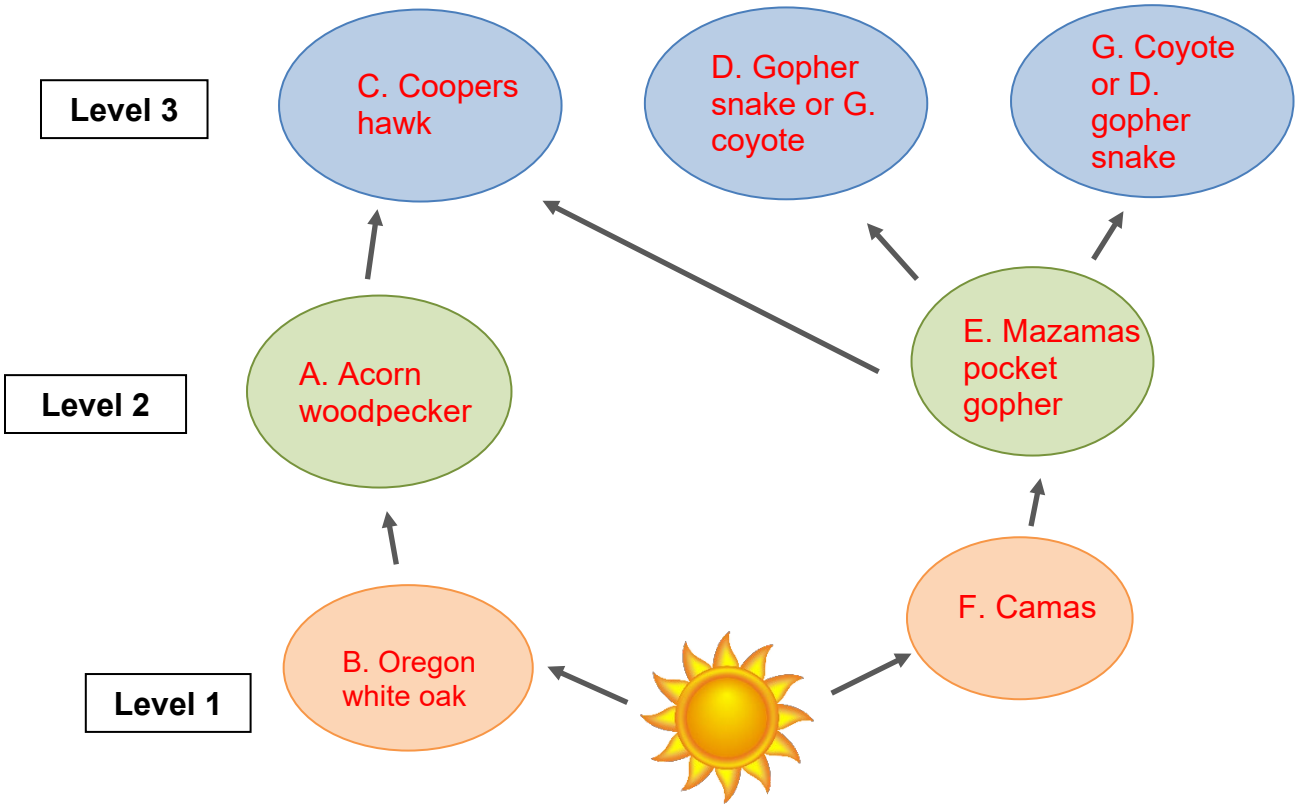
OREGON ENVIROTHON 2025 **TEAM #_____**

Wildlife Ecology **Test Total_____ / 50 points**

Part 1: Wildlife Ecology Concepts

1-7. Energy flows in a food web. In the diagram below, write the letter for each species listed below into one of the circles, creating a logical food web that represents three trophic levels for a **Willamette Valley Oak Woodland Ecosystem.** Sunlight is captured at Level 1. Please note that the arrows point in the direction of energy flow (the direction of the consumer). [7 points]



Species List:		
	A. Acorn woodpecker	E. Mazamas pocket gopher
	B. Oregon white oak	F. Camas
	C. Coopers hawk	G. Coyote
	D. Gopher snake	

8. What trophic level of this food web has carnivorous animals? [1 point] _Level 3____
9. Which of these species is an ecosystem engineer that influences soil composition? [1 point] _Mazamas pocket gopher___
10. Which of the species caches its food in trees? [1 point] _Acorn woodpecker____

____/ 10 points

Part 2: Wildlife Management Issue

Use the publication **Fire Adapted Oak Habitats in the South Willamette Valley** to answer questions 11-17.

11. In what way does fire play an important ecological role in the forests/woodlands of the southern Willamette Valley? [1 point]

    a. It reinitiates young or early seral forests, creates biodiversity gaps, and reduces flammable material buildup.
    b. It recycles nutrients, regenerate plants, and simulates biological diversity among plant species and habitats.
    c. Both a and b

12. Describe one way that fire-induced topkill can support oak trees. [1 point]

    Any one of: Thins dense stands, provides snags, or provides downed wood for wildlife.

13. Of the 200 native wildlife species that rely on oak habitats, what are three imperiled species found in these habitats? [3 points]
    Columbia white-tailed deer, White breasted nuthatch, and Fender's blue butterfly_(1 pt. each)

14. What are two things that trees provide for imperiled wildlife species in oak woodlands? [1 point, 0.5 points each]

    Any two of: shade, cover, forage, perches, or cavities

15. Figure 3 depicts the decline in oak habitat over time. What are three reasons for this decline? [1 point]

    a. Grassland flooding, decline in fuel, and decrease in Douglas fir species
    b. Fire exclusion, intensive forestry/agricultural management, and urban development
    c. Wetter winters, competition between oak species, and frequent fire

16. Historically, how did the cultural burning practices of the local Kalapuya people reduce damage to acorns? [1 point]
    The burning discouraged insects

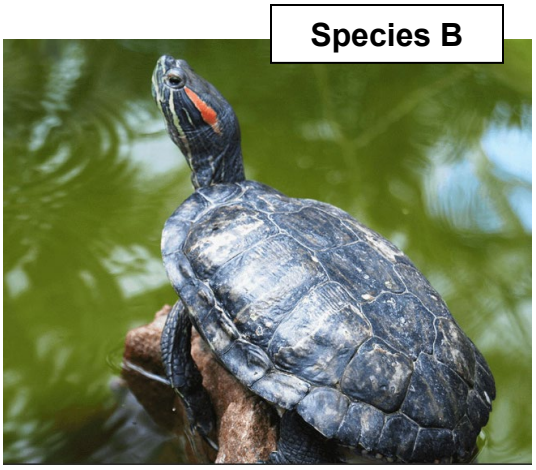
17. Why is it important to halt the encroachment into oak woodlands of upland forest species that persist at high densities? [1 point]
    They (Douglas-fir and incense-cedar) can **overtop** and eventually **shade out** oak species (0.5 pt. each key word.)

____/ 9 points

Part 3: Wildlife Interaction

Refer to the **Peterson Field Guide: *Western Reptiles and Amphibians*** for Questions 18-22.

(photo Oregon Department Of Fish and Wildlife)



(photo Tualitian Soil Water Conservation District)

Both of the turtles shown above are found in Oregon. One of them is a native species and the other is a non-native species that was introduced from releasing household pets.

18. Fill in the blank: Species B is non-native (or alien) to the ecosystem and its introduction has caused environmental harm. That is why it is known as a(n) __invasive__ species. [1 point]

19. Give the common name of Species A. [1 point] _Western pond turtle___

20. Give the scientific name of Species B. [1 point] _ *Trachemys scripta* ___
    or *Trachemys scripta elegans (red eared slider sub-species)*

21. Fill in the blank: Species A may not breed until it is _8__ to __10__ years old. [1 point]

22. These two species both use the same types of habitats and eat similar diets. Circle the term that best describes this type of species interaction. [1 point]

Predation Parasitism Commensalism Competition

____/ 6 points

Part 4: <u>Skins, Skulls, and Bones.</u>

Use the **field guides and materials** at your test station to help answer questions 23-25.

23. Examine and identify the set of **6 skins** of animals that are **all found in Oregon**.

Match the **letter** attached to each **skin** to the correct mammal species in the list below. [6 points]

_____ Virginia opossum	_____ American mink
__A_ elk	_____ gray fox
_____ northern river otter	__E_ coyote
__D_ red fox	_____ long-tailed weasel
_____ ermine	_C__ northern raccoon
_____ nutria	_F___ bobcat
__B_ deer	_____ yellow-bellied marmot

24. Examine each labeled **animal skull** displayed on the table (**be gentle with them**).

Assign each of the **4 skulls** to the appropriate mammal family. [4 points]

__A__ Felidae (cats)	_____ Castoridae (beavers)
__C__ Mustelidae (weasels)	__D__ Didelphidae (opossums)
__B__ Canidae (dogs, foxes)	_____ Cervidae (deer, elk)
_____ Mephitidae (skunks)	_____ Procyonidae (coatis, raccoons)

25. Compare the two skins at your table and give the <u>scientific</u> name for each. [2 points]

A. *Taxidea taxus*_____

B. *Urocyon cinereoargenteus*_____

The skull is from one of these same two species. Which species does it belong to? (circle one) [1 point] Note that matches *Taxidea taxus above*, so may be B here.

A B

____/ 13 points

Part 5: Identifying Tracks and Sign

Use **Scats and Tracks of the Pacific Coast**, as well as the pictures and tracks provided to answer Questions 26-31.

Scat A

See "TRACK A" for reference

Background. This species digs dens on exposed hilltops or ridges with a view of the surrounding area. Their scat varies from pure black animal protein to mostly hair with some bones. Tips are tapered into long ends.

Questions:

26. What is the scientific name of this species? [1 point] Canis latrans

27. Name one similar species and how to distinguish its tracks from this species. [1 point] Any one of these (0.5 point for similar species and 0.5 point for distinguishing feature): **Gray wolf:** Adult tracks of this species are smaller than that of a wolf pup. **Red fox**: Track may overlap in size with red fox, but lacks callus ridge of red fox. **Gray fox**: Track larger than gray fox and usually shows claws. **Bobcat:** Differs from bobcat by showing claws and by having one lobe on leading edge of interdigital pad.

____/ 2 points

Sign B

See "TRACK B" for reference

Background. Habitat: Frequently backwater eddies along riverbanks and shallow edges of lakes.

Questions:

28. What is the common name of the animal whose sign this is? [1 point] Great blue heron

29. What other sign can be used to identify this species? [1 point] Possible answers: large colonies of nests high in trees; undigested material may be coughed up as pellets.

____/ 2 points

Track C

See "Scat C" for reference

Background. This species occurs in **Oregon** and inhabits forests, seldom venturing far into wide openings. Thick understory vegetation and abundant food sources are critical.

Questions:

30. What is the common name of this animal? [1 point] Black bear

31. What is the scientific name of this species? [1 point] *Ursus Americanus*

____/ 2 points

Part 6: Species Identification of Willamette Valley Birds

Use the available **field guides** to help you identify the following three species and answer Questions 32-37.

Species A

32. What is the scientific name of Species A? [1 point] *Melanerpes lewis*

33. Fill in the blank: Species A will perch on top of dead trees (snag) and swoop and catch flying ____insects_____ out of the air. [1 point]

____/ 2 points

Species B

34. Species B is a songbird of open ground found in the Willamette Valley. What is its common name? [1 point] horned lark or streaked horned lark

35. Why are natural processes like wildfires and shifts in river channels important to Species B? [1 point] Possible answers: Creates habitat; habitat; foraging habitat; or enables feeding on seeds/insects in low vegetation areas.

____/ 2 points

Species C

Photo by Nick Myatt, ODFW

36. What is the scientific name of Species C? [1 point]

Ardea herodias

37. Fill in the blank: Species C __nests___ in trees, in colonies called rookeries. [1 point]

____/ 2 points