

Cross sections are intended to show the generalized relations between allochthons. Detailed relations between rock units are largely schematic. In a few areas, folds or faults are shown on the map sections in order to rationalize the apparent structures, but they are not included on the map sections. Rock units have not been extrapolated beneath the color on the sections, although thrust faults are schematically illustrated below the color. See sheet 1 for explanation of map symbols.

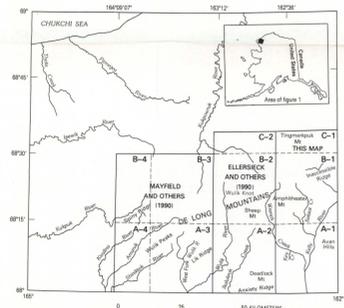


Figure 2.—Diagram showing the usual stacking position of structural units (allochthons) and stratigraphic units (sequences) in the southern part of the De Long Mountains quadrangle and the southwestern part of the Misheguk Mountains quadrangle (Curtis and others, 1984). Allochthons are numbered from structurally lowest (1) to structurally highest (7). Although the lowest thrust sheets of the Brooks Range allochthon are not exposed in the quadrangle, field relations from other areas indicate that the base is in fault contact with relatively autochthonous rocks (Mull and others, 1976; Mull and Tailleux, 1977). Lateral and vertical positions of stratigraphic sequences are shown as a schematic cross section from west to east. Thrust faults that separate allochthons shown with solid teeth; thrust faults that separate sequences within an allochthon shown with open teeth. Facies changes or uncertain relations between sequences shown with dashed lines.

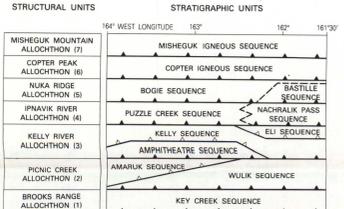


Figure 3.—Generalized allochthon and sequence map of south-central and southeastern De Long Mountains 1:250,000-scale quadrangle. Southwest on upper side of intersection thrust faults. Dashed lines indicate boundaries with uncertain locations. Parts of Picnic Creek allochthon shown with an asterisk may be Wolvenine Creek allochthon of Moore and others (1986), which is correlative with Ivotuk sequence of Brooks Range allochthon (Mayfield and others, 1988).

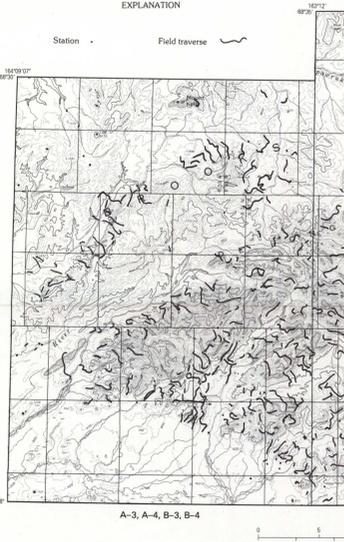


Figure 4.—Location of stations and field traverses used in compilation of this map and the two other maps in this series.

STRUCTURAL UNITS

MISHEGUK MOUNTAIN ALLOCHTHON (7)

COPTER PEAK ALLOCHTHON (6)

NUKA RIDGE ALLOCHTHON (5)

IPNAVIK RIVER ALLOCHTHON (4)

KELLY RIVER ALLOCHTHON (3)

PICNIC CREEK ALLOCHTHON (2)

BROOKS RANGE ALLOCHTHON (1)

STRATIGRAPHIC UNITS

MISHEGUK IGNEOUS SEQUENCE

COPTER IGNEOUS SEQUENCE

BOGIE SEQUENCE

PUZZLE CREEK SEQUENCE

KELLY SEQUENCE

AMPHITHEATRE SEQUENCE

AMARIK SEQUENCE

WULK SEQUENCE

KEY CREEK SEQUENCE

EXPLANATION

3 Kelly River allochthon, Kelly sequence

3A Kelly River allochthon, Amphitheatre sequence

4 Ipnavik River allochthon, Puzzle Creek sequence

5 Nuka Ridge allochthon, Bogie sequence and (or) olistoliths of Bogie sequence within other allochthons

6 Copter Peak allochthon, Copter igneous sequence

7 Misheguk Mountain allochthon, Misheguk igneous sequence

Kf Fortress Mountain Formation (autochthonous)

Kfo Fortress Mountain Formation (autochthonous) and Otipkruak Formation (allochthonous), undivided

Ko Otipkruak Formation, allochthon unknown

1 Brooks Range allochthon, Key Creek sequence

2 Picnic Creek allochthon, Amurik sequence

2W Picnic Creek allochthon, Wulk sequence

TABLE 1.—Comparison of allochthons in this report with equivalent structural units of other authors

This report	Curtis and others, 1984; Ellerseeck and others, 1984; Mayfield and others, 1984	Ellerseeck and others, 1979	Mull, 1979	Churkin and others, 1979	Mayfield and others, 1978a	Martin, 1970	Snelson and Tailleux, 1968; Tailleux and Brogg, 1970	Tailleux and others, 1966
Misheguk Mountain allochthon	Misheguk Mountain allochthon	Misheguk Mountain thrust sequence	Misheguk	Not distinguished	Misheguk Mountain thrust sequence	Ultrabasic pluton sequence	Misheguk thrust tectonic unit	Not distinguished
Copter Peak allochthon	Copter Peak allochthon	Copter Peak thrust sequence	Copter Peak	---do---	---do---	---do---	---do---	Do.
Nuka Ridge allochthon	Nuka Ridge allochthon	Nuka Ridge thrust sequence	Nuka Ridge	---do---	Nuka Ridge thrust sequence	Nuka Ridge	Nuka Ridge thrust tectonic unit	Nuka Ridge
Ipnavik River allochthon	Ipnavik River allochthon	Ipnavik River thrust sequence	Ipnavik	---do---	Ipnavik River thrust sequence	Ipnavik	Ipnavik thrust tectonic unit	Ipnavik
Kelly River allochthon	Kelly River allochthon	Kelly River thrust sequence	Kelly	---do---	Kelly River thrust sequence	De Long	Kelly thrust tectonic unit	Not distinguished
Picnic Creek allochthon	Picnic Creek allochthon	Picnic Creek thrust sequence	Not distinguished	---do---	Northwestern Brooks Range thrust sequence	Not distinguished	Wulk thrust tectonic unit	Sequence at Killgav River (eastern facies)
Brooks Range allochthon	Brooks Range allochthon	Brooks Range thrust sequence	Endicott sequence (eastern facies)	Kayak structural sequence	North-central Brooks Range thrust sequence (eastern facies)	Brooks Range sequence	Foothills thrust tectonic unit	Sequence at Mount Bapto (eastern facies)

TABLE 2.—Important criteria used to distinguish sequences

Sequence	Approximate age of diagnostic lithologies	Description of diagnostic lithologies in the sequence
Misheguk igneous sequence	(Jurassic?)	Only sequence composed of gabbro and peridotite
Copter igneous sequence	(Jurassic?) and Triassic	Only sequence that contains extensive pillow basalt
Bogie sequence	Carboniferous	Only sequence that contains the Nuka Formation
Puzzle Creek sequence	Early Pennsylvanian(?) to mid-Mississippian	Relatively thick black chert and (or) black chert and limestone or dolomite (thickness generally greater than 100 m). Underlain by: Kayak Shale and Uluok Formation
Kelly sequence	Late and Middle Devonian	Base of section is limestone unit of the Baitol Group
Amurik sequence	Early Pennsylvanian(?) to mid-Mississippian	Thick section of Kogruk Formation (thickness generally greater than 500 m). Underlain by: Thick section of Uluok Formation (thickness generally greater than 500 m)
Wulk sequence	Early Pennsylvanian(?) to mid-Mississippian	Relatively thick black chert and (or) black chert and limestone units (thickness as much as 200 m). Underlain by: Thick section of Kayak Shale and (or) Uluok Formation
Key Creek sequence	Early Pennsylvanian(?) to mid-Mississippian	Relatively thick black chert and (or) black chert and limestone units (thickness generally greater than 75 m). Underlain by: This and discontinuous Kuna Formation (thickness generally less than 30 m). Underlain by: This to thick section of micritic limestone unit (thickness up to 80 m)
	Early Pennsylvanian to middle Mississippian	Relatively thick shaly Kuna Formation (thickness approx. 60 m). Bedded black chert unit on top of Kuna Formation is generally less than 15 m thick. Unit underlain by: Relatively thin and discontinuous Kogruk Formation (thickness less than 30 m), or micritic limestone unit (thickness less than 30 m). Base is thick section of Upper Devonian sandstone and shale of the Kanayut Conglomerate, Noatak Sandstone, and Hunt Fox Shale (thickness of least 600 m)

TABLE 3.—Selected fossils from De Long Mountains A-1 and B-1 quadrangles and part of the C-1 quadrangle, Alaska

(Most fossils collected in 1979 during bedrock for this mapping project, but includes previously unpublished fossil collections. Some collections by geologists from private industry and dated by USGS paleontologists.)

Map locality	Field number	Latitude north	Longitude west	USGS collection number	Fossil age	Fossil type	Map unit	Fossil type	Identified by
1	68AT182.4	68°15'12"	162°04'00"	8299-SD	Devonian	Corals	Dbj <sub>3</sub>	Corals	*W.A. Oliver
2	68AT175F	68°07'45"	162°16'54"	---	Mississippian(?)	Brachiopods, corals, crinoids, bryozoans	Mu <sub>1</sub>	Brachiopods, corals, crinoids, bryozoans	*A.K. Armstrong
3	79C226C	68°22'53"	162°18'34"	---	Early Mississippian	---	---	---	---
4	79M4181-62m	68°13'45"	162°28'42"	28393-PC	Late Mississippian (probably early Meramecian)	Brachiopods	Mm <sub>1</sub>	Brachiopods	*J.T. Dutro, Jr.
4	79M4181-70	---	---	28394-PC	---	---	---	---	---
4	79M4181-81m	---	---	28395-PC	---	---	---	---	---
4	79M4181-99m	---	---	---	---	---	---	---	---
4	79M4181-112m	---	---	---	---	---	---	---	---
5	79M664F	68°13'45"	162°30'18"	---	Early Mississippian (Visean) Mamet zone 11 or younger	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
6	77M120	68°21'27"	162°05'57"	---	Probably Devonian	Stromatolite, brachiopods	Dbj <sub>3</sub>	Stromatolite, brachiopods	*C.F. Mayfield
7	68AT137	68°25'05"	162°11'31"	21779-PC	Late Mississippian	Brachiopods, corals	Mm <sub>1</sub>	Brachiopods, corals	*J.T. Dutro, Jr.
8	'26363	68°15'24"	162°03'48"	9172-SD	Probably Devonian or older	Stromatolite	Dbj <sub>3</sub>	Stromatolite	*W.A. Oliver
9	79E274A	68°08'10"	162°30'48"	---	Late Devonian (Famennian) to Early Mississippian (Osgonian) CAI-3	Conodonts	Mu <sub>1</sub>	Conodonts	*A.G. Harris
10	79M647	68°20'18"	162°18'12"	---	Middle Devonian to Early Mississippian (middle Osgonian) CAI-3	Conodonts	Dbj <sub>3</sub>	Conodonts	*A.G. Harris
11	79M644C	68°21'21"	162°02'24"	27506-PC	Mississippian (middle Osgonian) CAI-3	Conodonts	Pm <sub>1</sub>	Conodonts	*A.G. Harris
12	79C60A	68°18'57"	162°08'54"	10013-SD	Late Devonian (Famennian) CAI-3	Conodonts	Dbj <sub>3</sub>	Conodonts	*A.G. Harris
13	79M4164-43.5m	68°08'25"	162°29'47"	27527-PC	Mississippian (probably early Meramecian)	Brachiopods	Pm <sub>1</sub>	Brachiopods	*J.T. Dutro, Jr.
13	79M4164-51m	68°08'25"	162°29'47"	---	Early to Middle Pennsylvanian	Radiolarians	Pm <sub>1</sub>	Radiolarians	*B.L. Murchey
14	79M4164-121.5m	68°08'32"	162°29'28"	---	Triassic	Radiolarians	Jko	Radiolarians	*B.L. Murchey
15	68AT170	68°12'06"	162°26'12"	---	Late Mississippian (Mammetian)	Foraminifers, corals	Mu <sub>2</sub>	Foraminifers, corals	*A.K. Armstrong
16	68AT111	68°34'08"	162°10'48"	---	Early Carboniferous	Pachymorphs	Kfo	Pachymorphs	*B.L. Murchey
17	79E107B1	68°15'33"	162°13'23"	---	Mississippian to Early Pennsylvanian	Radiolarians	Pm <sub>1</sub>	Radiolarians	*B.L. Murchey
17	79E107B2	68°15'33"	162°13'23"	---	Mississippian to Early Pennsylvanian	Radiolarians	Pm <sub>1</sub>	Radiolarians	*B.L. Murchey
18	79E197A	68°11'23"	162°12'18"	---	Late Mississippian to Permian	Radiolarians	Yp <sub>1</sub>	Radiolarians	*B.L. Murchey
19	79E274B	68°08'22"	162°30'48"	---	Late Mississippian to Permian	Radiolarians	Yp <sub>1</sub>	Radiolarians	*B.L. Murchey
20	79M442E	68°16'00"	162°03'30"	---	Late Mississippian to Early Pennsylvanian	Radiolarians	Jp <sub>2</sub>	Radiolarians	*B.L. Murchey
21	79M444a	68°21'40"	162°03'36"	---	Late Mississippian to Early Pennsylvanian	Radiolarians	Pm <sub>1</sub>	Radiolarians	*B.L. Murchey
22	79T1D	68°10'17"	162°20'33"	---	Late Mississippian to Early Pennsylvanian	Radiolarians	Pm <sub>1</sub>	Radiolarians	*B.L. Murchey
23	79M658C	68°24'09"	162°17'56"	---	Late Mississippian (Visean) Mamet zone 9 or younger	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
24	79E125A	68°15'00"	162°29'00"	---	Mississippian (Late Tournaian) Mamet zone 9 or younger	Foraminifers	Mu <sub>2</sub>	Foraminifers	*B.L. Mamet
25	79T36C1	68°17'42"	162°22'51"	---	Early Mississippian (middle Tournaian) Mamet zone 7 or older	Foraminifers	Mu <sub>2</sub>	Foraminifers	*B.L. Mamet
26	79T37A	68°17'18"	162°33'12"	---	Mississippian	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
27	79T38D1	68°26'20"	162°02'06"	---	Late Mississippian (Visean) Mamet zone 11 or younger	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
28	79T41C	68°25'09"	162°18'12"	---	Late Mississippian (Visean) Mamet zone 12 or younger	Foraminifers	Pm <sub>1</sub>	Foraminifers	*B.L. Mamet
28	79T41C	68°25'09"	162°18'12"	28372-PC	Mississippian (Meramecian to Chesterian)	Pelecypods	Pm <sub>1</sub>	Pelecypods	*J.T. Dutro, Jr.
29	79T43A2	68°26'15"	162°08'20"	---	Late Mississippian (Visean) Mamet zone 12 or younger	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
29	79T43B	68°26'15"	162°08'20"	---	Late Mississippian (Visean) Mamet zone 11 or younger	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
30	79T45B	68°21'45"	162°28'18"	---	Late Mississippian (Visean) Mamet zone 12 or younger	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
31	79T47A	68°15'25"	162°30'00"	---	Late Mississippian (Visean) Mamet zone 11 or younger, probably zone 12	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
32	79T47B	---	---	---	---	---	---	---	---
32	79T47C	---	---	---	---	---	---	---	---
32	79T47D	---	---	---	---	---	---	---	---
32	79T47E	---	---	---	---	---	---	---	---
32	79T47F	---	---	---	---	---	---	---	---
32	79T47G	---	---	---	---	---	---	---	---
33	79T134B	68°19'50"	162°19'27"	---	Late Mississippian (Visean) Mamet zone 11-12	Foraminifers	Mm <sub>1</sub>	Foraminifers	*B.L. Mamet
34	79T157	68°17'35"	162°12'40"	28396-PC	Late Mississippian (probably Meramecian)	Brachiopods	Mm <sub>1</sub>	Brachiopods	*J.T. Dutro, Jr.
35	79E209C	68°28'21"	162°25'25"	28383-PC	Late Mississippian (probably Meramecian)	Brachiopods	Mm <sub>1</sub>	Brachiopods	*J.T. Dutro, Jr.
36	79C176C	68°23'14"	162°28'48"	28387-PC	Late Mississippian (probably Meramecian)	Gastropods	Mm <sub>1</sub>	Gastropods	*J.T. Dutro, Jr.
37	79T156	68°16'06"	162°16'24"	28378-PC	Late Mississippian (probably Meramecian)	Corals	Mm <sub>1</sub>	Corals	*J.T. Dutro, Jr.
38	79T34B	68°21'03"	162°12'12"	10472-SD	Late Middle Devonian	Brachiopods	Dbj <sub>3</sub>	Brachiopods	*J.T. Dutro, Jr.
39	79C203D	68°30'32"	162°12'50"	28389-PC	Late Mississippian	Brachiopods	Pm <sub>1</sub>	Brachiopods	*J.T. Dutro, Jr.

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CROSS SECTIONS TO ACCOMPANY

RECONNAISSANCE GEOLOGIC MAP OF THE DE LONG MOUNTAINS A-1 AND B-1 QUADRANGLES AND PART OF THE C-1 QUADRANGLE, ALASKA