

Accreted Terranes

Photos by Jim Cash
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This unit contains photos
from Hells Canyon, Rapid
River, McCall to New
Meadows, Kleinschmidt
Grade, and Slate Creek

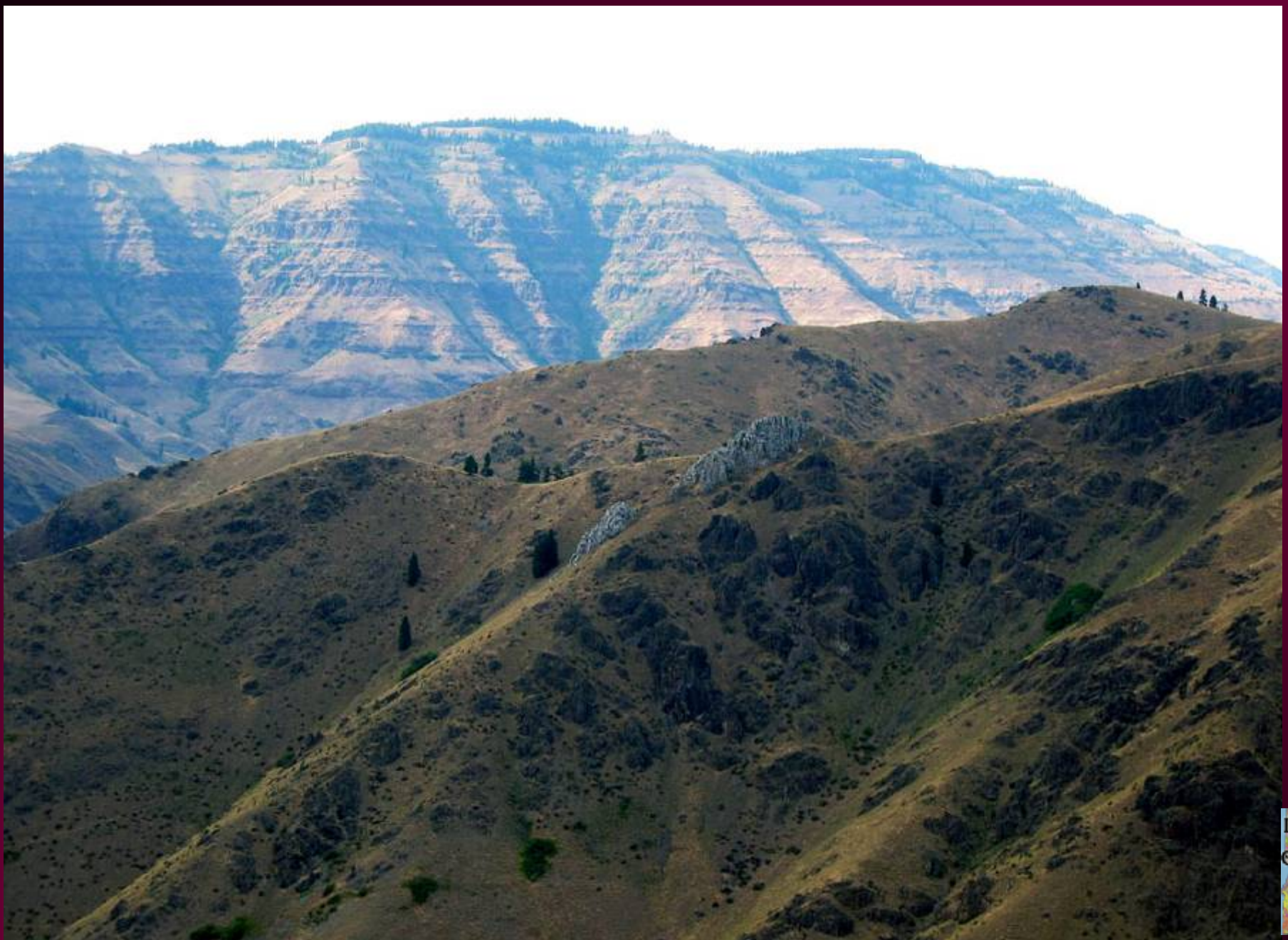




Seven Devils Area: View of Seven Devils Mountains from Black Lake Road (Emmett Mountain, White Mountain, Pyramid Peak - left to right)-view looking north.

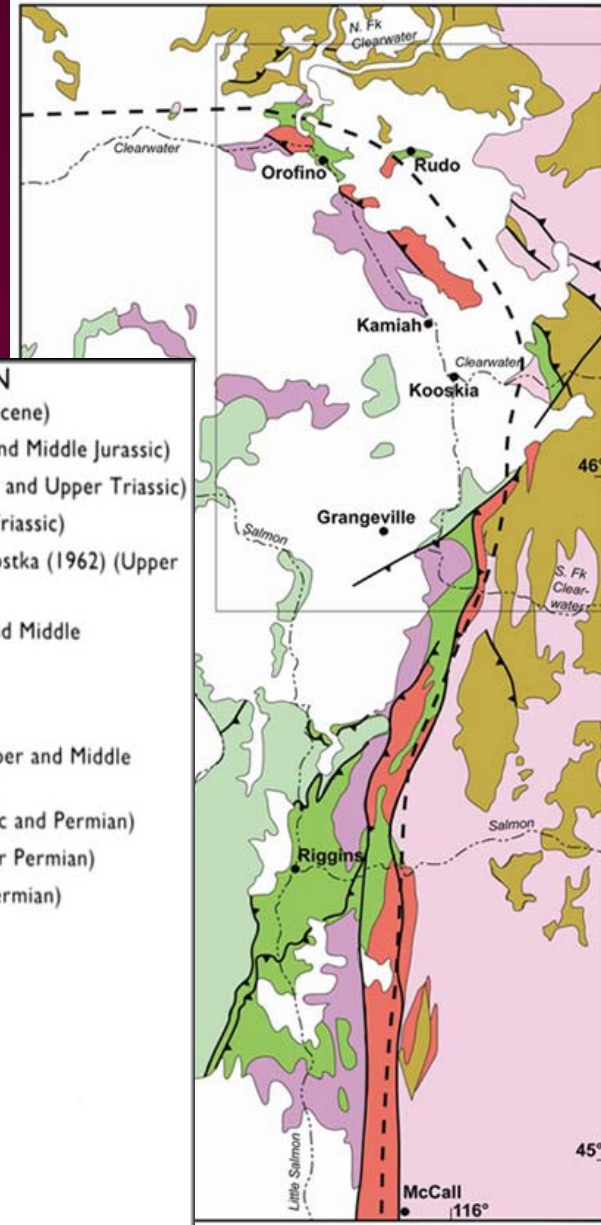


Seven Devils Mountains, photograph by Reed S. Lewis



Greenstone volcanoclastic rocks of Seven Devils Group, with Upper Triassic Martin Bridge Limestone. This is the Wallowa terrane. Early Miocene Columbia River Basalt of Weiser Embayment in background. View to west. FS Route 50, Adams County, Riggins, 1:100,000 quadrangle (Lund, 2003).

Kleinschmidt Grade, Seven Devils Terrane - Hunsaker Formation- lower Seven Devils Group-Wallowa Terrane



- Tertiary Columbia River basalt Group
- Permian-Cretaceous intrusive rocks of the Wallowa terrane
- Pennsylvanian(?) - Jurassic volcanic and sedimentary strata of the Wallowa terrane
- Orofino-Riggins Group assemblage of uncertain age and tectonic affinity
- Cretaceous-Tertiary plutons of the Idaho batholith
- Jurassic-Cretaceous mylonitic plutonic rocks and orthogneiss within the Salmon River suture zone
- Proterozoic-Early Paleozoic metasedimentary strata
- Trace of boundary shear zone- west Idaho shear zone as defined by Sr initial 0.704/0.706 line
- Discrete faults and shear zones of the Salmon River suture zone.
- Barb on hanging wall of thrust faults

After McClelland et al., 2001

EXPLANATION

- Tcr Columbia River Basalt Group (Miocene)
- Jch Coon Hollow Formation (Upper and Middle Jurassic)
- Jrh Hurwal Formation (Lower Jurassic and Upper Triassic)
- Tmb Martin Bridge Limestone (Upper Triassic)
- Tls "Lower Sedimentary Series" of Prostka (1962) (Upper Triassic)
- Tdc Doyle Creek Formation (Upper and Middle Triassic)—Includes:
- Tdck Kurry unit (Upper Triassic)
- Tws Wild Sheep Creek Formation (Upper and Middle Triassic)
- Tpcc Clover Creek Greenstone (Triassic and Permian)
- Phc Hunsaker Creek Formation (Lower Permian)
- Pwr Windy Ridge Formation (Lower Permian)

- Volcanic flows
- Sandstone, siltstone, and shale
- Conglomerate
- Sandstone
- Limestone
- Breccia
- Breccia and sandstone
- Pillow lava
- Interfingering contact
- Intrusive contact
- Unconformity

Jurassic to Cretaceous plutons

Tcr

Jch

Jrh

Tmb

Tdc

Tls

Tws

Tpcc

Phc

Pwr

Unconformity or intrusive contact

(1)



Kleinschmidt Grade, Seven Devils Terrane: Pyroclastic rocks and water laid tuffs of Lower Permian Hunsaker Formation - lower Seven Devils Group - Wallowa Terrane, Kleischmidt Grade.

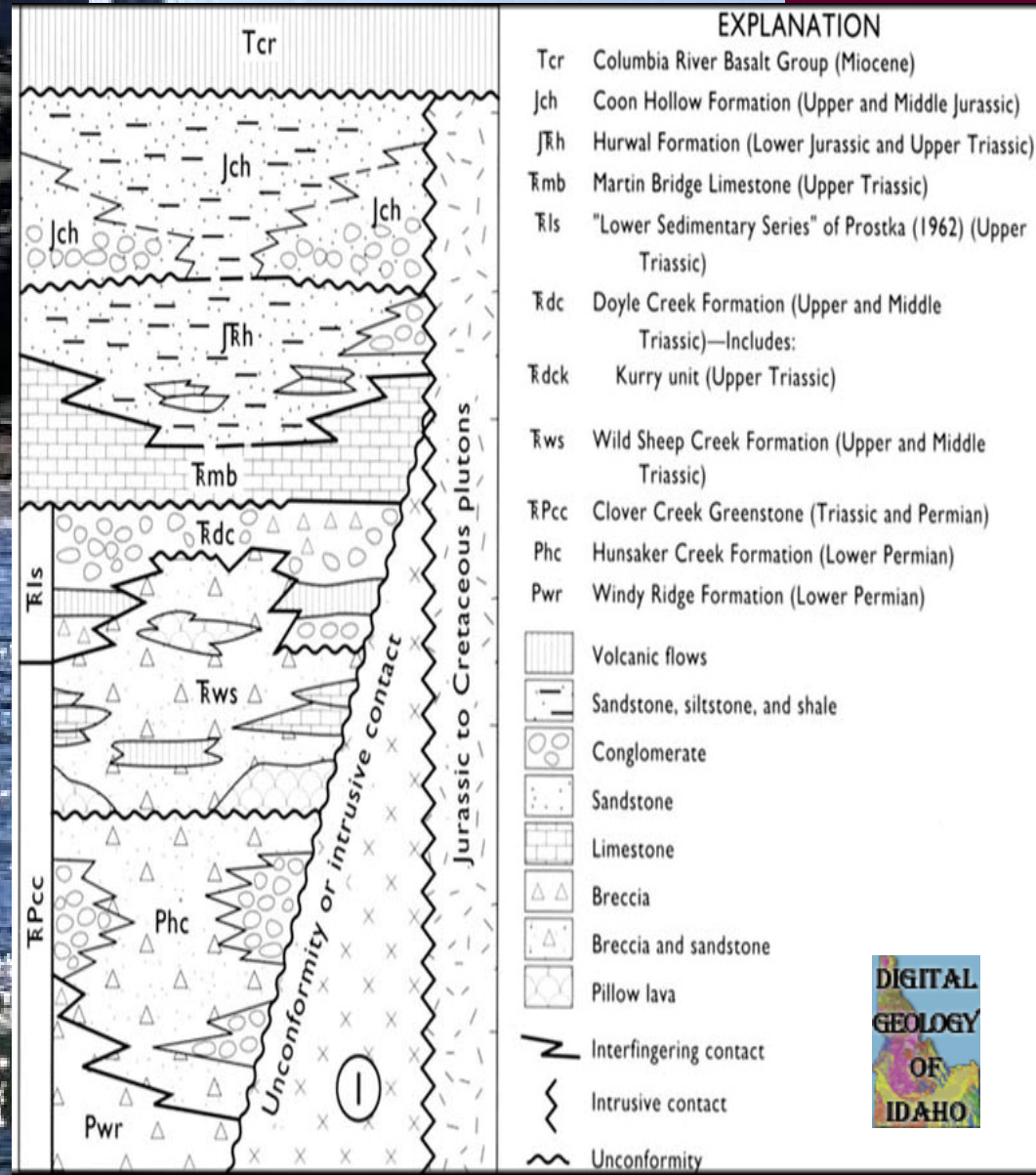


Greenstone basalt or andesite of Upper and Middle Triassic Wild Sheep Creek Formation - upper Seven Devils Group - Wallowa Terrane, Kleinschmidt Grade; FS Route 50, Adams County.



Greenstone basalt or andesite of Triassic Wild Sheep Creek Formation - upper Seven Devils Group-Wallowa Terrane. FS Route 50, Adams County.

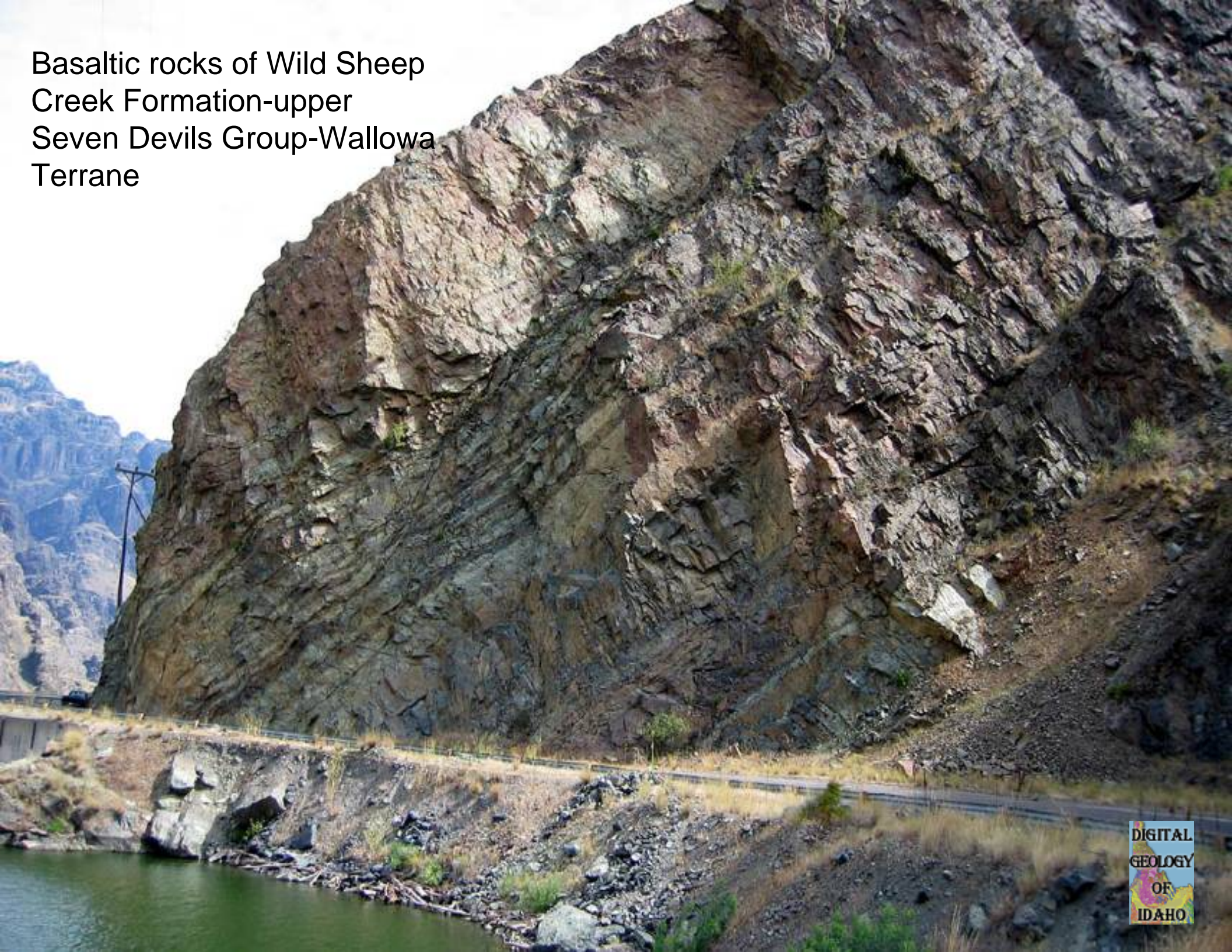
Hells Canyon Raft Trip



In Hells Canyon: View of folded Upper Triassic Martin Bridge Limestone on Oregon side of Snake River from Big Bend - Wallowa Terrane.



Basaltic rocks of Wild Sheep
Creek Formation-upper
Seven Devils Group-Wallowa
Terrane





Basaltic rocks across river from Steamboat Creek-Wild Sheep Creek Formation
-upper Seven Devils Group-Wallowa Terrane



Hells Canyon looking north downstream from Black Point

Upper and Middle Triassic Wild Sheep Creek Formation

Folding, faulting, & uplift

**Mid-Late Jurassic
shale & conglomerate**

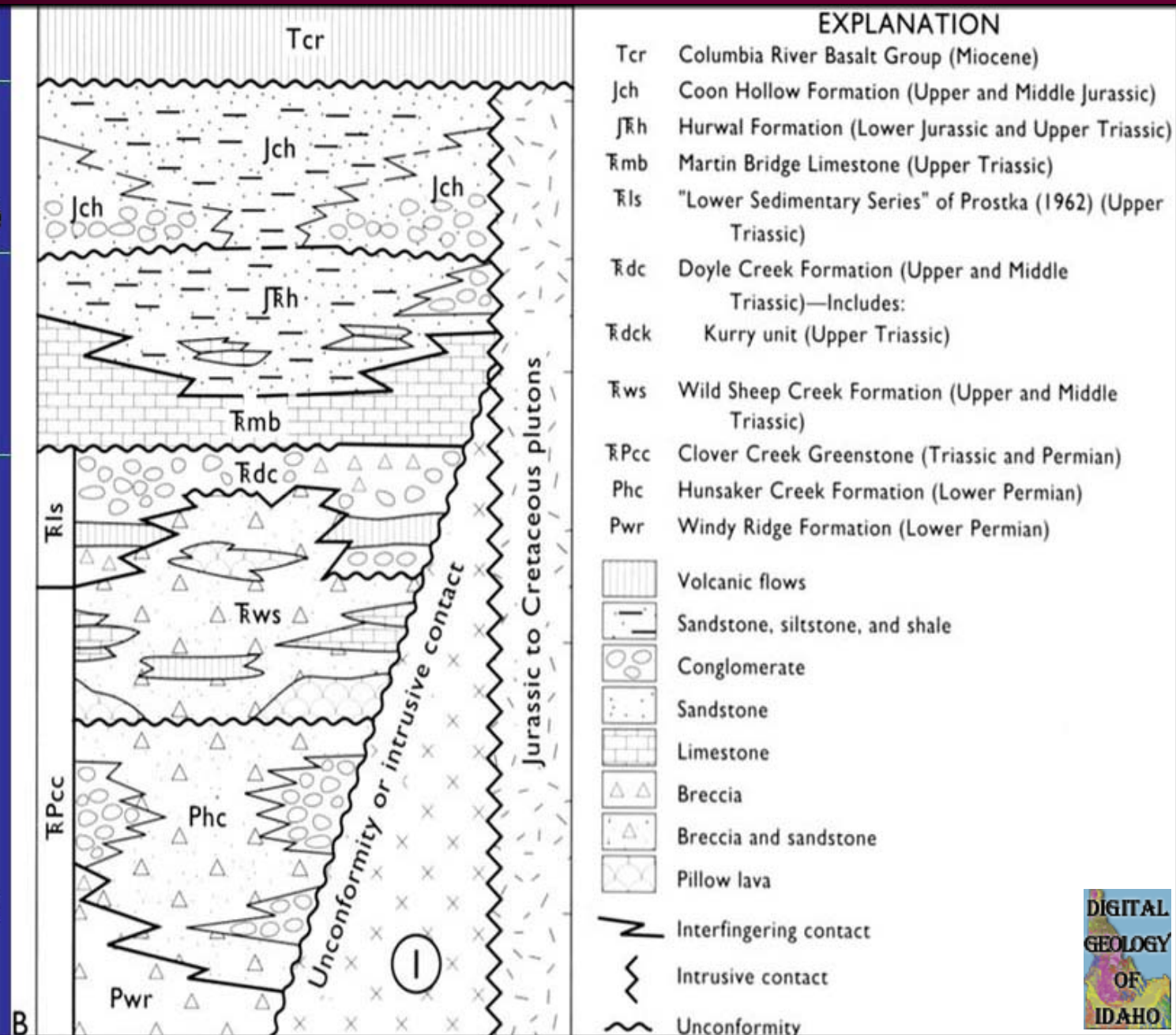
Uplift & erosion

**Late Triassic- Early
Jurassic limestone**

Arc volcanism ceases

**Permian-Triassic
island arc volcanism
(active subduction)**

From Vallier, 1998





Outcrop of basaltic rock showing pillow structure-Upper and Middle Triassic Wild Sheep Creek Formation-upper Seven Devils Group-Wallowa Terrane



Outcrop of basaltic rock showing conchoidal weathering in Triassic Wild Sheep Creek Formation-upper Seven Devils Group-Wallowa Terrane



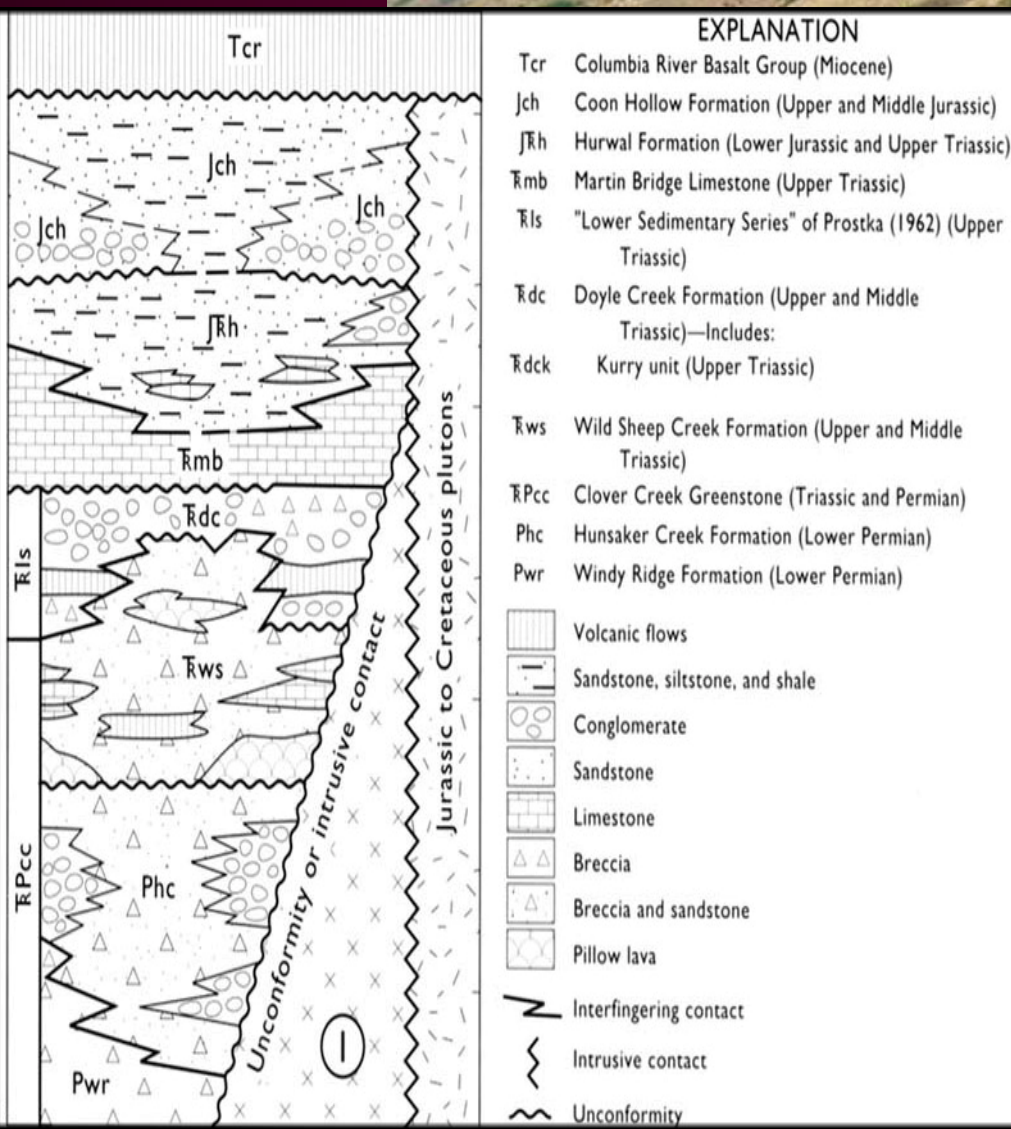
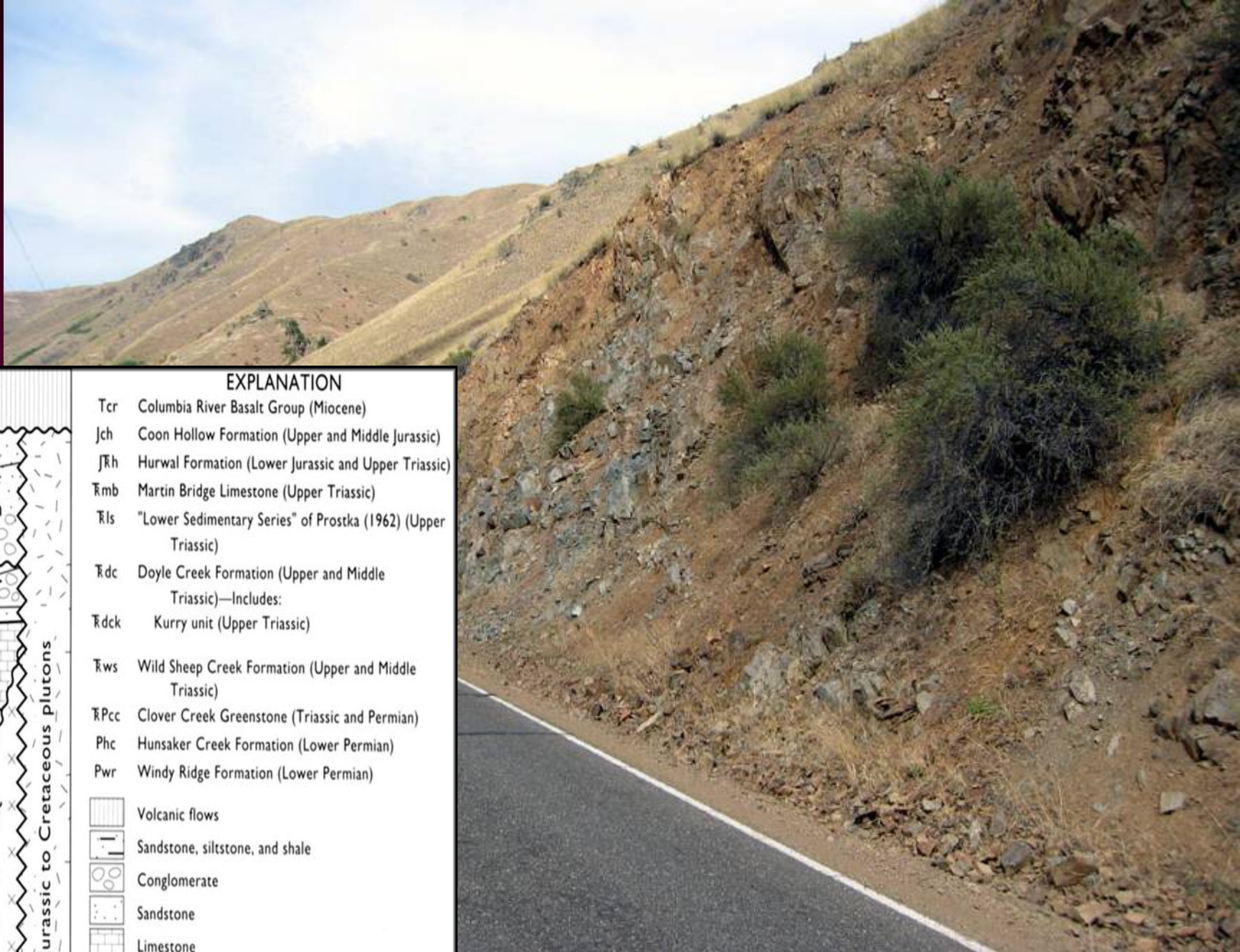
Basaltic rock showing
paleomagnetic core
samples taken-Triassic
Wild Sheep Creek
Formation-upper Seven
Devils Group-Wallowa
Terrane

Fragmental volcanoclastic rock of
Triassic Wild Sheep Creek
Formation-upper Seven Devils
Group-Wallowa Terrane





Slickenside in basaltic rocks of Wild Sheep Creek Formation - upper Seven Devils Group - Wallowa Terrane



Quartz keratophyre - Windy Ridge Formation/lower Permian - lower Seven Devils Group - Wallowa Terrane

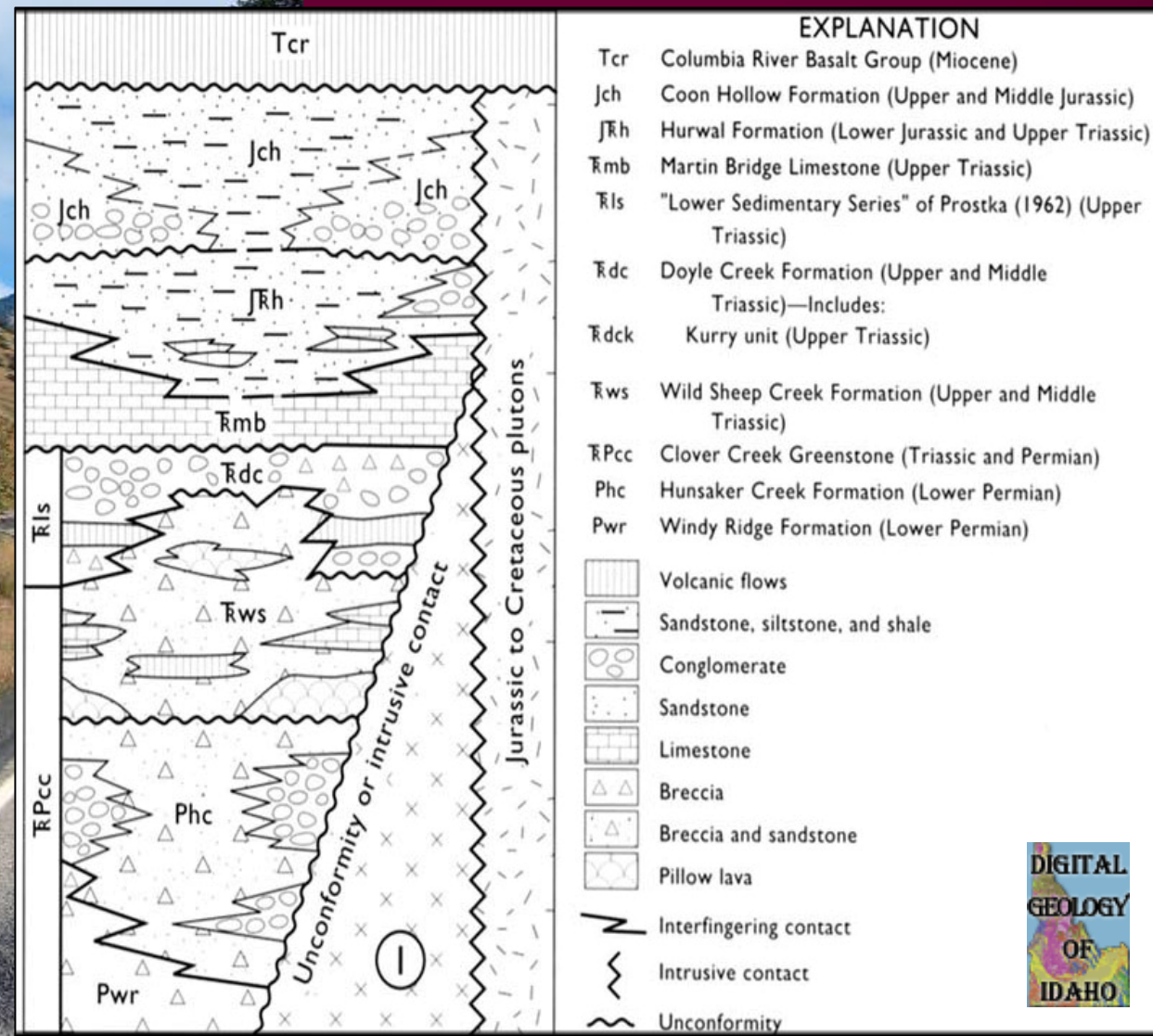
Greenstone volcanoclastic
conglomerate along Brownlee
Creek-Izee Terrane



Quartz keratophyre - Windy
Ridge Formation - lower Seven
Devils Group - Wallowa
Terrane

Izee Terrane

Outcrop of greenstone volcanoclastic conglomerate rock along Brownlee Creek.





Greenstone volcanoclastic rock along Brownlee Creek - Izee Terrane



Triassic Martin Bridge Limestone above volcaniclastic rocks of the Seven Devils Group
- Rapid River - Wallowa Terrane



Slate Creek - Outcrop of marble from marble quarry - Upper Triassic Martin Bridge Formation



Close-up of schist in Slate Creek
antiform-Upper Triassic Martin Bridge
Formation



Outcrop of Riggins Group muscovite
chlorite schist along Slate Creek -
Rapid River Plate.



Outcrop of marble from
marble quarry-Upper
Triassic Martin Bridge
Formation



Hornblende biotite
gneiss along Slate
Creek-Rapid River Plate



Outcrop of muscovite chlorite
schist at confluence of Slate
Creek and Salmon River -
Seven Devils Group





Muscovite chlorite schist along Little Salmon River-Baker Terrane



Muscovite chlorite schist along Little Salmon River-Baker Terrane



Mylonitic gneiss-between
McCall and New Meadows, Hwy 95.

Close-up of mylonitic gneiss with
plagioclase megacrysts taken from near
scenic overlook above Goose Creek,
Salmon River Suture.





Mylonitic gneiss with plagioclase megacrysts taken from near scenic overlook above Goose Creek, Salmon River Suture.



Foliated hornblende biotite tonalite above Rapid River, near Wildhorse Saddle



Seven Devils Group along South Fork Clearwater near Harpster Grade



Ultramafic intruding schist, Time Zone Bridge, one mile north of Riggins, Highway 95



Metamorphosed volcanic sediments near Blue Mountains



Felsic dikes in greenstone basalt or andesite - view from below Sheep Lake looking east.

Seven Devils Mountains from Heaven's Gate Lookout - view looking SW.

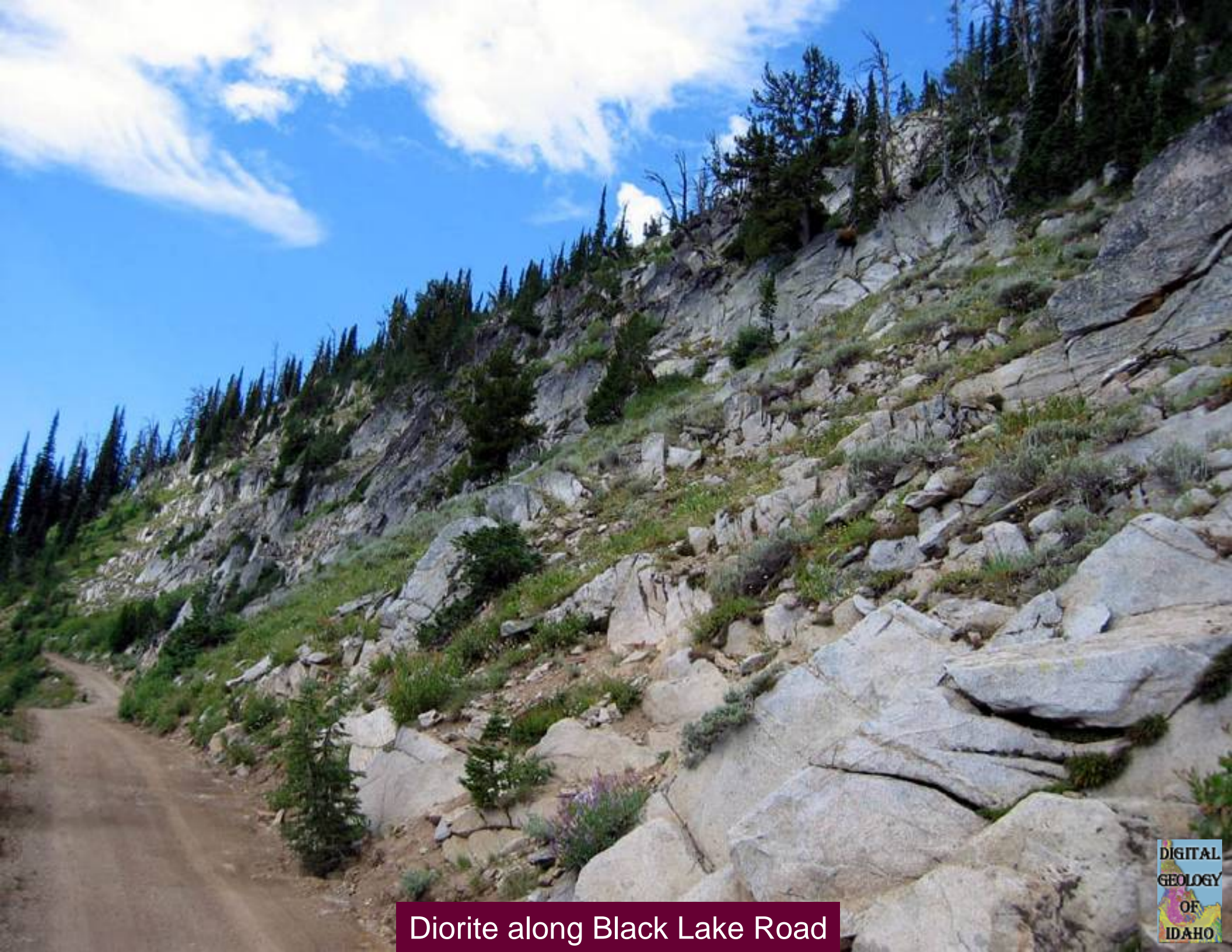




Greenstone volcaniclastic rock - Heaven's Gate Lookout in background



Shale on McClinery Ridge-note fold



Diorite along Black Lake Road



Greenstone along Black Lake Road