

Habitat Discoveries

Oregon State Standards

K.3S.1
K.3S.2
4.2L.1
5.2L.1
5.3S.2

Common Core Standards

ELA Literacy
RST.6-8.9

Vocabulary

- Ecosystem
- Biotic
- Abiotic
- Organism
- Habitat
- Habitat specialist
- Habitat generalist

Summary: Students will learn about specific habitat requirements for birds through discussion, hands-on exploration, and mapping

Time: 60 minutes

Grade Level: 3rd - 5th

Goals

- To increase awareness of common birds
- To gain understanding of components in the landscape that are used as habitat for specific bird species
- To provide science education aligning with state standards that can be used outside of the classroom in the school yard or local outdoor area.

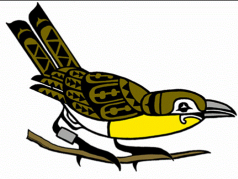
Learner Objectives

Students will... .

- Become familiar with at least one common local bird species
- Characterize the habitat requirements for a specific bird species
- Make spatial connections between habitat requirements and a given area

Materials

- Laminated bird pictures / fact cards for each student
(see for additional resources Bird Sleuth <http://www.birdsleuth.org/502/>)
- Habitat Scavenger Hunt worksheet for each student
- Pencils for each student
- Whiteboard and erasable marker



Habitat Discoveries

Background Information

An **ecosystem** is everything within a given area, both living (**biotic**) factors and non-living (**abiotic**) factors that interact with each other. The habitats within these ecosystems are characterized by their dominant vegetations (e.g. Savannah is dominated by grass, chaparral is dominated by shrubs, forest is dominated by trees). The type of habitat determines the organisms that live in it, because the organisms are adapted to their surroundings. Birds are tied to specific vegetation by their use for food and shelter. Trees and other plants provide food such as nuts, nectar, berries, seeds, associated insects and other animals. Trees and other plants provide shelter for nest building materials, species' preferred nesting locations, perching, hiding from predators/prey, and protection from harsh weather.

The habitat of an organisms provides everything needed to live. In general, all living things need food, shelter, water, and space in some form or another. Different species of birds have unique and specific requirements for their habitats. If a bird is adaptable to different habitats and doesn't require very specific things, it is called a **habitat generalist**. If a bird species has very specific requirements for its habitat, it is called a **habitat specialist**. An example of a habitat generalist would be the Western Scrub Jay, an adaptable bird species that can live in many habitat types. An example of a habitat specialist is the American Dipper which lives along rocky streams in the mountains. Habitat specialists are generally more at-risk for population decline because they are more vulnerable to habitat destruction.

Different bird, different needs

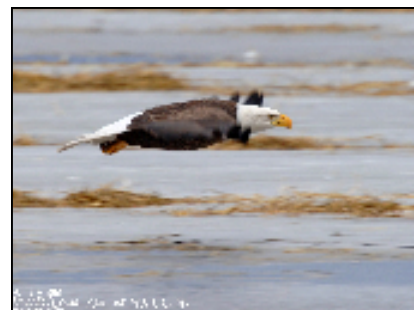
Acorn Woodpeckers require: dead trees to excavate a hole for nesting and storing acorns, oak trees for food (acorns/insects)



Rufous Hummingbirds require: shrubs and trees in open areas or forest edges for nesting, and abundant wildflowers for feeding on nectar



Bald Eagles require: open water areas for fishing, tall old-growth trees for nesting and perching above water, and an area that is far from human disturbance



Photos © Jim Livaudais 2013



Habitat Discoveries

Getting Ready

- Locate an outdoor space which is or could potentially be habitat for birds. There should be elements of food, water, shelter and space for local birds.
- Discuss common local birds and their requirements in an ecosystem.
- Model making a basic map with landmarks, for example: make a map of your classroom!

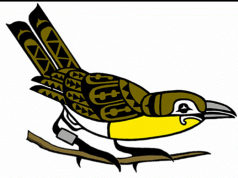
Discuss!

- What is an ecosystem
- What is required by living things to make a habitat
- The difference between a habitat generalist and specialist
- Examples of local birds and their habitat requirements

Investigate

1. Bring students to an outdoor location, with as much diversity of landscape features as possible (i.e. streams, ponds, trees, shrubs, grass etc.)
2. Encourage students to look around first and observe things that could be used by birds for habitat. Ask students to describe the main type of vegetation and categorize the type of habitat.
3. Hand out Bird Cards and have the students read over the back of the card, paying special attention to the food and shelter requirements for the individual bird species. Tell the students they are “becoming” that bird species, and so they must *think* like that bird (i.e. Do they need to be sheltered from predators? Do they need to have a certain place to perch and look for prey? etc)
4. Hand out the worksheet and go over the two components: making a map of the area, and labeling the components of the landscape that may be used for bird habitat.

(**Hint:** With younger children it may be beneficial to make the map while gathered in a group)
5. Allow 15-20 minutes for students to explore the given area for their bird’s habitat requirements and record them on their map.



Habitat Discoveries

Conclusion

1. Have students gather to share their findings.
2. Make a map of the local area on the whiteboard and have students come up and record where they would build their nest, find food/water.
3. Compare and contrast the different habitat requirements of different bird species.
4. Have students categorize the birds that may be habitat specialists vs. habitat generalists. Ask them to apply this knowledge by considering whether human development would have a greater affect on the specialists or generalists.
5. Have students reflect on how their habitat as a bird compares to their habitat as a human

Classroom Extensions

- Have students present their bird and bird habitat findings in the form of a “Real Estate” brochure to advertise all the great components of the habitat
- Have students pair up and look at each other’s maps and bird cards in order to compare and contrast the habitat requirements of different birds
- Have students make a food web that includes their individual bird. Use field guides, natural history books and the internet to look at predators and/or prey related to their individual birds.
- Use eBird (available <http://ebird.org/content/ebird/>) to examine charts and graphs of what birds can be found in the local area at different times of the year.

Link to KBO lessons

- **Bird Beak Buffet** Students will learn about bird beak adaptations and bird habitats through scientific inquiry, hands-on experiments, and class discussions.
- **Using Bird Field Guides** Students will explore field guides by identifying local bird species and their characteristics.

Further Resources

- For more information, materials (Bird Cards): *Bird Sleuth* from Cornell University’s Lab or Ornithology available <http://www.birds.cornell.edu/birdsleuth>
- *All About Birds* available <http://www.allaboutbirds.org/>

Name: _____

Date: _____



Habitat Discovery Map

Instructions: Draw a map of your surrounding habitat area, (include landmarks like trees/buildings/streams etc.):

A large, empty rectangular box with a black border, intended for the student to draw a map of their surrounding habitat area.

Look around your habitat, and label these things on your map above (just write the number):

- (1) where to get a drink
- (2) where to find something soft for the inside of your nest
- (3) where you could sit to be safe from predators
- (4) where you could sit to be high above and look for prey
- (5) where can you find a type of food that grows on a plant
- (6) where you could build a nest on the ground
- (7) where you can build a nest about 5 feet above the ground



Bird and Habitat Requirements: basic cards

Cut out cards for use with class.



Western Kingbird

Fun fact: Over the last 100 years, this species has been spreading throughout the western U.S. because human activities has been creating habitat for it.

Habitat: open valleys and lowlands where they can perch on fences and trees (to hunt insects)

Plants/Cover: grasslands, deserts, sagebrush, agricultural fields, and open woodlands. Nest is placed at the base of branches in shrubs and trees.

Food: bees, wasps, grasshoppers, crickets, beetles, moths, flies, bugs, and spiders. Sometimes may eat fruits of elderberry, hawthorn, and other shrubs.

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Acorn Woodpecker

Fun fact: This species has a complicated social system. Family groups hold territories, and young woodpeckers stay with their parents for several years and help raise more young.

Habitat: open oak forests, or mixed oak-pine forests

Plants/Cover: oak woodlands with dead trees to excavate holes for nesting and storing acorns. Nest holes may be used for a few years.

Food: Mostly acorns and insects. They may also eat almonds, walnuts, hazelnuts, pecans, and pinyon pine nuts

Photos © Jim Livaudais 2013



Wilson's Warbler

Fun fact: This species lives throughout the U.S. and tends to be brighter in the western regions. The populations in the north-west regions to Alaska also tend to be a bit larger.

Habitat: Shrubby riparian areas, edges of ponds, lakes and clear-cuts of montane and boreal forest.

Plant/Cover: Breeds (summer) in shrub thickets of riparian habitats, Winters in tropical evergreen and deciduous forest, secondary growth, brushy fields, and plantations. Nests in low shrubs or on the ground in grass.

Food: Insects and sometimes berries

Photos © Jim Livaudais 2013



Rufous Hummingbird

Fun fact: makes one of the longest migrations of any bird, as measured by body size. At 3 inches long, it may travel about 7,500 miles each year, as it migrates between Mexico and Alaska.

Habitat: open woodlands

Plants/Cover: shrubs and trees in open areas or forest edges for nesting with abundant wildflowers. Nests about 30ft. high in coniferous or deciduous trees.

Food: Wildflower nectar, as well as insects which they may find in spider webs or hunt for in the air. Insects are an important protein source for females' when preparing to lay eggs.

Photos © Jim Livaudais 2013



Bird and Habitat Requirements: basic cards

Cut out cards for use with class. For more cards, visit see for additional resources Bird Sleuth <http://www.birdsleuth.org/502/>)



Western Scrub Jay

Fun fact: Sometimes known as “camp robbers” these birds may steal food from a garbage, as well as acorns that may have been stored by woodpeckers.

Habitat Coastal oak or Montane pine woodlands

Plants/Cover: Scrub, open woodlands, suburban areas

Feeding: Populations that live around oaks developed stouter beaks to open acorns those living around pines have thinner, pointed beaks to get at pine nuts within pine cone scales.

Photos © Jim Livaudais 2013



Western Tanager

Fun fact: the red face is from rhodoxanthin, a pigment rare in birds. It is obtained from the diet, likely from insects that themselves acquire the pigment from plants.

Habitat Breeds (summer) in open coniferous and mixed deciduous-coniferous forests. Winters in open mountain pine woodlands, second growth, and suburban areas.

Plants/Cover: patchy forest canopy with cover between 40–70%

Feeding: Mainly insects and some fruit

Photos © Jim Livaudais 2013



White-breasted Nuthatch

Fun fact: In winter, nuthatches may for mixed flocks with chickadees and titmice.

Habitat: mature woods, more often found in deciduous than coniferous forests, and also in suburban areas

Plants/Cover: open areas with large trees, woodland edges with large trees. Nests in tree cavities or holes made by woodpeckers.

Food: beetles, various larvae, ants, fly larvae, caterpillars, stinkbugs, and spiders. They also eat seeds and nuts, including acorns, hawthorn, sunflower seeds, and sometimes crops such as corn.

Photos © Jim Livaudais 2013



Purple Finch

Fun fact: sometimes add in the sounds of other species, including Barn Swallows, American Goldfinches, Eastern Towhees, and Brown-headed Cowbirds.

Habitat: forests and suburbs with trees

Plants/Cover: Usually found in moist coniferous forests in summer as well as wooded riparian areas, mixed forests. Nests far out on coniferous tree limbs and sometimes shrubs.

Food: seeds of coniferous trees, tulip poplars, and others. Sometimes soft buds, nectar, fruit: including blackberries, honeysuckle, poison ivy, crabapples, juniper berries. They sometimes eat some insects such as caterpillars, grasshoppers, and beetles.

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