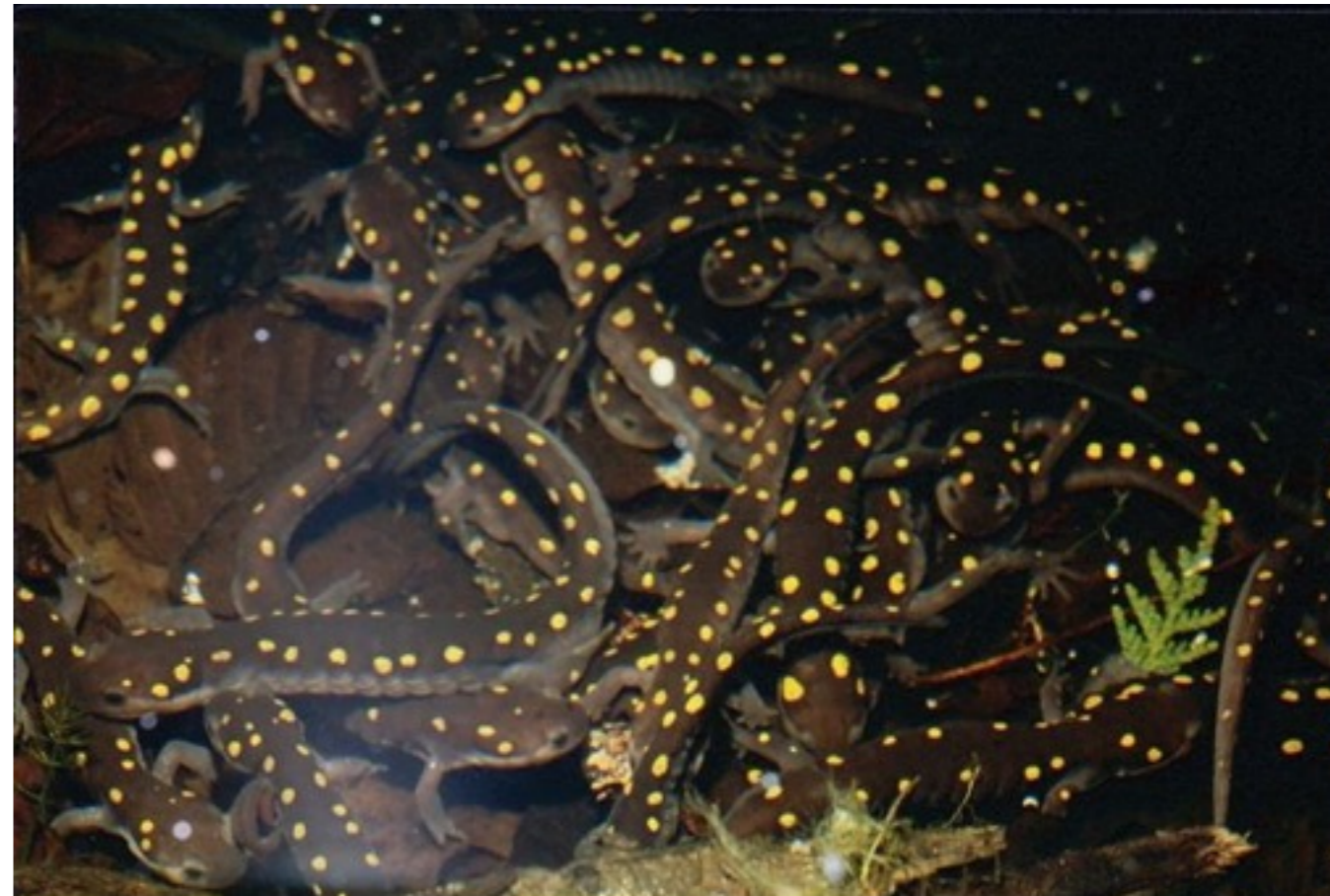


# Social Behavior and Reproduction (Amphibians)





# Social Behavior

- We don't think of amphibians and reptiles as being "social"
  - Ants, bees, meerkats
  - Even lions
- For most reptiles and amphibians, social behavior revolves around reproduction



# Amphibian Social Behavior

- We are familiar with frog calls, but the purpose of the call varies with each species
- Advertising self or territory?





# Spring Peepers

- *P. crucifer* males call to attract females
- The calls serve to advertise males.
- With so many males calling, the loudest is the fittest.



# Bullfrogs



- Male bullfrogs compete with each other for territory
- Larger frogs can acquire larger and better suited territories



# Bullfrogs

- Satellite males sit on the edge of territories
  - Smaller territories
  - Try to catch females as they come to the larger male territories





# American Toads

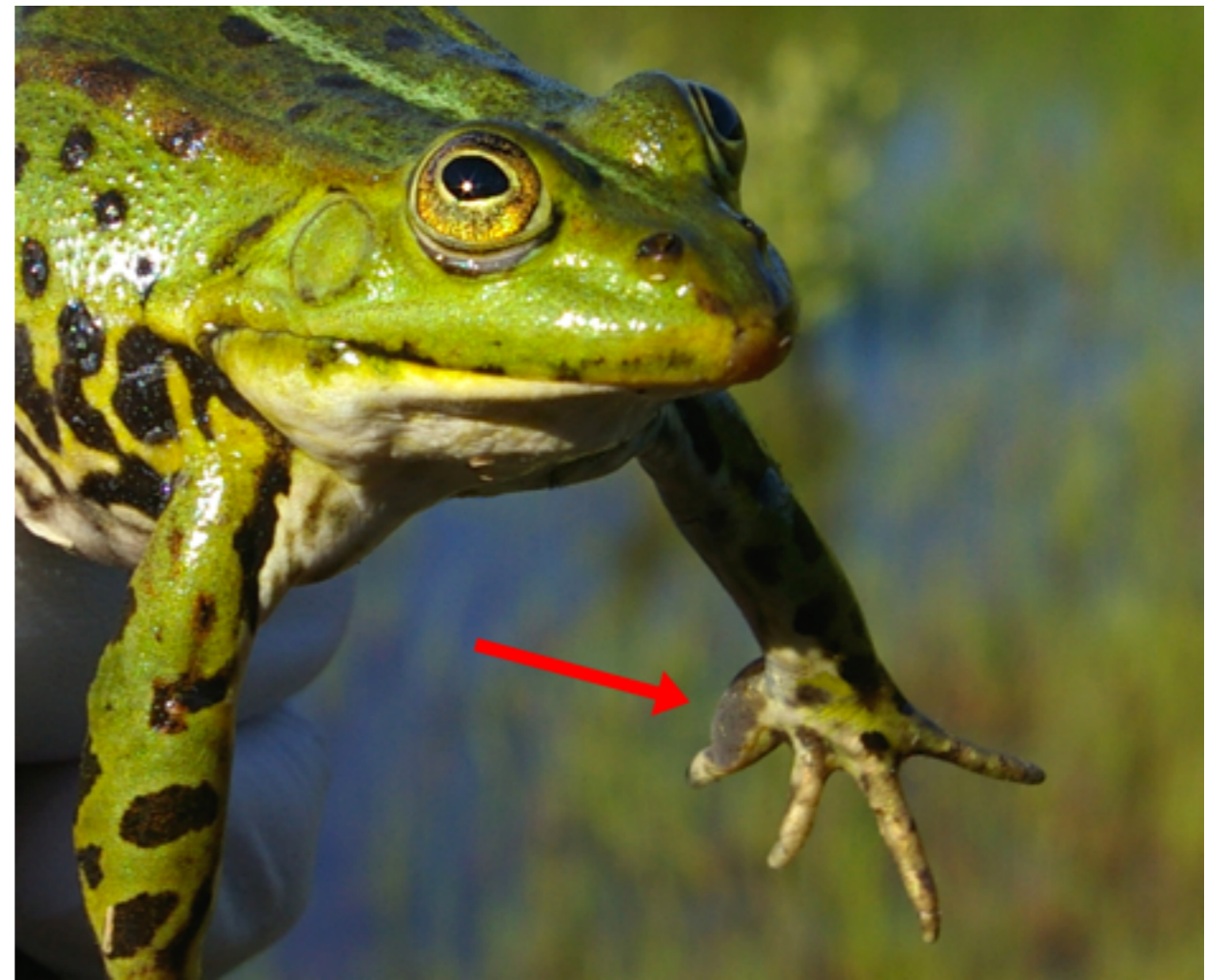
- Redefines “free-for-all”
- Males call, then physically fight for females





# Nuptial Pads - Frogs

- Use nuptial pads to grasp the females (and stay on!)
- Can use this to sex frogs during mating season





# Mating in Frogs

- Fertilization is external
- Males clasp the female behind her armpits
- Amplexus





# Mating in Frogs

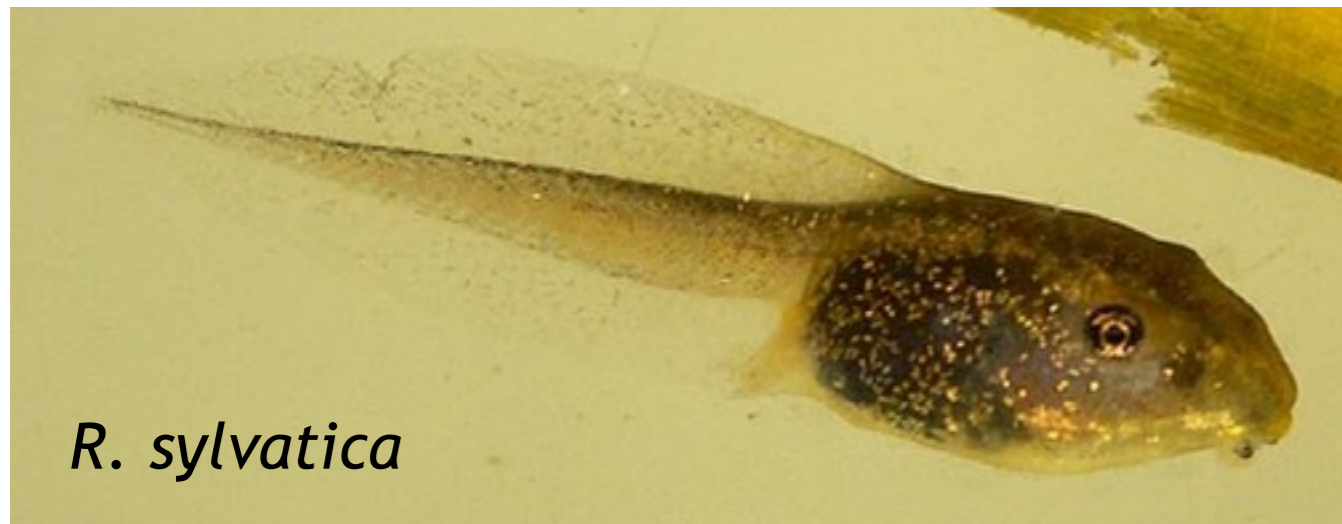
- As the female lays her eggs, the male releases the sperm.
- The eggs are laid in masses or strings.
- Species can be identified by how the eggs are laid, and where they are laid.





# Mating in Frogs

- Eggs hatch into tadpoles, completely aquatic larva.
- Tadpoles develop, grow, then metamorphose into frogs



*R. sylvatica*







*P. crucifer*



*R. clamitans*



*R. sylvatica*

© 2007 Michael Benard



*R. catesbeiana*

© Gary Nafis



# Salamanders

- Early spring is marked by the migration of many species of salamander
- Connecticut salamander courtship, copulation, and egg laying varies between clades
  - *Salamandridae*: aquatic courtship, aquatic eggs
  - *Ambystomidae*: aquatic courtship, aquatic eggs
  - *Plethodontidae*: both terrestrial and aquatic courtship (depending)



# Salamandridae

- Similar to frogs, nuptial pads, or “sexual excrescences” used by newts to grasp the female
  - Only seen in red spotted newts among CT salamanders
  - On their hind limbs! ...why?
- Newts firmly grasp female pectoral girdle, stroke their face, waft pheromones, and eventually lay spermatophore for female to pick up



Video



# *Ambystoma*



# *Plethodontidae*

- Many of the plethodontids have elaborate courtship rituals



[Video](#)



# *Plethodontidae*

- Eggs may be laid in the stream (*Eurycea*), under moss (*Hemidactylium*), or within rotting logs (*Plethodon*)













# *Plethodon*

- Young may be aquatic larva or direct developers
  - Switches often throughout the family

