SNAPSHOT WISCONSIN

Data Dashboard Scavenger Hunt:

Educator Handout

INTRODUCTION

In this activity, students will explore the Snapshot Wisconsin Data Dashboard, an online tool that visualizes many aspects of the project's trail camera data. Through this, students will practice interpretation of maps and graphs and connect their findings to the ecology of Wisconsin's wildlife.

Data Dashboard: datadashboard.snapshotwisconsin.org

KEY CONCEPTS

- Interpretation of data
- Wisconsin ecological landscapes
- Comparing behavior and life history of different Wisconsin species

LEARNING OBJECTIVES

Students will be able to:

- Interpret graphs and maps.
- Utilize their understanding of data to make inferences about Wisconsin wildlife life history.

CURRICULUM CONNECTIONS

Curriculum	**Standards**
NGSS (May 2013)	MS-LS2-1, HS-LS2-2
AP Biology (2019)	1.A, 2.A, 4.B
Wisconsin's Standards for Science	MS-LS2-1. SCI.LS2.A.h

KEY TERMS

Crepuscular: occurring or active during twilight (Merriam-Webster, n.d.)

Diurnal: active chiefly in the daytime (Merriam-Webster, n.d.)

Ecological landscape: areas with different ecological attributes and management opportunities, such as different key habitats, aquatic features, native plants and animals. (*Wisconsin DNR*, n.d.)

Ecological niche: The role an organism plays in a community. A species' niche encompasses both the physical and environmental conditions it requires (like temperature or terrain) and the interactions it has with other species (like predation or competition) (National Geographic, n.d.)

Habitat: the place or environment where a plant or animal naturally or normally lives and grows (Merriam-Webster, n.d.)

Hibernation: to pass the winter in a torpid or resting state (Merriam-Webster, n.d.)

Migration: to pass usually periodically from one region or climate to another for feeding or breeding (Merriam-Webster, n.d.)

Nocturnal: active at night (Merriam-Webster, n.d.)

Prey: an animal taken by a predator as food (Merriam-Webster, n.d.)

Predator: an organism that primarily obtains food by the killing and consuming of other organisms (Merriam-Webster, n.d.)

TIME REQUIREMENTS

20-30 minutes

SUGGESTED AUDIENCE

This activity is appropriate for middle school life sciences and general high school biology.

PRIOR KNOWLEDGE

Students should understand the concepts of ecological niche and habitat, as well as be able to provide examples of animal behavior and activity patterns (e.g. hibernation).

Students should have a general understanding of how to interpret line and bar charts.

MATERIALS

Each student will need:

Student worksheet and map handout
Writing utensil
Device to access Data Dashboard (computer or tablet works best)

PROCEDURES

1. Review the definitions of the key terms as a group.
2. Direct the students to the Data Dashboard website. Draw their attention to:
    a. The 22 species of interest along the left side
    b. The "Select map mode" options below the species list

   c. The “Select date range of data:” slider below the map mode selections
   d. The Animal Activity graph on the right side of the page
      i. The “by Hour” and “by Month” buttons below the graph.
3. Assign students to a species (Bear, Deer, or Sandhill Crane). Distribute the appropriate handouts for each species. Every student should also receive a map handout.
4. Students will complete the worksheet provided.
5. After completing the worksheet, have students compare and contrast their findings with classmates who were assigned different species.

TEACHING TIPS

- Encourage exploration of other species on the Dashboard.
- If students are confused by the options on the Dashboard, feel free to take more time to demonstrate step 1 of the procedure.
- After the activity, facilitate discussion about how ecology differs between species.
    - What are some examples of species that require different habitats? How does that impact the data we see in the maps?
        - Examples include:
            - Black bear are typically found in forested area and are most common in northern Wisconsin
            - Generalist species like white-tailed deer that succeed in a variety of habitats throughout Wisconsin
    - What are the different behavioral patterns that species exhibit? How does that impact the data we see in the maps?
        - Examples include:
            - Daily behavioral patterns: Species exhibit different patterns of activity throughout the 24 hours of a day. Common patterns include crepuscular, diurnal, and nocturnal.
            - Seasonal behavioral patterns: Many animals become more active as weather begins to warm and food becomes more abundant. This can influence behavioral patterns such as emerging from hibernation, migrating to an area, increased foraging and beginning to mate (*National Wildlife Federation*, 2010). In contrast, during colder months, animal activity may decrease as food becomes scarcer. Some animals may migrate out of the area for the winter or enter hibernation or torpor.

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