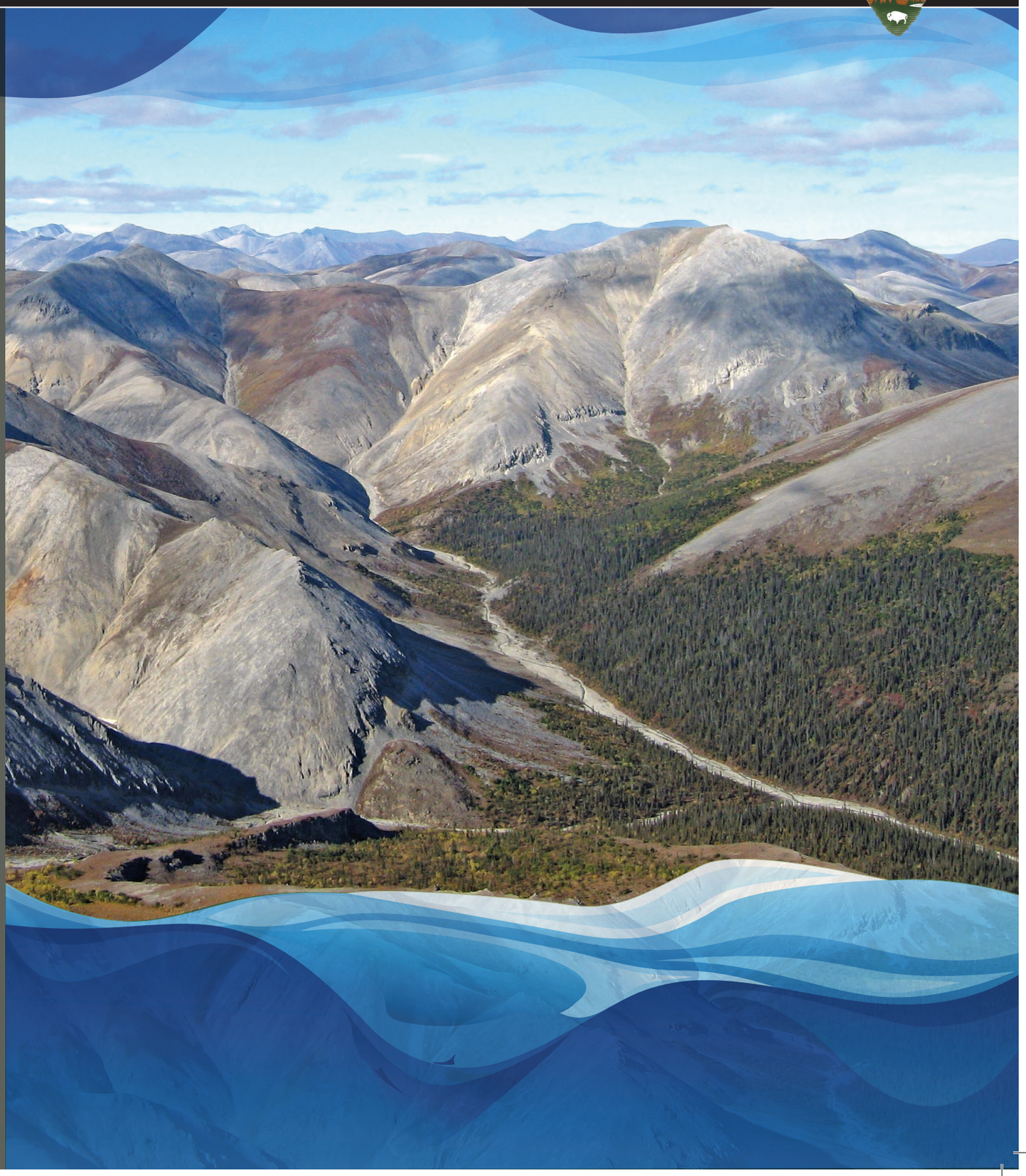
WILD AND SCENIC RIVER VALUES

SALMON WILD RIVER | Alaska | July 2016

NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR



Overview

This report summarizes outcomes from the Wild and Scenic River values workshop held May 5–6, 2015, at the Western Arctic National Parklands headquarters in Kotzebue, Alaska. The purpose of the workshop was to clearly define the Salmon Wild River free-flowing condition, water quality, and outstandingly remarkable values (ORVs); evaluate and describe each ORV; identify river-related issues; and identify a list of river stakeholders.

The workshop brought subject matter experts, park managers, and wild and scenic river program leaders together to evaluate the Salmon Wild and Scenic River and its tributaries. Articulation of the national significance and importance of this river to the public will benefit long-term protection and enhancement of these values. The outcomes from the workshop will provide a foundation for future river management.

The Wild And Scenic Rivers Act And The Salmon River

The national wild and scenic rivers system was created by Congress in 1968 (Public Law 90-542; 16 USC 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.

> *It is hereby declared to be the policy of the United States that certain 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 preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dams and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.*
>
> Wild and Scenic Rivers Act, October 2, 1968

In order to protect the Salmon River's free-flowing characteristics, water quality, and outstandingly remarkable values, 70 miles of the Salmon River were designated a wild river by the Alaska National Interest Lands Conservation Act (ANILCA) under the provisions of the 1968 National Wild and Scenic Rivers Act. The designated reach of the Salmon Wild River is "that portion within the Kobuk Valley National Park" (Public Law 96-487). The National Park Service (NPS) manages the entire river, which lies completely within Kobuk National Park.

Wild and Scenic River Values

Each river in the national system is administered with the goal of protecting and enhancing the values that caused it to be designated. Outstandingly remarkable values (ORVs), free-flowing condition, and water quality form the three pillars of protection under the Wild and Scenic Rivers Act. Because all wild and scenic rivers are free-flowing rivers whose water quality must be protected and enhanced, descriptions of these two values are included as part of this wild and scenic river values publication. These fundamental characteristics of the rivers are described after the ORV statements.

Outstandingly Remarkable Values

Free-flowing Condition

Water Quality

Outstandingly Remarkable Values

Outstandingly remarkable values are defined by the Wild and Scenic Rivers Act as the characteristics that make a river worthy of special protection. Thus, the foundation for wild and scenic river management is a clearly defined set of ORVs. The Interagency Wild and Scenic Rivers Coordinating Council has issued criteria for identifying and defining these values. The criteria guidance states that:

An ORV must be river related or dependent. This means that a value must

- be located in the river or on its immediate shorelands (generally within 0.25 mile on either side of the river)
- contribute substantially to the functioning of the river ecosystem
- owe its location or existence to the presence of the river

An ORV must also be rare, unique, or exemplary at a comparative regional or national scale. Such a value would be one that is a conspicuous example from among a number of similar values that are themselves uncommon or extraordinary.

Based on these criteria and a careful analysis of the designated reaches of the Salmon Wild River, the National Park Service has determined that several ORVs are present. The analysis concluded that the Salmon River contains the following ORVs: wildlife, recreational, and cultural. A set of broad statements has been developed that articulates each ORV for the entire river designation.

The Salmon River was not divided into distinct river segments because the entire designated reach is classified "wild" and because the river's character is similar throughout its length. Also, little is known about possible variations in the presence or absence of particular ORVs in the designated area. Everything that follows is representative of the entire 70 miles of the Salmon River.

The following matrix summarizes the evaluation results and provides organization to the ORV statements that follow.

River Segment	ORV Category				
	Fish	Wildlife	Scenic	Recreational	Cultural
Salmon River		●		●	●

Salmon Wild and Scenic River

Alaska

National Park Service
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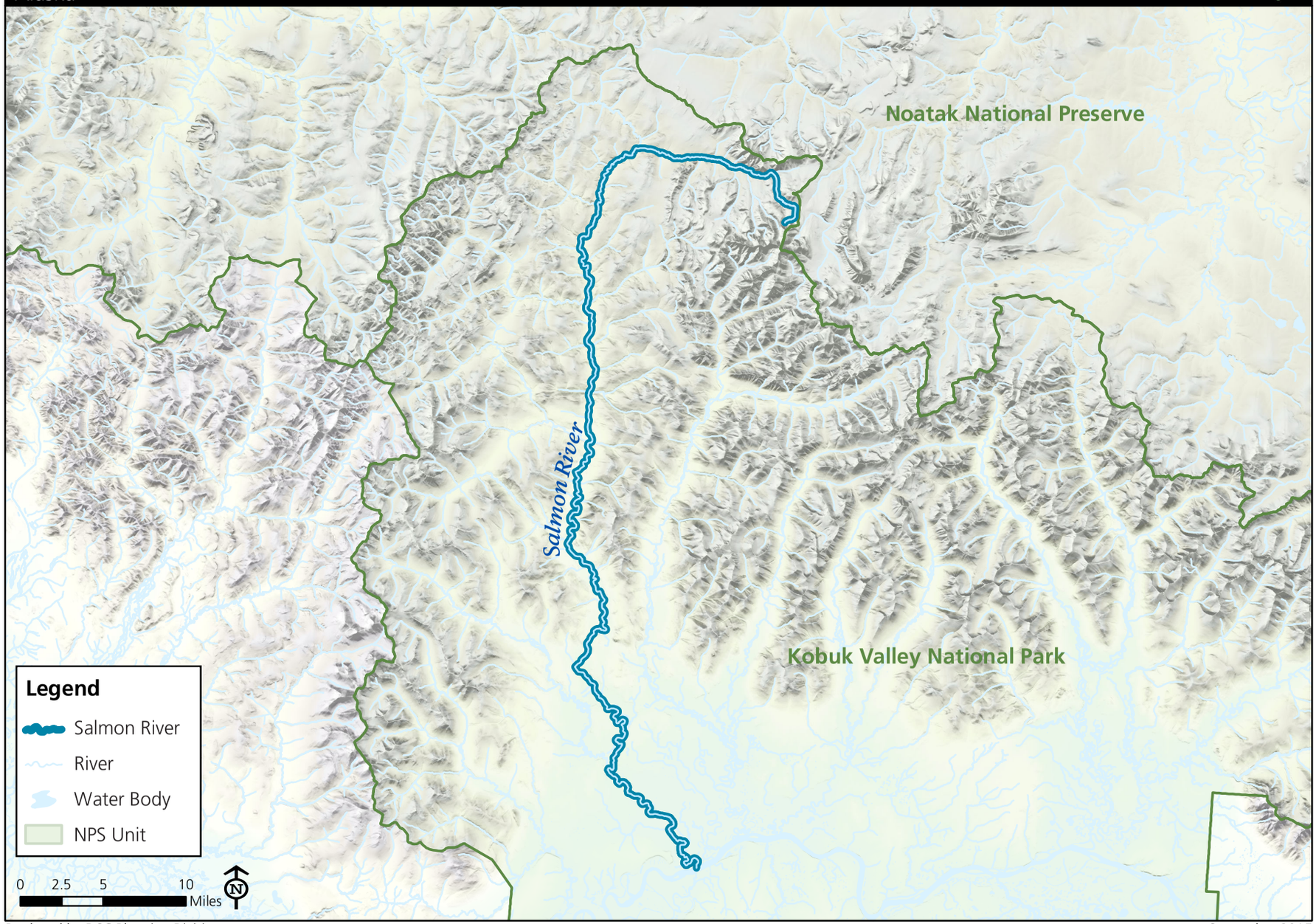

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ORV Evaluation

During the workshop, the Salmon River was evaluated to determine whether it contains outstandingly remarkable geologic, ecologic, fish, wildlife, scenic, recreational, and cultural values. A clearly defined set of criteria was developed for each of these ORV categories based on the professional judgment of subject matter experts participating in the workshop.

Wildlife Values

The Salmon River is a quintessential example of the intact ecosystem processes of the northwestern Arctic and is inhabited by a representative suite of species. The river was designated as wild and scenic, in part, because of its use by the Western Arctic caribou herd during its spring and fall migration, moose in winter, and waterfowl during nesting. The river drainage supports unaltered habitat for predators, raptors, and fish, and unaltered predator-prey dynamics.

Recreational Values

The Salmon River provides superlative opportunities for primitive and unconfined recreation. Visitors are almost guaranteed solitude and a pristine soundscape free from the impacts of human activity. Visitors will have an especially challenging experience in the wilderness. Many boaters with packrafts will usually have to hike in from outside the watershed to begin this class I float trip. An adventure on the river requires advanced skills in self-reliance, backpacking, provisioning, and orienteering.

Access is difficult because aircraft landing strips are few, but those who venture here are rewarded with spectacular scenic beauty, solitude, and a range of recreational opportunities. The combination of hiking and floating, combined with the remoteness, makes the Salmon River a destination for the most advanced backcountry travelers. There are healthy populations of sportfish such as chum salmon, Arctic char, and grayling. The water is crystal clear with deep green pools and many unnamed tributaries—exposed cliffs and bedrock add to the visual diversity. Photographers and naturalists will enjoy a continuous range of scenery from alpine tundra to low wetlands with a variety of wildlife. Wildlife viewing can be exceptional, with species such as caribou, moose, brown and black bear, and wolves present. Eagles and peregrine falcons nest in large trees and cliffs. The visiting season is a short three months and in August the tundra and forest vegetation is spectacular with colors of red and gold.

Cultural Values

Human settlement at the mouth of the Salmon River has been traced back over 10,000 years. While only three archeological sites have been documented to date, all three are eligible for the National Register of Historic Places (NRHP). The river corridor holds tremendous potential for archeological and paleontological resources based on other limestone cave formations found in the area and Onion Portage, which is a national historic landmark about 30 miles upstream from the mouth of the Salmon River. Evidence reveals that nine cultural complexes used the Kobuk River area, which is connected to the Salmon River.

The continuum of subsistence use on the Salmon River has taken place since AD 1000. The area was well-suited for a subsistence lifestyle with large runs of chum salmon. The river was also used by hunters as a corridor between the Kobuk River and Noatak River to obtain caribou resources. Central Kobuk River subsistence groups continue to use the Salmon River as they have since prehistory.

Free-flowing condition

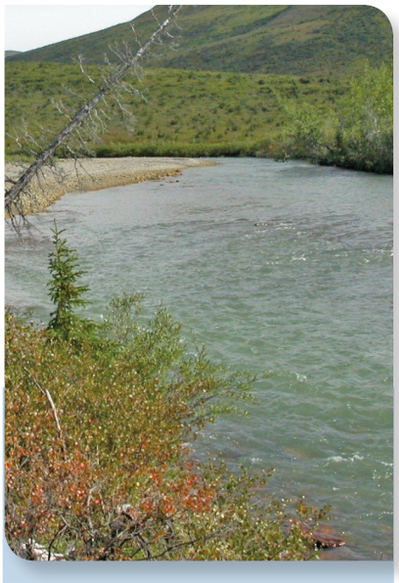
Section 16(b) of the Wild and Scenic Rivers Act defines free-flowing as "existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway."

In the upper reaches, the river averages 10 to 12 yards wide during normal flow conditions with average depths less than 1 foot and maximum main channel depths between 1 and 3 feet. Many riffles above the Nikok River confluence, 35 miles above the mouth, have maximum depths of 6 inches or less. Above the Nikok, occasional pools 6 to 8 feet deep are found, especially below bedrock exposures along the river. In the middle river area, the Salmon River is 15 to 20 yards wide with normal channel depths of 2 to 4 feet and riffle depths of 6 inches to 1 foot. Near the mouth, the river is roughly 20 yards wide with long deep pools 6 to 10 feet deep.

The Salmon River is relatively free from human infrastructure that could impact the free-flowing condition of the river; however, no streamflow data is available at this time. The maximum discharge of the river is usually reached after spring breakup in mid to late May or after extended summer rains, often in late July or August. Minimum flows occur in late winter (March and April). With the relatively light rainfall of the area and with a landscape largely sealed by permafrost, base flow rates are low in proportion to the size of the drainage area. However, because the permafrost prevents water absorption, rapid runoff occurs and flooding is common.

Water quality

Congress declared its intent to protect the water quality of rivers added to the national wild and scenic rivers system in section 1(b) of the Wild and Scenic Rivers Act. Congress further specified that the river-administering agencies cooperate with the US Environmental Protection Agency (EPA) and state water pollution control agencies to eliminate or diminish water pollution (section 12(c)). The act, however, does not reassign EPA and/or state responsibility for implementation of the Clean Water Act to the river-administering agency.



The Salmon River is a large tributary of the Kobuk River in Kobuk Valley National Park. Water quality parameters measured in August 2013 indicate that the Salmon River is unimpaired with respect to pH, dissolved oxygen, carbon content, nutrient loading, and trace metal concentrations. Like many rivers in Kobuk Valley National Park, flow in the Salmon River during summer and autumn appears to be generated primarily from regional groundwater sources. This is reflected by the relatively high specific conductivity readings, water isotope measurements, and the composition of riverine dissolved organic carbon—pH measurements in the Salmon River were between 7 and 8. Nutrient concentrations (ammonia, nitrate, phosphate) are very low, indicating oligotrophic conditions. However, spawning of anadromous fish populations in the Salmon River may provide seasonal pulses of organic matter and nutrients to primary and secondary producers. While sulfate was elevated relative to other Kobuk Valley drainages, sulfate concentration was still low when compared to other high-latitude rivers. Trace metals, such as iron and copper, were far below concentrations considered toxic by the US Environmental Protection Agency.

The Arctic is warming at a faster rate than temperate or tropical regions, and aquatic ecosystems may be vulnerable to the effects of warming. One direct effect of warming is a lengthening of the ice-free season on rivers and lakes. Longer open-water seasons may impact flow regime and fish habitat. Permafrost thaw in the Kobuk River valley may alter watershed hydrology, increase erosion, and modify the chemical composition of river water. Recent warming has also increased wildfire extent and severity in the region, which can have dramatic effects on river water quality. More research and monitoring are required to understand the effect of climate change and disturbance on arctic rivers, including the Salmon River.

A National Park Service report titled “Chemical Composition of Rivers in Alaska’s Arctic Network, 2013–2014” by O’Donnell et al. is currently in review and contains data on the Salmon River. The Salmon River has also been identified as an intensive monitoring site for River Communities and Ecosystems Vital Sign of the Arctic Inventory and Monitoring Network.

River-related issues

A list of river-related issues facing the Salmon Wild River has been developed to help river managers identify and prioritize future management efforts. Please note the list of issues is not organized by level of importance.

During the workshop, participants brainstormed issues facing the Salmon River. The following provides a summary of this exercise. It is not considered a comprehensive list of all issues, but rather a starting point for identifying issues to be addressed in future planning and management efforts.

- Proposed roads to the Upper Omar area and the Upper Ambler, and to the port site near Red Dog Mine. The potential corridor would follow the north bank of the Kobuk River.
- Upper Omar mining exploration area (potential) is west of the Salmon watershed.
- Mine remnants including several caches of 55-gallon fuel drums. More potential contamination is unknown.
- Single structure at the old mining camp is in decent shape—how should the park manage it?
- Jettisoned military fuel pods are still nearby.
- Removal or preservation of trash/historical resources—old radios, plates, and bed pans—scattered around a number of mining-related sites.
- Lack of baseline information on cultural resources (many acres, few resources.)
- Declines in wildlife populations.
- Predator control throughout the region may impact natural systems inside the river watershed. Currently, predator control is conducted by local communities, but it could expand if the State of Alaska takes it over.
- Mercury accumulation in some fish species.
- Influx of nonnative fauna species such as coyotes and fish.
- Parasites expanding their range.
- Nonnative plants and other invasive species entering the park.
- Shrubification.
- Development of timber resources in the upper Kobuk region could potentially lead to impacts on the Salmon River.
- Changing wildfire regimes.
- Climate change.
- All climate change impacts in the region will occur on the Salmon River.
- Presence of a climate monitoring station may be visible from the river.

- Atmospheric pollution deposition.
- Thermo-karst features and increased erosion.
- Lack of visitor use information—people who access Nakilak strip may or may not float out on the Salmon River.
- The park lacks basic information on many of the resources and uses throughout the corridor and the park, which touches on all facets of the park—natural, cultural, social science, and visitor use.
- Garnering and maintaining local support for management of the river.
- As public knowledge of the river increases, the extreme nature of floating the river could increase the number of rescues, resource damage, and wildlife encounters (not big increases, but some changes).
- Increase in air traffic.
- Increased interest could lead to pressure to develop new landing strips along the river.
- Potential construction of an airstrip called for in 1986 General Management Plan (never implemented).
- Illegal helicopter access is an emerging parkwide issue.
- Development outside park boundaries (powerlines between villages).

River-related stakeholders

Many individuals, organizations, institutions, and agencies throughout the region have participated in past planning, management, and program efforts with NPS staff for the Salmon River. The input and involvement from these stakeholders and partners are essential for effective management of the river. This list of stakeholders and partners will continue to be updated over time to ensure that all interested parties have an opportunity to engage in future management efforts.

- Alaska Village Electric Cooperative
- City and IRA offices in the region's villages
- Kobuk Valley National Park Subsistence Resource Council
- Lower Kobuk Watershed Council
- Maniilaq Association
- NANA Corporation
- Northwest Alaska Resource Advisory Council
- Northwest Arctic Borough
- Nova Copper (regional mining interest)
- Packrafting community
- State of Alaska Department of Fish and Game
- State Historic Preservation Office
- Subsistence users
- Tintina Gold (regional mining interest)
- Upper Kobuk Watershed Council
- Village of Ambler
- Village of Kiana
- Western Arctic National Parklands Commerical Use Authorization holders

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