

NAME: _____ DATE: _____ CLASS PERIOD: _____

LESSON 1: HELLO, HELLBENDER!

Student Handout

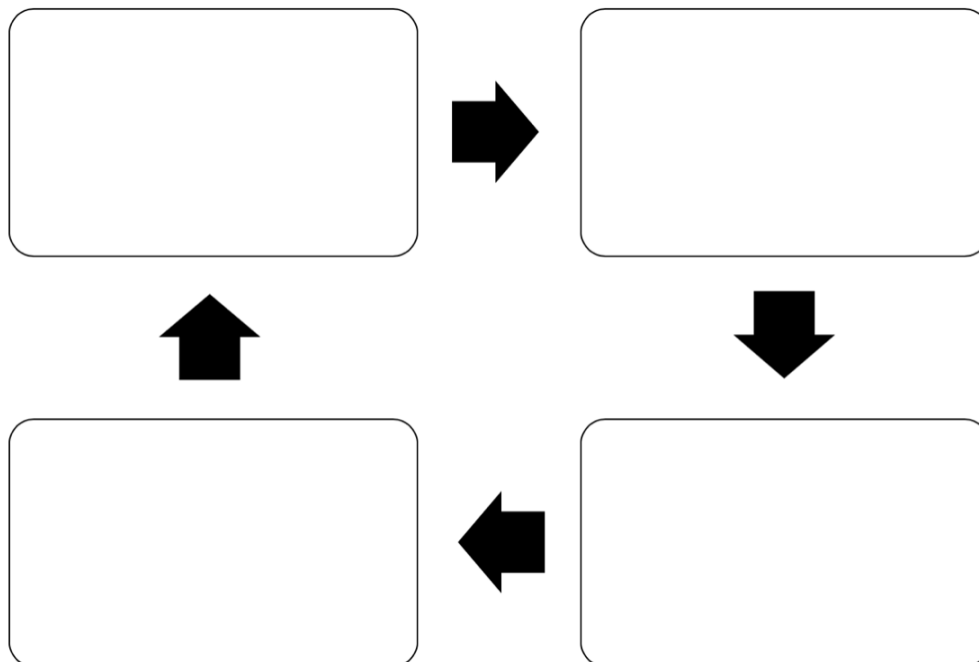
Part 1: *The Last Dragons* Video

Guiding questions: Answer these during the video to prepare for a quick class discussion!

1. What adaptation do you notice right away that hellbenders have to help them survive in their habitat?
2. What percentage of hellbender populations have disappeared? _____
3. Why is **siltation** – large amounts of mud and silt in the water – so bad for hellbenders?
4. Siltation (and other issues in streams) can be traced back to how “we’re _____.”
5. What is one way that humans can directly impact hellbenders in streams (even though they probably aren’t aware they are doing anything wrong)?
6. What do you *think* and *feel* when you see a hellbender salamander on this video for the first time? Did you know they existed? Have you ever seen one?

Part 2: The Hellbender Life Cycle

In the space provided below, draw a quick sketch and label the four parts of the hellbender life cycle.



Directions: For each of the 4 stages of the hellbender's life cycle, use what you know about streams and rivers to **predict/describe** how one living and one non-living factor might affect the size of the population at that stage. When you share with another group, fill in some other ideas that you didn't think of!

| LIFE STAGE | How one living factor affects this life stage | How one non-living factor affects this life stage |
|------------|---|---|
| Eggs | | |
| Larvae | | |
| Juveniles | | |
| Adults | | |

NOTES SHEET: HELLBENDER ECOLOGY

ABIOTIC

What does it mean? *Non-living*

How does it relate to hellbenders? What are some abiotic factors that affect these salamanders?

BIOTIC

What does it mean? *Living*

How does it relate to hellbenders? What are some biotic factors that affect these salamanders?

POPULATION

What does it mean? *A group of organisms of the same species living in the same place and interacting with each other*

How does it relate to hellbenders?

COMMUNITY

What does it mean? *All interacting biotic components of an ecosystem*

How does it relate to hellbenders?

PRODUCER

What does it mean? *Organisms that makes their own food using photosynthesis (plants, algae)*

How does it relate to hellbenders?

CONSUMER

What does it mean? *Organisms that eat other organisms (can't make their own food)*

How does it relate to hellbenders?

COMPETITION

What does it mean? *Occurs when two organisms need the same limited resource*

How does it relate to hellbenders?

PREDATION

What does it mean? *One organism feeding on another*

How does it relate to hellbenders?

LIMITING RESOURCE

What does it mean? *A factor that determines the size of a population of organisms*

How does it relate to hellbenders?

CARRYING CAPACITY

What does it mean? *The maximum number of individuals in a population that can be supported by available resources*

How does it relate to hellbenders?

BIOINDICATOR

What does it mean? *A species whose presence/absence can tell us about the overall health of an ecosystem*

How does it relate to hellbenders?

NICHE

What does it mean? *The range of conditions a species needs to survive, and the role it plays in the ecosystem*

How does it relate to hellbenders?

Use the remaining space here to write a few sentences that describe the NICHE of the eastern hellbender. Use at least 5 words from the Word Wall!