Seabirds
Like the pinnipeds and cetaceans these are re-entry animals - they went from land back into the water. Why?

- Sphenisciformes
- Porcellariiformes
- Charadriiformes
- Anseriformes
- Ciconiiformes
- Pelicaniformes

Something about... seabirds

23 orders of birds - 4 ‘true’ orders of seabirds

Approx. 250 species

- All seabirds still breed on land - many on islands
- Many are threatened or endangered
- Many serve as harbingers of ocean conditions
- Endotherms

Adaptation

- Webbed feet
- Countercurrent heat exchangers
- Oil in feathers (some)
- Air in feathers (some)
- Salt secreting glands
- Variety of ‘lifestyles’

Counter current heat exchangers revisited

- Blood in the arteries runs deep (not near the surface)
- As it passes by cooler veins, it gives up some of its heat, warming up the veins.
- In this way, heat can be ‘trapped’ within areas where it is needed

Food

Leatherbacks eat jellyfish and other soft-bodied animals. A floating plastic bag looks just like a jellyfish, but it will choke a sea turtle. Loggerheads eat hard-shelled organisms.

Nesting

Green Turtle nesting sites

[Map of nesting sites around the world]
ORDER PINNIPEDIA (suborder of carnivora)-winged foot: seals, sea lions, walruses

Families:
• Phocidae (seals)
• Otariidae (sea lions) and
• Odobenidae (walruses)

Adaptations
Remember these are MAMMALS
• Internal mammary glands
• Heat retention (blubber/fur)
• Respiratory rates-decreased
• Fusiform bodies
• K-selected
• Good vision (generally)
• Counter current heat exchange
• Haul-out
• Molting

Phocidae
• Internal testes
• Hind flipper propulsion
• No external ears
• Can’t really ‘walk’ on fore flippers like sea lions can
• Deeper divers
• Squid eaters (primarily)

Otariidae: sea lions
• Long fore-flippers
• Can walk and maneuver well on their fore flippers
• Swim underwater with fore flippers
• External ears (pinnae)
• External testes
• More recently evolved
• Fish eaters
Pinnipeds

Sea Lions

Odobenidae: walrus

- Internal testes
- No external ear flaps
- Flippers like a sea lion (large fore flippers)
- Use their large teeth (tusks) to dredge the bottom for molluscs and other invertebrates