Lecture Outline

- General tadpole features
- How to use features to key out tadpoles
- Anuran Families
  - Body size
  - Coloration and patterning
  - General habitats
- Summary

General Body Features
General Oral Disc Features

Body features used to key tadpoles
- Ocular position
- Oral disc morphology
  - Papillae
  - Cuspatelate and serrate jaw sheaths
- Patterning of tail musculature
- Spiracle positioning
- Vent positioning

Ocular Position

Families:
- Hylidae (excluding Acris)
- Microhylidae

Families:
- Ranidae
- Pelobatidae
- Bufonidae
Oral Disc Morphology: Emargination

**Emarginated**
- Families: Ranidae, Bufonidae

**Not Emarginated**
- Families: Microhylidae, Hylidae, Pelobatidae

Papillae

**Marginal**
- Families: Ranidae, Hylidae, Pelobatidae, Bufonidae

**Sub marginal**
- Families: Some Hylids, Some Ranids

Microhylidae – No papillae

Cuspate and Serrate Jaw Sheaths

*Rana catesbeiana* does not have cuspate or serrate jaw sheath

- Families: Bufonidae, Hylidae, Most Ranids, Pelobatidae
Patterning of tail musculature

- Scaphiopus holbrookii
- Pseudacris regilla
- Gastrophryne carolinensis

Spiracle Positioning

- Medioventral
- Sinistral

Families: Microhylidae

Families: Ranidae, Hylidae, Bufonidae, and Pelobatidae

Vent Positioning

- Medial
- Dextral

Families: Microhylidae, Pelobatidae, and Bufonidae

Families: Ranidae, and Hylidae
Ranidae

- Body size: medium-large (1 ½ - 4 inches TL)
- Coloration: Most green or olive in color with varying degrees of pigmentation (*Rana sylvatica* – brown)
- Habitat: Most reside in permanent ponds
- Exception:

Examples

- *Rana catesbeiana*
- *Rana palustris*

Hylidae

- Body size: small-medium (1 1/16 – 1 ½ inches TL)
- Body shape: Deep bodied
- Coloration: Light brown or olive
- Characteristic:
  - Characteristic only present on *Acris* sp.:  
- Habitats: Temporary and permanent ponds

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**Examples**

- *Hyla chrysoscelis*
- *Acris crepitans*

**Bufonidae**

- Body size: small (¾ – 1 inch TL)
- Body shape: Elongated as compared to Ranids
- Habitats: Mostly temporary pools, but may occur in permanent ponds
- Coloration: Dark brown or near black
- Distinguishing characteristic:
  - Distinguishing between *B. americanus* and *B. fowleri*:

**Example**

- *Bufo americanus*
Pelobatidae
- Body size: medium (1 ½ - 2 inches TL)
- Body shape: round
- Coloration: dark brown
- Distinguishing characteristics:
- Habitats: Both permanent and temporary pools

Example
Scaphiopus holbrookii

Microhylidae
- Body size: small-medium (1 – 1 3/16 inches TL)
- Body shape: flattened
- Coloration: mostly black with gold or silver flecking
- Distinguishing characteristics:
- Habitat: temporary pools
Example

Gastrophryne carolinensis

Summary

- **Ranidae:**
  - Eyes dorsal
  - Vent dextral
  - Oral disc emarginated
  - Medium-large tadpole
  - Usually green or olive in color
- **Bufoidae:**
  - Eyes dorsal
  - Vent medial
  - Oral disc emarginated
  - Dark brown or black coloration
- **Pelobatidae:**
  - Eyes dorsal
  - Vent medial
  - Oral disc not emarginated
- **Acris spp.:**
  - Eyes dorsal
  - Vent dextral
  - Oral disc not emarginated
  - Small-medium
  - Intestinal coil visible
- **All others:**
  - Eyes lateral
  - Vent medial
  - Oral disc not emarginated
  - Microhylidae:
    - Eyes lateral
    - Vent medial
    - Nares absent
    - Oral disc absent
    - Two oral flaps over mouthparts
    - Spiracle midventral

Some easy give-aways:

- Large tadpole in permanent pond –
- Ranid-like tadpole in temporary pond –
- Small black tadpole in temporary pond –
- Small-medium olive or light brown tadpole with eyes lateral –
- Medium sized, dark brown tadpole, tens of thousands of them -