



ABOUT THIS WORKSHEET

This worksheet complements the Click and Learn “Survey Methods” (<http://www.hhmi.org/biointeractive/survey-methods>).

PROCEDURE

As you proceed through the interactive, follow the instructions and answer the questions in the spaces provided.

1. Read the “Why Study Elephants” page and answer the following questions:
 - a. Elephants are considered to be a keystone species. What does that mean?
 - b. Name three elephant activities or functions that justify the term “keystone species” and describe how the activity changes African ecosystems.

Elephant activity	Change in ecosystem

- c. Why have elephant populations been declining for the past several decades?



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Student Handout

2. Biologists weigh the advantages and disadvantages of survey methods before choosing the appropriate approach. Read through each of the survey methods within the “Where are They” and “How Many” sections and use the table below to organize your thoughts.

Survey Type	Information Gathered	Methods used	Type of count (Total or Sample/Direct or Indirect)	Advantages	Disadvantages
Species Range			N/A		
Individual Range			N/A		
Aerial Survey					



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Individual Registration					
Acoustic Surveys					
Dung Transects					



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3. Read the “Population Change” section, watch the video and explore the map, then answer the following questions:
 - a. Turn on the 1979 and 2007 range layers on the map. Describe the change in the range. Where did the elephant range decrease, increase, or stay about the same?
 - b. In 1979, the estimated elephant population was 1.3 million and in 2007 it was 640,000. By approximately what percentage did the elephant population decline over this time period? (Show your work.) How does this compare to the change in range over this same time period?
 - c. Turn off the 1979 and 2007 range layers and turn on the 2016 trends layers. Based on the area surveyed, where are the major hotspots of elephant decline? Where are elephant populations stable or increasing?