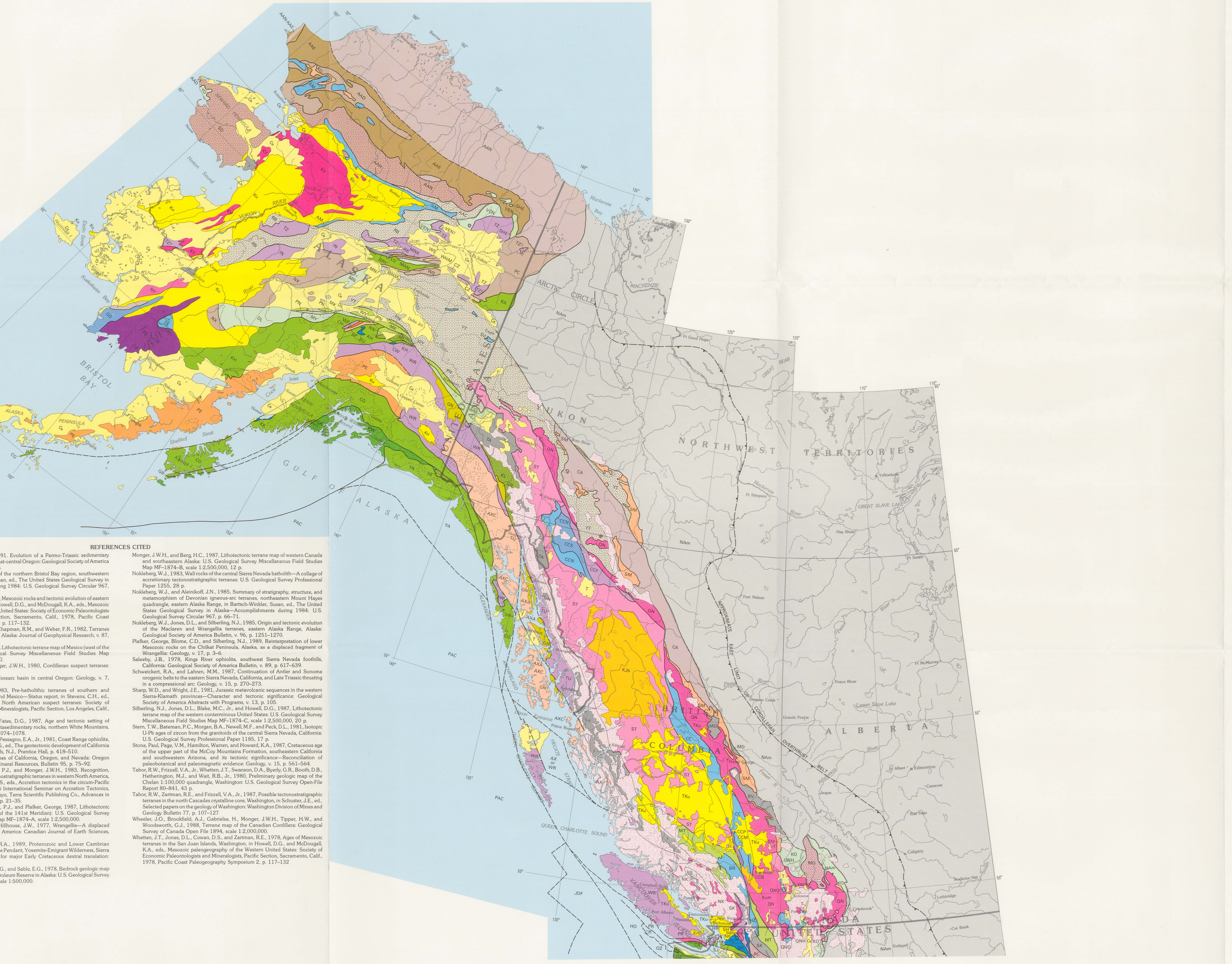

NOTE

The lithotectonic terrane map of the North American Cordillera shows the terranes that have been accreted during Phanerozoic time to this segment of the North American cratonic margin. It represents a collaborative project of the U.S. Geological Survey, the Geological Survey of Canada, and Petroleos Méxicana.

Each terrane depicted on this map is bounded by faults 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 displacement 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. This, along with uncertainty about the outcrop pattern, is also true for plutonic rocks in Mexico that are not portrayed. 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 of the North American Cordillera is a synthesis and condensation of four maps published previously at a scale of 1:2,500,000 that show Alaska west of the 141st Meridian (Jones and others, 1987), western Canada and southeastern Alaska (Monger and Berg, 1987), the western conterminous United States (Silberling and others, 1987), and Mexico (Coney and Campa, 1987). Reference should be made to these earlier, larger scale 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 reports on east-central and southern Alaska (Nokleberg and Aleinikoff, 1985; Foster and others, 1987), the Canadian Cordillera (Wheeler and others, 1988), east-central California (Schweickert and Lahren, 1987), and northwestern Mexico and adjacent southern California (Gastil and Miller, 1983).

EXPLANATION

ACCRETED TERRANES

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

ORIGINAL TECTONIC SETTING AND DEPOSITIONAL NATURE	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
Oceanic crust and sea mounts; sedimentary deposits mainly indigenous or pelagic. Includes inferred offshore oceanic and marginal basin rocks.						
Oceanic rocks tectonically 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 microcontinental derivation.						
Submarine-fan, terrigenous clastic rocks of continental or microcontinental derivation; includes continental slope and rise deposits.						
Continental fragment 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

Composite terrane—See chart above to interpret combinations of terranes shown by stripes

POSTACCRETION COVER DEPOSITS AND COVER ROCKS

Cz **Cenozoic deposits**

Czv **Cenozoic volcanic rocks**—Mexico

T **Tertiary rocks**—Western Canada

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

Ku **Upper Cretaceous rocks**—Alaska

Km **Cretaceous rocks**—California and Oregon; Albian in age at base

Kl **Cretaceous rocks**—California; Neocomian in age at base

POSTAMALGAMATION OR POSTACCRETION BATHOLITHIC INTRUSIVE ROCKS

Granitic and gneissic rocks—Shown only in western Canada, southeastern Alaska, and western conterminous United States

POSTAMALGAMATION OVERLAP ASSEMBLAGES

[Recognized only in Alaska and western Canada]

Kum **Upper and mid-Cretaceous rocks of Spences Bridge and Kingsvale Groups**—Deposited on both Quesnellia terrane and southernmost part of Cache Creek terrane

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

COC **Cocos plate**

JDF **Juan de Fuca plate**

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 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

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