Birds

of a feather will flock together

pg.400-409

Two Types of Feathers

Down Feathers

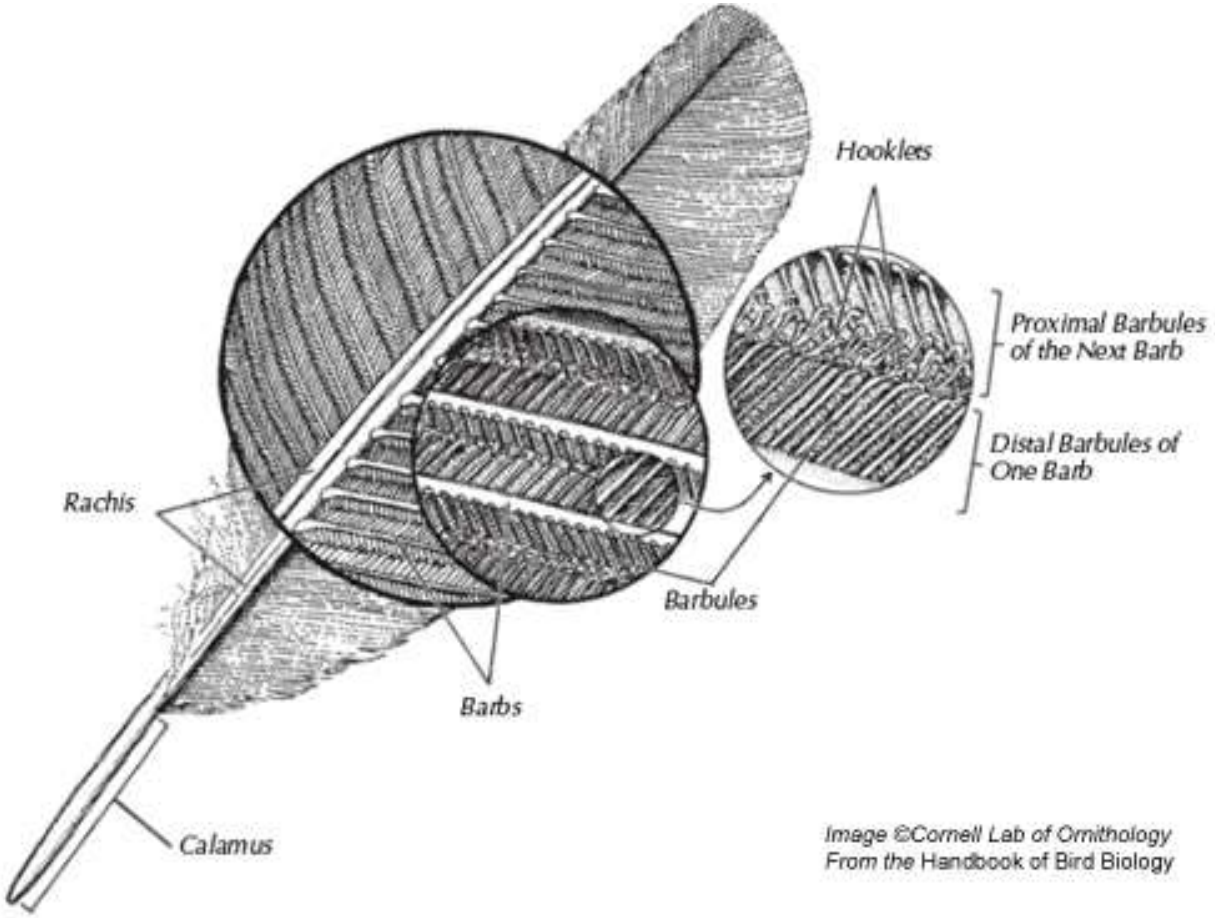
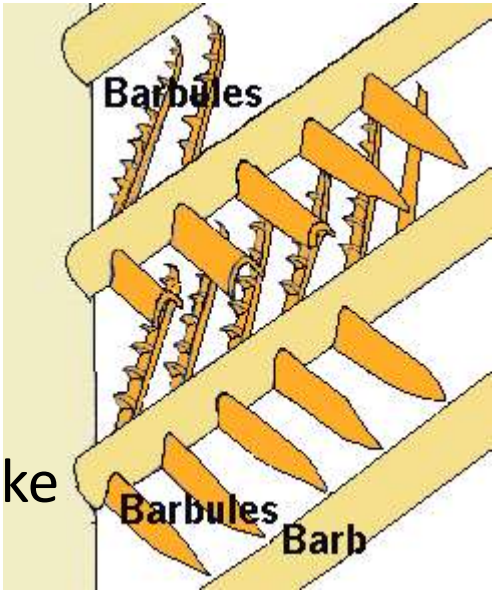


Image ©Cornell Lab of Ornithology
From the Handbook of Bird Biology

Contour Feathers

- Shaft/barbs
- Barbs link together to make smooth surface
- Cover wings and body to make streamlined flying surface



Preening

- Use beaks to spread oil on feathers
- Gland located near tail

Why???

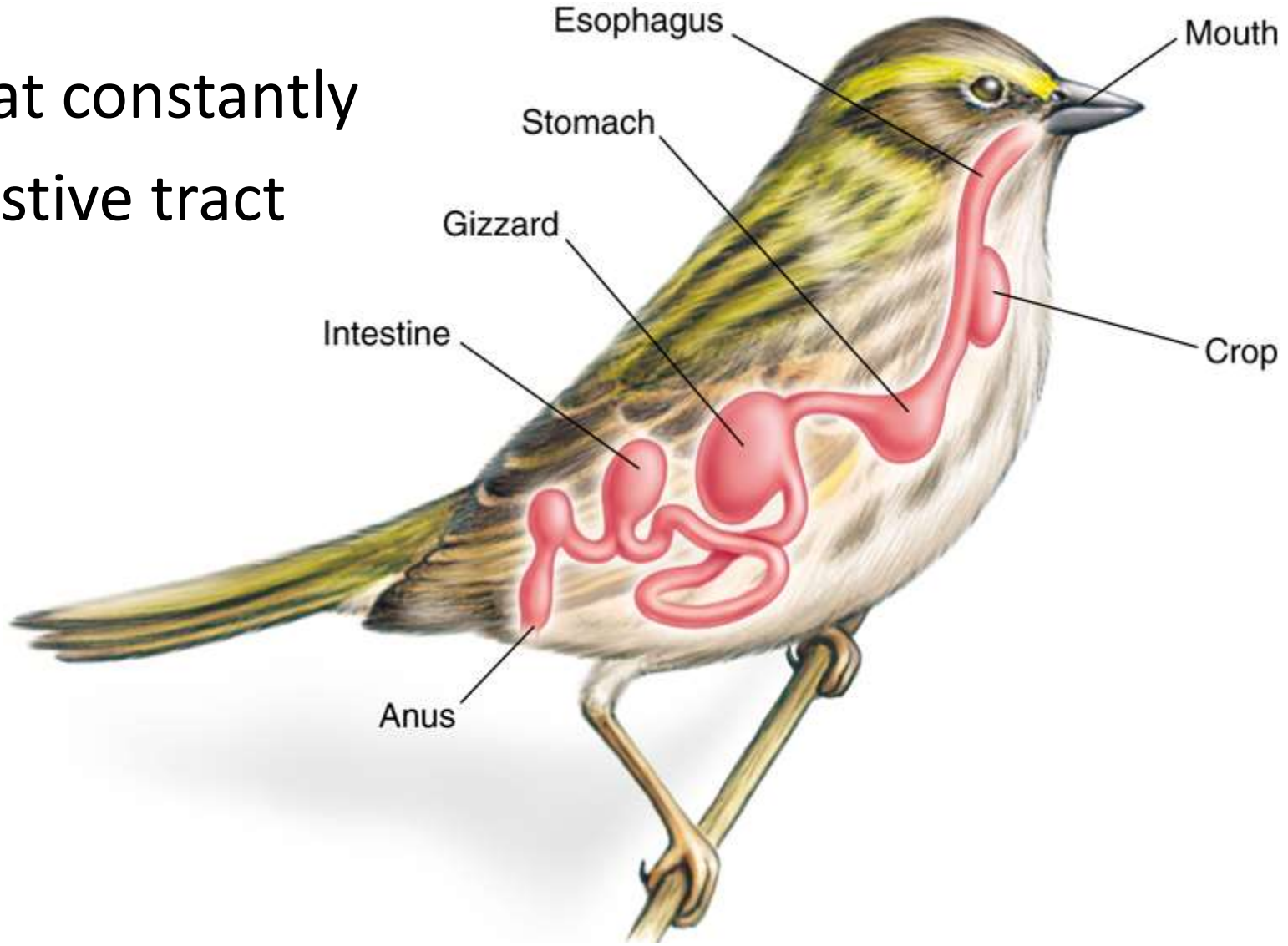
Oil makes feathers water repellent, keeps clean

Extra Energy= Extra Heat

- Need lots of energy to fly
- High metabolism
- Generates lots of body heat
- Can’t sweat
  - lay feathers flat & pant
  - (like dogs)

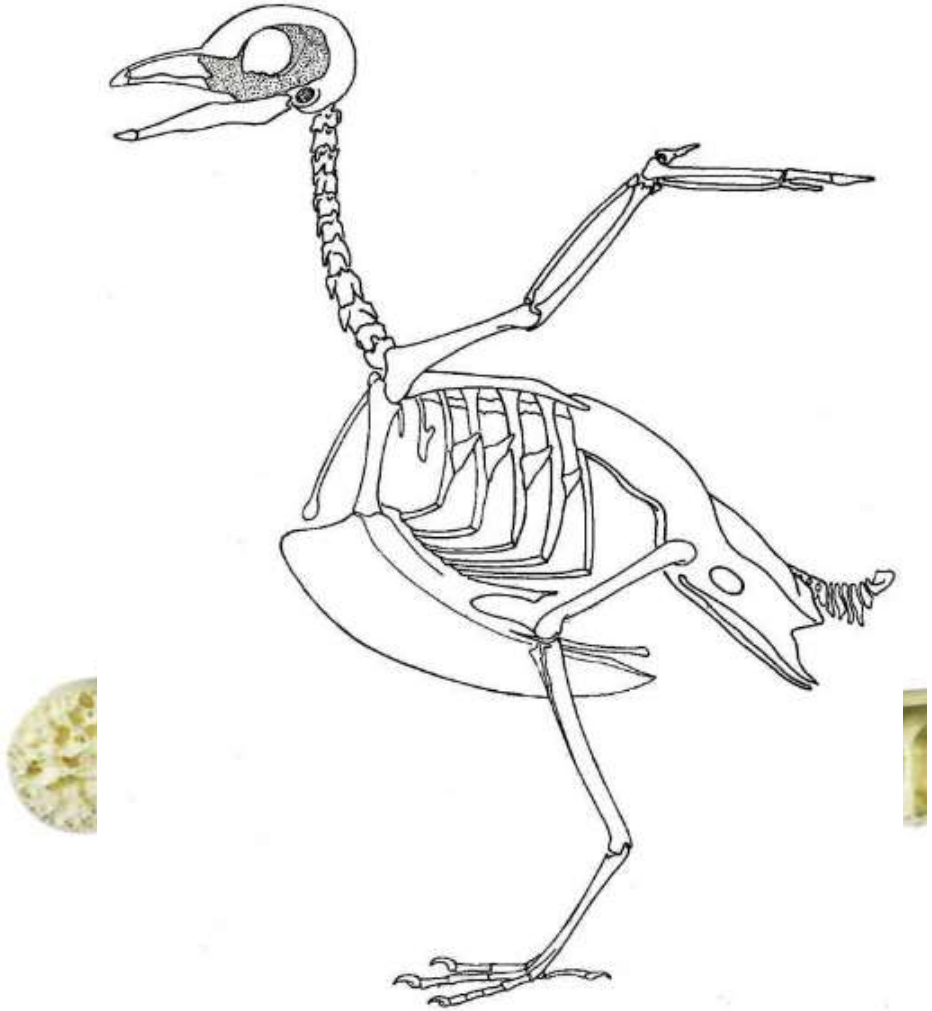
Funky Food

- Need to eat constantly
- Small digestive tract
- No teeth
- Crop
- Gizzard



Ready for Takeoff!

- Built for flight
  - Large eyes
  - Rapid beating heart
  - Air sacs in lungs
  - Wings
  - Hollow bones
  - Rigid skeleton
  - Flight muscles



Will humans ever be able to fly?

BIRDS' SPECIAL RESPIRATORY SYSTEM

Breathing in birds

First breath in:
air (blue) moves into the air sac

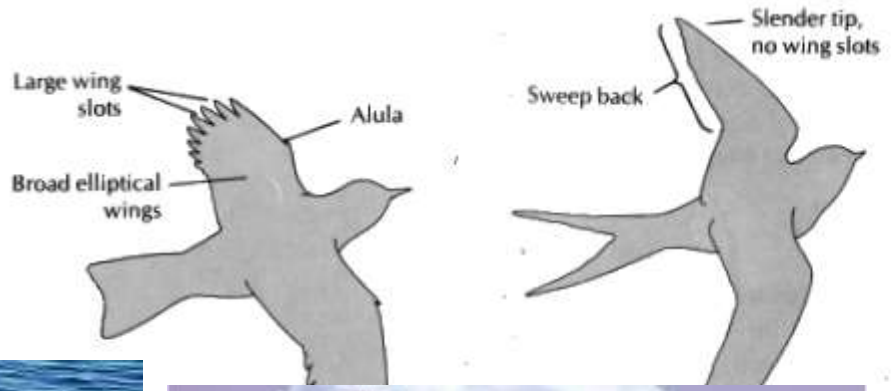
First breath out:
air moves into lungs

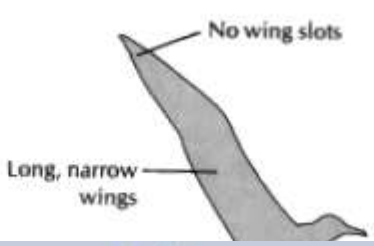
Second breath in:
air moves into front air sac

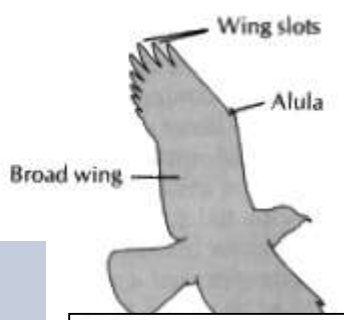
Second breath out:
air leaves the body

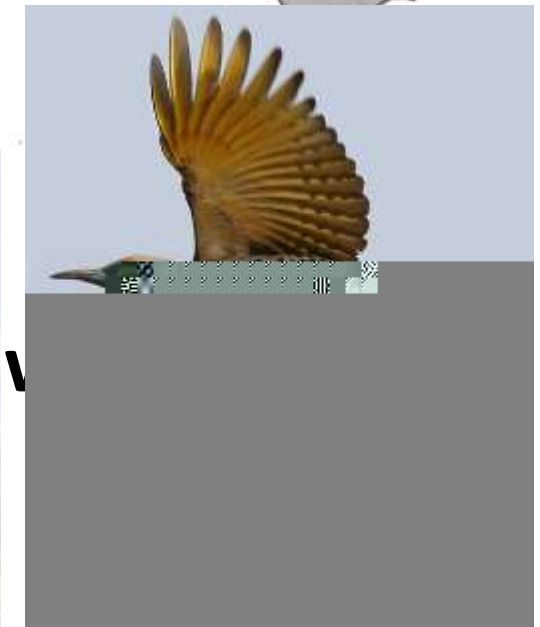
Wings

- Short, rounded wings= rapid movement
- Long, narrow wings= soaring, gliding



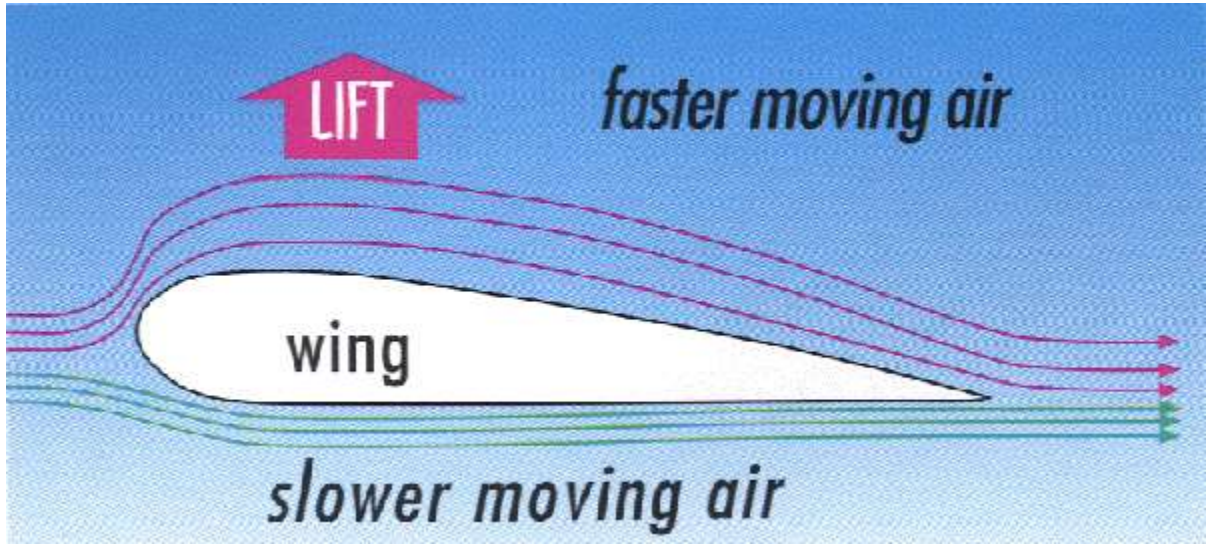




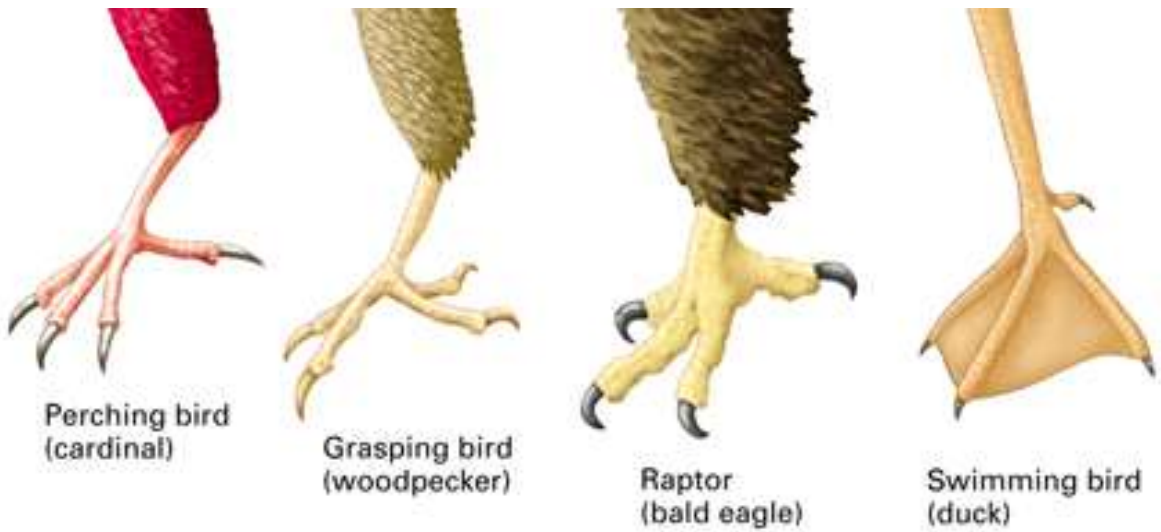


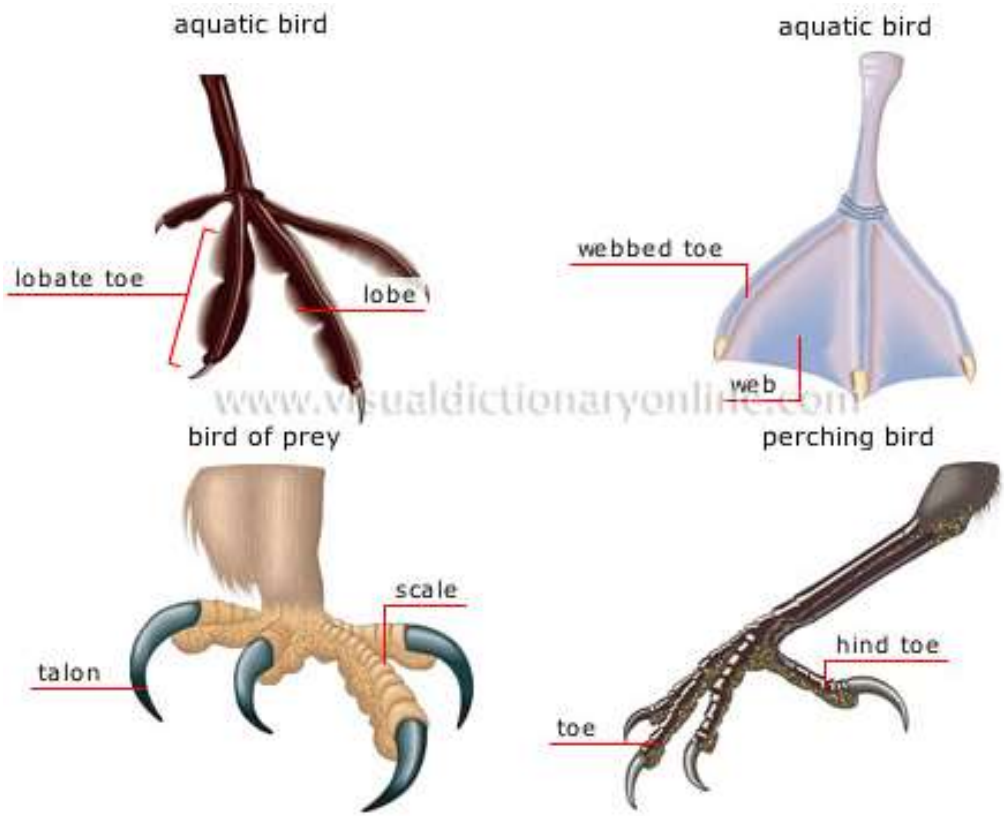
Lift

- Air over top= moves faster
- Air underneath= slower
- Creates air pressure difference to keep birds in the air



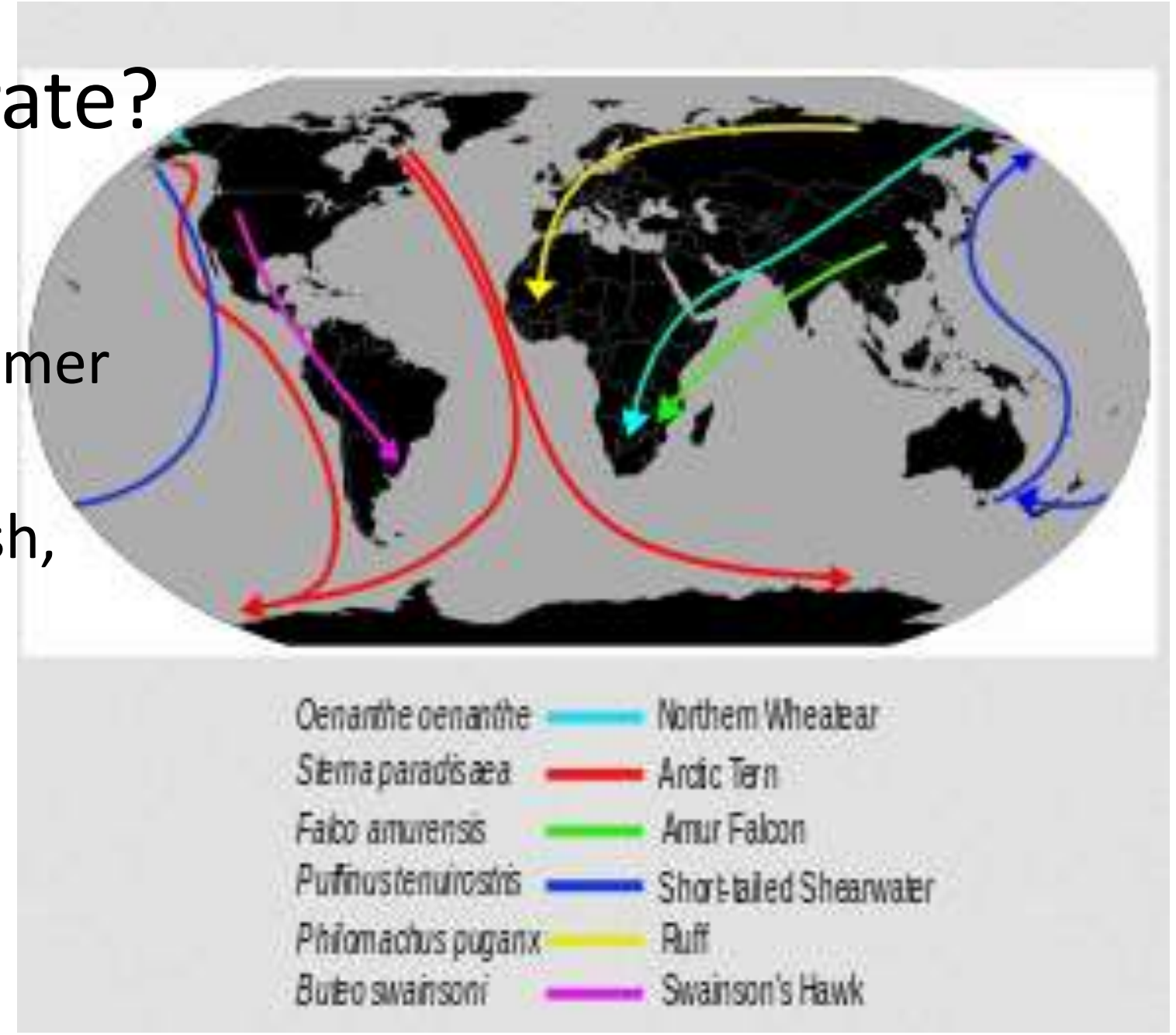
Fancy Feet

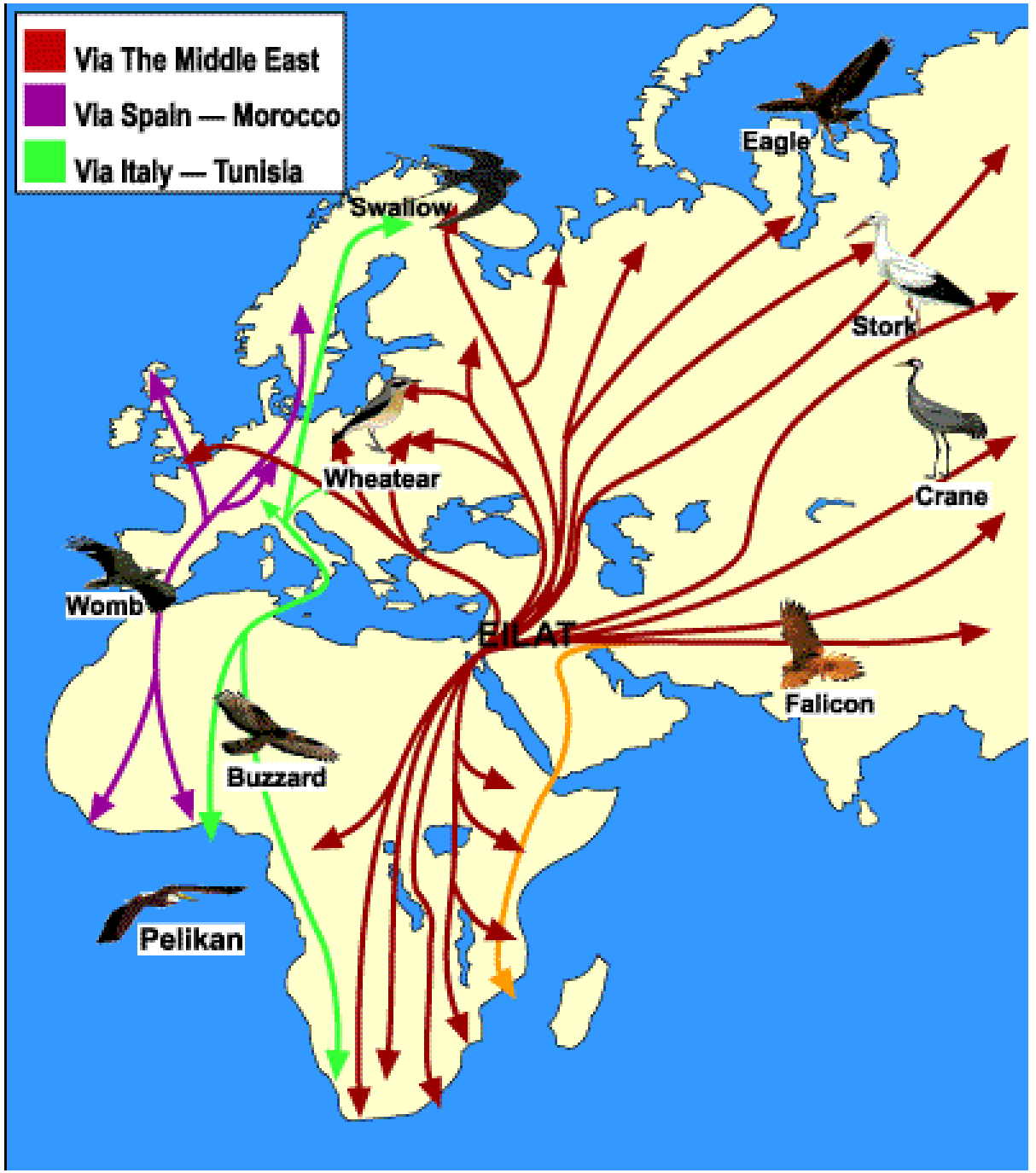

Perching bird
(cardinal)
Grasping bird
(woodpecker)
Raptor
(bald eagle)
Swimming bird
(duck)


aquatic bird
lobate toe
lobe
aquatic bird
webbed toe
web
www.visualdictionaryonline.com
bird of prey
scale
talon
perching bird
hind toe
toe

Why do birds migrate?

- More food in the summer (more light up north)
- Winters long and harsh, not much to eat




Via The Middle East
Via Spain — Morocco
Via Italy — Tunisia
Swallow
Eagle
Stork
Wheatear
Crane
Womb
EILAT
Falicon
Buzzard
Pelikan

Reproduction

- Internal fertilization
- Amniotic eggs
- Brooding
- Two types of babies
  - Precocial- chicks that hatch fully active
  - Altricial- can’t walk or fly when born

Parental Care

vs.

Why???

Flightless Birds

Don’t have a large keel for flying

Water Birds

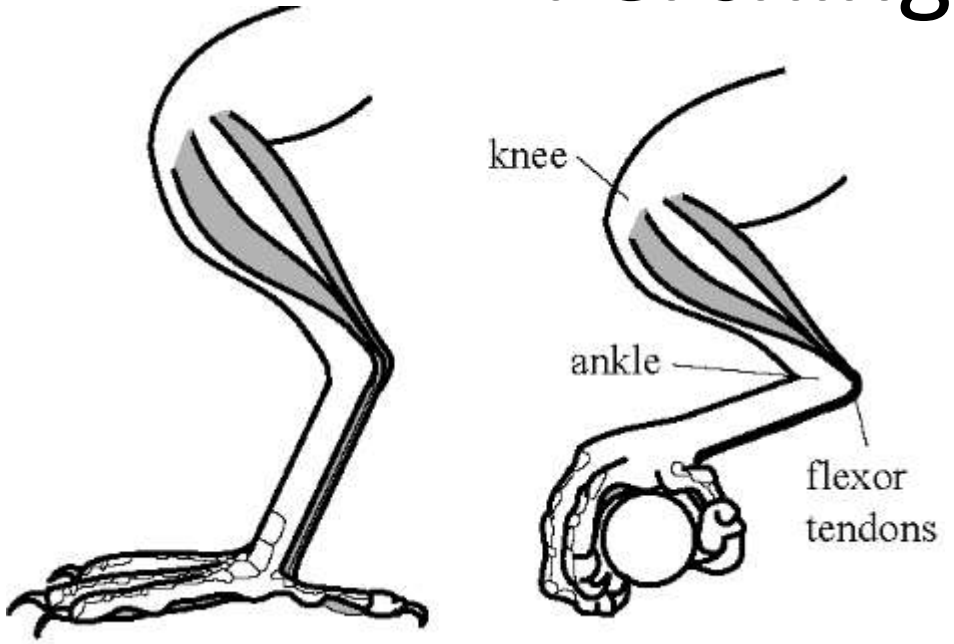
Webbed feet

Birds of Prey

Raptors

Good vision to see prey from high above

Perching Birds



Feet automatically close around the branch