

# 25.4 Amphibians

## KEY CONCEPT

**Amphibians evolved from lobe-finned fish.**



## 25.4 Amphibians

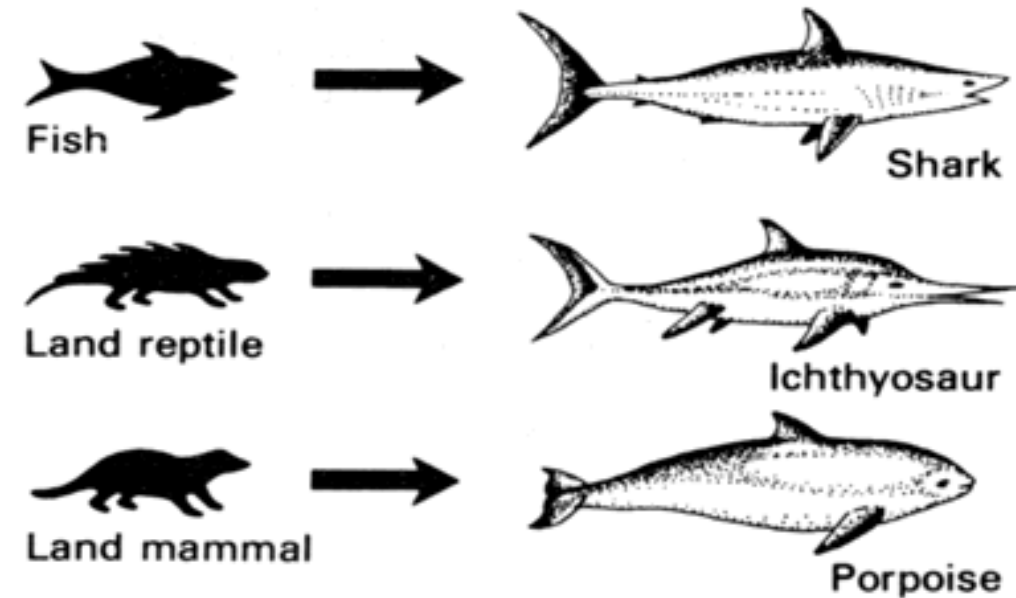
- ▶ **Amphibians were the first animals with four limbs.**
  - Tetrapods are vertebrates that have four limbs.



The fossilized remains of *Tiktaalik roseae* indicate it was a transitional species between fish and tetrapods.

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- Vertebrates that lack four limbs evolved from limbed ancestors.



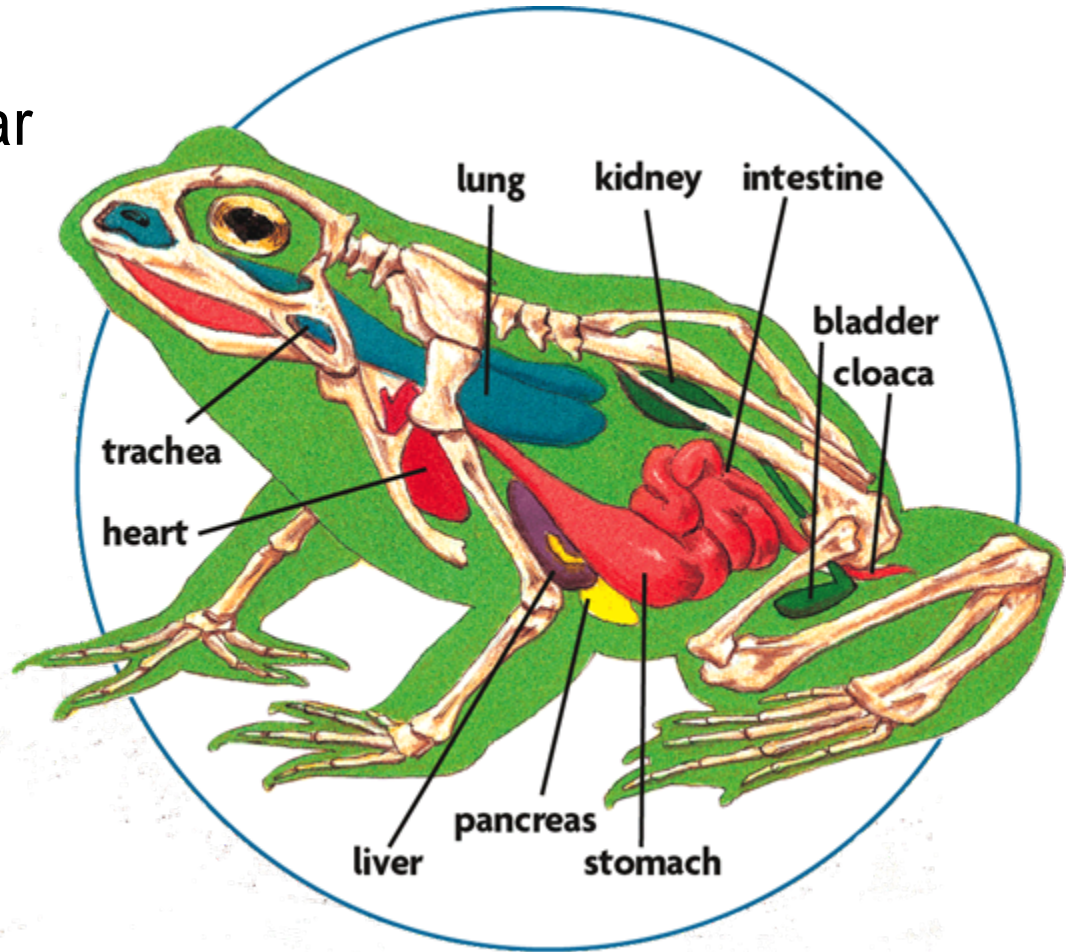
- Amphibians are animals that can live both on land and in water.

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- A number of adaptations allow amphibians to live on land.
  - large shoulder and hip bones
  - mobile, muscular tongue
  - middle ear
  - breathe through skin or with gills or lungs



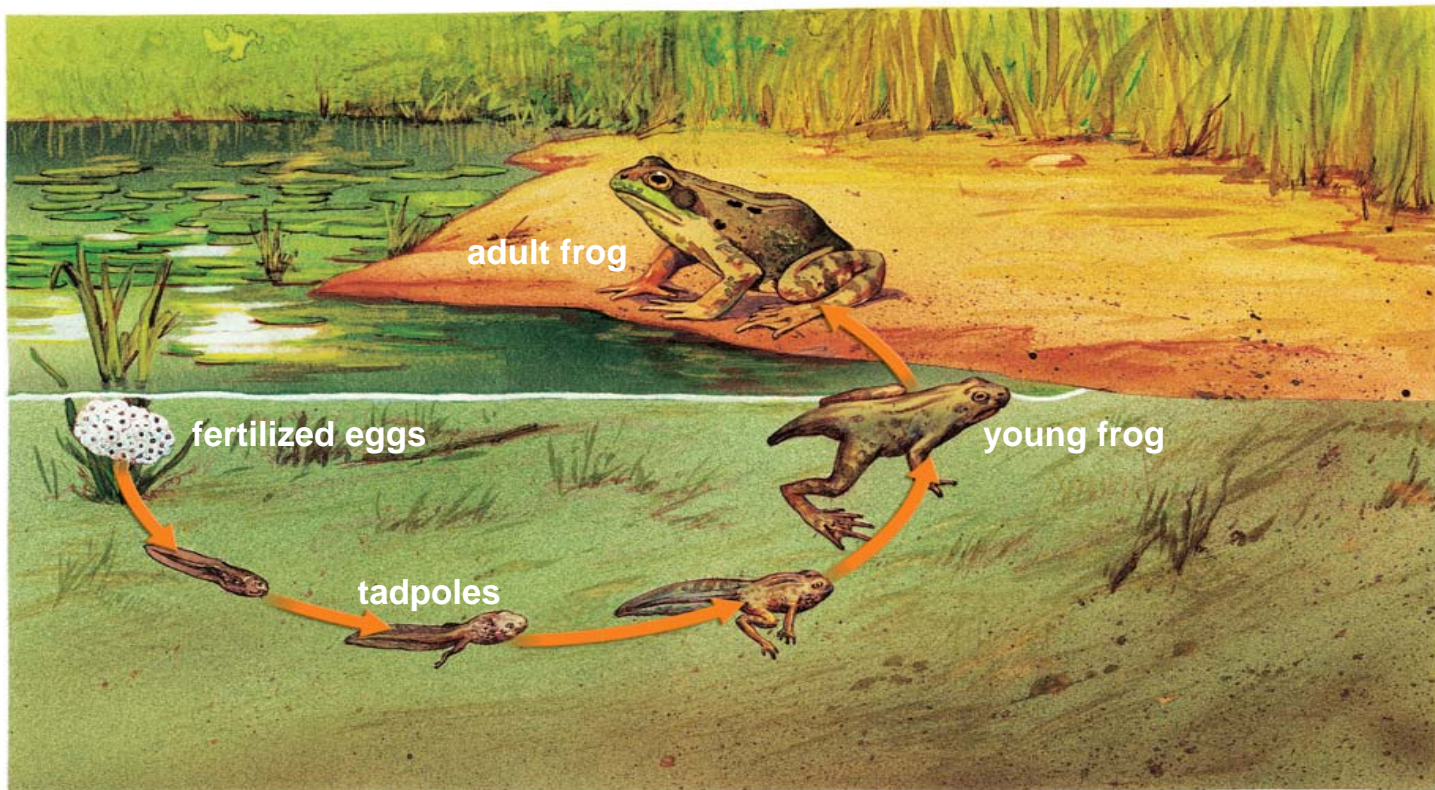
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- ▶ **Amphibians return to the water to reproduce.**
  - Amphibians use many strategies to keep their eggs wet.
    - lay eggs directly in water
    - lay eggs on moist ground
    - wrap eggs in leaves
    - brood eggs in pockets on the female's back



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- Tadpoles are aquatic larvae of frogs.
- During metamorphosis, tadpoles develop into their adult form.



- Not all amphibians undergo metamorphosis.

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### ▶ Modern amphibians can be divided into three groups.

- Salamanders have a long body, four walking limbs, and a tail.
- There are over 300 species of salamanders.





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- Frogs are the largest amphibian group and include toads.
- There are over 3000 species of frogs.
- Glands in the skin of frogs and toads contain poisons that help to protect them from predators.



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- Caecilians are legless, burrowing, tropical amphibians.
- There are 160 species of caecilians.

