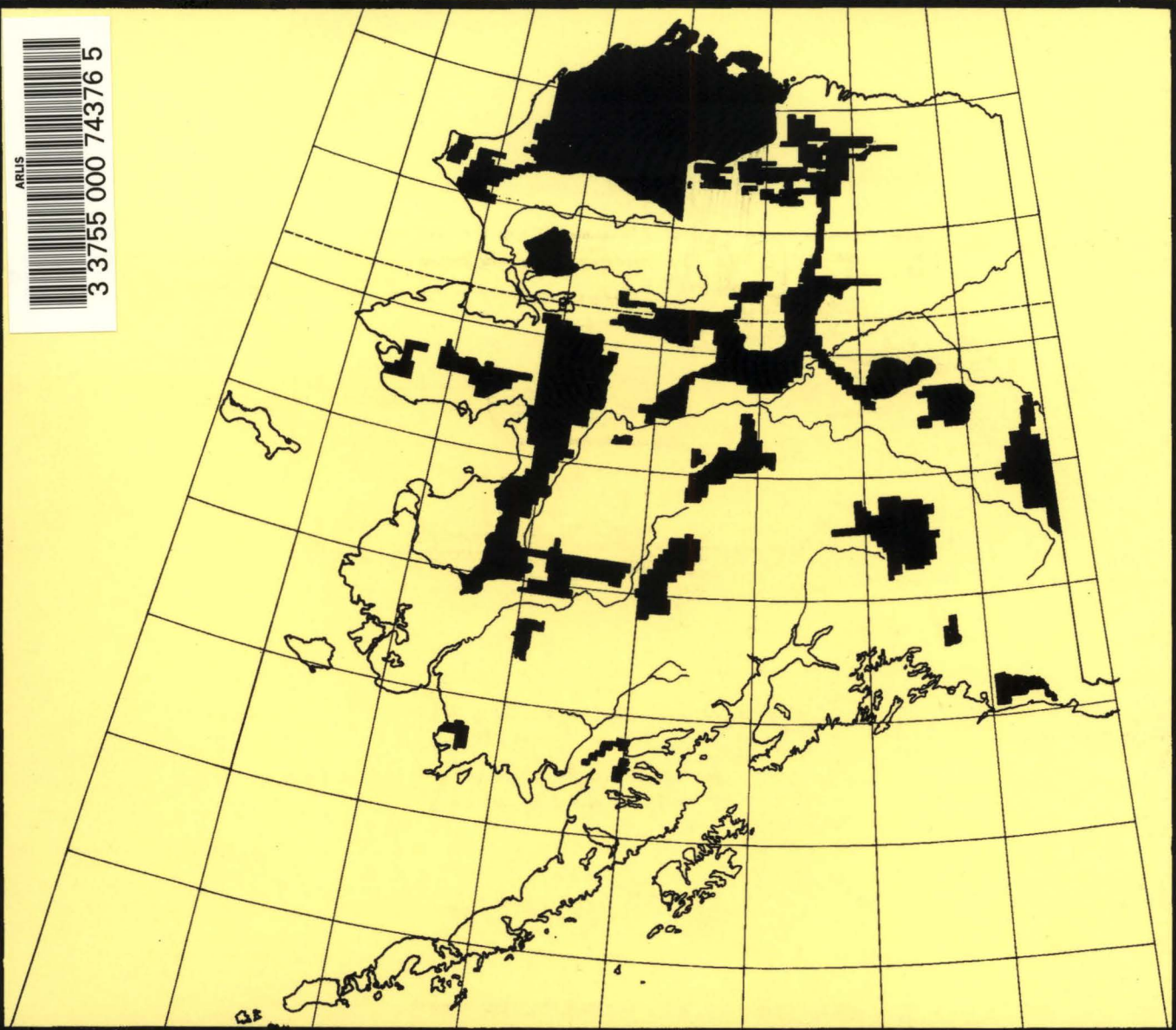


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*Paleontological Inventory and Assessment
of Public Lands Administered by
Bureau of Land Management
State of Alaska*

K. Don Lindsey
1986

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Bureau of Land Management
Contract #AK 950CT5-15

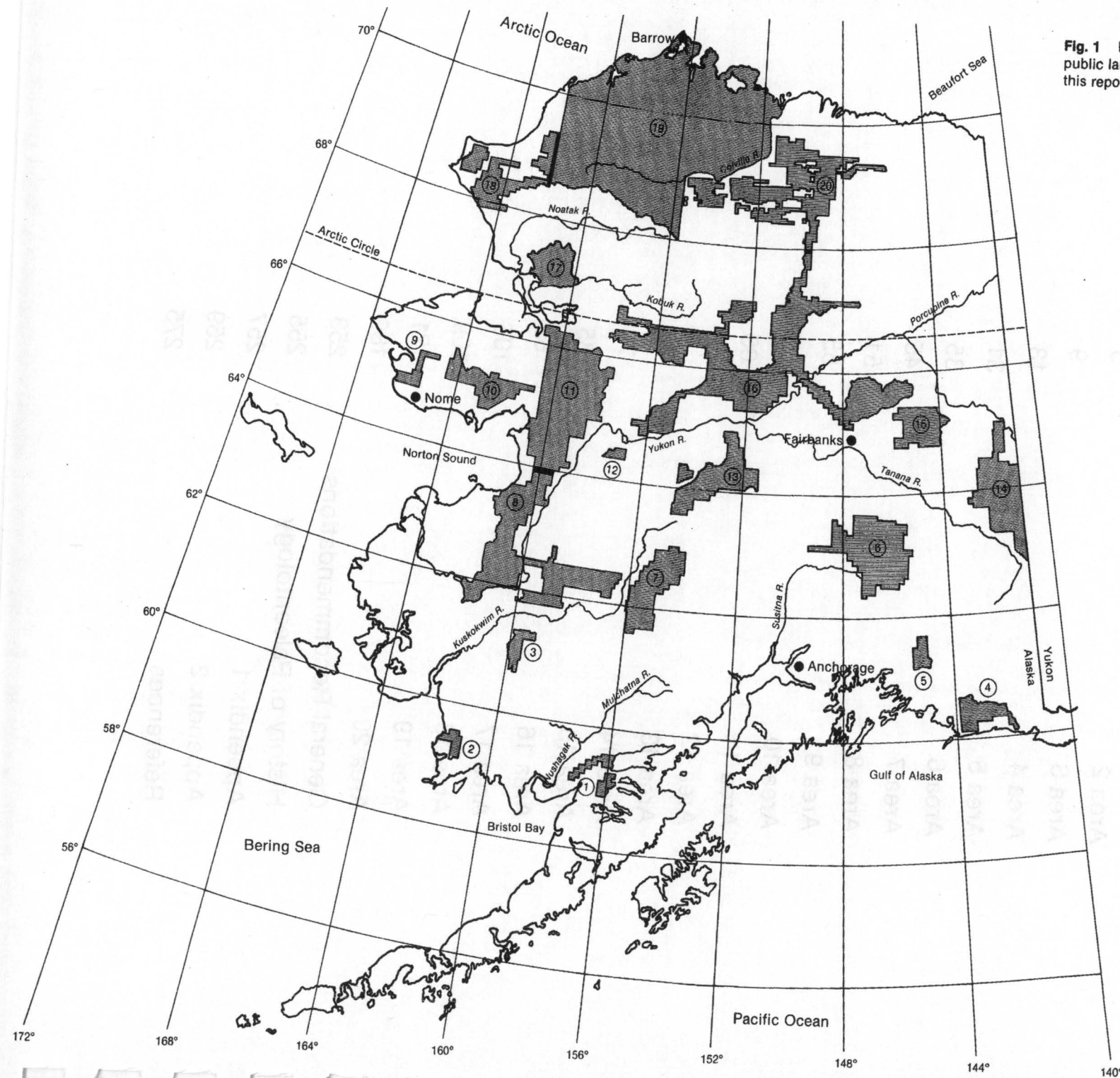
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Fig. 1 Map showing areas of public lands discussed in this report.



Scale: 1:7,600,000
1/4" = 30 miles

INTRODUCTION

This report is the end product of contract number AK 950CT5-15, issued by the Bureau of Land Management, State of Alaska, to provide an inventory and assessment of the paleontological resources on public or other Federal lands administered by the Bureau of Land Management.

The boundaries of these lands were determined by a mylar overlay for U.S. Geologic Survey Map A at a scale of 1:5,000,000. These boundaries were then projected to the Index to Topographic Maps of Alaska at the scale of 1:2,500,000. To overcome inaccuracies in this method, the boundaries were increased slightly when transferred to the Index Map, and instructions were given by the Contracting Officer to consider localities that were close to the boundary to be on Bureau of Land Management land.

A computer-assisted literature search was conducted to access data from GeoRef, Zoological Record, Geoarchives and N.T.I.S. Other professionals were consulted, the catalogue at the University of Alaska Museum, the field notes of Otto Geist, and the files of the Alaska Heritage Resources Survey were examined to compile sites on B.L.M. lands.

One through 20 study areas were established to better organize the data. This was done on the basis of the distribution of Federal and public lands and/or the regional geology of a given area. The 20 areas of this report are shown on the map, page iii, Fig. 1.

Localities were mapped on 1:250,000 or 1:63,360 U.S. Geological Survey topographic maps and identified by their locality number or field number. Where no numbers were given, the author's name was used, or numbers were assigned by the author of this report.

Each study area begins with a discussion of the fossiliferous geologic formations within the area, including a description of the lithology and analysis of the fossils reported from each formation, and concluding with management recommendations.

Site locality tables, which follow the area synopsis, are by geologic age and formation, oldest first. A single reference with reported fossils in one or more formations will have a table for each formation or unnamed unit. No attempt was made to revise stratigraphic nomenclature or assign unnamed formations to suspected named formations without field inspection. These stratigraphic relationships are

stated in the text, or implied by placing an unnamed formation table with correlative tables.

Locality numbers listed in the table are given as they appear in the reference, unless otherwise stated. Numbers other than U.S. Geological Survey are referenced by footnote to the institution of origin. U.S. Geological Survey numbers preceded by a "D" or "M" refer to Denver, Colorado or Menlo Park, California which are the repositories for those collections. Numbers assigned by the investigators of this report are also footnoted.

U.S. Geological Survey field numbers give the year, state and collector. For example 25ASm11; where 25 is the year 1925, A is for Alaska, and Smith was the collector. An Index to these field initials can be found in Appendix 1. If a collector is known, but not coded into a field number, the last name is listed or footnoted in the collector/field #column. Locality numbers duplicated by one or more author are cross-referenced by footnote to the pertinent citation(s).

First in the Map column is the name of the U.S.G.S. Topographic Map in which the locality appears. This name is omitted for subsequent localities until a locality appears in a different map.

Following the map name two identifier terms were inserted. "Surveyor" for latitude and longitude, and "farmer" for township, range and section. If the table reference gave latitude and longitude and/or township, range, section this information replaced the identifier term.

Any locality that was mapped using the authors locality map or geographic description has the calculated latitude and longitude and/or township, range and section.

Duplicate localities may have only township, range and section to serve as locators. Occasionally, duplicate localities have a different latitude and longitude in the references. The reason for this discrepancy is not known and no attempt was made to resolve this problem at the present time.

Localities that could not be mapped are indicated in the remarks column. Large or approximate localities that were mapped are shown on the appropriate map by a large circle, and have an approximate latitude or longitude and/or township, range and section to serve as locators.

Geologic age and/or stage are given exactly as they appear in the original text, and are not repeated

until a change in age or stage occurs at a given locality.

Taxa are reported as they appear in the cited reference without any systematic or taxonomic name changes. Common or group names are found opposite the genus name in the remarks column, and are not repeated until a change in the fauna occurs. A common or group name without a genus-species counterpart signifies that the fossil(s) were not or could not be identified beyond that category.

Holotypes with catalogue numbers and skeletal element are in the remarks column if reported by the author.

Significance of a particular fauna; if other than age, stratigraphic, or local correlative, is stated at the end of the table or mentioned in the area synopsis.

At the request of the Bureau of Land Management, the locality data in this report will be incorporated into the files of the Alaskan Heritage Resource Survey. Appendix 2 is a catalogue of A.H.R.S. numbers as assigned to the corresponding locality numbers from this report.

The author wishes to acknowledge and thank the following for their assistance and cooperation: Dr. John P. Cook, District Archaeologist, B.L.M. Alaska; Beth Walton, C.O.R., BLM, Alaska; Greg Dixon, Archaeologist, Dept. of Natural Resources, Alaska; David Carter, U.S.G.S.; and John Hanley, U.S.G.S. The staff at the University of Alaska Museum and Library. Theresa Day, Denise Medina, and other staff of the B.L.M. Library, Denver, Colorado; and the staff at the U.S.G.S. Library, Denver, Colorado.

Area 1

AREA 1

Quad Maps:
Dillingham
Iliamna
Naknek
Mt. Katmai

No fossils have been reported from this area. Rocks in the area are Tertiary volcanics and Quaternary alluvial, glacial, lake and beach deposits. The likelihood of fossils is very small in these sediments. No management is presently required.

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Area 2

AREA 2

Quad maps:
Goodnews Bay

Deposits of the Gemuk Group occur in Area 2. This group is a massive to thin bedded siliceous siltstone, and chert with calcareous siltstone, graywacke, conglomerate and limestone. This group ranges in age from Carboniferous to Cretaceous. Fossils in the area are not abundant or diverse.

Smith (1939) reports a small and poorly preserved collection of Permian brachiopods (Table 1). *Buchia rugosa*, a Late Jurassic bivalve from the Upper Kimmeridgian to Tithonian, has been found in the upper beds of this group. (Table 2).

Fossils are useful here to determine age and stratigraphy of the Gemuk Group.

No special management required.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
8010	35AS102 ¹	Goodnews Bay A-7 surveyor farmer	Permian?	<i>Productus (Horridona) cf. pitimanicus</i> <i>Spiriferella arctica</i>	Brachiopods

Reference: Smith, P., 1939.
¹ Culver

Gemuk Group

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24257		Goodnews Bay B-7 surveyor farmer	Jurassic Late Kimmeridgian to Middle Tithonian	<i>Buchia cf. B. rugosa</i>	Pelecypod Unable to plot, too vague.

Reference: Imlay, R.W., and other, 1973.

Area 3

AREA 3

Quad Maps:
Bethel
Russian Mission

Two sedimentary rock units in the study area have yielded fossils, the older Gemuk Group, that ranges in age from Carboniferous to Cretaceous, and the Kuskokuim Group of Cretaceous age.

The Gemuk Group contains four major lithologies: a graywacke, siltstone, and conglomerate; a chert, siltstone, graywacke, and limestone; a limestone and calcareous siltstone and sandstone; and a volcanic rock sequence.

Rocks of the Kuskokuim Group have been divided into two major lithologic units. The sedimentary unit consists of medium to dark gray siltstone and graywacke interbedded with pebble grit and conglomerate.

Fossils from the Gemuk Group are not abundant or diverse (Table 1). The pelecypods here range from Upper Kimmeridgian to Middle Tithonian of the Upper Jurassic.

Diversity and abundance of fossils is also low in the Kuskokuim Group (Table 2). Many of the localities have come from the volcanic unit of the group. The presence of *Inoceramus ambiguus* would indicate a Middle Jurassic age for these sediments rather than Cretaceous.

No special management required.

Gemuk Group

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20714 & 27092		Russian Mission A-2 surveyor farmer	Jurassic Late Kimmeridgian to Middle Tithonian	<i>Buchia rugosa</i> <i>Buchia mosquensis</i>	Pelecypods Unable to plot, too vague.
27091		surveyor farmer	Bajocian	<i>Inoceramus cf. I. ambiguus</i>	Pelecypod Unable to plot, too vague.
21481		Bethel D-3 60°59'11", 150°38" farmer		<i>Inoceramus ambiguus</i>	Pelecypod
21031		Bethel D-2 surveyor farmer		<i>Inoceramus cf. I. ambiguus</i>	Pelecypod Unable to plot, too vague.
20717		Bethel C-2 60°43'35", 159°31'23" farmer		<i>Inoceramus cf. I. ambiguus</i>	Pelecypod

Reference: Imlay, R.W., and other, 1973.

Kuskokwin Group

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1607		Bethel D-3 60°57', 159°57' farmer	Late Cretaceous	<i>Inoceramus sp.</i>	Pelecypod

Reference: University of Alaska Locality Catalogue.

Area 4

AREA 4

Quad Maps:
Bering Glacier

Sediments in this area range from Pliocene to Jurassic/Cretaceous with the older formations being more inland from the Gulf of Alaska.

The oldest fossiliferous formation in the area is the Yakutat Group. It is a marine graywacke with argillite and slate. The Fossils are poorly preserved and are brachiopods, pelecypods, gastropods and forams of Jurassic or Cretaceous age (Table 1). Only one locality was reported on B.L.M. land.

Wolfe (1977) lists Middle to Late Eocene marine mollusks from the Stillwater Formation (Table 2). This formation is a marine arkosic sandstone and siltstone with some coal beds. No terrestrial fossils were reported.

Marine and nonmarine beds of arkosic sandstones, siltstones and thin coal beds have been named the Kushtaka and Kulthieth Formations. These equivalent formations were deposited in the Late Eocene and Early Oligocene. Both contain an abundant and diverse flora (Tables 3, 4), and a marine fauna of gastropods and pelecypods (Table 5). The plants indicate a warmer climate with abundant precipitation.

The Katalla Formation, which is a fine grained sandstone, siltstone, mudstone and conglomerate, may be contemporaneous with the upper part of the Kulthieth. Age of the Katalla ranges from Oligocene to Miocene and possibly Pliocene. Oligocene angiosperms are reported from one locality on Bureau of Land Management land (Table 6). Miocene to Pliocene pectins are found at two localities (Table 7).

The Poul Creek Formation is in part equivalent to the upper Katalla Formation but has far fewer plant fossils (Table 8). The red, greenish gray and olive sandstones and silts contain a remarkable marine fauna throughout the section. The fauna, which is predominantly pelecypods and gastropods (Tables 9-16), ranges from Oligocene to Miocene. This fauna is characteristic of subtropical to temperate waters at 20-200 meters in depth. A single cephalopod (Tables 9, 12), and fish bones (Table 16) have been reported.

Gradationally overlying the Poul Creek is the Yakataga Formation. This formation is a sandstone and siltstone like the underlying Poul Creek, but also has a conglomeratic sandy mudstone interspersed with black shale. Like the preceding formation, it is quite fossiliferous. Here also gastropods and pelecypods are predominant (Tables 17-24). Crabs, barnacles and echinoderms are also found at a few localities. The fauna is mostly Miocene but some localities range into the Pliocene. The fauna is from the littoral to neritic zone of shallow waters and cooler temperatures more like the Gulf of Alaska today.

This area is unique for its abundance, diversity and good preservation of fossil flora and fauna. Some oil exploration has been done here and this activity should be monitored in the future to protect the paleontologic resources.

Although the area is not readily accessible to the general public, if the need or desire ever arose to establish a locality for controlled public fossil collecting this region may have potential. This is not to prescribe indiscriminate collecting, but rather a situation where the public is allowed to keep some of the common well studied taxa for their collections, and provide the more unique forms to interested scientific institutions.

**Yakutat Group
Table 1**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	59AMr453	Bering Glacier 60° 27' 11", 142° 35' farmer	Jurassic Cretaceous		Foraminifera Bryozoans Pelecypods Gastropod (Poorly preserved)

Reference: Miller, D.J., 1971.

**Stillwater Formation
Table 2**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M3880		Bering Glacier surveyor 16S 9E 24	Cenozoic Middle Eocene to Middle Oligocene	<i>Rimella?</i> aff. <i>R. macilenta</i> <i>Brachiodontes cowlitzensis</i> <i>Pitar</i> cf. <i>P. californianus</i>	Mollusks

Reference: Wolfe, J.A., 1977.

**Kushtaka Formation
Table 3**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3847	1	Bering Glacier 60° 25.6', 142° 50' farmer	Cenozoic Paleogene Lower Ravenian	<i>Dryopteris alaskana</i> <i>Platycary pseudobrauni</i> <i>Alnus scotti</i> <i>Knema</i> sp. <i>Myristica</i> sp. <i>Cinnamomophyllum latum</i> <i>Caesalpinites</i> sp. <i>Luvunga spatiosa</i> <i>Malanorrhoea alaskana</i> <i>Celastrus comparabilis</i> <i>Goweria dilleri</i> <i>Phytocrone acutissima</i> <i>Parashorea psuedogoldiana</i> <i>Alangium bergensis</i>	Megafossil plants
11157	2	60° 24.8', 143° 51.8' farmer		<i>Calkinsia plafkeri</i> <i>Cinnamomophyllum latum</i> <i>Litseaephyllum presamarensis</i> <i>Litseaephyllum similis</i>	
11158	3	60° 25.2', 143° 48.8' farmer		<i>Palmae</i> gen. indet. <i>Alnus martini</i> <i>Alnus scotti</i> <i>Girroniera</i> sp. <i>Limacia stenophylla</i> <i>Dasymaschalon?</i> sp. <i>Euodia alaskana</i> <i>Melanorrhoea alaskana</i> <i>Celastrus comparabilis</i> <i>Goweria alaskana</i> <i>Phytocrone acutissima</i> <i>Stemonurus alaskanus</i> <i>Zizyphus alaskanus</i> <i>Meliosma kushtakensis</i> <i>Clerodendrum</i> sp.	

Table 3 continued.

11159	4	60° 25.2', 143° 48.8' farmer		<i>Allantodiopsis pugetensis</i> <i>Illicium</i> sp. <i>Limacia stenophylla</i> <i>Litseaephyllum</i> sp. <i>Celastrus comparabilis</i> <i>Meliosma kushtakensis</i>	
11160	2	60° 24', 143° 57.5' farmer		<i>Cyathea inequilateralis</i> <i>Palmacites</i> sp. <i>Cinnamomophyllum latum</i>	
11162	2	60° 23.9', 143° 57' farmer		<i>Cyathea inequilateralis</i>	
11166	5	60° 28.5', 143° 37' farmer		<i>Allantodiopsis pugetensis</i> <i>Platycarya pseudobrauni</i> <i>Cocculus</i> sp. <i>Limacia stenophylla</i> <i>Pycnarrhena</i> sp. <i>Cinnamomophyllum latum</i> <i>Luvunga spatiosa</i> <i>Celastrus comparabilis</i> <i>Phytocrene acutissima</i> <i>Sageretia</i> sp. <i>Meliosma kushtakensis</i> <i>Vitis</i> sp. <i>Alangium</i> sp.	
3846	6	60° 27.5', 143° 57' farmer		<i>Cyathea inequilateralis</i> <i>Allantodiopsis pugetensis</i> <i>Litseaephyllum presamarensis</i> <i>Melanorrhoea alaskana</i> <i>Celastrus comparabilis</i> <i>Saurauia</i> sp. <i>Mastixia irregularis</i>	
11163	5	60° 26.5', 143° 57.4' farmer	Middle Ravenian	<i>Alnus martini</i>	
11164	5	60° 26.7', 143° 57.5' farmer		<i>Calkinsia platkeri</i> <i>Macclintockia</i> sp. <i>Dicotylophyllum kummerensis</i>	
3842	6	surveyor farmer		<i>Cryophyllum pugetensis</i> <i>Litseaephyllum presamarensis</i>	Unable to plot, too vague.
11167	3	60° 27.1', 143° 51' farmer	Upper Ravenian	<i>Glyptostrobus</i> sp. <i>Populus</i> sp. <i>Salix carbonensis</i> <i>Salix</i> sp. <i>Juglans</i> sp. <i>Pterocarya pugetensis</i> <i>Alnus cuprovallis</i> <i>Alnus</i> sp. <i>Cocculus</i> sp. <i>Corylopsis</i> sp. <i>Prunus nevadensis</i> <i>Sorbus carbonensis</i> <i>Ilex carbonensis</i> <i>Rhamnus</i> sp. <i>Tilia carbonensis</i> <i>Platkeria</i> sp. <i>Eugenia?</i> sp. <i>Dicotylophyllum carbonensis</i>	
9891	7	60° 22', 143° 51' 16S 9E 30	Kummerian	<i>Anemia?</i> sp. <i>Woodwardia</i> sp. <i>Alnus</i> sp. <i>Litseaephyllum presanguinea</i> <i>Litseaephyllum</i> sp. <i>Platanus comstocki</i> <i>Macclintockia pugetensis</i> <i>Dicotylophyllum kummerensis</i>	

Table 3 continued.

11169	⁵	60° 27.5', 143° 48.8'	farmer	<i>Tetracentron piperoides</i> <i>Litseaephyllum carbonensis</i> <i>Litseaephyllum presamarensis</i> <i>Litseaephyllum similis</i> <i>Litseaephyllum</i> sp.
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Reference: Wolfe, J.A., 1977.

Significance: Plants indicate tropical to temperate conditions with abundant precipitation.

¹ Martin, Paige, and Maddren, 1905.

² Wolfe, 1968.

³ Wolfe and Larson, 1968.

⁴ Gunn, 1968.

⁵ Wolfe, Larson and Gunn, 1968.

⁶ Maddren, 1905.

⁷ Shell Oil Co., 62H603200.

Kulthieth Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11170	¹	Bering Glacier 60° 19.5', 142° 29.9' farmer	Cenozoic Paleogene Lower Ravenian	<i>Anemia gunni</i> <i>Palmae</i> , gen. indet. <i>Platycarya pseudobrauni</i> <i>Alnus martini</i> <i>Alnus scotti</i> <i>Girroniera</i> sp. <i>Tetracentron piperoides</i> <i>Anamirta milleri</i> <i>Diploclisia</i> sp. <i>Litseaephyllum</i> sp. <i>Melanorrhoea alaskana</i> <i>Celastrus comparabilis</i> <i>Phytocrene sordida</i> <i>Pyrenacantha</i> sp. <i>Allophylus duktothensis</i> <i>Meliosma duktothensis</i> <i>Vitis</i> sp. <i>Barringtonia</i> sp. <i>Eugenia</i> sp. <i>Clethra</i> sp.	Megafossil plants
3879	²	surveyor farmer		<i>Allantodiopsis pugetensis</i> <i>Dryopteris alaskana</i> <i>Glyptostrobus</i> sp. <i>Paratinomiscium conditionalis</i> <i>Celastrus comparabilis</i> <i>Paleophytocrene elytraeformis</i> <i>Cananga</i> sp.	Unable to plot, too vague.
9551	46AMr43	60° 16', 143° 5' farmer	Kummerian ?	<i>Litseaephyllum katallaensis</i> <i>Allophylus wilsoni</i> <i>Macclintockia pugetensis</i>	
9553	47AMr60	60° 18.5', 142° 47' farmer	Oligocene Lincoln Kummerian	<i>Voisella</i> aff. <i>V. eugenensis</i> <i>Tellina</i> cf. <i>lincolnensis</i> <i>Solena</i> cf. <i>clarki</i> <i>Allophylus wilsoni</i> <i>Macclintockia pugetensis</i>	Mollusks Megafossil plants
9893	62H160940 ³	60° 20', 142° 54' 18S 16E 19		<i>Macclintockia pugetensis</i>	
9894	62H1609367 ³	18S 16E 19		do	

Reference: Wolfe, J.A., 1977.

Significance: Plants indicate tropical to temperate conditions with abundant precipitation.

¹ Wolfe, Larson and Gunn, 1968.

² Tarr, 1905.

³ Shell Oil Co.

Katalla Formation

Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15843	Miller	Bering Glacier 60° 4', 143° 47' farmer	Miocene to Pliocene	(<i>Lituyapecten</i>)	New subgenus of <i>Patinopecten</i>
15852		60° 1', 143° 51' farmer		do	

Reference: MacNeil, F.S., 1961.

Poul Creek Formation

Table 8

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
9895	62J266 ¹	Bering Glacier A-4 60° 9', 142° 15' 20S 18E 25	Oligocene Kummerian	<i>Macclintockia pugetensis</i> <i>Platanus comstocki</i>	Angiosperm

Reference: Wolfe, J.A., 1977.

Significance: Plants subtropical with no extended periods of darkness, no frost, mean annual temperature 20-25° C, abundant precipitation, no dry season.
¹ Shell Oil Co.

Poul Creek Formation

Table 9

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15422		Bering Glacier A-3 surveyor 20S 20E 19	Oligocene to Miocene	<i>Acila taliaterroi</i> <i>A. yakatagensis</i> <i>A. cf. empirensis</i>	Pelecypods
15423		surveyor		<i>A. cf. blancoensis</i> <i>A. cf. conradi</i> <i>Acila gettysburgensis</i>	Same location as 15422.
15424		surveyor 21S 19E 11		<i>Anadara</i> sp. aff. <i>A. osmonti</i> and <i>A. mediaimpressa</i> <i>Amussium</i> n. sp.? <i>Lima</i> cf. <i>L. twinensis</i>	
17881		surveyor 21S 19E 35		<i>Crenella porterensis</i> <i>Crassatellites</i> n. sp. aff. <i>C. washingtoniana</i> <i>Cardita</i> aff. <i>C. hannibali</i>	
17851		surveyor 21S 20E 34		<i>Cardita yakatagensis</i> <i>Cardita</i> cf. <i>C. hamiltonensis</i> <i>Thyasira</i> cf. <i>T. bisecta</i>	
17843		surveyor 21S 20E 32		<i>Nemocardium weaveri</i> <i>N. lorenzanum</i> "Cardium" <i>alaskensis</i>	
17829		surveyor 21S 20E 34		"Cardium" <i>hamiltonensis</i> <i>Cardium</i> Aff. <i>C. Coosense</i> <i>Pitar</i> sp. aff. <i>P. dalli</i> <i>Compsomyax</i> sp. aff. <i>C. angustifrons</i>	
18336		surveyor 22S 20E 4		<i>Macrocallista pittsburgensis</i> <i>Katherinella</i> cf. <i>K. arnoldi</i> <i>Mya salmonensis</i>	
17781		surveyor		<i>Myadesma</i> sp. <i>Solena</i> sp. aff. <i>S. eugenensis</i> and <i>S. lorenzana</i> <i>Panope</i> cf. <i>P. snohomishensis</i>	

Table 9 continued.

17786	surveyor		<i>Thracia</i> cf. <i>T. trapezoides</i> <i>Cochlodesma bainbridgensis</i> <i>Periploma</i> sp. cf. <i>P. besshoensis</i>	
D159	surveyor 19S 19E 25		<i>Turricula</i> cf. <i>T. washingtoniana turbonata</i> <i>Turritella</i> aff. <i>T. diversilineata</i> and <i>T. porterensis</i> <i>Echinophoria</i> cf. <i>E. fax</i>	Gastropods
D160	surveyor 21S 20E 4		<i>Echinophoria</i> cf. <i>E. rex</i> <i>Echinophoria</i> <i>apta</i> <i>Pseudoperissolax</i> cf. <i>P. trophonoides</i>	
D164	surveyor 21S 20E 31		<i>Fusitriton</i> sp. aff. <i>F. mathewsonni</i> and <i>F. vancouverense</i> <i>Neptunea</i> n. sp. <i>Colus</i> sp. cf. <i>C. jordani</i>	
D247	surveyor 22S 21E 7		<i>Ancistrolepis clarki teglandae</i> <i>Bruclarkia acuminatum</i> <i>Persø teglandae</i>	
D245	surveyor 22S 21E 8		<i>Whitneyella</i> sp. cf. <i>W. lincolnensis</i> <i>Fusinus</i> sp. cf. <i>hecoxi</i> , <i>sanctaerucis</i> , <i>stewarti</i> <i>Psephaea weaveri</i>	
D246	surveyor 22S 21E 15		<i>Cancellaria alaskensis</i> <i>Cancellaria</i> n. sp. <i>Scaphander</i> sp. cf. <i>S. alaskensis</i> <i>Aturia angustata alaskensis</i>	Cephalopod

Reference: Miller, D., 1957.

Note: Fauna characteristic of formation and not necessarily from all or any of the localities.

Poul Creek Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15433	Spieker	Bering Glacier A-4 60°7'15", 142° 12' farmer	Late Oligocene or Early Miocene	<i>Mya</i> (? <i>Arenomya</i>) <i>greningki</i>	Pelecypod
16891	Miller	Bering Glacier 60°15'48", 143°8'24" farmer	Late Middle Oligocene	<i>Mya</i> (? <i>Arenomya</i>) <i>kusiroensis</i>	
16864	Miller	60°15'15", 143°54'32" farmer		<i>do</i>	

Reference: MacNeil, F.S., 1965.

Poul Creek Formation

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
16899	Miller	Bering Glacier 60°21'37", 142°44'32" farmer	Cenozoic Upper Oligocene or Lower Miocene	<i>Delectopecten maddreni</i>	Pectinid

Reference: MacNeil, F.S., 1967.

Significance: Some migration to Atlantic from Pacific in late Cenozoic but not the other direction. Most related to older and more south Pacific types particularly eastern Asia. Early and Middle Tertiary stocks in north Pacific of European origin but reached north Pacific by a Tethyan or Indian Ocean route not Arctic and some returned to North Atlantic across Arctic.

Poul Creek Formation

Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20508-2 ¹		Bering Glacier A-4 60° 12'30", 142° 16'38" farmer	Early Miocene to Oligocene	<i>Bathybembix jonesi</i> n. sp. <i>Turritella</i> aff. <i>diversilineata blakeleyensis</i> <i>Liracassis apta</i>	Gastropods
81203		Bering Glacier A-3 60° 10'51", 142° 7" farmer		<i>Solemya (Acharax) dalli</i> <i>Conchocele disjuncta</i> <i>Liracassis apta</i> <i>Pteropurpura</i> n. sp. <i>Ancistrolepis rearensis</i>	Bivalves Gastropod
81001		60° 3'29", 141° 58'28" farmer		<i>Yoldia (Yoldia) takaradaiensis</i> <i>Yoldia (Yoldia) biremis</i> <i>Patinopecten (Lituyapecten) yakatagensis</i> <i>Lucinoma</i> cf. <i>L. tomitensis</i> <i>Pitar (Katherinella)</i> sp. <i>Cryptonatica</i> aff. <i>C. clausa</i> <i>Liracassis apta</i> <i>Liracassis durhami</i> n. sp.	Bivalves Gastropods
81003		60° 3'13", 141° 58'28" farmer		<i>Papyridea hamiltonensis</i> <i>Pitar (Katherinella) arnoldi etheringtoni</i> <i>Bathybembix turbonata</i> <i>Calyptraea</i> sp. <i>Crepidula</i> cf. <i>C. praerupta</i> <i>Liracassis apta</i>	Bivalves Gastropods
81201		60° 2'46", 141° 52'46" farmer		<i>Acila (Acila) gettysburgensis</i> <i>Yoldia (Yoldia) takaradaiensis</i> <i>Yoldia (Yoldia) biremis</i> <i>Crenella porterensis</i> <i>Cyclocardia yakatagensis</i> <i>Papyridea hamiltonensis</i> <i>Spisula equilateralis</i> <i>Spisula addicotti</i> n. sp. <i>Macoma incongrua</i> <i>Pitar (Katherinella) arnoldi</i> <i>Macrocallista weaveri</i> <i>Panope snohomishensis</i> <i>Thracia schencki</i> <i>Thracia</i> cf. <i>T. condoni</i> <i>Turritella</i> sp. <i>Euspira ramonensis</i> <i>Liracassis apta</i> <i>Liracassis durhami</i> n. sp. <i>Priscofusus clarki</i> n. sp. <i>Fulgoraria</i> sp. <i>Cancellaria (Crawfordina) alaskensis</i> <i>Scaphander alaskensis</i>	Bivalves Gastropods
81202		60° 2'56", 141° 52'41" farmer		<i>Acila</i> cf. <i>A. (Acila) submirabilis</i> <i>Colus</i> aff. <i>C. jordani</i>	Bivalves
81401		60° 2'40", 141° 50' farmer		<i>Pitar (Katherinella) arnoldi etheringtoni</i> <i>Panope snohomishensis</i> <i>Yoldia (Y.) takaradaiensis</i> <i>Y. (Y.) biremis</i> <i>Vertipectin</i> sp. <i>Cyclocardia yakatagensis</i> <i>C. hamiltonensis</i> <i>C.</i> sp. <i>Clinocardium hipkinsi</i> n. sp. <i>Papyridea hamiltonensis</i> <i>Nemocardium alaskense</i> <i>N.</i> aff. <i>N. yokoyamai</i> <i>Spisula equilateralis</i> <i>S. addicotti</i> n. sp. <i>Tellina</i> cf. <i>T. conlitzensis</i> <i>T. (Oudardia)</i> sp.	Bivalves

Table 13 continued.

			<i>Ancistrolepis clarki teglandae</i>	
			<i>Bruclarkia acuminatum</i>	
			<i>Perse teglandae</i>	
			<i>Whitneyella</i> cf. <i>W. lincolnensis</i>	
			<i>Fusinus (Priscofusus)</i> sp.(3)	
			<i>Psephaea (Miopleiona) weaveri</i>	
			<i>Cancellaria alaskensis</i>	
			<i>Cancellaria</i> n. sp.	
			<i>Scaphander</i> cf. <i>S. alaskensis</i>	
			<i>Aturia angustata alaskensis</i> ¹	Cephalopod
D252T	farmer		do	Same location as 16898.
16899 ³	farmer		do	Same location as 16898
16900	60° 20.8', 142° 41'		do	
	farmer			
16822	60° 17.8', 143° 14.6'		do	
	farmer			
D251T	60° 20.4', 142° 38'		do	
	farmer			
16821	60° 18.4', 143°		do	
	farmer			
17854	60° 17.9', 142° 46.9'		do	
	farmer			
16893	60° 17.3', 143° 1'		do	
	farmer			
17807	60° 17', 142° 46.7'		do	
	farmer			
16895	60° 16.2', 142° 57.6'		do	
	farmer			
17808	60° 15.8', 142° 46.7'		do	
	farmer			
16896	60° 16', 143° 7.3'		do	
	farmer			
16820	farmer		do	Same location as 16896.
16819	farmer		do	Same location as 16896.
16897	60° 16', 143° 6.2'		do	
	farmer			
16865	farmer		do	
C29242 ²	60° 16.4', 143° 22'		do	
	farmer			
16894	60° 16.4', 143°		do	
	farmer			

Reference: Miller, D.J. 1971.

¹ Selected fossils from formation. Some, all or none may be from listed localities.

² California Academy of Sciences locality number.

³ See also: Macneil, F.S., 1967.

Poul Creek Formation

Table 14

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29253 ¹		Bering Glacier A-4 60° 8', 142° 12'	Cenozic Lower Miocene	(<i>Lituyapekten</i>)	New subgenus of <i>Patinopecten</i>
29285 ¹		Bering Glacier A-3 60° 3', 141° 59'		do	
		farmer			

Table 14 continued.

29287 ¹	60° 3', 141° 58'	farmer	do
29290 ¹	60° 3', 141° 54'	farmer	do

Reference: MacNeil, F.S., 1961.
 Collector: Standard Oil Company
¹ California Academy of Science localities.

Poul Creek Formation

Table 15

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
D356	Kuenzi	Bering Glacier 60° 1'22", 141° 59'58" farmer	Middle Miocene	<i>Neptunea (N.)</i> sp. A aff. <i>N. (N.) heros</i>	All gastropods
17839	Miller	Bering Glacier A-3 60° 3'21", 141° 53'27" farmer		<i>N. (N.)</i> sp. A aff. <i>N. (N.) heros</i>	

Reference: Nelson, C.M. Jr., 1974.
 Significance: Cool temperate molluscan fauna.

Poul Creek Formation

Table 16

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
344		Bering Glacier A-4 60° 7', 142° 16' farmer	Late Oligocene	<i>Kewia</i> cf. <i>kannoii</i>	
385		Bering Glacier 60° 16', 143° 18' farmer	Late Eocene	<i>Turritella olympicensis</i>	Gastropod
399		Bering Glacier A-3 60° 7', 142° 4' farmer	Late Oligocene- Early Miocene		Fish bones
403		60° 3', 142° 3' farmer	Early Miocene Pillarian		Mollusks
407-439		farmer	Early and Middle Miocene Pillarian and Newportian		Mollusks Same location as 403.
445		60° 3'14", 142° 3'14" farmer	Early to Middle Miocene	<i>Turritella hamiltonensis</i> <i>Modiolus</i> cf. <i>M. restorationensis</i> <i>Nuculana alterovi sakhalinensis</i> <i>Crenella porterosis</i> <i>Turritella</i> sp. <i>Portlandia</i> sp. <i>Macoma arctata</i>	Gastropod Pelecypods Gastropod Pelecypods
586-600		60° 3', 142° 3' farmer	Early Miocene Pillarian		Mollusks
654-656		farmer	Miocene	do	Same location as 586.
663-666		60° 3', 142° ' farmer		do	
701-702		60° 3', 142° 3' farmer		do	
1105		60° 10.3', 142° 6.6' farmer	Late Eocene- Early Miocene	<i>Macrocallista pittsburgensis</i>	Pelecypod

Table 16 continued.

1166	60° 14', 142° 7' 19S 19E 26	Late Oligocene- Early Miocene	<i>Mushashia (Neopsephaea) corrugata</i> <i>Priscofusus stewarti</i> <i>Thracia schencki</i>	Gastropods Pelecypod Naticidae indet.: gastropod
1520	60° 13'12", 142° 7'3" farmer	Tertiary		Fish vertebrae
1523	60° 7', 142° 9' 21S 20E 5	Middle-Late Miocene	<i>Nuculana (Borissia) alterovisakhalinensis</i>	
1527	60° 14', 142° 7' 19S 19E 26	Late Oligocene	<i>Turritella</i> n. sp. aff. <i>T. diversilineata</i> <i>Pitar (Katherinella) arnoldi</i> <i>?Crassatella equilateralis</i> <i>Priscofusus stewarti</i> <i>Panope snohomishensis</i>	Gastropod Pelecypods
1538		Early-Middle Oligocene	<i>Eosiphonalia</i> cf. <i>E. washingtonensis</i> <i>Euspira ramonensis</i> <i>Perse olympicensis</i> cf. <i>quimperensis</i> <i>Perse olympicensis</i> <i>Spisula trapezoides</i>	Gastropods Pelecypod Gastropod indeterminate
1539		Oligocene or Miocene	<i>Macrocallista pittsburgensis</i>	Pelecypod

Reference: University of Alaska Locality Catalogue.

Yakataga Formation

Table 17

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15421		Bering Glacier A-3 surveyor 20S 19E 36	Miocene Pliocene?	<i>Acila taliaferroi</i> <i>A. yakatagensis</i> <i>A. cf. empirensis</i>	Pelecypods
15425		surveyor 21S 19E 11		<i>A. cf. blancoensis</i> <i>A. cf. conradi</i> <i>Yoldia</i> cf. <i>Y. scissurata strigata</i>	
17793		surveyor 21S 20E 4		<i>Nuculana</i> sp. aff. <i>N. washingtonensis</i> <i>Nuculana</i> sp. aff. <i>N. chehalisensis</i> <i>Patinopecten yakatagensis</i>	
D347		surveyor 21S 20E 9		<i>P.</i> aff. <i>P. propatulus</i> <i>P.</i> aff. <i>P. purisimaensis</i> <i>Chlamys</i> n. sp. aff. <i>C. parmeleei</i>	
17796		surveyor 21S 20E 11		<i>Chlamys</i> n. sp. aff. <i>C. watti</i> <i>Astarte</i> aff. <i>A. alaskensis</i> <i>Cardita</i> n. sp.	
6686		surveyor 21S 20E 8		<i>Cardita</i> n. sp. aff. <i>C. crassidens</i> and <i>C. paucicostata</i> <i>Thyasira</i> cf. <i>T. bisecta</i> "Cardium" <i>hamiltonensis</i> "Cardium" <i>alaskensis</i> <i>Cardium</i> aff. <i>C. coosense</i> <i>Cardium yakatagensis</i> <i>Serripes groenlandicus</i> <i>Chione securis</i> cf. var. <i>alaskensis</i> <i>Mya salmonensis</i> <i>Mya</i> cf. <i>M. truncata</i> <i>Panomya</i> cf. <i>P. turgida</i> <i>P.</i> aff. <i>P. norvegica</i> <i>Thracia</i> cf. <i>T. trapezoides</i> <i>Turritella hamiltonensis</i> <i>Fusitriton</i> sp. aff. <i>F. mathewsonni</i> and <i>F. vancouverense</i> <i>F.</i> sp. aff. <i>F. coosense</i> and <i>F. pacificum</i>	Possibly 2 species Gastropods

Table 17 continued.

Neptunea postplanata
Neptunea sp. aff. *N. colmaensis*, *N. tabulata*,
N. hawleyi
Neptunea cf. *N. lyrata*
Beringius crebricostatus
Colus sp. cf. *C. jordani*
Buccinum sp. aff. *B. plectrum*
Antiplanes sp. cf. *A. perversa*

Reference: Miller, D., 1957.

Fauna characteristic of formation and not necessarily from all or any of the localities.

Yakataga Formation

Table 18

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15431	Spieker	Bering Glacier A-4 60° 6' 42", 142° 15' 16" farmer	Tertiary Middle Miocene	<i>Mya (Mya) cuneiformis</i>	Pectins
15437	Spieker	60° 7' 9", 142° 11' 12" farmer	Early Middle Miocene	do	
17782	Miller	surveyor farmer		do	Unable to plot, too vague.
17827	Johnson	Bering Glacier 60° 10' 40", 142° 50' 56" farmer	Middle Miocene	do	
17835	Miller	60° 9' 11", 142° 41' 12" farmer		do	
17850	Miller	Bering Glacier A-4 60° 4' 17", 142° 16' 29" farmer	Early Middle Miocene	do	
6694	Maddren	60° 4', 142° 13' 40" farmer	Middle Miocene	<i>Chalmys (Swiftopecten) donmilleri</i>	
6697		surveyor 21S 20E 30		<i>Mya</i> sp.	

Reference: MacNeil, F.S., 1965.

Yakataga Formation

Table 19

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20494		Bering Glacier A-3 60° 3', 142° 5' farmer	Miocene to Pliocene	<i>Neptunea</i> cf. <i>N. (Sulcosipho) tabulata</i>	Gastropod
81104		60° 2' 31", 141° 59' 45" farmer		<i>Periploma (Aeiga) Besshoense</i> <i>Turritella (Neohaustator) hamiltonensis</i> <i>Neptunea (Neptunea) platkeri</i> n. sp.	Bivalve Gastropods
81106		60° 2', 141° 59' 45" farmer		<i>Macoma</i> sp.	Bivalve
81402		60° 3' 15", 141° 50' farmer		<i>Patinopecten jonesi</i> n. sp. <i>Clinocardium yakatagense</i> <i>Securella alaskensis</i> <i>Mya (Mya) truncata</i>	Bivalves

Table 19 continued.

81403	60° 3'25", 141° 48'47" farmer	<i>Swiftopecten donmilleri</i> <i>Clinocardium brooksi</i> <i>Turritella (Neohaustator) hamiltonensis</i>	Bivalves Gastropod
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Reference: Kanno, S., 1971.

Significance: Fauna indicates littoral to neritic shallow cold water less than about 60 feet deep. Similar environment to present day Gulf of Alaska.

¹ Tokyo University of Education locality numbers.

Yakataga Formation

Table 20

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29288		Bering Glacier A-3 surveyor 22S 20E 11	Miocene Pliocene	<i>Acila</i> sp.(4) <i>Yoldia</i> cf. <i>Y. scissurata strigata</i> <i>Nuculana</i> aff. <i>N. washingtonensis</i> <i>Nuculana</i> aff. <i>N. chehalisensis</i> <i>Patinopecten (Lituyapecten) yakatagensis</i> <i>Chlamys (Swiftopecten) donmilleri</i> <i>Astarte</i> aff. <i>A. alaskensis</i> <i>Cardita (Cyclocordia)</i> n. sp. <i>Cardita (Cyclocordia)</i> n. sp. aff. <i>crassidens</i> and <i>paucicostata</i> <i>Thyasira</i> cf. <i>T. bisecta</i> "Cardium" <i>hamiltonensis</i> <i>Clinocardium</i> aff. <i>C. coosense</i> <i>Clinocardium yakatagensis</i> <i>Serripes groenlandicus</i> <i>Chione securis</i> cf. var. <i>alaskensis</i> <i>Mya</i> cf. <i>M. truncata</i> <i>Mya salmonensis</i> <i>Panomya</i> cf. <i>P. turgida</i> <i>Panomya</i> aff. <i>P. norvegica</i> <i>Thracia</i> cf. <i>T. trapezoides</i> <i>Pododesmus (Monia) macrochisma</i> <i>Turricula</i> cf. <i>T. washingtoniana turbonata</i> <i>Turritella hamiltonensis</i> <i>Fusitriton</i> aff. <i>F. mathewsonii</i> <i>Fusitriton</i> aff. <i>F. coosense</i> and <i>pacificum</i> <i>?Neptunea</i> n. sp. <i>Neptunea</i> cf. <i>postplanata</i> <i>Neptunea</i> n. sp. aff. <i>colmaensis</i> and <i>lyrata</i> <i>Neptunea</i> aff. <i>N. lyrata</i> <i>Beringius crebricostatus</i> <i>Colus</i> cf. <i>C. jordani</i> <i>Buccinum</i> aff. <i>B. plectrum</i> <i>Antiplanes</i> cf. <i>A. perversa</i> <i>Thais lamellosa</i> <i>Scutellaster</i> cf. <i>S. oregonensis</i> ¹	Pelecypods Gastropods Echinoderm
29289		surveyor 22S 21E 6		do	
6694 ²		60° 4', 142° 7'40" 21S 19E 22		do	
16895		60° 16.2', 142° 57.6' farmer		do	
6695		21S 19E 24		do	
6696		60° 5', 142° 5'7" 21S 19E 24		do	
C29286		22S 20E 11		do	
C29284		22S 20E 4		do	
C29281		60° 2', 142° 3'10" 22S 20E 6		do	
C29277		21S 19E 24		do	

Table 20 continued.

C29278	60°5'20", 142°5'5" 21S 19E 13	do
C29249	Bering Glacier A-4 60°7'40", 142°17'45" 21S 18E 2	do
C29251	60°8'7", 142°18'45" 20S 18E 34	do

Reference: Miller, D.J. 1971.

¹ Selected fossils from formation. Some all or none may be from listed localities.

² See also: MacNeil, F.S., 1965.

Yakataga Formation

Table 21

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6695 ³	Maddren	Bering Glacier A-3 60°4', 142°5' farmer	Miocene to Pliocene	(<i>Lituyapecten</i>)	New subgenus of <i>Patinopecten</i>
15425 ²	Walton	60°7', 142°7' farmer		do	
29283 ¹		60°3', 142°3' farmer		do	
29253 ¹	Opooch Creek	Bering Glacier A-4 60°8', 142°12' farmer		do	

Reference: MacNeil, F.S., 1961.

¹ California Academy of Science localities

² See also Miller, D.J., 1957.

³ See also Miller, D.J., 1971.

Yakataga Formation

Table 22

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6686 ³	Maddren	Bering Glacier A-3 60°1'30", 142°2'12" farmer	Upper Miocene	<i>Neptunea (N.) lyrata altispira</i>	All gastropods
15852 ²	Miller	Bering Glacier surveyor farmer	Middle Miocene	<i>N. (Sulcosipho) kannoi</i> n. sp.	
D257	Rossmann	Bering Glacier A-4 60°7'45", 142°16'45" farmer		<i>N. (S.) kannoi</i> n. sp. <i>N. (N.)</i> sp. A aff. <i>N. (N.) heros</i>	
D347 ³	Standard Oil	Bering Glacier A-3 60°1'22", 141°59'58" farmer		<i>N. (N.)</i> sp. A aff. <i>N. (N.) heros</i> <i>N. (N.) lyrata altispira</i>	
M1791	Plafker	Bering Glacier 60°2', 143°51'36" farmer	Upper Miocene	<i>N. (N.)</i> sp. A aff. <i>N. (N.) heros</i>	
TFN70Q Mobil Oil ¹		60°2'22", 142°1' 22S 20E 4	Middle Miocene	<i>N. (Sulcosipho) kannoi</i> n. sp.	

Reference: Nelson, C.M. Jr., 1974.

Significance: Cool temperate molluscan fauna.

¹ University of Alaska locality number.

² See also: MacNeil, F.S., 1961.

³ See also: Miller, D.J., 1957.

Yakataga Formation

Table 23

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M1779	Suckling Hills	Bering Glacier 60° 1-2', 143° 40-47' 21S 9E	Tertiary	<i>Antiplanes</i> cf. <i>A. pervensa</i>	Gastropod Crabs
M1780				<i>Megayoldia</i> cf. <i>M. thracaeformis</i>	
M1781				<i>Lucinoma</i> cf. <i>L. acutilincata</i> <i>Thyasira</i> cf. <i>T. bisecta</i>	
M1782				<i>Clinocardium</i> cf. <i>C. yakatagensis</i> <i>Panomya</i> cf. <i>P. turgido</i>	
M1783				<i>Clinocardium</i> cf. <i>C. yakatagensis</i> <i>Panomya</i> cf. <i>P. turgido</i>	
M1784				<i>Clinocardium</i> cf. <i>C. yakatagensis</i> <i>Balanus</i> sp.	Barnacle
M1785				<i>Lucinoma</i> cf. <i>L. acutilincato</i> <i>Thyasira</i> cf. <i>T. bisecta</i>	
M1787					Spatangoid, echnoid
M1788				<i>Nuculana</i> n. sp.	
M1792				<i>Balanus</i> sp.	Crabs Barnacle Plotted as one locality, Suckling Hills.

Reference: Addicott, W.O., and others, 1977.

Yakataga Formation

Table 24

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
400		Bering Glacier A-3 60° 3', 142° 3' farmer	Late Miocene ?Wishkahan		Mollusks
401	farmer		Early Miocene Pillarlan		Same location as 400.
402	farmer		Middle Miocene Newportian		do
404	farmer				do
406	farmer		Late Early to Early Middle Miocene Newportian		do
441	farmer		Early Miocene Pillarlan		do
442	farmer		Late Early to Early Middle Miocene		do
443	farmer	60° 3', 142°	Late Miocene ?Wishkahan		
446-450	farmer				Same location as 443.
451	farmer		Middle Miocene ?Newportian		do
452-456	farmer		Late Early to Early Middle Miocene Newportian		do
457-458	farmer		Middle Miocene Newportian		do

Table 24 continued.

459-460	farmer	Early Miocene Pillarian		do
461	farmer	Middle Miocene ?Newportian		do
462	farmer			do
463	farmer	Late Early to Early Middle Miocene Newportian		do
464	farmer	Middle Miocene		do
465	farmer			do
474	60° 2' 33", 142° 4' 42" farmer	Early to Middle Miocene	<i>Turritella hamiltonensis</i>	Gastropod
556-561	60° 3', 142° 3' farmer	Late Miocene Wishkahan?		Mollusks
579-585	farmer	Middle Miocene Newportian		Same location as 556.
657-662	farmer	Miocene		Same location as 443.
667-699	farmer			Same location as 556.
1102	60° 4.2', 142° .6' farmer		<i>?Yoldia brevis</i> <i>Nuculana</i> sp. <i>Neptunea</i> aff. <i>N. tabulatus</i> <i>Yoldia yakatagensis?</i> <i>Acila yakatagensis</i> <i>Papyridea? hamiltonensis</i> <i>Nemocardium</i> sp. indet. <i>Katherinella arnoldi</i>	Pelecypods Gastropod Pelecypods
1542	60° 3', 142° 4' 21S 20E 31	Miocene	<i>Patinopecten (Lituyapecten) poulcreekensis?</i>	Pelecypod
1556	surveyor farmer	Miocene	<i>Mushashia (Neopsephaea) corrugata</i>	Gastropod Locality on Yakataga Ridge. Unable to plot, too vague.

Reference: University of Alaska Locality Catalogue.

Area 5

AREA 5

Quad Maps:
Valdez
McCarthy

Sedimentary rocks of the study area range in age from Upper Triassic to Upper Cretaceous. The oldest formation is the Chitistone limestone which is a limestone and dolomite with some chert nodules and lime mudstone. Overlying the Chitistone limestone is the Nizina limestone. This formation is similar to the underlying, but has more chert lenses rather than nodules. The next youngest deposit is the McCarthy Formation which is Upper Triassic to Lower Jurassic in age. This formation is an impure limestone with intercalated shale and siltstone. Following an unconformity is the Lower Cretaceous Kennicott Formation which is a fine to very coarse-grained sandstone and conglomerate with minor amounts of siltstone and shale.

The Schulze Formation overlies the Kennicott and consists of a fine to very fine grained sandstone and siltstone.

Upper Cretaceous formations include the Lower Chititu Formation and Upper MacColl Ridge Formation. The former is mostly mudstone with some siltstone, shale, limestone and rarely pebble conglomerate. It also includes some metamorphosed rocks.

Fossils collected from the study area include Upper Triassic and Lower Cretaceous pelecypods and Lower Cretaceous and Lower Jurassic ammonites and belemnites.

The references for the area (Tables 1-5), did not specify what formations the collections came from, but the fossils give some clues. Moffit (1938) notes abundance of the pelecypod *Halobia* (Table 1). This genus is most likely from the Chitistone limestone or Nizina limestone.

The presence of Lower Jurassic ammonites; *Keplerites* and *Stephanoceras* (Tables 2, 3) would suggest that these genera are from the McCarthy Formation.

The age and short range of the ammonite *Breweriaceras hulenense* indicate that the fossils listed in Table 4 most likely came from the Kennicott Formation which is restricted to the Albian stage in the study area (MacKevett 1974).

The fossils listed from unnamed Cretaceous deposits (Table 5), are not diagnostic enough to determine their formation of origin.

Adjacent to Bureau of Land Management lands in the study area, continental Cretaceous plants have been collected (Moffit, 1938).

McCarthy/Chitistone/Nizina Formations

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
4810	Moffit	McCarthy B-5 surveyor farmer	Triassic	<i>Spiriferina</i> sp. <i>Halobia</i> sp. ? <i>Tropites</i> sp. ? <i>Arcestes</i> sp.	Brachiopods
9	Rohn	surveyor farmer	Cretaceous	<i>Aucella</i> sp.	Pelecypod Stems. Unable to plot, too vague.
6316	Moffit	61°23', 142°35' farmer		<i>Inoceramus</i> sp.	Pelecypod
7	Rohn	McCarthy B-6 61°27', 142°57' farmer	Triassic	<i>Pseudomonotis subcircularis</i>	Brachiopod
2191	Spencer	surveyor farmer	Cretaceous	? <i>Aucella</i> cf. <i>A. pallasii</i> <i>Olcos ephanus</i>	Pelecypods Unable to plot, too vague.
1	Rohn	McCarthy B-8 surveyor farmer	Triassic	<i>Pseudomonotis subcircularis</i>	Brachiopods Unable to plot, too vague.
9937	Moffit	Valdez C-1 61°40', 144°30" farmer		<i>Pseudomonotis subcircularis</i>	Brachiopod
8938	Martin	61°39'9", 144°2'52" farmer		<i>Halobia</i> sp. <i>Pseudomonotis subcircularis</i> <i>Myophoria</i> sp.	Pelecypod Brachiopod Pelecypod Gastropod
4805	Moffit	61°39'19", 144°4'30" farmer		<i>Hinnites</i> sp.	Ammonite

Reference: Moffit, F.H., 1938.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
I		Valdez C-1 surveyor farmer	Upper Jurassic Early Late Callovia	<i>Keplerites?</i> sp.	Ammonite Unable to plot, too vague.
II		Valdez C-2 surveyor farmer		<i>Inoceramus</i>	Pelecypod Belemnites Unable to plot, too vague.
B		Valdez C-1 61°44.5', 144°5.5' farmer	Lower Cretaceous Hauterivian	<i>Simbirshites</i> n. sp. <i>Pinna</i> n. sp. <i>Inoceramus</i> n. sp.	Pelecypods
D		Valdez B-1 61°29.5', 144°22' farmer		<i>Simbirshites</i> n. sp. <i>Inoceramus</i> n. sp.	Belemnite Pelecypods Belemnite

Reference: Grantz, A., and others, 1966.

Unnamed Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
7231		Valdez C-2 61°31', 144°23' farmer	Jurassic	<i>Ostrea</i> sp. <i>Inoceramus</i> sp. <i>Leda?</i> sp. <i>Stephanoceras?</i> sp. <i>Perisphinctes?</i> sp.	Pelecypods Ammonites
7232	farmer			<i>Inoceramus ambiguus</i>	Pelecypods Same location as 7231.
7233	farmer			<i>Inoceramus ambiguus</i> <i>Stephanoceras</i> sp.	Ammonite Same location as 7231.

Reference: Moffit, F., 1914.

Unnamed Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
9972		McCarthy B-6 61°29'46", 143°11' farmer	Cretaceous Early Albian	<i>Leconteites deansi</i> <i>Leconteites lecontei</i> <i>Moffities robustus</i> <i>Kennicottia bifurcata</i> <i>Anagaudryceras aurarium</i> <i>Phyllopacyceras</i> cf. <i>P. shastalense</i> <i>Calliphylloceras</i> cf. <i>C. aldersoni</i> <i>Ptychoceras</i> cf. <i>P. laeve</i> <i>Aucellina</i> sp.	Ammonites Pelecypod

Reference: Jones, D.L., and others, 1965.

Significance: *Leconteites* and *Brewericeras* both have a wide distribution and a short geologic range which make these taxa good for correlations.

Unnamed Formation

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M1977		Valdez C-1 61°44'7", 144°2.3' farmer	Cretaceous	<i>Pinnakotsinensis</i> n. sp.	Pelecypod

Reference: Packard, E., and others, 1965.

Area 6

AREA 6

Quad Maps:
Healy
Mt. Hayes
Talkeetna Mts.
Gulkana

Late to Middle Devonian limestones in the Healy quadrangle contain coelenterates, bryozoans, brachiopods, corals, gastropods and a trilobite. These are poorly preserved and represent the oldest fossils found in this area (Table 1).

The McCallum Creek Sequence is made up of volcanic breccias and tuffs, and is interbedded with sandstones, silts, conglomerates and limestones (Hansen, 1963). The limestones have produced a fauna of corals and brachiopods (Tables 2, 3, locality 330-1). A Mississippian age has been assigned to these fossils.

Permian and Pennsylvanian rocks are the dominant fossiliferous deposits in the area. The formations have not yet been given formal names, but Hansen (1963) has referred the Pennsylvanian rocks to the Rainbow Mountain sequence and has described them as being graywackes, limestones, sandstones and mudstones with interspersed tuffs and volcanic breccias.

Most of the fossils have been found in the limestones and mudstones. Pennsylvanian fossils include brachiopods (Tables 3-7), corals (Tables 3, 4, 6-9), ammonites (Tables 3, 5-7, 10), and trilobites (Tables 3, 11). Other less common fossils include; bryozoans, fusulinids, crinoids, gastropods, and a pelecypod (Table 3).

One particular Pennsylvanian locality (RM8), stands out for its diversity and abundance. RM8 brachiopods show affinities to Asia and North America, are deep water types, show evidence of transport and most are Middle Pennsylvanian taxa (Gebhardt, 1972). A new species of trilobite was described by Chamberlain (1977) from this locality. It is the youngest occurrence of the genus *Griffithides* known and is thought to be Middle Pennsylvanian. The corals at this locality range from Lower Permian to Pennsylvanian. One unique specimen had preserved reproductive budding structures (Minato and others, 1967). This locality has produced new species of corals and crinoids (Rowett, 1969; Rowett and others, 1973; and Strimple and others, 1971).

Permian deposits are in proximity to the Pennsyl-

vanian rock in this area. Various names have been applied to these rocks but no formal descriptions yet apply. University of Alaska collections consist of corals and brachiopods, fusulinids from the Mankomen Formation (Table 12), and corals, brachiopods, fusulinids, bryozoans, pelecypods and cephalopods from unnamed Permian deposits (Table 3).

Rowett (1975) lists corals from the vicinity of Rainbow Mountain from the McCallum Creek sequence (Table 13). Pennsylvanian coral, brachiopods, gastropod, pelecypods and fusulinids are also found at these localities (Table 7).

Chamberlain (1977) lists trilobites from two localities in the area (Table 14). Both are from the Phelan Creek Formation and both are Early Permian. *Cheiropyge himalyensis* is the second known from North America and the oldest known occurrence of this taxa. The other trilobite is a new species and the oldest species of this genus.

One locality of Jurassic or Cretaceous age is reported from the area in an unnamed formation (Table 3, locality 844). These marine fossils are not specific to determine the exact age.

The youngest formations in the study are the Gakoma and Cantwell. Both are Tertiary and possibly Miocene in age. Plants have been reported from these two formations (Tables 15, 16).

In the vicinity of Tangle Lakes, white spruce cones were found that are the earliest evidence of postglacial spruce (Table 17; Hopkins and others, 1981).

Management recommendations: The Permian and Pennsylvanian fossils in this area are not completely sampled or studied. Several new species have been found and the potential is good for future recovery of additional paleontological material. Many of these localities are adjacent or close to the Richardson Highway and may be subject to construction damage or indiscriminate collecting. Bureau of Land Management managers should monitor activities in this area.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
A-713 ¹		Healy B-4 63°23', 148°41' 18S 7W 3	Late-Middle Devonian	<i>Cladopora</i> sp. <i>Dendrostella</i> sp. <i>Leiochynchus</i> spp. <i>Emanuella</i> sp. <i>Ladjia</i> sp. <i>Dechenella</i> sp.	Coelenterates Brachiopod ² Trilobite Tabulate corals Stromatoporoids Gastropods

Reference: Blodgett, R., 1977.

¹ University of Alaska

² Fossils poorly preserved

Unnamed Formation McCallum Creek Sequence

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	F-10	Mt. Hayes B-4 surveyor 19S 11E 14	Mississippian	<i>Leptaena</i> cf. <i>L. analoga</i> <i>Schuchertella</i> sp.	Brachiopods
	F-12	surveyor		<i>Buxtonia</i> sp.	
	F-11	surveyor 19S 11E 15		<i>Leptaena</i> cf. <i>L. analoga</i> <i>Brachythyris</i> cf. <i>B. subcardiformis</i>	

Reference: Hansen, L., 1963.

Unnamed Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
138		Mt. Hayes B-4 63°16', 145°35' farmer	Lower Permian		Brachiopods, corals Bryozoan, fusulinids
139		63°16', 145°36' farmer			Brachiopods, corals Pelecypods
142		farmer			Corals Same location as 139.
143		farmer	Permian		Brachiopod, corals Cephalopod Same location as 139.
151		63°19', 146° farmer	Upper Paleozoic	<i>Neospirifer</i> sp.	Brachiopod Mollusk? Coral?
158		Mt. Hayes A-5 63°, 146° farmer			Coral?
162		Mt. Hayes B-4 63°20', 146° farmer			Bryozoan, fusulinids
330-1		63°15', 145°35' farmer	Mississippian	<i>Brachythyris</i> cf. <i>B. suborbicularis</i>	Brachiopod Brachiopods, corals

Table 3 continued.

606	63°19', 145°43' farmer	Pennsylvanian		Brachiopods, crinoids, trilobite nautiloid, invertebrates indet.
607	farmer			Gastropods Same location as 606.
608	farmer			Brachiopod-spiriferid Same location as 606.
844	Healy B-4 63°25', 148°52' farmer	Jurassic-Cretaceous	<i>Inoceramus</i> sp.	Prisms Belemnites
995	Mt. Hayes B-4 63°18', 145°37' farmer	Pennsylvanian		Brachiopods, corals
1025	63°19.7', 145°43.4' farmer			Trilobites, corals, crinoids, scyphozoa, goniatite cephalopod
1588	surveyor farmer	Permian		Bryozoan, coral Isabel Pass - Rainbow Mtn. Unable to plot, too vague.
1698	63°20', 145°44' farmer	Pennsylvanian		Crinoid calyx, pelecypod Trilobite (pieces)
1751	63°15'30", 145°37' farmer	?Tertiary		Brachiopods, corals
2069	63°20', 145°44' farmer	?		Trilobite Same location as 1698
2079	63°19', 145°43' farmer			Brachiopods, ammonite

Reference University of Alaska Locality Catalogue.

Unnamed Formation Rainbow Mt. Sequence Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	F-1	Mt. Hayes B-4 surveyor 18S 11E 30	Pennsylvanian	<i>Aulophyllid</i> <i>Cladochonus</i> cf. <i>C. texasensis</i> <i>Composita</i> sp. <i>Linoproductus</i> (sensu stricto) sp. <i>Echinoconchus</i> sp. <i>Spirifer</i> cf. <i>S. rockymontanus</i> <i>Spirifer</i> spp. <i>Leiorhynchus</i> cf. <i>L. rockymontanus</i> <i>Aviculopecten</i> sp. <i>Pseudoparalegoceras</i> n. sp.	Corals Brachiopods Pelecypod Cephalopod Phillipsid trilobite
	F-2	surveyor 18S 11E 31		<i>Leiorhynchus</i> cf. <i>L. rockymontanus</i>	Fusiform fusulinids Brachiopod
	F-3	surveyor 19S 11E 10		<i>Wedekindellina</i> ? sp. <i>Fusulinella</i> ? sp.	Foraminifera
	F-4	surveyor 19S 11E 14		<i>Amplexizaphrentis</i> n. sp. <i>Michelinia</i> cf. <i>M. referta</i>	Cyathopsid coral Corals
	F-5	surveyor 19S 11E 15		<i>Schizophoria</i> sp. <i>Spirifer</i> spp.	Pleurotomariacian gastropod Brachiopods Dictyoclostid brachiopod
	F-6	surveyor			Lithostrotionellid coral Cyathopsid coral
	F-7	surveyor			Lithostrotionellid coral Cyathopsid coral

Table 4 continued.

F-8	surveyor			<i>Michelinia</i> cf. <i>M. referta</i> <i>Bothrophyllum</i> n. sp. <i>Buxtonia</i> sp. <i>Spirifer</i> spp.	Lithostrotionellid coral Cyathopsid coral Corals Brachiopods
F-9	surveyor 19S 11E 14			<i>Wedekindellina?</i> sp. <i>Fusulinella?</i> sp. <i>Buxtonia</i> sp.	Foraminifera Cyathopsid coral Dictyoclostid brachiopod Brachiopod Neococeratidian cephalopod

Reference: Hansen, L., 1963.

Unnamed Formation

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
RM8 ¹	Rainbow Mountain	Mt. Hayes B-4 surveyor farmer	Early Pennsylvanian - Middle Pennsylvanian	<i>Pseudoparalegoceras hansonii</i> <i>Desmoinesia</i> sp. <i>Productina</i> sp. <i>Tomioopsis</i> sp. <i>Choristites trautscholdi</i> <i>Subansiria</i> sp. <i>Linoproductus meniscus</i> <i>Stegacanthia?</i> sp. <i>Leptagonia?</i> sp. <i>Martinia galatea</i> <i>Alispirifer</i> sp. <i>Anthracospirifer occiduus</i> <i>Donella?</i> sp. <i>Ella</i> sp. <i>Antiquatonia</i> sp.	Ammonite Brachiopods ² 3 3 3 2 2 3

Reference: Gebhardt, R.L., 1972.

¹ University of Alaska. See Rowett, C.L., 1969; Minato, M., 1967; Chamberlain, C., 1977; Strimple, H., and others, 1971.² Known from North America.³ Known from Asia.

Unnamed Formation

Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
RM8 ⁴		Mt. Hayes B-4 surveyor farmer	Pennsylvanian Atokan	<i>Pseudoparalegoceras hansonii</i> <i>Cryptophyllum striatum</i> <i>Proshumardites</i> sp. cf. <i>P. primus</i> <i>Syngastrioceras</i> sp. (<i>gastrioceria</i>) <i>Desmoinesia</i> <i>Subansiria</i> <i>Tomioopsis</i> <i>Synbathocrinus alaskaensis</i> n. sp. <i>Eucatillocrinus richardsoni</i> <i>Coenocystis richardsoni</i> <i>Coenocystis timmeri</i> n. sp.	Ammonite (UA1023) Coral Ammonites Brachiopods Crinoids ¹ 2 3

Reference: Strimple, H., and others, 1971.

Collectors: University of Alaska students and L.G. Hanson, R. Allison, C.L. Rowett and R.S. Timmer.

Collection at University of Iowa, Geology Department.

¹ Holotype: SUI35159, Paratype: SUI34749, Hypotype: SUI32233.² Holotype: SUI35160, Paratype: SUI34694.³ Holotype: SUI34692.⁴ See also: Rowett, C.L., 1969; Rowett, C.L., 1973; Gebhardt, R.L., 1972; Minato, M., 1967; Chamberlain, C., 1977.

Unnamed Formation
Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
RM8 ²	1	Mt. Hayes B-4 63°19.5', 145°44' farmer	Lower Middle Pennsylvanian post-Morrowan pre-Missourian	<i>Cryptophyllum striatum</i> n. sp. <i>Cladochomus</i> sp. <i>Michelinia</i> sp. <i>Linoproductus</i> sp. <i>Juresania</i> sp. <i>Stenocisma</i> sp. <i>?Institina</i> sp. <i>Chaoiella</i> sp. <i>Pseudoparalegoceras hansonii</i>	Rugosa (UA1003) Tabulata Brachiopods Cephalopod Unidentified pectinoid pelecypods, bryozoa and trilobites (rare).
MC7		63°16.5', 145°36.5' farmer	Lower Permian Wolfcampian	<i>Bothrophyllum</i> cf. <i>B. pseudoconicum</i> <i>?Caninia</i> sp. <i>Michelinia</i> sp.	Rugosa Tabulata Brachiopods scattered and poorly preserved.
MC6		63°16', 145°36.5' farmer		<i>Heritschioides summitensis</i> n. sp.	Rugosa (UA1025) Holotype Brachiopods. Poorly preserved. Unidentified marine algae Schwagerinid fusulinidae
MC13		63°16.1', 145°36.5' farmer		<i>Timania rainbowensis</i> n. sp. <i>?Omphalotrochus</i> <i>Pseudofusulinella</i> sp.	Rugosa (UA1051) Holotype Gastropods Productid brachiopods Spiriferid Fusulinid
RC18		63°16.5', 145°50' farmer	Wolfcampian or Lower Leonardian	<i>Clisiophyllum</i> sp. <i>B</i> <i>Neospirifer</i> sp. <i>?Spiriferellina</i> <i>Spiriferella</i> sp. <i>?Camerisma</i> sp. <i>Antiquatonia</i> sp.	Rugosa Brachiopods
DR16		63°15.9', 145°48.8' farmer		<i>Clisiophyllum</i> sp. <i>A</i> <i>Aulocilsia deltense</i> n. sp. <i>Hindia?</i> sp.	Rugosa (UA1007) Holotype Porifera Brachiopods schwagerinid fusulinids
VV21a, b		Mt. Hayes A-4 63°14.25', 145°33.8' farmer		<i>Durhamina alaskaensis</i> n. sp. <i>Timania</i> cf. <i>T. schmidti</i> <i>Sinopora minatoi</i> n. sp. <i>Pseudofusulinella</i> sp. <i>Schwagerina</i> sp.	Rugosa (UA1004) Holotype Tabulata Fusulinidae
DR15		63°15.9', 145°48.8' farmer		<i>Durhamina sutherlandi</i> n. sp. <i>Sinopora</i> sp.	Rugosa (UA1006) Holotype Tabulata
MC3		63°16', 145°35.7' farmer	Wolfcampian	<i>Bothrophyllum</i> cf. <i>B. pseudoconicum</i> <i>Neospirifer</i> sp. <i>Choristites</i> sp. <i>?Unispirifer</i> sp. <i>Yakovlevia</i> sp. <i>Linoproductus</i> sp. <i>?Calliprotonia</i> sp. <i>?Kochiproductus</i> sp. <i>Rugosochonetes</i> sp. <i>?Denticulophora</i> sp.	Rugosa Brachiopods
MC1		63°15.8', 145°36.4' farmer		<i>Bothrophyllum</i> sp. <i>A</i> <i>?Pseudobradiphyllum</i> sp. <i>A</i> <i>?Bradyphyllum</i> sp. <i>A</i> <i>Spiriferella</i> sp. <i>Choristites</i> sp. <i>Reticulatia</i> sp.	Rugosa Brachiopods

Table 7 continued.

MC0	63°15.8', 145°37' farmer		<i>Linoproductus</i> sp. <i>Yakovlevia</i> sp. <i>?Kochiproductus</i> sp.	Rugosa Tabulata
RC17	63°15.9', 145°49.9'	Wolfcampian or ? Lower Leonardian	<i>Caminia petoczi</i> n. sp. <i>Linoproductus</i> sp. <i>Stenoscisma</i> sp.	Rugosa (UA1084) Holotype Brachiopods Fusulinids
DR14	63°16', 145°48.2' farmer		<i>Caminia petoczi</i> n. sp.	Rugosa Fusulinids Brachiopods poorly preserved.
MC5	Mt. Hayes B-4 63°16'5", 145°36'35" farmer	Wolfcampian	<i>Syringopora katoi</i> n. sp. <i>Plicatifera</i> sp. <i>Derbyia</i> sp.	Tabulata Brachiopod Fenestrate Bryozoa

Reference: Rowett, C.L., 1969.

Significance: Faunal affinities with those from Moscow Basin and Ural Mountains in Russia.

¹ University of Alaska specimen numbers.

² See also: Rowett, C.L., 1973; Gebhardt, R.L., 1972; Minato, M., 1967; Chamberlain, C., 1977; Strimple, H., and others, 1971.

Unnamed Formation

Table 8

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
RM-8 ¹		Mt. Hayes B-4 surveyor farmer	Lower Permian	<i>Timania rainbowensis</i>	Rugose coral Shows budding structures

Reference: Minato, M., and other, 1967.

¹ See also: Rowett, C.L., 1969; Rowett, C.L., 1973; Gebhardt, R.L., 1972; Chamberlain, C., 1977; Strimple, H., and others, 1971.

Unnamed Formation

Table 9

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
RM8 ¹		Mt. Hayes B-4 surveyor farmer	Pennsylvanian Atokan	<i>Sochkineophyllum</i> n. sp. <i>Cryptophyllum striatum</i>	Corallite (UA1106) type 5 corallites
				<i>Lophophyllidium</i> aff. <i>L. sauridens</i> <i>Zaphrentoides</i> sp. A <i>Zaphrentoides</i> aff. " <i>Zaphrentis</i> " <i>wannensis</i> <i>Neozaphrentis multiseptata</i> n. sp.	Polycoelid indet. 4 corallites 1 fragment corallite 4 corallites. (UA1117) type

Reference: Rowett, C.L., and other, 1973.

Significance: Pennsylvanian fossils unknown anywhere else in Alaska and invertebrates presumed to be antecedents to rich lower Permian fauna from this region.

¹ See also: Rowett, C.L., 1969; Gebhardt, R.L., 1972; Chamberlain, C., 1977; Strimple, H., and others, 1971.

Unnamed Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
F-1 ¹		Mt. Hayes B-4 surveyor 18S 11E 30	Pennsylvanian	<i>Pseudoparalegoreras</i> n. sp.	Ammonite

Table 10 continued.

F-9¹ surveyor do
19S 11E 14

Reference: Unklesbay, A., and other, 1966.

¹ Hansen's localities. See Hansen, 1963. Alaska Department of Natural Resources Geologic Report 2, 82 p.

Unnamed Formation

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
RM8 ^{1/2}	Allison	Mt. Hayes B-4 surveyor farmer	Middle Pennsylvanian Atokan	<i>Griffithides (Griffithides) major</i> n. sp.	Trilobite UA2440-2444 ² 1 complete internal mold 4 almost complete specimens

Reference: Chamberlain, C., 1977.

Significance: Youngest occurrence of genus known.

¹ University of Alaska locality number.

² University of Alaska specimen number.

³ See also: Rowett, C.L., 1969; Rowett, C.L., 1973; Gebhardt, R.L., 1972; Strimple, H., and others, 1971.

Mankomen Formation

Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
163-4		Mt Hayes B-4 63°15'-16', 145°51' farmer	Permian		Brachiopods, fusulinids
155		63°15', 145°47' farmer			Brachiopods
152		63°16', 145°50' farmer		<i>Crurithyrus</i> sp.	Brachiopods
153		63°16', 145°49' farmer		<i>Crurithyrus</i> sp.	
154		Mt. Hayes B-4 63°15', 145°47' farmer		<i>Cleiorthyridina</i> sp.	Corals

Reference: University of Alaska Locality Catalogue.

McCallum Creek Formation

Table 13

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
16697 PC	52APw64 Delta River district	Mt. Hayes B-4 63°18.5', 145°41.2' 19S 11E 15	Permian	<i>Bothrophyllum</i> cf. <i>B. pseudoconicum</i>	Corals
	Rainbow Mountain area	surveyor 19S 11E 15		<i>Timania</i> sp. <i>?Sinopora</i> sp.	same as MC-O ¹
		surveyor		<i>Bothrophyllum</i> sp. <i>?Pseudobradiphyllum</i> sp. <i>?Bradyphyllum</i> sp.	same as MC-1 ¹
		surveyor 19S 11E 14		<i>Bothrophyllum</i> cf. <i>B. pseudoconicum</i>	same as MC-3 ¹
		surveyor		<i>Syringopora katoi</i>	same as MC-5 ¹

Table 13 continued.

	surveyor		<i>Heritschioides summitensis</i>	same as MC-6 ¹
	surveyor		<i>Bothrophyllum</i> cf. <i>B. pseudoconicum</i> <i>?Caninia</i> sp. <i>Michelinia</i> sp.	same as MC-7 ¹
	surveyor		<i>Timania rainbowensis</i>	same as MC-13 ¹
Delta River	surveyor 19S 10E 16		<i>Caninia petoczi</i>	same as RC-17 ¹
	surveyor		<i>?Clisiophyllum</i> sp.	same as RC-18 ¹
	surveyor 19S 10E 15		<i>Caninia petoczi</i>	same as DR-14 ¹
	surveyor		<i>Durhaminia sutherlandi</i> <i>Sinopora</i> sp.	same as DR-15 ¹
	surveyor		<i>Auloclisia deltense</i> <i>Clisiophyllum</i> sp.	same as DR-16 ¹
McCallum Creek area	Mt. Hayes A-4 surveyor 19S 11E 25		<i>Timania</i> cf. <i>T. schmidtii</i>	same as VV-21 ¹
	surveyor farmer		<i>Durhaminia alaskaensis</i> <i>Sinopora minatoi</i>	same as VV-21 ¹

Reference: Rowett, C.L., 1975.

¹ See Rowett, C.L., 1969.

Phelan Creek Formation

Table 14

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Gulkana Glacier ²	Mt. Hayes B-4 surveyor farmer	Early Permian Wolfcampian	<i>Cheiryopyge himalayensis</i>	UA2445 ¹ . Pygidium Oldest occurrence known, second known from North America. Unable to plot, too vague.
	Rainbow Mt. ²	surveyor farmer		<i>Paraphillipsia aglypta</i> n. sp.	UA2439 ¹ . Pygidium Oldest species known 3 pygidia. UA2437-39 Unable to plot, too vague.

Reference: Chamberlain, C., 1977.

¹ Univ. of Alaska specimen number.

² Bond and Gilbertson.

Gakoma? Formation

Table 15

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
238		Mt. Hayes A-2 63°8', 144°43' 20S 16E 32	Tertiary	<i>Metasequoia</i> sp.	Sequoia Plants

Reference: University of Alaska Locality Catalogue.

Cantwell Formation**Table 16**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
722		Healy A-3 63°, 148° farmer	?Miocene		Angiosperms, conifers, seeds

Reference: University of Alaska Locality Catalogue.

Unnamed Formation**Table 17**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
5	Tangle Lakes	Mt. Hayes A-5 63°2', 146°4" farmer	Postglacial		White spruce cones

Reference: Hopkins, D., and other, 1981.

Significance: Earliest evidence of postglacial spruce.

Area 7

AREA 7

Quad Maps:
McGrath
Lime Hills

The distribution of fossils reported in this area is very small and restricted, yet the abundance, diversity and age range of the fossils more than compensates for the limited distribution.

The first fossils reported in the area were from an unnamed shale-sandstone argillaceous limestone. These fossils; brachiopod, ostracods and corals (Table 1), dated these rocks as Middle Ordovician and Devonian. Subsequent studies of the corals, gastropod, brachiopod and conodonts from this locality and nearby (Tables 2-4) confirmed a Middle Devonian age for these rocks, but also revealed the presence of Ordovician and Silurian organisms.

The name Cheeneetnuk was proposed by Blodgett and Gilbert (1983) for the dark gray, argillaceous, micritic limestones in the area. New fossils included brachiopods, conodonts, algae, trilobites and sponges (Tables 5-8).

Table 5 lists two new ammonites from this formation. The ammonites are Devonian (Eifelian) and are characteristic of an open marine environment.

Part of this study area, particularly the upper part of the Cheeneetnuk limestone, has been named the Nixon Fork Terrane (Patton 1978). It is thought that this terrane was accreted to Alaska by Post-Devonian tectonic movements. The fossils suggest that original deposition of the sediments may have been in the proximity of western Canada due to the similarities of the Alaskan fauna to the Canadian fauna.

From an unnamed Late Pennsylvanian formation in the area, similar in lithology to the Cheeneetnuk, ie; an argillite chert, limestone and mudstone; comes a diverse fauna of trilobites, echinoderms, bryozoans, brachiopods and pelecypods (Table 9).

Table 10 reports Mesozoic plants and pelecypods, and the Jurassic and Cretaceous pelecypod *Buchia* from unnamed formations in the area.

Considering the relatively short time that fossils have been known from the area, the paleontologic abundance and diversity, it would seem that additional field studies would be beneficial here. As a management procedure, the Bureau of Land Management should encourage and support continued research in this area. Protection of the sites does not

seem to pose an immediate problem due to fairly limited access by the public.

After thorough paleontologic investigations have been made in the area, and if abundance of specimens so warrant, this may be an area that could be set aside for some controlled public collecting.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3140CO		McGrath A-4 surveyor farmer	Middle ?Ordovician	<i>Christiania?</i> sp. <i>Oepikella</i> sp. <i>Brevibolbina?</i> sp. <i>Pyxion?</i> sp. <i>Leperditella</i> sp. <i>Krausella</i> sp.	Unable to plot, too vague. Brachiopod Ostracods
5592SD		62°11', 154°48'6" farmer	Devonian	<i>Aphrosalpinx textilis</i>	Algal limestone Archaeocyathid Rugose corals (4) - Close to <i>Leptoinophyllum</i>

Reference: Sainsbury, C.L., 1965.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6449SD	FET1690'	McGrath C-4 62°32.5', 154°51' farmer	Late Ordovician or Early Silurian	<i>Favosites</i> sp. <i>Syringopora</i> sp. <i>Holacanthia?</i> sp. <i>Catenipora</i> sp. <i>Brachylasma?</i> sp. <i>Tollina</i> sp. <i>Trabeculites</i> sp.	Corals
8927SD	65Ahr37	McGrath A-5 62°7.5', 155°1.7' farmer	Late Silurian	<i>Microplasma?</i> sp. <i>Kirkidium</i> sp.	Coral Brachiopod and other brachiopods
6452SD	WCG215'	Lime Hills D-8 61°45.2', 155°44' farmer	Silurian	<i>Ketophyllum</i> sp. <i>Lykocystiphyllum?</i> sp.	Corals Rugosans indeterminant
5592SD	59ASn16	McGrath A-4 62°11', 154°54' farmer	Late Devonian Frasnian	cf. <i>Ncostringophyllum</i> sp.	Coral
7691SD	65Ahr44	McGrath A-5 62°7.5', 155°5.6' farmer	Middle Devonian	<i>Favosites</i> sp. <i>Pachyfavosites</i> sp.	Corals
7692SD	65Ahr47A	62°4.8', 155°7.6' farmer		<i>Favosites</i> sp.	Coral
7693SD	65Ahr54	62°3.4', 155°8.4' farmer		<i>Favosites</i> sp. <i>Alveolites</i> sp. <i>Cladopora</i> sp. <i>Thamnopora</i> sp. <i>Grypophyllum</i> sp.	Corals
7695SD	65Ahr64	62°4.7', 155°9.4' farmer		<i>Favosites</i> sp. <i>Syringopora</i> sp. <i>?Thamnopora</i> sp.	Corals
7696SD	65Ahr66	62°4.5', 155°9.4' farmer		<i>Favosites</i> sp.	Coral
7698SD	65Ahr74	62°2.3', 155°13' farmer		<i>Favosites</i> sp. <i>Heliolites</i> sp. <i>Antherosalpinx</i>	Corals Worm tube
7699SD	65Ahr75A	62°1.9', 155°13.6' farmer	Late Middle Devonian	<i>Favosites</i> sp. <i>Pachyfavosites</i> sp. <i>Alveolites</i> sp. <i>Thamnopora</i> sp.	Corals

Table 5 continued.

3	79RB8			<i>Pinacites</i> sp. juv. <i>Foordites</i> cf. <i>platypleura</i> ² <i>Polygnathus costatus costatus</i>	Same loc. as above but 20m lower Conodont
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Reference: House, M.R., and others, 1982.

Significance: Good material. Also includes brachiopods, gastropods, bivalves, ammonites, and corals. Affinities to faunas of Europe, North Africa, and Czechoslovakia.

¹ First occurrence in North America.

² First occurrence in western North America.

³ See also: Blodgett, R., and other, 1983.

Cheeneetnuk Limestone

Table 6

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N	Long.W			
10060 ¹ SD	79RB4	McGrath A-5	62°4'3", 155°7'5"	Middle Devonian	<i>Cystiphyllodes</i> cf. <i>macrocystis</i> <i>Fusinipyge</i> ? sp. <i>Coelotrochium</i>	Brachiopod Trilobite Green algae
10321 SD	79RB6		62°4'28", 155°9'21" 23N 32W 21		<i>Camsellia</i> n. sp. <i>Coelotrochium</i>	Trilobite Green algae
10061 ¹ SD	79RB8		62°4'33", 155°9'23"	Eifelian	<i>Polygnathus costatus costatus</i> <i>Pinacites</i> sp. <i>Foordites</i> cf. <i>platypleura</i> <i>Coelotrochium</i> <i>Sphaerospongia tessellata</i>	Conodont Ammonites Green algae do
10062 ¹ SD	79RB9				<i>Otarion</i> sp. <i>Sphaerospongia tessellata</i> <i>Coelotrochium</i> <i>Subanarcestes</i> ? sp. <i>Pinacites jugleri</i>	Trilobite Green algae do Ammonites Same location as 10061SD.
10094 SD	79RB10 23N 32W 16		62°4'39", 155°9'25"		<i>Polygnathus costatus costatus</i>	Conodont
10095 ¹ SD	79RB11		62°4'50", 155°9'25"		<i>Sociophyllum</i> cf. <i>glomeratum</i> <i>Coelotrochium</i>	Brachiopod Green algae
10063 SD	79RB12		62°5'15", 155°7'27" 23N 32W 15		<i>Lekanophyllum</i> cf. <i>mediale</i> <i>Coelotrochium</i>	Brachiopod Green algae
10097 SD	79RB20	McGrath A-4	62°12'3", 154°59'43" 24N 31W 5		<i>Camsellia</i> n. sp.	Trilobites
10098 SD	79WG184		62°13'2", 154°53'40" 25N 30W 31		<i>Dechenella</i> cf. <i>setosa</i> <i>Basidechenella</i> ? sp. <i>Coelotrochium</i>	Green algae

Reference: Blodgett, R., and other, 1983.

Significance: Fossils show a gradual depth increase of water through time.

¹ See also: Rigby, J.K., and other, 1983.

Cheeneetnuk Limestone

Table 7

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N	Long.W			
10060 ² SD	79RB4	McGrath A-5	62°4'3", 155°7'5" 23N 32W 22	Middle Devonian Eifelian	<i>Hormospongia labyrinthica</i> n. g., n. sp.	Sponge Holotype UA2459 ¹
10061 ² SD	79RB8		62°4'3", 155°7'5" 23N 32W 21		<i>Hormospongia labyrinthica</i> n. g., n. sp. <i>Hormospongia diartheria</i> n. sp. <i>Hormospongia acara</i> n. sp.	Holotype UA2462-63 ¹ Holotype UA2464 ¹
10062 ² SD	79RB9		62°4'33", 155°9'23" 23N 32W 21		<i>Hormospongia labyrinthica</i> n. g., n. sp. <i>Hormospongia diartheria</i> n. sp. <i>?Haplition</i> sp.	

Table 7 continued.

10095² 79RB11 62°4'40", 155°9'25"
SD 23N 32W 16 *Hormospongia labyrinthica* n. g., n. sp.

Reference: Rigby, J.K., and other, 1983.
¹ University of Alaska specimen numbers.
² See also: Blodgett, R., and other, 1983.

Cheeneetuk Formation

Table 8

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
D ¹		McGrath A-5 62°4.5', 154°9.3' farmer	Devonian		Brachiopods Corals Gastropods Bivalves

Reference: Blodgett, R., 1983.
¹ See Blodgett and Gilbert, 1983.

Unnamed Formation

Table 9

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
A1695 ¹		McGrath A-5 62°5.4', 155°11.3' 23N 32W 17	Late Pennsylvanian Gshelian	<i>Brachymetopus pseudometopina</i> <i>Pseudophillipsia?</i> (<i>Carniphillipsia</i>) sp. A <i>Pseudophillipsia?</i> (<i>Carniphillipsia</i>) sp. B <i>Archeocidaris</i> sp. <i>Polypora</i> spp. <i>Septacamera</i> sp. <i>Waagenites?</i> sp. <i>Chonetinella</i> sp. <i>Anidanthus</i> sp. <i>Terrakea?</i> sp. <i>Reticularia?</i> sp. <i>Acanthopecten?</i> sp.	Trilobites Bryozoans Brachiopods Pelecypod

Reference: Hahn, G., and others, 1985.
Significance: *B. pseudometopina* formerly known only from Yugoslavia, widespread not endemic.
¹ University of Alaska locality number.

Unnamed Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
923		McGrath A-5 62°5', 155°12' farmer	Mississippian		Bryozoans, brachiopods
925		62°4.5', 155°9.7' farmer	Middle Devonian		Brachiopods, coral Worm tubes
952		surveyor 23N 32W 19	Late Paleozoic		Bryozoans, brachiopods
953		surveyor 23N 33W 36	Devonian		Corals, bryozoans
954		surveyor 23N 33W 22	Jurassic to	<i>Buchia</i> sp.	Pelecypod
1644-52		McGrath B-3 surveyor 26N 27W 8	Mesozoic		Plant impressions Also section 9, 35, 18, 19, 5.

Reference: University of Alaska Locality Catalogue.

Area 8

AREA 8

Quad Maps:
Unalakleet
Holy Cross
Iditarod
Russian Mission
Sleetmute

Fossil bearing deposits in this area range in age from Jurassic to Pleistocene. The former is represented by rocks of the Gemuk Group which spans a time from the Carboniferous to Cretaceous. Generally, these rocks consist of andesite, tuff, siltstones, graywacke and conglomerates interbedded with lava flows and other volcanics.

Fossils from the Gemuk Group in this area are not abundant or diverse (Table 1). The presence of the Bajocian ammonite *Stephanoceras* supports a Middle Jurassic age for these rocks in this area. The same formation to the southeast near Mt. Hamilton (Area 3) is much more fossiliferous.

In the Iditarod Quadrangle, fossil plants (Table 2) and marine pelecypods (Table 3) have been reported. These are suspected to have come from the Kuskokwim Group which ranges from Lower to Upper Cretaceous. The unidentified plants (Table 2) give no clues to the age, however; the pelecypod *Inoceramus* cf. *I. labiatus* is Upper Cretaceous.

Another Upper Cretaceous formation outcrops in the study area along the Yukon River. This formation known as the Kaltag is a non-marine sequence of sandstone, shale, conglomerate, tuff and coal. Plants are abundant and diverse, and some freshwater invertebrates are known. The plants (Table 4) suggest a warm temperate to tropical climate for this region during the Late Cretaceous.

Musk ox, mammoth and bison have been found in the unconsolidated fluviatile, lacustrine and glacial sands, silts and gravels (Table 5). These Pleistocene sediments are best exposed adjacent to the Yukon River.

The most significant paleontological resources in this area are the Cretaceous plants, and Pleistocene vertebrates. Both are not as abundant here as in other areas. No special management is required, but land managers should be familiar with the General Recommendations for Vertebrates and Plants given in this report.

Gemuk Group

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
27716		Russian Mission C-8 61°39', 161°55.5' farmer	Middle Jurassic Bajocian	<i>Stephanoceras?</i> sp.	Ammonite

Reference: Imlay, R.W., and other, 1973.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
956		Iditarod B-1 62°20'25", 156°9' 26N 37W 16	Mesozoic		Plants
957		62°15', 156°12' 25N 37W 6			do
958		62°17.5', 156°12' 25N 37W 18			do

Reference: University of Alaska Locality Catalogue.

Unnamed Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
9367		Iditarod B-3 surveyor farmer	Upper Cretaceous	<i>Inoceramus cf. I. labiatus</i>	Pelecypod Unable to plot, too vague.

Reference: Mertie, J., and others, 1924.

Kaltag Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2685	2AC282	Unalakleet D-1 63°51'8", 159°13'8" farmer	Middle Upper Cretaceous	<i>Unio</i> n. sp. <i>Viviparus</i>	Pelecypods
3269	3AH30	farmer		<i>Cissites pseudoplatanus</i> n. sp. <i>Ginkgo crenulata</i> n. sp. <i>Protophyllocladus obesus</i> n. sp. <i>Pseudoprotophyllum dentatum</i> n. sp.	Angiosperm Ginkgo Conifer? Angiosperm Same location as 2685.
2933	3AH30	farmer		<i>Unio</i> n. sp. <i>Viviparus</i> sp.	Pelecypods Same location as 2685.
4641	38	farmer		<i>Anemia supercretacea</i> n. var. <i>Cephalotaxopsis heterophylla</i> <i>Menispermities cordifolius</i> <i>Pseudoprotophyllum viburnifolium</i> n. sp.	? Conifer Angiosperm Same location as 2685.
4795	39	farmer		<i>Unio</i> sp. <i>Viviparus</i> sp.	Pelecypods Same location as 2685.
4642	36	63°51'26", 159°13'8" farmer		<i>Tilia cretacea</i> n. sp. <i>Ginkgo crenulata</i> n. sp.	Angiosperm

Table 4 continued.

			<i>G. reniformis</i>	
			<i>G. pseudoadiantoides</i> n. sp.	
			<i>Sequoia rigida spinifolia</i> n. var.	Sequoia
			<i>Populites pseudolancastriensis</i> n. sp.	Angiosperms
			<i>Liriodendropsis simplex</i>	
			<i>Laurus antedecans</i>	
			<i>Pseudoprotophyllum dentatum</i> n. sp.	
4794	37	63°51'16", 159°13'8" farmer	<i>Ostrea</i> sp.	Pelecypods
			<i>Panopea</i> sp.	
2985	2AC284	63°50'8", 159°13'8" farmer	<i>Cephalotaxopsis heterophylla</i> n. sp.	Conifers
			<i>Cephalotaxopsis magnifolia successiva</i> n. sp.	
			<i>Cephalotaxopsis</i> sp.	
			<i>Zingiberites alaskensis</i> n. sp.	Angiosperms
			<i>Castaliites ordinarius</i> n. sp.	
			<i>Castaliites inordinateus</i> n. sp.	
			<i>Castaliites</i> sp.	
			<i>Pseudoprotophyllum</i> sp.	
2986	2AC289	Unalakleet C-1 63°37'25", 159°26'30" farmer	<i>Platanus heerii</i>	
3270	3AH31	farmer	<i>Viburnum</i> sp.	Same location as 2986.
			<i>Sequoia</i> sp.	
3271	3AH32	Unalakleet B-2 63°25', 159°30'46" farmer	<i>Pterophyllum validum</i> n. sp.	Conifer
			<i>Ginkgo reniformis</i> n. sp.	Ginkgo
4643	40	farmer	<i>Ampelopsis? multesima</i> n. sp.	Angiosperms
			<i>Aralia wellingtoniana</i>	
			<i>Aralia parvidens</i> n. sp.	

Reference: Hollick, A., 1930.

Significance: Age equivalent to Dakota Group. *Ginkgo*, *Nilssonia* and *Podozamites* persisted longer in Alaska. Several new species. Flora indicates warm temperate climate, with a few tropical and subtropical species. Climate similar to southern USA or northern Mexico. Formation also has fresh water invertebrates.

Unnamed Formation

Table 5

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N - Long.W	Twn. Rng. Sec.			
23 ¹		Unalakleet B-2 63°29'30", 159°32' farmer		Pleistocene	<i>Ovibos</i> sp. <i>Elaphas</i> sp.	Musk ox Mammoth
24 ¹		Unalakleet A-2 63°4'45", 159°49' farmer			<i>Elaphas</i> sp. <i>Bison</i> sp.	Mammoth

Reference: Quackenbush, L.S., 1909.

¹ No locality or field numbers. Numbers assigned by investigators.

Area 9

AREA 9

Quad Maps:
Teller
Nome
Bendeleben

Much of the area is covered by perennially frozen, unconsolidated Pleistocene sediments. These deposits, of Sangamon and Wisconsin age, include silt and loess, glacial moraine and outwash gravel, and a younger upland silt.

The Pleistocene fauna (Tables 1-3) came to light during placer gold mining in the area.

Management should include monitoring future mining of this type for recovery and/or documentation of vertebrate fossils.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15		Teller A-2 65°13', 165°35' farmer	Pleistocene	<i>Bison</i>	
16		Teller B-1 65°20', 165°15' farmer		<i>Equus</i> <i>Bison</i>	Horse
20		Teller A-1 65°5', 165°19' farmer		<i>Equus</i>	
21		Nome D-2 64°49', 165°45' farmer		<i>Odobenus</i>	Walrus

Reference: Quackenbush, L.S., 1909.

¹ No locality or field numbers. Numbers assigned by investigators.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
V-4	Atlas ¹ Creek	Bendeleben B-6 65°22', 164°45' farmer	Pleistocene		Mammoth Bison

Reference: University of Alaska Vertebrate Catalogue.

¹ See also: Geist, O., field notes.

Unnamed Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Atlas Creek	Bendeleben B-6 surveyor farmer	Pleistocene		Super Bison, Horse, and Mammoth

Reference: Geist, O., field notes, 1951.

Area 10

AREA 10

Quad Maps:
Bendeleben
Candle
Solomon

Two fossiliferous deposits occur in this area. The oldest is an unnamed white-gray crystalline limestone interbedded with dark thin-bedded dolomite and dolomitic limestone. This outcrop was assigned a Late Devonian age, Fransian, on the basis of fossil corals (Table 1) collected east of the Darby Mountains.

The youngest of the two deposits consist of unconsolidated Quaternary deposits. Late Pleistocene vertebrates have been collected in the study area (Table 2). Some of the vertebrate fossil remains have been recovered by placer mining.

It is recommended that management procedures be taken to monitor any placer mining operations in Area 10 for the recovery or documentation of vertebrate fossils.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
8731SD	70AMm199	Solomon D-1 64°52', 162°6' farmer	Late Devonian	<i>Cladopora</i> sp. <i>Amphipora</i> sp. <i>Thamnopora</i> sp.	Corals
8732SD	70AMm202	64°51', 162°7' farmer		<i>Syringopora</i> sp. A <i>?Thamnopora</i> sp.	

Reference: Oliver, W.A. Jr., and others, 1975.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Bendeleben B-6 65°22', 164°44' farmer		<i>Equus</i> <i>Elephas primigenius</i>	Jaw and teeth Teeth and tusks

Reference: Collier, A.J., 1902.

Area 11

AREA 11

Quad maps:
Norton Bay
Nulato
Candle
Kateel River
Selawik

The most prolific fossil bearing units occur in the vicinity of the Yukon River. These sandstones, silts, and shales have been separated into two formations, the nearshore marine Nulato Formation, and the non-marine Kaltag Formation.

The marine formation contains an abundant Early Cretaceous (Albian) molluscan fauna (Table 1). Hollick (1930) reports some plants found in the marine Nulato Formation associated with marine gastropods, pelecypods and one echinoderm (Table 2). The overlying non-marine Kaltag Formation is rich in diversity and abundance of well preserved plants (Table 3). These plants are considered to be Late Cretaceous (Cenomanian). The significance of these plants has been discussed elsewhere (see Areas 16, 19). A few freshwater mollusks are also found in association with these plants.

Pleistocene vertebrates have been found at two localities within the area. (Table 4, 5)

At this time, the diversity and abundance of the Wisconsin vertebrate fauna here is not great, and is dominated by bison, with only one report, on Bureau of Land Management land, of a single mastodon (Table 5).

Quaternary freshwater and land mollusks have also been reported from Area 11 (Table 1).

Management would include the protection and documentation of any new Pleistocene vertebrate material.

**Unnamed Formations
Table 1**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26235	56APa116	Kateel River A-4 surveyor 3S 6E 29	Early Cretaceous Albian	<i>Arctica</i> sp. <i>Trigonia leana</i> <i>Ostrea</i> sp. <i>Thracia?</i> sp. <i>Glycymeris?</i> sp.	Pelecypods
26236	56APa117	surveyor		<i>Inoceramus altifluminis</i>	Same location as 26235.
26237	56APa118	surveyor 3S 6E 32		<i>Arctica</i> sp. <i>Ostrea</i> sp. <i>Panope</i> sp.	
26238	56APa119	surveyor		<i>Astarte?</i> sp. <i>Solecurtus?</i> sp.	Same location as 26237.
26239	56APa121	surveyor 4S 6E 4		<i>Arctica</i> sp. <i>Pleuromya</i> sp. <i>Trigonia leana</i> <i>Ostrea</i> sp. <i>Inoceramus</i> cf. <i>I. altifluminis</i> <i>Panope</i> sp. <i>Glycymeris?</i> sp. <i>Solecurtus?</i> sp.	
26240	56APa123	surveyor 4S 6E 8		<i>Arctica</i> sp. <i>Pleuromya</i> sp. <i>Trigonia leana</i> <i>Lucina?</i> sp. <i>Thracia stelcki</i> <i>Astarte</i> sp. <i>Goniomya matonabbei</i> <i>Solecurtus?</i> sp.	
26241	56APa124	surveyor 4S 6E 17		<i>Arctica</i> sp. <i>Inoceramus altifluminis</i> <i>Lucina</i> sp. <i>Goniomya matonabbei</i> <i>Pholadomya</i> sp. <i>Tancredia</i> sp.	Gastropods indeterminate
26242	56APa126	surveyor 4S 6E 29		<i>Inoceramus altifluminis</i> <i>Panope</i> sp. <i>Solecurtus?</i> sp. <i>Pholadomya</i> sp.	Pelecypods
25907	55ABI293	Kateel River A-5 surveyor 4S 3E 28		<i>Mytilus</i> sp.	
25914	55ABIF138	surveyor 5S 3E 3		<i>Mytilus</i> sp. <i>Pleuromya</i> sp. <i>Oxytoma?</i> sp. <i>Cucullaea?</i> sp.	
25908	55ABI295	surveyor 5S 3E 9		<i>Trigonia leana</i> <i>Inoceramus altifluminis</i>	
25909	55ABI296	surveyor		<i>Arctica?</i> sp. <i>Mytilus</i> sp.	Same location as 25908.
25910	55ABI299	surveyor 5S 3E 2		<i>Inoceramus</i> sp. indet.	
25912	55ABIF108	surveyor		<i>Inoceramus altifluminis</i>	
	55ABIF104	surveyor 5S 2E 26			Pelecypods indeterminate
25896	55ABI219	surveyor 5S 2E 35		<i>Mytilus</i> sp.	

Table 1 continued.

25897	55ABI222	surveyor			<i>Trigonia leana</i> <i>Glycymeris?</i> sp.	Same location as 25896.
25898	55ABI224	surveyor 6S 2E 3			<i>Mytilus</i> sp. <i>Pleuromya?</i> sp.	Cerithiid gastropods
	56APa112	Kateel River B-4 surveyor 2S 6E 20	Quaternary		<i>Succinea strigata</i>	Gastropods
25904	55ABI284	Kateel River B-5 surveyor 1S 3E 1	Early Cretaceous Albian		<i>Anomia?</i> sp.	
25905	55ABI285	surveyor 1S 4E 6			<i>Panope?</i> sp. <i>Glycymeris?</i> sp.	Pelecypods
25906	55ABI286	surveyor 1N 4E 31			<i>Mytilus?</i> sp. <i>Sphaerium?</i> sp.	
	55ABIF113	surveyor 2S 4E 31			<i>Mytilus</i> sp. <i>Inoceramus</i> sp. indet.	
25913	55ABIF111	surveyor			<i>Mytilus</i> sp.	Same location as 55ABIF113.
25901	55ABI266	surveyor 2S 4E 32			<i>Mytilus</i> sp. <i>Panope?</i> sp.	
25902	55ABI267	surveyor			<i>Arctica</i> sp. <i>Mytilus</i> sp. <i>Pleuromya</i> sp. <i>Trigonia leana</i> <i>Ostrea</i> sp. <i>Lucina</i> sp.	Same location as 25901.
25899	55ABI260	surveyor 2S 4E 33			<i>Glycymeris?</i> sp.	
25900	55ABI263	surveyor			<i>Mytilus</i> sp.	Same location as 25899.
26234	56APa102	Kateel River C-4 surveyor 2N 5E 16	Early Cretaceous		<i>Inoceramus altifluminis</i>	
	56APa109	Kateel River B-4 surveyor 1N 6E 15	Quaternary		<i>Valvata mergella</i> <i>Stagnicola petersi</i> <i>Succinea strigata</i> <i>Sphaerium tenue</i> <i>Pisidium idahoense</i>	Land and freshwater gastropods and pelecypods.
	58APa161	Kateel River C-5 surveyor 2N 3E 34	Early Cretaceous Albian		<i>Cucullaea</i> sp.	Pelecypods
25903	55ABI280	surveyor 2N 3E 33			<i>Arctica</i> sp.	
	58APa184	Kateel River C-6 surveyor 3N 2E 6			<i>Arctica</i> sp. <i>Ostrea</i> sp.	
	58APa189	Kateel River D-6 surveyor 5N 1W 15	Early Cretaceous Neocomian		<i>Buchia</i> sp.	

Reference: Patton, W., 1966.

Significance: Fauna indicates offshore and littoral marine environments.

Nulato Formation**Table 2**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
4787	27	Nulato D-4 64° 50'43", 157° 55'35" farmer	Middle Upper Cretaceous	<i>Ostrea</i> sp. <i>Panopea</i> sp. <i>Panopea concentrica</i>	Pelecypods Veneridae

Table 2 continued.

3255	3AH18b	64° 50'34", 157° 55'36" farmer	<i>Fucus irregularis</i> n. sp. <i>Podozamites lanceolatus</i> <i>Sequoia ambigua</i> <i>Viburnum grossecrenatum</i> n. sp.	Angiosperm Conifer Angiosperm
2677	2AC250	64° 50'42", 157° 55'36" farmer	<i>Leda</i> n. sp. <i>Inoceramus</i> cf. <i>labiatus</i> <i>Ostrea</i> n. sp. <i>Thracia</i> sp. <i>Cardium (Trachydium)</i> n. sp. <i>Panope</i> n. sp. <i>Viviparus</i> n. sp.	Pelecypods Gastropod
2928	3AH18c	64° 50'26", 157° 55'36" farmer	<i>Inoceramus</i> cf. <i>labiatus</i> <i>Thracia</i> sp. <i>Lucina</i> n. sp. <i>Panopea</i> sp.	Worm burrows Pelecypods Crustacea (large macruran) Veneridae
3256	3AH18d	64° 49'22", 157° 57'12" farmer	<i>Cephalotaxopsis heterophylla</i> n. sp. <i>Cissites comparabilis</i> n. sp.	Conifer Angiosperm
2680	2AC251	64° 49'4", 157° 57'12" farmer	<i>Ostrea</i> sp. <i>Pholadomya</i> n. sp. <i>Cardium (Trachydium)</i> n. sp. <i>Tellina</i> cf. <i>T. ashburnerii</i>	Pelecypods
2681	2AC252	64° 48', 157° 58'38" farmer	<i>Trigonia leana</i> <i>Protocardia</i> n. sp.	 Veneridae
4788	28	64° 46'52", 157° 58'57" farmer	<i>Ostrea</i> n. sp. <i>Trigonia leana</i> <i>Cardium (Trachydium)</i> n. sp. <i>Protocardia</i> n. sp. <i>Meretrix?</i>	
4790	30	64° 46'30", 157° 59'12" farmer	<i>Meretrix?</i> <i>Panope concentrica</i> <i>Turritella</i>	Gastropods
2930	3AH18d	64° 50', 157° 56' farmer	<i>Ostrea</i> n. sp. <i>Trigonia leana</i> <i>Pholadomya</i> n. sp. <i>Cardium (Trachydium)</i> n. sp. <i>Protocardia</i>	Pelecypods
2929	3AH18e	64° 48'46", 157° 57'50" farmer	<i>Pholadomya</i> n. sp. <i>Thracia?</i> <i>Cardium (Trachydium)</i> n. sp.	
4789	29	64° 46'42", 157° 58'57" farmer	<i>Nucula?</i> n. sp. <i>Pholadomya</i> n. sp. <i>Cardium (Trachydium)</i> n. sp. <i>Panopea?</i> sp.	
4791	31	64° 46'11", 157° 59'36" farmer	<i>Cardium (Trachydium)</i> n. sp. <i>Protocardia</i> sp.	
2983	2AC264	Nulato B-6 64° 26'18", 158° 32'14" farmer	<i>Acer collieri</i> n. sp.	Angiosperm
3266	3AH27	farmer	<i>Nilssonia alaskana</i> n. sp. <i>Podozamites lanceolatus</i> <i>Cephalotaxopsis heterophylla</i> n. sp. <i>Credneria mixta</i> n. sp.	Cycad. Same location as 2983. Conifers Angiosperm
3267	3AH28	64° 22'20", 158° 40'38" farmer	<i>Sequoia</i> sp.?	Cones
4793	34	farmer	<i>Hemiaster</i> sp. <i>Pinna</i> sp. <i>Inoceramus</i> cf. <i>labiatus</i> <i>Ostrea</i> n. sp.	Echinoderm Pelecypod

Table 2 continued.

4792	32	Nulato D-4 64° 45' 51", 157° 59' 50" farmer	<i>Pleuromya</i> n. sp. <i>Lucina</i> ? sp. <i>Meretrix</i> n. sp.	Same location as 3267.
			<i>Inoceramus</i> cf. <i>I. labiatus</i> <i>Ostrea</i> n. sp. <i>Trigonia lena</i> <i>Anomia</i> sp. <i>Cardium</i> n. sp. <i>Meretrix</i> sp. <i>Panope</i> sp.	Pelecypods

Reference: Hollick, A., 1930.

Significance: Age equivalent to Dakota Group. Flora indicates warm temperate climate, with a few tropical and subtropical species. Climate similar to southern USA or northern Mexico. Formation also has fresh water invertebrates.

Kaltag Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3253	3AH18	Nulato D-4 64° 52', 157° 54' 24" farmer	Middle Upper Cretaceous	<i>Viburnum grossecrenatum</i> <i>Platanus septentrionalis</i> n. sp. <i>Paracredneria crednerioides</i> n. sp.	Angiosperms
2679	2AC249	64° 51' 30", 157° 55' farmer		<i>Pseudoprotophyllum crassum</i> n. sp. <i>Tumion gracillimum</i> n. sp. <i>Sequoia fastigiata</i> <i>Ostrea</i> n. sp. <i>Pecten</i> n. sp.	Conifer Pelecypods
2964	2AC249	farmer			Same location as 2679.
3254	3AH18A	64° 51' 12", 157° 55' 16.8" farmer		<i>Rhamnites cornifolius</i> n. sp. <i>Credneria grewiopsoides</i> n. sp. <i>Pseudoprotophyllum comparabile</i> n. sp. <i>Sequoia</i> ?	Angiosperms Cones
4786	25	64° 50' 59", 157° 55' 21" farmer		<i>Unio</i> <i>Viviparus</i> n. sp. <i>Viviparus (Tulotoma)</i> n. sp. <i>Goniobasis</i> ?	Pelecypod Gastropods
4638	26	64° 50' 49", 157° 55' 26" farmer		<i>Juglans arctica</i> <i>Platanus alata</i> n. sp. <i>Cephalotaxopsis heterophylla</i> n. sp. <i>Sequoia concinna</i> <i>Glyptostrobus gronlandicus</i> <i>Populites pseudoelegans</i> n. sp. <i>Sterculia atwoodi</i> n. sp.	Angiosperms Conifer Sequoia Angiosperms
2978	2AC255	Nulato C-5 64° 40' 32", 158° 13' 36" farmer		<i>Sequoia</i> sp.	
3258	3AH19	64° 37' 7", 158° 18' farmer		<i>Ginkgo crenulata</i> n. sp. <i>Ginkgo pseudoadiantoides major</i> n. var. <i>Piper arcuatilae</i> n. sp. <i>Macclintockia alaskana</i> n. sp. <i>Asimina knowltoniana</i> n. sp. <i>Platanus alata</i> n. sp. <i>Credneria spatiosa</i> n. sp. <i>Vitis inequilateralis</i> n. sp. <i>Aralia polymorpha</i> <i>Sapotacites alaskensis</i> n. sp.	Ginkgos Angiosperms
3260	3AH21	64° 35' 16", 158° 20' 45" farmer		<i>Paracredneria alaskana</i> n. sp. <i>Paracredneria</i> ? sp. <i>Pseudoaspidiophyllum memorabile</i> n. sp.	
2980	2AC260	64° 34' 6", 158° 21' 55" farmer		<i>Cephalotaxopsis</i>	Conifers

Table 3 continued.

3261	3AG22	64° 33'25", 158° 23'36" farmer	<i>Podozamites lanceolatus</i> <i>Piper arcuatile</i> n. sp.	Angiosperm
4639	33	farmer	<i>Nilssonia comptula approximata</i> n. var. <i>Nilssonia akaskana</i> n. sp. <i>Podozamites lanceolatus</i> <i>Ginkgo concinna</i> <i>Ginkgo digitata</i> <i>Sequoia concinna</i> <i>Sequoia?</i> <i>Menispermites septentrionalis</i> n. sp. <i>Daphnogene turbulenta</i> n. sp. <i>Platanus?</i> sp. <i>Credneria comparabilis</i> n. sp. <i>Pseudoprotophyllum dentatum</i> n. sp. <i>Pseudoprotophyllum comparabile</i> n. sp.	Cycads. Same location as 3261. Conifer Ginkgo Sequoia cones Angiosperms
3259	3AH20	64° 31'5", 157° 20'6"48" farmer	<i>Nilssonia comptula approximata</i> n. var. <i>Podozamites lanceolatus</i> <i>Ginkgo concinna</i> <i>Nageiopsis angustifolia</i> <i>Tumion gracillimum</i> n. sp. <i>Sequoia concinna</i> <i>Sequoia?</i> <i>Glyptostrobus specialis</i> n. sp. <i>Platanus? newberryana</i> <i>Paracredneria? platanoidea</i> n. sp. <i>Pseudoprotophyllum magnum</i> n. sp.	Cycad Conifer Ginkgo Conifers Sequoia Cones Conifer Angiosperms

Reference: Hollick, A., 1930.

Significance: Age equivalent to Dakota Group. Flora indicates warm temperate climate, with a few tropical and subtropical species. Climate similar to southern USA or northern Mexico.

Unnamed Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
17		Kateel River C-5 65° 32', 158° 12' farmer		<i>Bison</i>	
22 ¹		Norton Bay C-4 64° 36', 160° 48' farmer			Genera not specified
11		Candles D-4 65° 51', 160° 55' farmer		<i>Odobenus</i>	Walrus

Reference: Quackenbush, L.S., 1909.

¹ No locality or field numbers. Numbers assigned by investigators.

Unnamed Formation

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
NOB026		Norton Bay C-4 64° 44'53", 160° 49'2" farmer	Pleistocene		Mastodon

Reference: Alaska Heritage Resources Survey record.

Area 12

AREA 12

Quad Maps:
Nulato

Deposits in the area consist of Permian to Jurassic volcanic and intrusive rocks, and Paleozoic metamorphic schists. No fossils, or few fossils would be expected and no fossils were reported.

No paleontologic management is required.

Area 13

AREA 13

Quad Maps:
Ruby
Medfra
Kantishna River

Fossiliferous rocks in this area are mostly older Paleozoic, ranging from Cambrian to Carboniferous. These sediments are predominantly argillaceous shales, slates, graywacke, chert and some limestone. The term Tonzona Group has sometimes been given to these rocks.

Because these rocks cover a long period of geologic time, fossils are important as a dating tool. The oldest fossils (Tables 1, 2) are Ordovician corals, trilobites, crinoids and a coelenterate, with the corals dominant.

Fossils of ?Silurian and Devonian age consist of corals and brachiopods (Table 3).

The youngest fossils from this group are bryozoans, pelecypods, brachiopods, trilobites and gastropods that indicate a Permian (Artinskian) age (Table 4).

Cretaceous fossils were reported but the evidence was too scarce and poorly preserved for a positive age date (Tables 5, 6).

One Pleistocene mammoth has been reported on Bureau of Land Management lands in this area (Table 7). Other vertebrates of the typical Alaskan Wisconsin fauna are known from nearby but outside of the study area.

No special management required for this area.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
8661CO ¹		Medfra D-2 63° 50' 22", 153° 49' 40" 19S 26E 17	Middle/Upper Ordovician Lower Ordovician	<i>Bumastoides</i> cf. <i>B. milleri</i> <i>Sphaerexochus</i> sp. <i>Catenipora</i> <i>Saffordophyllum</i> <i>Fletcheria</i> <i>Pycnolithus</i> <i>Tetradium</i> <i>Labechia</i> <i>Cliefdenella alaskaensis</i> n. sp.	Trilobites Corals Coelenterates USNM292685 Holotype

Reference: Stock, C.W., 1981.

Significance: First of genus *Cliefdenella* known from North America, known earlier from Australia and Siberia.

¹ Collectors: W.W. Patton, Jr. and J.T. Dutro, Jr., 1976.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	15AE5 ¹	Medfra D-2 surveyor 19S 26E 17	Upper Ordovician	<i>Columnnaria alneolata</i> <i>Halysites gracilis</i>	Corals Crinoids

Reference: Eakin, A., 1918.

¹ See also: Stock, C.W., 1981.

Unnamed Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	North Fork Kuskokwin River	Medfra D-1 63° 50' 24", 153° 4' farmer	Devonian	<i>Cladopora</i> sp. <i>Favosites</i> cf. <i>F. limitaris</i> <i>Alveolites</i> sp. <i>Atrypa reticularis</i> <i>Martinia</i> cf. <i>M. maja</i>	Corals Brachiopods

Reference: Eakin, A., 1918.

Unnamed Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
5453- 5456		Medfra C-4 63° 39', 154° 39' farmer	Permian Artinskian	<i>Stenopora</i> aff. <i>carbonaria</i> <i>Chonetes</i> aff. <i>C. ostiolatus</i> <i>Chonetes</i> sp. <i>Productus</i> aff. <i>P. mammatus</i> <i>Productus</i> n. sp. <i>Marginifera aagardi?</i> <i>Pustula</i> aff. <i>P. montpelierensis</i> <i>Pustula</i> n. sp. <i>Pustula</i> sp. <i>Aulosteges?</i> sp. <i>Camarophoria margaritovi?</i> <i>Rhyncopora</i> aff. <i>R. nikitina</i> <i>Spiriferella arctica</i> <i>Spirifer</i> aff. <i>S. nikitina</i> <i>Spirifer</i> aff. <i>S. triplicatus</i>	Bryozoan Brachiopods

Table 4 continued.

5455	1 farmer	<i>Martinia</i> aff. <i>M. triquetra</i> <i>Squamularia</i> sp. <i>Aviculopecten</i> sp. <i>Aviculopecten</i> n. sp. <i>Euchondria?</i> sp. <i>Pseudomonotis?</i> sp. <i>Griffithides</i> sp. <i>Batostomella?</i> sp. <i>Chonetes</i> sp. <i>Productus</i> aff. <i>P. mammatus</i> <i>Marginifera</i> aff. <i>M. splendens</i> <i>Marginifera aagardi</i> <i>Rhynchopora</i> sp. <i>Camarophoria</i> aff. <i>C. crumena</i> <i>Spirifer</i> aff. <i>S. triplicatus</i> <i>Squamularia</i> sp. <i>Aviculopecten</i> n. sp. <i>Euchondria?</i> sp. <i>Pleurotomaria?</i> sp. <i>Griffithides</i> sp.	Pelecypods Trilobite Bryozoan Brachiopods Pelecypods Gastropod Trilobite
5454	1 farmer	<i>Fistulipora</i> sp. <i>Stenopora</i> sp. <i>Rhombopora</i> sp. <i>Spirifer</i> aff. <i>S. triplicatus</i>	Bryozoan Brachiopods
5453	1 farmer	<i>Marginifera aagardi</i> <i>Phanerotrema?</i> sp.	Gastropod

Reference: Brown, J.S., 1924.

1 Plotted together, unable to plot individually.

Unnamed Formation

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
12562		Medfra C-3 63° 31', 154° 20' farmer	Upper Cretaceous	<i>Inoceramus</i> sp. <i>Belemnites</i> or <i>Belemnitella</i> sp.	Pelecypod Belemnite
12561		Medfra C-4 63° 43' 21", 154° 44' farmer		<i>Rhynchonella?</i> sp. <i>Inoceramus</i> sp. <i>Belemnites</i> of <i>Belemnitella</i> sp.	Fragmentary imprints Fragments numerous Indicate Jurassic or Lower Cretaceous.

Reference: Brown, J.S., 1924.

Ungalik Conglomerate

Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	2AC232	Ruby D-6 64° 45' 10", 156° 50' farmer	Upper Cretaceous		Pelecypods indeterminate Worm tubes, trails. Vegetable detritus.
4781		64° 45' 45", 156° 49' 45" farmer			All fossils poorly preserved

Reference: Hollick, A., 1930.

Unnamed Formation

Table 7

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N - Long.W	Twn. Rng. Sec.			
V-91	Ruby	Ruby B-3 64°25', 154°8'	farmer	Pleistocene		Mammoth

Reference: University of Alaska Vertebrate Catalogue.

Area 14

AREA 14

Quad maps:
Eagle
Tanacross

Mertie (1937) reports sparse fossils of Devonian age in an unnamed formation consisting of slate, shale, limestone, quartzite, conglomerate and chert (Table 1).

South of the Yukon River, fragmentary Cretaceous plants have been found (Table 2), but not yet described. In the same area the Kenai Formation has produced a diverse flora of Eocene angiosperms (Tables 3, 4). This formation consists of gray-black sandstones, clay, shale, lignites, and conglomerates.

Unique black chert cobbles and pebbles in the stream deposits of Chicken and Lost Chicken Creeks contain well-preserved remains of roots, stems, insects, algae and spores (Table 5). Presumably, the environment that produced these rocks was a peat bog of Late Tertiary age, probably Pliocene (Knoll, 1975).

The greatest fossil resource in Area 14 is the Pleistocene vertebrates found in the stream channels in the vicinity of Chicken (Tables 6-12).

In addition to the typical Beringian fauna at these localities, two localities stand out in their importance.

Lost Chicken has produced rare specimens of saiga antelope, *Panthera atrox* (Pleistocene lion) and the Kiang wild ass. This locality is the single best example of the mammalian fauna of the Late Pleistocene.

The Jack Wade mining site is unique because it may represent an *in situ* deposit, a rare occurrence in Alaska, and the possibility of human activity and bone alteration.

This area requires special management attention. The plants of Cretaceous and Eocene deserve further collecting and study. The Cretaceous deposits may also be of the right age and lithology to produce terrestrial vertebrates.

The Pliocene cobbles referred to by Knoll (1975), require further collecting and study to perhaps find the original outcrop, confirm the age, and provide additional paleontological data.

Prospecting and mining activities should be monitored for the protection and documentation of Pleistocene vertebrates.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	7AP82	Eagle A-2 64° 6.4', 141° 45' 9" farmer	Devonian		Crinoid columns
	5AP319	surveyor farmer		<i>Calamites radiatus</i>	And other plants. Unable to plot, too vague.

Reference: Mertie, J.B., Jr., 1937.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
291		Eagle D-1 64° 55', 141° 20' farmer	Cretaceous		Plant material

Reference: University of Alaska Locality Catalogue.

Kenai Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	3AP224	Eagle A-2 surveyor	Eocene		Stem fragments Angiosperms dominant Unable to plot, too vague.
	3AP224½	surveyor farmer		<i>Equisetum</i> sp.	Unable to plot, too vague.
	3AP237	64° 4' 51", 141° 58' 37" farmer			Plant fragments
	3AP251	surveyor farmer		<i>Corylus macquarrii</i>	Unable to plot, too vague. Fragments
	3AP348 ¹	Eagle D-2 surveyor farmer	Eocene	<i>Sequoia langsdorfii</i> <i>Taxodium dubium?</i> <i>Populus arctica?</i> <i>Populus richardsoni?</i> <i>Corylus macquarrii</i> <i>Quercus platania</i> <i>Betula prisca?</i>	Unable to plot, too vague.
	3AP349 ¹	surveyor farmer		<i>Sequoia langsdorfii</i> <i>Corylus macquarrii</i> <i>Populus arctica?</i> <i>Populus richardsoni?</i> <i>Juglans nigella?</i>	Unable to plot, too vague.
	3AP350 ¹	surveyor farmer		<i>Sequoia langsdorfii</i> <i>Equisetum</i> sp. <i>Populus latior?</i> <i>Populus hookeri?</i> <i>Fagus deucalionis</i> <i>Quercus turcinervis</i> <i>Juglans</i> sp.?	Unable to plot, too vague.
	3AP355 ¹	surveyor farmer		<i>Sequoia brevifolia?</i> <i>Corylus macquarrii</i> <i>Populus</i> sp.	Unable to plot, too vague.

Reference: Prindle, L., 1909.

¹ See also: Mertie, J., 1930.

Unnamed Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	3AP348 ¹	Eagle D-2 surveyor farmer	Eocene?		Flora, no list given Unable to plot, too vague Bryant Creek
	3AP349 ¹	surveyor farmer			
	3AP350 ¹	surveyor farmer			
	3AP355 ¹	surveyor farmer			

Reference: Mertie, J., 1930.

¹ See also: Prindle, L., 1909.

Unnamed Formation

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Eagle A-2 surveyor farmer	Pliocene (?)		Roots Stems Insects Algae Spores

Reference: Knoll, A., 1975.

Significance: Environment of deposition was a peat bog similar to those occurring in poorly drained valleys at higher latitudes today. Volcanism provided the silica which preserved the pickled organic remains in three dimensional detail. Producers, consumers, and decomposers are encased side by side in the chert. Important locality that deserves long term study.

Unnamed Formation

Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Ingle Creek ¹	Eagle A-2 surveyor farmer	Pleistocene		Elk, caribou, sheep, and super bison
	Lost Chicken Creek ²	surveyor farmer			Sheep and Elk
	Myers Fork	Eagle A-2 surveyor farmer			Mammoth (mandible with teeth) Sheep, bison, moose, caribou, and horse

Reference: Geist, O., 1949.

¹ See also: Guthrie, R.D., 1966.

² See also: Whitmore, F.C., and other, 1967; Harington, C.R., 1980; University of Alaska Vertebrate Catalogue; Guthrie R.D., 1966.

Unnamed Formation

Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Lost Chicken Creek ¹	Eagle A-2 64° 3'34", 141° 53'16" 26N 18E 4	Pleistocene	<i>Panthera atrox</i>	Right lower jaw with C1, P3-M1. USNM23619

Table 7 continued.

Reference: Whitmore, F.C., and other, 1967.

Collectors: T. Clark and H. Foster, 1964.

Significance: Differs from Rancho La Brea in only a few characters. Range Alaska to Mexico and California to Florida. *P. atrox* inhabits open country, arctic tundra, cold tolerance, modern large cats to 53° lat. Late Pleistocene cats 70° in Siberia, and northern Siberian islands 75-77°.

Other specimens found in the valleys of Lost Chicken Creek and adjacent Chicken Creek, derived from deposits of the same type that yielded the jaw of *P. atrox*. *Equus* sp. cf. *E. niobrarensis alaskae*; *Equus* sp.; *Bison bison*; *Bison* sp.; *Rangifer arcticus*; *Rangifer* sp.; *Cervus* sp. All United States National Museum specimens.

¹ See also: Harington, C.R., 1980; University of Alaska Vertebrate Catalogue; Guthrie, R.D., 1966; Geist, O., field notes, 1949.

Unnamed Formation

Table 8

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N - Long.W	Twn. Rng. Sec.			
	Lost Chicken Creek	Eagle A-2		Pleistocene	<i>Mammuthus primigenius</i> <i>Equus (Asinus) lambei</i> <i>Equus (Asinus) cf. kiang</i> <i>Cervus elaphus</i> <i>Rangifer tarandus</i> <i>Bison crassicornis</i> ⁶ <i>Symbos cavifrons</i> <i>Ovis? dalli</i>	Mammoth ¹ Yukon wild ass ² Kiang-like wild ass ³ Elk ⁴ Caribou ⁵ Helmeted Muskox ⁷ Dall sheep ⁸

Reference: Harington, C.R., 1980.

Significance: Fauna best example of late surviving (10,000 y.b.p.) mammal assemblage in E. Beringia.

Note: Specimens at National Museum of Canada.

See also: Whitmore, F.C. and other, 1967; Guthrie, R.D., 1966; University of Alaska Vertebrate Catalogue; Geist, O., field notes, 1949.

¹ Mandible with molar; right mandible with molar; few large tusks; limb bone fragment with spiral fractures; right astragalus.

² Post cranial fragment with right mandible; vertebrae atlas; axis; 3 thoracics; forelimbs; left humerus and distal right humerus; metacarpals (2); right pelvic fragment with acetabulum; femur; tibia (3); metatarsal.

³ First record in Alaska. Metatarsal.

⁴ Shed antler.

⁵ Antlers dist. ½ humerus; right dist. humerus; 2 right pelvis fragments; femur; prox. tibia; dist. right tibia; right metatarsal.

⁶ Numerous cranial and post cranial materials.

⁷ Cranial fragments with horncores.

⁸ Cranial fragments with partial horncore; axis vert.

Unnamed Formation

Table 9

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N - Long.W	Twn. Rng. Sec.			
	Chicken Creek ²	Eagle A-2		Pleistocene Wisconsin	<i>Cervus elaphus</i>	1 tooth ¹ 2 skulls with partial antlers 1 complete antler 3 incomplete antlers
	Lost Chicken Creek ³	64°4'30", 141°52'			<i>Cervus elaphus</i>	1 incomplete antler ¹
	Ingle Creek ⁴	Eagle A-3			<i>Cervus elaphus</i>	2 incomplete antlers ¹

Reference: Guthrie, R.D., 1966.

Significance: Indicates vegetational difference in past. Elk became extinct in Alaska during Sangamon interglacial. Change in vegetation could have caused extinction.

¹ All specimens from University of Alaska - Frick Laboratory.

² See also: University of Alaska Vertebrate Catalogue; Alaska Heritage Resources Survey records; Geist, O., field notes, 1949.

³ See also: Whitmore, F.C., and other, 1967; Harington, C.R., 1980; University of Alaska Vertebrate Catalogue; Geist, O., field notes, 1949.

⁴ See also: Geist, O., 1949.

Unnamed Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
V-12	Chicken Creek ¹	Eagle A-2 64° 8', 141° 53' farmer	Pleistocene		Bison, mammoth, horse cervid, ovis
V-54	Lost Chicken Creek ²	64° 03', 141° 53' farmer		<i>Rangifer, Canis, Saiga</i>	Mammoth, bison, horse, musk ox.

Reference: University of Alaska Vertebrate Catalogue.

¹ See also: Guthrie, R.D., 1966; Geist, O., field notes, 1949; Alaska Heritage Resources Survey record.

² See also: Whitmore, F.C. and other, 1967; Harington, C.R., 1980; Guthrie, R.D., 1966; Geist, O., field notes, 1949.

Unnammed Formation

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
EAG061	Chicken mining site ¹	Eagle A-2 64° 4' 50", 141° 55' 50" farmer	Pleistocene		Mastodon: ivory and teeth
EAG062	Jack Wade mining site ²	Eagle A-1 64° 7' 55", 141° 28' 30" farmer			Bison, ?sheep: tentatively identified

Reference: Alaska Heritage Resources Survey record.

¹ See also: University of Alaska Vertebrate Catalogue; Guthrie, R.D., 1966; Geist, O., field notes, 1949.

² See also: Porter, L., 1979.

Unnamed Formation

Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Jack Wade ¹	Eagle A-2 surveyor farmer	Late Pleistocene	<i>Lepus</i> <i>Equus (Asinus) lambei</i> <i>Alces Alces</i> <i>Rangifer tarandus</i> <i>Bison crassicornis</i> <i>Ovis dalli</i>	Hare, coprolites. Yukon wild ass. Tibia, metatarsal, phalanx, scapula, atlas, humerus. Moose, antler. Caribou, two crania. Bison, three individuals. Dall sheep, nine crania.

Reference: Porter, L., 1979.

Significance: Possible *in situ* vertebrate site with suggestion of human butchering.

Associated with wood, leaves, grass, and insects. Date 10-27,000 y.b.p.

¹ See also: Alaska Heritage Resources Survey record.

Area 15

AREA 15

Quad maps:
Circle
Big Delta
Charley River

No fossils were reported *in situ* from outcrops in this area. The rocks present are Precambrian and Paleozoic metamorphics with some Tertiary and Cretaceous intrusives. These deposits are usually devoid of fossils.

Stream deposits of Pleistocene age contain a typical vertebrate fauna. These localities are Mastodon, Ketchem, and Miller Creeks (Table 1).

Management should be directed to monitoring placer mining activities for the discovery of Pleistocene vertebrates.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Mastodon Creek	Circle B-3 surveyor farmer	Pleistocene		Mountain sheep skull Horse mandible, caribou, elk?, and bison
	Ketchem Creek	Circle C-2, B-2 surveyor farmer			Bison cranium Unable to plot, too vague.
	Miller Creek	Circle C-3 surveyor farmer			Super bison, horse, caribou

Reference: Geist, O., field notes.

Area 16

AREA 16

Quad Maps:

Circle
Livengood
Tanana
Melozitna
Nulato
Shungnak
Hughes
Bettles
Beaver
Chandalar
Wiseman

The oldest fossils in this area are Early Cambrian in age. They have only been reported at two localities (Table 1). This fan shaped trace fossil also occurs in the Cambrian of Europe.

Ordovician, Silurian, and Devonian rocks in the Livengood quadrangle have produced numerous fossils.

Local stratigraphic names for Ordovician deposits are the Tatalina Group, Fossil Creek volcanics and the Tolovana limestone.

The Tatalina Group is sandstone and conglomerate, graywacke, chert and limestone. The limestone from this group is the Tolovana which is a massive limestone and dolomite, with a tuffaceous carbonate. Underlying the Tolovana limestone is the Fossil Creek volcanics, a tuffaceous rock in this unit is fossiliferous.

Middle Ordovician fossils from the Fossil Creek volcanics include: gastropods, trilobites, bryozoans, brachiopods and corals. Corals and brachiopods dominate in abundance and diversity (Table 2).

Moving up in the section, the Tolovana limestone contains Late Ordovician corals (Table 3), a few bryozoans and trilobites, gastropods, and brachiopods (Table 4). Several taxa found in the Middle Ordovician are present.

The Silurian fauna of the Tolovana limestone is not as abundant or diverse with only brachiopods and corals reported in the area (Tables 3, 4).

The Devonian is represented in the Tolovana limestone and dominated by corals (Tables 2, 3). Other fossils include brachiopods, bivalves, gastropods, tentaculitids and an echinoderm (Table 5).

The Cascaden Formation is a dark gray crystalline limestone that outcrops near the town of Livengood. The fossils here are Middle and Upper Devonian and

are mostly corals (Table 3), but bryozoans and brachiopods also occur (Tables 2, 6, 7).

In the northern part of this area, near the Chandalar River, the Skajit limestone has produced a sparse Devonian fauna of brachiopods and corals (Table 8). The sample is not yet large enough for a precise age determination but the fossils known suggest an Upper to Middle Devonian age. (Table 9).

Mertie (1937) reported Mississippian and Carboniferous limestones, shales, slate and chert northwest of Livengood. The fossils are predominantly bryozoans and crinoid stems, but corals, gastropods, and brachiopods were also found (Table 24).

Unnamed Cretaceous and Late Jurassic? rocks in the Hughes quadrangle contain marine pelecypods and ammonites (Table 10). These deposits, as described by Patton and other (1966), consist of graywacke, mudstone, volcanoclastic tuff, andesitic tuff, breccia and basalt flows. Fossil ammonites are mostly Late Cretaceous, but the presence of *Buchia* at one locality is characteristic of the Late Jurassic or Early Cretaceous.

Cretaceous deposits of shale and sandstone along the Yukon River in this area yield an abundant collection of fossil plants and freshwater pelecypods (Table 11). Hollick (1930), who described the flora from these localities, called this the Melozi Formation. It is similar to the Nulato and Kaltag Formations in flora and lithology. The flora is dominated by numerous angiosperms typical of an Upper Cretaceous age. The flora is common to temperate, warm climates. Older genera of ginkgos and cycads seem to have remained extant longer in Alaska than their counterparts in other parts of the world.

Cycads and other plants of Late Cretaceous or Tertiary have been found along the middle fork of the

Koyukuk River (Table 12), and the Yukon River below Rampart (Table 13).

The majority of Pleistocene vertebrates from Alaska have come from the area near Livengood and Fairbanks, the latter being out of Federal lands. The localities on or near Bureau of Land Management land in the Livengood Quadrangle are listed below with corresponding table of fossils.

Yukon River: Table 14

Cleary Creek: Tables 15-18

Little Eldorado Creek: Tables 15, 16

Pedro Creek: Table 16

Independence Creek: Table 15

Livengood Creek: Tables 15, 17

Mike Hess Creek: Table 15

Gertrude Creek: Tables 15, 17, 22

Lillian Creek: Tables 15, 17, 19

Amy Creek: Table 15

Wilber Creek: Tables 15, 20

Dome Creek: Tables 15, 17, 21, 22

Wolf Creek: Table 15

Pedro Dome: Table 17

359 - University of Alaska: Table 23

21AMt128B: Table 24

Other Pleistocene vertebrate localities are: Dulbi River (Table 14), Birch Bluff, Koyukuk River at Hughes (Table 17), and Tanana River (Table 18).

The critical paleontological resource for management in this area is the Pleistocene vertebrate localities. Although the fauna in this area is well sampled, monitoring for new sites or material should continue, especially in areas of active mining.

Another important resource in this area is the Cretaceous plant localities along the Yukon River. This assemblage of flora is one of the best collections in North America. Fortunately, the flora has been adequately studied and documented, and is in a remote location. At the present time, no special management should be required other than to note that the fossil plants are unique.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	21AMt152	Livengood D-2 65°54', 147°44' 12N 1W 3	Early Cambrian	<i>Oldhamia</i> sp.	Trace fossil
	BP Exploration	Circle C-3 65°43', 145°4.3' 10N 13E 5		do	

Reference: Churkin, M.Jr., and other, 1965.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
5AS80	Stone	Livengood C-1, 2 surveyor farmer	Middle Ordovician Mohawkian	<i>Maclurina</i> sp.	Gastropod Unable to plot, too vague.
9AP87	Prindle/ Johnson	Livengood C-1 surveyor 9N 2E 9		<i>Streptelasma rusticum</i> <i>Rhombotrypa</i> sp. <i>Dinorthis</i> sp. <i>Plectambonites</i> sp. <i>Rafinesquina</i> sp. <i>Rhynchotrema increbescens</i> var. <i>Dyeria</i> ? sp <i>Isotelus</i> sp.	Coral Bryozoan Brachiopods Gastropods Trilobite
9AJ70		surveyor farmer		<i>Streptelasma</i> sp. <i>Columnaria thomi</i> <i>Columnaria</i> ? sp. <i>Halysites gracilis</i> var. <i>Rhombotrypa</i> sp. <i>Plectambonites sericeus</i> var. <i>Plectambonites</i> sp. <i>Triplecia</i> sp. <i>Rhynchotrema increbescens</i> var. <i>Liospira</i> cf. <i>L. progne</i> <i>Maclurea</i> ? sp. <i>Raphistomina</i> sp. <i>Cyclonema</i> sp. <i>Isotelus</i> sp.	Corals Bryozoan Brachiopods Gastropods Trilobite Same location as 9AP87.
1519C4	Blackwelder	surveyor farmer		<i>Columnaria thomi</i> <i>Calymene</i> sp. <i>Rhombotrypa</i> sp. <i>Lingula</i> sp. <i>Platystrophia</i> sp. <i>Dalmanella</i> sp. <i>Dinorthis</i> sp. <i>Leptaena</i> near <i>L. unicostata</i> <i>Plectambonites sericeus</i> var. <i>Triplecia</i> sp. <i>Rhynchotrema increbescens</i> var. <i>Isotelus</i> sp.	Coral Trilobite Bryozoan Brachiopods Trilobite Same location as 9AP87.
1519C6		surveyor farmer		<i>Leptaena</i> near <i>L. unicostata</i> <i>Isotelus</i> sp.	Crinoid columns Brachiopod Trilobite Same location as 9AP87.
1519C7		surveyor farmer		<i>Streptelasma</i> ? sp. <i>Halysites</i> sp.	Corals Same location as 9AP87.

Table 2 continued.

1520D1	Livengood C-2 surveyor farmer		<i>Streptelasma</i> sp. <i>Dalmanella</i> sp. <i>Rhynchotrema</i> sp.	Coral Brachiopods Unable to plot, too vague.
22AMt133	surveyor farmer	Devonian	<i>Halysites?</i> sp.	Coral Unable to plot, too vague.
29AMt54	surveyor farmer		<i>Cyathophyllum</i> sp. <i>Favosites</i> sp. <i>Alveolites</i> sp. <i>Cladopora</i> sp.	Corals Unable to plot, too vague.
29AMt64	surveyor farmer			Crinoid columns Unable to plot, too vague.
16AMt64a ¹	Livengood C-4 surveyor 8N 5W 14	Middle Devonian	<i>Cyathophyllum caespitosum</i> <i>Camarotoechia</i> sp. <i>Atrypa reticularis</i>	Coral Brachiopods

Reference: Mertie, J.B. Jr., 1937.

¹ See also: Mertie, J.B., 1918.**Tolovana Limestone****Table 3**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
7092CO ¹	9AP87	Livengood C-1 65°37', 147°21' farmer	Ordovician	<i>Chaetetipora</i> sp. cf. <i>C. elesmerensis</i> <i>Calapoecia</i> sp.	Corals
7093CO ¹	68ACn1751	65°37'20", 147°21'12" farmer		<i>Chaetetipora</i> sp. cf. <i>C. elesmerensis</i> <i>Palaeofavosites</i> sp.	Ceroid rugose coral
8300SD	68AGk431	Livengood C-2 65°32'30", 147°31'36" farmer	Silurian Wenlockian	<i>Mesofavosites</i> sp. cf. <i>M.</i> sp. <i>B</i> <i>?Halysites</i> <i>Pentamerus</i> sp.	Brachiopod
8301SD	68ACh323f	Livengood B-2 65°27'10", 147°44' farmer		<i>Favosites</i> sp.	Coral rugosan indet.
8302SD	68ACh296f	Livengood C-2 65°32'7", 147°31'42" farmer		<i>Halysites</i> sp. <i>Pentamerus</i> sp.	Coral Brachiopod
8920SD	68ACn1861B	65°33'50", 147°30'2" farmer		<i>Mesofavosites</i> sp. <i>Palaeofavosites</i> sp.	Corals
8921SD	68ACn1861C	farmer		<i>Catenipora?</i> sp. <i>Heliolites?</i> sp.	Same location as above. 50' higher
6383SD	53ABo25	Livengood B-3 65°17'20", 148°9' farmer	Middle Devonian Givetian	<i>Amphipora</i> sp. <i>Dendrostella</i> sp. cf. <i>D. rhenana</i>	
7341SD	64AWr314	farmer		<i>Amphipora</i> sp. <i>Dendrostella</i> sp. cf. <i>D. rhenana</i>	Same location as above.
8918SD	71AWr189	farmer		<i>Dendrostella</i> sp. cf. <i>D. rhenana</i>	Same location as above.
8922SD	67AWr170	farmer		<i>Syringopora</i> sp. <i>Dendrostella</i> sp. cf. <i>D. rhenana</i>	Same location as above.
8717SD	70ACh313f	Livengood C-4 65°30'36", 148°33'10" farmer		<i>Cladopora</i> sp. <i>Heliolites</i> sp. <i>Syringopora</i> sp. <i>Thamnopora</i> sp. <i>Grypophyllum</i> sp. <i>Sociophyllum</i> sp. cf. <i>S. glomerulatum</i>	
8919SD	68ADu14	Livengood B-4 65°27', 148°45' farmer		<i>Alveolites</i> sp. <i>Thamnopora</i> sp.	Brachiopods: poorly preserved

Table 3 continued.

Reference: Oliver, W.A. Jr., and others, 1975.

¹ See also: Prindle, L.M., 1913.

Tatalina Group

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Livengood C-1 surveyor 9N 2E 9	Late Ordovician Richmond	<i>Halysites gracilis</i> <i>Columnaria</i> sp. <i>Cyathophylloides thomii</i> <i>Streptelasma rusticum</i> <i>Rhombotrypa</i> cf. <i>quadrata</i> <i>Plectambonites sericeus</i> var. <i>Plectambonites</i> n. sp. <i>Rafinesquina</i> sp. <i>Dinorthis</i> sp. <i>Triplexia</i> sp. <i>Rhynchotrema</i> aff. <i>increbescens</i> . <i>Raphistomina</i> sp. <i>Cyclonema</i> sp. <i>Dyeria</i> ? so. <i>Liospira</i> cf. <i>progne</i> <i>Isotelus</i> sp.	Corals Bryozoan Brachiopods Gastropods Fragments, trilobite Fauna poorly preserved Same location as 7093CO. ¹
9AJ70	surveyor			<i>Halysites gracillis</i> <i>Columnaria</i> ? <i>Streptelasma</i> sp. <i>Cyathophylloides thomii</i> <i>Rhombotrypa</i> sp. <i>Triplexia</i> sp. <i>Plectambonites sericeus</i> var. <i>Plectambonites</i> n. sp. <i>Rhynchotrema increbescens</i> . <i>Raphistomina</i> sp. <i>Maclurea</i> ? <i>Cyclonema</i> sp. <i>Liospira</i> cf. <i>progne</i> <i>Isotelus</i>	Corals Bryozoan Brachiopods Gastropods Fragments, Trilobite Same location as 7093CO. ¹
9AP87	surveyor			<i>Streptelasma rusticum</i> <i>Rhombotrypa</i> sp. <i>Plectambonites</i> n. sp. <i>Rhynchotrema increbescens</i> . <i>Rafinesquina</i> sp. <i>Dinorthis</i> sp. <i>Dyeria</i> (?) <i>Isotelus</i>	Coral Bryozoan Brachiopods Gastropod Fragments, Trilobite Same location as 7093CO. ¹
9AJ82	surveyor 9N 2E 9		Silurian Niagaran	<i>Pentamerus</i> sp.	Brachiopods Same location as 7092CO. ¹
9AP94	surveyor			<i>Pentamerus</i> sp.	Same location as 7092CO. ¹
9AJ84	Livengood B-2 surveyor 7N 1W 30				Corals
9AP99	surveyor				Corals Same location as 9AJ84.

Reference: Prindle, L.M., 1913.

¹ See also: Oliver, W.A., Jr., and others, 1975.

Tolovana Limestone

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
876	1977P6	Livengood B-4? surveyor 7N 6W ?	Middle Devonian		Bivalves, gastropods tentaculitids Unable to plot, too vague.
820		Livengood B-3 65°17', 148°9' farmer	Devonian		Corals, brachiopods
2461		65°29', 148°27' farmer		<i>Phollocoidaris</i> sp.	Echinoderm

Reference: University of Alaska Locality Catalogue.

Cascaden Formation

Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
605		Livengood C-4 65°31', 148°32' farmer	Devonian		Corals
1196		surveyor farmer			Corals, bryozoans, brachiopods 15 miles west of Livengood Unable to plot, too vague.
1005		65°31', 148°33' farmer	Frasnian?	<i>Favosites</i> sp.	Corals
1006		65°31.3', 148°33.8' farmer		<i>Sociaphyllum</i> sp. <i>Thamnopora</i> sp. <i>Syringopora</i> sp. <i>Grypophyllum</i> sp. <i>Cladopora</i> sp.	
1077		65°30', 148°34' farmer	Middle Devonian	<i>Syringopora</i> sp.	

Reference: University of Alaska Locality Catalogue.

Unnamed Formation

Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Livengood C-4 surveyor 8N 5W 14	Middle Devonian	<i>Arypta reticularis</i> <i>Camarotoechia</i> sp. <i>Cyathophyllum caespitosum</i>	Brachiopods Coral Same location as 16AMt64a. 1

Reference: Mertie, J.B., 1918.

1 See also: Mertie, J.B., 1937.

Skajit Limestone

Table 8

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Chandalar D-5 67°58', 149°25' farmer	Lower-Middle Devonian Givetian	<i>Stringocephalus?</i> sp.	Brachiopods

Table 8 continued.

Chandalar D-4
67°57½', 148°43'
farmer

Stringocephalus sp.

Chandalar D-5
67°57', 149°17'
farmer

Macgeea sp.

Coral

Reference: Brosge, W.P., and others, 1962.

Unnamed Limestone

Table 9

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6402SD	59ABe523	Chandalar D-6 67°46.5', 149°40' farmer	Upper Devonian	<i>Amphipora</i> sp. <i>Macgeea</i> sp.	Corals
6403SD	59ABe524	farmer		<i>Alveolites</i> sp.	Coral Same location as 6402SD.
6406SD	59ARr597	Chandalar D-5 67°56', 149°24' farmer	Middle Devonian	<i>Cladophora</i> sp.	Coral

Reference: Oliver, W.A. Jr., and others, 1975.

Unnamed Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24682	53APa384	Hughes 66°16', 154°3' farmer	Late Cretaceous Albian		Worm tube Pelecypods indeterminate
24683	53APa385	66°15', 154°3' farmer		<i>Lemuroceras?</i> sp.	Ammonite Pelecypods indeterminate
M1785	62APa301	farmer		<i>Cleoniceras</i> n. sp. <i>Grantziceras glabrum</i> <i>Aptychus (Synaptychus?)</i> sp.	Ammonites Same location as 24683.
M2437	64APa140	66°24', 154°26' farmer		<i>Grantziceras?</i> sp.	
M2438	64APa130	66°20', 155°23' farmer	Cretaceous		Pelecypods indet.
M2066	63AMm367	66°3', 155°4' farmer	Late Jurassic- Early Cretaceous Neocomian	<i>Buchia</i> sp. indet.	

Reference: Patton, W., and other, 1966.

Melozi Formation

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2675	2AC237	Nulato C-1 64°42'33", 156°15'34" farmer	Upper Cretaceous to Middle Upper Cretaceous	<i>Unio</i> n. sp.	Pelecypods
2923	3AH14b	farmer		<i>Unio</i> n. sp. <i>Unio</i> sp. <i>Viviparus?</i> or <i>Campeloma?</i>	Same location as 2675. Gastropod

Table 11 continued.

3251a	3AH14a	68°42'33", 156°14'15" farmer	<i>Platanus</i> sp.	Angiosperm
2922	3AH14a	farmer	<i>Ostrea</i> sp. <i>Unio</i> n. sp.	Pelecypods Same location as 3251a.
4633	18	64°43'54", 156°4'45" farmer	<i>Ginkgo pseudoadiantoides</i> n. sp. <i>Cephalotaxopsis magnifolia successiva</i> n. var. <i>Cephalotaxopsis intermedia</i> n. sp. <i>Tumion gracillimum</i> n. sp.	Ginkgo Conifers
2963	2AC236	64°43'45", 156°6'24" farmer	<i>Asplenium foersteri</i> <i>Anemia supercretacea conformis</i> n. var. <i>Protophyllocladus polymorphus</i> <i>Populites platanoides</i> n. sp. <i>Populites spatiosus</i> n. sp. <i>Castaliites flabelliformis</i> n. sp. <i>Platanus latior intermedia</i> n. sp. <i>Credneria basinervosa</i> n. sp. <i>Vitis venusta</i> n. sp. <i>Sterculia basiauriculata</i> n. sp.	Ferns Conifer Angiosperms
3249	3AH12	64°43'16", 156°10'24" farmer	<i>Pinus?</i> sp. <i>Sequoia fastigiata</i> <i>Sequoia concinna</i> <i>Sequoia?</i> <i>Populus paelatior</i> n. sp. <i>Populites vitiformis</i> n. sp. <i>Populites spatiosus</i> n. sp. <i>Myrica? trifoliata</i> <i>Quercus eamesi</i> <i>Ficus daphnogenoides</i> <i>Sapindus apiculatus</i> <i>Paullinia minutidenticulata</i> n. sp.	Conifer Cones Angiosperms
3250		64°42'54", 156°12'17" farmer	<i>Ficus daphnogenoides</i> <i>Aristolochia paigei</i> n. sp. <i>Magnolia amplifolia</i> <i>Magnolia lacoena</i> <i>Benzoin venustum alaskanum</i> n. var. <i>Cinnamomum dubiosum</i> n. sp. <i>Cissites comparabilis</i> n. sp.	
3251	3AH14	farmer	<i>Sequoia rigida</i> <i>Macclintockia electilis</i> n. sp.	Same location as 3250.
3248	3AH11	64°43'41", 156°8'36" farmer	<i>Nilssonia yukonensis</i> n. sp. <i>Podozamites lanceolatus</i> <i>Ginkgo digitata</i> <i>Ginkgo pseudoadiantoides</i> <i>Cephalotaxopsis heterophylla</i> <i>Cephalotaxopsis microphylla laxa</i> n. var. <i>Tumion gracillimum</i> n. sp. <i>Sequoia reichenbachi</i> <i>Sequoia subulata</i> <i>Sequoia?</i> <i>Populites mirabilis</i> n. sp. <i>Menispermities reniformis</i> <i>Menispermities hederaceoides</i> n. sp. <i>Daphnophyllum dakotense</i> <i>Platanus latior</i> <i>Credneria inordinata</i> n. sp. <i>Credneria longifolia</i> n. sp. <i>Credneria mixta</i> n. sp. <i>Credneria intermedia</i> n. sp. <i>Pseudoprotophyllum crenulatum</i> n. sp. <i>Pseudoprotophyllum comparabile</i> n. sp. <i>Pseudoprotophyllum magnum</i> n. sp. <i>Pseudoprotophyllum latifolium</i> n. sp. <i>Pseudoprotophyllum singulare</i> n. sp. <i>Cotinus cretacea</i> n. sp. <i>Sapindus morrisoni</i> <i>Cissites yukonensis</i> n. sp. <i>Grewiopsis yukonensis</i> n. sp.	Cycads Ginkgo Conifers Sequoia Cones Angiosperms

Table 11 continued.

4634	20	farmer		<i>Cephalotaxopsis electilis</i> n. sp.	Conifer Same location as 3248.
4783	21	farmer		<i>Populites vitiformis</i> n. sp. <i>Populites platanoides</i> n. sp. <i>Populites? captiosus</i> n.sp <i>Menispermites communis</i> n. sp. <i>Daphnogene cocculoides</i> n. sp. <i>Platanus? newberryana</i> <i>Platanus? newberryana conditionalis</i> n. var. <i>Platanus heerii</i>	Angiosperms Pelecypods Same location as 3248.
2976	2AC235	64°43'58", 156°2'51" farmer		<i>Sphenolepis</i> sp. <i>Platanus</i> sp.	Conifer Angiosperms
4782	19	64°43'58", 156°0'49" farmer			Worm trails
2975	2AC234	farmer		<i>Sequoia</i> cf. <i>S. ambigua</i>	Same location as 4782.

Reference: Hollick, A., 1930.

Significance: Age equivalent to Dakota Group. *Ginkgo*, *Nilssonia* and *Podozamites* persisted longer in Alaska. Several new species. Flora indicates warm temperate climate, with a few tropical and subtropical species. Climate similar to southern USA or northern Mexico. Formation also has fresh water invertebrates.

Unnamed Formation

Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
965		Wiseman A-1 surveyor 26N 13W 7	Late Cretaceous to Early Tertiary	cf. <i>Nilssonia serotina</i> cf. <i>Nilssonia alaskana</i>	Cycads and other plants.

Reference: University of Alaska Locality Catalogue.

Unnamed Formation

Table 13

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
4632		Tanana B-2 surveyor farmer	Tertiary	<i>Nelumbo protolutea</i> sp.	Angiosperm Unable to plot, too vague.

Reference: Hollick, A., 1936.

Unnamed Formation

Table 14

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13 ¹		Livengood D-6 surveyor farmer	Pleistocene	<i>Ovibos</i> <i>Bison</i>	Musk ox Bison
18		Melozitna A-5 surveyor farmer		<i>Elephas</i>	Mammoth

Reference: Quackenbush, L.S., 1909.

¹ No locality or field numbers. Numbers assigned by investigators.

Unnamed Formation
Table 15

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Independence Creek	Livengood A-2 surveyor farmer	Pleistocene		Sheep skull
	Livengood Creek	surveyor farmer			Musk ox skull
	Mike Hess Creek	Livengood C-4 surveyor farmer			Bison cranium Unable to plot, too vague.
	Gertrude Creek	Livengood C-3 surveyor farmer			Bison, mammoth, horse, elk, musk ox, and caribou
	Little Eldorado ³	Livengood A-2 surveyor farmer			Musk ox-skull and skeleton Moose carcass Mastodon, mammoth Horse maxilla (1), mandibles (4) Caribou mandible, skull, antler Wolf skull Bison skull with horn shells and skeleton. Elk skull with partial antler Carnivore (?wolf) skull Carnivore mandible
	Lillian Creek ⁴	Livengood C-4 surveyor farmer			Bison maxillary, horse molar, mammoth
	Gertrude Creek ²	Livengood C-3 surveyor farmer			Mastodon skull and lower jaws Super bison skull
	Hess Creek	Livengood C-4 surveyor farmer			Bison-tibia Unable to plot, too vague.
	Amy Creek	Livengood C-3 surveyor farmer			Caribou Musk ox Horse
	Livengood Creek ¹	Livengood B-4 surveyor farmer			Mammoth tooth, musk ox, moose cranium
	Wilber Creek ⁵	Livengood B-3 surveyor farmer			Super bison, horse, caribou, mammoth, musk ox, moose carcass, and cranium
	Dome Creek ⁶	Livengood A-2 surveyor farmer			Mammoth skull and tusks Super bison, wolf, fox, musk ox, Caribou, elk, horse Bird, rodents
	Wolf Creek	surveyor farmer			Mammoth tooth
	Cleary Creek ⁷	surveyor farmer			Wolf skull Cat frontal and teeth, Carnivore-partial skull, Carnivore metapodial Rodent, mammoth post cranial Elk antler, caribou antler Moose antler Bison skull with horn sheath

Reference: Geist, O., field notes.

¹ See also: University of Alaska Vertebrate Catalogue.

² See also: Guthrie, R.D., 1966; University of Alaska Vertebrate Catalogue.

³ See also: Skinner, M.F., and other, 1947.

Table 15 continued.

⁴ See also: Frick, C., 1937; University of Alaska Vertebrate Catalogue.

⁵ See also: Guthrie, R.D., 1973.

⁶ See also: Guthrie, R.D., 1966; University of Alaska Vertebrate Catalogue; Pewe, T., 1966.

⁷ See also: University of Alaska Vertebrate Catalogue; Skinner, M.F., and other, 1947.

Unnamed Formation

Table 16

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Cleary Creek ³	Livengood A-1, 2 surveyor farmer	Pleistocene	<i>Bison (Superbison) crassicornuis</i>	Cranium, sheaths, one orbit. UAF:AM30619 Cranium, partial orbits. UAF:AM30623 Cranium, partial cores/orbits. UAF:AM30593 Cranium, one partial, one complete core, partial orbits. UAF:AM30645 Cranium, one core, partial core. UAF:AM30615 Partial cranium/right core. UAF:AM30547 Cranium, partial core. UAF:AM30602 Cranium, partial core. UAF:AM30566 Cranium, partial cores/orbit. UAF:AM30539 Cranium, partial cores/orbits. UAF:AM30603 Cranium. UAF:AM30649 Cranium, partial orbits. UAF:AM30618 Cranium, no orbits. UAF:AM30578 Cranium, partial left core. UAF:AM30607 Cranium, partial orbits. UAF:AM30609 Cranium, partial cores/orbits. UAF:AM30542 Cranium, left sheath, partial orbits. UAF:AM30512 Cranium, partial orbits. UAF:AM30617 Cranium, partial orbit. UAF:AM30582 Cranium, partial orbits/right core. UAF:AM30571 Cranium, right orbit, partial left core. UAF:AM30613 Cranium, partial cores. UAF:AM30528 Cranium, partial cores. UAF:AM30544 Cranium, partial cores. UAF:AM30550 Cranium, partial left core/orbits. UAF:AM30596 Cranium, partial cores/orbits. UAF:AM30612 Cranium, partial cores/orbits. UAF:AM30583 Cranium, partial cores/orbits. UAF:AM30513 Skull, sheaths, P ² -P ⁴ alv., M ¹ -M ² , M ³ alv. UAF:AM46911 Cranium, sheaths, cores, orbits. UAF:AM46914 Cranium, sheaths, cores, orbits. UAF:AM30592 Skull, right sheath, P ² -P ³ alv., P ⁴ -M ³ . UAF:AM46916 Skull, partial left core, P ² -P ⁴ alv., M ¹ -M ³ . UAF:AM46917 Skull, P ² -P ⁴ alv., M ¹ -M ² . UAF:AM30647 Cranium, sheaths, partial orbits. UAF:AM30650 Cranium, sheaths, partial orbits. UAF:AM30579 Cranium, partial orbits. UAF:AM30621 Cranium, partial right core. UAF:AM30511

Table 16 continued.

Little Eldorado Creek ²	Livengood A-2 69°5', 147°35' farmer				<p>Cranium, partial left core/orbit. UAF:AM30605</p> <p>Cranium, partial cores/orbits. UAF:AM30627</p> <p>Cranium, partial left core. UAF:AM30577</p> <p>Cranium, core fragments, partial orbits. UAF:AM30620</p> <p>Cranium, sheaths, partial orbits. UAF:AM30527</p> <p>Cranium, partial right core/orbits. UAF:AM30548</p> <p>Cranium, left sheath, partial orbit. UAF:AM30540</p> <p>Cranium, core fragments, partial orbits. UAF:AM30549</p> <p>Skull, P²-P³ alv., P⁴-M³. UAF:AM46931</p> <p>Cranium. UAF:AM30545</p> <p>Cranium. UAF:AM30646</p> <p>Cranium, partial cores/orbits. UAF:AM30610</p> <p>Cranium, right sheath, partial orbits. UAF:AM30561</p> <p>Cranium, partial orbits. UAF:AM30611</p> <p>Cranium, partial cores/orbits. UAF:AM30548</p> <p>Part may be BLM.</p> <p>Partial skull, sheaths. UAF:AM46913</p> <p>Skull, sheaths, P² alv., P³-M³. UAF:AM46958</p> <p>Skull, P²-M¹ alv., M²-M³. UAF:AM46925</p> <p>Part may be BLM.</p> <p>Cranium, left sheath. UAF:AM30521</p>
Pedro Creek ¹	Livingood A-1 65°, 147°28' farmer				

Reference: Skinner, M.F., and others, 1947.

¹ See also: University of Alaska Vertebrate Catalogue.

² See also: Geist, O., field notes.

³ See also: Geist, O., field notes; University of Alaska Vertebrate Catalogue.

Unnamed Formation

Table 17

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
V-6	Birch Bluff	Circle A-6 65° 15', 146° 44' farmer	Pleistocene		Bison
V-15	Dome Creek ⁶	Livengood A-2 65° 5', 147° 45' farmer			Bison, horse
V-27	Livengood Creek ²	Livengood C-4 farmer			Bison, mammoth, caribou
V-29	Mammoth Creek	Circle C-3 65° 33', 145° 9' farmer		<i>Rangifer</i> sp. <i>Ovis dalli</i>	Caribou Sheep Cervidae, bison, horse, mammoth
V-52	Gertrude Creek ³	Livengood C-4 65° 32', 148° 30' farmer			Mastodon
V-55	Lillian ⁴	65° 30', 148° 34' farmer		<i>Rangifer</i> sp.	Caribou Bison, horse, mammoth, cervid. Also V-93 thru V-99
V-57	Pedro Dome ¹	Livengood A-2 65° 2', 147° 30' farmer			Mammoth

Table 17 continued.

V-65	Hughes	Hughes 66°3', 154°15' farmer			Mammoth
V-67	Cleary Bedrock ⁵	Livengood A-2 65°7', 147°32' farmer			Canis, caribou, ovibos, mammoth, bison, horse
V-68	Tolovana	Livengood C-3 65°30', 148°15' farmer		<i>Alces</i> sp.	Moose

Reference: University of Alaska Vertebrate Catalogue.

¹ See also: Skinner, M.F., and other, 1947.² See also: Geist, O., field notes.³ See also: Guthrie, R.D., 1966; Geist, O., field notes.⁴ See also: Frick, C., 1937; Geist, O., field notes.⁵ See also: Skinner, M.F., and other, 1947; Geist, O., field notes.⁶ See also: Geist, O., field notes; Guthrie, R.D., 1966; Pewe, T., 1966.**Unnamed Formation**

Table 18

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Tanana River	Tanana surveyor farmer	Pleistocene	<i>Bison bison</i> "oregonus"	(USBS223292) ¹ Complete skull. Unable to plot, too vague.
	Cleary Creek ⁴	Livengood A-1, 2 65°4-7', 147°25-30' farmer		<i>Bison (Platycerobison) geisti</i> do	Cranium, no orbits. UAF:AM30552 ² Cranium, with horn cores. UAF:AM30581 ³

Reference: Skinner, M.F., and others, 1947.

¹ U.S. Biological Survey number.² P. Kaisen collector. American Museum number.³ A.S.W. Kerson, collector.⁴ See also: Geist, O., field notes; University of Alaska Vertebrate Catalogue.**Unnamed Formation**

Table 19

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Lillian Creek ¹	Livengood C-4 65°30'36", 148°32-4'24" farmer	Pleistocene	<i>Saiga ticei</i> n. sp.	Asiatic gazelle antelope Post. ½ cranium with horn cores. AC-F:AM30495. Collected 1930

Reference: Frick, C., 1937.

¹ See also: University of Alaska Vertebrate Catalogue; Geist, O., field notes.**Unnamed Formation**

Table 20

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Wilber Creek ¹	Livengood B-3 65°28', 149°35' farmer	Pleistocene Wisconsin	<i>Ochotona</i>	Pika Fecal pellets

Reference: Guthrie, R.D., 1973.

¹ See also: Geist, O., field notes.

Unnamed Formation

Table 21

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Dome Creek ¹	Livengood A-2 65°1'43", 147°35'36" farmer	Pleistocene	<i>Bison superbison crassicornis</i>	Head, complete with hide, horns, one ear, four legs with hooves and torso hide. Mammoth skull, tusks and hair

Reference: Pewe, T., 1966.

Significance: Hair dated at 32,700 +/- 980 y.b.p.

¹ See also: Geist, O., field notes; Guthrie, R.D., 1966; University of Alaska Vertebrate Catalogue.

Unnamed Formation

Table 22

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Dome Creek ³	Livengood A-2 65°1'43", 147°35'36" farmer	Pleistocene Wisconsin	<i>Cervus elaphus</i>	1 incomplete antler ¹
	Gertrude Creek ²	Livengood C-3 65°32', 148°30' farmer		<i>Cervus elaphus</i>	1 incomplete antler

Reference: Guthrie, R.D., 1966.

Significance: Indicates vegetational difference in past. Elk became extinct in Alaska during Sangamon interglacial. Change in vegetation could have caused extinction.

¹ All specimens from University of Alaska - Frick Laboratory.

² See also: University of Alaska Vertebrate Catalogue; Geist, O., field notes.

³ See also: Geist, O., field notes; Pewe, T., 1966; University of Alaska Vertebrate Catalogue.

Unnamed Formation

Table 23

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
359		Livengood A-1 surveyor 3N 1E ?	Pleistocene		Horse Unable to plot, too vague.

Reference: University of Alaska Locality Catalogue.

Unnamed Formation

Table 24

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	21AMt128b	Livengood C-4 surveyor farmer	Quaternary	<i>Elephas primigenius</i>	Tooth and humerus Unable to plot, too vague.
18AOF8		Livengood B-4 surveyor farmer	Carboniferous	<i>Batostomella</i> sp. <i>Athyris</i> sp.	Bryozoan Brachiopod Crinoid stems Unable to plot, too vague.
18AOF7		surveyor farmer	Mississippian	<i>Batostomella</i> sp. <i>Stenopora</i> sp. <i>Fenestella</i> sp. <i>Rhombopora</i> sp. <i>Spirifer</i> cf. <i>S. arcticus</i>	Bryozoans Brachiopod Crinoid columns Unable to plot, too vague.

Table 24 continued.

4AP277	Livengood C-3 or B-3 surveyor farmer	<i>Lithostrotion?</i> sp. <i>Archimedes?</i> sp. <i>Fistulipora</i> sp. <i>Polypora?</i> sp. <i>Rhombopora</i> sp. <i>Productus</i> cf. <i>P. longispinus</i> <i>Euomphalus</i> sp.	Coral? Coral Bryozoans Brachiopod Gastropod Unable to plot, too vague.
1522A	Livengood D-1 surveyor farmer	<i>Syringopora?</i> sp.	Bryozoan Unable to plot, too vague.

Reference: Mertie, J.B. Jr., 1937.

Area 17

AREA 17

Quad Maps:

Baird Mts.

Noatak

Selawik

Fossil bearing deposits in this area are confined to rocks of the Baird Group. Three major units are recognized although the stratigraphy is poorly known. Fossils in the study area are from the Skajit limestone. This is a massive light gray limestone. The corals are the dominant fossils recorded. They indicate a Middle to Early Devonian age (Table 1). These corals are useful for stratigraphic and age determination.

Quaternary flood plain deposits along the Kobuk River in the southern part of the area are known to contain Pleistocene freshwater pelecypods and gastropods (Table 2).

Quackenbush (Table 3) reports bison found in Quaternary deposits along this river also.

No special management is required.

**Baird Group
Skajit Limestone
Table 1**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
7168SD	22820 ¹	Baird Mts. B-4 67°28', 160°53' farmer	Middle Devonian	<i>Alveolites</i> sp. <i>Cladopora</i> sp. <i>Favosites</i> sp. <i>?Thamnopora</i> sp. <i>Pseudotryplasma</i> sp. cf. <i>P. altaicus</i> <i>Tryplasma</i> sp.	Corals
8793SD	66ARr60	Baird Mts. B-6 67°22', 161°53' farmer		<i>Auloporoids</i> <i>Thamnopora</i> sp.	
8798SD	66ATr48	67°21.9', 161°51.8' farmer		<i>Disphyllum</i> sp. <i>Thamnopora</i> sp. <i>D. sp. cf. D. catenatum</i>	
8796SD	66ARr86	67°22', 161°50' farmer		<i>Peneckiella</i> sp.	
8789SD	66ARr185A	Baird Mts. C-5 67°41.5', 161°11' farmer		<i>Cladopora</i> sp. <i>Syringopora</i> sp. A <i>Thamnopora</i> sp. <i>Acanthophyllum</i> sp. <i>Cystimorph</i> <i>Disphyllum</i> sp.	Solitary coral
8790SD	66ARr185B	farmer		<i>Cladopora</i> sp. <i>Thamnopora</i> sp. cf. <i>Dendrostella</i> sp.	Same location as 8798SD.

Reference: Oliver, W.A., and others, 1975.
¹ Collector: Standard Oil.

**Unnamed Formation
Table 2**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	23166	Selawik D-4 67°56', 160°51.5' farmer	Pleistocene Late Illinoian	<i>Sphaerium nitidum</i> <i>Pisidium casertanum</i> <i>Pisidium idahoense</i> <i>Valvata lewisi</i> <i>Helisoma subcrenatum</i>	Pelecypods Not found in Eurasia Freshwater gastropods
	23167	67°55'18", 160°54'10" farmer		<i>Sphaerium nitidum</i> <i>Pisidium idahoense</i> <i>Pisidium lilljeborgi</i> <i>Lymnaea randolphi</i>	Pelecypods Freshwater gastropod ¹

Reference: McCulloch, D.S., and others, 1965.
Significance: All found in Eurasia except as noted.
¹ Endemic to Alaska

**Unnamed Formation
Table 3**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
9 ¹		Selawik D-4 surveyor 18N 9W 14		<i>Bison</i>	
10		surveyor 18N 10W 18		<i>Bison</i>	

Reference: Quackenbush, L.S., 1909.
¹ No locality or field numbers. Numbers assigned by investigators.

Area 18

AREA 18

Quad Maps:
Point Hope
DeLong Mts.
Point Lay
Noatak

A few foraminifera, algae and stromatoporoids (bryozoans) have been reported from the Baird Group of Late Devonian age (Table 1). Fossils are not abundant or diverse in these light to dark gray, medium and fine grained limestones.

Of the remaining Paleozoic rocks in the area, the Mississippian age deposits dominate. The fauna (Tables 2-9) consists of corals, crinoids, brachiopods, bryozoans, ostracods, a few pelecypods and gastropods. Brachiopods and corals are the best represented. Mississippian formations, which are generally classed under the Lisburne Group are: Kogruk and Nuka Formations. The former is a light fine-grained limestone and dolomite with chert nodules. Common fossils are corals and brachiopods of Late Mississippian age (Tables 5, 6). The Nuka Formation is a more colored and coarse grained limestone. Corals and brachiopods are the most abundant fossils, and some brachiopods appear to be Permian (Table 8).

A few fossils of Permian age have been reported from the Siksikpuk Formation in the Point Hope quadrangle. They are corals (Table 10) and gastropods (Table 11). This formation is a varied color chert, shale and limestone. Fossils are not abundant and range in age, outside of the study area, from Triassic to Pennsylvanian.

Smith and other (1930) reports a pelecypod of Triassic age in an unnamed formation (Table 12). Pelecypods of equivilant age are reported from the Etivluk Group (Table 13). This formation is a multi-colored chert and siliceous shale. Proximity of this formation to the locality in Table 12 would imply that this locality is in the Etivluk Group.

Clay shales of the Kingak Formation have yielded Early Jurassic ammonites which are not abundant and poorly preserved in general (Tables 14, 15).

Overlying the Kingak is a series of shales, sandstones, chert and limestone known locally as the Tiglukpuk Formation. Upper Jurassic pelecypods are abundant and widespread (Tables 15-17), part of this formation may grade into the Cretaceous.

Lower Cretaceous formations in ascending order

are the Okpikruak, Torok, and Kukpowruk Formations.

The Okpikruak, which is composed of alternating graywacke, shale and conglomerate, contain an abundance of pelecypods (*Aucella*) (Tables 18-21). A few other fossils are present but not reported. The fauna of this formation indicates shallow cool water in temperate seas. The pelecypods range in age from the lower to upper part of the Early Cretaceous. The species of pelecypods are important tools for age correlation through northern Alaska. Fossils reported by Smith (1930) may also be from this formation (Table 22).

Similar in age, but slightly younger is the Torok Formation. Claystone, clayshale, silty shale with sandstone and silt make up the lithology of this formation. Again this formation is dominated by pelecypods (Table 23).

Overlying the Torok is the Kukpowruk Formation which is a series of marine and non-marine dark gray sandstones, silts and silty shales. Fossils are common and more diverse than the preceding Late Cretaceous formations. Ammonites and pelecypods are reported in this area (Tables 24, 25), but elsewhere starfish, brittlestars, worm tubes and gastropods have been found.

At the close of the Lower Cretaceous, Albian stage, an abrupt termination of pelecypods and the influx of the terrestrial Corwin Formation marks a major geologic event at this time and the recession of the Cretaceous sea.

Non-marine sediments of the Corwin Formation include: silty shales, coal, sandstone conglomerate and bentonic clay. This formation is the lateral equivalent to the Kukpowruk Formation, both of the Nanushuk Group.

Fossil plants from this formation are ferns, cycads, ginkgos, conifers and angiosperms (Tables 26-28). They range in time from late Lower Cretaceous to early Upper Cretaceous and record the change of temperatures from warm to cool and the increasing dominance of modern angiosperms - dicotyledons - through Lower Cretaceous to Upper Cretaceous.

Floral zones described by Scott and other (1979), and Smiley (1969) are useful for age correlations.

The only Tertiary fossils reported in the study area are from an unnamed formation in the Kivalina Lagoon area (Table 29).

Only general management procedures, as outlined elsewhere in this report, are applicable to the invertebrates and plants of this area.

Baird Group

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	81Md21	Noatak D-5 67°51'57", 164°6'33" farmer	Devonian		Stromatoporoids
	81Tr31	67°56'9", 164°4'3" farmer	Upper Devonian?		Algae Stromatoporoids

Reference: Mayfield, C.F., and others, 1984.

Unnamed Formation

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	AC17	Point Hope D-2 68°50'18", 166°1' farmer	Paleozoic Lower Carboniferous	<i>Productus?</i> sp. <i>Productella?</i> sp. <i>Dentalium?</i> sp. <i>Goniatites</i> sp.	Brachiopods Scaphopod Ammonite
	AC18	68°50', 166° farmer		<i>Aviculopecten</i> , several sp. <i>Nucula?</i> sp.	Pelecypods
	AC19	68°49', 166°2' farmer		<i>Lithostroton</i> sp. a? <i>Lithostroton portlocki</i>	Corals
	AC21	68°50', 166°2' farmer		<i>Aviculopecten</i> sp.	Pelecypods
	AC81	69°49', 165°59' farmer		do	
	AC33	surveyor farmer		<i>Aviculopecten</i> , several sp. <i>Nucula?</i> sp. <i>Pararca?</i> sp.	Unable to plot, too vague.
	AC34	surveyor farmer		<i>Aviculopecten</i> , several sp. <i>Nucula?</i> sp. <i>Pararca?</i> sp.	Unable to plot, too vague.

Reference: Collier, A., 1906.

Lisburne and Noatak Formations

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	26AS2 ¹	Noatak D-5 surveyor 29N 25W 29	Carboniferous ?Mississippian	<i>Triplophyllum</i> sp. <i>?Aclisina</i> sp. <i>Paraparchites</i> sp.	Coral Gastropod Ostracod
	26AS17	Delong Mts. A-4 surveyor farmer		<i>Triplophyllum</i> sp. <i>Leioclema</i> sp. <i>Camarotoechia</i> cf. <i>C. mutata</i> <i>Spirifer</i> cf. <i>S. stratiformis</i> <i>Reticularia</i> sp.	Coral ? Brachiopods
	26AS18	surveyor farmer		<i>Triplophyllum</i> sp. <i>Spirifer</i> sp.	Unable to plot, too vague. Coral Crinoid stems Brachiopod Unable to plot, too vague.
	26AS50	Delong Mts. D-1 68°51'32", 162°1'37" farmer		<i>Chonetes</i> cf. <i>C. choctawensis</i> <i>Spirifer martiniiformis?</i> <i>Martinia</i> sp. <i>?Eumetria</i> sp. <i>?Composita</i> sp.	Brachiopod

Table 3 continued.

26AS41	68°46'32", 162°3'40" farmer		<i>Orthotetes</i> sp. <i>Aviculipecten</i> sp. <i>Spirifer</i> sp.	Brachiopod Pelecypod Brachiopod Crinoid columns
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Reference: Smith, P.S., and other, 1930.

¹ See Mayfield, C.F., and others, 1984.

Lisburne Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	49ASa15f	DeLong Mts. B-2 68°26', 162°51' 12S 47W 2	Mississippian	<i>Halobia?</i> sp.	Pelecypod Productids Brachiopods
	49ASa17f				Bryozoans Brachiopods Crinoids
	49ASa18f			<i>Platycrinites</i> sp.	Same location as 49ASa15F.
	49ASa29f	68°25.5', 162°51' 12S 47W 11	Permian	<i>Neospirifer</i> sp. <i>Camarophorias</i>	Brachiopods

Reference: Chapman, R.M., and other, 1950.

Lisburne Group

Kogruk Formation

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M1020		DeLong Mts. B-1 68°19', 162°35' 34N 17W 21	Upper Mississippian Middle Meramac Late Meramac Middle Meramac Late Meramac Middle Meramac Late Meramac	<i>Lithostrotrion (Siphonodendron) sinuosum</i> <i>Lithostrotrion (Siphonodendron) warreni</i> <i>Lithostrotrion banffensis</i> <i>Lithostrotrion</i> aff. <i>L. banffensis</i> <i>Lithostrotrionella mclareni</i> <i>Lithostrotrionella</i> sp. <i>Thysanophyllum astraeiforme</i> <i>Thysanophyllum orientale</i> <i>Sciophyllum lambarti</i> <i>Sciophyllum alaskaensis</i> <i>Faberophyllum</i> spp.	Corals
M1022		Point Hope B-2 68°23', 165°49' 12S 59W 30	Middle Meramac Late Meramac	<i>Lithostrotrionella mclareni</i> <i>Lithostrotrionella</i> sp. A <i>Faberophyllum</i> spp.	

Reference: Armstrong, A.K., 1970.

Other fauna: bryozoans, and crinoids.

Kogruk Formation

Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
19193 PC	59Ahp1092 ¹	Noatak D-6 67°48'57", 164°37'12" farmer	Mississippian		Corals
	264461A' 87-D6-72D ²	67°54'21", 164°53'18" farmer	Late Mississippian Meramecian		Corals
	26AS2 ³	Noatak D-5 67°51'20", 164°21'36"	Mississippian		Corals

Table 6 continued.

		farmer			
26AS3		67°52'54", 164°25'5" farmer			Brachiopods
26AS5		67°52'27", 164°14'48" farmer			Corals Brachiopods
28817 PC	81Md22B	67°52'24", 164°18'12" farmer			Brachiopods Corals

Reference: Mayfield, C.F., and others, 1984.

¹ Collector: Standard Oil Company of California geologists.

² Mobil Oil Corp.

³ See also: Smith, P.S., and other, 1930.

Unnamed Formation

Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
28818 PC	81Tr30	Noatak D-5 67°53'46", 164°12'33" farmer	Mississippian		Brachiopods Corals

Reference: Mayfield, C.F., and others, 1984.

Nuka Formation

Table 8

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M1049	27443-7 ¹	Noatak D-6 67°57'21", 164°33'42" farmer	Late Mississippian? and Permian?		Corals Brachiopods
	187D6175 ²	farmer	Late Mississippian?		Corals Same location as 27443-7

Reference: Mayfield, C.F., and others, 1984.

¹ Collector: Standard Oil Company of California geologists

² Collector: Mobil Oil Corporation geologists.

Lisburne Group

Table 9

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15455	53ABo18	Point Hope D-2 68°52', 166°08' farmer	Late Paleozoic Upper Mississippian		Gastropods Euomphalacea indeterminate

Reference: Yochelson, E., and other, 1960.

Significance: Useful faunal zonation from fossils can determine Early Mississippian, Lower Mississippian and Permian: no distinct boreal fauna; most poorly preserved.

Siksikuk Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20213 PC	60ACr130	Point Hope B-2 68°23', 165°44' farmer	Permian	<i>Ufima</i> sp. <i>Tachylasma</i> sp.	Corals

Reference: Rowett, C.L., 1975.

Table 10 continued.

Siksikpuk Formation

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15453	53ASa247	Point Hope D-2 68°49', 165°58'	Late Paleozoic Permian?	<i>Straparollus alaskensis</i> n. sp. <i>Mourlonia? reloba</i> n. sp.	Gastropods Pleurotomariacca indeterminate

Reference: Yochelson, E., and other, 1960.

Unnamed Formation

Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13738	26AS42	DeLong Mts. C-1 surveyor 8S 43W 26	Upper Triassic	<i>Pseudomonotis subcircularis</i>	Pelecypod

Reference: Smith, P.S., and other, 1930.

Etiviuk Group

Table 13

Loc. #	Collector Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	26455-1 ¹	Noatak D-6 67°57'5", 164°44'30" farmer	Late Triassic Late Norian	<i>Monolis</i> sp.	Pelecypods
	27440-1 ¹	67°57'3", 164°57'40" farmer			do

Reference: Mayfield, C.F., and others, 1984.

¹ Collector: Standard Oil Company of California geologists.

Kingak Shale Formation

Table 14

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29159 ²	AF1024 ¹	Delong Mts. C-5 68°41'51", 164°45'5" farmer	Early Jurassic Early to Middle Toarcian	<i>Harpoceras</i> cf. <i>H. exaratum</i>	All ammonites
29160 ²	AF1025 ¹	farmer		<i>Harpoceras</i> cf. <i>H. exaratum</i>	Same location as 29159
29161 ²	AF1027 ¹	farmer		<i>Harpoceras</i> cf. <i>H. exaratum</i>	do
29163 ²	AF1028 ¹	farmer		<i>Dactyloceras (Orthodactylites)</i> cf. <i>D. (O.) directum</i>	do
29776 ²	68ATo46F	68°40.8', 164°45.5' farmer		<i>Harpoceras</i> cf. <i>H. exaratum</i> <i>Elegantoceras</i> sp. juv.	
29164 ²	AF26 ¹	DeLong Mts. C-4 68°40', 164°13' farmer	Late Pliensbachian	<i>Amaltheus</i> sp.	
M2441 ²	64ATr204F	68°37', 164°11' farmer		<i>Amaltheus margaritatus</i>	

Reference: Imlay, R.W., 1981.

¹ Collector: British Petroleum (Alaska) Inc., 1964.

² See also: Imlay, R.W., and other, 1973.

Unnamed Formation

Table 15

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M2441 ³		DeLong Mts. C-4 68°37', 164°11' farmer	Lower Jurassic Pliensbachian	<i>Amaltheus</i> sp.	Ammonites
29164 ³		68°40', 164°13' farmer		<i>Amaltheus</i> sp.	
29159-161 ³ & 29163		DeLong Mts. C-5 68°41'50", 164°45'5" farmer	Toarcian	<i>Harpoceras</i> cf. <i>H. exaratum</i> <i>Dactylioceras</i> sp.	
29776 ³		68°40.8', 164°45.5' farmer		<i>Harpoceras</i> sp.	
22126 ¹		DeLong Mts. B-2 68°23', 162°43' farmer	Late Oxfordian to Early Kimmeridgian	<i>Buchia concentrica</i>	Pelecypods
30071		DeLong Mts. C-3 68°43', 163°12'30" farmer		<i>Buchia concentrica</i>	
29131		68°42'30", 164°40'30" farmer	Late Kimmeridgian to Middle Tithonian	<i>Buchia mosquensis</i>	
29132		68°38'20", 164°36' farmer		cf. <i>Buchia mosquensis</i>	
22127 ²		68°42'30", 163°14' farmer		<i>Buchia rugosa</i>	

Reference: Imlay, R.W., and other, 1973.

¹ See Imlay, R.W., 1955.

² See Imlay, R.W., 1959.

³ See also: Imlay, R.W., 1981.

Tiglukpuk Formation

Table 16

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22127 ¹		DeLong Mts. C-3 68°42'30", 163°14' farmer	Upper Jurassic Kimmeridgian to Lower Portlandian	<i>Aucella</i> sp.	Pelecypod Abundant and widespread

Reference: Imlay, R.W., 1959.

Significance: Seven zones can be recognized by species, good for mapping and stratigraphy. Genus name changed to *Buchia*. Range of genus Late Jurassic to Early Cretaceous.

Collector: Sable 1949

¹ See Imlay, R.W., and other, 1973.

Tiglukpuk Formation.

Table 17

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22126 ¹	49ASa30	DeLong Mts. B-2 68°23', 162°43' farmer	Upper Jurassic Upper Oxfordian or Lower Kimmeridgian	<i>Aucella concentrica</i>	Pelecypod

Reference: Imlay, R.W., 1955.

¹ See also: Imlay, R.W., and other, 1973.

² See also: Imlay, R.W., 1981.

Unnamed Formation

Table 18

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13716 ¹	26AS19	DeLong Mts. A-4 surveyor 31N 23W 6	Lower Cretaceous	<i>Aucella crassicollis</i>	Pelecypod

Reference: Smith, P.S., and other, 1930.

¹ See Imlay, R.W., 1961.

Okpikruak Formation

Table 19

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13716 ¹	26AS19	DeLong Mts. A-4 68°8'30", 164° farmer	Lower Cretaceous Valanginian	<i>Aucella sublaevis</i>	Pelecypod Exact locality not known.
22128	49ASa46	DeLong Mts. C-2 68°44', 163°2' farmer		<i>Aucella sublaevis</i>	

Reference: Imlay, R.W., 1961.

¹ See also: Smith, P.S., and other, 1930.

Okpikruak Formation

Table 20

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	68ATr144	Noatak D-6 67°59'19", 164°33'54" farmer	Early Cretaceous? Valanginian?	<i>Buchia</i> sp. juv.	Pelecypod
M7590	81Md25C	DeLong Mts. A-5 68°5", 164°48'24" farmer	Early Cretaceous Berriasian	<i>Buchia okensis</i>	Pelecypod

Reference: Mayfield, C.F., and others, 1984.

Okpikruak Formation

Table 21

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	49ASa30f	DeLong Mts. B-2 68°25.5', 162°51' 12S 47W 11	Late Lower Cretaceous Aptian and Albian	<i>Aucellina</i>	Pelecypod

Reference: Chapman, R.M., and other, 1950.

Unnamed Formation

Table 22

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13719	26AS43	DeLong Mts. D-1 surveyor farmer	Upper Cretaceous	<i>Inoceramus</i> sp. <i>Mactra</i> ?	Pelecypods Unable to plot, too vague.

Table 22 continued.

13720	26AS45	surveyor farmer			asteroid? indeterminate Unable to plot, too vague.
13721	26AS48	surveyor farmer	Cretaceous or Jurassic	<i>Ostrea</i> sp. <i>Entolium?</i> sp. <i>Anomia?</i> sp. <i>Pleuromya?</i> sp. <i>Tellina</i> sp. <i>Mastra?</i> sp.	Pelecypods Unable to plot, too vague.
13723	26AS49	surveyor farmer		<i>Pleuromya?</i> sp. <i>Mastra?</i> sp.	Unable to plot, too vague.
7840	26AS46	surveyor farmer			Worm burrows or rhizomorphs indet. Unable to plot, too vague.
7842	26AS52	surveyor farmer	Jurassic	<i>Ginkgo</i> sp.	Fragments Unable to plot, too vague.
7843	26AS64	Point Lay A-1? surveyor farmer	Jurassic	<i>Thyropteris?</i> <i>Pinus nordenskioldii?</i> <i>Ginkgo digitata</i>	Fragments Conifers Unable to plot, too vague.
13730	26AS66	surveyor 2S 41W 23	?	<i>Dentalium</i> sp. or <i>Serpula</i> sp.	Scaphopod tube

Reference: Smith, P.S., and other, 1930.

1 See also: Imlay, R.W., 1961.

Torok Formation

Table 23

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13717	26AS37	DeLong Mts. D-2 68° 46', 162° 50' farmer	Lower Cretaceous Albian	<i>Arctica?</i> sp. <i>Panope? kissoumi</i>	Pelecypods

Reference: Imlay, R.W., 1961.

Kukpowruk Formation

Table 24

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13729	26AS61	Point Lay A-1 69° 10', 162° farmer	Lower Cretaceous Albian	<i>Tarcredia</i> sp. <i>Arctica?</i> sp.	Pelecypods
13728	26AS60	69° 9', 162° 8' farmer		<i>Gastropilites?</i> sp.	Ammonite
24472	49ACH153	DeLong Mts. D-1 68° 50' 10", 162° 20' farmer		" <i>Unio</i> " sp.	Pelecypod

Reference: Imlay, R.W., 1961.

1 See also: Chapman, R.M., and other, 1960.

Kukpowruk Formation

Table 25

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13728	26AS60	Point Lay A-1 surveyor 3S 42W 30	Cretaceous Albian	<i>Gastropilites</i> sp.	Ammonite Exact position not known. Torok or Kukpowruk Fm.

Table 25 continued.

13729	26AS61	surveyor 3S 42W 22		<i>Arctica?</i> sp. <i>Tancredia</i> sp.	Pelecypods
24472	49ACh153	Delong Mts. D-1 surveyor 7S 44W 15		"Unio"	

Reference: Chapman, R.M., and other, 1960.
 1 See also: Imlay, R.W., 1961.

Corwin Bluff Formation

Table 26

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1614		Point Hope D-1 68°52'40", 165°3'15" farmer	Cretaceous	<i>Sphenobaiera pulchella</i> <i>Phoenicopsis?</i> or <i>Podozamites</i> <i>Pityophyllum</i> sp.	Ginkgos Conifer

Reference: University of Alaska Locality Catalogue.

Corwin Formation

Table 27

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Area7	Corwin Bluff	Point Hope D-1 68°2.6', 165°2" farmer	Upper Cretaceous Albian	<i>Baiera</i> sp. <i>Ginkgo</i> sp. <i>Nilssonina alaskana</i> <i>Taeniopteris</i> sp. <i>Ctenis</i> sp. <i>Cephalotaxopsis</i> sp. <i>Taiwania</i> sp. <i>Abieites</i> sp. <i>Podozamites</i> sp. <i>Cladophlebis alata</i> <i>Sphenopteris psilotoides</i> <i>Baiera</i> <i>Nilssonina magnifolia</i> <i>Aldania</i> sp. <i>Jacutiella</i> sp. <i>Pityophyllum</i> sp. <i>Sphenolepis</i> sp. <i>Podozamites</i> spp. <i>Cladophlebis huttoni</i> <i>Coniopteris</i> sp. <i>Phoenicopsis</i> sp. <i>Czekanowskia rigida</i> <i>Nilssonina serotina</i> <i>Sagenopteris</i> sp.	Cycads, Zone II Ginkgos Cycads Conifers Ferns, Zone IB Ginkgo Cycads Conifers Ferns, Zone I Ginkgos Cycad ?

Reference: Smiley, C., 1969a.

Significance: Flora indicates climate change from warmer temperatures to cooler temperatures later in the Cretaceous.

Nanushuk Group

Table 28

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
4'	Kukpowruk River	Point Lay B-1? surveyor farmer	Cretaceous Aptian- Cenomanian	<i>Arctopteris rarinervis</i> <i>Coniopteris onychioides</i> <i>Ginkgo paradiantoides</i> <i>Ginkgo</i> n. sp. <i>Phoenicopsis</i> var. 3	Ferns, Zone IB Ginkgos

Table 28 continued.

			<i>Pityophyllum</i> var. 1	Conifers
			<i>Podozamites</i> var. 2	
			<i>Podozamites</i> var. 7	
			<i>Podozamites</i> var. 9	
			<i>Sphenobaiera</i> cf. <i>S. pulchella</i>	Ginkgo
			? <i>Zamites</i> sp.	Cycad
			? <i>Abietites</i> sp.	Conifer, Zone II
			<i>Ginkgo paradiantoides</i>	Ginkgos
			<i>Ginkgo</i> n. sp.	
			<i>Nilssonnia alaskana</i>	Cycad
			<i>Nilssonnia</i> cf. <i>N. orientalis</i>	
			<i>Nilssoniopteris polymorpha</i>	
			<i>Phoenicopsis</i> var. 3	Ginkgo
			<i>Pityophyllum</i> var. 2	Conifers
			<i>Podozamites</i> var. 7	
			<i>Podozamites</i> var. 9	
			<i>Podozamites</i> var. 15	
			? <i>Abietites</i> sp.	Zone III
			cf. <i>Ampelopsis multesima</i>	Angiosperms
			<i>Ciccites comparabilis</i>	
			<i>Coniopteris inenarabilis</i>	Fern
			<i>Elatocladus</i> n. sp.	Conifer
			? <i>Ginkgoites</i> (? <i>Baiera</i>) n. sp.	Ginkgo
			<i>Juniperites</i> n. sp.	Conifer
			<i>Nilssonnia alaskana</i>	Cycads
			<i>Nilssonnia</i> cf. <i>N. orientalis</i>	
			<i>Pityophyllum</i> var. 2	Conifer
			cf. <i>Platanus latiloba</i>	Angiosperm
			<i>Podozamites</i> var. 7	Conifers
			<i>Podozamites</i> var. 9	
			<i>Podozamites</i> var. 15	Unable to plot, too vague.
7 ¹	Corwin Bluff	Delong Mts. D-1, 2 surveyor farmer	<i>Arctopteris rarinervis</i>	Ferns, Zone IB
			<i>Coniopteris onychioides</i>	
			<i>Ginkgo paradiantoides</i>	Ginkgos
			<i>Ginkgo</i> n. sp.	
			<i>Phoenicopsis</i> var. 3	
			<i>Pityophyllum</i> var. 1	Conifers
			<i>Podozamites</i> var. 2	
			<i>Podozamites</i> var. 7	
			<i>Podozamites</i> var. 9	
			<i>Sphenobaiera</i> cf. <i>S. pulchella</i>	Ginkgo
			? <i>Zamites</i> sp.	Cycad
			? <i>Abietites</i> sp.	Conifer, Zone II
			<i>Ginkgo paradiantoides</i>	Ginkgo
			<i>Ginkgo</i> n. sp.	
			<i>Nilssonnia alaskana</i>	Cycads
			<i>Nilssonnia</i> cf. <i>N. orientalis</i>	
			<i>Nilssoniopteris polymorpha</i>	
			<i>Phoenicopsis</i> var. 3	Ginkgo
			<i>Pityophyllum</i> var. 2	Conifers
			<i>Podozamites</i> var. 7	
			<i>Podozamites</i> var. 9	
			<i>Podozamites</i> var. 15	
			<i>Arctopteris kolymensis</i>	Ferns
			<i>Arctopteris rarinervis</i>	
			<i>Coniopteris onychioides</i>	
			<i>Ginkgo paradiantoides</i>	Ginkgos
			<i>Ginkgo</i> n. sp.	
			<i>Nilssonnia</i> cf. <i>N. serotina</i> var. 2	Cycad
			<i>Phoenicopsis</i> var. 1	Ginkgo
			<i>Phoenicopsis</i> var. 2	
			<i>Phoenicopsis</i> var. 3	
			<i>Pityophyllum</i> var. 1	Conifers
			<i>Podozamites</i> var. 2	Unable to plot, too vague.

Reference: Scott, R.A., and other, 1979.

Note: Zones represent only a small collection of fossils.

¹ Authors locality numbers equal general areas.

Unnamed Formation

Table 29

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N - Long.W	Twn. Rng. Sec.			
M1817	McCulloch	Noatak D-6 67°49', 164°37'12"	farmer	Late Pliocene or Early Pleistocene	<i>Fortipecten hallae</i>	Pelecypod-pectin

Reference: MacNeil, F.S., 1967.

Significance: Some migration to Atlantic from Pacific in Late Cenozoic but not the other direction. Most related to older and more south Pacific types, particularly eastern Asia. Early and Middle Tertiary stocks in North Pacific of European origin but reached North Pacific by a Tethyan or Indian Ocean route, not Arctic, and some returned to North Atlantic across Arctic.

Area 19

AREA 19

Quad maps:
Barrow
Harrison Bay
Teshekpuk
Meade River
Wainwright
Utukok River
Lookout Ridge
Ikpikpuk River
Umiat
Killik River
Howard Pass
Misheguk Mtn.

In this area, the oldest rocks outcrop in the Brooks Range and date from Paleozoic to Middle Mesozoic, moving in a northward direction. The north slope of the Brooks Range is dominated by Cretaceous rocks. Late Tertiary sediments mantle the Arctic coastline and Late Pleistocene outcrops in the stream channels.

The oldest fossil reported from this area has the distinction of being a vertebrate. Perkins (1971) described a single tooth plate of the lung fish *Dipterus*? from an unnamed, undescribed Middle Devonian formation (Table 1).

Few fossils are found in the overlying Noatak Formation. Fossils reported from this formation are a brachiopod and an indeterminate gastropod of Mississippian age (Table 2). This formation is a gray to black, micaceous silty shale, indurated with thin silts, and sands. Some ironstone and dark clayshale occur. The lower part may be of Upper Devonian age.

Poorly preserved gastropods of Lower Mississippian age are reported from the Kayak Formation (Table 3). This formation is made up of predominantly black shale, sandstone and limestone (Bowsher, and Dutro, 1957). Outside the study area forams, ostracods and crinoid impressions occur. (Mayfield and others 1984).

Most of the Mississippian fossils occur in the Lisburne Group. The lithology of the group in general is mostly limestone with some shale and chert. Outcrops extend some 600 miles from Cape Lisburne across the state. In this area the Lisburne Group has been divided into two formations, the Early Mississippian Wachsmuth Limestone and the Late Mississippian Alapah Limestone (Bowsher and Dutro, 1957).

Disconformably overlying the Kayak Shale is the limestone, dolomite and banded chert of the Wachsmuth Limestone. A few gastropods (Table 4) and a cephalopod (Table 5), have been reported. Fossils were generally poorly preserved. The apparent lack of fossils from the Wachsmuth may be due to the fact that the exact stratigraphic position of many of the undifferentiated Lisburne Group localities is unknown.

A more variable lithology of limestones, black chert-shale and chert nodules comprise the Alapah Limestone. Ammonites and nautiloids have been reported (Table 5), and the Utukok Formation, which is probably equivalent, has brachiopods, cephalopods, a few gastropods and pelecypods (Table 6).

The undifferentiated localities in the Lisburne Group have produced, in addition to the previous named fossils; scaphopods, corals, and bryozoans (Tables 7-10). Tasch, (1979), reports float pebbles, possibly from the Lisburne Group, as far away as Barrow. These pebbles contained the remains of echinoderms, algae, sponge, bryozoans, corals and crinoids (Table 11).

Concluding the Paleozoic is the Nuka Formation of Pennsylvanian? and Permian. This formation is multicolored, medium to coarse grained arkose and course grained limestone. Corals from this formation (Table 12) have been identified by Rowett (1975). Two unnamed formations of the same age have trilobites and gastropods (Tables 13, 14), and may be from the same formation.

Pelecypods dominate the Triassic of the area (Tables 15-17). Most are probably from the Shublik Formation. Almost all of the Triassic is represented by continuous deposition of dark limestones and

shales, and chert. Fossils, mostly pelecypods, are found in the chert nodules and limestone. Rare and well preserved marine reptiles occur in this formation (Table 18). Fossils outside the area include ammonites and gastropods.

Three Jurassic formations are recognized in the area; the Otuk of Early Jurassic, the Kingak Shale of Early and Middle Jurassic and the Tiglukpuk of Late Jurassic.

Radiolarian chert is the prevailing rock of the Otuk Formation, as well as some siliceous shale. Fossils reported in the area are belemnites and pelecypods (Table 19). Fossils found elsewhere suggest that part of the formation may be Late Triassic.

The Kingak Shale is a dark, soft shale containing ammonites, pelecypods and numerous well-preserved crinoids, but none are reported in the study area.

Imlay (1955) proposed the name Tiglukpuk Formation for a series of coarse clastic conglomerate graywacke, sandstone, silts, tuffs, limestone and pillow lava. Limestones contain abundant pelecypods that are good stratigraphic age indicators (Tables 20, 21). Because the Kingak represents continuous deposition throughout the Jurassic, the Tiglukpuk Formation has been replaced by the Kingak.

Ammonites and pelecypods (Tables 22-24) from unnamed formations are probably from the Kingak Shale Formation. Additional fauna, from outside the area, includes a few brachiopods, scaphopods and belemnites.

Evidence exists that the Jurassic seas retreated during the Bathonian, Callovian and Portlandian stages, leaving terrestrial deposits which contain plant fossils (Table 37).

Proceeding north from the Brooks Range to the Arctic Ocean, the Cretaceous formations change from Late to Early Cretaceous.

The oldest of the Early Cretaceous formations is the Okpikruak which conformably overlies the Tiglukpuk. The lithology of the Okpikruak Formation is a series of alternating fine-grained greenish-gray graywacke sandstone, dark clay and silt shale with a basal conglomerate of angular to subrounded lithic fragments. The fauna is dominated by the pelecypod *Buchia* (Aucella), the species of which serve as good time-stratigraphic markers (Tables 25-28). A few forams, organic markings and one ammonite occur in these beds.

Following a time hiatus, including all of the Aptian Stage of the Late Cretaceous, the Torok Formation represents deposition during the next stage (Albian). This formation is composed of predominantly dark gray shale and silt interbedded with minor amounts

of green and gray sandstone. The fossils (Tables 29-32), are much more diverse than the preceding formation and include a rare jellyfish, worm tubes, pelecypods and ammonites.

As originally defined, (Gryc and others, 1951) the Torok Formation included green to gray coarse graywacke sandstone and conglomerate, and some marine shale. These rocks have since been assigned to the Fortress Mountain Formation. In places, the fossils suggest that the Fortress Mountain Formation is the lateral equivalent to the Torok Formation. The fauna in this area consists of ammonites, which dominate, and pelecypods (Table 33).

Concluding the Late Cretaceous are the formations of the Nanushuk Group. The oldest of these are Tuktuk, in eastern parts of the area, and the Kukpowruk in the western part. The former overlies the Torok, the later intertongues with the Torok.

The Tuktuk Formation is almost all marine sandstone, which is green to greenish gray and fine to very-fine grained. Some small amounts of silt shale and siltstone are present. The fauna is predominately composed of pelecypods, but worm tubes, crinoid stems and a brittlestar are present in the area (Tables 34, 35). Plants from Tables 36 and 37 are more likely from the Topagoruk Formation which is equivalent to the Tuktuk, but is non-marine and occurs along the Arctic coast.

Marine shoreline deposits of sandstone, shale and siltstone with subordinate claystone, conglomerate and carbonaceous shale make up the rocks of the Kukpowruk. Jellyfish, worm tubes, brittlestars, crinoids, echinoderm spines, and gastropods make up the minor elements of the fauna and pelecypods are the major constituents (Tables 38-42).

Three formations complete the Nanushuk Group; the Corwin, Grandstand, and Chandler Formations. All are coeval, but represent different lithologies and depositional environments.

Common rock types of the non-marine Corwin Formation are shale, siltstone, claystone, sandstone, coal, conglomerate, ironstone, clay and bentonite clay. A few fresh to brackish-water pelecypods occur (Table 43) in the lower part.

Dinosaur tracks and skin impressions have been found at two localities in the formation (Table 44). They are significant because skin impressions are rare and tracks usually indicate a deltaic environment. On the other hand, they also create an enigmatic problem. Were dinosaurs endemic to Alaska during the Cretaceous, or was this formation deposited in another part of the world and accreted to Alaska by tectonic movements?

Marine pelecypods, worm tubes, an echinoid spine

and one ammonite (Table 45) have been reported from the multicolored sandstones, silts and shales of the Grandstand Formation, which also contains thin coal beds. These fossils are Lower Cretaceous in age.

The final formation of Lower Cretaceous is the non-marine Chandler Formation. To the south this formation is sandstone and conglomerate but to the north grades into shale with interbedded sandstone and coal. Plants are the dominant fossils, and are, in fact, the best sample of Cretaceous flora in North America (Tables 37, 46-54). The plants are also important for age and stratigraphy correlations, and document a change from warm to cool temperatures and the changes in the flora through time. The Chandler ranges from Late Lower Cretaceous to Early Upper Cretaceous. In addition to plants, fresh to brackish-water pelecypods, starfish (Tables 55-57), amber with some insects (Table 58) and one large dinosaur track was reported (Table 59).

Overlapping the Lower-Upper Cretaceous boundary is the Ninuluk Formation which overlies, and in some places, intertongues with the Chandler Formation. Two thirds of this formation consists of greenish-gray siltstone, silt, shale and dark blue-gray clay shale. Coarse clastic sandstones make up the remainder of the deposits. Plants are present (Table 60) and are associated with marine pelecypods (Tables 61-65). One ammonite is reported (Table 66). This formation records the re-invasion of an Upper Cretaceous sea.

Formations of the Colville Group complete the Upper Cretaceous deposits of Area 19. The oldest of this group is the Seabee Formation which is a marine sandstone and shale with tuff and bentonite that increases upward, and a top of primarily oil shale. Marine fossils are abundant and are found in calcareous sandstone and concretions in shale. Several new species of ammonites have been found (Table 67), and show a mixing of Atlantic and Pacific faunas. In addition to many taxa of ammonites, pelecypods are common, especially *Inoceramus*, which is useful for age correlations within the formation (Tables 68, 69). Several localities have yielded fish vertebrae and scales (Table 70).

Overlying the Seabee Formation is the marine Schrader Bluff Formation and the non-marine Prince Creek Formation. The Prince Creek Formation contains bentonite and tuff in addition to sandstone, conglomerate and coal. It is separated into two tongues; the Tuluvak below, and the Kogosukruk Tongue above.

The Tuluvak Tongue of the Prince Creek Formation contains only plant fossils (Table 71). Angio-

sperms and "modern" conifers dominate. Again the flora reflects changing climates through the Cretaceous and the evolution of more advanced angiosperms.

Undifferentiated and unnamed lithologic units in the Prince Creek Formation also have numerous and abundant plants (Tables 72-74).

Clay, silt, shale, bentonite and bony coal are characteristic of the younger Kogosukruk Tongue. Plants are present, but not as abundant as in the lower tongue (Table 75). Marine pelecypods are listed in Tables 76, 77.

The first documented occurrence of dinosaur bones in Alaska are known from the Kogosukruk Tongue (Table 78). The fauna is dominated by hadrosaurs (duck-billed dinosaurs), and at least two taxa of carnivores may be present. These localities are unique as they represent the highest latitude of dinosaur remains in North America.

The marine equivalent to the Prince Creek Formation is the Schrader Bluff Formation that contains marine sandstone that grades into shales, and bentonite and tuff that increases toward the top.

The formation has been divided into three members; the lowest Rogers Creek Member that has few megafossils (none reported in the study area), the Barrow Trail Member and the Upper Sentinel Hill Member.

Most fossils are from the Barrow Trail Member, and consist of an ammonite, gastropod, pelecypods and a shark tooth (Table 79).

Pelecypods and gastropods are common in the Sentinel Hill Member (Table 80). Other elements include microfossils and fish vertebrae. Plants listed in Table 81 are probably from this member as well. Marincovich and others (1984), (Table 82) reported a unique assemblage of pelecypods from Ocean Point that are a mixture of Late Cretaceous and Early Tertiary. This fauna indicates that sediments of the Sentinel Hill Member transcend the K-T boundary, or that ecologic isolation delayed the extinction of Cretaceous organisms.

Oldest Tertiary fossils in the area are from an unnamed formation near Ocean Point which overlies the Kogosukruk Tongue of the Prince Creek Formation. Rocks of this formation are sandstone, silt and shales. Mollusks and ostracods are abundant but not diverse (Table 83); brachiopods, bryozoans and foraminifera are also present. Three geologic ages are represented by the fossils; Late Cretaceous, Paleocene, and Eocene, this may be due to geographic isolation of the Arctic Ocean during the Early Tertiary (Marincovich and others, 1985).

During Late Tertiary time, due to non-deposition,

erosion or both, fossils are absent until Late Pliocene to Pleistocene to recent. These deposits of unconsolidated sands, silt, gravels and clay are the result of lacustrine, fluvial, eolian, marine strand line fluctuations and frost actions. Due to the sporadic nature of deposition, fossils of the Gubik Formation sometimes display disparate ages. In the marine facies gastropods and pelecypods are common (Tables 84-91). Fossils from Table 92 are probably from the Gubik Formation. Some mammals are known including marine types (Tables 93, 94).

Pelecypods and gastropods from unnamed formations and similar lithologies, age and location are most likely from the Gubik Formation (Tables 95-101).

Other unnamed Pleistocene deposits of unconsolidated sands and silts, without a marine fauna have produced fossil insects (Table 102) and the typical Late Pleistocene mammal fauna including the rare saiga antelope and lion-like cat (Tables 103-112). Fossil wood is also present (Table 113).

Management recommendations are suggested for the area adjacent to locality 8451-SD, Table 1, in the Howard Pass Quadrangle. Efforts should be made here to encourage fieldwork to investigate the possibility of additional vertebrate material, and studies to accurately determine the age of these deposits.

Immediate attention should be given to the vertebrate remains in the Shublik Formation (Table 18). The completely articulated ichthyosaur, if still in place, should be examined by a vertebrate paleontologist to recommend removal, molding or some other means of preservation to make this unique specimen available for study and/or exhibit. The presence of other vertebrate localities would imply that additional material may be found by continued fieldwork in the vicinity.

Dinosaur bones have recently been found in the Prince Creek Formation (Table 78). Dinosaur tracks and skin impressions are also known from the Corwin and Chandler Formations (Table 44, 59). The media coverage of such events will undoubtedly spur the interest of the public. Management recommendations would be to exhibit some of this material in public institutions throughout the state. This would hopefully serve to educate as well as point out the necessity to protect this type of material. Hopefully, these educational activities may result in new sites being discovered and reported to the proper agencies by the public.

As mentioned elsewhere in this report, the Cretaceous flora of Alaska is one of the best examples of such fossils in North America. No special management seems necessary at this time, other than to

point out the scientific value of this resource.

Again, continued efforts should be made to see that new Late Pleistocene vertebrate sites are examined and/or documented.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
8451SD		Howard Pass 68°13', 156°50' farmer	Middle Devonian Givetian	? <i>Dipterus</i> sp.	Dipnoan, fish, USNM 26165 1 tooth plate

Reference: Perkins, P.C., 1971.

Significance: First specimen known from northwest North America.

Collector Armstrong, 1968.

Noatak Formation

Shale Member

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
50ARe232		Killik River 68°22', 155°40' 12S 16W 28,29,32,33	Mississippian	<i>Camarotoechia</i> sp. <i>Cleiothyridina</i> sp.	Brachiopods Gastropod indet.

Reference: Chapman, R.M., and others, 1951.

Kayak Formation

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13222	51ARr107	Howard Pass 68°35', 158°20' farmer	Lower Mississippian		All gastropods indeterminate <i>pleurotomariacean</i>
13245	51ATr406	68°33', 158°53' farmer			indeterminate <i>bellerophontacean</i> indeterminate <i>euomphalacean</i>
13219	51ARr84	farmer			Same location as 13222. indeterminate <i>euomphalacean</i>
13231	51ATr346	68°22', 157°42' farmer		<i>Platyceras (Orthonychia)</i> sp.	
13238	51ATr354	farmer		do	Same location as 13231.
13247	51ATr162	68°33', 158°54' farmer			indeterminate <i>euomphalacean</i> indeterminate <i>neritacean</i>
13252	51ATr323	68°25', 158°26' farmer		<i>Platyceras (Orthonychia)</i> sp.	
13258	51AKt124	68°22', 157°42' farmer		do	indeterminate <i>bellerophontacean</i>

Reference: Yochelson, E., and others, 1960.

Wachsmuth Formation

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
14074	49AMg91	Howard Pass 68°12', 156°38' farmer	Lower Mississippian		All Gastropods indeterminate <i>euomphalacean</i>
14097	49ALa5	68°20', 156°53' farmer			do indeterminate <i>euomphalacean</i>

Reference: Yochelson, E., and others, 1960.

Lisburne Group
Alapah Limestone
Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11818	50AK189	Howard Pass 68°37', 156°52' farmer	Mississippian	<i>Bollandites</i> cf. <i>B. sulcatum</i>	Ammonite plant Orthoconic nautiloid imprint
11828 ¹	50ATr45	68°35', 156°38' farmer		<i>Bactrites?</i> sp. indet. <i>Endolobus</i> sp. <i>Goniatites crenistria</i> <i>Pronorites?</i> sp.	Nautiloid Ammonite
11857	50ATr300	68°31', 158°30' farmer		<i>Cycloceras</i> sp. <i>Ammonellipsites (Fascipericyclus)</i> <i>polaris</i> n. sp.	Nautiloid Ammonite
13204	51ATr319	68°31', 158°29' farmer		<i>Bollandites kiliqwae</i> n. sp.	Ammonite
13236 ¹	51ATr352f	68°20', 157°42' farmer		<i>Dolorthoceras?</i> sp.	Wachsmuth limestone
13240 ¹	51ATr392	68°32', 158°51' farmer		<i>Munsteroceras</i> sp.	Lisburne Group undifferentiated
13241 ¹	51ATr393f	farmer		<i>Protocanites?</i> sp.	Lisburne Group undifferentiated Same location as above.
11865	50ASa150f	Misheguk Mtn. 68°33'32", 161°17'45" farmer		<i>Rayonoceras rangifer</i> n. sp.	Nautiloid Lisburne Group undifferentiated
11867 ²	50ASa236f	68°33'22", 161°10'15" farmer		<i>Kionoceras?</i> sp. A	
11877	50ASa202f	68°34'57", 161°14'50" farmer	Mississippian undifferentiated	<i>Munsteroceras saginatum</i> n. sp.	Ammonite
12787	51ASa1064f	68°37'35", 160°14'20" farmer		<i>Bollandites bowsheri</i> n. sp.?	
13100	50ALa108f	68°24'45", 161°16' farmer	Mississippian	<i>Kionoceras?</i> sp. A	Nautiloid Lisburne Group undifferentiated
14153	53ASa52f	68°37', 159°12' farmer		<i>Goniatites sphaericus</i>	Ammonite

Reference: Gordon, M., Jr., 1957.

Significance: Ammonites correlate with zones in British Isles.

¹ See also: Yochelson, E., and other, 1960.

² See also: Yochelson, E., and other, 1960; Dutro, J.T., Jr., 1953.

Utukok Formation
Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11868	Sec. F	Misheguk Mtn. 68°33', 161°10' farmer	Lower Mississippian Kinderhookian - Lower Osagean	<i>Chonetes utukokensis</i> n. sp.	Brachiopod Type section: All locations same as 11868.
11862	farmer			<i>Chonetes utukokensis</i> n. sp. <i>Punctospirifer? solidirostria</i> <i>Mooreoceras ?</i> sp.	Cephalopod
11867 ¹	farmer			<i>Composita humilis</i>	Brachiopod
11861 ²	farmer			<i>Schuchertella ampla</i> n. sp. cf. <i>Spirifer grimesi</i> cf. <i>Spirifer rowleyi</i> <i>? Imbrexia forbesi</i> <i>Composita humilis</i> <i>Straparolus blairi</i>	Brachiopods Gastropod

Table 6 continued.

11859	farmer	cf. <i>Spirifer grimesi</i> ? <i>Imbrexia forbesi</i> <i>Punctospirifer? solidirostria</i>	Brachiopods
11860	farmer	<i>Setigerites sablei</i> n. sp. <i>Spirifer grimesi</i> cf. <i>Spirifer rowleyi</i> cf. <i>Punctospirifer? solidirostria</i>	
12793	farmer	<i>Leptaena analoga</i> <i>Schuchertella ampla</i> n. sp. <i>Setigerites sablei</i> n. sp. cf. <i>Labriproductus wortheni</i> cf. <i>Spirifer rowleyi</i> ? <i>Imbrexia forbesi</i> <i>Composita humilis</i> var. A. n. var. <i>Edmondia burlingtonensis</i>	Pelecypod
11858 ²	farmer	<i>Leptaena analoga</i> <i>Schuchertella ampla</i> var. <i>complanata</i> n. sp. <i>Setigerites sablei</i> n. sp. <i>Punctospirifer? solidirostris</i> <i>Composita humilis</i> (?) <i>Euomphalus</i> sp.	Brachiopods Gastropod

Reference: Dutro, J.T., Jr., 1953.

Significance: Fossils abundant. Shallow water marine environment.

¹ See also: Gordon, M. Jr., 1957; Yochelson, E., and other, 1960.² See also: Yochelson, E., and other, 1960.

Lisburne Group

Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11843	50ATr189	Howard Pass 68°35', 157°29' farmer	Lower Mississippian	<i>Knightsites (Retispira?)</i> sp. <i>Treospira (Angyomphalus?)</i> sp.	All Gastropods
11858 ¹	50ASa227	Misheguk Mtn. 68°34'40", 161°10'30" farmer			indeterminate euomphalacean
11861 ¹	50ASa235	68°34'20", 161°10' farmer			do
11867 ^{1,2}	50ASa236	farmer		<i>Ianthinopsis?</i> sp.	indeterminate bellerophonacean Same location as 11861.
11890	50AMg149	68°34', 161°20'30" farmer		<i>Straparollus (Euomphalus) brooksensis</i> , n. sp.	
12700	11AS46	68°1', 159°2' farmer			indeterminate pleurotomariacean
12701	11AS51	68°7'48", 159°53' farmer		<i>Anematina rockymontanum</i> <i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	indeterminate euomphalacean indeterminate pleurotomariacean indeterminate neritacean
12709	50ADu16	68°22'18", 159°53'45" farmer			indeterminate neritacean
12773	51ATr14	Howard Pass 68°22', 157°28' farmer		<i>Platyceras (Orthonychia)</i> sp.	indeterminate neritacean
12788	50ADu77	Misheguk Mtn. 68°16'23", 159°57'36" farmer			indeterminate neritacean
12798	50ADu44	68°24', 159°53' farmer		<i>Platyceras (Orthonychia)</i> sp.	

Table 7 continued.

13225	51ATr1	Howard Pass 68°21', 157°18' farmer		do	
13228	51ATr10	68°22'30", 157°15' farmer		do	
13232	51ATr347	68°22', 157°42' farmer		do	
13234	51ATr350	farmer		<i>Bellerophon</i> sp. <i>Turbonellina? lata</i> n. sp. <i>Phymatopleura</i> sp.	indeterminate euomphalacean indeterminate pleurotomariacean indeterminate neritacean Same locality as 13232
13235	51ATr351	farmer		<i>Bellerophon</i> sp. <i>Straparollus (Euomphalus) brooksensis</i> n. sp. <i>Turbonellina? lata</i> , n. sp. <i>Naticopsis (Naticopsis)</i> sp.	do indeterminate pleurotomariacean indeterminate neritacean indeterminate loxonematacean Same location as 13232.
13236 ²	51ATr352	farmer		<i>Gosseletina?</i> sp. <i>Platyceras (Orthonychia)</i> sp.	Same location as 13232. indeterminate pleurotomariacean
13237	51ATr353	farmer		<i>Platyceras (Orthonychia)</i> sp.	Same location as 13232.
13240 ²	51ATr392	68°32', 158°51' farmer		<i>Euphemites</i> sp. <i>Straparollus (Euomphalus) brooksensis</i> n. sp. <i>Naticopsis (Naticopsis) suturicompta</i> n. sp. <i>Murchisonia</i> cf. <i>M.</i> sp.	indeterminate murchisoniacean Scaphopoda genus indeterminate
13241 ²	51ATr393	farmer			Same location as 13240. indeterminate euomphalacean
13242	51ATr394	farmer		<i>Anematina?</i> sp.	Same location as 13240.
13254	51ATr328	68°25', 158°27' farmer		<i>Platyceras (Orthonychia)</i> sp.	indeterminate neritacean
13255	51ATr329	farmer			Same location as 13254. indeterminate neritacean
13246	51ATr412	68°30'30", 158°48' farmer		<i>Platyzona</i> sp.	indeterminate neritacean Scaphopod indeterminate
14947	53ATr79	Misheguk Mtn. 68°36', 159°18' farmer	Upper Mississippian		indeterminate pleurotomariacean
11828 ²	50ATr45	Howard Pass 68°35', 156°38' farmer		<i>Loxonema</i> sp.	Gastropod Alapah Formation

Reference: Yochelson, E., and other, 1960.

¹ See also: Dutro, J.T., Jr., 1953.² See also: Gordon, M., Jr., 1957.**Lisburne Group****Table 8**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Mt. Bupto	Howard Pass 68°35', 157°32" 11S 24W 4	Early Mississippian Late Osagian or Late Mississippian Meramecian	<i>Camarotoechia</i> aff. <i>C. tuta</i> <i>Spirifer</i> sp. indet. <i>Brachythyris</i> aff. <i>B. suborbicularis</i> <i>Amplexizaphrentis</i> sp. indet.	Brachiopods Rugose corals

Table 8 continued.

Lisburne Ridge	68°35', 156°30' 9S 20W 32	Late Mississippian	<i>Amplexizaphrentis</i> sp. <i>Punctospirifer</i> sp. indet. <i>Spirifer</i> sp. indet.	Corals Brachiopods do Productids
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Reference: Armstrong, A.K., 1970a.

Lisburne Limestone

Table 9

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11	Kuna River	Howard Pass 68°38', 157°50' farmer	Mississippian	<i>Productus</i> sp.	Brachiopod

Reference: Mangus, M.D., and others, 1950.

1 Number assigned by investigators.

Unnamed Formation

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
5869	25ASmF2	Misheguk Mtn. 68°21', 161°8' farmer	Carboniferous	<i>Chonetes</i> cf. <i>C. burlingtonensis</i> <i>Spirifer</i> cf. <i>S. rostellatus</i>	Brachiopods
5870	25ASmF4	68°33', 161°8' farmer		<i>Campophyllum</i> sp. <i>Spirifer</i> cf. <i>S. rostellatus</i> <i>Camarotoechia</i> cf. <i>C. mutata</i> <i>Dielasma</i> sp.	Coral Brachiopods
5871	25ASmF10	Howard Pass 68°15', 157° farmer		<i>Fenestella</i> sp. <i>Hemitrypa</i> sp. <i>Productus</i> cf. <i>P. altonensis</i> <i>?Rhynchopora</i> sp. <i>Camarotoechia</i> cf. <i>C. mutata</i> <i>Spirifer</i> cf. <i>S. tenuimarginatus</i> <i>Reticularia</i> cf. <i>R. setigera</i> <i>Spiriferina</i> cf. <i>S. solidirostris</i> <i>Composita</i> cf. <i>C. lewisensis</i>	Bryozoans Brachiopods

Reference: Smith, P.S., and other, 1930.

Unnamed Formation

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Barrow B-4 surveyor farmer	Paleozoic		Fossiliferous beach gravels Bryozoa Corals Crinoids Echinoderms Algae Sponge Unable to plot, too vague.

Reference: Tasch, P., 1979.

Nuka Formation

Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
12753 PC	51ASa133f	Misheguk Mtn. 68°35'50", 160°55'30" farmer	Permian	? <i>Stereocorypha</i> sp.	Coral
12754 PC	51ASa135	68°35'20", 160°30' farmer			Metriophyllid coral, indet.
13213 PC	51ARr76	Howard Pass 68°42', 158°25' farmer		<i>Amplexizaphrentis</i> sp.	Corals
12784 PC	51ARr79	farmer		<i>Hornsundia</i> cf. <i>H. lateseptata</i>	Same location as 13213. but lower in section.
13206	51ATr342	68°35', 158°12' farmer		<i>Amplexocarinia</i> sp.	

Reference: Rowett, C.L., 1975.

Unnamed Formation

Table 13

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	FS68A37 ¹ Stehi	Misheguk Mtn. 68°38', 159°18' 9S 32W 23	Middle Pennsylvanian Atokan	<i>Griffithides</i> (<i>Metaphillipsia</i>)? <i>bufo</i>	Trilobite UA2448. latex mold UA2450. cast pygidium UA2451. partial cranidium UA2446. cast hypostome UA2449. ² inter. mold pygidium

Reference: Chamberlain, C., 1977.

Significance: All Eurasian - Arctic faunal realm.

¹ Case Western Reserve locality number

² University of Alaska specimen number

Unnamed Formation

Table 14

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11823	50AKt329	Howard Pass 68°36', 158°22' farmer	Permian	<i>Straparollus</i> (<i>Euomphalus</i>) <i>alaskensis</i> n. sp. <i>Amphiscapha</i> (<i>Cylicioscapha</i>) <i>grada</i> n. sp.	All Gastropods indeterminate pleuromariacean indeterminate bellerophontacean
13215	51ARr100	68°39', 158°38' farmer			indeterminate euomphalacean New Genus? B
13216	51ARr101	farmer			Same location as 13215. indeterminate pleuromariacean
14169	53ASa43	Misheguk Mtn. 68°39'30", 159°16' farmer		<i>Mourlonia?</i> <i>reloba</i> n. sp.	

Reference: Yochelson, E., and other, 1980.

Unnamed Formation

Table 15

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Howard Pass 68°42', 157°8' farmer	Late Cretaceous Triassic	<i>Aucella</i> sp. <i>Monotis</i> sp.	Pelecypods

Reference: Stefansson, K., and others, 1948.

Unnamed Formation

Table 16

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13314	25ASmF11	Misheguk Mtn. 68°8', 159°52' farmer	Upper Triassic	<i>Pseudomonotis subcircularis</i>	Pelecypods
13308	25ASmF3	68°41'38", 161°6'15" farmer		<i>Pseudomonotis subcircularis</i>	
13312	25ASmF8	Howard Pass 68°42'30", 156°14'34" farmer		<i>Pseudomonotis subcircularis</i>	

Reference: Smith, P.S., and other, 1930.

Shublik Formation

Table 17

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	50ARe82	Killik River 68°22', 155°31' 12S 16W 36 - 12S 15W 31	Triassic	<i>Monotis subcircularis</i>	Pelecypod

Reference: Chapman, R.M., and others, 1951.

Shublik Formation

Table 18

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
A ¹		Howard Pass 68°37'15", 157°35' farmer	Triassic		Completely articulated skeleton in rock. Appears to be Ichthyosaur
B		68°38'5", 156°51' farmer			Mixosaur teeth
C		68°43'45", 158°26' farmer			Mixosaur caudal vertebrae

Reference: Tailleux, J., and others, 1973.

Significance: Probably northern most occurrences of ichthyosaurs in North America.

¹ Locality numbers assigned by investigators.

Otuk Formation

Table 19

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2097-98		Killik River 68°32'12", 155°43'18" 10S 16W 31	Early Jurassic		Belemnites Pelecypods
2101		68°32', 155°43'18"			Pelecypods

Reference: University of Alaska Locality Catalogue.

Tiglukpuk Formation

Table 20

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22776 ¹	51ASa56	Misheguk Mtn. 68°40', 160°26'28" farmer	Upper Jurassic Kimmeridgian to Lower Portlandian	<i>Aucella mosquensis</i> <i>A. rugosa</i> ?	Pelecypod
23577	51ATr266	Howard Pass 68°43', 158°25' farmer	Middle Kimmeridgian to Lower Portlandian	<i>Aucella rugosa</i>	
23697	51ATr257	farmer		do	Same location as 23577.
22507	50ATr166	68°36', 157°33' farmer	Upper Oxfordian or Lower Kimmeridgian	<i>Aucella concentrica</i>	
22509	50ATr226	68°40', 157°8' farmer			Fossils. Not listed.
23598 ¹	51ATr19	68°23', 157°15' farmer	Middle Kimmeridgian to Lower Portlandian	<i>Aucella mosquensis</i> ?	

Reference: Imlay, R.W., 1955.

¹ See also: Imlay, R.W., and others, 1973.

Tiglukpuk Formation

Table 21

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22776 ¹		Misheguk Mtn. 68°40', 160°26'28" farmer	Jurassic Late Kimmeridgian to Middle Tithonian	<i>Buchia mosquensis</i> <i>Buchia rugosa</i>	Pelecypods
23598 ¹		Howard Pass 68°23', 157°15' farmer		cf. <i>Buchia mosquensis</i> <i>Buchia concentrica</i>	

Reference: Imlay, R.W., and others, 1973.

¹ See also: Imlay, R.W., 1955.

Unnamed Clay Shale

Table 22

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29774 ¹		Howard Pass 68°37.5", 156°42.5 farmer	Jurassic Sinemurian	<i>Crucilobicerias</i> sp.	Ammonite

Reference: Imlay, R.W., and other, 1973.

¹ See also: Imlay, R.W., 1981.

Unnamed Formation

Table 23

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29775	68ATo23	Howard Pass 68°40.6', 157°3.5' farmer	Jurassic Early Pliensbachian or Late Sinemurian	<i>Uptonia?</i> sp.	Ammonite
29774	68ATo21d	68°37.5', 156°42.5' farmer	Early Pliensbachian	<i>Uptonia</i> cf. <i>U. jamesoni</i>	

Reference: Imlay, R.W., 1981.

See also: Imlay, R.W., and other, 1973.

Unnamed Formation

Table 24

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24060	51ATr94	Howard Pass 68°40.5', 157°3.75' farmer	Mesozoic Early Jurassic Toarcian or Early Middle Jurassic Bajocian	<i>Otapiria tailleuri</i> <i>Inoceramus lucifer</i>	Pelecypods
M2451	64T305 64AS321	68°37.62', 156°43.5' 9S 21W 36		do	
29280	65ATr73.5			do	Same location as M2451.

Reference: Imlay, R.W., 1967.

Okpikruak Formation

Table 25

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2	Kuna River	Howard Pass 68°40', 157°55' farmer	Cretaceous	<i>Aucella</i> sp.	Pelecypod

Reference: Mangus, M.D., and others, 1950.

Okpikruak Formation

Table 26

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22514		Howard Pass 68°36', 156°57' farmer	Late Jurassic to Lower Cretaceous	<i>Buchia</i> (<i>Aucella</i>) sp.	Abundant and widespread
22724		Misheguk Mtn. 68°40'30", 160°20'50" farmer		do	
22736		68°40'30", 160°3' farmer		do	
22790		Howard Pass 68°42'10", 159°56'50" farmer		do	
23554		Misheguk Mtn. 68°40'45", 160°2'45" farmer		do	

Table 26 continued.

23560¹ Howard Pass
68°41'30", 159°59'
farmer

Reference: Imlay, R.W., 1959.

Significance: Seven zones can be recognized by species, good for mapping and stratigraphy. Range of genus Late Jurassic to Early Cretaceous.

¹ See also: Imlay, R.W., 1961.

Okpikruak Formation

Table 27

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22481	50ASa52A	Misheguk Mtn 68°41'22", 161°31'15" farmer	Lower Cretaceous Valanginian	<i>Aucella sublaevis</i>	Pelecypods
22497	50AMg79	68°41'10", 161°31'15" farmer		<i>Aucella sublaevis</i>	
22485	50ASa117	68°41'7", 161°29'46" farmer		<i>Aucella sublaevis</i>	
22496	50AMg69	68°40'30", 161°14'25" farmer		<i>Lytoceras</i> sp.	Ammonite
22500	50AMg224	68°30'15", 161°40' farmer		<i>Aucella sublaevis</i>	Pelecypods
13309 ¹	25ASmF5	surveyor 10S 39W 8	?Berriasian	cf. <i>Aucella suborensis</i>	
22490	50ASa251	68°34'10", 161°4'30" farmer	Valanginian	<i>Aucella sublaevis</i>	
22491	50ASa249	68°34'21", 161°7'15" farmer		<i>Aucella sublaevis</i>	
22492	50ASa262	68°34'20", 161°3'40" farmer	Berriasian	<i>Aucella sublaevis</i>	
22482	50ASa92	68°31'30", 161°38' farmer	Valanginian	<i>Aucella sublaevis</i>	
22483	50ASa97	68°32'29", 161°36'30" farmer		<i>Aucella sublaevis</i>	
22484	50ASa103	68°30'52", 161°36'25" farmer		<i>Aucella sublaevis</i>	
22486	50ASa135	68°33'50", 161°19' farmer		cf. <i>Aucella crassicollis</i>	
22488	50ASa247	68°35'7", 161°13'45" farmer		<i>Aucella crassicollis</i>	
22489	50ASa251	68°34'7", 161°17' farmer		<i>Aucella sublaevis</i>	
22487	50ASa135A	68°33'50", 161°19' farmer		cf. <i>Aucella crassicollis</i>	
22493	50ASa267	68°32'3", 161°7'45" farmer		<i>Aucella crassicollis</i>	
22498	50AMg187	68°37'40", 160°59'10" farmer		<i>Aucella sublaevis</i>	
22499	50AMg193	68°32'15", 161°5' farmer	Berriasian	<i>Aucella okensis</i>	
22781	51ASa106	68°36'45", 160°43' farmer	Valanginian	<i>Aucella crassicollis</i>	
22783	51ASa131	68°34'50", 160°31'30" farmer		<i>Aucella sublaevis</i>	
22784	51ASa137	68°34'25", 160°30' farmer		<i>Aucella crassicollis</i>	

Table 27 continued.

22734	51AMo105	68°36', 160°38' farmer		<i>Aucella sublaevis</i>	
23565	51ADu85	68°36'30", 160°35'45" farmer	Berriasian	<i>Aucella crassicolis</i>	
22778	51ASa65	68°36'20", 160°28'10" farmer	Valanginian	<i>Aucella crassicolis</i>	
22779	51ASa74	68°37'40", 160°32'20" farmer		<i>Aucella crassicolis</i>	
22780	51ASa75	68°37'15", 160°31'25" farmer		<i>Aucella crassicolis</i>	
22782	51ASa120	68°37'10", 160°32' farmer		<i>Aucella sublaevis</i>	
22501	50AMg242	68°46'30", 160°41' farmer		<i>Aucella sublaevis</i>	
22772	51ASa7	farmer		<i>Aucella sublaevis</i>	Same location as 22501.
22773	51ASa9	farmer		<i>Aucella sublaevis</i>	Same location as 22501.
22774	51ASa10	farmer		<i>Aucella sublaevis</i>	Same location as 22501.
22775	51ASa12	farmer		<i>Aucella sublaevis</i>	Same location as 22501. Belemnites indet.
22494	50ASa300	68°47'10", 160°36'30" farmer		cf. <i>Aucella sublaevis</i>	
23566	51ADu127	68°44'30", 160°13'30" farmer		<i>Aucella sublaevis</i>	
22785	51ASa218	68°44', 160°2' farmer		<i>Aucella sublaevis</i>	
22777	51ASa64	68°38', 160°25'15" farmer		<i>Aucella crassicolis</i>	
22724 ?	51AMo24	68°40', 160°20' farmer	Berriasian	<i>Aucella okensis</i> <i>Aucella sublaevis</i> <i>Aucella crassicolis</i>	
22725	51AMo41	68°38', 160°22' farmer	Valanginian	<i>Aucella crassicolis</i>	
22726	51AM042	68°38', 160°20' farmer	Berriasian	<i>Aucella okensis</i>	
22727	51AM047	68°39', 160°17' farmer	?Berriasian	cf. <i>Aucella subokensis</i>	
22728	51AM067	68°39'30", 160°21' farmer	Berriasian	<i>Aucella subokensis</i>	
22729	51AM068	68°39'30", 160°20' farmer		<i>Aucella okensis</i>	
22730	51AM069	68°39'30", 160°19'		<i>Aucella okensis</i>	
22731	51AM070	9S 36W 15	Valanginian	<i>Aucella crassicolis</i>	Same location as 22730
22732	51AM072		Berriasian	<i>Aucella okensis</i>	Same location as 22730
23564	51ADu50	68°40', 160°20'		<i>Aucella okensis</i> <i>Aucella subokensis</i>	
22786	51ASa227	68°42'10", 160°30" farmer		<i>Aucella subokensis</i>	
22789	51ASa252	68°42'45", 159°59' farmer		<i>Aucella okensis</i>	
22790 ?	51ASa255	68°42', 160°0'45" farmer		<i>Aucella okensis</i>	
22791	51ASa256	68°42', 160°0'46" farmer		<i>Aucella subokensis</i> <i>Aucella okensis</i>	500' west of location 22790.
22792	51ASa261	68°41'30", 160°2'10" farmer		<i>Aucella okensis</i>	

Table 27 continued.

22793	51ASa262	68°52', 160°20' farmer	Valanginian	<i>Aucella sublaevis</i>	
22794	51ASa267	68°42'30", 159°58'30" farmer	?Berriasian	cf. <i>Aucella subokensis</i>	
22795	51ASa270	farmer	Berriasian	<i>Aucella okensis</i>	Same location as 22794.
23559	51ASa1043	68°42'10", 160°0'30" farmer		<i>Aucella okensis</i>	
23560 ²	51ASa1045	68°41'30", 160°2'15" farmer	Valanginian	<i>Aucella crassicolis</i>	
22736 ²	51AMo156	68°41', 160°8' farmer		<i>Aucella sublaevis</i>	
22737	51AMo157	farmer		<i>Aucella crassicolis</i>	Same location as 22736
22787	51ASa232	68°40', 160°7'30" farmer		<i>Aucella sublaevis</i>	
22788	51ASa233	68°40'8", 160°7'30" farmer		<i>Aucella crassicolis</i>	Hill, 1000' north of location 22787.
23553	51ASa285	68°40'15", 160°6'20" farmer		<i>Aucella sublaevis</i>	
23554 ²	51ASa287	68°40'30", 160°5'20" farmer		<i>Aucella sublaevis</i>	
23555	51ASa289	68°40'45", 160°5' farmer	Berriasian	<i>Aucella subokensis</i>	
23556	51ASa290	68°40'53", 160°5' farmer		<i>Aucella subokensis</i>	Cut bank on north side of Nuka River about 1000' north of location 23555.
23557	51ASa291	farmer		<i>Aucella okensis</i>	Same location as 23556, but 3' lower in section
23567	51ADu131	68°42'40", 160°13' farmer	Valanginian	<i>Aucella sublaevis</i>	
23551	51ASa279	68°35'30", 160°15' farmer		<i>Aucella crassicolis</i>	
24692	53ATr18	68°45', 159°26' farmer		<i>Aucella crassicolis</i>	
24691	53ATr9	68°44', 159°17' farmer	Berriasian or Valanginian	<i>Aucella</i> sp.	
23573	51AKt22	Howard Pass 68°57', 158°25' farmer	Valanginian	<i>Aucella sublaevis</i>	
24693	53ATr105	farmer	Albian	<i>Aucella sublaevis</i>	Same location as 23573.
24041	51AKt72	68°37', 158°28' farmer	Valanginian	<i>Aucella crassicolis</i>	
22512	50ATr280	68°44', 158°49' farmer	Berriasian or Valanginian	<i>Aucella</i> sp.	
23574	51ATr177	farmer	Valanginian	<i>Aucella sublaevis</i>	Same location as 22512.
23575	51ATr209	68°41', 158°28' farmer		<i>Aucella crassicolis</i>	
23576	51ATr231	68°42', 158°26' farmer		<i>Aucella crassicolis</i>	
13313 ¹	25ASmF9	68°23', 156°44' farmer	Berriasian or Valanginian	<i>Aucella</i> sp.	
24657	49AMg46	68°38', 157°55' farmer	Valanginian	<i>Aucella crassicolis</i>	
21821	49ALa74	68°32', 157°56' farmer	Berriasian	<i>Aucella okensis</i> <i>Aucella subokensis</i>	
22522	50AKt285	68°33', 157°48' farmer	Valanginian	<i>Aucella crassicolis</i>	

Table 27 continued.

22521	50AK1257	68°38', 157°30' farmer	Berriasian or Valanginian	<i>Aucella</i> sp.
22519	50AK1219	68°37', 157°36' farmer	?Valanginian	cf. <i>Aucella crassicolis</i>
22518	50AK1185	68°36', 157°31' farmer	Valanginian	<i>Aucella crassicolis</i>
22508	50ATr217	68°40', 157°12' farmer	Berriasian	<i>Aucella subokensis</i>
22510	50ATr229	68°41', 157°9' farmer	Valanginian	<i>Aucella crassicolis</i>
22503	50ATr93	68°39', 157° farmer		<i>Aucella crassicolis</i>
22515	50AK1167	68°36', 157°16' farmer	?Berriasian	cf. <i>Aucella subokensis</i>
22517	50AK1174	68°37', 157°16' farmer	Valanginian	<i>Aucella crassicolis</i>
22506	50ATr139	68°34', 157°11' farmer		<i>Aucella crassicolis</i>
22516	50AK1173	68°36', 157°13' farmer	?Berriasian	cf. <i>Aucella subokensis</i>
22514 ²	50AK1113	68°36', 156°57' farmer	Valanginian	<i>Aucella crassicolis</i>
22505	50ATr128	68°33', 157°13' farmer		<i>Aucella crassicolis</i>
22504	50ATr122	68°30', 157°15' farmer	Berriasian or Valanginian	<i>Aucella</i> sp.
24656	49AD139	68°24', 156°25' farmer	?Berriasian	cf. <i>Aucella subokensis</i>

Reference: Imlay, R.W., 1961.

¹ See also: Smith, P.S., and other, 1930.² See also: Imlay, R.W., and other, 1959.**Unnamed Formation**

Table 28

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13311 ¹	25ASmF7	Howard Pass 68°51', 156°44' farmer	Lower Cretaceous	<i>Holostephanus</i> sp.	
13313 ¹	25ASmF9	68°23', 156°44' farmer		<i>Aucella</i> cf. <i>A. crassicolis</i>	Pelecypod
12476 ¹	24AS46	surveyor 7S 18W 1	?Cretaceous		Ammonite fragment
13309 ¹	25ASmF5	Misheguk Mtn. 68°36', 161°6' farmer	Lower Cretaceous	<i>Aucella</i> cf. <i>A. crassicolis</i>	Pelecypod

Reference: Smith, P.S., and other, 1930.

¹ See also: Imlay, R.W., 1961.

Torok Formation

Table 29

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25803 ¹		Lookout Ridge 69°13', 157°4' farmer	Cretaceous	<i>Conostichus</i> sp.	Coelenterate

Reference: Branson, C., 1962.

Significance: *Kirtlandia* equals *Conostichus*.

¹ See also: Imlay, R.W., 1961.

Torok Formation

Table 30

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24475 ¹	49ACh182	Utukok River A-5 69°0'50", 161°56'50" 5S 42W 17	Cretaceous Albian	<i>Flarentia?</i> n. sp.	Pelecypod

Reference: Chapman, R.M., and others, 1960.

¹ See also: Imlay, R.W., 1961.

Torok Formation

Table 31

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Etiivluk River	Howard Pass 68°55', 156°8' farmer		<i>Inoceramus</i> sp.	Pelecypod
	Ipnarik River	68°50', 156°30' farmer		<i>Lemuroceras</i> sp.	Ammonite

Reference: Mangus, M.D., and others, 1950.

Torok Formation

Table 32

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24475 ³	49ACh182	Utukok River A-5 69°0'33", 161°56' farmer	Lower Cretaceous Albian	<i>Flarentia? kukpowrukensis</i> n. sp.	Pelecypod
22480	50ASa32	Misheguk Mtn 68°53'24", 161°21' farmer		<i>Ditrupe cornu</i> n. sp. <i>Tancredia</i> sp.	Chaetopod worm Pelecypods
25807	49AKe89	Lookout Ridge 69°10', 158°17' farmer		<i>Oxytoma</i> sp. <i>Tancredia</i> sp.	Naticoid gastropods
25797	49AWh65	69°10', 158°5' farmer		<i>Solecortus? chapmani</i> n. sp.	Pelecypod
25803 ²	52AWh16	69°13', 157°4' farmer		<i>Kirklandia?</i> sp.	Coelenterate
25812	47AWh174	farmer		<i>Inoceramus</i> sp. juv. cr. <i>I. anglicus</i> <i>Gastropilites</i> sp. <i>Cleoniceras (Grycia) sablei</i> n. sp.	Pelecypod Ammonites Crinoid cirri Same location as 25803.

Table 32 continued.

25815	52AWh15	farmer	<i>Paragastrolites</i> aff. <i>P. spiekeri</i>	Same location as 25803.
25813	52AWh40	69°12', 156°47' farmer	<i>Cleoniceras (Grycia) sablei</i>	
25804	52AWh17	69°12', 156° 38' farmer	<i>Ditrupea cornu</i> n. sp. <i>Tancredia</i> sp. <i>Arctica?</i> sp. <i>Oxytoma camSELLi</i> <i>Cleoniceras (Neosaynella?) whittingtoni</i>	Chaetopod worm Pelecypods Ammonite
25805	52AWh71	69°11', 156°40' farmer	<i>Lima</i> sp.	Pelecypod
21822	49ALa141	Howard Pass 68°54'30'', 156°35' farmer	<i>Inoceramus</i> sp. juv. <i>Subarthroplites colvillensis</i> n. sp.	Ammonite
25814	47ATh324	68°55'10'', 156°31' farmer	<i>Subarthroplites belli</i>	
12476	24AS46	68°51'30'', 156°4' farmer		Ammonite fragment
12477	24AS50	farmer	<i>Inoceramus</i> sp. juv. cf. <i>I. anglicus</i>	Pelecypod Same location as 12476.
13311	25ASmF7	68°51', 156°4' farmer	<i>Subarthroplites bickeli</i> n. sp.	Ammonite
24639	53AB194	68°53', 156°8' farmer	<i>Inoceramus</i> sp. juv. cf. <i>I. anglicus</i> <i>Subarthroplites bickeli</i> n. sp.	Pelecypod Ammonite
24640	53AB1100	68°53'30'', 156°8' farmer	<i>Inoceramus</i> sp. juv. cf. <i>I. anglicus</i> <i>Puzosia?</i> sp. juv. <i>Cleoniceras taileuri</i> n. sp.	Pelecypod Ammonite
25811	53AB180	68°51', 156°11' farmer	<i>Isognomon?</i> sp.	Pelecypod

Reference: lmlay, R.W., 1961.

¹ See also: Smith, P.S., and other, 1930.² See also: Branson, C., 1962.³ See also: Chapman, R.M., and other, 1960.**Fortress Mountain Formation****Table 33**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
23558	51ASa299	Misheguk Mtn. 68°52', 160°20' farmer	Lower Cretaceous Albian	<i>Colvillia crassicostata</i> n. sp.	Ammonites
24040	51AKt18	Howard Pass 68°56', 158°31' farmer		(<i>Grantziceras</i>) cf. <i>Beudanticeras affine</i> <i>Colvillia kenti</i> n. sp.	
24695	53ASa64	69°, 158°57' farmer		<i>Placunopsis nuka</i> n. sp.	Pelecypods
22511	50ATr264	68°44', 158°7' farmer		<i>Aucellina dowlingi</i>	
23599	51ATr125	68°46', 156°55' farmer		<i>Inoceramus</i> sp. juv.	
23600	51ATr129	68°47', 156°46' farmer		<i>Puzosia?</i> sp. juv.	Ammonite
23601	51ATr135	68°48', 156°39' farmer		<i>Puzosia?</i> sp. juv.	
23602	51ATr144	68°49', 156°32' farmer		<i>Puzosia?</i> sp. juv.	
23603	51ATr139	68°48', 156°35' farmer		<i>Puzosia?</i> sp. juv.	

Table 33 continued.

22502	50ATr70	68°40', 156°45' farmer		<i>Inoceramus</i> sp. <i>juv.</i>	Pelecypod
22523	50AKt2000	68°43', 156°32' farmer		<i>Colvillia</i> cf. <i>C. kenti</i> n. sp.	Ammonite

Reference: Imlay, R.W., 1961.

Tuktu Formation

Table 34

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20404	46ATh80	Ikpikpuk River 69°, 154°5' farmer	Lower Cretaceous Albian	<i>Inoceramus anglicus</i>	Pelecypods Crinoid stems
20406	46ATh209	Killik River 68°59', 154°2' farmer		do	
20407	46ATh211	Killik River 68°59', 154°9' farmer		<i>Entolium utukokense</i> n. sp. <i>Ditupa cornu</i> n. sp.	Chaetopod worm Brittle star
20408	46ATh219	69°, 154°3' farmer		<i>Tancredia</i> n. sp. <i>Arctica?</i> sp.	Pelecypods
20409	46ATh222	farmer		<i>Inoceramus anglicus</i>	Same location as 20408.
20411	46ATh230	farmer			Worm? burrows Same location as 20408.
24636	53AB121	69°1', 154°2' farmer		<i>Inoceramus anglicus</i>	Pelecypod

Reference: Imlay, R.W., 1961.

Tuktu Formation

Table 35

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25125		Ikpikpuk River 69°10', 153°5' farmer	Cretaceous Middle Albian	<i>Inoceramus</i> sp.	Pelecypods Similar forms from Alberta Canada

Reference: Dettnerman, R.L., and others, 1963.

Tuktu Formation

Table 36

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
72 ¹		Wainwright C-2 70°34', 159°54' farmer	Cretaceous	<i>Baiera</i> sp. <i>Zamites</i> sp. <i>Amentotaxus</i> sp. <i>Podozamites</i> sp.	Ginkgophyte Cycadophyte Conifers
73		70°34', 159°49' farmer		do	

Reference: Smiley, C.J., 1966.

Note: Listed plants are components of author's plant floral zones, and listed taxa apply to each locality.

Significance: Plants show change from warm temperate gymnosperm forests in older deposits to cooler temperate angiosperm dominated forests in younger sediments.

¹ Author's locality numbers.

Unnamed Formation
Table 37

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
7852	26AS77	Utukok River C-5 surveyor farmer	Cretaceous or Jurassic	<i>Podozamites lanceolatus</i>	Conifer Unable to plot, too vague.
7844	26AS65	Utukok River B-5 surveyor 1S 40W 23	?Jurassic	<i>Baiera</i> sp.?	Ginkgo
7845	26AS67	surveyor	Jurassic	<i>Ginkgo digitata</i> <i>Podozamites lanceolatus</i> <i>Phoenicopsis</i> sp.	Conifer Ginkgo Same location as 7844.
7846	26AS69	surveyor	?Jurassic	<i>Thyrsopteris</i> sp.	Fern, fragments Same location as 7844.
7847	26AS72	surveyor 1S 39W 36			Gymnosperms indeterminate Cycads indeterminate
7849	26AS74	surveyor		<i>Ginkgo digitata</i>	Same location as 7847.
7850	26AS75	surveyor	Jurassic or Cretaceous	<i>Onychiopsis</i> sp.?	Fern, fragments Same location as 7847.
7666	26AS75	Utukok River D-5 surveyor 6N 40W 3	Jurassic	<i>Phoenicopsis speciosa</i> <i>?Cladophlebis alata</i>	Ginkgo Fern
7668		Utukok River D-4 surveyor 5N 37W 24	Lower Cretaceous	<i>Oleandridium</i> sp. <i>Onychiopsis</i> sp. <i>Cladophlebis</i> sp.	Ferns New fern Conifer leaves
	Schrader	Wainwright C-3 surveyor farmer	Lower Cretaceous Potomac	<i>Podozamites distantinervis</i> <i>Nageiopsis longifolia</i> <i>Baiera gracilis</i>	Conifer Fern Ginkgo no number Unable to plot, too vague.
7653	23AF28	Wainwright A-1 surveyor farmer	?Jurassic	<i>Ginkgo</i> sp. <i>?Cladophlebis alata</i>	Unable to plot, too vague. Fern
7859	26AS91	Wainwright C-1 surveyor 15N 28W 5	Jurassic	<i>Phoenicopsis speciosa</i>	Ginkgo
7860	26AS93	surveyor 1S 28W 16	?		Stem or rhizome indeterminate
7854	26AS82	Meade River A-5 surveyor farmer	Cretaceous	<i>Dicksonia montanensis</i> <i>Thyrsopteris</i> or <i>Onychiopsis</i> sp.	Fern Unable to plot, too vague.
7855	26AS83	surveyor farmer	?Cretaceous	<i>Equisetum</i> <i>?Cephalotaxopsis</i> sp. <i>Sphenolepidium?</i> or <i>Sequoia?</i>	Angiosperm leaf fragments Fragments Conifers Leaves, twigs, and cones Impressions of twig Unable to plot, too vague.
7856	26AS84	surveyor farmer	?Cretaceous ?Tertiary	<i>Aspidium meyeri</i> <i>Juniperus</i> cf. <i>J. tertiaria?</i> <i>Taxodium</i> cf. <i>T. garcile</i> <i>T. tinajorum</i> <i>Thuites ehrenswardii</i>	Fern, impression Conifers Twigs Unable to plot, too vague.
7699	No.1	Meade River D-1 surveyor farmer	Lower Cretaceous or Jurassic	<i>Pinus</i> sp.	Conifer Unable to plot, too vague.

Table 37 continued.

7700	No.2	Meade River C-2 surveyor farmer	Jurassic	<i>Phoenicopsis speciosa</i> <i>Podozamites lanceolatus eichwaldi</i> <i>Taeniopteris</i> sp. <i>Taxites zamiooides?</i>	Ginkgo Conifer Fern Conifer Unable to plot, too vague.
7701	No.3	Meade River B-3? surveyor farmer		<i>Pagiophyllum</i> sp. <i>Baiera</i> sp.	Conifer Ginkgo Unable to plot, too vague.
12412	24AMt68	Killik River 69°7'9", 153°19'34" farmer	Cretaceous	<i>Astarte</i> n. sp. <i>Inoceramus</i> sp.	Pelecypod
	24AMt64	68°59', 153°41'36" farmer	Middle Cretaceous to Late Cretaceous?	<i>Ginkgo</i> sp. <i>Podozamites</i> cf. <i>P. lanceolatus</i> or <i>P. latipinnis</i> <i>Sequoia</i> cf. <i>S. smidtii</i> <i>Sequoia</i> cf. <i>S. angusta</i> <i>Pterosperrmites</i> sp.	Fragments Conifers Angiosperm? Probably new species.
12413	1/4 24AMt69	Umiat B-5 69°18'1", 152°27'10" farmer	Upper Cretaceous	<i>Tellina</i> sp. <i>Thracia?</i> sp.	Pelecypods Pelecypod indeterminate
12414	24AMt70	69°18', 152°25' farmer		<i>Tellina</i> sp. <i>Thracia?</i> sp. <i>Nucula</i> sp. <i>Lucina</i> sp.	3 species Large and small species Pelecypod indeterminate
12477	24AS50	Howard Pass 68°51'30", 154°4' farmer		<i>Inoceramus</i> sp.	Imprint
7747	24AS61	surveyor farmer		<i>Nilssonina</i> sp. <i>Podozamites lanceolatus</i>	Cycad Conifer Unable to plot, too vague.
17478	24AS64 & 24AS68	Lookout Ridge surveyor 2S 19W 6		<i>Unio</i> sp.	Pelecypod casts
17479	24AS67 24AS68	surveyor 1S 19W 20		<i>Dentalium</i> sp. <i>Inoceramus</i> sp.	Scaphopod Pelecypods
17480	24AS69	surveyor		<i>Inoceramus</i> sp.	Pelecypod cast
17481	24AS72 24AS73	surveyor farmer	?	<i>Lucina?</i> sp.	Unable to plot, too vague.
7557	26AS85	surveyor farmer		<i>Nilssonina</i> or <i>Taeniopteris</i> <i>Sequoia</i>	Cycad Conifers Unable to plot, too vague.
7558	26AS86	surveyor farmer	Cretaceous or Tertiary	<i>Taxodium tinajorum</i> or <i>T. dubium</i>	Conifer Unable to plot, too vague.
17482	3 24AS84	Ikpikpuk River surveyor 5N 11W 27	Upper Cretaceous	<i>Inoceramus</i> <i>Inoceramus</i> sp.	Pelecypods, large species
7759	24AMt73	surveyor farmer	?	<i>Taxodium</i> sp. <i>Podozamites lanceolatus eichwaldii</i> <i>Taeniopteris?</i> sp.	Conifer Fern?
7742	24AS29	surveyor 4S 15W 35		<i>Cladophlebis</i> sp.? <i>Podozamites lanceolatus</i> <i>Cephalotaxopsis</i> sp. <i>Sequoia fastigiata</i> <i>Sequoia</i>	Fern Conifers Cone
7744	24AS32	surveyor farmer		<i>Tumion</i> sp. <i>Pterophyllum</i> sp. <i>Cephalotaxopsis</i> sp.	Conifers Unable to plot, too vague.

Table 37 continued.

7745	24AS36 24AS37	surveyor 5S 15W 7		<i>Podozamites lanceolatus</i> <i>Nilssonia</i> sp.	Cycad
7749	24AS78	surveyor farmer		<i>Sequoia fastigata</i> <i>Sequoia</i> sp. <i>Ginkgo digitata</i> <i>Ginkgo</i> sp. <i>Podozamites lanceolatus</i>	Ginkgos Conifer Unable to plot, too vague.
	24AS81	surveyor 2S 14W 25		<i>Platanus</i> cf. <i>P. heerii</i>	Angiosperm
13310	^{1/2} 25ASmF6	Utukok River surveyor 5S 34W 9	Lower Cretaceous	<i>Anisocardium</i> sp.	Pelecypod - probably new species.

Reference: Smith, P.S., and other, 1930.

¹ See also: Imlay, R.W., 1961.² See also: Chapman, R.M., and other, 1960.³ See also: Weber, E.J., 1948; Brosge, W.P., and others, 1966.⁴ See also: Brosge, W.P., and others, 1966.**Kukpowruk Formation**

Table 38

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25918 ¹		Utukok River 69° 23' 20", 159° 59' farmer	Cretaceous	<i>Conostichus</i> sp.	Coelenterate

Reference: Branson, C., 1962.

Significance: *Kirtlandia* equals *Conostichus*.¹ See also: Imlay, R.W., 1961; Chapman, R.M., 1960.**Kukpowruk Formation**

Table 39

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13730 ⁶	26AS66	Utukok River B-5 69° 15', 161° 45' farmer	Lower Cretaceous Albian	<i>Hamulus?</i> sp.	Star fish Worm tube
24473 ⁵	49ACh176	Utukok River A-5 69° 0' 22", 161° 53' farmer		<i>Tancredia</i> cf. <i>T. stelcki</i> <i>Flaentia?</i> <i>kukpowrukensis</i> n. sp.	Pelecypods
24474 ⁵	49ACh177	69° 0' 30", 161° 50' 30" farmer		<i>Arctica?</i> sp.	
24488 ⁵	49ASa187	Misheguk Mtn. 68° 59' 45", 161° 53' 45" farmer		<i>Arctica?</i> sp. <i>Cultellus?</i> <i>kokolikensis</i> n. sp.	Naticoid gastropods
13720 ⁵	26AS45	Misheguk Mtn. 68° 53', 161° 58' farmer			Star fish
13721 ⁵	26AS48	68° 53', 161° 59' farmer		<i>Arctica?</i> sp. <i>Panope?</i> sp. <i>Entolium utukokense</i> n. sp.	Pelecypods
13722	26AS49	68° 56', 161° 55' farmer		<i>Arctica?</i> sp. <i>Tancredia</i> sp. <i>Panope?</i> sp.	
24486 ⁵	49ASa165	68° 52' 30", 161° 59' farmer		<i>Arctica?</i> sp. <i>Tancredia</i> sp. <i>Panope?</i> <i>kissoumi</i>	

Table 39 continued.

24487	⁵ 49ASa165a	farmer	<i>Panope? kissoumi</i> <i>Entolium utukokense</i> n. sp.	Same location as 24486.
24451	⁵ 47ATm5	Misheguk Mtn. 68°57', 161°14' farmer	<i>Panope? sp.</i> <i>Entolium sp.</i>	Pelecypods
24452	⁵ 47ATm9	Utukok River A-4 69°7'30", 161°3'45" farmer	<i>Tancredia kurupana</i> n. sp. <i>Oxytoma camSELLI</i> <i>Arctica? sp.</i>	
24455	⁵ 47ATm10	69°8'15", 160°49' farmer	<i>Tancredia kurupana</i> n. sp. <i>Oxytoma sp.</i>	
24453	⁵ 47ACTm10	69°7', 160°50'2" farmer	<i>Tancredia stelcki</i> <i>Tancredia kurupana</i> n. sp. <i>Camplonectes dettermani</i> n. sp.	
24454	⁵ 47ATm10	69°7'10", 160°49'20" farmer	<i>Arctica? sp.</i> <i>Tancredia kurupana</i> n. sp. <i>Oxytoma cf. O. pinania</i> <i>Camplonectes dettermani</i> n. sp. <i>Entolium utukokense</i> n. sp.	
24460	⁵ 47ABa52	69°7', 160°39'33" farmer	<i>Tancredia kurupana</i> n. sp. <i>Oxytoma sp.</i> <i>Camplonectes dettermani</i> n. sp. <i>Entolium utukokense</i> n. sp.	
24459	⁵ 47ABa34	Utukok River A-3 69°2'5", 160°35' farmer	<i>Arctica? sp.</i> <i>Panope? sp.</i> <i>Entolium sp.</i>	
24456	⁵ 47ATm11	69°9'45", 160°33'30" farmer	<i>Panope? elongatissima</i>	
24458	⁵ 47ATm13	69°14'20", 160°35'45" farmer	<i>Arctica? sp.</i> <i>Tancredia kurupana</i> n. sp. <i>Tancredia stelcki</i> <i>Isognomon? sp.</i> <i>Entolium utukokense</i> n. sp.	
13310	³ 25ASmF6	Utukok River 69°1', 160° farmer	<i>Arctica? sp.</i>	
25809	⁵ 50AWh10	69°23', 159°59' farmer		Brittlestar
25810	⁵ 50AWh9	69°23', 159°59' farmer	<i>Entolium utukokense</i> n. sp.	Pelecypod Same location as 25809.
25918	⁴ 53AB164	69°23'20", 15°59' farmer	<i>Kirklandia? sp.</i> <i>Ditrupa cornu</i> n. sp.	Coelenterate Chaetopod worm
25806	⁵ 50ASv11	69°22', 159°52' farmer	<i>Entolium utukokense</i> n. sp.	Pelecypods
25798	49AWh69	Lookout Ridge 69°25', 158°5' farmer	<i>Tancredia sp.</i>	
20491	¹ 46AWb8	69°33', 157°59' farmer	<i>Tancredia kurupana</i> n. sp. <i>Panope? elongatissima</i> <i>Paragastropites cf. P. spiekeri</i>	Ammonite
25801	49AWh76	farmer	<i>Arctica? sp.</i> <i>Tancredia sp.</i> <i>Panope? sp.</i> <i>Entolium utukokense</i> n. sp. <i>Modiolus sp.</i>	Pelecypods Same location as 20491.
25799	49AWh70	69°32', 157°39' farmer	<i>Tancredia sp.</i>	
25800	49AWh71	farmer	<i>Tancredia kurupana</i> n. sp.	Same location as 25799.
25785	49AWh86	69°32', 157°28' farmer	<i>Inoceramus anglicus</i>	
25793	49AWh1	69°10', 158°42' farmer	<i>Ditrupa cornu</i> n. sp.	Chaetopod worm

Table 39 continued.

25794	49AWh62	69°5', 158°20' farmer	<i>Tancredia kurupana</i> n. sp.	Pelecypods
25791 ²	47ATr132	69°17', 157°25' farmer	<i>Tancredia stelcki</i> <i>Tancrediikurupana</i> n. sp. <i>Entolium utukokense</i> n.	
25792 ²	42AWh223	69°16', 157°1' farmer	<i>Tancredia stelcki</i> <i>Thracia stelcki</i> <i>Inoceramus anglicus</i>	
12479	24AS67.68	69°22', 156°27' farmer	<i>Ditrupe cornu</i> n. sp. <i>Inoceramus anglicus</i>	Chaetopod worm Pelecypods
12480	24AS69	69°22', 156°24' farmer	<i>Inoceramus anglicus</i> <i>Entolium utukokense</i> n. sp.	
25786 ²	47AWh103	farmer	<i>Arctica?</i> sp. <i>Ditrupe cornu</i> n. sp. <i>Tancredia stelcki</i> <i>Tancredia kurupana</i> n. sp. <i>Pleuromya</i> sp. <i>Oxytoma</i> sp. <i>Inoceramus anglicus</i> <i>Entolium utukokense</i> n. sp.	Same location as 12480. Chaetopod worm Pelecypods
				Crinoid cirri Echinoid spine
25787 ²	47AWh104	farmer	<i>Inoceramus anglicus</i>	Same location as 12479.
25788 ²	47AWh106	69°22', 156°29' farmer	<i>Tancredia stelcki</i>	
25789	47AWh111	69°22', 156°21' farmer	<i>Arctica?</i> sp. <i>Tancredia stelcki</i> <i>Flaventia? kukpowrukensis</i> n. sp.	
12481	24AS72.73	69°21', 156°15' farmer	<i>Panope?</i> sp.	
25790 ²	47AWh119	69°21', 156°13' farmer	<i>Arctica?</i> sp. <i>Tancredia stelcki</i> <i>Inoceramus anglicus</i> <i>Entolium utukokense</i> n. sp. <i>Cleoniceras (Neosaynella?) whittingtoni</i> n. sp. Ammonite	

Reference: Imlay, R.W., 1961.

¹ See also: Weber, E.J., 1947.² See also: Whittington, C.L., and other, 1948.³ See also: Smith, P.S., and other, 1930; Chapman, R.M., and other, 1960.⁴ See also: Chapman, R.M., and other, 1960; Branson, C., 1962.⁵ See also: Chapman, R.M., and other, 1960.⁶ See also: Smith, P.S., and other, 1930.**Kukpowruk Formation**

Table 40

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13310 ¹	25ASmF6	Utukok River 69°1'54", 160° farmer	Cretaceous Upper Albian	<i>Arctica?</i> sp.	Pelecypod Exact position not known Torok or Kukpowruk Formations
25918 ²	53ABi64	69°23'29", 159°58'46" 1S 33W 6		<i>Ditrupe cornu</i> <i>Kirklandia?</i> sp.	Worm Coelenterate
25809 ³	50AWh10				Brittlestar Same location as 25918.
25810 ³	50AWh9			<i>Entolium</i> sp.	Pelecypods Same location as 25918.
25806 ³	50ASv11	69°22'17", 159°50'47" farmer		<i>Entolium</i> sp.	
24474 ³	49ACh177	Utukok River A-5 69°1'5", 161°53'50" farmer	Albian	<i>Arctica?</i> sp.	

Table 40 continued.

24473 ³	49ACh176	69°0'45", 161°52'40" farmer	<i>Flaventia?</i> n. sp. <i>Tancredia</i> cf. <i>T. steicki</i>	
24458 ³	47ATm13	Utukok River A-3 surveyor 2S 36W 29	<i>Arctica?</i> sp. <i>Entolium</i> sp. <i>Tancredia stelcki</i> <i>Tancredia</i> n. sp. <i>Isognomon?</i> sp.	
24455 ³	49ATm10	Utukok River A-4 69°8'40", 160°51'10" farmer	<i>Tancredia</i> n. sp. <i>Oxytoma</i> sp.	
24460 ³	47ABa52	69°7'20", 160°51'50" farmer	<i>Entolium</i> sp. <i>Tancredia</i> n. sp. <i>Camptonectes</i> n. sp. <i>Oxytoma</i> sp.	
24454 ³	47ATm10	4S 37W 4	<i>Arctica?</i> sp. <i>Oxytoma</i> cf. <i>O. pinania</i> <i>Entolium</i> sp. <i>Tancredia</i> n. sp. <i>Camptonectes</i> n. sp.	Same location as 24460.
24453 ³	49ATm10	69°7'12", 160°52'20" farmer	<i>Tancredia stelcki</i> <i>Tancredia</i> n. sp. <i>Camptonectes</i> n. sp.	
24456 ³	47ATm11	Utukok River A-3 surveyor 3S 36W 21	<i>Panope?</i> <i>elongatissima</i>	
24459 ³	47ABa34	surveyor 5S 37W 1	<i>Arctica?</i> sp. <i>Panope?</i> sp. <i>Entolium</i> sp.	
24452 ³	47ATm9	Utukok River A-4 69°7'30", 161°4'30" farmer	<i>Arctica?</i> sp. <i>Oxytoma camSELLi</i> <i>Tancredia</i> n. sp.	
24488 ³	49ASa187	Misheguk Mtn. 68°59', 161°56' farmer	<i>Arctica?</i> sp. <i>Cultellus?</i> n. sp.	Natacolid gastropods
24451 ³	47ATm5	68°58', 161°15'25" farmer	<i>Panope?</i> sp. <i>Entolium</i> sp.	Pelecypods
13720 ³	26AS45	surveyor 6S 42W 31		Starfish undeterminate
13721 ³	26AS48	surveyor	<i>Arctica?</i> sp. <i>Panope?</i> sp. <i>Thracia</i> sp. <i>Entolium</i> sp.	Pelecypods Same location as 13720.
24486 ³	49ASa165	surveyor	<i>Arctica?</i> sp. <i>Panope ? kissoumi</i> <i>Tancredia</i> sp.	
24487 ³	49ASa165A	surveyor	<i>Panope ? kissoumi</i> <i>Entolium</i> sp.	Same location as 24486.

Reference: Chapman, R.M., and others, 1960.

¹ See also: Smith, P.S., and other, 1930; Imlay, R.W., 1961.

² See also: Imlay, R.W., 1961; Branson, C., 1962.

³ See also: Imlay, R.W., 1961.

Unnamed Formation

Table 41

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1	47AWh103F	Lookout Ridge 69°22', 156°24' farmer	Cretaceous	<i>Tellina?</i> <i>Nucula</i> sp. <i>Dentalium</i> sp. <i>Pectin</i> cf. <i>P. silentiensis?</i>	Pelecypods Scaphopod Pelecypods Cephalopod molds

Table 41 continued.

1	47AWh104F	69°22', 156°27' farmer		<i>Inoceramus</i> n. sp.	
1	47AWh106F	69°22', 156°29' farmer		<i>Nucula</i> sp.	
1	47AWh119F	69°21', 156°13' farmer		<i>Inoceramus</i> n. sp. <i>Nucula</i> sp. <i>Cardium</i> sp. <i>Tellina</i> ?	
1	47AWh223F	69°16', 157°1' farmer		<i>Nucula</i> sp. <i>Tancredia</i> sp. <i>Inoceramus</i> n. sp.	
1	47ATr132F	69°17', 157°25' farmer		<i>Pecten</i> cf. <i>P. silentiensis</i> ? <i>Nucula</i> sp. <i>Tellina</i> sp.	

Reference: Whittington, C.L., and others, 1948.

1 See also: Imlay, R.W., 1961.

Unnamed Formation

Table 42

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20491	46AWb8	Lookout Ridge surveyor 2N 25W 3	Cretaceous Lower Cenomanian	<i>Tellina</i> sp.	Pelecypods
20490	46AWb8	69°39'11", 157°21'10" farmer		<i>Inoceramus</i>	

Reference: Weber, E.J., 1947.

1 See also: Imlay, R.W., 1961.

Corwin Formation

Table 43

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25808	50AWh4	Utukok River 69°30', 159°14' farmer	Lower Cretaceous Albian	<i>Tancredia</i> sp. <i>Oxytoma</i> sp.	Pelecypods
25802	49AWh87	Lookout Ridge 69°32', 157°35' farmer		<i>Tancredia stelcki</i>	
12478	24AS64,65	69°19', 156°34' farmer		<i>Arctica?</i> sp.	

Reference: Imlay, R.W., 1961.

Corwin Formation

Table 44

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
A		Utukok River B-5 69°21'22", 161°27'4" 1S 40W 13	Late Cretaceous Campanian or Maestrichtian		Dinosaur tracks and skin impressions 3 tracks 4cm in diameter

Table 44 continued.

B	Utukok River B-4 69°22'43", 161°13'46" 1S 39W 12, 2	Dinosaur tracks and skin impressions 15-20cm in length Both localities with associated wood.
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Reference: Roehler, H.W., and other, 1984.
Significance: Indicates an environment adjacent to a delta-plain, and a temperate climate with seasonal variation, and wet conditions of saturated soil and open water. Northernmost occurrence of dinosaurs.

Grandstand Formation

Table 45

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24638	53AB1108	Howard Pass 68°58', 156°46' farmer	Lower Cretaceous Albian	<i>Tancredia kurupana</i> n. sp. <i>Arctica?</i> sp. <i>Entolium utukokense</i> n. sp. <i>Cleoniceras (Neosaynella? whittingtoni)</i> n. sp.	Echinoid spine Brittle star Pelecypods Ammonite
20435	46AGr211	Umiat B-5 69°15'15', 152°52' farmer		<i>Ditrupe cornu</i> n. sp. <i>Tancredia</i> sp. <i>Arctica?</i> sp. <i>Panope? kissoumi</i> <i>Entolium utukokense</i> n. sp.	Chaetopod worm Pelecypods
20477	45AKr169A	69°15', 152°51' farmer		<i>Ditrupe cornu</i> n. sp. <i>Thracia stelcki</i>	Chaetopod worm Pelecypod
20478	45AKr171	69°16', 152°40' farmer		<i>Tancredia kurupana</i> n. sp. <i>Panope?</i> sp. <i>Entolium utukokense</i> n. sp. <i>Xenohelix?</i> sp.	Pelecypods
25137	47ADt187	farmer		<i>Panope?</i> sp. <i>Entolium utukokense</i> n. sp.	Pelecypods Same location as 20435.
12413 ¹	24AMt69	69°16'30", 152°34' farmer		<i>Thracia stelcki</i>	

Reference: Imlay, R.W., 1961.

¹ See also: Smith, P.S., and other, 1930; Brosge, W.P., and others, 1966.

Nanushuk Group

Chandler Formation

Table 46

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3		Killik River and Ikpikpuk surveyor farmer	Late Middle Mesozoic	<i>Podozamites</i> <i>Baiera</i> <i>Ginkgo</i> <i>Nilssonia</i> <i>Macrotaeniopteris</i> <i>Cladophlebis</i> other genera	Sequoia-like cones and foliage Foliage of taxaceae Conifer wood Conifer Ginkgos Cycad Ferns Unable to plot, too vague.

Reference: Arnold, C.A., 1952a.

Nanushuk Group
Table 47

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2 ¹		Killik River 68° 59' 29", 154° 2' 59" farmer	Mesozoic and Tertiary	<i>Cedrus alaskensis</i>	Conifer

Reference: Arnold, C., 1952.

¹ Number assigned by investigator.

Nanushuk Group
Table 48

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Loc. 2 ¹		Umiat B-4 Umiat B-5 Umiat A-5 Ikpikuk River surveyors farmers	Cretaceous Aptian- Cenomanian	<i>?Ableites</i> sp.	Conifer - Zone II
				<i>Ginkgo paradiantoides</i>	
				<i>Ginkgo</i> n.sp.	Ginkgos
				<i>Nilssonina alaskana</i>	Cycads
				<i>Nilssonina</i> cf. <i>N. orientalis</i>	
				<i>Nilssoniopteris polymorpha</i>	
				<i>Phoenicopsis</i> var. 3	Ginkgos
				<i>Pityophyllum</i> var. 2	
				<i>Podozamites</i> var. 7	
				<i>Podozamites</i> var. 9	
				<i>Podozamites</i> var. 15	
				<i>?Abietites</i> sp.	Conifer - Zone III
				cf. <i>Ampelopsis multesima</i>	Dicots
				<i>Ciccites comparabilis</i>	
				<i>Coniopteris inenarabilis</i>	Fern
				<i>Elatocladus</i> n. sp.	Conifer
				<i>?Ginkgoites</i> (<i>?Baiera</i>) n. sp.	Ginkgo
				<i>Juniperites</i> n. sp.	Conifer
				<i>Nilssonina alaskana</i>	Cycads
				<i>Nilssonina</i> cf. <i>N. orientalis</i>	
				<i>Pityophyllum</i> var. 2	Conifer
				cf. <i>Platanus latiloba</i>	Dicot
				<i>Podozamites</i> var. 7	Conifers
				<i>Podozamites</i> var. 9	
				<i>Podozamites</i> var. 15	
				cf. <i>Ampelopsis multesima</i>	Dicots - Zone IV
				<i>?Cissites</i> sp.	
<i>Elatocladus</i> n. sp.	Conifers				
<i>Podozamites</i> var. 9					
<i>Pseudoprotophyllum</i> cf. <i>P. dentatum</i>	Dicot				
<i>Arctopteris rarinervis</i>	Ferns - Zone IB				
<i>Coniopteris onychioides</i>					
<i>Ginkgo paradiantoides</i>	Ginkgos				
<i>Ginkgo</i> n. sp.					
<i>Phoenicopsis</i> var. 3					
<i>Pityophyllum</i> var. 1	Conifers				
<i>Podozamites</i> var. 2					
<i>Podozamites</i> var. 7					
<i>Podozamites</i> var. 9					
<i>Sphenobaiera</i> cf. <i>S. pulchella</i>	Ginkgo				
<i>?Zamites</i> sp.	Cycad				
	Unable to plot, too vague.				
Loc. 3 ¹		Wainwright C-2 Wainwright B-2 Wainwright A-2 Wainwright A-3 Utukok River surveyors farmers		<i>Arctopteris rarinervis</i>	Ferns - Zone IB
				<i>Coniopteris onychioides</i>	
				<i>Ginkgo paradiantoides</i>	Ginkgos
				<i>Ginkgo</i> n. sp.	
				<i>Phoenicopsis</i> var. 3	
				<i>Pityophyllum</i> var. 1	Conifers
<i>Podozamites</i> var. 2					
<i>Podozamites</i> var. 7					

Table 48 continued.

<i>Podozamites</i> var. 9	
<i>Sphenobaiera</i> cf. <i>S. pulchella</i>	Ginkgo
? <i>Zamites</i> sp.	Cycad
? <i>Abieites</i> sp.	Conifer - Zone II
<i>Ginkgo paradiantoides</i>	Ginkgos
<i>Ginkgo</i> n.sp.	
<i>Nilssonia alaskana</i>	
<i>Nilssonia</i> cf. <i>N. orientalis</i>	
<i>Nilssoniopteris polymorpha</i>	
<i>Phoenicopsis</i> var. 3	
<i>Pityophyllum</i> var. 2	Conifers
<i>Podozamites</i> var. 7	
<i>Podozamites</i> var. 9	
<i>Podozamites</i> var. 15	
? <i>Abieites</i> sp.	Conifer - Zone III
cf. <i>Ampelopsis multesima</i>	Dicots
<i>Ciccites comparabilis</i>	
<i>Coniopteris inenarabilis</i>	Fern
<i>Elatocladus</i> n. sp.	Conifer
? <i>Ginkgoites</i> (? <i>Baiera</i>) n. sp.	Ginkgo
<i>Juniperites</i> n. sp.	Conifer
<i>Nilssonia alaskana</i>	Cycads
<i>Nilssonia</i> cf. <i>N. orientalis</i>	
<i>Pityophyllum</i> var. 2	Conifer
cf. <i>Platanus latiloba</i>	Dicot
<i>Podozamites</i> var. 7	Conifers
<i>Podozamites</i> var. 9	
<i>Podozamites</i> var. 15	Unable to plot, too vague.

Reference: Scott, R.A., and others, 1979.

Note: Zones represent only a small collection of fossils.

¹ Authors locality numbers

Nanushuk Group Chandler Formation Table 49

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1 ¹		Ikpikpuk River 69° 1'54", 155° 29' farmer	Mesozic and Tertiary	<i>Xenoxylon latiporosum</i>	Conifer

Reference: Arnold, C., 1952.

¹ Locality number assigned by investigators.

Unnamed Formation Table 50

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1 ¹		Meade River B-2 surveyor farmer	Late Mid-Mesozoic		Plants Unable to plot, too vague.

Reference: Arnold, C.A., 1952a.

¹ Locality number assigned by investigators.

Nanushuk Group
Chandler and Corwin Formations Undifferentiated
Table 51

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
7/31		Killik River 68°58'25", 155°45'19" farmer	Middle Cretaceous Necomian	<i>Coniopteris burejensis</i> <i>Ginkgo digitata</i> <i>Elatides curvifolia</i>	Fern Ginkgo Conifer
7/31(2)		68°57'3", 155°41'40" farmer		<i>Ginkgo digitata</i>	Ginkgo
8/1		68°58'57", 155°40'26" farmer		<i>Podozamites lanceolatus</i> <i>Elatocladus intermedius</i>	Conifers
8/1(2)		68°58'51", 155°35'31" farmer		<i>Ginkgo digitata</i> <i>Sphenobaiera longifolia</i> <i>Podozamites lanceolatus</i>	Ginkgos Conifer
8/1(3)		68°58'50", 155°28'8" farmer		<i>Cladophlebis (Eboracia) lobifolia</i> <i>Coniopteris burejensis</i> <i>Nilssonia alaskana</i> <i>Phoenicopsis speciosa</i> <i>Pagiophyllum ambiguum</i> <i>Podozamites lanceolatus</i> <i>Elatocladus intermedius</i>	Ferns Cycad Ginkgo Conifers
8/3		Ikpikpuk River 69°21', 155°30' farmer		<i>Onychiopsis psilotoides</i> <i>Coniopteris burejensis</i> <i>Nilssonia alaskana</i> <i>Taeniopteris (Nilssoniopteris?) amurensis</i> <i>Macrotaeniopteris grammoneura</i> sp. nov. <i>Ginkgo digitata</i> <i>Baiera manchurica</i> <i>Sphenobaiera longifolia</i> <i>Sphenobaiera spetzbergensis</i> <i>Sphenobaiera arnoldi</i> sp. nov. <i>Pagiophyllum ambiguum</i> <i>Podozamites lanceolatus</i> <i>Elatocladus macilenta</i> <i>Elatocladus intermedius</i> <i>Xenoxylon latiporosum</i>	Ferns Cycads Ginkgos Conifers Taxodiaceous cones
8/4		69°2'48", 155°18' farmer		cf. <i>Phoenicopsis angustifolia</i> <i>Elatocladus intermedius</i> <i>Zizyphoides</i> sp. <i>Menispermites</i> sp.	Ginkgo Conifer Angiosperms Taxodiaceous cones
8/4(2)		69°4'35", 154°57'15" farmer		<i>Elatocladus intermedius</i>	Conifer
8/5		69°4'30", 154°37' farmer		<i>Filicites</i> sp. <i>Elatocladus intermedius</i> <i>Elatocladus alaskensis</i> sp. nov.	Fern Conifers Taxodiaceous cones
8/5(2)		69°5'24", 154°23' farmer		<i>Nilssonia alaskana</i>	Cycad
8/6		69°1', 154°9' farmer		<i>Nilssonia alaskana</i> <i>Elatides curvifolia</i> <i>Pagiophyllum ambiguum</i>	Conifers
8/6(2)		Killik River 68°59', 154°2' farmer		<i>Cedrus alaskensis</i>	
8/6(3)		68°58', 153°53'30" farmer		<i>Coniopteris burejensis</i> <i>Elatocladus macilenta</i> <i>Elatides curvifolia</i> <i>Pagiophyllum ambiguum</i> <i>Sphenobaiera longifolia</i>	Fern Conifer Conifers Unable to plot, too vague.
	Meade River	surveyor farmer			

Table 51 continued.

East Oumalik	surveyor farmer		
		<i>Ginkgo digitata</i> <i>Ginkgoites</i> sp. cf. <i>Phoenicopsis angustifolia</i> <i>Podozamites lanceolatus</i> <i>Rhamnites</i> sp.	Ginkgos Conifer Angiosperms Unable to plot, too vague.
L-1-53 ²	Meade River C-3 70°37'25", 157°22'45" farmer	<i>Coniopteris burejensis</i> <i>Nilssonia alaskana</i> <i>Elatides curvifolia</i> <i>Pagiophyllum ambiguum</i> <i>Dicotylophyllum</i> sp. b	Ferns Cycad Conifers Angiosperm
L-2-53	Meade River B-3 70°29'45", 157°22' farmer	<i>Elatocladus macilentus</i>	Conifer
L-3-53	70°29'30", 157°24' farmer	<i>Ginkgo digitata</i> <i>Elatides curvifolia</i> <i>Elatocladus macilentus</i>	Ginkgo Conifers Taxodiaceous cones
L-4-53	Utukok River A-3 69°8'25", 160°44'43" farmer	<i>Coniopteris burejensis</i>	Fern
L-5-53	69°7'34", 160°44'43" farmer	<i>Thalites</i> sp.	Thallophyte
L-6-53	Utukok River 69°24', 160° farmer	<i>Onychiopsis psilotoides</i> <i>Coniopteris burejensis</i> <i>Ginkgo digitata</i>	Ferns Ginkgo
L-7-53	69°27'25", 160°3'45" farmer	<i>Coniopteris burejensis</i> <i>Ginkgo digitata</i>	Fern Ginkgo
L-8-53	69°30'30", 160°0'30" farmer	?	
L-9-53	69°31'21", 160°4' farmer	<i>Sphenobaiera longifolia</i> <i>Podozamites lanceolatus</i>	Ginkgo Conifer
L-10-53	69°31', 160°1' farmer	?	
L-11-53	69°32'30", 160°4' farmer	<i>Cladophlebis denticulata</i> <i>Coniopteris burejensis</i> <i>Ginkgo digitata</i> <i>Phoenicopsis latior</i> <i>Elatocladus intermedius</i> <i>Thalites trochoides</i> sp. nov.	Ferns Ginkgos Conifer Thallophyte
L-12-53	69°34'12", 160°8'24" farmer	<i>Lycopodites</i> sp.	Lycopod
L-13-53	69°35'47", 160°13'36" farmer	<i>Coniopteris burejensis</i> <i>Elatides curvifolia</i>	Fern Conifer
L-14-53	Utukok River C-3 69°36'46", 160°16' farmer	<i>Coniopteris burejensis</i> <i>Nilssonia alaskana</i> <i>Sphenobaiera longifolia</i> <i>Podozamites lanceolatus</i>	Fern Cycad Ginkgo Conifer
L-15-53	69°37'18", 160°4'48" farmer	<i>Onychiopsis psilotoides</i> <i>Taeniopteris lundgreni</i> <i>Ginkgoites</i> sp.	Fern Cycad Ginkgo
L-16-53	69°37'36", 160°27'15" farmer	<i>Sphenobaiera ikorfatensis</i>	Ginkgo
L-17-53	69°36', 160°30'47" farmer	<i>Podozamites lanceolatus</i>	Conifer
L-18-53	69°36'36", 160°35'34" farmer	<i>Cladophlebis haiburnensis</i> <i>Onychiopsis psilotoides</i> <i>Taeniopteris (Nilssoniopteris?) amurensis</i> <i>Taeniopteris lundgreni</i> <i>Podozamites lanceolatus</i>	Fern Cycads Conifer
L-19-53	69°37'58", 160°43'55" farmer	<i>Ginkgo digitata</i>	Ginkgo

Table 51 continued.

L-20-53	Wainwright A-1 70° 8' 20", 159° 24' farmer	<i>Elatocladus intermedius</i> <i>Dicotylophyllum</i> sp. a	Conifer Angiosperm
L-21-53	70° 6' 20", 159° 16' 30" farmer	<i>Elatocladus intermedius</i>	Conifers
L-22-53	70° 3' 30", 159° farmer	<i>Elatocladus intermedius</i>	
L-23-53	Wainwright A-2 70° 1' 50", 159° 54' 20" farmer	<i>Elatocladus intermedius</i> <i>Coniopteris burejensis</i> <i>Zizyphoides</i> sp. <i>Dicotylophyllum</i> sp. a	Fern Angiosperm
L-24-53	70° 2' 20", 159° 52' 10" farmer	<i>Podozamites renii</i> <i>Xenoxylon phyllocladoides</i>	Conifers
L-25-53	70° 3' 20", 159° 42' 32" farmer	<i>Nilssonia orientalis</i> <i>Macrotaeniopteris grammoneura</i> sp. nov. <i>Ginkgo digitata</i> <i>Elatocladus intermedius</i> <i>Elatocladus alaskensis</i> sp. nov.	Cycads Ginkgo Conifers
L-26-53	70° 9' 55", 159° 41' farmer	<i>Cladophlebis denticulata</i> <i>Onychiopsis psilotoides</i> <i>Coniopteris burejensis</i> <i>Nilssonia orientalis</i> <i>Macrotaeniopteris grammoneura</i> sp. nov. <i>Sphenobaiera arnoldi</i> sp. nov. <i>Phoenicopsis speciosa</i> <i>Pseudotorellia nordenskoldi</i> <i>Elatocladus macilenta</i> <i>Elatocladus intermedius</i> <i>Dicotylophyllum</i> sp. a	Ferns Cycads Ginkgos Conifers Angiosperm Taxodiaceous cones
L-27-53	Wainwright B-2 70° 20' 10", 159° 54' 10" farmer	<i>Coniopteris crenulata</i> sp. nov. <i>Taeniopteris lundgreni</i> <i>Sphenobaiera arnoldi</i> sp. nov. <i>Elatocladus macilenta</i>	Fern Cycad Ginkgo Conifer Taxodiaceous cones
L-28-53	70° 22' 40", 159° 51' 40" farmer	<i>Coniopteris crenulata</i> sp. nov. <i>Elatocladus macilenta</i>	Fern Conifer

Reference: Lowther, J.S., 1957

¹ University of Michigan locality numbers. Collector: C.A. Arnold in 1951.² University of Michigan locality numbers. Collector: J.S. Lowther in 1957.

Significance: Ferns and gymnosperms equal 95% of total flora.

Chandler Formation**Lower Killik Tongue****Table 52**

Loc. #	Collector/ Field #	Map Lat.N. - Long.W. Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
59'		Wainwright B-2 70° 25', 159° 59'	Cretaceous Upper Albian	<i>Baiera</i> sp. <i>Ginkgo</i> sp. <i>Ctenis</i> sp. <i>Nilssonia</i> sp. <i>Zamites</i> sp. <i>Elatides</i> sp. <i>Pagiophyllum</i> sp. cf. <i>Taiwania</i> sp. <i>Amentotaxus</i> sp. <i>Cephalotaxopsis</i> sp.	Ginkgophytes Cycadophytes Conifer Taxaceae
60		70° 26', 159° 58' farmer		do	
61		70° 27', 159° 58' farmer		do	

Table 53 continued.

		<i>Elatides</i> sp. <i>Pagiophyllum</i> sp. cf. <i>Taiwania</i> sp. <i>Amentotaxus</i> sp. <i>Cephalotaxopsis</i> sp.	Conifers
51	70°11'10", 159°37'13" farmer	do <i>Sequoia</i> sp. <i>Cephalotaxus</i> sp. <i>Torreya</i> sp.	Additions to locality 50.
52	70°11'42", 159°45'5" farmer	do	Includes taxa from localities 50 and 51.
54	Wainwright A-2 70°14'55", 159°49'50" farmer	do	do
55	Wainwright B-2 70°20', 159°54' farmer	do	do
56	70°23', 159°52' farmer	do	do
57	70°26', 159°50' farmer	do	do
58	70°29', 159°59' farmer	do	do

Reference: Smiley, C.J., 1966.

Note: Listed plants are components of authors plant floral Zones.

Significance: Plants show change from warm temperate gymnosperm forests in older deposits to cooler temperate angiosperm dominated forests in younger sediments.

See also: Langenheim R., and others, 1960: same localities.

1 Authors locality numbers.

Chandler Formation**Table 54**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
44 ¹		Ikpiukuk River 69°3'6", 153°42'30" farmer	Cretaceous Cenomanian		Zone IV ² Angiosperms, conifers
39		69°2', 153°53'45" farmer	Upper Albian		Zone III - Pteridophytes Ginkgophytes Conifers Last cycadophytes First angiosperms
40		69°2'42", 153°47'5" farmer			
42		69°2'58", 153°44'35" farmer			Assoc. with invertebrates
43		69°3'22", 153°43'20" farmer			do

Reference: Smiley, C.J., 1969

1 Author's locality number.

2 Flora zones of author with few specific plants.

Chandler Formation

Table 55

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20473 ¹		Ikpihpuk River surveyor 4S 8W 24	Early Cretaceous Middle Albian		Star fish
20474 ¹		surveyor		<i>Panope? kissoumi</i>	Pelecypod Same location as 20473.

Reference: Detterman, R.L., and others, 1963.

¹ See also: Imlay, R.W., 1961.

Chandler Formation

Table 56

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26141	47AZ555a	Ikpihpuk River 69°15", 155°31' farmer	Lower Cretaceous Albian	" <i>Unio</i> " sp.	Pelecypods
24617	53ADI65	60°3'20", 154°14' farmer		" <i>Unio</i> " sp.	
20473 ¹	45AKr128	69°4'30", 153°42' farmer			Starfish
20474 ¹	45AKr129	farmer		<i>Panope? kissoumi</i>	Same location as 20473.

Reference: Imlay, R.W., 1961.

¹ See also: Detterman, R.L., and others, 1963.

Nanushuk Group

Table 57

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Colville River	Killik River 68°58', 155°58' farmer	Cretaceous	<i>Tellina</i> sp. <i>Protocardium</i> sp.	Pelecypods

Reference: Mangus, M.D., and others, 1950.

Unnamed Formation

Table 58

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Pugnik Kuk Inlet	Wainwright C-2? surveyor farmer	Cretaceous	<i>Allocotidus bruesi</i>	Hymenoptera. From amber Unable to plot, too vague

Reference: Muesebech, C., 1963.

Chandler Formation

Table 59

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1		Ikpikpuk River 69° 3', 155° 23' farmer	Cretaceous		Dinosaur footprint 40 cm in diameter

Reference: Roehler, H.W. and others, 1984.

¹ Locality: On Colville River near mouth of Awuna River. 240 km east of Kokolik River. Reported by C.G. Mull.

Ninuluk and Chandler Formations

Table 60

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
45 ¹		Ikpikpuk River 69° 4' 19", 153° 41' 15" farmer	Cretaceous Cenomanian		Zone IV ² Conifers, angiosperms Assoc. with unidentified invertebrates
48		surveyor farmer			Assoc. with unidentified invertebrates Same location as 20476. ³
46		69° 4' 19", 153° 40' farmer			
47		surveyor farmer			Same location as 20467-20475. ³

Reference: Smiley, C.J., 1969.

¹ Author's locality number.

² Floral zones of author with few specific plants.

³ See also: Jones, D.L., and other, 1960; Detterman, R.L., and other, 1960.

Nanushuk Group

Ninuluk Formation

Table 61

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25140	48ADt215	Howard Pass 68° 49' 15", 157° 57' 30" farmer	Upper Cretaceous Cenomanian to Lower Santonian or Early Campanian	<i>Inoceramus (Inoceramus) dunveganensis</i>	Pelecypods

Reference: Jones, D.L., and other, 1960.

Nanushuk Group

Ninuluk Formation

Table 62

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20465	45AWa97	Ikpikpuk River 69° 4' 40", 153° 41' farmer		do	
20467 ¹	45AWa122	69° 8', 153° 18' farmer		do	

Table 62 continued.

20468	45AWa123A	farmer		do	Same location as 20467.
20475 ¹	45AKr155	farmer		do	
20476	45AKr162	69° 9', 153° 15' farmer		do	
20418	46ARy100B	69° 13', 153° 58' farmer		do	
20419	46ARy125E	69° 15' 30", 153° 33' farmer		do	
25148 ¹	47ADt107	69° 8', 153° 18' farmer		do	
25154 ¹	47ADt158	69° 11', 153° 2' farmer		do	
25155 ²	47ADt163	69° 13' 30", 153° 3' farmer		do	
24630 ¹	53ADt84	69° 4', 153° 52' farmer		do	

Reference: Jones, D.L., and other, 1960.

¹ See also: Detterman, R.L. and others, 1963.

² See also: Brosge, W.P., and other, 1966.

Ninuluk Formation

Table 63

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24630 ¹		Ikpikpuk River surveyor 4S 8W 29	Cretaceous Cenomanian	<i>Inoceramus dunveganensis</i>	Pelecypods
25156		69° 8', 153° 15' farmer		<i>Inoceramus?</i> sp.	
25157		69° 11', 153° 13' farmer		<i>Arctica?</i> <i>dowlingi</i>	
25154 ¹		surveyor 3S 5W 22		<i>Inoceramus dunveganensis</i>	
25144		Ikpikpuk River surveyor 4S 6W 2		<i>Arctica?</i> <i>dowlingi</i>	
25145		surveyor		<i>Arctica?</i> sp.	Same location as 25144.
25146		surveyor		<i>Arctica?</i> sp.	do
25147		surveyor		<i>Arctica?</i> sp. <i>Panope?</i> cf. <i>P. dunveganensis</i>	do
25148 ¹		surveyor		<i>Inoceramus dunveganensis</i>	do
25149		surveyor		<i>Inoceramus dunveganensis</i> <i>Arctica?</i> <i>dowlingi</i> <i>Brachydontis multilnigera</i>	do
20467 ¹		surveyor		<i>Inoceramus dunveganensis</i>	do
20475 ¹		surveyor		<i>Inoceramus dunveganensis</i>	do
25150		surveyor		<i>Inoceramus dunveganensis</i>	do

Reference: Detterman, R.L., and others, 1963.

¹ See also: Jones, D.L., and other, 1960.

Nanushuk Group
Ninuiuk Formation
Table 64

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25381	47AWb399	Ikpiuk River 69°49', 154°41' 5N 11W 17	Upper Cretaceous Late Albian to Late Cenomanian	<i>Panope? dunveganensis</i>	Pelecypods
	47AWb391	69°48', 154°37' 5N 11W 22			Microfossils
25382	47AWb414	farmer		<i>Arctica? dowlingi</i>	Pelecypods Same location as 47AWb391.
12482	24AS84 ^{1/2}	farmer		<i>Inoceramus</i> sp.	Same location as 47AWb391.
25380	47AWb393 ¹	69°46', 154°38' 5N 11W 22		<i>Corbula? sp.</i>	
25379	47AWb390 ¹	69°45', 154°41' 5N 11W 32		<i>Panope?</i> <i>Mytilus</i> sp.	
35378	47AWb387 ¹	69°44', 154°44' 4N 12W 2		<i>Arctica? dowlingi</i>	And microfossils
25377	47AWb384 ¹	69°43', 154°45' 4N 12W 11		<i>Arctica? dowlingi</i>	
25376	47AWb379 ¹	69°39', 154°50' 3N 12W 4		<i>Panope? dunveganensis</i> <i>Inoceramus</i> sp.	
25375	47AWb374 ¹	69°36', 154°54' 3N 12W 18		<i>Inoceramus</i> sp.	
25374	47AWb371 ¹	69°36', 154°57' 3N 13W 24		<i>Arctica? dowlingi</i> <i>Elliptio sulfuriensis</i>	
25373	47ABe55	69°29', 154°48' farmer		<i>Arctica? dowlingi</i> <i>Volsella</i> cf. <i>V. silentiensis</i> <i>Anomia</i> sp	
25372	49ABe50	69°25', 154°32' 1N 11W 27		<i>Panope? sp.</i>	
20414	46ARy87	69°9', 154°22' 3S 10W 28		<i>Arctica? dowlingi</i> <i>Volsella</i> cf. <i>V. silentiensis</i> <i>Inoceramus</i> sp.	
20416	46ARy89	69°11', 153°59' 3S 9W 13		<i>Arctica? dowlingi</i>	
20415	46Ry89A	farmer		<i>Arctica? dowlingi</i>	Same location as 20416.
20423	46AFi45	69°11', 154° 3S 9W 14		<i>Arctica? sp.</i>	
20417	46ARy100A	69°12', 153°59' 3S 9W 11		<i>Mytilus</i> sp.	
20421	46ARy159 159A	69°22', 153°20' 1S 8W 10		<i>Arctica? dowlingi</i>	And microfossils
20422	46ARy164A	1S 6W 15		<i>Mytilus</i> sp.	Same location as 20421.
25155 ³	47ADt163	69°14', 153°4' 2S 5W 35		<i>Arctica? sp.</i>	
	47ADt195	Umiat B-5 69°16', 152°36' 2S 3W 15		<i>Inoceramus</i> sp.	And microfossils
25152	47ADt196	farmer		<i>Psilomya? sp.</i> <i>Tancredia? sp.</i>	Same location as 47ADt195.

Table 64 continued.

12413 ^{2/4} 24AMt69	farmer	<i>Thracia?</i> sp. <i>Tellina</i> sp.	Same location as 47ADt195.
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Reference: Brosge, W.P., and others, 1966.

Significance: Fossil environments; fresh to brackish, swamp to marine beach and bar.

¹ See also: Weber, E.J., 1948.

² See also: Smith, and other, 1930.

³ See also: Jones, D.L., and other, 1960.

⁴ See also: Imlay, R.W., 1961.

Formation E

Table 65

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Camp 6	Ikpihpuk River 69°11'5", 153°55'9" farmer	Upper Cretaceous	<i>Mytilis</i> sp. <i>Inoceramus</i> n. sp. <i>Unio</i> sp.	Pelecypods
	Camp 5	69°7', 154°13'19" farmer		<i>Mytilis</i> sp. <i>Unio</i> sp. <i>Inoceramus</i> sp.	

Reference: Fischer, W.A., and other, 1947.

Unnamed Formation

Table 66

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
46AWb8 ³		Lookout Ridge 69°33', 158°2' farmer	Cretaceous	<i>Tellina</i> sp.	Pelecypod Ammonite
46AWb25		69°36', 157°25' farmer		<i>Inoceramus</i> sp.	Pelecypods
47AWb325		Ikpihpuk River 69°38', 155°27' farmer		<i>Veniella</i> sp.	
47AWb410		69°43', 155°16' farmer		do <i>Panope</i> sp.	
47AWb371 ¹	surveyor	3N 13W 24		<i>Veniella</i> sp.	
47AWb374 ¹	surveyor	3N 12W 18		<i>Inoceramus</i> sp.	
47AWb379 ¹	surveyor	3N 12W 4		<i>Inoceramus</i> sp. <i>Panope</i> sp.	Pelecypods
47AWb384 ¹	surveyor	4N 12W 3		<i>Veniella</i> sp.	
47AWb387 ¹	surveyor	4N 12W 2		<i>Veniella</i> sp.	
47AWb390 ¹	surveyor	5N 11W 29		<i>Panope</i> sp. <i>Mytilus</i> sp.	
24AS84 ^{1/2}	surveyor	5N 11W 22		<i>Inoceramus</i>	
47AWb393 ¹	surveyor	5N 11W 21		<i>Veniella</i> sp.	

Table 66 continued.

47AWb401 surveyor do

Reference: Weber, E.J., 1948.

¹ See also: Brosge, W.P., and other, 1966.

² See also: Smith, P.S., and other, 1930.

³ See also: Weber, E.J., and other, 1947; Imlay, R.W., 1961.

Seabee Formation

Table 67

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26559 ²	Kover	Ikpikuk River 69° 21', 154° 1S 9W 14	Cretaceous Early Turonian	<i>Otoscaphtes seabeensis</i> n. sp. <i>Borissiakoceras ashurkoffae</i> n. sp.	Ammonites
26562 ²	Brosge ¹	69° 20', 153° 59' 1S 9W 23		<i>Scaphites delicatulus</i> <i>Otoscaphtes seabeensis</i> n. sp. <i>Borissiakoceras ashurkoffae</i> n. sp.	
26561 ²	Brosge ¹	69° 20', 153° 47' 1S 8W 15		<i>Otoscaphtes seabeensis</i> n. sp. <i>Borissiakoceras ashurkoffae</i> n. sp.	
20420 ^{1/2}	Ray	69° 18', 153° 47' 2S 8W 15		<i>Scaphites delicatulus</i> <i>Otoscaphtes seabeensis</i> n. sp. <i>Proplacenticeras?</i> sp. <i>Watinoceras reesidei</i> <i>Borissiakoceras ashurkoffae</i> n. sp.	
26560 ^{1/2}	Brosge ¹			<i>Scaphites delicatulus</i> <i>Otoscaphtes seabeensis</i> n. sp. <i>Borissiakoceras ashurkoffae</i> n. sp.	Same location as 20420.

Reference: Cobban, W.A., and others, 1961.

¹ See also: Jones, D.L., and other, 1960.

² See also: Brosge, W.P., and others, 1966.

Seabee Formation

Colville Group

Table 68

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20413 ²	46ARy68a,b	Ikpikuk River 68° 19', 154° 19' farmer	Upper Cretaceous Early Turonian Middle/Lower Turonian	<i>Inoceramus (Mytiloides) labiatus</i> <i>I. aff. I. (I.) culvierii</i>	Pelecypods
20420 ¹	46ARy131	69° 16', 153° 47' farmer	Early Turonian	<i>I. (Mytiloides) labiatus</i>	
26560 ¹	49ABe1	farmer farmer	Middle/Lower Turonian	do <i>I. aff. I. (I.) culvierii</i>	Same location as 20420.
19435 ²	44AC525	Umiat B-4 69° 23' 30", 152° farmer	Upper Cretaceous	<i>I. (Mytiloides) labiatus</i>	
20424 ²	46ASt3	farmer		do	Same location as 19435.

Reference: Jones, D.L., and other, 1960.

¹ See also: Coban, W.A., and other, 1961; Brosge, W.P., and other 1966.

² See also: Brosge, W.P., and other, 1966.

Formation F

Table 69

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Camp 7	Ikpikpuk River 69° 15' 32", 154° 39' 9" farmer	Upper Cretaceous	<i>Watinoceras</i> sp. <i>Inoceramus</i> cf. <i>I. fragilis</i> <i>Inoceramus</i> cf. <i>I. labiatus</i> ? <i>Scaphites</i> spp.	Ammonite Pelecypods Ammonite
	Camp 4	69° 15', 154° 5' 49" farmer		<i>Inoceramus</i> cf. <i>I. fragilis</i>	Pelecypod

Reference: Fischer, W.A., and other, 1947.

Seabee Formation

Table 70

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
19435 ¹	44AC525	Umiait B-4 69° 23', 151° 59' 1S 1E 6	Upper Cretaceous Early-Late Turonian	<i>Inoceramus labiatus</i>	Pelecypods
19436	44AC526			<i>Protocardia</i> cf. <i>P. borealis</i> <i>Arctica</i> cf. <i>A. ovata</i>	Same location as 19435.
20424 ¹	46ASt3			<i>Inoceramus labiatus</i> <i>Inoceramus</i> sp.	Same location as 19435.
20431	46ASt103	69° 23', 152° 15' 1N 1W 35		<i>Scaphites</i> sp. <i>Watinoceras</i> sp. <i>Borissiakoceras</i> sp.	Ammonites Fish scales and vertebrae
20430	46ASt96			<i>Inoceramus</i> sp. <i>Watinoceras</i> sp. <i>Borissiakoceras</i> sp.	Pelecypod Ammonites Fish scales and vertebrae. Same location as 20431.
26530	46ARy47	Ikpikpuk River 69° 17', 153° 52' 2S 8W 9		<i>Inoceramus</i> sp.	Pelecypods
20413 ¹	46ARy68	69° 18', 154° 24' 1S 10W 32		<i>Inoceramus labiatus</i> <i>Inoceramus</i> aff. <i>I. cuvierii</i>	
26572	52ABe75	69° 16', 154° 7' 2S 9W 17		<i>Inoceramus labiatus</i> <i>Scaphites</i> sp.	Ammonite
20420 ²	46ARy131	69° 15', 153° 48' 2S 8W 22		<i>Inoceramus labiatus</i> <i>Inoceramus</i> sp. <i>Scaphites delicatulus</i> <i>Otoscaphties seabeensis</i> <i>Proplacentoceras</i> sp. <i>Watinoceras reesei</i> <i>Borissiakoceras ashurkoffae</i>	Pelecypods Ammonites
26560 ²	49ABe1			<i>Inoceramus labiatus</i> <i>Inoceramus</i> aff. <i>I. cuvierii</i> <i>Scaphites delicatulus</i> <i>Otoscaphties seabeensis</i> <i>Borissiakoceras ashurkoffae</i>	Pelecypods Same location as 20420. Ammonites
26558	49AKr1			<i>Inoceramus labiatus</i>	Pelecypod Same location as 20420.
26553	47AWh296	69° 11', 154° 31' 3S 11W 15		<i>Inoceramus labiatus</i> <i>Scaphites</i> sp. <i>Borissiakoceras</i> sp.	Pelecypod Ammonites Associated with fish scales and vertebrae
26559 ³	49AKr19	69° 20', 154° 3' 1S 9W 16		<i>Otoscaphties seabeensis</i> <i>Borissiakoceras ashurkoffae</i>	Ammonites

Table 71 continued.

26	70° 1' 10", 159° 54' 50" farmer	do	do
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Reference: Smiley, C.J., 1966.

Note: Listed plants are components of author's plant floral zones.

Significance: Plants show change from warm temperate gymnosperm forests in older deposits to cooler temperate angiosperm dominated forests in younger sediments.

¹ Author's locality numbers.

Unnamed Formation

Table 72

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1 ¹		Utukok River surveyor farmer	Late Cretaceous	<i>Podozamites</i>	Conifer
2		surveyor farmer		do	Conifer, taxodiaceous Angiosperm
5		surveyor farmer		do	
9		surveyor farmer		do	
14		surveyor farmer			
15		surveyor farmer		do	
16		surveyor farmer		do	
18		surveyor farmer			Angiosperm, conifer
19		surveyor farmer			do Pelecypod
21		surveyor farmer	Early Cretaceous to Late Cretaceous	<i>Ostrea</i> sp.	Heloidae-fly Angiosperm, conifer
26		Wainwright A-2 surveyor farmer			Angiosperm, conifer
28		surveyor farmer			do
34		surveyor farmer			do
35		surveyor farmer			do
54		surveyor farmer	Early Cretaceous		Empididae-fly Eulophidae, parasitic wasp
			Late Cretaceous	<i>Ceraphronidae</i> <i>Podozamites</i> <i>Asplenium</i> <i>Baiera</i> <i>Cephalotaxopsis</i> <i>Cladophlebis</i> <i>Credneria</i> <i>Dalbergites</i> <i>?Ficus</i> <i>Ginkgo</i> <i>Nageiopsis</i> <i>Protophyllocladus</i> <i>Taxodium</i> or <i>Parataxodium</i>	Conifer Fern Ginkgo Conifer Fern Angiosperms Ginkgo Conifers
44		Wainwright A-1 70° 5' 12", 159° 32' farmer		<i>Podozamites</i>	

Table 74 continued.

11	69°55'28", 160°4'42" farmer		do	do
12	69°55'44", 160°4'7" farmer		do	do
13	69°55'51", 160°1'10" farmer		do	do
14	69°56'11", 160°0'5" farmer		do	do
15	69°56'45", 159°58'45" farmer		do	do
16	69°56'50", 159°58'45" farmer		do	do
29	Wainwright A-2 70°2'15", 159°51'13" farmer	Turonian	<i>Podozamites</i> sp. <i>Platanophyllum</i> sp. <i>Credneria</i> sp. <i>Cissites</i> sp. <i>Menispermities</i> sp. <i>Populites</i> sp. <i>Juglans</i> sp. <i>Vivburnum</i> sp. <i>Celastrophyllum</i> sp. <i>Dalbergites</i> sp. <i>Laurophyllum</i> sp. <i>Magnolia</i> sp. <i>Sequoia</i> sp. <i>Taxodium</i> sp. <i>Sequoiadendron</i> sp. <i>Juniperus</i> sp. <i>Cephalotaxas</i> sp. <i>Torreya</i> sp. <i>Pinus</i> sp. <i>Picea</i> sp. <i>Larix</i> sp.	Conifer Sycamore-like Sycamore-like Angiosperm Taxodiaceae Taxaceae Pinaceae
30	70°2', 159°10'30" farmer		do	do
31	70°2'30", 159°9'30" farmer		do	do
32	70°3'26", 159°5'35" farmer		do	do
33	70°3'22", 159°5' farmer		do	do
34	70°4', 159°44' farmer		do	do
35	70°5', 159°44' farmer		do	do

Reference: Smiley, C.J., 1969.

Note: Listed plants are components of author's plant floral zones.

Significance: Plants show change from warm temperate gymnosperm forests in older deposits to cooler temperate angiosperm dominated forests in younger sediments.

See also: Langenheim, R., and others, 1960: same localities.

¹ Author's locality numbers.

Colville Group
Prince Creek Formation
Kogosukruk Tongue
Table 75

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Umiat B-3 69°30', 151°30' 2N 3E 30	Cretaceous	<i>Parataxodium wigginsii</i>	Conifer-foliage, seedcones, inflorescence.

Reference: Arnold, C., and other, 1955.

Significance: Ancestral to taxodium and metasequoia lineage.

Prince Creek Formation
Kogosukruk Tongue
Table 76

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26489 ¹	47AS117 47AWb387	Ikpikpuk River surveyor 4N 12W 1	Upper Cretaceous Late Santonian Early Campanian	<i>Mytilus</i> sp. <i>Volsella</i> sp. <i>Tancredia</i> sp. <i>Tellina</i> sp. <i>Panope</i> sp. <i>Gyrodes</i> sp.	Pelecypods Gastropod
26490 ¹	47AS123 47AWb384	surveyor 4N 12W 2		<i>Gyrodes</i> sp. <i>Haminea</i> sp.	Gastropods Plants and some microfossils

Reference: Brosge, W.P., and others, 1966.

¹ See also: Weber, E.J., 1948.

Prince Creek Formation
Kogosukruk Tongue.
Table 77

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26492	47AS147	Umiat D-3 69°58', 151°39' farmer	Upper Cretaceous Late Santonian to Early Campanian	<i>Panope</i> sp. <i>Gyrodes</i> sp.	Pelecypod Gastropod Gastropods unidentified Few microfossils

Reference: Brosge, W.P., and others, 1966.

Prince Creek Formation
Kogoruksuk Tongue
Table 78

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
V-81 ^{1/2}	Observation Point ³	Harrison Bay surveyor farmer	Late Cretaceous Maastrichtian		Lambeosaurine hadrosaur (duck-billed) metatarsal fragment vertebral centrum metatarsal, distal end
V-82		surveyor farmer farmer			do femur, distal end humerus (2)

Table 78 continued.

V-83		surveyor farmer			do dentary teeth phalanges vertebrae vertebrae, caudal femur femur, distal end femur, proximal end tibia tibia, distal end radius, fragment metatarsal metacarpal humeri tooth tyrannosaurid, tooth
				<i>Troodon</i> sp.	
V-84	Skin Point	surveyor farmer			Lambeosaurine vertebrae skin impression phalanges dentary (2)
V-85	Ladder Point	surveyor farmer			do limb bone
V-86	Sling Point	surveyor farmer			do vertebrae metatarsal phalanges
V-87		surveyor farmer			do fragments
V-88		surveyor farmer			do metatarsal tibia, distal end
V-89		surveyor farmer			do femur, distal end

Reference: Clemens, W.A., 1986.

¹ University of Alaska catalogue numbers.

² See Also: Davies, S.A., in press, Journal of Paleontology.

³ Collector: R.L. Liscomb, Shell Oil.

Schrader Bluff Formation

Barrow Trail Member

Table 79

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
19643	Kreidler	Umiat B-5 69°19', 152°36' 1S 3W 27	Cretaceous	<i>Inoceramus</i> sp. <i>Periplomya</i> sp. <i>Desmoscaphites?</i> sp.	Pelecypods Ammonite
26507	47ADt354	farmer		<i>Cardium?</i> sp. <i>Panope</i> sp.	Pelecypods Associated with microfossils Same location as 19643.
20425	46ASt33	Umiat B-3 69°27', 151°44' 1N 2E 19		<i>Glycymeris</i> cf. <i>G. borealis</i> <i>Protocardia</i> cf. <i>P. borealis</i>	
20428	46ASt67	Umiat B-4 69°20', 152°7' 1S 1W 1		<i>Nucula</i> sp. <i>Inoceramus</i> sp. <i>Tellina</i> sp. <i>Gyrodes</i> sp.	Gastropod
20429	46ASt69	69°24', 151°52' 1N 1E 27		<i>Nucula</i> sp. <i>Pecten</i> sp.	Pelecypods

Table 79 continued.

19434	44AC522	Umiat B-4 69°20', 152°10' 1S 1W 20	<i>Protocardia</i> cf. <i>P. borealis</i> <i>Tellina</i> sp. <i>Panope</i> sp.	
26506	47ADt336	Umiat B-5 69°19', 152°38' 1S 3W 33	<i>Inoceramus (Sphenoceramus) patootensis</i> <i>Voisella</i> sp. <i>Pholadomya</i> sp. <i>Arctica</i> cf. <i>A. orata</i> <i>Tancredia</i> cf. <i>T. americana</i> <i>Tellina</i> sp. <i>Legumen</i> sp. <i>Panope</i> sp. <i>Gyrodes</i> sp.	Gastropod Pelecypods
26505	47ADt330	69°19', 152°41' 1S 3W 32	<i>Nucula</i> sp. <i>Protocardia</i> cf. <i>P. borealis</i> <i>Legumen</i> sp. <i>Panope</i> sp.	
19642	Kreidler	farmer	<i>Yoldia</i> sp. <i>Periplomya</i> sp. <i>Tellina</i> sp. <i>Lunatia</i> sp.	Same location as 20427. Gastropod Shark tooth
20427	46ASt58	Umiat B-4 69°21', 152°14' 1S 1W 19	<i>Pecten</i> sp. <i>Corbula?</i> sp. <i>Protocardia</i> cf. <i>P. borealis</i> <i>Panope</i> sp.	Pelecypods
19437	44AC533	farmer	<i>Gervillia?</i> <i>Voisella</i> cf. <i>V. meeki</i> <i>Arctica</i> sp. <i>Protocardia</i> sp. <i>Gyrodes</i> sp.	Same locality as 20427 Gastropod

Reference: Brosge, W.P., and other, 1966.

Schrader Bluff Formation
Sentinel Hill Member
Table 80

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	47ASt32	Umiat B-3 69°25', 151°44' 1N 3E 19	Upper Cretaceous Late Santonian to Early Campanian	<i>Pecten</i> sp.	Pelecypods Fragments in microfossil collection.
	49AGr8	69°25', 151°47' 1N 1E 24		<i>Pecten</i> sp.	do
19644	Kreidler	Umiat B-5 69°19', 152°31' 1S 3W 26		<i>Yoldia</i> sp. <i>Lunatia</i> sp. <i>Oligoptycha</i>	Gastropods Fish vertebrae
26494	47ASt42	Umiat C-3 69°30', 151°29' farmer	Upper Cretaceous Late Santonian to Early Campanian	<i>Yoldia</i> sp. <i>Mytilus</i> cf. <i>M. subarcuatus</i> <i>Mytilus</i> sp. <i>Tellina</i> sp. <i>Leptosolen</i> sp. <i>Panope</i> sp. <i>Gyrodes</i> sp. <i>Haminea</i> sp.	Pelecypods Gastropods

Table 80 continued.

49AGr18	Umiat B-3 69°30', 151°30' 2N 3E 30	<i>Pecten</i> sp. <i>Pholadomya</i> sp. <i>Protocardia</i> cf. <i>P. borealis</i> <i>Tellina</i> sp. <i>Panope</i> sp.	Pelecypods abundant microfossils
26491	47AS124? Umiat C-4 69°36', 151°57.15' farmer	<i>Yoldia?</i> sp. <i>Panope</i> sp. <i>Leptosolen</i> sp.	Pelecypods

Reference: Brosge W.P., and other, 1966.

Schrader Bluff Formation

Table 81

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
51 ¹		Umiat B-4 69°24', 151°50' farmer	Cretaceous Campanian - Santonian		Last ginkgophytes Zone VI - angiosperms? Associated with invertebrates
50		69°24', 151°50'30" farmer			do

Reference: Smiley, C.J., 1969.

Significance: Plants show affinities to European stages and show floral changes through time.

¹ Author's locality numbers.

² Floral zones of author with few specific plants.

Schrader Bluff Formation

Sentinel Hill Member

Table 82

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Ocean Point	Harrison Bay A-3 70°5', 151°22' farmer	Cenozoic and Mesozoic	<i>Integricardium</i> sp. <i>Oxytoma</i> sp. <i>Yokoyamaia</i> sp. <i>Cyrtodaria</i> sp. <i>Pecten</i> sp. <i>Arctica</i> sp.	Bivalves Fauna also includes: brachiopods, ostracodes, gastropods, and foraminifera.

Reference: Marincovich, L., Jr., and others, 1984.

Significance: Fauna similar to Tertiary of Canadian Arctic Islands in west Greenland (Eureka Sound Formation). Fauna represents isolated part of Arctic Ocean cut off from other world oceans.

Unnamed Formation

Table 83

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Ocean Point	Harrison Bay A-3 70°4', 151°22" farmer	Paleocene to Early Eocene Thanetian-Ypresian	<i>Arctica</i> <i>Nucula</i> (<i>Nucula</i>) <i>Ebumeopecten</i> <i>Tancredia</i> <i>Integricardium</i> <i>Hypoxytoma</i> <i>Tellinimera</i> <i>Cyrtodaria</i> ¹ <i>Cylichna</i> <i>Bicorbula</i> <i>Argyromya</i> <i>Gari</i> (<i>Garum</i>) <i>Solenidae</i>	Mollusks

Table 83 continued.

Amauropsis
Corbala
Yoldia?

Ostracods, brachiopods,
bryozoans, foraminifera

Reference: Marinovich, L.Jr., and others, 1985.

Significance: Paleogeography; Arctic Ocean isolated from end of Cretaceous till Eocene. Shallow Paleocene seaway to North Sea basin.

¹ *Cyrtodaria rutupiensis* known from Middle Paleocene - Early Eocene of England.

Gubik Formation

Table 84

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Ocean Point	Harrison Bay A-3 70° 4', 151° 23' farmer	Middle Pleistocene	<i>Neptunea lyrata leffingwelli</i> <i>N. heros heros</i> <i>Axinopsida orbiculata</i> <i>Trichotropis borealis</i>	Mollusks
			Early Pleistocene	<i>Amauropsis islandica</i> <i>Cyrtodaria kurriana</i> <i>Chlamys lioica</i>	Gastropod Bivalve Scallop
			Late Pliocene	<i>Enhydra</i>	Sea otter ¹

Reference: Carter, L.D., and others, 1976.

¹ 2-3 million y.b.p.

Gubik Formation

Table 85

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
627	Colville River Schrader	Harrison Bay A-3 70°, 151° 36' 53" farmer	?Pleistocene - Late Pliocene	<i>Neptunea leffingwelli</i> <i>Pyrulofusus schraeri</i>	Gastropods Type locality
D305(T) ³	Stefansson	Umiat D-3 69° 59', 151° 38' 30" farmer		<i>Tachyrhynchus erosus major</i> <i>Neptunea</i> cf. <i>N. elatior</i> <i>N. leffingwelli</i> <i>Macoma calcarea</i> <i>Saxicava arctica</i>	Gastropods Pelecypods
D306(T) ⁴	Stefansson	Harrison Bay A-3 70° 4', 151° 22' farmer		<i>Tachyrhynchus erosus major</i> <i>Natica clausa</i> <i>Neptunea leffingwelli</i> <i>Buccinum physematum</i> <i>B.</i> sp. aff. <i>B. ochotense</i> <i>Colun (Aulacofusus) spitsbergensis</i> <i>Plicifusus</i> sp. aff. <i>P. kroyeri</i> <i>Antiplanes</i> cf. <i>A. perversa</i> <i>Chlamys hinsii</i> <i>Astarte broweri</i> <i>Cardita (Cyclocaria) cf. C. (C.) crebricostata</i> <i>Serripes groenlandicus</i> <i>Spisula</i> cf. <i>S. polynyma voyi</i> <i>Saxicava arctica</i> <i>Cyrtodaria kurriana</i> <i>Balanus</i> sp.	Gastropods Pelecypods Cirripedia Unidentified worm tubes
3627 ²	Skull Cliff Schrader	Meade River D-3 surveyor farmer		<i>Neptunea ventricosa clarki</i> <i>Lora skullcliffensis</i> <i>Astarte</i> cf. <i>A. subequilatera</i> <i>A.</i> aff. <i>A. fabula</i> <i>A. broweri</i> <i>A. leffingwelli</i> <i>Cardita (Cyclocardia) cf. C. (C.) crebricostata</i> <i>Serripes groenlandicus</i>	Gastropods Type locality Pelecypods

Table 85 continued.

15929 ¹	Meade River Barksdale	Meade River C-3 or B-3 70°30', 157°22'30" farmer	<i>Macoma calcarea</i> <i>Saxicava pholadis</i>	<i>?Natica clausa</i> <i>Volutopsis</i> sp. aff. <i>V. stefanssoni</i> <i>Neptunea ventricosa communis</i> <i>Buccinum plectrum</i> <i>A. aff. Astarte vernicosa</i> <i>A. bennetti</i> <i>A. leffingwelli</i> <i>Cardita (Cyclocardia) cf. C. (C.) crebricostata</i> <i>C. (C.) crassiens</i> <i>Macoma calcarea</i> <i>Saxicava arctica</i> <i>Balanus rostratus alaskensis</i>	Gastropods Pelecypods Cirripedia
1/1087	Peard Bay Hrdlicka	Meade River D-4 70°49', 158°23' farmer	<i>Neptunea ventricosa soluta</i> <i>Astarte cf. A. subequilatera</i> <i>A. aff. A. fabula</i> <i>A. leffingwelli</i> <i>Cardita (Cyclocardia) cf. C. (C.) crebricostata</i> <i>Serripes groenlandicus</i>	Gastropods Pelecypods	
7067	Leffingwell	farmer	<i>Astarte broweri</i> <i>A. bennetti</i> <i>A. leffingwelli</i> <i>Cardita (Cyclocardia) cf. C. (C.) crebricostata</i>	Pelecypods Same location as 1/1087.	
7228	Leffingwell	Barrow A-5 71°13'12", 154°55' farmer	<i>Astarte leffingwelli</i> <i>Cardita (Cyclocardia) cf. C. (C.) crebricostata</i> <i>Macoma calcarea</i> <i>Balanus rostratus alaskensis</i>	Pelecypods. Type locality. Cirripedia	
7229	Leffingwell	farmer	<i>Neptunea ventricosa soluta</i> <i>Cardita (Cyclocardia) cf. C. (C.) crebricostata</i>	Gastropoda Pelecypod Same location as 7228.	
15937	Point Barrow Barksdale	Barrow B-4 71°22.5', 156°28' farmer	<i>Neptunea ventricosa soluta</i> <i>Buccinum angulosum</i> <i>A. aff. Astarte vernicosa</i> <i>Serripes groenlandicus</i> <i>Macoma calcarea</i> <i>Mya cf. M. arenaria</i> <i>Saxicava pholadis</i>	Gastropoda. Pelecypods	

Reference: MacNeil, F.S., 1957.

University of California locality numbers.

¹ See also: Nelson, C.M., Jr., 1974.² See also: Meek, C.E., 1923; Nelson, C.M., Jr., 1974.³ See also: Brosge, W.P., and other, 1966; Nelson, C.M., Jr., 1974.⁴ See also: Brosge, W.P., and other, 1966; Nelson, C.M., Jr., 1974; MacNeil, F.S., 1967.**Gubik Formation****Table 86**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M7974		Barrow A-1 70°1'30", 154°36' farmer	Cenozoic Pliocene to Holocene	<i>Astarte borealis</i> <i>Bathyarca glacialis</i> <i>Margarites costalis</i> <i>Neptunea</i> sp.	Bivalves Gastropods Barnacle
M7975		farmer		<i>Cyclocardia crebricostata</i> <i>Macoma (Macoma) bathica</i> <i>Mya</i> sp. <i>Portlandia</i> sp. <i>Serripes</i> sp. <i>Spisula polynyma</i> <i>Neptunea</i> sp.	Bivalves Gastropod Echinoid: sand dollar Same location as M7974.

Table 86 continued.

M7976	farmer	<i>Astarte borealis</i> <i>Clinocardium</i> sp. <i>Crenella decussata</i> <i>Cyclocardia crebricostata</i> <i>Cyrtodaria kurriana</i> <i>Serripes</i> cf. <i>S. laperoussi</i> <i>Acteocina</i> sp. <i>Admete</i> sp. <i>Boreotrophon</i> sp. <i>Liomesus</i> sp. <i>Natacid</i> sp. <i>Oenopota</i> sp. <i>Polinices (Euspira) n.s.</i> <i>Trichotropis bicarinata</i>	Bivalves Gastropod Echinoid: sand dollar Same location as M7974.
M7977	farmer	<i>Cyclocardia crebricostata</i> <i>Serripes</i> sp. <i>Neptunea</i> sp.	Bivalves Gastropod Same location as M 7974.
M7166	Barrow A-3 71°7'7", 156°3'31" farmer	<i>Astarte</i> sp. <i>Serripes groenlandicus</i>	Bivalves
M7163	Barrow A-5 71°2'52", 156°10' farmer	<i>Astarte</i> sp. <i>Cyclocardia crebricostata</i>	Bivalves
M7164	71°3'43", 156°13'25" farmer	<i>Astarte</i> sp. <i>Clinocardium</i> sp. <i>Cyclocardia crebricostata</i> <i>Macoma</i> sp. <i>Macoma brota</i> <i>Serripes groenlandicus</i> <i>Spisula</i> sp. <i>Admete</i> cf. <i>A. couthouyi</i> <i>Boreotrophon</i> sp. <i>Crepidula grandis</i> <i>Natica (tectonatica) janthostoma</i> <i>Neptunea</i> sp. <i>Tachyrhynchus erosus</i> <i>Trichotropis bicarinata</i> <i>Trichotropis borealis</i>	Bivalves Gastropod
M7164A	farmer	<i>Clinocardium</i> sp. <i>Cyclocardia crebricostata</i> <i>Macoma</i> sp. <i>Serripes groenlandicus</i> <i>Admete</i> cf. <i>A. couthouyi</i> <i>Buccinum</i> sp. <i>Colus</i> sp. <i>Natacid</i> sp. <i>Oenopota</i> sp. <i>Plicificus kroyeri</i> <i>Tachyrhynchus erosus</i> <i>Trichotropis borealis</i>	Barnacle Bivalves Gastropods
M7164B	farmer	<i>Hiatella arctica</i> <i>Macoma brota</i> <i>Serripes groenlandicus</i> <i>Spisula voyi</i> <i>Admete</i> cf. <i>A. couthouyi</i> <i>Admete</i> cf. <i>A. middendorffiana</i> <i>Boreotrophon</i> sp. <i>Buccinum</i> sp. <i>Buccinum</i> cf. <i>B. tenellum</i> <i>Colus</i> sp. <i>Epitonium groenlandicum</i> <i>Natica (tectonatica) janthostoma</i> <i>Neptunea (Neptunea) heros heros</i> <i>Neptunea (Neptunea) lyrata leffingwelli</i>	Bivalves Gastropods

Table 86 continued.

		<i>Oenopota</i> sp. <i>Plicificus kroyeri</i> <i>Polinices (Euspira) pallidus</i> <i>Trichotropis borealis</i> <i>Volutopsius attenuatus</i>	
M7429	71°10', 157°2'21" farmer	<i>Cyclocardia crebricostata</i> <i>Macoma</i> sp. <i>Macoma brota</i> <i>Mya</i> sp. <i>Serripes</i> sp. <i>Astarte</i> sp. <i>Neptunea</i> sp. <i>Tachyrhynchus erosus</i>	Bivalves Gastropods
M7431	71°11'34", 157° farmer	<i>Cyclocardia crebricostata</i> <i>Hiatella arctica</i> <i>Macoma</i> sp. <i>Macoma (Macoma) balthica</i> <i>Macoma (Macoma) lama</i> <i>Mya</i> sp. <i>Serripes groenlandicus</i> <i>Siliqua</i> sp. <i>Beringius</i> sp. <i>Buccinum</i> sp. <i>Neptunea</i> sp.	Bivalves Gastropods
M7444	71°8'22", 157°4'22" farmer	<i>Astarte</i> sp. <i>Clinocardium ciliatum</i> <i>Cyclocardia crebricostata</i> <i>Hiatella arctica</i> <i>Mya</i> sp. <i>Mya (?Arenomya) pseudoarenaria</i> <i>Mya (Mya) truncata</i> <i>Serripes groenlandicus</i> <i>Buccinum</i> cf. <i>B. tenellum</i> <i>Colus</i> sp. <i>Epitonium groenlandicum</i> <i>Margarites costalis</i> <i>Neptunea</i> sp.	Bivalves Gastropods
M7432	Barrow B-4 71°17'31", 156°47'27" farmer	<i>Astarte borealis</i> <i>Hiatella arctica</i> <i>Mya</i> sp. <i>Serripes groenlandicus</i> <i>Boreotrophon</i> sp. <i>Buccinum</i> sp. <i>Neptungansp.</i> <i>Obesotoma</i> sp. <i>Oenopota</i> sp. <i>Trichotropis borealis</i> <i>Volutopsius attenuatus</i>	Bivalves Gastropods
M7433	farmer	<i>Hiatella arctica</i> <i>Macoma</i> sp. <i>Mya</i> sp. <i>Serripes groenlandicus</i> <i>Buccinum</i> sp.	Bivalves Gastropod Same location as M7432.
M7440	71°17'3", 156°48'14" farmer	<i>Astarte borealis</i> <i>Clinocardium ciliatum</i> <i>Hiatella arctica</i> <i>Mya</i> sp. <i>Serripes groenlandicus</i> <i>Buccinum</i> sp.	Bivalves Gastropod
M7441	farmer	<i>Astarte borealis</i> <i>Hiatella arctica</i> <i>Macoma (Macoma) lama</i> <i>Mya (?Arenomya) pseudoarenaria</i> <i>Mya (Mya) truncata</i> <i>Serripes</i> sp.	Bivalves Same location as M7440.

Table 86 continued.

M7669	71°19'36", 156°39'18" farmer	<i>Axinopsida orbiculata</i> <i>Macoma (Macoma) lama</i> <i>Mya</i> sp. <i>Serripes groenlandicus</i> <i>Tellina lutea alternidentata</i>	Bivalve
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Reference: Williams, J.R., and others, 1984.

Significance: *Natica (Tectonatica) janthostoma* now live in more southerly seas from Vladivostok to Hokkaido to Kamchatka but is known in early Pleistocene to Pelukian beds, indicating slightly warmer ocean temperature. *Neptunea (Neptunea) lyrata leffingwelli* is known only from deposits of upper Beringian to Kotzebuan marine transgressions of the Bering Strait region. Echinoids rare in Pleistocene deposits of this area. *Bathyrca glacialis* rare, lives currently in North Atlantic and Arctic Ocean but not in Bering Sea. Otherwise, all taxa are those living today in adjacent ocean.

Gubik Formation

Table 87

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M864	O'Sullivan	Meade River B-3 70°28'18", 157°23' farmer	Upper Pleistocene	<i>Neptunea (N.) heros heros</i>	All gastropods
M865		70°28', 157°23' farmer		do	
34322A ¹	Hanna	Meade River C-3 surveyor farmer	Middle Pleistocene	<i>Neptunea (N.) lyrata leffingwelli</i> <i>N. (N.) lyrata lyrata</i> <i>N. (N.) heros heros</i> <i>N. (N.) borealis</i>	Unable to plot, too vague.
15929 ⁶	Barksdale	surveyor 13N 21W 8	Upper Pleistocene	<i>N. (N.) heros heros</i>	
3627 ^{2/3}	Meek	Meade River D-3 surveyor farmer	Middle Pleistocene	<i>N. (N.) borealis</i>	
M3524	Sellman	surveyor farmer		<i>N. (N.) martyniiana beringiana</i>	Same location as 3627.
M861	O'Sullivan	Harrison Bay A-3 surveyor farmer	Upper Pliocene	<i>N. (N.) lyrata leffingwelli</i>	Unable to plot, too vague.
34571 ¹	Hussey & O'Sullivan	70°5', 151°32'14" farmer	Pliocene	<i>N. (N.) lyrata leffingwelli</i> <i>N. (N.) martyniiana beringiana</i>	
D305 ⁵	Stefansson	Umiat D-3 surveyor farmer	Upper Pliocene	<i>N. (N.) lyrata leffingwelli</i> <i>N. (N.) martyniiana beringiana</i>	
D306 ⁴	Stefansson	Harrison Bay A-3 surveyor 8N 3E 10		<i>N. (N.) lyrata leffingwelli</i>	
34568 ¹	Hussey & O'Sullivan	Barrow A-4 surveyor farmer	Middle Pleistocene	<i>N. (N.) lyrata leffingwelli</i> <i>N. (N.) heros heros</i>	Unable to plot, too vague.
M1829		Wainwright C-2 70°34', 159°54.8' farmer		<i>N. (N.) heros heros</i> <i>N. (N.) borealis</i>	
M1831		70°37.85', 159°58.6' farmer		<i>N. (N.) heros heros</i>	

Gubik Formation

Table 90

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Skull Cliff	Meade River D-3 and Barrow A-5 surveyor farmer	Cretaceous	<i>Neptunea</i> (N.) <i>lyrata leffingwellii</i> <i>Natica</i> (<i>Tectonatica</i>) <i>anthostoma</i>	Gastropods Unable to plot, too vague.

Reference: Williams, J.R., 1978.

Significance: Not in coastal waters today.

Gubik Formation

Table 91

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Skull Cliff	Meade River D-3 surveyor farmer	Early Pleistocene	<i>Natica jantostoma</i> <i>Neptunea</i> (N.) <i>lyrata leffingwellii</i> <i>Hiatella arctica</i> <i>Mya truncata</i> <i>M. arenaria</i> <i>Macoma</i> sp. <i>Astarte</i> sp. <i>Siliqua</i> sp. <i>Cyrtodaria</i> sp.	Gastropods ¹ Extinct species. Pelecypods Unable to plot, too vague.

Reference: Brigham, J.K., 1984.

Significance: Fauna correlates relative age and amino acid ratios.

¹ Confined to NW Pacific coast today.

Colville Formation

Table 92

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1		Harrison Bay A-3 surveyor 8N 2E 34	Pliocene?	<i>Amauropsis</i> sp. <i>Tachyrhynchus polaris</i> <i>Macoma frigida</i> <i>M. incongrua</i> <i>Astarte semisulcata</i> <i>Saxicava arctica</i>	Gastropods, fragments Pelecypods

Reference: Schrader, F.C., 1904.

¹ No locality number. Same as Schrader's locality 627.

Gubik Formation

Table 93

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1 ¹	Ocean Point	Harrison Bay A-3 70°3'55", 151°22'17" farmer	Pliocene to Pleistocene 2.2-1.7 my	<i>Enhydra</i> sp. <i>Pagophilus</i> sp.	Sea otter Toothless left dentary. USNM264275 ² Seal Femur (cast) USNM254304 ³
2 ¹	Teshkepuk	Teshkepuk C-1 70°38'48.6", 156°6' farmer	Pleistocene Sangamon 131-77,000 y.b.p.	<i>Eschrichtius</i> sp. <i>Pusa</i> sp.	Whale Seal Mandible with teeth ² USNM264274 and associated postcranial.

Table 93 continued.

Histiophoca fasciata
Alopex lagopus
Delphinapterus sp.
Phoca vitulina

Seal
 Arctic Fox
 Whale
 Seal

Reference: Repenning, C., 1983.

Significance: Loc. 1 - higher sea level, and warmer temperatures. Loc. 2 - associated marine fauna indicate extreme warm interglacial.

¹ Locality numbers assigned by investigator.

² Collected by Carter, 1975.

³ Collected by Helmericks

Gubik Formation

Table 94

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1		Barrow B-4 surveyor farmer	Quaternary Pleistocene to Recent		Unable to plot, too vague. All localities. Marine invertebrates
2		surveyor farmer			Fossil trees
3		Barrow A-5 surveyor farmer			Marine invertebrates
4		surveyor farmer			Fossil mammal bones
30		Barrow A-1 surveyor farmer			do
5		Meade River D-3 surveyor farmer			Marine invertebrates
6		Meade River D-6 surveyor farmer			do
18		Meade River C-3 surveyor farmer			do
7		Wainwright D-1 surveyor farmer			Fossil mammal bones
8		Wainwright C-2 surveyor farmer			do
9		Wainwright B-5, 6 surveyor farmer			do
13		Wainwright A-2 surveyor farmer			do
14		Wainwright A-1 surveyor farmer			do
15		surveyor farmer			do
17		Wainwright B-1 surveyor farmer			do

Table 94 continued.

12	Utukok River B-5 surveyor farmer	do
16	Lookout Ridge surveyor farmer	do
19	surveyor farmer	do
20	Ikpikpak River A-3 surveyor farmer	do
21	surveyor farmer	do
22	surveyor farmer	do
23	surveyor farmer	do
24	surveyor farmer	do
25	surveyor farmer	Fossil trees
26	surveyor farmer	Fossil mammal bones
27	surveyor farmer	Fossil trees
28	surveyor farmer	Fossil mammal bones
29	Teshekpuk A-3 surveyor farmer	Fossil trees
31	Teshekpuk C-1 surveyor farmer	do
32	Harrison Bay D-5 surveyor farmer	Fossil mammal bones
33	Harrison Bay C-5 surveyor farmer	do
34	Harrison Bay A-3 surveyor farmer	Marine invertebrates

Reference: Black, R.F., 1964.

See also: MacNeil, 1957.

Unnamed Formation**Table 95**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Barrow A-5 surveyor farmer	Pleistocene	<i>Astarte actis</i> <i>Astarte leffingwelli</i> <i>Balanus rostratus alaskensis</i> <i>Chrysodomus fornicatus</i> <i>Macoma sabulosa</i> <i>Venericardia crebricostata</i>	Pelecypods Barnacle Gastropod Pelecypods 15 miles SW of Cape Smyth Unable to plot, too vague.

Reference: Smith, P.S., and other, 1930.

Unnamed Formation

Table 96

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Stat. 70	Umiat C-3 69°30', 151°30'	Tertiary	<i>Panope</i> sp.	Pelecypod Gastropods

Reference: Stefansson, K., and others, 1948.

Unnamed Formation

Table 97

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M7165		Wainwright C-1 surveyor 16N 28W 31	Cenozoic	<i>Macoma balthica</i> <i>Mya (Arenomya) arenaria</i>	Pelecypod
M7308		Wainwright B-3 surveyor 13N 33W 36	Pliocene to Holocene	<i>Natica (Tectonatica) janthostoma</i> <i>Neptunea (Neptunea) heros heros</i> <i>Neptunea (Neptunea) lyrata leffingwelli</i> <i>Clinocardium</i> sp. <i>Cyclocardia crebricostata</i>	Gastropod Pelecypod

Reference: Williams, J.R., 1983a.

Identification by L.N. Marincovich, Jr., U.S. Geol. Survey.

Unnamed Formation

Table 98

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Stat. 627	Schrader	Harrison Bay A-3 surveyor farmer	Pliocene	<i>Chrysodomus leffingwelli</i> <i>Pyrulofusus schraderi</i>	Gastropods Unable to plot, too vague.
Stat. 7067	Leffingwell	surveyor farmer	Pleistocene	<i>Astarte bennetti</i> <i>Astarte borealis</i> <i>Astarte leffingwelli</i> <i>Venericardia crebricostata</i>	Pelecypods Unable to plot, too vague.
Stat. 7228	Leffingwell	Barrow A-5 71°1'21", 157°16'33" farmer		<i>Balanus rostratus alaskensis</i> <i>Astarte actis</i> <i>Astarte leffingwelli</i> <i>Venericardia crebricostata</i> <i>Macoma sabulosa</i>	Barnacle Pelecypods
Stat. 7229		farmer	?Pliocene	<i>Astarte</i> sp. <i>Venericardia crebricostata</i> <i>Chrysodomus fornicatus</i>	Gastropod Same locality as 7228.

Reference: Dall, W., 1920.

Significance: Fauna indicates more temperate seas, with connections between Bering Sea and Atlantic Ocean.

Unnamed Formation

Table 99

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	A	Harrison Bay B-3 70°16', 151°48' farmer	Middle Pleistocene	<i>Littorina</i> cf. <i>sitchana</i>	Gastropod Numerous mollusks Ostracods, marine and non-marine

Table 101 continued.

M7315	farmer		<i>Admete</i> , cf. <i>A. regina</i> <i>Boreotrophon</i> cf. <i>B. truncatus</i> <i>Buccinum glaciale</i> <i>Buccinum</i> cf. <i>B. tenellum</i> <i>Neptunea (Neptunea) heros heros</i> <i>Obesotoma</i> cf. <i>O. tenuilata</i> <i>Oenopota</i> sp. <i>Cyclocardia crebricostata</i> <i>Macoma balthica</i> <i>Macoma (Macoma)</i> cf. <i>M. (M.) brota</i> <i>Mya</i> sp. <i>Serripes groenlandicus</i> <i>Serripes laproussi</i> <i>Spisula</i> sp.	Gastropods Pelecypods Same location as M7314.
M7169	70°55', 157°35' farmer		<i>Natica (Cryptonatica) clausa</i> <i>Neptunea (Neptunea) heros heros</i> <i>Plicificus</i> sp. <i>Serripes groenlandicus</i>	Gastropods Pelecypod
M7170	70°56', 157°32' farmer		<i>Epitonium groenlandicum</i> <i>Oenopota</i> sp. <i>Cyclocardia crebricostata</i> <i>Macoma (Macoma)</i> cf. <i>M. (M.) brota</i> <i>Serripes groenlandicus</i>	Gastropods Pelecypods
M7170A	farmer		<i>Colus spitzbergensis</i> <i>Epitonium groenlandicum</i> <i>Margarites</i> sp. <i>Neptunea (Neptunea) lyrata</i> <i>Cyclocardia crebricostata</i> <i>Macoma</i> sp. <i>Serripes groenlandicus</i>	Gastropods Pelecypods Same location as M7170.
M7174	Inaru River Meade River D-2 70°46'42", 157°9'10' farmer		<i>Admete</i> sp. <i>Neptunea</i> sp. <i>Astarte</i> sp. <i>Cyclocardia crassidens</i> <i>Cyclocardia crebricostata</i> <i>Macoma balthica</i> <i>Serripes groenlandicus</i>	Gastropods Pelecypods
M7168	Meade River D-4 70°49', 157°59' farmer		<i>Admete couthouyi</i> <i>Buccinum</i> cf. <i>B. tenellum</i> <i>Natica (Cryptonatica) clausa</i> <i>Natica (Tectonatica) janthostoma</i> <i>Polinices (Euspira) pallidus</i> <i>Astarte</i> sp. <i>Astarte borealis</i> <i>Astarte</i> cf. <i>A. leffingwelli</i> <i>Cyclocardia crebricostata</i> <i>Macoma (Macoma)</i> cf. <i>M. (M.) brota</i> <i>Serripes groenlandicus</i> <i>Spisula voyi</i>	Gastropods Pelecypods
M7311	Inaru River Meade River C-3 70°35', 157°47' farmer		<i>Neptunea (Neptunea) heros</i> sp. <i>Astarte borealis</i> <i>Cyclocardia crebricostata</i>	Gastropod Pelecypods
M7175	70°42', 157°34' farmer		<i>Buccinum</i> sp. <i>Colus</i> sp. <i>Neptunea</i> sp. <i>Plicificus kroyeri</i> <i>Cyclocardia crebricostata</i> <i>Hiatella arctica</i> <i>Mya</i> sp. <i>Serripes groenlandicus</i>	Gastropods Pelecypods
M7176	70°42', 157°47' farmer		<i>Boreotrophon</i> sp. <i>Neptunea</i> sp. <i>Tachyrhynchus erosus</i>	Gastropods

Unnamed Formation

Table 103

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
V-5	Avalik/Kuk	Lookout Ridge 69°42', 157°53' farmer	Pleistocene		Caribou
V-7	Barrow	Barrow B-4 71°17', 156°47' farmer			Mammoth
V-30	Meade River	Meade River B-3 70°28', 157°24' farmer		<i>Rangifer</i> sp. <i>Alces</i> sp. <i>Alopex</i> sp. <i>Ovibos</i> sp. <i>Equus</i> sp.	Caribou Moose Fox Musk Ox Horse Bison, mammoth, cervidae
V-50	Nuiqsut	Harrison Bay A-2 70°14', 151° farmer			Mammoth

Reference: University of Alaska Vertebrate Catalogue.

Unnamed Formation

Table 104

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Ikpiqruk River	Ikpiqruk River 69°22'-57', 155°15'-18' farmer	Pleistocene		Musk Ox Bison Horse Mammoth Carnivore Super Bison Caribou Pelecypod casts Marine fossils
	Meade River	Lookout Ridge and Meade River 69°50', 157°09' - 70°39', 157°12' farmer			Mammoth (2) Musk Ox Bison Super Bison Caribou

Reference: Geist, O.W., 1962.

Unnamed Formation

Table 105

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1		Wainwright B-4 70°15', 161°14' farmer	Pleistocene	<i>Elephas</i>	Location approximate
2		Wainwright C-2 70°32'30", 160° farmer		<i>Elephas</i>	do
3		Meade River D-5 70°46', 158°41' farmer		<i>Elephas</i>	do
4		Meade River D-3 70°55', 157°38' farmer		<i>Elephas</i>	Same as Skull Cliff of others

Table 105 continued.

5	Teshekpuk D-3 70° 55', 154° 40' farmer	<i>Elephas</i>
6	Teshekpuk D-1 70° 55', 153° 15' farmer	<i>Elephas</i>
7	Harrison Bay C-4 70° 31', 151° 52' 30" farmer	<i>Elephas</i>

Reference: Quackenbush, L.S., 1909.

¹ No locality or field numbers. Numbers assigned by investigators.

Unnamed Formation

Table 106

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M1422 ¹	Linck	Lookout Ridge surveyor farmer farmer	Pleistocene Middle Wisconsin	<i>Saiga tatarica</i>	Right horn-core and frontal 37,000 y.b.p. Unable to plot, too vague.

Reference: Harington, C.R., 1980.

Significance: Rare, eight specimens known from Alaska.

¹ See also: Yeend, W., 1983.

Unnamed Formation

Table 107

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Pt. Barrow	Barrow B-4 surveyor farmer	Pleistocene	<i>Superbison crassicornis</i> <i>Superbison alaskensis</i>	Partial skull with broken horn cores. Univ. Penn. 13753 Skull and horn cores. Holotype. Univ. Penn. 13754 Unable to plot, too vague.

Reference: Frick, C., 1937.

Unnamed Formation

Table 108

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21		Wainwright A-2 surveyor farmer	Pleistocene	<i>Panthera atrox</i>	Lion-like cat Right maxillary with sockets for P ² -M ¹ . From Kaolak River Unable to plot, too vague.

Reference: Harington, C.R., 1969.

Unnamed Formation

Table 109

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Point Barrow	Barrow B-4 surveyor farmer	Pleistocene	<i>Bison (Platycerobison) alaskensis</i> <i>Bison (Superbison) crassicornis</i>	Posterior cranium, horn cores. CNHM25226 ¹ Partial cranium, cores. CNHM P6832 (UP13752) ²

Table 109 continued.

do

Cranium, partial cores.
CNHM P6833 (UP13753)

Reference: Skinner, M.F., and other, 1947.

¹ Holotype. Chicago Natural History Museum.

² Figured by Hay as *Bison occidentalis*.

Unnammed Formation

Table 110

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
IKR062		Ikpikpuk River 69°43'45", 154°47'15" farmer	Pleistocene		Mammoth tusk and post-cranial
IKR063		69°47', 154°47'55" farmer			do
IKR060		69°42'50", 154°49'30" 4N 12W 10			Mammoth Tusk
IKR061		69°43'45", 154°50'25" 4N 12W 4			do
TES058		Teshekpuk A-3 70°1'57", 154°37'50" 8N 11W 21			do
IKR059		Ikpikpuk River 69°41'5", 154°53'30" ?N 12W ?			do - and post-cranial

Reference: Alaska Heritage Resources Survey record.

Unnammed Formation

Table 111

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
177	Topagoruk ¹ River	Lookout Ridge 69°59', 156°10' farmer	Recent		Mollusks
97	Meade River	69°58'41", 157°20' farmer	Late Wisconsinian		Fossil ivory
99		69°59', 157°10' farmer			Mollusks Large mammal tooth
40 ²	Usuktuk River	69°57', 156°31' farmer			Saiga antelope bones, 37,000 y.b.p.
253	Awuna ³ River	69°47', 156°38' farmer			Mammoth ivory, teeth

Reference: Yeend, W., 1983.

¹ Williams and Yeend, 1979.

² Harington, 1980.

³ Smith and Mertie, 1930.

**Unnamed Formation
Table 112**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1		Teshkpuk A-3 70°, 154°30' farmer	?		Pelecypod
	1979P2	Ikpikuk River 69°20', 154°42' farmer	Pleistocene		Bison, horse, moose,

Reference: University of Alaska Locality Catalogue.

**Unnamed Formation
Table 113**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
14	Colville River Delta	Harrison Bay surveyor farmer	Pleistocene		Wood From terrace Found with Musk Ox bones Unable to plot, too vague.

Reference: Hopkins, D., and other, 1981.

Area 20

AREA 20

Quad Maps:
Killik River
Umiat
Sagavanirktok
Philip Smith Mts.
Chandler Lake
Mt. Michelson

Many of the fossiliferous sedimentary formations from Area 19 continue in a north and east direction through the Brooks Range into Area 20.

The oldest of the Paleozoic formations with fossils are from the Endicott Group. Three formations make up the group in this area; the lowest stratigraphically is the Hunt Fork Shale which grades into the Kanayut Conglomerate, which is in turn followed by the Kayak Shale.

Gray brown to dark gray shale, that in some places has metamorphosed to slate, is the predominant rock of the Hunt Fork Shale. Minor amounts of sandstone and silt also occur. Corals, brachiopods, pelecypods and some plants have been found (Tables 1-3). Corals are useful in age determinations and range from Middle to Late Devonian.

Conformably overlying the Hunt Fork Shale is the conglomerate and shale of the Kanayut Conglomerate. Brachiopods and corals are the dominant fossils here, but part of this formation is non-marine and some plants have been mentioned but not documented on Federal lands (Tables 4, 5).

Shales continue upward alternating with limestones and sandstones into the Kayak Formation. Plants, fish teeth and gastropods (Tables 6, 7, 8) are the main elements of the Late Mississippian fauna and flora of this final unit of the Endicott Group.

Proceeding upward in the stratigraphic sequence, limestones become the major sediments of the Lisburne Group. The Group ranges through time from the Upper Mississippian to Permian. In some places the Group can be divided into two formations; the older Wachsmuth, and the younger Alapah Limestone Formation. Farther east in the study area, the Alapah Limestone is replaced by the Wahoo Limestone.

Fossils from undifferentiated limestones of the group range in age from ?Devonian to Early Permian. Brachiopods, corals and crinoids are the most abundant followed by the bryozoans, gastropods, pelecypods, and a few small trilobites (Tables 9-14).

The Fickett series of Schrader (1904), which outcrops in the vicinity of the John and Anaktuvuk Rivers, may be in part synchronous with the Lisburne Group and contains similar fossils (Table 15). The rocks of the Fickett are limestones, slates, sandstone schists and conglomerates.

The lower part of the Lisburne Group, known as the Wachsmuth Limestone, has a fauna of corals, brachiopods, gastropods, crinoids and some trilobites (Tables 16-19). Most of the fossils are Early Mississippian in age. The limestones of this formation vary from shaly, crinoidal, to banded chert; some dolomite is also present.

Above the Wachsmuth, the limestones of the Alapah Limestone Formation become even more variable and have been described as dark, light gray, shaly, platy, banded, black-chert, fine-grained and chert - nodular (Bowsher and other 1957). The fauna is typical of the Lisburne Group, but more gastropods and cephalopods are reported (Tables 20-24) Wood and other (1975), note the presence of echinoderms; and a sponge (Table 25).

A light colored, coarse to fine-grained limestone overlying the Alapah Limestone is known as the Wahoo Limestone, which is the upper and last formation of the Lisburne Group. Fossils are Pennsylvanian, not prolific and fragmentary (Tables 26, 27).

Fossils from locality 367 and 749 (Table 28) are probably from the Lisburne Group.

Distinct variegated ferruginous shales and siltstones are the bulk of the Permian sediments of the Siksikuk Formation. Only brachiopods and gastropods have been reported in Area 20 (Tables 29, 30).

Two formations are recognized in the Sadlerochit Group; the Ehooka Formation of Permian Age, which is in part equivalent to the Siksikuk, and the Ivishak Formation of the Lower Triassic. Various names have been used for the members, and formations within the Sadlerochit Group, the most recent, Detterman and others (1975), is followed in this report.

Lithologic facies of the Echooka Formation are quite variable from place to place. In general, two members are delineated. The lower Joe Creek member is a series of calcareous silts, cherts, and limestones; the upper part of this member is very fossiliferous. Brachiopods, corals and gastropods are common with a few bryozoans, pelecypods, and trilobites (Tables 31-35).

The upper member of the Echooka Formation, the Ikiakpaurak Member, is an orthoquartzite, quartzitic sandstone and silts of Upper Permian age. Fossils are not as abundant as the preceding member. Corals, brachiopods, gastropods, bryozoans, and echinoderm fragments are reported (Tables 36, 37).

In the Triassic Ivishak Formation, brachiopods and corals give way to ammonites as the major fossils (Tables 38-40). Three members are known, but fossils in the study area have come solely from the Kavik Member. This member is Early Triassic and is composed of non-resistant shales and siltstones with large limestone concretions. The other two members, which are Lower Triassic, but younger than the Kavik, contain a few sparse fossils; brachiopods and pelecypods.

Leffingwell (1919) mentions brachiopods of Pennsylvanian age in the Sadlerochit Formation, which is now known as the Sadlerochit sandstone, which is equivalent to the upper parts of the Lisburne Group of Late Pennsylvanian age (Table 41).

As was the case in Area 19, the Middle and Upper Triassic Shublik Formation is richly fossiliferous. This formation is composed of dark carbonaceous shale, chert, and limestone. Pelecypods, brachiopods, ammonites and gastropods are abundant (Tables 42-44). Fish have been found in the study area (Table 45), belemnites (Table 45), and one coral (Table 46).

Pelecypods of Upper through Lower Triassic are reported from the Otuk Formation (Table 47). The genus *Monotis* is the most common and useful for dating the sediments. Rocks of this formation are similar to the Shublik and are dark cherts and shales.

Jurassic sediments in Area 20 have been placed in two formations, the oldest of which is the Kingak Shale. This formation is primarily a soft dark shale, and, as originally defined, contained only Lower Jurassic fossils. Subsequent work has shown that the deposition of the Kingak Formation continued throughout the Jurassic. Fossils are ammonites, pelecypods, and crinoids of museum quality (Tables 48-58). Table 60, with pelecypods and a belemnite from Leffingwell's (1919) Ignek Formation is now in the Kingak Formation.

The upper formation of the Jurassic is the Tiglukpuk, with graywacke, shale and siltstone being the principal components with some coarse conglomerates and volcanics. This formation name has been abandoned in favor of the Kingak Shale. Pelecypods and an occasional ammonite are the only reported fossils (Tables 61-65).

Two equivalent formations have been designated at the bottom of the Lower Cretaceous, overlying the Late Jurassic Kingak Shale or Tiglukpuk Formation. These beds are characterized as alternating fine-grained sandstone, silt, shale, and clay shale.

First to be named was the Okpikruak Formation. The fauna is sparse and not very diverse. Pelecypods dominate and other fossils include; gastropods, plants, ammonites, and belemnites (Tables 66-73). The species of *Buchia* (*Aucella*) is an excellent indicator of age and stratigraphic correlations.

Detterman and others (1975) proposed that the Okpikruak Formation be excluded in favor of the Kongakut Formation. This formation is similar in lithology to the Okpikruak and has been divided into four members. In ascending order they are; Clay Shale Member, the Kemik Sandstone, Pebble Shale, and Siltstone Member. The lower two are fossiliferous (Tables 74, 75).

Rocks and fossils of the Lower Cretaceous Aptian Stage are absent in the study area.

Beginning the Albian Stage are the Fortress Mountain Formation and the Torok Formation.

Coarse graywacke sandstone and conglomerate with intercalated shale are the main constituents of the Fortress Mountain Formation. Fossils are not common and most are from the lower part of the section. Pelecypods, ammonites and wood fragments are noted (Table 76, 77). The fish skeleton from locality 49ATr601, if correctly identified, belongs to a family that is known from the Jurassic and Cretaceous. Morphologically it resembles a gar fish. Due to the nature of these sediments, the probability of discovering additional specimens is remote.

Above and partly equivalent to the Fortress Mountain Formation is the Torok Formation, which is mostly clay shale with some silt and siltstone. Fossils collected from this formation are similar to the Fortress Mountain Formation in abundance and type. (Tables 78-83). Fish were again collected at two localities (Tables 82, 83).

Concluding the Lower Cretaceous are the Formations of the Nanushuk Group, which includes the remainder of the Albian Stage.

Beginning the Nanushuk Group Formations is a deposit of fine-grained, green and gray sandstones

with subordinate siltstone and silty shale, which is known as the Tuktu Formation.

Fossils from the Tuktu Formation are mostly marine, but transitional and non-marine groups are also found. Due to the variety of depositional environments, the faunal and floral diversity is high. Dominating the marine fauna are the ammonites, pelecypods and some gastropods; starfish, brittlestars, worm tubes, trails and burros are representative of the transitional environments (Tables 84-89). Primitive plants make up the flora of the non-marine sediments (Table 90).

Overlying the Tuktu Formation is the marine Grandstand Formation and the non-marine Chandler Formation both of which intertongue in some places.

The Grandstand is probably slightly older in the lowest part, which is mostly a thick, multicolored sandstone with small amounts of siltstone and shale. In the upper part the amounts of siltstone and shale increase to about 50% of the total and coal beds are present. Marine pelecypods are the only reported fossils from the study area (Table 91).

Plants are the principle fossil in the Chandler Formation attesting to its non-marine depositional environment (Tables 92, 93). A few fresh and brackish-water pelecypods do occur. (Tables 94, 95). All fossils from this study area are from the lower Killik Tongue Member which is a thick sandstone.

Fossils reported from the Ignek Formation (Tables 96, 97) are equivalent in age to the Chandler Formation and are superseded by that formation.

The last formation of the Nanushuk Group that marks the end of the Lower Cretaceous and the beginning of the Upper Cretaceous, overlies the Chandler Formation, and is known as the Ninuluk Formation.

The Ninuluk is predominantly marine, but intertongues with the Niakogon Tongue of the Chandler Formation, consequently the flora of the Ninuluk is probably from this non-marine tongue (Table 98). The lithology of the formation is greenish gray siltstone, silt-shale and dark blue-gray clay shale. Marine pelecypods are the main fossils (Tables 99-101). The plants are more modern with increasing taxa of angiosperms.

Fossils from undifferentiated parts of the Nanushuk Group are given in Tables 102-104. Table 105, reports the occurrence of dinosaur tracks outside of the study area, and unspecified bone fragments from the lower part of the Nanushuk Group.

Upper Cretaceous Formations in Area 20 are placed within the Colville Group. The oldest formation in the group (Turonian) is the Seabee Formation. This formation contains tuff and bentonite that increases upward through marine sandstone and shale, the top of this unit is a low-grade paper oil shale. The reported fauna (Tables 106-108), is all marine pelecypods and ammonites. Species of *Inoceramus* are useful stratigraphic markers.

The Prince Creek Formation and the Schrader Bluff Formation are lateral equivalents, the former is the non-marine unit and the latter, the marine. Both overlying the Seabee, belong to the Colville Group and conclude the Upper Cretaceous deposits of the study area.

The Schrader Bluff Formation is sandstone and shale with bentonite and tuff. The deposits reflect a transgression and recession of an Upper Cretaceous Sea. Pelecypods are the main components of the fauna with gastropods and unidentifiable fish remains (Tables 109, 110).

Prince Creek Formation fossils are all plants (Table 111), and the collections document the decline of ginkgophytes, and domination of angiosperms; one locality is associated with invertebrates. The deposits of this formation are similar to the Lower Cretaceous Chandler Formation and consist of sandstone, conglomerate, shale and coal with bentonite and tuff.

Fossils from unnamed Upper Cretaceous deposits are listed in Table 28, and Tables 112-117.

No sediments younger than Cretaceous have reported fossils in the study area.

Judging from the paleontological evidence, and the isolation of Area 20, no special management procedures seem necessary. The presence of fish skeletons in the Torok, and fish and dinosaur tracks in the Nanushuk Group could imply that more and/or identifiable specimens of this nature may be found. Outcrops of these formations should be "flagged" to document new localities with vertebrates, and to insure that any potential sites in these areas are surveyed prior to any activity that may impact the vertebrate fossils and tracks.

The lack of Late Pleistocene vertebrates is probably due to increased glaciation in the area during this time, however, this alone does not totally eliminate the possibility that these vertebrates could not be found in isolated cases in the future.

Unnamed Formation

Table 1

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	74ARr93	Philip Smith Mts. A-5 68°2', 149°48' 16S 10E 22	Late Devonian		Brachiopods Corals
9376SD	74ARr94	68°2', 149°52' 16S 10E 20			Corals
	75ABe70C	Philip Smith Mts. A-4 68°14', 149° 14S 13E 13			

Reference: Brosge, W.P., and others, 1979.

Hunt Fork Shale

Table 2

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6420SD	60ABe390	Philip Smith Mts. A-4 68°3', 148°56' farmer	Upper Devonian	<i>Cladopora</i> sp. <i>Phillipsastraca</i> sp.	Corals
6409SD ¹	60ARr420	68°4', 149°13' farmer		<i>Cladopora</i> sp. <i>Thamnopora</i> sp. <i>Disphyllum</i> sp. <i>Thamnophyllum</i> sp.	

Reference: Oliver, W.A., Jr., and others, 1975.

¹ See also: Brosge, W.P., and others, 1979.

Hunt Fork Shale

Table 3

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6409SD ¹	60ARr420	Philip Smith Mts. A-4 surveyor 16S 13E 7	Middle or Late Devonian Frasnian		Corals
9372SD	74ARr96	Philip Smith Mts. A-5 68°6', 149°54' 15S 10E 31	Late Devonian Frasnian		Corals, pelecypods, plants.
	75ARr149A,C	68°9'30", 149°45' 16S 11E 11			Corals, brachiopods
	75ARr150				Corals Same location as above.
	75ARr101	Philip Smith Mts. B-5 68°17', 149°26' 13S 11E 30	Late Devonian Famennian		Brachiopods, pelecypods
	75ABe71	Philip Smith Mts. A-4 68°12', 149°13' 14S 13E 19			Brachiopods
	75ABe95A,B	Philip Smith Mts. B-5 68°15', 149°50' 14S 10E 4			do
	75ARr96	68°20', 149°55' 13S 10E 7			do
	75ABe135	Philip Smith Mts. A-4 68°15', 149°9' 14S 13E 9			do

Table 3 continued.

75ABe453	68°14', 149°1' 15S 11E 13				do
9371SD 75ARr103	Philip Smith Mts. A-5 68°7', 149°40" 15S 11E 19	Frasnian			Corals
75ARr152A	Philip Smith Mts. A-4 68°1', 149°18" 16S 12E 35				Corals, mollusks
75ABe131A,B	68°11', 149°9' 14S 13E 33				Corals, brachiopods

Reference: Brosge, W.P., and others, 1979.
 † See also: Oliver, W.A., Jr., and others, 1975.

Kanayut Conglomerate

Table 4

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
966		Philip Smith Mts. A-5 68°6'51", 149°31'6" 15S 11E 26	Devonian		Brachiopods, Rugose corals
967		68°8'37", 149°40'19" 15S 11E 18			Brachiopods
968		68°6'51", 149°31'6" 15S 11E 26			Rugose corals

Reference: University of Alaska Locality Catalogue.

Kanayut Conglomerate

Table 5

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
75ABe140		Philip Smith Mts. A-5 68°22', 149°29' 14S 11E 35	Late Devonian Frasnian		Brachiopods, ostracods
76ABe455		68°24', 149°33' 15S 10E 16	Famennian		Brachiopods

Reference: Brosge, W.P., and others, 1979.

Kayak Shale

Table 6

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
74ARr104		Philip Smith Mts. A-5 68°23', 149°29' 14S 10E 23	Early Mississippian		Plants

Reference: Brosge, W.P., and others, 1979.

Kayak Shale

Table 7

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Sec. F		Chandler Lake B-2 68°19'19", 150°54'29" farmer	Mississippian		Fish teeth

Reference: Bowsher, A.L., and other, 1957.

Kayak Formation

Table 8

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3095 ²	F3-22-6 ¹	Chandler Lake B-2 68°16'25", 150°57'25" farmer	Lower Mississippian	<i>Turbonellina? lata</i> n. sp. <i>Platycera (Orthonychia)</i> sp.	Gastropods
3247 ²	F6-6-7 ¹	68°17'45", 150°56'30" farmer		<i>Platycera (Orthonychia)</i> sp.	

Reference: Yochleson, E., and other, 1960.

Significance: No distinct boreal fauna; most poorly preserved.

¹ Bowsher, Dutro, 1949.

² U.S. National Museum locality number.

Lisburne Formation

Table 9

Loc. #	Collector Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
455		Chandler Lake surveyor farmer	Middle Devonian	<i>Productella</i> 2 species <i>Platystoma</i> sp. <i>Zaphrentis</i> sp. <i>Fenestella</i> sp. <i>Unitrypa</i> sp. <i>Eridotrypa</i> cf. <i>E. barrandei</i>	Brachiopod Gastropod Coral Bryozoans Fossils from upper John and Anaktuvuk Rivers.
528		surveyor farmer		<i>Aulocophyllum</i> sp.	Coral
460		surveyor farmer	Upper Devonian	<i>Spirifer disjunctus</i>	Brachiopods
462		surveyor farmer		<i>Spirifer disjunctus</i>	
496		surveyor farmer	Devonian	<i>Diphyphyllum</i> 1 species	Corals
498		surveyor farmer		do	
499		surveyor farmer		do	
501		surveyor farmer		do	
523		surveyor farmer		do	
524		surveyor farmer		do	
500		surveyor farmer		<i>Zaphrentis</i> sp.	

Table 9 continued.

533	surveyor farmer			<i>Zaphrentis</i> sp. <i>Rhombopora</i> sp. <i>Fenestella</i> sp. <i>Hemitrypa</i> sp.	Bryozoans
22	surveyor farmer		Paleozoic	<i>Syringopora</i> sp. 1	
2	surveyor farmer			do sp. 2	
47	surveyor farmer		Upper Devonian	<i>Spirifer disjunctus</i> type	Brachiopod
5	surveyor farmer		Paleozoic ?Devonian	? <i>Acervularia</i>	Cyathophylloid coral
203	surveyor farmer				Crinoid stems Unable to plot, too vague. All localities.

Reference: Schrader, F.C., 1904.

Lisburne Group

Table 10

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
60C172		Philip Smith Mts. B-5 surveyor 13S 10E 6	Upper Mississippian Meramec	<i>Lithostrotion reiseri</i> n. sp.	Coral Holotype USNM 161095
70A-2		Mt. Michelson surveyor 3S 26E 27		<i>Lithostrotion reiseri</i> n. sp.	

Reference: Armstrong, A. K., 1973.

Significance: good index fossil.

Lisburne Group

Table 11

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13264 PC	50ABe20	Philip Smith Mts. B-5 68°25', 149°29' 12S 11E 11	Early Permian		Brachiopods
13267 PC	50ABe103	Philip Smith Mts. B-4 68°22', 149°20' 11S 12E 33			
14039 PC	50ARr22				Same location as 13267PC.
14040 PC	50ARr27				do
14044 PC	50ARr31	Philip Smith Mts. B-5 68°25', 149°26' 12S 11E 12			
	52ABe65	Philip Smith Mts. C-3 68°38', 148°28' 9S 16E 30	Early Pennsylvanian		
	75ARr72A	68°33', 148°45' 10S 14E 25			
	75ABe12A	68°35', 148°28' 10S 16E 18	Pennsylvanian		

Reference: Brosge, W.P., and others, 1979.

Lisburne Group
Table 12

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
751		Philip Smith Mts. B-4 surveyor 11S 12E ?	Mississippian		Corals
753		surveyor farmer			Brachiopods, bryozoans, crinoid stems
754		surveyor farmer			Bryozoans
755		surveyor farmer			Brachiopods
756		surveyor farmer			Brachiopods, corals
757		surveyor farmer			Corals bryozoans
758		surveyor farmer			Corals
759		surveyor farmer			Corals, bryozoans, crinoid stems
760		surveyor farmer			Brachiopods, bryozoans, crinoid stems
761		surveyor farmer			Brachiopods
762		surveyor farmer			Brachiopods, bryozoans
764		surveyor farmer			Brachiopods, bryozoans crinoid stems, corals
765		surveyor farmer			Brachiopods, corals
766		surveyor farmer			Coral
767		surveyor farmer			Brachiopods, corals
768		surveyor farmer			Brachiopods, bryozoans
769		surveyor farmer			Corals
770		surveyor farmer			Brachiopods Unable to plot, too vague. 751-770.
969		68° 28'5", 149° 19'50" 11S 12E 21	Jurassic		Brachiopods, pelecypods
970		68° 26'47", 149° 19'50" 11S 12E 33	Mississippian		Brachiopods, corals, crinoids, bryozoans
971					Same location as 970. Brachiopods, crinoids
972		68° 27'40", 149° 7'12" 11S 12E 27			Brachiopods
973		68° 27'40", 149° 14'53" 11S 12E 26			Brachiopods
974					Same location as 973. Brachiopods
975		68° 28'5", 149° 12'26" 11S 12E 24	Paleozoic		Plant material
976					Same location as 975. Brachiopods

Table 12 continued.

988	Philip Smith Mts. B-5 68°25', 149°36'6" 12S11E 8	Mississippian	Rugose corals, crinoids
989	68°26'49", 149°31'10" 11S 11E 34		Corals

Reference: University of Alaska Locality Catalogue.

Lisburne Formation

Table 13

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
16	7136	Mt. Michelson 69°16'30", 146°2" farmer	Mississippian	<i>Fenestella</i> sp. <i>Dielasma</i> aff. <i>D. hastatum</i> <i>Spirifer</i> sp. <i>Cliothyridina</i> aff. <i>C. sublamellosa</i> <i>Composita</i> aff. <i>C. trinuclea</i> <i>Aviculipecten?</i> sp. <i>Phillipsia</i> sp.	Bryozoan Brachiopods Pelecypod Trilobite
23	7127	surveyor farmer			Crinoid Brachiopod fragments Crinoid stems
25	7137	surveyor farmer		<i>Zaphrentis</i> sp. <i>Lithostroton junceum</i> sm. var. <i>basaltiforme?</i> <i>Lithostroton irregulare?</i> <i>L.</i> aff.? <i>L.</i> sp.	Corals
	7137a 7137b	surveyor farmer		<i>Lithostroton junceum?</i> <i>Zaphrentis</i> sp. <i>Lithostroton</i> aff. <i>L. basaltiforme</i> <i>Fenestella</i> sp. <i>Spirifer</i> aff. <i>striatus</i> var. <i>attenuatus</i>	Bryozoan Brachiopod
26A	7138	surveyor farmer		<i>Zaphrentis</i> aff. <i>Z. ovidos</i> <i>Syringopora geniculata</i> <i>Lithostroton junceum</i> <i>L. junceum</i> sm. var. <i>L. basaltiforme?</i> <i>L. portlocki?</i> <i>L. irregulare?</i> <i>L. affine?</i> <i>Fenestella</i> sp. <i>Hemitrypa</i> sp.	Corals Bryozoans
26X	7138a	surveyor farmer		<i>Lithostroton martini?</i> <i>Zaphrentis</i> sp. <i>Fenestella</i> sp. <i>Productus giganteus</i> <i>P.</i> aff. <i>undatus</i> <i>P.</i> sp. <i>Camarotoechia?</i> sp. <i>Spirifer</i> aff. <i>S. striatus</i> var. <i>attenuatus</i> <i>S. pinguis</i> <i>S. ovalis</i> <i>Bellerophon</i> sp. <i>Phillipsia</i> sp.	Corals Brachiopods Gastropod Trilobite
29A	7125	surveyor farmer		<i>Syringopora reticulata?</i> <i>Lithostroton basaltiforme?</i> <i>L.</i> sp.	Corals
29C	7125a	surveyor farmer		<i>Zaphrentis</i> sp. <i>Lithostroton portlocki?</i> <i>Productus</i> aff. <i>P. giganteus?</i> <i>Spirifer</i> aff. <i>S. striatus</i> var. <i>attenuatus</i>	Brachiopods All localities in same location.

Reference: Leffingwell, E.K., 1919.

Significance: Fossils from talus, none in place.

Lisburne Limestone

Table 14

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
1 ²	Okpikruak River ¹	Killik River 68°31', 153°30' farmer	Upper Mississippian	<i>Martinia</i> sp. <i>Leiorhynchus</i> sp. <i>Productella</i> sp. <i>Chonetes</i> sp. <i>Dimorphoceras</i> sp. <i>Grityoceras</i> sp. <i>Homoceras</i> sp. <i>Aviculopecten</i> <i>Mooreoceras</i> sp. <i>cf. Dictyoclostus inflatus</i> <i>Moorefieldella</i> aff. <i>M. eurekaensis</i> <i>Leda</i> sp. <i>Loxonema</i> sp. <i>Paraparchites</i> sp. <i>Moorefieldella</i> sp. indet. <i>Tropidostrophia griffithi</i> <i>Caneyella</i> sp. <i>Endolobus</i> sp. <i>Goniatites</i> cf. <i>choctawensis</i> <i>Conocardium</i> sp. <i>Mooreoceras</i> cf. <i>M. vaughanianum</i> <i>Pseuometacoceras</i> sp. <i>Crurithyris</i> sp. indet. <i>Glabrocingulum</i> sp. indet.	Brachiopods, Ammonites Pelecypod Ammonite Type. Brachiopods Pelecypod Gastropod Ostracod Brachiopod Pelecypod Ammonites Pelecypod Ammonites Brachiopod Gastropod Orthoceroid cephalopod
2	Kiruktagiak River ¹	Chandler Lake 68°25'24", 152°48'45"		<i>Caneyella</i> sp. <i>Bactrites</i> sp. <i>Mooreoceras</i> cf. <i>M. crebriliratum</i>	Pelecypod Nautiloid Ammonite

Reference: Patton, W.W., and others, 1950.

¹ Collector: G. Gryc.

² Numbers assigned by investigator.

Fickett Series

Table 15

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
493		Chandler Lake surveyor farmer	Lower Carboniferous	<i>Lithostrotion</i>	Coral
495		surveyor farmer		<i>Spirifer striatus</i> <i>Productus scabriculus</i> <i>Spirifer</i> cf. <i>S. neglectus</i>	Brachiopods
513		surveyor farmer		<i>Productus scabriculus</i>	
520		surveyor farmer		<i>Productus semireticulatus</i>	
521		surveyor farmer		<i>Spirifer striatus</i> <i>Productus</i> sp.? <i>Cystodictya</i> cf. <i>C. lineata</i>	Bryozoan
522		surveyor farmer		<i>Spirifer striatus</i> <i>Fenestella</i> sp.	Brachiopod Bryozoan
525		surveyor farmer		<i>Spirifer striatus</i> <i>Spiriferina cristata</i>	Brachiopod
534		surveyor farmer		<i>Streblotrypa</i> cf. <i>S. nicklesi</i> <i>Fenestella</i> cf. <i>F. cestriensis</i> <i>Cystodictya</i> sp. <i>Pinnatopora</i> sp. <i>Rhombopora</i> sp.	Bryozoans

Table 15 continued.

497	surveyor farmer	Upper Carboniferous	<i>Syringopora</i> cf. <i>S. multattenuata</i>	
529	surveyor farmer		do	
511	surveyor farmer			Crinoidal limestone
518	surveyor farmer			Crinoidal limestone
454	surveyor farmer			Crinoidal limestone
463	surveyor farmer	?Lower Carboniferous		Crinoidal columns
464	surveyor farmer			Crinoidal columns
461	surveyor farmer			Crinoidal columns
519	surveyor farmer	Devonian? or Carboniferous	<i>Fenestella</i> sp. <i>Cystodictya</i> ? sp.	Bryozoans Crinoid columns Fossils from upper John and Anaktuvuk Rivers. Unable to plot, too vague. All localities.

Reference: Schrader, F.C., 1904.

Lisburne Group - Lower part

Table 16

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	50ABe15	Philip Smith Mts. B-4 68°27', 149°16' 11S 12E 34	Late Mississippian		Corals
11779	50ABe16				Brachiopods
PC	50ABe17				Coral
	50ABe27	Philip Smith Mts. B-5 68°27', 149°35' 12S 11E 4			Corals
	75ARr102	Philip Smith Mts. B-4 68°27', 149°22' 12S 11E 29	Early Mississippian		Brachiopods

Reference: Brosge, W.P., and others, 1979.

Lisburne Group**Wachsmuth Limestone**

Table 17

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Sec. I		Chandler Lake B-2 68°19'20", 150°55'15" farmer	Mississippian	<i>Platycrinites</i> sp. <i>Pentremites</i> sp. <i>Dichocrinus</i> sp. <i>Spirifer</i> sp.	Crinoids Brachiopod

Reference: Bowsher, A.L., and other, 1957.

Lisburne Group
Wachsmuth Limestone
Table 18

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Sec. H		Chandler Lake B-2 68° 19' 20", 150° 54' 30"	Mississippian	<i>Syringopora</i> <i>Syringothyris</i>	Bryozoan Coral Crinoids Brachiopods Trilobites

Reference: Bowsher, A.L., and other, 1957.

Wachsmuth Formation
Table 19

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3089	F2-27-8 ¹	Philip Smith Mts. B-5 68° 24' 15", 149° 43' 20" farmer	Lower Mississippian	<i>Platyceras (Orthonychia) sp.</i>	All Gastropods
3091	F1-3-6 ¹	Chandler Lake B-2 68° 18' 50", 150° 55' 25" farmer		<i>Straparollus (Euomphalus) brookensis n. sp.</i>	
3098	F1-22-6 ²	68° 17', 150° 55' 15" farmer		<i>Anematina rockymontanum</i>	
3100	F2-20-8 ¹	Philip Smith Mts. B-5 68° 23' 15", 149° 45' 50" farmer		<i>Platyceras (Orthonychia) sp.</i>	indeterminate euomphalacean
3107	F2-21-7 ³	Chandler Lake B-1 68° 25' 10", 150° 30' 15" farmer		<i>Straparollus (Euomphalus) brooksensis n. sp.</i>	
3110	F6-23-7 ³	68° 23' 30", 150° 26' 20" farmer			New genus?
3173	F2-25-8 ³	Philip Smith Mts. B-5 68° 25' 12", 149° 43' 10" farmer		<i>Platyceras (Orthonychia) sp.</i> <i>Anematina rockymontanum</i>	indeterminate pleurotomariacean
3279	F1-20-6 ⁴	Chandler Lake 68° 10' 18", 150° 46' 20" farmer		<i>Platyceras (Orthonychia) sp.</i>	indeterminate euomphalacean
14965	F3-10-6 ⁴	Chandler Lake B-2 68° 19' 20", 150° 53' 30" farmer		<i>Platyceras (Orthonychia) sp.</i>	
3113	F3-3-8 ¹	68° 18' 50", 150° 55' 35" farmer		do	
3115	F1-12-7 ¹	farmer			Same location as 3113. indeterminate bellerophonacean
13278	50ABe31	Chandler Lake 68° 18' 30", 152° 40' 30" farmer		<i>Anematina rockymontanum</i>	
13286	50ABe43	68° 17', 152° 36' 30" farmer			indeterminate euomphalacean indeterminate neritacean
14954	F4-2-6 ⁴	Chandler Lake B-2 68° 19' 21", 150° 55' farmer		<i>Straparollus (Euomphalus) sp.</i>	
11807	50ABe115	Chandler Lake 68° 16' 40", 152° 36' 50" farmer		<i>Bellerophon sp.</i> <i>Platyceras (Platyceras) sp.</i>	indeterminate euomphalacean indeterminate pleurotomariacean

Table 19 continued.

11808	50ABe44	farmer		<i>Bellerophon</i> sp. <i>Anematina rockymontanum</i> <i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	Same location as 15408.
13292	50ABe117	68°18', 152°45' farmer		<i>Platyceras (Orthonychia)</i> sp.	

Reference: Yochelson, E., and others, 1960.

¹ Bowsher and Dutro, 1949.

² Bowsher, Dutro, Gudim and Feder, 1949.

³ Bowsher, Dutro and Gudim, 1949.

⁴ Bowsher, 1950.

Lisburne Group Alapah Limestone Table 20

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Sec. J	3087	Chandler Lake B-2 68°19'40", 150°55'15" farmer	Mississippian	<i>Batostomella</i> <i>Dictyoclostus</i> <i>Sulcoretopora</i> <i>Chonetes</i>	Brachiopods

Reference: Bowsher, A.L., and other, 1957.

Lisburne Group Alapah Limestone Table 21

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11801	50ARrF43	Chandler Lake 68°21', 151°51' farmer	Late Mississippian	<i>Echinoconchus</i> sp.	Brachiopod All localities from single stratigraphic section
11800	50ARrF48			<i>"Buxtonia"</i> cf. <i>"B." muir-woodi</i> <i>Munella?</i> <i>adonis</i>	Brachiopods
11799 ¹	50ARrF49			<i>Bellerophon</i> sp. <i>Naticopsis</i> cf. <i>N. suturicompta</i>	Gastropods
11798	50ARrF53			<i>Cystodictya</i> sp. <i>"Dictyoclostus"</i> sp. <i>Echinoconchus</i> aff. <i>E. biseriatus</i> <i>Spirifer</i> n. sp. <i>Camerothoria explanata</i> <i>Bairdia cestriensis</i> <i>Glyptopleura</i> sp.	Bryozoan Brachiopods Ostracods
11796	50ARrF54			<i>Spirifer</i> sp. indet.	Brachiopod Pectenid pelecypod, indeterminate
11797	50ARrF55			<i>Lithostroton</i> aff. <i>L. asiaticum</i>	Coral
11795	50ARrF56			<i>"Zaphrentis"</i> sp. <i>"Dictyoclostus"</i> aff. <i>"D." crawfordsvillensis</i> <i>Brachythyris suborbicularis</i>	Coral Brachiopods
11793	50ARrF62			<i>"Buxtonia"</i> cf. <i>"B." viminalis</i> <i>Spirifer</i> sp. <i>Brachythyris suborbicularis</i>	Brachiopods
11792	50ARrF63			<i>Spirifer floydensis</i> <i>Spirifer</i> sp.	Brachiopods
				<i>Phillipsia</i> sp.	Pectenid pelecypod, indeterminate Trilobite
11791	50ARrF64			<i>Brachythyris</i> aff. <i>B. suborbicularis</i> <i>Torynifer</i> aff. <i>T. pseudolineata</i>	Brachiopods

Table 21 continued.

11790	50ARrF65			<i>"Zaphrentis</i> cf. <i>"Z."konincki</i> <i>Spirifer</i> cf. <i>S. subaequalis</i> <i>Spirifer</i> sp.	Coral Brachiopods
10868 ¹	49ATr399	Killik River 68°33', 153°31' farmer		<i>Leiorhynchus</i> cf. <i>L. carboniferum</i> <i>Leiorhynchus</i> sp. <i>Morefieldella</i> cf. <i>M. eurekaensis</i> <i>Chonetes</i> sp. <i>Quadratia</i> aff. <i>Q. hirsutiformis</i> <i>Ambocoelia</i> ? sp. <i>Leda</i> sp. <i>Glabrocingulum</i> ? sp. <i>Loxonema</i> ? sp.	Pelecypod Gastropods zaphrentoid coral indeterminate fragments pelecypod indeterminate cephalopod? indeterminate ostracode indeterminate

Reference: Patton, W.W. Jr., and others, 1964.

¹ See also: Yochelson, E., and other, 1960.

Upper Lisburne Group

Table 22

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
13263 PC	50ABe13	Philip Smith Mts. B-4 68°27', 149°23' 11S 12E 32	Late Mississippian		Corals
11789 PC	50ABe21	Philip Smith Mts. B-5 68°25', 149°29' 12S 11E 11			Brachiopods
14984 PC	50ABe22				Corals Same location as 11789.
13265 PC	50ABe23	Philip Smith Mts. B-5 68°25', 149°32' 12S 11E 9			do
11775 PC	50ABe24	68°27', 149°32' 12S 11E 4			do
14987 PC	50ABe100	Philip Smith Mts. B-4 68°27', 149°23' 11S 12E 32			Brachiopods
13295 PC	50ABe101				Corals Same location as 14987PC.
13268 PC	50ABe104	68°27', 149°20' 11S 12E 33			Brachiopods
14046 PC	50ABe105				do Same location as 13268PC.
	50ABe106				Gastropods Same location as 13268PC.
12354 PC	50ABe111				Pelecypods Same location as 13268PC.
12355 PC	50ABe112				Gastropods Same location as 13268PC.
14041 PC	50ARr28				Corals Same location as 13268PC.
	50ARr29				Brachiopods
14045 PC	50ARr32	Philip Smith Mts. B-5 68°25', 149°27' 12S 11E 12			Corals, brachiopods, bryozoans
	76ABe403	68°25', 149°29' 12S 11E 11			Corals, brachiopods (303) ¹

Table 22 continued.

(400)	76ABe403	Corals (400) ¹
(1300)	76ABe403	do (1300) ¹

Reference: Brosge, W.P., and others, 1979.
¹ Fossil collection from stratigraphic sequence.

Alapah Formation
Table 23

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
3087a	F1-16-6 ¹	Chandler Lake B-2 68°19'20", 150°55'30" farmer	Upper Mississippian		All Gastropods Same location as 3087. indeterminate euomphalacean
3088	F5-24-7 ¹	Chandler Lake B-1 68°22'20", 150°29'34" farmer		<i>Bellerophon</i> sp. <i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	
3164	F2-24-7 ¹	68°23'10", 150°28'45" farmer		<i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	
3170	F1-23-7 ¹	68°23'40", 150°28' farmer		do	
3171	F4-11-8 ²	Philip Smith Mts. B-5 68°20'25", 149°43'5" farmer		do	
3182	F1-26-7 ²	68°22'25", 149°43'40" farmer		<i>Anematina rockymontanum</i> <i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	
12355	50ABe112	Philip Smith Mts. B-4 68°28'30", 149°21' farmer		<i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	indeterminate euomphalacean
15408	50ABe33	Chandler Lake 68°17', 152°36'30" farmer		<i>Bellerophon</i> sp.	
3272	F3-24-8 ²	Philip Smith Mts. B-5 68°25'30", 149°42'40" farmer		<i>Anematina rockymontanum</i>	indeterminate murchisonlaccen
9187	45AGr2	Chandler Lake 68°17', 152°36' farmer		<i>Anematina rockymontanum</i> <i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	
13287	50ABe45	68°17', 152°36'30" farmer		<i>Bellerophon</i> sp.	Same location as 15408.
14992	50ABe3	68°16'30", 151°34' farmer			indet. bellerophontacean
15430	47AGr182	Mt. Michelson B-4 69°17', 145°59' farmer			indet. euomphalacean
3087	F7-11-6 ¹ F1-13-6 F3-16-6	Chandler Lake B-2 68°19'20", 150°55'30" farmer		<i>Straparollus (Euomphalus) brooksensis</i> , n. sp.	
3167 ⁵	F6-24-7 ¹	Chandler Lake B-1 68°22'15", 150°29'35" farmer		<i>Rhineoderma?</i> sp. <i>Portlockiella?</i> sp. <i>Anematina?</i> sp. <i>Anomphalus</i> sp.	indeterminate murchisoniacean indeterminate euomphalacean indeterminate pleurotomariacean indeterminate neritacean

Table 23 continued.

3169	F1-28-8 ¹	Philip Smith Mts. B-5 68°25'25", 149°43'40" farmer		indeterminate euomphalacean
3172	F3-23-8 ¹	farmer	<i>Bellerophon</i> sp.	Same location as 3171.
3186	F4-27-8 ³	Chandler Lake B-2 68°19'25", 150°55'30" farmer	<i>Straparollus (Euomphalus) brooksensis</i> , n. sp.	
3188	F5-7-8 ²	farmer		indeterminate euomphalacean Same location as 3186.
13288	50ABe46	Chandler Lake 68°17', 152°36'30" farmer	<i>Anematina rockymontanum</i>	Same location as 13286.
10862	49APa384	68°22'35", 152°54' farmer	<i>Bembexia? inumbilicata</i> n. sp.	
10868 ⁵	49ATr399	Killik River 68°33', 153°31' farmer	<i>Neilsonia?</i> sp.	
12084 ⁵	F3-12-6 ⁴	Chandler Lake 68°18', 151°21' farmer	<i>Euphemites</i> sp.	indeterminate pleurotomariacean
12779	51ABe5	68°20', 152°50'15" farmer	<i>Bembexia? inumbilicata</i> n. sp.	
14150	53APa105	68°20'30", 152°54' farmer	<i>Nodospira ornata</i> n. sp.	
14151	53ABo	farmer	<i>Bembexia? inumbilicata</i> n. sp.	indeterminate euomphalacean indeterminate bellerophontacean Same location as 14150.
9184	45AKr58	Killik River 68°34'30", 153°31' farmer	<i>Neilsonia?</i> sp. <i>Murchisonia</i> cf. <i>M.</i> sp.	
12340	50ACh41	68°35', 154°32' farmer	<i>Nodospira ornata</i> n. sp.	
12342	50AKe226	Chandler Lake 68°17', 151°53' farmer	<i>Euphemites</i> sp. <i>Bembexia? inumbilicata</i> n. sp.	
12348	46ATh8	Killik River 68°35', 154°32' farmer	<i>Nodospira ornata</i> n. sp.	Same location as 12340.
11799 ⁶	50ARr49	Chandler Lake 68°20', 151°50' farmer	<i>Bellerophon</i> sp. <i>Naticopsis (Naticopsis) suturicompta</i> n. sp.	indeterminate euomphalacean
14035	50ARr18	Philip Smith Mts. B-4 68°29', 149°13' farmer	<i>Platyceras (Platyceras)</i> sp.	
14984	50ABe22	68°26', 149°22' farmer	<i>Platyceras (Orthonychia)</i> sp.	

Reference: Yochelson, E., and others, 1960.

Note: 3000 numbers are U.S. National Museum locality numbers.

¹ Collectors: Bowsher, Dutro, Gudim, 1949.

² Collectors: Bowsher, Dutro, 1949.

³ Collectors: Bowsher, Gyre, Fischer, 1949.

⁴ Collectors: Bowsher, Gyre, 1950.

⁵ See also: Gordon, M. Jr., 1957.

⁶ See also: Patton, W.W., Jr., and others, 1964.

Lisburne Group
Alapah Limestone
Table 24

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11764	F-7/11June	Chandler Lake 68°17', 151°33' farmer	Mississippian	<i>Michelinoceras dutroi</i> n. sp. <i>Dolorthoceras medium</i> n. sp.? <i>Goniatites?</i> spp. <i>Girtyoceras?</i> spp. <i>Leiorhynchus</i> cf. <i>L. carboniferum</i> <i>Nuculana</i> sp. <i>Posidonia</i> sp.	Nautiloids Ammonites Brachiopods Coral
11804	50ARrF59	68°15', 151°50' farmer		<i>Euloxoceras</i> sp. <i>Sudeticeras alaskae</i> n. sp. <i>Eothalassoceras aurorale</i> n. sp.	Nautiloid Ammonites
3167 ^{1/2}	F-6/24July Bowsher	Chandler Lake B-1 68°22'30", 150°28'25" farmer		<i>Dolorthoceras?</i> sp.	Nautiloids
12084 ²	F-3/12June Bowsher	Chandler Lake 68°18', 151°21' farmer		<i>Adnatoceras alaskense</i> n. sp. <i>Endolobus</i> sp. <i>Bollandites bowsheri</i> <i>Girtyoceras endicottense</i> n. sp. <i>Cypricardella</i> sp.	Ammonites Pelecypod Nautiloid fragment
13110	52ABe17f	Sagavanirktak B-1 69°15', 147°15' farmer		<i>Cycloceras</i> sp. <i>Platyceras</i> sp. <i>Productus</i> indet. <i>Dictyoclostus?</i> sp. indet. <i>Echinoconchus</i> sp. <i>Spirifer</i> aff. <i>S. gregeri</i> <i>Spirifer</i> aff. <i>S. osagensis</i> <i>Spirifer</i> aff. <i>S. stratiformis</i> <i>Nuculana</i> sp. <i>Myalina</i> sp.	Nautiloid Gastropod Brachiopods Pelecypod

Reference: Gordon, M., Jr., 1957.

Significance: Ammonites correlate with zones in British Isles.

¹ U.S. National Museum locality numbers.

² See also: Yochelson, E., and other, 1960.

Lisburne Group
Alapah Limestone
Table 25

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
70A4 ¹		Mt. Michelson A-4 69°13'29", 146°12'58" farmer	Mississippian		Echinoderms Bryozoans Crinoids Sponge All fragments

Reference: Wood, G., and other, 1975.

¹ See also: Mamet, B.L., and other, 1972.

Wahoo Limestone

Table 26

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
70A5 ¹		Mt. Michelson B-4 69°15'25", 146°10'45" farmer	Pennsylvanian		Fragments of- Echinoderms Bryozoans Crinoids Pelecypods

Reference: Wood, G. and other, 1975.
¹ See also: Mamet, B.L., and other, 1972.

Lisburne Group

Table 27

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
70A4 ¹		Mt. Michelson 69°16'30", 146°30' farmer	Upper Mississippian Meramec	<i>Lithostrotrion</i> (S.) sp. D <i>Lithostrotrionella</i> aff. <i>L. banffensis</i> <i>Lithostrotrion</i> sp. R <i>Lithostrotrionella banffensis</i> <i>Lithostrotrion</i> (S.) <i>sinuosum</i> <i>Lithostrotrion</i> (S.) <i>warreni</i> <i>Lithostrotrionella maclareni</i> <i>Thysanophyllum astraeiforme</i> <i>Sciophyllum alaskaensis</i> <i>Lithostrotrionella birdi</i> <i>Diphyphyllum klawockensis</i>	Corals: Alapah Limestone
70A5 ¹		69°15', 146°10' farmer	Middle Pennsylvanian Atoka	<i>Lithostrotrionella</i> sp. <i>Corwenia</i> sp. <i>Michelina</i>	Wahoo Limestone Tubulate coral

Reference: Mamet, B.L., and other, 1972.
¹ See also: Wood, G., and other, 1975.

Unnamed Formation

Table 28

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
367		Philip Smith Mts. B-5 surveyor 11S 12E ?	Mississippian		Brachiopods, bryozoans, crinoid stems Unable to plot, too vague.
749		Philip Smith Mts. B-4 surveyor 11S 12E			Brachiopods, bryozoans, corals Unable to plot, too vague.
750		surveyor 11S 12E ?	Permian		Bivalves Unable to plot, too vague.
962		Sagavanirktok B-3 69°21'42", 148°41'26" 1S 14E 15	Cretaceous		Angiosperm leaf
963		69°17'40", 148°44'6" 2S 14E 4	Paleozoic		Pelecypods
964		Sagavanirktok 69°0'24", 148°51'47" 5S 14E 17	Tertiary or Cretaceous	<i>Gastropolites kingi</i>	Ammonites

Reference: University of Alaska Locality Catalogue.

Siksikuk Formation

Table 29

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	1982P18	Philip Smith Mts. B-5 68°16', 149°30' farmer	Permian	<i>Septospirifer</i> sp. <i>Spiriferella</i> sp. <i>Martinia</i> sp. <i>Camerisma</i> sp. <i>Straparollus</i> sp.	Brachiopods Atigun Gorge area Cannot plot exactly. Gastropod

Reference: University of Alaska Locality Catalogue.

Siksikuk Formation

Table 30

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
11785	50ABe201	Philip Smith Mts. B-4 68°29', 149°13' farmer	Permian	<i>Straparollus (Euomphalus) alaskensis</i> n. sp.	All Gastropods
11786	50ABe200	farmer		do	Same location as 11785.
11814	50AKe238	Chandler Lake 68°17', 151°53' farmer		do	
11815	50AKe240	farmer			Same location as 11814. indeterminate euomphaiacean
11816	50AKe242	farmer		<i>Straparollus (Euomphalus) alaskensis</i> , n. sp. <i>Mourlonia? reloba</i> n. sp.	Same location as 11814.
14099	50ARr23	Philip Smith Mts. B-4 68°29', 149°13' farmer		<i>Straparollus (Euomphalus) alaskensis</i> n. sp.	
14152	53APa122	Chandler Lake 68°17', 151°53' farmer		<i>Straparollus (Euomphalus) alaskensis</i> , n. sp.	
14174	49ATr449A	68°23', 152°54' farmer		<i>Trepostira (Trepostira)</i> sp. <i>Glabrocingulum (Glabrocingulum)</i> sp.	

Reference: Yochelson, E., and others, 1960.

Sadlerochit Group

Table 31

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	50ABe200	Philip Smith Mts. B-4 68°27', 149°20' 11S 12E 33	Early Permian		Brachiopods
	50ABe201				Same location as 50ABe200.
	50ABe202				do
	50ARr24				do
	50ARr25				do
	50ARr26				do
	75ADt6A	Philip Smith Mts. C-3 68°35', 148°28' 10S 16E 18			Brachiopods
	75ADt7C,E	68°34', 148°27' 10S 16E 19			
	75ADt22A	Philip Smith Mts. D-3 68°47', 148°20' 7S 16E 33			

Table 31 continued.

Loc. #	Collector/Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
75ADt96		Philip Smith Mts. B-4 68°28', 149°15' 11S 12E 26			Brachiopods
75ADt109		Philip Smith Mts. B-5 68°25', 149°50' 12S 10E 8			
75ARr22		Philip Smith Mts. C-3 68°38', 148°28' 9S 16E 30			
75ARr25		Philip Smith Mts. C-4 68°30', 149°5' 11S 13E 9			
75ARr62		Philip Smith Mts. C-3 68°36', 148°24' 10S 16E 4			
75ARr72F		68°33', 148°29' 10S 16E 30			
75ARr73		68°34', 148°29' 10S 16E 19			
75ARr146A		Philip Smith Mts. C-4 surveyor 11S 13E 7			
76ABe400F		Philip Smith Mts. B-4 68°27', 149°20' 11S 12E 33			
50ABe108		11S 12E 33			

Reference: Brosge, W.P., and others, 1979.

Sadlerochit Formation**Table 32**

Loc. #	Collector/Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
7118b	19D ¹	Mt. Michelson B-4 69°28', 145°50' farmer	Permian		All Gastropods indet. bellerophontacea indet. pleurotomariacean
15813 ²	51ADt147	Philip Smith Mts. D-3 68°49', 148°22'30" farmer		<i>Straparolius (Euomphalus) alaskensis</i> n. sp.	
15817 ²	51AKe162	Philip Smith Mts. C-3 68°40'10", 148°27'45" farmer			indet. pleurotomariacean
15826 ²	52AMo5	Sagavanirktok B-1 69°20'30", 147°2' farmer		<i>Spiroscapha</i> cf. <i>S.</i> sp.	
15829	52AMo37	Mt. Michelson B-4 69°28', 145°49' farmer		<i>Amphiscapha (Cyllicioscapha) grada</i> n. sp.	

Reference: Yochelson, E., and others, 1960.

¹ Leffingwell, 1908.² See also: Keller, A.S., and others, 1961.

Sadlerochit Group
Echooka Formation
Joe Creek Member
Table 33

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26800PC 26804PC		Sagavanirktok A-2 69°7', 147°38'-46' 4S 18E 10-12	Lower Permian - Lower Triassic	<i>Yakovlevia</i> sp. <i>Waagenoconcha</i> sp. <i>Linoproductus</i> sp. <i>Cancrinella</i> sp. <i>Thamnosia</i> sp. <i>Timaniella</i> sp. <i>Spiriferella</i> sp. <i>Attenuatella</i> sp.	Brachiopods Unable to plot, too vague.

Reference: Dettnerman, R.L., and other, 1977.

Sadlerochit Formation
Echooka Member
Table 34

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15815 PC ¹	51AKe106	Sagavanirktok A-2 69°, 148°12' farmer	Permian	? <i>Verbeekiella</i> sp.	Coral

Reference: Rowett, C.L., 1975.

¹ See also: Keller, A.S., and others, 1961.

Sadlerochit Formation
Echooka Member
Table 35

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
15815 ²	51AKe106	Sagavanirktok A-2 69°, 148°02' farmer	Permian	? <i>Verbeekiella</i> sp.	Coral Brachiopod fragments
15806	51ADt8	Sagavanirktok B-1 69°22', 147°11' farmer	Permian	<i>Productus septentrionalis</i> ? <i>Productus multistriatus</i> <i>P. mammatus</i>	Brachiopods
15807	51ADt69	69°17'30", 147°22' farmer		<i>Fenestella?</i> sp. indet.	Corals, brachiopods Bryozoans
15818	52AKe1A	69°22'30", 147°14' farmer		<i>Productus</i> aff. <i>septentrionalis</i>	Brachiopods - productids Crinoid columnals
15826 ¹	52AMo5	69°22'30", 147°15' farmer		<i>Productus</i> aff. <i>septentrionalis</i>	Brachiopods Pelecypods Gastropod
15816	51AKe123	Phillip Smith Mts. D-2 68°51', 148°4' farmer			Brachiopod
15811	51ADt126	68°57', 148°7'30" farmer		<i>Pseudogastrioceras</i> sp.	Ammonite Brachiopods Bryozoans
15817 ¹	51AKe162	Phillip Smith Mts. C-3 68°40'30", 148°20' farmer			Brachiopods Pelecypods Gastropods All collection fragmentary

Table 35 continued.

15812	51ADt146	Philip Smith Mts. D-3 68°48'30", 148°17' farmer		Gastropods Cephalopod All collection fragmentary
15813 ¹	51ADt147	68°50', 148°17' farmer		Brachiopods indeterminate Gastropod
15819	52AKe8	Mt. Michelson B-5 69°21', 146°40'35" farmer		Brachiopods, All indeterminate. Pelecypods.
15820	52AKe9	farmer	<i>Chonetes</i> <i>Productus</i> <i>?Stenopora</i>	Brachiopod (2 species) and frags. brachiopods Bryozoan Same location as 15819.
15827	52AMo6	69°22', 146°58' farmer	<i>?Productus aagardi</i> <i>?Rhynchopora</i>	Brachiopods Pelecypods
15828	52AMo30	69°22', 146°38' farmer	<i>?Spiriferella arctica</i> <i>?Rhynchopora</i> <i>?Myalinas</i>	Brachiopods Pelecypod
15821	52AKe19	Mt. Michelson 69°20'30", 146°26' farmer		Trilobite, pygidium indeterminate Brachiopod
15823	52AKe21	farmer	<i>?Productus</i>	Brachiopod Same location as 15821.

Reference: Keller, A.S., and others, 1961.

Significance: Fauna fragmentary, and indeterminate.

¹ See also: Yochelson, E., and others, 1960.² See also: Rowett, C.L., 1975.

Sadlerochit Group
Echooka Formation
Ikiakpaurak Member
Table 36

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24381		Mt. Michelson B-5 69°18'30", 146°34'30" farmer	Upper Permian Late Guadalupian	<i>Neophricodothyris asiatica</i> <i>Stenosisma?</i> sp. <i>Liosotella ? pseudohorrida</i>	Brachiopods Bryozoans, echinoderm fragments.
24382		farmer		<i>Chonetes</i> cf. <i>C. superba</i> <i>Attenuatella</i> sp. <i>Spiriferella saranae</i> <i>Rhynchopora</i> sp.	Brachiopods Same location as 24381. 100 ft. above base
24383		farmer		<i>Megousia</i> <i>Stenosisma</i> cf. <i>S. kochi</i> <i>Pterospirifer alatus</i> <i>Rhynchopora</i> sp.	do 150 ft. above base
24384		farmer		<i>Neophricodothyris</i> sp. <i>Neospirifer</i> sp.	Horn corals, bryozoans. Brachiopods 175 ft. above base Gastropods

Reference: Detterman, R.L., and others, 1975.

Sadlerochit Group
Echooka Formation
Ikiakpaurak Member
Table 37

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26805PC		Sagavanirktok A-2 surveyor 4S 18E 10-12	Late Permian Kazanian	<i>Kuvelousia</i> <i>Stenosocisma</i> <i>Punctospirifer</i> <i>Spiriferella</i> <i>Zoophycos</i>	Brachiopods Trace fossil Unable to plot, too vague.

Reference: Detterman, R.L., and other, 1977.

Sadlerochit Group
Ivishak Formation
Kavik Member
Table 38

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M6049 23595 ¹		Sagavanirktok A-2 surveyor 4S 18E 10-12	Early Triassic Griesbachian	<i>Otoceras</i> sp. <i>Ophiceras</i> sp.	Ammonites Unable to plot, too vague.

Reference: Detterman, R.L., and other, 1977.

¹ See also: Keller, A.S., and others, 1961.

Ivishak Formation
Kavik Member
Table 39

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M6060		Mt. Michelson B-4 69°17'45", 146°22' farmer	Early Triassic Late Griesbachian	<i>Ophiceras commune</i> <i>Ophiceras</i> cf. <i>O. greenlandicum</i> <i>Proptychites</i> cf. <i>P. rosenkrantzi</i> <i>Otoceras boreale</i> <i>Claraia stachei</i>	Ammonites

Reference: Detterman, R.L., and others, 1975.

Sadlerochit Formation
Ivishak Member
Table 40

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	51AKe87	Sagavanirktok A-2 69°8'30", 147°48" farmer	Early Triassic	<i>Ophiceras</i> cf. <i>O. commune</i> <i>?Discophiceras</i> sp. indet.	Ammonites Ammonoids indeterminate Preservation poor.
	51ADt106	69°9', 147°41' farmer		<i>Ophiceras</i> cf. <i>O. tibeticum</i>	Ammonite
23595 ¹	51ADt108	69°9'30", 147°43'30" farmer		<i>Otoceras boreale</i>	Ammonite
	52AKe22	Mt. Michelson 69°17'42", 146°21'27" farmer			Ammonoids indeterminate

Table 40 continued.

52AKe23	farmer		Octoceratan or Early Gyronitan	<i>Ophiceras</i> cf. <i>O. greenlandicum</i> <i>Proptychites</i> cf. <i>P. rosenkrantzei</i> <i>Claraia stachei</i>	Ammonites Same location as 52AKe22.
51ADt91	69°16'30", 147°34' farmer			? <i>Glyptophiceras</i> sp. indet.	Ammonite
52AMo31	69°17'49", 146°35' farmer			?(<i>Proptychites</i>) <i>Gervillea</i> sp.	Ammonoids poorly preserved Brachiopod
52AKe7	Mt. Michelson B-5 69°22'20", 146°43'30" farmer			(<i>Proptychites</i> ?)	Ammonoids indeterminate

Reference: Keller, A.S., and others, 1961.

¹ See also: Detterman, R.L., and other, 1977.

Sadlerochit Formation

Table 41

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
14	7122	Mt. Michelson 69°27', 146°3' farmer	Pennsylvanian	<i>Streptorhynchus</i> ? sp. <i>Spirifer</i> aff. <i>S. rectangulus</i>	Brachiopods

Reference: Leffingwell, E.K., 1919.

Shublik Formation

Table 42

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
17		Mt. Michelson surveyor farmer	Triassic	<i>Rhynchonella</i> sp. <i>Terebratula</i> (2) sp. <i>Spiriferina</i> sp. <i>Pecten</i> sp. <i>Lima</i> ? sp. <i>Avicula</i> sp. <i>Gervillea</i> sp. <i>Nucula</i> ? sp. <i>Megalodon</i> ? sp. <i>Pleurotomaria</i> sp.	Brachiopods Pelecypods Large form; several specimens.
18		surveyor farmer		<i>Rhynchonella</i> sp. <i>Halobia</i> sp. cf. <i>H. superba</i> <i>Megalodon</i> ? sp. <i>Pleurotomaria</i> ? sp.	Brachiopod Pelecypods Gastropod
21		surveyor farmer		<i>Terebratula</i> sp. <i>Spiriferina</i> sp. <i>Halobia</i> sp. cf. <i>H. superba</i> <i>Pseudomonotis</i> sp.	Brachiopods Pelecypods
22A		surveyor farmer		<i>Rhynchonella</i> sp. <i>Spiriferina</i> ? sp. <i>Aviculipecten</i> sp.	Brachiopods Pelecypod
22C		surveyor farmer		<i>Rhynchonella</i> sp. <i>Halobia</i> sp. cf. <i>H. superba</i>	Brachiopod Pelecypod
22C		surveyor farmer		<i>Rhynchonella</i> sp. <i>Rhynchonella</i> ? sp. <i>Gryphaea</i> ? sp. <i>Pseudomonotis subcircularis</i> ?	Brachiopods Pelecypods From talus block. Unable to plot, too vague. All localities.

Reference: Leffingwell, E.K., 1919.

Shublik Formation

Table 43

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22747 ¹	51ADt144	Philip Smith Mts. D-3 68°52', 148°15' 7S 16E 2	Middle to Late Triassic		Ammonites
	75ADt98	Philip Smith Mts. B-4 68°28', 148°20' 11S 12E 28	Early Triassic		Pelecypods
	75ARr66	68°29', 149°15' 11S 12E 23			
	75ARr157A,B	68°29', 149°12' 11S 12E 24			
	75ARr158C	68°29', 149°18' 11S 12E 22	Late Triassic		
	75ARr199E	68°29', 149°12' 11S 12E 24	Early Triassic		
M6724	75ADu4	Philip Smith Mts. B-5 68°28', 149°40' 11S 10E 25	?		Bivalve

Reference: Brosge, W.P., and others, 1979.

¹ See also: Keller, A.S., and others, 1961; Imlay, R.W., 1955.

Shublik Formation

Table 44

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
23586	51AKe12	Sagavanirktok B-1 69°23'15", 147°7'30" farmer	Late Triassic Karnian	<i>Germanonutilus brooksi</i> <i>Monotis</i> sp.	Ammonite Pelecypod
23591	51ADt80	69°16', 147°34' farmer		<i>Halobia</i> cf. <i>H. dilatata</i>	Pelecypods
23592	51ADt83	69°16'20", 147°33' farmer		<i>Pecten</i> n. sp. <i>Lima</i> ? n. sp.	
23593	51ADt84	69°16'10", 147°34'30" farmer		<i>Halobia cordillerana</i> <i>Posidonia</i> cf. <i>P. jacksoni</i> <i>Trachyceras (Protrachyceras?)</i> sp. <i>Clionites?</i> sp. <i>Tropites stantoni</i> <i>Sirenites</i> cf. <i>S. hayesi</i> <i>Halobia</i> cf. <i>H. superba</i>	Ammonites Pelecypod Ammonite indeterminate juv.
23594	51ADt88	69°16', 147°35' farmer		<i>Pecten</i> cf. <i>P. deformis</i> <i>Monotis subcircularis</i> <i>Myophoria?</i> sp.	Pelecypods
23587	51AKe55	Sagavanirktok A-2 69°11'50", 147°43' farmer		<i>Spiriferina</i> cf. <i>S. yukonensis</i> "Rhynchonella" sp. <i>Monotis subcircularis</i>	Brachiopods Pelecypod Gastropod indeterminate
23588	51AKe79	69°9'50", 147°46'30" farmer		<i>Spiriferina yukonensis</i> <i>Lima?</i> sp.	Brachiopod Pelecypods
23596	51ADt124	69°, 148°4'34" farmer		<i>Spiriferina</i> cf. <i>S. yukonensis</i> "Rhynchonella" sp.	Brachiopods
23589	51AKe111	Sagavanirktok 69°1', 148°48'30" farmer		<i>Halobia</i> cf. <i>H. cordillerana</i> <i>Cardiomorpha?</i> sp. <i>Margarites?</i> sp. <i>Hoplotropites</i> cf. <i>H. moffiti</i>	Gastropod Ammonite

Table 44 continued.

23590	51AKe126	Philip Smith Mts. D-2 68°53', 148°8'30" farmer	<i>Spiriferina</i> cf. <i>S. yukonensis</i> <i>Halobia</i> cf. <i>H. cordillerana</i> <i>Trachyceras?</i> sp. <i>Tropites stantoni</i> <i>Halobia</i> sp. indet. <i>Juvavites?</i> sp. <i>Sirenites</i> sp. indet.	Brachiopod Pelecypod Ammonites Pelecypod Ammonites
23597	51ADt148	68°56', 148°10' farmer	<i>Halobia</i> sp.	Pelecypods
24042	52AKe24	Mt. Michelson 69°22', 146°25' farmer	<i>Halobia</i> sp. indet.	
24043	52AKe25	farmer	<i>Pecten</i> sp. indet. <i>Avicula</i> sp. indet.	Echinoid spines Same location as 24042.
24044	52AKe26	farmer	<i>Spiriferina</i> cf. <i>S. yukonensis</i> <i>Ostrea (Liostrea)</i> cf. <i>O. (L.) keilhau</i> <i>Rhynchonella</i> sp.	Brachiopod Pelecypod Brachiopod Gastropods indet. Same location as 24042.
24045	52AKe27	farmer	<i>Halobia cordillerana</i>	Pelecypod Same location as 24042.
24046	52AKe28	farmer	<i>Spiriferina</i> cf. <i>S. yukonensis</i> <i>Hoplotropites</i> cf. <i>H. moffiti</i>	Brachiopod Ammonite Same location as 24042.
24047	52AKe29	farmer	<i>Ostrea (Liostrea)</i> cf. <i>O. (L.) keilhau</i> <i>Monotis subcircularis</i>	Pelecypods Same location as 24042.
24048	52AKe30	Sagavanirktok 69°16'20", 147°33' farmer	<i>Rhynchonella</i> sp. indet. <i>Lima</i> cf. <i>L. martini</i>	Brachiopod Pelecypod
24072	52AMo33	Mt. Michelson 69°23', 146°25' farmer	<i>Halobia</i> sp. indet. <i>Lima</i> cf. <i>L. martini</i> <i>Pecten (Entolium)</i> cf. <i>P. yukonensis</i> <i>Rhynchonella</i> sp. indet.	Brachiopod Gastropods indet.
24073	52AMo34	farmer	? <i>Arca</i> cf. <i>A. inflata</i>	Pelecypods Same location as 24042.
24074	52AMo35	69°22'30", 146°25' farmer	<i>Pecten (Entolium)</i> cf. <i>P. yukonensis</i> <i>Spiriferina</i> cf. <i>S. yukonensis</i> <i>Rhynchonella</i> sp. indet.	Brachiopods
24071	52AMo32	Mt. Michelson B-5 69°22'50", 146°37' farmer	<i>Spiriferina</i> cf. <i>S. yukonensis</i> <i>Rhynchonella</i> " sp. indet. <i>Pecten</i> cf. <i>P. yukonensis</i> <i>Lima</i> cf. <i>L. martini</i>	Pelecypods

Reference: Keller, A.S., and others, 1961.

Significance: Similar species found in central and southern Alaska. The brachiopods and pelecypods similar to those found from Bear Island. Lagoonal deposits.

Shublik Formation**Table 45**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
50APa242	Chandler Lake B-2 68°23', 150°47' farmer	Late Triassic Norian	<i>Entomonotis subcircularis</i> <i>Monotis alaskana</i>	Pelecypods Brachiopods	
50APa246	farmer		<i>Aulacoceras?</i>	Belemnite Same location as 50APa242.	
50APa247	farmer		<i>Halobia</i> sp. <i>Trachyceras</i> sp.	Pelecypod Ammonite Same location as 50APa242.	

Table 45 continued.

	50APa277	Chandler Lake 68° 17', 151° 48' farmer	<i>Entomonotis subcircularis</i>	Pelecypods Belemnites indeterminate Brachiopods
	53APa113	farmer	<i>Posidonia</i> sp.	Same location as 50APa277.
	53APa114	farmer		Coelacanthine fish Caudal body section Same location as 50APa277.
	53APa115	farmer	<i>Posidonia</i> sp. juv.	Pelecypod Same location as 50APa277.
	53APa116	farmer	<i>Posidonia</i> sp.	Same location as 50APa277.
	53APa118	farmer	<i>Boreosomus</i> cf. <i>B. arcticus</i>	Paleoniscoid fish partial skeleton Same location as 50APa277.
	53APa119	farmer	? <i>Rhynchonella</i> sp.	Brachiopod
	53APa120	farmer	<i>Posidonia</i> sp.	Pelecypods
	53APa121	farmer	<i>Posidonia</i> sp. juv.	
	50APa333	68° 29', 152° 18' farmer	<i>Arcæstes</i> sp. <i>Trachyceras</i> sp.	Ammonites
21835	49APa275	68° 33' 30", 152° 58' farmer	<i>Entomonotis subcircularis</i> <i>Halobia</i> aff. <i>H. alaskana</i> <i>Halobia</i> cf. <i>H. gigantea</i>	Pelecypods
	50APa43	Chandler Lake C-1 68° 32' 30", 150° 7' farmer	<i>Arcæstes</i> sp. <i>Halobia</i> sp. <i>Dictyoconites</i> <i>Rhacophyllites?</i> sp. <i>Polycyclus?</i> sp.	Ammonite Pelecypod Belemnite Ammonite
	50APa98	Chandler Lake B-1 68° 23' 30", 150° 18' farmer	<i>Entomonotis subcircularis</i> <i>Posidonia</i> cf. <i>P. blatchleyi</i>	Brachiopods indeterminate Pelecypods
				Ammonites indeterminate Fish remains?
21834	49ATr397	Killik River 68° 32' 30", 153° 31' farmer	<i>Halobia</i> sp. indet. <i>Monotis</i> sp. <i>Monotis</i> cf. <i>alaskana</i> <i>Placunopsis</i> sp. <i>Entomonotis subcircularis</i>	Pelecypods

Reference: Patton, W.W., Jr., and other, 1964.

Unnamed Formation**Table 46**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	24AMt62	Chandler Lake surveyor farmer	Upper Triassic	<i>Michelina</i> sp.	Coral Unable to plot, too vague.

Reference: Smith, P.S., and other, 1930.

Otuk Formation**Table 47**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2150		Chandler Lake 68° 21' 12", 151° 52' 24" 12S 1E 34	Middle Triassic		Pelecypods

Table 47 continued.

Loc. #	Collector/Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
2152			Upper Triassic		Pelecypods Same location as 2150.
2158					Pelecypods do
2159					Pelecypods do
2160		68° 18'36", 151° 49' 13S 1E 14	Lower Triassic		Pelecypods
2162-4		Chandler Lake B-2 68° 23'42", 150° 52'30" 12S 5W 23	Upper Triassic		Pelecypods
2165-8		68° 21'42", 150° 47'30" 12S 6E 31			Pelecypods
2169-75		Chandler Lake B-1 68° 24', 150° 19'10" 12S 8E 17	Lower Triassic		Pelecypods, brachiopods
2176		68° 24', 150° 18.9' 12S 8E 20	Upper Triassic		Pelecypods
2178		Philip Smith Mts. B-4 68° 24'24", 149° 14'54" 12S 12E 14			Pelecypods, microfossils
2181		Killik River 68° 32', 154° 43' 11S 12W 4			Pelecypods

Reference: University of Alaska Locality Catalogue.

Kingak Shale Table 48

Loc. #	Collector/Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Mt. Michelson 69° 30', 146° 20' farmer	?	<i>Pentacrinus subangularis</i> var. <i>alaska</i>	Crinoid

Reference: Springer, F., 1926.

Kingak Shale Table 49

Loc. #	Collector/Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M6695	75AD124	Philip Smith Mts. D-3 68° 48', 148° 22' 7S 16E 29	Late Jurassic		Pelecypods Ammonites

Reference: Brosge, W.P., and others, 1979.

Kingak Shale Table 50

Loc. #	Collector/Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29883		Mt. Michelson B-4 69° 16'20", 146° 22' farmer	Jurassic Sinemurian to Early Bajocian	<i>Otapiria tailleuri</i>	Pelecypod Crinoids: good specimens

Table 50 continued.

30266 ¹	Mt. Michelson B-4 69°24', 146°10' farmer	Early-Middle Bajocian	<i>Arkelloceras</i> cf. <i>A. mclearni</i> <i>Inoceramus</i> sp.	Ammonite Pelecypod
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Reference: Dettnerman, R.L., and others, 1975.

¹ See also: Imlay, R.W., 1976

Kingak Shale

Table 51

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29157& 22595 ¹		Mt. Michelson B-4 69°24', 146°10' farmer	Jurassic Bajocian	<i>Pseudolioceras whiteavesi</i> <i>P. maclintocki</i>	Ammonites
21023 ¹		farmer		<i>Pseudolioceras whiteavesi</i>	Same location as 29157.
29138- 29142		farmer		<i>Arkelloceras</i> sp.	Same location as 29157.
21024 ¹		69°27', 146°13'30" farmer		do	
22597 ¹		farmer		do	Same location as 21024.
24033 ^{1/6}		farmer		do	do
21023 ¹		69°25', 146°8' farmer	Bathonian	<i>Arcticoceras</i> sp.	
22596 ¹		69°23'30", 146°7'30" farmer		do	
29146 ⁵		69°24', 146°10' farmer		<i>Arctocephalites</i> sp.	
29134- 29136		farmer		<i>Amoeboceras (Prionodoceras)</i> sp. <i>Buchia concentrica</i>	Ammonite Pelecypod Same location as 29146.
22745 ^{2/5}		Sagavanirktok A-2 69°, 148°4'30" farmer	Callovian	<i>Pseudodococeras grewingki</i> or <i>Arcticoceras</i> immature	Ammonite
22750 ²		Philip Smith Mts. D-3 68°49'30", 148°17'30" to 68°51', 148°22'30" farmer	Late Kimmeridgian to Middle Tithonian	<i>Buchia rugosa</i> <i>Buchia concentrica</i>	Pelecypods
22751 ²		farmer		<i>Buchia rugosa</i> <i>Buchia concentrica</i>	
22766 ²		farmer		<i>Buchia rugosa</i> <i>Buchia concentrica</i>	
22768 ²		farmer		<i>Buchia rugosa</i> <i>Buchia concentrica</i>	Same location as 22766.
22769 ²		farmer		<i>Buchia rugosa</i> <i>Buchia concentrica</i>	Same location as 22766.
22746 ²		Philip Smith Mts. D-2 68°52', 148°8' farmer		<i>Buchia rugosa</i>	
21027 ³		Mt. Michelson B-5 69°22', 146°32' farmer		<i>Buchia rugosa</i> <i>Buchia mosquensis</i>	
24028 ⁶		68°24'45", 146°37'30" farmer		<i>Buchia rugosa</i> <i>Buchia concentrica</i>	
21026 ⁴		69°22', 146°32' farmer		<i>Buchia concentrica</i>	

Table 51 continued.

22759² Sagavanirktok A-2
69° 13', 147° 40'
farmer *Buchia concentrica*

Reference: Imlay, R.W., and other, 1973.

¹ See also: Imlay, R.W., 1955, 1976.

² See also: Imlay, R.W., 1955; Keller, A.S., and others, 1961.

³ See also: Imlay, R.W., 1955, 1981a.

⁴ See also: Imlay, R.W., 1955.

⁵ See also: Imlay, R.W., 1976.

⁶ See also: Keller, A.S., and others 1961.

Kingak Shale

Table 52

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22759	^{3/4} 51AKe48	Sagavanirktok A-2 69° 13', 147° 40' farmer	Upper Jurassic Upper Oxfordian- Lower Kimmeridgian	<i>Aucella concentrica</i>	Pelecypod
22739	51ADt122	Sagavanirktok B-1 69° 23', 147° 13' farmer		<i>Tancredia</i> sp.	
24011 ⁴	52AMo4	Mt. Michelson B-5 69° 23', 146° 59' farmer	Lower Jurassic	<i>Pentacrinus subangularis</i> var. <i>alaska</i>	Crinoid
21026	¹ 47AGr32	69° 22', 146° 32'. farmer	Upper Jurassic Upper Oxfordian or Lower Kimmeridgian	<i>Aucella concentrica</i> <i>Aucella spitiensis</i>	Pelecypods
21027	² 47AGr8	farmer		<i>Aucella rugosa</i> <i>Phylloceras (Macrophyloceras)</i> sp.	Ammonite Same location as 21026.
24012 ⁴	52AMo36	Mt. Michelson B-4 69° 19', 146° 18' farmer	Lower Jurassic	<i>Pentacrinus subangularis</i> var. <i>alaska</i> <i>Plicatula</i> spp.	Crinoid Pelecypod
21024	¹ 47AGr205	surveyor farmer	Upper Jurassic Callovian	<i>Reineckeia (Reineckeites)</i> cf. <i>R. stuebeli</i>	Ammonite
22596	¹ 50AGr18	69° 23' 30", 146° 7' 30" farmer	Lower Callovian	<i>Arcticoceras</i> sp.	
22597	¹ 50AGr24	farmer	Middle Callovian	<i>Inoceramus</i> spp. <i>Reineckeia (Reineckeites)</i> cf. <i>R. stuebeli</i>	Pelecypod Ammonite Same location as 22596.
24033 ^{1/4}	52AKe37	69° 25', 146° 8' farmer	Callovian	<i>Inoceramus</i> spp. <i>Reineckeia (Reineckeites)</i> cf. <i>R. stuebeli</i>	Pelecypod Ammonite
21023 ³	47AGr202	farmer	Middle Jurassic Bajocian	<i>Inoceramus lucifer</i> <i>Pseudolioceras</i> sp. indet.	Same location as 24033.
22595 ³	50AGr9	farmer		<i>Inoceramus</i> spp. <i>Pseudolioceras</i> sp. indet.	Same location as 24033.

Reference: Imlay, R.W., 1955.

¹ See also: Imlay, R.W., and other, 1973; Imlay, R.W., 1976.

² See also: Imlay, R.W., and other, 1973; Imlay, R.W., 1981a.

³ See also: Imlay, R.W., and other, 1973.

⁴ See also: Keller, A.S., and others, 1961.

Unnamed Formation
Table 53

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M2318	64APa224	Chandler Lake 68°21.24', 151°52.35' 13S 1E 10	Early Jurassic Toarcian or Early Middle Jurassic Bajocian	<i>Otapiria tailleuri</i> <i>Inoceramus lucifer</i>	Pelecypods
29281 ¹	65ATr123B			<i>Otapiria tailleuri</i>	Associated with indeterminate ammonites Same location as M2318.
29282 ¹	65ATr149.4	68°18.32', 151°48.3 farmer		<i>Otapiria tailleuri</i>	
M2317	64APa206	Chandler Lake B-2 68°23.25', 150°52.5' farmer		do	
29287	65ATr153.2	farmer			Same location as M2317.
29284	65ATr152.22	68°23.5', 150°52.1' farmer		do	
29285	65ATr159.2	Phillip Smith Mts. B-4 68°29', 149°14' farmer		do	

Reference: Imlay, R.W., 1967.

¹ See also: Imlay, R.W., 1981.

Unnamed Formation
Table 54

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
29281 ¹	65ATr123B	Chandler Lake 68°21'15", 151°52'30" farmer	Early Jurassic Early Pliensbachian or Late Sinemurian	<i>Uptonia?</i> sp.	Ammonite
29282 ¹	65ATr149.4	68°18'15", 151°48' farmer		do	

Reference: Imlay, R.W., 1981.

¹ See also: Imlay, R.W., 1967.

Unnamed Formation
Table 55

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21023 ² part	47AGr202	Mt. Michelson B-4 69°23', 146°6' farmer	Middle Jurassic Early Bajocian and Bathonian	<i>Pseudolioceras maclintocki</i> <i>P. whiteavesi</i>	All Ammonites
22595 ²	50AGr9	farmer	Early Bajocian	<i>Pseudolioceras maclintocki</i>	Same location as 21023.
21024 ²	47AGr205	69°21'50", 146°1'	Middle Bajocian	<i>Arkelloceras</i> cf. <i>A. maclearni</i>	
22597 ²	50AGr24	farmer	Middle Bajocian	<i>Arkelloceras</i> cf. <i>A. maclearni</i>	Same location as 21024.
24033 ^{3/5}	52AKe37	farmer		<i>Arkelloceras</i> cf. <i>A. maclearni</i>	Same location as 21024.
29138 ²	AG861 ¹	69°24', 146°10'		<i>Arkelloceras</i> cf. <i>A. maclearni</i>	
29139 ²	AG868 ¹	farmer		<i>Arkelloceras</i> cf. <i>A. maclearni</i>	
29141 ²	AG873 ¹	farmer		<i>Arkelloceras</i> cf. <i>A. maclearni</i>	Same location as 29138.
29142 ²	AG893 ¹	farmer		<i>Arkelloceras</i> cf. <i>A. maclearni</i>	Same location as 29138.
29157 ²	AG857 ¹	farmer	Early Bajocian	<i>Pseudolioceras maclintocki</i>	Same location as 29138.

Table 55 continued.

30266 ³	72ADt377	farmer	Middle Bajocian	<i>Arkelloceras</i> cf. <i>A. maclearni</i>	Same location as 29138.
21023 ²	47AGr202	69°23', 146°6' farmer	Early Bathonian and Bathonian	<i>Arcticoceras ishmae</i>	
22596 ²	50AGr18	69°22'10", 146°2' farmer	Bathonian	<i>Arcticoceras ishmae</i>	
29146 ⁴	AG875 ¹	69°24', 146°10' farmer		<i>Arctocephalites</i> cf. <i>A. elegans</i> <i>A. cf. A. arcticus</i>	
22745 ^{2/5}	51ADt134	Sagavanirktok A-2 69°, 148°4'39" farmer		<i>Arcticoceras</i> sp.juv.	

Reference: Imlay, R.W., 1976.

¹ Collector: British Petroleum.

² See also: Imlay, R.W., and other, 1973; Imlay, R.W., 1955.

³ See also: Detterman, R.L., and others, 1975.

⁴ See also: Imlay, R.W., and other, 1973.

⁵ See also: Keller, A.S., and others, 1961.

Kingak Shale

Table 56

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21027 ¹		Mt. Michelson B-5 69°23'33", 146°30' 1N 23E 33	Late Jurassic Middle Oxfordian - Late Kimmeridgian	<i>Phylloceras</i> sp.	Ammonite
29135 ²		Mt. Michelson 69°23'36", 146°11' farmer		<i>Buchia concentrica</i> <i>Amoeboceras (Prionodoceras?) prorsum</i>	Pelecypod Ammonite
29136		farmer		<i>Buchia concentrica</i> <i>Amoeboceras?</i> sp. B	Same location as 29135.

Reference: Imlay, R.W., 1981a.

Significance: *Phylloceras* common to Tethyan and Pacific realms. *Amoeboceras* spread south from Arctic Ocean.

¹ See also: Imlay, R.W., and others, 1973; Imlay, R.W., 1955.

² See also: Leffingwell, E.K., 1919.

Unnamed Formation

Table 57

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	75AS221	Philip Smith Mts. B-4 68°29', 149°15' 11S 12E 23	Jurassic		Pelecypods
M6729	75ABe105N	Philip Smith Mts. D-3 68°51', 148°20" 7S 16E 9	Late Jurassic		do
M6730	75ABe105S		Early Cretaceous		do Same location as M6729.

Reference: Brosge, W.P., and others, 1979.

Kingak Formation

Table 58

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Fortress Creek	Killik River 68°30', 153°15' farmer	Jurassic	<i>Inoceramus</i> sp. <i>Pseudolioceras</i> sp.	Pelecypod Ammonite Pelecypod fragments

Reference: Patton, W.W., and others, 1950.

Kingak Shale Formation

Table 59

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22739	51ADt22	Sagavanirktok B-1 69°23'40", 147°14' farmer	Jurassic	<i>Tancredia</i> sp.	Pelecypod
22745 ¹	51ADt134	Sagavanirktok A-2 69°, 148°4'30" farmer	Upper Jurassic Callovia	<i>Pseudocadoceras gerwingki</i>	Ammonite
22747 ³	51ADt144	Philip Smith Mts. D-3 68°, 148°12' farmer	Lower Jurassic	<i>Amaltheus (Pseudoamaltheus)</i> sp. <i>Lytoceras</i> cf. <i>L. fimbriatum</i>	
22748 ²	51ADt145	farmer	Jurassic		Brachiopod Same location as 22747.
22759 ^{2/5}	51AKe48	Sagavanirktok A-2 69°14'30", 147°42'30" farmer	Upper Jurassic Oxfordian	<i>Aucella concentrica</i>	Pelecypod
22760	51AKe54	Sagavanirktok B-2 69°15'30", 147°40' farmer	Jurassic	<i>Inoceramus</i> sp.	
22763	51AKe98	Sagavanirktok A-2 69°3', 147°57' farmer			Ammonite fragments
22764 ²	51AKe113	Philip Smith Mts. D-2 69°, 148°4'30" farmer		<i>Inoceramus</i> sp.	Rhynchonellid brachiopods Pelecypod
24011 ²	52AMo4	Mt. Michelson B-5 69°23'30", 147°3' farmer	Lower Jurassic	<i>Pentacrinus subangularis</i> var. <i>alaska</i>	Crinoid
24012 ²	51AMo36	Mt Michelson B-4 69°22'15", 146°25' farmer		<i>Pentacrinus subangularis</i> var. <i>alaska</i> <i>Plicatula</i> sp. <i>Oxytoma?</i> sp.	Pelecypod
24028 ⁵	52AKe14	Mt Michelson B-5 69°24'45", 146°38' farmer	Jurassic	<i>Aucella rugosa</i> <i>A. concentrica</i>	
24029	52AKe15	69°25'10", 146°37'30" farmer		<i>Aucella</i> sp.	
24033 ¹	52AKe37	Mt. Michelson B-4 69°27', 146°13'30" farmer	Upper Jurassic Callovia	<i>Reineckeia</i> cf. <i>R. stuebeli</i> <i>Inoceramus</i> sp.	Ammonite Pelecypod

Reference: Keller, A.S., and others, 1961.

¹ Imlay, R.W., and other, 1973; Imlay, R.W., 1955; Imlay, R.W., 1976.

² Imlay, R.W., 1955

³ Imlay, R.W., 1955; Brosge, W.P., and others, 1979.

⁴ Imlay, R.W., 1955; Imlay, R.W., 1976.

⁵ Imlay, R.W., and other, 1973.

Ignek Formation

Table 60

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
100 ¹		Mt. Michelson B-4 69°23'35", 146°8'30" farmer	Jurassic	<i>Astarte</i> sp. <i>Cyprina?</i> sp. <i>Homomya</i> sp. <i>Dentalium?</i> <i>Pleurotomaria?</i> sp. <i>Natica</i> sp. <i>Belemnites?</i> sp.	Mollusks Same location as 29135, 29136. Belemnite

Reference: Leffingwell, E.K., 1919.

¹ See also: Imlay, R.W., 1981a.

Tiglukpuk Formation

Table 61

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26390		Killik River 68°32'30", 153°30'30" farmer	Jurassic Middle to Late Tithonian	cf. <i>Buchia fischeriana</i>	Pelecypods
M2531		Sagavanirtok B-1 68°27', 147°8' farmer		<i>Buchia unschensis</i>	

Reference: Imlay, R.W., and others, 1973.

Tiglukpuk Formation

Table 62

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22578 ²	50AKe93	Chandler Lake B-1 68°27', 150°12' farmer	Late Jurassic Late Oxfordian to Early Portlandian	<i>Buchia concentrica</i> ¹	Pelecypods Fossils scarce and poorly preserved at all localities.
22579 ²	50AKe97	68°27', 150°12' farmer		<i>Buchia rugosa</i>	
22580 ²	50AKe109	68°26', 150°8' farmer		<i>Buchia rugosa</i>	
22581 ²	50AKe114	farmer		<i>Buchia rugosa</i>	Same location as 22580.
22582	50AKe121	68°28', 150°18' farmer		<i>Buchia concentrica</i> ¹	
22584 ²	50AKe132	68°27', 150°18' farmer		<i>Buchia rugosa</i>	
22585 ²	50AKe135	farmer		<i>Buchia rugosa</i> <i>Lytoceras?</i> sp.	Same location as 22584. Ammonite
22586 ²	50AKe136	farmer		<i>Buchia rugosa</i>	Pelecypod Same location as 22584.

Reference: Paton, W.W., Jr., and other, 1964.

¹ All *Buchia* re-identified by D.L. Jones as *B. sublaevis* of Valanginian age, which would be Early Cretaceous rather than Jurassic.

² See also: Imlay, R.W., 1955.

Tiglukpuk Formation

Table 63

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22766 ¹	51AKe135	Philip Smith Mts. D-3 68°51', 148°17'30" farmer	Middle to Late Jurassic Kimmeridgian to Portlandian	<i>Aucella concentrica</i> <i>A. rugosa</i> <i>A. mosquensis</i>	Pelecypods
22768 ¹	51AKe153	68°51'50", 148°18'30" farmer		<i>A. rugosa</i>	
22769 ¹	51AKe154	68°51', 148°18' farmer		<i>A. concentrica</i> <i>A. rugosa</i> <i>A. mosquensis</i>	
22749 ²	51ADt149	68°49'30", 148°21' farmer		<i>A. rugosa</i>	
22750 ¹	51ADt151	68°49'45", 148°22' farmer		<i>A. cf. A. mosquensis</i>	
22751 ¹	51ADt152	68°50', 148°20'30" farmer		<i>A. rugosa</i> <i>A. mosquensis</i>	
22746 ¹	51ADt136	Philip Smith Mts. D-2 68°52', 148°6' farmer		<i>A. rugosa</i>	

Reference: Keller, A.S., and others, 1961.

¹ See also: Imlay, R.W., and other, 1973; Imlay, R.W., 1955.

² See also: Imlay, R.W., 1955.

Tiglukpuk Formation

Table 64

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21522	49ATr352	Killik River 68°31', 153°03' farmer	Middle Jurassic Lower Bajocian	<i>Inoceramus lucifer</i> <i>Pseudolloceras?</i> sp.	Pelecypod Ammonite
22591	50AKe263	Chandler Lake 68°22', 151°50' farmer	Bajocian	<i>Inoceramus</i> spp <i>Parkinsonia?</i> sp. juv.	Pelecypod Ammonite
22584 ¹	50AKe132	Chandler Lake B-1 68°26', 150°28' farmer	Upper Jurassic Kimmeridgian ?	<i>Aucella rugosa?</i>	Pelecypod
22585 ¹	50AKe135 & 50AKe93	68°27', 150°20' farmer		<i>A. rugosa?</i> <i>Lytoceras?</i> sp.	Ammonite
22586 ¹	50AKe136	68°26', 150°28' farmer		<i>A. rugosa</i>	Pelecypods
22587	50AKe174	68°30', 150°24' farmer	Middle Kimmeridgian to Lower Portlandian	<i>A. rugosa</i>	
22578 ¹	50AKe97	68°27', 150°20' farmer		<i>A. concentrica</i> <i>A. rugosa</i>	
22579 ¹		farmer		do	Same location as 22578.
22580 ¹	50AKe109 50AKe114	Chandler Lake B-1 68°26', 150°9' farmer		<i>A. rugosa</i>	
22581 ¹		farmer		do	Same location as 22580.
22749 ⁴	51ADt149	Philip Smith Mts. D-3 68°47', 148°25' farmer		<i>A. rugosa</i>	
22750 ³	51ADt151	68°48', 148°25' farmer		<i>A. mosquensis?</i>	

Table 64 continued.

22751 ³	51ADt152	68° 49', 148° 24' farmer		<i>A. rugosa</i> <i>A. mosquensis</i>	
22766 ³	51AKe135	68° 52', 148° 22' farmer	Middle Kimmeridgian	<i>A. concentrica</i> <i>A. mosquensis</i> <i>A. rugosa</i>	
22768 ³	51AKe153	farmer	Middle Kimmeridgian to Lower Portlandian	<i>A. rugosa</i>	Same location as 22766.
22769 ³	51AKe154	farmer	Middle Kimmeridgian	<i>A. mosquensis</i> <i>A. rugosa</i> <i>A. concentrica</i>	Same location as 22766.
22746 ³	51ADt136	Philip Smith Mts. D-2 68° 50', 148° 10' farmer	Middle Kimmeridgian to Lower Portlandian	<i>A. rugosa</i>	
22747 ^{4/5}	51ADt144	Philip Smith Mts. D-3 68° 52', 148° 14' farmer	Lower Jurassic Pliensbachian	<i>Lytoceras</i> cf. <i>L. fimbriatum</i> <i>Amaltheus (Pseudoamaltheus)</i> sp.	Ammonite
22748 ⁴	51ADt145	68° 52', 148° 15' farmer	Lower Jurassic		Brachiopods indeterminate
22745 ^{2/4}	51ADt134	Philip Smith Mts. D-2 68° 58', 148° 7' farmer	Upper Jurassic Middle Callovian	<i>Pseudocadoceras growingki</i>	Ammonite
22764 ⁴	51AKe115	68° 58', 148° 5' farmer	?Callovian	<i>Inoceramus</i> spp	Brachiopods indeterminate Pelecypod

Reference: Imlay, R.W., 1955.

¹ See also: Patton, W.W., and other, 1964.² See also: Imlay, R.W., and other, 1973; Imlay, R.W., 1976.³ See also: Imlay, R.W., and other, 1973; Keller, A.S., and others, 1961.⁴ See also: Keller, A.S., and others, 1961.⁵ See also: Brosge, W.P., and others, 1979.**Tiglukpuk Formation****Table 65**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Chandler Lake 68°20'47", 151°51'41" farmer	Early Cretaceous Valanginian	<i>Buchia (Aucella) sublaevis</i>	Pelecypod Type locality

Reference: Jones, D.L., and other, 1964.

Okpikruak Formation**Table 66**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Fortress Creek	Chandler Lake 68°34', 152°58' farmer	Early Late Cretaceous Neocomian	<i>Aucella crassicolis</i>	Pelecypod. Abundant throughout Plants

Reference: Patton, W.W., and others, 1950.

Okpikruak Formation

Table 67

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22762 ¹	Keller	Sagavanirktok A-2 69° 12', 147° 44' farmer	Lower Cretaceous	<i>Aucella</i> sp.	Pelecypod Abundant and widespread

Reference: Imlay, R.W., 1959.

Significance: Seven zones can be recognized by species, good for mapping and stratigraphy. Genus name changed to *Buchia*. Range of genus late Jurassic to early Cretaceous.

¹ See also: Keller, A.S., and others, 1961.

Okpikruak Formation

Table 68

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
50AE71		Killik River 68°26', 155°32' 12S 16W 2	?	<i>Aucella crassicollis</i>	Pelecypod and plants
50AE72		68°25', 155°32' 12S 16W 11		do	

Reference: Chapman, R.M., and others, 1951.

Okpikruak Formation

Table 69

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M6711	75AD111	Philip Smith C-3 68°38', 148°28' 9S 16E 30	?		Pelecypods
M6712	75AD171	68°36', 148°18' 10S 16E 2	Jurassic/ Cretaceous		
M6713	75AD172	68°34', 148°35' 10S 15E 22	Early Cretaceous		
M6716	75ARr59A	68°34', 148°30' 10S 15E 24			
M6698	75ARr61B	68°34', 148°35' 10S 15E 22			

Reference: Brosge, W.P., and others, 1979.

Okpikruak Formation

Table 70

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Chandler Lake 68°19'26", 151°52'41" farmer	Early Cretaceous Berriasian	<i>Buchia okensis</i> <i>B. subokenis</i> <i>B. crassicollis</i>	Pelecypods

Reference: Jones, D.L., and other, 1964.

Okpikruak Formation

Table 71

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	49ATr252	Chandler Lake 68°32', 152°59' farmer	Early Cretaceous Berriasian and Valanginian	<i>Buchia</i> sp.	Pelecypods All localities not abundantly fossiliferous
21823 ¹	49APa192	68°35'30", 152°48' farmer		<i>Buchia crassa</i> <i>Buchia crassicolis</i> <i>Taonurus caudagalli</i>	Markings
21837 ¹	49APa203	68°36', 152°47' farmer		<i>Buchia crassa</i> <i>Buchia crassicolis</i>	
21561 ¹	49APa512	68°35', 152°22' farmer		<i>Buchia crassicolis</i>	
21553 ¹	49ATr374	Killik River 68°35', 153°28' farmer		<i>Buchia crassicolis</i>	
21824 ¹	49ATr388	68°35', 153°29' farmer		<i>Buchia?</i>	Organic markings

Reference: Patton, W.W., Jr., and other, 1964.

¹ See also: Imlay, R.W., 1961.

Okpikruak Formation

Table 72

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22738 ¹	51ADt18	Sagavanirktok B-1 69°24'30", 147°15' farmer	Early Cretaceous Late Neocomian	<i>Aucella subokensis</i> <i>A. okensis</i>	Pelecypods
22740	51ADt33	68°26', 147°12' farmer		<i>A.</i> sp.	Belemnite fragments Pelecypods
22741	51ADt49	farmer		<i>A. cf. A. okensis</i> <i>A. sp.</i>	Same location as 22740.
22742 ¹	51ADt50	farmer		<i>A. sublaevis</i>	do
22757 ¹	51AKe23	69°25'30", 147°12' farmer		<i>A. okensis</i> <i>Aucella subokensis</i>	
22761 ¹	51AKe76	69°11'20", 147°45'30" farmer		<i>A. sublaevis</i>	
22762 ²	51AKe77	farmer		<i>A. sublaevis</i>	
24008 ¹	52AMo8	68°25' farmer		<i>Lytoceras</i> sp. <i>Plicatula</i> sp.	Ammonite Pelecypod Rhynchonellid, brachiopod Unable to plot, too vague.
24009 ¹	52AMo2	surveyor farmer		<i>Parallelodon?</i> sp.	Pelecypod Unable to plot, too vague.
24010 ¹	52AMo3	farmer		<i>A. subokensis</i>	Pelecypod Same location as 22738.
22744 ¹	51ADt94	Sagavanirktok B-2 69°15'15", 147°49' farmer		<i>A. sublaevis</i>	Pelecypods
22765 ¹	51AKe128	Philip Smith Mts. D-3 68°56', 148°15'30" farmer		<i>A. okensis</i> <i>A. subokensis</i>	
22767 ¹	51AKe139	Philip Smith Mts. D-3 68°54'15", 148°19' farmer		<i>A. crassicolis</i>	

Table 72 continued.

24026	52AKe2	Mt. Michelson D-3 69°27'10", 146°56' farmer	A. sp.	
24030	52AKe16	surveyor farmer	A. sp.	Unable to plot, too vague.
24031	52AKe33	Mt. Michelson 69°31'15", 146°24' farmer	A. okensis A. subokensis Camptonectes sp.	Belemnite indeterminate

Reference: Keller, A.S., and others, 1961.

¹ See also: Imlay, R.W., 1961.² See also: Imlay, R.W., 1961, 1959.**Okpikruak Formation****Table 73**

Loc. #	Collector/ Field #	Map		Age - Stage	Genus/Species	Remarks
		Lat.N - Long.W Twn. Rng. Sec.				
20470	45AWa36	Killik River 68°35', 153°29'15" farmer		Lower Cretaceous Valanginian	<i>Aucella crassicollis</i>	Pelecypods
20471	45AKr52	68°35'10", 153°29'45" farmer			do	
21553 ²	49ATr374	68°35', 153°28' farmer			do	
21824 ²	49ATr388	68°35', 153°29' farmer			? <i>Aucella crassicollis</i>	
21823 ²	49APa192	Chandler Lake 68°35', 152°48' farmer			<i>Aucella crassicollis</i>	
21837 ²	49APa203	68°36', 152°47' farmer			do	
21561 ²	49APa512	68°35', 152°22' farmer			do	
22590	50AKe273	68°18', 151°50' farmer		Berriasian or Valanginian	<i>Aucella</i> sp.	
22592	50AKe272	68°18', 151°50' farmer		Valanginian	<i>Aucella crassicollis</i>	
22594	50APa285	68°18', 151°50' farmer		Berriasian	<i>Aucella okensis</i> <i>Phylloceras tiglukpukense</i> n. sp.	Ammonite
3202	538-540 Schrader	Chandler Lake C-2 68°38'15", 151°9'		Valanginian	<i>Aucella crassicollis</i>	Pelecypod
22589	50AKe224	Chandler Lake B-2 68°25', 150°49' farmer			do	
22765 ³	51AKe128	Philip Smith Mtn D-3 68°52', 148°12' farmer		Berriasian	<i>Aucella okensis</i> <i>Aucella subokensis</i>	
22767 ³	51AKe139	68°54', 148°18' farmer		Valanginian	<i>Aucella crassicollis</i>	
22744 ³	51ADt94	Sagavanirktok B-2 69°15', 147°49' farmer			<i>Aucella sublaevis</i>	
22761 ³	51AKe761	Sagavanirktok A-2 69°12', 147°44' farmer			do	
22762 ¹	51AKe77	69°12', 147°44' farmer		Berriasian	<i>Aucella subokensis</i>	

Table 73 continued

22738 ³	51ADt18	Sagavanirktok B-1 69°24'30", 147°15' farmer		<i>Aucella okensis</i> <i>Aucella subokensis</i>	Belemnites indeterminate
24010 ³	52AMo3	69°25', 147°14' farmer		<i>Aucella subokensis</i>	Pelecypods
22742 ³	51ADt50	69°26'30", 147°10' farmer	Valanginian	<i>Aucella sublaevis</i>	
22757 ³	51AKe23	69°26', 147°10' farmer	Berriasian	<i>Aucella okensis</i> <i>Aucella subokensis</i>	Gastropod fragments
24008 ³	52AMo1	69°25', 147°10' farmer	?Berriasian	<i>Plicatula</i> sp. <i>Lytoceras</i> sp.	Pelecypod Ammonite Brachiopods indet.
24009 ³	52AMo2	69°25', 147°5' farmer	?Berriasian	<i>Parallelodon?</i> spp. <i>Plicatula?</i> sp.	Pelecypods

Reference: Imlay, R.W., 1961.

¹ See also: Keller, A.S., and others, 1961; Imlay, R.W., 1959.² See also: Patton, W.W., Jr., and other, 1964.³ See also: Keller, A.S., and others, 1961.

Kongakut Formation

Table 74

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M6699	75ARr56	Philip Smith Mts. D-3 68°57', 148°20' 6S 16E 13	Early Cretaceous		Pelecypods
M6696-7	75ABe37B,C	68°46', 148°25' 8S 16E 6			do

Reference: Brosge, W.P., and others, 1979.

Kongakut Formation

Table 75

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M5581		Sagavanirktok B-1 69°21'41", 147°21'43" farmer	Early Cretaceous Berriasian	<i>Buchia keyserlingi?</i>	Pelecypods Sparse megafauna

Reference: Detterman, R.L., and others, 1975.

Fortress Mountain Formation

Table 76

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21825 ¹	49ATr167	Chandler Lake 68°37', 152°54' farmer	Cretaceous Early Albian	<i>Inoceramus</i> sp. juv.	Pelecypods Wood indeterminate
21556 ¹	49ATr722	68°37', 152°42' farmer		<i>Aucellina dowlingi</i>	
21562 ¹	49APa584	farmer		<i>Aucellina dowlingi</i>	Same location as 21556.
	49APa613 ¹	68°35', 152°45' farmer		<i>Inoceramus</i> sp.	
	50AKe291 ¹	68°33', 152°6' farmer		<i>Pleuromya</i> sp.	

Table 76 continued.

49ATr601	68°32', 152°30' farmer			?Aspidorhynchidae - fish skeleton
21558 ¹ 49APa345	Killik River 68°38', 153°30' farmer		<i>Colvillia crassicosata</i> <i>C. kenti</i>	Ammonites

Reference: Patton, W.W. Jr., and other, 1964.

Significance: Fossils not abundant.

¹ See also: Imlay, R.W., 1961.

Fortress Mountain Formation

Table 77

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21558 ¹	49APa345	Killik River 68°38', 153°30' farmer	Lower Cretaceous Albian	<i>Colvillia crassicosata</i> n. sp. <i>Colvillia kenti</i> n. sp.	Ammonites
21825 ¹	49ATr167	Chandler Lake 68°36', 152°54' farmer		<i>Inoceramus</i> sp. juv.	Pelecypods
21556 ¹	49ATr722	68°37', 152°43' farmer		<i>Aucellina dowlingi</i>	
21562 ¹	49APa584	farmer		<i>Aucellina dowlingi</i>	Same location as 21556.
26142 ¹	49APa613	68°35', 152°45' farmer		<i>Inoceramus</i> cf. <i>I. altifluminis</i>	
24431 ¹	50AKe291	68°33', 152°6' farmer		<i>Pleuromya kelleri</i> n. sp. <i>Panope?</i> sp. <i>Thracia</i> cf. <i>T. kissoumi</i>	Pelecypods

Reference: Imlay, R.W., 1961.

¹ See also: Patton, W.W. Jr., and other, 1964.

Torok Formation

Table 78

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21557 ¹	49ATr754	Killik River 68°43', 153°15' farmer	Lower Cretaceous Albian	<i>Subarthroplites</i> cf. <i>S. colvillensis</i> n. sp.	Ammonite
21554 ¹	49ATr641	Chandler Lake 68°41', 152°14' farmer		<i>Inoceramus</i> sp. juv. <i>Puzosia?</i> sp. juv. <i>Beudanticeras (Grantziceras) affine</i> <i>Colvillia crassicosata</i> n. sp. <i>C.</i> cf. <i>C. crassicosata</i> n. sp.	Pelecypod Ammonites
25120 ¹	48AD186	68°42'30", 152°15' farmer		<i>Inoceramus</i> sp. juv. cf. <i>I. anglicus</i>	Pelecypod
22593 ¹	50APa201	Chandler Lake C-2 68°34', 150°45' farmer		<i>Gastroplites</i> cf. <i>G. kingi</i>	Ammonite
22756	51AD184	Philip Smith Mts. C-4 68°39', 149°2' farmer		<i>Inoceramus</i> sp. juv.	Pelecypod

Reference: Imlay, R.W., 1961.

¹ See also: Patton, W.W., Jr., and other, 1964.

Torok Formation

Table 79

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25120	48ADt86	Chandler Lake 68°42'43", 152°14'7" farmer	Cretaceous Early to Middle Albian	<i>Inoceramus</i> sp. juv. cf. <i>I. anglicus</i>	Pelecypods
21554	49ATr641	68°42'30", 152°13'32" farmer		<i>Inoceramus</i> sp. juv. <i>Beudanticeras (Grantziceras) affine</i> <i>Colvillia crassicosata</i> <i>Colvillia</i> cf. <i>C. crassicosata</i> <i>Puzosia?</i> sp. juv.	Ammonites
21557	49ATr754	Killik River 68°43', 153°15' farmer		<i>Subarcthoplites</i> cf. <i>S. colvillensis</i>	
22593	50APa201	Chandler Lake C-2 68°34', 150°45' farmer		<i>Gastropilites</i> cf. <i>G. kingi</i>	Wood indeterminate

Reference: Patton, W.W., Jr., and other, 1964.

Significance: Fauna suggests that Torok and Fortress Mountain formations are lateral equivalents. Few Fossils.

See also: Imlay, R.W., 1961.

Torok Formation

Table 80

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Chandler Lake 68°33', 152°45' farmer	Upper Lower Cretaceous Albian	<i>Inoceramus</i> sp.	Pelecypod Plants Upper part of formation.

Reference: Patton, W.W., and other, 1950.

Torok Formation

Table 81

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
M6706	75ADt45	Philip Smith Mts. D-3 68°55', 148°20' 6S 16E 16	?		Bivalve

Reference: Brosge, W.P., and others, 1979.

Torok Formation

Table 82

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	50AE107	Killik River 68°50', 155°36' 7S 16W 13	?		Fish skeleton
	50AE110	68°53', 155°36' 6S 16W 35		<i>Aucella?</i> sp.	Pelecypod

Reference: Chapman, R.M., and others, 1951.

Torok Formation

Table 83

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Chandler Lake 68°35', 152°37' farmer	Lower Cretaceous		Aspidorhynchid fish Lower part of formation

Reference: Patton, W.W., and other, 1950.

Tuktu Formation

Table 84

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Tuktu Bluff	Chandler Lake 68°43'30", 152°15'50" 68°45'51", 152°8'20" farmer	Lower Cretaceous	<i>Pleuromya</i> sp. <i>Inoceramus</i> sp. <i>Campionectes</i> sp.	Bivalves Megafossils poorly preserved and sparse (molds and casts).

Reference: Ahlbrandt, T.S., and others, 1979.

Significance: Fauna marine, transitional and non-marine.

1 Stratigraphic Section.

Tuktu Formation

Table 85

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6703	75ADt44	Philip Smith D-3 68°57', 148°20' 6S 16E 4	Cretaceous		Pelecypods
M6704	75ADt46	68°58', 148°20' 5S 16E 33	Early Cretaceous		do

Reference: Brosge, W.P., and others, 1979.

Nanushuk Group

Tuktu Formation

Table 86

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22755 1	51ADt178	Philip Smith Mts. D-4 68°45', 149° farmer	Early Cretaceous Albian	<i>Inoceramus</i> sp. juv. <i>Arctica?</i> sp. <i>Pleuromya</i>	Pelecypods

Reference: Keller, A.S., and others, 1961.

1 See also: Imlay, R.W., 1961.

Tuktu Formation

Table 87

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	50APa357	Chandler Lake 68°42', 151°50' farmer	Cretaceous Middle Albian	<i>Arctica</i> sp. <i>Pleuromya?</i> sp.	Pelecypods
21827 1	49ATr741	68°44', 152°19' farmer		<i>Cleoniceras tailleuri</i>	Ammonite

Table 87 continued.

25121	¹ 48ADt129	68° 44', 152° 18' farmer	<i>Entolium utukokense</i> <i>Thracia stelcki</i> <i>Panope? elongatissima</i>	Pelecypods
25122	¹ 48ADt134	farmer	<i>Ditrupe cornu</i> <i>Homomya</i> sp. <i>Panope? sp.</i>	Worm Pelecypods Same location as 25121.
25123	¹ 48ADt147	farmer	<i>Arctica? sp.</i>	Same location as 25121.
20454	¹ 45AGr31	farmer	<i>Inoceramus</i> cf. <i>I. cadottensis</i> <i>Homomya</i> sp. <i>Arctica? sp.</i> <i>Yoldia</i> cf. <i>Y. kissoumi</i> <i>Astarte ignekensis</i> <i>Ditrupe cornu</i>	Same location as 25121. Worm Starfish
	50APa22	Chandler Lake C-1 68° 35', 150° 7' farmer		Trails or burrows
24425	¹ 50APa29	68° 35', 150° 11' farmer	<i>Ditrupe cornu</i> <i>Thracia</i> cf. <i>T. stelcki</i>	Worm Pelecypods
24426	¹ 50APa156	68° 35', 150° 24' farmer	<i>Inoceramus</i> cf. <i>I. cadottensis</i>	
24427	² 50APa180	68° 39', 150° 32' farmer	<i>Pseudopulchellia pattoni</i> <i>Solecurtus? chapmani</i> <i>Panope? elongatissima</i>	
24428	¹ 50AKe19	68° 42', 150° 8' farmer	<i>Isognomon? sp.</i>	
24429	¹ 50AKe25	68° 41', 150° 13' farmer	<i>Solecurtus? chapmani</i> <i>Pleuromya sikanni</i> <i>Arctica</i> sp.	
24430	¹ 50AKe35	68° 40', 150° 10' farmer	<i>Panope? elongatissima</i> <i>Thracia stelcki</i> <i>Arctica? sp.</i> <i>Dicranodonta dowlin2i</i> <i>Xenohelix? sp.</i>	

Reference: Patton, W.W., Jr., and other, 1964.

¹ See also: Imlay, R.W., 1961; Detterman, R.L., and others, 1963.² See also: Imlay, R.W., 1961.

Tuktu Formation

Table 88

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20396	46ACh115	Killik River 68° 54', 155° 13' farmer	Lower Cretaceous Albian	<i>Arctica? sp.</i> <i>Veniella</i> sp. <i>Modiolus archisikanni</i>	Pelecypods
20397	46ACh120	farmer		<i>Ditrupe cornu</i> n. sp. <i>Astarte</i> sp. <i>Arctica? sp.</i> <i>Panope? sp.</i> <i>Oxytoma</i> sp. <i>Entolium</i> sp. <i>Modiolus archisikanni</i> <i>Paragastropilites spiekeri</i>	Worm burrow Pelecypods Same location as 20396.
20412	46ACh124	68° 57' 30", 155° 10' farmer		<i>Ditrupe cornu</i> n. sp. <i>Tancredia</i> sp. <i>Thracia stelcki</i>	Worm burrow Pelecypods

Table 88 continued.

20405	46ATh106	68° 50', 155° 17' farmer	<i>Ditrupea cornu</i> n. sp. <i>Tancredia kurupana</i> n. sp. <i>Dicranodonta dowlingi</i> <i>Arctica?</i> sp. <i>Panope? elongatissima</i> <i>Goniomya matonabbei</i> <i>Inoceramus</i> sp. <i>Entolium utukokense</i> n. sp. <i>Modiolus archisikanni</i> <i>Cleoniceras (Grycia) sablei</i> n. sp.	Worm burrow Pelecypods Ammonite
20392	46ACh57	68° 48', 154° 25' farmer	<i>Arctica?</i> sp. <i>Inoceramus anglicus</i> <i>Entolium</i> sp.	Worm? burrows Pelecypods
20394	46ACh67	68° 48'30", 154° 24' farmer	<i>Ditrupea cornu</i> n. sp. <i>Dicranodonta dowlingi</i> <i>Lucina</i> sp. <i>Inoceramus anglicus</i> <i>Entolium</i> sp.	Worm Pelecypods
20395	46ACh68	68° 48', 154° 22' farmer	<i>Dicranodonta dowlingi</i> <i>Lucina</i> sp. <i>Arctica?</i> sp. <i>Solecurtus? chapmani</i> n. sp. <i>Pleuromya sikanni</i> <i>Panope</i> sp. <i>Pinna</i> cf. <i>P. hagi</i> <i>Modiolus archisikanni</i> <i>Cleoniceras</i> cf. <i>C. (Neosaynella?) whittingtoni</i> n. sp.	Ammonite Naticoid gastropods
20401	46ATh55	68° 48', 154° 18' farmer	<i>Tancredia</i> sp. <i>Pleuromya</i> sp.	Pelecypods
20402	46ATh60	68° 51', 154° 10' farmer	<i>Inoceramus anglicus</i>	Pelecypod
20403	46ATh67	68° 52', 154° 11' farmer	<i>Ditrupea cornu</i> n. sp. <i>Dicranodonta dowlingi</i> <i>Oxytoma camSELLi</i> <i>Inoceramus</i> sp. <i>Entolium utukokense</i> n. sp. <i>Paragastrolites flexicostatus</i> n. sp.	Worm burrow Pelecypods
20464	45AWa72	68° 51'15", 153° 24'30" farmer	<i>Inoceramus anglicus</i>	Pelecypods
20472	45AKr82A	farmer	<i>Inoceramus anglicus</i>	Same location as 20464.
24619	53ADt48	68° 52', 153° 25' farmer	<i>Arctica?</i> sp. <i>Inoceramus anglicus</i>	
24633	53ABI9	68° 51', 153° 24' farmer	<i>Inoceramus anglicus</i> <i>Inoceramus cadottensis</i> <i>Gastrolites</i> cf. <i>G. kingi</i>	Ammonite
24634	53ABI13	68° 52', 153° 24' farmer	<i>Inoceramus anglicus</i> <i>Paragastrolites flexicostatus</i> n. sp.	Pelecypod Ammonite
24635	53ABI14	69° 52'30", 153° 24' farmer	<i>Inoceramus anglicus</i>	Pelecypod
21827	49ATr741	Chandler Lake 68° 44', 152° 19' farmer	<i>Cleoniceras tailleuri</i> n. sp.	Ammonite
25124	48ADt153	68° 44', 152° 22' farmer	<i>Inoceramus</i> sp.	Pelecypod
25125	48ADt158	68° 44', 152° 20'30" farmer	<i>Inoceramus</i> sp.	

Table 88 continued.

20454	² 45AGr31,37	68° 43'30", 152° 17' farmer	<i>Ditrupa cornu</i> n. sp. <i>Yoldia</i> cf. <i>Y. kissoumi</i> <i>Astarte igneekensis</i> n. sp. <i>Arctica?</i> sp. <i>Homomya</i> sp. cf. <i>Inoceramus cadottensis</i>	Brittlestar Worm burrow Pelecypods
25121	² 48ADt129	farmer	<i>Panope?</i> <i>elongatissima</i> <i>Thracia stelcki</i> <i>Entolium utukokense</i> n. sp.	Same location as 20454.
25122	² 48ADt134	farmer	<i>Ditrupa cornu</i> n. sp. <i>Panope?</i> sp. <i>Homomya</i> sp.	Worm burrow Pelecypods Same location as 20454.
25123	² 48ADt147	68° 43'15", 152° 15' farmer	<i>Arctica?</i> sp. <i>Panope?</i> sp.	
20432	46AGr187	Umiat A-5 69° 13'45", 152° 28'15" farmer	<i>Dicranodonta dowlingi</i> <i>Entolium utukokense</i> n. sp.	
20433	46AGr188	69° 13'45", 152° 28' farmer	<i>Flaventia?</i> sp. <i>Pleuromya</i> sp.	
20492	46AGr182	69° 14'30", 152° 28' farmer	<i>Modiolus archisikanni</i>	
24620	53ADt89	69° 14', 152° 28' farmer	<i>Ditrupa cornu</i> n. sp.	Worm burrow
24621	53ADt190	69° 13'30", 152° 28' farmer	<i>Ditrupa cornu</i> n. sp. <i>Entolium utukokense</i> n. sp. <i>Placunopsis</i> spp.	Worm burrow Pelecypods
25128	47ADt238	69° 14'15", 152° 28'30" farmer	<i>Ditrupa cornu</i> n. sp.	Worm burrow
25129	47ADt248	farmer	<i>Pleuromya sikanni</i>	Pelecypod Same location as 24620.
25917	47ADt243	69° 14', 152° 28'30" farmer	cf. <i>Gastropilites kingi</i>	Ammonite
24622	53ADt91	69° 13'30", 152° 28' farmer	<i>Ditrupa cornu</i> n. sp.	Worm burrow
24274	¹ 52ABt261	Umiat A-4 69° 06', 152° 5' farmer	<i>Ditrupa cornu</i> n. sp. <i>Panope?</i> <i>elongatissima</i> <i>Thracia stelcki</i>	Worm burrow Pelecypods
24293	52ADt202	69° 6', 151° 58' farmer	<i>Panope?</i> sp.	
24294	¹ 52ADt204	69° 6', 152° 30" farmer	<i>Ditrupa cornu</i> n. sp. <i>Entolium</i> sp.	Worm burrow Pelecypod
24295	¹ 52ADt206	69° 5'30", 152° 0'30" farmer	<i>Ditrupa cornu</i> n. sp. <i>Entolium</i> sp.	Worm burrow Pelecypod
24296	¹ 52ADt207	69° 5', 151° 56' farmer	<i>Dicranodonta dowlingi</i> cf. <i>Thracia stelcki</i> <i>Inoceramus</i> sp.	Pelecypods
24297	¹ 52ADt210	69° 4'45", 151° 55'30" farmer	<i>Panope?</i> <i>kissoumi</i>	
25126	¹ 48ADt287	69° 5', 151° 55'30" farmer	<i>Tancredia</i> sp. <i>Panope?</i> <i>kissoumi</i> <i>Modiolus</i> sp	
25127	¹ 48ADt341	Umiat A-3 69° 6'30", 151° 38' farmer	cf. <i>Yoldia kissoumi</i> <i>Arctica?</i> sp.	
24299	¹ 52ADt216	Chandler Lake 68° 52'30", 151° 55'30" farmer	<i>Ditrupa cornu</i> n. sp. <i>Arctica?</i> sp.	Worm burrow Pelecypod

Table 88 continued.

24624	53ADt103	Chandler Lake D-1 68° 51'30", 150° 30'30" farmer	<i>Ditrupe cornu</i> n. sp. <i>Arctica?</i> sp. <i>Panope?</i> <i>kissoumi</i>	Worm burrow Pelecypods
24625	53ADt104	68° 51'30", 150° 30'45" farmer	<i>Ditrupe cornu</i> n. sp. <i>Nucula (Pectinucula)</i> cf. <i>N. dowlingi</i> <i>Astarte portana</i> <i>Solecurtus?</i> <i>chapmani</i> n. sp. <i>Panope?</i> <i>elongatissima</i>	Worm burrow Pelecypods
24626	53ADt106	68° 51'30", 150° 31' farmer	<i>Panope?</i> sp. <i>Arctica?</i> sp. <i>Homomya</i> sp. <i>Entolium utukokense</i> n. sp. <i>Modiolus archisikanni</i>	Cerithiid gastropods Pelecypods
24627	53ADt108	farmer	<i>Thracia stelcki</i> <i>Arctica?</i> sp.	Same location as 24624. Trochid? gastropods
25131	47AWb101	farmer	<i>Thracia stelcki</i>	Pelecypod Same location as 24624.
25132	47AWb103	farmer	<i>Arctica?</i> sp.	Same location as 24624.
25133	47AWb106	farmer	<i>Astarte ignekensis</i> n. sp. <i>Astarte portana</i> <i>Tancredia</i> sp. <i>Arctica?</i> sp. <i>Panope?</i> <i>elongatissima</i> <i>Panope?</i> sp. <i>Isognomon?</i> sp. <i>Inoceramus</i> sp. <i>Entolium utukokense</i> n. sp. cf. <i>Gastropilites kingi</i>	Pelecypods Ammonite Same location as 24624.
25135	47AWb110	farmer	<i>Ditrupe cornu</i> n. sp. <i>Panope?</i> <i>elongatissima</i> cf. <i>Gastropilites kingi</i>	Worm burrow Pelecypod Ammonite Same location as 24624.
20480	45AFs55	Chandler Lake C-2 68° 44', 151° 7' farmer	<i>Ditrupe cornu</i> n. sp. <i>Panope?</i> sp. <i>Inoceramus</i> sp. <i>Entolium</i> sp.	Crinoid stems and cirri Worm burrow Pelecypods
24637	53ABl130	farmer	<i>Solecurtus?</i> <i>chapmani</i> n. sp. <i>Entolium utukokense</i> n. sp. cf. <i>Gastropilites kingi</i> <i>Xenohelix?</i> sp.	Naticoid gastropods Star fish Worm burrows Pelecypods Ammonite Gastropod? Same location as 20480.
3204	551556	68° 44', 151° 3' farmer	<i>Dicranodonta dowlingi</i> <i>Astarte ignekensis</i> n. sp. <i>Inoceramus</i> sp. <i>Xenohelix?</i> sp.	Pelecypods Same location as 20484 and 24623.
20484	45AFs217	farmer	<i>Ditrupe cornu</i> n. sp. <i>Dicranodonta dowlingi</i> <i>Panope?</i> <i>elongatissima</i> <i>Thracia stelcki</i> <i>Entolium utukokense</i> n. sp. <i>Placunopsis</i> spp. <i>Gastropilites kingi</i> <i>Paragastropilites flexicostatus</i> n. sp. <i>Xenohelix?</i> sp.	Brittle star Worm burrow Pelecypods Ammonites

Table 88 continued.

24623	¹ 53ADt93	farmer	<i>Ditrupea cornu</i> n. sp. <i>Dicranodonta dowlingi</i> <i>Arctica?</i> sp. <i>Panope? elongatissima</i> <i>Entolium utukokense</i> n. sp. <i>Modiolus archisikanni</i> <i>Beudanticeras?</i> sp. <i>Xenohelix?</i> sp.	Worm burrow Pelecypods Same location as 20484. Ammonites
3203	546-548	farmer	<i>Ditrupea cornu</i> n. sp. <i>Xenohelix</i>	Worm? burrows Same location as 20494.
20494	¹ 45AFs28	68°38'15", 151°9' farmer	<i>Thracia stelcki</i>	Pelecypods
24427	² 50APa180	Chandler Lake C-1 68°39', 150°32' farmer	<i>Solecurtus? chapmani</i> n. sp. <i>Panope? elongatissima</i> <i>Pseudopulchellia pattoni</i> n. sp.	Ammonite
25130	¹ 47AWb21	68°35'5", 150°32' farmer	<i>Panope? elongatissima</i> <i>Inoceramus</i> sp.	Pelecypods
26140	¹ 50APa192	68°39', 150°32' farmer	<i>Psilomya</i> sp.	
24426	² 50APa156	68°35', 150°24' farmer	cf. <i>Inoceramus cadottensis</i>	
24428	² 50AKe19	68°42', 150°8' farmer	<i>Isognomon?</i> sp.	
24429	² 50AKe25	68°41', 150°13' farmer	<i>Arctica?</i> sp. <i>Solecurtus? chapmani</i> n. sp. <i>Pleuromya sikanni</i>	
24430	² 50AKe35	68°40', 150°10' farmer	<i>Dicranodonta dowlingi</i> <i>Arctica?</i> sp. <i>Panope? elongatissima</i> <i>Thracia stelcki</i> <i>Xenohelix?</i> sp.	
24425	² 50APa29	68°35', 150°11' farmer	<i>Ditrupea cornu</i> n. sp. cf. <i>Thracia stelcki</i>	Worm burrow Pelecypods
20437	46AGr31	Philip Smith Mts. C-4 68°32', 149°3' farmer	<i>Modiolus</i> sp.	
20436	46AGr11	Philip Smith Mts. D-4 68°46', 149°2' farmer	<i>Thracia stelcki</i> <i>Isognomon?</i> sp.	
22755	³ 51ADt178	68°46', 148°57' farmer	<i>Inoceramus</i> sp.	
20438	46AGr34	Philip Smith Mts. D-3 68°56', 148°47' farmer	<i>Inoceramus anglicus</i> <i>Cleoniceras tailleuri</i> n. sp.	Ammonite
20439	46AGr62	Sagavanirktok A-2 69°3', 148°5' farmer	<i>Inoceramus anglicus</i> <i>Gastrolites kingi</i> <i>Xenohelix?</i> sp.	Pelecypod Ammonite Gastropod?
22753	51ADt112	69°4'45", 148°3' farmer	cf. <i>Inoceramus cadottensis</i> cf. <i>Inoceramus altifluminis</i>	Pelecypods
22754	51ADt113	farmer	<i>Inoceramus anglicus</i> cf. <i>Gastrolites kingi</i> <i>Paragastrolites flexicostatus</i> n. sp.	Ammonites Same location as 22753.

Reference: Imlay, R.W., 1961.

Note: Geographic data are same for some localities, but stratigraphy differs.

¹ See also: Detterman, R.L., and others, 1963.² See also: Patton, W.W., Jr., and others, 1964; Detterman, R.L., and others, 1963.³ See also: Keller, A.S., and other, 1961.

Tuktu Formation
Table 89

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
25127 ¹		Umiat A-3 surveyor 4S 2E 10	Cretaceous Middle Albian	<i>Yoldia</i> cf. <i>Y. kissoumi</i> <i>Arctica?</i> sp.	Pelecypods
24297 ¹		Umiat A-4 surveyor 4S 1E 20		<i>Panope?</i> <i>kissoumi</i>	
24296 ¹		surveyor		<i>Dicranodonta dowlingi</i> cf. <i>T. stelcki</i> <i>Inoceramus</i> sp.	
24274 ¹		surveyor 4S 1W 15		<i>Ditrupea cornu</i> <i>Panope?</i> <i>elongatissima</i> <i>Thracia stelcki</i>	Worm Pelecypods
24294 ¹		surveyor 4S 1W 13		<i>Ditrupea cornu</i> <i>Entolium</i> sp.	Worm Pelecypods
24295 ¹		surveyor		do do	
25126 ¹		Chandler Lake surveyor 8S 2W 25		<i>Tancredia kurupana</i> <i>Panope?</i> sp. <i>Modiolus</i> sp.	
24299 ¹		surveyor 6S 1E 32		<i>Ditrupea cornu</i> <i>Arctica?</i> sp.	Worm Pelecypods
25124 ¹		surveyor 8S 2W 21		<i>Inoceramus</i> sp.	
20454 ^{1/2}		surveyor 8S 2W 26		<i>Ditrupea cornu</i> <i>Yoldia</i> cf. <i>Y. kissoumi</i> <i>Astarte ignekensis</i> <i>Arctica?</i> sp. <i>Homomya</i> sp. cf. <i>Inoceramus cadottensis</i>	Brittlestar Worm Pelecypods
25121 ^{1/2}		surveyor 8S 2W 25		<i>Panope?</i> <i>elongatissima</i> <i>Thracia stelcki</i> <i>Entolium utokokense</i>	
25122 ^{1/2}		surveyor		<i>Ditrupea cornu</i> <i>Panope?</i> sp. <i>Homomya</i> sp.	Worm Pelecypods
25123 ^{1/2}		surveyor 8S 2W 36		<i>Arctica?</i> sp. <i>Panope?</i> sp.	
21827 ^{1/2}		surveyor 8S 2W 23		<i>Cleoniceras tailleuri</i>	Ammonite
24637 ¹		Chandler Lake C-2 68° 44', 151° 10' 20" farmer		<i>Solecurtus?</i> <i>chapmani</i> <i>Entolium utokokense</i> cf. <i>Gastrolites kingi</i> <i>Xenohelix?</i> sp.	Pelecypods Ammonite Gastropod Starfish Worm? burrows
20480 ¹		surveyor 8S 4E 23		<i>Ditrupea cornu</i> <i>Panope?</i> <i>kissoumi</i> <i>Inoceramus</i> sp. <i>Entolium</i> sp.	Crinoid stems and cirri Worm Pelecypods Naticoid gastropods

Table 89 continued.

20484 ¹	Chandler Lake C-2 surveyor 8S 4E 24	<i>Ditrupea cornu</i> <i>Dicranodonta dowlingi</i> <i>Panope? elongatissima</i> <i>Thracia stelcki</i> <i>Placunopsis</i> sp. <i>Entolium utokokense</i> <i>Gastrolites kingi</i> <i>Paragastrolites flexicostatus</i> <i>Xenohelix</i>	Brittlestar Worm Pelecypods
24623 ¹	Chandler Lake C-2 surveyor 8S 4E 23	<i>Ditrupea cornu</i> <i>Dicranodonta dowlingi</i> <i>Arctica? sp.</i> <i>Panope? elongatissima</i> <i>Entolium utokokense</i> <i>Modiolus archisikanni</i> <i>Beudanticeras? sp.</i> <i>Xenohelix</i>	Worm Pelecypods Ammonite Gastropod?
20494 ¹	surveyor 9S 4E 27	<i>Thracia stelcki</i>	Pelecypods
25130 ¹	Chandler Lake C-1 surveyor 10S 7E 8	<i>Panope? elongatissima</i> <i>Inoceramus</i> sp.	
26140 ¹	surveyor 9S 7E 20	<i>Psilomya</i> sp.	
24426 ^{1/2}	surveyor 10S 7E 14	<i>Inoceramus cadottensis</i>	
24428 ^{1/2}	surveyor 8S 8E 36	<i>Isognomon? sp.</i>	
24429 ^{1/2}	surveyor 9S 8E 10	<i>Arctica? sp.</i> <i>Solecurtus? chapmani</i> <i>Pleuromya sikanni</i>	
24430 ^{1/2}	surveyor 9S 8E 14	<i>Dicranodonta dowlingi</i> <i>Arctica? sp.</i> <i>Panope? elongatissima</i> <i>Thracia stelcki</i> <i>Xenohelix? sp.</i>	Gastropod?
24425 ^{1/2}	surveyor 10S 8E 14	<i>Ditrupea cornu</i> <i>Thracia stelcki</i>	Worm Pelecypods
20464 ¹	Killik River surveyor 7S 7W 12	<i>Inoceramus anglicus</i>	
20472 ¹	surveyor 7S 6W 7	<i>Inoceramus anglicus</i>	
24633 ¹	surveyor 7S 7W 12	<i>Inoceramus anglicus</i> <i>Inoceramus cadottensis</i> cf. <i>Gastrolites kingi</i>	Ammonite

Reference: Detterman, R.L., and others, 1963.

¹ See also: Imlay, R.W., 1961.² See also: Patton, W.W., Jr., and other, 1964; Imlay, R.W., 1961.

Tuktu Formation

Table 90

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26 ¹		Umiait A-4 69° 4' 40", 151° 55' 20" farmer	Cretaceous Middle Albian		Zone I ² - pteridophytes Ginkgophytes Cycadophytes Assoc. with unidentified invertebrates Near. if not same locality as, 25126 and 24297 of others.

Table 90 continued.

1	Chandler Lake 68° 44'17", 152° 20'55" farmer	do
2	68° 44'21", 152° 19'35" farmer	do
3	68° 44'42", 152° 18'31" farmer	do
4	68° 49'9", 152° 17'45" farmer	do Same as Tuktu Bluff location of other(s).
5	68° 45', 152° 18'20" farmer	do

Reference: Smiley, C.J., 1969.

Significance: Plants show affinities to European stages and show floral changes through time.

¹ Authors locality number.

² Flora zones of author with few specific plants

Grandstand Formation

Table 91

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20398	46ACh137	Killik River 68°59', 155°10' farmer	Lower Cretaceous Albian	<i>Arctica?</i> sp.	Pelecypods
20399	46ACh139	farmer		<i>Panope? elongatissima</i> <i>Inoceramus anglicus</i>	
25138	47ADt265	Umiat A-5 69°12'30", 152°29'30" farmer		<i>Panope?</i> sp.	
25139	47ADt267	69°12'13", 152°29'30" farmer		<i>Arctica?</i> sp.	
24273	52ABt229	Umiat A-4 69°12', 151°52' farmer		<i>Panope?</i> sp. <i>Entolium</i> sp.	
20457	45AGr56	69°3'50", 151°51'30" farmer		<i>Inoceramus anglicus</i>	
24298 ¹	52ADt213	69°4', 151°52' farmer		<i>Tancredia</i> sp. <i>Arctica?</i> sp. <i>Inoceramus</i> sp. <i>Entolium utukokense</i> n. sp.	
25136 ¹	48ADt280	farmer		<i>Arctica?</i> sp. <i>Panope?</i> sp.	Same location as 24298.
24301	52ADt107	Chandler Lake D-2 68°52', 151°11' farmer		<i>Arctica?</i> sp. <i>Panope? kissoumi</i>	

Reference: Imlay, R.W., 1961.

¹ See also: Detterman, R.L., and others, 1963.

Chandler Formation

Killik Tongue

Table 92

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Killik Bend	Killik River 68°58'55", 153°57'57" 68°58'30", 153°57'40" farmer	Lower Cretaceous		Leaves and stumps in growth position.

Reference: Ahlbrandt, T.S., and others, 1979.

¹ Stratigraphic section.

Chandler Formation

Killik Tongue

Table 93

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
6 ¹		Chandler Lake 68°45'8", 152°17'13" farmer	Cretaceous Upper Albian		Zone II ² pteridophytes Ginkgophytes Cycadophytes
7		68°45'31", 152°18'20" farmer			Conifers
8		68°45'31", 152°17'13" farmer			do
9		68°45'47", 152°16'51" farmer			do
35		Killik River 68°58'30", 154°1' farmer			do Same location as 8/6(2) of other author(s).
36		68°58'30", 153°59' farmer			do Same as Killik Bend location of other author(s).
10		Chandler Lake 68°46'15", 152°15'53" farmer			Zone III ² pteridophytes Ginkgophytes Conifers Last cycadophytes First angiosperms
11		68°45'45", 152°14'20" farmer			do
12		68°45'47", 152°13'24" farmer			do
13		68°46'3", 152°11'35" farmer			do
14		68°46'27", 152°10'40" farmer			do
37		Killik River 68°58'30", 153°58' farmer			do Near location 8/6(3) of other author(s).
38		68°58'30", 153°55' farmer			do
15		Chandler Lake 68°40'59", 152°8'26" farmer	Cretaceous Cenomanian		do
16		68°47'15", 152°6'29" farmer			do
25		68°3'53", 151°52'15" farmer			Near or same as locations 24298 of other authors.

Table 93 continued.

17	68° 46' 43", 152° 5' 1" farmer	Zone IV ² angiosperms Conifers
18	68° 46' 43", 152° 4' 4" farmer	do
19	68° 46' 51", 152° 1' 17" farmer	do
20	68° 47' 46", 151° 59' 30" farmer	do
21a	68° 49' 30", 151° 59' farmer	do

Reference: Smiley, C.J., 1969.

Significance: Plants show affinities to European stages and show floral changes through time.

¹ Authors locality number.

² Flora zones of author with few specific plants

Chandler Formation

Table 94

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20479	45AWa85B	Killik River 68° 59', 153° 51' farmer	Lower Cretaceous Albian	"Unio" sp.	Pelecypods
24432	50AKe213	Chandler Lake C-2 68° 39', 150° 51' farmer		<i>Panope? kissoumi</i> <i>Psilomya</i> sp. <i>Entolium utukokense</i> n. sp.	

Reference: Imlay, R.W., 1961.

Chandler Formation

Killik Tongue

Table 95

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24298 ¹		Umiat A-4 surveyor 4S 1E 27	Early Cretaceous Middle Albian	<i>Tancredia</i> sp. <i>Arctica?</i> sp. <i>Inoceramus</i> sp. <i>Entolium utukokense</i>	Pelecypods
25136 ¹		surveyor		<i>Arctica?</i> sp. <i>Panope?</i> sp.	Same location as 24298.

Reference: Detterman, R.L., and others, 1963.

¹ See also: Imlay, R.W., 1961.

Nanushuk Group

Ignek Formation

Table 96

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24027 ¹	52AKE6	Sagavanirktok B-1 69° 28' 30", 147° 3" farmer	Early Cretaceous	<i>Astarte</i> sp. aff. <i>Mentzelopsis</i> <i>Entolium</i> sp.	Pelecypod Brachiopod Pelecypods
22752	51ADt101	Saganvanirktok B-2 69° 17', 147° 58' 30" farmer		<i>Inoceramus</i> sp.	

Table 96 continued.

24025	52AKe4	Mt. Michelson B-5 69°29', 146°58' farmer		<i>Yoldia?</i> cf. <i>Y. kissoumi</i> <i>Eopectin?</i> sp. aff. <i>Mentzeliopsis</i> <i>Entolium</i> sp.	Brachiopod Pelecypod
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Reference: Keller, A.S., and others, 1961.

¹ See also: Imlay, R.W., 1961.

Ignek Formation

Table 97

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
22758	51AKe33	Sagavanirktok B-2 69°24', 147°42' farmer	Lower Cretaceous Albian		Belemnite fragments.
24027 ¹	52AKe6	Sagavanirktok B-1 69°29', 147°8' farmer		<i>Panope?</i> sp. <i>Entolium?</i> sp.	Brachiopods indet. Pelecypods

Reference: Imlay, R.W., 1961.

¹ See also: Keller, A.S., and others, 1961.

Ninuluk Formation

Table 98

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
21b ¹		Chandler Lake 68°49'36", 151°58'49" farmer	Cretaceous Cenomanian		Angiosperms. Zone IV ² Conifers
24		Umiait A-4 69°2'52", 151°53'20" farmer			do Associated with invertebrates.

Reference: Smiley, C.J., 1969.

¹ Author's locality numbers.

² Floral zones of author with few specific plants.

Ninuluk Formation

Table 99

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	50APa13	Chandler Lake C-1 68°37', 150°5' farmer	Cretaceous Cenomanian	<i>Volsella</i> sp.	Pelecypods
	50APa15	68°37', 150°7' farmer		<i>Volsella</i> cf. <i>V. silentiensis</i> <i>Panope</i> sp.	
	50AKe7	68°38', 150°8' farmer		<i>Inoceramus</i> cf. <i>I. athabaskensis</i> <i>Panope?</i> <i>dunveganensis</i> <i>Arctica</i> sp. <i>Volsella</i> sp.	
	50AKe2	Philip Smith Mts. C-5 68°39', 149°53' farmer		<i>Volsella</i> cf. <i>V. silentiensis</i>	
	50AKe5	farmer		<i>Volsella</i> cf. <i>V. silentiensis</i> <i>Panope?</i> <i>dunveganensis</i> <i>Corbula?</i> sp.	Same location as 50AKe2.

Reference: Patton, W.W., Jr., and others, 1964.

Nanushuk Group
Ninuluk Formation
Table 100

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24264 ¹	52ABI45	Chandler Lake 68°57'30", 152°28' farmer	Upper Cretaceous Cenomanian to Lower Santonian or Early Campanian	<i>Inoceramus (Inoceramus) dunveganensis</i>	Pelecypod
24276 ¹	52ADt32	68°45', 152°22' farmer		do	
24278	52ADt74	68°59'30", 152°51' farmer		do	
24283	52ADt102	68°55', 152°23' farmer		do	
24268 ¹	52ABI181	Chandler Lake D-2 68°55', 151°11'30" farmer		do	
24284	52ADt155	68°56'30", 151°10'30" farmer		do	
24285	52ADt168	68°51', 151°9' farmer		do	
24300 ¹	52ADt230	Umiat A-5 69°5'3", 152°38' farmer		do	
24271 ¹	52ABI273	69°7', 152°36' farmer		do	

Reference: Jones, D.L., and other, 1960.

¹ See also: Detterman, R.L., and others, 1963.

Ninuluk Formation
Table 101

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24286		Umiat A-3 69°13'22", 151°42'40" farmer	Cretaceous Cenomanian	<i>Arctica?</i> sp. <i>Panope?</i> sp.	Pelecypods
25143		69°6'55", 151°47' farmer		<i>Arctica?</i> sp. <i>Panope? dunveganensis</i> .	
24287		Umiat A-4 69°3'2", 151°52'15" farmer		<i>Arctica?</i> sp.	
25142		farmer		<i>Arctica? dowlingi</i> cf. <i>A. dowlingi</i> <i>Panope? dunveganensis</i>	Same location as 24287.
20456		farmer		<i>Arctica? dowlingi</i>	Same location as 24287.
20466 ¹		Killik River 68°59', 153°36'30" 5S 7W 29		<i>Inoceramus dunveganensis</i>	
24629 ¹		farmer		<i>Inoceramus dunveganensis</i> cf. <i>Arctica dowlingi</i>	Same location as 20466.
24628		68°55'34", 153°22'53" farmer		<i>Inoceramus</i> sp.	
24280		Chandler Lake 68°57'23", 152°57'42" farmer		<i>Inoceramus dunveganensis</i>	
20455		surveyor 7S 1E 20		<i>Inoceramus</i> sp.	

Table 101 continued.

25140	farmer	<i>Inoceramus dunveganensis</i> <i>Panope? dunveganensis</i> <i>Voisella</i> sp.	Same location as 20455.
25141	68° 51'58", 151° 57'45" farmer	cf. <i>Arctica dowlingi</i> <i>Panope? dunveganensis</i>	
24275	68° 52'23", 152° 22'53" farmer	<i>Panope? dunveganensis</i>	
24279	68° 58'55", 152° 52'59" farmer	<i>Inoceramus dunveganensis</i>	
24267	68° 58'16", 152° 25'18" farmer	<i>Inoceramus</i> sp. juv. <i>Arctica? dowlingi</i> <i>Panope? dunveganensis</i>	
24261	68° 51'5", 152° 44'28" farmer	<i>Panope? dunveganensis</i>	
24265	68° 56'57", 152° 29'13" farmer	<i>Panope? dunveganensis</i> <i>Voisella</i> cf. <i>V. silentiensis</i>	
24282	68° 56'18", 152° 25' farmer	<i>Panope? sp.</i> <i>Arctica? dowlingi</i> <i>Arctica? sp.</i>	
24276 ¹	68° 48'2", 152° 21'40" farmer	<i>Inoceramus dunveganensis</i>	
24263	68° 50', 152° 48'4" farmer	<i>Arctica? dowlingi</i>	
24264 ¹	surveyor 6S 2W 6	<i>Inoceramus dunveganensis</i>	
24266	68° 57'10", 152° 27'43" farmer	<i>Inoceramus dunveganensis</i>	
24281	68° 58'48", 152° 22'53" farmer	<i>Inoceramus? sp.</i>	
24277	68° 50', 152° 36'14" farmer	<i>Arctica? sp.</i> <i>Panope? dunveganensis</i> <i>Voisella</i> cf. <i>V. silentiensis</i>	
24268 ¹	Chandler Lake D-2 surveyor 6S 4E 16	<i>Inoceramus dunveganensis</i>	
20486	68° 53'45", 151° 54" farmer	<i>Tellina? sp.</i>	
24300 ¹	Umiat A-5 surveyor 4S 3W 21	<i>Inoceramus dunveganensis</i> cf. <i>Panope dunveganensis</i>	
24291	69° 8'14", 152° 37'40" farmer	<i>Mactra? sp.</i>	Gastropod
24271 ¹	surveyor 4S 3W 10	<i>Inoceramus dunveganensis</i>	
24289	69° 7'42", 152° 34'25" farmer	<i>Tellina? sp.</i>	
24288	69° 5'25", 152° 33'30" farmer	<i>Inoceramus dunveganensis</i>	

Reference: Detterman, R.L., and others, 1963.

¹ See also: Jones, D.L., and other, 1960.

**Nanushuk Group
Table 102**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Loc.1 ¹		Umiat A-3, A-4 Chandler Lake surveyor farmer	Cretaceous Aptian - Cenomanian	<i>Arctopteris rarinervis</i> <i>Coniopteris onychioides</i> <i>Ginkgo paradiantoides</i> <i>Ginkgo</i> n. sp. <i>Phoenicopsis</i> var. 3 <i>Pityophyllum</i> var. 1 <i>Podozamites</i> var. 2 <i>Podozamites</i> var. 7 <i>Podozamites</i> var. 9 <i>Sphenobaiera</i> cf. <i>S. pulchella</i> <i>?Zamites</i> sp. <i>?Abieitites</i> sp. <i>Ginkgo paradiantoides</i> <i>Ginkgo</i> n.sp. <i>Nilssonina alaskana</i> <i>Nilssonina</i> cf. <i>N. orientalis</i> <i>Nilssoniopteris polymorpha</i> <i>Phoenicopsis</i> var. 3 <i>Pityophyllum</i> var. 2 <i>Podozamites</i> var. 7 <i>Podozamites</i> var. 9 <i>Podozamites</i> var. 15 <i>?Abieitites</i> sp. cf. <i>Ampelopsis multesima</i> <i>Ciccites comparabilis</i> <i>Coniopteris inenarabilis</i> <i>Elatocladus</i> n. sp. <i>?Ginkgoites</i> (? <i>Baiera</i>) n. sp. <i>Juniperites</i> n. sp. <i>Nilssonina alaskana</i> <i>Nilssonina</i> cf. <i>N. orientalis</i> <i>Pityophyllum</i> var. 2 cf. <i>Platanus latiloba</i> <i>Podozamites</i> var. 7 <i>Podozamites</i> var. 9 <i>Podozamites</i> var. 15 cf. <i>Ampelopsis multesima</i> <i>?Cissites</i> sp. <i>Elatocladus</i> n. sp. <i>Podozamites</i> var. 9 <i>Pseudoprotophyllum</i> cf. <i>P. dentatum</i>	Zone IB-Ferns Ginkgos Conifers Ginkgo Cycad Zone II-Conifer Ginkgos Cycads Ginkgo Conifers Zone III Angiosperms Fern Conifer Ginkgo Conifer Cycads Conifer Angiosperm Conifers Zone IV-Angiosperms Conifers Angiosperm Unable to plot, too vague.

Reference: Scott, R.A., and other, 1979.

Note: Zones represent only a small collection of fossils.

¹ Authors' locality number.

**Nanushuk Group
Table 103**

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	Tuktu Bluff	Chandler Lake 68°45', 152°16' 8S 2W 23	Cretaceous	<i>Cleoniceras</i> sp. <i>Dentalium</i> sp. <i>Inoceramus</i> sp. <i>Pleuromya</i> sp. <i>Tellina</i> sp. <i>Protocardium</i> sp. <i>Pecten</i> sp.	Pelecypods
Zone D		Umiat A-4 surveyor farmer	Cretaceous	<i>Pecten</i> sp. <i>Tellina</i> sp. <i>Protocardium</i> sp. <i>Inoceramus</i> cf. <i>subround</i> <i>Dentalium</i> sp.	Unable to plot, too vague.

Table 103 continued.

Zone E	Chandler Lake 68°48', 152°41' 7S 3W 20, 29	Upper Cretaceous	<i>Voisella</i> sp. <i>Protocardium</i> sp. <i>Tellina</i> sp. <i>Inoceramus athabaskensis</i> <i>Inoceramus linguiform</i>	
Zone F	surveyor farmer		<i>Inoceramus labiatus</i> <i>Inoceramus</i> sp. <i>Scaphites</i> cf. <i>S. delicatalus</i>	Unable to plot, too vague. Good preservation with original shell material. Ammonite
Zone G	68°56', 152°22' 6S 2W 15, 16		<i>Panope</i> sp. <i>Legumen</i> sp. <i>Pholadomya</i> sp.	Pelecypods

Reference: Detterman, R.L., and other, 1952.

Nanushuk Group Table 104

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Umiat surveyor 1S 5E ?	Upper Cretaceous	<i>Inoceramus</i> sp. <i>Astarte</i> sp. <i>Nucula</i> sp. <i>Avicula</i> sp. <i>Pectunculus</i> sp. <i>Thracia</i> sp. <i>Tellina</i> 2 species <i>Siliqua</i> sp. <i>Modiola</i> sp. <i>Scaphites</i> sp. <i>Haminea</i> sp.	Pelecypods Unable to plot, too vague.

Reference: Schrader, F.C., 1904.

Nanushuk Group Table 105

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
Ninuluk Bluff		Ikpiqruk River 69°7'45", 153°16'55" 69°7'15", 153°17'30" farmer	Lower Upper Cretaceous	<i>Inoceramus</i> sp. <i>Arctica?</i> sp.	Pelecypods Leaves, bone.

Reference: Ahlbrandt, T. S., and others, 1979.

Significance: Fossils restricted to marine or brackish sandstone. Marine, transitional, and non-marine. Three toed ?dinosaur tracks found nearby, out of study area.

¹ Stratigraphic Section.

Colville Group Seabee Formation Aiyak Member Table 106

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
24632	53AD1116	Chandler Lake D-1 68°50'30", 150°32'30" farmer	Creataceous Middle/Lower Turonian	<i>Inoceramus</i> aff. <i>I. (I.) cuvierii</i>	Pelecypod

Reference: Jones, D.L., and other, 1960.

Seabee Formation

Table 107

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26563 ¹	Gryc	Chandler Lake 68°50'45", 151°25' 7S 3E 15	Cretaceous Early Turonian	<i>Scaphites delicatulus</i> <i>Otoscaphtes seabeensis</i> n. sp. <i>Proplacenticerus?</i> n. sp. <i>Borissiakoceras ashurkoffas</i> n. sp.	Ammonites
26567	Detterman			<i>Scaphites delicatulus</i> <i>Otoscaphtes seabeensis</i> n. sp. <i>Borissiakoceras ashurkoffae</i> n. sp.	Same location as 26563.
26545 ¹	Weber	Chandler Lake D-1 68°50'30", 150°33' 7S 6E 12, 7E 7		<i>Scaphites subdelicatulus</i> <i>Otoscaphtes perrini</i> <i>Borissiakoceras inconstans</i>	
26569 ¹	Bickel	Umiat A-4 69°2'15", 152°4' farmer		<i>Scaphites delicatulus</i> <i>Otoscaphtes seabeensis</i> n. sp. <i>Borissiakoceras ashurkoffae</i> n. sp.	

Reference: Cobban, W.A., and other, 1961.

Other fauna: *Inoceramus* and other pelecypods.

¹ See also: Jones, D.L., and other, 1960.

Colville Group

Seabee Formation

Table 108

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26566	52ADt61	Chandler Lake 68°52', 152°33'30" farmer	Upper Cretaceous Early Turonian	<i>Inoceramus (Mytiloides) labiatus</i>	Pelecypods
24641	52ABI31	68°52'30", 152°32' farmer		do	
26568	52ABI33	68°53', 152°30'30" farmer		do	
26565	52ADt57	68°51'30", 152°36' farmer		do	
26545 ¹	47AWb63	Chandler Lake D-1 68°50'30", 150°33' farmer		do	
26563 ¹	51AGr34	Chandler Lake 68°50'45", 151°25' farmer	Middle/Lower Turonian	do <i>I. aff. I. (I.) cuvierii</i>	
26569 ¹	52ABI259	Umiat A-4 69°2'15", 151°58' farmer		<i>I. aff. I. (I.) cuvierii</i>	

Reference: Jones, D.L., and other, 1960.

¹ See also: Cobban, W.A., and other, 1961.

Schrader Bluff Formation

Barrow Trail Member

Table 109

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
20493	45AFs29	Chandler Lake 68°29', 151°17' farmer	Upper Cretaceous Lower Santonian to Early Campanian	<i>Inoceramus (Sphenoceramus) steenstrupi</i>	All pelecypods

Table 109 continued.

26498	47AWb136	Chandler Lake D-2 68°59'15", 150°42' farmer	do <i>I. (Sphenoceras) patootensis</i>	
20463	45AGr201	Umiat B-3 69°20', 151°25' farmer	<i>I. (Sphenoceras) patootensis</i>	
20461	45AGr195	69°19', 151°25' farmer	<i>I. (Sphenoceras) patootensis</i>	
20462	45AGr200	farmer	do	Same location as 20463.
26508	48ADt387	Umiat A-3 69°12'15", 151°26'30" farmer	do	
26509	48ADt410	69°13', 151°25'30" farmer	do	
26511	48ADt449	69°19'15", 151°25' farmer	do	

Reference: Jones, D.L., and other, 1960.

† See also: Detterman, R.L., and others, 1963.

Schrader Bluff Formation Table 110

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
26525		Umiat A-3 69°8'57", 151°15' farmer	Cretaceous Upper Santonian- Lower Campanian	<i>Inoceramus patootensis</i>	Pelecypods
26522		69°8'45", 151°13'10" farmer		<i>Inoceramus</i> sp.	
26524		69°8'22", 151°14'25" farmer		<i>Gyrodus</i> sp. <i>Lima?</i> sp. <i>Mytilus?</i> sp.	Gastropod Pelecypods
26521		69°8'15", 151°12'45" farmer		<i>Inoceramus patootensis</i> <i>Inoceramus steenstrupi</i> <i>Lima?</i> sp.	
26498	†	Chandler Lake D-2 surveyor 5S 6E 28		<i>Gyrodus</i> sp. <i>Inoceramus patootensis</i> <i>Nemodon?</i> sp. <i>Pecten</i> sp. <i>Pholadomya</i> sp. <i>Protocardium</i> cf. <i>P. borealis</i> <i>Tancredia</i> cf. <i>T. americana</i> <i>Tellina</i> sp. <i>Xylophagella</i> cf. <i>X. whitmeyi</i>	Gastropod Worm borings Pelecypods
20487		68°58'2", 150°43' farmer		<i>Gyrodus</i> sp. <i>Inoceramus patootensis</i> <i>Panope</i> sp. <i>Pecten</i> sp. <i>Protocardium</i> cf. <i>P. borealis</i> <i>Tancredia</i> cf. <i>T. americana</i> <i>Tellina</i> sp.	Fish remains; teeth, scales, vertebrae Gastropod Pelecypods
26495		68°59'35", 150°44'40" farmer		<i>Lima?</i> sp. <i>Protocardium</i> sp.	

Reference: Detterman, R.L., and others, 1963.

† See also: Jones, D.L., and other, 1960.

**Prince Creek Formation
Kogosukruk Tongue**

Table 111

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
55'		Umiat C-3 69°33', 151°29' farmer	Cretaceous ?Maestrichtian	<i>Parataxodium</i> sp. <i>Trochodendroides</i>	Zone VII ² dominated by angiosperms
54		69°32', 151°29' farmer		do	do
53		Umiat B-3 69°27', 151°35' farmer		do	do Associated with invertebrates.
52		69°25', 151°45' farmer	Campanian- Santonian		Zone VI - angiosperms Last ginkgophytes

Reference: Smiley, C.J., 1969.

Significance: Plants show affinities to European stages and show floral changes through time.

¹ Author's locality number.

² Floral zones of author with few specific plants.

Formation E

Table 112

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	45AGr53	Umiat A-4 69°4', 151°50' farmer	Upper Cretaceous	<i>Inoceramus</i> sp. <i>Protocardia borealis</i> <i>Tellina</i> sp. <i>Mytilus</i> , sp. <i>Nucula?</i> sp. <i>Glycimeris</i> cf. <i>borealis</i> <i>Volselfa</i> sp.	Pelecypods Starfish

Reference: Payne, T.G., and others, 1946.

Formation B

Table 113

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	45AWa62	Killik River 68°48', 153°30' farmer	Upper Cretaceous		No fauna, plants
	45AWa61	farmer			do
	45AWa57-60	68°48', 153°35' farmer			do

Reference: Payne, T.G., and other, 1946.

Formation A
Table 114

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
	45AGr31	Chandler Lake 68°40', 152°16' farmer	Upper Cretaceous	<i>Inoceramus</i> sp. cf. <i>unabundus</i> <i>Inoceramus</i> sp. <i>Pecten</i> sp. cf. <i>mortoni</i> <i>Pecten</i> sp. <i>Tellina</i> sp. <i>Glycymeris</i> (?) sp. <i>Lucina</i> ? sp. cf. <i>occidentalis</i> <i>Protocardium borealis</i> <i>Dreissena</i> ? sp. <i>Nuculua</i> sp. <i>Turritella</i> sp. <i>Gyrodes</i> sp. <i>Scaphites</i> sp. <i>Dentalium</i> sp.	Pelecypods. Zone I. Gastropods. Cephalopod Scaphopod Starfish Crinoid stems Worm borings

Reference: Payne, T.G., and others, 1946.

Formation C
Table 115

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Killik River 68°53', 155°5' 6S 13W 30 6S 14W 25	Upper Cretaceous	<i>Cardium</i> ? sp.	Unionids? Pelecypods Fossils from non-marine tongue

Reference: Chapman, R.M., and others, 1947.

Formation B
Table 116

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Killik River surveyor 9S 13W 7	Upper Cretaceous	<i>Dentalium</i> sp. <i>Yoldia</i> ? sp. <i>Lucina</i> ? sp.	Gastropod Pelecypods From marine tongue

Reference: Chapman, R.M., and other, 1947.

Unnamed Formation
Table 117

Loc. #	Collector/ Field #	Map Lat.N - Long.W Twn. Rng. Sec.	Age - Stage	Genus/Species	Remarks
		Umiat B-2 69°26'30", 151°6' farmer	?	<i>Mytilus</i> sp.	Pelecypod

Reference: Fischer, W.A., and other, 1950.

General Management Recommendations

GENERAL MANAGEMENT RECOMMENDATIONS

The paleontologic resources of Alaska present a unique situation for management concerns; first, the fossils of Alaska are well documented, and most are isolated from immediate mitigating circumstances. The question is how long will this condition last, and how can management look toward the future?

Hopefully, this report will offer the beginning of a process where Bureau of Land Management can judiciously manage and conserve this resource into the future.

One of the primary tasks of management should be to update the locality data base presented in this report on a periodic basis.

Most of the paleontological work done in the past was by U.S. Geological Survey personnel, and no doubt this trend will continue into the future. It would be beneficial for the Bureau of Land Management to draft a memo of understanding with the U.S. Geological Survey requesting that a resume of new field data be submitted to the Bureau of Land Management at the conclusion of any work on Federal lands, as is required by recipients of paleontological collecting permits.

When the Geographical Information System digital mapping program is operational, the locality data of this report should be entered into that system along with the current geologic formation maps in each study area. This would allow land managers to identify those formations within a given area that have a potential or significant paleontological resource.

Contract funds should be made available to support field work at some of the localities to verify or resolve conflicting or erroneous map coordinates. In addition, some sites should be inspected to assess present and future paleontological status.

Another beneficial tool for effective land management would be for the Bureau of Land Management to establish and support a Geologic Advisory Group composed of professional paleontologists and geologists to make recommendations on site protection,

assist with the processing of collecting permit applications, and other related matters.

Experience in the "lower 48" has shown that the Bureau of Land Management's efforts to protect and conserve paleontological resources are often construed by the public as "locking up" certain areas. Due to the fact that many of the sites are remote or isolated in Alaska, this may not be an immediate problem, but could become such in the future. Education is probably the best remedy to prevent this problem. It would seem that this could best be accomplished by funding temporary traveling exhibits that show some of the fossils of Alaska, why they are important to science, and explain the Bureau of Land Management's mandate to protect this resource. Also, some attention should be directed to allocating a suitable area where amateurs and enthusiasts could pursue their hobby or contribute to a scientific field project on Bureau of Land Management administered lands.

General Management Recommendations Applicable to Invertebrate Fossils.

As is obvious from this report, invertebrate fossils make up the bulk of the paleontological resource on Federal and public lands. Ironically, they require the least management for several reasons. By nature their primary importance to science is their role in providing information as to environments of deposition, age indicators, paleoenvironmental factors, and stratigraphic relationships. In many cases they are abundant and have therefore been adequately sampled, documented and studied. Few have any great commercial value. Finally, most sites are far removed from intense human impact. As mentioned elsewhere in this report, some specimens are of museum quality. Recommendations for management of invertebrate fossils are to protect the latter, and watch for sites that would be suitable for public collecting areas. Plants are a similar situation and have the same management recommendations.

General Management Recommendations for Vertebrate Fossils.

The presence of dinosaurs on the North Slope has been the single most exciting paleontological event since the discovery of the first Pleistocene mammoth bone. This discovery also represents a perfect circumstance for the Bureau of Land Management to explain its role in the conservation of fossil resources by developing an educational exhibit as mentioned above. In addition to the other education and public relations benefits of such a project it could bring forth new finds by the public that may have gone unreported otherwise. It should be pointed out here that the bones of duck-billed dinosaurs (hadrosaurs) are small in parts of the skeleton, and lighter weight than more typical dinosaurs. The possibility seems strong that these fossils have been overlooked in the field due to their resemblance to recent or Pleistocene skeletal material. For that reason alone it is important for management to encourage and solicit the public to report fossil finds on Federal lands.

Although Alaska can boast that they have one of the best samples of Late Pleistocene vertebrates in North America, they are still critical from a management standpoint. The main management recommendation in this case is that the Bureau of Land Management should do everything possible to see that every reported site is examined by an expert. The importance of this approach may be obscured by the idea that no one wants or needs another bison bone. To a certain extent that statement is partly true, but further research is still necessary with regard to this fauna.

For a hundred years or more the theory has been that the first Americans crossed Beringia at the same time and co-existed with the Late Pleistocene fauna, to date, solid evidence of this fact has not unequivocally proven the theory. In the last few decades new techniques have been developed to better distinguish bone tools and human markings from natural or geologic abrasions. This new technology applied to new sites and materials could aid in substantiating the presence or absence of early man. The philosophy should be that every locality of this age be considered an archaeological site until proven otherwise.

Solifluction deposition and collecting techniques of Wisconsin age vertebrate sites has obscured or eradicated stratigraphic data and relationships in many cases. New data in this context would be helpful by revealing new stratigraphic information and refining the dating of these deposits.

By adopting the recommendation that all new paleontological localities on Bureau of Land Management lands be examined, the Bureau will be aiding the scientific community as well as showing the public and critics that effective management of Alaska's paleontologic resource is being accomplished.

HISTORY OF PALEONTOLOGY IN ALASKA

Alaska has had a long and productive history in the field of paleontology. The earliest fossil record was a pecten mollusk found by a French expedition led by La Perouse¹ in 1786. This specimen was cited by Grewingk² as evidence of Tertiary rocks on the northeast coast of the Gulf of Alaska (Lituya District). The latter reference also contains the first geologic map of Alaska.

Following this, the Russian Admiral Kotzebue discovered Ice Age mammals at Eschscholtz Bay during the voyage of the *Herald* in 1816. This locality was named Elephant Point and was visited by several exploration parties; in 1828 by Capt. Beechey, Royal Navy, and Mr. Collie; Captain Kellet and Dr. Goodridge in 1850. Fossils collected during the expeditions were deposited in the British Museum and described by Sir John Richardson³ and W. Buckland⁴. By this time, a half dozen genera of mammals had been identified. The first American to visit Elephant Point was W.R. Dall⁵ who commented on his finds in 1881.

About this same time, similar Ice Age mammal remains were discovered on the Yukon by Dall⁶ and at placer mines near Nome by Moffit⁷ in 1905.

Enticed by the discovery of a frozen mammoth in Siberia in 1901, the Smithsonian Institution launched expeditions in the area in 1904 and 1907, followed by the American Museum of Natural History in 1907 and 1908.

By this time, the U.S. Geological Survey had become active in Alaska in mapping and geologic reconnaissance and new Pleistocene vertebrate sites were documented in these reports.

Large scale gold mining operations began in the Fairbanks area in 1928, and as a consequence, thousands of fossil bones of Late Pleistocene vertebrates were exhumed. This project was supervised by the late Otto Geist, of the University of Alaska, and financed by Childs Frick of the American Museum of Natural History. The entire operation was both a curse and a blessing. Tons of fossil bones were shipped to New York and resulted in the finest collection of that type in the World, yet stratigraphic and

other related data were non-existent. The secondary blessing was that commercial enterprise and science could work together to the mutual benefit of both. The Bureau of Land Management should be acutely aware of this unique relationship and work to perpetuate it into the future.

The history of invertebrate paleontology has followed a similar chronologic pattern. Early finds were made by exploration parties in the late 1800's, and followed by work conducted by U.S. Geological Surveys during the mapping and reconnaissance phase from the early 1900's to late 1920's.

President Harding was indirectly responsible for increasing the collection and documentation of Alaskan invertebrates when he established the Naval Petroleum Reserve in 1923. The U.S. Navy commissioned the U.S. Geological Survey to compile the geologic data on the region and begin the exploration for oil. This work continued through 1982 and resulted in an abundance of paleontological collections and information for that region of Alaska.

If a comparison is made here in a historical perspective, between invertebrate and vertebrate paleontology one single fact is paramount. Economic exploration of geologic resources can be beneficial to the science of paleontology.

The history of paleontology in Alaska demonstrates two points that pertain to the management of fossil resources. First, exploration on public lands should not be excluded to protect paleontological resources, but instead managed effectively to achieve maximum utilization of all resources. Second, the resultant collecting bias created by extensive work in a few areas should not overshadow the need for management in other areas.

¹ J.F. de G. La Pérouse, 1797. Voyage de La Pérouse autour du monde, publié conformément au décret du 22 avril 1791, et rédigé par M.L.A. Milet-Mureau: Paris, Imprimerie de la République, v. 2, 398p.

² Constantin Grewingk, 1850. Beitrag zur Kenntniss der orographischen un geognostischen Beschaffenheit der Nord-West-Küste Amerikas mit den anliegenden Inseln: Russ. K. min. Gessell. St. Petersburg Verh. 1848-49, p. 76-424, pls. 1-7.

³ Sir John Richardson: Zoology of the Voyage of the *Herald* (Kotzebue and Beechey Voyage 1816 and 1826).

⁴ W. Buckland, 1831. On the occurrence of the remains of elephants, and other quadrupeds, in the cliffs of frozen mud, in Eschscholtz Bay, within Bering's Strait, and in other distant parts of the shores of Arctic seas. App. 593-612. In: F.W. Beechey, Narrative of a voyage to the Pacific and Bering's Strait . . . London. Colburn and Bentley.

⁵ W.R. Dall, American Journal of Science, 3rd series, vol. 21, pp108.

⁶ W.R. Dall, 1869. (Statement concerning the finding of the bones of muskox, buffalo, and elephant near Yukon River). Proc. Boston Society of Natural History. 13:136-137.

⁷ F.H. Moffit, 1913. U.S. Geological Survey Bulletin 533, p. 45-45.

APPENDIX 1

Ba = Barksdale
Be = Brosge
Bl = Bickel
Bo = Bowsher
C = Coats
Ch = Chapman
Cr = Campbell
Cr = Carter
Dt = Detterman
Du = Dutro
F = Foran
Fs = Fellows
Gr = Gryc.
Ke = Keller
Kr = Kirschner
Kt = Kent
La and Lz = Lachenbruch
Md = Maddren
Mg = Mangus
Mo = Morris
Mt = Mertie
Mu = Mull
Pw = Pewe
Re = Reynolds
Rr = Reiser
Ry = Ray
S and Sm = Smith
Sa = Sable
St = Stefansson
Sv = Stevens
Th = Thurrell
Tm = Thompson
To = Tourtelot
Tr = Tailleur
Wa = Warner
Wb = Weber
Wh = Whittington
Z = Zomberge

APPENDIX 2

Alaska Heritage Resources Survey Numbers Trigraph Index to 1:250,000 map

Baird Mtns	XBM	Philip Smith Mtns.	PSM
Barrow	BAR	Point Hope	XPH
Beaver	BVR	Point Lay	XPL
Bendeleben	BEN	Ruby	RUB
Bering Glacier	XBG	Russian Mission	RUS
Bethel	BTH	Sagavanirtok	SAG
Bettles	BET	Selawik	SLK
Big Delta	XBD	Shungnak	SHU
Candle	CAN	Sleetmute	SLT
Chandalar	CHN	Solomon	SOL
Chandler Lake	XCL	Talkeetna Mtns.	TLM
Charley River	CHR	Tanacross	TNX
Circle	CIR	Tanana	TAN
DeLong Mts.	DEL	Teller	TEL
Dillingham	DIL	Teshekpuk	TES
Eagle	EAG	Umiat	UMI
Goodnews Bay	GDN	Unalakleet	UKT
Gulkana	GUL	Utukok River	XUR
Harrison Bay	HAR	Valdez	VAL
Healy	HEA	Wainwright	WAI
Holy Cross	XHC	Wiseman	WIS
Howard Pass	XHP		
Hughes	HUG		
Iditarod	IDT		
Ikpikpak River	IKR		
Iliamna	ILI		
Kantishna River	XKR		
Kateel River	KAT		
Killik River	KIR		
Lime Hills	LIM		
Livengood	LIV		
Lookout Ridge	XLR		
McCarthy	XMC		
McGrath	MCG		
Meade River	XMR		
Medfra	MED		
Melozitna	MLZ		
Misheguk Mtn.	MIS		
Mt. Hayes	XMH		
Mt. Katmai	XMK		
Mt. Michelson	XMM		
Naknek	NAK		
Noatak	NOA		
Nome	NOM		
Norton Bay	NOB		
Nulato	NUL		

Alaska Heritage Resources Survey Numbers Numbers Assigned to Lindsey Report

Area 1

No fossils

Area 2

AHRS	Lindsey paleontological listings	pg. #
GDN-210	8010.....	7

Area 3

AHRS	Lindsey paleontological listings	pg. #
BTH-138	20717	11
BTH-139	21481	11
BTH-140	1607.....	11

Area 4

AHRS	Lindsey paleontological listings	pg. #
XBG-004	D159	20
XBG-005	D160	20
XBG-006	D164	20

XBG-007	D247	20	XBG-058	15433	20
XBG-008	D245	20	XBG-059	15437	26
XBG-009	1166, 1527, 1538, 1539, D246	25, 20	XBG-060	29253	23, 28
XBG-010	1520	25	XBG-061	15431	26
XBG-011	81203	21	XBG-062	6694	26, 27
XBG-012	81201, 29290, 29289	21, 24	XBG-063	17850	26
XBG-013	81202	21	XBG-064	6694	26, 27
XBG-014	81401	21	XBG-066	17827	26
XBG-015	81402	26	XBG-067	17835	26
XBG-016	81403	27	XBG-068	15852	19, 28
XBG-017	81106, C29284	26-28	XBG-069	15843	19
XBG-018	81104, 17781, 17793, 17786	19, 20, 25, 26	XBG-070	59AMr453	15
XBG-019	81001	21	XBG-071	11170	17
XBG-020	17851, 81003, 29285,	19, 23	XBG-072	D251T	23
XBG-021	17829	19	XBG-073	16900	23
XBG-022	17843, 400-404, 407-439, 441, 556-561, 579-600, 654-656, 667-669, 701, 702	19, 24, 29, 30	XBG-074	16899	20, 23
XBG-023	663-666	24	XBG-075	9893, 9894	17
XBG-024	442, 443, 446-465, 657-662	29, 30	XBG-076	9553	17
XBG-025	474	30	XBG-077	17808	23
XBG-026	D347, D356	24, 25, 28	XBG-078	17807	23
XBG-027	455	24	XBG-079	17854	23
XBG-028	399	24	XBG-080	17831	18
XBG-029	TFN70Q	28	XBG-081	17832	18
XBG-030	18336	19	XBG-082	17822	18
XBG-031	29287	24	XBG-083	17815	18
XBG-032	6686	25, 28	XBG-084	16862	18
XBG-033	29283	28	XBG-085	16863	18
XBG-034	29288, 17796	25, 27	XBG-086	16861	18
XBG-035	C29286	27	XBG-087	16892	18
XBG-036	17839	24	XBG-088	16858, 16859	18
XBG-037	1542	30	XBG-089	16856	18
XBG-038	29281	27	XBG-090	16857	18
XBG-039	17881	19	XBG-091	16860	18
XBG-040	6697	26	XBG-092	9551, 16819, 16820, 16891, 16865, 16896, 16897	17, 23
XBG-041	1102	30	XBG-093	16864	20
XBG-042	6695	27, 28	XBG-094	C29242	23
XBG-043	6696, C29277	27	XBG-095	16894	23
XBG-044	C29278	28	XBG-096	16893	23
XBG-045	15425	25, 28	XBG-097	16821	23
XBG-046	15424	19	XBG-098	16822	23
XBG-047	1523	25	XBG-099	385	24
XBG-048	15421	25	XBG-100	11168	18
XBG-049	15422, 15423	19	XBG-101	11157	15
XBG-050	1105	24	XBG-102	3847	15
XBG-051	20494	26	XBG-103	11162, 11160	16
XBG-052	20508-2	21	XBG-104	11163	16
XBG-053	9895	19	XBG-105	11164	16
XBG-054	C29251	28	XBG-106	3846	16
XBG-055	D257	28	XBG-107	9891	16
XBG-056	C29249	28	XBG-108	11167	16
XBG-057	344	24	XBG-109	11169	17
			XBG-110	11159	16
			XBG-111	11158	15

XBG-112	M3880	15
XBG-113	11166	16
XBG-114	16898, D252T	22, 23
XBG-115	16895	23, 27

Area 5

AHRS	Lindsey paleontological listings	pg. #
VAL-228	B	33
VAL-229	M1977, Packard 1965	34
VAL-230	9937	33
VAL-231	4805	33
VAL-232	8938	33
VAL-233	7231-7233	34
XMC-026	6316	33
XMC-027	7	33
XMC-028	9972	34

Area 6

AHRS	Lindsey paleontological listings	pg. #
XMH-328	238	43
XMH-330	VV21A, B	40
XMH-331	158	37
XMH-334	1698, 2069, 2079	38
XMH-335	F-1	42
XMH-336	RM-8	39-42
XMH-337	1025	38
XMH-338	606-608	38
XMH-339	F-2	38
XMH-340	16697	42
XMH-341	995	38
XMH-342	F-3	38
XMH-343	F-6-F-8	38, 39
XMH-344	MC6, MC7, F-5	38, 40
XMH-345	F-4	38
XMH-346	F-10	37
XMH-347	MC13	40
XMH-348	139, 142, 143	37
XMH-349	MC5	41
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REFERENCES

- Addicott, W.O., Winkler, G.R., and Plafker, G., 1977. Preliminary megafossil biostratigraphy and correlation of stratigraphic sections in the Gulf of Alaska Tertiary Province. U.S. Geological Survey Open File Report No. 77-491, 2p.
- Ahlbrandt, T.S., Huffman, A.C. Jr., Fox, J.E., and Pasternack, I., 1979. Depositional framework and reservoir - quality studies of selected Nanushuk Group outcrops, North Slope, Alaska. U.S. Geological Survey Circular 794, p. 14-31.
- Armstrong, A.K., 1973. *Lithostrotion reiseri* n. sp., a cerioid colonial coral from Meramec age bed, Lisburne Group, Arctic Alaska. U.S. Geological Survey Journal Res., v. 1, no. 2, p. 137-145.
- , 1970a. Mississippian dolomites from the Lisburne Group, Killik River, Mt. Bupto region, Brooks Range, Alaska. American Association of Petroleum Geologists Bulletin, v. 54, no. 2, p. 251-264.
- , 1970. Carbonate facies and the lithostrotioned corals of the Mississippian Kogruk Formation, DeLong Mountains, northwest Alaska. U.S. Geological Survey Professional Paper 664, 38p.
- Arnold, C.A., 1952a. Paleobotanical investigations in Naval Petroleum Reserve No. 4. Alaska Science, v. 116, p. C1-62.
- , 1952. Silicified plant remains from the Mesozoic and Tertiary of western North America, Part II, Some fossil woods from northern Alaska. Papers of the Michigan Academy of Science, Arts and Letters, v. 38, p. 9-20.
- , and Lowther, J., 1955. A new Cretaceous conifer from northern Alaska. American Journal of Botany, v. 42, p. 522-528.
- Black, R.F., 1964. Gubik Formation of Quaternary age in northern Alaska. U.S. Geological Survey Professional Paper 302-C, p. 59-91.
- Blodgett, R., 1977. A Givetian (Late Middle Devonian) fauna from Healy B-4 Quadrangle, central Alaska Range, Alaska. Alaska Division of Geological and Geophysical Survey Geological Report 55, p. 1-2.
- , 1983a. Paleobiogeographic implications of Devonian fossils from the Nixon Fork Terrane, southwestern Alaska. Geological Survey of America Abstracts, v. 15(5), p. 423.
- , 1983. Paleobiogeographic affinities of Devonian fossils from the Nixon Fork Terrane, southwestern Alaska; in pre-Jurassic rocks in Western North America suspect terranes. C.H. Stevens ed. Publication: Society of Economic Paleontologists and Mineralogists, Pacific Section. p. 125-130.
- , and Gilbert, W., 1983. The Cheeneetnuk limestone, a new Early(?) to Middle Devonian Formation in the McGrath A-4 and A-5 Quadrangles, west-central Alaska. Alaska Geological and Geophysical Survey Professional Report 85, 6p.
- Bowsher, A.L., and Dutro, J.T., Jr., 1957. The Paleozoic section in the Shainin Lake area, central Brooks Range, Alaska. In exploration of Naval Petroleum Reserve No. 4 and adjacent areas, northern Alaska, 1944-53, Pt. 3. U.S. Geological Survey Professional Paper 303-A, 40p.
- Branson, C., 1962. *Conostichus*, a scyphomedusan index fossil. Oklahoma Geology Notes, v. 22(10), p. 251-253.
- Brigham, J.K., 1984. Marine stratigraphy and amino acid geochronology of the Gubik Formation, western Arctic Coastal Plain, Alaska. U.S. Geological Survey Circular 939, p. 5-9.
- Brosge, W.P., and Whittington, C.L., 1966. Geology of the Umiat-Maybe Creek region, Alaska. U.S. Geological Survey Professional Paper 303-H, p. 501-638.
- , Dutro, J.T., Jr., Mangus, M.D., and Reiser, H.N., 1962. Paleozoic sequence in eastern Brooks Range, Alaska. American Association of Petroleum Geologists Bulletin, v. 46, no. 12, p. 2174-2198.
- , Dutro, J.T., Jr., Mangus, M.D., and Reiser, H.N., 1979. Bedrock geologic map of the Philip Smith Mountains Quadrangle, Alaska. U.S. Geological Survey Map MF 879B.
- Brouwers, E., Marincovich, L. Jr., and Hopkins, D., 1984. Paleoenvironmental record of Pleistocene transgressive events preserved at Skull Cliff, northern Alaska. U.S. Geological Survey Circular 939, p. 9-12.
- Brown, J.S., 1924. The Nixon Fork country and silver-lead prospects near Ruby, Alaska. U.S. Geological Survey Bulletin 783-D, p. 97-150.
- Carter, D.L., Repenning, C.A., Marincovich, L., Hazel, J.E., Hopkins, D.M., McDougall, K., and Naeser, C.W., 1976. Gubik and pre-Gubik Cenozoic deposits along the Colville River near Ocean Point, North Slope, Alaska. U.S. Geological Survey Circular 751-B, p. B12-14.
- , Marincovich, L., Brouwers, E.M., and Forester, R.M., 1979. Paleogeography of a Pleistocene coastline, Alaskan Arctic Coastal Plain. U.S. Geological Survey Circular 804-B, p. B39-B41.
- Chamberlain, C., 1977. Carboniferous and Permian trilobites from Ellesmere Island and Alaska. Journal of Paleontology, v. 51, p. 758-771.
- Chapman, R.M., and Eberlein, D.G., 1951. Stratigraphy and structure of the Upper Oolamagavik, Kurupa, and Etivluk Rivers. U.S. Geological Survey investigations Naval Petroleum Reserve No. 4, Report 41.
- , and Sable, E.G., 1950. Stratigraphy and structure of the Kokolik and Kukpowruk Rivers area, Alaska. U.S. Geological Survey investigations Naval Petroleum Reserve No. 4, Report 33.
- , and Sable E.G., 1960. Geology of the Utukok-Corwin region, northwestern Alaska. U.S. Geological Survey Professional Paper 303-C, p. 47-167.

- , and Thurrell, R.F., 1947. Stratigraphy and structure of the area of the Kurupa, Colamnagavik, Killik and Colville Rivers. U.S. Geological Survey investigations Naval Petroleum Reserve No. 4, Report 5.
- Churkin, M., Jr., and Brabb, E.E., 1965. Occurance and stratigraphic significance of *Oldhamia*, a Cambrian trace fossil in east-central Alaska. Geological Survey Research: U.S. Geological Survey Professional Paper 525-D. p. D120-124.
- Clemens, W.A., 1985. Evaluation of the first Late Cretaceous vertebrate local fauna discovered on the North Slope, Alaska. Department of Paleontology, University of California, Berkeley.
- Cobban, W.A., and Gryc, G., 1961. Ammonites from the Seabee Formation (Cretaceous) of northern Alaska. *Journal of Paleontology*. v. 35. p. 176-190.
- Collier, A.J., 1902. A reconnaissance of the northwestern portion of Seward Peninsula, Alaska. U.S. Geological Survey Professional Paper 2. 70p.
- , 1906. Geology and coal resources of the Cape Lisburne Region, Alaska. U.S. Geological Survey Bulletin 278. 54p.
- Dall, W., 1920. Pliocene and Pleistocene fossils from the Arctic Coast of Alaska and the auriferous beaches of Nome, Norton Sound, Alaska. U.S. Geological Survey Professional Paper 125-C. p. 23-37.
- Detterman, R.L., Bickel, R., and Gryc, G., 1963. Geology of the Chandler River Region, Alaska. U.S. Geological Survey Professional Paper 303-E. p. 223-334.
- , and Bickel, R., 1952. Stratigraphy and structure of the Grandstand and Hawk anticlines and vicinity, Alaska. U.S. Geological Survey investigations Naval Petroleum Reserve No. 4, Report 41.
- , and Dutro, J.T., Jr., 1977. Depositional environment and fauna for a section of the Sadlerochit Group, northeastern Alaska. U.S. Geological Survey Circular 751-B. p. B10-11.
- , Reiser, H.N., Brosge, W.P., and Dutro, J.T., Jr., 1975. Post-Carboniferous stratigraphy, northeastern Alaska. U.S. Geological Survey Professional Paper 886. 46p.
- Dutro, J.T., Jr., 1953. Stratigraphy and Paleontology of the Noatak and associated formations, Brooks Range, Alaska. Ph.D. Thesis, Harvard University.
- Eakin, H., 1918. The Cosna-Nowitna Region, Alaska. U.S. Geological Survey Bulletin 667. 54p.
- Fischer, W.A., and Ray, R.G., 1947. Stratigraphy and structure of the area of Maybe Creek. U.S. Geological Survey investigations Naval Petroleum Reserve No. 4, Report 4.
- , and Kover, A.N., 1950. Review of the stratigraphy and structure of the Gubik Anticline. U.S. Geological Survey investigations Naval Petroleum Reserve No. 4, Report 37.
- Frick, C., 1937. Horned ruminants of North America. *Bulletin of the American Museum of Natural History*, v. 69. 669p.
- Gebhardt, Robert, L., 1972. A Systematic Study of the Pennsylvanian brachiopods from Rainbow Mountain in west-central Alaska. M.S. Thesis, University of Alaska.
- Geist, O.W., 1962. Collecting Pleistocene fossils and natural history material in Arctic Alaska river basins, 1959, 1960, 1961. Arctic Institute of North America, Office of Naval Research.
- , 1937-1951. Field notes. University of Alaska, Archives Library, Fairbanks Alaska.
- Gordon, M., Jr., 1957. Mississippian cephalopods of northern and eastern Alaska. U.S. Geological Survey Professional Paper 283. 61p.
- Grant, A., Jones, D.L., and Lanphere, M.A., 1966. Stratigraphy, paleontology and isotopic ages of Upper Mesozoic rocks in the southwestern Wrangel Mountains, Alaska. U.S. Geological Survey Professional Paper 550-C. p. C39-47.
- Guthrie, R.D., 1966. Extinct wapiti of Alaska and Yukon Territory. *Canadian Journal Zoology*. v. 44, no. 1. p. 47-57.
- , 1967. Differential preservation and recovery of Pleistocene large mammal remains in Alaska. *Journal Paleontology*, v. 41, no. 1. p. 243-246.
- , 1968. Paleoecology of the large mammal community in interior Alaska during the Late Pleistocene. *American Midland Naturalist*, v. 79, no. 2. p. 346-361.
- , 1973. Mummified pika (*Ochotona*) carcass and dung pellets from Pleistocene deposits in interior Alaska. *Journal of Mammalogy*, v. 54, no. 4. p. 970-971.
- Hahn, G., Blodgett, R.B., and Gilbert, W.G., 1985. First Recognition of the Gshelian (Upper Pennsylvanian) trilobite *Brachymetopus pseudometopina* Gauri and Ramous in North America: and a description of accompanying trilobites from west-central Alaska. *Journal of Paleontology*, v. 59, no. 1. p. 27-31.
- Hansen, L., 1963. Bedrock geology of the Rainbow Mountain area, Alaska Range, Alaska. Alaska Division of Mines and Minerals - Geologic Report 2. 82p.
- Harrington, C.R., 1980. Radiocarbon dates on some Quaternary mammals and artifacts from northern North America. *Arctic*, v. 33(4). p. 815-832.
- , 1980. Pleistocene mammals from Lost Chicken Creek, Alaska. *Canadian Journal of Earth Science*, v. 17, no. 2. p. 168-198.
- , 1969. Pleistocene remains of the lion-like cat (*Panthera atrox*) from the Yukon Territory and northern Alaska. *Canadian Journal of Earth Science*. v. 6, no. 5. p. 1277-1288.
- Hoare, J.M., and Conrad, W.L., 1959. Geology of the Bethel Quadrangle, Alaska. U.S. Geological Survey Miscellaneous Geologic Investigation Map, I-285.
- , 1959. Geology of the Russian Mission Quadrangle, Alaska. U.S. Geological Survey Miscellaneous Geologic Investigations Map, I-292.
- Hollick, A., 1930. The Upper Cretaceous floras of Alaska. U.S. Geological Survey Professional Paper 159. 123p.
- , 1936. The Tertiary floras of Alaska. U.S. Geological Survey Professional Paper 182. 171p.

- Hopkins, D., and Smith, P., 1981. Dated wood from Alaska and the Yukon: implications for forest refugia in Beringia. *Quaternary Research* v. 15. p. 217-249.
- House, M.R., and Blodgett, R.B., 1982. The Devonian goniatite genera *Pinacites* and *Foordites* from Alaska. *Canadian Journal of Earth Science*, v. 19. p. 1873-1876.
- Imlay, R.W., 1955. Characteristic Jurassic mollusks from northern Alaska. U.S. Geological Survey Professional Paper 274-D. p. 53-67.
- , 1959. Succession and speciation of the pelecypod *Aucella*. U.S. Geological Survey Professional Paper 314-G. p. 155-169.
- , 1961. Characteristic Lower Cretaceous megafossils from northern Alaska. U.S. Geological Survey Professional Paper 335. 74p.
- , 1967. The Mesozoic pelecypods *Otapiria* Marwick and *Lupherella* Imlay, new genus in the United States. U.S. Geological Survey Professional Paper 573-B. p. B1-11.
- , 1976. Middle Jurassic (Bajocian and Bathonian) ammonites from northern Alaska. U.S. Geological Survey Professional Paper 854. 22p.
- , 1981. Early Jurassic ammonites from Alaska. U.S. Geological Survey Professional Paper 1148. 49p.
- , 1981a. Late Jurassic ammonites from Alaska. U.S. Geological Survey Professional Paper 1190. 19p.
- , and Detterman, R.L., 1973. Jurassic paleobiogeography of Alaska. U.S. Geological Survey Professional Paper 801. 34p.
- Jones, D.L., Murphy, M.A., and Packard, E., 1965. The Lower Cretaceous (Albian) ammonite genera *Leconteites* and *Breweriaceras*. U.S. Geological Survey Professional Paper 503-F. p. F1-21.
- , and Gryc, G., 1960. Upper Cretaceous pelecypods of the genus *Inoceramus* from northern Alaska. U.S. Geological Survey Professional Paper 334-E. p. 149-165.
- , and Grantz, A., 1964. Stratigraphic and structural significance of Cretaceous fossils from Tiglukpuk Formation, northern Alaska. *American Association of Petroleum Geologists Bulletin*, v. 48, no. 9. p. 1462-1474.
- Kanno, S., 1971. Tertiary molluscan fauna from the Yakataga District and adjacent areas of southern Alaska. *Paleontology Society of Japan Special Paper* #16. 142p.
- Keller, A.S., Morris, R., and Detterman, R.L., 1961. Geology of the Shavirovik and Sagavanirktok Rivers Region, Alaska. U.S. Geological Survey Professional Paper 303-D. p. 171-200.
- Kerher, G.C., and others, 1966. *Lexicon of geologic names of the United States for 1936-1960*. U.S. Geological Survey Bulletin 1200, pt. 1, 2, 3.
- , 1970. *Lexicon of Geologic Names of the United States for 1961-1967*. U.S. Geological Survey Bulletin 1350. 848p.
- Knoll, A., 1975. The Paleontology of the proposed Yukon-Charley National Rivers area. Report to the National Park Service by the Center for Northern Studies, Wolcott, Vermont.
- Kontrimavichus, V.L. (ed.), 1976. *Beringia in the Cenozoic Era*. Vladivostok. 593p.
- Langenheim, R., Smiley, C., and Gray, J., 1960. Cretaceous amber from the Arctic Coastal Plain of Alaska. *Bulletin of Geological Society of America*. v 71. p. 1345-1356.
- Leffingwell, E.K., 1919. The Canning River Region, northern Alaska. U.S. Geological Survey Professional Paper 109. 251p.
- Lowther, J.S., 1957. A Cretaceous flora from northern Alaska. Ph.D. dissertation, University of Michigan. 212p.
- MacKewett, E.M., Jr., 1974. Geologic Map of the McCarthy B-5 Quadrangle, Alaska. U.S. Geological Survey Quadrangle Map GQ-1146.
- MacNeil, F.S., 1957. Cenozoic megafossils of northern Alaska. U.S. Geological Survey Professional Paper 294-C. p. 99-126.
- , 1961. *Lituyapecten* (new subgenus of *Patinopecten*) from Alaska and California. *Shorter contributions to general geology*. U.S. Geological Survey Professional Paper 354-J. p. 225-249.
- , 1965. Evolution and distribution of the genus *Mya* and Tertiary migrations of mollusca. U.S. Geological Survey Professional Paper 483-G. p. G1-G47.
- , 1967. Cenozoic pectinids of Alaska, Iceland, and other northern regions. U.S. Geological Survey Professional Paper 553. 57p.
- McCulloch, D.S., Taylor, D.W., and Rubin, M., 1965. Stratigraphy, non-marine Mollusks, and radiometric dates from Quaternary deposits in the Kotzebue Sound area, western Alaska. *Journal of Geology*, v. 73, no. 3. p. 442-452.
- Mamet, B.L., and Armstrong, A.K., 1972. Lisburne Group, Franklin and Romanzof Mountains, northeastern Alaska. U.S. Geological Survey Professional Paper 800-C. p. C127-C144.
- Mangus, M.D., Detterman, R.L., Lachenbruch, M.D., Jr., and Lachenbruch, A.H., 1950. Stratigraphy and structure of the Etivluk and Kuna Rivers area, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 35.
- Marincovich, L. Jr., Brouwers, E.M., and Carter, D.L., 1985. Early Tertiary marine fossils from northern Alaska: Implications for Arctic Ocean paleogeography and faunal evolution. *Geology*, v. 13. p. 770-773.
- , 1984. Early Tertiary marine fossils from Ocean Point, Arctic Coastal Plain, and their relation to Arctic Ocean paleogeography. U.S. Geological Survey Circular 939. p. 15-17.
- Mayfield, C.F., Ellersieck, I., and Tailleux, I.L., 1984. Explanation to accompany reconnaissance geologic map of the Noatak C5, D5, D6 and D7 Quadrangles, Alaska. U.S. Geological Survey Open File Report 84-396. 27p.
- Meek, C.E., 1923. Notes on stratigraphy and Pleistocene fauna from Peard Bay, Arctic Alaska. University of California Publication, Department of Geological Science Bulletin, v. 14, no. 13. p. 409-422.

- Mertie, J.B., 1918. The gold placers of the Tolovana District. U.S. Geological Survey Bulletin 662D. p. 221-227.
- , and Harington, G., 1924. The Ruby Kushokwim Region, Alaska. U.S. Geological Survey Bulletin 754. 129p.
- , 1930. Geology of the Eagle-Circle District, Alaska. U.S. Geological Survey Bulletin 816. 168p.
- , 1937. The Yukon-Tanana Region, Alaska. U.S. Geological Survey Bulletin 872. 236p.
- Miller, D.J., 1957. Geology of the southeastern part of the Robinson Mountains, Yakataga District, Alaska. U.S. Geological Survey OM-187.
- , 1961. Stratigraphic occurrence of *Lituyapekten* in Alaska. Shorter contributions to general geology. U.S. Geological Survey Professional Paper 354-K. p. 241-249.
- , 1971. Geologic Map of the Yakataga District, Gulf of Alaska, Tertiary Province, Alaska. U.S. Geological Survey I-610.
- Minato, M., and Rowett, C.L., 1967. Modes of reproduction in rugose corals. *Lethaia*, v. 1. p. 175-183.
- Moffit, F.H., 1912. Headwater regions of Gulkana and Susitna Rivers, Alaska. U.S. Geological Survey Bulletin 498. 82p.
- , 1914. Geology of the Hanagita-Bremner Region, Alaska. U.S. Geological Survey Bulletin 576. 56p.
- , 1938. Geology of the Chitina Valley and adjacent area, Alaska. U.S. Geological Survey Bulletin 894. 137p.
- Morgan, A., Morgan, A., and Carter, D.L., 1978. Paleoenvironmental interpretation of a fossil insect fauna from bluffs along the lower Colville River, Alaska. U.S. Geological Survey Circular 804-B. p. B41-43.
- Muesebeck, C., 1963. A new ceraphronid from Cretaceous amber (Hymenoptera:Proctotrupoidea) *Journal of Paleontology*, v. 37(1), p. 129-130.
- Mull, C.G., 1985. Cretaceous tectonics, depositional cycles and the Nanushuk Group, Brooks Range and Arctic Slope, Alaska. In Huggman, A. (ed) *Geology of the Nanushuk Group and related rocks, North Slope, Alaska*. U.S. Geological Survey Bulletin 1614. p. 7-36.
- Nelson, C.M. Jr., 1974. Evolution of the Late Cenozoic gastropod *Neptunea* (Gastropoda:Buccinacea). Ph.D. dissertation, University of California, Berkeley.
- Oliver, W.P., Jr., Merriam, C.W., and Churkin, M. Jr., 1975. Ordovician, Silurian and Devonian corals of Alaska. U.S. Geological Survey Professional Paper 823-B. p. 13-42.
- Orth, D.J., 1967. Dictionary of Alaska place names. U.S. Geological Survey Professional Paper 567, 1080p.
- Packard, E., and Jones, D., 1965. Cretaceous pelecypods of the genus *Pinna* from the West Coast of North America. *Journal of Paleontology*, v. 39(5). p. 910-915.
- Patton, W.W., Jr., 1966. Regional Geology of the Kateel River Quadrangle, Alaska. U.S. Geological Survey Map I-437.
- , and Miller, T., 1966. Regional Geologic Map of the Hughes Quadrangle, Alaska. U.S. Geological Survey Map I-459.
- , and Tailleux, I., 1950. Stratigraphy and structure of the Okpikruak and Kiruktugiak Rivers area, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 34.
- , and Tailleux, I., 1964. Geology of the Killik-Itkillik Region, Alaska. U.S. Geological Survey Professional Paper 303-G. p. 409-500.
- , 1978. Juxtaposed continental and oceanic-island arc terranes in the Medfra Quadrangle, west-central Alaska. In Johnson, K.M., ed., U.S. Geological Survey Circular 772B. p. B38-39.
- Payne, T.G., Warner, L.A., and Kirschner, C.E., 1946. Stratigraphy and structure of the areas of the Killik, Chandler, Anaktuvik and Colville Rivers, Alaska. Geological investigation of Naval Petroleum Reserve No. 4, Alaska. Report 1.
- Perkins, P.C., 1971. The dipnoan fish *Dipterus* from the Middle Devonian (Givetian) of Alaska. *Journal of Paleontology*, v. 45. p. 554-555.
- Pewe, T., 1966. Permafrost and its effect on life in the North. Oregon State University Press. Corvallis. 40p.
- , 1975. Quaternary geology of Alaska. U.S. Geological Survey Professional Paper 835. 145p.
- Porter, L., 1979. Ecology of a Late Pleistocene (Wisconsin) ungulate community near Jack Wade, east-central Alaska. M.S. thesis, University of Washington, Seattle.
- Prindle, L., 1909. The Fortymile Quadrangle. U.S. Geological Survey Bulletin 375. 52p.
- , Katz, F.J., and Smith, P.S., 1913. A geologic reconnaissance of the Fairbanks Quadrangle, Alaska. U.S. Geological Survey Bulletin 525. 220p.
- Quackenbush, L.S., 1909. Notes on Alaskan mammoth expeditions of 1907 and 1908. *American Museum of Natural History Bulletin*, v. 26, Art. 9. p. 87-130.
- Repenning, C., 1983. New evidence for the age of the Gubik Formation Alaskan North Slope. *Quaternary Research*, v. 19. p. 356-372.
- Rigby, J.K., and Blodgett, R.B., 1983. Early Middle Devonian sponges from the McGrath Quadrangle of west-central Alaska. *Journal of Paleontology*, v. 57, no. 4. p. 773-786.
- Roehler, H.W., and Stricker, G., 1984. Dinosaur and wood fossils from the Cretaceous Corwin Formation in the National Petroleum Reserve, North Slope of Alaska, Alaska Geological Society, v. 4, p. 35-41.
- Rohr, D.M., and Blodgett, R.B., 1985. Upper Ordovician gastropods from west-central Alaska. *Journal of Paleontology*, v. 59, no. 3. p. 667-673.
- Rowett, C.L., 1969. Upper Paleozoic stratigraphy and corals from the east-central Alaska Range, Alaska. Arctic Institute of North America, Technical Paper No. 23. 120p.
- , 1975. Stratigraphic distribution of Permian corals in Alaska. U.S. Geological Survey Professional Paper 823-D. p. 59-73.
- , and Timmer, R., 1973. Lophophyllid, hapsiphyllid and polycoid corals of Pennsylvanian age from the east-central Alaska Range. *Pacific Geology*, v. 6. p. 1-16.

- Sainsbury, C.L., 1965. Previously undescribed Middle(?) Ordovician, Devonian(?) and Cretaceous(?) rocks, White Mountain area, near McGrath, Alaska. Geological Survey Research: U.S. Geological Survey Professional Paper 525-C. p. C91-95.
- Schrader, F.C., 1904. A reconnaissance in northern Alaska. U.S. Geological Survey Professional Paper 20. 139p.
- Scott, R.A., and Smiley, C.J., 1979. Some Cretaceous plant megafossils and microfossils from the Nanushuk Group, northern Alaska: A preliminary report. U.S. Geological Survey Circular 794. p. 89-93.
- Skinner, M.F., and Kaisen, O.C., 1947. The fossil *Bison* of Alaska and preliminary revision of the genus. Bulletin of American Museum of Natural History, v. 89. Art. 3. p. 123-256.
- Smiley, C.J., 1972. Applicability of plant megafossils biostratigraphy to marine non-marine correlations: An example from the Cretaceous of northern Alaska. 24th International Geological Congress, Montreal, Section 7. p. 413-421.
- , 1969. Cretaceous floras of Chandler-Colville Region, Alaska: Stratigraphic and preliminary floristics. American Association of Petroleum Geologists Bulletin, v. 53, no. 3. p. 482-502.
- , 1969a. Floral zones and correlations of Cretaceous Kukpowruk and Corwin Formations, northwest Alaska. American Association of Petroleum Geologists, v. 53. p. 2079-2093.
- , 1966. Cretaceous floras from Kuk River area, Alaska: Stratigraphic and climatic interpretations. Geological Society of America Bulletin, v. 77. p. 1-14.
- Smith, P.S., 1939. Areal Geology of Alaska. U.S. Geological Survey Professional Paper 192. 100p.
- , and Mertie, J.B., Jr., 1930. Geology and mineral resources of northwestern Alaska. U.S. Geological Survey Bulletin 815. 351p.
- Springer, F., 1926. The genus *Pentacrinus* in Alaska. Proceedings U.S. National Museum, v. 67(5). p. 1-7.
- Stefansson, K., 1948. Stratigraphy and structure of the area of the Ipnarik River, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 14.
- , Thurrell, R.F. Jr., and Zumberge, J.H., 1948. Stratigraphy and structure of the area of the Colville River, north of Umiat, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 12.
- Stock, C.W., 1981. *Cliefdenella alaskaensis* n. sp. (Stromatoporoidea) from the Middle/Upper Ordovician of central Alaska. Journal of Paleontology, v. 55, no. 5. p. 998-1005.
- Strimple, H., Allison, R., and Kline, G., 1971. Pennsylvanian crinoids from Alaska. University of Kansas Paleontology Contributions, Paper no. 56, p. 9-15.
- Tailleur, I., Mull, C., and Tourtelot, H., 1973. A skeleton in Triassic rocks in the Brooks Range foothills. Arctic v. 26(1). p. 79-81.
- Tasch, P., 1979. Fossiliferous beach gravels, Barrow, Alaska: Preliminary observations. Transactions of Kansas Academy of Science, v. 82. p. 100.
- Unklesbay, A. and Pauken, R., 1966. Pennsylvanian ammonoids from Alaska. Journal of Paleontology, v. 40. p. 1379-1380.
- Weber, E.J., 1947. Stratigraphy and structure of the area of the Meade and Kuk Rivers and Point Barrow, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 6.
- , 1948. Stratigraphy and structure of the area of the Titluk River and upper part of Ikpikuk River, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 16.
- Whitmore, F.C., and Foster, H.L., 1967. *Panthera atrox* (Mammalia: felidae) from central Alaska. Journal of Paleontology, v. 42, no. 1. p. 247-251.
- Whittington, C.L., and Troyer, M.L., 1948. Stratigraphy and structure of the area of the Kigalik and Awuna Rivers, Alaska. U.S. Geological Survey investigation Naval Petroleum Reserve No. 4, Report 17.
- Williams, J.R., 1978. Stratigraphy of the Gubik Formation at Skull Cliff, northern Alaska. U.S. Geological Survey Circular 804-B. p. B31-33.
- , 1983. Engineering-geologic maps of northern Alaska, Meade River Quadrangle. U.S. Geological Survey Open File Report 83-294. 32p.
- , 1983a. Engineering-geologic maps of northern Alaska, Wainwright Quadrangle. U.S. Geological Survey Open File Report 83-457. 30p.
- , and Carter, D.L., 1984. Engineering-geologic maps of northern Alaska, Barrow Quadrangle. U.S. Geological Survey Open File Report 84-124. 39p.
- Wilmarth, M.G., 1938. Lexicon of geologic names of the United States. U.S. Geological Survey Bulletin 896, pt. 1, 2.
- Wilson, C.W., 1981. Bibliographic references to Alaskan fossils, 1839-May 1979. U.S. Geological Open File Report 81-0624. 74p.
- Wolfe, J.A., 1977. Paleogene floras from the Gulf of Alaska Region. U.S. Geological Survey Professional Paper 997. 108p.
- Wood, G., and Armstrong, A., 1975. Diagenesis and stratigraphy of the Lisburne Group limestones of the Sadlerochit Mountains and adjacent areas, northeast Alaska. U.S. Geological Survey Professional Paper 857. 47p.
- Yeend, W., 1984. Engineering-geologic maps of northern Alaska, Utukok River Quadrangle. U.S. Geological Survey Open File Report 84-682.
- , 1983. Engineering-geologic maps of northern Alaska, Lookout Ridge Quadrangle. U.S. Geological Survey Open File Report 83-279.
- Yochelson, E.L., and Dutro, J.T., Jr., 1960. Late Paleozoic gastropods from northern Alaska. In Shorter contributions to general geology 1958. U.S. Geological Survey Professional Paper 334-D. p. 111-146.
- , and Dutro, J.T., Jr., 1963. *Mourlonia sablei*, new name for *Mourlonia minuta* Yochelson and Dutro 1960, not Weller 1916. Journal of Paleontology, v. 37, no. 3, p. 725.