



Literacy, STEM & Test Prep for the Gifted



*Every Student is a Masterpiece!*

**Problem &  
Research  
Questions**

**Goal, Purpose &  
Hypothesis**

**Methodologies &  
Tools to Test the  
Hypothesis**

**Possible Findings,  
Data Presentations  
and/Alternative  
Approaches**

The US Fish & Wildlife Service wants to remove 23 animal species from the Endangered Species List. The agency wants to remove these animals from the list because they are believed to be extinct, which means all individuals of that species have died out. Affected animals include the ivory-billed woodpecker (bird) and eight mussels (shellfish) species.

A. Imagine you are a wildlife biologist working to update the Endangered Species List and make recommendations to the US Fish & Wildlife Service. What questions do you need to ask to assess whether these species are extinct?

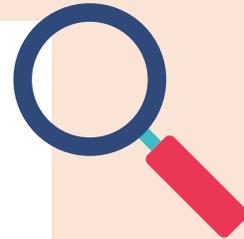
B. What types of information might you use to support your findings? What criteria would you use to judge the accuracy and authenticity of the evidence you gather?

C. How would you present your arguments to the US Fish & Wildlife Service? How would you acknowledge differing points of view?

# Conservation Biology

## Scientific Method

Problem & Research Questions



Goal, Purpose and Hypothesis



Methodologies & Tools to Test the Hypothesis



Possible Findings, Data Presentation and Alternative Approaches



# Problem & Research Questions

Delisting a species from the endangered list is a complex scientific process in conservation biology. It involves careful study and analysis to ensure the species has recovered and is no longer at risk of extinction, or the other way around, extinct. Scientists use various methods/processes to assess the population size, habitat quality, and species threats. They also consider the effectiveness of conservation efforts and the species long-term prospects. They conduct population surveys, genetic analyses, and habitat assessments to gather data on the species' population size, genetic diversity, and habitat suitability.

Some scientific questions that I will initially ask to guide my research are:

In the research journal, Dr. \_\_\_\_\_ studied (logos).

Dr. \_\_\_\_\_ found out that \_\_\_\_\_

Another source is \_\_\_\_\_.

The IUCN criteria for extinct/extinct in the wild/endangered are \_\_\_\_\_.

The Y species \_\_\_\_\_ based on the IUCN is currently \_\_\_\_\_.

According to the US Fish and Wildlife Endangered Species Act,

\_\_\_\_\_.

# Goal, Purpose and Hypothesis

**However**, other wildlife biologists discovered that (other sources), so I would \_\_\_\_\_. Delisting an endangered species from the Endangered Species list prematurely would result in XYZ reasons because XYZ justifications. There were also reported \_\_\_\_\_, according to \_\_\_\_\_. Another point of view might be XYZ's alternative viewpoint and XYZ's alternative reasons.

Some of my hypotheses/My hypothesis is \_\_\_\_\_

My purpose is/Some of my objectives are\_\_\_\_\_.

# Methodologies & Tools to Test the Hypothesis

Once the data is collected, scientists evaluate it using statistical models and peer-reviewed research. This rigorous approach ensures that decisions to delist a species are based on sound scientific evidence. (sample only based on your readings.)

By comparing these data to the criteria set by the government, wildlife biologists can determine if a species is no longer at risk of extinction. If the species meets the requirements or standards, a proposal is submitted to the government for review. The government then evaluates the proposal and decides whether or not to delist the species. The scientific method ensures that decisions to delist species are based on sound evidence and not influenced by personal biases or political agendas.

Based on recent research (cite source) about Y species, Dr. \_\_\_ (logos) found out that \_\_\_\_. The team used field surveys and observation tools such as \_\_\_\_\_ (cite them). Another biologist, on the other hand, used \_\_\_\_\_, and they found out that \_\_\_\_\_. Contrary to these findings, another team discovered in X date that \_\_\_\_\_, and their methodology was \_\_\_\_\_.

Based on these studies, I would use \_\_\_\_\_ methodologies, and I will utilize \_\_\_\_\_ tools to do my research. My hypothesis is/are \_\_\_\_\_.

The processes that the biologists use are \_\_\_\_\_. I will use \_\_\_\_\_. Discuss the methodologies. Discuss your methods and tools in this paragraph and provide evidence or sources like previous journals or studies done by wildlife biologists. Verbalize your thought processes as to why you would do the same thing or reasons you would do them differently.

# Possible Findings, Data Presentations and/Alternative Approaches

Could you discuss other wildlife biologists' findings in this paragraph and a summary? These would serve as your evidence. Transition sentence..... (Similarly, Unfortunately, etc.) Discuss your hypothesis and some scenarios if your findings might not go what you expected or your hypothesis proved untrue. Discuss how you would modify your experiment or your decision. Discuss how other scientists analyze their data or synthesize their data. Discuss yours - how would you synthesize your data?

Closing sentence here. Thanks to the efforts of \_\_\_- and the collaboration of many scientists (cite your source or identify the team), several species were successfully delisted from the endangered list (or the other way around). It was a reminder that with proper conservation measures and collective action, we can make a difference in saving our planet's incredible wildlife. Please write your conclusion.

Short closing sentence. Apply the "ending strategies" from our writing techniques