U.S. DEPARTMENT OF THE INTERIOR
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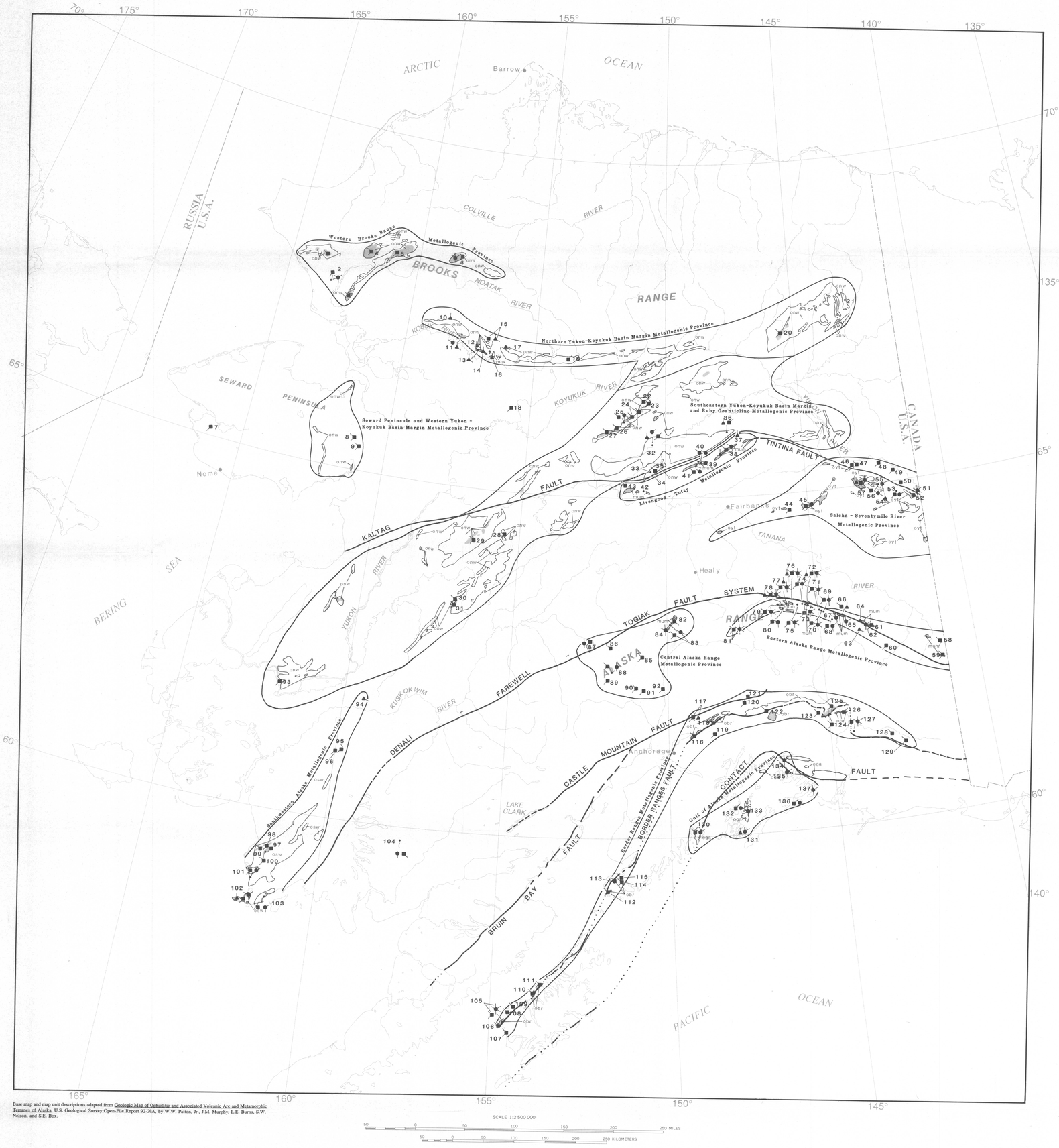

Base map and map unit descriptions adapted from Geologic Map of Ophiolitic and Associated Volcanic Arc and Metamorphic Terranes of Alaska, U.S. Geological Survey Open-File Report 92-20A, by W.W. Patton, Jr., J.M. Murphy, L.E. Burns, S.W. Nelson, and S.E. Box.

SCALE 1:2 500 000

50 0 50 100 150 200 250 MILES

50 0 50 100 150 200 250 KILOMETERS

EXPLANATION

Asbestos
Soapstone Jade
Ni Au Cr Mn
Hg Co PGE Ti
Cu

Barbs on polygons indicate presence of indicated commodities at specified locations, which, are described in Table 1. In congested areas, some locations are shown by solid circles and the appropriate polygons are connected to those locations by leaders. This symbology refers only to mineral commodities that are clearly associated with or derived from ophiolitic rocks or mafic and ultramafic rocks of uncertain affinity. Commodities not clearly associated with or derived from ophiolitic or other mafic and ultramafic rocks are contained in parentheses, under the heading "commodities" in table 1.

Location described in table 1. Unless indicated by other symbols, no commodity is clearly associated with ophiolitic rocks or other mafic and ultramafic rocks.

Metallogenic province boundary

Strike-slip fault

MAP UNITS

NORTHERN AND WESTERN ALASKA

onw

TERRANE CONTAINING OPHIOLITIC COMPLEXES OF NORTHERN AND WESTERN ALASKA

Black pattern represents allochthonous alpine-type mafic-ultramafic complexes composed of a lower mantle suite of serpentinized harzburgite and dunite and an upper plutonic suite of layered ultramafic rocks and layered and nonlayered gabbro. K-Ar ages range mostly from Middle to Late Jurassic.

Outlined white areas represent an imbricate assemblage of pillow-basalt, radiolarian chert, gabbro, argillite, and graywacke with prehnite-pumpellyite metamorphic facies assemblages. Presence of glaucophane near base indicates local high-pressure metamorphism. Fossil ages range from Devonian to Early Jurassic.

SOUTHWESTERN ALASKA

osw

TERRANE CONTAINING OPHIOLITIC COMPLEXES OF SOUTHWESTERN ALASKA

Black pattern represents allochthonous alpine mafic-ultramafic complexes composed of nonlayered gabbro and lesser amounts of harzburgite and dunite. Uncertain but probable Mesozoic age.

Outlined white areas represent imbricate assemblage of pillow basalt, radiolarian chert, gabbro, argillite, graywacke, and carbonate rocks. Prehnite-pumpellyite and locally transitional blueschist-greenschist metamorphic facies. Fossil ages range from Devonian to Jurassic.

EAST-CENTRAL ALASKA

oyt

TERRANE CONTAINING OPHIOLITIC COMPLEXES OF EAST-CENTRAL ALASKA

Black pattern represents allochthonous alpine-type mafic-ultramafic complexes composed of serpentinized harzburgite and dunite, sparse layered gabbro, and coarse nonlayered gabbro. Age is uncertain.

Outlined white areas represent assemblages of pillow basalt, basaltic tuffs, radiolarian chert, argillite, graywacke, conglomerate, and limestone. Prehnite-pumpellyite metamorphic facies. Fossils of Mississippian, Early Permian, and Late Triassic ages.

SOUTH-CENTRAL ALASKA

obr

TERRANE CONTAINING OPHIOLITIC COMPLEXES OF SOUTH-CENTRAL ALASKA

Black pattern represents ultramafic rocks including dunite, wehrlite, clinopyroxenite, websterite, and harzburgite.

Outlined white areas represent gabbro complexes including gabbronorite, leucogabbronorite, and ferrogabbronorite. K-Ar ages range from Early to Middle Jurassic.

GULF OF ALASKA REGION

oga

TERRANE CONTAINING OPHIOLITIC COMPLEXES OF THE GULF OF ALASKA REGION

Chiefly pillow basalt and sheeted dikes with lesser amounts of layered gabbro, serpentinized peridotite, and plagiogranite. Associated with Late Cretaceous to early Tertiary turbidites. Prehnite-pumpellyite to lower greenschist metamorphic facies. One U-Pb date of 57 Ma from the Resurrection Peninsula.

MAFIC-ULTRAMAFIC COMPLEXES OF UNCERTAIN BUT POSSIBLE OPHIOLITIC AFFINITIES

mum

Include small mafic-ultramafic bodies along Denali-Farewell-Togiak fault system in eastern and central Alaska Range and between Fairbanks and the Yukon River. Ages and structural setting of bodies poorly known.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Figure 1. Ophiolitic and other mafic-ultramafic metallogenic provinces in Alaska (west of 141st Meridian)