

Greater Latrobe Trout in the Classroom Program

Trout Release Days Field Trip Schedule

Thursday, May 3, 2012

Mrs. Hoopes' and Mrs. O'Donnell's Life Science Classes

8:00 – 8:30 AM – Seminar Period – Mr. Monty Murty arrives, transfers trout from tanks, begins trout transport to Linn Run State Park, Rector, PA (Grove Run)

8:15 – 8:30 PM – Homeroom – All students are to report to Homeroom as usual

8:30 AM – Students, teachers, & chaperones report to the cafeteria for bus assignments

8:45 AM – Departure from Latrobe Junior High for Linn Run State Park, Rector, PA

9:15 AM – Arrival – Linn Run State Park, Rector, PA – All 4 buses report to Grove Run

9:30 – 10:00 AM – Trout Release at Grove Run

- Following trout release - 2 busses depart for Adam's Falls

10:00 – 10:30 AM – Activity Session #1

10:30 – 11:00 AM – Activity Session #2

11:00 – 11:30 AM – Activity Session #3

- Following Activity Session #3 – 2 busses depart from Grove Run for Adam's Falls

11:30 AM – 12:30 PM – Lunch at Adam's Falls

12:25 PM – Groups switch and busses depart from Adam's Falls for Grove Run

12:30 – 1:00 PM – Activity Session #4

1:00 – 1:30 PM – Activity Session #5

1:30 – 2:00 PM – Activity Session #6

2:00 PM – Clean up, gather students on busses

2:30 PM – Departure from Linn Run State Park for Latrobe Junior High School

3:00 PM – Arrival at Latrobe Junior High School

3:17 PM – Students depart for home on normal afterschool bus

Greater Latrobe Trout in the Classroom Program

Trout Release Days Activity Assignments

Thursday, May 3, 2012

Grove Run (Upper Stations)

- Water Quality / Habitat Assessment – Natalie Reese, Rocco Cremonese
- News Report – Michelle Tantlinger, Megan Hubbard
- Project Wild Trout Activity – Dan Dougherty

Adam's Falls (Lower Stations)

- Fly Fishing / Casting – Monty Murty and Trout Unlimited members
- Nature Hike to Flat Rock – Jackie Hoopes, Brandy Harman
- Kick netting / Macroinvertebrate Identification – Pat Roberts, 9th grade trout team

Roamers:

- Thursday, 5/3/12 – Erin O'Donnell, Linda Hanna

Greater Latrobe, SW PA

7th Grade Release Day Field Trip Overview

The morning of the event

- Brook trout need to be transferred into their travel buckets along with a portable aerator. Use water from the tank and frozen cups of water (de-chlorinated) to help keep the water cold (this should take between 15-20 min.)
- Count the number of trout as you transfer them
- Make sure the fish buckets get on the bus

Releasing the Trout-Bucket Brigade (due to large number of students, split the students into 2 groups and have 2 different release sites along the stream)

Before releasing the fish need some sort of send off, examples, a speech, poem or song. This is a big deal, a project students have been working on for 7 months, don't just rush through it.

Bucket Brigade

- Before the buses come, pick the perfect spot. An area that is open enough for student to form lines, but still have cover for the trout. Also need an area where the stream bank is not too steep.
- Have the students stand in straight lines, with a line starting at the stream edge and then moving back away from it.
- Give the last 3 students in each line a cup.
- Have all of the students with cups come over to the fish bucket. (approximately 1 bucket for 3 lines)
- Place a fish in each cup and have that student return to line.
- Once that student is back in line, begin passing the cup up to the front of the line.
- When the cup reaches the first person in line, that person will GENTLY place the trout in the stream.
- Then that person should take the cup to the fish bucket to get a new fish in the cup and return to the back of their line
- The process begins again.
- Continue the process until all the fish have been placed in the stream.

After the fish release, the students will be divided into groups and rotate between 6 educational stations.

Stations (30 minutes per station)

Fly Fishing/Journaling Station: This station is led by members of Trout Unlimited (program partner). At the station, students have a chance to learn the basics of fly fishing and see a fly fishing demonstration. Fishermen not only focus on the fly fishing techniques, but also on the

question,” why fly fisherman are also conservationists.” While watching the demonstration, students fill out the journaling worksheet. Or if there practice rods available actually try their hand at fly fishing. (see journal worksheet)

News Report: Students use flip cameras to document the field trip as well as the Trout in the Classroom Program in general by having 1 student (the reporter) ask the other students predetermined questions. Divide the students into groups of 5-6 then assign roles. There needs to be a director/camera person, reporter, cue card holder, and students to answer the reporter’s questions. It may be a good idea to brainstorm the answers to the questions before actually filming. (See Script and cue cards)

How Many Fish in the Stream: An interactive education experience, similar to the Project Wild Activity, “How Many Bears in the Forest.” During the activity students become Brook Trout searching for food to survive. However, there are a variety of scenarios, such as predation, or low pH levels, that make finding food a challenge. By the end of the activity students should be able to define “limiting factors” and provide a few examples of limiting factors for Brook Trout. (See How many fish in the stream lesson plan for more information)

Macroinvertebrate Collection and Identification (biological indicator of stream health): Led by staff at the Loyalhanna Watershed Association (program partner). Students will learn how to collect macroinvertebrates through the use of kick nets. They will then examine/identify what macroinvertebrates were collected at the stream to determine if the trout we released have food to eat, and if the stream has good water quality. (All materials provided by LWA)

Water Quality/Habitat Assessment (chemical and habitat indicators of stream health): Students will work in groups to complete a habitat assessment and water chemistry assessment of the stream to determine if this is an appropriate stream to release our trout. By this point the student should already know how and why to perform the water chemistry tests, but this maybe their first exposure to a habitat assessment. Therefore take the time to explain what a habitat assessment is and why the factors being examined are important to the health of our trout. (See Water Quality/Habitat Assessment Worksheet)

Nature Hike: Led by Park Manager if possible, a teacher knowledgeable about the park if not. During the walk provide history of the area, and point out favorable as well as unfavorable trout habitats along the hike. (Current in science classes, students were learning about dichotomous keys, use the these keys to identify a few trees along the trail)

How Many Fish in the Stream

Goal: Demonstrates the consequences for a population of fish, if one or more habitat components are relatively scarce.

Objective: Students will define a limiting factor, and describe how limiting factors affect animal populations, specifically brook trout populations.

Materials:

- Multicolored poker chips

Procedure:

- Have the students form a large circle (students should be about an arm's length apart). Students need to put some kind of "marker" by their feet to create a home base. Markers can include water bottles, sticks, pile of leaves... whatever is handy.
- Give them the following instructions: You are now all Brook Trout, and the inside of the circle is the stream where you live.
- Randomly scatter the chips inside the circle. Tell the students that the chips represent food. The goal of the activity is to collect enough food to survive.
- To collect food: Students must WALK to a food chip, pick it up and walk back to their home base where they will make a pile of "food". (If students ask why they need to return to home base, it is because the trout are moving to a safer area, such as deeper water or hiding by a rock, to digest their food) Students continue to walk back and forth between chips and home base until all the food is gone. (ALL STUDENTS WALKING AROUND INSIDE CIRCLE AT THE SAME TIME- students can have fun, but safely)
- Once all the food is collected, have students stand at their home base, and count how many food chips they collected. Poll the students for their results... at which point tell them that trout are very active fish, so to survive you needed to collect at least 15 chips. (see how game goes and adjust this number as needed, we need to have some "fish" die)
- Talk about results- food is a limiting factor, without food trout will not survive, what are some situations in which there would not be enough food for all the trout in the stream?

Start with a perfect world (as described above) then do a round or 2 (or 3) with different scenarios. After each scenario discuss

Possible scenarios (can do each scenario separately, or they can build off one another)

1. More realistic: One (or two) fish has lost an eye to a predator and so must keep 1 eye closed during the game. Another fish(s) has an injured fin and so hops on 1 foot to get food. Add 1 or two predators, such as a fisherman and a bear. They can walk into the circle and tag fish that would then have to leave the game. Fishermen and bears would not feed nonstop so after a tag they need to wait 5 seconds before tagging another fish.

2. Water becomes very warm. The trout do not have enough oxygen and so must move in slow motion. Add a predator if you want. Put a time limit on this scenario. At the end of the scenario there may be food still out in the circle, so food is not the limiting factor, in this case the amount of oxygen was.
3. Drop in pH: There is a huge rainstorm that spikes the pH of the water. 1. This kills some of the trout food, so remove some chips before the game begins. 2. The drop in the pH make the fish act crazy and so the before picking up a chip the “trout” needs to jump up and down 3 times. 3. The drop in pH stresses the trout, so they now need to collect 20 chips to survive. 4. There are still predators in the stream

Possible Closure Questions:

- In the game, food was a limiting factor. Let’s define “limiting factor.”
- What are examples of limiting factors for brook trout? – food, water temperature, water chemistry, pollution, predation, limited space (ex. building of dams, bridges, roads- something that would impede the waterway)
- How is this simulation not like the real world? –we did not account for reproduction

Notes:

Limiting Factor: When any element of factor in a habitat is inappropriate or exceeds the tolerance range of an animal or population, it directly affects the well-being of the animal(s) and may result in death or population reduction. This factor “limits” the animal or the population

In the case of the trout limiting factors may include components such as:

- Predators: will reduce the population. Predators include fisherman (especially during trout season) bears, otters, eagles, osprey, larger fish... and many more
- Food availability- Not enough food, trout will die or swim to a new location
 - Possible reason this would occur: erosion- added sediment into the water clogs the gills and so kills the macroinvertebrates trout eat
- Water temperature- Cold water can hold more dissolved oxygen than warm water. If the water is too warm (above 70-75⁰F) trout, a very active fish, do not have enough oxygen to survive, so will either die or swim to a new location
 - Possible reason this would occur: Trees along the stream are cut down for lumber, farm field or to create a housing development. Therefore the trout lose the shade that helps keeps the water cool.
- pH level: If the pH of the water drops below 3 or above 8, the trout will die.
 - In our area we have a problem with Abandoned Mine Drainage. This is where old mines fill up with water. That water mixes with minerals from the mine. When this mineral/water mixture is exposed to air it can become highly acidic. This exposure happens after rain storms when the mines fill up so much with water that the water overflows into nearby streams. Thus causing the stream to become highly acidic and kill the trout.

Name: _____

Science Teacher: _____

PD. _____

Station: Fly Fishing

Answer the following questions. Use the back of the page if necessary



List or draw (choose 1) your observations (sight, sound, smell, feel) about the area around you, please include the fly fisherman's process.

Drawing Box (make sure to label the diagram)

Would you enjoy fly fishing, why or why not? (Answer in complete sentences)

A fish story is a far fetching, boastful story such as when a fisherman exaggerates the size of the fish caught or the difficulty involved. Imagine you are fishing in Linn Run, summarize a fish story you would tell (1 paragraph).

Today is _____, and we are here at _____ as part of the 7th grade Trout in the Classroom Program. This field-trip is the culminating activity of a 6 month program to raise Brook Trout, our state fish, with the intent to release them into the wild. Let's talk to a few students and ask them about their experiences.

For all those viewers at home who are stuck inside, can you please describe today's weather?

Student Response:

Can you please explain how you released the Brook Trout?

Student Response:

How many brook trout did you release today?

Student response:

What are some stories about today's release that you would like to share?

Student response:

Can you please describe what the release site looked like?

Student response:

What about Linn Run makes it a good location to release Brook Trout into the wild?

Student response:

Now that we know some specifics about today, let's learn about the Trout in the Classroom program in general.

1. I am sure many people have not heard of the Trout in the Classroom program before, can you please explain it for us?

2. Besides actually raising trout, what other experiences did you have through the Trout in the Classroom Program?

3. What was your favorite part of the Trout in the Classroom Program?

4. What was the most challenging aspect of Trout in the Classroom Program?

5. Can you please relate a funny story from the program?

6. Can you please explain 2 interesting facts you learned through participating in this program?

7. What words of wisdom would you share with incoming 7th graders who will be participating in the program next year?

Conclusion:

You heard it here first; trout in the classroom is a great success. This is (reporter's make believe name) signing off.



News Report: Trout in the Classroom Release Day

Intro:

News Reporter: Today is _____, and we are here at _____ as part of the 7th grade Trout in the Classroom Program. This field-trip is the culminating activity of a 6 month program to raise Brook Trout, our state fish, with the intent to release them into the wild. Let's talk to a few students and ask them about their experiences.

News Reporter: For all those viewers at home who are stuck inside, can you please describe today's weather?

Student Response:

News Reporter: Can you please explain how you released the Brook Trout?

Student Response:

News Reporter: What are some stories about today's release that you would like to share?

Student response:

News Reporter: Can you please describe what the release site looked like?

Student response:

News Reporter: What about Linn Run makes it a good location to release Brook Trout into the wild?

Student response:

News Reporter: How many brook trout did you release today?

Student response:



News Reporter: Now that we know some specifics about today, let's learn about the Trout in the Classroom program in general.

Students need to answer at least, 6 questions. They can be answered in any order.

1. **News Reporter:** I am sure many people have not heard of the Trout in the Classroom program before, can you please explain it for us?
2. **News Reporter:** Besides actually raising trout, what other experiences did you have though the Trout in the Classroom Program?
3. **News Reporter:** What was your favorite part of the Trout in the Classroom Program?
4. **News Reporter:** What was the most challenging aspect of Trout in the Classroom Program?
5. **News Reporter:** Can you please relate a funny story from the program?
6. **News Reporter:** Can you please explain 2 interesting facts you learned through participating in this program?
7. **News Reporter:** What words of wisdom would you share with the incoming 7th graders who will be participating in this program next year?



Conclusion:

News Reporter: You heard it here first; trout in the classroom is a great success. This is (reporter's make believe name) with (station's name) signing off.

Names: _____

Group Number: _____



Water Quality and Habitat Assessment: Is this an appropriate release site for our trout?

Date: _____ Stream Name/Watershed: _____ Site Location: _____

Weather Conditions: Today _____ Past 2-5 Days: _____

Habitat Visual Assessment: Evaluate the surrounding habitat as a tool for determining water quality and the condition of the aquatic community.

For each assessment, circle the description that best fits the site

Assessment	Excellent	Good	Fair	Poor
Water Appearance	Clear water, little algal growth present	Fairly clear water, small amount of algal growth on stream bottom	Greenish water, abundant algal growth	Pea green, gray or brown water, severe algal growth
Stream cover for fish and macroinvertebrates	Stream contains <u>lots</u> of boulders (over 10"), cobble (2-10"), and submerged logs	There is an <u>adequate</u> amount of both rock and wood for habitat	<u>Some</u> rock and wood, but less than desired	<u>Not much</u> stable habitat, lack of habitat is obvious
Fine particle sediment (silt, sand, mud)	Rocks in stream are <u>not</u> surrounded by fine sediments; I see very little sand, silt or mud on bottom	Rocks are <u>partly</u> surrounded by fine sediments. I could easily flip over the rocks on the bottom	Rocks are <u>more than half</u> surrounded by fine sediments. Rocks are firmly stuck into sediment	Rocks are <u>deeply stuck</u> into fine sediments; bottom is mostly sand, silt or mud.
Condition of banks and coverage	The banks are stable; no evidence of erosion, the <u>whole bank</u> is covered with vegetation or rock	Moderately stable; some small areas of erosion, <u>most of bank</u> is covered by vegetation or rock	Largely unstable; <u>almost</u> half of the bank has areas of erosion or is NOT covered by vegetation or rock	Unstable; eroded areas, evidence that erosion occurs frequently, <u>more</u> than half of the bank is NOT covered by vegetation or rock
Riparian Vegetation Zone (the land that borders the stream)	Natural vegetation extends <u>at least 2 channel widths</u> on each side of stream; Parking lots, roads, clear-cut, lawns, or crops have not impacted zone	Natural vegetation extends <u>1 channel width</u> on each side; human activities have small impact on zone	Natural vegetation extends <u>1/3</u> of channel width on each side; human activities impacting zone are commonly evident	Natural vegetation <u>less than 1/3</u> of channel width on each side; lots of nearby human activities
Canopy Cover	<u>75%</u> of water surface shaded	<u>50%</u> of water surface shaded	<u>20-50%</u> of water surface shaded	<u>Less than 20%</u> of water surface shaded
Overall Visual Assessment of Site	Excellent	Good	Fair	Poor

Names:

Group Number:

Water Quality

After completing each test, fill in the chart. Make sure to use the appropriate units

Test	Results	Ideal Range for Brook Trout	Healthy for Brook Trout YES/NO
Temperature		50 ⁰ F-65 ⁰ F	
pH		4.5-8 (above 6 to reproduce.)	
Ammonia		<1 mg/l	
Nitrite		<1 mg/l	
Nitrate		<1 mg/l	



Overall Rating:

Using the information gathered from the water quality chart and the habitat assessment, how would you rate the stream as a good place to release our Brook Trout? Circle your rating

Circle your answer

5-Excellent	4-Good	3-Fair	2-Poor	1-Death
Brook Trout will thrive year round as the stream meets ALL conditions necessary for trout survival	Brook Trout will live happily in this stream, but will be occasionally stressed	Brook Trout will survive in this stream, but will be repeatedly stressed, therefore will not grow to their full potential	Many of the trout will die. Only the few strong trout that are tough will survive	Brook Trout CAN NOT live in this stream