INV. 3 ACTIVITY—MONO LAKE VIRTUAL TRIP

Mono Lake Trip

Take a virtual field trip to the very unique Mono Lake, located in eastern California, via the video *The Mono Lake Story*, found on FOSSweb. Learn about the unique geography surrounding this special place and learn the story about how a group of people came together to make a difference to solve problems for the lake environment and for the city of Los Angeles.

View the Streaming Video, *The Mono Lake Story*

To access the streaming videos, login to FOSSweb, click on the Environments Module, and go to the Media Library. After watching the video answer the following questions in your notebook. Look for the Streaming Videos.

1. What are the tufa towers made of?

2. What is the water like in the lake?

3. What do the brine shrimp eat? How many brine shrimp live there?

4. What do the flies eat?

5. Why is the lake important for so many migratory birds?

6. What threatened the lake? What happened to the "salinity" of the lake (how much salt concentration there was) when the lake shrunk in size?

7. What did David Gaines help organize?

8. How is Mono Lake doing today?

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Environments Module
Investigation 3: Brine Shrimp Hatching
July 2020

INV. 3 ACTIVITY—MONO LAKE FOOD WEB

Review
If we were at school exploring investigation 3, you would have set up an experiment with brine shrimp and explored the optimum salt-water conditions for hatching. From *The Mono Lake Story* video, you learned that three trillion brine shrimp can live in the lake.

Introduction
Today we will work with a food web of numerous organisms. You will visit the multimedia on FOSSweb called "Food Webs" and specifically explore the Mono Lake food web. Mono Lake is a salt lake and home to the organism the brine shrimp as well as many others.

As a reminder, consumers are animals that eat plants and animals. Producers make their own food. Decomposers break down other organisms.

Engage with online activity:
Use **Chrome as a browser** for this online activity. To access the Online Activities, login to FOSSweb with the user name and password provided by your teacher. Click on the Environments Module, and go to the Online Activities.

Focus question: How do organisms interact with each other in an environment?

Write the focus question in your notebook.

1. Go to FOSSweb using a Chrome browser, go to online activity "Food Webs." (Other browsers do not work as well.)

2. Use the map to select the Mono Lake food web. Click on "Visit Food Web" at top right.

3. Read the "Overview" of Mono Lake. List five key points in your notebook.

4. After a thorough reading, click on "Food Web" and begin to explore the organisms in that ecosystem by clicking on "Info."

5. Click on "Move." Drag two organisms (one that eats the other) into the correct box—composers, decomposers, or producers. You can't drag them to the wrong box.

6. Click on "Connect" and draw a line from the organism that is being eaten to the organism that will eat it.

7. Once the arrow is in place click on "Check Link." I f you are correct the organisms will turn green. (When things turn yellow you are "missing some links" and red means something is incorrect.) Do not move on until everything is green.

9. Continue to add one organism at a time, connecting organisms in a food web, and after each add, click on "Check links." You may need to click on "Info" to find out what each organism eats and what eats it.

10. Create a food web with as many organisms as you can. It gets trickier the more organisms you add.

When you are done please draw the food web in your notebook. Make sure the arrows are going in the correct direction. Respond to the focus question in your notebook.

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Environments Module
Investigation 3: Brine Shrimp Hatching
July 2020

INV. 3 ACTIVITY—TROUT RANGE OF TOLERANCE

Review

Recently you explored the Mono Lake Food Web on FOSSweb. Interesting that there are no fish in Mono Lake. Why do you think that is?

Introduction

To stick with our aquatic theme, we are going to explore a bit about rainbow trout, a native fish to many rivers in North Americans. The water trout virtual investigation on FOSSweb is called "Trout Range of Tolerance."

Engage with online activity

To access the Online Activities, login to FOSSweb with the user name and password provided by your teacher. Click on the Environments Module, and go to the Online Activities. Go to Virtual Investigation: "Trout Range of Tolerance."

Start the virtual investigation. Listen to the narrator discuss how rainbow trout hatching can indicate the environmental health of a river. When there are fewer rainbow trout hatchings, the river may be in distress, not very healthy.

It is your job to find out at what temperature is best, optimal, for rainbow trout eggs to hatch.

Don't click "Go" until you have your notebook open to record your data. Before you begin, record the focus question:

➔ **How does temperature affect the hatching of rainbow trout eggs?**

Check the 17 tanks by clicking on the temperatures at the top of the screen—record how many trout hatched at each temperature. You will need a data table in your notebook. If you need help doing that, click on "Help."

When you have recorded all of your data, hit the "Done" button.

In your notebook, identify the range of tolerance for temperature for trout hatching.

- What is the lowest temperature where rainbow trout will hatch and what is the highest temperature? This is the range. Record it.

- What temperatures are optimal, or best for hatching?

Now, using the answers to those two questions, write a letter to the Water Company about how building a dam could affect trout survival. You can do this in your notebook.

Read "The Shrimp Club" in *FOSS Science Resources: Environments* eBook
To access the interactive eBook, login to FOSSweb with the user name and password. Click on the Environments Module, and go to the Media Library. Click on the eBook.

What did those students do in order to improve those aquatic habitats? Did it work? Record what they did in your notebook.

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