 36.
- T. 27 N., R. 17 E., unsurveyed,
- sec. 7, SW1/4NE1/4, S1/2NW1/4, S1/2;
 - sec. 8, S1/2;
 - sec. 15, SW1/4SW1/4;
 - sec. 16, S1/2NE1/4, W1/2, SE1/4;
 - sec. 17;
 - sec. 18, N1/2, N1/2SE1/4;
 - sec. 20, NE1/4, N1/2NW1/4, E1/2SE1/4;
 - sec. 21;
 - sec. 22, W1/2NW1/4, SW1/4;
 - sec. 26, SW1/4;
 - sec. 27, S1/2NE1/4, W1/2, SE1/4;
 - sec. 28, NE1/4, E1/2NW1/4, NW1/4NW1/4, E1/2SE1/4;
 - sec. 33, E1/2NE1/4;
 - sec. 34;
 - sec. 35, W1/2, W1/2SE1/4, SE1/4SE1/4;
 - sec. 36, S1/2SE1/2.
- T. 26 N., R. 18 E., unsurveyed,
- sec. 1 and 2;
 - sec. 3, E1/2NE1/4, SW1/4NE1/4, S1/2;
 - sec. 4, S1/2;
 - sec. 5, SE1/4NW1/4, all Federal lands in S1/2;
 - sec. 6, W1/2NW1/4, SE1/4NW1/4, SE1/4SW1/4, N1/2SE1/4, all Federal lands in W1/2;
 - sec. 7, NE1/4NE1/4, SE1/4SE1/4;
 - sec. 8, all Federal lands in N1/2, SW1/4, E1/2SE1/4, SW1/4SE1/4;
 - sec. 9, N1/2NE1/4, NW1/4;
 - sec. 10, NW1/4NE1/4, E1/2NW1/4;
 - sec. 11, E1/2NE1/4, NW1/4NE1/4;
 - sec. 12, N1/2, E1/2SW1/4, NW1/4SE1/4;
 - sec. 17, NW1/4NE1/4, NW1/4;
 - sec. 18, NE1/4, E1/2NW1/4, SW1/4NW1/4, SW1/4, W1/2SE1/4, NE1/4SE1/4;
 - sec. 19, W1/2NE1/4, W1/2.
- T. 27 N., R. 18 E., unsurveyed,
- secs. 1, 12, 13, 24, and 25;
 - sec. 36, N1/2NW1/2, SE1/4NE1/4, E1/2SE1/4.
- T. 28 N., R. 18 E., unsurveyed,
- sec. 31, S1/2;
 - sec. 32, S1/2;

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- sec. 33, S1/2;
 - sec. 34, S1/2;
 - sec. 35, SE1/4NE1/4, S1/2;
 - sec. 36, NE1/4, S1/2NW1/4, S1/2.
- T.26 N., R.19 E., unsurveyed,
- sec. 1, NW1/4, N1/2SW1/4, SE1/4SW1/4, W1/2SE1/4;
 - sec. 2, E1/2NE1/4, NW1/4NE1/4;
 - sec. 6, SW1/4KE1/4, that part of NW1/4NE1/4 lying north of the Taylor Highway, W1/2, W1/2SW1/4;
 - sec. 7, NW1/4KE1/4, K1/2NW1/4, SW1/4NW1/4;
 - sec. 12, E1/2, E1/2W1/2;
 - sec. 13, NE1/4NE1/4.
- T.27 N., R.19 E., unsurveyed,
- sec. 1, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, S1/2SW1/4, NW1/4SE1/4;
 - sec. 5, W1/2NW1/4;
 - secs. 6 and 7;
 - sec. 12, W1/2;
 - sec. 13, K1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;
 - sec. 14, SE1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, SE1/4;
 - sec. 15, S1/2S1/2;
 - sec. 16, SE1/4SW1/4, SE1/4;
 - sec. 17, SW1/4SW1/4;
 - secs. 18 to 22, inclusive;
 - sec. 23, NW1/4NW1/4;
 - sec. 24, SE1/4SE1/4;
 - sec. 25, NE1/4, NE1/4SW1/4, S1/2SW1/4, K1/2SE1/4, SW1/4SE1/4;
 - sec. 26, W1/2, SE1/4;
 - that part of sec. 27 lying north of the Taylor Highway,
 - that part of sec. 28 lying north of the Taylor Highway
 - secs. 29 and 30;
 - all Federal lands in secs. 31 to 33, inclusive, lying west and north of the Taylor Highway;
 - sec. 35;
 - sec. 36, K1/2NW1/4, SW1/4NW1/4.
- T.28 N., R.19 E., unsurveyed,
- sec. 31;
 - sec. 32, NW1/4, K1/2SW1/4, SW1/4SW1/4.
- T.26 N., R.20 E., unsurveyed,
- sec. 18, NW1/4.
- T.27 N., R.20 E., unsurveyed,
- sec. 2, NW1/4NW1/4;
 - sec. 3, KE1/4, E1/2NW1/4, SW1/4NW1/4, K1/2SW1/4;
 - sec. 4, SE1/4KE1/4, SE1/4SW1/4, SE1/4;
 - sec. 8, SE1/4NE1/4, SE1/4SW1/4, SE1/4;
 - sec. 9, NW1/4KE1/4, NW1/4, N1/2SW1/4;
 - sec. 17, N1/2K1/2, S1/2NW1/4, NW1/4SW1/4;
 - sec. 18, SE1/4 NE1/4, SE1/4SW1/4, SE1/4;
 - sec. 19, W1/2KE1/4, NW1/4, N1/2SW1/4, SW1/4SW1/4;
 - sec. 30, NW1/4NW1/4.

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T.28 N., R.20 E., unsurveyed,
sec. 34, SE1/4SE1/4;
sec. 35, NE1/4, SE1/4NW1/4, SW1/4, W1/2SE1/4;
sec. 36, W1/2NW1/4.

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

Fairbanks Meridian

T.5 S., R.21 E., unsurveyed,

- sec. 12, S1/2SW1/4, SE1/4;
- sec. 13, N1/2N1/2, SW1/4NW1/4;
- sec. 14, NE1/4, E1/2SW1/4, W1/2SE1/4, NE1/4SE1/4;
- sec. 22, SE1/4SE1/4;
- sec. 23, W1/2; NW1/4NE1/4
- sec. 26, W1/2NW1/4;
- sec. 27, E1/2NE1/4, SW1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, W1/2SE1/4, NE1/4SE1/4;
- sec. 28, SE1/4SE1/4;
- sec. 33, N1/2NE1/4, SW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, N1/2SW1/4;
- sec. 34, N1/2NW1/4.

T.5 S., R.22 E., unsurveyed,

- sec. 7, NW1/4SW1/4, S1/2S1/2;
- sec. 8, SW1/4SW1/4;
- sec. 16, NW1/4SW1/4, S1/2S1/2;
- sec. 17, NW1/4NE1/4, S1/2NE1/4, NW1/4, NE1/4SW1/4, SE1/4;
- sec. 18, N1/2N1/2, SE1/4NE1/4;
- sec. 20, NE1/4NE1/4;
- sec. 21, NE1/4, E1/2NW1/4, NW1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;
- sec. 22, W1/2NW1/4, S1/2;
- sec. 23, S1/2SW1/4;
- sec. 25, SW1/4NW1/4, S1/2;
- sec. 26, N1/2, N1/2SW1/4, SE1/4;
- sec. 27, NE1/4, N1/2NW1/4;
- sec. 36, NE1/4, N1/2NW1/4.

T.5 S., R. 23 E., unsurveyed,

- sec. 30, SW1/4, SW1/4SE1/4;
- sec. 31, N1/2, NE1/4SW1/4, SE1/4;
- sec. 32, SW1/4NW1/4, SW1/4.

T.6 S., R.23 E., unsurveyed,

- sec. 4, SW1/4, S1/2SE1/4;
- sec. 5, NW1/4NE1/4, S1/2NE1/4, NW1/4, S1/2;
- sec. 6, E1/2NE1/4, NW1/4NE1/4;
- sec. 8, NE1/4, N1/2NW1/4, NE1/4SE1/4;
- sec. 9;
- sec. 10, NW1/4NW1/4, S1/2NW1/4, S1/2;
- sec. 11, NW1/4SW1/4, S1/2S1/2;
- sec. 13, SW1/4NE1/4, S1/2NW1/4, SW1/4, NW1/4SE1/4, S1/2SE1/4;
- sec. 14;
- sec. 15, N1/2, SE1/4;
- sec. 16, E1/2NE1/4, NW1/4NE1/4;
- sec. 23;
- sec. 24, excluding a Native allotment;
- sec. 25;
- sec. 26, E1/2.

T.6 S., R.24 E., unsurveyed,

- sec. 13, S1/2N1/2, S1/2;
- sec. 14, E1/2SW1/4, SE1/4;
- sec. 17, S1/2SW1/4;

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

- sec. 18, S1/2S1/2;
 - secs. 19 and 20;
 - sec. 21, W1/2NW1/4, S1/2;
 - sec. 22, S1/2NE1/4, S1/2;
 - sec. 23;
 - sec. 24, NE1/4, W1/2, N1/2SE1/4, SW1/4SE1/4;
 - sec. 25, NW1/4NE1/4, N1/2NW1/4;
 - secs. 26 to 30, inclusive;
 - sec. 32, N1/2;
 - sec. 33, N1/2;
 - sec. 34, N1/2;
 - sec. 35, W1/2NW1/4.
- T.5 S., R. 25 E., unsurveyed,
- sec. 24, SE1/4SW1/4, NE1/4SE1/4, S1/2SE1/4;
 - sec. 25;
 - sec. 26, S1/2NE1/4, SE1/4NW1/4, S1/2;
 - sec. 27, NE1/4SE1/4, S1/2SE1/4;
 - sec. 33, E1/2SE1/4;
 - secs. 34 to 36, inclusive.
- T.6 S., R. 25 E., unsurveyed,
- sec. 1, N1/2, N1/2SW1/4, NW1/4SE1/4;
 - secs. 2 and 3;
 - sec. 4, NE1/4, E1/2NW1/4, S1/2;
 - sec. 8, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4;
 - sec 9;
 - sec 10, NE1/4, W1/2;
 - sec. 11, N1/2N1/2;
 - sec. 16, NE1/4, W1/2, NE1/4SE1/4, W1/2SE1/4;
 - sec. 17, NE1/4, NE1/4NW1/4, S1/2NW1/4, S1/2;
 - sec. 18, S1/2N1/2, S1/2;
 - sec. 19, N1/2, N1/2SW1/4;
 - sec. 20, N1/2, NE1/4SW1/4, N1/2SE1/4;
 - sec. 21, NW1/4NE1/4, NW1/4, NW1/4SW1/4.
- T.5 S., R.26 E., unsurveyed,
- secs. 13 and 14;
 - sec. 15, E1/2SW1/4, SW1/4SW1/4, SE1/4;
 - sec. 16, SW1/4SW1/4, S1/2SE1/4;
 - sec. 19, S1/2;
 - sec. 20, E1/2, E1/2NW1/4, SW1/4;
 - secs. 21 to 23, inclusive;
 - sec. 24, N1/2, SW1/4, N1/2SE1/4;
 - sec. 25, W1/2NW1/4;
 - sec. 26, N1/2;
 - sec. 27, N1/2, N1/2S1/2;
 - secs. 28 to 30, inclusive;
 - sec. 31, N1/2, N1/2S1/2;
 - sec. 32, N1/2NE1/4, NW1/4, N1/2SW1/4.
- T.3 S., R.27 E., unsurveyed,
- sec. 19, S1/2NE1/4, SE1/4NW1/4, W1/2SW1/4, SE 1/4;
 - sec. 20, SW1/4NE1/4, S1/2NW1/4, S1/2;
 - sec. 21, S1/2NE1/4, SE1/4NW1/4, S1/2;

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

- sec. 22, SW1/4NW1/4, S1/2;
 - sec. 23, SW1/4, S1/2SE1/4;
 - sec. 24, S1/2SW1/4;
 - secs. 25 to 29, inclusive;
 - sec. 30, E1/2, E1/2NW1/4;
 - sec. 33, N1/2N1/2;
 - sec. 34, E1/2N1/2;
 - sec. 35, E1/2;
 - sec. 36, N1/2, E1/2S1/2.
- T.5 S., R.27 E., unsurveyed,
- sec. 9, S1/2N1/2, S1/2;
 - sec. 10, S1/2N1/2, S1/2;
 - sec. 11, S1/2NW1/4, SW1/4, S1/2SE1/4;
 - secs. 13 to 18, inclusive;
 - sec. 19, N1/2, N1/2S1/2;
 - secs. 20 to 24, inclusive;
 - sec. 25, NW1/4NE1/4, N1/2NW1/4;
 - sec. 26, N1/2N1/2;
 - sec. 28, N1/2NW1/4;
 - sec. 29, NE1/4NE1/4;
- T.6 S., R.27 E., unsurveyed,
- sec. 36, E1/2SE1/4.
- T.7 S., R.27 E., unsurveyed,
- sec. 1, NE1/4, SW1/4SW1/4, E1/2SW1/4, NW1/4SE1/4;
 - sec. 11, E1/2SE1/4;
 - sec. 12, NW1/4, W1/2SW1/4;
 - sec. 13, NW1/4NW1/4;
 - sec. 14, E1/2NE1/4, SE1/4;
 - sec. 23, E1/2;
 - sec. 24, W1/2SW1/4, SE1/4SW1/4;
 - sec. 25, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, SE1/4;
 - sec. 26, N1/2NE1/4;
 - sec. 36, NE1/4NE1/4.
- T.3 S., R.28 E., unsurveyed,
- sec. 29, W1/2NW1/4, SW1/4, W1/2SE1/4;
 - secs. 30 and 31;
 - sec. 32 W1/2NE1/4, SE1/4NE1/4, W1/2, SE1/4;
 - sec. 33, SW1/4.
- T.4 S., R.28 E., unsurveyed,
- sec. 4, W1/2, SE1/4;
 - sec. 5;
 - sec. 6, NE1/4, E1/2NW1/4, E1/2SE1/4;
 - sec. 8, N1/2, SE1/4;
 - sec. 9;
 - sec. 10, SW1/4;
 - sec. 13, SW1/4, SW1/4SE1/4;
 - sec. 14, S1/2;
 - sec. 15, N1/2NW1/4, S1/2;
 - sec. 16;
 - sec. 17, E1/2;

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

- sec. 20, E1/2, E1/2W1/2, SW1/4NW1/4, W1/2SW1/4;
 - sec. 21;
 - sec. 22, N1/2, SW1/4;
 - sec. 23, N1/2, N1/2SE1/4, SE1/4, SE1/4;
 - sec. 24, W1/2NE1/4, SE1/4NE1/4, W1/2, SE1/4;
 - sec. 25, N1/2NE1/4;
 - sec. 27, W1/2NW1/4;
 - sec. 28 and 29;
 - sec. 30, E1/2;
 - sec. 31, E1/2, E1/2W1/2;
 - sec. 32;
 - sec. 33, NE1/4NW1/4, W1/2W1/2.
- T. 5 S., R. 28 E., unsurveyed,
- sec. 3;
 - sec. 4, E1/2, E1/2W1/2;
 - sec. 7, SE1/4SW1/4, S1/2SE1/4;
 - sec. 8, S1/2S1/2;
 - sec. 9, E1/2, E1/2W1/2, SW1/4SW1/4;
 - sec. 10;
 - secs. 15 to 22, inclusive;
 - sec. 23, S1/2S1/2;
 - sec. 25, S1/2N1/2, S1/2;
 - secs. 26 to 29, inclusive;
 - sec. 30, NE1/4, N1/2SE1/4;
 - sec. 33, N1/2, SE1/4;
 - secs. 34 to 36, inclusive.
- T. 6 S., R. 28 E., unsurveyed,
- sec. 1;
 - sec. 2, N1/2;
 - sec. 3, N1/2;
 - sec. 12, SE1/4SW1/4, S1/2SE1/4;
 - sec. 13, N1/2NE1/4, NW1/4;
 - sec. 14, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4, N1/2SE1/4;
 - sec. 15, SE1/4SW1/4, NE1/4SE1/4, S1/2SE1/4;
 - sec. 21, SE1/4NE1/4, S1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;
 - sec. 22, N1/2NE1/4, NW1/4, NW1/4SW1/4;
 - sec. 28, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4;
 - sec. 29, E1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, SW1/4, N1/2SE1/4;
 - sec. 30, SE1/4SE1/4;
 - sec. 31, N1/2NE1/4, SW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;
 - sec. 32, NW1/4NW1/4.
- T. 7 S., R. 28 E., unsurveyed,
- sec. 6, NW1/4NW1/4;
 - sec. 31, NW1/4NW1/4, S1/2NW1/4, N1/2SW1/4.
- T. 4 S., R. 29 E., unsurveyed,
- sec. 19, SW1/4NW1/4, SW1/4, S1/2SE1/4;
 - sec. 20, S1/2SW1/4, SW1/4SE1/4;
 - sec. 25, NW1/4SW1/4, S1/2S1/2;
 - sec. 26, S1/2;
 - sec. 27, S1/2N1/2, S1/2;
 - sec. 28;
 - sec. 29, N1/2, N1/2S1/2, SE1/4SE1/4;

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

- sec. 30, N1/2, NE1/4SE1/4;
 - sec. 33, N1/2NE1/4;
 - sec. 34, N1/2N1/2;
 - sec. 35, N1/2N1/2, S1/2NE1/4;
 - sec. 36, N1/2, NE1/4SW1/4, N1/2SE1/4.
- T. 5 S., R. 29 E., unsurveyed,
- sec. 29, W1/2SW1/4;
 - sec. 30, S1/2;
 - secs. 31 and 32;
 - sec. 33, W1/2, SW1/4SE1/4.
- T.6 S., R. 29 E., unsurveyed,
- sec. 4, N1/2, SW1/4, W1/2SE1/4;
 - sec. 5 to 8, inclusive;
 - sec. 9, W1/2E1/2, W1/2;
 - sec. 16, W1/2NE1/4, NW1/4, S1/2;
 - sec. 17 to 21, inclusive;
 - secs. 27 to 30, inclusive;
 - sec. 31, N1/2;
 - secs. 32 to 34, inclusive.
- T.7 S., R.29 E., unsurveyed,
- secs. 3 and 4;
 - sec. 5, N1/2, N1/2S1/2;
 - secs. 9 and 10;
 - sec. 13, S1/2S1/2;
 - sec. 14, SW1/4, W1/2SR1/4, SE1/4SR1/4;
 - secs. 15 and 16;
 - sec. 21, NW1/4, N1/2NW1/4, E1/2SE1/4;
 - secs. 22 to 27, inclusive;
 - sec. 28, E1/2NE1/4;
 - sec. 35, E1/2, E1/2NW1/4;
 - sec. 36.
- T.8 S., R.29 E., unsurveyed,
- sec. 1, N1/2N1/2.
- T.4 S, R.30 E., unsurveyed,
- sec. 1, SE1/4SE1/4;
 - sec. 30, S1/2S1/2;
 - sec. 31, E1/2, NW1/4, N1/2SW1/4;
 - sec. 32, S1/2NE1/4, W1/2, SE1/4;
 - sec. 33, S1/2S1/2, NE1/4SE1/4;
 - sec. 34, S1/2;
 - sec. 35, S1/2;
 - sec. 36, S1/2.
- T.5 S., R.30 E., unsurveyed,
- sec. 1, N1/2, NW1/4SW1/4, NE1/4SE1/4;
 - sec. 2, N1/2, N1/2S1/2;
 - sec. 3, E1/2NE1/4.
- T.7 S., R.30 E., unsurveyed,
- sec. 19, S1/2SW1/4;
 - sec. 24, E1/2NE1/4, S1/2;
 - sec. 25;

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

- sec. 26, NE1/4, S1/2NW1/4, S1/2;
 - sec. 27, SE1/4NE1/4, E1/2SE1/4;
 - sec. 28, S1/2NW1/4, S1/2;
 - sec. 29, S1/2NE1/2, S1/2;
 - sec. 30, S1/2NE1/4, NW1/4, S1/2;
 - secs. 31 to 36, inclusive.
- T.8S., R.30 E., unsurveyed,
- sec. 1, N1/2, SW1/4;
 - secs. 2 to 5, inclusive;
 - sec. 6, N1/2;
 - sec. 9, E1/2, E1/2W1/2;
 - secs. 10 and 11;
 - sec. 12, NW1/4, N1/2SW1/4, SW1/4SW1/4;
 - sec. 14, W1/2E1/2, W1/2;
 - sec. 15;
 - sec. 16, E1/2, E1/2W1/2;
 - sec. 21, E1/2, E1/2W1/2;
 - sec. 22;
 - sec. 23, SE1/4NE1/4, W1/2NE1/4, W1/2, SE1/4;
 - sec. 24, S1/2NW1/4, N1/2SW1/4, SW1/4SW1/4, SE1/4;
 - sec. 25, W1/2W1/2;
 - sec. 26;
 - sec. 27, N1/2, SE1/4;
 - sec. 28, N1/2NE1/4, NE1/4NW1/4;
 - sec. 33, E1/2NE1/4;
 - secs. 34 and 35;
 - sec. 36, W1/2W1/2, SE1/4NW1/4, NE1/4SW1/4.
- T.4 S., R.31 E., unsurveyed,
- sec. 6, SW1/4SW1/4;
 - sec. 7;
 - secs. 18 and 19;
 - secs. 30 and 31.
- T.5 S., R.31 E., unsurveyed,
- sec. 3, NW1/4NW1/4;
 - sec. 4, N1/2N1/2, SW1/4NE1/4, S1/2NW1/4;
 - sec. 5, N1/2, N1/2SW1/4;
 - sec. 6, N1/2, NW1/4SW1/4.
- T.7 S., R.31 E., unsurveyed,
- sec. 13, S1/2;
 - sec. 14, S1/2;
 - sec. 15, E1/2SW1/4, SW1/4SW1/4, SE1/4;
 - sec. 16, S1/2S1/2;
 - sec. 17, S1/2S1/2;
 - sec. 18, SE1/4SW1/4, S1/2SE1/4;
 - secs. 19 to 24, inclusive;
 - sec. 25, N1/2N1/2, SE1/4NE1/4;
 - sec. 26, NE1/4, N1/2NW1/4;
 - sec. 27, N1/2;
 - sec. 28, N1/2, N1/2SW1/4;
 - sec. 29, N1/2, N1/2S1/2, S1/2SW1/4;
 - sec. 30;
 - sec. 31, N1/2NE1/4, SW1/4NE1/4, NW1/4, N1/2SW1/4.

The legal descriptions are based on the unsurveyed 1 inch - 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

T. 8 S., R. 31 E., unsurveyed,

- sec. 19, S1/2;
- sec. 20, SW1/4, S1/2 SE1/4;
- sec. 21, S1/2SE1/2;
- sec. 22, SW1/4SW1/4;
- sec. 23, S1/2SE1/4;
- sec. 24, S1/2SW1/4;
- sec. 26, N1/2NE1/4, NW1/4, N1/2SW1/4;
- sec. 27, N1/2;
- sec. 28, N1/2N1/2;
- sec. 29, N1/2NE1/4.

T. 5 S., R. 32 E., unsurveyed,

- that part of secs. 25 and 26 lying south of the Taylor Highway;
- sec. 35, all Federal lands in N1/2NE1/4, SW1/4NE1/4, W1/2, and NW1/4SE1/4 lying south of the Taylor Highway;
- sec. 36, N1/2N1/2.

T. 6 S., R. 32 E., unsurveyed,

- sec. 2, that part of N1/2NW1/4, SE1/4NW1/4 lying east of the Taylor Highway;
- that part of secs. 3 and 9 lying east of the Taylor Highway;
- sec. 10, that part of NW1/4NE1/4, NW1/4, N1/2SW1/4, SW1/4SW1/4 lying east of the Taylor Highway;
- sec. 15, NW1/4NW1/4, SW1/4SW1/4;
- that part of sec. 16 lying east of the Taylor Highway;
- sec. 21, that part of W1/2NE1/4, W1/2, SW1/4SE1/4 lying east of the Taylor Highway;
- sec. 28, that part of SE1/4NE1/4, W1/2NE1/4, W1/2, N1/2SE1/4 lying east of the Taylor Highway;
- that part of sec. 33 lying east of the Taylor Highway;
- sec. 34, SW1/4NW1/4, NW1/4SW1/4.

T. 7 S., R. 32 E., unsurveyed,

- sec. 4, that part of NE1/4NE1/4, W1/2NE1/4, W1/2, lying east of the Taylor Highway;
- sec. 8, all Federal lands in SE1/4SE1/4;
- sec. 9, SW1/4NE1/4, that part of the NW1/4 and N1/2SW1/4, lying east of the Taylor Highway, all Federal lands in S1/2SW1/4, W1/2SE1/4;
- sec. 13, S1/2S1/2;
- sec. 14, S1/2S1/2;
- sec. 15, S1/2NE1/4, W1/2, SE1/4;
- all Federal lands in sec. 16;
- sec. 17, E1/2, S1/2NW1/4, SW1/4;
- sec. 18, S1/2;
- sec. 19;
- sec. 20, E1/2, SW1/4, N1/2SE1/4;
- sec. 21, N1/2, N1/2SW1/4, SE1/4SW1/4, SE1/4;
- sec. 22 to 26, inclusive;
- sec. 27, N1/2, E1/2SW1/4;
- sec. 28, N1/2NE1/4;
- sec. 29, E1/2NW1/4;
- sec. 30, N1/2NE1/2, SW1/4NW1/4;
- sec. 35, NE1/4, N1/2NW1/4, SE1/4NW1/4;
- sec. 36.

The legal descriptions are based on the unsurveyed 1 inch = 1 mile scale boundary maps appended to this river management plan. In case of discrepancy, these maps will control.

- T. 5 S., R. 33 E., unsurveyed,
sec. 9, that part of SE1/4SE1/4 lying east of the Taylor Highway;
sec. 10, SW1/4SW1/4;
sec. 15, NW1/4NW1/4;
sec. 16, that part of NE1/4, NW1/4SE1/4, W1/2 lying east of the Taylor Highway;
that part of secs. 17 and 19 lying east of the Taylor Highway;
sec. 20, that part of NE1/4, SW1/4, N1/2SE1/4, SW1/4SE1/4 lying east of the Taylor Highway;
sec. 21, N1/2NW1/4, SW1/4NW1/4;
sec. 29, NW1/4NW1/4;
sec. 30, that part of N1/2, N1/2SW1/4, SW1/4SW1/4, N1/2SE1/4 lying east of the Taylor Highway.
- T. 7 S., R. 33 E., unsurveyed,
sec. 19, SW1/4;
sec. 24, NE1/4NE1/4, S1/2NE1/4, SE1/4;
sec. 25, E1/2, SE1/4NW1/4, E1/2SW1/4;
sec. 29, SW1/4, W1/2SE1/4;
sec. 30, W1/2, SE1/4;
secs. 31 to 34, inclusive;
Sec. 35, NE1/4NE1/4, S1/2N1/2, NW1/4NW1/4, S1/2;
Sec. 36.
- T. 8 S., R. 33 E., unsurveyed,
secs. 1 to 5, inclusive;
sec. 6, NE1/4, N1/2NW1/4;
sec. 10, NE1/4;
sec. 11, N1/2;
sec. 12, NW1/4.
- T. 7 S., R. 34 E., unsurveyed,
sec. 8, SE1/4;
sec. 9, S1/2;
secs. 16 and 17;
secs. 19 to 21, inclusive;
sec. 28, N1/2, N1/2S1/2;
sec. 29, N1/2, N1/2S1/2;
secs. 30 and 31.
- T. 8 S., R. 34 E., unsurveyed,
sec. 6, N1/2N1/2.

The area as described, excluding lands between ordinary high water marks for the designated streams, contains approximately 243,000 acres subject to adjustment to lines of public land surveys.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It is essential to ensure that all entries are supported by appropriate evidence and are clearly documented.

3. The second part of the document outlines the various methods used to collect and analyze data.

4. These methods include both qualitative and quantitative approaches, each with its own strengths and limitations.

5. The third part of the document provides a detailed overview of the theoretical framework underlying the research.

6. This framework is based on a combination of established theories and new insights from recent research.

7. The fourth part of the document describes the research methodology and the specific procedures followed.

8. The methodology is designed to ensure the reliability and validity of the research findings.

9. The fifth part of the document presents the results of the study and discusses their implications.

10. The results indicate that there are significant differences between the two groups being compared.

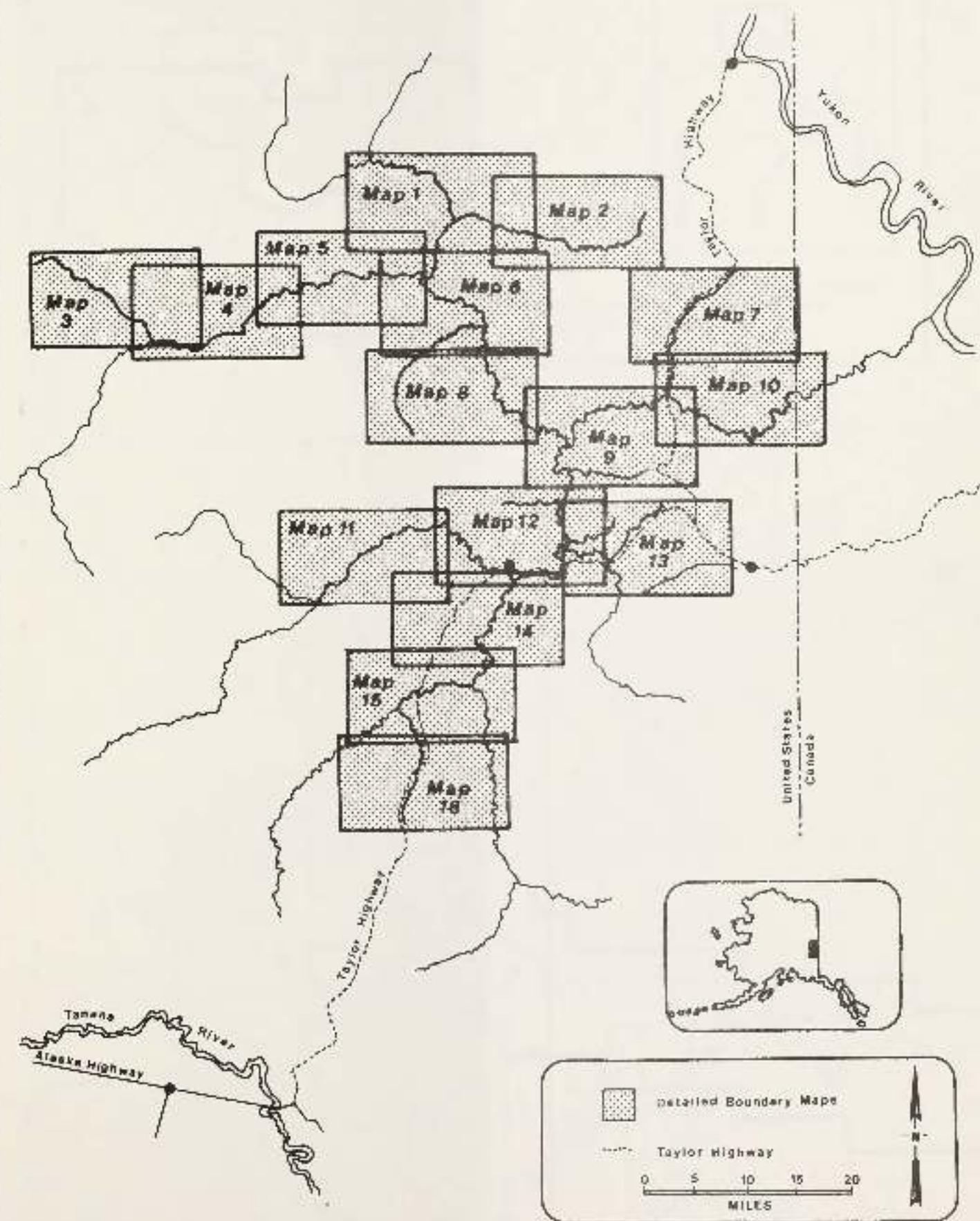
11. These findings have important implications for the field of study and suggest areas for further research.

12. The final part of the document concludes the study and provides a summary of the key findings.

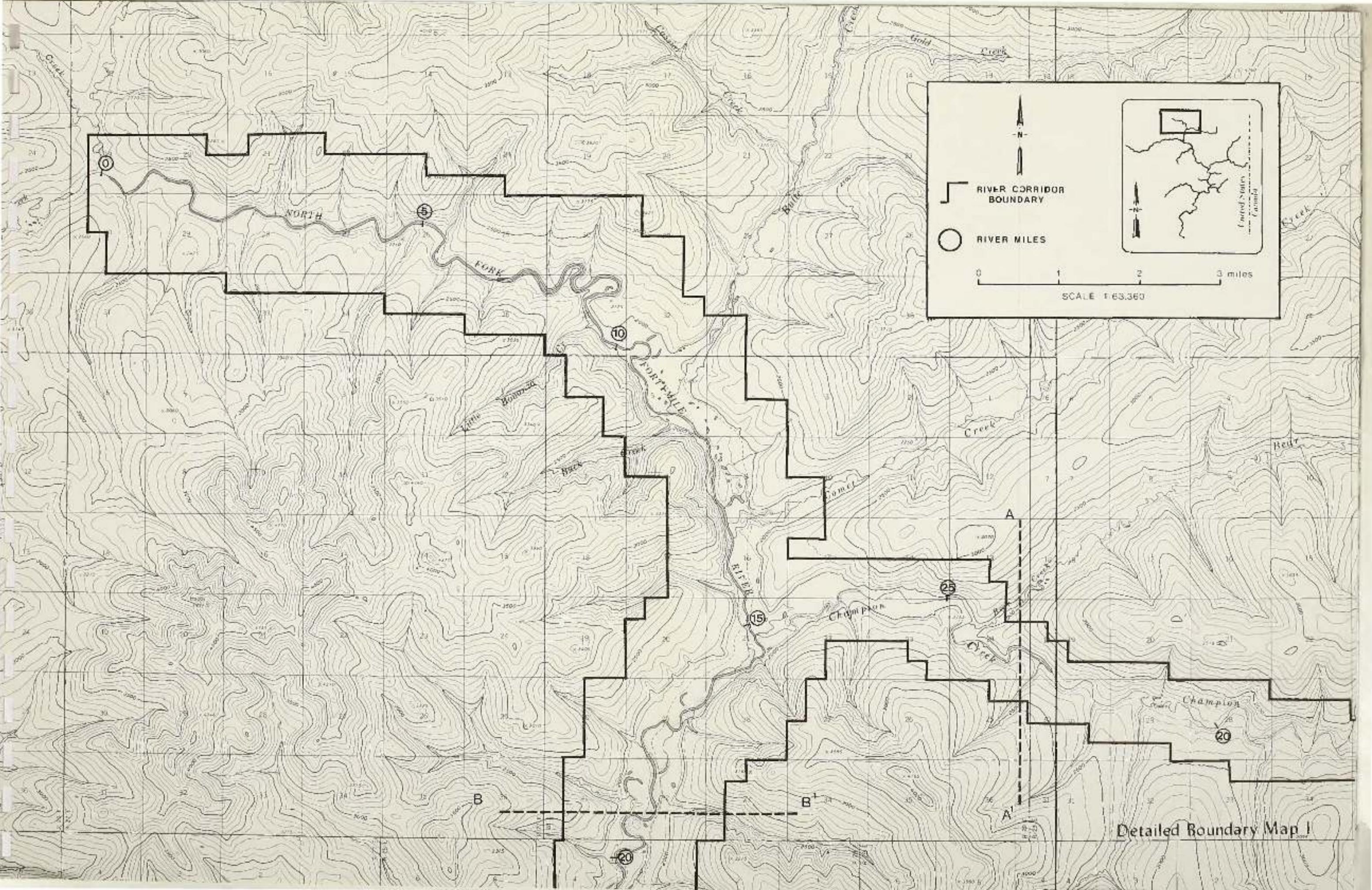
13. It is hoped that this research will contribute to a better understanding of the phenomena being studied.

Fortymile National Wild and Scenic River

Index Map







Legend:

- RIVER CORRIDOR BOUNDARY (represented by a thick black line)
- RIVER MILES (represented by a circle with a number inside)

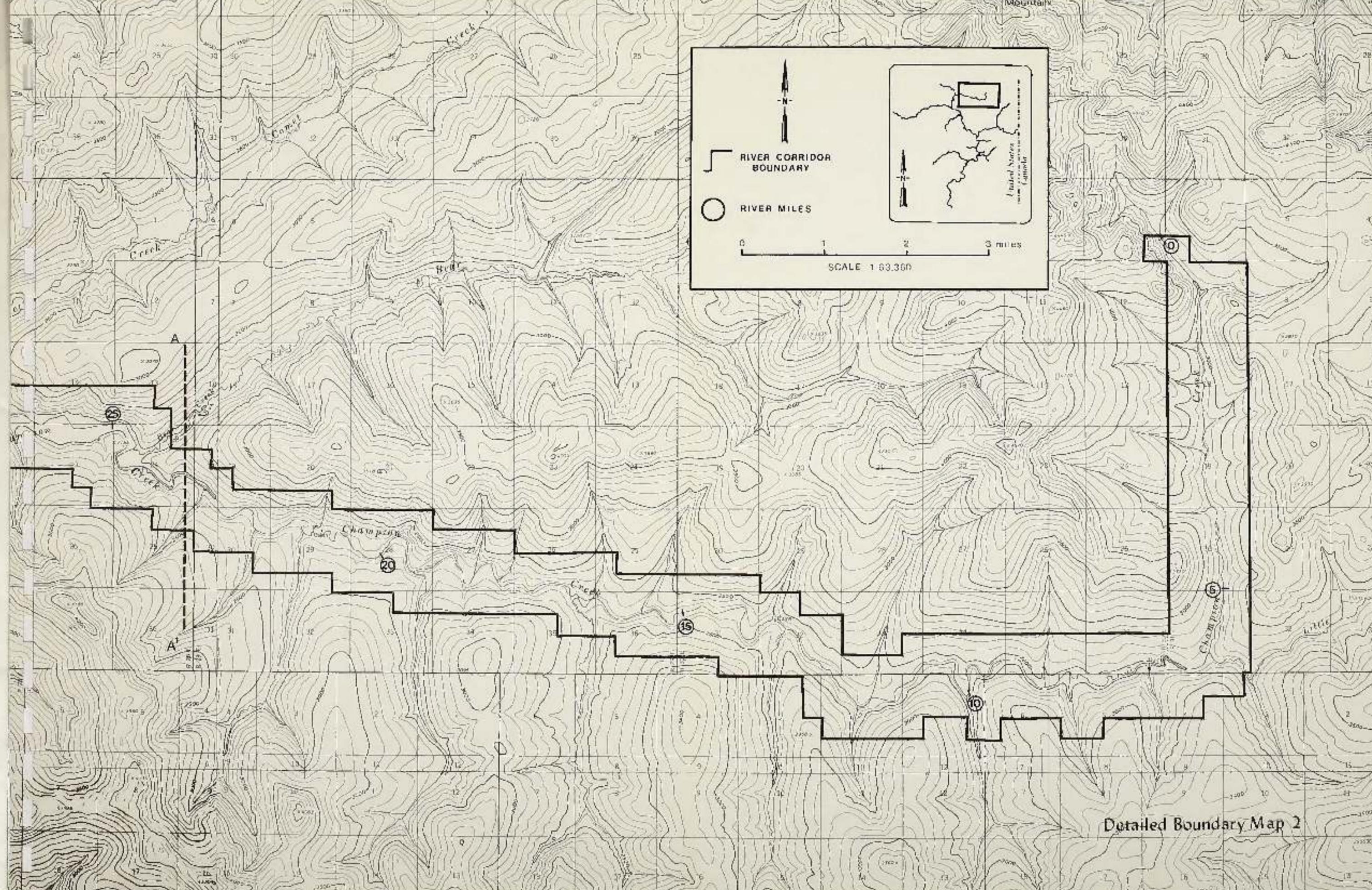
North Arrow: A vertical line with an arrowhead pointing upwards, labeled "N".

Scale Bar: A horizontal line with markings at 0, 1, 2, and 3 miles. Below the bar, the text "SCALE 1:63,360" is printed.

Inset Map: A small map in the top right corner showing the location of the study area within the United States and Canada. The United States is outlined in solid black, and Canada is outlined in a dashed line. A small rectangle indicates the area shown in the main map.

Detailed Boundary Map I





Legend and Scale:

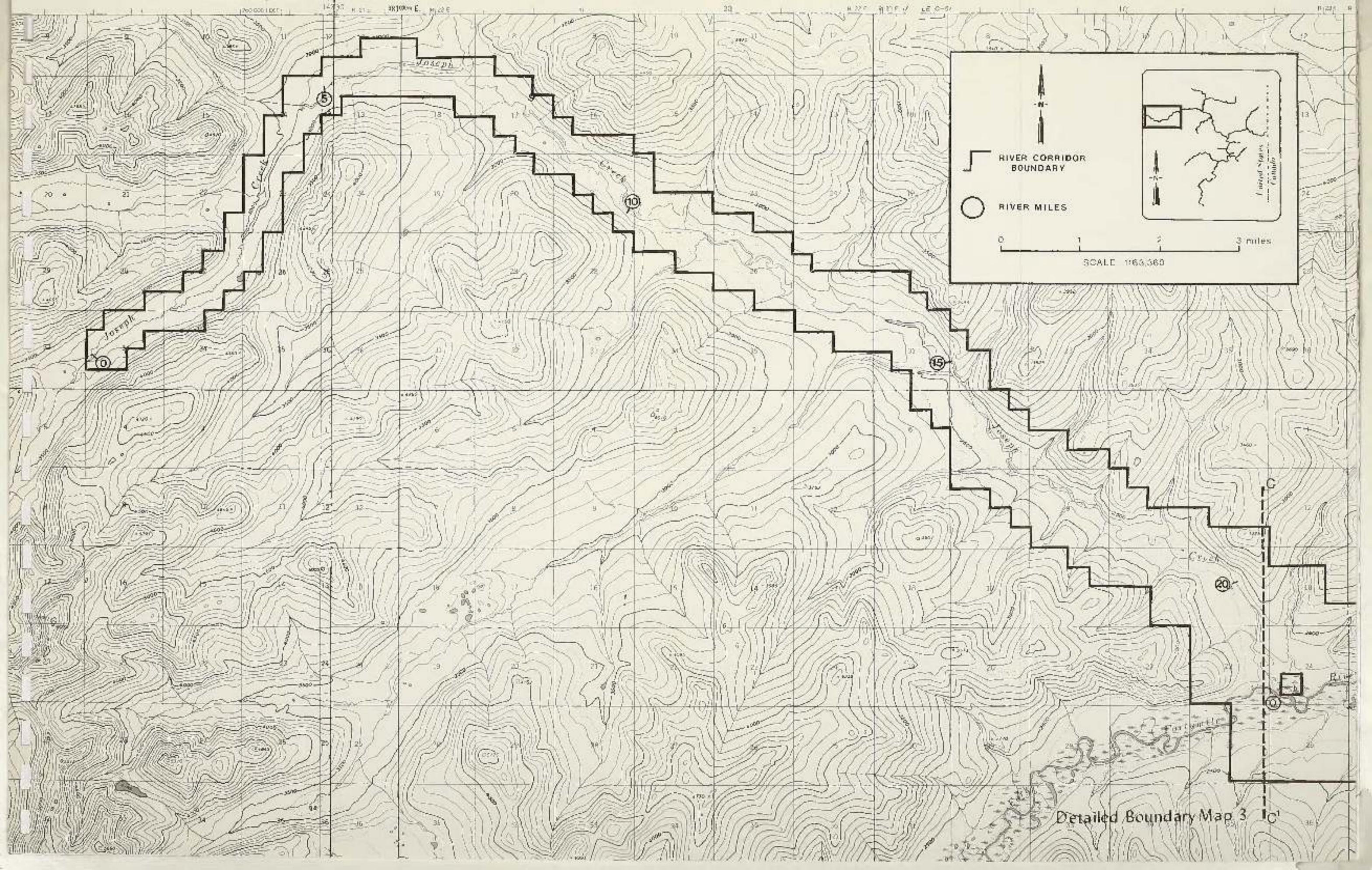
- N
- RIVER CORRIDOR BOUNDARY
- RIVER MILES

SCALE 1:63,360

0 1 2 3 miles

United States Geological Survey

Detailed Boundary Map 2

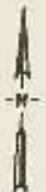


Legend and Scale:

- North Arrow
- RIVER CORRIDOR BOUNDARY
- RIVER MILES
- Scale: 0 1 2 3 miles
- SCALE 1:63,360

Inset Map: Shows the location of the study area within a larger regional context, with a north arrow and the text 'United States' and 'California'.

Detailed Boundary Map 3 C1

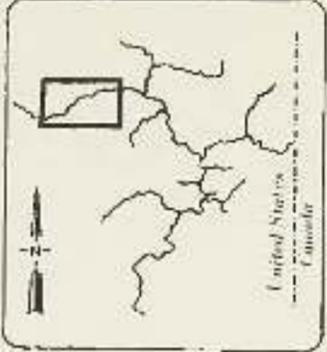
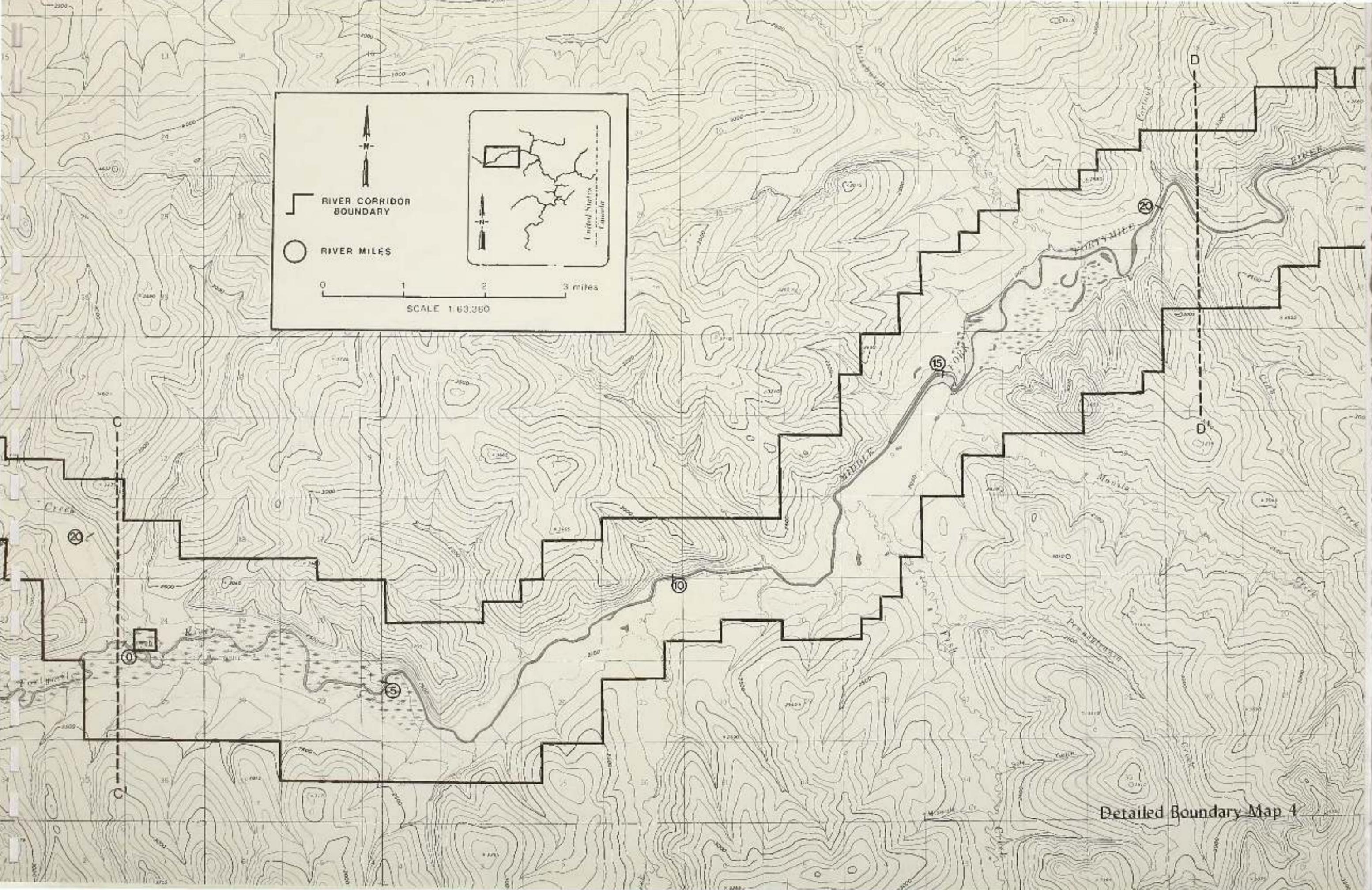


 RIVER CORRIDOR BOUNDARY

 RIVER MILES



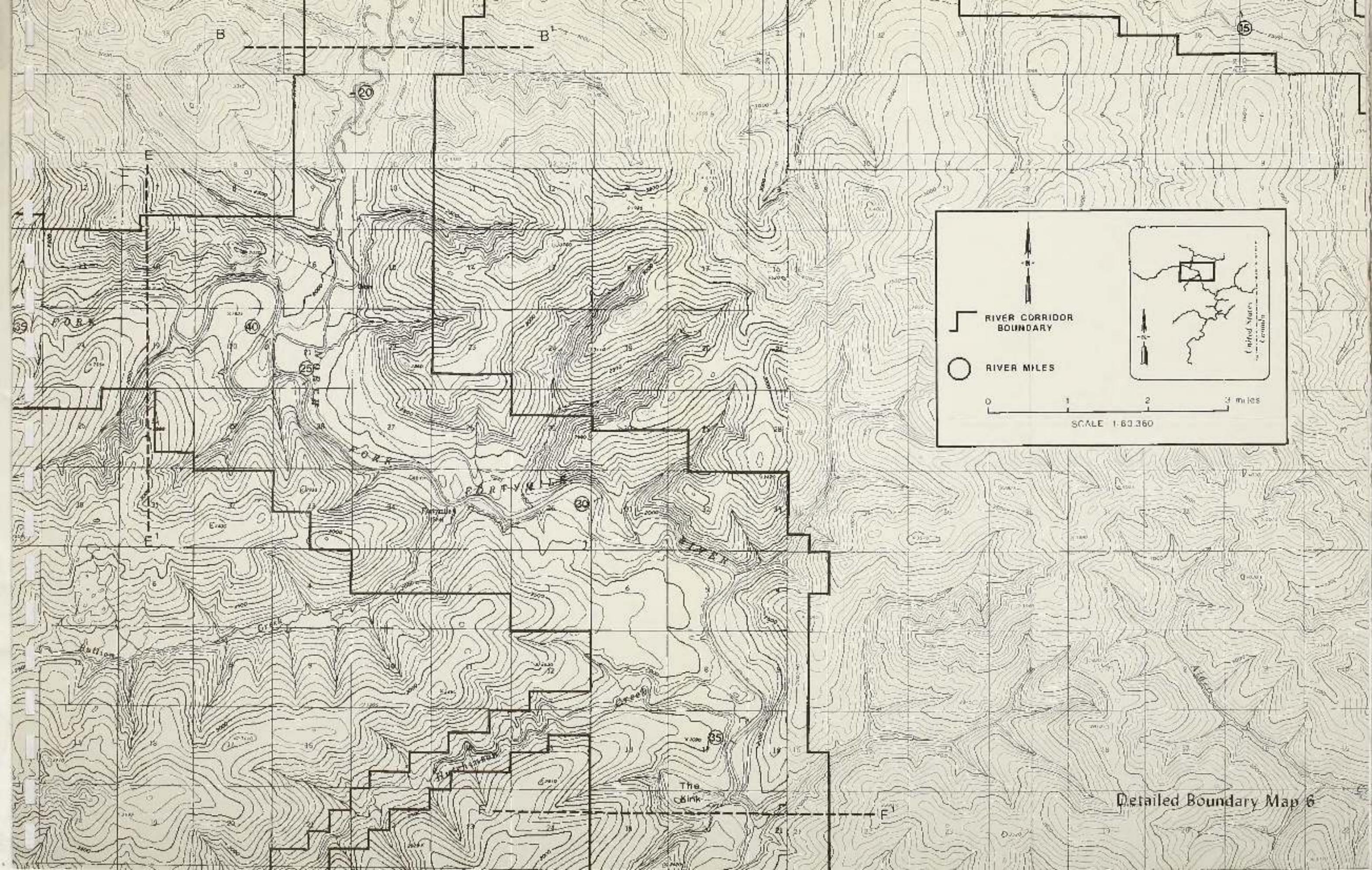
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Detailed Boundary Map 4







B

B¹

15

20

39

40

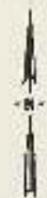
25

E¹

20

35

F¹

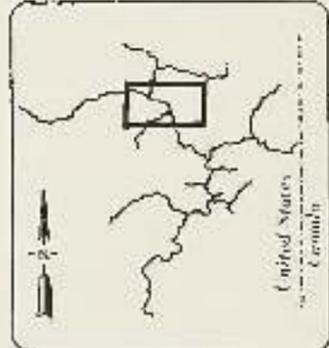


 RIVER CORRIDOR BOUNDARY

 RIVER MILES



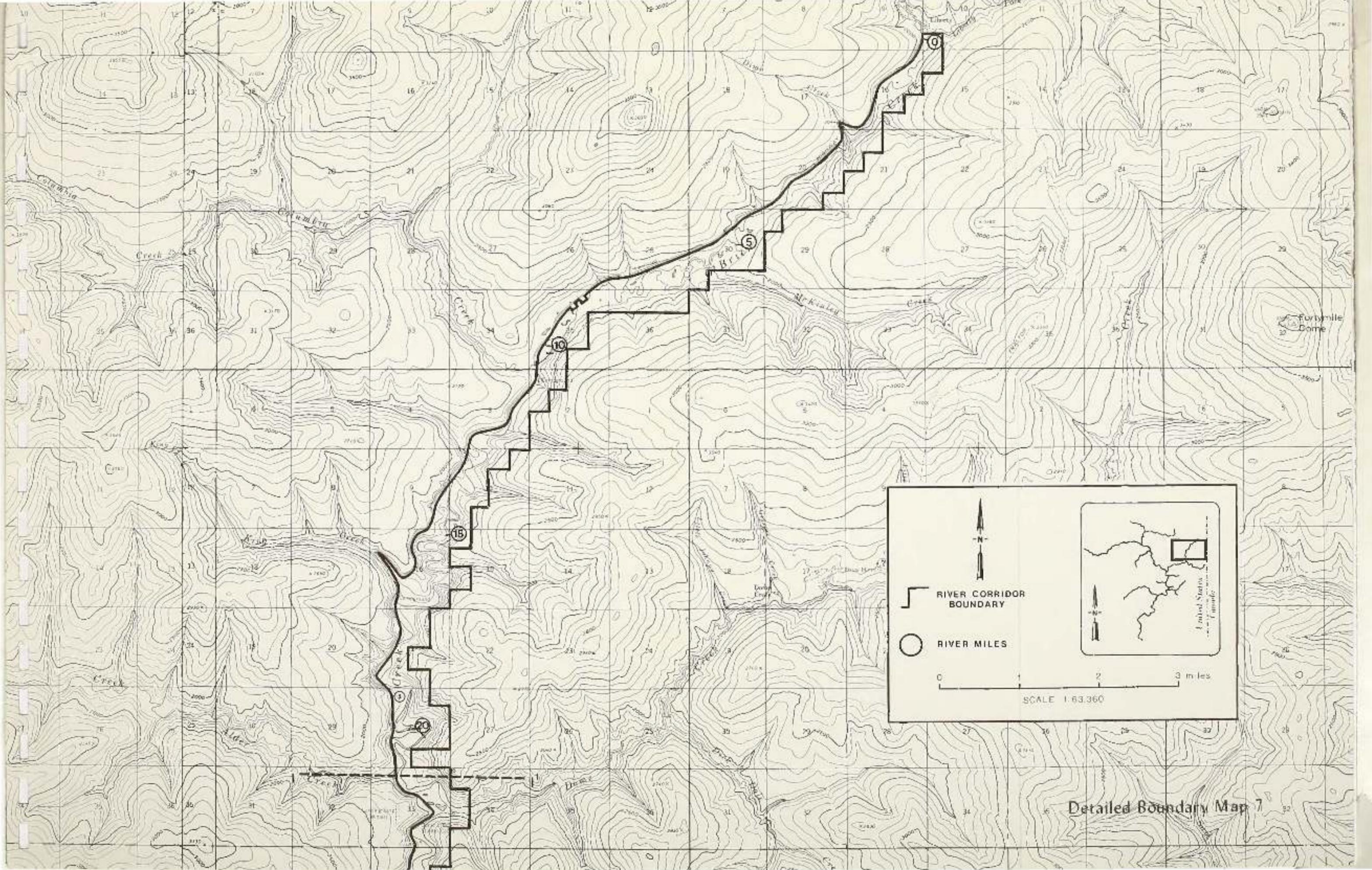
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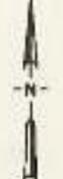


United States
Columbia

Detailed Boundary Map 6





 N

 RIVER CORRIDOR BOUNDARY

 RIVER MILES

0 1 2 3 miles

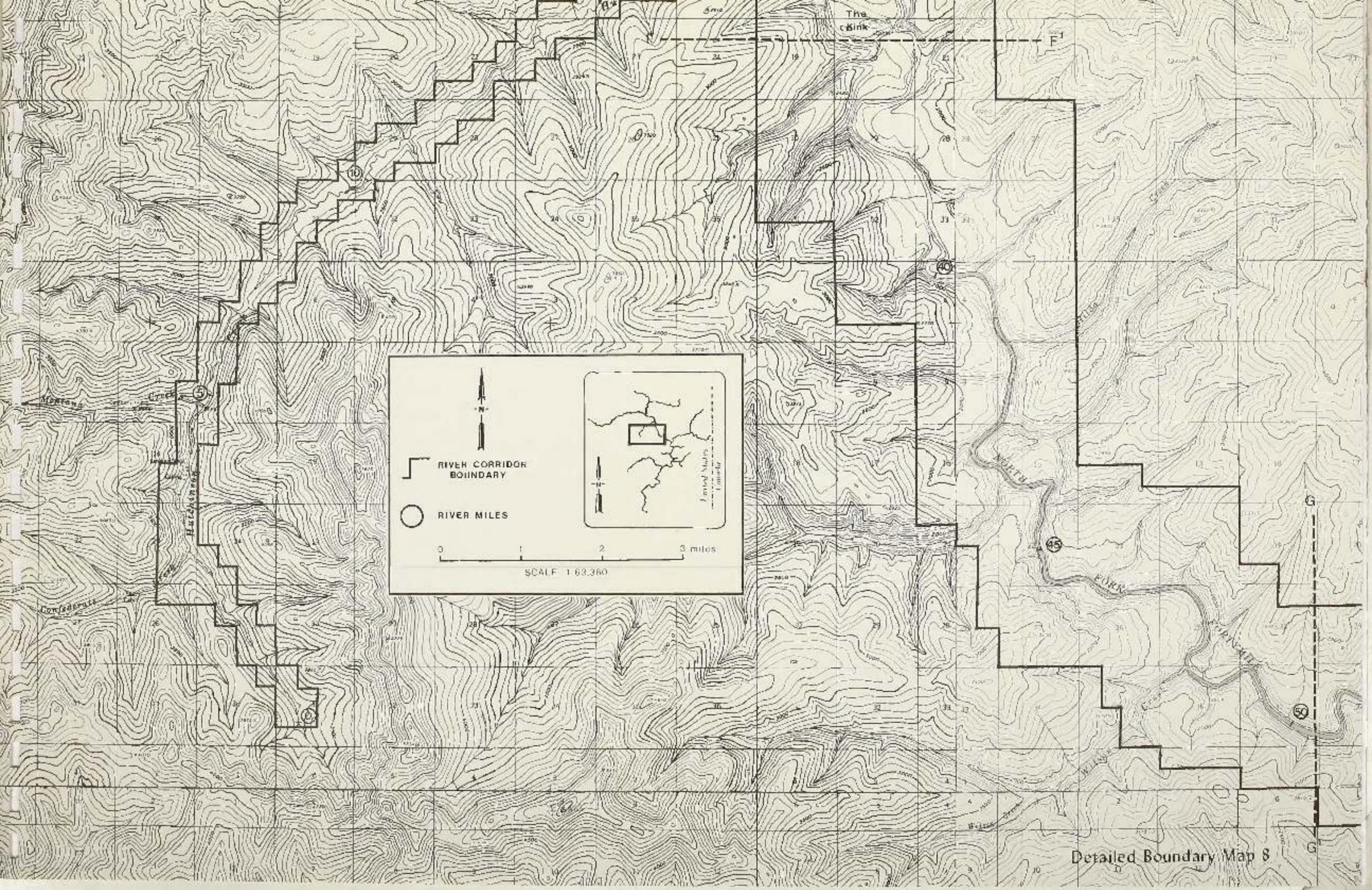
SCALE 1:63,360



United States
Tennessee

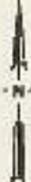
Detailed Boundary Map 7





The Sink

F

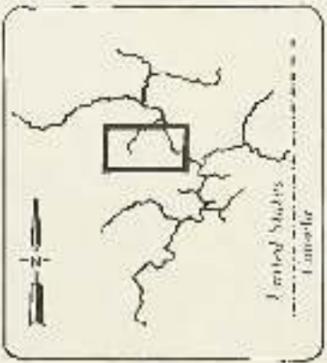
 N

 RIVER CORRIDOR BOUNDARY

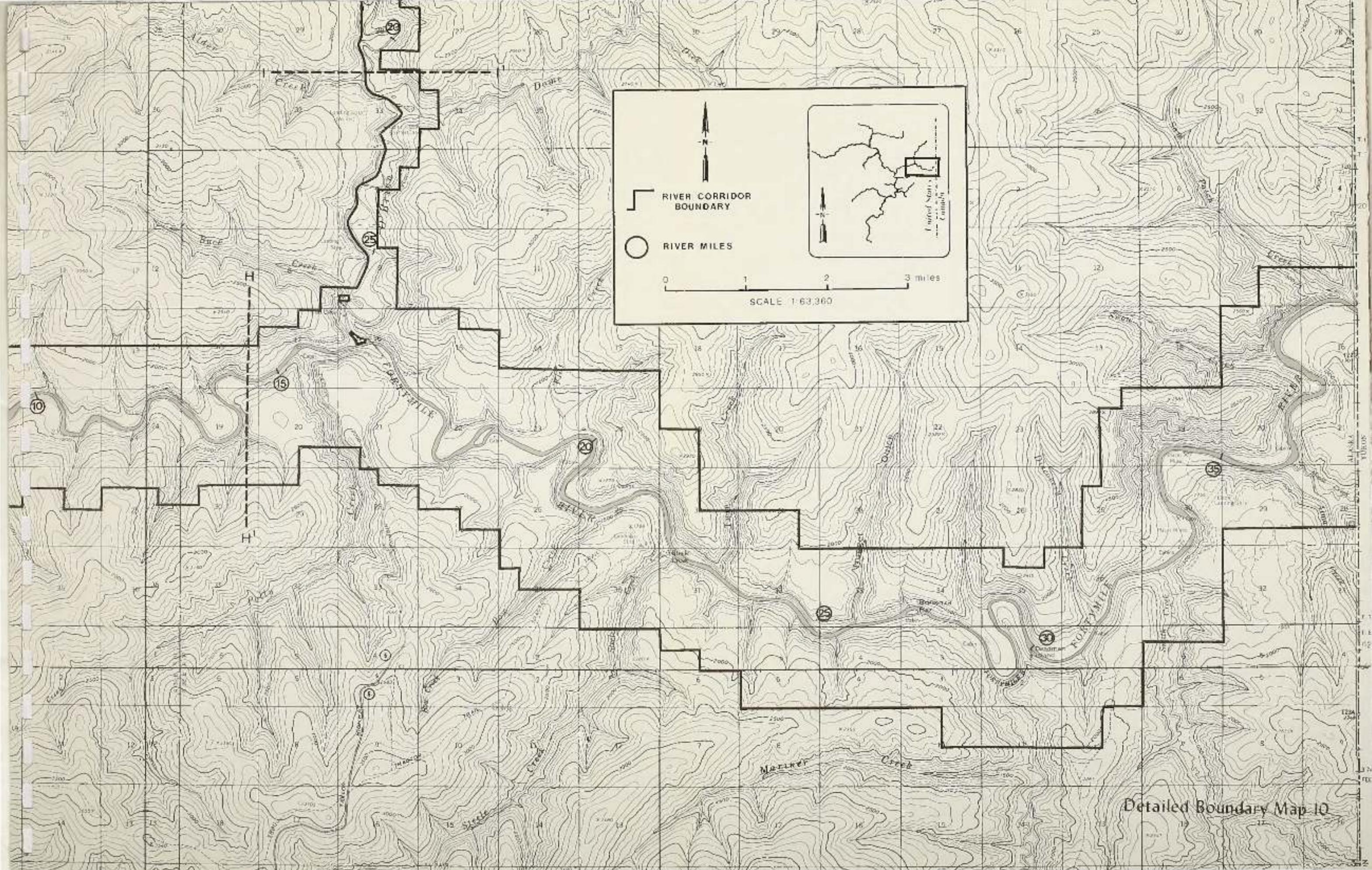
 RIVER MILES

0 1 2 3 miles

SCALE 1:63,360



United States
1 mile



Legend and Scale:

- RIVER CORRIDOR BOUNDARY
- RIVER MILES

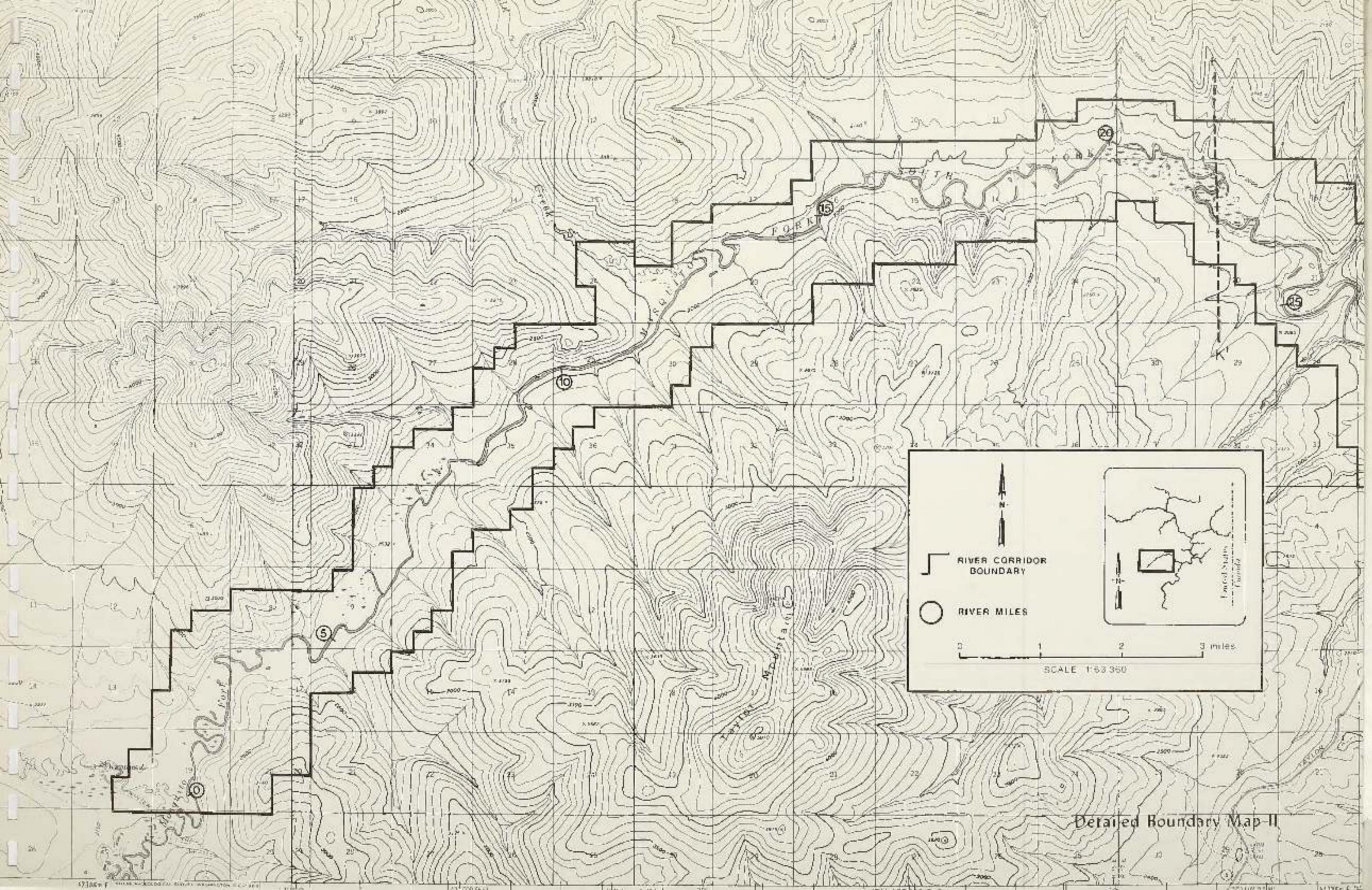
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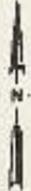
0 1 2 3 miles

Inset Map: Shows the location of the study area within a larger regional context, including labels for 'United States' and 'California'.

Detailed Boundary Map 10





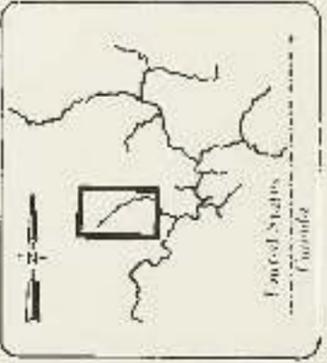
 N

 RIVER CORRIDOR BOUNDARY

 RIVER MILES

0 1 2 3 miles

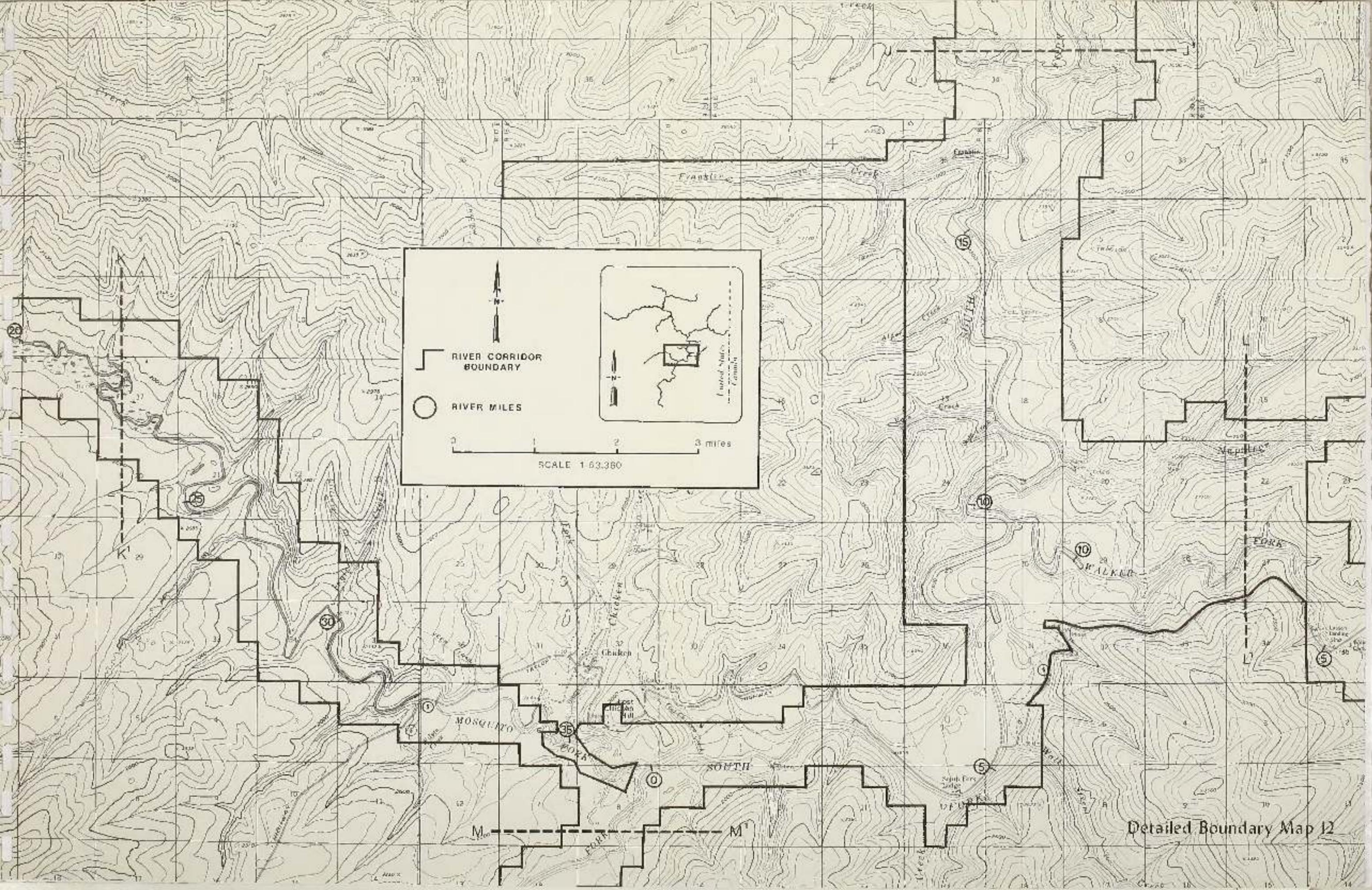
SCALE 1:63 350

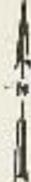


United States
Partners

Detailed Boundary Map-II





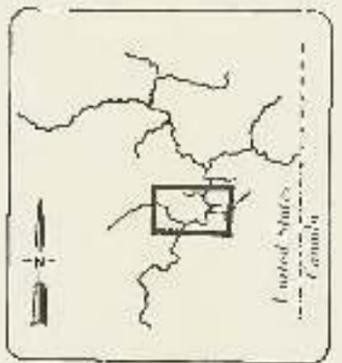
 N

 RIVER CORRIDOR BOUNDARY

 RIVER MILES

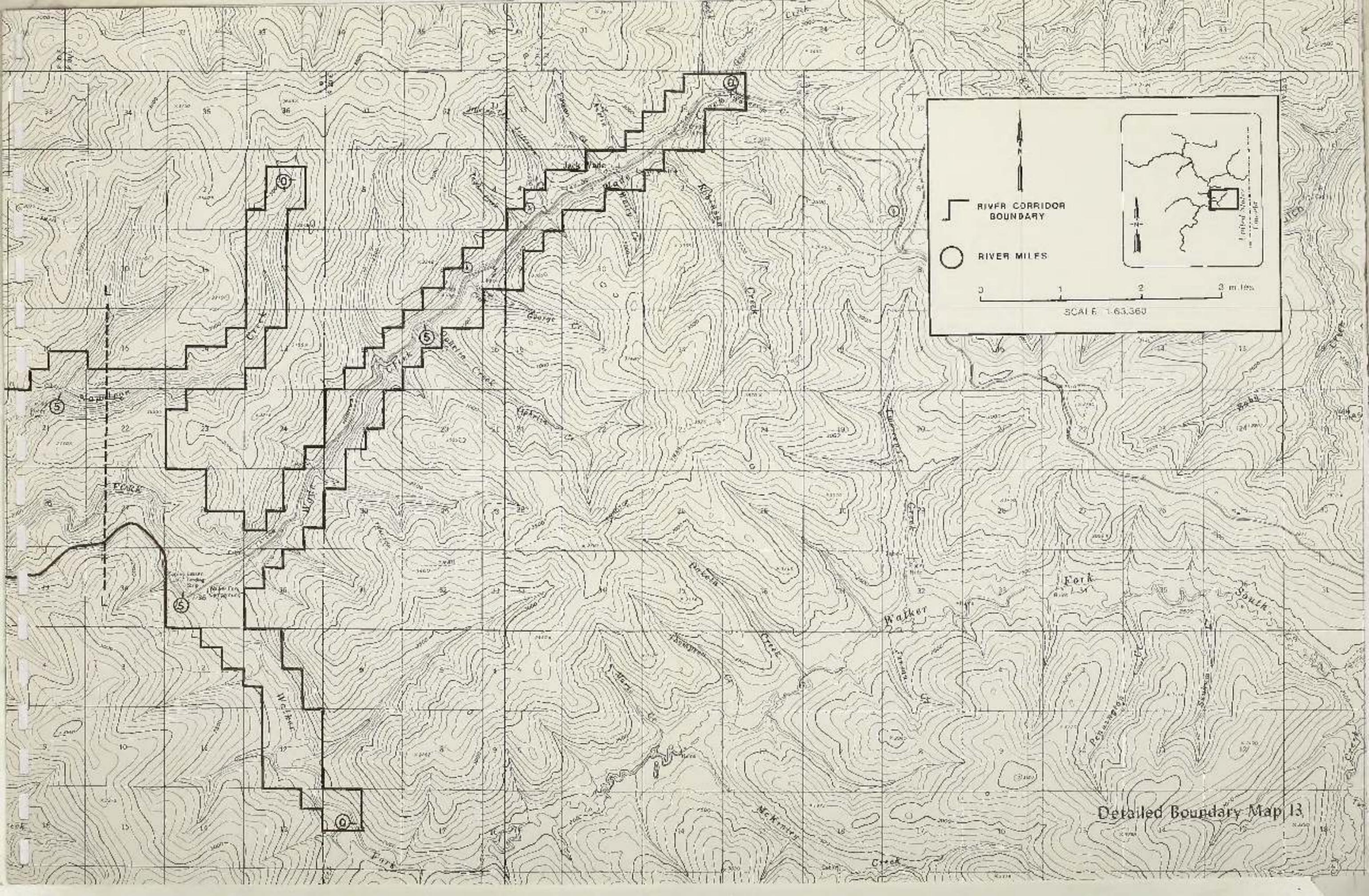
 0 1 2 3 miles

SCALE 1:63,360



United States
Columbia

Detailed Boundary Map 12



Legend:

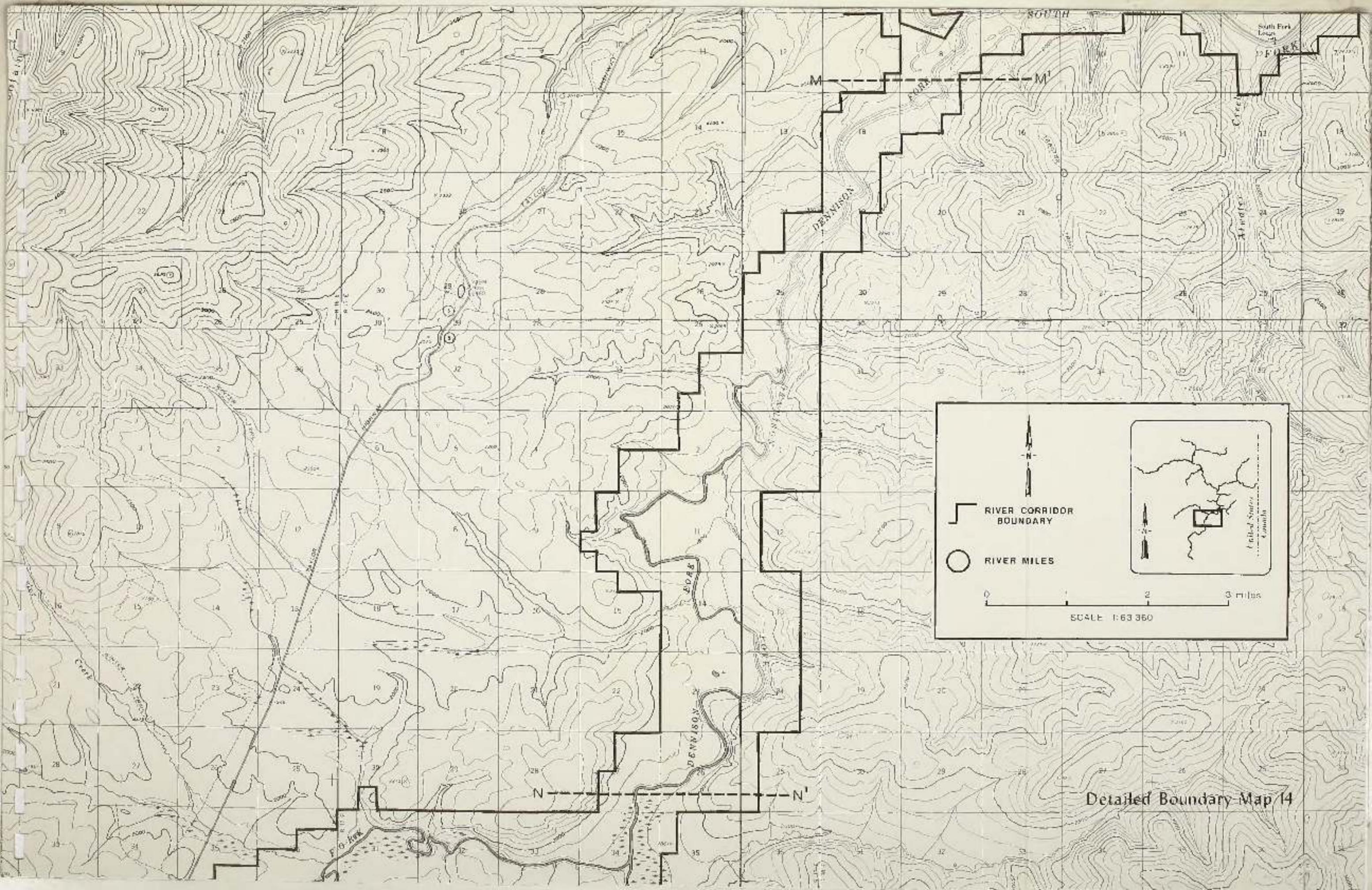
- RIVER CORRIDOR BOUNDARY
- RIVER MILES

Scale: 0 1 2 3 miles
SCALE 1:63,360

Inset Map: Shows the location of the study area within a larger regional context.

Detailed Boundary Map 13





Legend

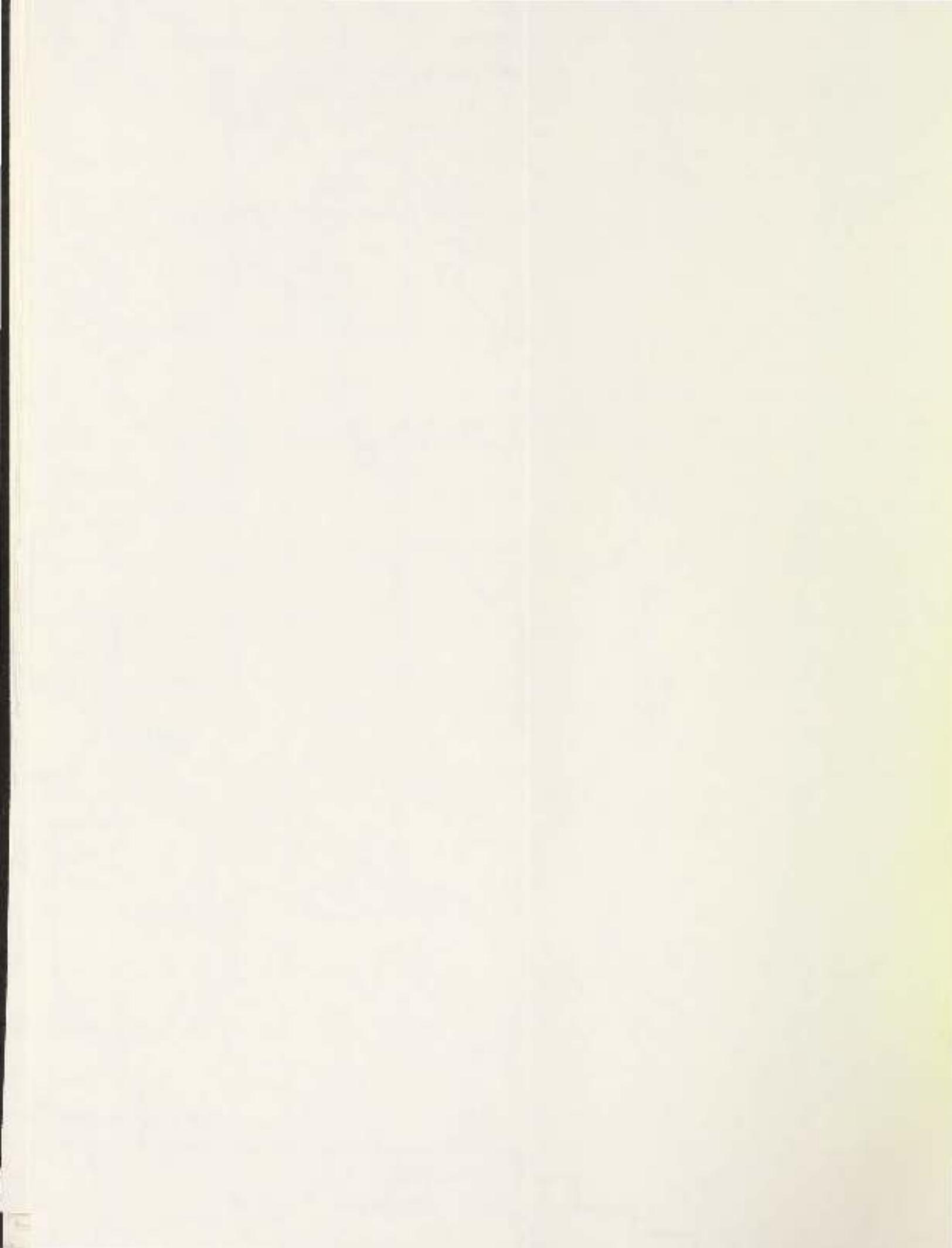
- RIVER CORRIDOR BOUNDARY
- RIVER MILES

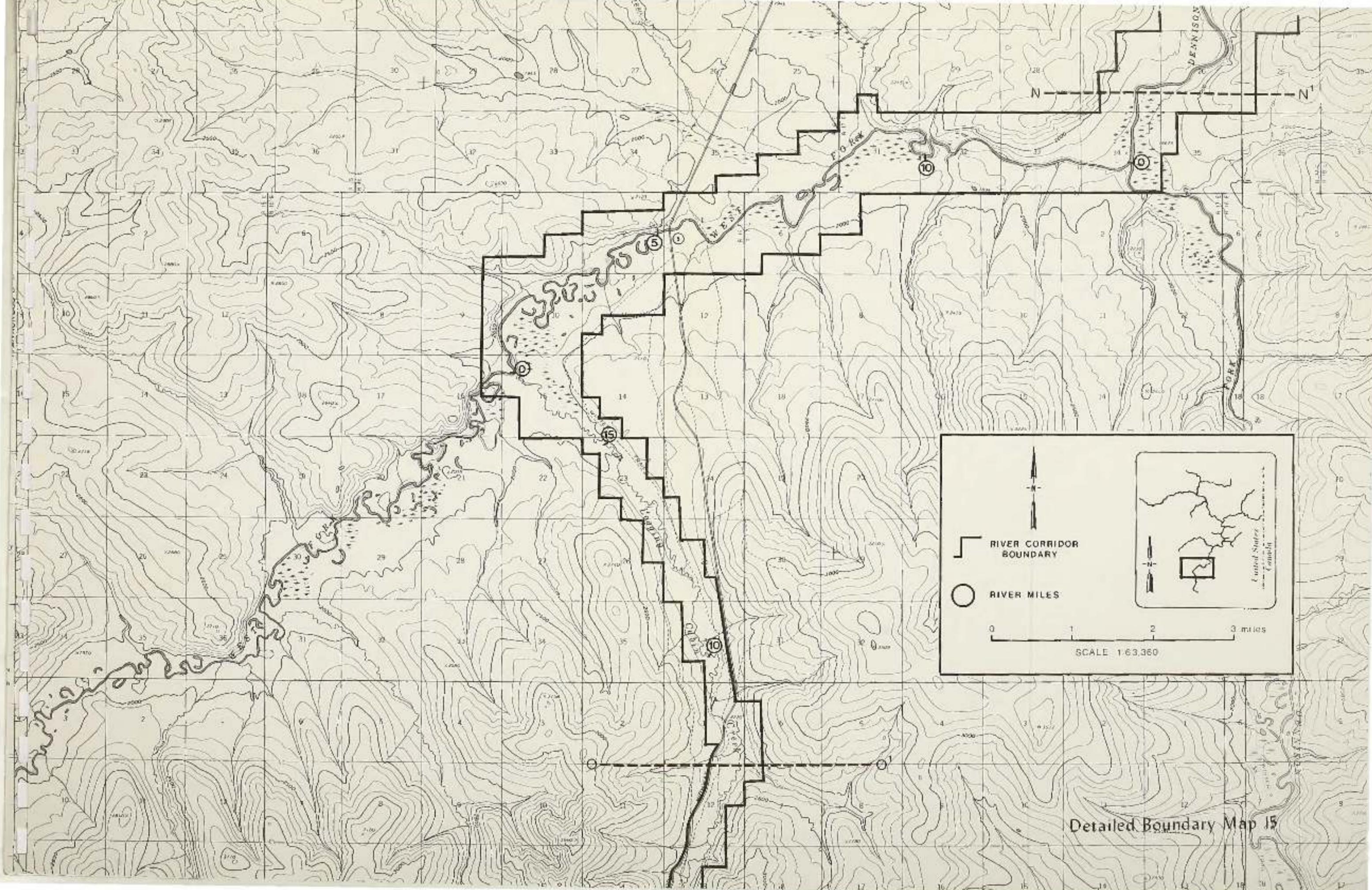
SCALE 1:63 360

0 1 2 3 miles

Inset Map: *Upper San Joaquin*

Detailed Boundary Map 14





Legend:

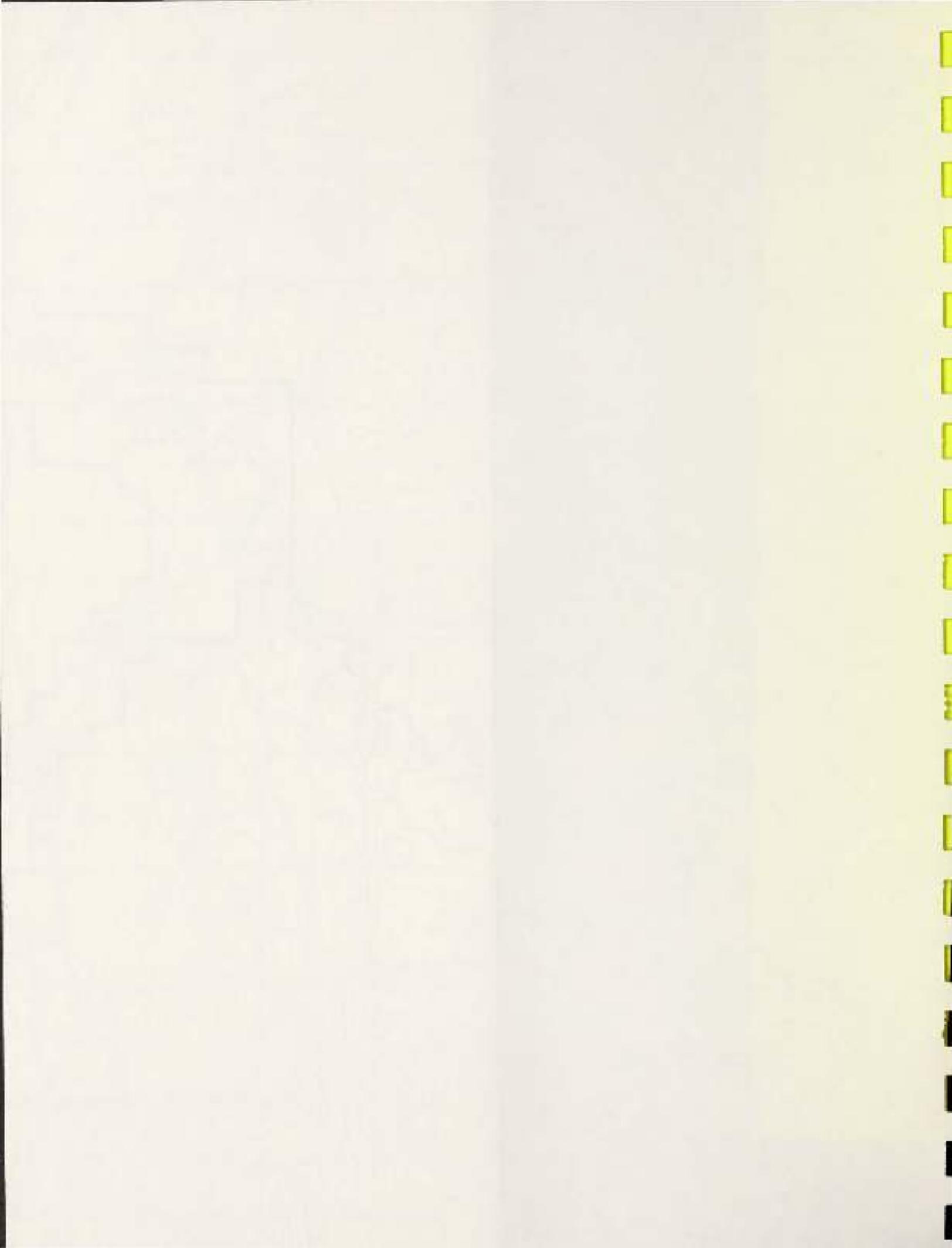
- RIVER CORRIDOR BOUNDARY
- RIVER MILES

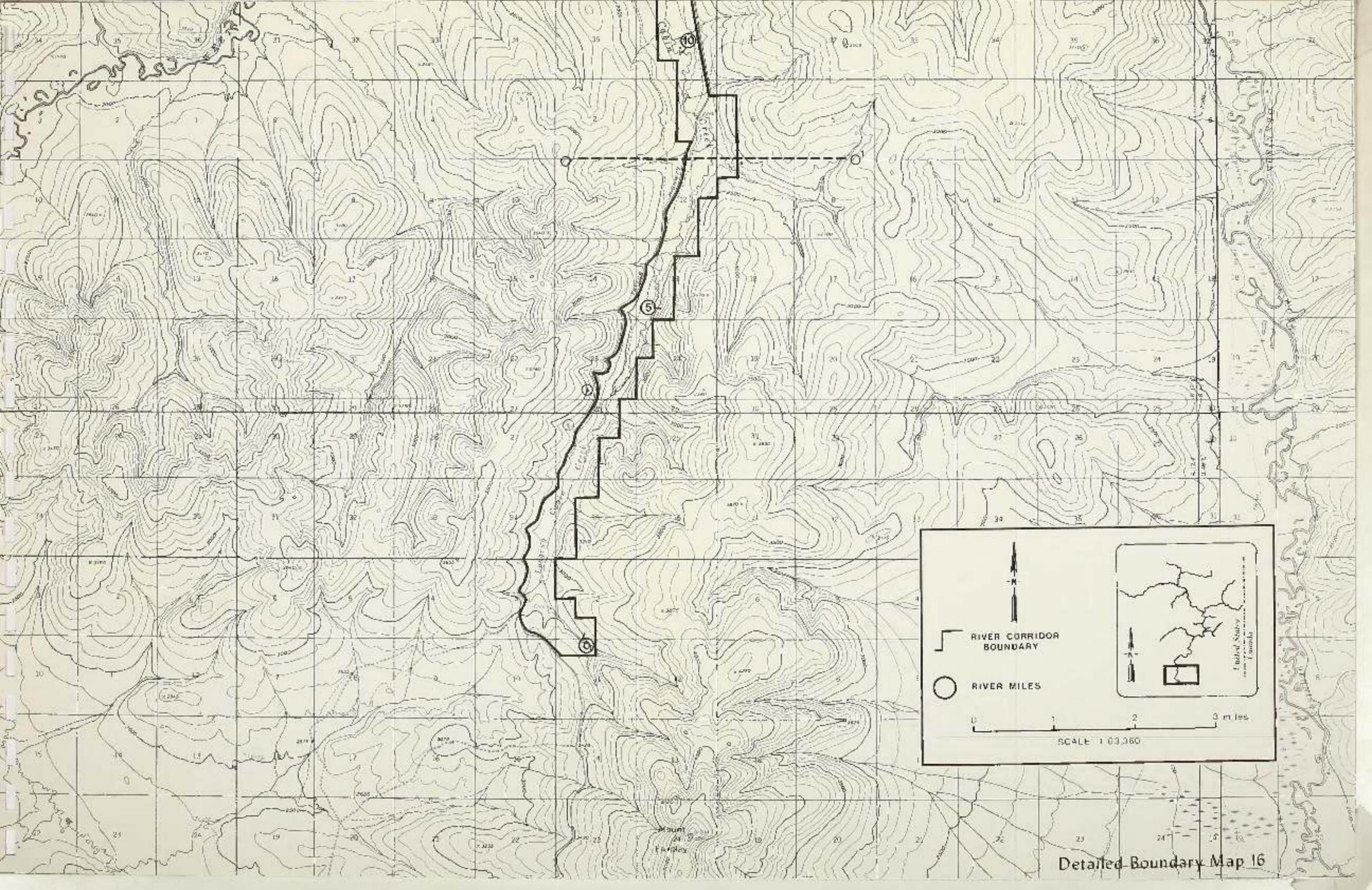
Scale: 1:63,360

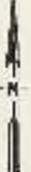
0 1 2 3 miles

United States
Canada

Detailed Boundary Map 15





 N

 RIVER CORRIDOR BOUNDARY

 RIVER MILES

0 1 2 3 miles

SCALE 1:63,360

 United States
Study Corridor

Detailed Boundary Map 16

