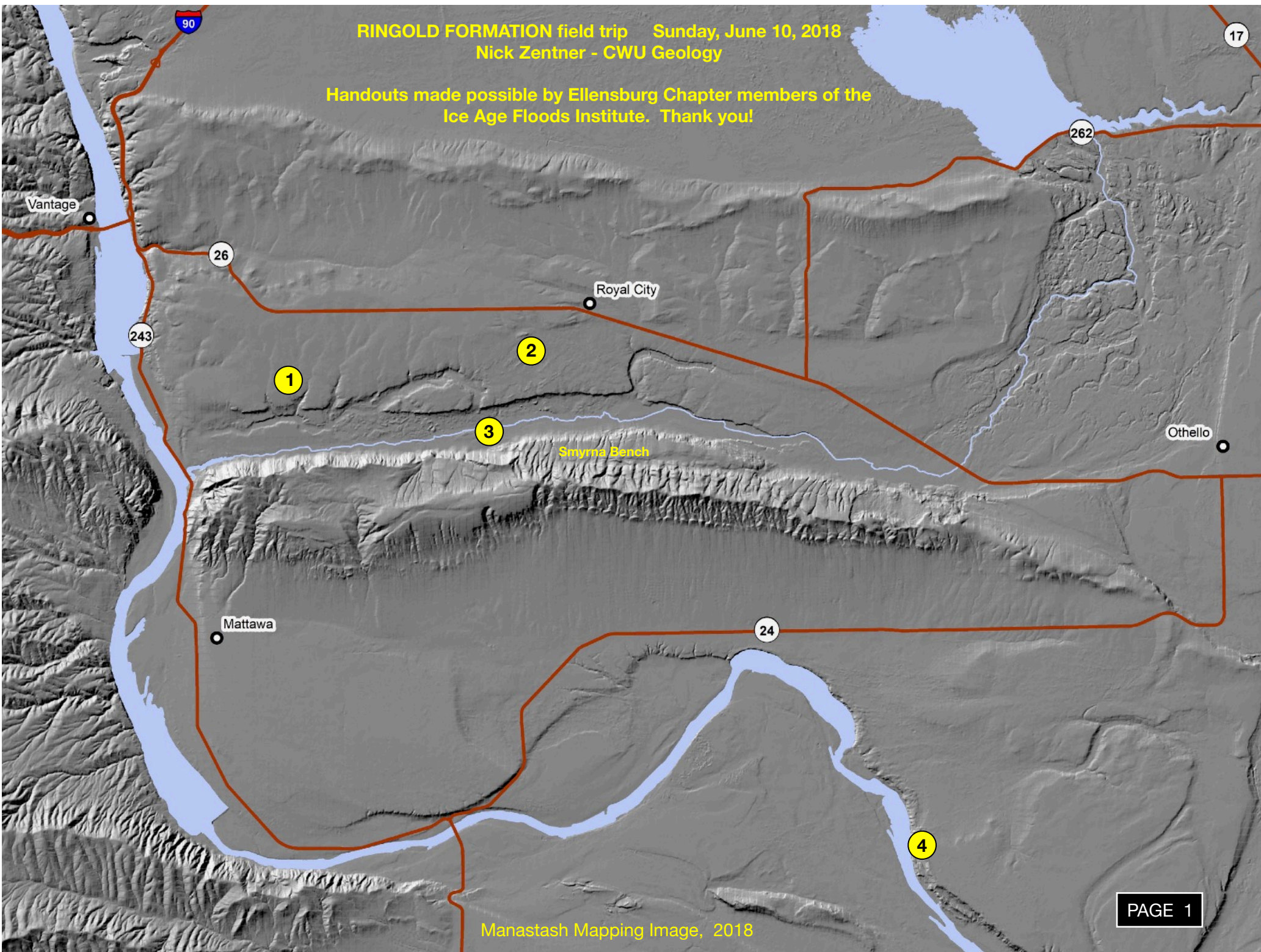
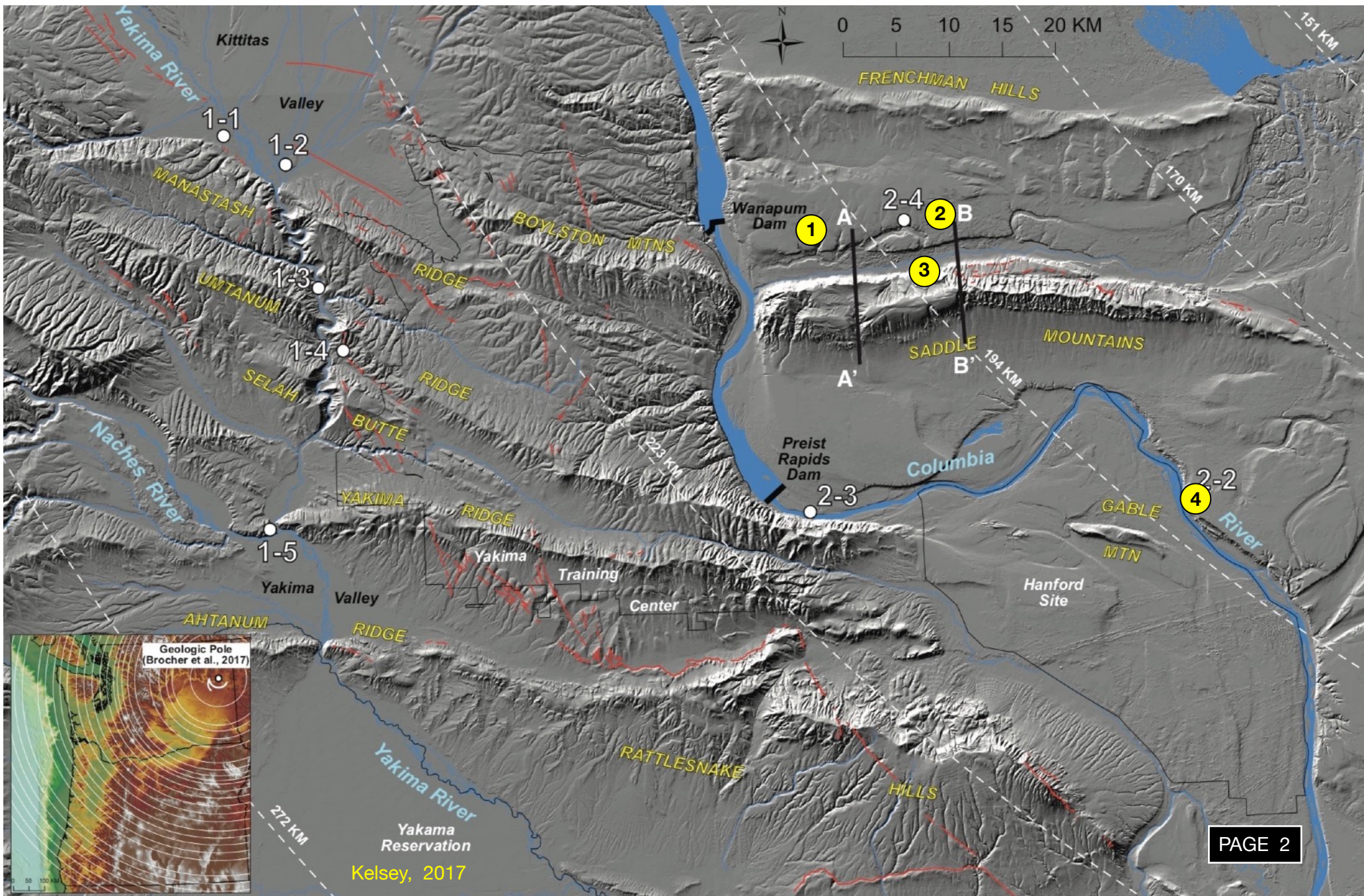


RINGOLD FORMATION field trip Sunday, June 10, 2018
Nick Zentner - CWU Geology

Handouts made possible by Ellensburg Chapter members of the
Ice Age Floods Institute. Thank you!





10:00 am **leave CWU**

East on I-90...Vantage...Exit I37...26E for 6.7 miles...R on Beverly-Burke Rd...2.1 miles...L on I5 SW Rd...0.5 miles...right shoulder park just shy of cinder block cabin with US flag.

10:45 - 11:45 ① **Cinder Block Cabin**

Return to make R on 26E...8.1 miles...R on I SW Rd @Judy's Great Food...1.0 mile...L on I4 SW Rd...0.1 mile...right shoulder park.

12:00 - 12:30 ② **Cash Butte**

Return to make R on 26 E...4.0 miles...R on E SW Rd which becomes Lower Crab Creek Rd...8.1 miles...Smyrna...veer right at gravel spur...park in gravel lot.

1:00 - 1:45 ③ **Smyrna Knob**

Return to make R on 26 E...21.7 miles to Othello...R on 24W...16 miles...L at brown 'White Bluffs Area' sign...8 miles on straight gravel...park in lot at White Bluffs Overlook.

3:00 - 4:30 ④ **White Bluffs Overlook**

Return to make L on 24W...R on 24 SW Rd to Mattawa...roundabout...Vantage...Ellensburg.

6:00 pm **return to CWU**

SMYRNA BENCH

looking East

Othello

WHITE BLUFFS

Upper Ringold

Lower Ringold

Smyrna

Elephant Mountain Basalt

'The Scallop'

3

'Ribbon Candy'

Lower Ringold

Elephant Mountain Basalt

PAGE 4



Google



SMYRNA BENCH

looking Southeast

Othello

Upper Ringold

WHITE BLUFFS

UP

UP

UP

UP



Saddle Mountains Fault

Lower Ringold



'The Scallop'

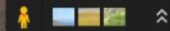
Elephant Mountain Basalt

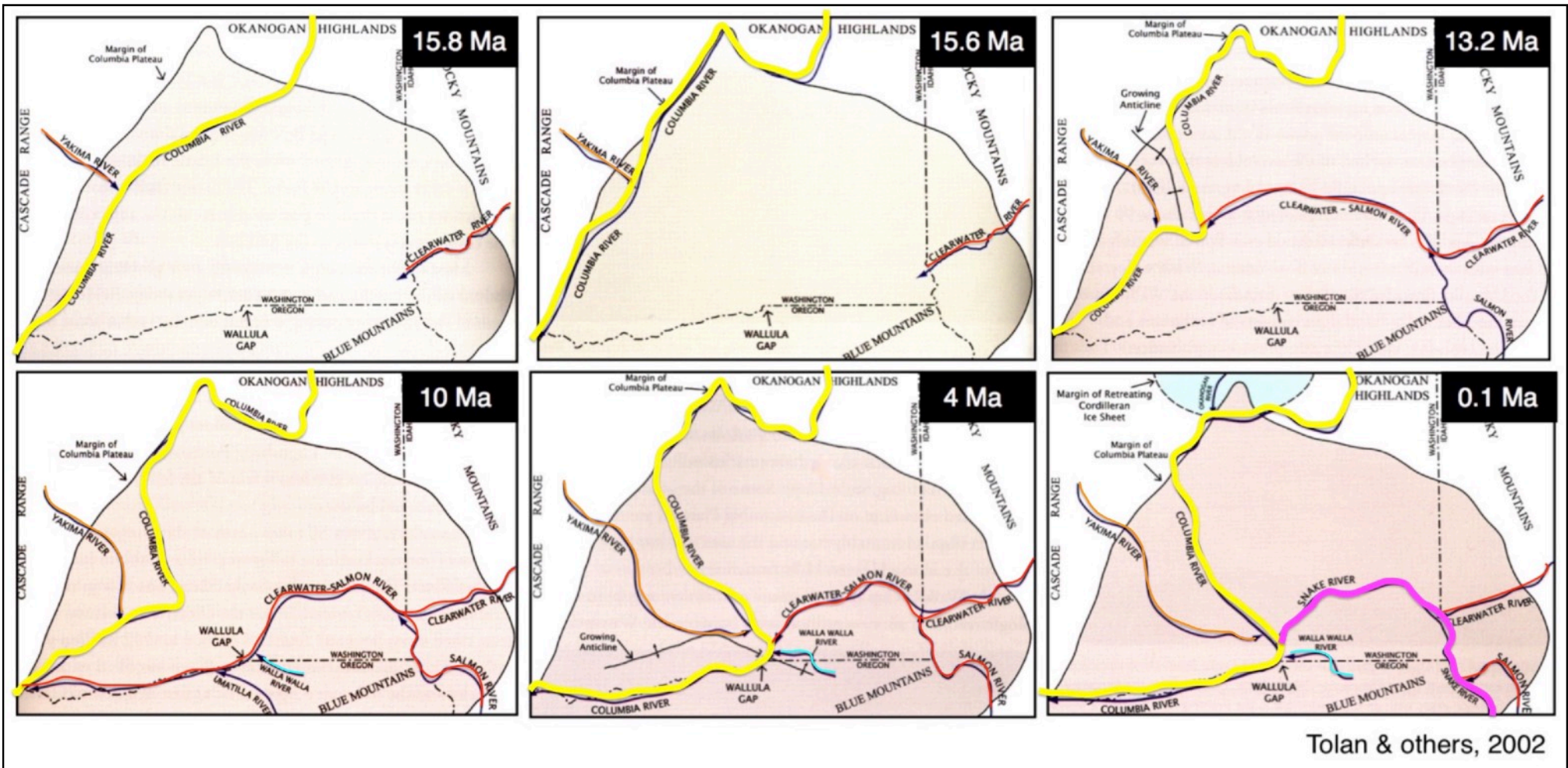
3



Google

PAGE 5





Tolan & others, 2002

looking South

TriCities

"flat top" of Ringold Formation

Upper Ringold

White Bluffs Scenic Area

4

WHITE BLUFFS



Google

PAGE 7

looking North

SADDLE MOUNTAINS

WHITE BLUFFS

Upper Ringold

4

"flat top" of Ringold Formation

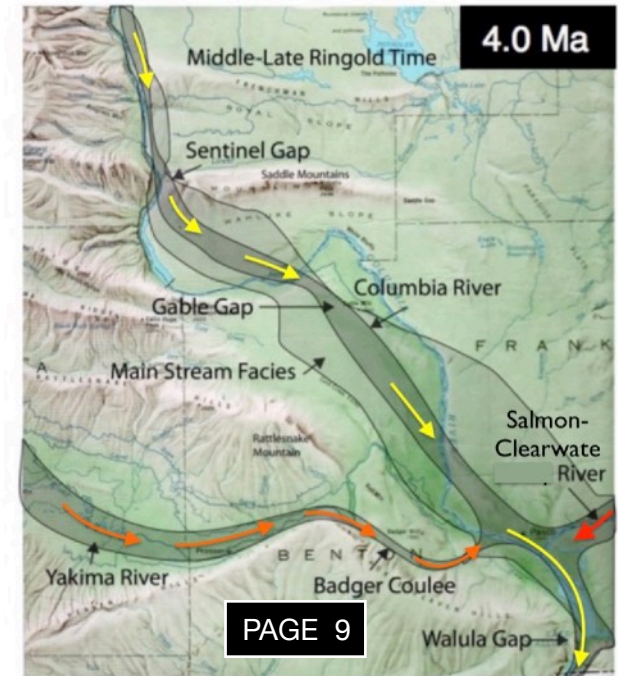
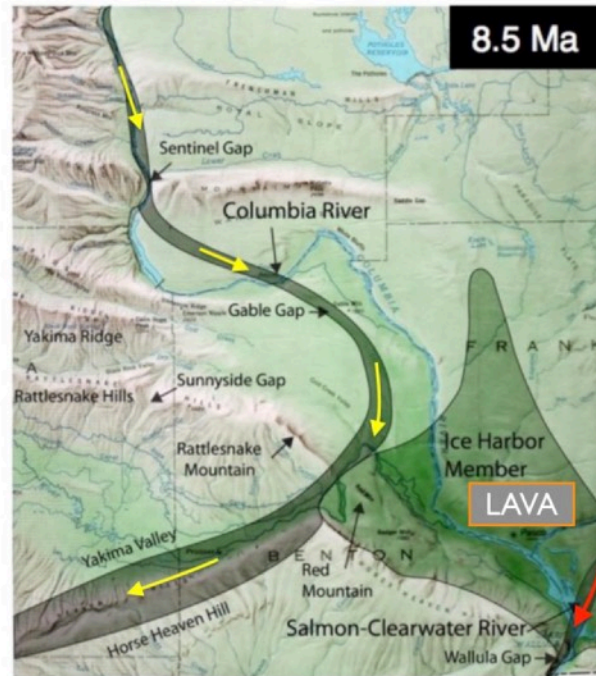
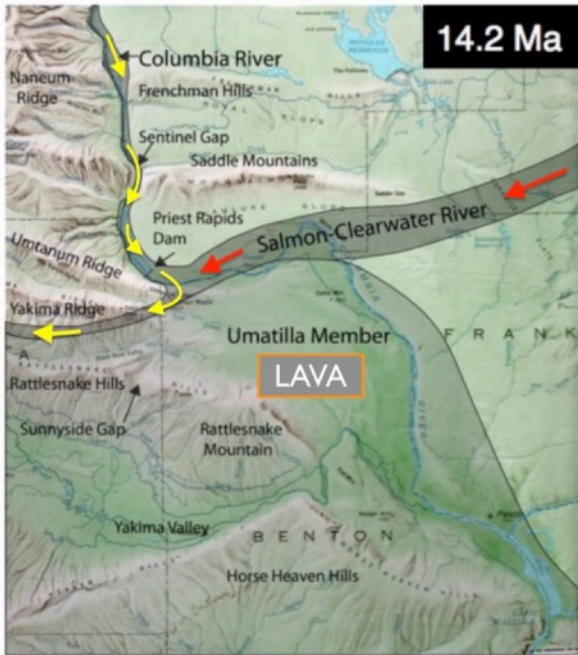
WHITE BLUFFS

Upper Ringold



Google

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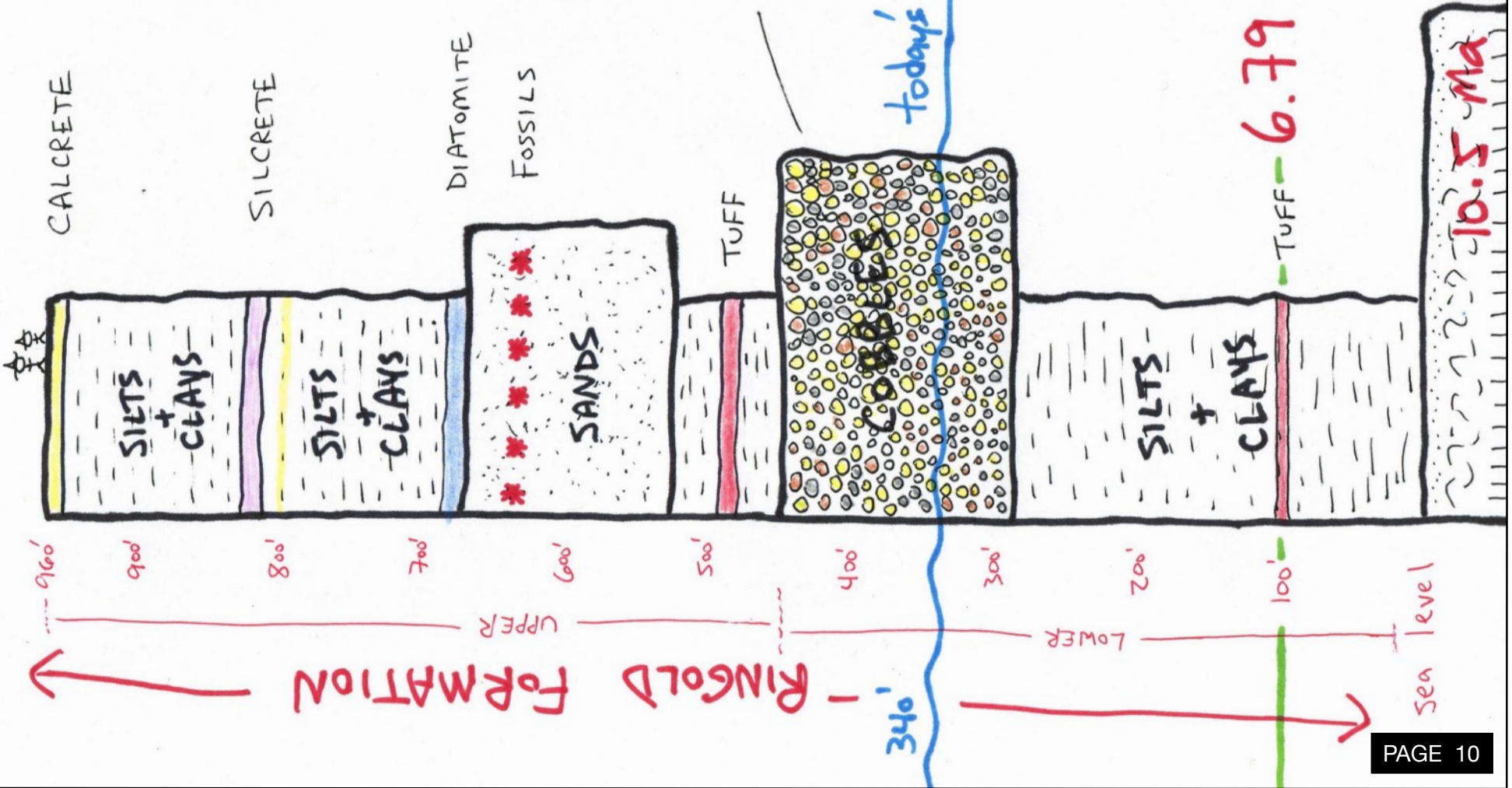


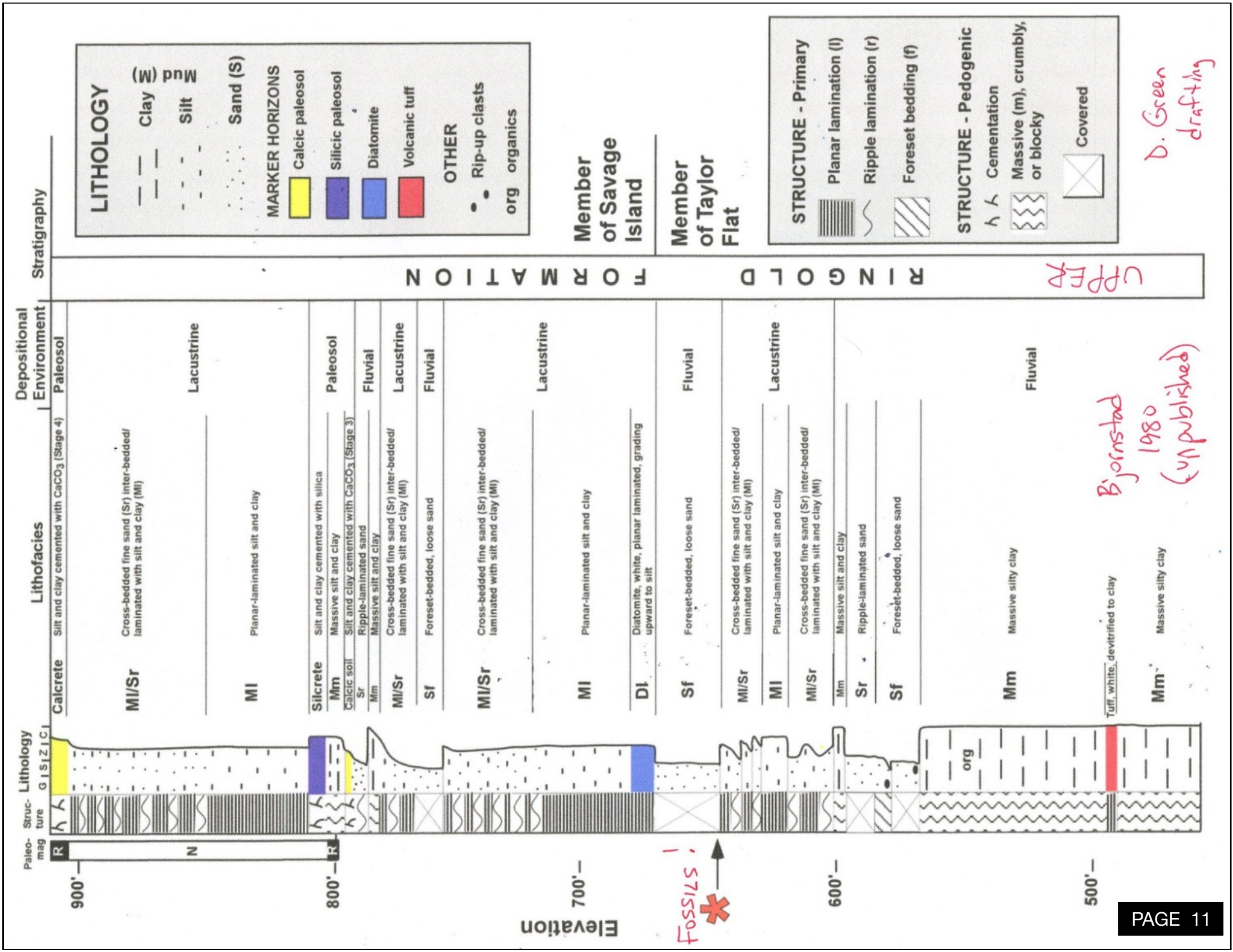
WHITE BLUFFS

Using:
 Lindsey 1996
 Newcomb 1958
 Bjornstad 1980 (unpublished)

45% quartzites
 30% basalts
 25% granites

Today's Columbia River





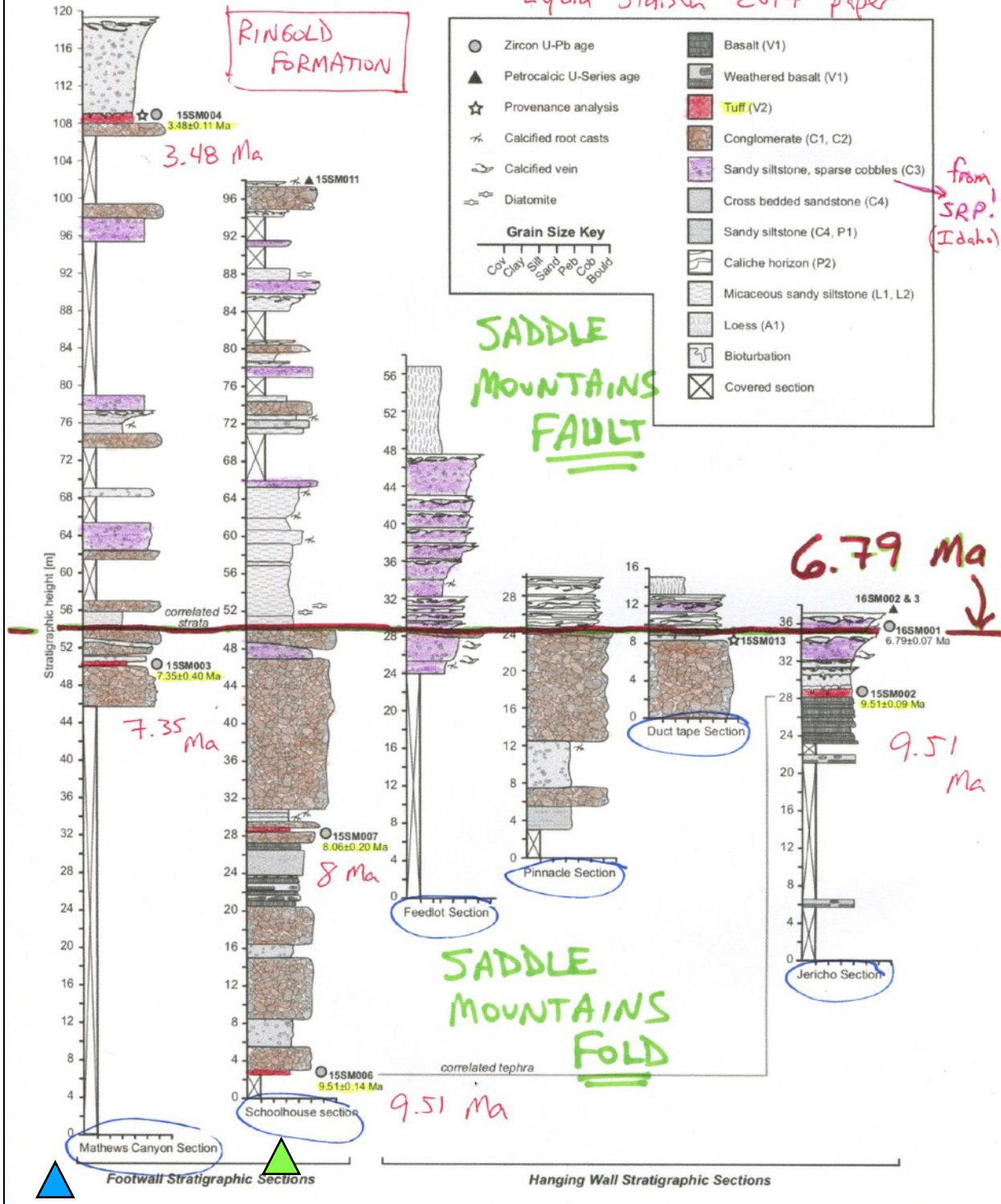
UPPER

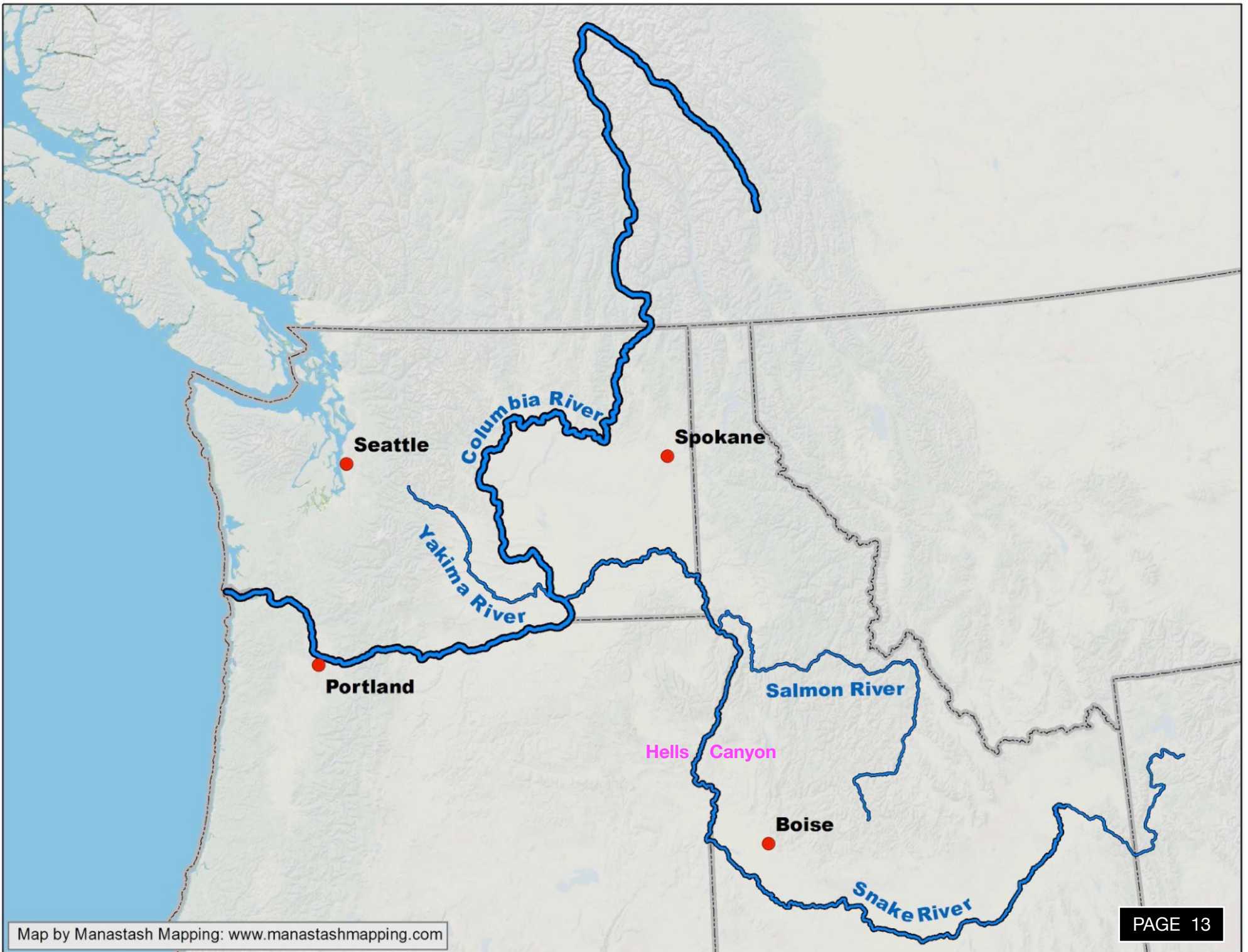
Bjornstad
1980
(unpublished)

D. Green
drafting

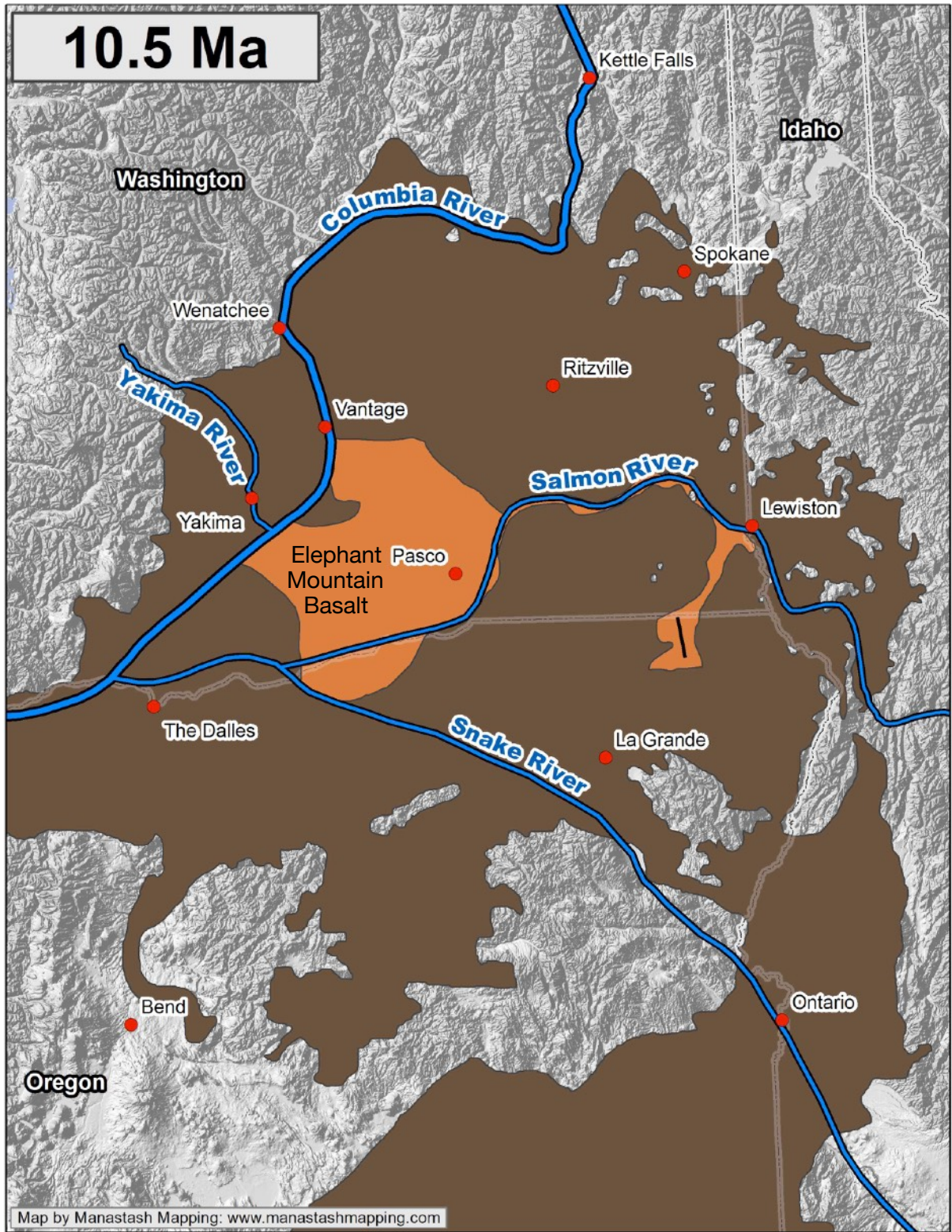
Fossils!
*

Lydia Staisch 2017 paper

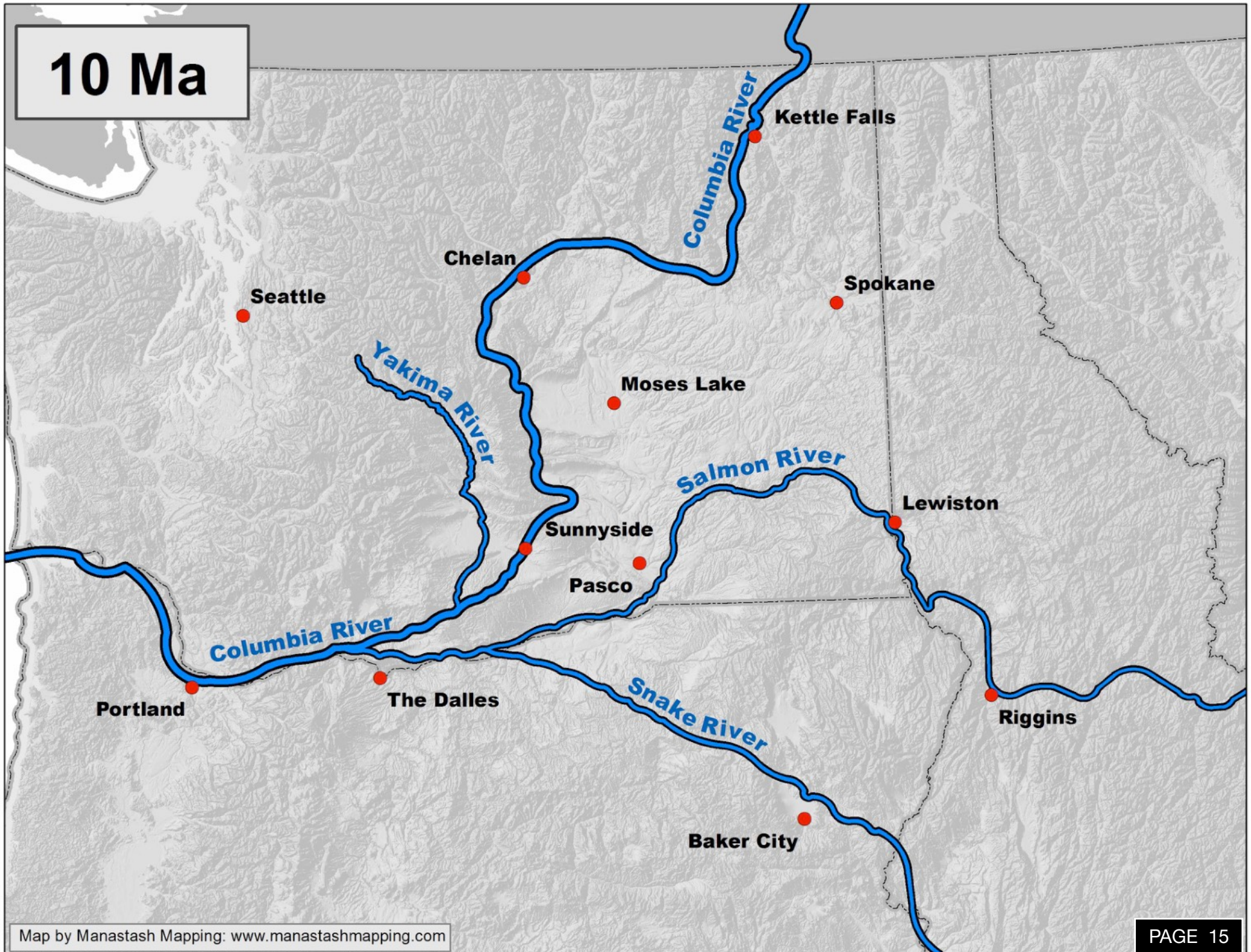




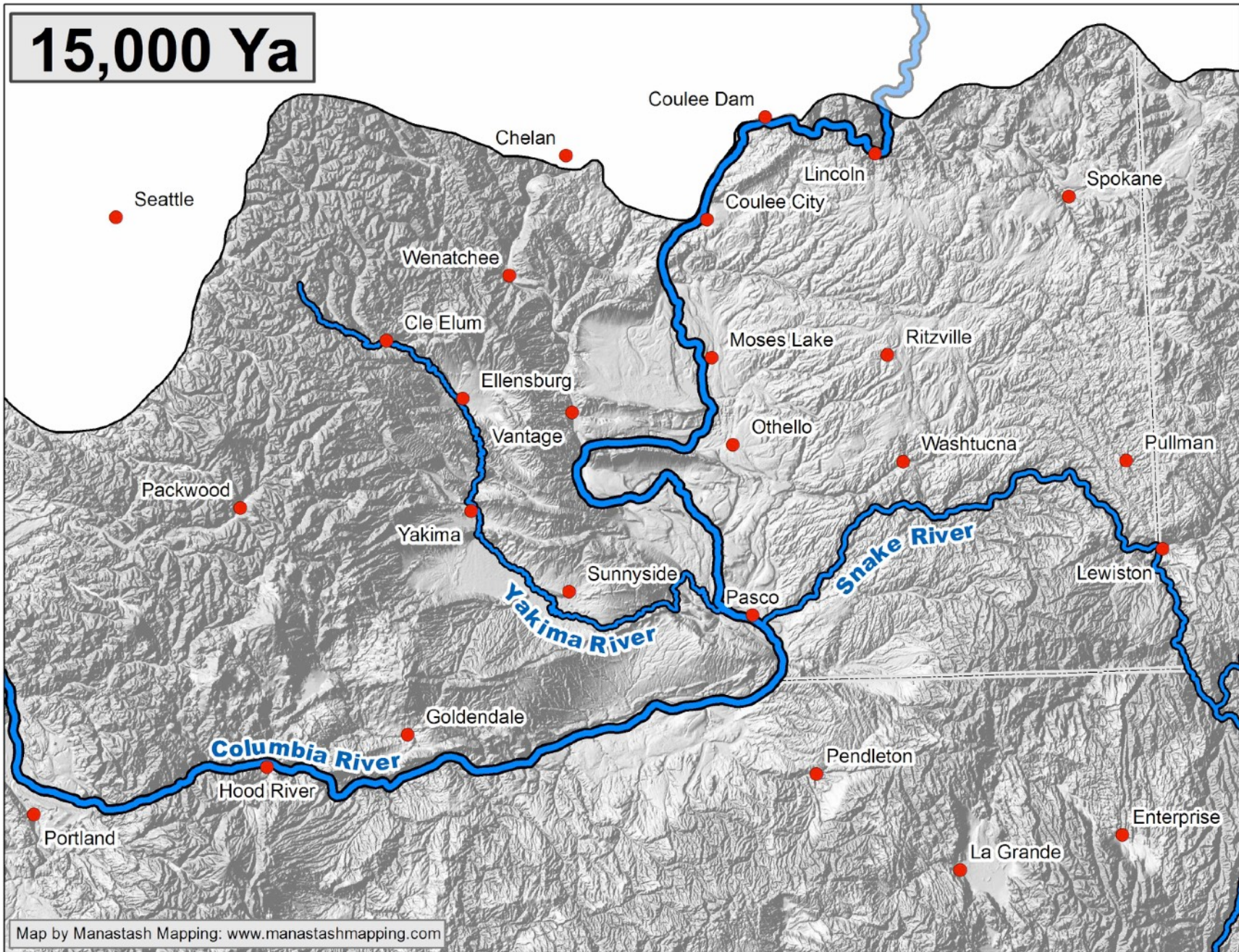
10.5 Ma



10 Ma



15,000 Ya



Map by Manastash Mapping: www.manastashmapping.com

