	SOUTHEASTERN	Copper River		GULF OF ALASKA	[Arrangement of units	within individual districts based on stratigraphic seque		of districts with respect to each other, within the space of the space	ace allotted to an individ	Yukon		Kuskokwim		NORTHERN ALASKA		SEWARD PENINSULA	NOD SA
A G G District		District Lithologic description	District	Lithologic description	District	Lithologic description	District	Lithologic description	District	Lithologic description	District	Lithologic description	District	Lithologic description	District	Lithologic description	ER- PEB
OUATE NARY Thr	roughout parts of every major region of the the relation of some of the older deposit	e Territory deposits of material origin ts is not so readily discernible, and var	nating through g nished ice sheet	glacial, fluviatile, lacustrine, marine, or eolian ts, dormant volcanoes, abandoned shore line	action, or accum s, deserted river	ulated as outpourings of lava or the ejected courses, uplifts, and depressions must be i	material produce nferred to explain	d by volcanic activity, were formed du some of the deposits that here and th	ring Quaternary timere are found in even	ne. Many of these deposits may be directled ery region. The complex sequences of the	y traced into depevents thus reco	posits in course of accumulation orded have not yet been determ	or destruction ained with suffice	by the existing rivers, glaciers, oceans sient precision so that they can be set	volcanoes, we forth here in o	thering or erosion. However, hronologic order.	QUATER
			Lituya	Marine shale.					Hot Springs-				Compine	Neutral tinted soft shale with		·	
e e e e e e e e e e e e e e e e e e e	Rhyolite, obsidian, andesite, and basalt.		Yakutat	Cross-bedded sandstone, shale, and clay, in part marine, in part terrigenous.  Conglomerate, shale, sandstone of marine and glacial origin, described as Pinnacle "system."			Shumagin- Moller	Shale and sandstone.	Rampart  Fortymile- Eagle	High gravels, slightly consolidated.  High gravels, slightly consolidated.			Canning	some rounded concretions. Marrine,	Nome	Part of coastal plain sequence of sand, gravel, and silt. Marine.	liocene
<u>a</u>			Yakataga	Shale flaggy conditions and conglom-			?						Colville	Gray and slate-colored calcareous silts. Marine.			
			Lituya	Marine sandstone, shale, conglomerate, and coal.													
eu e			Yakataga	Buff sandstone, shale, intercalated con- glomerate. Quartzose, marine sandstone, and shale. Marine calcareous shale, thin limestone,		Basaltic lava, and volcanic rocks, some											ocene
IOZOIC			•	Marine calcareous snale, thin limestone, and conglomerate.  Sandstone, shale, flaggy sandstone.  Tokun.	Matanuska	rhyolitic flows near top of section.  Arkose, conglomerate, shale.  Massive conglomerate. Eska conglomerate.	Shumagin- Moller	Conglomerate. Unga conglomerate.	Kantishna- Donnelly	Loosely consolidated gravel and sand.  Nenana gravel.	Tonzona	Loosely consolidated gravel and sand. Nenana gravel.			General	Basaltic and andesitic lava flows and pyroclastics.	
CEN CRTIARY Oligoce			Katalla N.	Arkose, coal, sandstone, shale. Kushtaka formation. Shale and sandstone. Stillwater formation.		giunici asc.	Kodiak										Oligoo
			Katalla S.	Marine shale, sandstone, conglomerate.  Katalla formation.				,									-
					Seldovia-	Sandstone, shale, some conglomerate	g 1	Sandstone, shale, little conglom-	Koyukuk-Dall	Basaltic lava flows. Clay, shale, sandstone, conglomerate, and lignite.	7			1			
					Hope	and coal. Kenai formation.	General	Sandstone, shale, little conglomerate and lignite. Pyroclastics, andesite, and basalt flows.	Nulato- Marshall —Fortymile-	Andesite and basalt flows and tuff.  Rhyolite, dacite, and andesite. Undifferentiated from Cretaceous,							
General		Agglomerate, flows, breccia and tuff. Conglomerate, variegated clay, lenses of	Yakataga	Fine gray arkose, black shale, some coal.	Spurr- Yentna.	Sandstone, shale, grit, coal; compara- able to Kenai formation.	Shumagin- Moller	Soft shale, sandstone and grit, marine alternating with terrigenous.	Eagle. Cosna-	heavy conglomerate, sandstone, and shale.	Goodnews	Basalt, tuff, ellipsoidal lava interlaminated with minor amounts of sedi- mentary rocks.	Kobuk	Conglomerate, soft cross-bedded sandstone, shales, some coal; comparable to Kenai formation.	General	Sandstone, shale, conglomerate, coal; comparable to Kenai formation.	Eocene
	Coarse sandstone with inter- calated conglomerate, and some coal.	coal, nonmarine.			——Chulitna	Rhyolitic lava, trachyte, andesite, some interbedded with Cantwell formation.		1	Iditarod  Rantishna	Rhyolite and andesite porphyry. Pyroxene andesite and basalt.  Coal-bearing series of shale, sandstone, and grit; comparable to Kenai for-							
					Matanuska	Shale, sandstone, and coal. Chicka- loon formation.	Kodiak	Shale, sandstone, grit, and coal; comparable to Kenai formation.		mation.							
					,				Donnelly- Kantishna Marshall	Coarse conglomerate, sandstone, and dark shale. Cantwell formation. Sandstone, graywacke, little conglomerate and argillite.							
	) Y	Undifferentiated sand-			Yentna	Black and gray slate, phyllite, and gray- wacke.		] = 1   2	Nulato —Innoko- Iditarod	erate and argillite. Sandstone, shale, coal. Nulato formation, part of Shaktolik group. Sandstone, shale, and conglomerate.			Anaktu- vuk-	Sandstone, shale, coal; little tuff at top of section.			
- D D D D		General stone, graywacke, arkose, shale, some conglomerate, and grit.	General	Undifferentiated sandstone, graywacke, arkose, shale, some conglomerate, and grit.	Matanuska Anchorage-	Sandstone and shale. Shale with subordinate formation.	Mulchatna- Chignik- Tikchik	Conglomerate, sandstone, shale Shale and coal beds. Shale.	Ruby-Koyu- kuk	Conglomerate sandstone, arkose, shale (part of Bergman and Shaktolik groups).	Tonzona- George- town	Sandstone shale and conglomerate.  Undifferentiated shale and	Lisburne Canning	Coarse gray sandstone.		Sandstone, shale, coal. Shaktolik group. Coarse conglomerate and grit. Un-	
ST O	?		?		Nuka	Argillite, graywacke, shale, small amounts of conglomerate and grit.			Hot Springs Rampart	Black massive impure sandstone and shale.  Greenish-gray to black sandstone, shale,	Good- news	sandstone.	Kobuk	Extension of Upper Cretaceous beds of adjacent districts of the Koyukuk Valley of Yukon region.		galik conglomerate.	Sno
ETACEOU									——Eagle	and graywacke. Conglomerate in upper part.							RETACEC
CRE			2				Tikchik	Dark fine-grained graywacke and slate.	Ruby-Koyu- kuk Hot Springs-	Dark shale, slate, sandstone, arkose, some lava flows and tuffs, former Koyukuk group.  Slate and quartzite.				·			C. C.
S —Genera	Black slate and shale gray- wacke, some conglomerate, calcareous sandstone, and	Kotsina- Chitina  Black shale, sandstone, and small amount of conglomerate and			Matanuska	Conglomerate, tuff, and arkose; some massive limestone. Nelchina limestone.		Gray arenaceous cross-bedded lime- stone. Herendeen limestone. Thin - bedded shale, little sand-	Rampart  Eagle	Sandstone and fine conglomerate. Black shale, gray to black sandstone. Kandik formation.	?		Anaktu- vuk- Lisburne	Greenish-brown sandstone, shale, little conglomerate, and grit; in- cludes former Anaktuvuk group.			Lower
7	impure limestone.	sandy shale.	?	?			Southwest- ern	stone, less conglomerate. Stan- iukovich shale.	Chisana-White	Undifferentiated shale and argillite, some graywacke.			??	•			
					1	Sandstone shale, argillite, little chert,											
					Chulitna {	some conglomerate, and limestone lenses. Conglomerate possibly equivalent to Chisik.											
	Melaphyre flows, tuff, agglomerate with associated slates of former Berners formation. Douglas Island volumers grown	Conglomerate, sand- stone, limestone			Matanuska {	Green sandy shale, equivalent to Nak- nek formation. Shale, sandstone, little conglomerate, equivalent to Chinitna shale.	Kanatak	Arkose, conglomerate, sandstone, and shale. Naknek formation. Shale, sandstone, sandy calcareous shale, little limestone. Shelikof	•		?		-Lisburne?	Sandstone, shale, coal. Originally considered Jurassic on paleobotanic evidence but now re-			pper
Genera	al canic group.  Black clay slate with some conglomerate and much graywacke. Treadwell	Kusku- lana- Nizina stone, limestone shale. (Formerly in- cluded in Kennicott formation of some reports.)				Massive arkosic sandstone, tuff, coarse sandstone, shale, and conglomerate.		shale, little limestone. Shelikof formation; comparable with Chinitma shale.					}	garded as Upper Cretaceous.			ם
	slate.				Chinitna	Arkose, sandy shale, and sandstone. Conglomerate shale, arkosic sandstone. Chisik conglomerate.  Shale, argillite, few sandy and calcareous beds, rare grit. Chinitna shale.											
					ļ <i>'</i>	Sandstone and sandy shale, some con-											-
SIC					Chinitna  Kamishak	glomerate, grit, arkose, and little limestone. Tuxedni sandstone. Porphyry, tuff, basaltic and andesitic											ASSIC
MESOZOIO JURASSI Middle	Melaphyre tuff. Thane vol- Limestone. canic group.	Chitina Tuff.			Kamishak Matanuska	lava flows.  Sandstone, shale, small amount of conglomerate equivalent to Tuxedni	Katmai-	Continuation of rocks of the Chinitna and Kamishak districts of Cook Inlet region.			?		Canning	Black shale and some sandstone. Ignek formation. Black shale. Kingak shale.			Middle JURAS
<del> </del>	Limestone. Tuff and shale.				Skwentna	sandstone.  Argillite, some sandstone, little lime-	Kanatak	Sandstone, shale, and conglomerate. Kialagvik formation.									
					Yentna	Massive grit, sandstone, little conglomerate and slate. Tordrillo formation.											_
			?		Skwentna- Yentna	Altered volcanics, interstratified tuff, chert arkose, part of Skwentna group.	Kanatak	Sandstone and shale with some limestone beds.  Shale, sandstone, conglomerate			?	VI 3100					
9- 2-		Massive conglomerate with well-rounded pebbles set in tuff	General	Undifferentiated sandstone, arkose,	Matanuska	Lava, breccia, tuff, interbedded sand- stone and shale. Talkeetna forma- tion.	—Iliamna- Telaquana	comparable in part with Skwen-			Aniak	Undifferentiated sandstone, shale, and associated rocks.					ower
l low l		pebbles set in tuff matrix.	deneral	graywacke, and volcanic rocks.	Seldovia	Tuff, volcanic agglomerate, interbedded with thin limestone, shale, and sandstone.	-Chignik- Naknek	Greenish volcanic rocks associated with shale and horizontal sediments.			George- town	Shale, sandstone, conglom- erate in part comparable with Skwentna group and Tordrillo formation.					
			?	•			-Kodiak	Slate and graywacke, not differentiated.					?				
					Valdez Creek	In east shaly limestone and calcareous sandstone.  In west dark-blue to black shale, ar-	Kanatak	Limestone and shale. Contorted chert.	Chisana-White	Thin-bedded limestone and black shale. Shale, lavas, and pyroclastic rocks.			T.1	Soft black shale. Dark chert, thin bedded cherty			
		Shale, black shale, argillite. McCarthy			Chulitna	kose, graywacke; no limestone.  - Argillite, clayey sandstone, lenses of tuff and conglomerate.  - Argillaceous rocks, limy white and							Lisburne 〈	limestone. Argillite, black, green and red chert.			
e Gener	Andesite breccia with lime- stone matrix, interbedded with slates. Black slate and shale.	Shale. Thin-bedded limestone, some shale becoming more abundant to-			·	rusty sandstone. Limestone.  Volcanic rocks.	Tikchik	Light-colored more or less silicified limestone, somewhat metamorphosed.	Kandik	Thin-bedded limestone and calcareous shale.		•	Canning	Black shale. Limestone and inter-layered shale. Calcareous sandstone.			Upper
ASSIC	Conglomerate, sandstone, and little limestone.	ward top of section. Nizina limestone. Massive bedded limestone, thin shale partings. Chitistone			Chinitna	Limestone.  Chert interstratified with thin shale sandstone, limestone. Kamishak			Sheenjek	Not definitely identified in field but unquestionably present in fossil col- lections from district.			Colville- Noatak	Tenacious dark shale. Chocolate-colored limestone. Dominantly chert with some thin			RIASSIC
T R		limestone.			Kamishak Seldovia	chert. Igneous rocks, basic volcanics. Limestone with volcanic material. Chert with thin films of argillite.	Kodiak	Undifferentiated cherty rocks. Ellipsoidal greenstone, greenstone	Kantishna	Black siliceous limestone with poorly preserved fossils doubtfully identified.				bedded limestone, siliceous dark colored but white weathering argillite, locally sandstone.			
					Seldovia	Ellipsoidal greenstone.		schist, and tuff.		ned.					York?	One extremely doubtful occurrence in area of black slates.	- Independent
Mido					ļ		<u> </u>						`			rence in area of black states.	- Wer Mi
	Thick-bedded limestone with	Basaltic lava of green- stone habit. Nikolai	-			1	?										
nian 2	common to abundant in- tercalated layers of white chert. Conglomerate. limestone,	General Lava, tuff, volcanic			?—Chulitna	Tuff, volcanic breccia, lava, some argillite, limestone, chert, and conglomerate.	Tikehik	Volcanic rocks, dominantly green- stones, probably equivalent to Nikolai formation. Massive cream-colored to yellowish lime-	? Kandik	Limestone. Conglomerate, shale, and limestone.	Akiak	Light-gray limestone, grad- ing upward into effusive rocks; tuff at top of sec- tion.	Canning	Light-colored sandstone. Sadle-rochit sandstone.			ermian
General	sandstone, andesitic and ba- saltic lava, tuff, and locally rhyolitic volcanic rocks.	breccia interstrati- fied with shale, lime- stone, sandstone, and conglomerate.						stone.				With the second					
- General	White massive limestone.				<u>'</u>												Pennsyl- vanian
Pen									Porcupine	Dark shale and limestone, in part same as Calico Bluff formation.							
									Koyukuk- Melozi	sidered part of Kanuti group.				Massive light-colored semicrystal-			ous
EROUS										Clay shale, sandstone, conglomerate. Nation River formation. Lava flows and associated sediments. Rampart group and Circle volcanics.			Central- Western	Massive light-colored semicrystal- line limestone, considerably silic- ified. Lisburne limestone. Sandstone, shale, thin limestone, in places chert, conglomerate.	·		ONIFER
RBONIF									Yukon- Tanana	Limestone beds. Undifferentiated schist, shale, chert,		Argillite, sandstone, gray-		Noatak formation.	York	Dark and light blue-gray lime- stone associated with slate and	CARB
O   General	Interbedded coarsely crystal- line limestone, and black chert overlain by interlay- ered dense gray quartzite,	General Slate, schist, small amounts of lime- stone, tuff, and ba- salt flows. Strelna					Tikehik	Dominantly chert, cherty grit and conglomerate toward base, overlain by thin-bedded siliceous limestone, shale, slate, and quartzitic sandstone.	Wisemen-	quartzite. Chert with minor amount of limestone and shale. Livengood chert.  Comparable with northern Alaska	Goodnews	wacke.			General	schist. Limestone near Palaz- ruk.  Limestone and associated sedi- ments, not definitely identified but apparently widely distrib-	ssip
Missi	cherty limestone, and sparse conglomerate.	formation and Klu- tina group.				•		quartzitic sandstone.	Chan- dalar Marshall	section.  Andesite and basalt flows and tuff.		00200 00000	Canning	Gray and black limestone, somewhat brecciated, much silicified, equivalent of part of Lisburne limestone.		uted in peninsula.	′   ≥
									Sheenjek	Dark limestone, somewhat silicified, weathering light, with argillaceous and arenaceous beds.				- Black limestone, slate, shale and sandstone; age uncertain; rests unconformably on highly metamorphic schists.			
									?	Quartzite, conglomerate, shale, with cherty matrix.  Clay slate.			?		,		
									Chisana	Clay slate. Shale and conglomerate. Wellesley formation.							
									Wiseman-Alatna Wiseman-	glomerate, grit, and limestone.			Colville	Quartzite, sandstone, slate, sub- ordinate conglomerate, grit, and	?		per
General	Basalt, andesite, tuff, lime- stone, sandstone, slate, and conglomerate.				?				Chan-dalar  Regle	impure limestone. Formerly part of West Fork formation.  Basalt lava and pyroclastics of greenstone habit. Woodchopper volcanics.	17 7		Noatak	ordinate conglomerate, grit, and limestone.			ın
								X-	Porcupine	Brown shale and basalt.							
					?					Salmontrout limestone.  Argillite, chert, and cherty grit. Thin beds dark-gray limestone, shale,	George-	Undifferentiated limestone of Lime Hills (?)				Sahinta	
	Limestone. Andesite, gray to green tuff,				?  Chinitna	Limestone and calcareous schist, much deformed and metamorphosed. Not distinguished on map.			Central-	and chert. Lithographic limestone, dark-gray crystalline limestone. Clay shale siliceous slate, chert, quartz-			     -Lisburne	Calcareous sandstone and shale.	-Fair- haven	Schists overlying limestone. Not differentiated on map.	NIAN
YONIAN	Andesite, gray to green tuff, graywacke; locally conglom- erate, thin limestone. Andesite lava, tuff, breccia, conglomerate, and locally								East Wiseman-	ite, sporadic limestone, and con- glomerate.		Blue to white somewhat siliceous semicrystalline limestone, weathering			Council	Black thin-bedded limestone. Formerly considered part of	iddle DEVO
General General	rhyolite lava. Interbedded limestone, slate, chert, andesite breccia, tuff, and locally conglomerate.					Silingous and availle			Chan-dalar  Kantishna Nenana	Massive limestone, equivalent to part of Tonzona.  Limy shale, more calcareous at top. Slate, argillite, graywacke, quartzite.		brown. Formerly considered part of Tonzona group.  Thinly bedded limestone	Canning			Nome group.  Blue-gray limestone considerably	Σ
	Conglomerate, graywacke; locally sandstone and limestone.				Chulitna	Siliceous and argillaceous sediments, age highly problematical. Not distinguished on map.		•	?   Nenana	Black conglomerate, white conglomerate, shale, and graywacke.  Crystalline limestone associated with		with calcareous and chloritic shale and arkose. Formerly considered part of Takotna formation.		on map.	Kouga- rok	metamorphosed. Formerly considered part of Port Clarence limestone.	ē
					?				Tok Sheenjek	black slate, sandy beds, somewhat schistose.  Quartzite, sandstone, slaty sandstone,		Undifferentiated limestone not distinguished on map.					010
EOZOIC										and argillaceous sediments.							wer
PAI									1		1111		' ' '		?		Der L
Upper									????          _	Division in the second							- A
	Gray-green graywacke, sparse								Porcupine	Black fissile shale, little siliceous lime- stone. Buff magnesian limestone.					Council-	·	
NA Sp 7Gene	Gray-green graywacke, sparse conglomerate, sandstone, and shale.  Gray-green shale, red beds, gray sandstone, shale, lime-	i .	,						Sheenjek- Alatna Kandik	Slate, schist, thin layered limestone. Skagit. Massive somewhat siliceous limestone. Skagit. Massive white to cream limestone.	Tonzona.	Graywacke and associated chert. Formerly considered part of Tonzona	? Noatak- Kobuk		Fair-	Light-colored magnesian limestone Formerly considered part of Port Clarence limestone.	e. Widdle RIAN
SILURIA Mis	gray sandstone, shale, lime- stone.  Dense limestone, locally thick conglomerate, thin lime- stone, and sandstone.								Preacher- Tolovana Hot	Massive white to cream limestone.  Calcareous and dolomitic limestone,		group.					SILU
									Hot Springs								_   .
کی ؟ Gene	I Indiirated Playwacke, Diack								Ruby	Undifferentiated limestone, not distinguished on map.	? — McGrath.	Undifferentiated limestone, not distinguished on map.			?		Lower
	Indurated graywacke, black slate, small amounts of conglomerate.			_													
Upper					!				??				??				Oppe
									Porcupine Ruby	Gray limestone.  Magnesian limestone overlain by cal-	McGrath.	Bluish-gray limestone, not					N
OOVICIAN Gene	nis seninents. andesitie								Ruby	Magnesian limestone overlain by cal- careous limestone, not differentiated on map.  Volcanic tuff and associated igneous		distinguished as such on map.			Western	Bluish-gray limestone, in places considerably metamorphosed.  Port Clarence limestone.	Middle RDOVICI
OR O S I Gene	ous sediments, andesitic lava, and volcanic rocks.								—reacher	Volcanic tuff and associated igneous rocks.  Black shale, merging downward into schist.	Lonzona.	Bluish limestone, sandy and carbonaceous slate. Part of former Tatina group.					OF
in Gen	Black chert and graptolite slate, graywacke, locally andesitic volcanic rocks.				?						?		??				Lower
	andesitic volcanic rocks.				6					Limestone, with dark-gray to black slate and chert in higher part.	_				???		) ber
Upper 1									???	slate and chert in higher part. Limestone.	_						AN UF
CAMBRIAN					?				??? ? Kandik	Upper plate of limestone. Thin layers of slate and quartzite. Lower plate of limestone.			?? 		<b>? ? ?</b> 		Midd
C C C					?												Lower
										Undifferentiated highly metamorphic schist, quartzite, and calcareous rocks.							
									Alatna Dall-Tozi	Undifferentiated metamorphics in part. Birch Creek schist.				IIndies.	York	Black slates and quartzites. "Slates near York." Metamorphic greenstone and feld-	3. D
-PALEOZOIC	Metamorphic complex of schists, slates, and calcareous rocks. Wales group.				Wasilla.	Schists in vicinity of Willow Creek; ag extremely doubtful, probably early Paleozoic or older.	e y		Kandik- Eagle	Dolomite, limestone, shale, quartzite, associated with basalt and diabase. Tindir group.			Canning.  Kobuk.	Undifferentiated metamorphic schist, quartzite, and related rocks. Neruokpuk schist. Undifferentiated highly metamorphic schist, quartzite, and lime-	Nome	Metamorphic greenstone and feld- spathic schist, including Casa- depaga schist.  Highly metamorphic schist, phyl- lite and thin limestone. Nome	1- DZO
JAN I—Sou	ous rocks. Wales group.					raleozoic or older.		· ·	Kantishna- Tok	related rocks. Totatlanika schist. and regular Birch Creek schist.	1		·	phic schist, quartzite, and lime- stone.	Nome		
6				l	1	1	1	I	1	10.22		1	I			schist with some calcareous	1 ' '
PRE-P.									Yukon- Tanana	Schist, quartzite, and other highly metamorphic rocks, Birch Creek schist, some associated basic volcanics.						Highly metamorphic quartzose schist with some calcareous beds. Kigluaik group.	
RIOD PRE	SOUTHEASTERN ALASKA	COPPER RIVER		GULF OF ALASKA al lines and question marks at the left-hand side of the geogr		Cook Inlet		SOUTHWESTERN ALASKA	Tanana	schist, some associated basic vol- canies.		Kuskokwim		NORTHERN ALASKA		schist with some calcareous beds. Kigluaik group.  SEWARD PENINSULA  2672—39 (Fac	БРОСН РЕВІОР ЕВА