

Bobcat Research

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Overall Unit Enduring Questions

- How is scientific data useful in planning human actions?
- What are some possible reasons why it is important to have large carnivores in an ecosystem?
- How do local uses of land affect habitat?
- How can local planning minimize negative impacts on other species?

Previewing Activities

Pre-teach in your customary, creative way the following vocabulary:

Ledge	Wetland	Corridor	Predator	Carnivore
Habitat	Vermin	Fragmenting	Range (for an animal)	
Breeding population		Generalist	Cache	Crepuscular

Using small groups, create a class list of the survival requirements of mammals generally (food, water, shelter/den habitat, protection from predators, area).

Viewing Activities and Questions

- Have students record notes during the video focused on the following questions:
- What information do radio collars gather about bobcats? Why is this useful?
- What are some specific ways that bobcats meet their survival requirements?
- What different types of habitat meet different survival needs of bobcats?

Post-Viewing Activities

This will require a large-format map of the school district and 50 self-adhesive sticky dots for each student or a reasonable substitute.

Have students create as accurate as possible a record of where they are every $\frac{1}{2}$ hour for a 24-hour period. Have students post the sticky dots on the map of your school district, one dot for each location in their 24-hour record. This will set the stage for a guided discussion around the following topics:

- What patterns emerge from the data of student location?
- What “survival needs” for humans could correspond to each location?
- What locations and survival needs might emerge if parents or grandparents were included in this data?
- What “critical habitat” is essential for your community?
- What might happen if your community was “fragmented”?
- What important information might be missed using this type of study of humans?

Next, return to the topic of bobcats and discuss these topics:

- What does the data collected by radio collars tell us about bobcats and habitat?
- What information could be missing? Why?
- Is everywhere in your school district “bobcat habitat”? Why/why not?
- Is some habitat more important than others? Why/why not?

Extensions

From your regional planning commission or Google Earth or other source, obtain as large as possible an aerial photograph of your school district.

Break students into four groups. Provide each group with small sticky circle post-its or markers for recording information on the map.

Group One – Using student knowledge of the area or information available on the map, mark possible sites of rocky outcrops or ledge on the map. If none, mark the edge of the map in the direction of significant off-map ledges or rocky outcrops.

Group Two – Same as group one, but mark the map for known or suspected wetland areas.

Group Three – Mark areas on the map that you suspect would have significantly higher than average concentrations of bobcat prey species (rodents such as voles, deer mice and meadow jumping mice, squirrels, rabbits, ruffed grouse, turkey). Be prepared to defend why you chose these areas.

Group Four – Identify any major roads or other human-made objects on your map that might pose a significant barrier to bobcats. As a group, identify those places on the road

that would be the safest places to cross from a bobcat's perspective. Be prepared to defend your choices.

After all four features have been identified, have students look for patterns and identify possible corridors between habitat components. Discuss the vocabulary word "fragmenting" and what that might mean for bobcats. After students have identified possible corridors between habitat features, try to determine what human land uses exist in those corridors. Is it compatible with bobcats? What types of future decisions could preserve or change that?

Vermont Teaching Standards

- 7.13.cc. Describe, model, and explain the principles of the interdependence of all systems that support life (e.g., food chains, webs, life cycles, energy levels, populations, oxygen-carbon dioxide cycles), and apply them to local, regional, and global systems.
- 7.16.cc. Describe how management and development practices affect resource conservation and agricultural systems (e.g., People decide when and how to harvest trees, fish, and wildlife; where to plant and how to grow crops; where to preserve wild areas; where to locate businesses and homes; and how farm practices can reduce their impacts on streams).