UTAH GEOLOGICAL AND MINERAL SURVEY
a division of
UTAH DEPARTMENT OF NATURAL RESOURCES

Plate 1
Utah Geological and Mineral Survey Map 127
Geologic Map of Antelope Island

GEOLOGIC MAP OF ANTELOPE ISLAND, DAVIS COUNTY, UTAH

by
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1990

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Field mapped in 1987, 1988

UTM GRID AND 1990 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

UTAH
LOCATION MAP

Base from U.S.G.S. Antelope Island, Antelope Island North, Antelope Island South, Buffalo Point, and Plug Peak NE quadrangles. Cartography by J. Parker.

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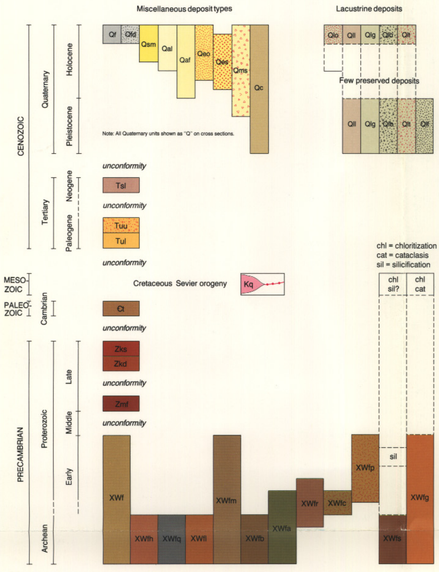
Plate 2
Utah Geological and Mineral Survey Map 127
Geologic Map of Antelope Island

CORRELATION OF MAP UNITS



Precambrian divisions and symbols

PERIOD	EON	ERA	Age (m.y.)	Map symbol
Precambrian	Proterozoic	Late	570	Z
		Middle	900	Y
		Early	1600	X
	Archean	Late	2500	W
		Middle	3000	
		Early	3400	

Modified from the Decade of North American Geology 1983 Geologic Time Scale by the Geologic Society of America, (A.R. Palmer, compiler).

FORMATION		THICK-NESS ft (m)	SYMBOL	LITHOLOGY
Quaternary deposits		0-50 (0-15)	Q	unconformity
Salt Lake Group		0-1800+ (0-550+)	Tsl	
conglomeratic unit	upper	0-500 (0-150)	Tuu	unconformity
	lower	0-400 (0-120)	Tul	
Tintic Quartzite		800+ (245+)	Ct	major unconformity
Kelley Canyon Fm.	slate member	50-250 (15-75)	Zks	unconformity
	dolomite member	20-30 (6-9)	Zkd	
Mineral Fork Formation		0-200 (0-60)	Zmf	unconformity
Farmington Canyon Complex			XWg, XWfs, XWfp, XWfc, XWf, XWfm, XWfb, XWfa, XWfl, XWfh, XWfh	major unconformity

DESCRIPTION OF MAP UNITS

Qf — Artificial fill— *Poorly sorted coarse- and fine-grained spoil from excavated areas.*

Qfd — Disturbed ground— *Excavation areas where most of the surficial deposits have been removed and remaining materials have been relocated to contour the surface.*

Qsm — Marsh deposits associated with springs— *Organic-rich sand, silt, and clay localized in marshy areas at sites of spring discharge.*

Qal — Stream-channel alluvial deposits— *Poorly sorted gravel, sand, and mud in ephemeral streams and washes.*

Qaf — Alluvial-fan deposits— *Poorly sorted gravel, sand, and mud deposited on piedmont slopes after regression of Lake Bonneville.*

Qeo — Oolitic wind-blown sand deposits— *Medium sand-sized grains of lacustrine-formed oolids that form dunes on the northwestern side of the island.*

Qes — Siliceous wind-blown sand deposits — *Fine- to medium-grained sand derived from the Tintic Quartzite that forms low dunes and thin sheets on the northwestern side of the island.*

Qms — Landslide deposits— *Slumps and other varieties of landslides derived from lacustrine and colluvial deposits.*

Qc — Colluvial deposits— *Rock fragments, soil, and talus, derived from adjacent slopes, principally above the Bonneville shoreline. Only discrete, relatively thick deposits are mapped.*

Qlo — Lacustrine oolitic sand deposits— *Relatively thick oolid deposits formed by precipitation of calcium carbonate in wave-agitated water around sand nuclei and deposited on Holocene and modern beaches, mostly along the northwestern shore of the island.*

Qll — Lacustrine lagoonal deposits — *Organic-rich sand, silt, and clay localized in lagoons behind beach ridges of the Great Salt Lake and Lake Bonneville.*

Qlg — Lacustrine sand and gravel deposits — *Coarse-grained deposits of Lake Bonneville and the Great Salt Lake.*

Qlb — Lacustrine boulder deposits — *Boulder shoreline deposits of Lake Bonneville and the Great Salt Lake.*

Qlt — Lacustrine tufa and calcium carbonate-cemented gravel deposits — *Calcium carbonate precipitated to form a bulbous deposit coating rocks and sediments or as interstitial cement at the outer edges of shore platforms; only the largest deposits are mapped.*

Qlf — Lacustrine sand, silt, and clay deposits — *Fine-grained sediments deposited below wave base in Lake Bonneville.*

Tsl — Salt Lake Formation — *Light gray, tuffaceous sandstone, volcanic ash, conglomerate, and poorly consolidated sandstone, 0-1800+ feet (0-550+ m) thick.*

Tuu — Upper member of conglomeratic unit — *Poorly sorted cobble- to boulder-sized conglomerate with metamorphic, carbonate, quartzite, and volcanic clasts interbedded with thin lacustrine limestone, 0-500 feet (0-150 m).*

Tul — Lower member of conglomeratic unit — *Gray poly-mictic conglomerate (clasts to 10 feet (3 m)), red conglomerate (metamorphic clasts), and variegated mudstone, 0-400 feet (0-120 m).*

Kq — Quartz veins — *White, pale yellowish-white, to pale greenish-white, coarse to fine crystalline quartz; generally featureless. Occurs as thin veins up to about 10 feet (3 m) thick or as irregular bodies, often with blocks of older rock units included. Cretaceous? in age.*

Ct — Tintic Quartzite — *Light grayish-pink and pale green coarse-grained quartzite and metaconglomerate, 800+ feet (245+ m) thick.*

Zks — Slate member of the Kelley Canyon Formation — *Purple, lavender, green, orange, and yellow slate, finely laminated to thin bedded, weathers to smooth slopes, 50 to 250 feet (15 to 75 m) thick.*

Zkd — Dolomite member of the Kelley Canyon Formation — *Pale pink, finely crystalline, cliff-forming dolomite, 20 to 30 feet (6 to 9 m) thick.*

Zmf — Mineral Fork Formation — *Dark brown to black diamictite with poorly sorted angular to rounded, matrix-supported clasts, 0 to 200 feet (0 to 60 m) thick.*

FARMINGTON CANYON COMPLEX

XWg — Chloritized and hematitized gneiss, mylonite, and phyllonite — *Mostly gneiss and schist that have been subjected to varying degrees of deformation, chloritization, and hematitization. Commonly dark green, olive green, grayish green, and reddish black.*

XWfs — Silicified cataclastic gneiss — *Gneiss that was brecciated, silicified, and chloritized, possibly during separate metamorphic events.*

XWfp — Pegmatitic granite — *Irregular bodies, dikes, and sills of coarse-grained, light-colored, igneous rock of granitic composition.*

XWfc — Coarse-grained granite — *Coarse-grained, light reddish granite intruded as small plugs. Crops out in the Garr Knolls, in the southern part of the island.*

XWfl — Red granitic gneiss — *Foliated reddish granitic gneiss, medium crystalline, resistant, massive, and with widely spaced joints.*

XWfm — Migmatitic granitic gneiss — *With alternating layers and stringers of mafic and sialic material. Locally exhibits ptygmatic folding. Western outcrops grade compositionally and texturally into red granitic gneiss.*

XWfb — Mixed gneiss, amphibolite, granite, and schist — *Migmatitic gneiss interlayered with amphibolite, hornblende-plagioclase gneiss, plagioclase-biotite schist, and irregularly intruded by pegmatitic granite.*

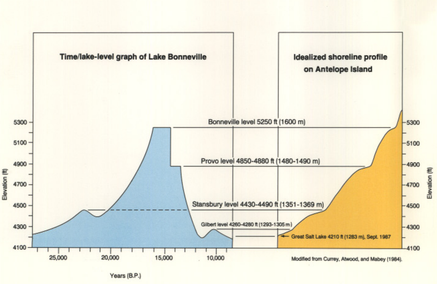
XWfa — Amphibolite and gneiss — *Dark green to black amphibolite, and hornblende-plagioclase gneiss; only the largest outcrops are mapped separately.*

XWfl — Layered gneiss — *Layered gneiss, schist, migmatite, and pegmatite, distinguished by planar layering continuous over distances of several hundred feet.*

XWfq — Quartz-plagioclase gneiss — *Quartz gneiss containing a relatively small percentage of small porphyroblasts of amphibole and feldspar. Forms clear to milky white, thin-to medium-layered, resistant outcrops.*

XWfh — Mixed amphibolite, gneiss, and granite — *Amphibolite, hornblende-plagioclase gneiss, and minor hornblende schist, interlayered with sills of pegmatitic granite.*

XWf — Farmington Canyon Complex, undifferentiated. Shown only on cross section.



SYMBOLS

- Geologic contact: dashed where inferred, dotted where buried
- Fault: dashed where inferred, dotted where buried, queried where probable; bar and ball on downthrown block
- Thrust fault: teeth on upper plate
- Strike and dip of sedimentary rocks: inclined, vertical
- Strike and dip of foliation of metamorphic rocks: inclined, vertical
- Strike and dip of cleavage: inclined, vertical
- Bonneville shoreline: dashed where less well-defined; 16,000 to 14,500 years B.P.
- Provo shoreline: 14,500 to 13,500 years B.P.
- Stansbury shoreline: 23,000 to 22,000 years B.P.
- Gilbert shoreline: 11,000 to 10,000 years B.P.

Variation in the elevation of shorelines may be attributed to isostatic and tectonic adjustments, difficulties in resolving closely-spaced shorelines, or other factors

- Highwall or edge of pit, quarry, or scarp of landslide
- Mine; prospect; shaft; adit
- Gravel pit
- Oil or gas well, not completed
- Water well: flowing; nonflowing
- Radiometrically dated sample location:
  1. UGMS sample AIGW0102 42.9 ± 1.7 my
  2. UGMS sample AIMJ0101 49.2 ± 1.9 my
  3. UGMS sample AITW0930 38.8 ± 1.5 my
  4. Hedge et al (1983) 1993.0 ± 22 my
- Shear zone
- Quartz vein
- Primarily igneous rocks (cross section only)
- Primarily metamorphic rocks showing dominant trend of metamorphic foliation (cross section)