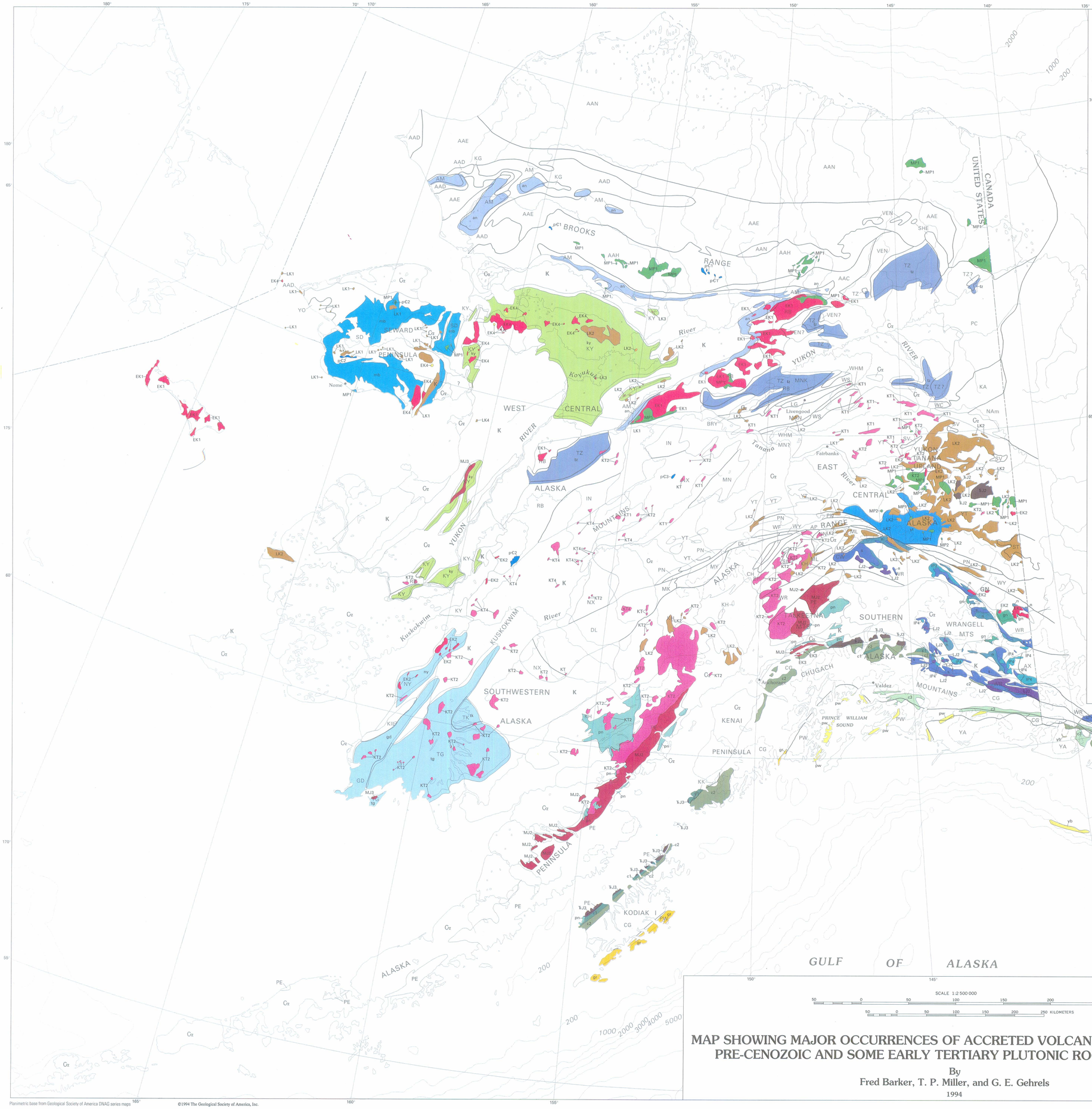

MAP SHOWING MAJOR OCCURRENCES OF ACCRETED VOLCANIC ROCKS AND THE PRE-CENOZOIC AND SOME EARLY TERTIARY PLUTONIC ROCKS OF ALASKA

By
Fred Barker, T. P. Miller, and G. E. Gehrels
1994

EXPLANATION OF PRE-CRETACEOUS AND MINOR TERTIARY PLUTONIC ROCKS

Age[1]

- KT — Cretaceous to Eocene, 70–56 Ma
- LK — Late Cretaceous,[2] 97–66 Ma
- EK — Early Cretaceous, 135–97 Ma
- LJ — Late Jurassic, 157–144 Ma
- MJ — Middle to Late Jurassic, 173–155 Ma
- ŦJ — Late Triassic to Early Jurassic, 215–184 Ma
- IP — Pennsylvanian to Permian, 309–279 Ma
- MP — Devonian to Mississippian, 408–333 Ma
- OS — Ordovician to Silurian, 505–408 Ma
- Є — Cambrian, 570–505 Ma
- pЄ — Precambrian, >570 Ma

Numerals following letter symbols designating age indicate rock type, as follows

1 Granite
2 Tonalite, granodiorite, and minor granite
3 Quartz diorite, tonalite, gabbro, and trondhjemite
4 Monzonite, syenite, alkali granite, and diorite
5 Ultramafic rocks (found only in southeastern Alaska)

[1]Ages given are partly actual ones (Miller, this volume) and partly ones taken from the Decade of North American Geology 1983 Geologic Time Scale
[2]97–70 Ma in southeastern Alaska; some plutons may be as old as about 105 Ma

EXPLANATORY NOTE

This map supplements Chapters 19 and 21 of this volume. These two disparate groups of rocks are areally mutually exclusive, and so–to conserve space–the two are combined on this map. Accreted volcanic rocks are found in some of the other accreted terranes of Alaska. However, these have not been studied by modern analytical methods and so they are not included on this map. The sources for this map are referenced in the chapters in this volume by Barker and others and by Miller. Additional information is given in the various regional summary chapters, and in the plate by Silberling and others (this volume) showing terranes of Alaska. Boundaries of accreted rocks shown on this plate locally differ from those of Silberling and others' lithotectonic terrane plate (this volume), which is also shown as a base layer (gray) on this plate. Most of the volcanic rocks and some of the plutonic rocks shown on this map have been regionally metamorphosed; see Dusel-Bacon's chapter and Plate 4 in this volume for further information.

GEOLOGIC MAP SYMBOLS

CONTACTS

Terrane-bounding fault—Dashed where approximately located; dotted where concealed

Postaccretion or postamalgamation contact—Includes both depositional contacts and faults that are not terrane boundaries

Outline of icefield

POSTACCRETION COVER DEPOSITS

Cz **Sedimentary and volcanic rocks (Cenozoic)**

K **Sedimentary and volcanic rocks (Upper Cretaceous)**

POSTAMALGAMATION OR POSTACCRETION BATHOLITHIC ROCKS IN SOUTHEASTERN ALASKA

POSTAMALGAMATION OVERLAP ASSEMBLAGE

GN **Gravina-Nutzotin belt (Upper Jurassic to mid-Cretaceous)**

ACCRETED TERRANES

[Arranged alphabetically by map symbol]

- AAC — Coldfoot subterrane of Arctic Alaska terrane
- AAD — Delong Mountains subterrane of Arctic Alaska terrane
- AAE — Endicott Mountains subterrane of Arctic Alaska terrane
- AAH — Hammond subterrane of Arctic Alaska terrane
- AAN — North Slope subterrane of Arctic Alaska terrane
- AM — Angayucham terrane
- AP — Aurora Peak terrane
- AX — Alexander terrane
- BP — Broad Pass terrane
- BRY — Baldry terrane
- CG — Chugach terrane
- CH — Chulitna terrane
- CW — Clearwater terrane
- DL — Dillinger terrane
- GD — Goodnews terrane
- IN — Innoko terrane
- KA — Kandik River terrane
- KG — Kaguik terrane
- KH — Kahiltna terrane
- KIL — Kilbuck terrane
- KK — Kachemak terrane
- KY — Koyukuk terrane
- LG — Livengood terrane
- MAN — Manley terrane
- MK — McKinley terrane
- ML — Maclaren terrane
- MN — Minchumina terrane
- MNK — Minook terrane
- MY — Mystic terrane
- NN — Nenana terrane
- NX — Nixon Fork terrane
- NY — Nyack terrane
- PC — Porcupine terrane
- PE — Peninsular terrane
- PN — Pingston terrane
- PW — Prince William terrane
- RB — Ruby terrane
- SD — Seward terrane
- SHE — Sheemjek terrane
- ST — Stikinia terrane
- SU — Susitna terrane
- SV — Seventymile terrane
- TA — Tracy Arm terrane
- TG — Togiak terrane
- TK — Tikchik terrane
- TU — Taku terrane
- TZ — Tozitna terrane
- VEN — Venetie terrane
- WC — Woodchopper Canyon terrane
- WF — West Fork terrane
- WHM — White Mountain terrane
- WR — Wrangellia terrane
- WS — Wickersham terrane
- WY — Windy terrane
- YA — Yakutat terrane
- YO — York terrane
- YT — Yukon-Tanana terrane

NONACCRETIONARY CONTINENTAL ROCKS AND OCEANIC PLATE

NAm **North America**—Nonaccretionary Phanerozoic continental rocks of North America

EXPLANATION OF TERRANES CONTAINING MAJOR OCCURRENCES OF VOLCANIC ROCKS

	Accreted terrane	Age	Lithology: mode of occurrence	Tectonic environment
a6	Alexander terrane	Triassic	Basalt, rhyolite: flows	Rift(?)
a5		Permian	Basalt: flows, breccia	Unknown
a4		Devonian to Mississippian	Basalt, andesite: pillow flows, breccia	Unknown
a3		Early to Late Devonian	Basalt to rhyolite: breccia, flows, tuff	Rift(?)
a2		Ordovician to Early Silurian	Basalt to rhyolite: flows, breccia, dikes	Island arc
a1		Proterozoic to Cambrian	Basalt to rhyolite: flows, breccia	Island arc(?)
an	Angayucham terrane	Mississippian and Early Jurassic	Basalt, diabase: pillow flows, sills	Ocean plateau, seamounts
gd	Bristol Bay: Goodnews terrane	Permian to Early Cretaceous	Basalt, diabase, andesite: flows, breccia, sills, dikes	Oceanic: ophiolite, island arc
ny	Nyack terrane			
tk	Tikchik terrane			
tg	Togiak terrane			
c3	Chugach terrane: Valdez Group	Late Cretaceous	Metabasalt, andesite: flows, breccia, tuff	Island arc(?)
c2	Uyak and McHugh complexes, Kelp Bay and Yakutat Groups	Late Triassic to Mid-Cretaceous	Metabasalt: pillow flows, breccia	MORB, minor seamount(?)
c1	Schists of Raspberry Strait, Seldovia, Iceberg Lake, and Liberty Creek	Late Jurassic and older	Metabasalt (blueschist, greenschist): flows, breccia, tuff	MORB
gn	Gravina-Nutzotin belt	Late Jurassic to Early Cretaceous	Basalt, andesite: flows, breccia, pillow flows	Island arc, partly arc-rift(?)
gr	Ghost Rocks terrane	Late Cretaceous to Paleocene	Basalt, andesite: flows, pillow flows, tuff	MORB
mb	Metabasites of Seward Peninsula	Ordovician(?)	Metabasalt, metadiabase, metagabbro: flows, breccia, hypabyssal intrusives	Continental-margin rift(?)
ky	Koyukuk terrane (see Patton and others, this volume)	Early Cretaceous	Basalt, andesite: flows, tuff, breccia	Island arc
pn	Peninsular terrane, Talkeetna Formation	Late Triassic(?) to Jurassic	Basalt to dacite: flows, breccia, tuff, dikes, plugs	Island arc
pw	Prince William terrane	Late Paleocene to middle Eocene	Basalt: pillow flows, flows	Leaky transforms or near-ridge(?)
t	Taku terrane	Permian to Triassic	Basalt: pillow flows, flows	Back-arc basin(?)
tz	Tozitna terrane (see Patton and others, this volume)	Mississippian to Triassic	Basalt, diabase: pillow flows, sills	Ocean plateau(?)
ŧ	Wrangellia terrane: Skolai Group, Tetelna Volcanics, Slana Spur Formation	Pennsylvanian	Basalt to rhyolite: flows, breccia, pillow flows, tuff	Island arc
n	Wrangellia terrane: Nikolai Greenstone	Middle and(or) Late Triassic	Basalt, diabase: flows, breccia	Back-arc basin
yb	Yakutat terrane	Paleogene	Basalt: flows, hyaloclastite, breccia	MORB(?), seamount(?), ocean island(?)
yt	Southern Yukon-Tanana terrane	Devonian to Mississippian	Basalt to quartz keratophyre: flows, tuffs	Continental-margin arc

Plate 13. Major occurrences of accreted volcanic rocks and some pre-Cenozoic and some early Tertiary plutonic rocks
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Planimetric base from Geological Society of America DNAG series maps

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Lithotectonic terrane map modified from Silberling and others (this volume)