U.S. COAST AND GEODETIC SURVEY.

Henry S. Driffield
Superintendent

State: Alaska

DESCRIPTIVE REPORT.

Topographic Sheet No. 2448

Locality:
Yukon Delta—Kavanagh and Kuskokwim Passes

1899.

Chief of Party:
R. L. Faries
Yukon Delta, Alaska

Descriptive Report
Lower Kawanakaj Topographic Sheet.

This sheet covers that part of Kawanakaj and Kwikpaw Passes from the mouth of Kusnyuk Slough to the sea-coast. The banks of these passes vary from about 10 feet high, in the vicinity of Kusnyuk Slough, to about one foot above ordinary high tide at the sea-coast. At extreme high tides—in southerly weather—the coast at the mouth of the passes is covered with water in many places. The banks of Kawanakaj Pass and Kwikpaw Pass are covered with a thick growth of willow and alder trees (15 to 25 feet high) to within about six (6) miles of the coast. There are no trees nearer than about 1½ miles from the coast line. There are no sand-bars in mid-stream.
in Kawonak Pass, and four fathoms of water can be carried, except at the head of the large island 3½ miles up from the coast. The two passes come together at the head of this island and then separate again, forming several islands and emptying into the sea a little more than a mile apart. At the head of the large island a shoal makes out, and down stream in Kawonak Pass, from its left bank. Vessels coming down stream should keep a straight course until nearly abreast the head of the island and then cross over to the head of the island and keep the right bank of the pass close aboard for a distance of about one-half mile, then gradually cross to the left bank. The crossing at the head of the island carries 3 fathoms of water. At this point the Shewpok also carries a good depth of water, but a little further down stream there are shoals and the channel is difficult to find, while at its mouth there is but little depth of water.
anywhere. Strangers on reaching the head of the large island are likely to make the mistake of "keeping straight ahead" and going down the twistyway, instead of turning to the left and going down the Kawanak, which affords a deeper and unobstructed channel.

There is very shallow water in the waterways amongst the islands at the coast and between the mouths of the passes, and vessels should not attempt to navigate amongst these islands.

On Kawanak Pass, three miles up from the coast, there are two Eskimo summer villages, 'Aqeklakâkâmiit on the left bank and Nvokugâmiit on the right bank. These are the only native settlements on this pass. In summer the natives inhabit these villages for the purpose of hunting and salmon-fishing. Fish do not appear to be as plentiful here as in the south (Kwikwak) pass of the Delta. Ducks, geese and ptarmagin are also found here, which the natives constantly offer for sale, or will exchange for food or
and tobacco, and possibly liquor too, if
such were offered them, but of this lat-
ter civilized commodity they seem to have
little or no knowledge as they never
call for it. Natives can be found in
these villages who have a good knowl-
edge of the waters of these passes and
the various sloughs, but they seem to
know but little of the channel out
the bar at the mouth of Kawana Pass.
Natives were seen hunting the harp seal
in this channel, but they were not more
than three miles off the coast and still
within view of their land marks of
driftwood on shore.
A few natives are also found on the中学-
paek, down near the coast, in summer.
No steamboats or sailing craft have ever
been known to have used either of the
passes shown on this sheet.
Here, as elsewhere in the Yukon Delta, there
is driftwood all along the banks of the
passes, but the natives have not prepared
it for canoe use, as is the case on the
Apoon and Upper Whitepass.
The survey of Kawanak Pass depends upon a scheme of triangulation, which was connected with that of the rest of the delta and hence with that along the coast from St. Michael. The topography was executed by means of the plane table, and sketch work based upon sextant angles locations. The lower part of Kivitpok Pass depends upon sextant and theodolite triangulation, the topography being filled in from sketch work based upon sextant angles, and also from running sketch work in a steam launch as noted in my descriptive report on the Upper Kawanak Topographic Sheet, Yukon Delta, 1899.

**Currents**

The velocity of the current is never greater than 1.8 knots; and it is less than this on rising or at high tide. The current is even reversed (flows up the passes) at the mouth of the passes during flood tide, i.e. just before high tide is reached.

The Kawanak carries much more water than that part of the Kivitpok shown on this sheet.
The range of tide at mouth of Eskyut Slough is 1.10 feet, and at mouth of Kavanauk Pass 2.28 feet, and is three (3) hours earlier than at Eskyut Slough.

From the coast, a depth of 3 fathoms of water can be carried up Kavanauk Pass and thence up Willypok Pass to New Port Hamilton, a distance of 35 miles, or about 8 miles below the head of the Delta.

The water in these passes is always fresh. This is also the case for several miles to seaward of the passes.

The weather, fog and ice conditions, already described in the "Bering Sea Coast Pilot" are applicable here.

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R.L. Faris

(April 12, 1900)