

# WATER

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## RESOURCE DESCRIPTION

Almost all surface water runoff within the Matanuska Valley Moose Range drains into the Matanuska River; the exception is upper Wasilla Creek which flows directly into the Knik Arm via the Palmer Slough. Four major tributaries to the Matanuska River pass through the Moose Range. These include the Kings and Chickaloon Rivers and Moose and Granite Creeks. These streams generally flow south through narrow valleys or gorges and have cut canyons into bedrock over the last 10,000 years (see Map 8, page 47).

The headwaters of the Kings and Chickaloon Rivers and Granite Creek originate outside of the Matanuska Valley Moose Range boundary. The headwaters of Moose Creek are located within the Moose Range boundary. All four of the major tributaries have glaciers in their headwaters and most of their annual discharge occurs during the spring and early summer. A large portion of the basin's annual runoff occurs in late spring and early summer months--May and June. Stream discharge decreases during winter because of cold temperatures and ice formation. The minimum discharge occurs during the late winter and sometimes the late summer.

There are several smaller creeks which are direct tributaries of the Matanuska River. These include, but are not limited to, Eska and Little Granite Creeks. Gloryhole and Knob Creeks are tributaries of Eska Creek. Tributaries of the three major streams include Premier Creek, Iron Creek and Buffalo Creek (Moose Creek), Young Creek (Kings River), Boulder, Sawmill, California and Doone Creeks (Chickaloon River). There are numerous unnamed tributaries of all four major streams.

To date, none of the major streams (Moose and Granite Creeks and Chickaloon and Kings Rivers) have continuous flow records. Miscellaneous flow measurements have been recorded by the Division of Geological and Geophysical Survey (DGGs) during April of 1984 (see Appendix VI on page 231). The variety of units and abbreviations used for measuring water use and flow are also defined in Appendix VI.

Eska Creek near Sutton has had miscellaneous discharge measurements taken since 1961 (see Appendix VI on page 231). The peak discharge recorded was on August 10, 1961, at 680 cfs. The minimum record discharge was taken on May 19, 1966, at 7.70 cfs. No discharge measurements are available for the winter months, i.e., October-April.

Miscellaneous water quality samples have been taken on all major streams and Eska Creek between the years 1948 and 1958. The most recent sample was taken on Moose Creek in 1984 for temperature, pH, dissolved oxygen and conductivity by DGGs.

## WATER

There are numerous lakes within the Moose Range, many of which are unnamed, although they probably have local names. Some of the larger lakes include Wishbone, Seventeen Mile, Slipper, Ruby (Rose), Fish and Drill lakes. All of these lakes are located within three miles of the southern boundary in the Moose Range and seem to be accessible by existing roads or trails. Most of these lakes are surrounded by private lands. Wishbone and Slipper Lakes are surrounded by state lands, and Seventeen Mile Lake has state, borough and private lands adjacent to it.

There is very little groundwater information in any area of the Moose Range east of Granite Creek and only 26 recorded well logs for the area west of Granite Creek, most of which are located around Sutton, within a seven square mile area. These well logs are very sketchy at best and give very little indication of water availability. A display of existing well log information prior to December, 1985 is in Appendix VI on page 231.

These wells range in depth from 21 to 178 feet and show yields of between 1 and 117 gallons per minute. Bedrock was encountered between 2 and 54 feet below the surface. (See Appendix VI on page 231 for more information.)

Also in Appendix VI is a chart showing a number of water rights the state has on file for the Moose Range by township, range and case file number.

Flood hazard is discussed in the Engineering Geology section and areas within the Moose Range with flood hazard are shown on Map 8, page 47.

## RESOURCE EVALUATION

Water is a crucial determinant in resource planning and management. Without adequate water supplies, human development becomes impossible, or, at the very least, expensive.

Water has both consumptive and non-consumptive uses. Consumptive uses are recognized for domestic, industrial and commercial activities, while non-consumptive uses include those for fish and wildlife, recreation, mineral development, navigation and transportation.

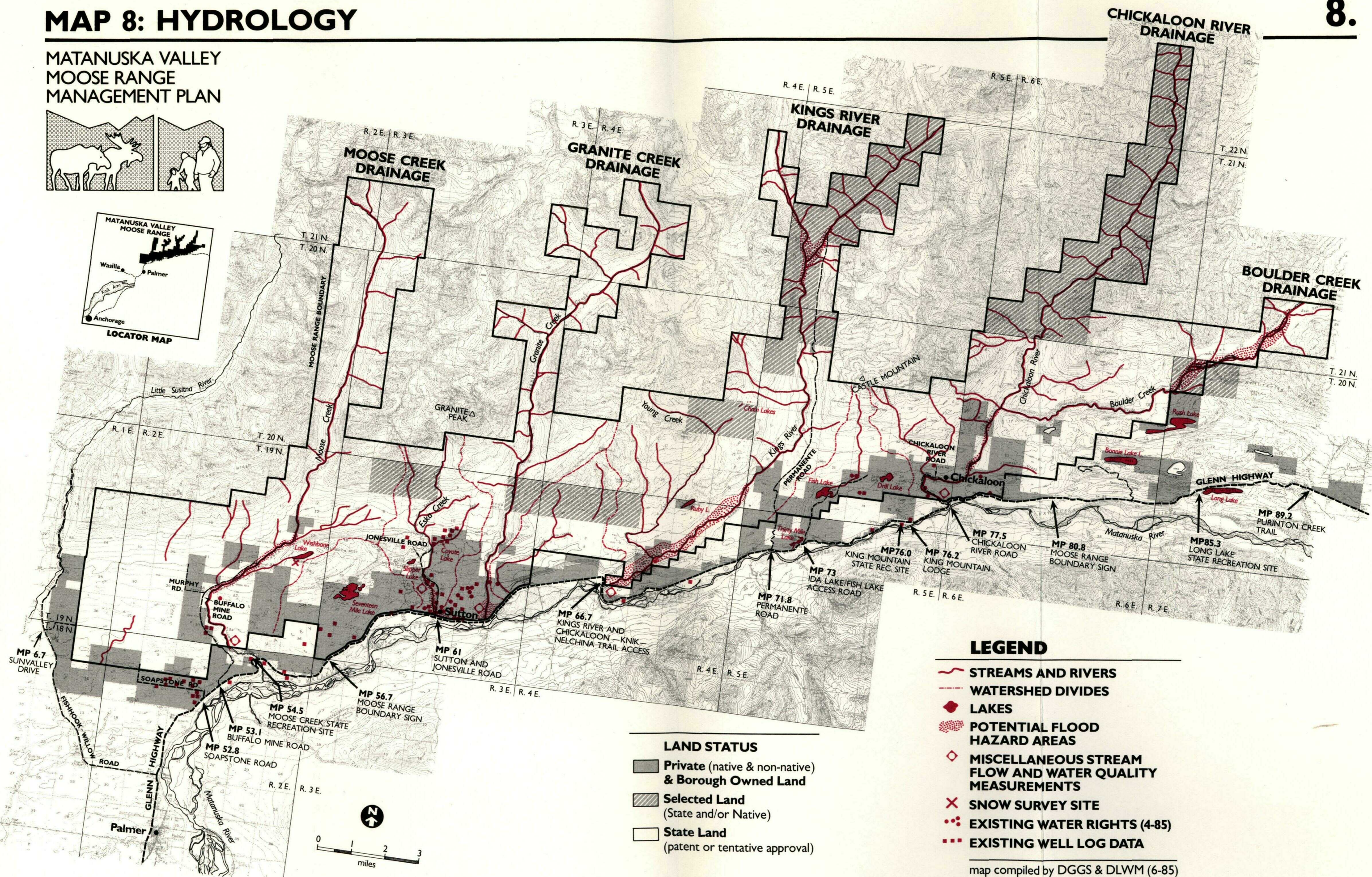
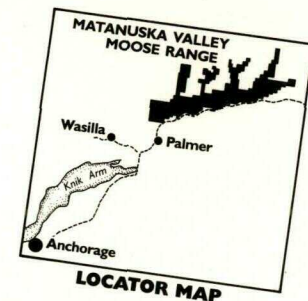
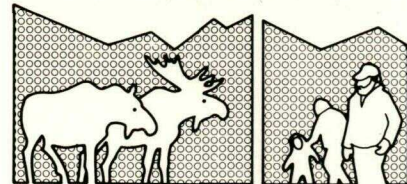
The significance of glaciers in a drainage basin is that they contribute to the water quality problems. Active glaciers produce a heavy sediment load which, without treatment, results in almost undrinkable water. Removal of the sediment is expensive. The water is, however, adequate for use in placer mining, irrigation, recreation, fish and wildlife and other specific purposes.

The hydrology data available at this time is insufficient. Without adequate attention to the quality and supply of this resource, future needs may not be met and development may be difficult.



# MAP 8: HYDROLOGY

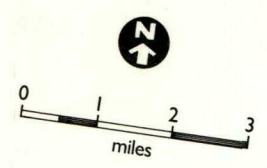
## MATANUSKA VALLEY MOOSE RANGE MANAGEMENT PLAN



### LEGEND

- STREAMS AND RIVERS
- WATERSHED DIVIDES
- LAKES
- POTENTIAL FLOOD HAZARD AREAS
- MISCELLANEOUS STREAM FLOW AND WATER QUALITY MEASUREMENTS
- SNOW SURVEY SITE
- EXISTING WATER RIGHTS (4-85)
- EXISTING WELL LOG DATA

- ### LAND STATUS
- Private (native & non-native) & Borough Owned Land
  - Selected Land (State and/or Native)
  - State Land (patent or tentative approval)



map compiled by DGGS & DLWM (6-85)