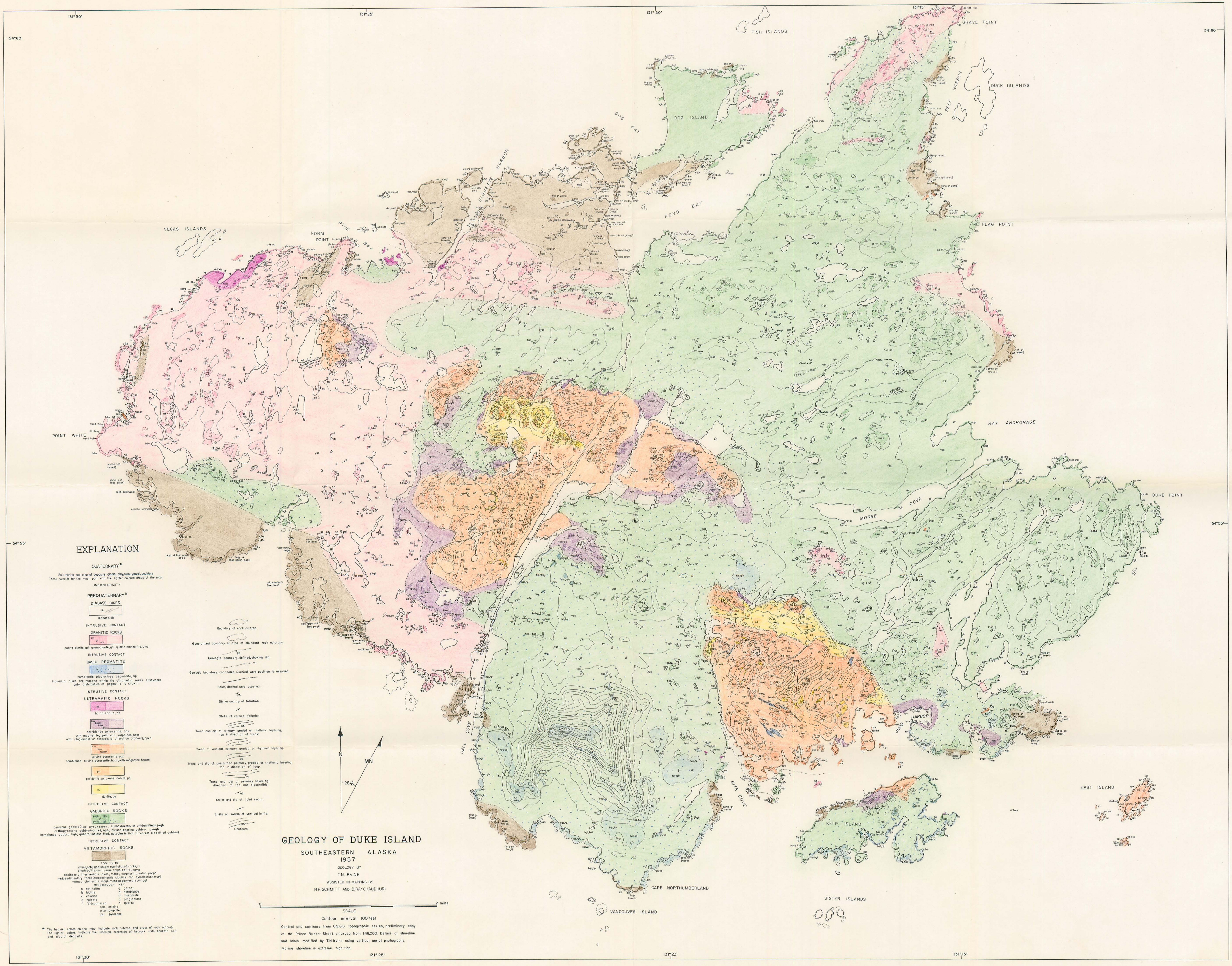

GEOLOGY OF DUKE ISLAND

SOUTHEASTERN ALASKA

1957

GEOLOGY BY

T.N. IRVINE

ASSISTED IN MAPPING BY

H.H. SCHMITT AND B. RAYCHAUDHURI

0 — 1 — 2 miles

SCALE

Contour interval 100 feet

Control and contours from U.S.G.S. topographic series, preliminary copy of the Prince Rupert Sheet, enlarged from 1:48,000. Details of shoreline and lakes modified by T.N. Irvine using vertical aerial photographs. Marine shoreline is extreme high tide.

EXPLANATION

QUATERNARY*

Soil: marine and alluvial deposits: glacial clay, sand, gravel, boulders
These coincide for the most part with the lighter colored areas of the map.

UNCONFORMITY

PREQUATERNARY*

DIABASE DIKES

diabase, db

INTRUSIVE CONTACT

GRANITIC ROCKS

quartz diorite, qd granodiorite, gd: quartz monzonite, qmz

INTRUSIVE CONTACT

BASIC PEGMATITE

hornblende plagioclase pegmatite, hp
Individual dikes are mapped within the ultramafic rocks. Elsewhere only distribution of pegmatite is shown.

INTRUSIVE CONTACT

ULTRAMAFIC ROCKS

hornblendite, hb

hornblende pyroxenite, hpx
with magnetite, hpxm; with sulphides, hpxs
with plagioclase (or clinozoisite alteration product), hpxp

olivine pyroxenite, opx
hornblende olivine pyroxenite, hopx; with magnetite, hopxm

peridotite, pyroxene dunite, pd

dunite, du

INTRUSIVE CONTACT

GABBROIC ROCKS

pyroxene gabbro (two pyroxenes, clinopyroxene, or unidentified), pxgb
orthopyroxene gabbro (norite), ngb; olivine-bearing gabbro, pxogb
hornblende gabbro, hgb; gabbro, unclassified, gb (color is that of nearest classified gabbro)

INTRUSIVE CONTACT

METAMORPHIC ROCKS

ROCK UNITS
schist, sch; gneiss, gn; non-foliated rocks, rk
amphibolite, amp: para-amphibolite, pamp
dacite and intermediate lavas, mdac; porphyritic, mdac porph
metasedimentary rocks (predominantly clastics and pyroclastics), msed
metaconglomerate, mcgl: meta-agglomerate, maggl

MINERALOGY KEY

a actinolite
b biotite
c chlorite
e epidote
f feldspathized
g garnet
h hornblende
m muscovite
p plagioclase
q quartz
calc calcite
graph graphite
px pyroxene

Boundary of rock outcrop.

Generalized boundary of area of abundant rock outcrops.

Geologic boundary, defined, showing dip.

Geologic boundary, concealed. Queried were position is assumed.

Fault, dashed were assumed.

Strike and dip of foliation.

Strike of vertical foliation

Trend and dip of primary graded or rhythmic layering, top in direction of arrow.

Trend of vertical primary graded or rhythmic layering.

Trend and dip of overturned primary graded or rhythmic layering top in direction of loop.

Trend and dip of primary layering, direction of top not discernible.

Strike and dip of joint swarm.

Strike of swarm of vertical joints.

Contours

* The heavier colors on the map indicate rock outcrop and areas of rock outcrop. The lighter colors indicate the inferred extension of bedrock units beneath soil and glacial deposits.