U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PROFESSIONAL PAPER–729–G
PLATE 1 OF 3

GEOLOGIC MAP OF THE YELLOWSTONE PLATEAU AREA

By
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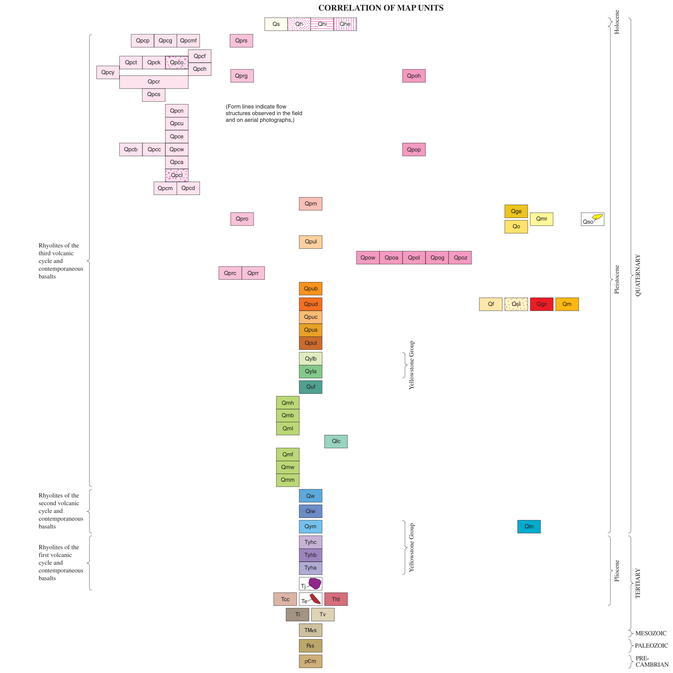
2001

CORRELATION OF MAP UNITS



LIST OF MAP UNITS

[See text for complete description of map units]

Surficial deposits (Holocene and Pleistocene)—Age ranges of individual units overlap

- Qs — **Detrital deposits**
- Qh — **Hot-spring deposits**
- Qhc — **Cemented ice-contact deposits localized by hot springs**
- Qhe — **Hydrothermal-explosion deposits**

Plateau Rhyolite (Pleistocene)

Central Plateau Member

- Qpcp — **Pitchstone Plateau flow**
- Qpcg — **Grants Pass flow**
- Qpcmf — **Moose Falls flow**
- Qpcy — **West Yellowstone flow**
- Qpct — **Trischman Knob dome**
- Qpck — **Douglas Knob dome**
- Qpcq — **Tuff of Cold Mountain Creek**
- Qpcf — **Solfatara Plateau flow**
- Qpch — **Hayden Valley flow**
- Qpcr — **Bechler River flow**
- Qpcs — **Summit Lake flow**
- Qpcb — **Buffalo Lake flow**
- Qpcc — **Spring Creek flow**
- Qpcn — **Nez Perce Creek flow**
- Qpcu — **Spruce Creek flow**
- Qpce — **Elephant Back flow**
- Qpcw — **West Thumb flow**
- Qpca — **Aster Creek flow**
- Qpcd — **Tuff of Bluff Point**
- Qpcm — **Mary Lake flow**
- Qpcd — **Dry Creek flow**

Roaring Mountain Member

- Qprs — **Crystal Spring flow**
- Qprg — **Gibbon River flow**
- Qpro — **Obsidian Cliff flow**
- Qprc — **Cougar Creek dome**
- Qprr — **Riverside flow**

Mallard Lake Member

- Qpm — **Mallard Lake flow**

Obsidian Creek Member

- Qpoh — **Gibbon Hill dome**
- Qpop — **Paintpot Hill dome**
- Qpow — **Willow Park dome**
- Qpoa — **Apollinaris Spring dome**
- Qpol — **Landmark dome**
- Qpog — **Rhyolite-basalt mixed lavas of Gardner River**
- Qpoz — **Rhyolite-basalt mixed lavas of Grizzly Lake**

Upper Basin Member

- Qpul — **Scaup Lake flow**
- Qpub — **Biscuit Basin flow**
- Qpud — **Dunraven Road flow**
- Qpuc — **Canyon flow**
- Qpus — **Tuff of Sulphur Creek**
- Qpul — **Tuff of Uncle Tom's Trail**
- Qpe — **Gerrit Basalt (Pleistocene)**
- Qo — **Osprey Basalt (Pleistocene)**—Includes some gravel
- Qmr — **Madison River Basalt (Pleistocene)**
- Qso? — **Sediments (Pleistocene)**—Interlayered with Plateau Rhyolite
- Qf — **Falls River Basalt (Pleistocene)**
- Qsl — **Swan Lake Flat Basalt (Pleistocene)**
- Qgt — **Basalt of Geode Creek (Pleistocene)**
- Qm — **Basalt of Mariposa Lake (Pleistocene)**

Lava Creek Tuff (Pleistocene)

- Qylb — **Member B**
- Qyla — **Member A**
- Quf — **Undine Falls Basalt (Pleistocene)**—Includes some gravel

Mount Jackson Rhyolite (Pleistocene)

- Qmh — **Mount Haynes flow**
- Qmb — **Big Bear Lake flow**
- Qml — **Harlequin Lake flow**
- Qmf — **Flat Mountain flow**
- Qmw — **Wapiti Lake flow**
- Qmm — **Moose Creek Butte flow**
- Qlc — **Lewis Canyon Rhyolite (Pleistocene)**
- Qw — **Basalt of Warm River (Pleistocene)**

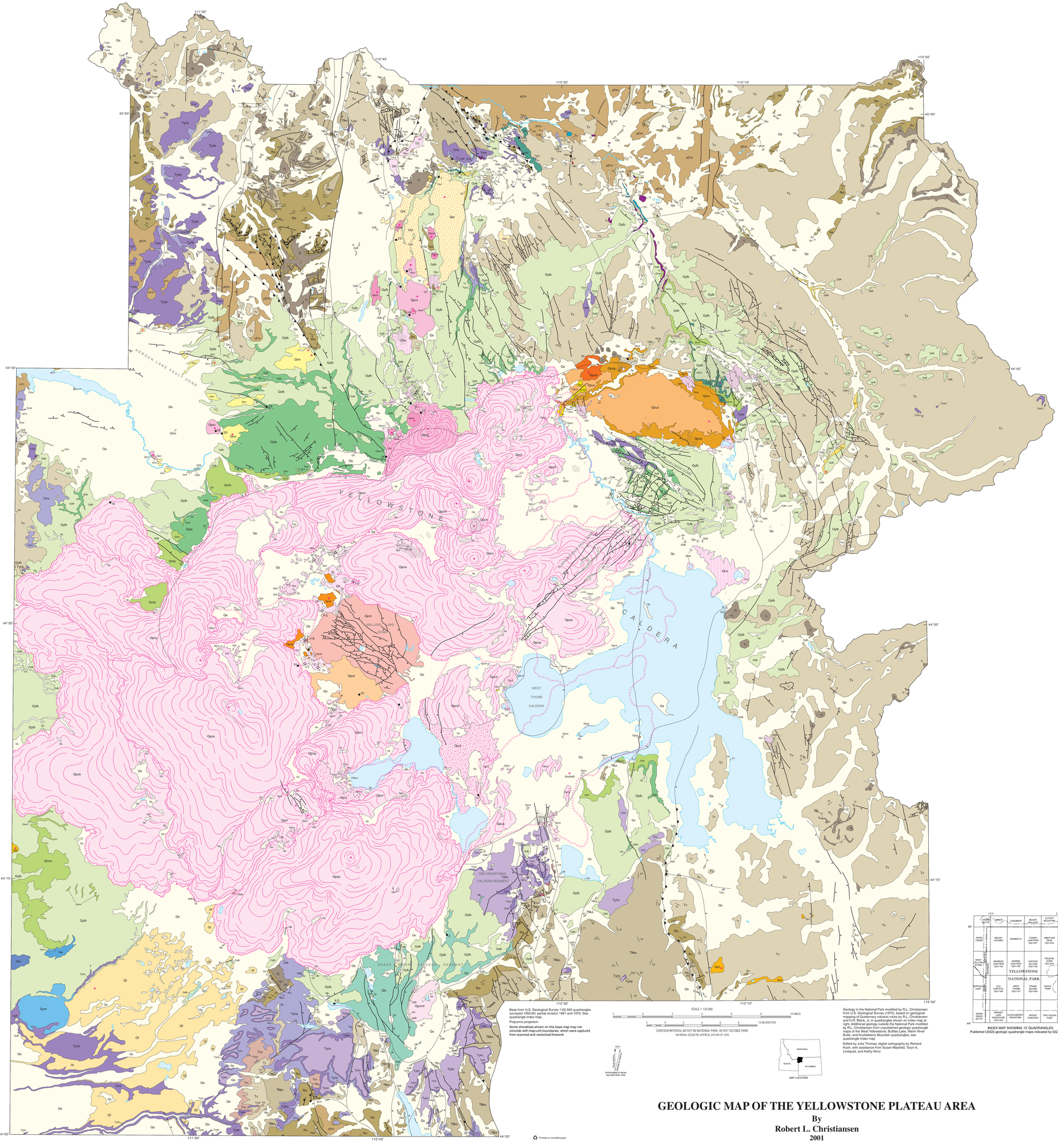
Island Park Rhyolite (Pleistocene)

- Qiw — **Warm River Butte dome**
- Qym — **Mesa Falls Tuff (Pleistocene)**
- Qm — **Sediments and basalts of The Narrows (Pleistocene)**

Huckleberry Ridge Tuff (Pliocene)

- Tyhc — **Member C**
- Tyhb — **Member B**
- Tyha — **Member A**
- Tj — **Junction Butte Basalt (Pliocene)**—Includes some gravel
- Tcc — **Conant Creek Tuff and tuff of Kilgore (Pliocene)**
- Tg — **Gravel of Mount Everts (Pliocene)**
- THl — **Heart Lake Conglomerate (Pliocene)**
- Ti — **Intrusive rocks (Tertiary)**
- Tv — **Volcanic rocks (Tertiary)**
- TMks — **Sedimentary rocks (Paleocene and Mesozoic)**
- Pzs — **Sedimentary rocks (Paleozoic)**
- pCm — **Metamorphic rocks (Precambrian)**

- **Contact**—Dotted where concealed
- **Lava-flow front**—Hachures on side of younger flow; dotted where concealed
- **Lava-flow form lines**
- **Faults**—Dotted where concealed
  - **Normal**—Bar and ball on downthrown side
  - **Reverse**—Teeth on overriding block
  - **Reverse (with later normal movement)**—Teeth on overriding block of reverse fault; bar and ball on downthrown side of normal fault
  - **Low angle fault**—Sawteeth on upper plate
- **Strike and dip of bedding**
  - **Inclined**—Angle of dip shown where known
  - **Horizontal**
  - **Overturned**—Angle of dip shown where known
- **Area of hydrothermal acid alteration**
- **Volcanic vent**
- **Locality of analysed sample**—See table 4
- **Drill hole locality**



Base from U.S. Geological Survey 1:62,500 quadrangles surveyed 1955-60; partial revision 1961 and 1970. See quadrangle index map.

Polyconic projection

Some shorelines shown on this base map may not coincide with map-unit boundaries, which were captured from scanned and vectorized linework

SCALE 1:125 000

2 0 2 4 6 8 10 MILES

2 0 2 4 6 8 10 KILOMETERS

CONTOUR INTERVAL 60 FEET IN NATIONAL PARK; 40 FEET OUTSIDE PARK
NATIONAL GEODETIC VERTICAL DATUM OF 1929

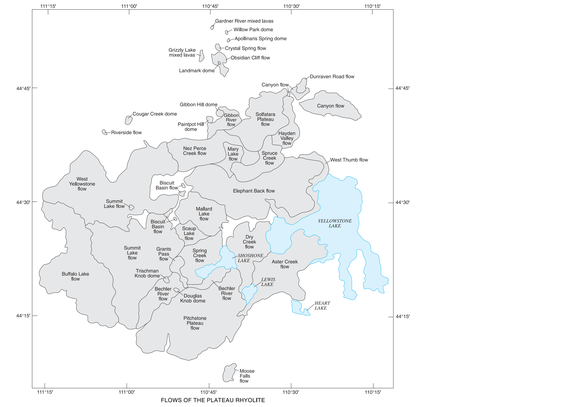
APPROXIMATE MEAN DECLINATION, 2000

MONTANA
IDAHO
WYOMING
MAP LOCATION

Geology in the National Park modified by R.L. Christiansen from U.S. Geological Survey (1972), based on geological mapping of Quaternary volcanic rocks by R.L. Christiansen and H.R. Blank, Jr. in quadrangles shown on index map at right. Additional geology outside the National Park modified by R.L. Christiansen from unpublished geologic quadrangle maps of the West Yellowstone, Buffalo Lake, Warm River Butte, and Huckleberry Mountain quadrangles; see quadrangle index map.

Edited by Julia Thomas; digital cartography by Richard Koch, with assistance from Susan Mayfield, Taryn A. Lindquist, and Kathy Nimz

INDEX MAP SHOWING 15' QUADRANGLES
Published USGS geologic quadrangle maps indicated by GQ numbers



FLOWS OF THE PLATEAU RHYOLITE

Christiansen, R.L., 2001, Geology of Yellowstone National Park—The Quaternary and Pliocene Yellowstone Plateau Volcanic Field of Wyoming, Idaho, and Montana: U.S. Geological Survey Professional Paper 729–G