Habitats and Field Techniques

Announcements

- Field photos requested! Send me photos you take so I can post them to the website and show off your cool finds
- Project proposals (yes, I'll shut up about them after this) - the more detail about methods you can write, the more I can help you
  - What locations will you sample?
  - Where in those locations will you sample?
  - What data will you collect?
  - How long will it take?
  - What possible results do you anticipate?

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What kind of harp is this?

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What kind of harp is this?

Keys to Understanding Habitat

- Shelter, Sunlight, Water, Food

Habitats of Interest

- Rivers/Streams
- Lakes/Ponds
- Bogs/Marshes
- Forests
- Meadows
- Sandy
- Edge Habitat

Rivers/Streams

- Flowing water
- Prone to variation (flooding and drying)
- Depth and velocity of water will impact diversity
  - Slow and deep
  - Fast and shallow
- Faster water = higher oxygen
- Canopy cover?
- **Who do we expect to live here?**

Lakes/Ponds

- Still or slow moving water
- Mostly permanent
- Deep water
- Retains ambient temperature longer
  - Winter - deep warm water serves as refuges
  - Summer - deep water becomes cooler, animals transition between shore and deep water
- Stable resources
- Typically lacking cover
- **Who do we expect to live here?**

Swamps/Marshes

- Still or slow moving water
- Somewhat permanent
  - Susceptible to drought
- Shallow
- Low oxygen
- Likely freezes
- Cover?
- Lack of fish predators
- **Who do we expect to live here?**

Forests

- Typically dry, but shelter may retain moisture (dead logs, etc.)
- Lots of cover
- Variety of food sources
- More common as a habitat
- **Who do we expect to live here?**

Meadows

- Dry (and stay dry)
- Open, little or no canopy
- Cover, but of a different variety
- Diverse resources
- Potential human impact
- Tend to be old farmland, old farm buildings
- **Who do we expect to live here?**

Sandy

- Dry, moisture poor soil
- Open, little canopy when present
- Less cover
- Rare in CT
- More variable weather conditions
- **Who do we expect to live here?**

Edge Habitats

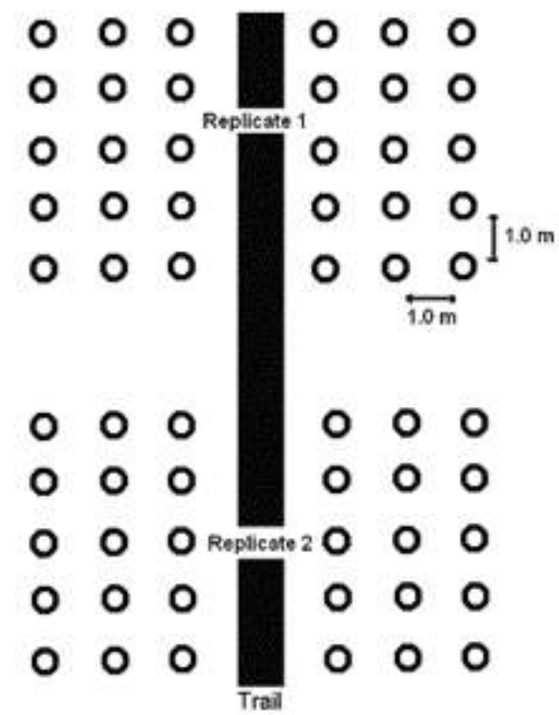
- Edge habitats are where two different habitat types come together.
  - Natural ecotones
  - Disturbed habitat (agricultural fields, etc.)
- Can be an area of high biodiversity
  - Best of both worlds

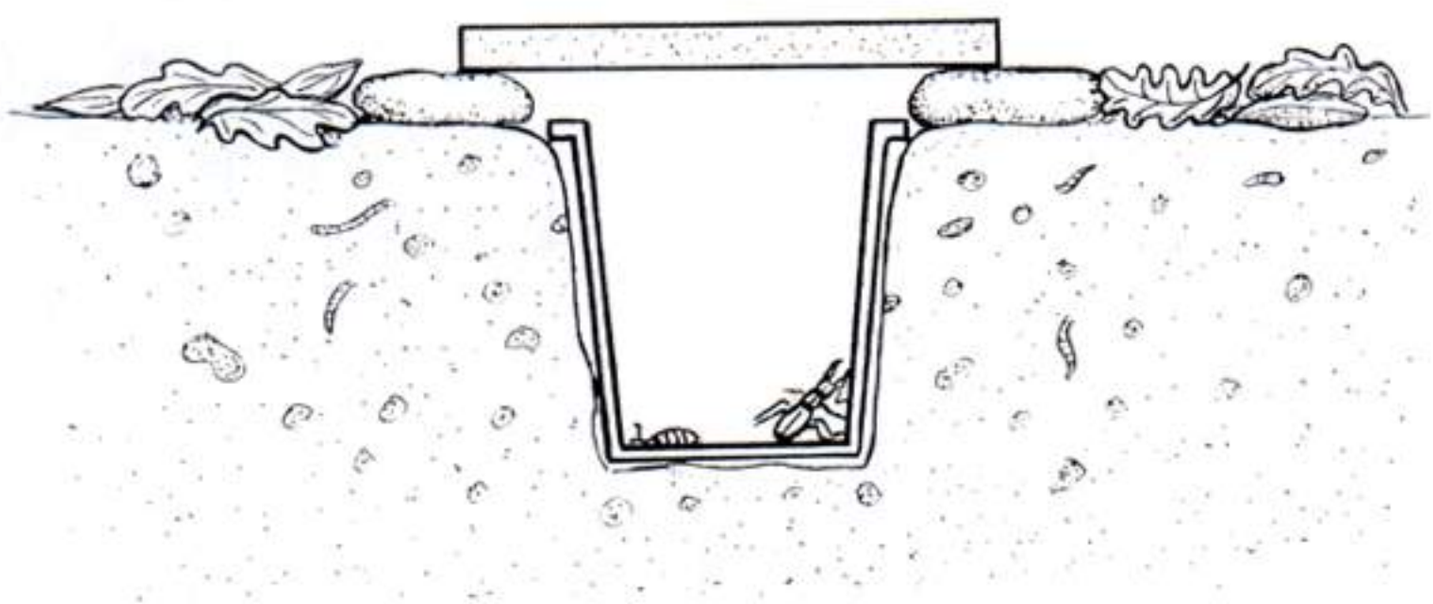
Herpetological Field Techniques

- Two sets of techniques…
  - *Catching* (other than, you know, just grabbing them)
  - *Processing*
- These techniques tend to be species dependent
  - Depends on species abundance and movement throughout its range
  - Depends on the unique natural history of a species

Pitfall Traps

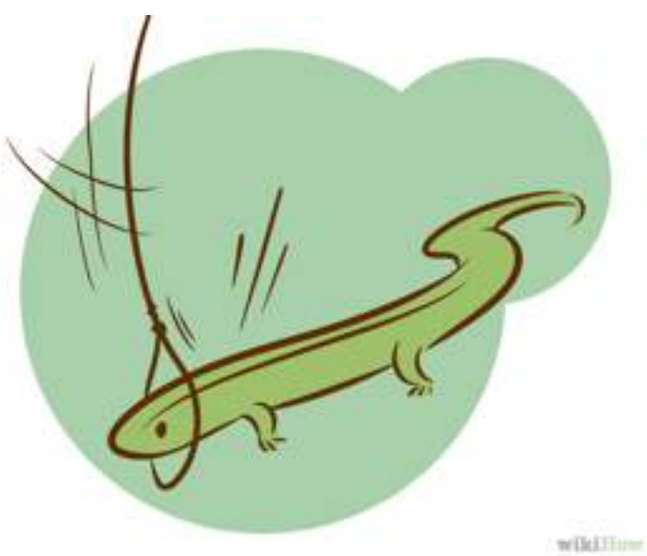
- Useful for…
  - Biodiversity estimates
  - Discovering the edges of a species range
  - Finding very rare species
- Typically placed in grids
- Often using a fence to guide individuals into the bucket
- Really time intensive
- Field guide page 23





Noosing (a.k.a. lizard fishing)

- Used widely to catch small, extremely fast lizards
- **DO NOT** try this on larger animals…it could result in damage or death
- Field guide pages 20 & 23
- Noosing in action



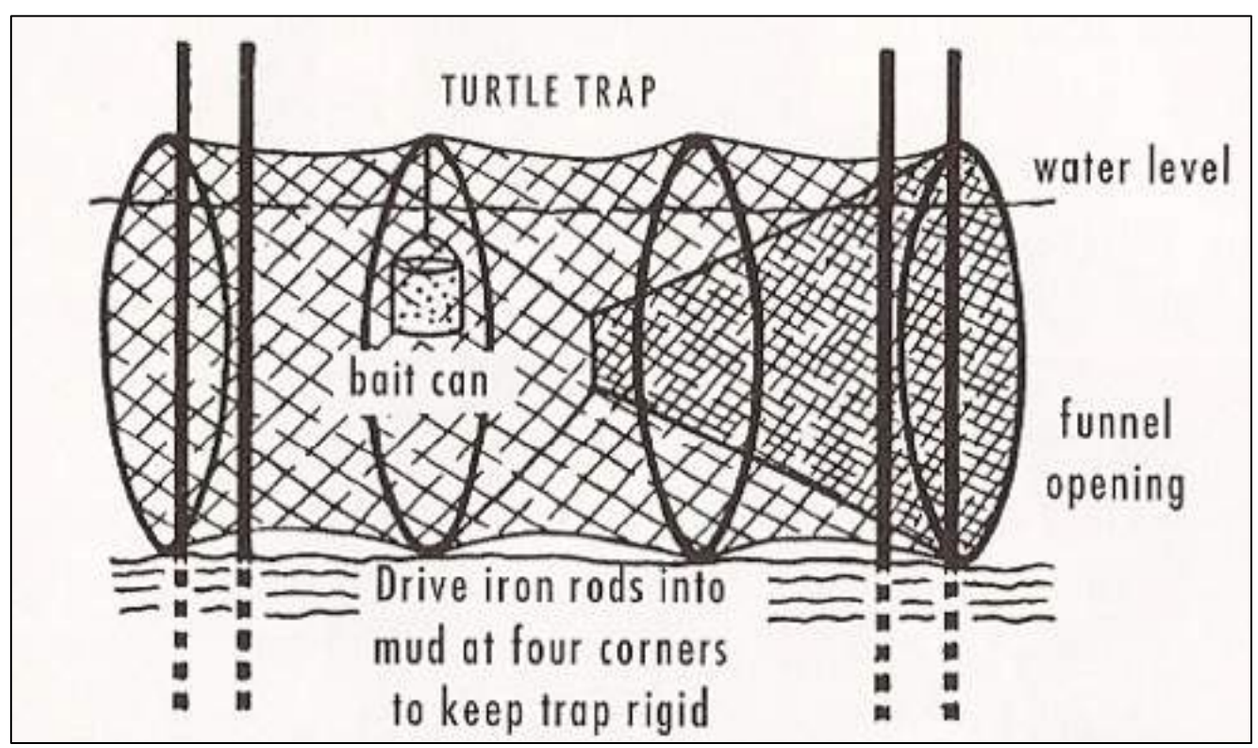
Snake Hooks/Tongs

- Useful for large/venomous snakes
- Great care must be taken to avoid injury to the snake and the handler
- Field guide pages 17 & 20

CATCHING TECHNIQUE

Turtle Hoop Traps

- Used for aquatic turtles
- Traps are baited, then checked after 12 hours
- Adequate access to air must be ensured
- Field guide page 20 & 22



Dip Nets

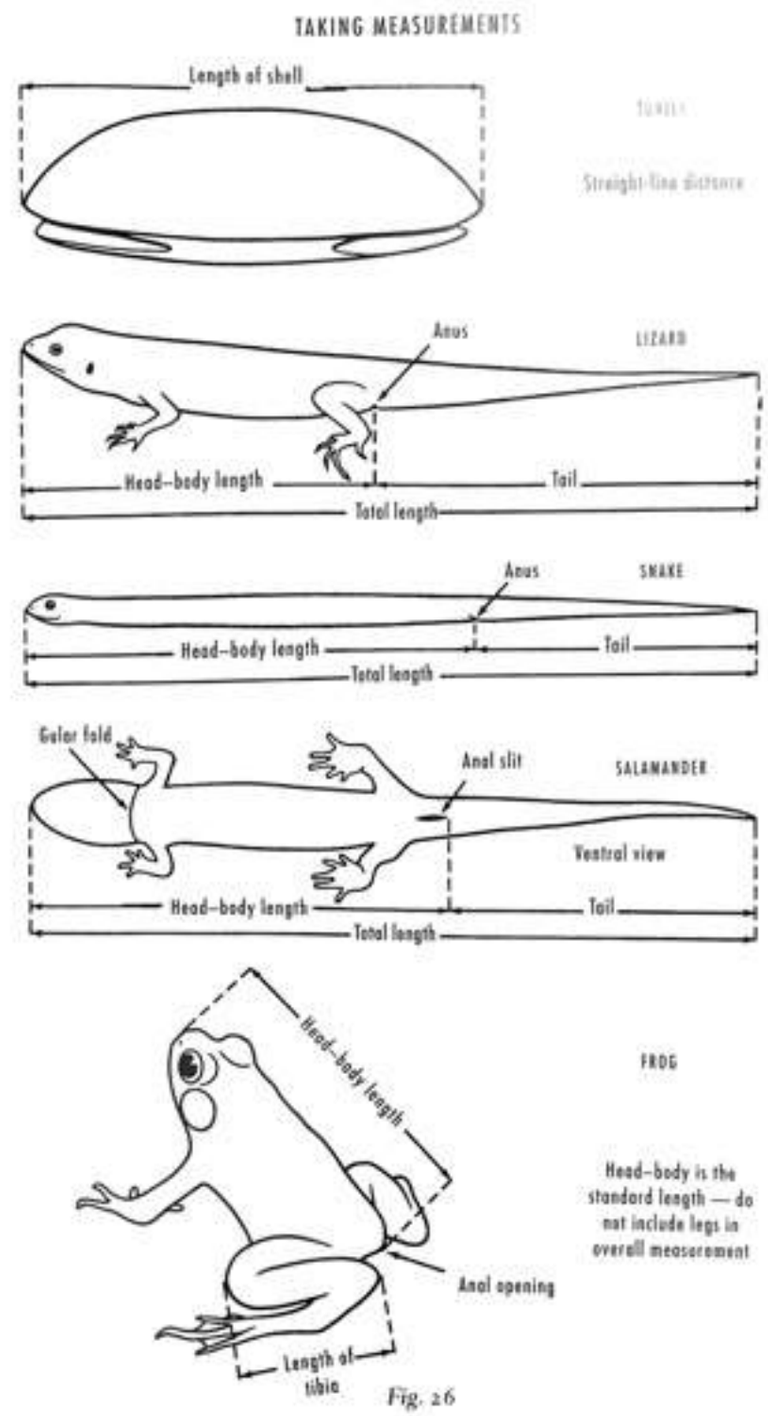
- Useful for collecting tadpoles, salamanders larvae, and aquatic salamanders (great for adult newts), or baby turtles (or, if you’re Andrew, 1 ft long Wood Turtles)
- Fine mesh prevents escape and damage to captured individuals
- Field guide pages 20 and 22

Collecting Bags

- Useful for later processing after doing lots of collecting
- Lizards and snakes
  - Cloth bags (pillowcases) with a loose knot at the top
- Frogs and salamanders
  - Clear aquarium bag, place water or leaf litter inside, blow air in, then tie
- Field guide page 21

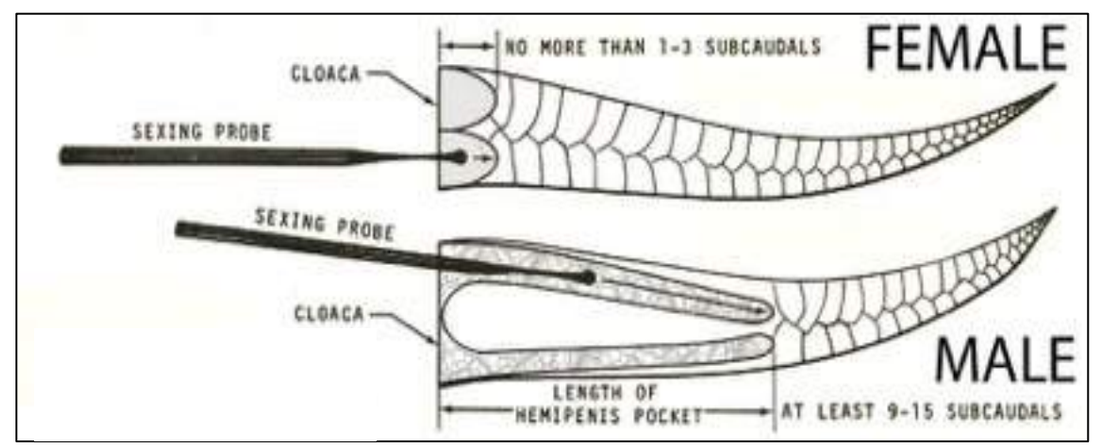
Field Measurements

- **S**nout **V**ent **L**ength (SVL) used for salamanders, lizards, and snakes
- Shell length (head to tail) **straight line distance** used for turtles
- Head body length used for frogs
- Field guide page 141



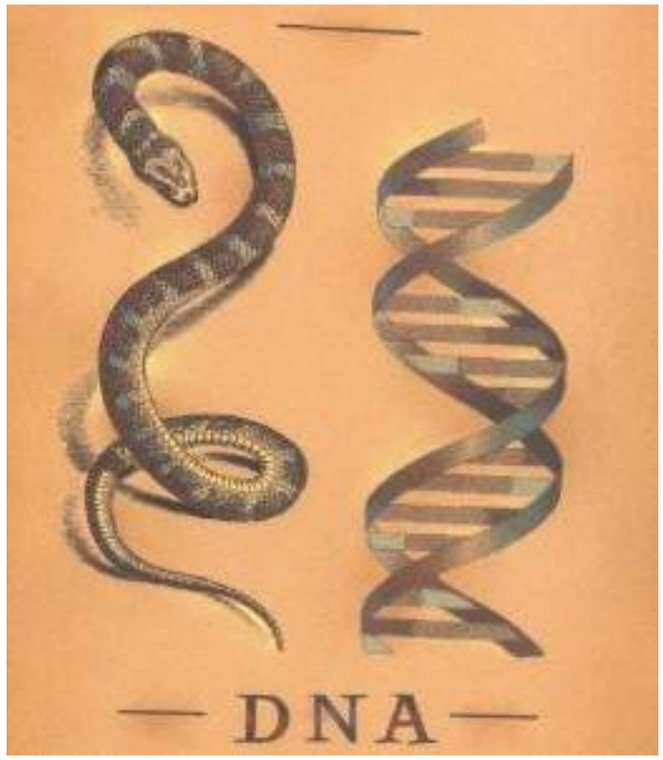
Field Measurements Cont.

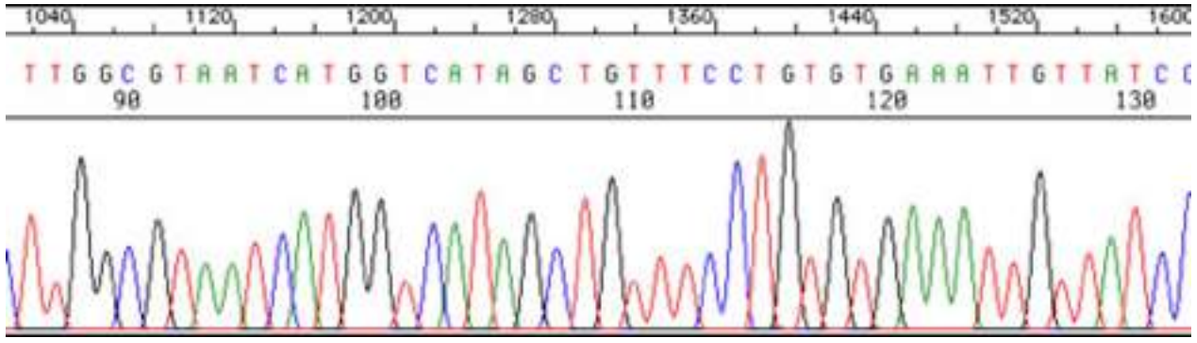
- Alternatively, take a photo with a ruler, and measure SVL later using software
- Other useful tools:
  - Field scale
  - Tube for containing snakes + metal probe for sexing



Tissue Sampling for Genetics

- DNA sequences allow for…
  - Reconstruction of evolutionary history
  - Mapping ancestral ranges
  - Assessing hybridization





Tissue Sampling for Genetics

	Tail clips	Toe clips	Shed skin	Blood sample
Frogs	✗	✓	✗	?
Salamanders	✓	✓ (Large only)	✗	?
Turtles	✗	✗	✗	✓
Lizards and Snakes	✓	✓	✓	?