

# Lecture Notes

## Student Worksheet

1. Perennial stream is \_\_\_\_\_
2. An example of a perennial stream is the \_\_\_\_\_
3. Ephemeral stream is \_\_\_\_\_
4. An example of an ephemeral stream is the \_\_\_\_\_
5. Why do ephemeral streams flow intermittently? \_\_\_\_\_

6. Draw a picture of what slope measures:

7. The instrument used to measure slope is called a \_\_\_\_\_.
8. Fill out the following table using the words "deep" or "shallow," "slow" or "fast."

Habitat	Depth	Flow
Pools		
Runs		
Riffles		
Glides		

9. Why are riffles important to aquatic life? \_\_\_\_\_
10. Why is gravel size important to salmon populations? \_\_\_\_\_
11. What human activity could increase silt in a stream? \_\_\_\_\_
12. What human activity could increase substrate size in a stream? \_\_\_\_\_
13. Embeddedness is \_\_\_\_\_
14. Why is embeddedness an important measure of stream health? \_\_\_\_\_
15. How do riparian trees influence the health of a stream? \_\_\_\_\_

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### Answer Key

1. Perennial stream is *a stream that flows year around.*
2. An example of a perennial stream is the *Mokelumne River, Sacramento River, American River, Cosumnes River, etc. (Answers will vary)*
3. Ephemeral stream is *a stream that doesn't flow year around.*
4. An example of an ephemeral stream is the *Dry Creek, Jackson Creek, Sutter Creek, etc. (Answers will vary)*
5. Why do ephemeral streams flow intermittently? *They are fed primarily from low elevation watersheds that receive winter rain, but not snowmelt.*
6. Draw a picture of what slope measures. *Answers will vary.*
7. The instrument used to measure slope is called a *clinometer.*
8. Fill out the following table using the words "deep" or "shallow," "slow" or "fast."

Habitat	Depth	Flow
Pools	<i>deep</i>	<i>slow</i>
Runs	<i>deep</i>	<i>fast</i>
Riffles	<i>shallow</i>	<i>fast</i>
Glides	<i>shallow</i>	<i>slow</i>

9. Why are riffles important to aquatic life? *Riffles add oxygen to a creek which is essential for most aquatic organisms.*
10. Why is gravel size important to salmon populations? *Salmon construct their nests in specific-sized gravel beds. If gravel is too large, they can't move the stones. If gravel is too small or covered with silt, their eggs will not have sufficient oxygen to survive.*
11. What human activity could increase silt in a stream? *Erosion from construction, logging, mining, road-building.*
12. What human activity could increase substrate size in a stream? *Dams halt the downstream movement of gravel, so substrate size increases downstream of a dam.*
13. Embeddedness is *a measure of the silt surrounding the rocks in a stream.*
14. Why is embeddedness an important measure of stream health? *Embeddedness indicates the sediment load in a stream. Too much silt can harm benthic insects and fish eggs.*
15. How do riparian trees influence the health of a stream? *Tree litter is a source of food for aquatic insects. Roots stabilize banks and prevent erosion. Roots can also slow water, increasing physical habitat diversity. Tree canopy shades a stream reducing temperature extremes.*