

Geologic Map of the Poison Creek 7.5' Quadrangle, Harney County, Oregon

2019

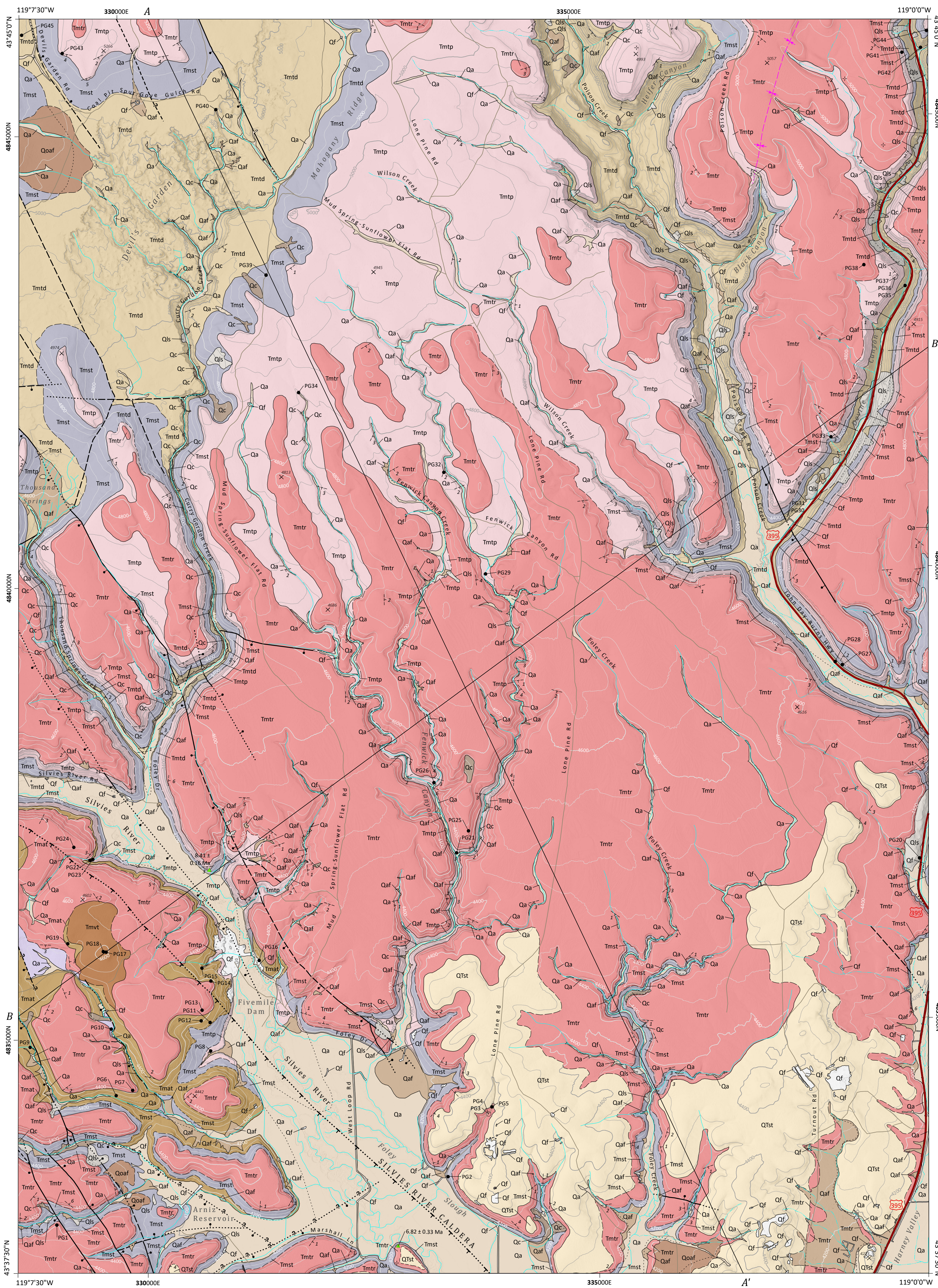
GMS-123

Geologic Map of the Poison Creek and Burns 7.5' Quadrangles,
Harney County, Oregon

By Jason D. McCaughy, Carle J.M. Duda, and Mark L. Ferns

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STATEMAP component of the National Cooperative Geologic Mapping Program (NCGMP00136).
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PLATE 1



EXPLANATION OF MAP UNITS

See Explanation of Map Units in the accompanying pamphlet for complete unit descriptions.

UPPER CENOZOIC SURFICIAL DEPOSITS

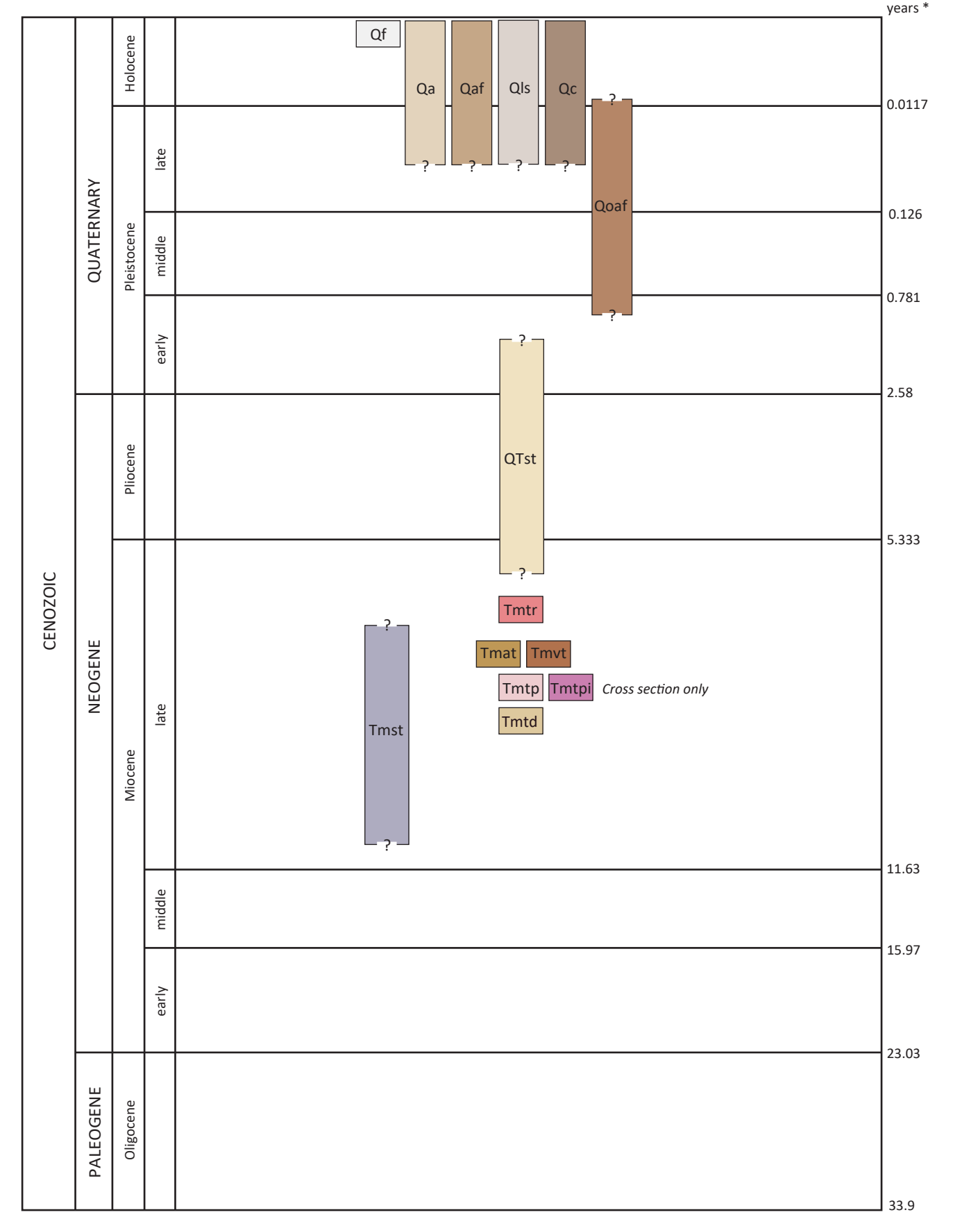
- Qf modern fill and construction material (upper Holocene)
- Qa alluvium (Holocene and Upper Pleistocene[?])
- Qaf fan deposits (Holocene and Upper Pleistocene[?])
- Qls landslide deposits (Holocene and Upper Pleistocene[?])
- Qc colluvium (Holocene and Upper Pleistocene[?])
- Qoaf older fan deposits (Holocene and Upper Pleistocene[?])

Angular unconformity to disconformity

UPPER CENOZOIC VOLCANIC AND SEDIMENTARY ROCKS LOWER PLEISTOCENE TO UPPER MIOCENE SEDIMENTARY ROCKS

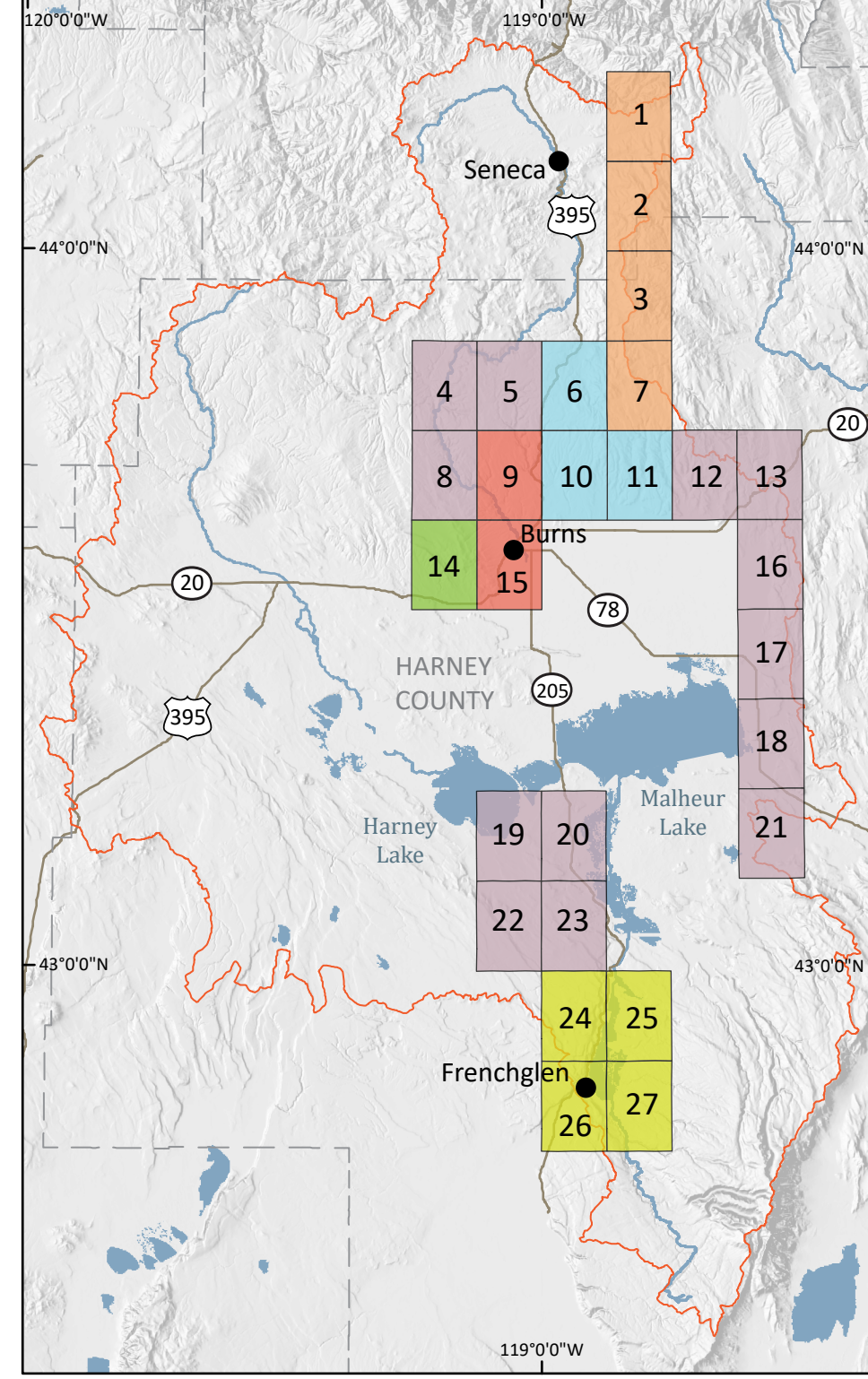
- Qlts sedimentary rocks (lower Pleistocene to upper Miocene[?])
- Tmtr Rattlesnake Tuff (upper Miocene) 7.093 ± 0.015 Ma ($^{40}\text{Ar}/^{39}\text{Ar}$)
- Tmat basaltic trachyandesite and trachyandesite flows and dikes (upper Miocene)
- Tmst basaltic trachyandesite and trachyandesite vent deposits (upper Miocene)
- Tmpt Prater Creek Ash-flow Tuff (upper Miocene) 8.41 ± 0.16 Ma ($^{40}\text{Ar}/^{39}\text{Ar}$)
- Tmpt Prater Creek Ash-flow Tuff, intracaldera unit (upper Miocene) (cross section only)
- Tmtd Devine Canyon Ash-flow Tuff (upper Miocene) 9.63 ± 0.05 Ma, 9.74 ± 0.02 Ma ($^{40}\text{Ar}/^{39}\text{Ar}$)
- Tmst tuffaceous sedimentary rocks (upper Miocene)

TIME-ROCK CHART



*International Chronostratigraphic Chart, International Stratigraphic Commission, 2013/V1. Time scale after Gradstein and others (2004), Ogg and others (2008), and Cohen and others (2013). <http://www.stratigraphy.org/index.php/isc-chart-timeline>

HARNEY BASIN LOCATION MAP

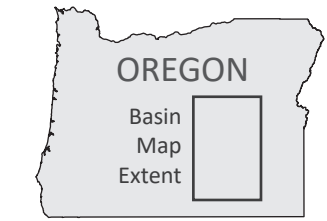


- FY 2018 DOGAMI STATEMAP (this study)
- FY 2019 DOGAMI STATEMAP geologic mapping
- DOGAMI geologic mapping completed
- Future DOGAMI geologic mapping targets
- USGS geologic mapping completed
- FY 2016 - 2019 EdMap project areas (Portland State University, Oregon)

U.S. Geological Survey 7.5' Quadrangles by Number

- Big Canyon
- Jump-Off Joe Mountain
- Calamity Butte
- Landing Creek
- Mosquito Flat
- Devine Ridge North
- Telephone Butte
- Burns Northwest
- Poison Creek (this study)
- Devine Ridge South
- Harney
- Buchanan
- Stinkingwater Pass
- Burns Butte
- Burns (this study)
- Mahon Creek
- New Princeton
- Southeast Harney Lake
- Coyote Buttes
- Adobe Flat
- Twin Buttes
- Jacksass Butte
- Irish Lake
- Krumbo Reservoir
- Frenchglen
- Page Springs

- Harney basin hydrologic boundary
- County boundary
- Stream
- Route 78 State 395 Federal
- Waterbody

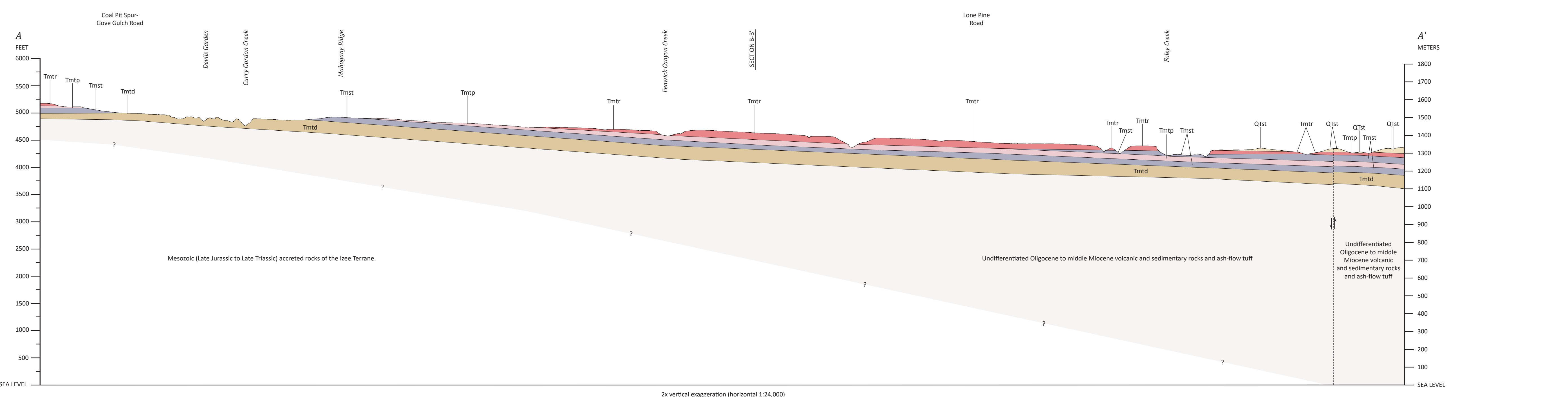


EXPLANATION OF SYMBOLS

- Stream
- Intermittent stream
- Road
- U.S. highway
- Cross section line
- Horizontal bedding, as determined remotely or from aerial photographs
- Gently inclined (between 0° and 30°) bedding as determined remotely or from aerial photographs; showing approximate strike and direction of dip
- Digital elevation model (1-meter) derived elevation
- Location of whole-rock XRF geochemical analysis sample; open circle where multiple data points overlap
- Location of radiometric age sample, age in millions of years (Ma)
- Caldera margin — Identity and existence certain, location concealed. Ticks point into caldera
- Contact — Solid line where accurately located, long-dashed where approximate, short-dashed where inferred, dotted where concealed, queried where identity or existence questionable
- Fault — Thick solid line where accurately located, long-dashed where approximate, short-dashed where inferred, dotted where concealed, queried where identity or existence questionable
- Normal fault — Thick solid line where accurately located, long-dashed where approximate, short-dashed where inferred, dotted where concealed, queried where identity or existence questionable. Ball and bar on downthrown block
- Normal fault (in cross section) — Short-dashed line where inferred, dotted where approximate. Arrows show relative motion
- Syncline — Thick solid line where accurately located, long-dashed where approximate, short-dashed where inferred, dotted where concealed, queried where identity or existence questionable

GEOLOGIC CROSS SECTIONS

Quaternary units not shown in cross section.



Source Data: Three-foot bare earth lidar digital elevation model for Poison Creek (10119-F1) quadrangle derived from multiple Oregon LIDAR Consortium airborne lidar surveys: Harney 3 DBP 2018 and Burns 2011. These data are distributed through the Oregon Department of Geology and Mineral Industries (DOGAMI) LIDAR Program (<https://lidar.dogami.oregon.gov/lidarviewer/>). Water features from USGS High Resolution National Hydrography Dataset (NHD). Aquatic Resources Information System (ARIS) (2017). Road features from Oregon Department of Transportation (ODOT) (2015).

Projection: Oregon Statewide Lambert Conformal Conic, Unit: International Feet, Horizontal Datum: NAD 1983 BLMN, UTM Coordinates: Zone 11N, NAD83.

Software: Esri ArcGIS v10.6 and Adobe® Illustrator® 2019 v23.0.3

Field Work: Field work conducted in 2018 and 2019 by Jason D. McCaughy, DOGAMI; Carle J.M. Duda, DOGAMI; and Darriek Boschmann, Oregon Water Resource Department

References: Cohen, S.M., Finney, S.C., Gibbard, D.L., and Fin, J.-C., 2013, The ICS International Chronostratigraphic Chart: Episodes 36, p. 199-204.
Gradstein, F.M., Ogg, J.C., and Smith, A.G., eds., 2004, A geologic time scale, Cambridge, U.K., Cambridge University Press, 589 p.
Ogg, J.C., Ogg, G., and Gradstein, F.M., 2008, The concise geologic time scale, New York, Cambridge University Press, 184 p.

Geology Reviews: Martin Streck, Portland State University, Oregon; Josh Hackett, Oregon Water Resource Department; Clark A. Newsom, DOGAMI (retired); Ian P. Mullis, DOGAMI; and Robert A. Houston, DOGAMI.

Digital Cartography: Jon I. Franczyk, DOGAMI

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