

## Brine Shrimp/ Brine Fly Activity

- Objectives:**
- 1) Name the only two animals that live in the lake.
  - 2) Identify their life cycle stages
  - 3) Identify the differences between male and female brine shrimp.

### Introduction

The Great Salt Lake is so salty that the only living things in the lake are algae, bacteria, brine shrimp and brine flies. Brine is another word for “salt”. There are no fish in the lake because of the salinity. Brine Shrimp go through different life stages. First are the eggs or “cysts”, second are the babies called “nauplii”, the third is a juvenile stage where they look like mini adults, finally the adult stage, where you can identify female and male.

The Female shrimp have little egg sacs on the their back, while the male shrimp have two large claws above their heads. While brine shrimp lay eggs, they can also give birth to live young. The eggs can lay dormant for up to 25 years until the right conditions arise. (temperature, salinity, etc)

Brine Flies also go through life stages: eggs, larvae, pupa, and adult. The Brine fly spends half of its life in the lake. The eggs are layed in the water and remain until the pupa stage, where they wash up on shore and emerge as adults.

Brine Shrimp and Brine Flies eat the algae that live in the lake, and the birds eat the shrimp. Our brine shrimp and brine flies are the **keystone species** of the ecosystem of the lake. Without them, we would not have the large population of birds.

### Inventory Items

Microscopes (2)  
Box of Slides  
Petri Dishes  
Plastic cups  
Moist wipes  
Water dropper (3)

### Activity

1. Head down to the water, (beach, marina).
2. Show and pass around Brine Shrimp/Fly life cycle and talk about it. Recite the different life cycles. Discuss the purpose of a keystone species and why they are so important. Try to name another keystone species of Utah.
3. Pull out the microscopes and pass out the plastics cups. Now that the kids know what to look for, tell them to go and find specimens in the water. You can turn your tote into a table for the microscopes. Use the water droppers to place specimens on slides. To focus the microscopes, push/pull it up and down, no twisting.
4. Have kids identify what they have and make observations. If you have journals, have them sketch what they see.
5. Once finished, please stack cups and wipes slides and microscopes clean of dirt and salt.