Pliocene volcanic sequence

- **Dacite**
  - Plagioclase- and pyroxene-phyric dacite dykes are tabular. May occur as massive, columnar joined sills up to 100 m thick, with thin (~10 cm) fine grained chilled margins. In northeastern regions dykes of around 1 m wide are common. Features variable grey plagioclase (< 4 mm), occasionally clinopyroxene (< 2 mm) phenocrystic, and coarse to medium grained groundmass.
  - Coherent lavas and insitu breccia facies. Major component of the southwest volcanic centre. Massive, coherent basalt with large crystal fragments, 5 cm to 50 cm in size, and minor scoria. Deposits are fine grained to medium grained, with discontinuous scoria and crystal fragments.

- **Clinopyroxene-phyric basaltic andesite**
  - Coherent lava and in situ breccia facies. Major component of the southwest volcanic centre. Massive, coherent basalt with large crystal fragments, 5 cm to 50 cm in size, and minor scoria. Deposits are fine grained to medium grained, with discontinuous scoria and crystal fragments.

- **Dacite volcaniclastic sediments and tuffs**
  - Stratified polymict dacite and scoriaceous breccia. Polymict layers of angular to subangular clasts interbedded with scoria and ash. Matrix consists of lithic dust fragments, scoria, and fine grained volcanic ash. Lava flows have reverse and normal grading, euhedral pyroxene, crossbedding, and channelized. Beds, 1–300 cm thick, consisting of layers of variable dust and ash, 0–100 cm thick, and may be interbedded with scoria and crystal fragments.

- **Dacite**
  - Coarse-grained dacite and scoriaceous breccia. Unit consisting of monomict angular dacite, with occasional phenocrysts (~4 mm), occasionally pyroxene (~2 mm) phenocrysts, and variable phenocrysts in a fine-grained groundmass.
  - Isolated outcrops of Monomict dacite, typically less than 1 m thick, with matrix comprising 50–60% of the rock volume.

Quaternary volcanic sequence

- **Pleistocene–Holocene alluvium**
  - Alluvial sediments deposited in river valleys and on small coastal plains. Coastal beach deposits.

**Hydrothermal alteration**

- **Strong alteration**
  - Massive, coherent basalt with large crystal fragments, 5 cm to 50 cm in size, and minor scoria. Deposits are fine grained to medium grained, with discontinuous scoria and crystal fragments.

- **Weak alteration**
  - Stratified polymict dacite and scoriaceous breccia. Polymict layers of angular to subangular clasts interbedded with scoria and ash. Matrix consists of lithic dust fragments, scoria, and fine grained volcanic ash. Lava flows have reverse and normal grading, euhedral pyroxene, crossbedding, and channelized. Beds, 1–300 cm thick, consisting of layers of variable dust and ash, 0–100 cm thick, and may be interbedded with scoria and crystal fragments.

**Faults**

- **Normal fault**
  - Unassigned terrace level.

- **Terrace dated at ~125 ka**
  - Terrace dated at ~125 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~100 ka**
  - Terrace dated at ~100 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~80 ka**
  - Terrace dated at ~80 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~60 ka**
  - Terrace dated at ~60 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~40 ka**
  - Terrace dated at ~40 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~20 ka**
  - Terrace dated at ~20 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~12 ka**
  - Terrace dated at ~12 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~10 ka**
  - Terrace dated at ~10 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~8 ka**
  - Terrace dated at ~8 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~6 ka**
  - Terrace dated at ~6 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~4 ka**
  - Terrace dated at ~4 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~2 ka**
  - Terrace dated at ~2 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~1 ka**
  - Terrace dated at ~1 ka (Chappell & Veeh, 1978).

**Legend**

- **Qa** Latest Pleistocene–Holocene alluvium
  - Aluvial sediments deposited in river valleys and on small coastal plains. Coastal beach deposits.

- **Q1** Unassigned terrace level.

- **Q1a** Youngest limestone terrace, dated at ~125 ka (Chappell & Veeh, 1978).

- **Q1b** Terrace dated at ~125 ka (Chappell & Veeh, 1978).

- **Q1c** Terrace dated at ~100 ka (Chappell & Veeh, 1978).

- **Q1d** Terrace dated at ~80 ka (Chappell & Veeh, 1978).

- **Q1e** Terrace dated at ~60 ka (Chappell & Veeh, 1978).

- **Q1f** Terrace dated at ~40 ka (Chappell & Veeh, 1978).

- **Q1g** Terrace dated at ~20 ka (Chappell & Veeh, 1978).

- **Q1h** Terrace dated at ~12 ka (Chappell & Veeh, 1978).

- **Q1i** Terrace dated at ~10 ka (Chappell & Veeh, 1978).

- **Q1j** Terrace dated at ~8 ka (Chappell & Veeh, 1978).

- **Q1k** Terrace dated at ~6 ka (Chappell & Veeh, 1978).

- **Q1l** Terrace dated at ~4 ka (Chappell & Veeh, 1978).

- **Q1m** Terrace dated at ~2 ka (Chappell & Veeh, 1978).

- **Q1n** Terrace dated at ~1 ka (Chappell & Veeh, 1978).

**Figure 4.3**

Pliocene volcanic sequence

- **Dacite**
  - Plagioclase- and pyroxene-phyric dacite dykes are tabular. May occur as massive, columnar joined sills up to 100 m thick, with thin (~10 cm) fine grained chilled margins. In northeastern regions dykes of around 1 m wide are common. Features variable grey plagioclase (< 4 mm), occasionally clinopyroxene (< 2 mm) phenocrystic, and coarse to medium grained groundmass.

- **Clinopyroxene-phyric basaltic andesite**
  - Coherent lava and in situ breccia facies. Major component of the southwest volcanic centre. Massive, coherent basalt with large crystal fragments, 5 cm to 50 cm in size, and minor scoria. Deposits are fine grained to medium grained, with discontinuous scoria and crystal fragments.

- **Dacite volcaniclastic sediments and tuffs**
  - Stratified polymict dacite and scoriaceous breccia. Polymict layers of angular to subangular clasts interbedded with scoria and ash. Matrix consists of lithic dust fragments, scoria, and fine grained volcanic ash. Lava flows have reverse and normal grading, euhedral pyroxene, crossbedding, and channelized. Beds, 1–300 cm thick, consisting of layers of variable dust and ash, 0–100 cm thick, and may be interbedded with scoria and crystal fragments.

- **Dacite**
  - Coarse-grained dacite and scoriaceous breccia. Unit consisting of monomict angular dacite, with occasional phenocrysts (~4 mm), occasionally pyroxene (~2 mm) phenocrysts, and variable phenocrysts in a fine-grained groundmass. Clast size varies from 2 mm to 50 cm, with matrix comprising 50–60% of the rock volume.

**Faults**

- **Normal fault**
  - Unassigned terrace level.

- **Terrace dated at ~125 ka**
  - Terrace dated at ~125 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~100 ka**
  - Terrace dated at ~100 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~80 ka**
  - Terrace dated at ~80 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~60 ka**
  - Terrace dated at ~60 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~40 ka**
  - Terrace dated at ~40 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~20 ka**
  - Terrace dated at ~20 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~12 ka**
  - Terrace dated at ~12 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~10 ka**
  - Terrace dated at ~10 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~8 ka**
  - Terrace dated at ~8 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~6 ka**
  - Terrace dated at ~6 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~4 ka**
  - Terrace dated at ~4 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~2 ka**
  - Terrace dated at ~2 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~1 ka**
  - Terrace dated at ~1 ka (Chappell & Veeh, 1978).

- **Terrace dated at ~0 ka**
  - Terrace dated at ~0 ka (Chappell & Veeh, 1978).
Author/s: Ely, Kim Susan

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