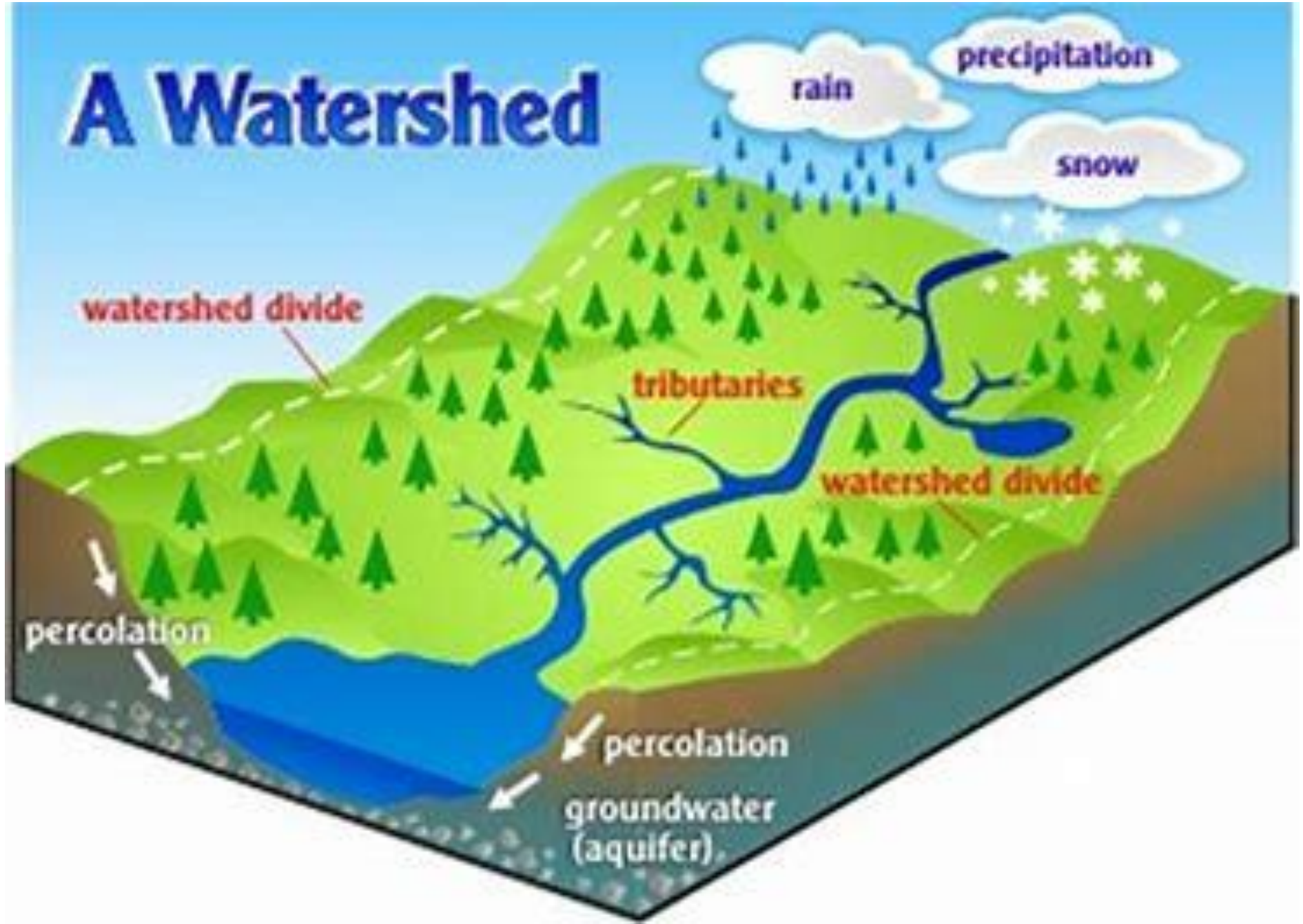
Hydrology Intro Notes

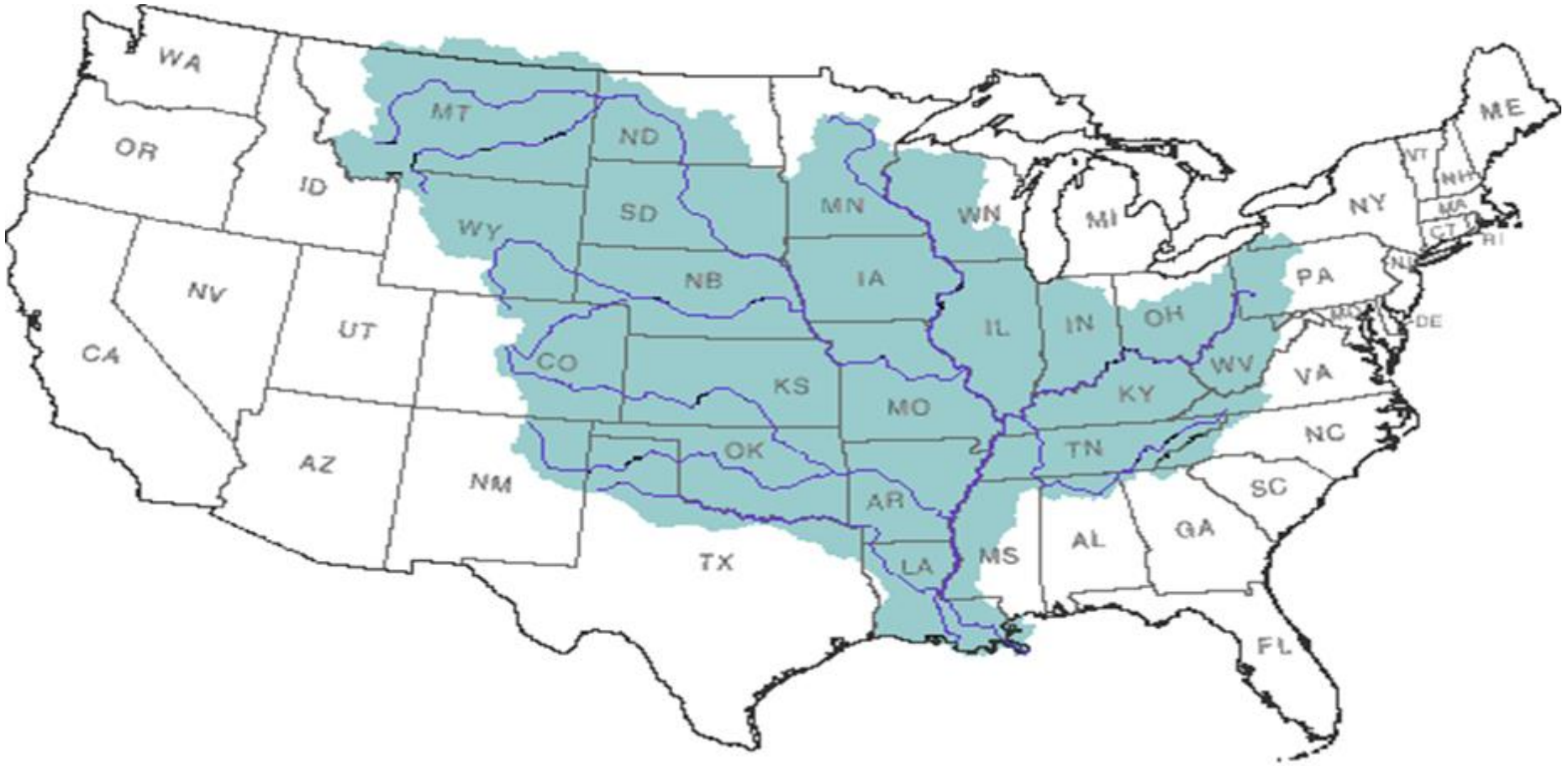
You're going to LOVE this……

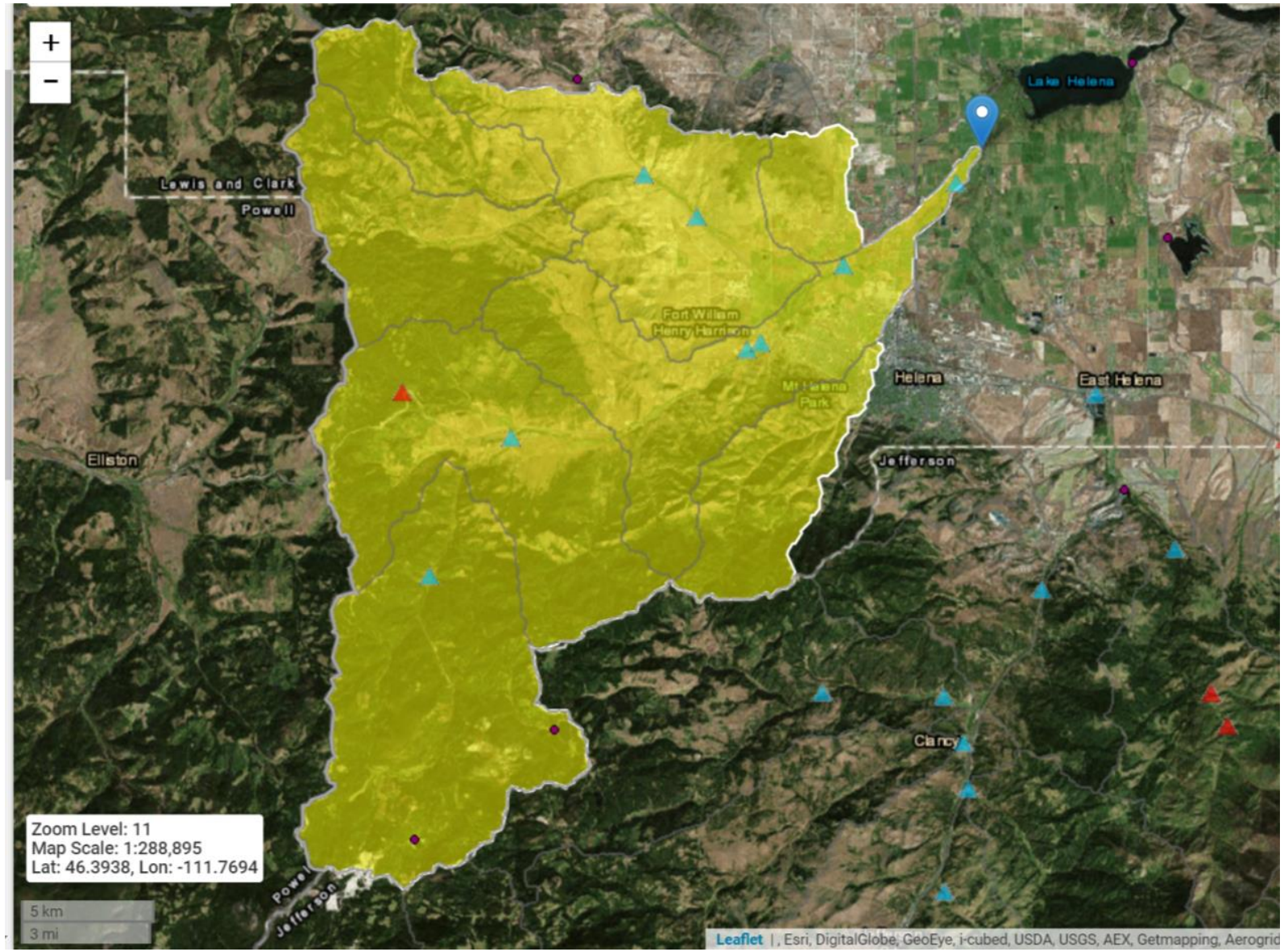

A Watershed
precipitation
rain
snow
watershed divide
tributaries
watershed divide
percolation
percolation
groundwater
(aquifer)

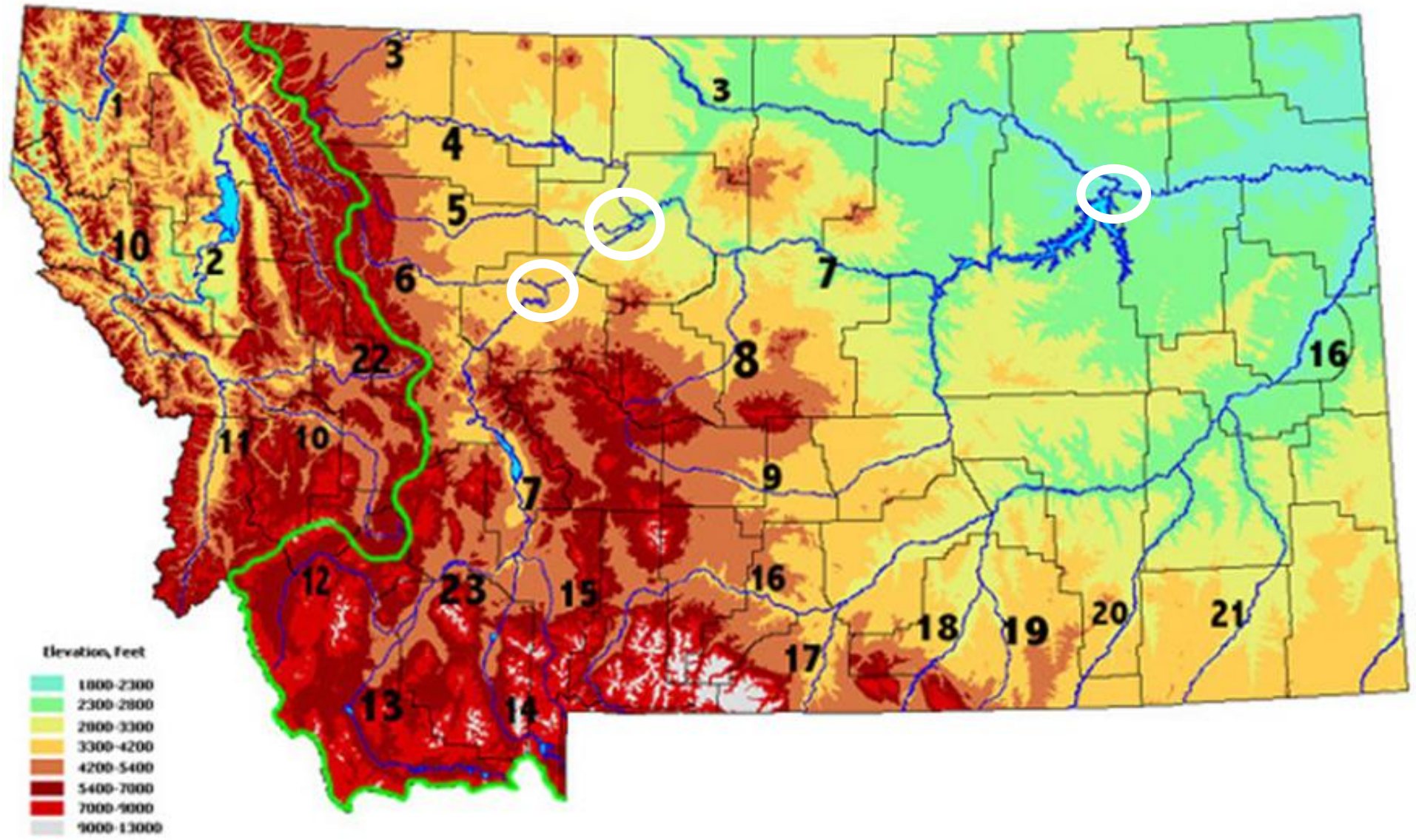
Watersheds

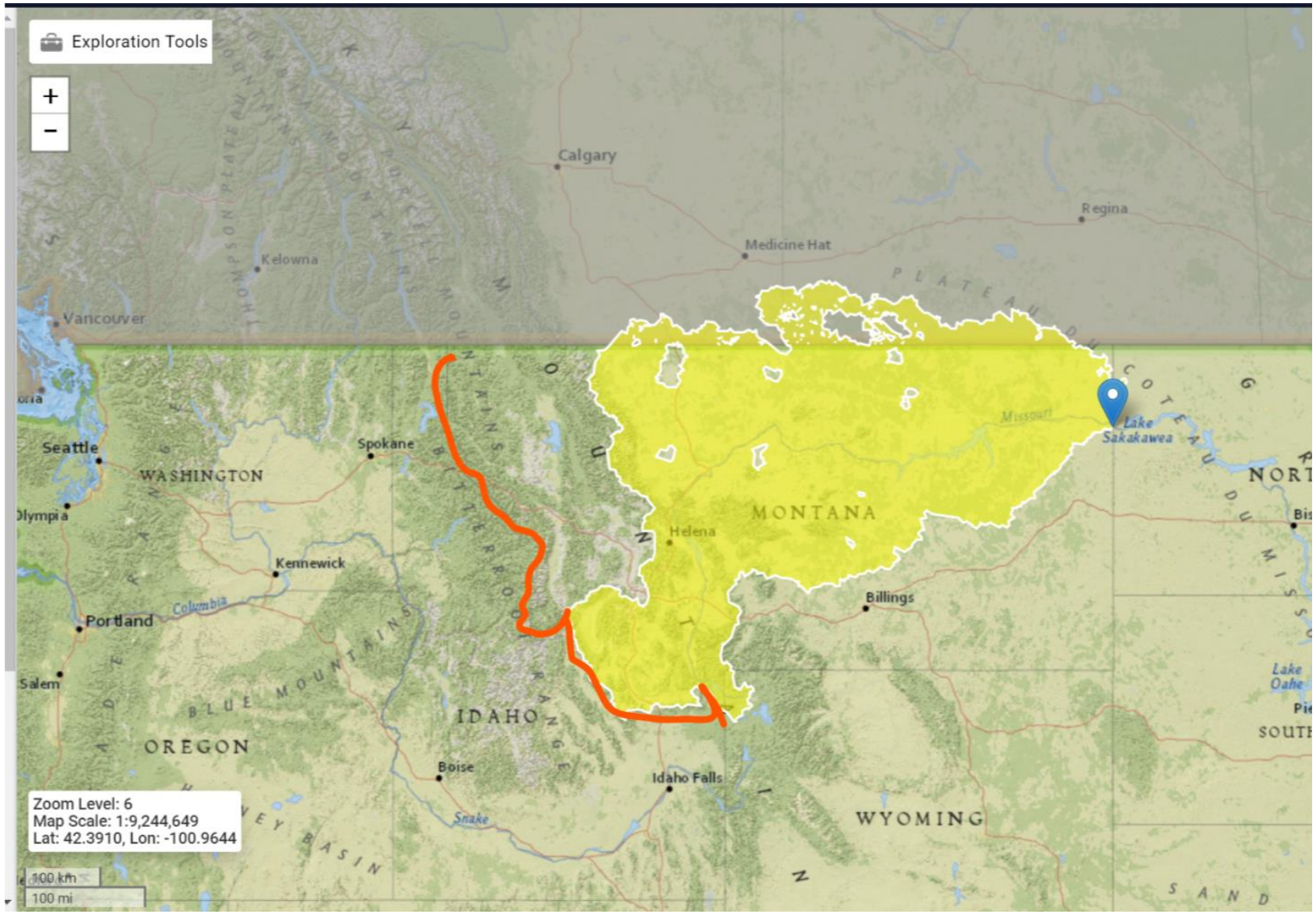
- Watershed Animation
- -A watershed is all land that drains into the named surface water.
  - -For example, The Amazon River Watershed.

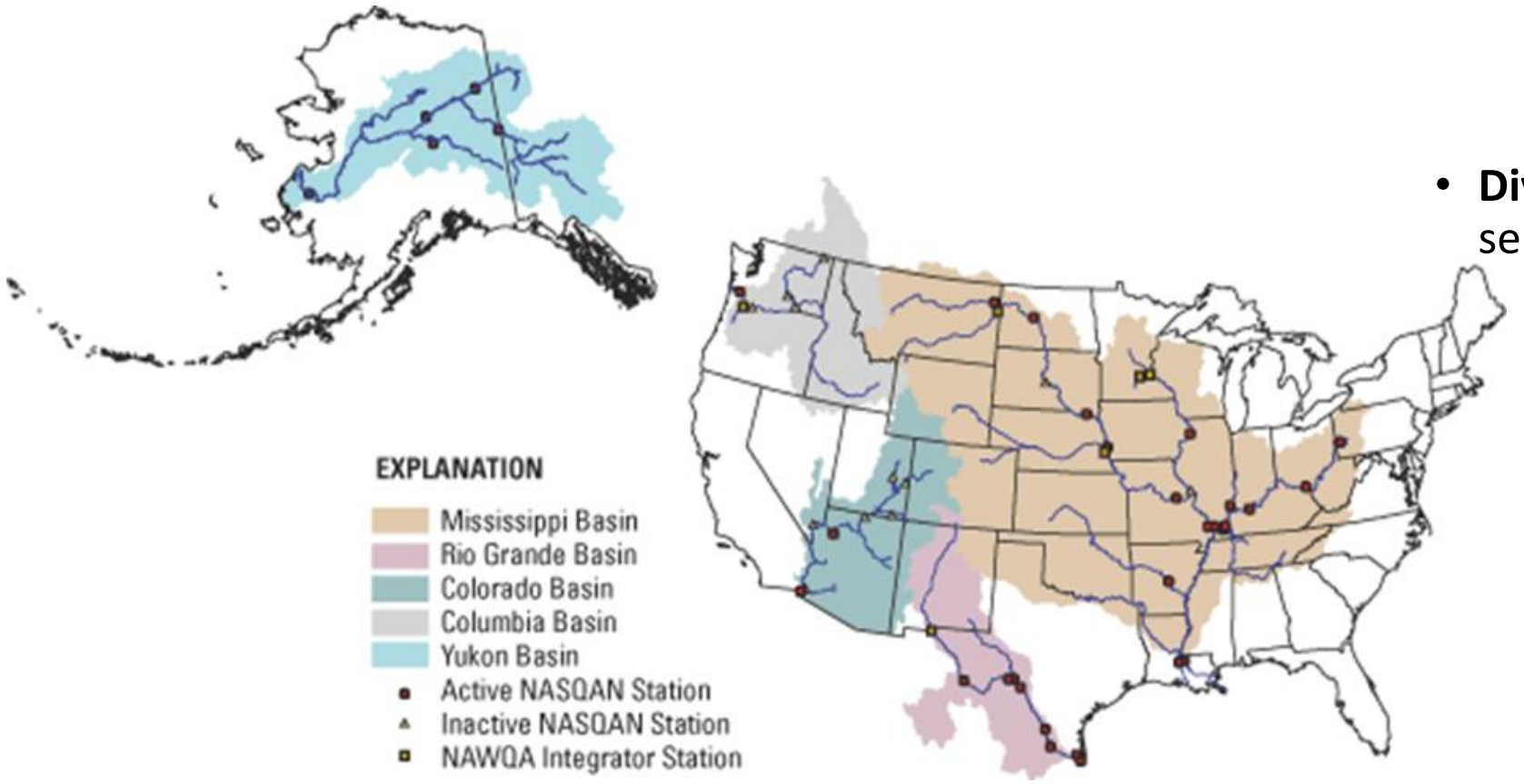
Mississippi River Drainage



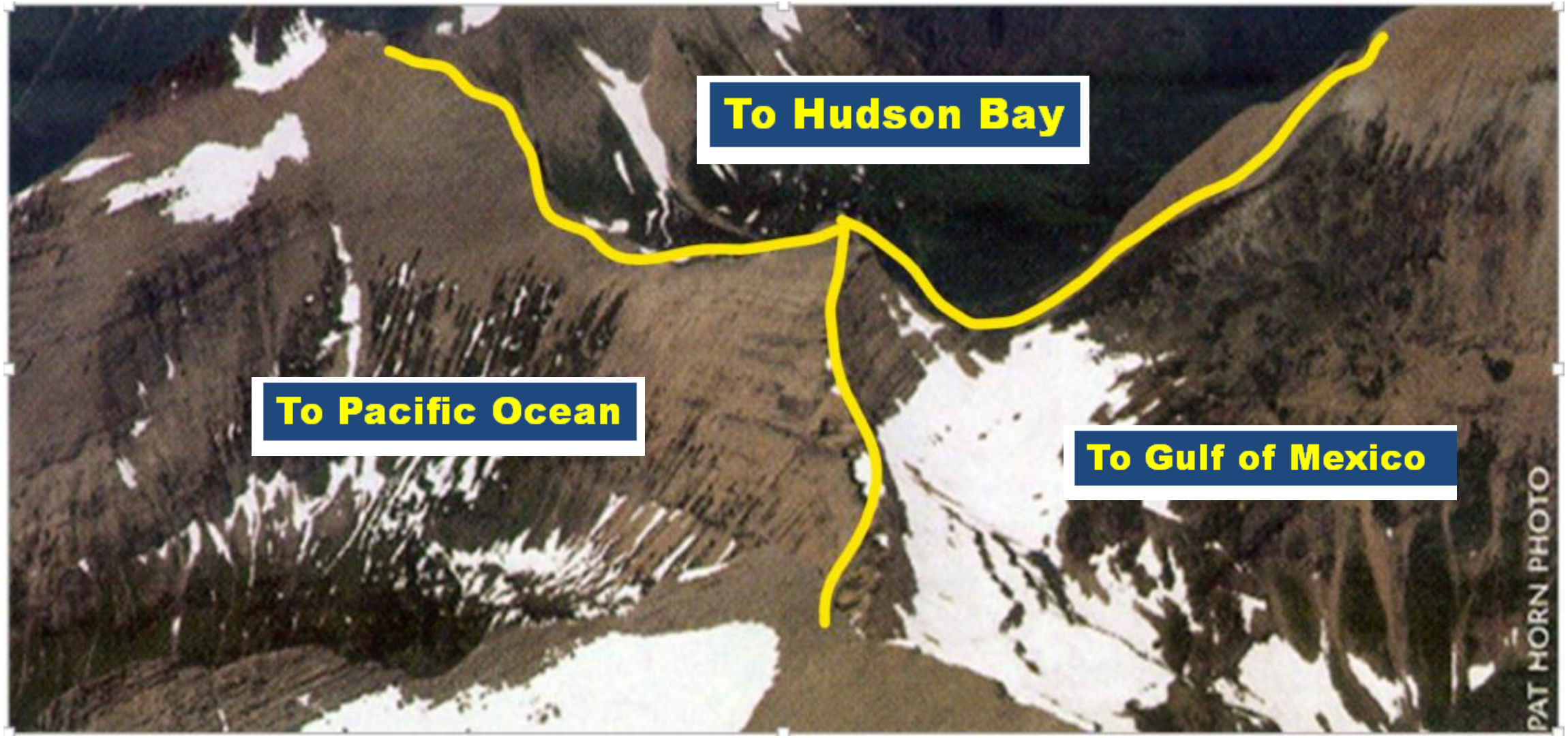

+
−
Lake Helena
Lewis and Clark
Powell
Fort William
Henry Harrison
Helena
East Helena
Elliston
Jefferson
Clancy
Zoom Level: 11
Map Scale: 1:288,895
Lat: 46.3938, Lon: -111.7694
5 km
3 mi
Leaflet | , Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid


1
3
3
4
5
10
2
6
7
22
8
16
11
10
9
7
12
23
15
16
18
19
20
21
17
13
14
Elevation, Feet
1800-2300
2300-2800
2800-3300
3300-4200
4200-5400
5400-7000
7000-9000
9000-13000

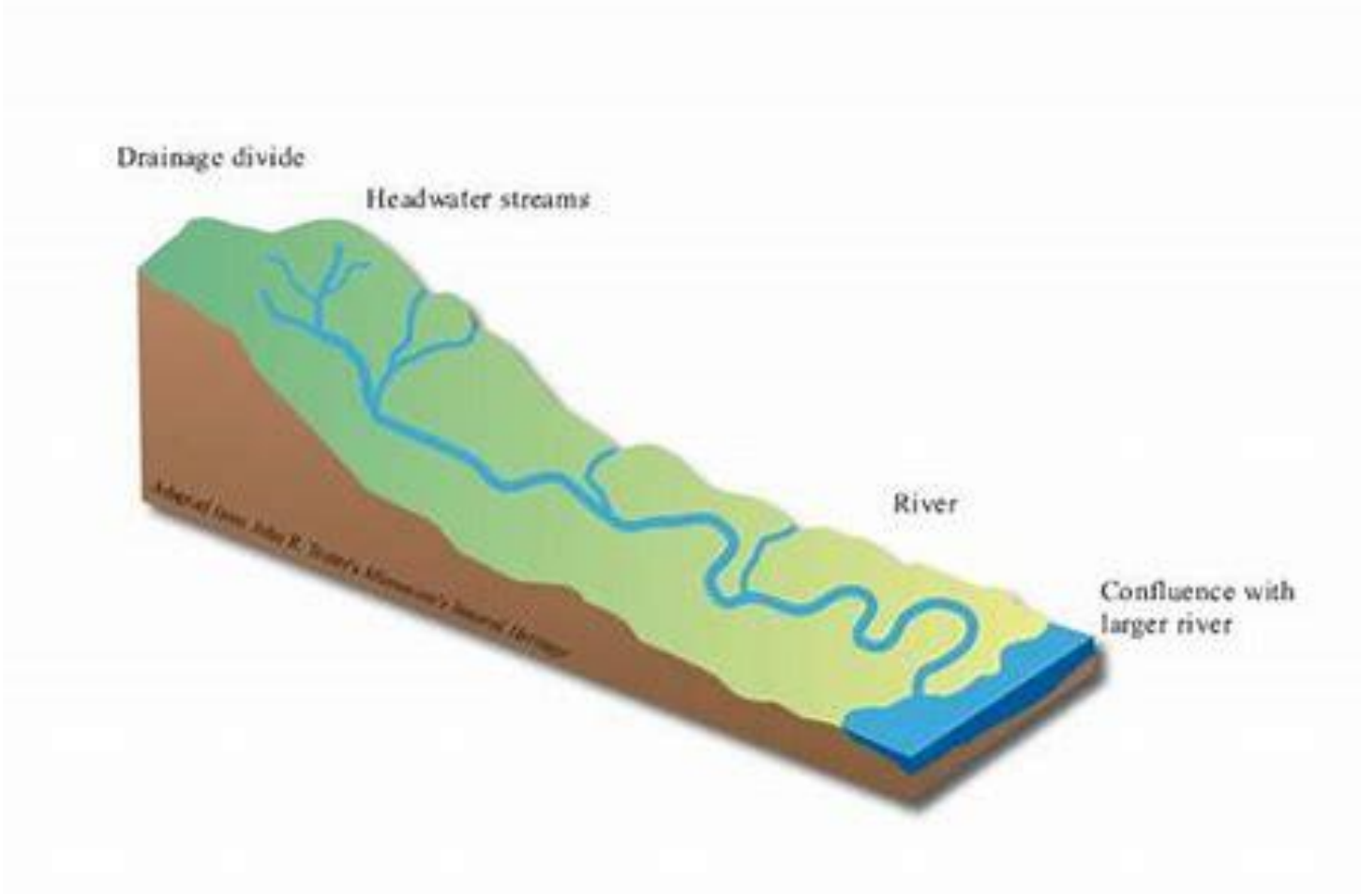

Exploration Tools
+
−
Calgary
Regina
Medicine Hat
Kelowna
Vancouver
Seattle
Spokane
WASHINGTON
Olympia
Kennewick
Portland
Columbia
Salem
OREGON
BLUE MOUNTAINS
IDAHO
Boise
Idaho Falls
Snake
WYOMING
MONTANA
Helena
Billings
Missouri
Lake Sakakawea
Lake Oahe
Zoom Level: 6
Map Scale: 1:9,244,649
Lat: 42.3910, Lon: -100.9644
100 km
100 mi

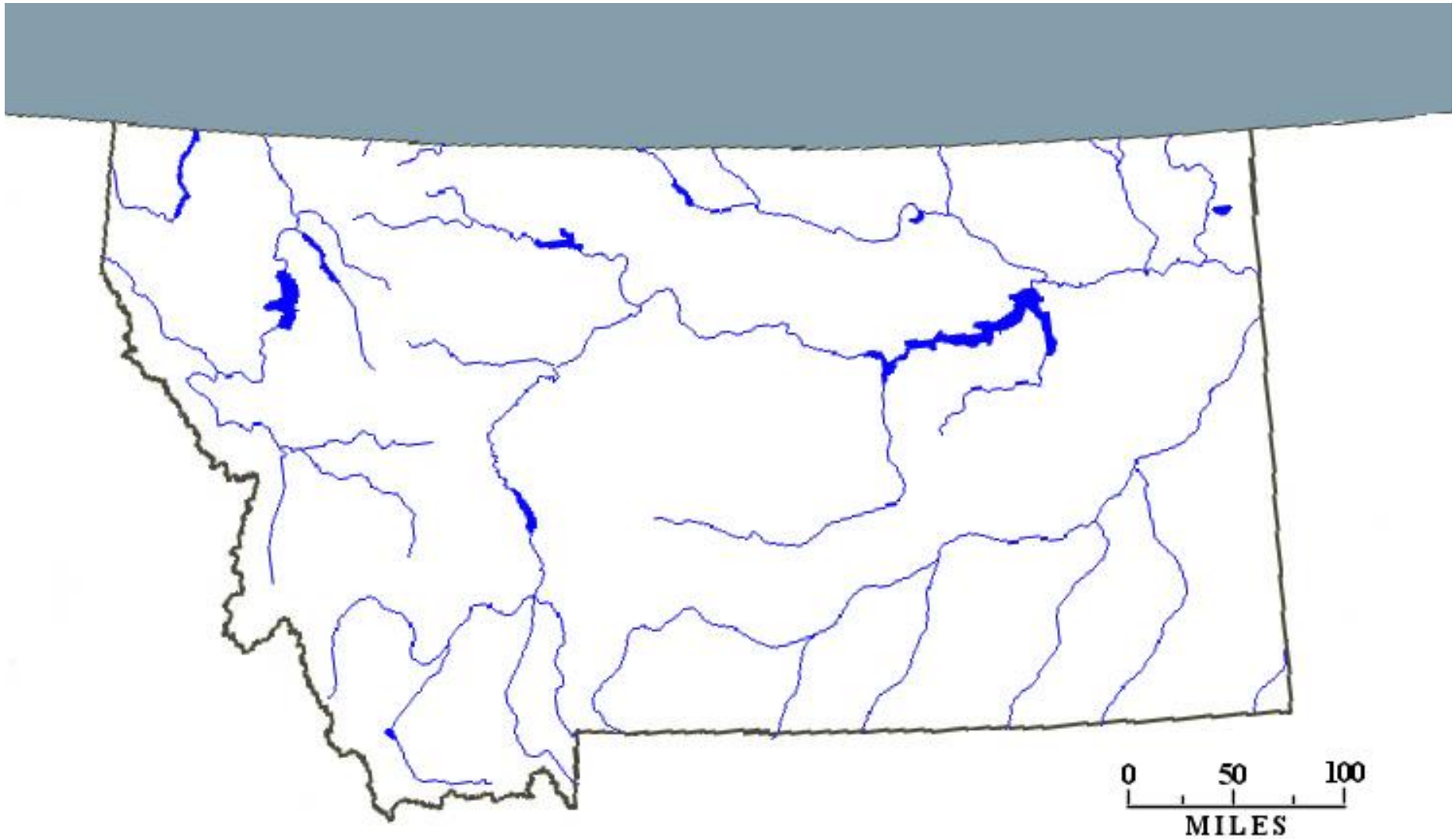


- **Divide:** High ground that separates two (2) watersheds
  - Continental Divide:separates the two main watersheds in the United States, either the Atlantic or the Pacific

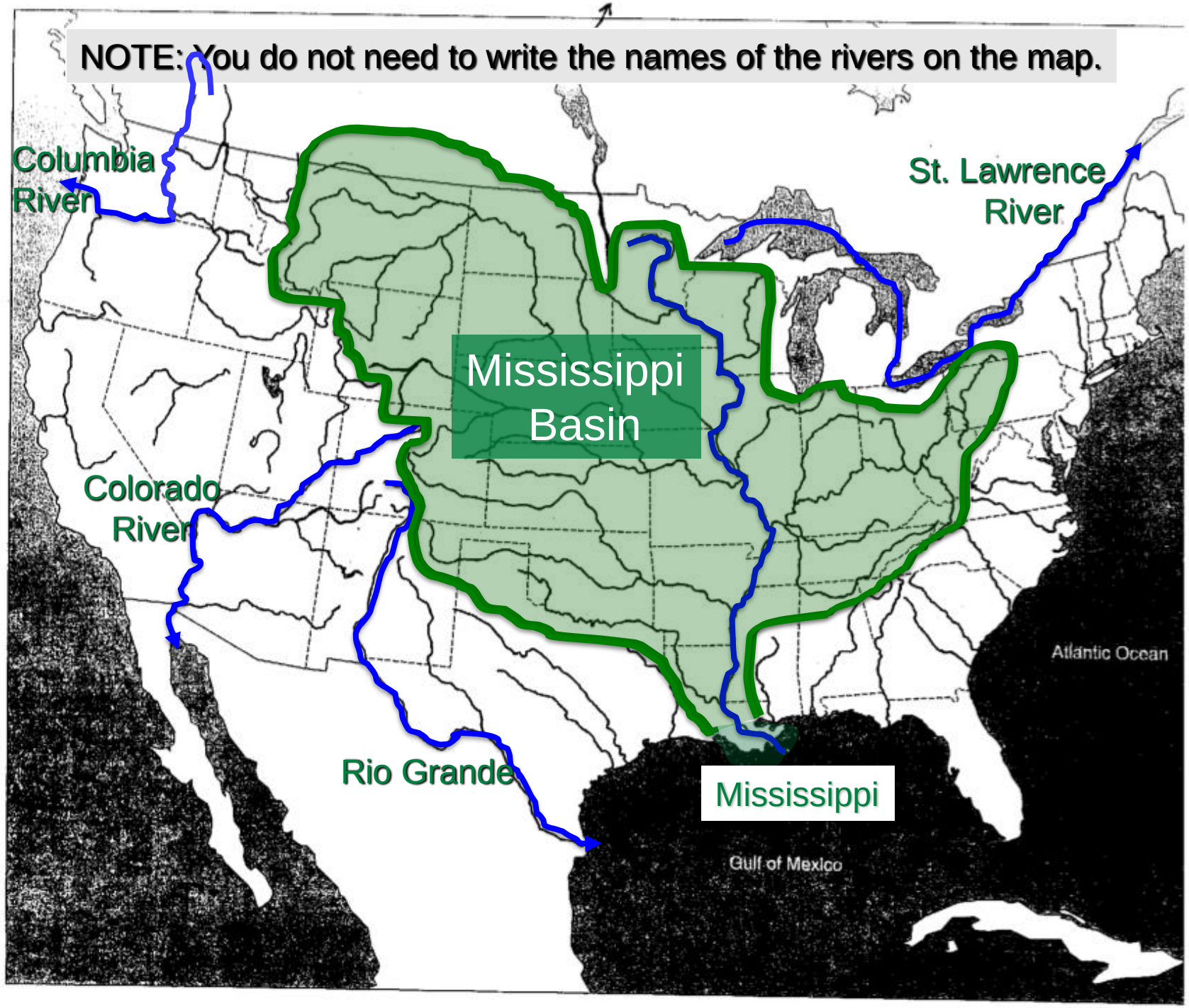

To Hudson Bay
To Pacific Ocean
To Gulf of Mexico
PAT HORN PHOTO

- Headwaters: where the river begins
  - High in the Mountains
- Mouth: where the river dumps into another body of water (lake, river, ocean etc)




0
50
100
MILES

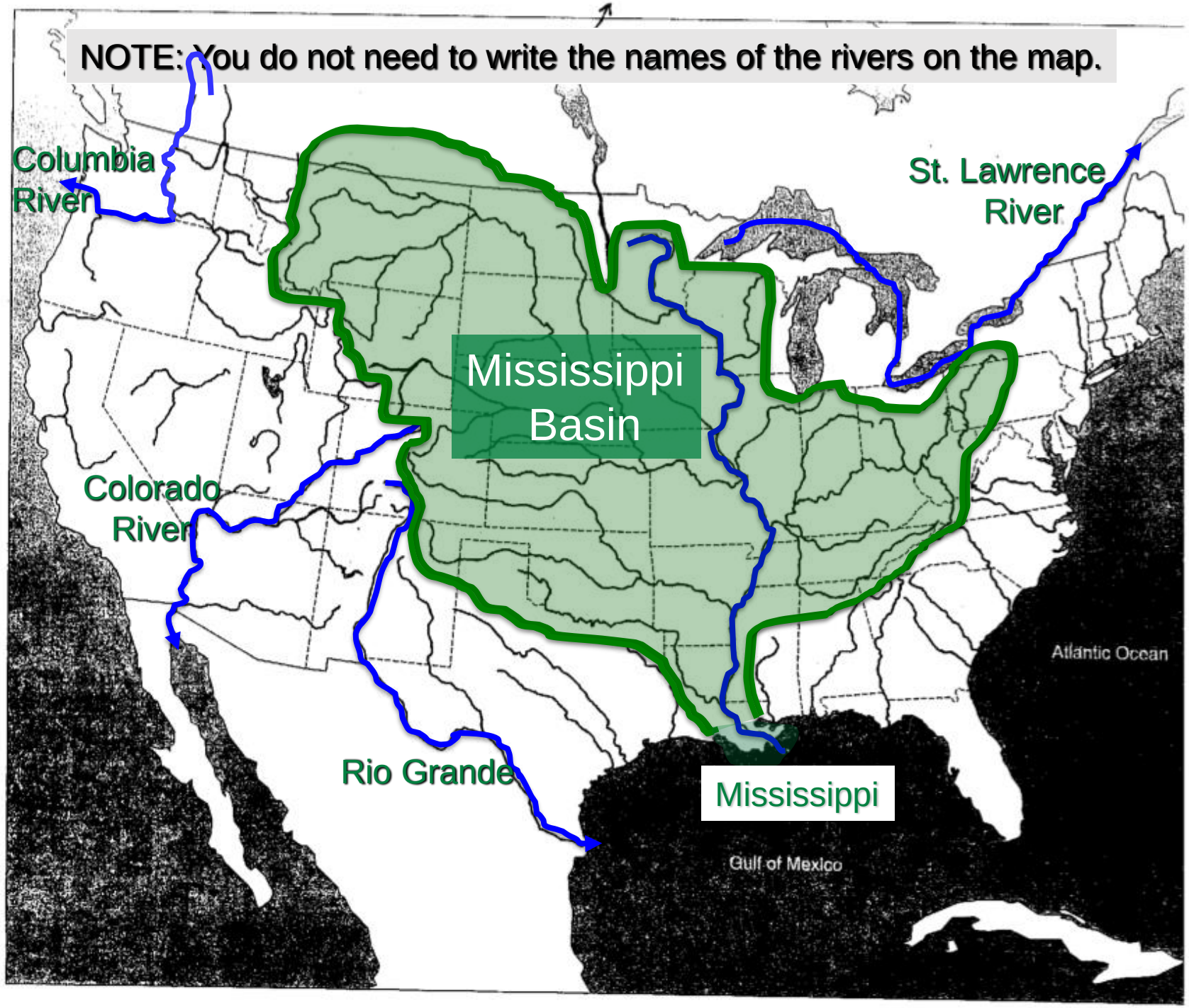
U.S. Watersheds and their Tributaries


NOTE: You do not need to write the names of the rivers on the map.
Columbia River
St. Lawrence River
Mississippi Basin
Colorado River
Rio Grande
Mississippi
Atlantic Ocean
Gulf of Mexico

Map Activity: Drainage Basins

(You need to get the handout from Gillin.)

- This presentation is for those students who missed class the day we started this activity.
- The next slide shows the part that we did together Tuesday.
- View that slide and copy it onto your map.
- Then continue with #2 on you handout.
- You will need colored pencils and highlighters.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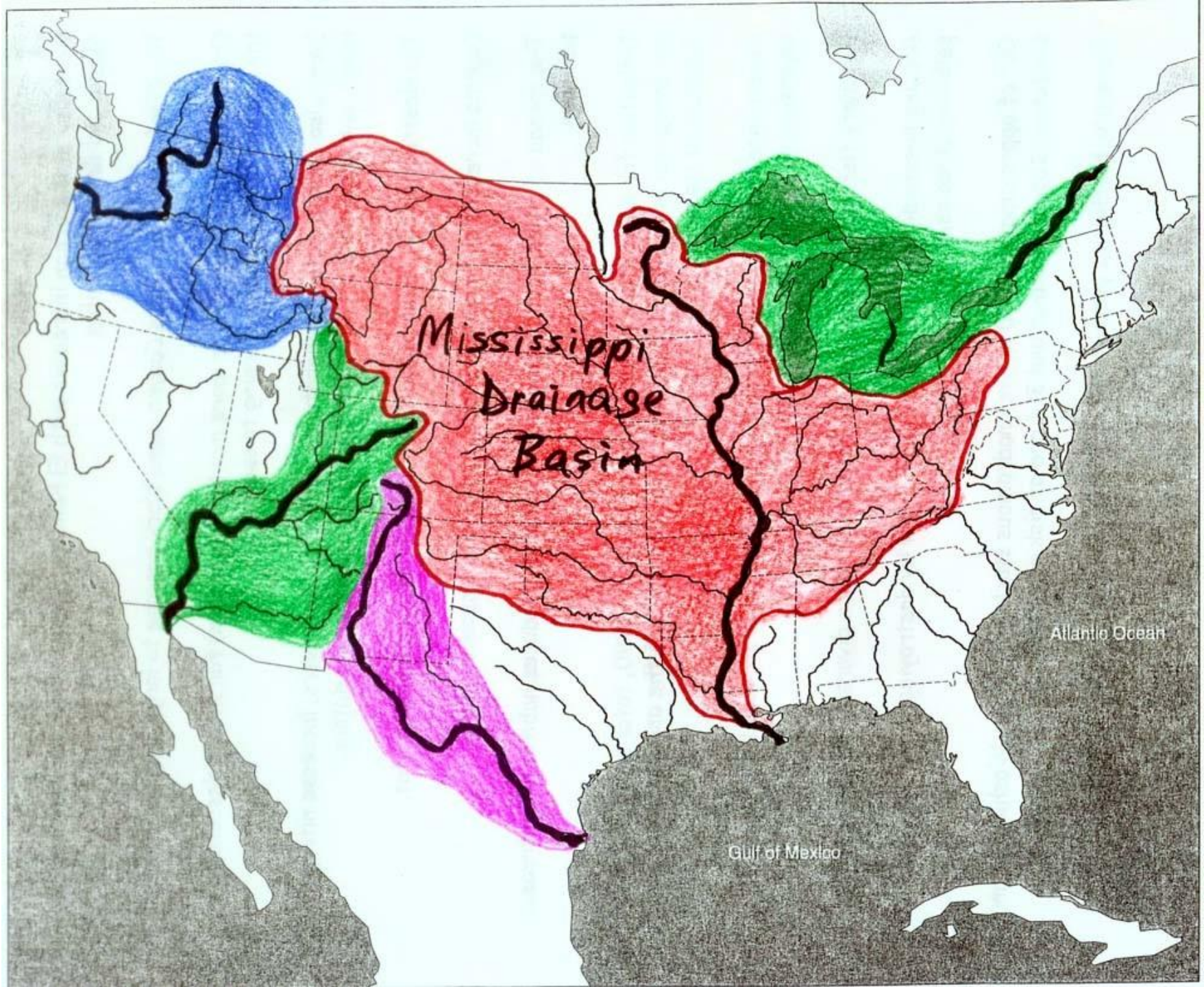
Mississippi
Drainage
Basin
Atlantic Ocean
Gulf of Mexico

Stream Dynamics

- Discharge:
  - Amount/volume of water coming out of a stream
- Gradient:
  - Steepness or slope of a stream channel
- Velocity:
  - Speed of the water in a stream

Stream Dynamics

- Erosion:
  - Force of running water that changes the shape of channels by abrasion, grinding and dissolving.
    - Loads: dissolved, suspended, bed load
    - High Velocity
- Deposition:
  - Stream energy has decreased (slower water) loads may set down and not be carried by a river anymore. (muddy water analogy)
- Delta:
  - A build-up of sediment/mud where a stream enters a lake or ocean

Stream Dynamics

- https://www.youtube.com/watch?v=8a3r-cG8Wic#t=158.26 Why do Rivers Curve

- https://www.youtube.com/watch?v=AgocNx3-De0 -Rafting Grand Canyon