

Trout in the Classroom

Lesson/Presentation Plan

Prepared by Bill F. (draft 1, 4/30/20)



Eco-Cruises
Floating Classroom
Trout in the Classroom

Audience/Grade: Elementary/MS versions

Title/Topic: Trout Lily Reading & Observation

Overview: Lesson includes two versions of a brief essay on the growth habits of the Trout Lily, hopefully appropriate for 4th grade and secondary level reading. Students should use the information within as a guide for their interpretation of why trout lilies often bloom in great numbers near streams.

Skills/Understandings/Learning Objective(s): Reading comprehension...

- Reading comprehension
- Use of information resource to interpret observations

Relevance: Trout habitat element

Timeframe: 30 minutes

Group Size: Independent study

Location(s): Flexible home/classroom or outdoors.

Materials/Preparation:

- Provided in Lesson Packet/plan

Motivator/Warm-Up: During late April and early May, many spring (ephemeral) wildflowers are in bloom, and streams gorges are great places to find them. With a little information, what you take for granted becomes much more interesting. Trout lilies can provide clues to the rest of trout habitat: shade, soils, insect life.

Procedure:

- Read the passage on trout lilies
- Have students answer questions about the passage (some are provided)
- Have students observe stream area with trout lilies and try to infer something about another element of the habitat, based on the characteristics and location (or absence!) of plants.

Wrap Up: Students can share their inferred ideas for discussion. Class vote on "Trout Lilies" or "Fawn's Ears" Which is a better name?

Assessment Criteria/Rubric:

	Needs work	OK	Good
Engagement/Participation			
Students showed understanding of key concepts...			
Creative projects ...			

Safety Considerations: When advising students to explore outdoors, always suggest an adult accompany them, and remind them to use caution around waterways. Rocks and steep areas are often loose after spring thaw and are especially worthy of care. A good, native, Ithacan will understand this and exercise caution without being fearful of exploring the beauty of our area.

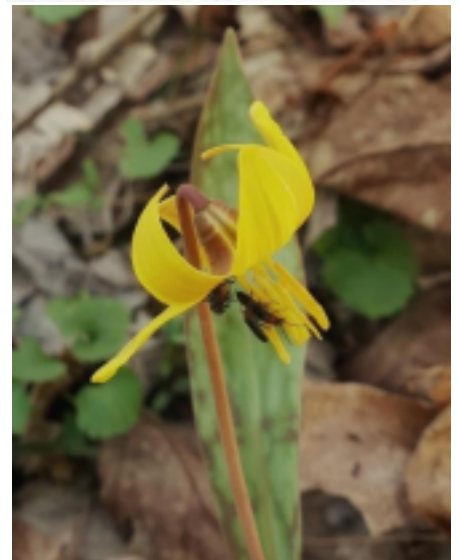
Trout Lily Lore

(Reading Sample, Elementary Level)

In 1890, naturalist John Burroughs wrote about the “Fawn lily”. He wrote that the two leaves, on either side of the flower, stand up like a fawn’s ears, giving it an alert, wide awake look. Most people today call it the “Trout Lily”, because the leaves remind us of the spots and parr marks on a young trout. It is one of the most beautiful of our early spring wild flowers, but for some reason, people seem to pay more attention to its leaves! Which name do you like?

Mr. Burroughs also loved this plant’s root system. Each plant has a little round bulb a few inches underground. That bulb grows “droppers” that burrow deep down into the soil. At the end of each dropper, up to a foot away from the mother plant, a new bulb and a whole new plant grows using food sent to it by the parent. But, if the dropper hits something hard, like a rock or another root, it stops growing and the parent plant makes flowers instead. This explains why some Trout Lily patches seem like they are just leaves, while others have many flowers.

The flowers stand only a few inches above ground, but the plant grows deep and far underground, protected by a thick layer of decaying leaves of the forest floor. Ants and other insects living there pollinate the trout lilies while enjoying their nectar.



Cool Facts

Trout Lilies, with their “dropper” roots, can form extensive patches if left undisturbed. In protected stream valleys and gorges, where no one has ever farmed or built houses, patches of trout lilies that might be 200 or 300 years old!

Native Americans and settlers



used trout lilies for medicine and collected the dropper roots for food. You can boil them and eat them like spaghetti. See if you can find them, growing under the decaying leaves, but leave them in place so the plants survive!

Questions to ask and answer:

1. When do trout lilies grow?
2. Why do you think trout lilies grow so early in the spring?
3. Why don't trout lilies grow in your lawn?
4. What pollinates trout lilies?
5. Why do you think they are a part of a health stream habitat for trout?
6. Which name do you think is best: Trout Lily or Fawn's Ears?

Reading Sample, Secondary Level (Under Construction!)

In 1890, naturalist and essayist John Burroughs wrote about the fawn lily (*Erythronium americanum*, a.k.a. trout lily, dogtooth violet, adders tongue): "It is one of the most beautiful of our wild flowers. Its two leaves stand up like a fawn's ears, and this feature with its curved petals, gives it an alert, wide-awake look." Burroughs was also fascinated by this lily's root system. Young corms produce droppers that burrow into the soil at a 45-degree angle. At the end of each dropper, up to a foot away from the mother plant, a new corm is formed from food sent down by the parent. In four years, a typical seed will produce about nine corms planted 7-8 inches deep. If the dropper hits hard soil, rock, or a root, the corms begin producing flowers. This explains why some patches rarely flower while others are abundantly floriferous. Though the flowers stand only a few inches above ground, the plant grows 6-10 inches, with most of its structure hidden below ground. This is the kind of elegant pyramid scheme I can get behind. —Director of Horticulture Uli Lorimer, Brooklyn Botanical Garden.

MORE Trout Lily Lore

hard, like a rock or another root, it stops growing and the parent plant sends food to make flowers instead. This explains why some Trout Lily patches seem like they are just leaves, while others have many flowers. Though the flowers stand only a few inches above ground, but the plant grows deep and far underground, protected by a thick layer of decaying leaves of the forest floor. —Director of Horticulture Uli Lorimer, Brooklyn Botanical Garden. (Adapted by Bill Foster, Discover Cayuga Lake) As Trout Lilies send out "dropper" roots (or "rhizomes"), they can form extensive patches if left undisturbed. Protected stream valleys and gorges, when no one has even farmed or built, offer great places to find patches of trout lilies that might be 200 or 300 years old.

Native Americans and settlers used trout lilies for medicinal purposes. It is also said that, if you find many dropper roots growing beneath the leaf duff, you can boil them and eat them like spaghetti. See if you can find them, but leave them in place so the plants survive!

Reproduction and Pollination: The trout lily sprouts and flowers in early spring, before new tree leaves grow and block out the sun. They depend on early flying insects, and ground dwellers, for pollination. This picture shows insects (which might actually be Fireflies!) busy collecting Trout Lily nectar and pollinating the flower.

New plants usually grow when underground rhizomes spread and form colonies. Mature plants also spread via seeds. Ants scatter the seeds, eating part of the seed and leaving the rest to germinate.