Amphibians and Reptiles of the West Eugene Wetlands

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Introduction

This is a series of lesson plans surrounding the herpetofauna of a wetland habitat in the Willamette Valley of Oregon. It was created to be used in conjunction with a field trip to the West Eugene Wetlands in Eugene, Oregon, but could, however, be easily adapted to other wetland sites around the country, provided one has information on the herpetofauna of the specific area. General information about amphibian and reptile habitat needs is provided along with more specific information on the amphibians and reptiles encountered in the West Eugene Wetlands. Further information can be found on specific species from many of the resources noted in the reference list at the end of this document.

The purpose of this curriculum is to introduce students to the connections between habitat and the animals that inhabit it, while giving students an introduction to field studies and a broader perspective on reptile and amphibian needs. I've included the necessary presentations along with a teacher's hard copy of the Amphibians and Reptiles of the West Eugene Wetlands presentation. Also included are the handouts and some background information on wetlands. I hope both you and your students enjoy learning about the herpetofauna of the West Eugene Wetlands.

Objectives

- Students will understand habitat needs for reptiles and amphibians
- Students will be able to make predictions about habitat needs based on physical characteristics
- Students will have an introduction to field studies by examining local wetland habitat
- Students will understand how actions of humans can affect the habitats of local wildlife
- Students will make a personal plan to minimize affects on local habitats of herpetofauna

Lesson 1: Habitat Needs of Amphibians and Reptiles

Classroom Activity

Objectives: To introduce a unit on reptiles and amphibians; to show students both similarities and differences between reptiles and amphibians; to introduce the herpetofauna of the west Eugene wetlands.

Materials: -2 terrariums, one with a "typical" reptile, one with a "typical" amphibian OR pictures, overheads of a reptile and an amphibian.
-Background information on herpetofauna of the west Eugene wetlands.
-Slide show of west Eugene wetlands herpetofauna.
-Checklists of reptile and amphibian habitat needs.

Procedure:
1. Show students terrariums or pictures of reptiles and amphibians. If appropriate, have students handle animals.
2. Ask students to generate 2 lists: Same and Different (similarities and differences between reptiles and amphibians.
3. Explain habitat what habitat means. Ask what our habitat needs are. Ask students if they can determine habitat needs for each based on the Same and Different exercise. Brainstorm lists of habitat needs.
4. Explain habitat needs for each.
5. Show slide show of A&R of W.Eugene wetlands. Ask of each, A or R? Describe each, habitat needs, importance, interaction with, etc.
6. Explain upcoming field trip to wetlands. Give basic information about wetlands in this area.
7. Divide group into 2: Amphibians Specialists and Reptiles Specialists or have whole class become Specialists of both groups.
8. Hand out A & R habitat checklists.
9. Go over checklists. Talk about field trip to wetlands.

Lesson 2: Field Trip to the West Eugene Wetlands

Field Activity

Objectives: For students to gain a better understanding of wetland habitat, to observe amphibians and reptiles in their habitats, or to just observe habitat and assess needs.

Materials:
-A & R Habitat checklists
-Clipboards
-Pens/pencils
-Thermometers
-Rulers

Procedure:
1. Divide again into Amphibians Specialists and Reptiles Specialists groups, or have entire class be both Specialists
2. Explain procedure of going out into the wetlands.

- Remind students of respect for the habitat
- Go into field to find habitats, check off information on Checklists
- If you move something, like a rock or a log, remember to put it back where you found it. Animals may be living there.
- Never, under any conditions, touch an animal. How would you feel if someone 100 times as big as you suddenly scooped you up out of your habitat.
- Stay on the path. Going out into the fields or ponds disturbs the animals that are living there.
- Don't leave anything behind. That means any type of garbage, gear or personal items.

3. Hand out checklist, supplies.
4. Have students go into field, preferably in small groups, and look for habitat, take notes, write down observations, etc.

Lesson 3: Field Trip Follow Up

Classroom Activity

Objectives: To assess data taken on field trip; to determine if habitat needs were met for both amphibians and reptiles in wetland; to discuss humans impacts on habitat and populations of herpetofauna in wetlands; to generate discussion on what we can do to help.

Materials:
-Checklists from field trip
-Presentation on deformed frogs
-Information on populations in the area

Procedure:

1. Hand back checklists.
2. Ask students if they thought there was good habitats for A & R. Why/why not?
3. Ask students what they saw, if they saw any amphibians or reptiles, etc.
4. Lead into discussion about human impacts on A & R habitat and populations.
   -filling wetlands
   -roads
   -agriculture
   -pollutants
   -deforestation
5. Presentation on deformed frogs and other impacts. Talk about western pond turtle.
6. Make a personal plan of what we can do to help.

Basic Information on Wetlands

What are wetlands and why are they important?

Basically, anything that contains permanent or temporary areas with standing water are considered wetlands. There are different kinds of wetlands, and they are identified by their distinctive plant and soil types (City 1999).

Wetlands are an important part of the global ecosystem. They affect the entire watershed they are in including streams, lakes, other surrounding wetlands, and the riparian areas (Hey 1999). Wetlands are areas of unique biodiversity. They are home to a wide variety of plants, insects, amphibians, birds, and mammals. The soil properties of wetlands make them great water storage areas in times of flooding, and they also act to filter out pollution (Campbell 1999). They are also an important part of the carbon cycle. Wetland plants are good at pulling carbon dioxide out of the air, a gas know to be responsible for the greenhouse effect (Hey 1999).

The value of wetlands however has not always been appreciated. Nineteenth century American settlers were not known to appreciate wetlands. Wetlands, marshes, sloughs, and swamps were thought of as smelly breeding grounds for mosquitoes and alligators. As European settlers moved west across North America, they also brought with them the need for agriculture. Wet soils made life difficult for farmers in the 19th century. To these early settlers, a good wetland was a drained wetland. Draining wetlands for agricultural purposes was a common practice by the late 1800's. It is estimated that over 116 million acres of wetlands had been drained and filled for farmland by 1985 (Hey 1999).

Current wetland policies however are more strict than they were in the 19th century. The current trend in wetland policy is the implementation of mitigation banks. In this system, wetland habitat that is restored by one party is assigned a value or number of credits. In the future, a developer that is unable to avoid filling a wetland elsewhere can withdraw these credits, at a price, in order to build on that land (Salvesen, 1996). This strategy ensures that at least one acre of wetland is restored for each that is filled. The problem with this practice is that older wetlands are more successful and have greater biodiversity. Ideally, we would not be destroying wetlands in the first place. However, this is not the case, and wetland restoration remains a big issue in the United States.

What are the wetlands like in Eugene?

There are several types of wetlands in Eugene including ash woodland, emergent wetlands, ponds, and wet prairie. The ash woodland trees include Oregon ash, black cottonwood, and willows. Here you might see black-tail deer, Pacific treefrogs, northwestern garter snakes, downy woodpeckers, and other birds and wildlife. The emergent wetlands are filled with sedges and cattails, and the wildlife here is also abundant. In the ponds, you may see a beaver or nutria, but also look for the impressive great blue heron either feeding or taking to flight. Wet prairie you'll soon find is filled with tufted hairgrass, which looks like its name. Racers, gopher snakes, and garters, all harmless, can be found moving swiftly through these grasses. Also flying overhead, you may spot sparrows, finches, the western meadowlark, or the northern harrier (City 1999). Whichever part of the Eugene wetlands you find yourself in, there is way too much to see and do in just one trip!

A Species in Trouble: the Western Pond Turtle *(Clemmys marmorata)*

The numbers of western pond turtles have declined to the point that they are under consideration for the endangered species list (Storm 1995). They are currently protected in Oregon and Washington, and in the Willamette Valley they are being monitored by the Army Corps of Engineers, Portland District on the Willamette Valley Projects. It is estimated that the current population numbers are less than 10% of their historical population. Agricultural and urban development, flood control, and predation by Bullfrogs are all contributors to the pond turtles declining numbers (Army 2000).

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Amphibian Habitat Checklist

_____Air temperature _____Time of day

_____Shallow water with submerged or emergent vegetation

_____Temperature of water _____Depth of water

What is this type of habitat used for?_____

What amphibians would you find there?_____

_____Shrubbery

What is this used for?_____

What amphibians would you find there?_____

_____Ponds

_____Temperature of water _____Depth of water

What are these used for?_____

What amphibians would you find there?_____

_____Surface litter on water

What is this used for?_____

What amphibians would you find there?_____

_____Downed wood

What is this used for?_____

What amphibians would you find there?_____

Amphibian Checklist for the West Eugene Wetlands

_____Long-toed salamander

Time of day_____Where spotted_____

_____Rough-skinned newt

Time of day_____Where spotted_____

_____Pacific treefrog

Time of day_____Where spotted_____

_____Bullfrog

Time of day_____Where spotted_____

_____Unidentifiable amphibian

Time of day_____Where spotted_____

Description_____

_____

Reptile Habitat Checklist

_____Air temperature _____Time of day

_____Large rocks

What are these rocks used for?_____

What reptiles would you find there?_____

_____Talus slopes or rocks with large fissures

What are these used for?_____

What reptiles would you find there?_____

_____Submerged logs (in water)

What are these logs used for?_____

What reptiles would you find there?_____

_____Water sites

What is the water needed for?_____

What reptiles would you find there?_____

_____Meadows or sunny grassy fields

What are these areas used for?_____

What reptiles would you find there?_____

_____Downed wood (on the ground)

What is this wood used for?_____

What reptiles would you find there?_____

_____Shrubbery

What are shrubs used for?_____

What reptiles would you find there?_____

Reptile Checklist for the West Eugene Wetlands

_____Western Pond Turtle

Time of day_____Where spotted_____

_____Southern Alligator Lizard

Time of day_____Where spotted_____

_____Northwestern Garter Snake

Time of day_____Where spotted_____

_____Common Garter Snake

Time of day_____Where spotted_____

_____Western Terrestrial Garter Snake

Time of day_____Where spotted_____

_____Ringneck Snake

Time of day_____Where spotted_____

_____Racer

Time of day_____Where spotted_____

_____Gopher Snake

Time of day_____Where spotted_____

_____Unidentifiable reptile

Time of day_____Where spotted_____

Description_____

_____