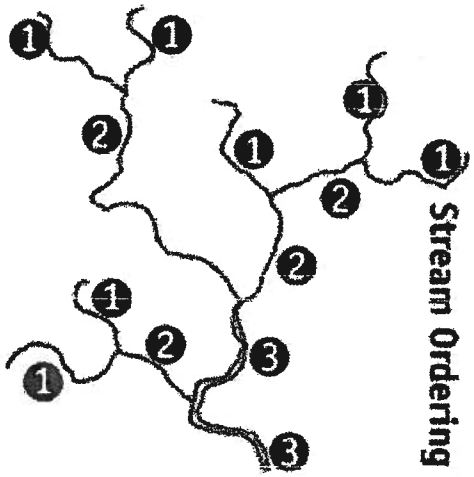
Stream Order

Learning Concept 3: Students can explain stream order and compare and contrast streams of different orders in a watershed.

Bodies of water that flow across the Earth's surface via a current and are contained within a narrow channel and banks are referred to as rivers, creeks, or streams. A tributary is a stream that flows into a main stem river not flowing directly into the ocean. We can use a tool called Stream Order to help us categorize streams in our watershed by size. Stream Order is a common classification system used to study and measure the size of the world's waterways: the further downstream the stream is, the higher the order; the further upstream the stream, the more likely it is to dry up during parts of the year.

When studying stream order, it is important to recognize the pattern associated with the movement of streams up the hierarchy of strength. Because the smallest tributaries are classified as **first order**, scientists often give them the value of **1**. It then takes a joining of the two first order streams to form a **second order** stream. When two second order streams combine, they form a **third order** stream, and when two third order streams join, they form a **fourth** and so on.



If, however, two streams of different order join, neither increases in order. For example, if a second order stream joins a third order stream, the second order stream simply ends by flowing its contents into the third order stream, which then maintains its place in the hierarchy.

The rules can be summarized by the following:

RULE 1: The stream increases in size only when like numbers join,
A size 1 stream is a stream that is truly the origination of a river; no tributaries flow into it. When a size 1 stream flows into another size 1, the stream then becomes a size 2 below the convergence (meeting place).

RULE 2: The increase in size is only by one increment,
Imagine the worksheet is a watershed that drains into the ocean. Start labeling all size 1 streams, then size 2 streams, and size 3 streams working your way down to the ocean.

RULE 3: When unlike numbers join, the stream remains the higher number,
When a lower number stream, for example, a size 1 stream flows into a higher number stream, size 2, the stream remains a size 2 stream below the convergence (meeting place).

Stream sizes can be generalized into three major categories:

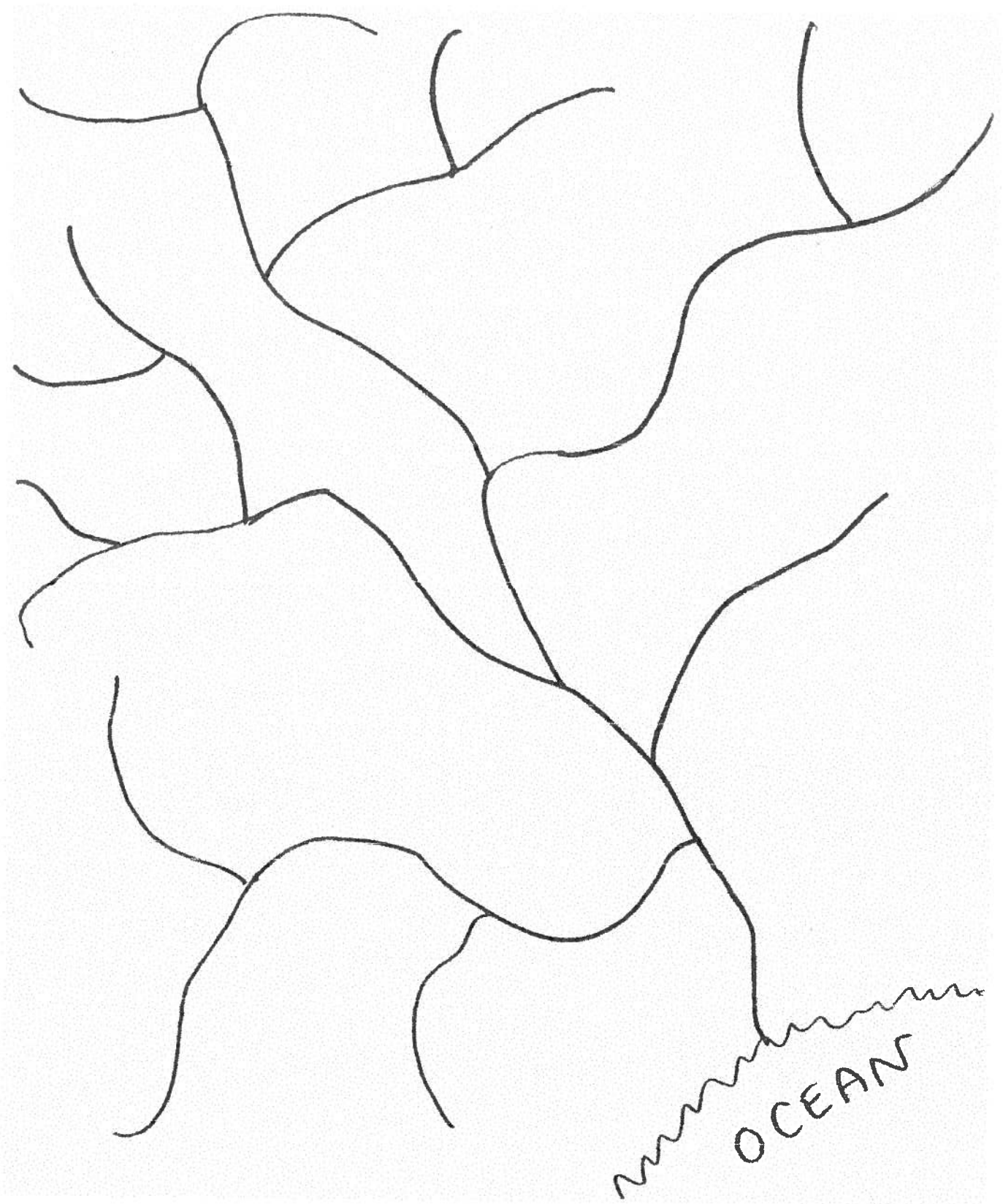
SMALL – Sizes 1-3
MEDIUM – Sizes 4-6
LARGE – Sizes 7-12

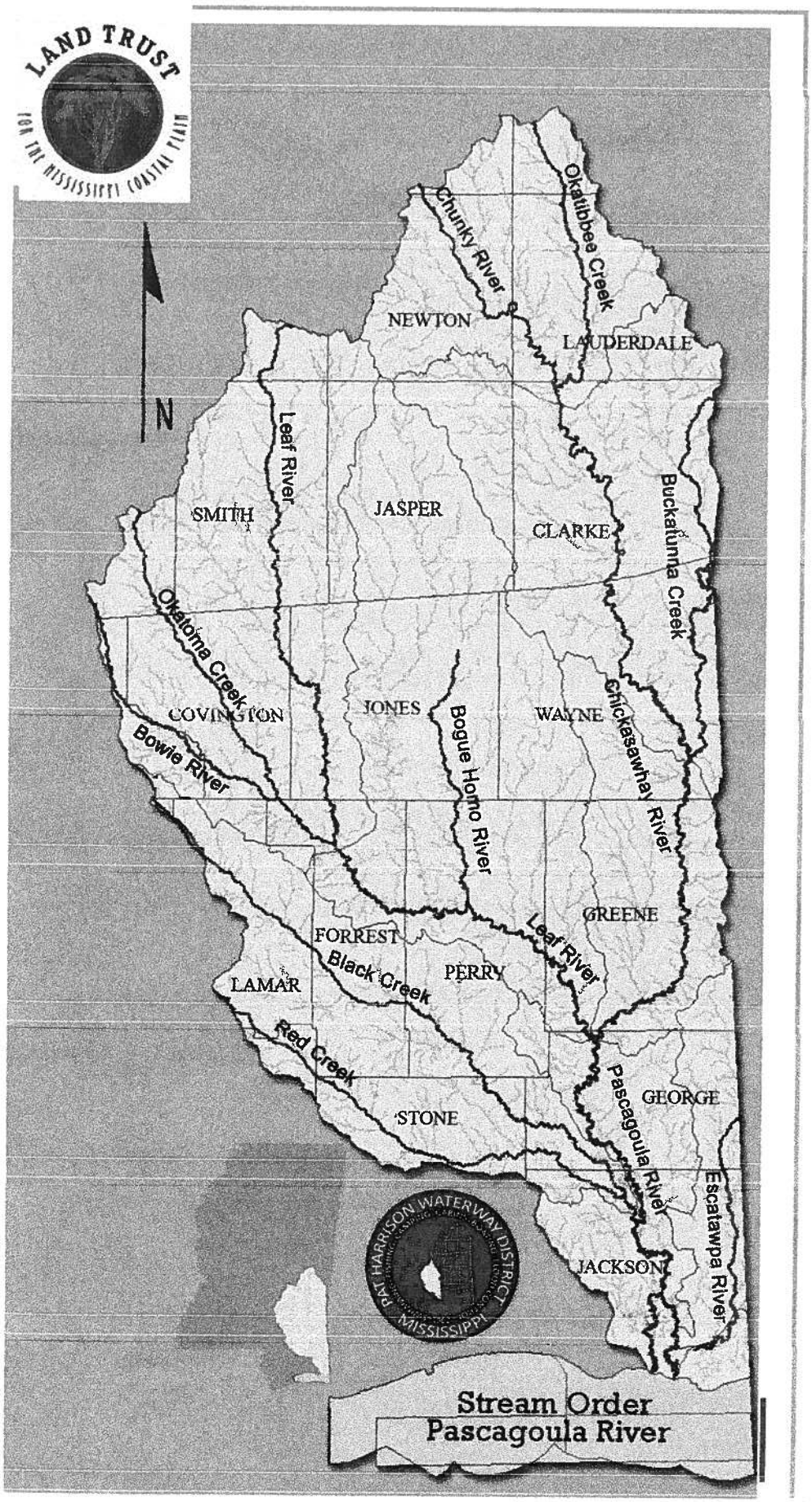
Part 1: Label the stream orders to the ocean.

Part 2: Label the stream order of the Pascagoula River.

Part 3: Create your own watershed with colored pencils by following the stream order system explained above. Use different colors to represent each different stream order. Add a pollutant to your watershed and identify the areas that are affected by the pollutant.

Worksheet 1- Stream Order Worksheet




LAND TRUST
FOR THE MISSISSIPPI COASTAL PLAIN
N
Chunky River
Okatibbee Creek
NEWTON
LAUDERDALE
Leaf River
SMITH
JASPER
CLARKE
Buckatunna Creek
Okatoma Creek
COVINGTON
JONES
WAYNE
Chickasawhay River
Bowie River
Bogue Homo River
GREENE
FORREST
Leaf River
Black Creek
PERRY
LAMAR
Red Creek
Pascagoula River
GEORGE
STONE
Escatawpa River
PAT HARRISON WATERWAY DISTRICT
MISSISSIPPI
JACKSON
Stream Order
Pascagoula River