

U. S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

TONGASS TIMBER REFORM ACT WILDERNESS AREAS
SUPPLEMENT TO U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 91-10
(UNDISCOVERED LOCATABLE MINERAL RESOURCES OF THE
TONGASS NATIONAL FOREST AND ADJACENT LANDS,
SOUTHEASTERN ALASKA)

By

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and

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OPEN-FILE REPORT 91-343

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U.S. Geological Survey, MS 904
Menlo Park, CA 94025

1991

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Figure 1s. Map of southeastern Alaska, showing location of Tongass National Forest lands open for mineral entry, Tongass National Forest lands in Wilderness status, U.S. National Park Service lands, State of Alaska, Sealaska Native Corporation, and private lands. All boundaries are approximate; some areas are too small to be depicted at this scale. Information from U.S. Forest Service (1990), other sources, and U.S. Forest Service (written communications, November 1990, May 1991).

TABLE LIST

Table 3s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts in the following 1:250,000-scale quadrangles, southeastern Alaska: BC, Bradfield Canal; CR, Craig; DE, Dixon Entrance; JU, Juneau; KC, Ketchikan; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation.

Table 4s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts entirely or principally within the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka;. See text of Brew and others (1991) for explanation.

Table 5s. Undiscovered mineral-resource endowment of selected individual mineral-resource tracts, in metric tons; in all of Tongass National Forest and adjacent lands, by the U.S. Geological Survey MARK3 simulator for tracts entirely or principally within each of the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka;. See text of Brew and others (1991) for explanation.

Table 6s. Commodity prices used in calculation of gross-in-place value of undiscovered mineral resources, Tongass National Forest and adjacent lands. (Prices are averages for the decade 1978-1987, based on U.S. Bureau of Mines (1983, 1988). Prices have been rounded to two places. The following conversions were used: 0.9078 mt = 1 st, 1 kg = 2.2 lb, 1 st = 2,000 lb, 1 stu = 20 lb, 31.1 g = 1 troy oz; from Coldwell (1990). Prices for antimony and tin calculated specifically for this report by a method similar to that of the USBM).

Table 7s. Metal tonnages and gross-in-place values (GIPV) calculated for selected individual mineral-resource tracts, in all of Tongass National Forest and adjacent lands, southeastern Alaska, in the following 1:250,000-scale quadrangles: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka; all tonnages are metric; see text of Brew and others (1991) for explanation.

Table 8s. Aggregated metal tonnages and gross-in-place values (GIPV), on a commodity-by-commodity basis, of undiscovered mineral resources, in all of Tongass National Forest and adjacent lands, southeastern Alaska; all tonnages are metric; see text of Brew and others (1991) for explanation.

Table 9s. Metal tonnages and gross-in-place values (GIPV) calculated for those parts of selected individual mineral-resource tracts that are totally or partially in the Tongass National Forest, southeastern Alaska; in the following 1:250,000-scale quadrangles: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka; all tonnages are metric; see text of Brew and others (1991) for explanation.

Table 10s. Aggregated metal tonnages and gross-in-place values (GIPV), on a commodity-by-commodity basis, for those parts of mineral-resource tracts that are totally or partially in the Tongass National Forest, southeastern Alaska; all tonnages are metric; see text of Brew and others (1991) for explanation.

Table 11s. Gross-in-place values (GIPV) calculated for those parts of selected individual mineral-resource tracts that are wholly or partially in parts of the Tongass National Forest, southeastern Alaska, that are now open to mineral entry; all tonnages are metric; see text of Brew and others (1991) for explanation.

Tongass Timber Reform Act Wilderness Areas Supplement to U.S. Geological Survey Open-File Report 91-10
(Undiscovered locatable mineral resources of the Tongass National Forest and adjacent lands, southeastern Alaska)

By

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ABSTRACT

This report is a supplement to a much longer report on the undiscovered metallic mineral resources of the Tongass National Forest and adjacent lands in southeastern Alaska (Brew and others, 1991). This report has two purposes: (1) it revises the previous calculations of amount and gross-in-place-value (GIPV) of undiscovered resources in lands open to mineral entry to reflect the six new Wilderness areas created by the Tongass Timber Reform Act of October 1990; and (2): it corrects two calculation errors in the previous report.

The revised figure for the GIPV of undiscovered metallic mineral resources in those parts of the Tongass National Forest that are open to mineral entry is \$23.5 billion; the previous figure was \$24.4 billion. The revised figure for the molybdenum endowment of those mineral-resource tracts that are wholly or partially in the Tongass National Forest is 345,000 metric tonnes and their GIPV is \$4.35 billion; the previous figures were 490,000 metric tonnes and \$6.19 billion, respectively. The revised figure for the GIPV of the thorium endowment of the mineral-resource tracts that are wholly or partially in the Tongass National Forest is \$1.49 billion; the previous figure was \$1.49 million.

With the revised figures, the Tongass National Forest is now estimated to contain about 69 percent of the endowment of the whole region and , in turn, the parts of the Forest now open to mineral entry are now estimated to contain about 83 percent of the undiscovered metallic mineral resource endowment of the whole Tongass National Forest.

DISCUSSION

As described at length in Brew and others (1991), southeastern Alaska is a geologically complex region that contains a wide variety of known locatable metallic mineral deposits, some of which have produced very important amounts of metals and other materials during the past 100-plus years. The Juneau district, the Chichagof district, the Kasaan Peninsula Bokan Mountain, and the Hyder district are all well known productive localities. In recent years major new discoveries have been made at the Green's Creek mine and the Quartz Hill molybdenite property.

The comprehensive report by Brew and others (1991) estimated the undiscovered locatable metallic mineral-resource endowment of all of the region; it then estimated the undiscovered mineral-resource endowment of the Tongass National Forest, which covers about 80 percent of the region; and, finally, it estimated the undiscovered mineral-resource endowment of that part of the Tongass that was open to mineral entry as of October, 1990.

This supplementary report revises the previous calculations of amount and gross-in-place-value (GIPV) of undiscovered resources in lands open to mineral entry to reflect the six new Wilderness areas created by the Tongass Timber Reform Act of October 1990. Those areas are the Pleasant-Lemesurier-Inian Islands, Young Lake, Chuck River, Kuiu Island, South Etolin Island, and Karta River Wildmesses. This report also corrects two calculation errors in the previous report, one concerned with the amount and gross-in-place-value (GIPV) of the undiscovered molybdenum endowment of the Tongass National Forest, and the other with the gross-in-place-value (GIPV) of the undiscovered thorium endowment of those parts of the Forest that are now open to mineral entry.

With the revised figures, the Tongass National Forest is now estimated to contain about 69 percent of the endowment of the whole region and, in turn, the parts of the Forest now open to mineral entry are now estimated to contain about 83 percent of the undiscovered metallic mineral resource endowment of the Tongass National Forest.

The report by Brew and others (1991) contains detailed descriptions of the process involved in the undiscovered-mineral-resource appraisal of the region and of the material contained in the tables. That information is not repeated here.

In order to recalculate the undiscovered-mineral-resource endowment of the parts of the Forest now open to mineral entry, it was necessary to reexamine those previously defined mineral-resource-assessment tracts in the areas of the new Wildmesses and to reestimate the percentages of the tracts open to mineral entry. The results of those reexaminations and reestimations are communicated here in the form of revised pertinent parts of tables 3 and 4 of Brew and others (1991). The pertinent parts of table 5 of Brew and others (1991) are included for completeness, as is table 6. The effects of the reestimates on the derivative tables are communicated here in the form of revised pertinent parts of tables 7, 8, 9, and 10. A complete version of table 11, including the revised pertinent parts is included. Thus, the reader needs to have the report by Brew and others (1991) to get the full explanation of the table headings and the like, but the material in this report fully documents the revisions made as a result of the creation of the six new Wilderness areas.

REFERENCES CITED

Brew, D.A., Drew, L.J., Schmidt, L.M., Root, D.H., and Huber, D.F., 1991, Undiscovered locatable mineral resources of the Tongass National Forest and adjacent areas, southeastern Alaska: U.S. Geological Survey Open-File Report 91-10, 370 p., 15 maps at 1:250,000, 1 map at 1:500,000, 11 figs.

All other references are to be found in the references section of the above document.

Table 3s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts in the following 1:250,000-scale PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation of headings and sources of information.

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2-BC)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
BRADFIELD CANAL QUADRANGLE						
09BC	Outer Etolin	Mesozoic turbidites, other metasedimentary and metavolcanic rocks, and Cretaceous granitic rocks are intruded by Middle Tertiary alkalic and subalkalic granitic rocks, producing permissive vein and skarn environments; intrusive rocks elsewhere (in tract 05PE) have close relation to volcanic rocks.	None	None	a) Polymetallic vein, 22c b) W vein, 15a(?)	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
CRAIG QUADRANGLE						
05CR	Outer Etolin	Mesozoic turbidites, other metasedimentary and metavolcanic rocks, and Cretaceous granitic rocks are intruded by Middle Tertiary alkalic and subalkalic granitic rocks, producing permissive vein and skarn environments; intrusive rocks elsewhere (in tract 05PE) have close relation to volcanic rocks.	None	None	a) Polymetallic vein, 22c b) W vein, 15a(?)	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
06CR	Canoe Passage	Fault cuts Cretaceous turbidites intruded by Late Cretaceous tonalite and Middle Tertiary granite.	None	None	Polymetallic vein, 22c	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
10CR	South-central Prince of Wales Island	Scattered and varied deposits in broad expanse of Ordovician, Mississippian, and Devonian sedimentary and volcanic rocks.	CR004-006, 012, 030, 031, 049, 063, 095-099, 127	None	a) Kuroko massive sulfide, 28a b) Polymetallic vein, 22c c) Porphyry Cu, 17 d) Cu skarn, 18b	Reconnaissance geologic and geochemical mapping by USGS; some prospecting.
16CR	Black Lake (A), Lake Saint Nicholas (B)	Lower Paleozoic andesitic breccia and some Middle Paleozoic carbonate rocks intruded by Cretaceous granitic pluton with possible Mo mineralization.	(A)CR018-020; (B)CR025	None	Porphyry Mo, 21b	Reconnaissance and some semi-detailed geologic and geochemical mapping by USGS; drilling on one prospect in 1970's
17CR	Pin Peak	Lower Paleozoic andesitic breccia and some Middle Paleozoic carbonate rocks intruded by Cretaceous granitic pluton with possible Mo mineralization; polymetallic(?) veins also.	CR016,017,021-24	None	a) Porphyry Mo, 21b b) Polymetallic veins, 22c	Reconnaissance and some semi-detailed geologic and geochemical mapping by USGS.

quadrangles, southeastern Alaska: BC, Bradfield Canal; CR, Craig; DE, Dixon Entrance; JU, Juneau; KC, Ketchikan; MF, Mount Fairweather; PA, Port Alexander;

8 Accessibility and related factors, including percent of tract in different land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undiscovered deposits (% chance that there are the number given or more deposits) 95 90 50 10 05					11 Grade and tonnage model available?	12 Tract area, in square kilometers	13 Remarks	
In part close to tidewater; some parts steep and rugged; some thick brush and timber. 100% in USFS Tongass National Forest.	Permissive geology; Cr, Ni, Mo, W, Pb, Nb stream-sediment anomalies; Cu, Pb, Au, Mo, Zn, Cr, Ni bedrock anomalies in tract 15PE to W.	a)	0	0	0	0	1	Yes	25	Same undiscovered resources as in adjoining tracts 15PE, 05CR, and 01KC.
		b)	0	0	0	0	1	Yes		
		c)	0	0	0	0	1	Yes		
In part close to tidewater; some parts steep and rugged; some thick brush and timber; some logging roads. 85% in USFS South Etolin Wilderness; 15% in USFS Tongass National Forest.	Permissive geology; Cr, Ni, Mo, W, Pb, Nb stream-sediment anomalies; Cu, Pb, Au, Mo, Zn, Cr, Ni bedrock anomalies in tract 15PE to N.	a)	0	0	0	0	1	Yes	70	Same undiscovered resources as in adjoining tracts 09BC and 15PE.
		b)	0	0	0	0	1	Yes		
Close to tidewater; local thick brush and timber. 100% in USFS South Etolin Wilderness.	Permissive geology; Cu, Mo, Ni bedrock anomalies in tract 16PE to N; very small tract.	No estimate.					Yes	4	Same undiscovered resources as in adjoining tract 16PE.	
In part close to tidewater; heavy timber, limited outcrop; part has logging roads. 02% in USFS Karta River Wilderness Area; 40% in Alaska Native lands; 58% in USFS Tongass National Forest.	Known deposits; permissive geology; numerous Cu geochem anomalies; scattered Pb, Zn, Ea, Ag anomalies; very large tract.	a)	0	1	2	3	5	Yes	1606	Same resources as in tracts 03DE and 11KC.
		b)	0	3	6	8	10	Yes		
		c)	0	0	1	2	3	Yes		
		d)	0	1	2	4	6	Yes		
Close to tidewater in part; locally steep; close to State roads; also logging roads. 50% in Alaska Native lands; 20% in USFS Karta River Wilderness Area; 3% in USFS Tongass National Forest.	Known occurrences; permissive geology; Mo geochem anomalies; moderate size tract.	0	0	0	0	0	1	Yes	233	
Close to tidewater in part; locally steep; close to State roads; also logging roads. 25% in Alaska Native lands; 25% in USFS Karta River Wilderness Area; 50% in USFS Tongass National Forest.	Known occurrences; permissive geology; Mo geochem anomalies; small tract.	a)	0	0	0	1	2	Yes	60	
		b)	0	0	0	0	1	Yes		

Table 3s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts in the following 1:250,000-scale PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation of headings and sources of information. - *Continued*.

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2-BC)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
CRAIG QUADRANGLE-CONTINUED.						
18CR	Maybeso Creek	Ordovician shale and graywacke contain numerous polymetallic (?) veins.	CR026-029, 032-48	Production: Several thousand oz Au 1900 to 1940's.	a) Porphyry Mo, 21b b) Polymetallic veins, 22c	Reconnaissance and some semi-detailed geologic and geochemical mapping by USGS; intermittent re-examination by industry.
DIXON ENTRANCE QUADRANGLE						
03DE	South-central Prince of Wales Island	Scattered and varied deposits in broad expanse of Ordovician, Mississippian, and Devonian sedimentary and volcanic rocks in Craig quad to N.	DE008	None	a) Kuroko massive sulfide, 28a b) Polymetallic vein, 22c c) Porphyry Cu, 17	Reconnaissance geologic and geochemical mapping by USGS; some prospecting.
JUNEAU QUADRANGLE						
09JU	Admiralty Island	Highly deformed and slightly metamorphosed Late Triassic mafic and intermediate volcanic rocks, fine-grained clastic rocks, and ultramafic masses host, in different places, significant massive sulfide, Ni-Cu magmatic segregation, and polymetallic vein deposits.	JU028-045	Significant past production from polymetallic vein deposits JU032, 034, 037; and from synorogenic-syn-volcanic Ni-Cu deposit JU033. Reserves: JU033 contains discovered reserve of about 560,000 T with 0.35% Cu, 0.34% Ni, 0.15% Co; deposit JU044 has just started production; it has discovered reserve of about 3.5 million T with 3.9% Pb, 9.7% Zn, 23.8 oz/T Ag, 0.18 oz/T Au.	a) Sierran massive sulfide, 28c b) Synorogenic-synvolcanic Ni-Cu, 7a	Reconnaissance and some detailed geologic and geochemical mapping by USGS; intense private prospecting in non-National Monument part of tract.
KETCHIKAN QUADRANGLE						
01KC	Outer Etolin Island	Mesozoic turbidites, other metasedimentary and metavolcanic rocks, and Cretaceous granitic rocks are intruded by Middle Tertiary alkalic and subalkalic granitic rocks, producing permissive vein and skarn environments; intrusive rocks elsewhere (in tract 05PE) have close relation to volcanic rocks.	None	None	a) Polymetallic vein, 22c b) W vein, 15a(?)	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
11KC	South-central Prince of Wales Island	Scattered and varied deposits in broad expanse of Ordovician, Mississippian, and Devonian sedimentary and volcanic rocks.	None	None	a) Kuroko massive sulfide, 28a b) Polymetallic vein, 22c c) Porphyry Cu, 17 d) Cu skarn, 18b	Reconnaissance geologic and geochemical mapping by USGS; some prospecting.

quadrangles, southeastern Alaska: BC, Bradfield Canal; CR, Craig; DE, Dixon Entrance; JU, Juneau; KC, Ketchikan; MF, Mount Fairweather; PA, Port Alexander;

8 Accessibility and related factors, including percent of tract in different land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undiscovered deposits (% chance that there are the number given or more deposits)					11 Grade and tonnage model available?	12 Tract area, in square kilometers	13 Remarks
		95	90	50	10	05			
Close to tidewater in part; locally steep; close to State roads; also logging roads. 15% in Alaska Native lands; 25% in USFS Karta River Wilderness Area; 60% in USFS Tongass National Forest.	Known deposits; permissive geology; widespread Zn, Pb, Mo, Cu geochem anomalies; small tract.	a) 0	0	0	0	1	Yes	90	
		b) 0	1	3	6	8	Yes		
In part close to tidewater; heavy timber, limited outcrop; part has logging roads. 100% in USFS Tongass National Forest.	Known deposits; permissive geology; numerous Cu geochem anomalies; scattered Pb, Zn, Ba, Ag anomalies; very large tract in quad to N, very small part here.	a) 0	1	2	3	5	Yes	1 Same resources as in tracts 10CR and 11KC.	
		b) 0	3	6	8	10	Yes		
		c) 0	0	1	2	3	Yes		
		d) 0	1	2	4	6	Yes		
Close to tidewater, locally heavy timber; steep in part. 19% in USFS Admiralty Island National Monument; 79% in USFS Tongass National Forest; 02% in USFS Young Lake Wilderness.	Known deposits and mines; permissive geology; abundant and varied geochemical anomalies; relatively well prospected.	a) 0	0	0	1	3	Yes	409 Same undiscovered resources as in adjoining tract 13SI and 01SD.	
		b) 0	0	0	0	1	Yes		
In part close to tidewater; some parts steep and rugged; some thick brush and timber; some logging roads. 100% in USFS Tongass National Forest.	Permissive geology; Cr, Ni, Mo, W, Pb, Nb stream-sediment anomalies; Cu, Pb, Au, Mo, Zn, Cr, Ni bedrock anomalies in tract 15PE to NW.	a) 0	0	0	0	1	Yes	50 Same undiscovered resources as in adjoining tracts 09BC, 05CR, and 15PE.	
		b) 0	0	0	0	1	Yes		
Close to tidewater; low relief; timber and brush. 100% in USFS Tongass National Forest.	Known deposits; permissive geology; numerous Cu geochem anomalies; scattered Pb, Zn, Ba, Ag anomalies in tract 10CR to W; adjoins that very large tract.	a) 0	1	2	3	5	Yes	1 Same resources as in tract 10CR.	
		b) 0	3	6	8	10	Yes		
		c) 0	0	1	2	3	Yes		
		d) 0	1	2	4	6	Yes		

Table 3s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts in the following 1:250,000-scale PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation of headings and sources of information. - *Continued*

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2-BC)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
MOUNT FAIRWEATHER QUADRANGLE						
11MF	Dundas River	Paleozoic carbonate, clastic and minor volcanic rocks intruded by voluminous Tertiary and Cretaceous granitic rocks; skarn deposits in carbonates near intrusions.	MF050b, 052-055, 057-061	Reserves: USBM USGS estimate for MF054: indicated resource: 27,000 T with 1.0% Cu, 0.1 oz/Au, 2.0 oz/T Ag.	a) Cu skarn, 18b b) Polymetallic vein, 22c c) Porphyry Cu-Mo, 21a	Reconnaissance geologic and some geochemical mapping by USGS; little recent prospecting.
PORT ALEXANDER QUADRANGLE						
08PA	Southwest Kuiu	Cretaceous granodiorite plutons and dikes intrude middle Paleozoic graywacke, carbonate, and minor conglomerate; some large altered zones.	None	None	a) Porphyry Cu-Mo, 21a b) Polymetallic veins, 22c	Reconnaissance and some semidetailed geologic and geochemical mapping by USGS; little exploration.
PETERSBURG QUADRANGLE						
04PE	Southwest Kuiu	Cretaceous granodiorite plutons and dikes intrude middle Paleozoic graywacke, carbonate, and minor conglomerate; some large altered zones.	PE001	None	a) Porphyry Cu-Mo, 21a b) Polymetallic veins, 22c	Reconnaissance and some semidetailed geologic and geochemical mapping by USGS; little exploration.
06PE	Tunehean Creek-Castle River (A), Southeast Zarembo (B), Central Etolin (C), Niblack and Deer Islands (D)	Middle Tertiary alkalic and subalkalic granitic rocks intrude Cretaceous and Mesozoic turbidites, other metasedimentary and metavolcanic rocks, Cretaceous granitic rocks, and Tertiary sedimentary and volcanic rocks; closely associated with Tertiary volcanic rocks of tract 05PE to the NW, but more deeply eroded to the SE.	None	None	a) Felsic plutonic U and REE, FP/UREE(?) b) Felsic plutonic Th and REE veins, FP/THRE(?)	Reconnaissance and some semidetailed geologic and geochemical mapping by USGS; moderate level of prospecting locally.
15PE	Outer Etolin Island	Mesozoic turbidites, other metasedimentary and metavolcanic rocks, and Cretaceous granitic rocks are intruded by Middle Tertiary alkalic and subalkalic granitic rocks, producing permissive vein and skarn environments; intrusive rocks elsewhere (in tract 05PE) have close relation to volcanic rocks.	None	None	a) Polymetallic vein, 22c b) W vein, 15a(?)	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
16PE	Canoe Passage	Fault cuts Cretaceous turbidites intruded by Late Cretaceous tonalite and Middle Tertiary granite.	None	None	Polymetallic vein, 22c	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
18PE	Tracy Arm-Stikine River	Deformed and metamorphosed Paleozoic Mesozoic clastic and volcanic rocks are intruded by Late Cretaceous granodiorite and tonalite near the S end of the tract and intruded by latest Cretaceous-earliest Tertiary great tonalite sill for the whole length of the tract; massive sulfide deposits in metamorphic rocks close to the sill have been metamorphosed; they are inferred to have been Sierran-type massive sulfide deposits; vein deposits that are inferred to be young also present.	PE034	None	a) Metamorphosed massive sulfide, RM/MS (model as Sierran massive sulfide, 28c) b) Polymetallic vein, 22c c) Au-Qtz vein, 36a	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting in N 2/3 of tract, moderate in the S 1/3.

quadrangles, southeastern Alaska: BC, Bradfield Canal; CR, Craig; DE, Dixon Entrance; JU, Juneau; KC, Ketchikan; MF, Mount Fairweather; PA, Port Alexander;

8 Accessibility and related factors, including percent of tract in different land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undiscovered deposits (% chance that there are the number given or more deposits) 95 90 50 10 05					11 Grade and tonnage model available?	12 Tract area, in square kilometers	13 Remarks	
In part close to tidewater; somewhat rugged; steep brush- and timber-covered slopes. 85% in USNPS Glacier Bay National Park. 15% in USFS Pleasant-Lemesurier Islands Wilderness.	Known deposits; permissive geology; Cu, Zn, Pb, Sn, W geochemical anomalies.	a)	0	0	1	2	3	Yes	413	
		b)	0	0	1	2	3	Yes		
		c)	0	0	0	0	1	Yes		
Timber- and brush-covered; locally steep; in part close to tidewater; 50% in USFS South Kuiu Wilderness; 50% in USFS Tongass National Forest.	Permissive geology; Mo, W, Zn stream-sediment anomalies in N part of tract; Y, Nb to S; weak Mo, Zn, Cu, Co bedrock anomalies in N part of tract; As, Ag, Au, Pb, Cu in SW part; Ag, As, Sb, Zn, Cu, Pb in SE part.	a)	0	0	0	0	1	Yes	263	Same resources as in adjoining tract 04PE.
		b)	0	0	0	1	2	Yes		
Timber- and brush-covered; locally steep; in part close to tidewater; 100% in USFS Tongass National Forest.	Permissive geology; known deposit; Mo stream-sediment anomaly; Ag, As, Sb, Zn, Cu, Pb bedrock anomalies.	a)	0	0	0	0	1	Yes	14	Same resources as in adjoining tract 08PA.
		b)	0	0	0	1	2	Yes		
Most subtracts close to tidewater; some locally rugged and steep; most have heavy brush and timber; some logging roads in (B) and (C); (C) 08% in USFS South Etolin Wilderness; (A), (B), (D), and remaining part of (C): 92% in USFS Tongass National Forest.	Permissive geology; strong aeromagnetic anomalies; local aeroradioactivity anomalies; La, Nb, Y, Pb stream-sediment anomalies; Be, Nb, Y, Sn, Cu, Mo, La, Co, Cr bedrock anomalies.	a)	0	0	0	0	1	No	(A) 28	
		a)	0	0	0	0	1	Maybe	(B) 80	
									(C) 213	
									(D) 9	
									Tot. 330	
In part close to tidewater; some parts steep and rugged; some thick brush and timber; some logging roads. 25% in USFS South Etolin Wilderness; 75% in USFS Tongass National Forest.	Permissive geology; Cr, Ni, Mo, W, Pb, Nb stream-sediment anomalies; Cu, Pb, Au, Mo, Zn, Cr, Ni bedrock anomalies.	a)	0	0	0	0	1	Yes	316	Same undiscovered resources as in adjoining tracts 09BC, 01KC, and 05CR.
		b)	0	0	0	0	1	Yes		
Close to tidewater; local thick brush and timber. 100% in USFS South Etolin Wilderness.	Permissive geology; Cu, Mo, Ni bedrock anomalies; very small tract.	No estimate.						Yes	16	Same undiscovered resources as in adjoining tract 06CR.
In part close to tidewater; in part remote; steep; very extensive glacier cover locally. 50% in USFS Stikine-LeConte Wilderness; 50% in USFS Tongass National Forest.	Known deposit; permissive geology; Ba, Pb, Zn, Au, Ag stream-sediment anomalies; Ba, Zn, Co, Ni, Cr, Mo, Pb, Cu, Ag, As bedrock anomalies; strong and steep aeromagnetic gradient; quite well protected locally; large tract.	a)	0	0	0	1	2	Yes	407	Same undiscovered resources as in adjoining tract 04SD.
		b)	0	0	1	2	3	Yes		
		c)	0	0	0	0	1	Yes		

Table 3s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts in the following 1:250,000-scale PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation of headings and sources of information. - Continued,

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2-BC)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
SUMDUM QUADRANGLE						
01SD	Admiralty Island	Highly deformed and slightly metamorphosed Late Triassic mafic and intermediate volcanic rocks, fine-grained clastic rocks, and ultramafic masses host, in different places, significant massive sulfide, Ni-Cu magmatic segregation, and polymetallic vein deposits.	SD001	None	a)Sierran massive sulfide, 28c b)Synorogenic-synvolcanic Ni-Cu, 7a	Reconnaissance and some detailed geologic and geochemical mapping by USGS; intense private prospecting locally in the past.
04SD	Tracy Arm-Sitkine River	Deformed and metamorphosed Paleozoic and Mesozoic clastic and volcanic rocks intruded by latest Cretaceous-earliest Tertiary great tonalite sill; known sulfide deposits are in metamorphic rocks close to the sill and have been metamorphosed; they are inferred to have been Sierran-type massive sulfide deposits.	SD006,008,009-011, 015-017, 021-025, 036	Production: at SD036, 50 oz Au in early 1900's. Reserves: at SD009-7,300 T with 0.23 oz/T Au, 0.31 oz/T Ag, 0.7% Cu; SD011-187,000 T with 3.42% Zn, 1.42% Cu, 0.43 oz/T Ag, 0.008 oz/T Au; SD016,017-26.7 million T with 0.57% Cu, 0.37% Zn, 0.3 oz/T Ag; USBM has revised inferred estimates, but they are not yet available.	a)Metamorphosed massive sulfide, RM/MS (model as Sierran massive sulfide, 28c) b)Au-Qtz vein, 36a	Reconnaissance geologic mapping and geochemical sampling by USGS in N 2/3's of tract, less in S 1/3; extensive drilling at SD009, 011, 016, 17
05SD	Endicott Peninsula	Au-Qtz and polymetallic vein and possible metamorphosed Sierran-type massive sulfide deposits occur in highly deformed and variably metamorphosed Paleozoic and Mesozoic clastic, volcanic, and carbonate rocks that are intruded by Late Cretaceous granodiorite and tonalite plutons.	SD019, 022-024, 026-035, 037-040	Production: SD022 produced 24,000 oz Au and 24,000 oz Ag in early 1900's; several Au-Qtz veins in Windham Bay area each produced a few 1,000 oz Au at about the same time, average Au content about 0.25 oz/T. Reserves: USBM has inferred estimates for some localities, but they are not yet available.	a)Sierran massive sulfide, 28c b)Au-Qtz veins, 36a	Reconnaissance geologic mapping and geochemical sampling by USGS intensely prospected in early 1900's.
SITKA QUADRANGLE						
13SI	Admiralty Island	Highly deformed and slightly metamorphosed Late Triassic mafic and intermediate volcanic rocks, fine-grained clastic rocks, and ultramafic masses host, in different places, significant massive sulfide, Ni-Cu magmatic segregation, and polymetallic vein deposits.	SI088-091, 093, 094, 097, 100-103, 105-112.	Pyrola prospect (SI090) is best known and is probably similar to Greens Creek deposit in Juneau quad to N.	a)Sierran massive sulfide, 28c b)Synorogenic-synvolcanic Ni-Cu, 7a	Reconnaissance and some detailed geologic and geochemical mapping by USGS; intense private prospecting locally in the past.

8 Accessibility and related factors, including percent of tract in different land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undiscovered deposits (% chance that there are the number given or more deposits) 95 90 50 10 05					11 Grade and tonnage model available?	12 Tract area, in square kilometers	13 Remarks
In part close to tidewater; locally heavy timber; steep in part; 100% in USFS Admiralty Island National Monument and Wilderness.	Significant known deposits; permissive geology; abundant and varied geochemical anomalies; relatively well prospected locally.	a) 0	0	0	1	3	Yes	12	Same undiscovered resources as in adjoining tract 13SI.
In part close to tidewater; in part remote; steep; very extensive glacier cover. 60% in USFS Tracy Arm-Fords Terror Wilderness; 05% in USFS Chuck River Wilderness. 35% in USFS Tongass National Forest	Significant known deposits; permissive geology; large tract; significant geochemical anomalies; strong and steep aeromagnetic gradient; quite well prospected locally.	a) 0	0	1	2	4	Yes	705	Same undiscovered resources as in adjoining tract 18PE.
In part close to tidewater; in part heavily bush- and timber-covered. 50% in USFS Chuck River Wilderness; 50% in USFS Tongass National Forest.	Significant known deposits; permissive geology; large tract; significant geochemical anomalies; quite well prospected locally.	a) 0	0	0	1	2	Yes	537	
In part close to tidewater; locally heavy timber; steep in part; 95% in USFS Admiralty Island National Monument and Wilderness; 05% of the above is covered by Alaska Native lands.	Significant known deposits; permissive geology; abundant and varied geochemical anomalies; relatively well prospected locally.	a) 0	0	0	1	3	Yes	1546	Same undiscovered resources as in adjoining tract 09JU.
		b) 0	0	0	0	1	Yes		

Table 4s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts entirely or principally within PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation of headings. Information for tracts taken from

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2; locations are given on plate 3)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
CRAIG QUADRANGLE						
10CR	South central Prince of Wales Island	Scattered and varied deposits in broad expanse of Ordovician, Mississippian, and Devonian sedimentary and volcanic rocks.	CR004-006, 012, 030, 031, 049, 063, 095-099, 127; DE008	None	a) Kuroko massive sulfide, 28a b) Polymetallic vein, 22c c) Porphyry Cu, 17 d) Cu skarn, 18b	Reconnaissance geologic and geochemical mapping by USGS; some prospecting.
16CR	Black Lake (A)- Lake Saint Nicholas (B)	Lower Paleozoic andesitic breccia and some Middle Paleozoic carbonate rocks intruded by Cretaceous granitic pluton with possible Mo mineralization.	(A)CR018-020; (B)CR025	None	Porphyry Mo, 21b	Reconnaissance and some semi-detailed geologic and geochemical mapping by USGS; drilling on one prospect in 1970's.
17CR	Pin Peak	Lower Paleozoic andesitic breccia and some Middle Paleozoic carbonate rocks intruded by Cretaceous granitic pluton with possible Mo mineralization; polymetallic(?) veins also.	CR016,017,021-024	None	a) Porphyry Mo, 21b b) Polymetallic veins, 22c	Reconnaissance and some semi-detailed geologic and geochemical mapping by USGS.
18CR	Maybeso Creek	Ordovician shale and graywacke contain numerous polymetallic(?) vein .	CR026-029, 032-048	Production: Several thousand oz Au 1900 to 1940's.	a) Porphyry Mo, 21b b) Polymetallic veins, 22c	Reconnaissance and some semi-detailed geologic and geochemical mapping by USGS; intermittent re-examination by industry.
MOUNT FAIRWEATHER QUADRANGLE						
11M ^c	Dundas River	Paleozoic carbonate, clastic and minor volcanic rocks intruded by voluminous Tertiary and Cretaceous granitic rocks; skarn deposits near intrusions.	MF050b, 052-055, 057-061	Reserves: USBM/USGS estimate for MF054: indicated resource: 27,000 T with 1.0% Cu, 0.1 oz/T Au, 2.0 oz/T Ag.	a) Cu skarn, 18b b) Polymetallic vein, 22c c) Porphyry Cu-Mo, 21a	Reconnaissance geologic and some geochemical mapping by USGS; little recent prospecting.
PETERSBURG QUADRANGLE						
06PE	Tunehaan Creek-Castle River (A), Southeast Zarembo (B), Central Etolin (C), Niblack and Deer Islands (D)	Middle Tertiary alkalic and subalkalic granitic rocks intrude Cretaceous and Mesozoic turbidites, other metasedimentary and metavolcanic rocks, Cretaceous granitic rocks, and Tertiary sedimentary and volcanic rocks; closely associated with Tertiary volcanic rocks of tract 05PE to the NW, but more deeply eroded to the SE.	None	None	a) Felsic plutonic U and REE, FP/UREE(?) b) Felsic plutonic Th and REE veins, FP/THRE(?)	Reconnaissance and some semidetalled geologic and geochemical mapping by USGS; moderate level of prospecting locally.

the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; sources given in table 3s.

8 Accessibility and related factors, including percent of tract in different land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undiscovered deposits (% chance that there are the number given or more deposits)					11 Grade and tonnage model available?	12 Tract area, in square kilometers	13 Remarks and references to tracts in table 3.
		95	90	50	10	05			
In part close to tidewater; heavy timber, limited outcrop; part has logging roads. 02% in USFS Karta River Wilderness; 40% in Alaska Native lands; 58% in USFS Tongass National Forest.	Known deposits; permissive geology; numerous Cu geochem anomalies; scattered Pb, Zn, Ba, Ag anomalies; very large tract.	a) 0 1 2 3 5					Yes	CR 1,606 DE 01 KC 01 Tot.1,608	Includes tracts 03DE, 10CR, and 11KC.
		b) 0 3 6 8 10					Yes		
		c) 0 0 1 2 3					Yes		
		d) 0 1 2 4 6					Yes		
Close to tidewater in part; locally steep; close to State roads; also logging roads. 50% in Alaska Native lands; 20% in USFS Karta River Wilderness; 30% in USFS Tongass National Forest.	Known occurrences; permissive geology; Mo geochem anomalies; moderate size tract.	0 0 0 0 1					Yes	233	
Close to tidewater in part; locally steep; close to State roads; also logging roads. 25% in Alaska Native lands; 25% in USFS Karta River Wilderness; 50% in USFS Tongass National Forest.	Known occurrences; permissive geology; Mo geochem anomalies; small tract.	a) 0 0 0 0 1					Yes	60	
		b) 0 0 0 0 1					Yes		
Close to tidewater in part; locally steep; close to State roads; also logging roads. 15% in Alaska Native lands; 25% in USFS Karta River Wilderness; 60% in USFS Tongass National Forest.	Known deposits; permissive geology; widespread Zn, Pb, Mo, Cu geochem anomalies; small tract.	a) 0 0 0 0 1					Yes	90	
		b) 0 1 3 6 8					Yes		
In part close to tidewater; somewhat rugged; steep brush- and timber-covered slopes. 85% in USNPS Glacier Bay National Park. 15% in USFS Pleasant-Lemesurier Islands Wilderness.	Known deposits; permissive geology; Cu, Zn, Pb, Sn, W geochemical anomalies.	a) 0 0 1 2 3					Yes	413	
		b) 0 0 1 2 3					Yes		
		c) 0 0 0 0 1					Yes		
Most subtracts close to tidewater; some locally rugged and steep; most have heavy brush and timber; some logging roads in (B) and (C); 08% in USFS South Etolin Wilderness; 92% in USFS Tongass National Forest.	Permissive geology; strong aeromagnetic anomalies; local aeroradioactivity anomalies; La, Nb, Y, Pb stream-sediment anomalies; Be, Nb, Y, Sn, Cu, Mo, La, Co, Cr bedrock anomalies.	a) 0 0 0 0 1					No	(A) 28	
		a) 0 0 0 0 1					Maybe	(B) 80	
								(C) 213	
								(D) 9	
								Tot 330	

Table 4s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts entirely or principally within PE, Petersburg; SD, Sumdum; SI, Sitka.; See text of Brew and others (1991) for explanation of headings. Information for tracts taken from

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2; locations are given on plate 3)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
PETERSBURG QUADRANGLE-CONTINUED.						
15PE	Outer Etolin	Mesozoic turbidites, other metasedimentary and metavolcanic rocks, and Cretaceous granitic rocks are intruded by Middle Tertiary alkalic and subalkalic granitic rocks, producing permissive vein and skarn environments; intrusive rocks elsewhere (in tract 05PE) have close relation to volcanic rocks.	None	None	a)Polymetallic vein, 22c b)W vein, 15a(?)	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
16PE	Canoe Passage	Fault cuts Cretaceous turbidites intruded by Late Cretaceous tonalite and Middle Tertiary granite.	None	None	Polymetallic vein, 22c	Reconnaissance geologic and geochemical mapping by USGS; low level of prospecting.
SUMDUM QUADRANGLE						
04SD	Tracy Arm-Stikine River	Deformed and metamorphosed Paleozoic and Mesozoic clastic and volcanic rocks are intruded by latest Cretaceous-earliest Tertiary great tonalite sill; known sulfide deposits are in metamorphic rocks close to the sill and have been metamorphosed; they are inferred to have been Sierran-type massive sulfide deposits.	SD006,008,009-011, 015-017, 021, 025, 036, PE034	Production: at SD036, 50 oz Au in early 1900's. Reserves: at SD009-7,300 T with 0.23 oz/T Au, 0.31 oz/T Ag, 0.7% Cu; SD011-187,000 T with 3.42% Zn,1.42% Cu, 0.43 oz/T Ag, 0.008 oz/T Au; SD016, 017-26.7 million T with 0.57% Cu, 0.37% Zn, 0.3 oz/T Ag; USBM has revised inferred estimates, but they are not yet available.	a)Metamorphosed massive sulfide, RM/MS (model as Sierran massive sulfide, 28c) b)Au-Qtz vein, 36a	Reconnaissance geologic mapping and geochemical sampling by USGS in N half of tract, less in S half; extensive drilling at SD009, 011, 016, 17
05SD	Endicott Peninsula	Au-Qtz and polymetallic vein and possible metamorphosed Sierran-type massive sulfide deposits occur in highly deformed and variably metamorphosed Paleozoic and Mesozoic clastic, volcanic, and carbonate rocks that are intruded by Late Cretaceous granodiorite and tonalite plutons.	SD019, 022-024, 026-035, 037-040	Production: SD022 produced 24,000 oz Au and 24,000 oz Ag in early 1900's; several Au-Qtz veins in Windham Bay area each produced a few 1,000 oz Au at about the same time, average Au content about 0.25 oz/T. Reserves: USBM has inferred estimates for some localities, but they are not yet available.	a)Sierran massive sulfide, 28c b)Au-Qtz veins, 36a	Reconnaissance geologic mapping and geochemical sampling by USGS; intensely prospected in early 1900's.

the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; sources given in table 3s. - *Continued.*

8 Accessibility and related factors, including percent of tract in different land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undiscovered deposits (% chance that there are the number given or more deposits) 95 90 50 10 05	11 Grade and tonnage model available?	12 Tract area, in square kilometers	13 Remarks and references to tracts in table 3.
In part close to tidewater; some parts steep and rugged; some thick brush and timber; some logging roads. 20% in USFS South Etolin Wilderness; 80% in USFS Tongass National Forest.	Permissive geology; Cr, Ni, Mo, W, Pb, Nb stream-sediment anomalies; Cu, Pb, Au, Mo, Zn, Cr, Ni bedrock anomalies.	a) 0 0 0 0 1 b) 0 0 0 0 1	Yes Yes	PE 316 BC 25 CR 70 KC 50 Tot. 461	Includes tracts 09BC, 01KC, 05CR, and 15PE.
Close to tidewater; local thick brush and timber. 100% in USFS South Etolin Wilderness.	Permissive geology; Cu, Mo, Ni bedrock anomalies; very small tract.	No estimate.	Yes	PE 16 CR 4 Tot. 20	Includes tracts 06CR and 16PE.
In part close to tidewater; in part remote; steep; very extensive glacier cover. 38% in USFS Tracy Arm-Fords Terror Wilderness; 03% in USFS Chuck River Wilderness; 18% in USFS Stikine-LeConte Wilderness; 41% in USFS Tongass National Forest.	Significant known deposits; permissive geology; large tract; significant geochemical anomalies; strong and steep aeromagnetic gradient; quite well prospected locally.	a) 0 0 1 2 4 b) 0 0 0 0 1	Yes Yes	SD 705 PE 407 Tot 1,112	Includes tracts 18PE and 04SD.
In part close to tidewater; in part heavily bush- and timber-covered. 50% in USFS Chuck River Wilderness; 50% in USFS Tongass National Forest.	Significant known deposits; permissive geology; large tract; significant geochemical anomalies; quite well prospected locally.	a) 0 0 0 1 2 b) 0 0 0 0 1	Yes Yes	537	

Table 4s. Tongass National Forest and adjacent lands individual mineral-resource tract information for selected tracts entirely or principally within PE, Petersburg; SD, Sumdum; SI, Sitka;. See text of Brew and others (1991) for explanation of headings. Information for tracts taken from

1 Map No.	2 Name	3 Description, including geologic units and controls of deposits	4 Mines, prospects, and occurrences (numbers are from table 2; locations are given on plate 3)	5 Production and other resource information	6 Mineral deposit types expected (see table 1 and Cox and Singer, 1986)	7 Status of geologic, geochemical, and geophysical information
SITKA QUADRANGLE						
13SI	Admiralty Island	Highly deformed and slightly metamorphosed Late Triassic mafic and intermediate volcanic rocks, fine-grained clastic rocks, and ultramafic masses host, in different places, significant massive sulfide, Ni-Cu magmatic segregation, and polymetallic vein deposits.	SI088-091, 093, 094, 097, 100-103, 105-112; JU028-045.	Pyrola prospect (SI090) is best known in SI quad; Production: significant in from polymetallic vein deposits JU032, 034, 037; and from synorogenic-syn-volcanic Ni-Cu deposit JU033. Reserves: JU033 contains reserves of about 560,000 T with 0.35% Cu, 0.34% Ni, 0.15% Co. Deposit JU044 has just started production. Reserves: JU044 contains reserves of 3.5 million T with 3.9% Pb, 9.7% Zn, 23.8 oz/T Ag, 0.18 oz/T Au.	a)Sierran massive sulfide, 28c b)Synorogenic-synvolcanic Ni-Cu, 7a	Reconnaissance and some detailed geologic and geochemical mapping by USGS; intense private prospecting locally in the past.

the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; sources given in table 3s. - *Continued.*

8 Accessibility and related factors, including percent of tract in dif- ferent land status(es)	9 Summary of undiscovered resource information	10 Estimated number of undis- covered deposits (% chance that there are the number given or more deposits) 95 90 50 10 05	11 Grade and ton- nage mod- el avail- able?	12 Tract area, in square kilo- meters	13 Remarks and references to tracts in table 3.
In part close to tidewater; local- ly heavy timber; steep in part; 79% in USFS Admiralty Island Na- tional Monument and Wilder- ness; 04% in Alaska Native lands; 16% in USFS Tongass National Forest; 01% in USFS Young Lake Wilderness.	Significant known deposits; permis- sive geology; abundant and varied geochemical anomalies; relatively well prospected locally.	a) 0 0 0 1 3 b) 0 0 0 0 1	Yes Yes	SI 1,546 JU 409 SD 12 Tot 1967	Includes tracts 13SI, 09JU, and 01SD.

Table 5s. Undiscovered mineral-resource endowment of selected individual mineral-resource tracts, in metric tons; in all of Tongass National Forest and adjacent lands, by the U.S. Geological Survey MARK3 simulator for tracts entirely or principally within each of the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka; See text of Brew and others (1991) for explanation.

1	2	3	4	5	6	7	8	9
Map No.	Name	Mineral-deposit type no.	Deposit tonnage	Commodity	Metal content, in tons	Calculated metal grade in percent	Calculated grade, units as shown	Tract tonnage totals in millions
CRAIG QUADRANGLE								
10CR	South central Prince of Wales Island	Kuroko massive sulfide, 28a	1.49E+05	Cu	2.48E+04	16.6644	22.31 g/ton	12.02
				Au	3.32E+00	0.0022		
				Zn	5.70E+04	38.2550		
				Ag	1.81E+02	0.1216		
				Pb	1.25E+04	8.3826		
		Polymetallic veins, 22c	6.23E+05	Cu	6.02E+02	0.0965	894.06 g/ton	
				Au	1.50E+00	0.0002		
				Zn	3.13E+04	5.0161		
				Ag	5.57E+02	0.0894		
				Pb	4.63E+04	7.4254		
		Cu skarn, 18b	9.91E+06	Cu	1.33E+05	1.3370	0.23 g/ton	
				Au	2.25E+00	2.27E-05		
Ag	1.87E+01			0.0002				
16CR	Black Lake - Lake Saint Nicholas	Porphyry Mo, 21b	1.59E+07	Mo	1.24E+04	0.0776	15.92	
17CR	Pin Peak	Porphyry Mo, 21b	1.66E+07	Mo	1.29E+04	0.0773	16.64	
		Polymetallic veins, 22c	7.57E+03	Cu	2.59E+01	0.3419	993.13 g/ton	
				Au	3.46E-02	0.0005		
				Zn	4.40E+02	5.8137		
		Ag	7.52E+00	0.0993				
		Pb	7.45E+02	9.8428				
18CR	Maybeso Creek	Porphyry Mo, 21b	1.54E+07	Mo	1.16E+04	0.0754	15.78	
		Polymetallic veins, 22c	3.73E+05	Cu	3.72E+02	0.0997	894.37 g/ton	
				Au	9.01E-01	0.0002		
				Zn	1.93E+04	5.1635		
		Ag	3.34E+02	0.0894				
		Pb	2.70E+04	7.2440				

Table 5s. Undiscovered mineral-resource endowment of selected individual mineral-resource tracts, in metric tons; in all of Tongass National Forest and adjacent lands, by the U.S. Geological Survey MARK3 simulator for tracts entirely or principally within each of the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka; See text of Brew and others (1991) for explanation. - *Continued*.

1	2	3	4	5	6	7	8	9		
Map No.	Name	Mineral-deposit type no.	Deposit tonnage	Commodity	Metal content, in tons	Calculated metal grade in percent	Calculated grade, units as shown	Tract tonnage totals in millions		
MOUNT FAIRWEATHER QUADRANGLE										
11MF	Dundas River	Cu skarn, 18b	4469500	Cu	59575	1.33277405		80.709		
				Au	0.83845	1.8757E-05	0.18757 g/ton			
				Ag	8.8277	0.00019749	1.97488 g/ton			
		Polymetallic veins, 22c	8919.1	Cu	3.5213	0.03947646				
				Au	0.0087398	9.798E-05	0.9798 g/ton			
				Zn	406.51	4.557287				
				Ag	11.284	0.12650224	1.26502 kg/ton			
				Pb	756.62	8.482287				
		Porphyry Cu-Mo, 21a	76242000	Cu	385160	0.50545932				
				Mo	9786.2	0.01284278				
				Au	1.2025	1.5781E-06	0.01578 g/ton			
				Ag	115.38	0.00015142	1.51417 g/ton			
		PORT ALEXANDER QUADRANGLE								
		08PA	Southwest Kuiu	Porphyry Cu-Mo, 21a	75776000	Cu	387760	0.51155673		75.815
Mo	10838					0.01429815				
Au	1.4295					1.8859E-06	0.01886 g/ton			
Ag	123.14					0.00016245	1.62454 g/ton			
Polymetallic veins, 22c	41606					Cu	49.193	0.1182524		
						Au	0.090645	0.0002179	2.17897 g/ton	
				Zn	2018.4	4.85192308				
				Ag	47.06	0.113125	1.13125 kg/ton			
				Pb	3839.7	9.23004808				
PETERSBURG QUADRANGLE										
06PE	Tunehean Creek-Castle River, southeast Zarembo, central Etolin, Niblack and Deer Island			Felsic Plutonic Th-REE,	1047800	Th	5334.5	0.50804762		1.0478
		REE	4544.1			0.43277143				
		U	85.923			0.00818314	81.8314 g/ton			
15PE	Outer Etolin	Polymetallic veins, 22c	6854.7	Cu	9.6103	0.14029635		0.00685		
				Au	0.0196	0.00028613	2.86131 g/ton			
				Zn	423	6.17518248				
				Ag	6.4361	0.09395766	939.577 g/ton			
				Pb	477.33	6.96832117				

Table 5s. Undiscovered mineral-resource endowment of selected individual mineral-resource tracts, in metric tons; in all of Tongass National Forest and adjacent lands, by the U.S. Geological Survey MARK3 simulator for tracts entirely or principally within each of the following 1:250,000-scale quadrangles, southeastern Alaska: CR, Craig; MF, Mount Fairweather; PA, Port Alexander; PE, Petersburg; SD, Sumdum; SI, Sitka. See text of Brew and others (1991) for explanation. - Continued.

1 Map No.	2 Name	3 Mineral-deposit type no.	4 Deposit tonnage	5 Commodity	6 Metal content, in tons	7 Calculated metal grade in percent	8 Calculated grade, units as shown	9 Tract tonnage totals in millions
SUMDUM QUADRANGLE								
04SD	Tracy Arm- Stikine River	Sierran mas- sive sulfide, 28a	848450	Cu	14274	1.68325472	2.21557 g/ton	0.93757
				Au	1.8788	0.00022156		
				Zn	32104	3.78584906		
				Ag	102.68	0.01210849	121.085 g/ton	
				Pb	7178.5	0.84652123		
		Au-Qtz veins, 36a	89147	Au	0.61658	0.00069201	6.92009 g/ton	
				Ag	0.11859	0.0001331	1.33098 g/ton	
05SD	Endicott Penin- sula	Sierran mas- sive sulfide, 28a	264930	Cu	4384.7	1.65460377	2.2217 g/ton	0.32826
				Au	0.58875	0.00022217		
				Zn	9996.4	3.77222642		
				Ag	32.629	0.01231283	123.128 g/ton	
				Pb	2129.91	0.80373962		
		Au-Qtz veins,	63357	Au	0.49623	0.0007827	7.82697 g/ton	
SITKA QUADRANGLE								
13SI	Admiralty Island	Sierran mas- sive sulfide, 28a	309480	Cu	5228.2	1.69197411	2.21531 g/ton	0.72407
				Au	0.68453	0.00022153		
				Zn	12512	4.04919094		
				Ag	39.911	0.01291618	129.162 g/ton	
				Pb	2627.8	0.85042071		
		Synorogenic- synvolcanic Ni- Cu massive sulfide, 7a	414610	Cu	2891.4	0.69672289	3.1694 mg/ton	
				Au	0.0013153	3.1694E-07		
				Ni	3490.3	0.84103614		
				Pt	0.00022565	5.4373E-08	0.54373 mg/ton	
				Co	15.586	0.00375566		
				Pd	0.00065475	1.5777E-07	1.57771 mg/ton	

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Table 6. Commodity prices used in calculation of gross-in-place value of undiscovered mineral resources, Tongass National Forest and adjacent lands. (Prices are averages for the decade 1978-1987, based on U.S. Bureau of Mines (1983, 1988). Prices have been rounded to two places. The following conversions were used: 0.9078 mt = 1 st, 1 kg = 2.2 lb, 1 st = 2,000 lb, 1 stu = 20 lb, 31.1 g = 1 troy oz; from Coldwell (1990). Prices for antimony and tin calculated specifically for this report by a method similar to that of the USBM).

<u>Commodity</u>	<u>Symbol</u>	<u>Price (English)</u>	<u>Price (Metric)</u>
Antimony	Sb	\$1.66/lb	\$3,652.00/mt
Barite	Barite	\$ 39.00/st	\$ 42.96/mt
Cobalt	Co	6.70/lb	14,760.96/mt
Columbium Oxide	Cb ₂ O ₅	2.94/lb	6,477.20/mt
Copper	Cu	0.92/lb	2026.88/mt
Gold	Au	456.43/tr oz	14.68/g
Iron	Fe	65.85/st	72.54/mt
Lead	Pb	0.38/lb	837.19/mt
Molybdenum	Mo	5.72/lb	12,601.89/mt
Nickel	Ni	2.85/lb	6,278.92/mt
Palladium	Pd	135.75/tr oz	4.36/g
Platinum	Pt	503.38/tr oz	16.19/g
Rare Earth Metals	RE	5.65/lb	12,447.68/mt
Silver	Ag	11.58/tr oz	0.37/g
Thorium Oxide	ThO ₂	4.43/lb	9.75/kg
Tin	Sn	8.62/lb	18,964.00/mt
Titanium	Ti	6.82/lb	15,025.34/mt
Tungsten Oxide	WO ₃	31.35/stu	3,453.40/mt
Uranium Oxide	U ₃ O ₈	16.65/lb	36,682.09/mt
Vanadium Oxide	V ₂ O ₅	4.10/lb	9,032.83/mt
Yttrium Oxide	Y ₂ O ₃	6.24/lb	13,747.52/mt
Zinc	Zn	0.47/lb	1,035.47/mt
Zirconium Oxide	ZrO ₂	172.00/st	189.47/mt

Table 7s. Metal tonnages and gross-in-place values (GIPV) calculated for selected individual mineral-resource tracts, in all of Tongass National Forest and adjacent lands, southeastern Alaska. (All tonnages are metric; see text for complete explanation of headings.)

1 Map No.	2 Name	3 Tract tonnage, in millions	4 Commodity	5 Metal content, in tons	5a Commodity prices	6 GIPV commodity	7 GIPV of tract
CRAIG QUADRANGLE							
10CR	South central Prince of Wales Island	12.02	Cu	1.58E+05	2026.88	3.20E+08	7.95E+08
			Au	7.08E+00	14.68	1.04E+08	
			Zn	8.82E+04	1035.47	9.14E+07	
			Ag	7.57E+02	0.37	2.80E+08	
			Pb	5.88E+00	837.19	4.92E+03	
16CR	Black Lake-Lake Saint Nicholas	15.92	Mo	1.24E+04	12601.89	1.56E+08	1.56E+08
17CR	Pin Peak	16.64	Mo	1.29E+04	12601.89	1.62E+08	1.66E+08
			Cu	2.59E+01	2026.88	5.25E+04	
			Au	3.46E-02	14.68	5.08E+05	
			Zn	4.40E+02	1035.47	4.56E+05	
			Ag	7.52E+00	0.37	2.78E+06	
			Pb	7.45E+02	837.19	6.24E+05	
18CR	Maybeso Creek	15.78	Mo	1.16E+04	12601.89	1.46E+08	3.26E+08
			Cu	3.72E+02	2026.88	7.54E+05	
			Au	9.01E-01	14.68	1.32E+07	
			Zn	1.93E+04	1035.47	1.99E+07	
			Ag	3.34E+02	0.37	1.23E+08	
			Pb	2.70E+04	837.19	2.26E+07	
MOUNT FAIRWEATHER QUADRANGLE							
11MF	Dundas River	80.71	Mo	9.79E+03	12601.89	1.23E+08	1.11E+09
			Cu	4.45E+05	2026.88	9.01E+08	
			Au	2.05E+00	14.68	3.01E+07	
			Zn	4.07E+02	1035.47	4.21E+05	
			Ag	1.35E+02	0.37	5.01E+07	
			Pb	7.57E+02	837.19	6.33E+05	
PORT ALEXANDER QUADRANGLE							
08PA	Southwest Kuiu	75.82	Mo	1.08E+04	12601.89	1.37E+08	1.01E+09
			Cu	3.88E+05	2026.88	7.86E+08	
			Au	1.52E+00	14.68	2.23E+07	
			Zn	2.02E+03	1035.47	2.09E+06	
			Ag	1.70E+02	0.37	6.30E+07	
			Pb	3.84E+03	837.19	3.21E+06	
PETERSBURG QUADRANGLE							
06PE	Tunehean Creek Castle River, southeast Zarem- bo, central Etolin, Niblack and Deer Island	1.05	Th	5.33E+03	9.75	5.20E+07	1.12E+08
			RE	4.54E+03	12447.68	5.66E+07	
			U	8.59E+01	36682.09	3.15E+06	
15PE	Outer Etolin	0.01	Cu	9.61E+00	2026.88	1.95E+04	3.53E+06
			Au	1.96E-02	14.68	2.88E+05	
			Zn	4.23E+02	1035.47	4.38E+05	
			Ag	6.44E+00	0.37	2.38E+06	
			Pb	4.77E+02	837.19	4.00E+05	

Table 7s. Metal tonnages and gross-in-place values (GIPV) calculated for selected individual mineral-resource tracts, in all of Tongass National Forest and adjacent lands, southeastern Alaska. (All tonnages are metric; see text for complete explanation of headings.)-Continued.

SUMDUM QUADRANGLE

04SD	Tracy Arm-Stikine River	0.94	Cu	1.43E+04	2026.88	2.89E+07	1.43E+08
			Au	2.50E+00	14.68	3.66E+07	
			Zn	3.21E+04	1035.47	3.32E+07	
			Ag	1.03E+02	0.37	3.80E+07	
			Pb	7.18E+03	837.19	6.01E+06	

05SD	Endicott Peninsula	0.33	Cu	4.41E+03	2026.88	8.95E+06	6.98E+07
			Au	1.17E+00	14.68	1.72E+07	
			Zn	1.22E+04	1035.47	1.26E+07	
			Ag	7.20E+01	0.37	2.66E+07	
			Pb	5.21E+03	837.19	4.36E+06	

SITKA QUADRANGLE

13SI	Admiralty Island	0.72	Cu	8.12E+03	2026.88	1.65E+07	7.86E+07
			Au	6.86E-01	14.68	1.01E+07	
			Zn	1.25E+04	1035.47	1.30E+07	
			Ag	3.99E+01	0.37	1.48E+07	
			Pb	2.63E+03	837.19	2.20E+06	
			Ni	3.49E+03	6278.92	2.19E+07	
			Pt	2.26E-04	16.19	3.65E+03	
			Co	1.56E+01	14760.96	2.30E+05	
			Pd	6.55E-04	4.36	2.85E+03	

TOTAL GIPV FOR ALL TRACTS, INCLUDING OTHERS IN TABLE 7 OF BREW AND OTHERS (1991): 4.08E+10

Table 8s. Aggregated metal tonnages and gross-in place values (GIPV), on a commodity-by-commodity basis, of undiscovered mineral resources, in all of Tongass National Forest and adjacent lands, southeastern Alaska. (All tonnages are metric; see text for complete explanation).

1 Commodity	2 Metal content, in tons	3 Commodity prices	4 GIPV Commodity
Cu	5.04E+06	2026.88	1.02E+10
Mo	4.45E+05	12601.89	5.61E+09
Au*	1.68E+02	14.68	2.46E+09
Zn	2.22E+06	1035.47	2.30E+09
Ag*	7.55E+03	0.37	2.79E+09
Pb	1.19E+06	837.19	9.98E+08
Fe	1.29E+08	72.54	9.38E+09
Th**	1.67E+05	9.75	1.63E+09
REE	1.42E+05	12447.68	1.77E+09
U	2.77E+03	36682.09	1.02E+08
Ni	2.65E+04	6278.92	1.66E+08
Pt*	1.58E-03	16.19	2.56E+04
Co	1.21E+02	14760.96	1.79E+06
Pd*	5.41E-03	4.36	2.36E+04
Sb	6.20E+01	3652	2.26E+05
Sn	1.81E+05	18964	3.43E+09
W	2.50E+03	3453.4	8.63E+06
<i>Total***</i>	<i>1.39E+08</i>		<i>4.09E+10</i>

*, Commodity priced in grams

** , Commodity priced in kilograms

***, Discrepancy from Total of 4.08E+10 in Table 7s is due to rounding procedures

Table 9s. Metal tonnages and gross-in-place values (GIPV) calculated for those parts of selected individual mineral-resource tracts that are totally or partially in the Tongass National Forest, south-eastern Alaska. (All tonnages are metric; see text for complete explanation of headings.)

1 Map No.	2 Name	3 Tract tonnage, in millions*	4 Commodity	5 Metal content, in tons	5a Commodity prices	6 GIPV commodity	7 GIPV of tract
10CR	South central Prince of Wales Island	12.02 3.61	Cu	4.74E+04	2026.88	9.60E+07	2.39E+08
			Au	2.12E+00	14.68	3.12E+07	
			Zn	2.65E+04	1035.47	2.74E+07	
			Ag	2.27E+02	0.37	8.40E+07	
			Pb	1.76E+00	837.19	1.48E+03	
16CR	Black Lake-Lake Saint Nicholas	15.92 5.57	Mo	4.33E+03	12601.89	5.45E+07	5.45E+07
17CR	Pin Peak	16.64 4.16	Mo	3.23E+03	12601.89	4.06E+07	4.17E+07
			Cu	6.47E+00	2026.88	1.31E+04	
			Au	8.65E-03	14.68	1.27E+05	
			Zn	1.10E+02	1035.47	1.14E+05	
			Ag	1.88E+00	0.37	6.95E+05	
18CR	Maybeso Creek	15.78 5.52	Mo	4.07E+03	12601.89	5.13E+07	1.14E+08
			Cu	1.30E+02	2026.88	2.64E+05	
			Au	3.15E-01	14.68	4.63E+06	
			Zn	6.74E+03	1035.47	6.98E+06	
			Ag	1.17E+02	0.37	4.32E+07	
08PA	Southwest Kuiu	75.82	Mo	1.08E+04	12601.89	1.37E+08	1.01E+09
			Cu	3.88E+05	2026.88	7.86E+08	
			Au	1.52E+00	14.68	2.23E+07	
			Zn	2.02E+03	1035.47	2.09E+06	
			Ag	1.70E+02	0.37	6.30E+07	
06PE	Tunehean Creek Castle River, southeast Zarem- bo, central Etolin, Niblack and Deer Island	1.05 0.80	Th	4.05E+03	9.75	3.95E+07	8.49E+07
			RE	3.45E+03	12447.68	4.30E+07	
			U	6.53E+01	36682.09	2.40E+06	
07PE	Kosciusko- Northern Prince of Wales	84.49 38.02	Mo	4.70E+03	12601.89	5.92E+07	5.30E+08
			Cu	2.04E+05	2026.88	4.14E+08	
			Au	9.59E-01	14.68	1.41E+07	
			Zn	2.70E+03	1035.47	2.80E+06	
			Ag	9.93E-01	0.37	3.67E+07	
15PE	Outer Etolin	0.01 0.006	Cu	5.67E+00	2026.88	1.15E+04	2.08E+06
			Au	1.16E-02	14.68	1.70E+05	
			Zn	2.50E+02	1035.47	2.58E+05	
			Ag	3.80E+00	0.37	1.41E+06	
			Pb	2.82E+02	837.19	2.36E+05	

Table 9s. Metal tonnages and gross-in-place values (GIPV) calculated for those parts of selected individual mineral-resource tracts that are totally or partially in the Tongass National Forest, south-eastern Alaska. (All tonnages are metric; see text for complete explanation of headings.)—Continued.

1 Map No.	2 Name	3 Tract tonnage, in millions*	4 Commodity	5 Metal content, in tons	5a Commodity prices	6 GIPV commodity	7 GIPV of tract
SUMDUM QUADRANGLE							
04SD	Tracy Arm- Stikine River	0.94 0.36	Cu	5.42E+03	2026.88	1.10E+07	5.43E+07
			Au	9.48E-01	14.68	1.39E+07	
			Zn	1.22E+04	1035.47	1.26E+07	
			Ag	3.91E+01	0.37	1.45E+07	
			Pb	2.73E+03	837.19	2.28E+06	
05SD	Endicott Penin- sula	0.33 0.07	Cu	8.83E+02	2026.88	1.79E+06	1.40E+07
			Au	2.35E-01	14.68	3.44E+06	
			Zn	2.44E+03	1035.47	2.53E+06	
			Ag	1.44E+01	0.37	5.33E+06	
			Pb	1.04E+03	837.19	8.72E+05	
SITKA QUADRANGLE							
13SI	Admiralty Island	0.72 0.12	Cu	1.30E+03	2026.88	2.63E+06	1.26E+07
			Au	1.10E-01	14.68	1.61E+06	
			Zn	2.00E+03	1035.47	2.07E+06	
			Ag	6.39E+00	0.37	2.36E+06	
			Pb	4.20E+02	837.19	3.52E+05	
			Ni	5.58E+02	6278.92	3.51E+06	
			Pt	3.61E-05	16.19	5.85E+02	
			Co	2.49E+00	14760.96	3.68E+04	
			Pd	1.05E-04	4.36	4.57E+02	
			TOTAL GIPV OF ALL TRACTS, INCLUDING THOSE IN TABLE 9 OF BREW AND OTHERS (1991)				

* Top number is from table 7; bottom number is that part of the total that is within the Tongass National Forest.

Table 10s. Aggregated metal tonnages and gross-in-place values (GIPV), on a commodity-by-commodity basis, for those parts of mineral-resource tracts that are totally or partially in parts of the Tongass National Forest, south-eastern Alaska. (All tonnages are metric; see text for complete explanation)

1 Commodity	2 Metal content, in tons	3 Commodity prices	4 GIPV Commodity
Cu	3.37E+06	2026.88	6.83E+09
Mo	3.45E+05	12601.89	4.35E+09
Au*	1.20E+02	14.68	1.76E+09
Zn	1.34E+06	1035.47	1.39E+09
Ag*	5.40E+03	0.37	2.00E+09
Pb	7.02E+05	837.19	5.88E+08
Fe	6.37E+07	72.54	4.62E+09
Th**	1.53E+05	9.75	1.49E+09
Re	1.30E+05	12447.68	1.62E+09
U	2.54E+03	36682.09	9.32E+07
Ni	2.28E+04	6278.92	1.43E+08
Pt*	1.42E-03	16.19	2.30E+04
Co	1.01E+02	14760.96	1.49E+06
Pd*	4.91E-03	4.36	2.14E+04
Sb	6.20E+01	3652.00	2.26E+05
Sn	1.81E+05	18964.00	3.43E+09
W	2.50E+03	3453.40	8.65E+06
<i>Total***</i>	<i>7.00E+07</i>		<i>2.83E+10</i>

*, Commodity priced in grams

** , Commodity priced in kilograms

***, Discrepancy from Total of 2.86E+10 in Table 9s is due to rounding procedures and a possible sought-for, but-as-yet-unfound, error!

Table 11s. Gross-in-place values (GIPV) calculated for those parts of individual mineral-resource tracts that are totally or partially in parts of the Tongass National Forest that are now open to mineral entry. (All tonnages are metric. See text for complete explanation.)

1 Map no.	2 Name	3 Tract GIPV	4 Fraction of tract in Tongass NF and open to mineral entry	5 Tract GIPV in that fraction
ATLIN QUADRANGLE				
01AL	Lace River	6.09E+07	100	6.09E+07
03AL	Chilkoot Range metabasalts	2.30E+07	100	2.30E+07
BRADFIELD CANAL QUADRANGLE				
01BC	Bradfield Canal Coast Mountains	1.46E+09	0.82	1.20E+09
02BC	Cone Mountain	1.88E+08	100	1.88E+08
04BC	Glacier Basin- Berg Basin	5.94E+07	0.87	5.17E+07
05BC	Harding River	5.29E+07	100	5.29E+07
10BC	Burroughs Bay	9.33E+08	0.19	1.77E+08
12BC	Chickamin Glacier	8.90E+08	0.38	3.38E+08
13BC	Texas Creek- Hyder	1.09E+09	100	1.09E+09
CRAIG QUADRANGLE				
03CR	Sweetwater Lake	9.53E+06	0.91	8.67E+06
07CR	Lava Creek	8.21E+07	100	8.21E+07
09CR	Lower Cleveland Peninsula	4.27E+08	100	4.27E+08
10CR	South central Prince of Wales Island	7.95E+08	0.58	4.61E+08

Table 11s. Gross-in-place values (GIPV) calculated for those parts of individual mineral-resource tracts that are totally or partially in parts of the Tongass National Forest that are now open to mineral entry. (All tonnages are metric. See text for complete explanation.)-Continued.

1 Map no.	2 Name	3 Tract GIPV	4 Fraction of tract in Tongass NF and open to mineral entry	5 Tract GIPV in that fraction
CRAIG QUADRANGLE-CONTINUED.				
12CR	Kasaan Peninsula	6.75E+09	0.35	2.36E+09
13CR	Baker Island	9.75E+08	100	9.75E+08
14CR	San Juan Bautista Island	1.64E+07	100	1.64E+07
16CR	Black Lake-Lake Saint Nicholas	1.56E+08	0.3	4.68E+07
17CR	Pin Peak	1.66E+08	0.5	8.30E+07
18CR	Maybeso Creek	3.26E+08	0.6	1.96E+08
19CR	Suemez Island	2.66E+08	100	2.66E+08
20CR	Trocadero Bay-Cholmondeley Sound	2.22E+08	0.62	1.38E+08
21CR	Copper Mountain	1.43E+09	0.6	8.58E+08
22CR	Dora Bay	5.30E+08	0.7	3.71E+08
23CR	Dolomi	1.06E+08	0.73	7.74E+07
24CR	Northern Dall	2.11E+08	0.55	1.16E+08
25CR	Southeast Sukkwan Island	1.08E+08	0.65	7.02E+07
26CR	Moira Sound	8.07E+08	1	8.07E+08
27CR	Niblack	1.18E+08	1	1.18E+08
DIXON ENTRANCE QUADRANGLE				
05DE	Kassa Inlet	1.04E+08	0.5	5.20E+07
06DE	Bokan Mountain	1.63E+09	100	1.63E+09
08DE	Southern Dall & Long Islands	1.39E+08	0.6	8.34E+07

Table 11s. Gross-in-place values (GIPV) calculated for those parts of individual mineral-resource tracts that are totally or partially in parts of the Tongass National Forest that are now open to mineral entry. (All tonnages are metric. See text for complete explanation.)-Continued.

1 Map no.	2 Name	3 Tract GIPV	4 Fraction of tract in Tongass NF and open to mineral entry	5 Tract GIPV in that fraction
DIXON ENTRANCE QUADRANGLE-CONTINUED.				
09DE	Barrier Islands	2.29E+08	0.1	2.29E+07
10DE	Southeastern- most Prince of Wales Island	6.68E+08	100	6.68E+08
JUNEAU QUADRANGLE				
02JU	Casement Glacier	1.08E+09	0.11	1.19E+08
04JU	Sullivan Island to Sullivan River	1.54E+08	0.76	1.17E+08
05JU	Excursion River	1.96E+07	0.25	4.90E+06
06JU	Nun Mountain	5.54E+07	0.9	4.99E+07
07JU	Neka Bay, W of	4.40E+07	0.83	3.65E+07
11JU	Kensington- Jualin & Eagle River-Juneau	3.73E+08	0.33	1.23E+08
13JU	Juneau Icefield	2.41E+08	100	2.41E+08
KETCHIKAN QUADRANGLE				
08KC	Southern Revillagigedo Island	3.55E+07	0.5	1.78E+07
10KC	Boca de Quadra- Quartz Hill	9.88E+08	0.6	5.93E+08
14KC	Southwestern Gravina Island- Eastern Annette Island	1.44E+08	0.57	8.21E+07
16KC	Tongass Narrows	1.39E+08	0.2	2.78E+07

Table 11s. Gross-in-place values (GIPV) calculated for those parts of individual mineral-resource tracts that are totally or partially in parts of the Tongass National Forest that are now open to mineral entry. (All tonnages are metric. See text for complete explanation.)-continued

1 Map no.	2 Name	3 Tract GIPV	4 Fraction of tract in Tongass NF and open to mineral entry	5 Tract GIPV in that fraction
PORT ALEXANDER QUADRANGLE				
05PA	Security Bay	1.94E+07	100	1.94E+07
06PA	Saginaw Bay- Cornwallis Penin- sula	7.93E+08	0.85	6.74E+08
08PA	Southwest Kuiu	1.01E+09	0.5	5.05E+08
PETERSBURG QUADRANGLE				
05PE	Southwest Kupreanof	3.55E+08	1	3.55E+08
06PE	Tunehean Creek- Castle River, southeast Zarem- bo, central Etolin, Niblack and Deer Island	1.12E+08	0.92	1.03E+08
07PE	Kosciusko- Northern Prince of Wales	1.18E+09	1	1.18E+09
08PE	Salmon Bay	1.12E+08	1	1.12E+08
12PE	Duncan Canal- Zarembo Island	2.17E+08	0.95	2.06E+08
13PE	Kupreanof Mountain	2.65E+07	0.9	2.39E+07
14PE	Woewodski	1.23E+08	1	1.23E+08
15PE	Outer Etolin	3.53E+06	0.8	2.82E+06
20PE	Groundhog Basin	3.43E+09	1	3.43E+09
SUMDUM QUADRANGLE				
02SD	Snettisham	8.00E+06	1	8.00E+06
04SD	Tracy Arm- Stikine River	1.43E+08	0.41	5.86E+07

Table 11s. Gross-in-place values (GIPV) calculated for those parts of individual mineral-resource tracts that are totally or partially in parts of the Tongass National Forest that are now open to mineral entry. (All tonnages are metric. See text for complete explanation.)-Continued.

1 Map no.	2 Name	3 Tract GIPV	4 Fraction of tract in Tongass NF and open to mineral entry	5 Tract GIPV in that fraction
SUMDUM QUADRANGLE-CONTINUED.				
05SD	Endicott Peninsula	6.98E+07	0.5	3.49E+07
06SD	Dawes Glacier-Buddington Range	2.08E+07	0.95	1.98E+07
SITKA QUADRANGLE				
01SI	Yakobi-Mirror Harbor	1.32E+08	0.5	6.60E+07
02SI	Yakobi-Chichagof	1.37E+08	0.4	5.48E+07
03SI	Lisianski Inlet	4.49E+07	0.32	1.44E+07
04SI	Lake ElfindahL, Rust mountain, Granite Islands, Deep Bay, Krusof island, Takatz Bay and Trap Bay, Crawfish Inlet-Gut Bay, Redfish Bay	1.04E+09	0.48	4.99E+08
07SI	Tam Mountain, Moore Mountains	1.55E+08	1	1.55E+08
08SI	Tenakee Inlet, S of head of	2.92E+07	1	2.92E+07
10SI	Seal Creek	5.49E+07	1	5.49E+07
11SI	Tenakee-Sitkoh Bay	1.05E+08	1	1.05E+08
13SI	Admiralty Island	7.86E+07	0.16	1.26E+07
SKAGWAY QUADRANGLE				
16SK	Skagway River	9.95E+08	0.5	4.98E+08

Table 11s. Gross-in-place values (GIPV) calculated for those parts of individual mineral-resource tracts that are totally or partially in parts of the Tongass National Forest that are now open to mineral entry. (All tonnages are metric. See text for complete explanation.)-continued

1 Map no.	2 Name	3 Tract GIPV	4 Fraction of tract in Tongass NF and open to mineral entry	5 Tract GIPV in that fraction
SKAGWAY QUADRANGLE-CONTINUED.				
17SK	Meade Glacier	3.96E+07	100	3.96E+07
TAKU RIVER QUADRANGLE				
02TR	Bacon Glacier & Mount Ogden	1.85E+08	100	1.85E+08
03TR	Kluchman Mountain	4.98E+06	100	4.98E+06
04TR	Snow Tower- Sawyer Glacier	4.43E+07	0.41	1.82E+07
YAKUTAT QUADRANGLE				
01YA	Fairweather Range	9.98E+08	0.37	3.69E+08
02YA	Yakutat Range	1.60E+08	0.31	4.96E+07
Total GIPV for Mineral Resources in Tongass National Forest lands now open to mineral entry				2.35E+10

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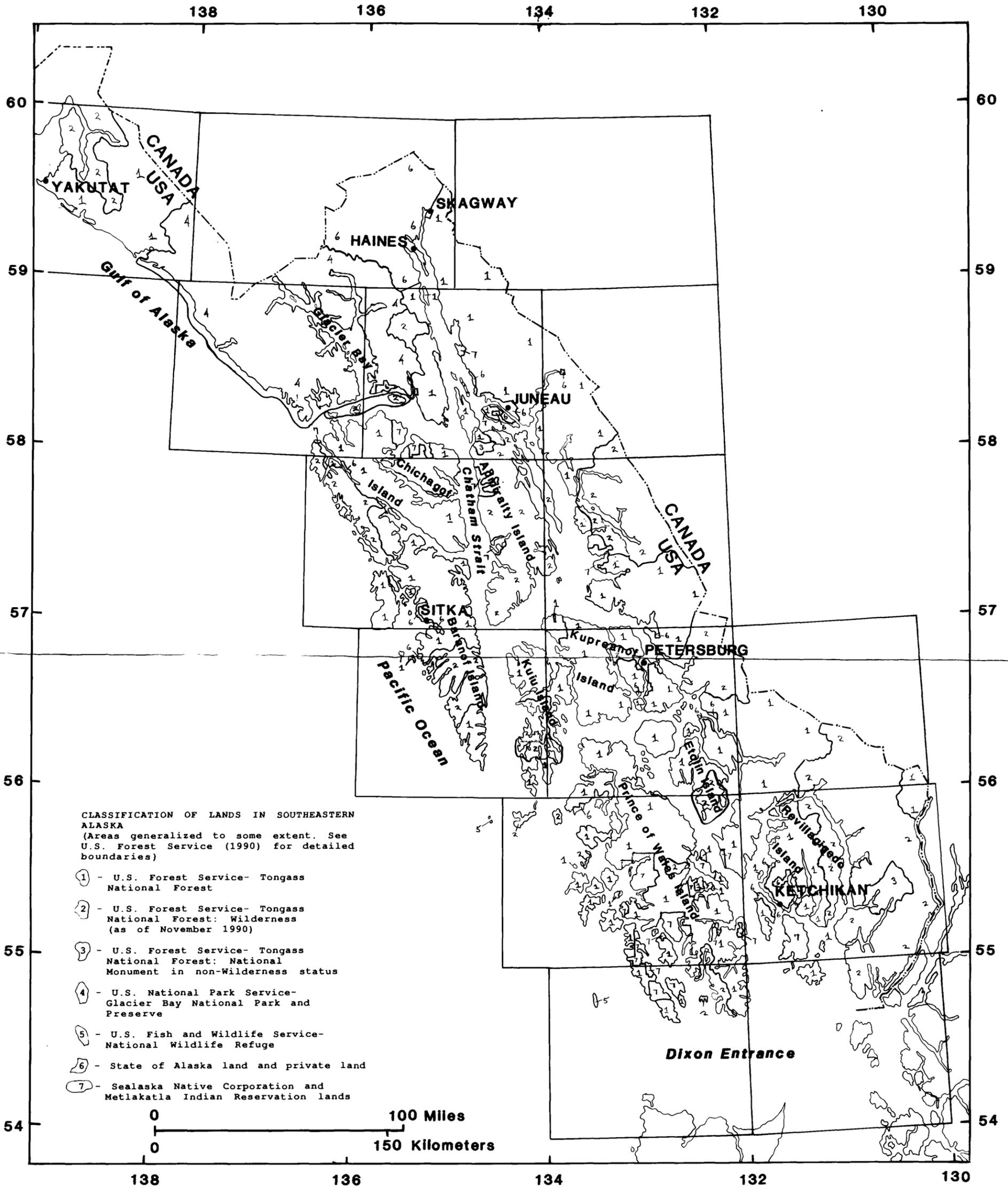


Figure 1s