EEB 3266
Field Herpetology

Monday May 7th 2017

Instructor

Andrew Frank

- PhD candidate in Dr. Elizabeth Jockusch's lab
- I work on speciation and its impact on evolutionary history using Californian blue-tailed skinks
- I did TFA for 2 years before graduate school
- I'm always open for questions and concerns

So… What is Field Herpetology? (what did I got myself into…)

- Herpetology is the study of **amphibians** and **reptiles**
- Studying animals in the field is an extremely powerful way to connect to them and learn from them
    - Field experiences are **transformative**
- This course has two central components:
    - 1. Gaining knowledge about **herpetofauna**
    - 2. Applying your knowledge to **conduct science**

What am I going to learn? (Course Objectives)

IDENTIFICATION & BIOLOGY

- **Identify** all of Connecticut's amphibians and reptiles by...
  - Sight
    - In the field
    - Preserved specimens
    - Written descriptions
  - Sound (frog calls)
  - Habitat
- Understand the **unique biology** of herpetofauna

CONDUCTING FIELD RESEARCH

- How to **catch and handle** the animals
- How to **conduct a scientific study** (in miniature)
  - Pose research questions
  - Pose hypotheses
  - Test hypotheses
- How to conduct **safe and ethical research**

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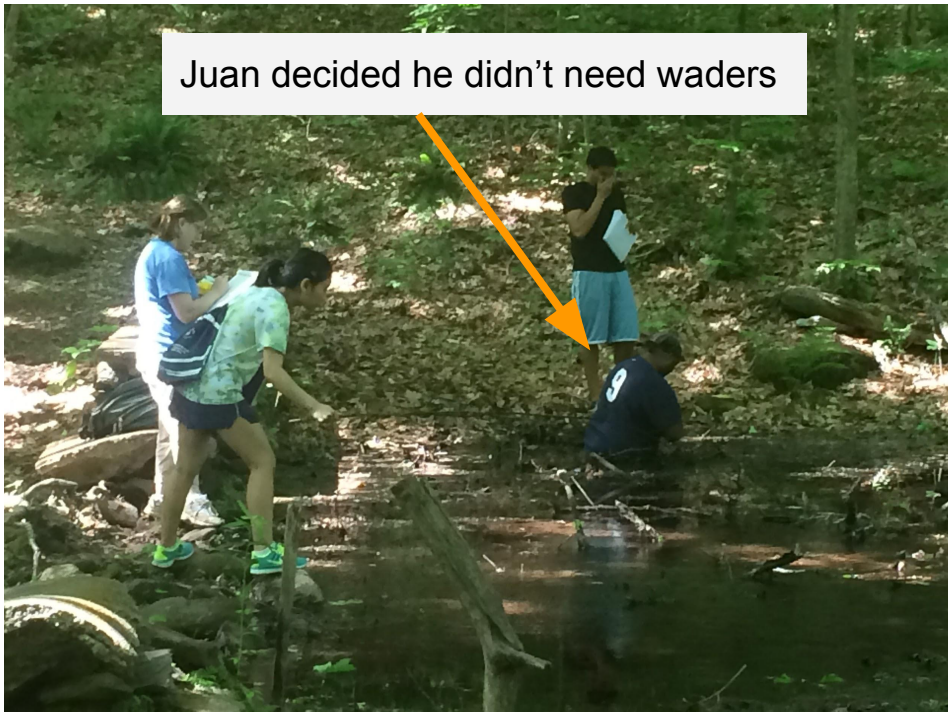
What's this class like?

- About 1 hour of lecture, then outside
  - It's a field course, duh
- You WILL be **handling live, wild animals**
  - If you have a spine, you are very special to UConn (more on this later)
- You WILL get **dirty and/or wet**
  - I hope nobody is wearing flip flops
  - (yeah, I totally did this)



Syllabus & Course Website

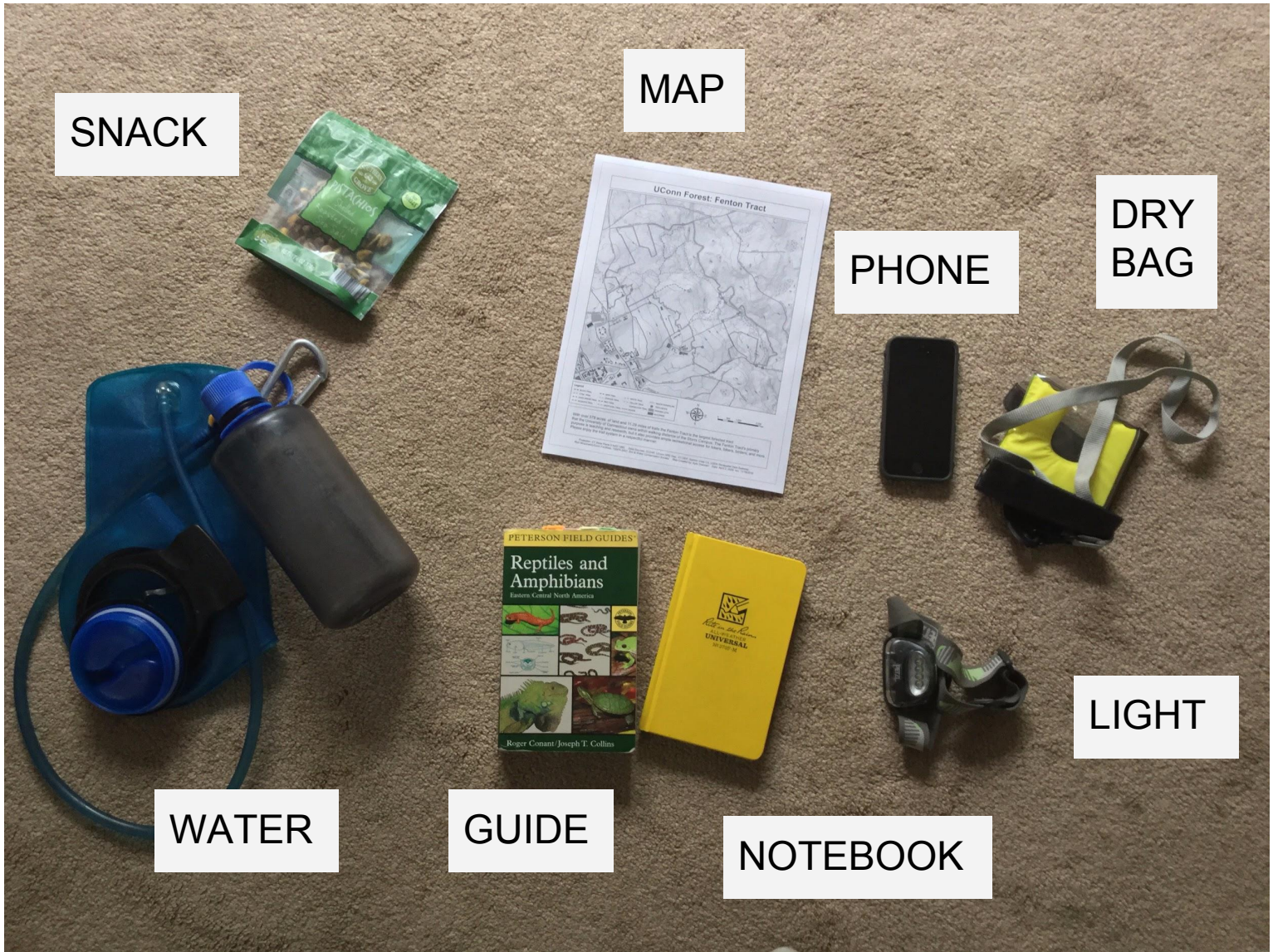
(Assignments, Course Policies, Materials, Schedule)

Equipping yourself for Day 1 in the field

THINGS YOU NEED TO KNOW

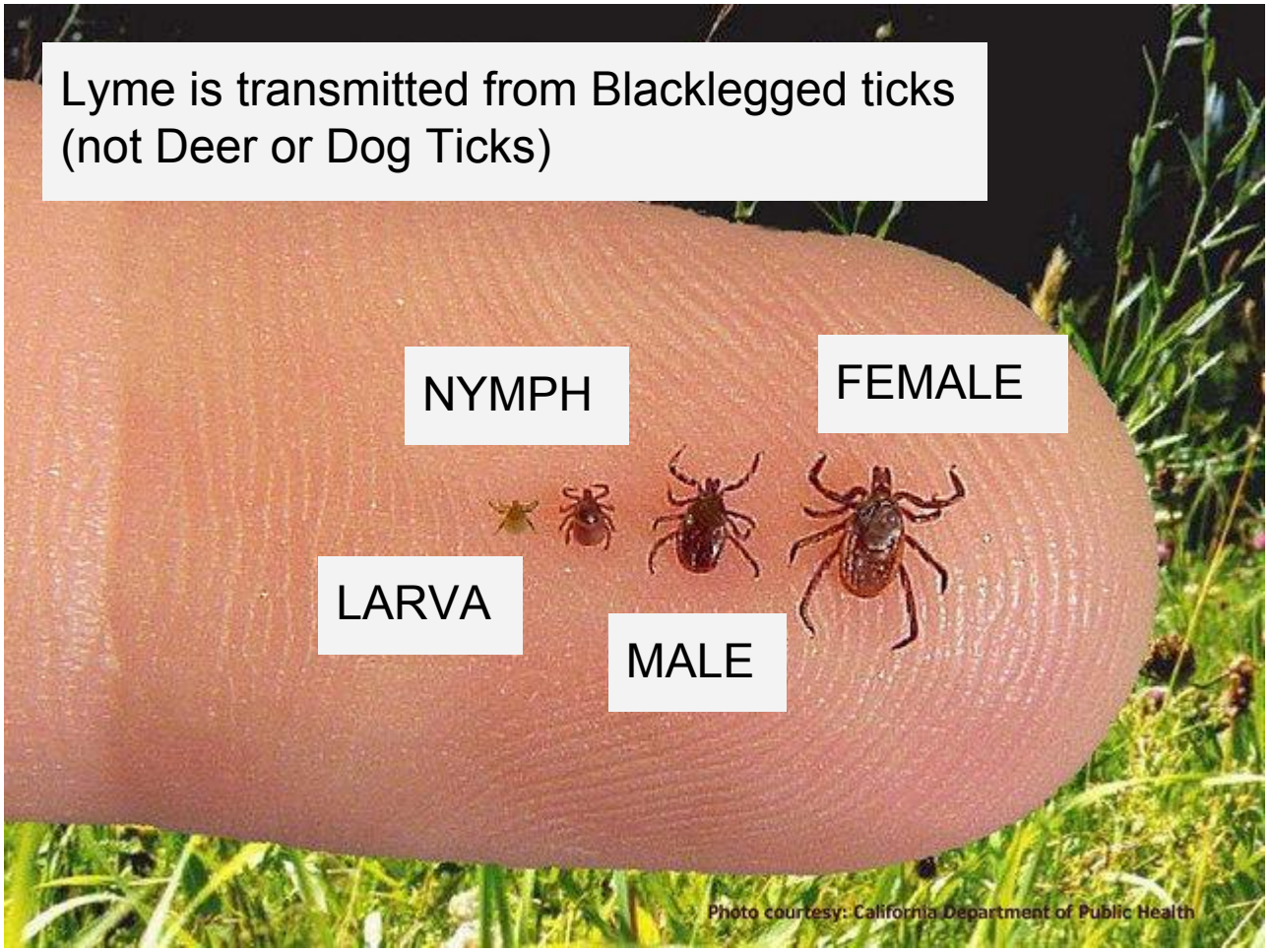
1. How to **take care of yourself** and **others** in the field
2. How to **take care of the animals** you encounter
3. How to **take effective field notes**
4. What your **field work goals** are

1. Taking care of yourself and others: **Pack list**



1. Taking care of yourself and others: **Poison Ivy**

1. Taking care of yourself and others: **Ticks**



Always perform tick checks

- Right after finishing in the field (with a friend)
- Later that day in the shower

Lyme disease transmission rates are greatest >48 hours after bite, the sooner you find it, the better!!!

1. Taking care of yourself and others: **Emergencies**

If you get lost:

- You should BE WITH SOMEONE (never travel alone)
- If you have cell service, just call me
- If you have GPS signal, navigate to your initial GPS reading (Google Maps Offline Mode)
- If you're unable to navigate whatsoever, stay put and make noise

If you get injured:

- You should BE WITH SOMEONE (never travel alone)
- If the injury is mild (e.g. water snake bite)
  - Find Andrew, get first aid
- If the injury is severe (e.g. profusely bleeding, bad fall)
  - Immediately call 911 if able
  - Do not leave the injured person alone
  - Send someone to get help

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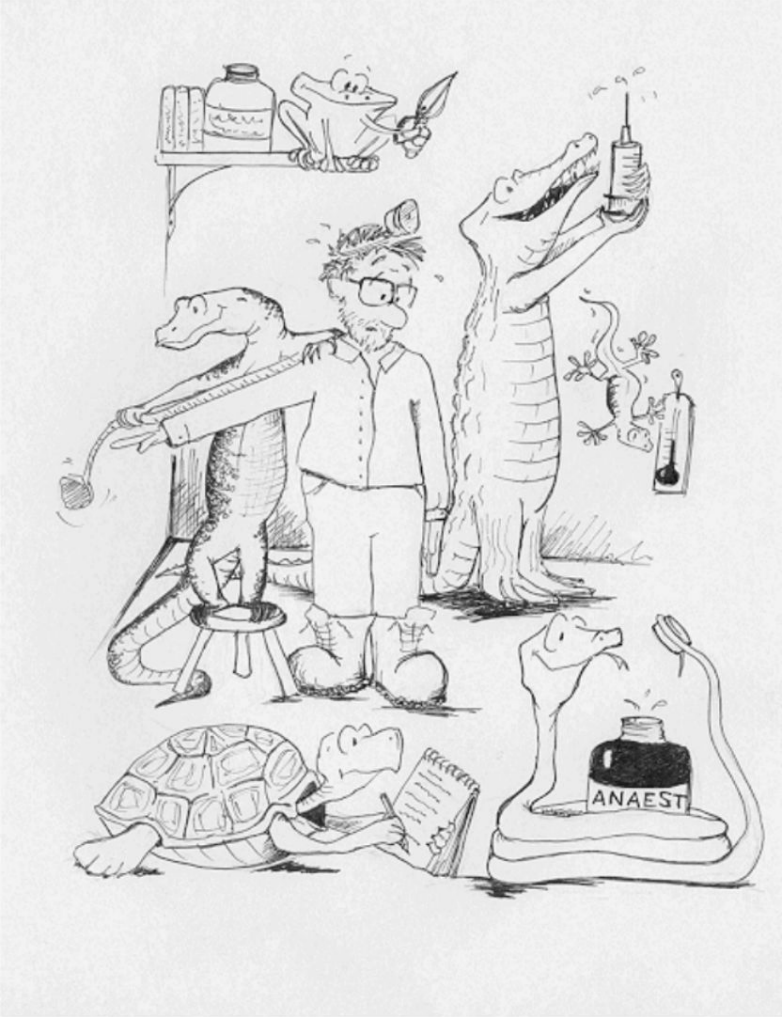
2. Taking care of the animals: **IACUC**

"The Institutional Animal Care and Use Committee (IACUC) is charged with responsibility for reviewing the University of Connecticut's program for the humane care and use of animals in research and teaching as described in its Assurance and University Policy."

Before you work with wild animals, you need to learn some basics on handling vertebrates in the field

Specific questions?
http://research.uconn.edu/iacuc/

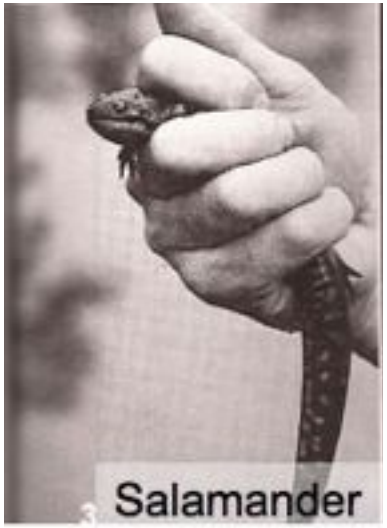


2. Taking care of the animals: **Catching & Holding**

Catching by hand is the most common way you'll catch animals… the key is holding the animal correctly to **reduce stress**

Reference: pages 18 & 19, Field Guide (3rd edition)

Small salamanders:
Cupped in hands, open palms



Larger salamanders:
Cupped in hands, open palms OR
hold by pectoral girdle w/ support

2. Taking care of the animals: **Catching & Holding**

Small frogs:
Cupped in hands, open palms OR gently pinch pectoral girdle between thumb and index finger

Large frogs:
Grasp pelvic girdle & legs to prevent movement w/ one hand, use second grasp pectoral girdle

2. Taking care of the animals: **Catching & Holding**

Small snakes:
Light grasp (with thumb and index finger) behind the head, support the body

Large snakes:
Strong enough grasp behind the head to prevent escape, generous body support to prevent damage to first vertebrae
WE WILL NEVER HANDLE VENOMOUS SNAKES

2. Taking care of the animals: **Catching & Holding**

Small turtles:
Firm grip on shell and plastron on both sides OR grip shell/plastron with one hand and use second hand to support plastron entirely

Snapping Turtles:
Firmly grasp the turtle by its sides, NEVER placing hands above the forelimbs

2. Taking care of the animals: **Catching & Holding**

SNAPPING TURTLES ARE THE MOST DANGEROUS ANIMAL YOU WILL ENCOUNTER

- Never attempt to pick up a fully grown adult without my supervision
- These turtles turn surprisingly fast, making you vulnerable to their bites
- **The 3rd edition field guide is out of date**
    - **NEVER ATTEMPT TO PICK UP ONLY BY THE TAIL**

Snapping Turtles:
Approaching from behind, firmly grasp the turtle by its sides, NEVER placing hands above the forelimbs

2. Taking care of the animals: **Stressed/ill animals**

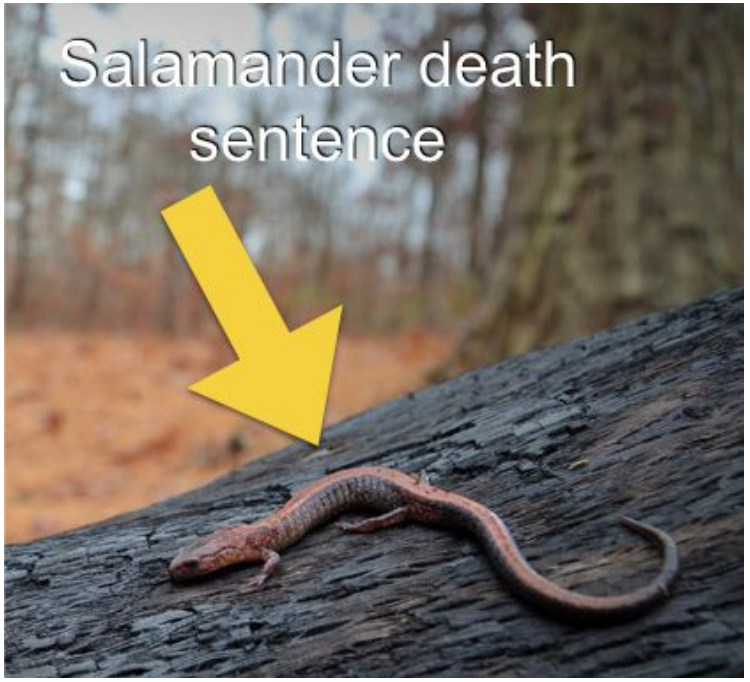
Expected signs: Musking, biting, vocalization (frog release call)

Unexpected signs: Increased respiration, lethargy, regurgitation, voiding bladder & bowels

If you observe unexpected signs of stress or illness, **put the animal down!!**

2. Taking care of the animals: **Releasing animals**

- Put animals back **exactly** where you found them
- If you're searching underneath a cover object, place the cover object back, THEN encourage the animal back under
- If for some reason you can't, put it in the closest possible habitat that mimics the original



2. Taking care of the animals: **Washing up**

Not a recommended behavior.

- **Always** wash your hands with soap and water before and after you go out into the field and handle animals
  - Protects amphibian skin from bacteria on your hand
  - Protects you from possible salmonella
- **Never** put sunblock or hand sanitizer on your hands prior to handling animals
  - Harmful to amphibian skin
- After we use waders, I'll soak the waders in bleach to prevent spread of chytrid fungus

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3. Taking effective field notes

- Field notebooks are probably the most important tools in this class, a classic field method
- Contain climate data, location data, seasonal population counts, hilarious stories…
  - Potential for huge long-term data sets for single sites
  - Potential to rediscover amazing sampling sites
  - Great questions, great hypotheses, come from careful observations (and notes)

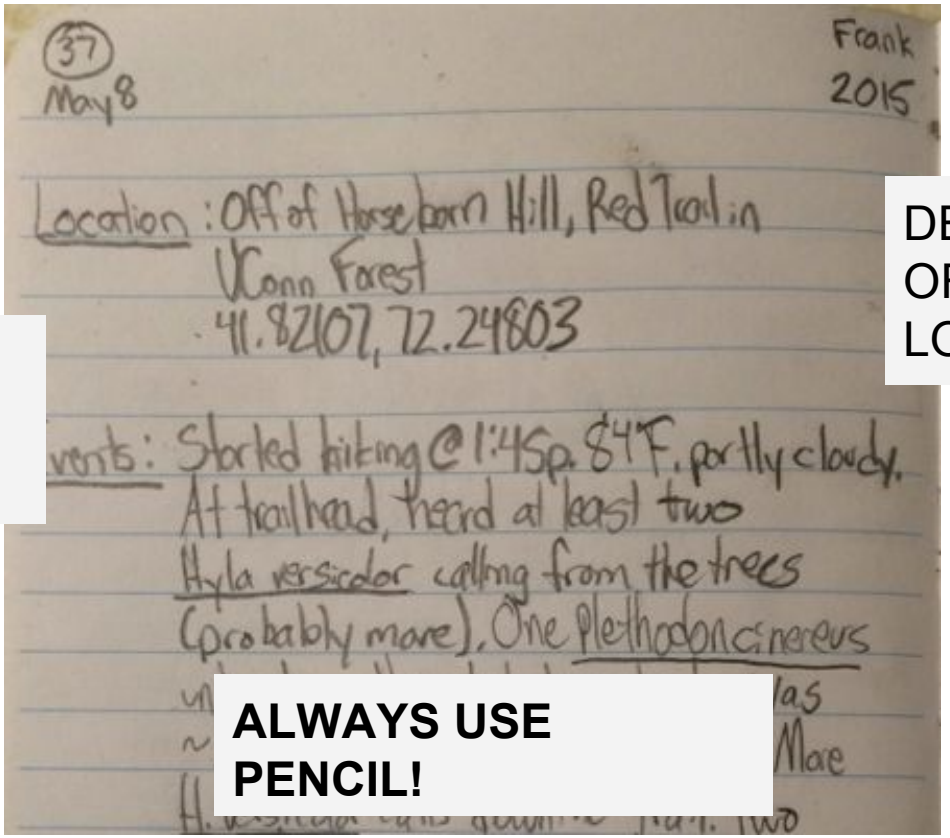
3. Taking effective field notes: **Grinnellian format**

PAGE NUMBER

TODAY'S DATE

LAST NAME

YEAR



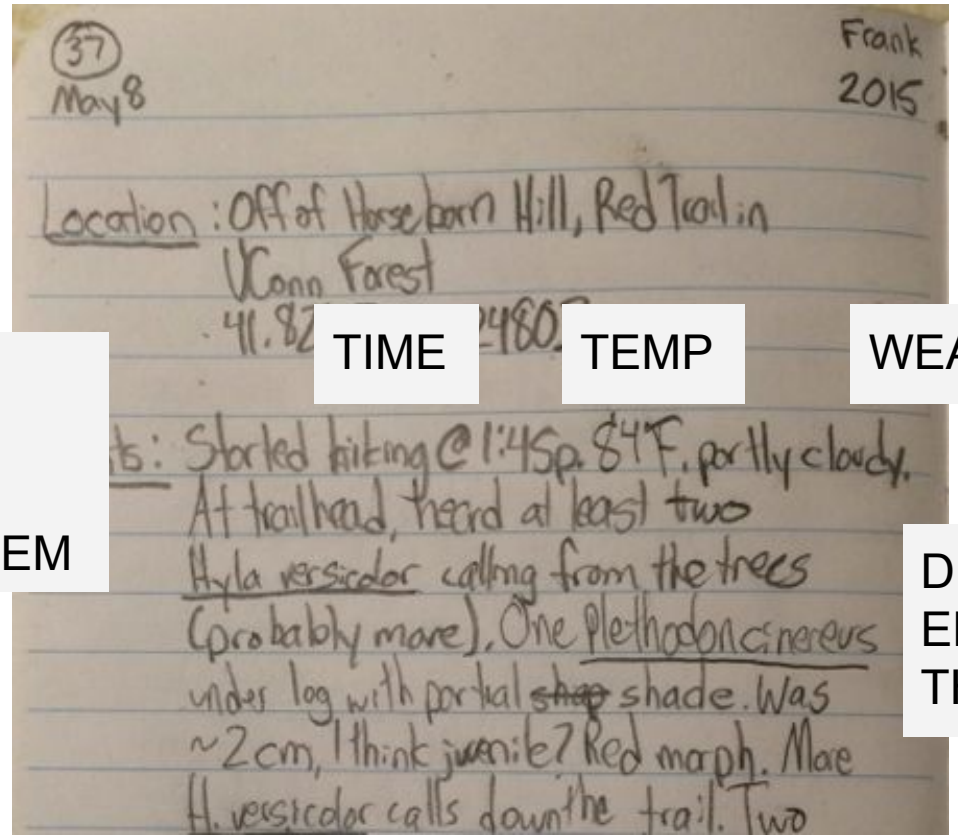
DESCRIPTION OF STARTING LOCATION

STARTING LOCATION GPS COORDINATES

3. Taking effective field notes: **Getting GPS coords**

App: “My GPS Coordinates”

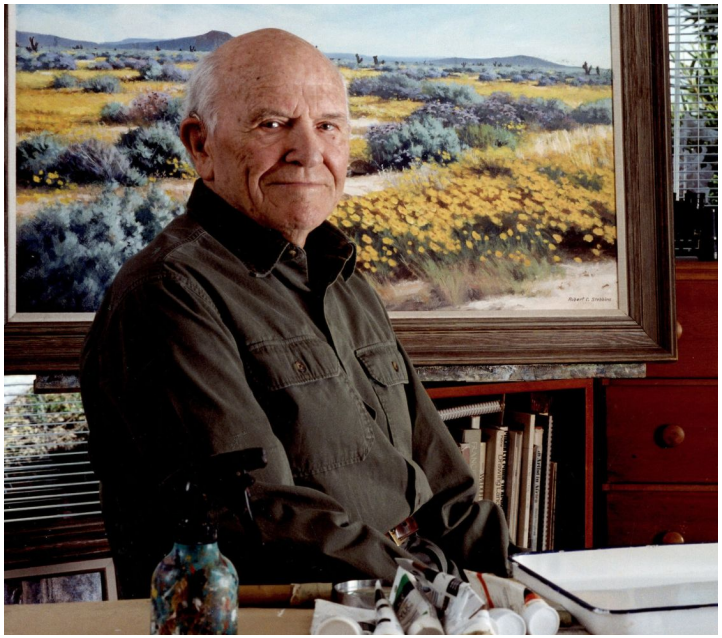
3. Taking effective field notes: **Grinnellian format**



ALWAYS USE SCIENTIFIC NAMES, UNDERLINE THEM

DESCRIBE ENCOUNTER W/ THE ANIMAL

3. Taking effective field notes: **Tips from Stebbins**



Robert C. Stebbins, Herpetologist Extraordinaire

"...keep a journal. Describe the route traveled and general features of the terrain, vegetation, and weather. When you find an animal, watch it for a time from a distance if possible.... Describe the ground surface (sand, hardpan, rock), vegetation (grassland, chaparral, or forest, listing species of plants if possible), temperature, moisture conditions. Note other animals present. Try to interpret what you see."

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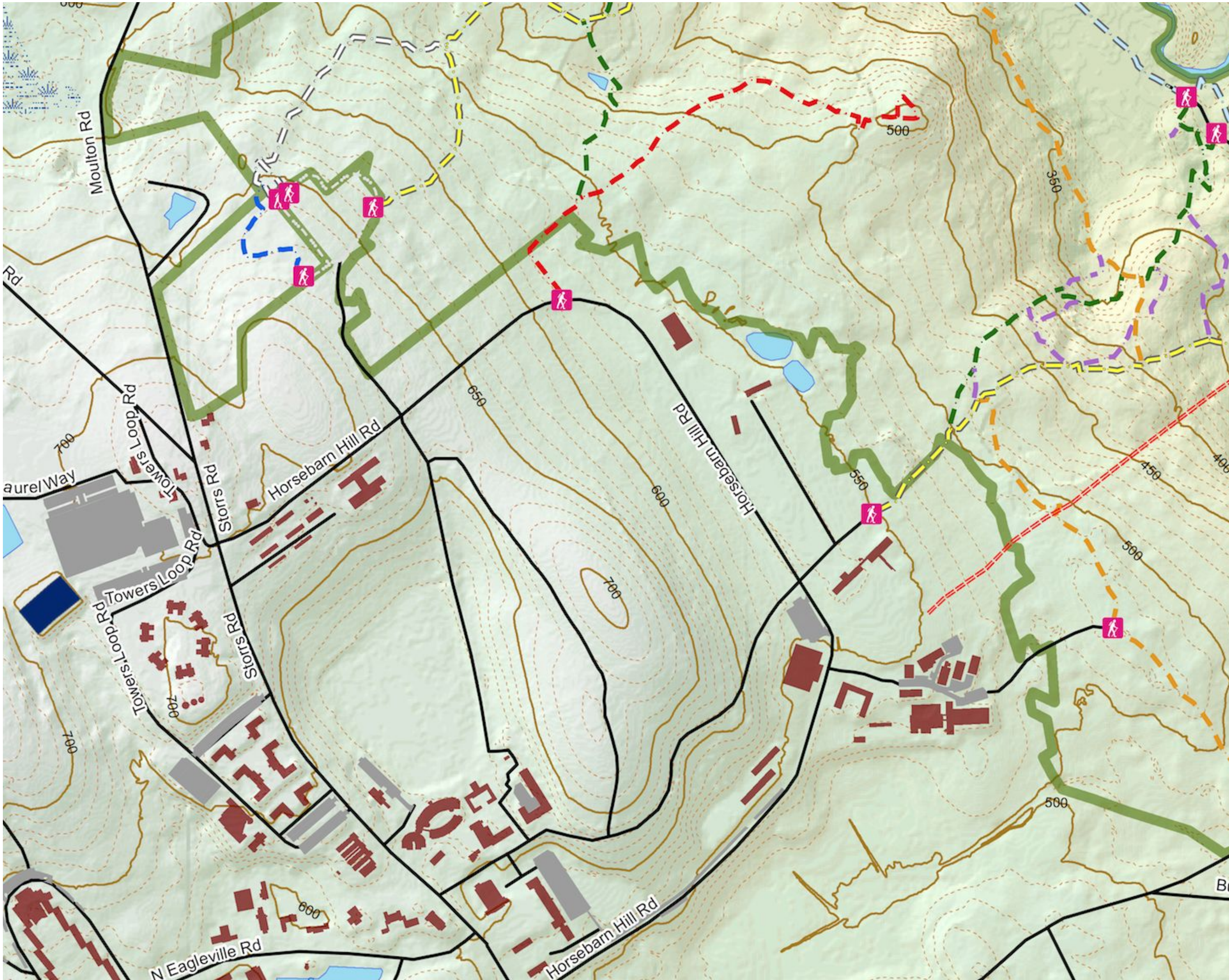
4. Know your goals for the field

Assignment #1:

- Submit 5 scientific questions based on observations you've made in the field, or extrapolations you make based on observations.
- Due Wednesday at 9am
- Use today to get your feet wet (figuratively and literally)
  - Focus on **making observations** and **following your curiosity**
  - (and then writing down your curious musings).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