Catch the Hatch

A Community Science Project by:

Left Hand Watershed Center

Training Overview

- Project Overview
- Relevance to Science
- Project Logistics
  - Sign Ups and Gear
  - Field Protocol
  - PMD Identification
  - Technology and Data Entry

Follow along in Volunteer Manual

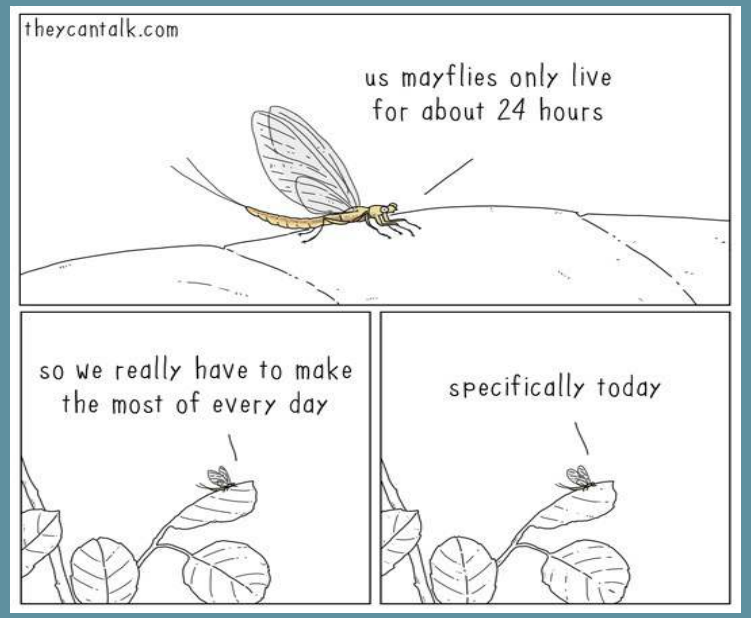
Project Overview

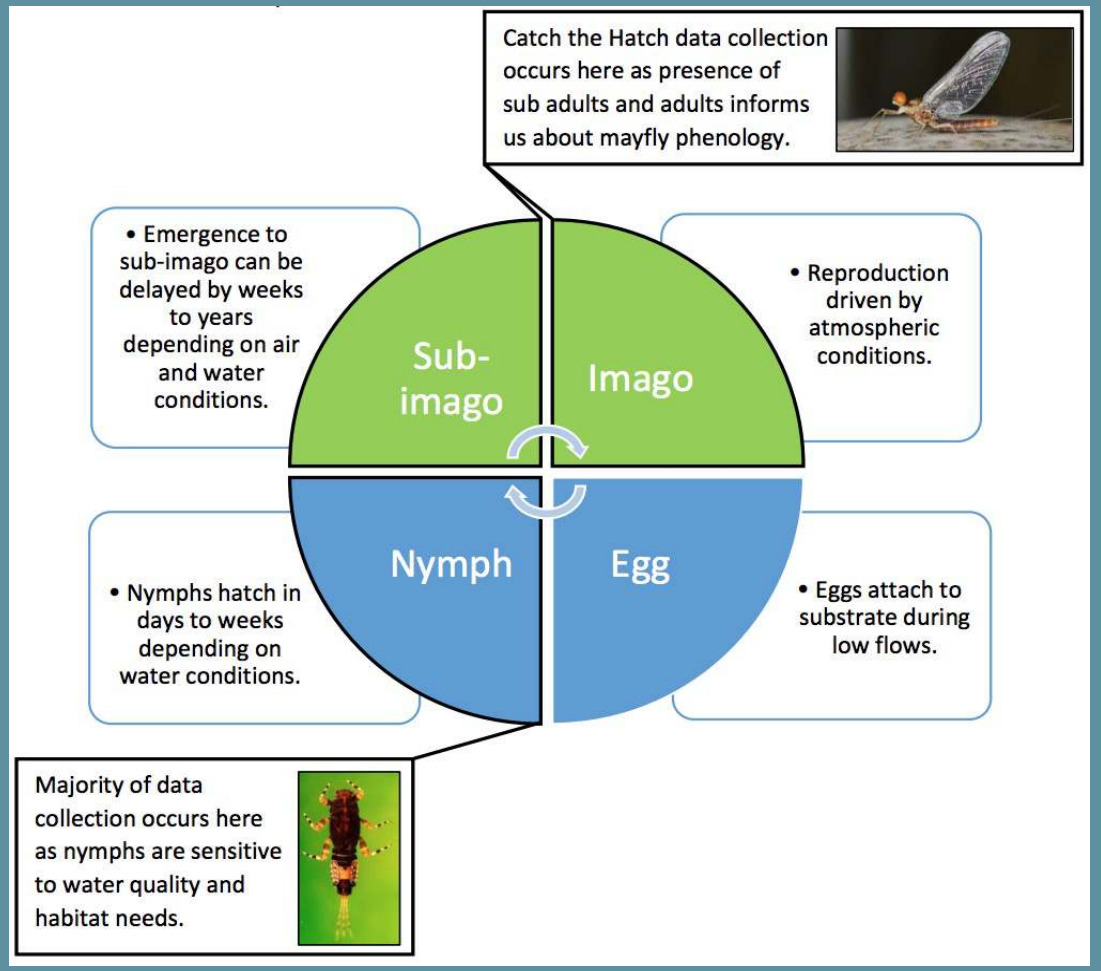
- Volunteer Expectations (pg. 5 Volunteer Manual)
  - Sign up and follow through with multiple observations
  - Follow field and data entry protocols
  - Maintain and return project gear

- Project Timeline (pg. 6)
  - June 15- July 15; peak emergence window for Pale Morning Duns (PMDs)

Relevance To Science

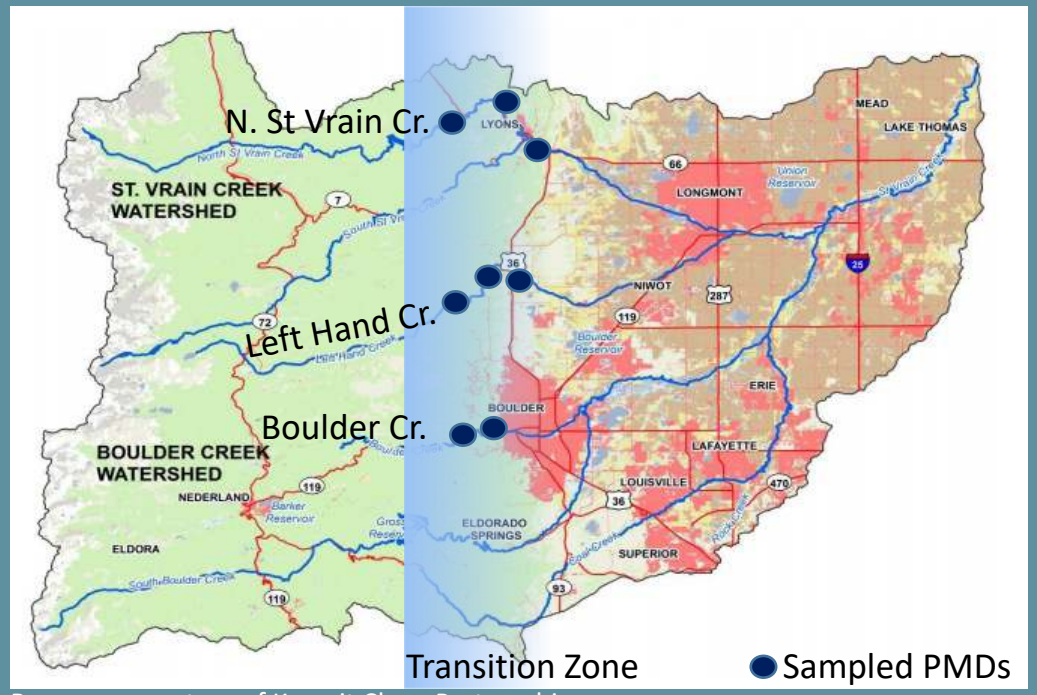
- Mayflies and PMDs (pg. 6-7)
  - Life stages in water and on land
  - Indicators of watershed health





Relevance To Science

- Mayflies and PMDs (pg. 6-7)
  - Life stages in water and on land
  - Indicators of watershed health
  - Found in Front Range transition zones
  - Heavily sampled as nymphs (in creeks)
  - What about adults??
    - That's where we come in!



Base map courtesy of Keep it Clean Partnership

Research Questions (pg. 7)

1. Can trained community volunteers accurately identify sub adult and/or adult PMDs during their peak emergence (June 15-July 15)?

2. What sampling time frame results in more correct observations of sub adult and/or adult PMDs?

3. Are PMD adult and nymph life stages present in the same location from year to year?

4. How does presence of sub adults and adult PMDs during peak emergence change over time in the transition watershed zone of Boulder, Left Hand, and North St. Vrain Creeks?

Research Questions (pg. 7)

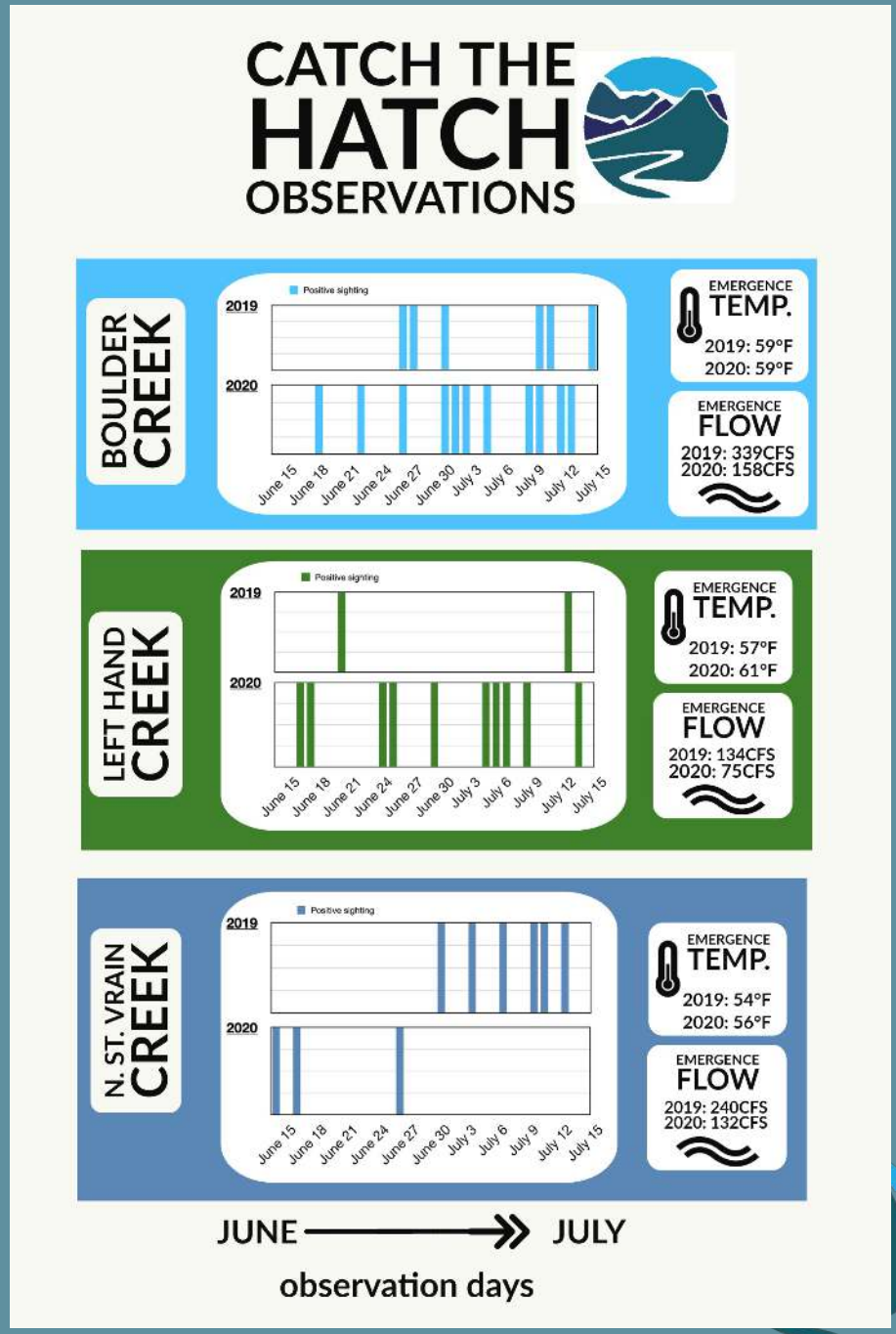
Long term 2020; short term

1. Can trained community volunteers accurately identify PMDs during their peak emergence?

2. What sampling time frame results in more correct observations of PMDs?

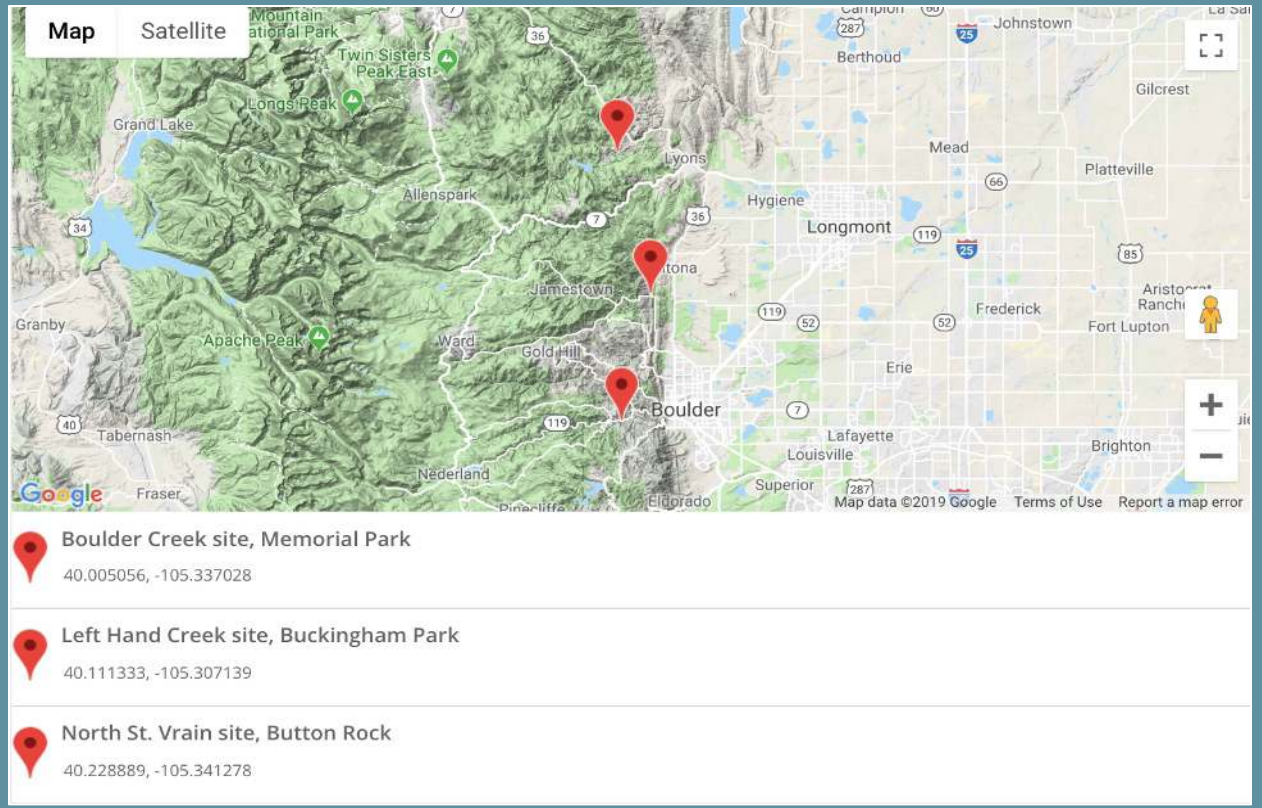
3. Are all PMD life stages present in the same location from year to year?

4. How does presence of PMDs during peak emergence change over time in the transition watershed zone of Boulder, Left Hand, and North St. Vrain Creeks?



Logistics: Signing up for observations

- Three locations (pg. 8)
- One month of observations
  - Goal: 1 observation a day at all sites
- Sign ups
  - Sign up on Project Page
  - The more observations the better!



Preparing for an observation

- Get your gear! Local pickup (sign up on Project Page)
  - ID Guide
  - 3-Piece Collapsible Net
  - Pre-filled Sample Vials
  - Thermometer
  - Protocols and Datasheet (in Volunteer Manual & available on Project Page)

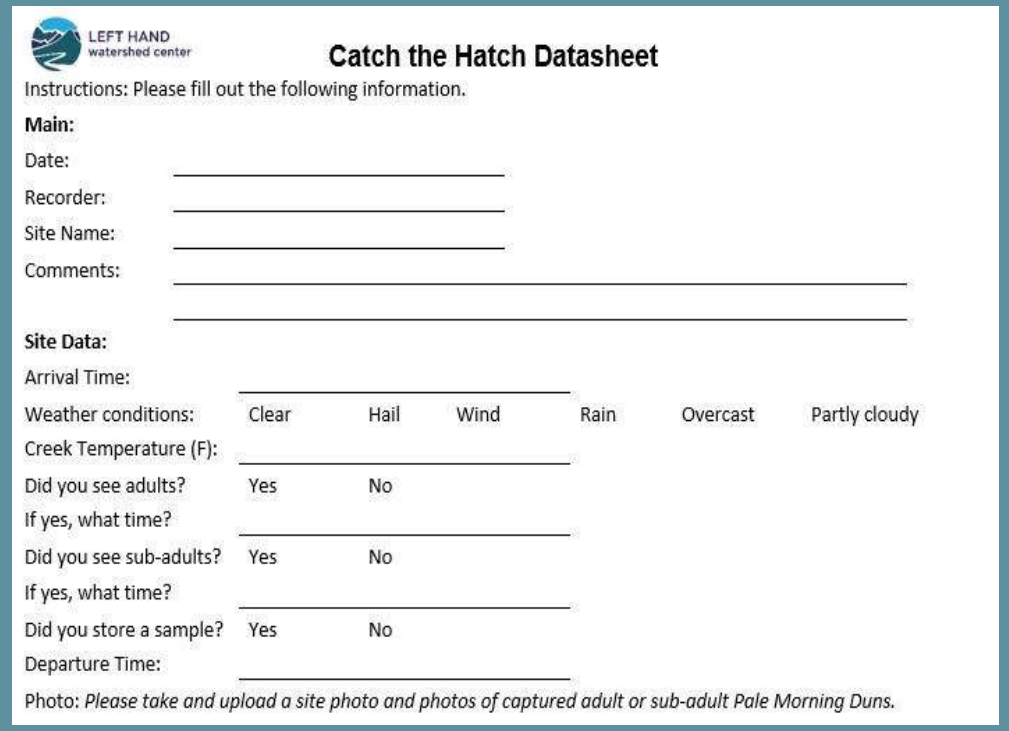
Preparing for an observation

- Choose a timeframe (pg. 10)
  - Tier 1 (priority): 11am- 2pm
    - Sub-adults emerging.
    - Characteristic pale yellow appearance with darker wings.

  - Tier 2: 2pm to sundown
    - Sub adult and adults forms emerging or on vegetation or substrate.
    - Adults darker in appearance with clear wings.

Making an observation for 30 or more min.

- On arrival record:
  - Date, your name & site name
  - arrival time
  - weather
  - creek temperature
  - take a site photo
- Recreate (fish, walk, relax) and observe for PMDs
  - emerging or on vegetation/substrate



LEFT HAND watershed center

Catch the Hatch Datasheet

Instructions: Please fill out the following information.

Main:

Date: _____

Recorder: _____

Site Name: _____

Comments: _____

_____

Site Data:

Arrival Time: _____

Weather conditions: Clear Hail Wind Rain Overcast Partly cloudy

Creek Temperature (F): _____

Did you see adults? Yes No

If yes, what time? _____

Did you see sub-adults? Yes No

If yes, what time? _____

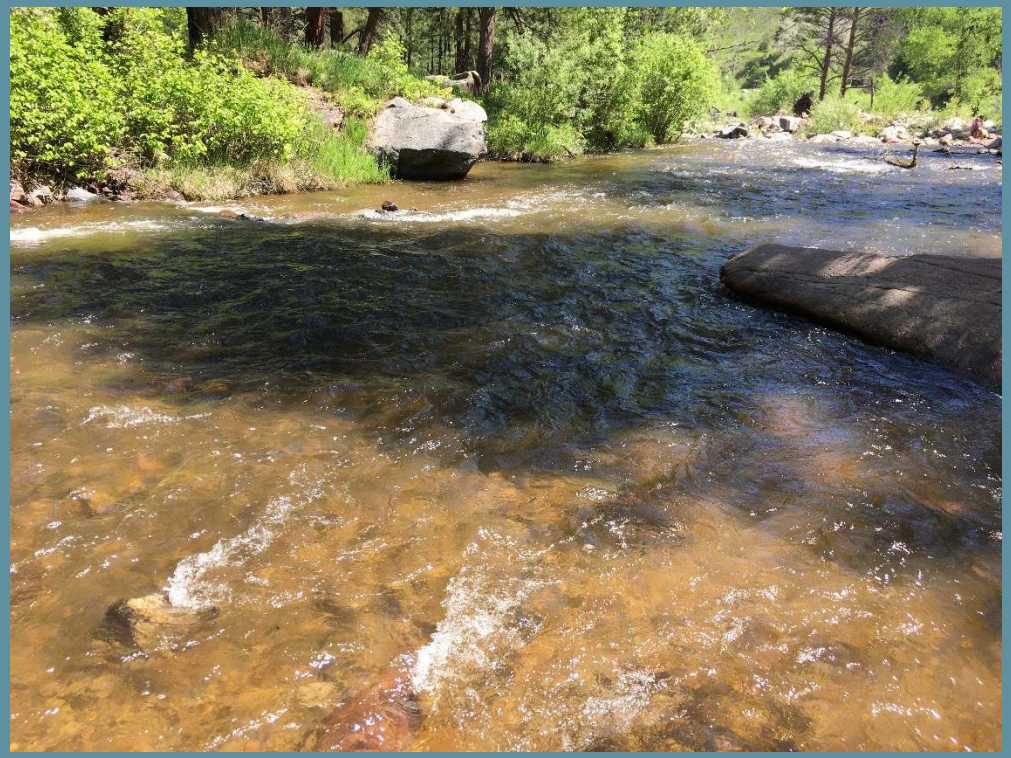
Did you store a sample? Yes No

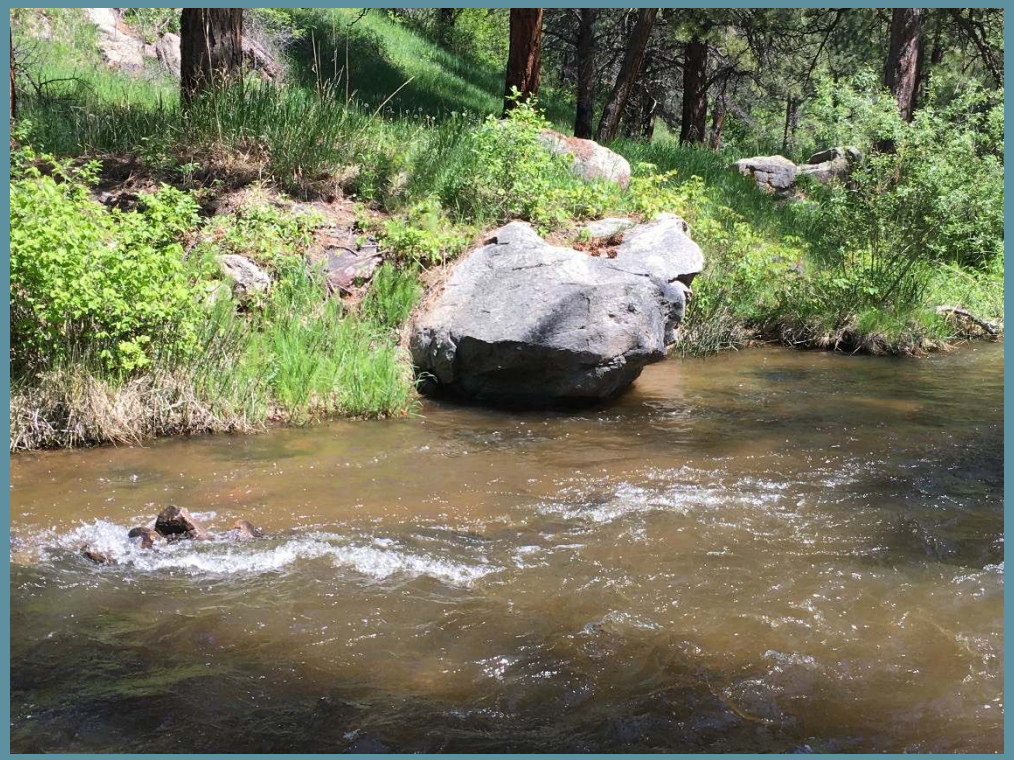
Departure Time: _____

Photo: *Please take and upload a site photo and photos of captured adult or sub-adult Pale Morning Duns.*

Observing for emerging PMDs

- Look near riffles and in “slack water”
  - Remember: PMD nymphs leave rocks in fast-flowing riffles and emerge from the water’s surface





Observing for emerging PMDs

Observing for emerging PMDs

Observing PMDs and concluding your observation

- Did you see any adults or sub adults (datasheet pg. 11)?
  - No- GREAT! These observations are equally as important.
  - Yes- GREAT! Record time, try to capture, take a photo, preserve in vial.
- Departure:
  - Record time and any comments

Hatch photo courtesy of L. Nolan, 2019

PMD Identification

LEFT HAND watershed center

Pale Morning Dun ID Guide **Catch the Hatch**

Key Characteristics: three elongated tails, body is not brown, size is 1/3-1/4 inch (excluding tails)

Sub-adult (dun) Female
Wings: gray
Body: yellowish-greenish
Eyes: small

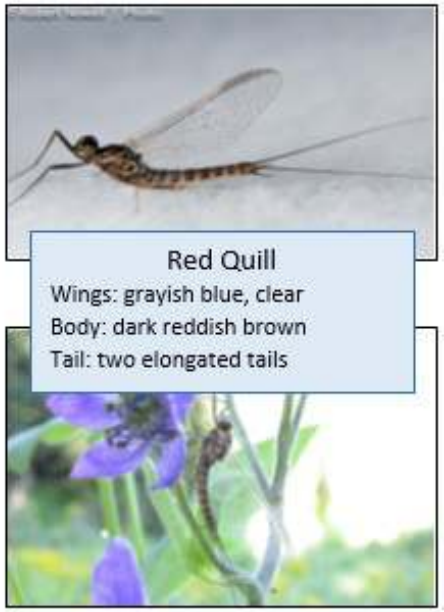
Sub-adult (dun) Male
Wings: gray
Body: reddish; pale yellow edges
Eyes: enlarged

Adult (spinner) Male
Wings: clear
Body: reddish-brown; paler edges
Eyes: enlarged

PMD Look-a-likes

PMD look-a-likes

Blue Wing Olive
Wings: grayish blue, clear
Body: greenish to reddish brown
Tail: two elongated tails



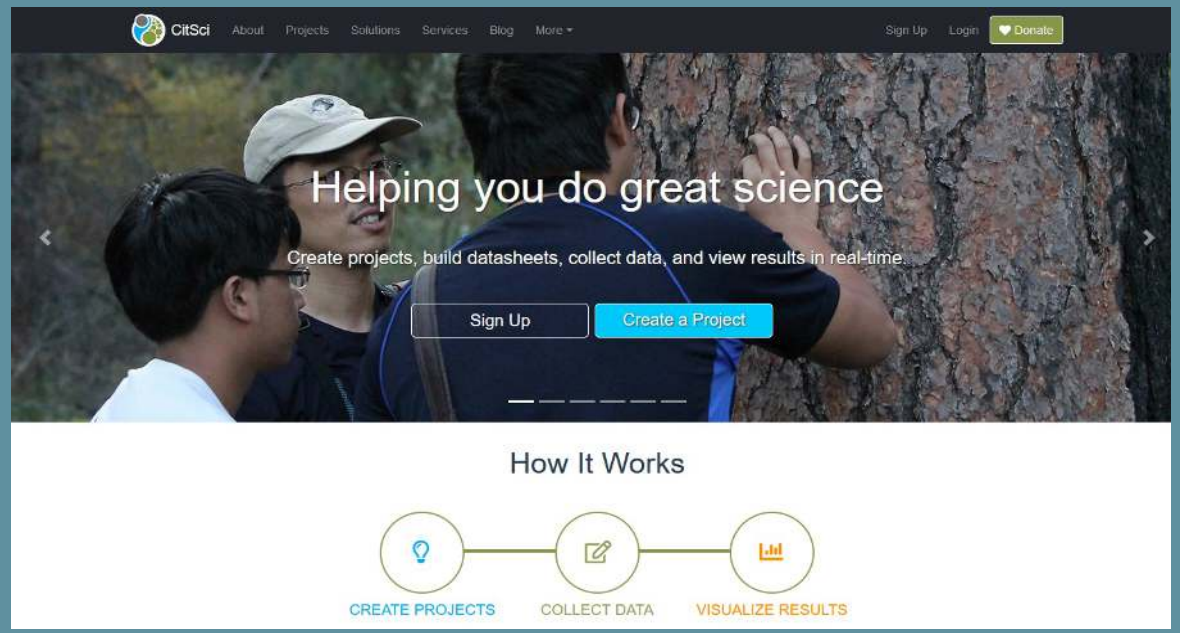
Red Quill
Wings: grayish blue, clear
Body: dark reddish brown
Tail: two elongated tails

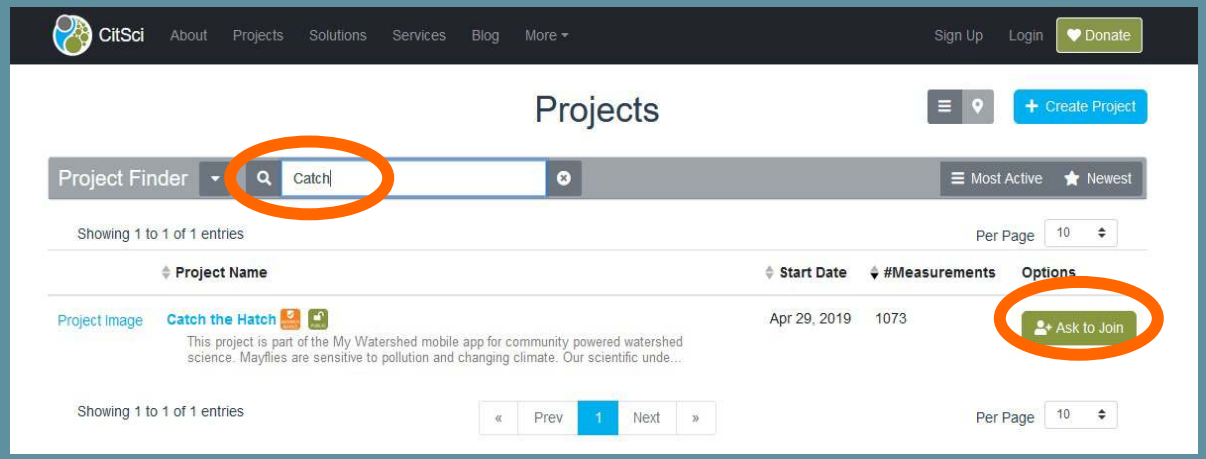
Green Drake
Wings: gray with dark venation
Body: olive brown
Tail: three stout tails

Photo credit: Timberline Aquatics, Robert Newell Photo, Troutnut.com, HenrysForkAnglers.com

Project Registration (pg. 14)

- All must register at citsci.org and join Catch the Hatch Project
- IMPORTANT! Citsci.org is having a relaunch June 11-13. New volunteers wait until June 13 to create an account. Past volunteers will be asked to update their password after relaunch.





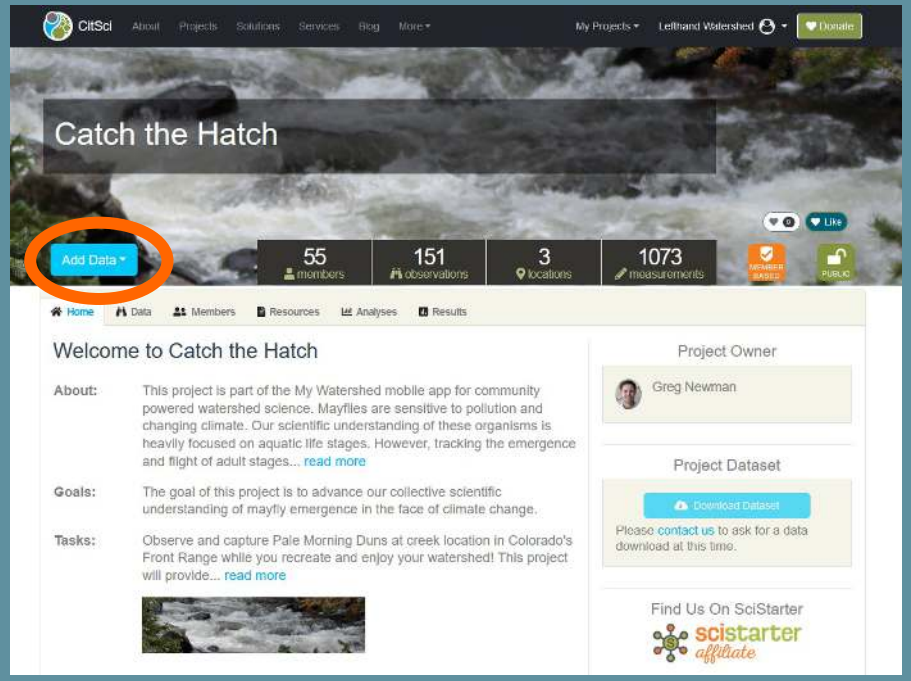
Data Entry

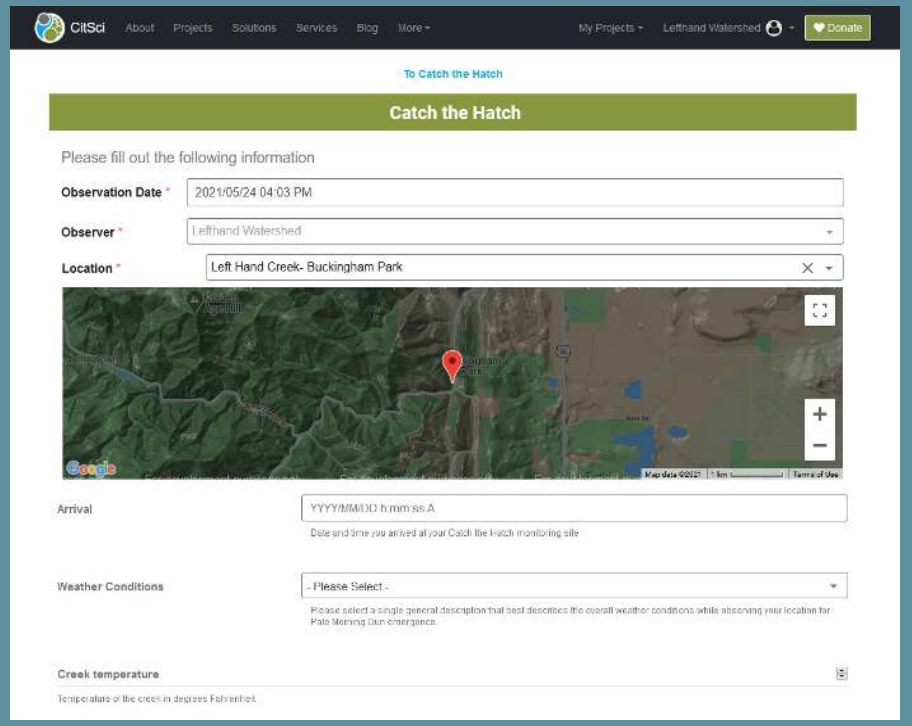
- *Always* record data on paper datasheet and take photos on phone or camera in the field!
- Then, two options:
  - Upload data directly to citsci.org (pg. 17)
  - Upload data using My Watershed app (uploads to citsci.org) (pg. 22)

- You can always view all project data and edit your data on citsci.org!

Data Entry on Website (pg. 17)

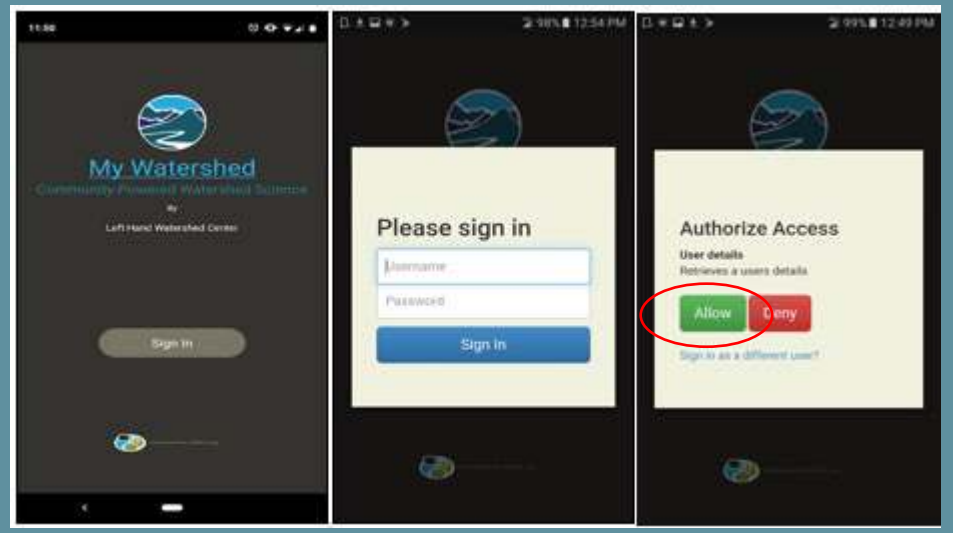
- Go to citsci.org. Sign in and navigate to Catch the Hatch
- Click “Add Data” and enter data on datasheet (will match your hard copy)
- Submit your data and review.



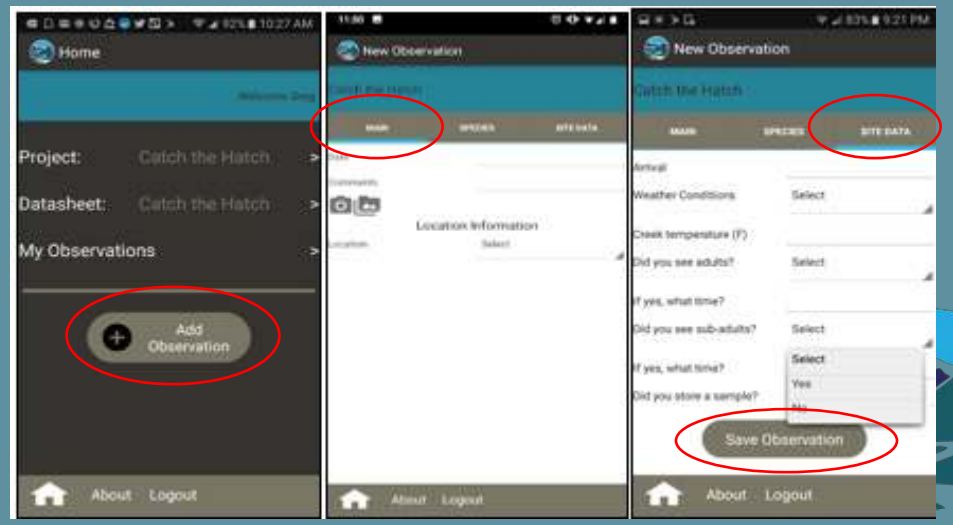


Data Entry on My Watershed (pg. 22)

- Search for and download “My Watershed” on Google Play or App Store
- Load app and sign in using citsci.org credentials then allow access
  - Remember to *always* log in to app before you upload data!

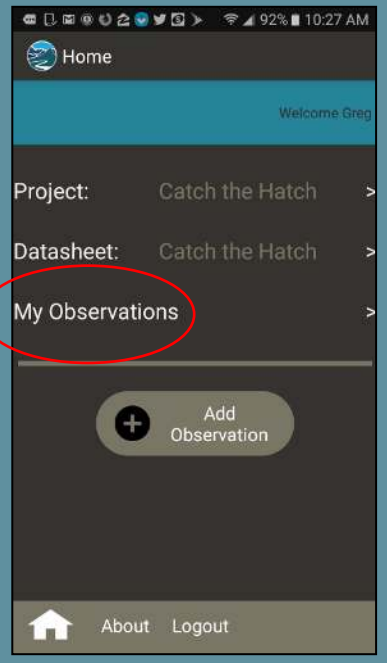


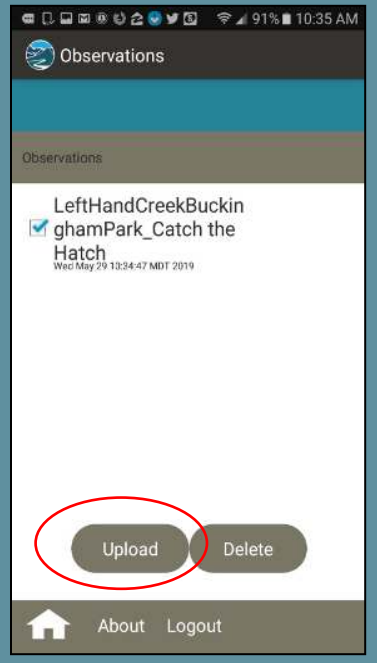
- Select Catch the Hatch project and datasheet and “Add Observation”
  - Main tab: Date, comments, upload photos, location.
  - Site Data tab: Enter data and click “Save Observation”

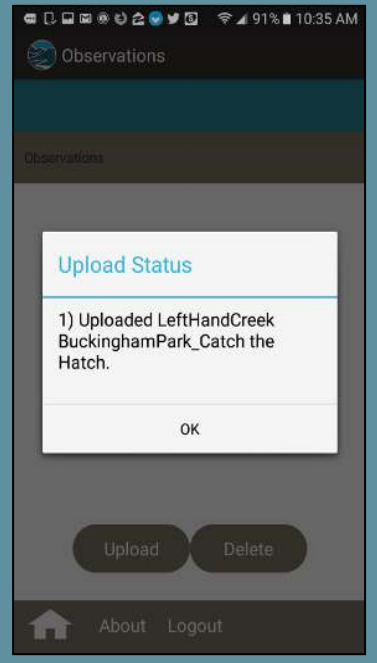


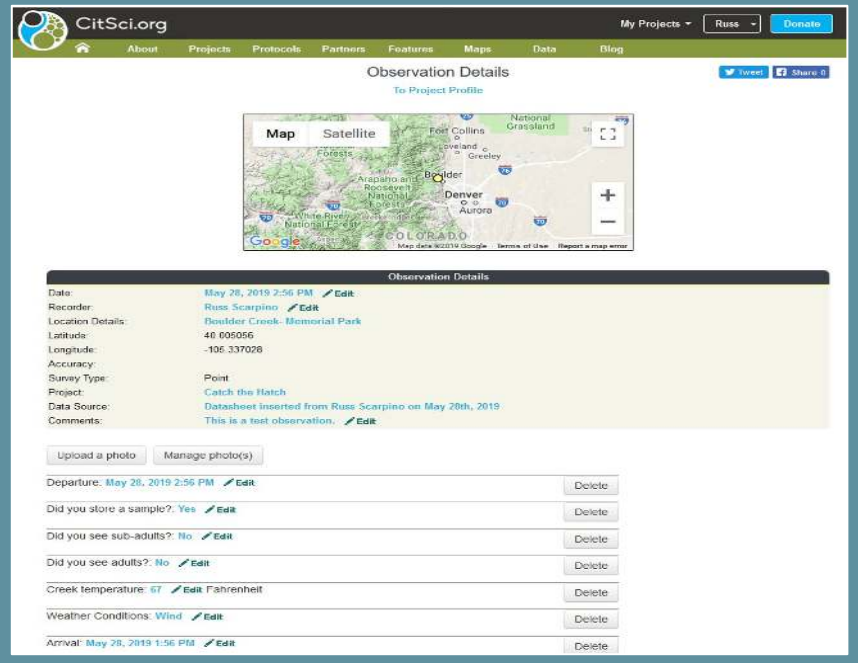
Data Entry on My Watershed (pg. 22)

- After you have entered data you are ready to upload
  - Click “My Observations”
  - Select observation and “Upload” (on iOS “Upload One”)
- Review and edit your data observation by logging in on citsci.org









Questions?

- Sign up for gear pick up on the Project Page
- Register and join the Catch the Hatch project on citsci.org
- Sign up for your observations on the Project Page