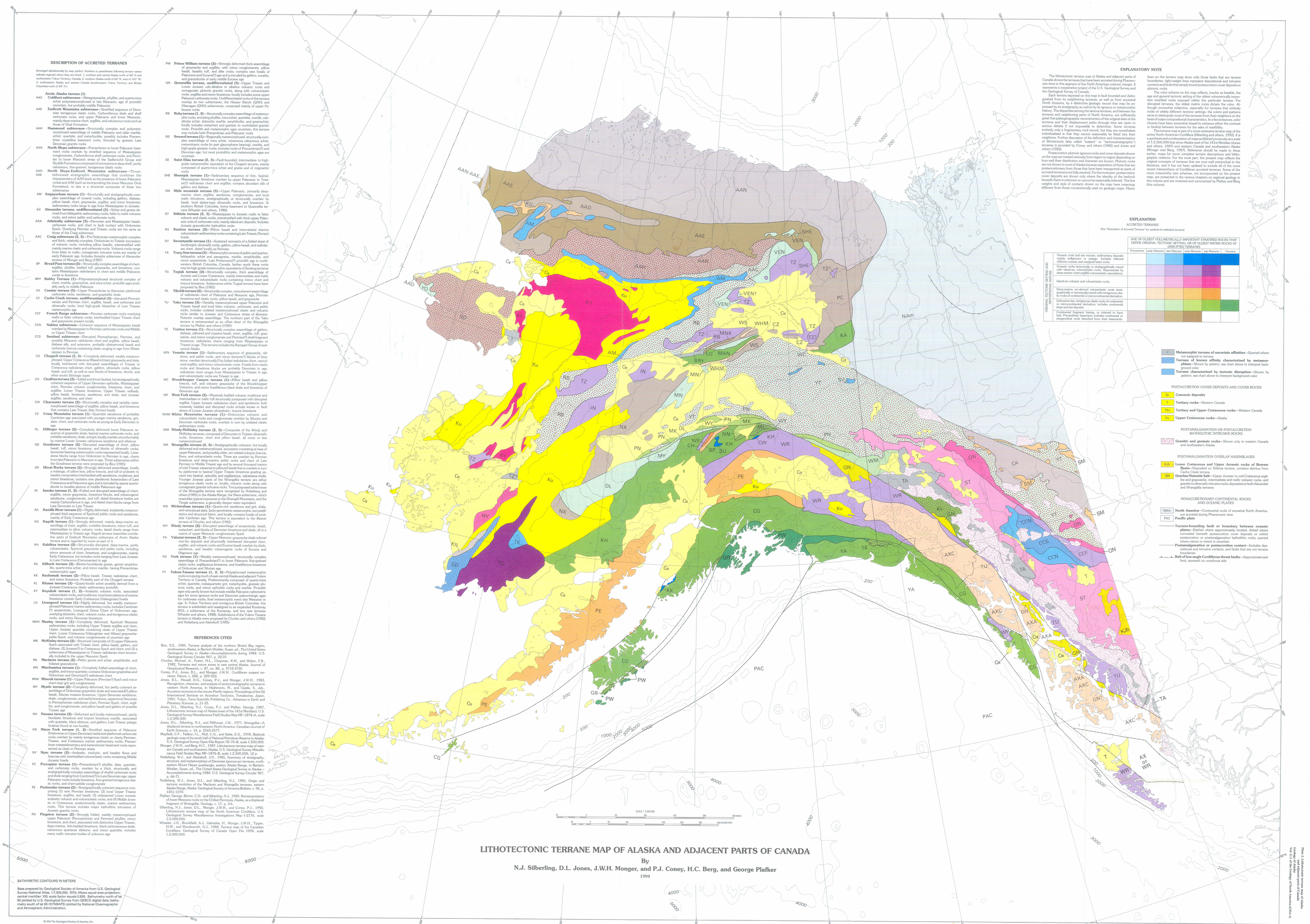

DESCRIPTION OF ACCRETED TERRANES

[Arranged alphabetically by map symbol. Numbers in parentheses following terrane names indicate region(s) where they are found: 1, northern and central Alaska north of 64° N and northwestern Yukon Territory, Canada; 2, southern Alaska south of 64° N, west of 141° W; 3, southeastern Alaska and western Canada (southwestern Yukon Territory and British Columbia) north of 54° N.]

Arctic Alaska terrane (1)

AAC **Coldfoot subterrane**—Metagraywacke, phyllite, and quartz-mica schist polymetamorphosed in late Mesozoic; age of protolith uncertain, but probably middle Paleozoic

AAE **Endicott Mountains subterrane**—Stratified sequence of Devonian terrigenous clastic rocks, Carboniferous shale and shelf carbonate rocks, and upper Paleozoic and lower Mesozoic, mainly deep-marine chert, argillite, and calcareous rocks such as those of Otuk Formation

AAH **Hammond subterrane**—Structurally complex and polymetamorphosed assemblage of middle Paleozoic and older marble, schist, quartzite, and metavolcanic; possibly includes Precambrian crystalline basement rocks. Intruded by gneissic Late Devonian granitic rocks

AAN **North Slope subterrane**—Precambrian to lower Paleozoic basement rocks overlain by stratified sequence of Mississippian conglomerate, Carboniferous shelf carbonate rocks, and Permian to lower Mesozoic strata of the Sadlerochit Group and Shublik Formations composed of nonmetamorphosed to deep-shelf, partly calcareous, fine-grained, terrigenous clastic rocks

AAN-AAE **North Slope-Endicott Mountains subterrane**—Thrust-imbricated stratigraphic assemblage that combines the characteristics of AAN (such as the presence of lower Paleozoic rocks) and AAE (such as incorporating the lower Mesozoic Otuk Formation), or else is a structural composite of these two subterranes

AM **Angayucham terrane (1)**—Structurally and stratigraphically complex assemblage of oceanic rocks, including gabbro, diabase, pillow basalt; chert, graywacke, argillite, and minor limestone; sedimentary rocks range in age from Mississippian to Jurassic

AX **Alexander terrane, undifferentiated (3)**—Schist and gneiss derived from feldspathic sedimentary rocks, felsic to mafic volcanic rocks, and minor pelitic and carbonate rocks

AXA **Admiralty subterrane (3)**—Devonian and Mississippian basalt, carbonate rocks, and chert in fault contact with Ordovician flysch. Overlying Permian and Triassic rocks are the same as those of the Craig subterrane

AXC **Craig subterrane (2, 3)**—Pre-Ordovician metamorphic complex and thick, relatively complete, Ordovician to Triassic succession of volcanic rocks, including pillow basalts, interstratified with mainly marine clastic and carbonate rocks. Volcanic rocks range from felsic to mafic; comagmatic intrusive rocks are mainly of early Paleozoic age. Includes Annette subterrane of Alexander terrane of Monger and Berg (1987)

BF **Broad Pass terrane (2)**—Structurally complex assemblage of chert, argillite, phyllite, bedded tuff, graywacke, rare limestone, contains Mississippian radiolarians in chert and middle Paleozoic corals in limestone

BRY **Baldry Terrane (1)**—Polymetamorphosed structural complex of chert, marble, greenschist, and mica schist; protolith ages probably early to middle Paleozoic

CA **Cassiar terrane (3)**—Upper Precambrian to Devonian platformal carbonate rocks, sandstone, and graptolite shale

CC **Cache Creek terrane, undifferentiated (3)**—disrupted Pennsylvanian and Permian chert, argillite, basinal marine carbonate and ultramafic rocks; local high-grade blueschist of Late Triassic metamorphic age

CCF **French Range subterrane**—Permian carbonate rocks overlying mafic or felsic volcanic rocks; interbedded Upper Triassic chert and graywacke present locally

CCN **Nakina subterrane**—Coherent sequence of Mississippian basalt overlain by Mississippian to Permian carbonate rocks and Middle or Upper Triassic chert

CCS **Sentinel subterrane**—Disrupted Pennsylvanian, Permian, and possibly Mesozoic radiolarian chert and argillite, pillow basalt, diabase sills, and extensive, probably olistostromal basalt and carbonate breccia containing clasts ranging in age from Mississippian to Permian

CG **Chugach terrane (2, 3)**—Complexly deformed, weakly metamorphosed, Upper Cretaceous (Maastrichtian) graywacke and slate, locally interlayered with disrupted assemblages of Triassic to Cretaceous radiolarian chert, gabbro, ultramafic rocks, pillow basalt, and tuff, as well as rare blocks of limestone, diorite, and other exotic lithologic types

CH **Chulitna terrane (2)**—folded and thrust-faulted, but stratigraphically coherent sequence of Upper Devonian ophiolite, Mississippian chert, Permian volcanic conglomerate, limestone, chert, and argillite, Lower Triassic limestone, Upper Triassic redbeds, pillow basalt, limestone, sandstone, and shale, and Jurassic argillite, sandstone, and chert

CW **Clearwater terrane (2)**—Structurally complex and variably metamorphosed assemblage of argillite, pillow basalt, and limestone that contains Late Triassic (late Norian) fossils

CZ **Crazy Mountains terrane (1)**—Quartzitic sandstone of probable Cambrian age associated with younger marine sandstone, grit, slate, chert, and carbonate rocks as young as Early Devonian in age

DL **Dillinger terrane (2)**—Complexly deformed lower Paleozoic sequence of graptolitic shale, basinal marine carbonate rocks, and turbiditic sandstone, shale, and grit; locally overlain unconformably by marine Lower Jurassic calcareous sandstone and siltstone

GD **Goodnews terrane (2)**—Disrupted assemblage of chert, pillow basalt, tuff, minor limestone, and blocks of ultramafic rocks; lawsonite-bearing metamorphic rocks represented locally. Limestone blocks range from Ordovician to Permian in age, cherts from late Paleozoic to Mesozoic in age. Three subterranes within the Goodnews terrane were proposed by Box (1985)

GR **Ghost Rocks terrane (2)**—Strongly deformed assemblage, locally a melange, of pillow lava, pillow breccia, and tuff of andesitic to basaltic composition interbedded with sandstone, mudstone, and minor limestone; contains rare planktonic foraminifers of Late Cretaceous and Paleocene ages and is intruded by sparse quartz-diorite to tonalite plutons of middle Paleocene age

IN **Innoko terrane (1, 2)**—Folded and disrupted assemblage of chert, argillite, minor graywacke, limestone blocks, and volcanogenic sandstone, conglomerate, and tuff; dated limestone bodies are mainly Carboniferous in age, and dated chert blocks range from Late Devonian to Late Triassic

KA **Kandik River terrane (1)**—Highly deformed, incipiently metamorphosed thick sequence of flyschoid pelitic rocks and sandstone; mainly of Early Cretaceous age

KG **Kagvik terrane (1)**—Strongly deformed, mainly deep-marine assemblage of chert, argillite, turbiditic limestone, minor tuff, and intermediate to silicic volcanic rocks; dated cherts range from Mississippian to Triassic age. Kagvik terrane resembles correlative parts of Endicott Mountains subterrane of Arctic Alaska terrane and is regarded by some as part of it

KH **Kahiltna terrane (2)**—Structurally disrupted, deep-marine, partly volcaniclastic, flyschoid graywacke and pelitic rocks, including minor amounts of chert, limestone, and conglomerate; mainly Early Cretaceous, but includes rocks ranging from Late Jurassic to Late Cretaceous (Cenomanian) in age

KIL **Kilbuck terrane (2)**—Biotite-hornblende gneiss, garnet amphibolite, quartz-mica schist, and minor marble, having Precambrian metamorphic ages

KK **Kuskokwim terrane (2)**—Pillow basalt, Triassic radiolarian chert, and minor limestone. Probably part of the Chugach terrane

KL **Kluane terrane (3)**—Quartz-biotite schist possibly derived from a Jurassic-Cretaceous clastic sedimentary protolith

KY **Koyukuk terrane (1, 2)**—Andesitic volcanic rocks, associated volcaniclastic rocks, and mudstone; local intercalations of marine limestone contain Early Cretaceous (Valanginian) fossils

LG **Livengood terrane (1)**—Highly deformed, but weakly metamorphosed Paleozoic marine sedimentary rocks; includes Cambrian (?) serpentinite, Livengood Dome Chert of Ordovician age, overlying dolomite, chert, volcanic rocks, and terrigenous clastic rocks, and minor Devonian limestone

MAN **Manley terrane (1)**—Complexly deformed, flyschoid Mesozoic sedimentary rocks, including Upper Triassic argillite and chert, Upper Jurassic quartzite containing clasts of Upper Triassic chert, Lower Cretaceous (Valanginian and Albian) graywacke-pelite flysch, and volcanic conglomerate of uncertain age

MK **McKinley terrane (2)**—Structural composite of (1) upper Paleozoic flysch associated with Triassic chert, pillow basalt, gabbro, and diabase; (2) Jurassic(?) to Cretaceous flysch and chert; and (3) a subterrane of Mississippian to Triassic radiolarian chert structurally included in the upper Mesozoic flysch

ML **Maclaren terrane (2)**—Pelitic gneiss and schist, amphibolite, and foliated granodiorite

MN **Minchumina terrane (1)**—Complexly folded assemblage of chert, argillite, and minor quartzite; contains Ordovician graptolites and Ordovician and Devonian(?) radiolarian chert

MNK **Minook terrane (1)**—Upper Paleozoic (Permian?) flysch and minor chert-clast grit and conglomerate

MY **Myatic terrane (2)**—Complexly deformed, but partly coherent assemblage of Ordovician graptolitic shale and associated(?) pillow basalt, Silurian massive limestone, Upper Devonian sandstone, shale, conglomerate, and reefal limestone; uppermost Devonian to Pennsylvanian radiolarian chert, Permian flysch, chert, argillite, and conglomerate, and pillow basalt and gabbro of possible Triassic age

NN **Nenana terrane (2)**—Deformed and locally metmorphosed, partly bioclastic limestone and impure limestone marble, associated with quartzite, black siltstone, and gabbro; Late Triassic pelagic bivalves found at one locality

NX **Nixon Fork terrane (1, 2)**—Stratified sequence of Paleozoic (Ordovician to Upper Devonian) reefal and platformal carbonate rocks overlain by mainly terrigenous clastic or cherty Permian, Triassic, and Cretaceous marine sedimentary rocks. Precambrian metasedimentary and metavolcanic basement rocks represented as clasts in Permian strata

NY **Nyac terrane (2)**—Andesitic, trachytic, and basaltic flows and breccias with interbedded volcaniclastic rocks containing Middle Jurassic fossils

PC **Porcupine terrane (1)**—Precambrian(?) phyllite, slate, quartzite, and carbonate rocks, overlain by a thick, structurally and stratigraphically complex assemblage of shelfal carbonate rocks and shale ranging from Cambrian(?) to Late Devonian age; upper Paleozoic rocks include limestone, fine-grained terrigenous clastic rocks, and chert-pebble conglomerate

PE **Peninsular terrane (2)**—Stratigraphically coherent sequence comprising (1) rare Permian limestone; (2) local Upper Triassic limestone, argillite, and basalt; (3) widespread Lower Jurassic andesitic volcanic and volcaniclastic rocks; and (4) Middle Jurassic to Cretaceous, predominantly clastic, marine sedimentary rocks. This terrane includes major batholithic intrusions of Jurassic granitic rocks

PN **Pingston terrane (2)**—Strongly folded, weakly metamorphosed upper Paleozoic (Pennsylvanian and Permian) phyllite, minor limestone, and chert, associated with distinctive Upper Triassic, deep-marine, thin-bedded limestone, black carbonaceous shale, calcareous quartzose siltstone, and minor quartzite; includes many mafic intrusive bodies of unknown age

PW **Prince William terrane (2)**—Strongly deformed thick assemblage of graywacke and argillite, with minor conglomerate, pillow basalt, basaltic tuff, and dike rocks; contains rare fossils of Paleocene and Eocene(?) age and is intruded by gabbro, tonalite, and granodiorite of early middle Eocene age

QN **Quesnellia terrane, undifferentiated (3)**—Upper Triassic and Lower Jurassic calc-alkaline to alkaline volcanic rocks and comagmatic plutonic granitic rocks, along with volcaniclastic rocks, argillite and minor limestone; locally includes some upper Paleozoic carbonate rocks. Undifferentiated rocks of this terrane overlap its two subterranes, the Harper Ranch (QNH) and Okanagan (QNO) subterranes, composed mainly of upper Paleozoic rocks

RB **Ruby terrane (1, 2)**—Structurally complex assemblage of metamorphic rocks, including phyllite, mica schist, quartzite, marble, calc-silicate schist, dolomite marble, amphibolite, and greenschist; locally includes metachert and gneissic to nontoliated granitic rocks. Protolith and metamorphic ages uncertain; this terrane may include both Precambrian and Paleozoic rocks

SD **Seward terrane (1)**—Regionally metamorphosed, structurally complex assemblage of mica schist, micaceous calcareous schist, metavolcanic rocks (in part glaucophane bearing), marble, and high-grade gneissic rocks; includes rocks of Precambrian(?) and Devonian age, but most protolithic and metamorphic ages are uncertain

SE **Saint Elias terrane (2, 3)**—Fault-bounded, intermediate- to high-grade metamorphic equivalent of the Chugach terrane; mainly composed of quartz-mica schist and gneiss and of migmatitic rocks

SHE **Sheenjek terrane (1)**—Sedimentary sequence of thin, basinal, Mississippian limestone overlain by upper Paleozoic to Triassic(?) radiolarian chert and argillite; contains abundant sills of gabbro and diabase

SM **Slide mountain terrane (3)**—Upper Paleozoic, primarily deep-marine, chert, argillite, sandstone, conglomerate, and local mafic intrusions, stratigraphically or structurally overlain by basalt, local alpine-type ultramafic rocks, and limestone. In southern British Columbia, forms basement to Quesnellia terrane (Wheeler and others, 1988)

ST **Stikinia terrane (2, 3)**—Mississippian to Jurassic mafic to felsic volcanic and clastic rocks, interstratified with thick upper Paleozoic units of carbonate rock; mainly island-arc deposits. Includes Jurassic granodiorite batholithic rocks

SU **Susitna terrane (2)**—Pillow basalt and intercalated marine volcaniclastic sedimentary rocks containing Late Triassic (Norian) fossils

SV **Seventymile terrane (1)**—Scattered remnants of a folded sheet of hartburgite ultramafic rocks, gabbro, pillow basalt, and radiolarian chert, dated locally as Permian

TA **Tracy Arm terrane (3)**—Metamorphic terrane of pelitic and quartzo-feldspathic schist and paragneiss, marble, amphibolite, and minor serpentinite. Late Proterozoic(?) protolith age in northwestern British Columbia, Canada, farther south these rocks may be high-grade metamorphic equivalents of flanking terranes

TG **Togiak terrane (2)**—Structurally complex, thick assemblage of Jurassic and Lower Cretaceous, mainly intermediate and mafic volcanic and volcaniclastic rocks containing minor chert and impure limestone. Subterranes within Togiak terrane have been proposed by Box (1985)

TK **Tikchik terrane (2)**—Structurally complex, nonconcordant assemblage of radiolarian chert of Paleozoic and Mesozoic age, Permian limestone and clastic rocks, pillow basalt, and graywacke

TU **Taku terrane (3)**—Variably metamorphosed upper Paleozoic and Triassic basalt and local felsic volcanic, carbonate, and pelitic rocks; includes undated metamorphosed clastic and volcanic rocks similar to Jurassic and Cretaceous strata of Gravina-Nutzotin overlap assemblage. The northern part of the Taku terrane is reinterpreted as an offset sliver of the Wrangellia terrane by Plafker and others (1989)

TZ **Tozitna terrane (1)**—Structurally complex assemblage of gabbro, diabase, pillowed and massive basalt, chert, argillite, tuff, graywacke, and minor conglomerate and Permian(?) shelf-fragment limestone; radiolarian cherts ranging from Mississippian to Triassic in age. This terrane includes the Rampart Group of east-central Alaska

VEN **Venetie terrane (1)**—Sedimentary sequence of graywacke, siltstone, and pelitic rocks, and minor tectonic(?) blocks of limestone, overlain (structurally?) by folded radiolarian chert, varicolored argillite, and minor volcaniclastic rocks. Fossils from clastic rocks and limestone blocks are probably Devonian in age, radiolarian chert ranges from Mississippian to Triassic in age, and volcaniclastic rocks are Triassic in age

WC **Woodchopper Canyon terrane (1)**—Pillow basalt and pillow breccia, tuff, and volcanic graywacke of the Woodchopper Volcanics, and minor fossiliferous black shale and limestone of Devonian age

WF **West Fork terrane (2)**—Massively bedded volcanic mudstone and intermediate or mafic tuff structurally juxtaposed with disrupted argillite, Upper Jurassic radiolarian chert, and sandstone; both massively bedded and disrupted rocks include lenses or fault slivers of Lower Jurassic phyllonite, impure limestone

WHM **White Mountains terrane (1)**—Ordovician volcanic and volcaniclastic rocks and conglomerate overlain by Silurian and Devonian carbonate rocks, overlain in turn by undated clastic sedimentary rocks

WM **Windy-McKinley terrane (2, 3)**—Composite of the Windy and McKinley terranes, composed of Devonian to Triassic ultramafic rocks, limestone, chert and pillow basalt, all more or less metamorphosed

WR **Wrangellia terrane (2, 3)**—Stratigraphically coherent, but locally deformed and metamorphosed, succession consisting at base of upper Paleozoic, and possibly older, arc-related volcanic breccia, flows, and volcaniclastic rocks. These are overlain by Permian limestone and deep-marine pelitic rocks and chert of Late Permian to Middle Triassic age and by several thousand meters of mid-Triassic subaerial to pillowed basalt that is overlain in turn by platformal to basinal Upper Triassic limestone grading upward into basinal, spiculitic and argillaceous, calcareous rocks. Younger Jurassic parts of the Wrangellia terrane are either terrigenous clastic rocks or, locally, volcanic rocks along with comagmatic granitic intrusive rocks. Two juxtaposed subterranes of the Wrangellia terrane were recognized by Nokleberg and others (1985) in the Alaska Range: the Slana subterrane, which resembles typical exposures in the Wrangell Mountains, and the Tangle subterrane, a generally deeper water equivalent

WS **Wickersham terrane (1)**—Quartz-rich sandstone and grit, shale, and varicolored slate; lacks penetrative metamorphic recrystallization and structural fabric, and locally contains fossils of probable Cambrian age. This terrane is equivalent to the Beaver terrane of Churkin and others (1982)

WY **Windy terrane (2)**—Disrupted assemblage of serpentinite, basalt, metachert, and blocks of Devonian limestone and shale, all in a matrix of upper Mesozoic conglomeratic flysch

YA **Yakutat terrane (2, 3)**—Upper Mesozoic graywacke-shale submarine-fan deposits and structurally interleaved disrupted chert, argillite, and volcanic rocks and Eocene basalt overlain by shale, sandstone, and basaltic volcanogenic rocks of Eocene and Oligocene age

YO **York terrane (1)**—Weakly metamorphosed, structurally complex assemblage of Precambrian(?) to lower Paleozoic fine-grained clastic rocks, argillaceous limestone, and fossiliferous limestone of Ordovician and Silurian age

YT **Yukon-Tanana terrane (1, 2, 3)**—Polydeformed metamorphic rocks occupying much of east-central Alaska and adjacent Yukon Territory in Canada. Predominantly composed of quartz-mica schist, quartzite, metaquartzite grit, metarhyolite, gneissic plutonic rocks, and minor ophiolitic rocks and marble. Protolith ages only partly known but include middle Paleozoic radiometric ages for some igneous rocks and Devonian paleontologic ages for carbonate rocks; final metamorphic event late Mesozoic in age. In Yukon Territory and contiguous British Columbia, this terrane is subdivided and reassigned to an expanded Kootenay (KO), a subterrane of the Kootenay, and two new terranes (Wheeler and others, 1988). Subdivisions of the Yukon-Tanana terrane in Alaska were proposed by Churkin and others (1982) and Nokleberg and Aleinikoff (1985)

REFERENCES CITED

Box, S.E., 1985, Terrane analysis of the northern Bristol Bay region, southwestern Alaska, *in* Bartsch-Winkler, Susan, ed., The United States Geological Survey in Alaska—Accomplishments during 1984: U.S. Geological Survey Circular 967, p. 32-37.

Churkin, Michael, Jr., Foster, H.L., Chapman, R.M., and Weber, F.R., 1982, Terranes and suture zones in east central Alaska: Journal of Geophysical Research, v. 87, no. B5, p. 3718-3730.

Coney, P.J., Jones, D.L., and Monger, J.W.H., Cordilleran suspect terranes: Nature, v. 288, p. 329-333.

Jones, D.L., Howell, D.G., Coney, P.J., and Monger, J.W.H., 1983, Recognition, character, and analysis of tectonostratigraphic terranes in western North America, *in* Hashimoto, M., and Uyeda, S., eds., Accretion tectonics in the circum-Pacific regions, Proceedings of the Oji International Seminar on Accretion Tectonics, Tomakomai, Japan, 1981: Tokyo, Terra Scientific Publishing Co., Advances in Earth and Planetary Sciences, p. 21-35.

Jones, D.L., Silberling, N.J., Coney, P.J., and Plafker, George, 1987, Lithotectonic terrane map of Alaska (west of the 141st Meridian): U.S. Geological Survey Miscellaneous Field Studies Map MF-1874-A, scale 1:2,500,000.

Jones, D.L., Silberling, N.J., and Hillhouse, J.W., 1977, Wrangellia—A displaced terrane in northwestern North America: Canadian Journal of Earth Sciences, v. 14, p. 2565-2577.

Mayfield, C.F., Tailleur, I.L., McLean, H., and Sable, E.G., 1978, Bedrock geologic map of the south half of National Petroleum Reserve in Alaska: U.S. Geological Survey Open-File Report 78-70-B, scale 1:500,000.

Monger, J.W.H., and Berg, H.C., 1987, Lithotectonic terrane map of western Canada and southwestern Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-1874-B, scale 1:2,500,000, 12 p.

Nokleberg, W.J., and Aleinikoff, J.N., 1985, Summary of stratigraphy, structure, and metamorphism of Devonian igneous-arc terranes, northeastern Mount Hayes quadrangle, eastern Alaska Range, *in* Bartsch-Winkler, Susan, ed., The United States Geological Survey in Alaska—Accomplishments during 1984: U.S. Geological Survey Circular 967, p. 66-71.

Nokleberg, W.J., Jones, D.L., and Silberling, N.J., 1985, Origin and tectonic evolution of the Maclaren and Wrangellia terranes, eastern Alaska Range, Alaska: Geological Society of America Bulletin, v. 96, p. 1251-1270.

Plafker, George, Blome, C.D., and Silberling, N.J., 1989, Reinterpretation of lower Mesozoic rocks on the Chilkat Peninsula, Alaska, as a displaced fragment of Wrangellia: Geology, v. 17, p. 3-6.

Silberling, N.J., Jones, D.L., Monger, J.W.H., and Coney, P.J., 1992, Lithotectonic terrane map of the North American Cordillera: U.S. Geological Survey Miscellaneous Investigations Map I-2176, scale 1:5,000,000.

Wheeler, J.O., Brookfield, A.J., Gabrielse, H., Monger, J.W.H., Tipper, H.W., and Woodsworth, G.J., 1988, Terrane map of the Canadian Cordillera: Geological Survey of Canada Open File 1894, scale 1:2,000,000.

EXPLANATORY NOTE

The lithotectonic terrane map of Alaska and adjacent parts of Canada shows the terranes that have been accreted during Phanerozoic time to this segment of the North American cratonic margin. It represents a cooperative project of the U.S. Geological Survey and the Geological Survey of Canada.

Each terrane depicted on this map is fault bounded and distinguished from its neighboring terranes, as well as from ancestral North America, by a distinctive geologic record that may be expressed by its stratigraphy as well as by its igneous or metamorphic history. The disparities among the various terranes, and between the terranes and neighboring parts of North America, are sufficiently great that paleogeographic reconstruction of the original sites of the terranes and their dispersion paths through time are open to serious debate if not impossible to determine. Some terranes embody only a fragmentary rock record, but they are nonetheless individualized in that they cannot reasonably be fitted into their neighbors. Further discussion of the definition and characterization of lithotectonic (also called "suspect" or "tectonostratigraphic") terranes is provided by Coney and others (1980) and Jones and others (1983).

Postaccretion plutonic igneous rocks and cover deposits shown on the map are treated variously from region to region depending on how well their distribution and character are known. Plutonic rocks are not shown in most of Alaska because separation of those that are postaccretionary from those that have been transported as parts of accreted terranes is not fully resolved. For the most part, postaccretion cover deposits are shown only where the identity of the bedrock beneath them is unknown or cannot be reasonably inferred. The line weights and style of contacts shown on the map have meanings different from those conventionally used on geologic maps. Heavy lines on the terrane map show only those faults that are terrane boundaries; light-weight lines represent depositional and intrusive contacts and faults that simply bound postaccretion cover deposits or plutonic rocks.

The color scheme on the map reflects, insofar as feasible, the age and general tectonic setting of the oldest volumetrically important stratified rocks exposed within the particular terrane. For disrupted terranes, the oldest matrix rocks dictate the color. Although somewhat subjective, especially for terranes that embody rocks of widely different tectonic settings, the colors and patterns serve to distinguish most of the terranes from their neighbors on the basis of major compositional characteristics. In a few instances, color choices have been somewhat biased to enhance either the contrast or kinship between terranes for the sake of readability.

This terrane map is part of a more extensive terrane map of the entire North American Cordillera (Silberling and others, 1992). It is a synthesis and condensation of maps published previously at a scale of 1:2,500,000 that show Alaska west of the 141st Meridian (Jones and others, 1987) and western Canada and southeastern Alaska (Monger and Berg, 1987). Reference should be made to these earlier, maps for more complete terrane descriptions and bibliographic citations. For the most part, the present map reflects the original concepts of terranes that are now well entrenched in the literature, and it has not been updated to include all of the more recent interpretations of Cordilleran accreted terranes. Some of the more noteworthy new schemes, not incorporated on the present map, are presented in the various chapters on regional geology in this volume and are reviewed and summarized by Plafker and Berg (this volume).

EXPLANATION

ACCRETED TERRANES

[See "Description of Accreted Terranes" for symbols for individual terranes]

	AGE OF OLDEST VOLUMETRICALLY IMPORTANT STRATIFIED ROCKS THAT DEFINE ORIGINAL TECTONIC SETTING, OR OF OLDEST MATRIX ROCKS OF DISRUPTED TERRANES					
	Precambrian	early Paleozoic	late Paleozoic	early Mesozoic	late Mesozoic	Cenozoic
ORIGINAL TECTONIC SETTING AND DOMINANT LITHOLOGY	Oceanic crust and sea mounts; sedimentary deposits are pelagic or hemipelagic. Includes inferred offshore oceanic and marginal basin rocks.					
	Oceanic rocks, volcanic or stratigraphically mixed with island-arc volcaniclastic rocks. Represented by deep-marine chert-argillite-volcaniclastic associations.					
	Island-arc volcanic and volcaniclastic rocks.					
	Deep-marine arc-derived volcaniclastic rocks stratigraphically or tectonically mixed with terrigenous clastic rocks of continental or transcontinental derivation.					
	Submarine-fan, terrigenous clastic rocks of continental or transcontinental derivation; includes continental slope and rise deposits.					
	Continental basement having, or inferred to have had, Precambrian basement; includes continental or miogeoclinal rocks detached from their basements.					

Metamorphic terrane of uncertain affinities—Queried where not assigned to terrane

Terrane of known affinity characterized by metamorphism—Shown by pattern; see chart above to interpret background color

Terrane characterized by tectonic disruption—Shown by pattern; see chart above to interpret background color

POSTACCRETION COVER DEPOSITS AND COVER ROCKS

Qc **Cenozoic deposits**

T **Tertiary rocks**—Western Canada

TKu **Tertiary and Upper Cretaceous rocks**—Western Canada

Ku **Upper Cretaceous rocks**—Alaska

POSTAMALGAMATION OR POSTACCRETION PLUTONIC INTRUSIVE ROCKS

Granitic and gneissic rocks—Shown only in western Canada and southeastern Alaska

POSTAMALGAMATION OVERLAP ASSEMBLAGES

KJb **Lower Cretaceous and Upper Jurassic rocks of Bowser Basin**—Deposited on Stikinia terrane, contains detritus from Cache Creek terrane

GN **Gravina-Nutzotin belt**—Upper Jurassic to mid-Cretaceous argillite and graywacke, intermediate and mafic volcanic rocks, and granitic to ultramafic intrusive rocks; deposited on both Alexander and Wrangellia terranes

NONACCRETIONARY CONTINENTAL ROCKS AND OCEANIC PLATES

NAm **North America**—Continental rocks of ancestral North America, not accreted during Phanerozoic time

PAC **Pacific plate**

Terrane-bounding fault or boundary between oceanic plates—Dashed where approximately located; dotted where concealed beneath postaccretion cover deposits or within postaccretion or postamalgamation batholithic rocks; queried where nature or extent is uncertain

Postamalgamation or postaccretion contact—Includes depositional and intrusive contacts, and faults that are not terrane boundaries

Belt of low-angle Cordilleran thrust faults—Approximate east limit; sawteeth on overthrust side

BATHYMETRIC CONTOURS IN METERS

Base prepared by Geological Society of America from U.S. Geological Survey National Atlas, 1:7,500,000, 1970; Albers equal-area projection; central meridian 100; scale factor equals 0.828. Bathymetry north of lat 60 plotted by U.S. Geological Survey from GEBCO digital data; bathymetry south of lat 60 (SYNBAPS) plotted by National Oceanographic and Atmospheric Administration.

©1994 The Geological Society of America, Inc.

LITHOTECTONIC TERRANE MAP OF ALASKA AND ADJACENT PARTS OF CANADA

By

N.J. Silberling, D.L. Jones, J.W.H. Monger, and P.J. Coney, H.C. Berg, and George Plafker

1994

Published by:

The Geological Society of America, Inc.
3300 Penrose Place, P.O. Box 9140, Boulder, Colorado 80301
in publication of the Decade of North American Geology Project,
which is funded, in part, by the U.S.A. Foundation

Plate 3, Lithotectonic terrane map of Alaska and adjacent parts of Canada
Geology of Alaska
Vol. G of the Geology of North America (DNA-G)