2025 Ipswich River Herring Count Training

IPSWICH RIVER
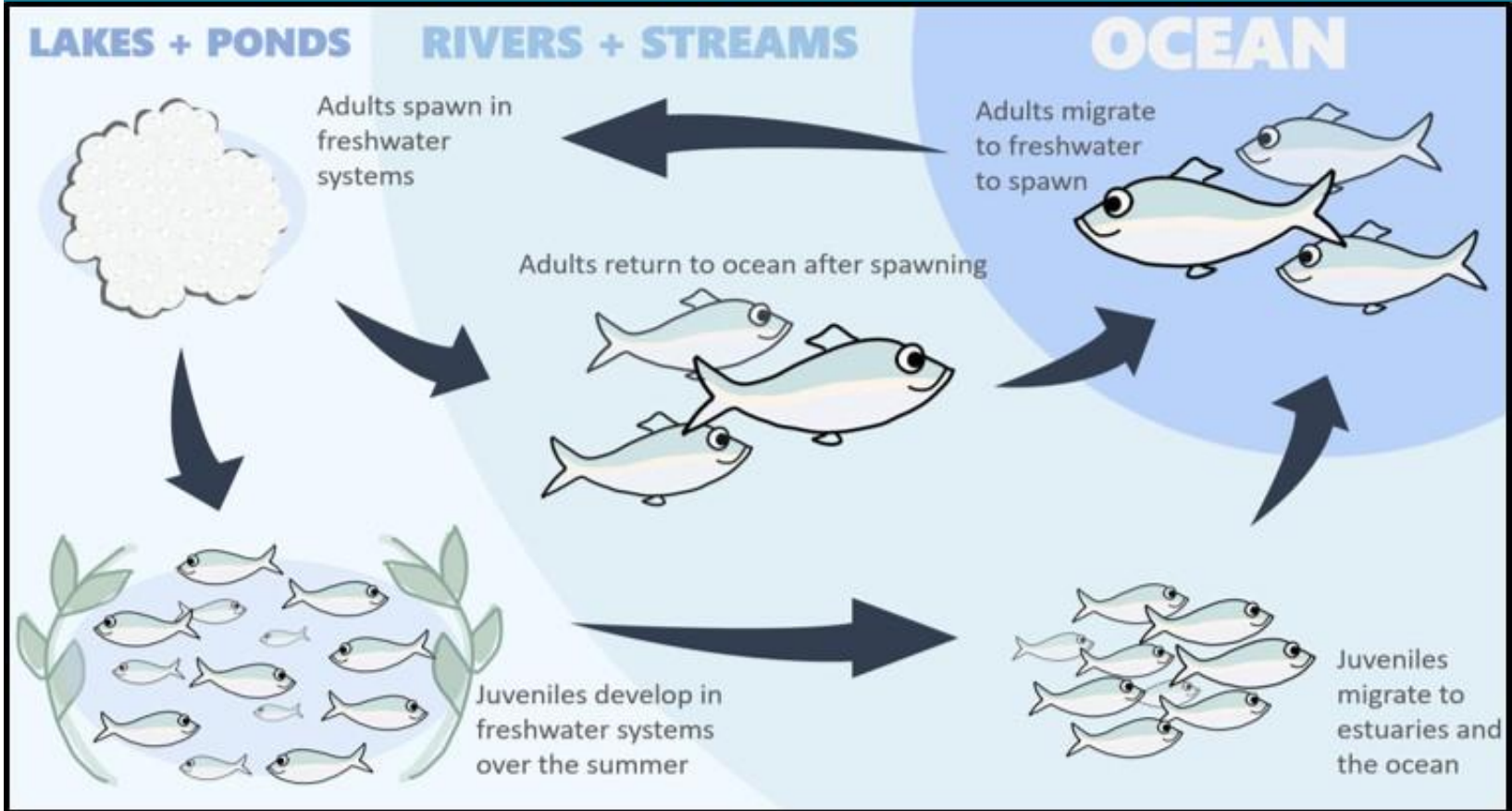WATERSHED ASSOCIATION

ALEWIFE

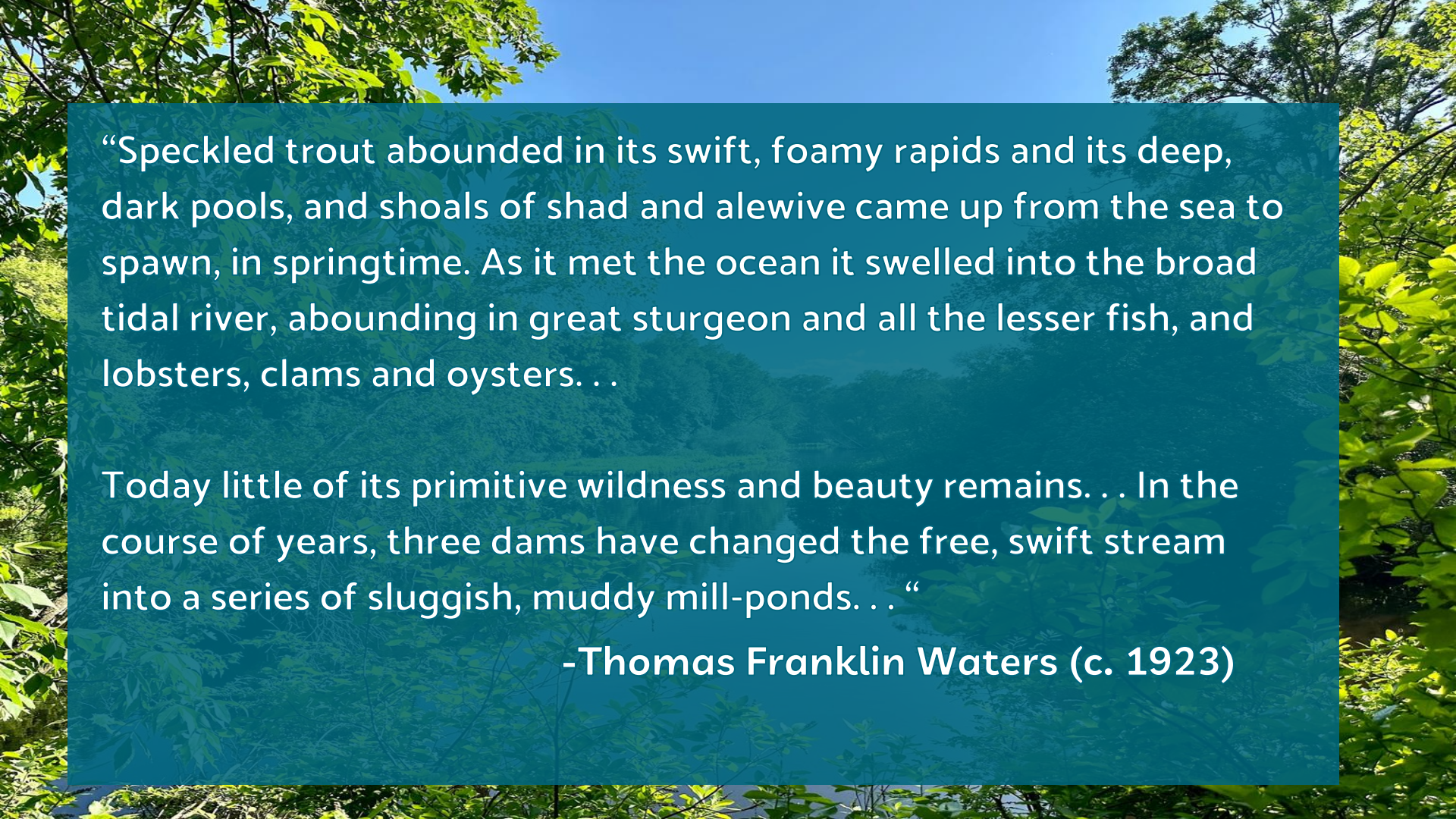BLUE BACK
HERRING

ALEWIFE VS. BLUEBACK HERRING

- Alewife prefer spawining in ponds.
- Blueback can spawun in flowing water.
- Both native to Atlancic coast.
  - Aleswife range exteends further north, blueback further south.

WHAT ARE ANADROMOUS FISH?

- Spend most of their lives at sea, migrating to freshwater only to spawn.
- Includes lamprey, eel, shad, smelt

RIVER HERRING LIFE CYCLE

LAKES + PONDS   RIVERS + STREAMS   OCEAN

Adults spawn in freshwater systems

Adults migrate to freshwater to spawn

Adults return to ocean after spawning

Juveniles develop in freshwater systems over the summer

Juveniles migrate to estuaries and the ocean

"Speckled trout abounded in its swift, foamy rapids and its deep, dark pools, and shoals of shad and alewive came up from the sea to spawn, in springtime. As it met the ocean it swelled into the broad tidal river, abounding in great sturgeon and all the lesser fish, and lobsters, clams and oysters. . .

Today little of its primitive wildness and beauty remains. . . In the course of years, three dams have changed the free, swift stream into a series of sluggish, muddy mill-ponds. . . "

-Thomas Franklin Waters (c. 1923)

Bostik Dam (no fish passage)
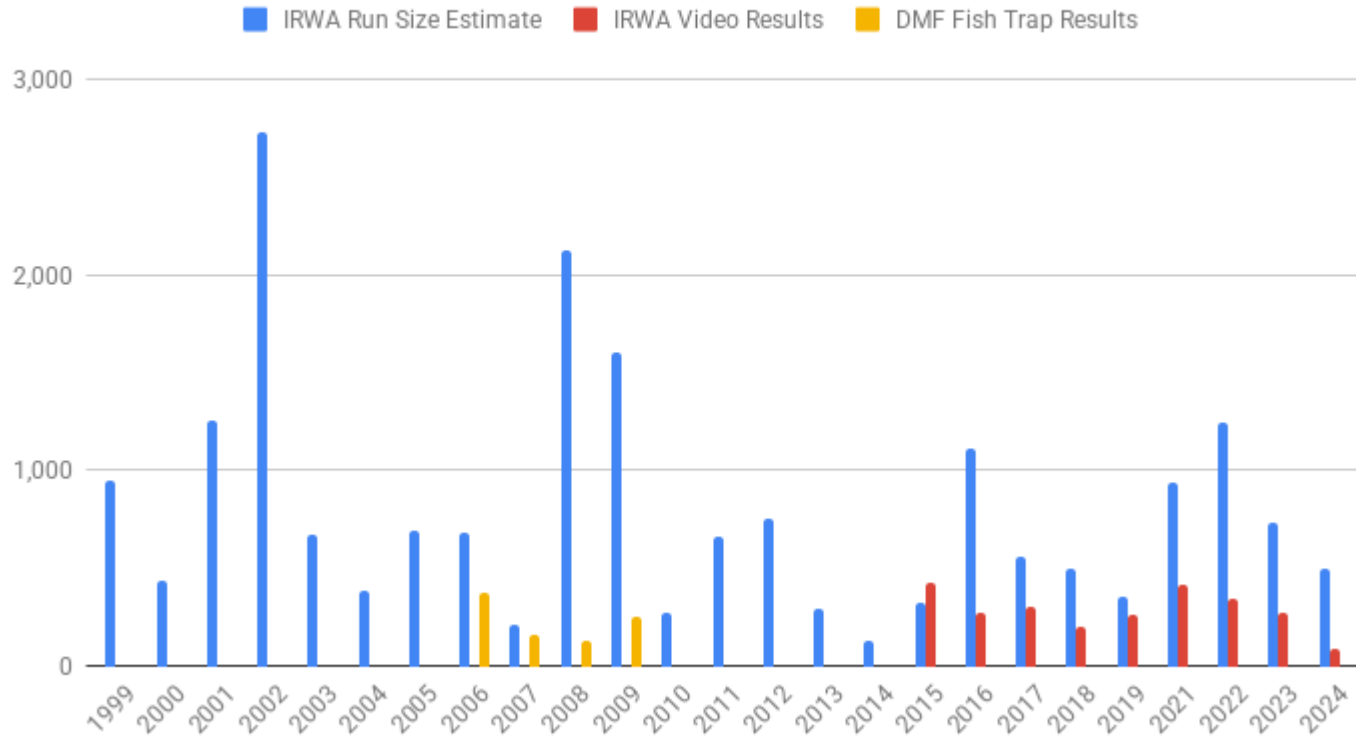

Willowdale Dam

Ipswich Mills Dam

DAMS OF THE IPSWICH RIVER

- Volunteer monitoring program to estimate the herring run size during the annual spring migration.
- Volunteers perform individual, 10 minute counts at the Fish Ladder April-June.
- Follows a method designed by the Mass. Division of Marine Fisheries that produces statistically reliable run size estimates.

- River herring populations have declined throughout their entire range on the east coast of North America over the last few decades as a result of overfishing and habitat degradation.

- The river herring count data is submitted to scientists at the Massachusetts Division of Marine Fisheries, who use this data to estimate the herring run size at each fish ladder.

- This informs the agency about the status of river herring populations throughout the state, which guides management decisions and regulations that help sustain those populations on the coast.

- River herring are an important component of a healthy coastal and riverine ecosystem.

WHY COUNT RIVER HERRING?

Annual Run Size Estimates, Video Results and Trap Results

Legend:
- IRWA Run Size Estimate (blue)
- IRWA Video Results (red)
- DMF Fish Trap Results (yellow)

CURRENT TRENDS

WHERE DO I COUNT?

IPSWICH MILLS DAM

WHERE DO I COUNT?

You count from here (facing upstream)
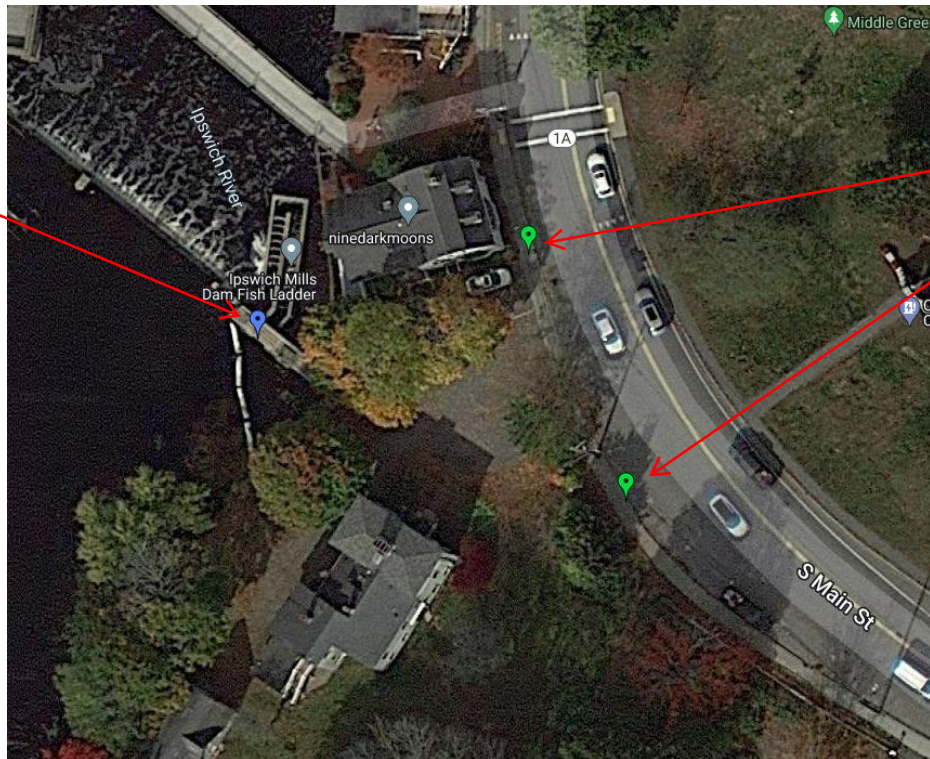
WHERE IS IT?

See the map with directions on the IRWA website.

Fish Count Location

PARKING:
ON-STREET PARKING ON SOUTH MAIN ST. ALSO IN MUNICIPAL LOT ACROSS THE STREET (OUT OF VIEW).
-DO NOT PARK IN GRAVEL DRIVEWAY

HOW DO I COUNT?
STEP 1: Find box on fence

STEP 2:
Remove everything you will need.

- CLIPBOARD
- PENCIL
- STOPWATCH

STEP 3:
Record your name and date in the columns on the data sheet.

IPSWICH RIVER
WATERSHED ASSOCIATION
The Voice of the River

2023

PLEASE RECORD FISH GOING UPSTREAM ONLY

Ipswich River, Ipswich Mills Dam

Observation	Name	Date	Weather (see key below)	Water Temp C	Air Temp C	AM/PM	Time	# Fish (ONLY record herring)
Example	*Henrietta Herring*	*04/12/23*	*5*	*15*	*19*	*PM*	*1:00-1:10*	*1*
1								
2								
3								
4								
5								
6								

Weather Key: 1= no clouds (sunny); 2= 1%-25% clouds; 3=26%-50% clouds; 4=51%-75% clouds; 5=76%-100% clouds; 6= drizzle/light rain; 7=rain/moderate-heavy; 8=sleet/snow; 9=other

Additional Observations:

STEP 4:
Record the weather on the data sheet.

2023

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Additional Observations:

STEP 5:
Record the air and water temperature in degrees Celsius.

- Be sure to turn the air temp. board away from direct sunlight.

STEP 5 (CONT.): Record water and air temperature on data sheet.

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Additional Observations:

STEP 6:
Record the time interval and write "AM" or "PM" in the columns

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Additional Observations:

STEP 7:

- look down at the counting board and begin the stopwatch.
- Watch continuously for <u>TEN</u> minutes.

  - Note: New for 2025! The counting box will be completely open, no lid to open and close

WHAT AM I LOOKING FOR?

- **Watch this <u>video</u> to see what herring and other fish look like.**
- **This was recorded when there was a specialized trap at the top of the fishladder and is clearer than what the current view looks like.**

STEP 8:

- Record the number of any HERRING GOING UPSTREAM (and only herring going upstream) in the "fish" column of the data sheet.
- If any herring are observed going back downstream, subtract that from your total.

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Additional Observations:

STEP 9:

- Make any other notable observations about wildlife or other activity around the fish ladder.
- Record these at the bottom of the data sheet.
- Examples:

    - I saw a huge snapping turtle!

    - Fifteen lamprey came up during my count!

    - I dropped the pencil in the river, sorry :(

    - A river otter ran up the ladder!

STEP 10:

- Return all counting tools to the boxes.
- If the data sheet is full, place it in the plastic bag in the box.
- Multiple dates can go on one sheet.
- Hang box back up on fence if you removed it.
- You're done! Thanks! :)

TYPES OF FISH YOU MIGHT SEE

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2008 TRAP RESULTS
LESS COMMON FISH

1 BLUEBACK HERRING

1 PICKEREL

6 LARGEMOUTH BASS

0 AMERICAN SHAD

2 AMERICAN EEL

3 BULLHEAD

1 CREEK CHUBSUCKER

HOW OFTEN DO I COUNT?

•As often or as little as you want!

•Once a day, once a week, one time only, up to you! **

WHEN DO I COUNT?

•There are THREE time periods every day:

•7 AM to 11 AM

•11 AM to 3 PM

•3 PM to 7 PM

**Goals: At least 3, 10 min. counts per period (9 per day) and for counts to be as random as possible

HOW DO I SIGN UP?

- Request email will go out every Thursday for the following week.
- Go to the Ipswich River Herring Count Page on SignUp.com.
- You can sign up anytime. Go to a date and click the Sign Up button
- You can see who is already signed up in each time block (7am-11am, 11am-3pm, 3pm-7pm).
- Pick a block Enter your information and click Save
- You should receive an automatic email showing your sign up times.
- Save the link, plus will be sent out weekly with any updates.
- Drop-in counters: check the calendar in the box to see if that time is already covered.

Counting Guidelines

The goal is to do a ten minute count at some point within the time period you sign up for, ideally with 3 counters signed up for each time period for a total of 9 counts a day.

The time periods in which to count are:
7AM - 11 AM
11AM - 3 PM
3PM - 7 PM

Four rules:
1) Randomness is better, so if you do a count in the same time slot regularly try to not have it be at exactly the same time.
2) Please, **no back to back counts**, meaning if you sign up for more than one count in a given time slot please leave at least 10 minutes in between.
3) If you do a drop-in count (don't sign up ahead but pop by when you have time) ***please, please*** *check the data sheet to make sure a count is needed and fill in your name on the hard copy schedule in the box.* Otherwise a scheduled counter might get bumped from their planned slot.

What do I do if I have questions?

Contact Ryan
- fishcount@gmail.com or rodonnell@ipswichriver.org
- (978) 412-8200
  (Mon-Thurs. business hours)

VIDEO CAMERA EXAMPLES

MACHINE LEARNING

- The Ipswich River is participating in a project being led by MIT Sea Grant and the Woodwell Climate Institute to develop an AI machine learning model that can identify and count herring in video footage.
- The goal is for the model to achieve at least an 80% accuracy compared to a human reviewing the same footage. In some cases it can achieve 90% or greater.
- See the talk given by the developer, Zhongqi Chen, at a River Herring Network meeting in November, 2024.
- Below are examples from the Parker River of an earlier version of how a model like this would work.

THANKS FOR COUNTING. REMEMBER, EVERY COUNT COUNTS!