Lesson 3: Watersheds
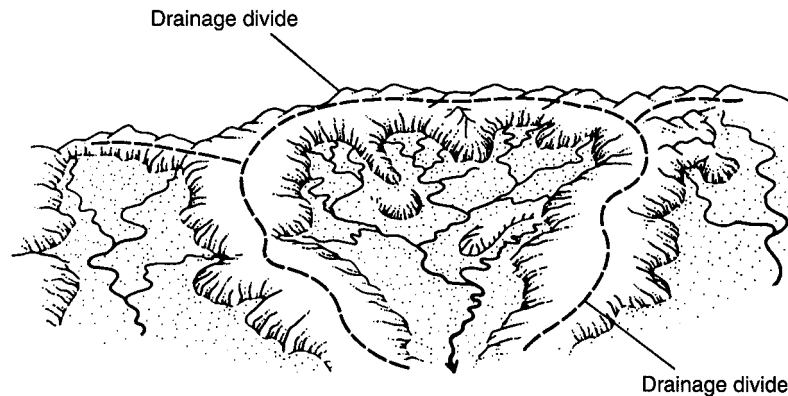
Definition

Drainage Basin
A drainage basin is the area of land draining into a stream at a given location. Other names: catchment, watershed

Drainage Divide
A drainage divide is a line dividing land whose drainage flows toward the given stream from the land whose drainage flow away from that stream.

Figure 7.1.4 Schematic diagram of a drainage basin. The high terrain on the perimeter is the drainage divide (from Marsh (1987)).

Hydrologic Unit Codes (HUC)

Hydrologic units are watershed boundaries organized in a nested hierarchy by size.

8-Digit HUC: The original (1980s) classification consists of four levels:

| Name	Level	Digits	# of HUs
Regions	1	2	22
Subregions	2	4	221
Accounting Units	3	6	378
Cataloging Units	4	8	2264

12-Digit HUC: The revised (2010) classification consists of six levels:

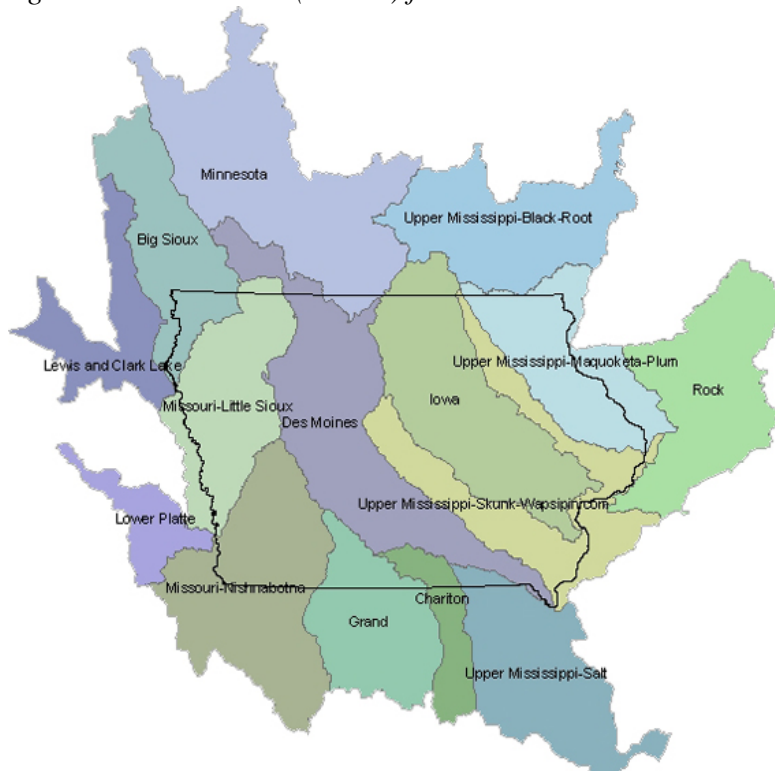| Name	Level	Digits	Average size (mi^2)	# of HUs (approx)
Region	1	2	177,560	21
Subregion	2	4	16,800	222
Basin	3	6	10,596	370
Subbasin	4	8	700	2,200
Watershed	5	10	227	22,000
Subwatershed	6	12	40	160,000

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Hydrologic Unit Maps

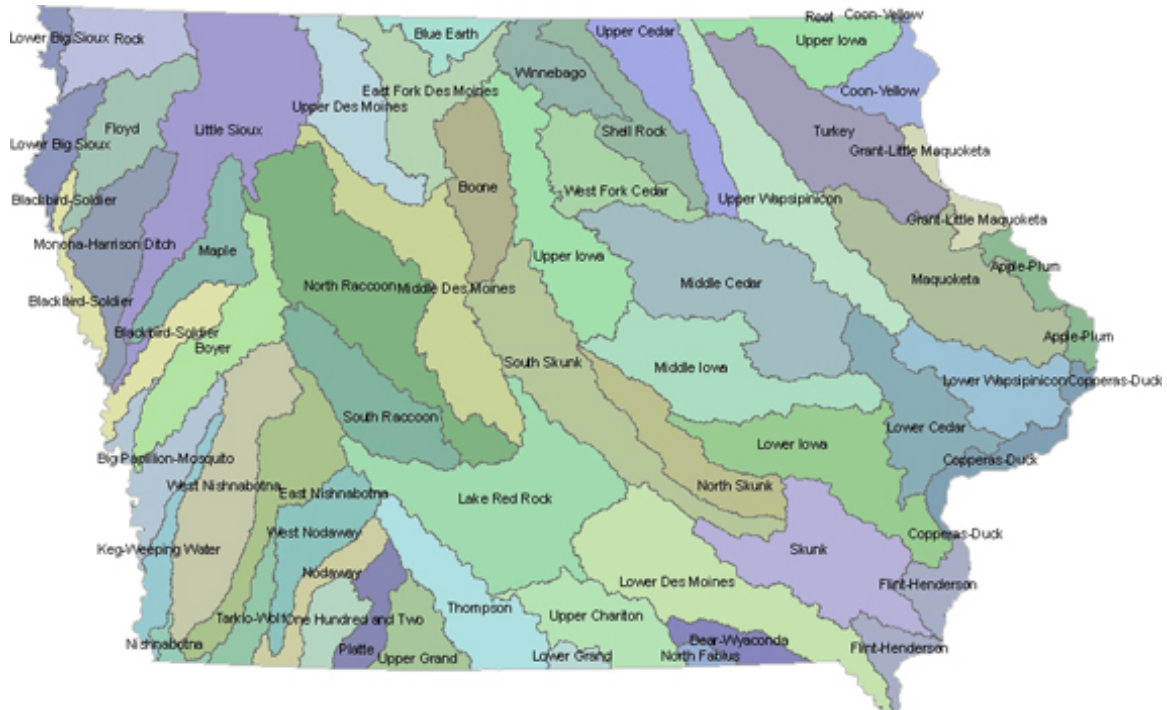*2-Digit and 4-Digit Hydrologic Unit Boundaries (Regions and Subregions)*
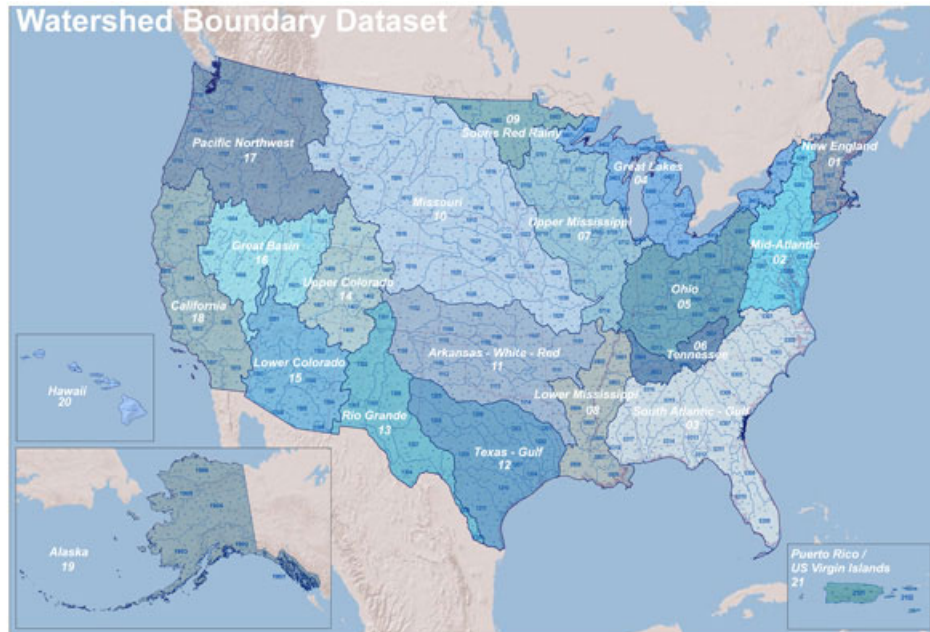
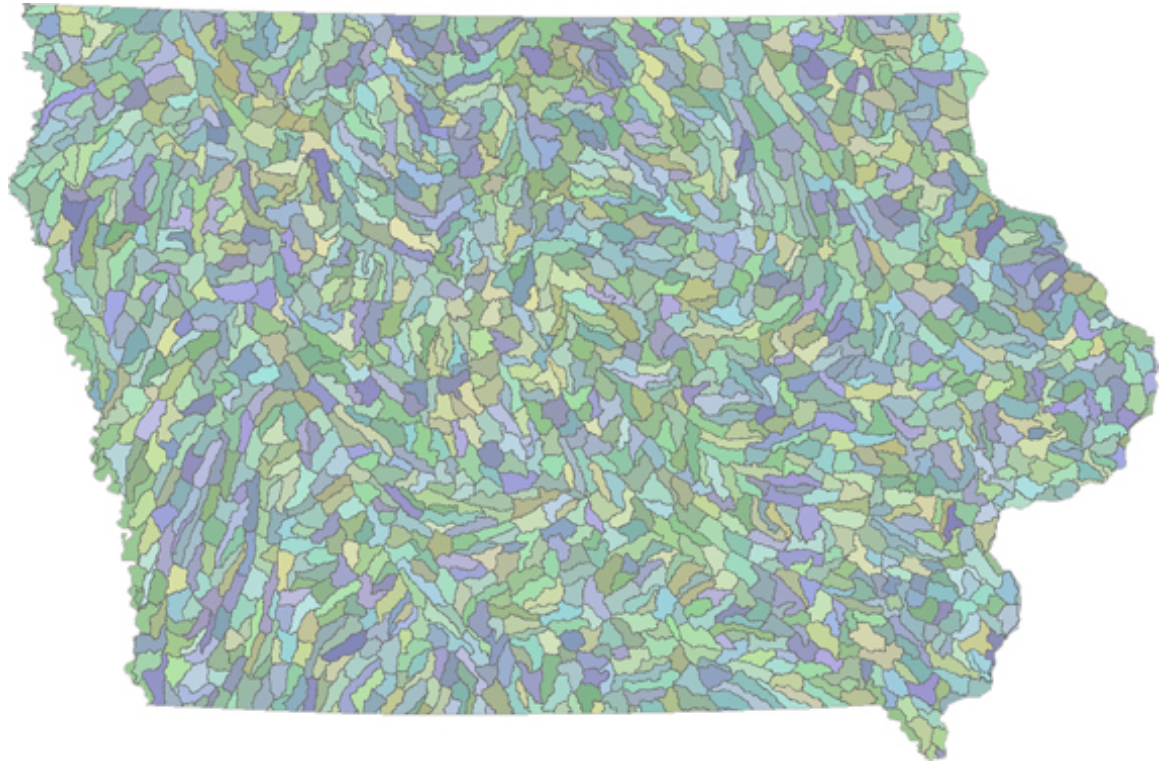*6-Digit Hydrologic Unit Boundaries (Basins) for Iowa*

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8-Digit Hydrologic Unit Boundaries (Subbasins) for Iowa

12-Digit Hydrologic Unit Boundaries (Subwatershed) for Iowa

Lesson 3: Watersheds

Delineating a Watershed
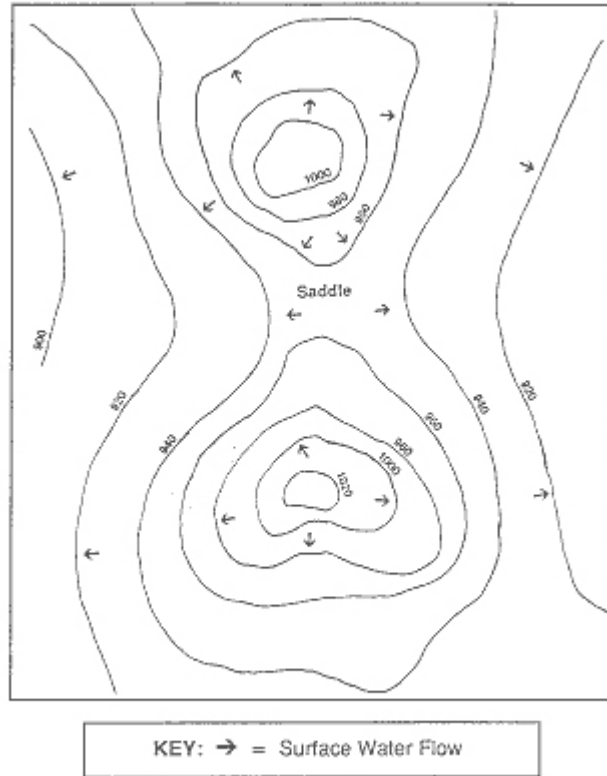
Topography and flow paths

Figure E-2: Saddle

Steps for Delineating a Watershed

Using a topographic map:

1. Draw a circle at the outlet or downstream point of the stream
2. Put small "×'s" at the high points along both sides of the watercourse, working your way upstream towards the headwaters of the watershed.
3. Starting at the circle that was made in step one, draw a line connecting the "×'s" along one side of the watercourse. This line should always cross the contours at right angles (i.e. it should be perpendicular to each contour line it crosses).
4. Continue the line until it passes around the head of the watershed and down the opposite side of the watercourse. Eventually it will connect with the circle from which you started.

Adapted from *How to Read a Topographic Map and Delineate a Watershed* (http://www.nh.nrcs.usda.gov/technical/Publications/Topowatershed.pdf)