

## OCN 201 Biology Lecture 7. Marine Vertebrates II (Reptiles Birds, Mammals)

### I. **Class Reptilia (Turtles, snakes, crocodiles)**

#### A. *Sea Turtles (Leatherbacks, Green turtles, Hawksbill, Loggerhead)*

1. Shells:
2. Adults have no predators except:
3. Migrate long distances:
4. Size: Largest turtles are the:
5. Diet:

#### B. *Marine Crocodiles (Only one living species)*

1. Tropical West Pacific (Australia, Indonesia)
2. Size (can get up to 7 meters and weigh over a ton)

#### C. *Sea Snakes (50 species known)*

1. Found in Indian Ocean and Western Pacific
2. Hunt small fish among corals and rocky bottoms
3. Rise periodically to breathe
4. Give birth in water to living young and never come on shore
5. Venomous – have saliva-borne neurotoxins (not hollow teeth)
6. Not very aggressive, but cause about 20 human fatalities per year

### II. **Class Aves (Marine Birds)**

#### A. *Procellariiformes or “Tubenoses” (albatrosses, petrels, shearwaters)*

1. Most oceanic of the birds: wings very efficient for soaring
2. Albatross flies for weeks or months over long distances (up to 15,000 miles) often at high speeds (up to 80 km/h)
3. Catch fish and squid by dipping bill into water during flight

#### B. *Pelecaniformes (pelicans, frigate birds, cormorants, boobies)*

1. All have throat pouches & webbed feet. Broad wings for slow flight
2. Catch fish by diving

#### C. *Charadriiformes (gulls and terns)*

1. Shorebirds. Maneuverable and efficient flyers, decent runners
2. Gulls more nearshore scavengers
3. Terns more oceanic foraging. Dive for prey. Arctic tern has the longest migratory route (24,000 km round trip each year).

#### D. *Sphenisciformes (penguins)*

1. Lost ability to fly, but excellent swimmers
2. Adapt to cold: increased body fat and stubby appendages
3. Neutral buoyancy aids in swimming
4. Can dive to 265 meters and stay submerged for 10 minutes
5. Feed on zooplankton, fish, squid, and bottom-dwelling mollusks

### III. **Class Mammalia (Mammals)**

#### A. *Distinguishing characteristics*

- 1.
- 2.
- 3.
- 4.
- 5.

#### B. *Five Groups of Marine Mammals*

1. Polar Bears (One species: *Ursus maritimus*)
2. Sea Otters (One species: *Enhydra lutes*)
3. Sirenians (e.g. manatees)
4. Pinnipeds (seals, sea lions, walruses) The only truly amphibious marine mammals
5. Cetaceans (Whales, Dolphins, and Porpoises)
  - a. Mysticetes = Baleen Whales (humpback, blue, sei, etc)
    - (i) Largest mammal is the: \_\_\_\_\_ (up to 30 m long)
    - (ii) Feeding:
    - (iii) Blowhole openings:
    - (iv) Some have throat grooves (known as Rorquals)
    - (v) Migration
      - Summer:
      - Winter:
      - Longest migration:
  - b. Odontocetes = Toothed Whales (dolphin, killer whale, sperm whale)
    - (i) Smaller than baleen whales
    - (ii) Blowhole openings:
  - c. Whale Vocalizations
    - (i) Odontocetes
      - (i) Communication
      - (ii) Echolocation: melon focuses sound in front of animal
      - (iii) Two uses:
    - (ii) Mysticetes
      - (i) Communicate with "songs"
      - (ii) Songs with repeating phrases that can be up to 30 min