10 -

COVERED

stone, fine to medium grained; greenish gray;

small-scale cross bedding.

EXPLANATION



Augustine volcaniclastic material deposited by ash flows, mudflows, and rubble flows during 1963-64 eruption. Dark colored. Poorly sorted; size ranges from sand to large blocks.



Augustine volcaniclastic material deposited by ash flows, mudflows, and rubble flows; older than 1963-64 eruption. Dark colored. Poorly sorted; size ranges from sand to large blocks.



Augustine volcaniclastic material deposited mainly by ash flows. Light colored. Mostly sand and lapilli. Abundant pumice. Bedding, cross bedding and channeling common. Has same dip as flank of volcano.



Tuff and agglomerate; dark basaltic—looking sand and lapilli size fragments. Well cemented. Horizontal beds; overlies tilted Upper Jurassic sandstones. Possibly represents early stage of Augustine volcanic eruption.



Scattered occurrences of rounded plutonic and sedimentary debris at approximately 1,000-foot elevation. Probably represents remnants of Pleistocene glacial till or outwash. Not seen in place.



Sandstone, fine grained, greenish gray, poorly bedded, muddy matrix. Contains Cretaceous marine fossils including ammonites and pelecypods (<u>Inoceramus</u>). Probably represents marine shelf deposits. Approximately 50 feet exposed in gulleys along middle part of Augustine Creek.



## Naknek Formation

Sandstone, fine- to medium-grained, gray, arkosic, well sorted. Weathers white or iron stained. Consists of alternating subunits characterized by flat or parallel-inclined bedding, small-scale cross bedding, or large-scale cross bedding. Contains Upper Jurassic marine pelecypods. Probably represents "high-energy" beach or near-shore marine deposits. Forms prominent band of light-colored outcrops between 700 and 900 feet elevation, plus possible landslide block along seacoast. Over 100 feet exposed.



Siltstone (coarse grained) and fine-grained sandstone, dark gray to gray, laminated. Weathers blocky. Small-scale and micro cross-bedding common throughout. Contains Upper Jurassic marine pelecypods. Carbonaceous material common throughout. Probably deposited on restricted marine shelf or in protected bay or estuary. Forms dip slope between 200- and 700-foot elevation. Covered on slope by thin layer of volcanic debris but exposed almost continuously in bottoms of most streams draining south slope. Approximately 150-200 feet thick. Conformable with units above and below.



Sandstone, fine to coarse grained, gray. About 50 feet thick. Exposed along beach cliff for approximately 1,200 feet west of E. Kamishak Creek. Consists of two subfacies. Eastern half is fine-grained sandstone and some siltstone. Parallel- and ripple-laminated. Convolute bedding and flaser bedding common. Probably deposited in sandy tidal-flat environment. Cut out laterally to the west by large sandstone channels consisting of mediumto coarse-grained sandstone with large-scale trough cross bedding (2-3 ft.) trending to southeast. May represent tidal-channel deposits. No marine fossils found in this entire unit

<sup>1</sup>Mesozoic fossils identified by U.S. Geological Survey (Detterman, R.L., and Jones, D.L., 1974, Mesozoic fossils from Augustine Island, Cook Inlet, Alaska: Am. Assoc. Petroleum Geologists Bull., v. 58, p. 868-876.

Geologic contact, dashed where approximately located.



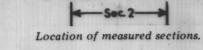
Fault, dashed where approximately located. U, upthrown block; D, downthrown block.

Strike and dip of beds.

Horizontal beds.



Trend of large sandstone channel.



MEASURED SECTION NO. 2, BEACH SECTION (EAST TO WEST), MEASURED SECTION NO. 1, WEST KAMISHAK CREEK NAKNEK FORMATION (Jn1, Jn2), VERTICAL SCALE-FEET. NAKNEK FORMATION (Jn2, Jn3), VERTICAL SCALE—FEET. iltstone; gray; finely laminated or ripple cross bedded, Sandstone, fine to medium grained, well sorted, arkosic; weathers blocky; scattered carbonaceous (plant) material; marine pelecypods common throughout, maingray, weathers white or orange (Fe-stained); alternating units characterized by flat or parallel-inclined ly Corbicula sp. laminations, small-scale cross bedding (up to 1 ft) or large-scale cross bedding (2 - 3 ft); marine pelecypods scattered throughout. 170 -170 -Sandstone, as above, resistant-CaCO3 cemented; abun-160 -Sandstone, very fine to fine grained; greenish gray, dant pelecypods, Buchia sp., Corbicula sp. small-scale cross bedding (up to 1 ft.); convolute bedding; scattered pelecypods incl. Corbicula sp. Siltstone, as above; Buchia concentrica (Sowerby) col-150 -Sandstone, as above. lected at about 134 ft. 140-140-(This unit is cut by two small northeast-trending faults with throws of about 8 and 25 ft.). 130-130 -120-120 -Sandstone, as above. 110-110 -Siltstone, as above. andstone, very fine to fine grained; gray; abundant 100organic plant debris. Siltstone, coarse grained; dark gray; massive to faintly laminated, weathers blocky; marine pelecypods common throughout either isolated or in stringers or 90pods, Buchia sp., Camptonectes sp., Corbicula sp.; scattered plant remains. 80tone, as above, resistant-CaCO3 cemented; abundant pelecypods. Sandstone, very fine grained; greenish gray; ripple cross Siltstone, as above 70bedded, abundant carbonaceous material (plant re-70 mains?); contains Corbicula sp.; burrowed at top. Siltstone; gray, weathers blocky; ripple cross bedded; springs at top. Sandstone, fine grained; gray; small-scale cross bedding (up to 1 ft.). Sandstone, fine to coarse grained, arkosic; greenish 50-SCALE IN FEET gray; large-scale trough cross bedding (1-3 ft.) trending to SE; forms large channel complex that trends SE and cuts out beds below. No fossils observed. 40-40-Sandstone, very fine to fine grained, some siltstone; SCALE IN MILES greenish gray; alternating parallel laminations and CONTOUR INTERVAL - 100 FEET Sandstone, very fine grained; gray micro-cross bedded. ripple cross bedding; convolute bedding and flaser Geology by R.T. Buffler, bedding common; no fossils observed. July 1974 DATUM MEAN SEA LEVEL 30-Siltstone, as above. 153°25' 30 -Topographic Base: University of Texas Marine Science Institute Iliamna B-2 Quadrangle Galveston, Texas 77550 Sandstone, very fine to fine grained, silty, with coarse U.S. Geological Survey stringers; greenish gray; parallel laminated or microcross bedded, weathers blocky; scattered marine 20-20 pelecypods and plant debris.

GEOLOGIC MAP OF SOUTH AUGUSTINE ISLAND, LOWER COOK INLET, ALASKA

APPROXIMATE MEAN

DECLINATION, 1954

Richard T. Buffler