

BACKCOUNTRY TRIP REPORT

KUGRAK HOT SPRINGS VEGETATION INVENTORY

Report #940015

PARTICIPANTS: Donna DiFolco and Ann Corson

GENERAL LOCATION: Kugrak River (Upper Noatak River)

DEPARTURE DATE: 26 June 1994

RETURN DATE: 29 June 1994

METHOD OF TRAVEL: Foot

MAPS USED: Survey Pass C-6 (scale 1:63,360)

BRIEF ROUTE DESCRIPTION: We hiked to the Kugrak "hot" springs from Omelaktavik Lake (on the south side of the Upper Noatak River). The springs lie about 3 miles south, on the east side of a sharp bend in the Kugrak River, marked by a grove of balsam poplar trees. Camp was made on a ridge about half way between Omelaktavik Lake and the springs.

SIGNIFICANT FINDINGS:

1. Kugrak springs do not host many "exotic" plants, as they are only 56 degrees (about the same temperature as the ocean in southcentral Alaska; the Kugrak is 43 degrees).
2. Plants normally associated with dry, sunny ridges (e.g. Juniperus communis) were found growing at the springs. Perhaps the warmth--the longer, snow-free growing season--is the reason for this.
3. One area, strewn with dead trees, was dominated by "invader" species such as fireweed. The question arises, is the springs "growing," by a build-up of minerals?
4. The ground at the springs is very soft in places due to the water oozing out of it. Care should be taken when visiting the area to avoid damaging the vegetation.

TRAVEL PROBLEMS ENCOUNTERED AND SUGGESTIONS FOR FUTURE TRIPS:

None. The springs are easily accessed following the dry ridge on the east side of the Kugrak River.

NEED FOR OR OPPORTUNITY FOR FOLLOW-UP--A few ideas:

1. How much earlier (if at all) in the spring does the area surrounding the springs become snow free--and how much later in the fall does it remain snow free? Is it snow-free year 'round?
2. The cliffs above the Kugrak on the west side (across

from the springs) may provide an opportunity for a raptor study.

3. A long term study could watch to see how the springs develop--mineral deposits, vegetation changes, etc.

DAILY ROUTE DESCRIPTIONS AND CONDITIONS:

26 June 1994

Low grey clouds enshrouded the mountains the morning Annie and I were scheduled to leave Bettles for Lake Omelaktavik. They hung there until well into the afternoon, but finally at 3:10 p.m. we were airborne in the Park's Cessna 185, heading for the Upper Noatak. Ed dropped us off at the south shore of the lake and we were underway by 5 p.m.

We hiked south, skirting east of two small lakes. Annie got wet tennis shoes crossing a marshy area above the first lake. At the third lake, we crossed at the outlet through a thick but narrow strip of brush and followed the lichen ridge between the lake and the Kugrak River. We decided to make camp there and look for the springs in the morning. Evidently, it was not where it was marked on my map. Bob had described where they were to Annie, and we could see the balsam poplars that marked their presence.

We watched a couple groups of Dall Sheep grazing on the mountainside east of us while we ate our chili dinner, being scolded by a Lesser Yellowlegs. A cold, stiff wind kept the mosquitoes in their hiding places.

27 June 1994

Rain pelted the tent during the night, but by morning it had stopped. After a hot breakfast, we headed for the grove of poplars. We found hiking easy on the ridge above the river. Bob had said to cross the river before it makes the big bend because the channel became too deep after that. What we didn't realize until after we had waded one channel was that he had approached the springs from the opposite side of the river.

We followed a relatively warm stream (according to Annie, who could tell the easiest) until we came to where it spurted and oozed out of a hill. Part of the springs flow west down the hill into the little stream that empties into the Kugrak to the north, and part falls into the river from the steeper, southern side.

Having located the springs, we set about taking note of all the plants we recognized and collecting those we did not. Besides collecting specimens for identification, we also collected a few specimens to add to the Park herbarium. (Some plants seemed "rare" in that we could not find more than one flowering representative, or in some cases, only the leaves of a plant. These we did not collect so as to avoid the possibility of endangering the population.)

We also recorded water and soil temperatures. The Kugrak "Not-So-Hot" Springs are only 13 degrees warmer than the very cold Kugrak River, which is 43 degrees Fahrenheit. The springs (recorded at two places) is 56 degrees. Despite the low temperature, the springs are spectacularly beautiful, especially

on the southeast side where they fall from an overhanging cliff into a clear channel of the Kugrak (at least this year they do). Mosses cling to the rocks behind a veil of water. We agreed that, on a hot day, the falls might make for a refreshing shower.

The wind would have made identifying and pressing the plants in the field difficult, to say the least, so we decided to carry everything back to camp and continue the "office" work in the tent. The next day, I left the plant press and Eric (as I so fondly refer to Hulten's 5-pound Flora of Alaska and Neighboring Territories) in camp.

28 June 1994

The routine was pretty much the same the next day. We combed the area to find anything we had missed and brought back another bag of unknowns to identify. Some we had trouble with, and those will need to be verified.

Cold, windy weather continued, thankfully, with only occasional spitting rain. The sheep must have moved to a different area, for we didn't see them that evening. We watched a pair of Pacific Loons fishing in the lake instead. The Yellowlegs seemed to calm down after awhile.

29 June 1994

We were due to be picked up in the "afternoon" so we did not return a third time to the springs. We felt we had already seen and collected all we could for this trip anyway. Before packing, I drew up a plant list for the area around camp while Annie collected and pressed plants needed for the herbarium.

We reached Lake Omelaktavik at 12:30 p.m. After lunch we worked through the bag of plants we'd collected on the hike back and were able to identify most of them. We decided we should produce a colored version of Hulten's Flora of Alaska, write it in the King's English, and leave out the keys, resulting in what we thought would make a book much easier to use.

Greater Scaups, Surf Scoters and White-winged Scoters floated on the lake while we waited. A pair of Arctic Terns performed aerobatics in the wind and a Tree Sparrow sang out to all who would hear.

'Round about 6:30 p.m., not even a minute after we finally decided to dig out our bear barrels again for a snack, we heard the drone of a Beaver and waved to Jay, the Brooks Range Aviation pilot. He picked us up, then flew on down the river to collect Bob and Melissa, who had finished their patrol of the Noatak. We arrived back in warm Bettles at 9:00 p.m.

Temperatures measured at the Kugrak Springs and neighboring areas, June, 1994. W = water temp. G = ground temp at approx. 4".

<u>Location</u>	<u>Temperature (degrees F)</u>
1. Kugrak River, just above springs	43 (W)
2. Springs, in falls on southeast side	56 (W)
3. Springs, at source, top of hill	56 (W)
4. Hill behind springs (sunny, noon)	50 (G)
5. Camp (cloudy, evening)	42 (G)
6. Hill behind springs (cloudy, morning)	43 (G)
7. Springs, directly above southeast outlet	54 (G)

Bird species seen during Kugrak Springs flora survey, June 26-29, 1994. * refers to species identified at the Springs.

- *Least Sandpiper
- *Upland Sandpiper
- *Lesser Yellowlegs
- *Whitecrowned Sparrow
- *American Tree Sparrow
- *Greycheeked Thrush
- *American Robin
- *Mew Gull
- *Golden Eagle
- Pacific Loon
- Surf Scoter
- White-winged Scoter
- Greater Scaup
- Golden Plover
- Common Snipe
- Arctic Tern
- Smith's Longspur
- Common Redpoll
- Common Raven

Mammal sign found at Kugrak Springs, June, 1994.

- Moose
- Caribou
- Grizzly Bear
- Wolf
- Ground Squirrel

List of plants found at the Kugrak Springs, Gates of the Arctic National Park and Preserve, Alaska, June 26-29, 1994.

ATHYRIACEAE (Lady Fern Family)
Cystopteris montana (Lam.) Bernh.

BETULACEAE (Birch Family)
Betula glandulosa Michx. - Shrub Birch

BORAGINACEAE (Borage Family)
Mertensia paniculata (Ait.) G. Don - Bluebell

CAPRIFOLIACEAE (Honeysuckle Family)
Linnaea borealis L. - Twinflower
Viburnum edule (Michx.) Raf. - High Bush Cranberry

CARYOPHYLLACEAE (Pink Family)
Moehringia lateriflora (L.) Fenzl - Grove Sandwort

COMPOSITAE (Composite Family)
Aster sibiricus L. - Siberian Aster
Solidago multiradiata Ait. var. multiradiata - Goldenrod
Senecio lugens Richards. - Black-tipped Groundsel

CUPRESSACEAE (Cypress Family)
Juniperus communis L. subsp. nana (Willd.) Syme - Common Juniper

CYPERACEAE (Sedge Family)
Carex aquatilis Wahlenb. subsp. stans (Drej.) Hult. - (species needs verification)
Carex spp.

ELAEAGNACEAE (Oleaster Family)
Shepherdia canadensis (L.) Nutt. - Soapberry

EQUISETACEAE (Horsetail Family)
Equisetum palustre L.
Equisetum scirpoides Michx.
Equisetum variegatum Schleich. subsp. variegatum

ERICACEAE (Heath Family)
Arctostaphylos rubra (Rehd. & Wilson) Fern. - Bearberry
Vaccinium vitis-idaea L. subsp. minus (Lodd.) Hult. - Lingonberry

GRAMINEAE (Grass Family)
Agropyron violaceum (Hornem.) Lange subsp. andinum (Scribn. & Sm.) Melderis - Wheatgrass
Arctagrostis latifolia (R. Br.) Griseb. var. latifolia - Polar Grass
Dupontia Fischeri R. Br. subsp. psilosantha (Rupr.) Hult.
Elymus innovatus Beal - Lyme Grass

JUNCACEAE (Rush Family)
Juncus castaneus Sm. subsp. castaneus - Rush

LEGUMINOSAE (Pea Family)

Hedysarum alpinum L. subsp. americanum (Michx.) Fedtsch. - Eskimo Potato

LENTIBULARIACEAE (Bladderwort Family)

Pinuicula vulgaris L. subsp. vulgaris - Butterwort

LILIACEAE (Lily Family)

Tofieldia pusilla (Michx.) Pers. - False Asphodel

Zygadenus elegans Pursh - Death Camass

ONAGRACEAE (Evening Primrose Family)

Epilobium angustifolium L. subsp. angustifolium - Fireweed

Epilobium latifolium L. - River Beauty

ORCHIDACEAE (Orchis Family)

Platanthera hyperborea (L.) Lindl. - Northern Green Bog Orchid

PYROLACEAE (Wintergreen Family)

Pyrola asarifolia Michx. var. purpurea (Bunge) Fern. - Wintergreen

RANUNCULACEAE (Crowfoot Family)

Aconitum delphinifolium DC. subsp. delphinifolium - Monkshood

Anemone parviflora Michx. - Windflower

ROSACEAE (Rose Family)

Dryas integrifolia M. Vahl - Entire Leaf Mountain Avens

Dryas octopetala L. - White Mountain Avens

Potentilla fruticosa L. - Shrubby Cinquefoil

RUBIACEAE (Madder Family)

Galium boreale L. - Bedstraw

SALICACEAE (Willow Family)

Populus balsamifera L. subsp. balsamifera - Balsam Poplar

Salix alaxensis (Anderss.) Cov. - Feltleaf Willow

Salix glauca L. - Grayleaf Willow

Salix reticulata L. subsp. reticulata - Nettleaf Willow

SAXIFRAGACEAE (Saxifrage Family)

Parnassia palustris L. subsp. neogaea (Fern.) Hult. - Bog Star

SCROPHULARIACEAE (Figwort Family)

Castilleja yukonsis Pennell - Indian Paintbrush (species needs verification)

VALERIANACEAE (Valerian Family)

Valeriana capitata Pall. - Valerian

VIOLACEAE (Violet Family)

Viola sp.

A partial list of mosses, liverworts and lichens (not compiled by an expert) found at the Kugrak Springs, Gates of the Arctic National Park and Preserve, Alaska, June 26-29, 1994.

MOSES AND LIVERWORTS

Bryobrittonia longipes
Bryum pseudotriquetrum
Dicranum sp.
Drepanocladus spp.
Hylocomium splendens
Marchantia polymorpha
Meesia triquetra
Pleurozium schreberi
Rhizomnium sp.
Tomenthypnum nitens
Tortula norvegica
and others

LICHENS

Cetraria cuculata
Cetraria islandica
Cladina rangiferina
Cladina stellaris
Peltigera sp.

A list of plants found in the vicinity of the Kugrak Springs, but not directly associated with the springs, Gates of the Arctic National Park and Preserve, Alaska, June 26-29, 1994.

BETULACEAE (Birch Family)

Betula glandulosa Michx. - Shrub Birch

BORAGINACEAE (Borage Family)

Eritrichium aretioides (Cham.) DC. - Arctic Forget-Me-Not

CAMPANULACEAE (Bluebell Family)

Campanula lasiocarpa Cham. subsp. lasiocarpa - Mountain Harebell

CARYOPHYLLACEAE (Pink Family)

Minuartia arctica (Stev.) Aschers. & Graebn. - Arctic Sandwort

Minuartia Rossii (R. Br.) Graebn.

Silene acaulis L. - Moss Campion

Stellaria laeta Richards - Chickweed

COMPOSITAE (Composite Family)

Artemisia sp. (frigida or furcata) - Wormwood

Chrysanthemum integrifolium Richards. - Chrysanthemum

Erigeron sp. - Fleabane

Saussurea angustifolia (Willd.) DC.

Senecio lugens Richards. - Black-tipped Groundsel

CRUCIFERAE (Mustard Family)

Cardamine hyperborea O. E. Schulz - Bitter Cress

Parrya nudicaulis (L.) Regel - Parry's Wallflower

CYPERACEAE (Sedge Family)

Carex spp.

Eriophorum angustifolium Honck. - Tall Cotton Grass

Eriophorum vaginatum L. - Tussock Cotton Grass

ELAEAGNACEAE (Oleaster Family)

Shepherdia canadensis (L.) Nutt. - Soapberry

EQUISETACEAE (Horsetail Family)

Equisetum palustre L.

ERICACEAE (Heath Family)

Andromeda polifolia L. - Bog Rosemary

Arctostaphylos rubra (Rehd. & Wilson) Fern. - Bearberry

Cassiope tetragona (L.) D. Don - Bell Heather

Rhododendron lapponicum (L.) Wahlenb. - Lapland Rosebay

Vaccinium uliginosum L. - Blueberry

GRAMINEAE (Grass Family)

Arctagrostis latifolia (R. Br.) Griseb. - Polar Grass

Calamagrostis lapponica (Wahlenb.) Hartm. - Reed Bent Grass

LEGUMINOSAE (Pea Family)

Astragalus umbellatus Bunge - Hairy Arctic Milk Vetch

Hedysarum alpinum L. subsp. americanum (Michx.) Fedtsch. - Eskimo Potato

Oxytropis borealis DC. - Oxytrope

Oxytropis campestris (L.) DC. subsp. gracilis (Nels.) Hult. - Yellow Oxytrope

Oxytropis campestris (L.) DC. subsp. Jordalii (Pors.) Hult.

LILIACEAE (Lily Family)

Tofieldia pusilla (Michx.) Pers. - False Asphodel

Zygadenus elegans Pursh - Death Camass

PAPAVERACEAE (Poppy Family)

Papaver lapponicum (Tolm.) Nordh. subsp. Porsildii Knaben - Arctic Poppy

POLYGONACEAE (Buckwheat Family)

Polygonum bistorta L. subsp. plumosum (Small) Hult. - Pink Plumes/Bistort

PRIMULACEAE (Primrose Family)

Androsace chamaejasme Host subsp. Lehmanniana (Spreng.) Hult. - Rock Jasmine

Dodecatheon frigidum Cham. & Schlecht. - Shooting Star

Primula sp. - Primrose

PYROLACEAE (Wintergreen Family)

Pyrola grandiflora Radius - Large-flowered Wintergreen

ROSACEAE (Rose Family)

Dryas integrifolia M. Vahl

Potentilla biflora Willd. - Two-flowered Cinquefoil

Potentilla fruticosa L. - Shrubby Cinquefoil

SALICACIAE (Willow Family)

Salix arctica Pall. - Arctic Willow

Salix glauca L. - Grayleaf Willow

Salix reticulata L. - Netleaf Willow

SAXIFRAGACEAE (Saxifrage Family)

Boykinia Richardsonii (Hook.) Gray - Alaska Boykinia/Bear Flower

Saxifraga oppositifolia L. subsp. Smalliana (Engler & Irmsch.) Hult. - Purple Mountain Saxifrage/French Knot Moss

SCROPHULARIACEAE (Figwort Family)

Pedicularis capitata Adams - Capitata Lousewort

Pedicularis Langsdorffii Fisch. subsp. arctica (R. Br.) Pennell - Arctic Lousewort

Pedicularis sudetica Willd. - Sudetan Lousewort/Fernweed

VALERIANACEAE (Valerian Family)

Valeriana capitata Pall. - Valerian

A partial list of mosses and lichens found in the vicinity of the Kugrak Springs, but not directly associated with the springs, Gates of the Arctic National Park and Preserve, Alaska, June 26-29, 1994.

MOSSES

Dicranum spp.
Hylocomium splendens
Pleurozium schreberi
Rhutidium rugosum
Tomenthypnum nitens
and others

LICHENS

Cetraria cuculata
Cetraria tilesii
Cladina rangiferina
Stereocaulon sp.
Thamnolia sp.
and others

