Back From the Brink Lab

Name _____

Date _____

Period _____

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Do Now In 1941 there were only 16 whooping cranes left in the wild. In the winter of 2024 to 2025, scientists counted about 540. 2 minutes, before you open the lab

A. What is your best guess about what happened?

☐ People protected them ☐ They changed on their own ☐ Not sure yet

B. Write one thing people could do to help a species come back.

_____

☐ I can use the endangered species list to compare groups with percents.

☐ I can name the human cause (HIPPCO) behind a real species' decline.

☐ I can use population counts to argue which ways of protecting a species work.

Part 1. The list (Tab 1)

SEP 5 Using Mathematics · CCC Scale, Proportion, and Quantity

Pick a group. Find its percent, type it in and press **Check**. Do the six groups below. Copy from **Your table**.

Example. Snails: 51 listed. 51 ÷ 728 = 0.070. × 100 = **7.0%** of the list.

1. SEP 5 · Percent of the list = total listed ÷ 728 × 100.

Group	Total listed	Percent of the list (%)
Mammals	96	
Corals	7	
Fishes	170	
Insects	89	
Birds	99	
Clams	92	

2. Circle. Biggest share: Birds / Fishes / Mammals. Smallest: Corals / Clams / Insects.

READ FIRST. In the lab, find the green **Learn It** box and read it. Then answer 3 to 5.

3. Tick the word that fits each description.

Description	Endangered	Threatened
Enough are left for now, but its numbers are falling.	☐	☐
So few are left that it could soon go extinct.	☐	☐

4. SEP 5 · Use a calculator. **Clams:** 76 ÷ 92 × 100 = _____% endangered. **Fishes:** 93 ÷ 170 × 100 = _____ % endangered.

Which group is more in danger? Circle: Clams / Fishes. Because a **bigger** / **smaller** share of them is endangered.

5. SEP 2 · Model check. Each bar stands for: ☐ one group's share of the list ☐ one animal ☐ one year

Tick the **two** things this bar model leaves out:

☐ plants and animals in other countries

☐ why each species is in danger

☐ the number of fishes on the list

☐ the percent for each group

Part 2. The cause (Tab 2)

SEP 4 Analyzing Data · CCC Cause and Effect

Open all seven case files, **A** to **G**. Read each one and its big number.

6. Case B: raccoon sightings fell _____%.

Case D: _____ eagle nesting pairs in 1963.

7. SEP 5 · Case F: rhinos fell from 65,000 to 2,410.

65,000 − 2,410 = _____ lost.

That ÷ 65,000 × 100 = _____% lost.

READ FIRST. In the lab, find the green **Learn It** box and read it. Then answer 8 to 10.

8. CCC 2 · Cause and effect. What is the **main** human cause in each case? Tick one in each row.

Case	Habitat loss	Invasive species	Population growth	Pollution	Climate change	Over-exploitation
F. Black rhinoceros	☐	☐	☐	☐	☐	☐
B. Everglades raccoons	☐	☐	☐	☐	☐	☐
E. Polar bear	☐	☐	☐	☐	☐	☐
A. Bornean orangutan	☐	☐	☐	☐	☐	☐
D. Bald eagle	☐	☐	☐	☐	☐	☐
C. Tiger	☐	☐	☐	☐	☐	☐

9. Case G, the honeybee, has three human causes. Tick all three.

☐ Habitat loss ☐ Invasive species
☐ Population growth ☐ Pollution
☐ Climate change ☐ Overexploitation

10. Use the word bank. Greatest threat: _____
Second: _____

Word bank habitat loss · invasive species · pollution

Part 3. The comeback (Tab 3)

SEP 5, SEP 7 · CCC Stability and Change

Pick each species. Read the lowest and the latest count off the graph. Find **times larger** and press **Check**.

11. SEP 5 · Times larger = latest ÷ lowest. The first row is done for you.

Species	Lowest count (year)	Latest count (year)	Times larger
Bald eagle (pairs)	*417 (1963)*	*9,789 (2007)*	*9,789 ÷ 417 = 23.5*
California condor			
Whooping crane			
Black rhinoceros			

12. Circle the one that grew the most times over: Bald eagle / California condor / Whooping crane / Black rhino

READ FIRST. In the lab, find the green **Learn It** box and read it. Then answer 13 to 15.

13. Which fix did the most to bring each species back? Tick one in each row.

Species	A law that bans a poison	Captive breeding	Protected land	A treaty that bans trade
Whooping crane	☐	☐	☐	☐
Black rhinoceros	☐	☐	☐	☐
Bald eagle	☐	☐	☐	☐
California condor	☐	☐	☐	☐

14. CCC 7 · Black rhinos: 6,487 ÷ 65,000 × 100 = _____% of the 1970 number. Is the black rhino back?
☐ yes ☐ not yet
Because: ☐ it has only about a tenth of its old number ☐ it grew from 1995 to 2022

15. SEP 7 · Argue it. "*Captive breeding alone can save the California condor.*"

Claim	☐ I agree. ☐ I disagree.
Evidence	Captive breeding took condors from _____ to _____. But in the wild, _____ still poisons them.
Reasoning	A fix works best when it _____.

Environmental Science (NGL / Cengage), Chapter 7 Summary and Review, pp. 238-241 · ES.3.7.7 · HS-LS4-5, HS-LS2-7, HS-ESS3-3 · Real data: U.S. Fish and Wildlife Service, IUCN, NSIDC.