√ Pre-Visit √ Field Site

Activity: Bird Count

Appropriate Grade: 7-12

Oregon Content Standard: Scientific Inquiry: COLLECTING AND PRESENTING DATA

Conduct procedures to collect, organize, and display scientific data.

National Science Standard: Content Standard A - Abilities necessary to do scientific inquiry: use appropriate tools and techniques to gather, analyze, and interpret data.

Materials Needed:

- Clipboards with string loops
- Pencils
- Watch, or stop watch
- Copies of the student data sheet created by your students (1 per student per count)
- Copies of the search area map created by your students (1 per student per count)
- Binoculars
- Spotting scope

Background Information: In general, ornithologists adhere to a standardized protocol (methods) when conducting a bird census (count). Biologists from PRBO Conservation Science conducted waterbird surveys in the Klamath Marsh in 2003 by boat, by ground surveys, and by aerial surveys. The student worksheet on page 2 of this activity provides more details on the study.

Counting birds or wildlife species is most useful when counts are repeated, either within a season or from year to year. Keeping track of data collected from year to year is an interesting exercise for students to participate in. If possible, instituting annual waterbird counts as part of your science curriculum is an excellent way for students to collect data and make conclusions, giving them a hands-on experience with this scientific process.

Learner Objective: The student will demonstrate her/his ability to collect and organize scientific data by conducting a waterbird count at Moore Park or any other site where waterbirds are present.

Procedure– student driven study

1. Arrange at least one field trip to Moore Park, or another site, to count waterbirds. Some ideas I include making 2-3 trips to the same site during the months of May and June, and repeating the field trip(s) from year to year with different classes enabling comparison of the data.
2. Pass out copies of the waterbird biologist study methods for each student to review.
3. Have students design a protocol (standard method) for counting waterbirds at Moore Park. First, students need to agree upon a question. Some general questions that may be of interest to students are: What types of waterbirds are at Moore Park?, How many can we identify?, Are there different waterbirds at the park during different months?, etc. Have students make their questions as specific as possible. What will the students measure? Examples: number of waterbirds, number of each species, number of each group (ie grebes, pelicans, ducks, shorebirds, etc.) Which one they

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4. choose may depend upon identification abilities. More on this in part 5. Help them pick a question that best fits with your field trip arrangements.
5. Next, students need to design the protocol for answering the question. Ask students to think about some of the variables of counting birds: weather, temperature, time of day, length of census, traffic, influence of observers, number of observers, moving birds, etc.
6. Identifying birds can be challenging, however, waterbirds are often relative stationary and easy to see. One way to get around difficult identification is to divide students into groups or pairs. Have each small group focus on one species. Or, student can learn to recognize what group of birds each bird belongs to. For example, you could record the number of grebes, ducks, pelicans, egrets and herons, shorebirds, etc. Decide as a group how you would like to approach this.
7. Create a data sheet. Depending upon the protocol you choose, create a data sheet for recording observations. Include space at the top of the page for observer name, date, time and duration of survey, weather conditions, etc. Next, you can list the species or groups of species with space for checking or tallying individuals counted.
8. Once the protocol has been outlined and written down and data forms are created, conduct the count! Make sure to bring supplies needed. It is a good idea to practice bird observation and identification prior to the count– maybe schoolyard or feeder birding.
9. Back in the classroom, summarize data as a class. You can average the number of each category seen by observer or observer group or list each count separately, or both, to appreciate the difference in observations by different observers. Graph total number of species or groups when appropriate. Have students evaluate the data and answer some of the following questions:

What does it show us?
What are the limitations?
Can any conclusions be drawn?
Did the experiment answer the question?
How would you do it differently?

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Waterbird Studies in the Klamath Basin

Biologists from the research organization PRBO Conservation Science (www.prbo.org) studied water-birds in the Klamath Basin during the year 2003. Their goal was to determine what species of non-game waterbirds (birds that are not hunted for sport) were using the marsh and wetland habitats during the spring (May), summer (June), and fall (August). To conduct the surveys they had 16-20 observers for each survey. They conducted surveys of the entire Klamath Basin which includes areas in southern Oregon and northern California. Survey methods included counting birds from the ground using binoculars and spotting scopes, counting birds from boats, counting birds from a plane, and from aerial photographs.