

GEOLOGIC MAP OF THE LAKE TAHOE BASIN CALIFORNIA AND NEVADA

Compiled by
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Digitized by
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DESCRIPTION OF MAP UNITS
(See pamphlet for more detailed unit descriptions)

- | | |
|---|--|
| af Artificial fill (late Holocene) | ap Aplite and pegmatite dikes (Cretaceous) |
| Qb Beach deposits (Holocene) | Kelg Echo Lake granodiorite (Cretaceous) |
| Qfp Flood-plain deposits (Holocene) | Kppg Phipps Pass granodiorite (Cretaceous) |
| Qt Talus deposits (Holocene) | Kbmg Bryan Meadow granodiorite (Cretaceous) |
| Ql Lake deposits (Holocene) | Kllg Lovers Leap granodiorite (Cretaceous) |
| Qyg Younger glacial deposits (Holocene) | Kggg Glen Alpine granodiorite (Cretaceous) |
| Qc Colluvium (Holocene) | Ktlg Tyler Lake granodiorite (Cretaceous) |
| Qls Landslide deposits (Holocene and Pleistocene) | Kwlg Wrights Lake granodiorite (Cretaceous) |
| Q Alluvium (Holocene and Pleistocene) | Kdlg Dicks Lake granodiorite (Cretaceous) |
| Qf Alluvial fan deposits (Holocene and Pleistocene) | Krpa Alaskite at Rubicon Point (Cretaceous) |
| Qm Mudflow deposits (Holocene and (or) Pleistocene) | Krvg Rockbound Valley granodiorite (Cretaceous) |
| Qob Older beach deposits (Pleistocene) | Kwgd Granodiorite of Waterhouse Peak (Cretaceous) |
| Qol Older lake deposits (Pleistocene) | Kqdg Quartz diorite of Grass Lake (Cretaceous) |
| Qlt Lacustrine terrace deposits (Pleistocene) | Kkdg Granodiorite of Kingsbury Grade (Cretaceous) |
| Qtl Till | Kwpt Tonalite West of Waterhouse Peak (Cretaceous) |
| Qnio Outwash deposits | Keg Granodiorite of East Peak (Cretaceous) |
| Tahoe glacial deposits (Pleistocene) | Ksgr Monzogranite of Spooner Summit of Grose (1985) (Cretaceous) |
| Qta Till | Ktgr Granodiorite of Thornburg Canyon (Cretaceous) |
| Qtan Outwash deposits | Kevg Granodiorite of Charity Valley (Cretaceous) |
| Tahoe and Tioga glacial deposits - undivided (Pleistocene) | Keld Diorite of Caples Lake (Cretaceous) |
| Qgt Till | Kelg Granodiorite of Caples Lake (Cretaceous) |
| Older glacial deposits - pre-Tahoe deposits (Pleistocene) | Kfpg Freel Peak granodiorite (Cretaceous) |
| Qog Till | Kbla Burnside Lake adamellite of Parker (1961) (Cretaceous) |
| Qogg Outwash deposits | Kdpg Granodiorite of Daggett Pass (Cretaceous) |
| Glacial deposits undivided (Pleistocene and Holocene?) | Kcpt Carson Pass tonalite of Parker (1961) (Cretaceous) |
| Qg Till | Kfvg Granodiorite of Faith Valley (Cretaceous) |
| Qgo Outwash deposits | Kepp Ebbetts Pass granodiorite of Wishrie (1957) (Cretaceous) |
| Qbhm Bald Mountain olivine latite of Birkeland (1961) (Pleistocene) | Kklg Granodiorite of Kinney Lakes (Cretaceous) |
| Qvmcc cinder cone deposits | bd Basalt dikes (Cretaceous) |
| Qjf Juniper Flat alluvium of Birkeland (1961) (Pleistocene) | Kdql Breccia monzodiorite north of Daggett Pass (Cretaceous?) |
| Qpc Prosser Creek alluvium of Birkeland (1961) (Pleistocene) | kbp Quartz pipe (Cretaceous?) |
| Qvh Hirschdale olivine latite of Birkeland (1961) (Pleistocene) | Kcfa Camper Flat granodiorite (Cretaceous or Jurassic?) |
| Qvbc cinder cone deposits; Qvht - basaltic tuff | Kdvg Desolation Valley granodiorite (Cretaceous or Jurassic?) |
| QPot Older talus deposits (Pliocene and (or) Pleistocene) | Kkqm Keiths Dome quartz monzonite (Cretaceous or Jurassic?) |
| QPvd Dry Lake volcanic flows of Birkeland (1961); Wise and Sylvester (2004) (Pliocene and (or) Pleistocene) - QPvd1 - QPvd4 (oldest to youngest) | Unamed granitic rocks of the Sierra Nevada batholith |
| QPvbs Big Chief basalt of Birkeland (1961) (Pliocene and (or) Pleistocene) | Kgr Granite and granodiorite, undivided (Cretaceous) |
| QPpmp Page Meadow basalt of Wise and Sylvester (2004) (Pliocene and (or) Pleistocene) | Kqd Quartz diorite and diorite (Cretaceous) |
| QPs Unnamed gravels, sand and alluvium (Pliocene and (or) Pleistocene) | Kdg Diorite and gabbro (Cretaceous) |
| QPvbi Burton Creek basalt of Wise and Sylvester (2004) (Pliocene and (or) Pleistocene) | Klgr Granite (Cretaceous and (or) Jurassic) |
| QPvli Lake Forest basalt of Wise and Sylvester (2004) (Pliocene and (or) Pleistocene) | Kjgd Granodiorite (Cretaceous and (or) Jurassic) |
| Unamed volcanic and intrusive rocks (Pliocene and (or) Pleistocene) | Kldg Diorite and gabbro (Cretaceous and (or) Jurassic) |
| QVbh Basalt flows, flow breccia and basaltic ash | Jurassic intrusive rocks: |
| QPIa - intrusive andesite and latite; QPIb - intrusive basalt | Jagd Quartz diorite at Azure Lake (Late? and Middle Jurassic) |
| Pvta Tahoe City trachyandesite of Wise and Sylvester (2004) (Pliocene) | Jpgr Pyramid Peak granite (Jurassic) |
| Pvtcc cinder cone deposits | Jh Diorite (Jurassic?) |
| Pvth Tahoe City basalt of Wise and Sylvester (2004) (Pliocene) | Jdg Diorite and gabbro (Late? and Middle Jurassic) |
| Pvp Polaris olivine latite of Birkeland (1961) (Pliocene) | Jmd Microdiorite dikes (Jurassic) |
| Pvpt latite tuff and tuff breccia | Jmb Mafic intrusive breccia (Late? and Middle Jurassic) |
| Pvah Alder Hill basalt of Birkeland (1961) (Pliocene) | Ja Anorthosite (Late? and Middle Jurassic) |
| Pvabc cinder cone deposits | Metamorphic rocks |
| Ps Fluvial and lacustrine deposits (Pliocene) | Tuttle Lake Formation of Harwood (1992) (Late? and Middle Jurassic) |
| Unamed volcanic and intrusive rocks (Miocene) | Jlf Lava flows |
| Pva Andesite and basaltic andesite flows | Jtb Volcanic breccia |
| Pval Andesite lahars | Jts Tuffaceous sandstone and conglomerate |
| Pvb Basalt flows - includes Boca Ridge flows of Latham (1985) | Jtd Diamicrite |
| Pi Dikes and intrusives - Pia - andesite; Pib - basalt | Jsc Sailor Canyon Formation (Middle and Early Jurassic) |
| Unamed volcanic and intrusive rocks (Miocene) | Jtm Metamorphic rocks undivided (Jurassic and (or) Triassic) |
| Mva Undivided andesite and dacite lahars, flows, breccia and volcanoclastic sediments | Jtrms Metasedimentary rocks (Jurassic and (or) Triassic) |
| Mvbf Andesite and dacite flows | Jtrmv Metavolcanic rocks (Jurassic and (or) Triassic) |
| Mvbf Basalt flows | Jtrls Limestone (Late Triassic?) |
| Mvs Fluvial deposits | Lake Tahoe Sequence of Harwood (1992) |
| Mi Intrusive rocks - Mia - andesite, basaltic andesite and latite; Mib - basalt; Mir - rhyolite | Jlp Pelite unit (Jurassic?) |
| Mvg Glenbrook volcanic center (Miocene) Mvgt - latite intrusions; Mvgt - vitric-crystal tuff; Mvgtf - trachyte flows and vent fill | Jlc Ellis Peak Formation (Jurassic) |
| Upper lahar sequence of Harwood and Fisher (2002) (Miocene) | Jlb Blackwood Creek Formation (Jurassic) |
| Mval Andesite lahars | Mls Serena Creek Formation (Mississippian? or younger) |
| Mvula Andesite flows | |
| Mvulp Pumiceous tuff | |
| Mvult Rockslide-avalanche deposits | |
| Lower lahar sequence of Harwood and Fisher (2002) (Miocene) | |
| Mvll Andesite lahars | |
| Mvlla Andesite flows | |
| Unamed volcanic and sedimentary rocks | |
| QAMr Rhyolite tuff (Oligocene and Miocene?) | |
| Qc Conglomerate and breccia (Oligocene and (or) older Tertiary) | |

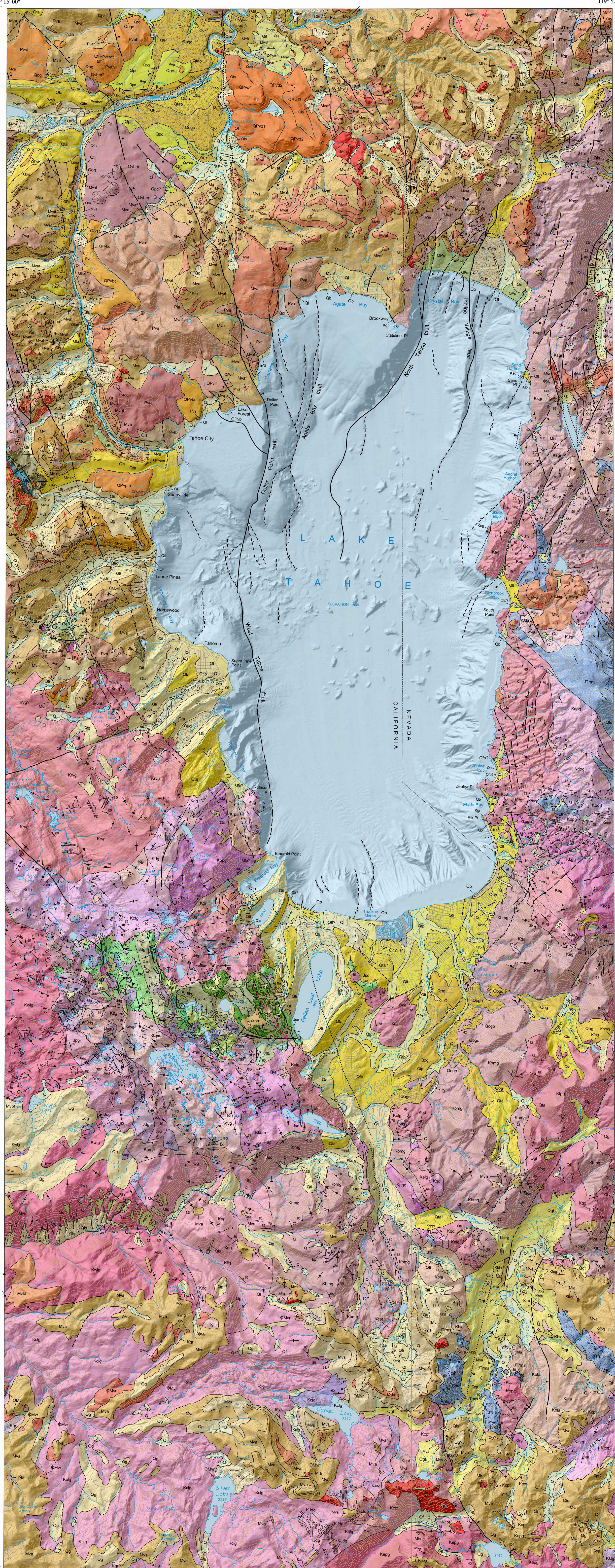
MAP SYMBOLS

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|--|---|--|---|
| | Contact - solid where well or approximately located; dashed where inferred or gradational. | | Strike and dip of stratified rocks. Number indicates dip angle in degrees when known. |
| | Fault - solid where well located; dashed where approximately located; short dash where inferred; dotted where concealed; queried where continuation or existence is uncertain. Ball and bar on downthrown side. (The age and location of the faults in the lake bottom and cutting Quaternary deposits should be considered preliminary interpretations.) | | Inclined beds - ball indicates top direction known |
| | Thrust fault - solid where well located; dashed where approximately located. | | Vertical beds |
| | Anticline fold - arrow indicates plunge direction. | | Overtured beds |
| | Syncline fold - arrow indicates plunge direction. | | Strike and dip of metamorphic and igneous foliation and cleavage. |
| | Glacial moraine crest. | | Foliation or cleavage |
| | Dikes - andesite, latite, basalt and mafic dikes; dashed where approximately located. | | Vertical foliation or cleavage |
| | Arrows on landslides indicate direction of movement. | | Cleavage parallel to bedding |
| | Maar at Lake Forest on the Kings Beach Quadrangle. | | Cleavage parallel to bedding - ball indicates top direction known |
| | | | Strike and dip of joints. |
| | | | Vertical joint |

ABBREVIATED INDEX TO GEOLOGIC SOURCE DATA (Primary compilation sources shown in bold type)

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| 1. Truckee Quadrangle*
Birkeland, P.W. 1961; Burnett, J.L., 1982; Franks, A.L., 1980; Gates, W.C.B., 1994; Harwood, D.S. and Fisher, G.R., 2002; Hawkins, F.F., LaForge, R. and Hansen, R.A., 1986; Latham, T.S., Jr., 1985; Wise, W.S. and Sylvester, A.G., 2004. | 11. Emerald Bay Quadrangle*
Burnett, J.L., 1982; Fisher, G.R., 1989; Loomis, A.A., 1983; McCaughey, J.W., 2003; U.S. Department of Agriculture, 1974. |
| 2. Martis Peak Quadrangle*
Birkeland, P.W. 1961; Burnett, J.L., 1982; Franks, A.L., 1980; Gates, W.C.B., 1994; Latham, T.S., Jr., 1985; Matthews, R.A., 1968; Wise, W.S. and Sylvester, A.G., 2004. | 12. Rockbound Valley Quadrangle
Fisher, G.R., 1989; Loomis, A.A., 1983; Sabine, C., 1992. |
| 3. Mount Rose Quadrangle*
Lewis, R.L., 1988; Stewart, J.H., 1999. | 13. Pyramid Peak Quadrangle
Connelly, S.F., 1988; John, D.A., Armin, R.A. and Moore, W.J., 1981; Loomis, A.A., 1983; Sabine, C., 1992; Wagner, D.L. and Spittler, J.E., 1997. |
| 4. Marlette Lake Quadrangle*
Grose, T.L.T., 1986; Stewart, J.H., 1999. | 14. Echo Lake Quadrangle*
Burnett, J.L., 1982; Connelly, S.F., 1988; Fisher, G.R., 1989; John, D.A., Armin, R.A. and Moore, W.J., 1981; Loomis, A.A., 1983; McCaughey, J.W., 2003. |
| 5. Kings Beach Quadrangle*
Burnett, J.L., 1982; Franks, A.L., 1980; Wise, W.S. and Sylvester, A.G., 2004. | 15. Freel Peak Quadrangle*
Armin, R.A. and John, D.A., 1983; John, D.A., Armin, R.A. and Moore, W.J., 1981. |
| 6. Tahoe City Quadrangle*
Birkeland, P.W. 1961; Gates, W.C.B., 1994; Harwood, D.S. and Fisher, G.R., 2002; Higgins, C.T., 1977; Wise, W.S. and Sylvester, A.G., 2004. | 16. Carson Pass Quadrangle
Armin, R.A., John, D.A. and Moore, W.J., 1984; Burnett, J.L., 1982; DeOreo, S.B., 2004; John, D.A., Armin, R.A. and Moore, W.J., 1981. |
| 7. Homewood Quadrangle*
Harwood, D.S. and Fisher, G.R., 2002; Higgins, C.T., 1977. | 17. Caples Lake Quadrangle*
Bedrossian, T.L., 1979; Burnett, J.L., 1982; DeOreo, S.B., 2004; John, D.A., Armin, R.A. and Moore, W.J., 1981; McKee, E.H. and Howe, R.A., 1981. |
| 8. Meeks Bay Quadrangle*
Burnett, J.L., 1982. | 18. Tragedy Spring Quadrangle
Bedrossian, T.L., 1979. |
| 9. Glenbrook Quadrangle*
Grose, T.L.T., 1985; Stewart, J.H., 1999. | |
| 10. South Lake Tahoe Quadrangle*
Armin, R.A. and John, D.A., 1983; Bonham, H.F., Jr. and Burnett, J.L., 1976. | |

* Fault additions from: Schweickert, R.A., Lahren, M.M., Karlin, R.E., Smith, K.D. and Howell, J.F., 2000.



Geology compiled 2001-2004
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Base Map
Topographic base from U.S.G.S. Placerville, Truckee, South Valley and Carson City 30x60 quadrangles. Shaded topographic and bathymetric base from U.S.G.S. digital elevation models (<http://tahoe.usgs.gov/DEM.html>). Projection UTM, zone 10, North American Datum 1927.

SCALE 1:100,000
CONTOUR INTERVAL 50 METERS

UTM GRID AND 1984 MAGNETIC NORTH DECLINATION AT CENTER OF MAP

USGS science for a changing world

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