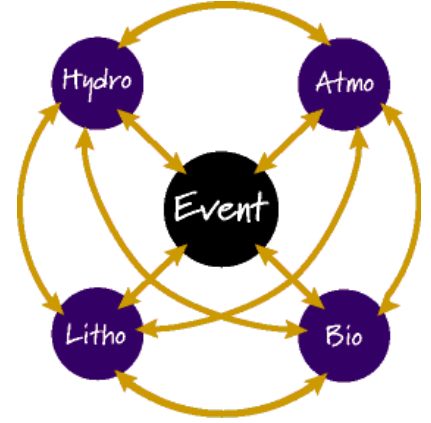


Earth System Science (ESS)

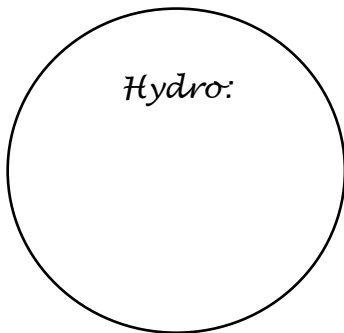
Connecting Earth's Systems

Background: The Earth has a long list of environmental issues: expanding droughts and wildfires; escalating frequency and strength of tornadoes and hurricanes; spreading invasive species; and increasing numbers of endangered species. The ESS model involves tying an event, either of natural or human origin, to the Earth systems and further exploring connections between Earth systems and Earth events as cause and-effect relationships. Arrows are used to help you visualize the connection between an event and the Earth systems. The arrows in the model point in two directions because ongoing activity in the systems can also cause an event. By using a local, regional, or global event to generate focus on an Earth science concept, we will begin to understand how a seemingly minor event can have an impact on the Earth in major ways, affecting all its systems.

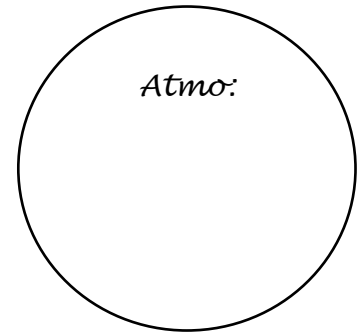


Part I: Follow the directions below to complete the concept map:

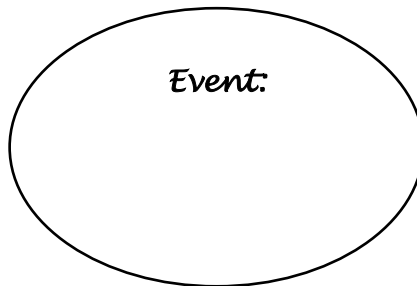
1. Identify each sphere by correctly labeling its primary characteristics: water, land, air, and life.
2. Label the event as natural or human-caused, or both.
3. Make the following connections:
 - a. Draw and label 2 arrows with a complete sentence that describes the connection (an interaction) between the event and 2 of the 4 spheres.
 - b. Draw and label 2 arrows between the spheres describing how the effects of the event changed the interaction between the them. Use complete sentences.



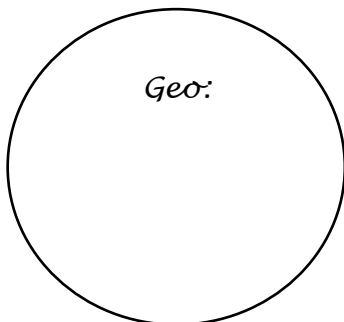
Hydro:



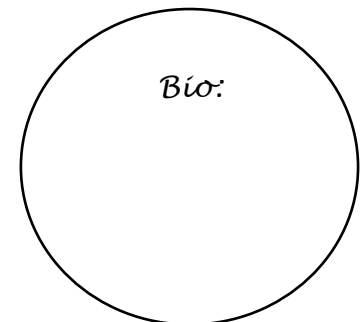
Atmo:



Event:



Geo:



Bio:

Part II: Choose an “Earth Science Event” from the list we made in class. Research the event and focus on the cause and effects. Fill in the chart below, including the names of websites where you obtained information.

Cause and Effect	Sources
<p><u>Cause</u> (comes first, origin of event, start):</p> <p><u>Effects</u> (happens after; occurs as a result of something else):</p> <p>1.</p> <p>2.</p> <p>3.</p>	<p>1.</p> <p>2.</p> <p>3.</p>

Part III: Using what you have learned about your event, complete the Earth Science System (ESS) model below by writing two event interactions and two sphere interactions. Use complete sentences. Remember to **underline keywords** in each sentence and to circle and label phrases found in the sentences as a *cause or effect* (you will find both).

Sample Keywords
 cause, effects
 increases, decreases
 changes, impacts

Follow the directions below to complete the concept map:

1. Identify each sphere by correctly labeling its primary characteristics: water, land, air, and life.
2. Label the event as natural or human-caused, or both.
3. Make the following connections:
 - a. Draw and label 2 arrows with a complete sentence that describes the connection (an interaction) between the event and 2 of the 4 spheres.
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