Name _____ Date _____

Resources in the Amazon

Using the map, Amazonia: The Human Impact, explore the location of different natural resources in the rain forest. Think about the development that needs to occur to extract the resources (building mines, dams, and oil and gas blocks) and how this might change the rain forest and affect the indigenous people who live in the area. Before you get started, read the following information about the different resources:

Mining: The mining industry is very important to South America's economy. Mining is the process of extracting ore from the Earth. Mineral resources including iron ore, copper, gold, and tin are extracted through mining.

- **Iron ore:** South America contains about 20% of the world's iron ore reserves. Iron ore and steel (which is made from iron) are used in construction and machinery throughout the world.
- **Copper:** South America contains more than 25% of the world's copper reserves. Copper is used in electrical wiring and equipment because it is a good conductor of heat and is resistant to corrosion.
- **Gold:** Gold is also extracted through mining. Because of its value and high demand for luxury goods, illegal miners burn parts of the forest to quickly access areas with gold. They also use mercury to separate gold, which contaminates rivers and is a toxin that enters the food chain when it is taken up by fish.
- **Tin:** Tin is another mineral extracted through mining. It is used to solder metallic surfaces.

Oil and Gas: Oil and natural gas are also very important to South America's economy. They are drilled and then used for energy and fuel. Oil extraction can release toxic by-products into rivers and broken pipelines can result in leakage and oil spillage.

Hydroelectric energy: Moving water is used to make hydroelectric energy. To harness energy from flowing water, the water must be controlled. Usually a dam is constructed on a river to create a reservoir. The water is then channeled through tunnels in the dam that cause turbines to turn, which ultimately leads to the generation of electricity. While hydroelectricity relies on water, a clean renewable energy source, the construction of the dams needed to harness that energy can affect the local plant and animal life, as well as cause humans to relocate.

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Resources in the Amazon, continued

Part 1. Where are different resources located in the Amazon?
Use the map, Amazonia: The Human Impact, to answer the questions below.

1. **Mining:** Locate the description of minerals under the heading Resources. Read the description and answer the following questions:

   a. What mineral resources are mined in the Amazon? _____

   _____

   b. How much of the region is mined? _____

   c. Where are most of the mines in production located? _____

   _____

   _____

   _____

   d. What are the consequences of mining? _____

   _____

   _____

   _____

2. **Oil and Gas:** Locate the description of oil and gas under the heading Resources. Read the description and answer the following questions:

   a. How many blocks are under production in the Amazon? _____

   b. Where are most of these blocks located? _____

   _____

   _____

   c. What are the consequences of developing more oil and gas blocks? _____

   _____

   _____

   _____

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Resources in the Amazon, continued

3. Hydroelectric Projects: Locate the description of hydroelectric projects. Read the description and answer the following questions:

a. How much electricity does hydropower provide in the following countries:

Ecuador: _____

Bolivia: _____

Peru: _____

b. Where are most of the operating hydropower plants located? _____

_____

_____

c. What threatens the future of hydropower? _____

_____

_____

_____

_____

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Resources in the Amazon, continued

Part 2. Where are indigenous territories and managed areas located in the Amazon?
Managed areas include state and federal parks and reserves that are off-limits to any kind of development. Indigenous areas are set aside to respect the ancestral grounds and pristine wilderness of the indigenous people in the area. While it is illegal to develop in both managed areas and indigenous territories, it is difficult to enforce these laws. Those areas that are closest to mines, dams, and roads are at greatest risk of being damaged by illegal miners, loggers, and developers. This could lead to deforestation in areas that could destroy parts of the forest and cause indigenous populations to relocate.

Looking at the map, Amazonia: The Human Impact, read the description under Managed Areas and answer the following questions:

1. How many managed areas are in Amazonia? _____

2. How many indigenous territories are in Amazonia? _____

3. How much of Amazonia is covered by managed areas or indigenous territories? _____

_____

4. Compare the Managed Areas map with the Resources map.

a. What observations can you make about mines in production and indigenous territories? Why do you think you are observing these patterns? _____

_____

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Resources in the Amazon, continued

b. What observations can you make about oil and gas in production and indigenous territories? Why do you think you are observing these patterns? _____

_____

_____

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5. Compare the large map with the Resources map.

a. What observations can you make about operating hydroelectric projects and indigenous territories? Why do you think you are observing these patterns? _____

_____

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b. In general, what might be some consequences to indigenous territories if mining, oil and gas extraction, and hydroelectric power continue to develop in Amazonia? _____

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Resources in the Amazon, continued

Part 3. What areas of Amazonia are being explored for further resources?

1. Mining: Review the mine blocks legend and locate areas on the map that are under exploration, under tender, or open for bidding.

a. Where are most of the mining sites that are under exploration, tender, or open for bidding?

_____

_____

_____

_____

b. What areas of proposed mining sites could encroach on indigenous territories? Circle those areas on the map. _____

_____

_____

_____

c. Identify one area of Amazonia that has the potential to be mined that you believe should be managed. Use other parts of the map (land cover, habitat loss, and roads) to provide more evidence to support your claim. _____

_____

_____

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Resources in the Amazon, continued

2. Oil and Gas: Review the oil and gas legend and locate areas on the map that are under exploration, under tender, or open for bidding.

a. Where are most of the oil and gas sites that are under exploration, tender, or open for bidding?

_____

_____

b. What areas of proposed oil and gas sites could encroach on indigenous territories? Circle those areas on the map. _____

_____

_____

_____

c. Identify one area of Amazonia that has the potential to extract oil and gas that you believe should be managed. Use other parts of the map (land cover, habitat loss, and roads) to provide more evidence to support your claim. _____

_____

_____

_____

3. Hydroelectric Projects: Review the hydroelectric plants legend and locate areas on the map that are planned or potential.

a. Where are most of the planned or potential hydroelectric plants? _____

_____

_____

_____

_____

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Resources in the Amazon, continued

b. What areas of planned or potential hydroelectric plants could encroach on indigenous territories? _____

_____

_____

_____

_____

c. Identify one area of Amazonia that has the potential to be a hydroelectric plant that you believe should be managed. Use other parts of the map (land cover, habitat loss, and roads) to provide more evidence to support your claim. _____

_____

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