

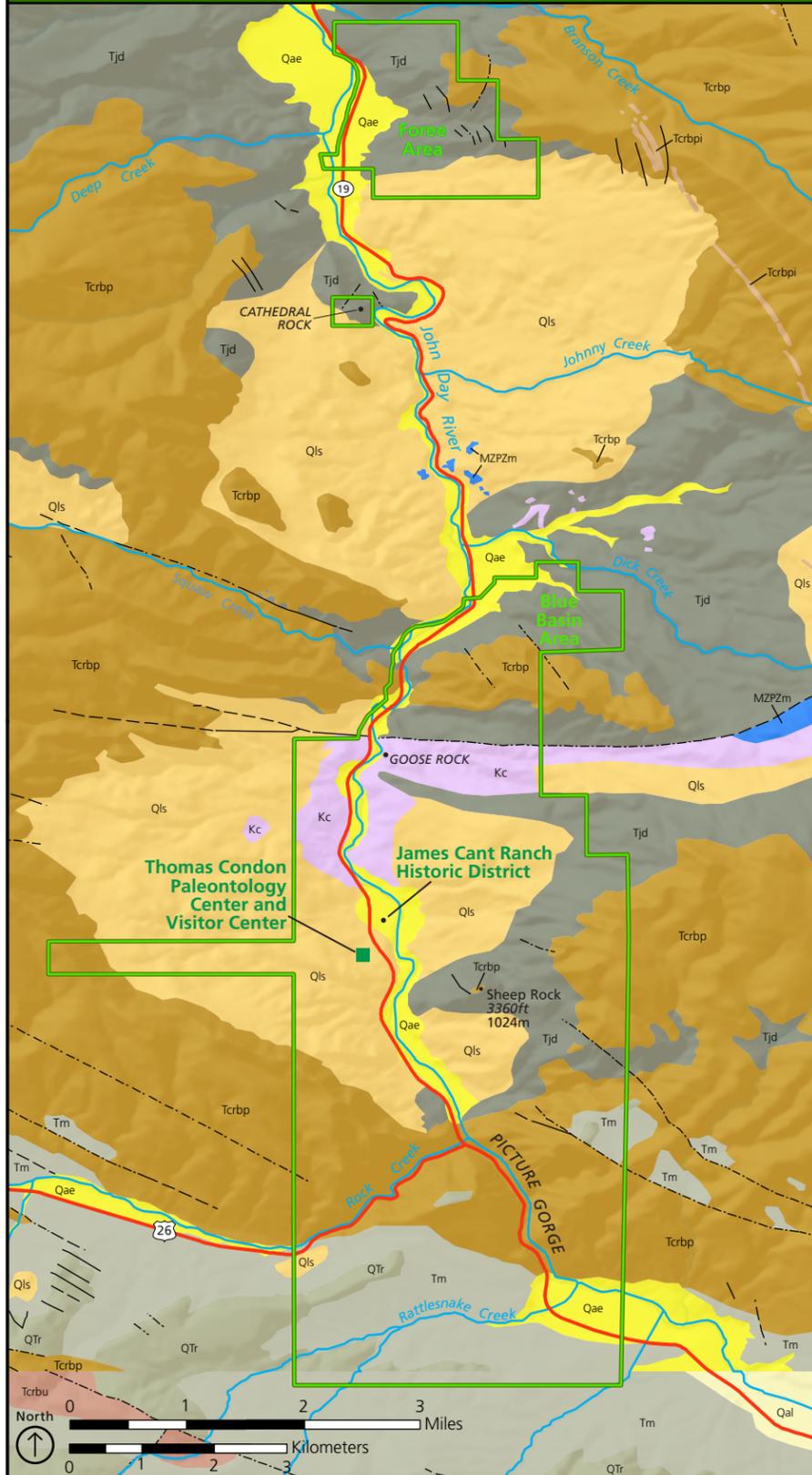
# Geologic Map of John Day Fossil Beds National Monument

Oregon

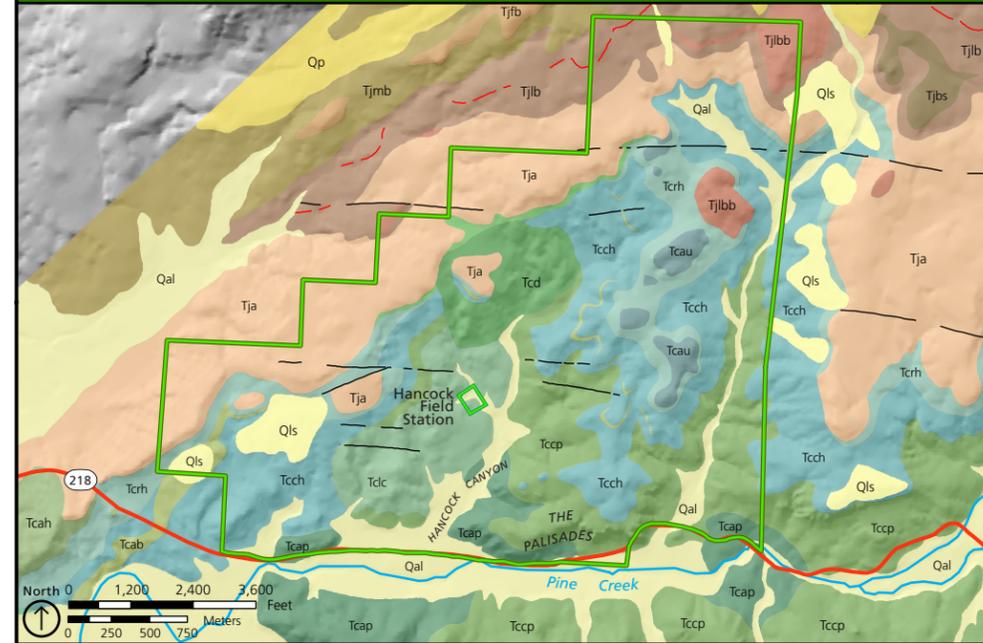
National Park Service  
U.S. Department of the Interior



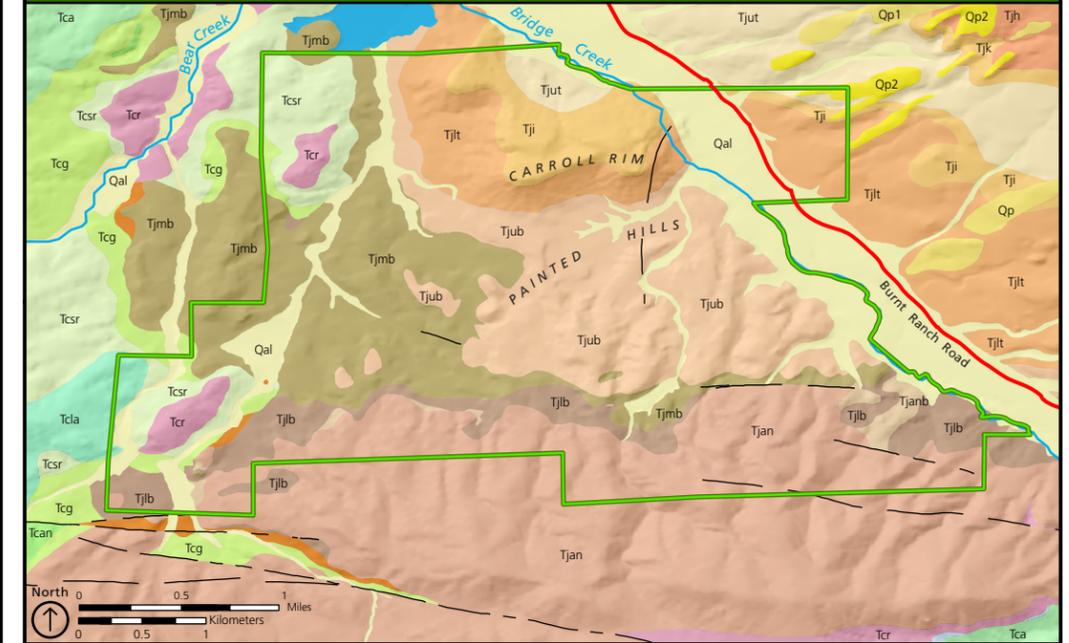
Map 1: Sheep Rock Unit



Map 2: Clarno Unit



Map 3: Painted Hills Unit



Map 4: Full Extent, Areas of Detail in Yellow



- NPS Boundary**  
 NPS Boundary
- Infrastructure**  
 cities  
 structures  
 points of interest  
 roads
- Water**  
 rivers
- Faults**  
 unknown offset/displacement, known or certain  
 unknown offset/displacement, approximate  
 unknown offset/displacement, concealed  
 normal fault, known or approximate
- Linear Geologic Units**  
 Tjft - Lower Big Basin Member, member F Tuff, approximate
- Geologic Units**
- water
  - Qal Alluvium
  - Qae Alluvium, eolian/fluvial
  - Qp Pediments
  - Qp1 Pediments, lower surface
  - Qp2 Pediments, upper surface
  - Qt Terrace alluvium
  - Qls Landslides
  - QTr Rattlesnake Formation, Ashflow Tuff
  - Tm Mascall Formation
  - Tcrb Columbia River Basalt Group
  - Tcrbu undivided
  - Tcrbp Picture Gorge Basalt
  - Tcrbpi Picture Gorge Basalt, basalt dikes
  - Tcrbpi Picture Gorge Basalt, basaltic irregular intrusion
  - Tjd John Day Formation
  - Tjh Haystack Valley Member
  - Tjk Kimberly Member
  - Tjut Upper Turtle Cove Member
  - Tji Picture Gorge ignimbrite
  - Tjlt Lower Turtle Cove Member
  - Tjub Upper Big Basin Member
  - Tjmb Middle Big Basin Member
  - Tjfb Middle Big Basin Member; member F basalts
  - Tjmbb Middle Big Basin Member basalt
  - Tjlb Lower Big Basin Member claystones
  - Tjanb Lower Big Basin Member, andesite sapolite breccia
  - Tjan Lower Big Basin Member, andesite of Sand Mountain
  - Tjbs Lower Big Basin Member, volcanoclastic deposits
  - Tjbb Lower Big Basin Member, member B basalts
  - Tja Lower Big Basin Member, welded tuff of member A
  - Tcl Clarno Formation
  - Tcg claystones of Brown Grotto
  - Tcan andesite flows
  - Tcsr rhyolite sapolite
  - Tcr rhyolite of Bear Creek
  - Tcs claystones of Sand Mountain
  - Tca andesite of Bridge Creek Canyon
  - Tcm claystones of Meyers Canyon
  - Tcla lower Clarno andesite flows
  - Tcq siltstones of the Mammal Quarry
  - Tcah andesite of Horse Mountain
  - Tcau andesite of Horse Mountain, upper andesite
  - Tcrca andesite of Horse Mountain, red claystones
  - Tcrh claystones of Red Hill
  - Tcrg claystones of Red Hill, cobble conglomerate
  - Tcch conglomerates of Hancock Canyon
  - Tct conglomerates of Hancock Canyon, welded tuff
  - Tcab conglomerates of Hancock Canyon, amygdaloidal basalt
  - Tcam conglomerates of Hancock Canyon, middle andesite
  - Tccp conglomerates of the Palisades
  - Tcap andesite of Pine Creek
  - Tcd Hancock dacite dome
  - Tclc lower Clarno conglomerates
  - Krx Cretaceous rocks
  - Kc Mitchell Group, conglomerate w/ intercalated sandstone lenses
  - Ks Mitchell Group, sedimentary rocks
  - Kji Nevadan Intrusives, dioritic intrusive rocks
  - TRV Olds Ferry Terrane, Vester Formation
  - TRsp Baker Terrane, igneous and metamorphic rocks
  - MZPZm Baker Terrane, metamorphic rocks
  - PZu1 Baker Terrane, sedimentary, volcanic, and metamorphic rocks

This map was produced by Ian Hageman (Colorado State University) and Georgia Hybels (NPS Geologic Resources Division) in August 2014. It is an overview of compiled geologic data prepared as part of the NPS Geologic Resources Inventory. This map is not a substitute for site-specific investigations.

The source maps used in creation of the digital geologic data were:

Bestland, E.A. and Retallack, G.J. 1994. Geology and Paleoenvironments of the Clarno Unit, John Day Fossil Beds National Monument, Oregon (1:7,300 scale). Final Report NPS Contract CX-9000-1-10009.

Bestland, E.A. and Retallack, G.J. 1994. Geology and Paleoenvironments of the Painted Hills Unit, John Day Fossil Beds National Monument, Oregon (1:7,300 scale). Final Report NPS Contract CX-9000-1-10009.

Niewendorp, C.A., Jenks, M.D., Ferns, M.L., Madin, I.P., Staub, P.E., and Ma, L. 2006. Oregon Geologic Data Compilation - Release 3, State of Oregon (1:100,000 scale). Oregon Department of Geology and Mineral Industries OGD-3.

As per source map scale and U.S. National Map Accuracy Standards, geologic features represented here are within 4 m (12 ft) (1:7,300 scale data) or 50 m (166 ft) (1:100,000 scale data) of their true location.

All digital geologic data and publications prepared as part of the Geologic Resources Inventory are available at the NPS Integrated Resource Management Applications Portal (IRMA): <https://irma.nps.gov/App/Reference/Search>. Enter "GRI" as the search text and select a park from the unit list.