



Community Spotlight

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Exploring the population dynamics of wintering bald eagles through long-term data

By Julie Beckstead, Alexandra Lagasse, Scott Robinson



Module Description:

In this module students address the research question: “How does a bald eagle population change over time at a winter migratory stopover and which factors influence its abundance?” The bald eagle was listed as endangered in the early 1970s under the United States Endangered Species Protection Act of 1973. As a result, several agencies and biologists set up long-term monitoring programs leading to a wealth of data at both local and national scales. Many of these datasets were collected during winter migration when bald eagles are found at stopover sites on lakes and rivers along their migration route.

The data sets used in this activity come from the Bureau of Land Management in Northern Idaho. Since 1974, they have recorded weekly counts of migrating bald eagles every midwinter at Lake Coeur d’Alene. Several factors are predicted to influence winter population dynamics, including weather, food availability, and human disturbance.

This activity has two different approaches:

- Guided Approach: Students will generate questions about bald eagle numbers influenced by weather and food availability. Students will then use graphing software (JMP or Excel) to compile the data in a graphical form to answer their questions.
- Open-Ended Approach: Students will generate their own hypothesis of interest from the larger bald eagle data set.

Teaching Setting:

This resource is designed for undergraduate biology courses. The open-ended approach is encouraged for upper division ecology students in conservation biology, wildlife management, or population ecology classes. See “Related Materials and Opportunities” below for information on how this module has been adapted for a variety of teaching settings.

Citation:

Beckstead, J., Lagasse, A., Robinson, S. (2018). [Exploring the population dynamics of wintering bald eagles through long-term data](#). [Ecological Society of America](#), QUBES Educational Resources. [doi:10.25334/Q4Q68Z](#)

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Related Materials and Opportunities:

This module was originally published in the Ecological Society of America (ESA) education journal *Teaching Issues and Experiments in Ecology (TIEE)*. See the *TIEE* citation below:

Julie Beckstead, Alexandra Lagasse, Scott Robinson. February 2011, posting date. Exploring the population dynamics of wintering bald eagles through long-term data. *Teaching Issues and Experiments in Ecology*, Vol. 11:

https://www.esa.org/tiee/vol/v7/issues/data_sets/beckstead/abstract.html

The module is also available through the [EcoEd digital library](#), ESA's online education resource portal. [View the EcoEd record for this module](#) or [browse other EcoEd resources](#).

On QUBES, the module has been viewed 200+ times and adapted 11 times by participants in four different Ecological Society of America (ESA)-sponsored Faculty Mentoring Networks (FMN). [Check out the adaptations](#) listed in the original resource record to see how this resource has been customized for a variety of class settings.

The QUBES Open Educational Resources (OER) Publishing platform makes it easy for users to adapt and re-publish teaching materials ([learn more about QUBES OER](#)). OER are educational materials that are freely available for faculty to use, share, adapt, and reuse. OER are generally licensed using one of the [Creative Commons](#) licenses that allow for use of the original material and addition to it, with proper attribution to the original author. With OER, faculty can find a great resource and customize it to fit a class's specific needs. The appropriate use of OERs follows a "life cycle" pattern - the OER is *found* -> *adapted* -> *used* -> *refined* -> and *reshared* with the community. However, it is that final step of resharing an adapted OER that often fails to be captured by the user community, largely due to lack of an appropriate tool for resharing. The QUBES OER Publishing platform fills this gap and provides OER users with a mechanism for resharing and getting credit for the work they put into the adaptation.

If you are interested in using OER but would like some guidance and support through the *adaptation*, *use*, *refinement*, and *resharing* processes, join a QUBES Faculty Mentoring Network (FMN)! Our spring FMNs are just finishing up, but we are already planning for the Fall 2019 FMNs. We anticipate running FMNs that feature teaching resources with [natural history collections data](#), agent based modeling, genomics, digital evolution, and big environmental datasets. [Subscribe to the QUBES newsletter](#) to receive updates about when applications open this summer.

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