

PART TWO: Making Predictions

By Victoria Fisher

Unit Theme: Collecting and Processing Data from the Chicago Peregrine Program

Conceptual Lens: Animal Repopulation

Concepts: Data description, Inference, Hypothesis, Prediction

Vocabulary: *These words should be defined before the lesson plan, perhaps as a group.*

Extinct

Extirpated

Falcons

Tiercels

DDT

Hacking

Enduring Understandings:

Peregrine Falcons at one time reached numbers of more than 400 west of the Rockies. Due to the use of DDT as a powerful insecticide and crop spray, by the 1960s they had been extirpated from the Midwest and Eastern US. Now, populations are recovering after the government banned the use of DDT in 1972 and reintroduction efforts.

Guiding Questions:

- Are Peregrine Falcons an endangered species?
- What are the factors that contributed to the decline of Peregrines in the Midwest?
- What are the factors contributing to the rise in populations of Peregrines in the Midwest?
- Do increased numbers of Peregrines point to a healthier population? Why or why not?
- What can be done to help continue the growing population of Peregrines in the Midwest?

Skills:

National Science Standards Grades 5-8: 5.8.1, 5.8.3, 5.8.6

Illinois Science Learning Standards: 11A

Instructional Activities & Methods:

1. Begin by reading the “Decline and Recovery” and “Status and Monitoring” sections of About the Expedition. Discuss and define the vocabulary words as a class.
2. Explore the Tools section and get an idea of the types of equipment that scientists use to monitor birds, the watch the Video Reports to see how Peregrines are banded and tracked throughout Northern Illinois.
3. Using the Internet as a search tool, have groups of students investigate the decline of Peregrines in the mid-70s. Assign each group a research topic such as “Peregrine extinction”, “Peregrines and DDT”, “Peregrine Populations – Illinois (or other state)”. Use state departments of agriculture websites for good data, and the resources listed on the Education Resources page are also great sources.
4. Present the research information to the class.

Culminating Performance Assessment:

What?

- Transform gathered observation data into a meaningful representation of Peregrine falcon repopulation in the Midwest over time. The data is already calculated for you on the Expedition Map page of Mary Hennen's website.

Why?

- To analyze collected data, create representational charts, models, etc., understand the uses of data collection; make predictions based on previous results.

How?

1. Using the Expedition Map, and either paper or Excel spreadsheets, create a table that represents the number of Peregrine pairs observed in the Midwest states: Illinois, Indiana, Michigan, Wisconsin, Iowa, Ohio and Minnesota. (See example below)
2. There should be columns for the pairs of birds in 1999 and 2003, a column for percent increase, and a column for predictions for 2005.
3. Once the table is filled in with data, have students calculate the percent increase in birds in each state over the period of 1999-2003 (4 years). The formula to use for this calculation is **$(2003 \text{ \# birds} - 1999 \text{ \# birds}) / 1999 \text{ \# birds} \times 100 = \% \text{ increase}$** .
4. After the calculations have been made, have students use the data to create a representational chart or histogram. This can easily be done with Excel by clicking "Insert" then "Chart" and experimenting with the layout.
5. Based on your percent increases, you can make predictions on how many birds there will be in each state by the end of the 2005 season. **(Add percent increase to 2003 bird number)** Keep reading Mary's emails and checking the Interactive Map to see which nests are producing chicks. (Note that the data is in *pairs* of birds, so divide to get single bird numbers.)
6. Discuss what these increases mean in light of the guiding questions above.
7. At the end of the season (June), check with Mary's Interactive Map and other state department's of agriculture to see if your 2005 predictions were accurate.

Assessment Codes:

(O)- observation

(WS) –writing sample

(P) – presentation

	Falcon Pairs in 1999	Falcon Pairs in 2003	Percent Increase	Predicted Pairs in 2005
Illinois	3	11	270%	
Indiana	6	12	100%	
Wisconsin	10	18	80%	
Iowa	3	4	33.30%	
Michigan	7	12	71.40%	
Ohio	10	16	60%	
Minnesota	25	36	44%	
TOTAL	64	109	70.30%	