#### Welcome!



#### **LOCATE**

#### <u>"CHAT" function on your device</u> –

- Make sure your "chat" is set for "everyone"
- In the chat box Type your (First and Last Name)

#### **TECH CHECK**

#### **AUDIO and VIDEO** - Can you hear and see us?

**MUTE** – Make sure you are on mute to decrease background noise.

#### MAKE SURE YOU HAVE

#### **Materials needed for class**

- Pen/paper
- Snacks and drink
- Any materials you were asked to have with you

# **Agenda**



**Break for 10-minutes Welcome and Introductions PA TIC Aquarium Resource** Introduction to the PA TIC program Guide **PFBC Fish Health PA TIC Partnerships Questions and Wrap-Up PA TIC Curriculum Overview** 





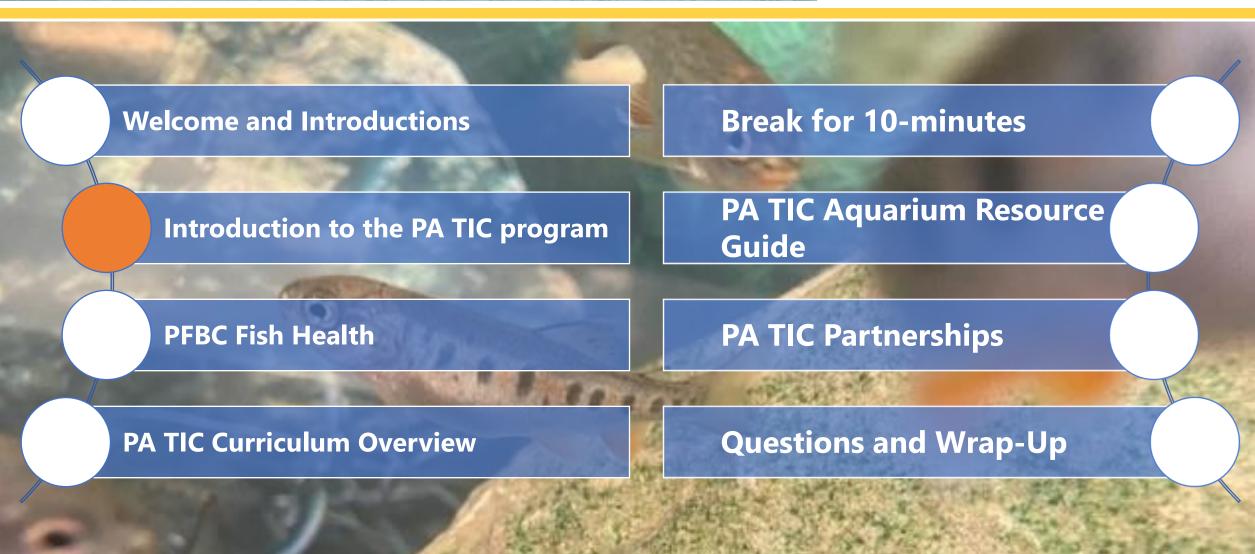


# Pennsylvania Trout in the Classroom New Teacher Workshop

**Presented By:** Rachel Kester (PATU Program Director); Carolyn Heckman (Community Engagement Coordinator); Coja Yamashita (Fish Health Unit Leader); Cody Whipple (NC RES)

# **Agenda**





#### **Trout In the Classroom (TIC)**



#### Partnership between:

# Pennsylvania Fish and Boat Commission (PFBC)

**Mission:** To protect, conserve, and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities

#### Pennsylvania Trout Unlimited (PATU)

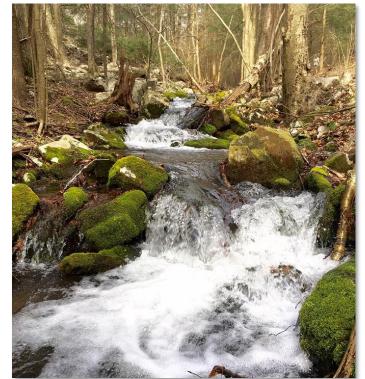
**Mission:** To conserve, protect, restore, and sustain Pennsylvania's coldwater fisheries especially our wild trout resources.



# **Our Organizations**



We are user-funded, independent, organizations relying on fishing license sales and or membership purposes to continue our efforts in protecting, conserving, and enhancing the Commonwealth's Aquatic Resources and Provide Fishing and Boating Opportunities.







## TIC helps to:



 Foster awareness and knowledge about coldwater conservation

• Encourage participation in coldwater conservation, management and recreation programs.







#### Trout In the Classroom Objectives



- 1. Raise trout by observing and monitoring a coldwater ecosystem in a classroom aquarium
- 2. Identify stages of the trout life cycle
- 3. Recognize Brook Trout as "indicator species" for healthy coldwater streams
- 4. Describe conditions needed for trout survival in your classroom aquarium and in nature





### PA Trout In the Classroom (TIC)



#### Partnership between:

Pennsylvania Fish and Boat Commission (PFBC)

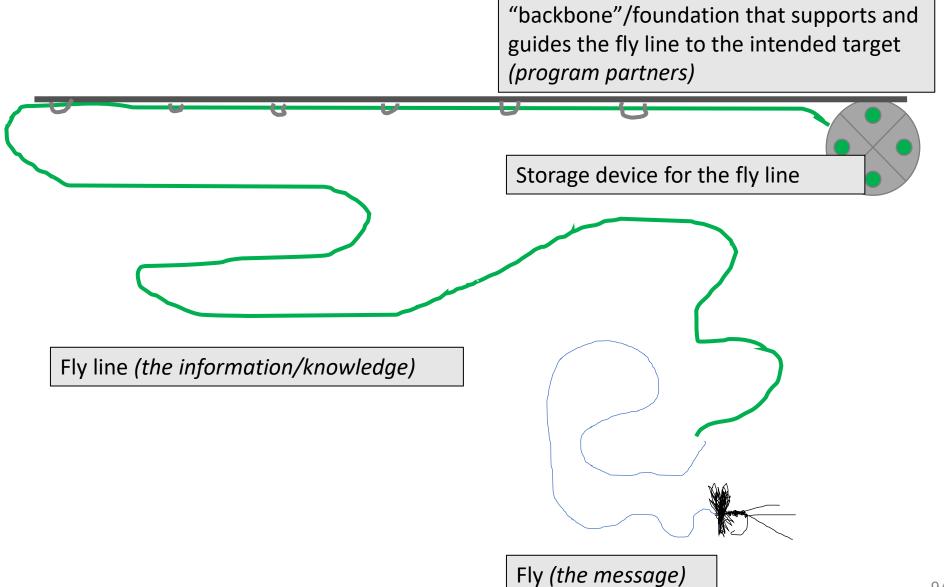
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Pennsylvania Trout Unlimited (PATU)

**Mission:** To conserve, protect, restore, and sustain Pennsylvania's coldwater fisheries especially our wild trout resources.

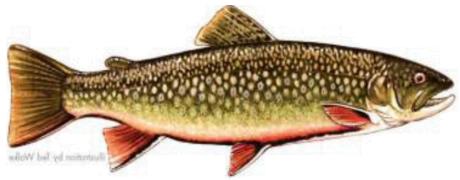


#### **TIC framework**



Anglers (teachers), using the guidance and support of the rod will deliver the "fly" with a steady, yet gentle, grip and precise accuracy.

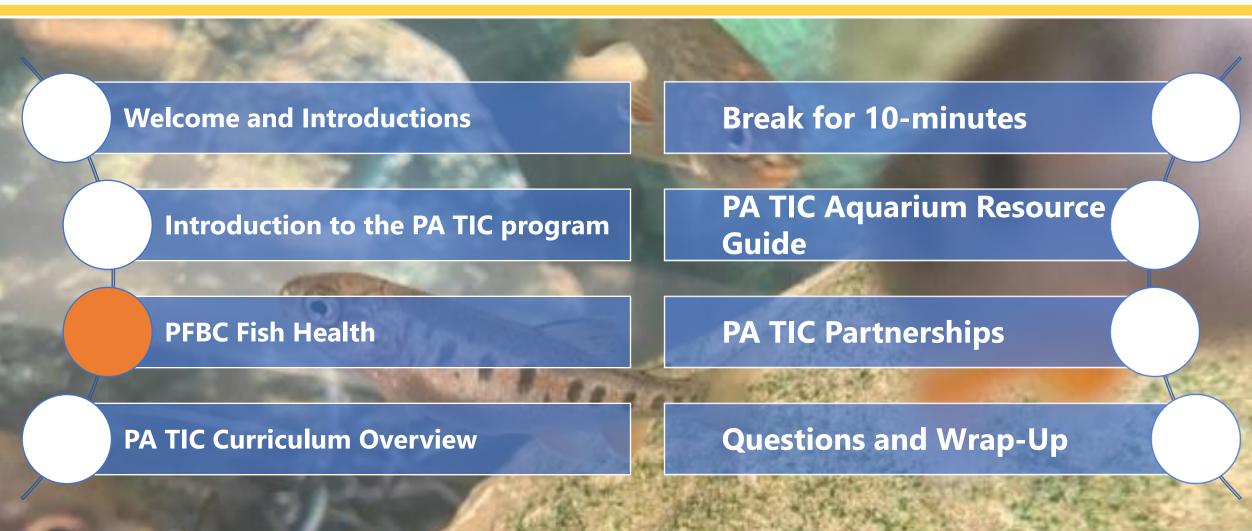
If all components (line, reel, rod and angler) work together to provide a seamless "presentation", the trout (students) will "rise to the fly".





## Agenda





## Agenda



**Break for 10-minutes Welcome and Introductions PA TIC Aquarium Resource** Introduction to the PA TIC program Guide **PFBC Fish Health PA TIC Partnerships Questions and Wrap-Up PA TIC Curriculum Overview** 

#### PA TIC Curriculum Overview



#### PA TIC is an educational program.

- PA TIC is not a stocking program.
- The success of your TIC program is not measured in the number of Trout released.

#### PA TIC is an interdisciplinary program.

• There is no set curriculum that you must follow.

#### PA TIC Curriculum Overview



PA TIC Timeline

https://www.patroutintheclassroom.org/program-timeline.html

**Trout Unlimited National Website** 

PFBC Activities and Education Portal

PA TIC Newsletters

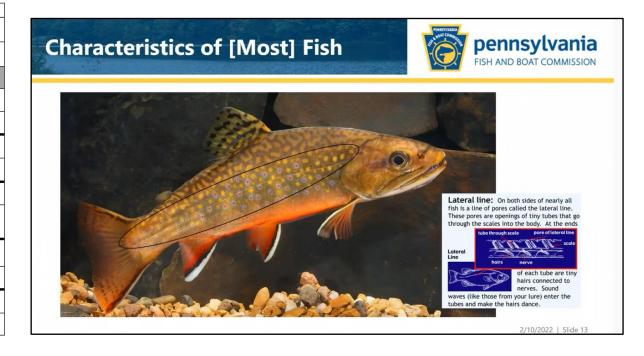
PA TIC Biennial Summit

#### **PA TIC Curriculum Overview**



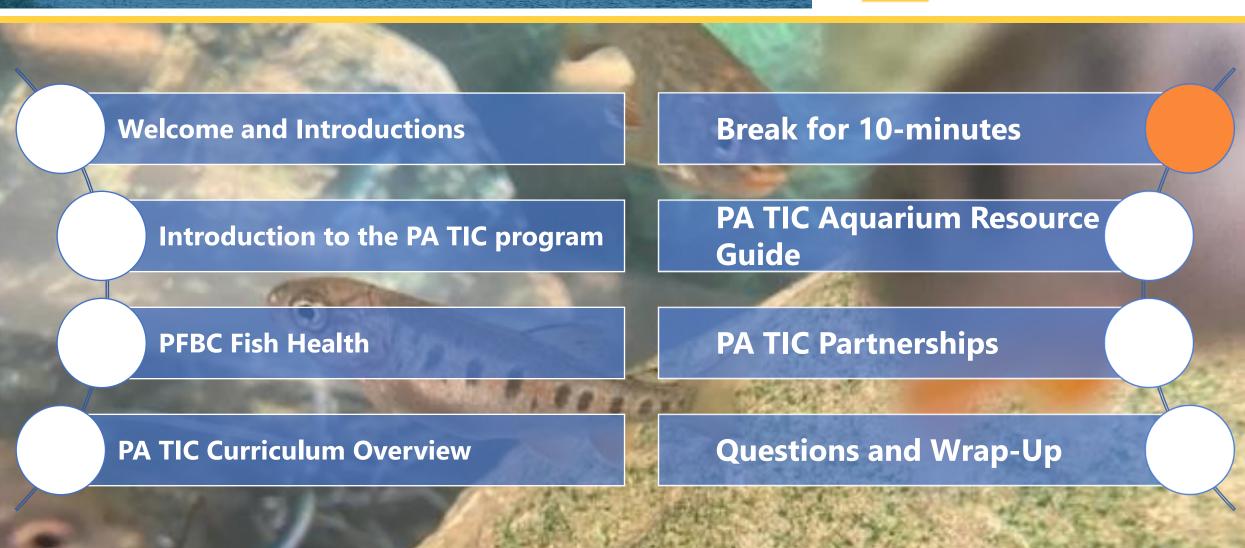
#### PFBC Virtual Program Opportunities

TIC Virtual Programming Schedule – Elementary (K-4 <sup>th</sup> )									
The same pr	ogram title is	offered tv	vice/date.	A WebEx link, with additional instructions, will be sent prior to the program.					
	r class, for th link next to tl		Please test technology, and ability to use	ility to use WebEx prior to the program.					
Theme	Program Title	Date	Program Description		PFBC Staff	REGISTRATION LINK(s)			
Trout & Trout life cycle	Trout Are Made of Trees	1/11/22	Learn about life in a trout stream! We will read the book "Trout Are Made of Trees" by April Pulley Sayre and learn about the life cycle and natural history of the Brook Trout and the things that they eat! We'll share supplemental educational resources to accompany this program, including a trout craft.		Andy D.	10a.m. – 10:30a.m. 1p.m. – 1:30p.m.	REGISTER REGISTER		
Macromania	Crayfish	2/8/22	Learn about the life of the crayfish. We will read the book Crayfish by Lola M Schaefer and learn about the natural history of the crayfish. We'll share supplemental educational resources to accompany this program, including an easy crayfish craft.		Walt D.	10a.m. – 10:30a.m. 1p.m. – 1:30p.m.	REGISTER REGISTER		
Fishing	Edison's Toolbox	3/8/22	house to fill his tacklebox for a fishing trip	atching fish! Join Edison as he searches his p with his dad in "Edison's Tacklebox" by Il educational resources to accompany this	Anneli F.	10a.m. – 10:30a.m. 1p.m. – 1:30p.m.	REGISTER REGISTER		
Amphibians	Life of a Spotted Salamander	4/12/22	Discover the secretive life of the Spotted Salamander's Life" by John Himmelman a history of the Spotted Salamander. We'll accompany this program, including an ea	and learn about the life cycle and natural share supplemental educational resources to	Mandy S.	10a.m. – 10:30a.m. 1p.m. – 1:30p.m.	REGISTER REGISTER		
Reptiles	Life of a Woodland Box Turtle	5/10/22	"Turtle's Day", by Ron Hirschi, see a live \	nd (aka Eastern) Box Turtle! We will read Woodland Box Turtle, and provide time for craft to do with your students, as well as ccompany this program.	Dee F.	10a.m. – 10:30a.m. 1p.m. – 1:30p.m.	REGISTER REGISTER		



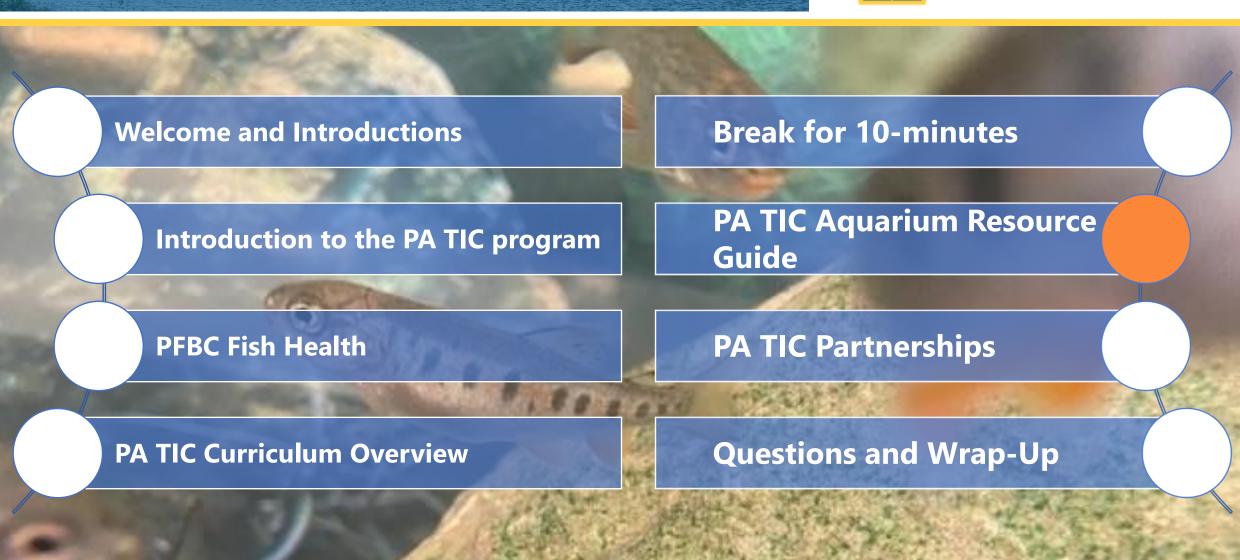
# Agenda



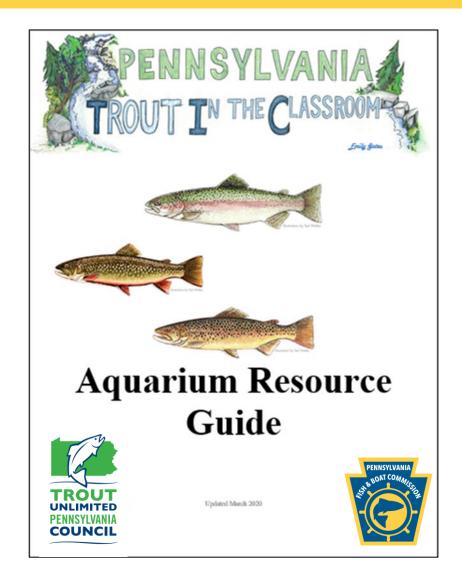


## Agenda



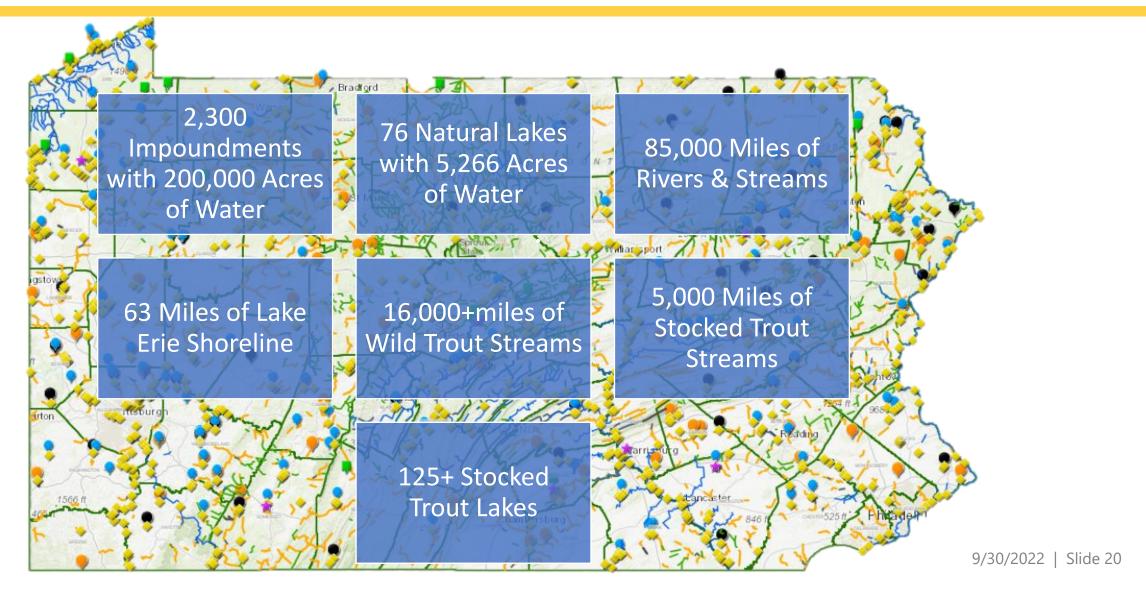






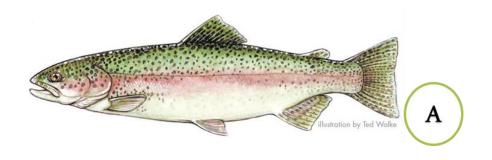
### Pennsylvania Waterways



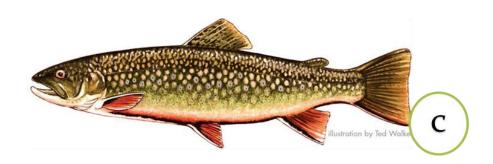


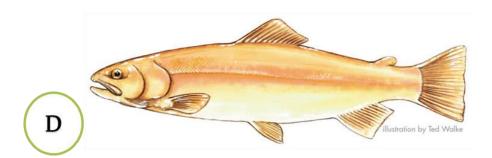


Virtual Question #1 - Of the following Salmonids, which is native to Pennsylvania's waterways?











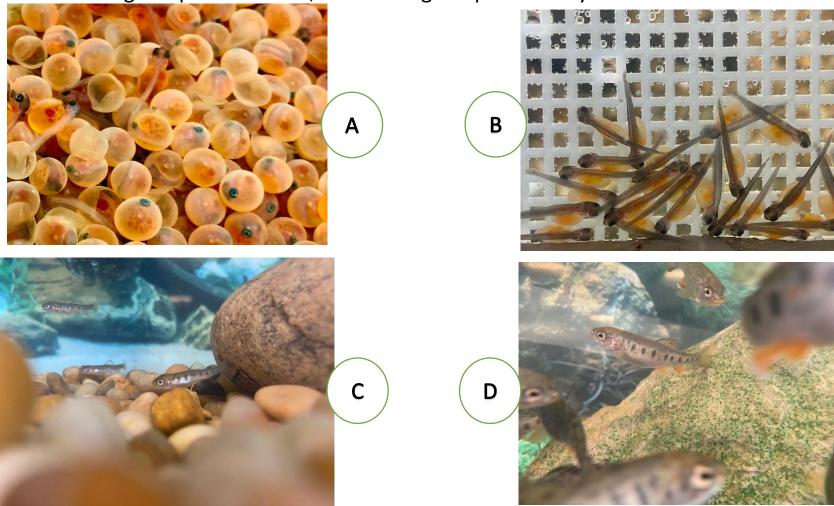
**Brook Trout (Salvelinus fontinalis)** 

Even though PA TIC utilizes Rainbow Trout, it is important to discuss the importance of native fishes with your TIC program.

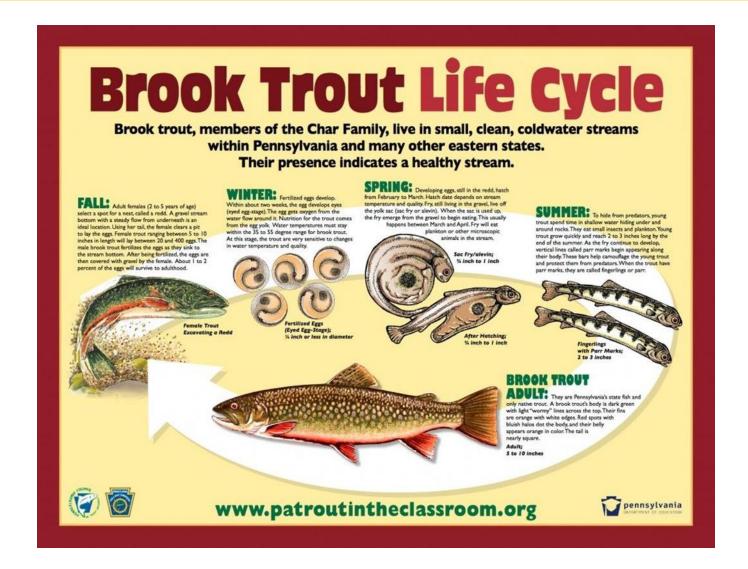




Virtual Question # - Using the photos below, which image depicts sac fry also known as alevin?









#### PA TIC Egg Shipment Day



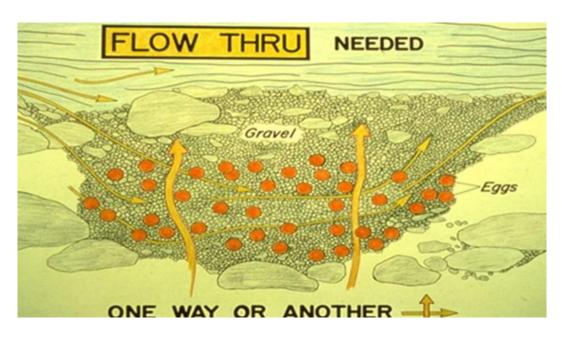




#### **Eyed Eggs**

- Have visible developed eyes
- Require steady well oxygenated flow
- Darkness
- In nature, 1-2% survival
- No food







#### **Egg Baskets**

- Artificial means of creating a Trout Redd
- \* Not provided in your TIC equipment
- Activity Track your own survival







Virtual Question #3 -Which photo depicts proper placement of eggs in the egg baskets?







#### Sac Fry/Alevin

- Newly hatched Trout
- Yolk Sac
- Darkness
- No food!





#### Fry

- Less than 1 inch
- Free swimming
- Time to feed





#### Fingerling

- Less than 1 3 inches
- Feeding Guidelines







Chapter 4: Trout Habitat and Needs

Virtual Question #4 –Which habitat will most likely sustain a population of healthy Trout?







**Chapter 5: Making the Connection** 

Virtual Question #5 – Of the pictured PA TIC Aquarium Equipment, which is directly involved in supplying adequate dissolved oxygen?







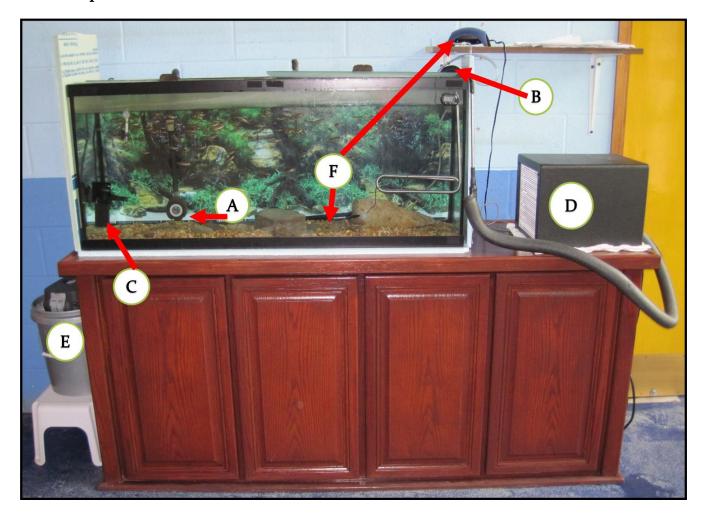








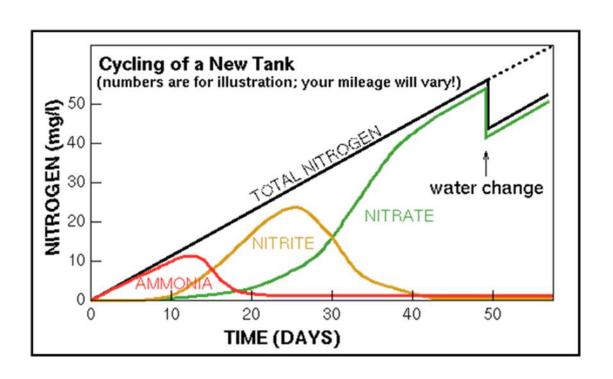
Chapter 6: Aquarium Set-up

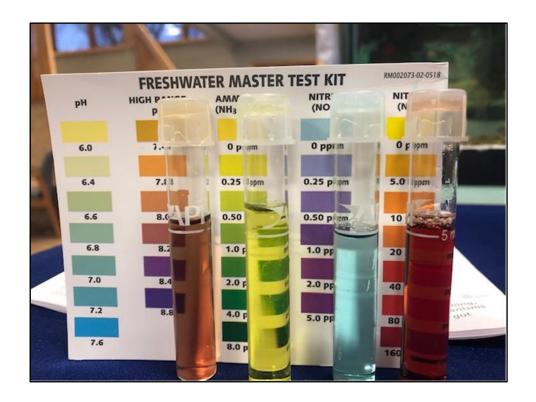




Pre-Cycling your PA TIC Aquarium

Complete prior to egg arrival







#### PA TIC Aquarium Salt Treatment

- Complete prior to egg arrival
- Energy allocation and osmoregulation





Aquarium Capacity	Total Dose	Application Rate
35 gallon aquarium	7 tablespoons	2 tablespoons over 3 days with 1 on day 4
55 gallon aquarium	11 tablespoons	3 tablespoons over 3 days with 2 on day 4
75 gallon aquarium	15 tablespoons	3 tablespoons/day



Chapter 7: Trout Care

- Acclimation
  - 1. As soon as the box arrives
    - a. Open the box
    - b. Take the bag out of the box
    - c. DO NOT open the bag immediately. As soon as you open the bag and lose the oxygen trapped inside, the water inside the bag that is ridden with ammonia becomes even more toxic.
    - d. Float the bag in your aquarium for 20-30 minutes. Your eggs are double bagged, you can remove the outer bag to speed up the process.
    - e. Open the bag and test the water temperature. If it is within five degrees of your tank water scoop the eggs out with a net and release them into your egg basket. **DO NOT ADD THE WATER IN THE BAG TO YOUR TANK.**
    - f. If the water temperature is not within five degrees of your tank water, add water from your aquarium immediately to mix it until you get to that point. Then complete step e.



#### Feeding Guidelines

- Guidelines are approximate
- Systems are unique
- A more scientific method <u>BIO002-FeedGuidelines2021.pdf</u> (bio-oregon.com)

#### PA TIC TROUT FEEDING GUIDELINES

\*\*Guidelines are for 100-150 trout.

(Less or more trout = adjust accordingly & feed only what your trout will eat within the first 30 seconds)

Trout size	Approx. date	Size food	Teaspoons/feeding	Times
Swim-up fry (no more yolk	mid – January through early	0	1/16	3-4/day
sac)	February			
	Early February Through mid	1	1/4	3-4/week
	March			
1/2-1"	Mid March to Mid April	1	1/4	3-4/week
	Mid April to mid May	2	1/2	3/week
1 ½"-3"	Mid May to late May	2	1/2	3-4/week



Feeding Guidelines





**Feeding Guidelines** 

Virtual Question #6 – Which of the following will likely happen if you excessively feed your Trout?

My Trout will grow fast and as a result will be strong and healthy!

Excess food can lead to ammonia spikes, which could result in Trout mortality.

В



Feeding Guidelines

Virtual Question #7 – Which life stage depicts when you can begin feeding?







Α

В

С

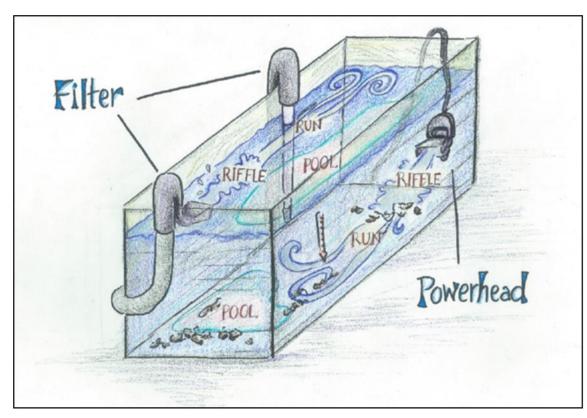


#### Vacation and Holiday Prep

- Trout are wild animals that can survive leaner times; however, you should feed at least twice during a long vacation. It is natural to experience some cannibalism, which could lead into a carrying capacity lesson or survival of the fittest lesson.
- Continue with the normal feeding cycle in the days leading up to vacation.
- Conduct a partial water change (20-25%) prior to leaving.



Chapter 8: Maintaining your Ecosystem







#### Water changes!!

- Very important
- Develop a schedule









#### Chapter 9: Record Keeping

- Also very important
- Record and track as much information as possible!

Who is feeding?  Do Not Over Feed, It can KILL the fish.				
Date	Time	Amount/Type of Feed	Name	
		1		
<u> </u>		<del> </del>		
		-		
		+		
	_	+		
		1		
<b>——</b>		<del> </del>		
		<del> </del>		



#### Release Days

- Approved Stocked Trout Waterways
- Designation of Agent Letter
- Approved List

You must have these items with you on your release day!



April 7, 2022

Cody Whipple PA Fish and Boat Commission 595 East Rolling Ridge Drive Bellefonte, PA 16823

Re: Designation of Agent of the Executive Director

Registered Trout In the Classroom (TIC) participants (list attached) and you are hereby designated as Agents of the Executive Director of the Pennsylvania Fish and Boat Commission pursuant to Section 302(b) of the Fish and Boat Code, 30 Pa.C.S. §302(b), subject to the following limitations:

- This Agent Status permits the possession of no more than 300 trout eggs, fry or fingerlings for the sole purpose of educational use during the TIC Program.
- The trout raised through your TIC program must be released in the stocked trout waterway listed next to your classroom name in the attached list. (Look for your last name. The list is organized alphabetically by last name.)
- A copy of this designation must be kept with the trout at all times. You must show this document, with some other positive form of identification during the TIC program, to any officer authorized to enforce the Fish and Boat Code.
- 4. This designation will expire automatically on June 30, 2022.

Sincerely,

Timothy D. Schaeffer Executive Director

Attachments: TIC Approved Release Site Listing

cc: BLE Regions BOEM ROECs BOEM Agent File

> Bureau of Outreach, Education and Marketing 1601 Elmerton Avenue | Harrisburg, PA 17110 | Phone: 717.705.7800 | Fax: 717.705.7800 | fishandboat.com



#### Release Days

- Educational Field Trip Rotating Stations
- Partnerships
- The culmination of your PA TIC program!









#### Chapter 11: Troubleshooting

### Steps for Effective Troubleshooting

- 1. Check the PATIC Resource Guide
- 2. Consult your program Partner
- 3. Contact me! <a href="mailto:cwhipple@pa.gov">cwhipple@pa.gov</a>

Remember: Photos, feeding data, behavior and Water Quality info before you contact me! pH, Ammonia, Nitrites and Nitrates!



PA TIC End of Year Report PA TIC Registration



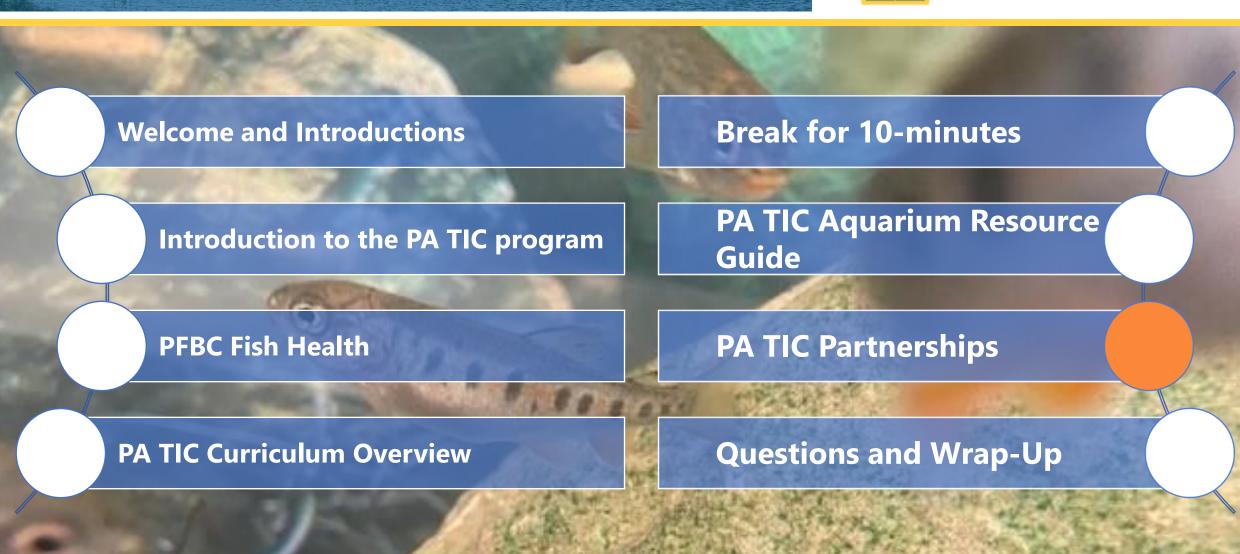
# QUESTIONS?





# Agenda





## Thank you!







### **THANK YOU!**

Pennsylvania Trout in the Classroom is growing fast! Everything you do helps foster coldwater conservation! Your PA TIC program continues to educate and grow the conservation, preservation, and enhancement of the Commonwealth's Aquatic Resources.