Botanical and physiographic reconnaissance of Northern Yukon

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BOTANICAL AND PHYSIOGRAPHIC
RECONNAISSANCE
OF NORTHERN YUKON

by
Stanley L. Welsh
and
J. Keith Rigby

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Frontispiece. Southeast across the northeastern part of the Barn Mountains into Blow River Pass. Linear trails of caribou show in the trampled tundra in the foreground. Creeks in the foreground and intermediate distance are tributaries at the head of Fitton Creek at approximately 68°29' N; 138°15' W. The Richardson Mountains show as faint ghosts beyond the sea fog blanketing Blow River Valley.
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Stanley L. Welsh¹ and J. Keith Rigby²

ABSTRACT

The area of study is located in the northern panhandle of the Yukon Territory, and includes the British and Barn Mountains, Old Crow Flats, and the coastal plain of the north slope. The physiography and geology of the region is described and the plant communities are enumerated. An annotated list of 279 species, 15 sub-species, 63 varieties, and 1 form of vascular plants collected during the summer of 1970 is included.

INTRODUCTION

The area of study is located within the northern panhandle of the Yukon Territory (Fig. 1), and extends southward 70 to 80 miles from the shore of the Beaufort Sea across the British and Barn mountains and Old Crow Flats to the Porcupine River, west and southwest of the northern Richardson Mountains. The area under investigation includes the Barn Mountains and Blow River valley on the east, and the British Mountains and Old Crow Flats to the Alaska border on the west (Bostock, 1948). In general the area lies between latitudes 65° and 69° 39' north and longitudes 138° and 141° west, in the Blow River, Herschel Island, Demarcation Point, Davidson Mountain, Old Crow, and Bell River quadrangles. The collected area occurs in quadrangles I17 A-2-7, 10-13; I17 B-8-9, and 16; I17-C 1, 8-9; and I17-D-3-5, of the National Topographic Survey of Canada.

The central part of the area is approximately 130 miles west of Inuvik, Northwest Territories, and approximately 70 miles north of Old Crow, an Indian village on the Porcupine River.

The British Mountains continue to the west in Alaska as the Romanzof Mountains. The more eastern Barn Mountains are west across the Blow River valley from the northern end of the Richardson Mountains, which are adjacent on the west to the lower Mackenzie River delta.

We arrived at the landing strip on the gravel bar in the Porcupine River upstream from Old Crow (Fig. 2) on June 17 and set up a temporary camp while awaiting the arrival of air transportation to Sam Lake. Camp was established June 18 at Sam Lake, in the topographic saddle between the British Mountains and Barn Mountains at the northeastern edge of Old Crow Flats (Fig. 3). Bonney (Bonnet) Lake to the southeast approximately 20 miles, Trout Lake to the north approximately 45 miles (Fig. 4), and other lakes in the Old Crow Flats area were still frozen. Trout Lake opened up approximately July 1, and Bonney Lake at about the same time, McNeish Lake, east of the mouth of Firth River, remained with ice over much of the lake until mid-July. The small lake in the headwaters of the Firth River, near the braided ice field of the Firth River east of the Alaska border, was clear early in the season on June 20 when we first flew into the area. Sam Lake, and Firth Lake, as we will call it here, are both shallow lakes and apparently warmed more quickly than the deeper clearwater lakes both north and south of the British Mountains.

Timber for tent poles, stakes for tents, poles for a dock, etc., were obtained from a small grove of white spruce trees on the south flank of hills approximately 4 miles northwest of Sam Lake, or from the valley of Dog Creek and Black Fox Creek, 5 to 10 miles to the southwest, the northernmost woods in the area. There is no available timber to the southeast of Sam Lake for some distance. Trees sufficient for low tents and dock construction are available in the Firth

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River valley, in the vicinity of Firth Lake and upstream for a short distance. Only willows are growing in the lower part of the Firth and Malcolm river valleys where these rivers empty onto the north slope of the British Mountains and the Arctic coastal plain.

We moved our camp onto a prominent point on the northwestern side of Sam Lake on June 18-19 and experienced some difficulty with tent pegs. First, wooden pegs would not function in the permafrost which was at that time at the surface, necessitating use of long metal spikes (10-12 inches) for initial setting up of equipment. However, as frost level lowered, the spikes did not hold in the spongy ground, and longer stakes were necessary to hold tents in an upright position.

**Accessibility**

Access is currently only by aircraft with floats landing on the few lakes in the mountains and along the mountain flanks. McNeish Lake, Trout Lake, and other lakes along the north flank, and Bonney Lake, Sam Lake, Firth Lake, and other minor lakes along the south flank of the British Mountains are usable by planes of Otter size and smaller. Several lakes in Old Crow Flats are also deep enough and large enough for emergency use, but most are so far from solid camp areas that they are impractical for anything but transshipment points.

A very short semigraded strip is located at the head of Fitton Creek near a mine prospect on the east side of the Barn Mountains, northeast of Mt. Fitton, but is soft during the summer. A landing strip capable of handling a DC-3 is nearing completion at the village of Old Crow on the Porcupine River and will give year-round use. The first planes landed there during late July of 1970 on the unfinished runway. This is an improvement over the gravel channel bar in the middle of the Porcupine River, 10 miles up-
stream from town, where the airstrip was located in earlier years and was used during the early part of the summer of 1970. It was usable only during low-water stages of the river and is periodically flooded, even during the summer, by floods related to heavy rainfall.

Winter seismic trails cross the Blow River Pass into Old Crow Flats from the northeast from the Arctic slope east of the Barn Mountains. A winter road was bladed across the Eagle Plains and into Old Crow village during the winter of 1969-70, from the Demster Highway through the Ogilvie Range. It connects to Dawson and roads to the south.

Most aircraft of the region are based at Inuvik, and both wheeled and float-equipped planes are available for service and charter. Inuvik is the local center for shipping and connections to regions outside the lower Mackenzie River valley and delta region. It is the major supply point for much of the northern Yukon and adjacent Northwest Territories, and most items required can be purchased through suppliers there.
Fig. 3. Sam Lake, northeast portion of Old Crow Flats, and Barn Mountains, with Black Fox Creek at the left and its major tributary, Dog Creek, in the center. Collecting localities: A = 55; B = 59; C = 58; D = 57; E = 60; F = 56. Air Photo Division—Energy, Mines, and Resources—Canadian Government air photo A 13383-172.

TOPOGRAPHY

The area includes the generally mountainous to hilly region of the British Mountains and Barn Mountains, the western foothills of the Richardson Mountains, the western part of the narrow Arctic coastal plain of Canada, and the flat, marshy, Old Crow Flats (Fig. 5).

OLD CROW FLATS

Old Crow Flats covers a wide area of low relief extending south from the British Mountains and west from the Driftwood Mountains to the Old Crow Range, north of the village of Old Crow. It is approximately 40 miles across north-south and 50 miles across east-west. The entire flat is between 800 and 1,400 feet above sea level and gently slopes to the south into the Old Crow River, which drains the lake-studded flats into the Porcupine River through a gap at the eastern end of the Old Crow Range.

The flats are covered with small lakes and poorly drained marsh, much of the latter show-
ing excellent patterned-ground development. Individual lakes range from small ponds up to lakes 8 to 10 miles across. Most of the lakes are marsh-bordered, and only a few have beach development at all. Limited beaches are common at the southern end of the lakes, evidence of dominantly north winds.

Several of the major streams such as Black Fox Creek, Timber Creek, and Old Crow River which drain across the flats, are entrenched into the fine-grained fluvial sediments and lake clay and silt that form the flats. Entrenchment increases toward the south into the major Old Crow River drainage where streams may be as much as 50 to 60 feet below the general flat upper surface. Streams in the interior of the flats may be entrenched 10 feet, but in the outer peripheral areas entrenchment of 4 or 5 feet is typical. Major streams entering from the mountain slopes have produced belts of gravel, spread by the meandering streams. These are tree-covered with white spruce and cottonwood trees in the central and southern part of the area, but are willow-covered and barren, meander-scarred plains in the peripheral areas. Old Crow Flats is an area of easy winter road development, but
Fig. 5. Map of collected area in northern Yukon.
Fig. 6. Old Crow Flats, along Timber Creek showing angular lakes with about the same directional development as the ridge at left. Arrow marks collecting site 67. Air Photo Division—Energy, Mines, and Resources—Canadian Government air photo A 13470-76.

a bottomless bog area during summer, and for much of the year, it is a barrier to overland movement.

Several low "islands" rise above the general marshy level of the flats (Fig. 6). These are bedrock exposures of either Lisburne Limestone, Kayak Shale or of the younger lower sandstones of the Cretaceous sequence. These rocks are folded and appear to be overlain unconformably by the much younger lake silts and clays of the flats. The islands rise as much as 400 to 500 feet above the general level of the flats. Minor ice-shoved gravel beaches produce limited dry-ground ridges 5 to 15 feet high along the shores of some lakes.

Lakes of the flats occur generally below the 1000-foot contour, where the flats have a slope of only a few feet per mile. These lakes range from angular rectangular to rounded and many show a distinct lineation with a northwest-southeast trend and an even more pronounced northeast-southwest one. Such rectangular outline is particularly shown well in the southeastern and northwestern quarters of the flats, but is also evident in the northeastern part. The northwest-southeast trend is parallel to fold
trends in the hills in the southern margin of the British Mountains and to the folded rocks in the islands within the flats. One island, on Timber Creek in the southwestern part of the Blow River 1:250,000 quadrangle, shows the pattern and relationship fairly well. The sides are also parallel and normal to the long axis of the Old Crow Flats basin and could be joint controlled in the fractured permafrost in the continuing subsidence in the basin.

Sequences of lake-filling and destruction show in the patterned ground and marshes of the flats. Some of the shallow lakes have obviously filled with marsh plants and are now virtually destroyed. In some, the patterned ground is now only a vague ghost in the tussock and willow tundra, particularly around the higher ground of the periphery of the flats.

There is some suggestion that the Old Crow Flats basin is still actively undergoing minor subsidence along the trough, for lakes away from the trough appear to have been tilted slightly toward the northwest-southeast axis of the basin, with abandoned shorelines on the exterior basin side and encroaching shorelines on the interior side.

**Barn Mountains**

The Barn Mountains (Fig. 7) are a relatively low, north-south trending range in the north-

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**Fig. 7.** Barn Mountains, east side, with western tributaries of Blow River, and with Twin Peaks (T), and Mt. Fitton (F), near right center. Air Photo Division—Energy, Mines, and Resources—Canadian Government air photo A 14406-66.
eastern side of the area of concern, west of the Blow River and the northern end of the Richardson Mountains, and northeast of Old Crow Flats. They rise to approximately 3500 feet, 2000 feet above Old Crow Flats to the southwest, and above Blow River valley to the east. The Barn Mountains are bordered on the northwestern and northern side by low hills that form a foothill belt with the Arctic coastal plain.

The Barn Mountains are rolling, occasionally angular, barren hills and low-rounded mountains, carved on older fractured rocks which break into angular talus and fragmental rubble that blanket the slopes in fine debris. There is little tundra development on the generally steeper rock-strewn slopes. Several streams cut or nearly transect the range so that the mountains consist of essentially three separate masses: one south of the headwaters of Boulder Creek, a central mass between Boulder Creek and the northern one in the headwaters of Anker Creek. All three masses rise to approximately the same exhumed, warped, peneplain surface. Highest points in the range are generally concordant at approximately 3000 feet, but one peak 3506 feet high occurs in the southern part of the central area, at the head of Boulder Creek.

Slopes drop off moderately fast along the eastern side of the elongate triangular range, with valleys developing on softer shale close to the older more resistant rocks. Slopes of the western side are less steep, partially because of an overlapping sequence of Paleozoic limestone which allows development of strong cuestas on the alternating softer and harder beds. The softer pre- and post-Lisburne shales erode to form strike valleys flanking the inward facing Lisburne cuesta (facing toward the core of the Barn Mountains).

The Barn Mountains are approximately 16 miles long and 10 miles wide at their widest on the northern part. They taper southward to only a mile across near their southern tip north of the major bend of the Blow River.

**British Mountains**

The British Mountains are an east-west trending range which is an eastward continuation of the Romanzov Mountains of the Brooks Range complex of Alaska. They are flanked by a series of moderately low disconnected foothills on the north and south, the former of which are termed the Buckland Hills. The British Mountains are bounded on the south by Old Crow Flats, with a series of isolated partially disconnected hills and ridges of Paleozoic and Mesozoic rocks at the transition.

British Mountains rise to a summit level of approximately 3500 feet in the eastern part, but to more mountainous expression and elevations of as much as 5420 feet in the central part of the belt near the Alaskan boundary, in peaks between the Firth and Malcolm rivers. The inner margin of the Arctic coastal plain on the north and Old Crow Flats on the south are both at elevations of approximately 1500 feet, giving the mountains a relief of approximately 2000 feet.

At the Alaska-Yukon boundary the range is approximately 50 miles wide, but it gradually narrows until it is only 25 to 30 miles wide in the vicinity of the Babbage River, at its eastern end, including some of the small outlying dissociated foothill ranges.

The British Mountains are cut into segments by the Malcolm River, Firth River (Fig. 8), and, at the eastern end, by tributaries of the Babbage River. Broad passes between the headwaters of Thomas and Timber Creek from the south, with the Firth River on the north, functioned as one of the main north-south accessways in the western part of the range. The broad Babbage River valley and Dog Creek and Timber Creek passes also offer relatively low elevation accessways around the eastern part of the range.

General summit levels of the range plunge eastward, perhaps as the generalized surface of an exhumed peneplain at the base of the upper Triassic. Summit-level erosional surfaces appear to be at approximately 5500 feet in the western end, approximately 4000 feet in the central part, and approximately 3000 feet in the area of the Babbage River at the eastern end of the range.

Local topography in the western part of the mountains is often precipitous, with sharp divides and cliff-strewn slopes. In the area east of the Firth River, however, slopes are more gentle and summits are often rounded with a generally subdued topography. Chert and quartzite ridges often show sharp divides, but the dominantly softer rocks erode to less expressive forms.

**Arctic Coastal Plain**

The Arctic coastal plain (Fig. 9) stretches southward from the margin of the Beaufort Sea to the northern flanks of the Barn and British mountains and a foothill belt, sometimes referred to as the Arctic Plateau or the Buckland Hills, in the western part of the British Mountains. The coastal plain is a region of low relief, sloping from 1000 to 1500 feet along the mountains to an elevation of less than 500 feet at the base of the piedmont only 5 to 10 miles from the mountains. The plain surface has even a much lower gradient in the outer part of the
Fig. 8. Firth River (F), along the coastal plain, 10 to 15 miles south of the Beaufort Sea, at its juncture with Loney Creek. Arrow indicates collection locality 6 upstream from Loney Creek (L) and west of McNeish Lake (M). Air Photo Division—Energy, Mines, and Resources—Canadian Government air photo A 13751-116.

plain. Three divisions can thus be recognized in the plain: an inner piedmont, an intermediate zone where fluvial processes are still dominant, and an outer zone where accretionary coastline processes dominate.

The inner piedmont slopes the steepest and is a region of pediment development over the soft Mesozoic shales and sandstones. Locally, the surface slopes approximately 100 feet per mile, or even steeper, in the immediate foothill belt, and is less steep in the outer regions. Slopes in the intermediate zone are usually less than 25 to 50 feet per mile and are covered pediment slopes with gravel and sand blanketing the beveled, slightly folded, softer, younger rocks. The slope of the outermost zone is even less yet terminates in the embayed coastline-sea cliff development of the shoreline.

The coastal plain is a region where broad deltas are developing from each of the major streams, such as the Malcolm, Firth, Babbage, and Blow rivers. The Firth and Malcolm rivers are producing deltas typical of steep headlands with smooth fronts and multidistributary fanning channels. The Babbage River, on the other hand, is producing a delta which is a miniature of the
Mackenzie River to the east, filling an estuary between moderately high protecting ridges. The Blow River is emptying onto the flank of the Mackenzie delta and is producing much the same general topographic pattern as seen on the larger structure.

Lakes are a common feature of the eastern part of the outer, lower coastal plain. In general these are shallow, muskeg-bordered lakes with little through-flowing water. Most appear to be kettles or the result of melting ice, with a few related to abandoned channels of the major streams as the latter have shifted their discharge channels near the mountain front. A few of these lakes would be serviceable bases for field parties. In the west, McNeish Lake, east of the Firth River, is deep enough and ice-free long enough to function as a campsite in the late summer. Most of the lakes are not usable, however, because they are surrounded by marsh and soft ground.

Lakes are not common on the upper slopes of the plain, but Trout Lake and the small lake to the north are deep enough and large enough to be serviceable for float plane-based operations. These appear to be ice-melt lakes, possibly even

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**Fig. 9.** Arctic coastal plain, Beaufort Sea, and King Point (K), along the lower reaches of Deep Creek and Babbage River. Collecting locality 13 (C). Air Photo Division—Energy, Mines, and Resources—Canadian Government air photo A 14363-55.
plunge-pool lakes in the ancient surface of the Babbage drainage.

Entrenchment of streams below the general tundra surface is typical of all the streams draining northward from the British Mountains and Barn Mountains into the coastal plain. These major streams are entrenched not only into their own debris, but into the underlying bedrock as well. For example, the Babbage River is entrenched 60 to 70 feet below the general pediment surface on Jurassic Shale near Trout Lake. The amount of entrenchment decreases coastward, so that halfway across the 25-mile wide plain, it is entrenched only 10 to 15 feet. The degree of entrenchment varies somewhat in the outer reaches of the river, but generally is less than 3 to 5 feet where the depositional surface of the delta begins 4 or 5 miles from the shore.

The Firth River and other more directly emptying steeper streams show the same general degree of entrenchment, apparently related to uplift of the land mass. The Firth River cuts across vertical slate and quartzite near the coastal plain border 20 miles upstream from the shore and is entrenched 40 to 50 feet below the general sloping plain level. Its banks step down in a series of spectacularly developed, cut bedrock terraces. It is well entrenched for approximately 10 miles of the inner and medial parts of the plains, but begins to fan and develop an intricate lobate delta in the outer 10 to 15 miles of its course. It is entrenched only 2 or 3 feet throughout most of the lower gradient part of its coastal plain course.

Four distinct terraces are recognizable on most major streams, with the lower two as the most prominent and with deepest entrenchment. The vertical-walled entrenchment of the Malcolm, Firth, and Babbage rivers into bedrock cut terraces is particularly striking at the mountain front-coastal plain boundary.

Deposits of the Firth River terminate in a rounded, lobate or arenate deltaic coastline, with an offshore lagoon and barrier island sequence, a suggestion of moderately active regression and energy dissipation along the shoreline. The Malcolm River shows an almost identical pattern and has even a more spectacularly fanning delta, terminating in the typical lobate to crescentic seaward margin, with a bordering lagoon and an offshore barrier island sequence, named Nunatak Spit.

Abandoned beaches mark the uplands of the coastal plain, scribing the flanks of the British Mountains to elevations of 700 to 800 feet. These appear to be only moderate-energy beaches of relatively short still-stand because of the immaturity of the beach clastics, as well as shallowness of indentation and poor development of sea cliffs. Some of the high levels may be kame-like features developed where mountain streams banked against Pleistocene sea ice from offshore or against a lobe of continental ice from the MacKenzie River.

The coastal plain varies from 6 or 7 miles wide at its western development, north of the British Mountains west of the Malcolm River, to a broad plain 30 to 55 miles wide north of the Barns Mountains, west of the Blow River valley. It narrows again to the east around the northern end of the Richardson Mountains where there is only a minimum plain between the mountains and the southwestern margin of the Mackenzie delta.

**Buckland and Babbage Hills**

The Buckland Hills are on the north flank of the British Mountains. The term Babbage Hills is applied to the continuation of these mainly dissociated hills of Late Paleozoic and Cretaceous rocks in the vicinity of the headwaters of the Babbage River.

On the southern side of the British Mountains the hills are commonly cuestas or unbreached anticlinal ridges of Lisburne Limestone from which the softer Jurassic and Triassic beds have been stripped. Cuestas of Cretaceous rocks in the structural saddle between the Barn and British mountains also form features of relief that rise above the softer shale valleys as distinct linear features. Similar dissociated hills on the northern side of the British Mountains are on outliers of older Nunokpuk rocks and, in the eastern part, on cuestas of Cretaceous sandstone in the Crow River, Trout Lake, and Sleepy Mountain region.

**Driftwood Mountains**

The Driftwood Mountains are an elongate north-south range along the east side of Old Crow Flats, south of the Barn Mountains. They are cored by ragged-weathering Lower Paleozoic chert and siliceous shale, surrounded by gentle cuestas of Upper Paleozoic and Mesozoic rocks. They form a series of hills approximately 12 miles wide and 25 miles long which rise to an elevation of slightly over 3000 feet, approximately 1500 feet above Old Crow Flats on the west and 2000 feet above Driftwood River on the southeast. They are the southwestern end of a series of hills leading southwest from the main Richardson Mountains east of Bounney Lake.
WEATHER

Weather experienced during the summer of 1970 can be subdivided into basic patterns or periods. During the month of June, at least from the time we arrived at Sam Lake area until the first week in July, the weather was moderately clear all the time, with only three one-day periods when fieldwork was not possible because of weather. The days were bright and clear, with a consistent wind from the north or northeast.

Wind exhibited a diurnal variation related apparently to the differences in temperature between Old Crow Flats and the north slope and Arctic coastal plain. During the afternoon, following warming of the Old Crow Flats, air rose over the flats and pulled cool air from the north, producing moderately strong winds from approximately noon until 1:00 to 2:00 a.m. During the period from 2:00 a.m. until late morning, the air was usually moderately calm.

The several short-duration storms in June blew in from the northeast with wind-driven rain, with the exception of one storm which blew in from the northwest. In general the weather pattern was from northwest to southeast or from west to east for the entire summer.

During June the temperatures on the valley bottoms and around Sam Lake were approximately 40° to 50° during low sunlight periods at night and during the windy part of the day, but warmed to 60° to 70° during the calm part of the day. A maximum of 80° occurred during a still period during the period of 24-hour sun in late June.

With the disappearance of sea ice from near-shore in the Beaufort Sea in mid-July, the general weather pattern changed. For two weeks during early July the wind was most commonly from the south, off Old Crow Flats, with several intense thundershowers visible on most afternoons, both in the flats to the south and over the higher part of the British Mountains to the west. This general pattern held until approximately mid-July when the major winds again came from the north and northeast, bringing thick persistent banks of sea fog onto the northern slope and into the lower valleys of the mountains. Only at night did fog reach onto the southern part of the mountains in areas west of the major drainage through Blow River valley. Occasionally fog would accumulate in the Old Crow Flats area, but commonly the Sam Lake area remained fog-free even though surrounding areas were blanketed. Bonney (Bonnet) Lake was commonly fog- blanketed, while areas to the west were moderately clear. Trout Lake and the lower end of the Babbage River valley were often fog-blanketed during late July and early August.

Temperatures remained in the 60s and 70s during the days in the area around Sam Lake, and only when cold winds blew off the sea to the north did temperatures in the mountains drop much below that of the base camp. Temperatures at night remained near 50° during the early part of July in the base camp area, but dropped into the 30s during the nights of late July and early August. The first frosts occurred July 30 and 31 during a period of calm following a cold north wind.

Weather in late July and early August was decidedly cyclic. Calm wind and bright clear weather was generally followed, usually in less than one day, with high cirrus clouds and increasing winds usually from the south or southwest. Cloud cover increased and winds calmed, usually followed by a warm, steady rain, sometimes for 2 or 3 days. Wind velocity then increased and swung from south to southwest, then west. Patches of broken clouds usually followed with a change of wind from west or northwest into the north or northeast, with some increase in clouds and much increase in local fog on the ridges north of Sam Lake, in Blow Pass and Babbage River Pass, and over the coastal plain. This usually was followed by clearing and strong northeasterly wind, with later calming and beginning of bright, clear weather again. The entire cycle usually took from 3 to 5 days to pass.

STRATIGRAPHY

Rocks of the region range in age from Late Precambrian (?) to Upper Cretaceous, with Tertiary (?) and Quaternary sediments over the more consolidated part of the section. The section breaks into four broad sequences of rocks: an older Precambrian to Devonian (?) strongly folded argillaceous and cherty section included in the Neruokpuk and equivalent Road River formations (Martin, 1939; Norford, 1964; Norris et al., 1963; Reed, 1968); an intermediate Upper
Paleozoic section which includes a basal clastic sequence of Devonian and Mississippian age overlain by a carbonate sequence, the Lisburne Limestone, of Mississippian and Pennsylvanian age; and an upper sequence of clastic Jurassic and Cretaceous rocks including the Kingak Shale and unnamed Cretaceous formations (Jeletzky, 1961; Mountjoy, 1967b). A fourth sequence of Permian and Triassic rocks is exposed in the western part of the area (Mountjoy, 1967a) between the Lisburne Limestone and the Jurassic Kingak Shale. A total thickness of approximately 40,000 feet of beds is present in the area (Fig. 10).

Fig. 10. Geological section in northern Yukon.
VEGETATION

The general aspect of northern Yukon is dominated by vegetation of low relief, i.e., tundra. The hills and valleys have the look of a well-tended golf course (Fig. 11). The vegetation is not uniform, however, it varies in cover and in composition. The major vegetative control appears to be the amount of moisture that is available. Substrate differences appear to influence the water supply directly, and thus the plant cover indirectly. The limestone, shale, sandstone, and siliceous conglomerates, slates, and schists of the lower, rounded mountains generally lack the more lush vegetation of the bajadas, wet meadows, and stream courses of lower elevations. Rock stripes, boulder patches, and rock outcrops appear at first glance to be barren of higher plants. They are vegetated by a sparse cover of plants widely spaced. Even the lowlands display a mosaic pattern in the green mantle of the land. Frost-heaved patches of gravel of irregular shape produce a varied pattern in the tundra. The swales where water drains slowly over the surface are bright green compared to the slopes alongside them. Polygonal patterns appear here and there in the tundra, apparently always associated with poorly drained sites. The lower trenches of most polygons are moist or have standing water in them and frequently are more lushly vegetated than the surrounding area. Tall vegetation is present only along the streams, where willows and an occasional cottonwood stand a few feet above the surface, Southward along the upper reaches of the drainage of the Old Crow and rarely in the headwaters of the streams which drain to the Arctic Sea, there occurs a depauperate assemblage of the Boreal Forest, chiefly along stream courses, and along some south facing slopes. This forest extends to about 69° 15' N along the Firth River, at approximately 140° 25' W. Eastward, however, the forest does not extend that far north, reaching only to about 68° 39' N along Spruce Creek, a tributary of the Canoe River, at approximately 138° 43' W. The trees reach their best development in the mountain system on south facing slopes near the bases of low rounded hills. In the Old Crow Flats there has developed a parkland tundra or taiga, the interspaces of which is dominated by a heathland of dwarf birch, willows, and other shrubs. In some places the woodland is really quite dense, the trees reaching a height of up to 25-30 feet and a few inches in diameter.

Fig. 11. Northwestward from approximately 58°32' N; 138°27' W, along westward dipping cuestas of Lisburne Limestone, at the northwest edge of the Barn Mountains, in the headwaters of Wood Creek. Low vegetated valleys are in the Kayak shale, in part in fault-repeated sections. Tussock and alpine tundra and heathlands.
Lakes dot the land in the Old Crow Flats but are less common elsewhere; in fact, there are very few lakes of any consequence in the mountains. Numerous lakes, most lacking higher plant life, occur on the coastal plain of the north slope. Thus, aquatic vegetation is best represented in the Old Crow drainage system.

**Stream Sides and Bars**

The effects of streams seldom reach far from active running water. However, since the streams tend to be braided, at least in the lower reaches, the effect is often more broadly felt. Willows of one to several species dominate the banks (Fig. 12 and 13). Where meanders develop there may be considerable development of willow dominated vegetation (Fig. 14 and 15). The height of these riparian plants varies from one foot to ten or fifteen, or less commonly to twenty feet. The larger plants are the willow, Salix alaxensis, with densely hairy branchlets. However, the cottonwood, Populus balsamifera, is sometimes present (Fig. 16). Neither of these plants reach far from the streamside. As soon as the riparian boundary is exceeded, there is no more Salix alaxensis. Certainly Salix alaxensis is the abundant, tall willow species along all of the drainages, from high elevations down to very low ones, except, of course, in the Old Crow River area where other species become important, but even there Salix alaxensis continues as one of the dominant species.

Other species of willow grow along the drainages and grade in height backward from the abundant moisture of the river or stream into the drier heath or tussock tundra along the margins. Here and there the alder, Alnus crispa, grows tall enough to add to the thicket along the drainages and in some places such as along the Firth River, at its junction with Muskeg Creek, the alder forms a part of the heath vegetation some distance back from the bank (Fig. 17). Similar extensive growth of alder occurs along the lower portions of the Blow River and in the Old Crow Flats where river bars are formed which do not receive an annual scouring. Bars which receive annual scouring do not support vascular plants, but are barren throughout the growing season (Fig. 18).

Many plants occur in the openings among the willows lining banks and bars. Here such things as sweet vetch, milk vetch, buttercups,
chickweeds, and other plants grow in profusion adding pink, yellow, and white to the color of the gravel bar vegetation. Poorly drained sites back from the riparian vegetation develop a distinctive cover of plants. Dryas, Empetrum, Ledum, Arctostaphylos, Betula, Vaccinium, (vitis-idaea, and uliginosum) and Salix dominate the community. But secondary species brighten the landscape with shades of yellow ( Arnica and Oxytropis ), white and lavender ( Castileja ), blue ( Mertensia and Lupinus ), and pale cream ( Pedicularis capitata ), and pink ( Pedicularis and Hedysarum ). The tiny flowers of the miniature plants of Tofieldia and Carex add to the diversity of flower types, and here and there are the bright pink spikes of bistort and the inconspicuous ones are viviparous bistort. This heath type forms a dark, dull green stripe along the drain-
Fig. 14. Jurassic and Cretaceous sand and shale at the junction of Canoe River with the Babbage River south of Trout Lake, taken from approximately 68°48' N; 138°45' W. The river terraces are veneered here and there with a thin blanket of gravel. Tussock tundra (center), heathland (along slopes) and willow dominated bar (foreground).
Fig. 15. Cretaceous shale and sandstone at approximately 68°55' N; 138°31' W, along the lower part of the Babbage River where the river has emerged from the British Mountains onto the Coastal Plain. Low country in the background is carved on soft Cretaceous sediments. Willow, alder, and dwarf birch heathland in foreground and along stabilized bar.

age systems in the tundra and can be picked out from some distance by its contrast with the pale or gray green of the tussock tundra (Fig. 19).

**Lake Margins**

In the tundra, the lakes are generally small and commonly shallow. The margins are frequently occupied by emergent plants. Principal among there are the sedge, Carex aquatilis, and the grass, Arctophila fulva. The wet meadows at the waters edge are dominated by the cotton grass, Eriophorum angustifolium, and back from the waters edge the vegetation is dominated by a thicket of low willows (Salix) and birches (Betula glandulosa). Interspersed among the
willows and extending into the wet meadows are *Andromeda polifolia*, *Cardamine purpurea*, *Pedicularis kanei*, *P. sudetica*, *P. labradorica*, and *Rubus chamaemorus*. The extent of the wet meadow and the willow-birch thicket is controlled by the topography features of the lake basin. Also, the height of the willows and birches is apparently a function of topography and snow depth, with the height of the inner ridge of the lake basin and the height of the snow bank formed adjacent to the ridge limiting shrub height. *Ledum decumbens* and *Empetrum nigrum* fill in between the willows and the birches. In some lakes there is an accumulation of several feet of organic debris along the beaches. The aquatic and semiaquatic plants occupy the organic fill in the same sequence as in lakes which have rocky basins forming the beach. The shallow lake at collecting locality 72 has two organic debris littered beaches (Fig. 20).

**Tussock Tundra**

Landward from either lakes or streams, there is developed a hummocky tundra which covers more land surface than any other vegetative type. Even here there is much variation in the composition of the vegetation. Near streams and lakes there is a transition from the tallish, lusht vegetation characterizing these sites to the hummocky tundra type (Fig. 21 and 22). Slopes along streams are characteristically transitional to tussock tundra also (Fig. 23). The transition may be completely subtle or it may be abrupt. Generally, *Salix alaxensis* gives way abruptly along the wet sites, but the other species of willow which may grow to a height of a few feet along the streams continue to dominate the rounded hummocks of the tundra, but seldom reach a height much above the hummocks. They grow there with *Vaccinium vitis-idaea*, *V. uliginosum*, *Betula glandulosa*, *Dryas integrifolia*, *Arctostaphylos alpina*, *Pedicularis capitata*, *P. labradorica*, *P. kanei*, *Oxypolis maydelliana*, *Cardamine digitata*, *Polygonum bistorta*, and *Carex* species.

In higher, better drained ridges and slopes, the willow hummocks give way to a cotton grass tussock tundra dominated by *Eriophorum vaginatum* and *Carex* species. Shrubs are not lacking in the tussock tundra, but their role is subordinate to the cotton grass. In fact the same species of shrubs outlined for the wetter hummocky tundra occur in the tussock tundra as well.

![Fig. 16. Undercut meander bend along Black Fox Creek in the east central part of Old Crow Flat at 139°30' W; 68°07' N at Locality 68. Elevation of about 900 feet. Willow and cottonwood dominated bar, with taiga and heathland in background.](image-url)
Fig. 17. Southwest across the Firth River to Firth Rock. Collecting locality 15, at 68°47' N; 140°28' W and at approximately 1400 feet in elevation is on the gravel bar in the center of the stream. Vegetation in the foreground is on river gravel terraces. Firth Rock is composed mainly of Lisburne Limestone. Firth Rock rises approximately 1000 feet above the river valley. *Salix, Betula, Alnus* heathland and taiga along valley bottom, river bank, and bar.

Swales and moist flats in the tussock tundra appear green and lush by comparison to the well-developed tussock tundra. The green of the sites is due in a large part to the presence of the cotton grass *Eriophorum angustifolium*, and in some places to the presence of the horsetail, *Equisetum arvense*. Where the relief is low and drainage is poor, there is developed a topography made apparent by the presence of polygonal figures in the tundra (Fig. 24 and 25). Each polygon is outlined by a trench, and this is often filled with water or is, at any rate, more moist than the surrounding area. Here grows *Eriophorum angustifolium* and *Carex* species, often in a mass of *Sphagnum*. Other plants in the polygons are *Potentilla palustris, Pedicularis* species and *Menyanthes trifoliata*. In drier polygons the trenches often support a community of plants similar to that along a stream channel, i.e., with *Salix, Betula, Empetrum, Ledum*, and *Vaccinium*.

### Alpine Tundra

Mountains in the northern Yukon appear pale green to gray or else they are green only in small areas. Talus and rockstripes are often bar-
ren of plants or are occupied by clumps or stripes and patches of Dryas, Empetrum, Betula, and Carex. Talus slopes are evidently in motion, and vegetation is commonly oriented in stripes with an up-down slope axis (Fig. 26). Ridge tops are characterized by widely spaced plants of Potentilla uniflora, Draba caesia, D. lactea, Astragalus australis, Oxytropis nigrescens, Saxifraga reflexa, S. tricuspidata, Douglasia arctica, D. ochotensis, Parrya nudicaulis, Phlox sibirica, and Eretrichium nanum. Carex, Kobresia, Festuca, and Poa are the principal monocots. Again, density and composition varies, with the most dense vegetation in swales and on north facing slopes. Seeps and springs are densely covered with Salix, Betula, Empetrum, Dryas, and Carex and numerous herbaceous species. The herbs in the seepy areas are the same as those in wet meadows, i.e., species of Pedicularis, Cardamine, Anemone, Senecio, Carex, Kobresia, Dodecatheon, Lagotis, Parrya, Polemonium, and Myosotis.

From the specimens collected, it seems that each geological stratum exposed in the alpine tundra supports a distinctive flora. In regions where vegetative cover is well developed, the plants are insulated from the geological formation by organic debris, permanently frozen ground, or by alluvium. Geological control of vegetation is best demonstrated on outcrops of formations on ridge crests and mountain tops where conditions for growth are poor at best. Some species seem to do well on any substrate, regardless of the nature of the stratum. Others occur principally on limestone formations (Figs. 27, 28, 29 and 30), e.g., Alyssum americanum; Arenaria rossii var. elegans; Braya purpurascens; Carex petriaca; Festuca brachyphylla; F. ovina; Lychnis apetala; L. furcata; and Saxifraga caespitosa. Those which occur most often on slate and schist (Figs. 31 and 32) include: Arenaria macrosarpa Pursh; A. rubella; Douglasia arctica; Saxifraga eschscholtzii; and Senecio fuscatus. On siliceous conglomerate, granite, and sandstone (Figs. 33, 34 and 35), the list of apparently restricted species include Loiseleuria procumbens; Potentilla elegans; and Saussurea angustifolia. Those which grow primarily on shale (Fig. 30) include: Saxifraga exilis and S. serpyllifolia. Siliceous conglomerates and sandstones are definitely poorer in species than are the limestones. The shales and schists are intermediate, but the limestones support the greatest number of species in alpine sites.

![Image](image_url) Fig. 18. At locality 56. During the maximum meltwater Black Fox Creek runs over the exposed gravel in the foreground.
Fig. 19. Southwest along one of the numerous willow-bordered drainages southeast of Sam Lake in a tundra heathland flat which rims the southwestern edge of the Barn Mountains. Photograph is at approximately 68°23' N; 138°27' W. Some of the marginal small lakes at the edge of Old Crow Flats show in the background. Helicopter antenna shows toward the left, and an old seismograph trail shows in the foreground. Alternating stripes and patches of Salix and Betula (dark) and Eriophorum, Carex, and Salix tundra (light) with large areas of tussock tundra along the drainage margin.
Boreal Forest

The Boreal Forest is only poorly developed in northern Yukon. Three main types are recognizable, e.g., white spruce stands on south facing slopes, open parkland tundra (i.e., taiga), and riparian woodland. The first type, the spruce woodland on the southern bases of hills (Fig. 36) and on south facing slopes in valleys (Figs. 37 and 38), is distinctive. This woodland is made up of isolated stands which vary in size from a few trees to rather extensive forests. Southward, in Old Crow Flats, the stands on hills tend to become continuous with the parkland tundra and riparian woods (Fig. 39). The species composition in the spruce stands is the same as that of the parkland tundra, differing mainly in the frequency of species encountered. In both the dominant tree species is the white spruce, *Picea glauca*.

The riparian woods (Figs. 40, 41, 42, and 43) are distinct even though they grade into both of the other types of woodland. White spruce is the dominant conifer, and other tree species are represented by white birch, *Betula papyrifera*.

Fig. 20. Unnamed lakes in Old Crow Flat about 16 miles south of Sam Lake. Collecting locality 72 is along the south side of the lake with two developed beaches (A), and 73 is atop the prominent ridge (B) between the two larger lakes.
Fig. 21. Southwestward along broad open valley near the head of Trail River at approximately 68°53' N; 139°58' W. Rocks in the background are principally of Lisburne Limestone. Streaks are reflections from the helicopter bubble. Tussock tundra.

Fig. 22. Stream terraces along the Canoe River south of Trout Lake at approximately 68°47' N; 138°46' W. Rocks in the foreground are Jurassic shale. Hills in the background are held up by Cretaceous sandstone. Tussock tundra on patterned ground.
and the cottonwood, Populus balsamifera. Betula glandulosa and B. glandulifera form the under-story in the riparian woods, along with Salix spp., Rosa, Ledum, Empetrum, and Rhododendron. Herbaceous streamside components include; Agropyron macrostizum, Arabis hirsuta; Arenaria physodes, Astragalus alpinus, Barbarea orthoceras, Castilleja pallida, Hedysarum alpinum, H. boreale, Stellaria longipes, and Taraxacum cera-
dron, and other woody species of plants. Meadow in the deltas are dominated by Eriophor-
um. Maritime vegetation gives way abruptly along sea cliffs to tussock tundra typical of the coastal plain.

**Aquatic Vegetation**

Streams in the region ordinarily have scoured bottoms and do not support a flora of higher plants. However, along the edge of some streams the yellow marsh marigold, Caltha palustris, grows in shallow water of quiet pools. Lakes support a variety of kinds of aquatic plants. In Old Crow Flats some lakes are filled with yellow pond lily, Nuphar polysepala. The pond lilies grow in a circular pattern some distance out from the edge of the pond in the deeper water. The margin of these ponds is occupied by species of Carex, Triglochin maritima, Utricularia intermedia, Menyanthes trifoliata, and Ranunculus hyperboreus. Potamogeton alpinus is attached and submerged in some ponds. Emergent vegetation in the lakes consists of Utricularia, Menyan-
thes, and species of Carex. Several species of
Carex, Scirpus caespitosus, and Pinguicula vulgaris grow in moist sites in the heath-taiga lands in Old Crow Flats.

A peculiar semiaquatic habitat occurs along the Babbage and Canoe Rivers and Timber Creek, where more or less permanent fields of ice spread out along basins in the braided stream course (Fig. 46). Willows and other woody species are embedded in the ice. As the ice melts the willows flower and grow leaves, but the growing season is much shortened and existence of this vegetative type appears tenuous.

Fig. 24. Patterned ground and poor Cretaceous exposures along the lower part of the Babbage River at approximately 58°57' N, 139°21' W. Moderately wet tussock tundra on patterned ground (foreground) and streambank and gravel bar vegetation (center and background).
COLLECTION LOCALITIES

During the summer of 1970 collections were made from 79 localities in northern Yukon (Fig. 47). Collections were made in the period between June 17 and August 15.

1. NE Mount Page. In British Mts., ca 4 miles northeast of Mount Page, in headwaters of unnamed river draining to Clarence Lagoon, ca 16 miles south of Beaufort Sea coast, at 69°24' N, 149°50' W, in alpine tundra on Kayak shale.

2. Malcolm River. In pass between Malcolm River and unnamed river draining to Clarence Lagoon, ca 14 miles south of Beaufort Sea coast, at 69°23' N, 140°40' W, at 2500 feet elevation, in alpine tundra on Kayak shale.

3. Mt. Conybeare, south flank. South flank of Mt. Conybeare, ca 8 miles south of Komakuk Beach, Beaufort Sea, at 68°28' N, 140°07' W, at ca 1100 feet elevation, in rich tundra on limestone.


5. Loney Creek. Along Loney Creek, a tributary of Firth River, 6 miles southwest of confluence, at 69°20' N, 139°50' W, at ca 100 feet elevation, in arctic tundra, on Triassic limestone of the Shublik formation.


7. Buckland Hills. North slope of Buckland Hills, on ridge adjacent to a small lake, ca ½ mile east of hill 722 and 20 miles south of Herschel Island, at 69°13' N, 139°06' W, at 700 feet elevation, in tundra on Nenujpuk shale.

8. Ancient Beach. In Buckland Hills, on ancient, polygonally figured, gravelly beach, ca 2 miles north of Roland Creek and 23 miles south of Herschel Island, at 69°11' N, 139°07' W, at 900 feet elevation, in sparse tundra.

9. DC-3 Wreckage. Site of DC-3 wreckage, on divide between Spring River and Roland Creek, at 69°07' N, 139°10' W, at 1500 feet elevation, in sparse but rich alpine tundra, on Nenujpuk shale.

10. Three Pyramids section. British Mts., at 69°02' N, 139°43' W, at 3000 feet elevation, on Kayak Shale in alpine tundra.

11. Crow-Trail. Ridge top, between Crow and Trail rivers, ca 24 miles southwest of Kay Point, at 69°00' N, 138°46' W, at 1000 feet elevation, in tundra on Nenujpuk shale.


13. Coastal plain lake. Lake margin, ca 4 miles west-southwest of King Point, at 69°06' N, 138°07' W, at ca 200 feet elevation, in hummocky heath-tundra.

14. King Point. Sandy beach, at King Point, Beaufort Sea coast, at 69°07' N, 137°58' W, at near sea level, in maritime vegetation.

15. Firth River. Gravel bar, in Firth River at junction of Muskeg Creek, at 68°47' N, 140°28' W, at ca 1400 feet elevation, with willows, dwarf birch, and white spruce.

16. Firth Lake. Lake shore and river gravel, along Firth River, British Mts., at 68°49' N, 140°37' W, at 1500 feet elevation, in Betula-Salix heath.

17. Firth-Muskeg divide. Ridge top between Firth River and Muskeg Creek, ca 12 miles east of Alaska border and 5 miles southeast of confluence of River and Creek, at 68°45' N, 140°33' W, at 3200 feet elevation, in rich tundra on Lisburne limestone.

18. Head Muskeg Creek. Ridge top, near head of Muskeg Creek, ca 13 miles south of confluence with Firth River, and 13 miles east of Alaska border, at 68°38' N, 140°25' W, at 2500 feet elevation, in poor tundra on siliceous Triassic Shublik formation.

19. Lisburne cliffs, Snow flush, on north side of small cliffs, in whitisht Lisburne limestone ca 40 miles west of Sam Lake, near head of Timber Creek, at 68°30' N, 140°08' W, at 2800 feet elevation, in rich alpine tundra.

20. W Timber Creek. Ridge top, west of Timber Creek, ca 36 miles west of Sam Lake, at 68°26' N, 140°05' W, at 2800 feet elevation, in poor alpine tundra, on siliceous conglomerate.


22. Bear Creek. Along Bear Creek, a tributary of the Crow River, Buckland Mts., at 68°57'
Fig 25. View looking toward the southeast across the piedmont zone between the coastal plain and the hills along the Barn Mountains to the south. Stream in the foreground is at an elevation of approximately 50 feet. South across the coastal plain southwest of King Point from approximately 69°05' N, 138°07' W, near collecting locality 13. Wet tussock tundra on polygonal ground, dominated by *Eriophorum*, *Carex*, and *Salix* species.
N, 139°35' W, at 2000 feet elevation, in alpine tundra.

23. Mt. Sedgwick, Northwest edge of Mt. Sedgwick, at 68°52' N, 139°20' W, at 2500 feet elevation, alpine tundra, in granite wash felsenmeer.


27. Deep Creek. Stream gravel, along Deep Creek, in shale slope, at 68°50' N, 137°45' W, at 490 feet elevation, with willows.

28. Deep Creek lower. Along Deep Creek, at 68°52' N, 137°43' W, at 400 feet elevation, in tundra over Cretaceous shale.

29. Blow River. Gravel bar, in prominent meander of Blow River, ca 12 miles south of Shingle Point, at 68°46' N, 137°20' W, at 300 feet elevation, in willow dominated community.

30. Blow River delta. Delta of Blow River, ca 2 miles east of Shingle Point, at 68°55' N, 137°10' W, at ca 2 feet elevation, in Salix—Eriophorum—Alopecurus community in open gravelly areas between rows of driftwood logs.

31. Upper Babbage River. Along Babbage River, ca 32 miles west-northwest of Sam Lake, at 68°38' N, 139°45' W, at 1200 feet elevation, in willow thicket and meadow, along black Kingak shale slope.

32. Babbage-Cottonwood. Hill top, between head of Babbage River and Cottonwood Creek, at 68°40' N, 139°27' W, at 1900 feet elevation, in tundra on Shublik sandstone outcrop.


34. Ridge 3261 NNE. Low cliff, on summit of ridge, ca 5 miles north-northeast of #3261, ca 21 miles west-northwest of Sam Lake, at

Fig. 26. Westward into Lisburne-Limestone outcrops in the headwaters of Gravel Creek at approximately 68°43’ N, 139°43’ W. Peaks in the background have an elevation of approximately 3500 feet and a relief of 1000 to 1500 feet. Alpine tundra, on solifluction and talus slopes.
Fig. 27. Northwest from near collecting locality 49 at approximately 68°23' N; 139°07' W. Rocks in the foreground are limestone of the older Paleozoic Nernokpik sequence exposed in the core of a small dome south of the main British Mountain trend. The darker slopes in the intermediate distance are on the Kayak Shale, with Lisburne Limestone forming the gentle cuesta and the hill in the intermediate distance. Rich alpine tundra.

68°32' N, 139°18' W, at 2500 feet elevation in rich tundra, on Permian Sadlerochit limestone.

35. S Babbage River. South fork of Babbage River, ca 18 miles northwest of Sam Lake, at 68°35' N, 139°07' W, at ca 2000 feet elevation, in tundra on Jurassic shales.

36. Babbage ice field. Lower ice field, near head of Babbage River, along bluff above south bank, at 68°40' N, 139°07' W, at 1000 feet elevation, in mixed heath-tussock tundra on Kingak shale.

37-38. Babbage River narrows. Narrows along Babbage River, ca 20 miles north-northwest of Sam Lake, at 68°43' N, 139°02' W, at ca 900 feet elevation, in tussock tundra along ridge crest, on Triassic rocks.


40. Dog Creek upper. Along upper Dog Creek,
ca 9 miles north of Sam Lake, Barn Mts., at 68°32' N, 138°42' W, at ca 1800 feet elevation, tussock tundra and stream gravels.

41. Barn Mts. Reddish, slaty ridge top, in Barn Mts., ca 10 miles northeast of Sam Lake, at 68°33' N, 138°18' W, at ca 2500 feet elevation, in alpine tundra on Nernokpuk formation.

42. Fitton Creek. Along west fork of Fitton Creek, a tributary of Blow River, ca 22 miles east-northeast of Sam Lake, at 68°34' N, 138°04' W, at 1000 feet elevation, in snow flush along mossy slope, and in willow thicket.

43. NE Mt. Fitton. Ridge top, ca 4 miles northeast of Mt. Fitton, on summit between Fitton Creek and Blow River, at 68°30' N, 137°52' W, at 1900 feet elevation, in sparse alpine tundra, on Nernokpuk formation.

44. Ridge 3261 south. Ridge top, ca 2 miles south of ±3261, ca 21 miles west-northwest of Sam Lake, at 68°28' N, 139°25' W, at 3200 feet elevation, in alpine tundra, in rock stripes of Ordovician-Silurian limestone.

45. Siliceous conglomerate. Outcrops of siliceous conglomerate, ca 23 miles west of Sam Lake, at 68°25' N, 139°30' W, at 2500 feet elevation, in poor alpine tundra.

46. Ridge 3261, 4 miles S. Ridge crest and saddle, ca 20 miles west of Sam Lake, at 28°27' N, 139°22' W, at 2800 feet elevation, in sparse alpine tundra, on slaty schist, in Nernokpuk formation.

47. Triassic-Lisburne contact. West Barn Mts., at Triassic-Lisburne contact, at 68°24' N, 139°20' W, at 2000 feet elevation, in alpine tundra.

48. Ridge 2651. Ridge top, about 14 miles west of Sam Lake, at 68°23' N, 139°10' W, at 2651 feet elevation, in alpine tundra on Ordovician-Silurian limestone.

49. Ridge 2651, 1 mile E. Ridge crest, ca 13 miles west of Sam Lake, ca 1 mile east ±2651, at 68°23' N, 139°08' W, at 2500 feet elevation, in rock stripes, in patchy but rich tundra on Lisburne limestone.

50. Ridge 2651, 1 mile S. Ridge top, ca 14 miles west of Sam Lake, at 68°22' N, 139°10' W, at 2500 feet elevation, in tundra-taiga transition at contact zone between Kayak shale and Lisburne limestone.

51. Ridge 2651, 1.5 miles S. Ridge top, ca 14

Fig. 28. East across outcrops of massive Lisburne Limestone at locality 19 at approximately 2800 feet in the southern part of the British Mountains at 68°32' N; 140°08' W. Lakes in Old Crow Flat can be seen in the background to the southeast. Rich alpine tundra.
Fig. 29. Northwestward across Lisburne Limestone outcrops at Locality 19 on the ridge at the south edge of the British Mountains in the same areas as Figure 10. Alpine tundra, rich in species.

miles west of Sam Lake, ca 1.5 miles south of #2651, at 68°21' N, 139°10' W, at 2100 feet elevation in rock stripes and boulder patches with poor alpine tundra, on siliceous conglomerate and Kayak shale.

52. Small lake. Small lake in Old Crow Flats, ca 22 miles southwest of Sam Lake, at 68°16' N, 139°22' W, at ca 1000 feet elevation, emergent vegetation and surrounding Betula-Rhododendron heath and spruce woods.

54. Dog Creek north. Along Dog Creek, ca 6 miles northwest of Sam Lake, at 68°28' N, 138°45' W, at ca 2000 feet elevation, in a wet meadow with *Salix, Vaccinium, Arctostaphylos, Dryas, Carex*, and *Arnica*.


56. Black Fox Creek. Gravel bar, in Black Fox Creek, ca 5 miles west of Sam Lake, at 68°24' N, 138°49' W, at 1400 feet elevation, with willows and tussock tundra.

57. Sedge meadow. Summit of ridge, in Lisburne limestone, south end of Barn Mts., ca 3 miles northwest of Sam Lake, at 68°26'.
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Fig. 31. Broad tundra-covered slope blanketing strongly folded Nemokpuk beds near collecting locality 46 at 68°27' N; 139°22' W at approximately 2700 feet. Small platy angular debris is of siliceous schistose beds in the Nemokpuk Formation. Sparse alpine tundra, with patches of Dryas dominating.

N, 138°40' W, at 2500 feet elevation, in sedge meadow, alpine tundra.

58. Lisburne limestone. Rocky ridge top, ca 4 miles northwest of Sam Lake, at 68°27' N, 138°40' W, at 2578 feet elevation, in alpine tundra, on Lisburne limestone.

59. Dog Creek. Gravel bar, along Dog Creek, ca 4 miles northwest of Sam Lake, at 68°26' N, 138°45' W, at ca 1400 feet elevation, in willow community.

60. Spruce woods. Grove of spruce woods, on south-facing slope, ca 3 miles northwest of Sam Lake, at 68°26' N, 138°40' W, at 1550 feet elevation, on Lisburne limestone.

61. NW Sam Lake. Wet, polygonal tundra, ca 1 mile northwest of Sam Lake, at 68°25' N, 138°38' W, at ca 1600 feet elevation.

63. Sam Lake west. Around west margin of Sam Lake, at 68°25' N, 138°38' W, at 1500 feet elevation, in *Salix-Carex* heath.

64. Dog Creek head. Along head of Dog Creek, ca 6 miles north of Sam Lake, at 68°28' N, 138°35' W, at 2200 feet elevation, in riparian vegetation, heath, snow flush, and alpine tundra, on sandstone.


67. Timber Creek. Gravel bar, along Timber

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**Fig. 32.** Northwestward from Mt. Fitton to Twin Peaks. The rocks on Mt. Fitton in the foreground are slightly weathered siliceous granitic rocks. Slopes of Twin Peaks in the background are carved in large part in strongly folded slates of the Nenokpuk sequence overlain by coarse conglomerates of the late Paleozoic sequence. The Twin Peaks rise to an elevation of approximately 2600 feet. Rocks of Mt. Fitton in the foreground are at an elevation of approximately 1500 feet. Alpine tundra, with boulder patches, solifluction slopes, and sparsely covered slopes and rock outcrops.
Creek, a tributary of Old Crow River, ca 33 miles southwest of Sam Lake, at 65°11' N, 139°47' W, at ca 900 feet elevation, in white spruce-white birch woods and willow dominated bar.

68. Lower Black Fox. Gravel bar, along Black Fox Creek, at 68°07' N, 139°28' W, at ca 900 feet elevation, in spruce-willow-poplar taiga.

69. Rose Lake. Gravelly north shore of Rose Lake, Old Crow Flats, at 68°06' N, 139°23' W, at 900 feet elevation.

70. Taiga pond. Pond and adjacent taiga-heathland, ca 22 miles south-southwest of Sam Lake, at 68°05' N, 139°05' W, at ca 1000 feet elevation.

71. Black Fox Creek lower. Along Black Fox Creek, ca 13 miles southwest of Sam Lake, at 65°15' N, 138°50' W, at 1100 feet elevation on gravel bar, with cottonwood and willows.

72. Unnamed lake. Small unnamed lake, in Old Crow Flats, ca 16 miles south of Sam Lake, at 65°12' N, 138°49' W, at ca 1200 feet elevation, on humus beach and lake basin margin, with aquatic plants and heath.


74. Nenuokpuk limestone. West side of Blow River Valley, at 65°17' N, 137°50' W, at 2200 feet elevation, in alpine tundra, on Nenuokpuk limestone.

75. Cretaceous mudstone. Head of Blow River, along a creek margin ca 27 miles southeast of Sam Lake, at 65°17' N, 137°17' W, at 1500 feet elevation, in tundra.

76. Old Crow. Along gravel bar and first terrace above Porcupine River at Old Crow, at 67°35' N, 139°50' W, at ca 900 feet elevation, in white spruce woods and riparian vegetation, on alluvium.

77. Old Crow landing strip. Landing strip on river bar, ca 8 miles east of Old Crow, at 67°34' N, 139°32' W, at 900 feet elevation, in willow community.

78. Porcupine River bluff. Bluff west of bend in Porcupine River, ca 31 miles east of Old
Crow, at 67°36' N, 138°38' W, at 100 feet elevation, in spruce woods.


Checklist of Vascular Plants

The following list of plants collected during 1970 is arranged in phylogenetic sequence to the subdivision level and is alphabetically arranged thereafter. Collectors’ names are abbreviated with WR for S. L. Welsh and J. K. Rigby, and Rigby for J. K. Rigby. All specimens are deposited at BRY. A summary of taxa collected is presented at the end of the checklist (Fig. 48). Distribution records were checked against maps published by Hulten (1968) and Porsild (1964). Identifications were made by comparison of specimens collected with keys provided by Hulten and Porsild and with an unpublished manuscript of “Anderson’s Flora of Alaska and adjacent Canada” (Welsh, 1971).

LYCOPSIDA

Lycopodiaceae Clubmoss Family

*Lycopodium selago* L.

Locality ±11, WR 10291, 8 July; ±43, WR 10720, 15 July. Alpine tundra, ridgetops, on slate.

Selaginellaceae Spikemoss Family

*Selaginella sibirica* (Milde) Hieron

Locality ±9, WR 10139a, 1 July; ±41, WR 10297, 8 July. Alpine tundra, ridgetops, on slate.

SPHENOPSIDA

Equisetaceae Horsetail Family

*Equisetum arvense* L.

Locality ±15, WR 70578a, 12 July; ±16, Rigby 34, 23 June; ±59, WR 10051, 30 June; ±77, Rigby 11, 18 June. Gravel bars, and forming vast green patches along moist upland sites.

Fig. 34. South across the south flank of the British Mountains into Old Crow Flats from approximately 68°24' N; 139°16' W near locality 45. Rocks in the foreground are siliceous cherty conglomerate underlying the Kayak Shale, the soft unit which forms the broad valley in the intermediate distance. The light colored ridges beyond the valley and along the margin of Old Crow Flats are in Lisburne Limestone. Old Crow Flats to the south is an area where broad marshes and lakes are extensively developed on Tertiary and Quaternary fill. Alpine tundra dominated by *Betula glandulosa*, Dryas, Loiseleuria, and Empetrum.
Equisetum scirpoides Michx.
Locality #26, WR 10699, 15 July. Gravel bar.

PTEROPSIDA-FILICINEAE
Polypodiaceae Fern Family

Cystopteris fragilis (L.) Bernh.
Locality #17, WR 10557a, 12 July; #19, WR 10550, 12 July; #32, WR 10209, 3 July. On low cliffs and talus slopes, in alpine tundra, on sandstone and limestone. This is the first report of C. fragilis for northern Yukon.

Dryopteris fragrans (L.) Schott.
Locality #33, WR 10389, 9 July. Siliceous conglomerate, in alpine tundra. This is the first record of D. fragrans for northern Yukon.
PTEROPSIDA-GYMNOSPERMAE

Pinaceae Pine Family

**Picea glauca** (Moench) Voss

Locality #16, Rigby 25, 23 June; #60, WR 10046, 30 June; #67, WR 10096, 1 July; #76, WR 10432, 10 July. On terraces, gravel bars, lake shores, and mountain slopes, in taiga and boreal forest. A dominant species.

**Picea mariana** (Mill.) Britt., Sterus., Pogg.

Locality #50, WR 10509, 11 July. Tundra-taiga transition, an Kayak shale. This specimen has only a few hairs along the leaf base and lacks cones. It is tentatively assigned to *P. mariana*, but might represent a hybrid with *P. glauca*.

PTEROPSIDA-ANGIOSPERMAE-DICOLYLEDONEAE

Betulaceae Birch Family

**Alnus crispa** (Ait.) Pursh

var. crispa

Locality #30, WR 10323, 8 July, #36, WR 10194, 3 July; #72, 10654, 13 July. Stream bank and heathland component, widespread.

**Betula glandulifera** (Reg.) Butler

Locality #67, WR 10097, 1 July; #79, Rigby 130b, 26 July. These are shrubs with characteristics intermediate between *B. glandulosa* and *B. papyrifera*. They grow along river banks and bluffs in Old Crow Flat.

**Betula glandulosa** Michx.

var. glandulosa

Locality #8, WR 10147, 1 July; #16, Rigby 27, 40, 23 June, #24, WR 10126, 1 July; #52, WR 10479, 11 July; #65, WR 10301, 8 July; #73, Rigby 54, 24 June. Dwarf birch is abundant in most phases of alpine and arctic tundra and heathlands. In favorable locations it is erect, reaching a height of 2 to 4 feet. In less favorable sites, it is a prostrate spreading shrub.

**Betula papyrifera** Marsh

var. nealaskana (Sarg.) Raup

Locality #67, WR 10095, 1 July; #79, Rigby 130, 134, 26 July. White birch is a component of riparian woods and occurs on bluffs along stream channels in the lower reaches of Old Crow Flat.

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Fig. 36. Southeastward across white spruce woods toward Sam Lake along the north side of Old Crow Flats. The woods are at approximately 68°25' N; 138°40' W. Collecting locality 60 is in the point of woods in the immediate right center, at the edge of the tundra, at an elevation of approximately 1550 feet. Mixed heathland and tussock tundra are in the foreground.
Fig. 37. East up Skidoo Creek at 68°51' N; 140°13' W, east of collecting locality 15. All the rocks immediately visible in the foreground are in the Lisburne Limestone. The valley bottom in the foreground is at an elevation of approximately 1500 feet, with peaks along the skyline at about 2000 feet. White spruce woods, near northern limit of trees along Firth River valley.
Boraginaceae Borage Family

Eretrichium nanum (Vill.) Schrad.

var. aretioides (Cham.) Herder
Locality ±1, WR 10262, 5 July; ±2, WR 10247, 5 July; ±48, WR 10518, 11 July. Alpine tundra and barrens.

var. chamissonis (DC.) Herder
Locality ±3, WR 10176, 1 July; ±4, WR 10226, 4 July; ±23, Rigby 96, 25 June. Alpine tundra and barrens.

Mertensia maritima (L.) S. F. Gray
Locality ±14, WR 10033, 30 June; do, WR 10686, 15 July. Gravelly beaches and spits along the sea coast.

Mertensia paniculata (Ait.) G. Don
ssp. paniculata
Locality ±5, WR 10603, 13 July; ±31, WR 10405, 9 July; ±54, WR 10276, 6 July; ±59, 10062, 30 June. Gravel bars, meadows, and alpine and arctic tundra.

Myosotis sylatica Hoffm.
Locality ±3, WR 10178, 1 July; ±5, WR 10610, 13 July; ±25, WR 10624, 13 July; ±27, Rigby 141, 28 July; ±40, WR 10506, 11 July; ±59, WR 10065, 30 June. Streams gravels, tussock tundra, alpine tundra, and barrens.

Caryophyllaceae Pink Family

Arenaria arctica Stev
Locality ±1, WR 10261, 5 July; ±3 WR 10180, 1 July; ±4, WR 10218, 3 July; ±8, WR 10152, 1 July; ±9, WR 10133, 1 July; ±16, Rigby 71, 24 June; ±17, WR 10558, 12 July; ±32, WR 10211, 3 July; ±42, WR 10293a, 8 July; ±43, WR 10714, 15 July; ±59, WR 10059, 30 June. Ridge tops, alpine slopes, tussock tundra, and stream gravels, common to abundant.

Arenaria laricifolia L.
var. hultenii Welsh
Locality ±46, WR 10378, 9 July; ±55, WR 10068a, 30 June; ±79, Rigby 133, 26 July. Siliceous outcrops and on limestone, in alpine tundra.

var. laricifolia
Locality ±29, WR 10355, 9 July; ±45, WR 10539, 12 July; ±50, WR 10524, 11 July; ±51, WR 10514, 11 July; ±51, WR 10362, 9 July; ±66, Rigby 107, 22 July. Siliceous conglomerates

Fig. 38. Gravel bar at Firth Rock and collecting locality 15 in the foreground. Most of the plants were collected to the right beyond the picture on the frequently covered crest of the gravel bar. White spruce, willow, alder, and dwarf birch dominate the talus slopes.
and quartzites and less commonly on limestones, in alpine tundra.

*Arenaria macrocarpa* Pursh

Locality #29, WR 10744, 15 July (from a rounded, hemispheric clump 3 feet in diameter); #40, WR 10510, 11 July; #41, WR 10293, 8 July; #43, WR 10716, 15 July. Stream gravels and slaty ridge tops.

*Arenaria peploides* L.

var. *peploides*

Locality #14, WR 10032, 30 June; do, WR 10681, 15 July. Sea beach and spit gravels.

*Arenaria physodes* Fisch.

Locality #67, WR 10110, 1 July. Stream gravels and bars.

*Arenaria rossii* R. Br.

var. *elegans* (C. & S.) Welsh

Locality #34, WR 10397, 9 July; #46, WR 10369, 9 July. Alpine tundra, on limestone.

*Arenaria rubella* (Wahl.) Smith

fma. *exilis* (Fern.) Polunin

Locality #9, WR 10141, 1 July. Alpine tundra on Nerukpuk formation.

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Fig. 39. Northwest along Pleistocene beach ridges. The prominent light scar in left center is a graveled beach at approximately 68°12' N; 139°02' W at the eastern shore of a broad lake which occupied Old Crow Flats. Black Fox Creek in the middle distance is lined by spruce. British Mountains rise along the skyline beyond Old Crow Flats. Parkland tundra (taiga) and heathland.
var. rubella
  Locality ±11, WR 10187, 1 July; ±59, WR 10050, 30 June; do, WR 10465, 10 July. Gravel bars, and alpine tundra on Nernokpuk formation.

Arcanaria sajanensis Willd.
  Locality ±64, WR 10642, 14 July. Shrubby, alpine tundra, in a snow flush.

Cerastium beeringianum Cham. & Schl.lect.
  var. beeringianum
  Locality ±12, WR 10453, 10 July; ±44, WR 10367, 9 July; ±59, WR 10053. Alpine tundra on limestone and on gravel bars and braided stream channels.

Cerastium maximum L.
  Locality ±76, WR 10434, 10 July. River terrace alluvium in white spruce woods.

Lychnis alpeta L.
  Locality ±44, WR 10365, 9 July; ±49, WR 10356, 9 July. Alpine tundra, on limestone.

Lychnis fucata (Raf.) Fern
  Locality ±34, WR 10391, 9 July. Alpine tundra, on limestone.

Lychnis triflora R. Br.
  var. dunesouli Robins.
  Locality ±67, WR 10113, 1 July. Gravel bar, in lower Old Crow Flats.

Silene acaulis L.
  var. exscapa (All.) DC.
  Locality ±2, WR 10257, 5 July; ±4 WR 10217, 3 July; do, WR 10241, 4 July; ±5, WR 10615, 13 July (peduncles filiform, to 1.5 cm long); ±6, WR 10169, 1 July; ±37, WR 10092, 30 June. Alpine and arctic tundra, on ridge tops, slopes, and gravel bars, common to abundant.

Silene repens Pers.
  Locality ±31, WR 10401, 9 July; ±66, Rigby 109, 22 July. Gravel bars and tussock tundra.

Stellaria humifusa Rothb.
  Locality ±14, WR 10682, 15 July. Sea beach and spit gravels.

Stellaria longifolia Muhl.
  Locality ±70, WR 10662, 15 July. Pond margin, in taiga.

Stellaria longipes Goldie
  var. alticaulis (Hulten) C.L. Hitchc.
  Locality ±12, WR 10452, 10 July. Gravel bars, in braided arctic stream channel.
  var. edwardsii (R. Br.) Gray
  Locality ±56, WR 10590, 12 July. Gravel bar, in stream channel.

var. lacta (Richards.) Wats.
  Locality ±14, WR 10674, 15 July; ±50, WR 10530, 11 July; ±59, WR 10060, 30 June. Sea beach and spit, alpine tundra, and gravel bars.

var. longipes
  Locality ±5, WR 10612, 13 July; ±29, WR 10730, 15 July; ±67, Rigby 58, 24 June; do, WR 10104, 1 July. Gravel bars.

Compositae Composite Family

Achillea millefolium L.
  ssp. boreale (Bong.) Breitung
  Locality ±26, WR 10706, 15 July; ±29, WR 10736, 15 July; ±69, Rigby 159, 20 July; ±76, WR 10420, 10 July; ±78, Rigby 127, 26 July. River bluffs, terraces, and gravel bars.

Antennaria alpina (L.) Gaertn.
  var. compacta (Malte) Welsh
  Locality ±11, WR 10192, 1 July; ±18, WR 10554, 12 July. Alpine tundra, in siliceous sandstones and slaty shales.

Antennaria monocephala DC.
  Locality ±8, WR 10151, 1 July; ±9, WR 10146a, 1 July; ±40, WR 10641, 14 July. Alpine tundra and heathlands.

Arnica alpina (L.) Olin
  var. angustifolia (Vahl) Fern.
  Locality ±1, WR 10263a, 5 July; ±4, WR 10232, 4 July; ±5, WR 10601, 13 July; ±50, WR 10532, 11 July. Alpine and arctic tundra.

ssp. attenuata (Greene) Maguire
  var. attenuata
  Locality ±12, WR 10447, 10 July; ±33, WR 10379, 9 July; ±25, WR 10621, 13 July; ±54, WR 10273, 6 July. Stream banks, meadows, and bars.

Arnica lousiana Farr.
  var. frigida (C.A. Mey.) Welsh
  Locality ±1, WR 10263, 5 July; ±15, WR 10563, 12 July; ±32, WR 10205, 3 July. Alpine tundra.

Artemisia alaskana Rydb.
  Locality ±26, WR 10700, 15 July. Gravel bar.

Artemisia glomerata Ledeb.
  Locality ±9, WR 10138, 1 July; ±10, Rigby 75, 91, 25 June. Alpine tundra, on Nernokpuk formation and Kayak shale.
Artemisia norvegica Fries

var. conata (Ryd.) Welsh
Locality #12, WR 10446, 10 July; #43, WR 10725, 15 July; #64, WR 10639, 14 July. Gravel bars, and alpine tundra.

Artemisia tilesii Ledeb.

var. unalascensis Besser
Locality #14, WR 10675, 15 July; #26, WR 10701, 15 July; #29, WR 10739, 15 July; #59, WR 10468, 10 July; #67, WR 10106, 1 July; #68, Rigby 157, 20 July; #78, Rigby 126, 26 July. Gravelly sea beaches and spits, and on gravel bars, terraces, and river bluffs.

Aster sibiricus L.

Locality #68, Rigby 156, 20 July; #76, WR 10426, 10 July; #78, Rigby 125, 26 July. River bars, terraces, and bluffs, in Old Crow Flats.

Crepis nana Richards.

Locality #12, WR 10444, 10 July; #15, WR 10570a, 12 July; #16, Rigby 69, 24 June; #19, WR 10552, 12 July; #25, WR 10622a, 13 July; #49, WR 10352, 9 July; #59, WR 10462, 10 July; #67, WR 10105, 1 July. Bars and stream banks and on talus and ridge tops in tundra.

Erigeron acris L.

var. kamtschaticus (DC.) Herder
Locality #65, Rigby 154, 20 July; #71, WR 10496, 11 July. Gravel bars, in Old Crow Flats.

Erigeron humilus Graeb.
Locality #50, WR 10536, 11 July; #51, WR 10515a, 11 July. Kayak shale, in alpine tundra.

Erigeron lonchophyllus Hook.
Locality #22, WR 0713, 15 July. Tussock tundra.

Erigeron purpuratus Greene
Locality #59, WR 10459, 10 July; #71, WR 10500, 1 July. Gravel bars, along streams in Old Crow Flats.

Erigeron yukonensis Rydb.
Locality #34, WR 10390, 9 July; #50, WR 10527, 11 July; #51, WR 10508, 11 July; #66, Rigby 106, 22 July. On Kayak shale, and contact between Shublik and Lisburne limestones in alpine tundra. The specimens do not fit the published description of E. yukonensis exactly. In fact, they closely resemble Aster alpinus var. vienhappeli, but have bright pink purple rays.

Fig. 40. Southwestward across lakes along the west bank of Old Crow River, toward Shaffer Creek drainage. Lakes at the right are at 67°55'N; 139°44'W. The relatively well-drained bank of Old Crow River is toward the east (left). Elevation is approximately 950 feet. Riparian woods of Picea glauca, Salix, and Populus, and heathlands of Betula glandulosa and Salix.
Fig. 41. Parkland tundra near the uppermost limit of trees along Timber Creek at approximately 68°26' N; 139°45' W. Abandoned meanders show along the gravel margin. Exposures of Lisburne Limestone show as the light colored barren area in the upper left. Salix and Picea glauca fringed stream and meander.

Matricaria matricarioides (Les.) Porter
Locality ±76, WR 10435, 10 July. Weed of disturbed sites, at Old Crow.

Petasites frigidus (L.) Fries
var. frigidus
Locality ±24, WR 10124a, 1 July; ±42, WR 10332, 8 July; ±60, WR 10036, 30 June. Meadows, willow thickets, and heathlands.

Saussurea angustifolia (Willd.) DC
var. angustifolia
Locality ±33, WR 10396, 9 July; ±51, WR 10515, 11 July; ±56, WR 10591, 12 July. Siliceous conglomerates in alpine tundra, heathlands, and on gravel bars.

Senecio atropurpureus (Ledebr.) Fedtsch.
var. ulmeri (Steffen) Porsild
Locality ±4, WR 10239, 4 July; ±7, WR 10159, 1 July; ±16, Rigby 68, 24 June; ±34, WR 10204, 3 July; ±40, WR 10644, 14 July; ±57, WR 10078, 30 June; ±60, WR 10044, 50 June. A dominant species in tundra generally. Both ligulate and nonligulate phases are represented.

Senecio congestus (R. Br.) DC.
Locality ±14, WR 10673, 15 July; ±62, WR 10549a, 13 July; ±72, WR 10649, 14 July. Gravelly seashores and spits, and lakes shores.

Senecio fuscatus (Jord. & Fourr.) Hayek
Locality ±9, WR 10142, 1 July; ±43, WR 10721, 15 July. Alpine sparse tundra, on NERUOKPUK formation.

Senecio lugens Hook
Locality ±5, WR 10605, 13 July; ±25, WR 10622, 13 July; ±27, Rigby 143, 28 July; ±29, WR 10737, 15 July; ±50, WR 10529, 11 July; ±54, WR 10284, 6 July; ±59, WR 10473, 10 July; ±67, WR 10108, 1 July; ±71, WR 10495, 11 July. Gravel bars and meadows.

Senecio resedifolius Less.
Locality ±1, WR 10264, 5 July; ±9, WR 10143, 1 July; ±44, WR 10364, 9 July; ±48, WR 10348, 9 July; ±74, Rigby 137, 26 July. Alpine tundra, on limestone, slates, and shales.

Senecio yukonensis Porsild
Locality ±40, WR 10644a, 14 July. Shrubby tundra.

Solidago multiradiata Ait.
Locality ±5, WR 10606, 13 July; ±15, WR 10370, 12 July. Gravel bars and stream banks.
Tanacetum bipinnatum (L.) Schulz-bip
ssp. huronense (Nutt.) Welsh
Locality #76, WR 10424, 10 July; #78, Rigby 123, 26 July. Gravel bars and river terraces, in Old Crow Flats.

Taraxacum ceratophorum (Lede.) DC.
Locality #59, WR 10458, 10 July; #67, WR 10111, 1 July. Gravel bars and river terraces.

Taraxacum lyratum (Lede.) DC.
Locality #2, WR 10245, 5 July; #64, WR 10640, 14 July; ±58, WR 10476, 11 July. Alpine tundra, on Lisburne limestone, Kayak shale, and Jurassic shales.

Crassulaceae Stonecrop Family
Sedum roseum (L.) Scop.
var. integrifolium (Raf.) Berger
Locality ±4, WR 10215, 3 July; ±10, Rigby 81, 25 June. Alpine tundra.

Cruciferae Mustard Family
Alyssum americanum Greene
Locality ±48, WR 10344, 9 July; ±50, WR 10526a, 11 July; ±51, 10513, 11 July. Alpine tundra, on limestone outcrops. These collections represent a northward extension of the range of the species in the Yukon.

Arabis hirsuta Lange
var. pyenocarpa (Hopkins) Rollins
Locality ±67, WR 10101, 1 July; do, Rigby 60, 24 June. River bar. These collections represent the northernmost known limits of this entity in the Yukon.

Barbara orthoceras Lede.
Locality ±67, WR 10102, 1 July; ±69, Rigby 150, 20 July. Lake shores and gravel bars, in Old Crow Flats.

Braya humilis (C.A. Mey.) Robins
ssp. arctica (Buch.) Rollins
Locality ±15, WR 10565, 12 July. Gravel bar, in Firth River. This specimen is apparently the first record of B. humilis for northern Yukon.

Braya purpurascens (RBr.) Bunge
Locality ±50, WR 10345, 9 July. Alpine tundra, on limestone. This specimen is apparently the first record of B. purpurascens for the Yukon.

Cardamine bellidifolia L.
Locality ±42, WR 10322a, 8 July. Snow flush and willow thicket.

Cardamine digitata Richards.
Locality ±11, WR 10191, 1 July; ±13, WR 10692, 15 July; ±14, WR 10687, 15 July; ±34, WR 10202, 3 July; ±57, WR 10076, 30 June; ±64, WR 10641a, 14 July. Tussock and shrubby tundra.

Cardamine microphylla Adams
Locality ±1, WR 10260, 5 July; ±2, WR 10249, 5 July. Alpine tundra, on Kayak shale. This is apparently a new record for the Yukon.

Cardamine pratensis L.
Locality ±62, WR 10223, 4 July. Lake shore.

Cochearia officinalis L.
var. arctica (Schlecht.) Gel.
Locality ±14, WR 10688, 15 July. Sea beaches and spits.

Descurainia sophioides (Fisch.) Schulz
Locality ±14, WR 10670, 15 July; ±76, WR 10425, 10 July. Gravel bars and terraces along rivers, and near an abandoned dwelling along the sea coast.

Draba alpina L.
Locality ±16, Rigby 72, 24 June. Gravelly river bank.

Draba caesia Adams
Locality ±3, WR 10182, 1 July; ±4, WR 10216, 3 July; ±6, WR 10166a, 1 July; ±9, WR 10135, 1 July; ±10, Rigby 79, 25 June; ±48, WR 10341, 9 July. Alpine tundra, in limestone, shales, and slates, and on gravel bars. Common.

Draba cinerea Adams
Locality ±5, WR 10618a, 13 July; ±21, Rigby 115, 25 July; ±34, WR 10395, 9 July; ±73, Rigby 49, 24 June. Alpine tundra, on limestone and sandstone.

Draba glabella Pursh
Locality ±10, Rigby 77, 25 June; ±14, WR 10685, 15 July; ±31, WR 10409, 9 July; ±59, WR 10061, 30 June; ±64, WR 10643, 14 July. Gravel bars along streams, and sea beaches and spits.

Draba lactea Adams
Locality ±2, WR 0254, 5 July; ±4, WR 10238, 4 July; ±17, WR 10562, 12 July; ±19, WR 10544, 12 July; ±32, WR 10210, 3 July; ±44, WR 10363, 9 July; ±64, WR 10636, 14 July. Sandstone, limestone, shales, and slates, in alpine tundra. The specimens cited herein are evidently the first records of this species for northern Yukon.
Draba longipes Raup

Locality #50, WR 10538, 11 July. In tundra-taiga transition at contact between Kayak shale and Lisburne limestone.

Erysimum chieranthoides L.

Locality ±68, Rigby 158, 20 July; ±78, Rigby 129, 26 July. Gravel bars and stream terraces, in Old Crow Flats.

Erysimum inconspicuum (Wats.) MacM.

Locality ±25, WR 10623, 13 July; ±26, WR 10698, 15 July. Gravel bars, along arctic streams. These specimens are apparently the first record of this species for northern Yukon.

Erysimum pallasii (Pursh) Fern.

Locality ±10, Rigby 74, 25 June; ±12, WR 10443, 10 June; ±31, WR 10402, 9 July; ±50, WR 10353, 9 July; ±59, WR 10049, 30 June; do, WR 10464, 10 July. Gravel bars, and alpine tundra.

Lesquerella arctica (Wormskj.) Wats.

Locality ±16, Rigby 64, 24 June; ±37, WR 10051, 30 June. Alpine tundra, on Triassic rocks, and on gravelly river bank.

Parrya nudicaulis (L.) Reg.


Rorippa islandica (Oed.) Borbas

var. hispida (Desv.) Butters & Abbe

Locality ±70, WR 10663, 15 July; ±72, WR 10655, 14 July; ±76, WR 10430, 10 July. Lake shores, gravel bars, and river terraces.

Smelowskia borealis (Greene) Drury & Rollins

Locality ±17, WR 10556a, 12 July. Talus slope, on limestone. This specimen represents a range extension eastward and northward from previous records.

Smelowskia calycina (Steph.) C. A. Mey.

var. media Drury & Rollins

Locality ±2, WR 10243, 5 July; ±4, WR 10213, 3 July; ±6, WR 10167, 1 July; ±7, WR 10154, 1 July; ±8, WR 10149, 1 July; ±9, WR 10140, 1 July; ±10, Rigby 90, 25 June; ±16, Rigby 62, 24 June; ±24, WR 10125, 1 July; ±41.

Fig. 42. Black Fox Creek at the margin of Old Crow Flat looking toward the southwest from approximately 68°15' N; 138°76' W. Pinus glauca woods, margined with Salix, Betula papyrifera, and Populus.
Reconnaissance

Elaeagnaceae Oleaster Family

Shepherdia canadensis (L.) Nutt.

Locality #59, WR 10052, 30 June; #68, Rigby 100, 20 July. Gravel bars, along stream courses.

Empetraceae Crowberry Family

Empetrum nigrum L.

var. hermaphroditicum (L.ge.) Sor.

Locality #36, WR 10199, 3 July; #65, WR 10300, 8 July. A dominant in tussock tundra and heathlands. This is evidently the first report of E. nigrum for northern Yukon.

Eriaceae Heath Family

Andromeda polifolia L.

Locality #60, WR 10045, 30 June; #62, WR 10031a, 30 June. Lake shores, heathlands, and taiga.

Arctostaphylos alpina (L.) Spreng

Locality #5, WR 10618, 13 July; #7, WR 10161, 1 July; #15, WR 10564, 12 July; #25, WR 10628a, 13 July; #73, Rigby 47, 24 June. A dominant species in tussock tundra and on ridges and slopes in alpine tundra, and along stream courses.

Cassiope tetragona (L.) D. Don

var. tetragona

Locality #1, WR 10269, 5 July; #10, Rigby 82, 25 June; ±16, Rigby 24, 25 June; #22, WR 10331, 8 July; ±55, WR 10070, 30 June; ±60, WR 10041, 30 June; ±73, Rigby 53, 24 June. Alpine tundra, heathland, and taiga. A dominant common species.

Ledum decumbens (Ait.) Lod.

Locality #30, WR 10319, 8 July; #55, WR 10071, 30 June; ±60, WR 10044b, 30 June; ±73, Rigby 57, 24 June. Woodlands, lake shores, stream banks, and deltas.

Loiseleuria procumbens (L.) Desv.

Locality #39, WR 10129, 1 July; #47, WR 10359, 9 July; ±73, Rigby 45, 24 June. Poor tundra on siliceous conglomerates, sandstone, and shale.

Rhododendron lapponicum (L.) Wahl

Locality #5, WR 10604, 13 July; #6, WR 10166, 1 July; ±16, Rigby 15, 21, 29, 23 June; ±37, WR 10083, 30 June; ±60, WR 10042, 30 June; ±73, Rigby 52, 24 June. Tundra, heathland, and taiga, widespread and common.

Vaccinium uliginosum L.

Locality #7, WR 10160, 1 July; ±36, WR 10201, 3 July; ±62, WR 10024, 30 June. A dominant species in tussock tundra, heathlands, and taiga.

Vaccinium vitis-idaea L.

Locality #63, WR 10306, 8 July. Shrubby tundra and taiga.

Gentianaceae Gentian Family

Gentianella propinqua (Richards.) Gillette

Locality #26, WR 10704, 15 July. Gravel bar. Evidently rare.

Haloragaceae Watermilfoil Family

Hippuris vulgaris L.

Locality ±62, WR 10313, 8 July. Emergent in lake margin.

Leguminosae Legume Family

Astragalus alpinus L.

Locality #12, WR 10449a, 10 July; #16, Rigby 14, 23 June; ±29, WR 10732a, 15 July; ±36, WR 10203, 3 July; ±59, WR 10461, 10 July; do, WR 10047, 30 June; ±67, Rigby 61, 24 June. Tussock tundra and gravel bars. Widespread and locally common.

Astragalus australis (L.) Lam.

Locality #3, WR 10175, 1 July; #12, WR 10440, 10 July; ±15, WR 10580, 12 July; ±32, WR 10207, 3 July; ±37, WR 10050, 30 June. Ridge tops, on limestone or sandstone, and on river gravels on the north slope.

Astragalus bodinii Shield.

Locality ±59, WR 10047a, 30 June; do, WR 460, 10 July. Gravel bar, along Dog Creek. This report is apparently the first record of A. bodinii from Northern Yukon.

Astragalus umbellatus Bunge

Locality ±4, WR 10234, 4 July; ±37, WR 10091, 30 June; ±59, WR 10057, 30 June. Alpine tundra and stream gravels.

Hedysarum alpinum L.

Locality ±1, WR 10270, 5 July; ±5, WR 101
10613, 13 July; #34, WR 10388; #48, WR 10520, 11 July; #51, WR 10516, 11 July; #54, WR 10277, 6 July; #67, Rigby 59, 24 June; do, WR 10116, 1 July; #76, WR 10418, 10 July; #78, Rigby 128, 26 July. Alpine tundra, on shale and limestone, and on gravel bars, stream banks and terraces, and meadows. Widespread and common. Both the dwarf alpine phase and the tall woodland phases are represented and also the intermediates between them.

*Hedysarum boreale* Nutt.
ssp. *mackenzii* (Richards.) Welsh

Locality #1, WR 1027a, 5 July; #12, WR 10439, 10 July; #18, Rigby 120, 25 July; #27, WR 10712, 15 July; #32, WR 10207, 3 July; #37, WR 10082, 30 June; #48, WR 10346, 9 July; #50, WR 10523, 11 July; #51, WR 10507, 11 July; #59, WR 10048, 30 June; do, WR 10467, 10 July; #67, WR 10099, 10115, 1 July. Alpine tundra on shale, limestone, and sandstone, and
on gravel bars and terraces. Widespread and locally common. There is a dwarf alpine phase in this species also, and it is likewise connected by a series of intermediates to the more robust streamside phase.

_Lupinus arcticus_ Wats.

Locality ±2, WR 10256, 5 July; ±8, WR 10148, 1 July; ±11, WR 10184, 1 July; ±12, WR 10445, 10 July; ±15, WR 10693, 15 July; ±16, Rigby 43, 23 June; ±24, WR 10119, 1 July; ±29, WR 10740, 15 July; ±59, WR 10063, 30 June; ±59, WR 10066, 30 June; ±62, WR 10026, 30 June; ±65, WR 10303, 8 July; ±77, WR 6, 18 June. Alpine tundra and heathlands on sandstone, shale, and limestone, and on stream gravel and tussock tundra. Widespread.

_Oxytropis arctica_ R. Br.

Locality ±12, WR 10448, 8 July; ±35, WR 10221, 3 July; ±48, WR 10340, 9 July. The latter two specimens are more or less depauperate alpine phases from limestone ridge tops, the first listed is a more typical plant from river gravels. These specimens apparently represent the first report of _O. arctica_ from the Yukon since its initial collection in 1906 on Herschel Island by Lindstrom.

_Oxytropis campestris_ (L.) DC.

**var. jordalii** (Porsild) Welsh

Locality ±15, WR 10572, 12 July; ±59, WR 10455, 10 July. Gravel bars. Both specimens were collected from polychrome-flowered populations. The latter were pink in the field and have faded bright blue-purple as the specimens dried. The combination of small flowers, few flowered racemes, and few leaflets (17 or less) per leaf serve to unite these specimens with var. _jordalii_. This is the second know report of var. _jordalii_ from the Yukon.

**var. varians** (Rydb.) Barneby

Locality ±50, WR 10526, 11 July; ±68, Rigby 160, 20 July; ±71, WR 10494, 11 July. The first specimen cited is a dwarf alpine phase, the latter two are typical of the stream phase of var. _varians_.

_Oxytropis deflexa_ (Pallas) DC.

**var. foliolosa** (Hook.) Barneby

Locality ±59, WR 10058, 30 June; do, WR 10454, 10 July. Gravel bars. This is the first known report of _O. deflexa_ for northern Yukon.

_Oxytropis maydelliana_ Trautv.

Locality ±1, WR 10266, 5 July; ±32, WR 10206, 3 July; ±34, WR 10494, 9 July; ±36, WR 10200, 3 July; ±37, WR 10089, 30 June; ±46, WR 10585, 12 July; ±51, WR 10513a, 11 July; ±54, WR 10282, 6 July; ±59, WR 10457, 10 July. Alpine tundra, on shale, slate, schist, and limestone, and gravel bars, tussock tundra and heathlands. Widespread and locally abundant.

_Oxytropis nigrescens_ (Pallas) DC.

**var. nigrescens**

Locality ±3, WR 10177, 1 July; ±7, WR 10153, 1 July; ±9, WR 10139, 1 July; ±16, Rigby 16, 24 June; ±23, Rigby 94, 25 June; ±37, WR 10084, 30 June; ±43, WR 10719, 15 July; ±44, WR 10366, 9 July; ±59, WR 10456, 10 July. Ridge tops, on limestone, sandstone, granite, shales and slates, and on stream gravels.

_Oxytropis viscosa_ Nutt.

Locality ±3, WR 10173, 1 July; ±6, WR 10165, 1 July; ±12, WR 10441, 10 July. Gravel bars, along arctic streams, and on limestone ridge tops. This is the first report of a viscid oxytrope for northern Yukon.

_Lentibulariaceae_ Bladderwort Family

_Pinguicula vulgaris_ L.

Locality ±15, WR 10569, 12 July; ±52, WR 10483, 11 July. Wet pond margin and river bank. This is the first apparent report of _P. vulgaris_ for northern Yukon.

_Utricularia intermedia_ Hayne

Locality ±52, WR 10482, 11 July. Emergent, in shallow pond. This is the first report of _U. intermedia_ for northern Yukon.

_Menyanthaceae_ Buckbean Family

_Menyanthes trifoliata_ L.

Locality ±52, WR 10486, 11 July. Emergent, in shallow ponds in Old Crow Flats.

_Nymphaeaceae_ Waterlily Family

_Nuphar polysepalum_ Engelm.

Locality ±52, WR 10477, 11 July. Lakes, in Old Crow Flats.

_ONAGRACEAE_ Evening-primrose Family

_Epilobium angustifolium_ L.

Locality ±3, Rigby 113, 24 July; ±69, Rigby 148, 20 July; ±76, WR 10666, 15 July; ±76, WR 10429, 10 July. Gravel bars, stream terraces, and lake and pond margin.

_Epilobium latifolium_ L.

Locality ±5, WR 10605, 13 July; ±12, WR 10442, 10 July; ±25, WR 10626, 13 July; ±26,
10705, 15 July; ±31, WR 10400, 9 July; ±68, Rigby 153, 20 July. Stream and river gravels.

_Epilobium palustre_ L.

var. lapponicum Wahl.
Locality ±70, WR 10668, 15 July; ±10658, 14 July. Lake margins.

Orobanchaceae Broomrape Family

_Boschniakia rossica_ (C. & S.) Fedtsch.
Locality ±28, Rigby 114, 24 July. In shrubby tundra. This is the most northern record of _B. rossica_ for the Yukon.

Papaveraceae Poppy Family

_Papaver radicatum_ Rottb.
Locality ±2, WR 19242, 5 July; ±4, WR 10227, 10228, 4 July; ±5, WR 10614, 13 July; ±18, WR 10556, 12 July; ±21, Rigby 118, 25 July; ±22, WR 0708, 15 July; ±50, WR 10533, 11 July; ±53, Rigby 112, 22 July. Ridge tops and talus slopes, on limestone, shale, and slate, and less commonly in tussock tundra.

Plantaginaceae Plantain Family

_Plantago canescens_ Adams
Locality ±76, WR 10419, 10 July; ±77, Rigby 12, 18 June. River terraces and gravel bars.

Polemoniaceae Phlox Family

_Phlox sibirica_ L.

var. borealis (Wherry) Welsh
Locality ±1, WR 10259, 5 July; ±3, WR 10181, 1 July; ±9, WR 10134, 1 July; ±10, Rigby 88, 89, 25 June; ±22, WR 10710a, 15 July; ±35, WR 10219, 3 July; ±37, WR 10090, 30 June; ±48, WR 10342, 9 July. Ridge tops, on limestone, shale, slate, and sandstone, in tundra. This is the first report of _P. sibirica_ for northern Yukon.

_Polemonium boreale_ Adams
Locality ±2, WR 10250, 5 July; ±3, WR 10172, 1 July; ±4, WR 10237, 4 July; ±16, Rigby 13, 23 June; ±25, WR 10625, 13 July; ±26, WR 10703, 15 July; ±27, Rigby 142, 28 July. Alpine tundra, on shale, slate, and limestone, and on river bars.

_Polemonium caeruleum_ L.

var. villosum (Rud.) Brand
Locality ±5, WR 10600, 13 July; ±14, WR 10669, 15 July; ±29, WR 10729, 15 July; ±33, WR 10385, 9 July; ±42, WR 10338, 8 July.

Heathlands, willow thicket, and meadows, on gravel bars, beaches, and spits.

Polygonaceae Buckwheat Family

_Polygonum alpinum_ All.

ssp. alaskanum (Small) Welsh
Locality ±29, WR 10734, 15 July; ±69, Rigby 151, 20 July; ±76, WR 10428, 10 July; ±79, Rigby 132, 26 July. Gravel bars, terraces, and river bluffs and lake shores, in Old Crow Flat, and northward along the Blow River almost, or quite, to the coast. These are the first records of _P. alpinum_ from northern Yukon.

_Polygonum bistorta_ L.

ssp. plumosum (Small) Hulten
Locality ±5, WR 10620, 13 July; ±31, WR 10410, 9 July; ±39, WR 10127, 1 July; ±40, WR 10502, 11 July; ±42, WR 10326, 8 July; ±50, WR 10528a, 11 July; ±56, WR 10592, 12 July; ±57, WR 10072a, 30 June; ±60, WR 10064. Meadows, tussock tundra, stream gravels, and taiga. Broadly distributed, common.

_Rumex arcticus_ Trautv.
Locality ±42, WR 10337, 8 July; ±62 WR 10596, 13 July; ±70, WR 10667, 15 July. Stream banks, and lake and pond margins. Uncommon.

Primulaceae Primrose Family

_Androsace chamaejasme_ Host.

ssp. lehmanni (Spreng.) Hulten

_Dodocateon frigidum_ Cham. & Schlechtt.
Locality ±4, WR 10230, 4 July; ±39, WR 10128, 1 July; ±50, WR 10534, 11 July; ±54, WR 10250, 6 July; ±57, WR 10079, 30 June. Meadows, stream banks, and snow flushes.

_Douglasia arctica_ Hook.
Locality ±29, WR 10742, 15 July; ±41, WR 10295, 8 July; ±43, WR 10718. Slaty ridge tops, in Neruokpuk formation and on gravel bars. Specimens on gravel bars grow in rounded, hemispheric clumps, those on ridge in depressed-pulvinate mats.

_Douglasia ochotensis_ (Willd.) Hulten
Locality ±4, WR 10240, 4 July; ±9, WR 10137, 1 July; ±17, WR 10559, 12 July. Slaty ridge tops in Neruokpuk formation, and on Lisburne limestone. This is the first report apparent of _D. ochotensis_ in northern Yukon.
Pyrolaceae Wintergreen Family

_Aconitum delphinifolium_ DC.

var. _delphinifolium_

Locality ±5, WR 10902, 13 July; ±27, Rigby 190, 28 July. Stream gravels.

_Aemone drummondii_ Wats.

Locality ±2, WR 10264, 5 July; ±4, WR 10218a, 3 July; ±6, WR 10168a, 1 July; ±10, Rigby 87, 25 June; ±48, WR 10347, 9 July. Alpine tundra, on limestone, slate, and shale, and on gravel bars along arctic streams.

_Aemone parviflora_ Michx.


_Aemone patens_ L.

Locality ±5, WR 10607, 13 July; ±37, WR 10085, 30 June; ±44, WR 10389, 9 July; ±73, Rigby 40, 24 June. Alpine tundra, on sandstone, shale and limestone outcrops.

_Aemone richardsonii_ Hook.

Locality ±3, WR 10411, 9 July; ±42, WR 10334, 8 July. Thickets and meadows, along streams.

_Caltha palustris_ L.

var. _arctica_ (R. Br.) Huth.

Locality ±6, WR 10168, 1 July; ±62, WR 10028a, 30 June. Pond and stream margins. Uncommon.

_Delphinium glaucum_ Wats.


_Ranunculus hyperboreus_ Rothb.

Locality ±14, WR 10672, 15 July; ±72, WR 10652, 14 July. Pond and lake margins and muddy shores.

_Ranunculus lapponicus_ L.

Locality ±30, WR 10321, 8 July. Moist willow-grass-cottongrass community. Uncommon.

_Ranunculus nivalis_ L.

Locality ±19, WR 10545, 12 July; ±42, WR 10333, 8 July; ±64, WR 10637, 14 July. Snow flushes, in alpine tundra, heathlands, and willow thickets. Locally common.

_Ranunculus pallasii_ Schlecht.

Locality 62, WR 10594, 13 July. Boggy area, adjacent to Sam Lake. Uncommon.

_Ranunculus pygmaeus_ Wahl.

Locality ±42, WR 10329, 8 July; ±50, WR 10535, 11 July; ±64, WR 10635, 14 July. Snow flushes, in alpine tundra, heathlands, and willow thickets. Locally common.

_Ranunculus turneri_ Greene

Locality ±40, WR 10505, 11 July; ±59, WR 10055, 30 June; do, WR 10463, 10 July; ±64, WR 10633, 14 July. Gravel bars and thickets. Locally common.

_Rubiaceae Madder Family

_Galium trifidum_ L.

var. _trifidum_

Locality ±72, WR 10653, 14 July. Lake shore. Uncommon.

_Rosaceae Rose Family

_Dryas integrifolia_ Vahl

var. _integrifolia_

Locality ±6, WR 10164, 1 July; ±16, Rigby 18, 36, 39, 23 June; do, Rigby 63, 24 June; ±57, WR 10076a, 30 June; ±60, WR 10044a, 30 June. Tundra, heathlands, and taiga. A dominant species.

_Dryas octopetala_ L.

var. _kamtschatica_ (Juz.) Hulten

Locality ±5, WR 10616, 13 July; ±7, WR 10159, 1 July; ±33, WR 10383, 9 July; ±55, WR 10067a, 30 June; ±57, WR 10077, 30 June. Alpine tundra and meadows, on limestone, shale, siliceous conglomerates, and slate. A dominant species.

var. _octopetala_

Locality ±10, Rigby 85, 25 June; ±73, Rigby 46, 24 June. Alpine tundra. These records are apparently the first for _D. octopetala_ from northern Yukon.

_Geum glaucum_ Adams

Locality ±2, WR 10244, 5 July; ±4, WR 10229, 4 July; ±10, Rigby 83, 25 June. Alpine tundra, on slate and shale.
Fig. 44. West along the shoreline from King Point at approximately $69^\circ 07'\ N;\ 138^\circ 00'\ W$. The seachlift is in soft sediments with considerable permafrost ice showing in some of the deeper gullies. The cliff rises approximately 150 feet above the ice-covered Beaufort Sea to the right. Arctic tundra, heathland, and maritime habitat.

*Potentilla anserina* L.

var. *ansaerina*

Locality $\pm 76$, WR 10527, 10 July. River bars and terraces. This is the first evident report of *P. anserina* for northern Yukon.

*Potentilla biflora* Willd.

Locality $\pm 5$, WR 10617, 13 July; $\pm 19$, WR 10551, 12 July; $\pm 46$, WR 10584, 12 July; $\pm 48$, WR 10519, 11 July; $\pm 53$, Rigby 111, 22 July; $\pm 74$, Rigby 135, 26 July. Alpine and arctic tundra, on limestone and slate.

*Potentilla elegans* Cham. & Schlecht.

Locality $\pm 10$, Rigby 78, 25 June; $\pm 18$, WR 10555, 12 July; $\pm 20$, WR 10543, 12 July. Alpine
tundra, on siliceous conglomerate and sandstone. This is the first report of *P. elegans* for northern Yukon.

**Potentilla fruticosa** L.

Locality ±5, WR 10619, 13 July; ±15, WR 10566, 12 July; ±12, WR 10711, 15 July; ±48, WR 10521, 11 July; ±50, WR 10531, 11 July; ±52, WR 10481, 11 July. Taiga, heathland, and tundra. Widespread, and locally common.

**Potentilla hookeriana** Lehm.

Locality ±5, WR 0611, 13 July; ±25, WR 10627, 13 July; ±33, WR 10381, 9 July; ±50, WR 10525, 11 July. Alpine tundra, and along streams on gravel.

**Potentilla norvegica** L.

Locality ±69, Rigby 149, 20 July. Lake shore. This is the first report of *P. norvegica* from northern Yukon.

**Potentilla palustris** L.

Locality ±61, WR 10289, 7 July; ±70, WR 10659, 15 July; ±72, WR 10656, 14 July. Lake shores, pond margins, and wet heathlands.

**Potentilla uniflora** Ledeb.

Locality ±1, WR 19272, 5 July; ±9, WR 1013, 1 July; ±10, Rigby 86, 25 June; ±48, WR 10343, 9 July; ±55, WR 10068, 30 June; ±73, Rigby 44, 24 June. Alpine tundra, on sandstone, shale, limestone, and slate. Locally abundant.

**Rosa acicularis** Lindl.

var. *bougeiana* Crepin

Locality ±67, WR 10094, 1 July; ±68, Rigby 155, 20 July. Gravel bars, terraces, and bluffs.

**Rubus chamaemorus** L.

Locality ±40, WR 10505a, 11 July; ±60, WR 10039, 30 June. Heathland and taiga.

**Spiraea beauverdiana** Schneid.

Locality ±29, WR 10735, 15 July; ±79, Rigby 131, 26 July. Gravel bars and gravelly slopes. This is the first report of *S. beauverdiana* for northern Yukon.

**Salix alaxensis** (Anderss.) Cov.

var. *alaxensis*

Locality ±6, WR 10162, 1 July; ±24, WR 10118, 1 July; ±36, WR 10193, 3 July; 68, Rigby 99, 20 July; ±77, Rigby 21, 18 June. River and stream bars and terraces and lake shores. A dominant species in the plant community along drainages throughout the region; the tree willow of the arctic.

var. *longistylis* (Rydb.) Schneid.

Locality ±77, Rigby 3, 18 June. River bar.

**Salix arctica** Pallas

Locality ±57, WR 10075, 30 June. Meadow, in alpine tundra.

**Salix brachycarpa** Nutt.

ssp. *niphooclada* (Rydb.) Argus

Locality ±6, WR 10163, 1 July; ±11, WR 10188, 1 July; ±13, WR 10694, 15 July; ±31, WR 10409, 9 July; ±36, WR 10196, 3 July; ±50, WR 10357, 9 July; ±59, WR 10064, 30 June. Alpine tundra on limestone, and arctic tundra on slate, and in tussock tundra, and on gravel bars along streams and lake shores. This entity is a dominant shrub in all major arctic plant communities.

**Salix candida** Flugge

Locality ±52, WR 10478, 11 July. Lake margin, in wet taiga. This is the first record of *S. candida* for northern Yukon.

**Salix chaminononis** Anderss.

Locality ±42, WR 10339, 8 July. Snow flush and meadow adjacent to willow thicket. Apparently this is the first record of *S. chaminononis* for the Yukon.

**Salix fuscescens** Anderss.

Locality ±62, WR 10028, 30 June. Stony pavement beach of Sam Lake.

**Salix glauca** L.

var. *acutifolia* (Hook.) Schneid.

Locality ±1, WR 10271, 5 July; ±5, WR 10510, 11 July; ±15, WR 10581, 12 July; ±30, WR 10324, 8 July; ±36, WR 10196a, 3 July; ±52, WR 10664, 15 July; ±60, WR 10038, 30 June; ±67, WR 10107, 1 July. Lake margins, stream banks, terraces and gravel bars in tundra, heathland, and taiga. Widely distributed, common, and dominant in several plant communities.

**Salix hastata** L.

Locality ±6, WR 10163a, 1 July; ±15, WR 10567, 12 July; ±25, WR 10629, 13 July; ±37, WR 10404, 9 July; ±54, WR 10275, 6 July; ±67,
WR 10109, 1 July. Gravel bars, stream banks, and terraces. This is the first report of *S. novaesangiiae* for northern Yukon.

*Salix lanata* L.

ssp. *richardsonii* (Hook.) Skvortsov

Locality #6, WR 10162a, 1 July. Gravel bar.

*Salix phlebophylla* Anderss.

Locality #8, WR 10150, 1 July; #9, WR 10145, 1 July; #25, WR 10631, 13 July; #40, WR 10501a, 11 July; #55, WR 10067, 30 June. Alpine tundra, on shale, ancient beaches, and alluvium. Widespread, and locally abundant.

*Salix planifolia* Pursh

ssp. *pulchra* (Cham.) Argus var. *pulchra*

Locality #11, WR 10189, 1 July; #24, WR 10121, 1 July; #30, WR 10322, 8 July; #36, WR 10195, 3 July; #62, WR 10023, 10027, 30 June; #64, WR 10635, 14 July. Lake shores, drainages, deltas, and shrubby tundra. A dominant species.

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Fig. 45. Southeast along the spit at King Point along the shore of the Beaufort Sea at approximately 69°07' N; 137°58' W. The Richardson Mountains form the faint hills along the skyline. Major large logs in the foreground are principally conifers brought down the Mackenzie River from forests in the Northwest Territories and British Columbia to the south. Collecting locality 14.
Salix reticulata L.

Locality ±16, Rigby 28, 23 June. River bank, in gravel, and in alpine tundra.

Saxifragaceae Saxifraga Family

Boytinia richardsonii Hook.

Locality #1, WR 10258, 5 July; #4, WR 10231, 4 July; #5, WR 10597, 13 July; ±31, WR 10399, 9 July; ±46, WR 10582, 12 July. Slopes and ridges, in alpine tundra, on slate, shale, and limestone.

Chrysosplenium tetrandrum (Lund) Fries

Locality ±72, WR 10657, 14 July. Lake shore.

Chrysosplenium wrightii Franch. & Sav.

Locality ±2, WR 10255, 5 July. Alpine tundra, on Kayak shale.

Parnassia kotzebuei Cham.

Locality ±67, WR 10114, 1 July. Gravel bar.

Parnassia palustris L.

var. neogaea Fern.

Locality ±15, WR 10571, 12 July; ±21, Rigby 117, 25 July; ±53, Rigby 110, 22 July. On limestone in alpine tundra, and with willows on gravel bars.

Saxifraga bronchialis L.

var. purpuracmaculata Hulten

Locality #43, WR 10724, 15 July. Alpine tundra, on Nernokpuk formation. Evidently uncommon.

Saxifraga cernua L.

Locality ±14, WR 10671, 15 July; ±62, WR 10224, 4 July. Lake shores, and gravels along sea shores.

Saxifraga caespitosa L.

Locality ±17, WR 10557, 12 July; ±19, WR 10548, 12 July. Snow flushes, cliffs, and talus slopes, on Lisburne limestone. This is the first record of S. caespitosa for northern Yukon.

Saxifraga davurica Willd.

var. grandiflora (Engler & Irmscher) Welsh

Locality ±2, WR 10251, 5 July; ±10236, 4 July. Alpine tundra, on shale and slate.

Saxifraga eschscholtzii Sternb.

Locality ±4, WR 10213, 3 July. Alpine tundra, on Nernokpuk slate. This is the first record of S. eschscholtzii for the Yukon.

Saxifraga exilis Steph.

Locality ±31, WR 10406, 9 July. Steep slope, with willows, on Jurassic Kingak shale.

Saxifraga flagellaris Willd.

var. flagellaris

Locality ±9, WR 10136, 1 July; ±47, Rigby 108, 22 July. Alpine tundra, on slate, shale, and limestone. This is the first record of S. flagellaris for northern Yukon.

Saxifraga hirculus L.

Locality ±22, WR 10707, 15 July. Meadow, along Bear Creek. Evidently uncommon.

Saxifraga oppositifolia L.

Locality ±23, Rigby 95, 25 June; ±44, WR 10376, 9 July. Alpine tundra, on granite and limestone.

Saxifraga punctata L.

var. nelsoni (D. Don) Macoun

Locality ±4, WR 10238a, 4 July; ±11, WR 10185, 1 July; ±14, WR 10669a, 15 July; ±31, WR 10407, 9 July; ±36, WR 10197, 3 July; ±37, WR 10056, 30 June; ±40, WR 10503, 11 July; ±42, WR 10336, 8 July. A dominant species in tussock and shrubby tundra over a series of geological formations.

Saxifraga reflexa Hook.

Locality ±1, WR 10265, 5 July; ±2, WR 10252, 5 July; ±3, WR 10179, 1 July; ±9, WR 10144, 1 July; ±16, Rigby 70, 24 June; ±17, WR 10561, 12 July; ±19, WR 10549, 12 July; ±37, WR 0093, 30 June; ±43, WR 10717, 15 July. Alpine tundra, on slate, shale, and limestone, and on stream banks.

Saxifraga rivularis L.

var. rivularis

Locality ±42, WR 10328, 8 July. Snow flush, along a mossy bank.

Saxifraga serpyllifolia Pursh

Locality ±2, WR 10253, 5 July. Alpine tundra, on Kayak shale.

Saxifraga tricuspidata Rottb.

Locality ±1, WR 10268, 5 July; ±9, WR 10132, 1 July; ±21, Rigby 116, 25 July; ±35, WR 10220, 3 July; ±42, WR 10325, 8 July; ±48, WR 10358, 9 July; ±51, WR 10512, 11 July; ±55, WR 10069, 30 June; ±65, WR 10298, 1040b, 8 July; ±73, Rigby 48, 24 June; ±74, Rigby 136, 26 July; ±75, Rigby 146, 26 July. A dominant species in alpine tundra, in several communities.

Scrophulariaceae Figwort Family

Castilleja elegans Malte

Locality ±78, Rigby 122, 26 July. Gravelly bluff.
Castillepa hyperborea Pennell

Locality ±22, WR 10710, 15 July; ±37, WR 10088a, 30 June; ±43, WR 10723, 15 July; ±44, WR 10373, 9 July; ±46, WR 10583, 12 July; ±47, Rigby 105, 22 July; ±58, WR 10447, 11 July. Alpine tundra ridge tops, on limestone, sandstone, slate, and shale. Locally common.

Castilleja pallida (L.) Spreng.

ssp. caudata Pennell

Locality ±13, WR 10695, 15 July; ±15, WR 10573, 12 July; ±31, WR 10403, 9 July; ±54, WR 10274, 6 July; ±59, WR 10056, 30 June; do, WR 10466, 10 July; ±67, WR 10100, 1 July. Gravel bars, terraces, and bluffs, and less commonly in tundra.

Castilleja raupii Pennell

Locality ±70, WR 10665, 15 July. Pond margin, in heath-taiga vegetation. Apparently, this is a new record for northern Yukon.

Lagotis glauca Gaertn.

Locality ±3, WR 10170, 1 July; ±4, WR 10235, 4 July; ±10, Rigby 93, 25 June; ±11, WR 10183, 1 July; ±24, WR 10124, 1 July; ±37, WR 0088, 30 June; ±57, WR 10073, 30 June; ±62, WR 10029, 30 June. Meadows, lake margins, tussock tundra, and ridge tops, on shale, slate, and limestone.

Pedicularis capitata Adams

Locality ±1, WR 10267, 5 July; ±3, WR 10174, 1 July; ±7, WR 10155, 1 July; ±11, WR 10186, 1 July; ±13, WR 10691, 15 July; ±30, WR 10320, 8 July; ±37, WR 10087, 30 June; ±50, WR 10528, 11 July; ±57, WR 10281, 6 July; ±62, WR 10030a, 30 June; ±65, WR 10299, 8 July. Tussock tundra, meadows, and deltas, on sandstone, shale, limestone, slate, and alluvium. Common. A dominant species.

Pedicularis kanei Durand

Locality ±1, WR 10272a, 5 July; ±16, Rigby 17, 32, 23 June; do, Rigby 67, 24 June; ±44, WR 10372, 9 July; ±57, WR 10072, 30 June. Alpine tundra and with willows along stream banks.

Pedicularis labradorica Wirsing

Locality ±33, WR 10382, 9 July; ±47, WR 10360, 9 July; ±48, WR 10520a, 11 July; ±52, WR 10480, 11 July; ±60, WR 10040, 30 June; ±61, WR 10288, 7 July; ±65, WR 10302, 8 July.

Fig. 46. Elf icefield along the headwaters of Canoe River. Kayak Shale forms the low dark exposures along the river and is capped by light colored Lisburne Limestone. Cretaceous rocks form the steeply dipping cuestas along the skyline in the background. As ice field melts, willows encased in it grow leaves, produce flowers, and fruit. Tussock tundra and heathlands.
Tussock tundra, heathlands, and taiga, and alpine tundra on ridge tops and rock stripes, on siliceous conglomerate, limestone, and sandstone.

**Pedicularis langsdorffii** Fisch.

Locality ±13, WR 10690, 15 July; ±14, WR 10684, 15 July; ±24, WR 10125, 1 July; ±30, WR 10316, 8 July; ±57, WR 10283, 6 July; ±62, WR 10025, 30 June; ±63, WR 10309, 8 July; ±64, WR 10634, 14 July; ±65, WR 10304, 8 July. Lake shores, heathlands, wet meadows, tussock tundra, stream banks, deltas, and spits.

**Pedicularis oederi** Vahl.


**Pedicularis sudetica** Willd.

var. bicolor Walpers

Locality ±14, WR 10683, 15 July; ±30, WR 10317, 8 July; ±60, WR 10043, 30 June; ±62, WR 10222, 10222a, 4 July; ±63, WR 10308, 5 July. Lake shores, stream banks, and deltas, in heathland, tundra, and taiga.

var. gymnocephala Trautv.

Locality ±52, WR 10488, 11 July. Wet heathland, in taiga. This is the first report of these two varieties for northern Yukon.

**Pedicularis verticillata** L.

Locality ±15, WR 10568, 12 July. Gravel bar, with willow and dwarf birch.

**Umbelliferae Carrot Family**

**Bupleurum triradiatum** Arams

ssp. arcticum (Regel) Hulten

Locality ±33, WR 10387, 9 July; ±34, WR 10398, 9 July; ±43, WR 10715, 15 July; ±44, WR 10374, 9 July; ±45, WR 10349, 9 July; do, WR 10519a, 11 July; ±66, Rigby 104, 22 July. Alpine tundra, on siliceous conglomerate, limestone, slate, and shale.

**Conioselinum eudifolium** (Turcz.) Porsild

Locality ±76, WR 10433, 10 July. River terrace, in white spruce woods.

**Valerianaceae Valerian Family**

**Valeriana capitata** Pallas

Locality ±5, WR 10599, 13 July; ±10, WR 10190, 1 July; ±14, WR 10659, 15 July; ±25, WR 10628, 13 July; ±33, WR 10384, 9 July; ±51, WR 10507, 11 July; ±60, WR 10035, 30 June. Tundra, heathland, and taiga.

**PTEROPSIDA-ANGIOSPERMAE-MONOCOTYLEDONAE**

**Cyperaceae Sedge Family**

**Carex aquatilis** Wahl.

ssp. *aquatilis*

Locality ±15, WR 10573, 12 July; ±52, WR 10484, 11 July; ±62, WR 10031, 30 June; ±70, WR 10661, 15 July. Emergent in shallow ponds and lakes, and on lake shores, gravel bars, and stream banks. This is the first report of *ssp. aquatilis* from northern Yukon.

**Carex bigelowii** Torr.

Locality ±14, WR 10680, 15 July; ±31, WR 10412, 9 July; ±36, WR 10198, 3 July; ±40, WR 10506a, 11 July; ±42, WR 10327, 8 July; ±56, WR 10588, 12 July; ±57, WR 10077a, 30 June; ±60, WR 10037, 30 June; ±61, WR 10255, 7 July; ±65, WR 10303a, 8 July. A dominant species in tussock tundra, and on rockstripes and outcrops of sandstone and limestone, and on gravel bars and spits.

**Carex capillaris** L.

Locality ±15, WR 10574, 12 July. Gravel bar, with willow and dwarf birch. This is the first report of *C. capillaris* for northern Yukon.

**Carex chordorrhiza** Ehrh.

Locality ±52, WR 10489, 11 July. Emergent in shallow ponds, in wet heath-taiga.

**Carex concinna** R. Br.

Locality ±54, WR 10278, 6 July. Wet meadow.

**Carex diandra** Schrank

Locality ±52, WR 10485, 11 July. Emergent in margin of shallow lake. This is the first record of *C. diandra* from northern Yukon.

**Carex limosa** L.

Locality ±52, WR 10491, 11 July. Emergent, in shallow water, in wet heath-taiga. This is the first record of *C. limosa* for northern Yukon.

**Carex macloviana** d’Uvville

Locality ±40, WR 10504a, 11 July. Gravel bar. The specimen is fragmentary but apparently belongs to *C. macloviana*, and is the first record of the species for northern Yukon.

**Carex maritima** Gunn.

Locality ±61, WR 10257, 7 July. Shallow pond, in polygonal tundra.

**Carex misandra** R. Br.

Locality ±19, WR 10546a, 12 July; ±44, WR
10371, 9 July. Limestone outcrops, in alpine tundra. This is the first record of C. misandra for northern Yukon.

Carex nardina Fries

Locality ≥11, WR 10188a, 1 July; ≥17, WR 10560, 12 July; ≥44, WR 10375, 9 July. Limestone and slate ridge tops, in alpine tundra.

Carex petricosa Dewey

Locality ≥15, WR 10756, 12 July; ≥19, WR 10546, 12 July. Limestone, in alpine tundra, and on gravel bar in stream course.

Carex podocarpa R. Br.

Locality ≥7, WR 10156, 1 July; ≥9, WR 10146, 1 July; ≥20, WR 10542, 12 July; ≥24, WR 10122, 1 July; ≥41, WR 10290, 8 July; ≥43, WR 10726, 15 July; ≥64, WR 1063a, 10645, 14 July. On slate, conglomerate, and sandstone; in alpine tundra, and in tussock tundra, heathlands, lake shores, stream banks, and gravel bars. A dominant species.

Carex rotundata Wahl.

Locality ≥61, WR 10286, 7 July. Emergent in shallow pond, in polygonal tundra. This is the first report of C. rotundata for northern Yukon.

Carex rapestris All.

Locality ≥34, WR 10394, 9 July; ≥46, WR 10587, 12 July. Limestone and slate ridgetops, in alpine tundra.

Carex scirpoidea Michx.

Locality ≥15, WR 10578, 12 July; ≥44, WR 10368, 9 July; ≥46, WR 10586, 12 July; ≥52, WR 10493, 11 July. Lake shores and river bars, in heath and taiga, and on limestone and slate in alpine tundra.

Carex supina Willd.

ssp. spaniocarpa (Steud.) Hulten

Locality ≥47, WR 10361, 9 July. Siliceous conglomerate rock stripes in alpine tundra. This is the first report of C. supina for northern Yukon.

Eriophorum angustifolium L.

Locality ≥50, WR 10314, 8 July; ≥52, WR 10490, 11 July; ≥62, WR 10311, 8 July; do, WR 10630, 30 June; ≥72, WR 10650, 14 July. Lake and pond margins.

Eriophorum chamissonis C. A. Mey.

var. albidum (Myl.) Fern.

Locality ≥30, WR 10318, 8 July. Delta of Blow River, This is the first report of E. chamissonis for northern Yukon.

Eriophorum scheuchzeri Hoppe

Locality ≥62, WR 10225, 4 July; ≥72, WR 646, 14 July. Lake shores. This is the first report of E. scheuchzeri for northern Yukon.

Eriophorum vaginatum L.

Locality ≥24, WR 10120, 1 July; ≥63, WR 10310, 8 July; ≥64, WR 10632, 14 July. A dominant species in the tussock tundra. By mid-July, the tundra appeared to be covered by hoarfrost due to the abundant inflorescences of E. vaginatum. This is the first record of E. vaginatum for northern Yukon.

Kobresia myosuroides (Ville.) Fiori & Pavl.

Locality ≥11, WR 10187a, 1 July; ≥34, WR 10392, 9 July. Alpine tundra, on slate and limestone.

Scirpus caespitosus L.

Locality ≥52, WR 10492, 11 July. Lake shore. This is the first report of S. caespitosus for northern Yukon.

Gramineae Grass Family

Agropyron caninum (L.) Beauv.

var. latilime (Scribu. & Sm. Pease & Moore

Locality ≥12, WR 10451, 10 July; ≥59, WR 10471, 10 July; ≥76, WR 10431, 10 July. Stream gravels and river terraces.

Agropyron macraurum (Turcz.) Drobov

Locality ≥26, WR 10697, 15 July; ≥31, WR 10413, 9 July; ≥59, WR 10472, 10 July; ≥67, WR 10098, 10103, 10112, 1 July; ≥76, WR 10421, 10 July. Terraces and gravel bar.

Alopecurus alpinus Sm.

Locality ≥14, WR 10677, 15 July; ≥30, WR 10315, 8 July. Spits, beaches, and deltas along the Beaufont Sea. This is the first record for northern Yukon.

Arctagrostis latifolia (R. Br.) Griseb.

Locality ≥15, WR 10577a, 12 July; ≥29, WR 10733, 15 July; ≥56, WR 10589, 12 July; ≥72, WR 10648, 14 July. Gravel bars and lake shores.

Arctophila fulva (Trin.) Anders.

Locality ≥62, WR 10312, 8 July; do, WR 10595, 13 July; ≥72, WR 10651, 14 July. Emergent in shallow lakes and ponds.

Bromus pumpellianus Scribn.

Locality ≥12, WR 10450, 10 July; ≥26, WR 10702, 15 July; ≥32, WR 10212, 3 July; ≥71, WR 10498, 11 July; ≥76, WR 10434, 10 July.
Fig. 47. Map of collection localities in northern Yukon.
Stream terraces and gravel bars, and less commonly on sandstone in alpine tundra.

Calamagrostis canadensis (L.) Beauv.
Locality ±68, Rigby 152, 20 July. Gravel bar. This is the first report of *C. canadensis* for northern Yukon.

Calamagrostis inexpansa Gray
Locality ±15, WR 10577, 12 July; ±29, WR 10715, 15 July. Gravel bars. This is the first record of *C. inexpansa* for northern Yukon.

Calamagrostis purpurascens R. Br.
Locality ±21, Rigby 121, 25 July; ±34, WR 10396, 9 July; ±48, WR 10351, 9 July; ±68, Rigby 102, 20 July. Gravel bars, and on rocky limestone outcrops in alpine tundra. This is the first report of *C. purpurascens* for the northern Yukon.

Deschampsia caespitosa (L.) Beauv.
Locality ±29, WR 10732, 15 July; ±31, WR 10416, 9 July. Gravel bars.

Elymus innovatus Beal
Locality ±2, WR 10248, 5 July; ±15, WR 10579, 12 July. Gravel bars, and on shaly slopes in alpine tundra.

Elymus mollis Trin.
Locality ±14, WR 10676, 15 July. Sea beach and spit.

Festuca altaica Trin.
Locality ±31, WR 10417, 9 July. Stream bank.

Festuca balfouriana Polunin
Locality ±29, WR 10731, 10743, 15 July. Gravel bar. This is the first report of *F. balfouriana* for northern Yukon.

Festuca brachyphylla Schult.
Locality ±17, WR 10558a, 12 July; ±44, WR 10370, 9 July. Limestone outcrops, in alpine tundra.

Festuca rubra L.
Locality ±12, WR 10149, 10 July; ±25, WR 10630, 13 July; ±26, WR 10696, 15 July; ±56, WR 10593, 12 July; ±59, WR 10473a, 10 July; ±68, WR 101, 20 July. Gravel bars. This is the first record of *F. rubra* for northern Yukon.

Hierochloe alpina (Sw.) R. & S.
Locality ±7, WR 10157, 1 July; ±18, WR 10553, 12 July; ±29, WR 10747, 15 July; ±42, WR 10330, 8 July. A dominant species in alpine and dry tussock tundra, on slate, sandstone, and alluvium.

Hordeum jubatum L.
Locality ±76, WR 10422, 10 July. River terrace, in open white spruce woods. This is the first record of *H. jubatum* for northern Yukon.

Poa alpigena (Fries) Lindm.
Locality ±76, WR 10438, 10 July. River bar, with other grasses and forbs.

Poa alpina L.
Locality ±10, Rigby 92, 25 July. Alpine tundra, on Kayak shale.

Poa arctica R. Br.
Locality ±39, WR 10730, 15 July; ±34, WR 10396a, 9 July; ±45, WR 10540, 12 July; ±59, WR 10469, 10474a, 10 July; ±65, WR 10305, 8 July. Gravel bars, and in alpine tundra on sandstone, siliceous conglomerate and limestone.

Poa glauca Vahl
Locality ±9, WR 10130, 1 July; ±29, 10741, 15 July; ±42, WR 10296, 8 July; ±43, WR 10728, 15 July; ±44, WR 10377, 9 July; ±59, WR 10470, 10 July; ±74, Rigby 138, 26 July. Alpine tundra, on limestone and shale, and on gravel bars.

Poa lanata Scribn. & Merr.
Locality ±29, WR 10730a, 15 July; ±72, WR 10647, 14 July. Gravel bars and lake shores. This is the first record for northern Yukon.

Puccinellia borealis Swallen
Locality ±14, WR 10678, 10678a, 10679, 15 July; ±76, WR 10437, 10 July. River bars and terraces, and sea beaches and spits.

Trisetum spicatum (L.) Richt.
var. molle (Michx.) Beal
Locality ±19, WR 10547, 12 July; ±29, WR 10746, 15 July; ±31, WR 10415, 9 July; ±43, WR 10727, 15 July; ±59, WR 10474, 10 July. Gravel bars, and in alpine tundra on slate and limestone.

Juncaginaceae Arrowgrass Family

Triglochin maritima L.
Locality ±52, WR 10487, 11 July. Wet heath-woodland near a small lake.

Juncaceae Rush Family

Juncus arcticus Willd.
Locality ±31, WR 10429, 9 July. Gravel bar.
This is the first report of *J. arcticus* for northern Yukon.

*Juncus trilunmis* L.

Locality ±52, WR 10490, 11 July. Wet heathland, surrounding a small lake. This is the first record of *J. trilunmis* for northern Yukon.

*Luzula confusa* Lindeb.

Locality ±41, WR 10294, 8 July; ±42, WR 10335, 8 July; ±45, WR 10541, 12 July; ±65, WR 10304a, 8 July. Alpine tundra.

*Luzula confusa* Lindeb.

Locality ±21, Rigby 119, 25; ±22, WR 10709, 15 July; ±50, WR 10522, 11 July; ±51, WR 10511, 11 July; ±51, WR 10497a, 11 July. Gravel bars, and in alpine tundra on shale and limestone.

**Potamogetonaceae Pondweed Family**

*Potamogeton alpinus* Balbis

var. *tenuifolius* (Raf.) Ogden

Locality ±70, WR 10660, 15 July. Shallow pond. This is the first report of *P. alpinus* for northern Yukon.

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**REFERENCES**


