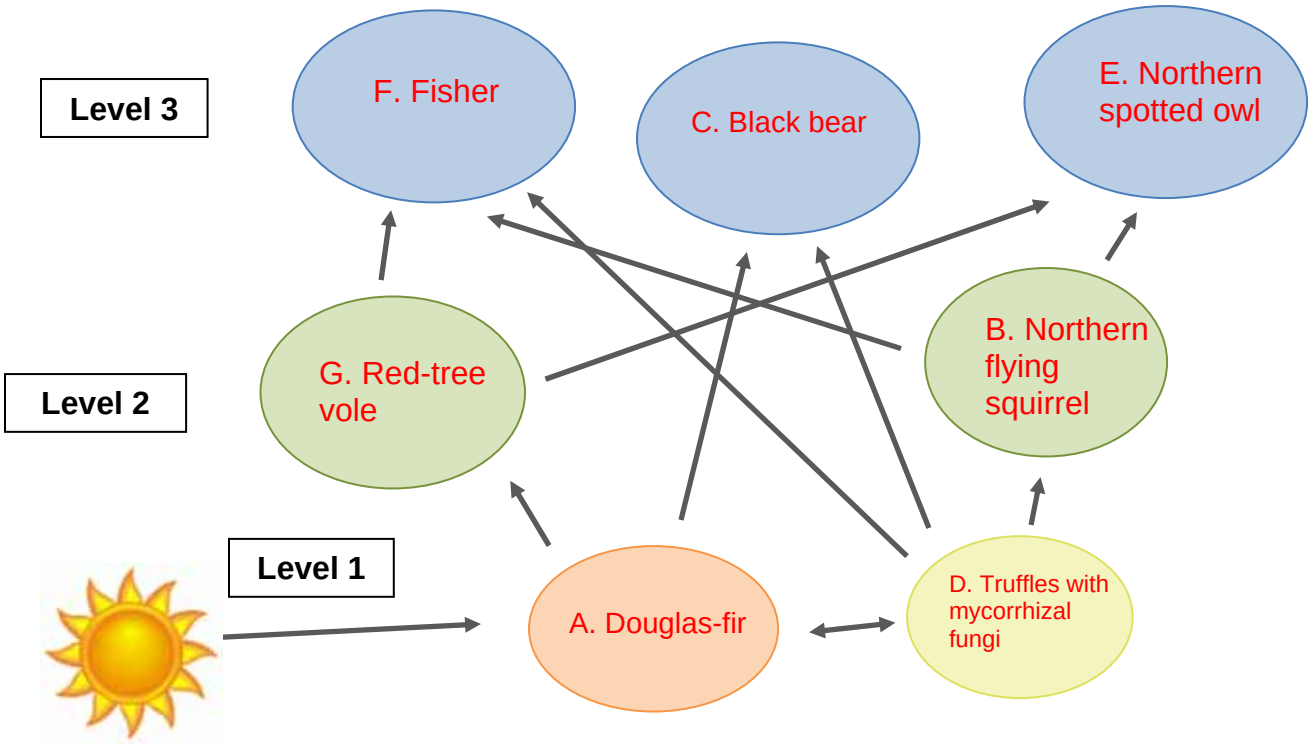
OREGON ENVIROTHON 2024 **TEAM #_____**

Wildlife Station **Test Total_____ / 50 points**

Part 1: Wildlife Ecology Concepts

1-7. Energy flows in a food-web. In the diagram below, write the letter of each of the species listed into one of the circles to create a logical food web representing three trophic levels for a **Western Oregon Cascades Ecosystem**, where sunlight is captured at Level 1. Please note the arrows point in the direction of energy flow (the direction of the consumer). [7 points] Note: Students may use letter, species name or both



Species List:		
	A. Douglas-fir	E. Northern spotted owl
	B. Northern flying squirrel	F. Fisher
	C. Black bear	G. Red-tree vole
	D. Truffles with mycorrhizal fungi	

8. What trophic level of this food web has carnivorous animals? ____Level 3____
9. What two species have a symbiotic relationship? Douglas-fir and truffles ____
10. How many species in this food web are heterotrophic organisms? _6 species _____

____/ 10 points

Part 2: Wildlife Management Issue – Siting Renewable Energy in Oregon

Refer to the document entitled ***Siting Renewable Energy in Oregon (Section - Site Characteristic 3: Areas with Low Biodiversity Conflicts) (page 19-23).***

11. When expanding the production and use of renewable energy, what is one Northwest example of local, regional, or population-level impacts on wildlife and habitat? (Hint: identify energy type and species group) [2 points]

Detrimental effect of hydropower (1 pt.) on salmon populations (1 pt.)

12. Which plan produced by the Oregon Department of Fish & Wildlife (ODFW) lists 294 "Species of Greatest Conservation Need"? [1 point]

a. The Oregon Biodiversity Information Center (ORBIC)
b. ORESA map
c. Oregon Conservation Strategy

13. Which are considered Significant Wildlife Habitats? [1 point]

a. Bear dens, greater sage-grouse nests, rock outcroppings
b. Deer wintering areas, seabird nesting islands, salmon areas, vernal pools, and waterfowl/waterbird habitat
c. Coastal dunes, rivers, wetlands, and fragile mountain areas

14. Studies have found that siting wind development in which areas would avoid negative impacts on biodiversity loss? [1 point]

a. Siting in areas with low biodiversity value
b. Siting in areas with high biodiversity value

15. How are voluntary Wind Energy Guidelines (WEGs) intended to help wind developers [1 point]? Name three species groups (taxon) noted as examples. [3 points]

How help developers: Assess, avoid, minimize and/or compensate for impacts to species of concern (1 pt.)

Possible species group answers (any 3): Migratory birds, bats, eagle and grouse species, and/or federally or state protected species (3 pts.)

____/ 9 points

<u>Part 3: Wildlife Interaction:</u> Oregon Squirrels
Refer to the book *Peterson Field Guide: Mammals of North America.*

(photo by Larry McCombs)

(photo by Dalia Kvedaraite)

Both of the squirrel species shown above are found in Oregon. Only one of these squirrels is a native species, and this species is the largest tree squirrel in Oregon. The other squirrel is a non-native species that was introduced in 1919 to Oregon's state capitol grounds.

16. Why is Species A decreasing in number and range? [1 point].

    ____Habitat loss and competition with introduced eastern gray squirrel_____

17. Give the common name of Species A [1 point]. _western gray squirrel____

18. Give the <u>scientific</u> name of Species B [1 point]. _*Sciurus carolinensis*_____

19. What habitat type can you find Species A in and why are you unlikely to find this species in suburbs or cities? [2 points] One point for habitat type, one for reason

    <u>Habitat type: Mostly oak and mixed oak and coniferous forest, also found in stands of sycamore, cottonwood, or walnut.</u>
    <u>Reason unlikely to find in suburbs or cities: They are less tolerable of humans.</u>

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

    Predation Parasitism Commensalism Competition

____/ 6 points

PART 4: <u>Skins, Skulls, and Bones.</u>
Your test station should have **field guides** and **materials** to help answer the following questions.

21. 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]

__D__ Virginia opossum	__F__ American mink
_____ American badger	_____ gray fox
__A__ northern river otter	_____ coyote
_____ red fox	_____ long-tailed weasel
__E__ ermine	_____ northern raccoon
_____ nutria	__B__ bobcat
_____ woodchuck	__C__ yellow-bellied marmot

22. Examine each labeled **animal skull** displayed on the table (**be gentle with them**). Match the l**etter** of each **skull** to the correct mammal family below. [4 points]

_C___ Felidae (cats)	__A__ Aplodontia (mountain beaver)
_____ Mustelidae (weasels)	__D__ Didelphidae (opossums)
_B___ Leporidae (hares, rabbits)	_____ Cervidae (deer, elk)
_____ Mephitidae (skunks)	_____ Procyonidae (coatis, raccoons)

23. Compare the two skins and give the scientific name for each. [2 points]

A. *Canis latrans*_____

B. *Urocyon cinereoargenteus*_____

The skull is from one of these species. Which species does it belong to? (circle one) [1 point]

A B

____**/ 13 points**

Part 5: Identifying Tracks and Sign

Use the pictures and the tracks provided—and the book *Scats and Tracks of the Pacific Coast*—to identify the species.

Species A

See TRACK A, SCAT A, and SIGN A for reference.

Background. This species breaks off limbs of trees when removing velvet from antlers. Height of tree wound indicates height of animal.

Questions:

24. What is the genus of this species? [1 point] Odocoileus _____

25. What two species in this genus have similar tracks that are not distinguishable? [1 point]

_Mule deer _____

_white-tailed deer_____

____/ 2 points

Species B

See TRACK B and the picture SCAT B below for reference.

SCAT B

Background. River and stream drainages are prime habitats for this species, but storm drains in cities may also provide refuge.

Questions:

26. What is the common name of this animal? [1 point] Raccoon_____

27. What is one other sign that can be used to identify this species? [1 point]

Will accept any variation of one of these: Digs holes in stream banks to get at crayfish. Leaves piles of crayfish skeletons and claws. Digs for worms in lawns.

____**/ 2 points**

Species C

See SCAT C and the picture TRACK C below for reference.

TRACK C

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:

28. What is the common name of this animal? [1 point] Black bear_____

29. What is the scientific name of this species? [1 point] *Ursus americanus*_____

____**/ 2 points**

Part 6: Species Identification

Use the available **field guides** to help you identify the species below, pictured on the following pages.

Species D. [2 points]

30. What is the scientific name of Species D? _*Gambelia wislizenii*_____

31. Small rodents, lizards and snakes are ___prey_____ for Species D?

Species E. [2 points]

32. This species is found in Western Oregon. The individual in the picture was found at 4,500 feet above sea level in potholes in a meadow. What is its common name?

____Cascades Frog_____

33. When an experiment removed introduced nonnative brook trout (predator to species E at larval stage) from mountain lakes, what do you suspect happened to population densities of Species E?

Increased_____

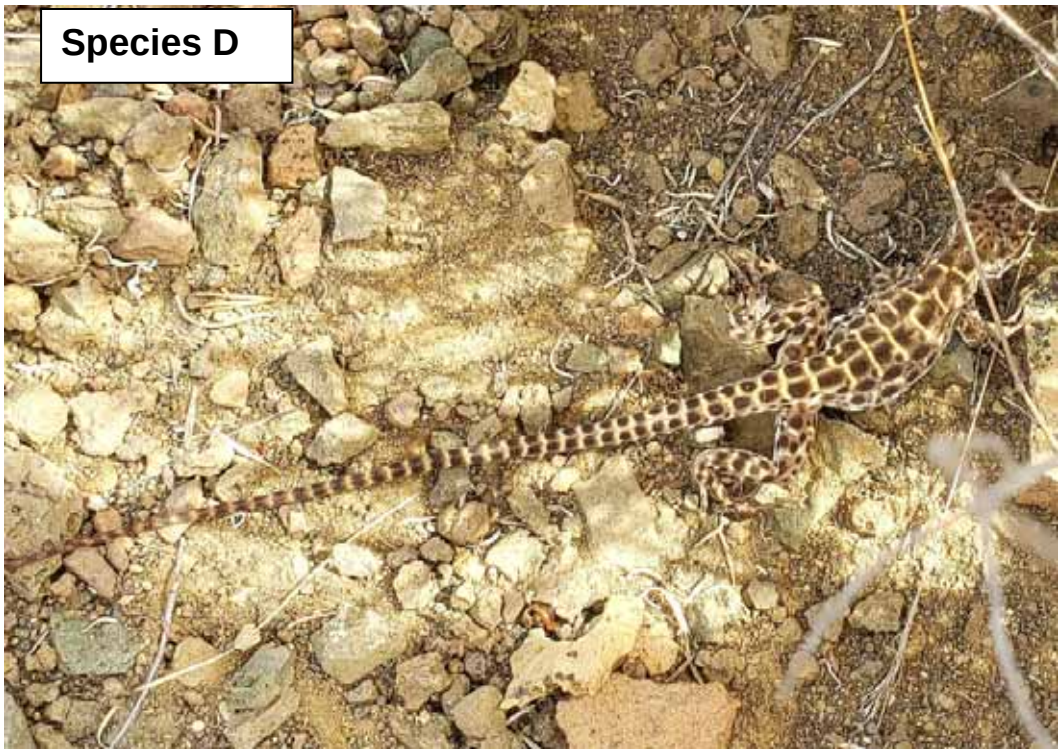
Species F. [2 points]

34. Give the scientific name

_____*Hypsiglena torquata*_____

35. How does Species F subdue prey? __venom_____

____**/ 6 points**


Species D


Species E


Species F