

Lab 4 – Orders Didelphimorphia, Soricomorpha, Chiroptera

Need to know:

Terms: hallux, calcar, uropatagium, tragus

Didelphimorphia

Didelphis virginiana—ID based on skin or skull, n. history

Soricomorpha

Sorex spp.—ID based on skin or skull, n. history

Sorex palustris—ID based on skin or skull, n. history

Scalopus aquaticus—ID based on skin or skull, n. history

Chiroptera

Tadarida brasiliensis—ID based on skin, n. history

Antrozous pallidus—ID based on skin, n. history

Corynorhinus townsendii—ID based on skin, n. history

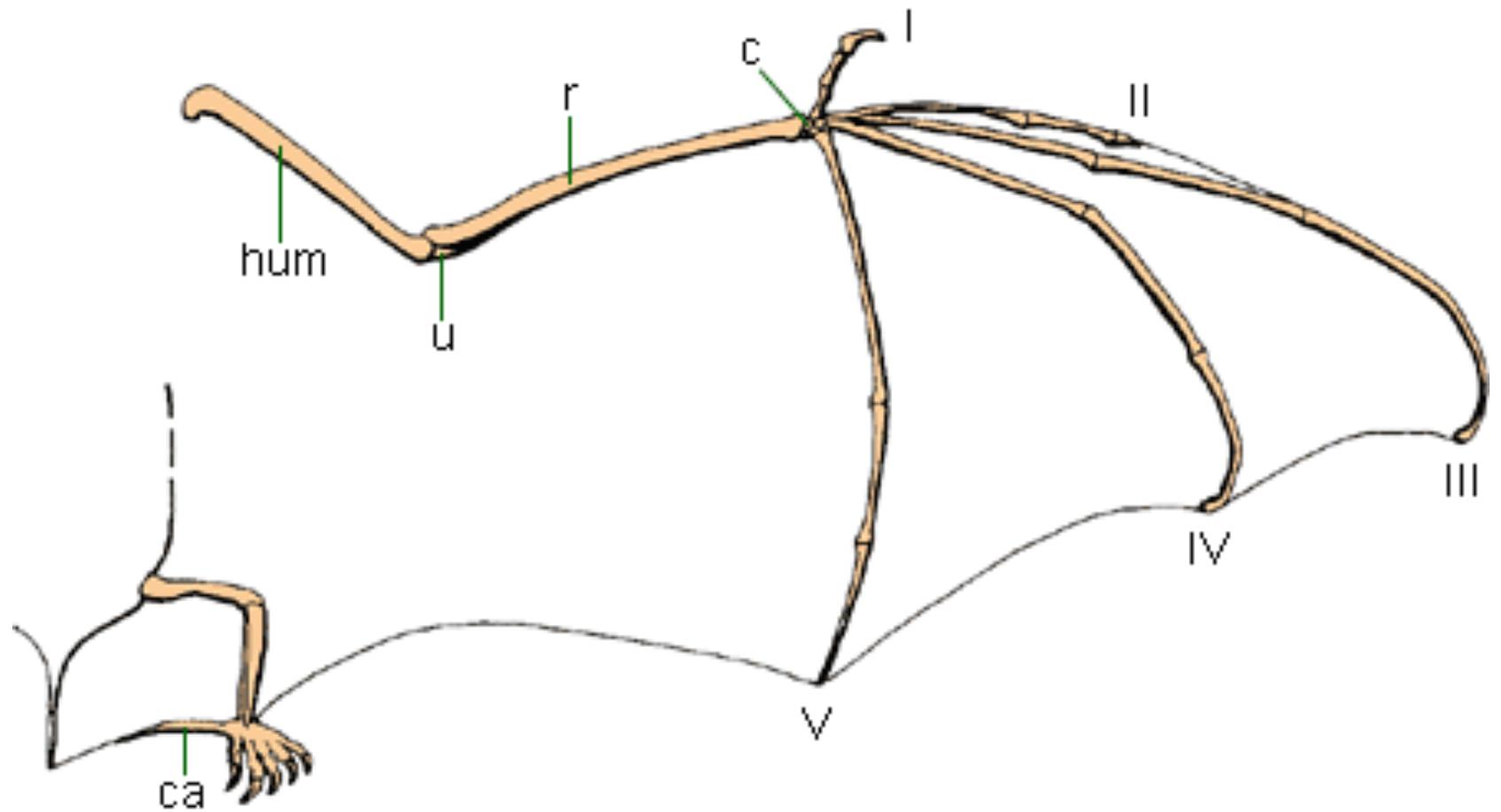
Eptesicus fuscus—ID based on skin, n. history

Lasionycteris noctivagans—ID based on skin, n. history

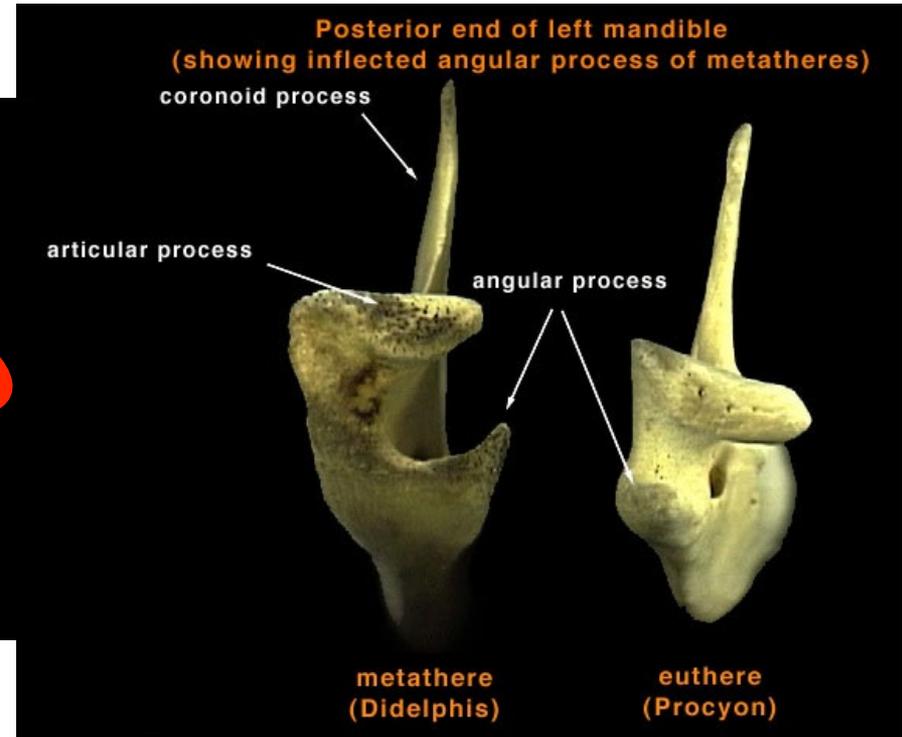
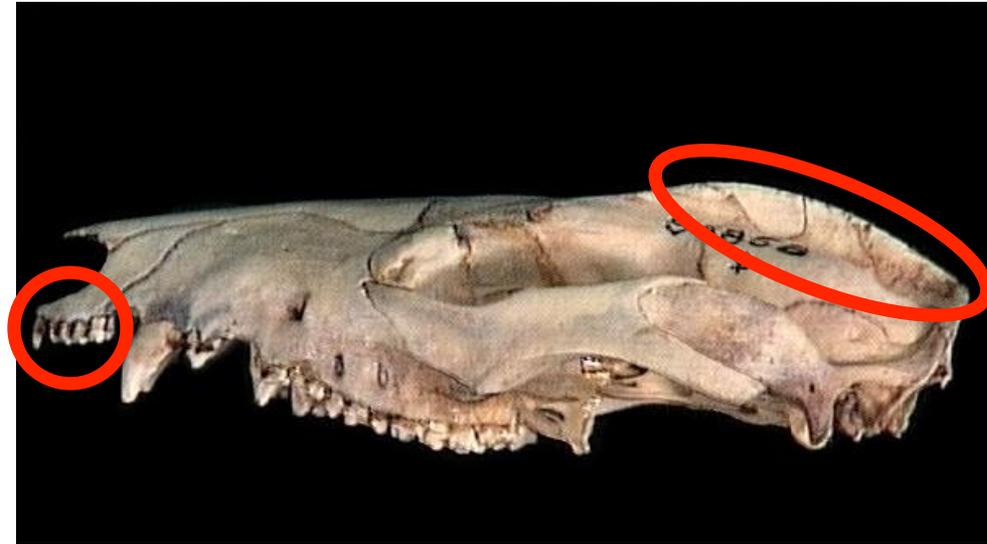
Lasiurus borealis—ID based on skin, n. history

L. cinereus—ID based on skin, n. history

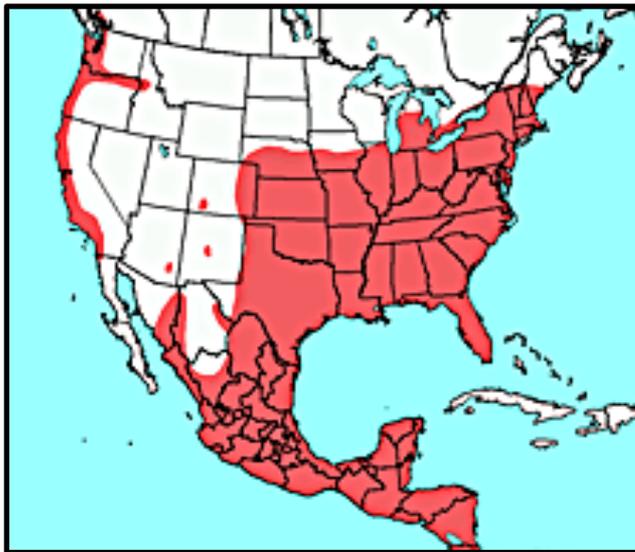
Myotis spp.—ID based on skin, n. history



Order Didelphimorphia, Family Didelphidae—American opossums
Virginia opossum—*Didelphis virginiana*

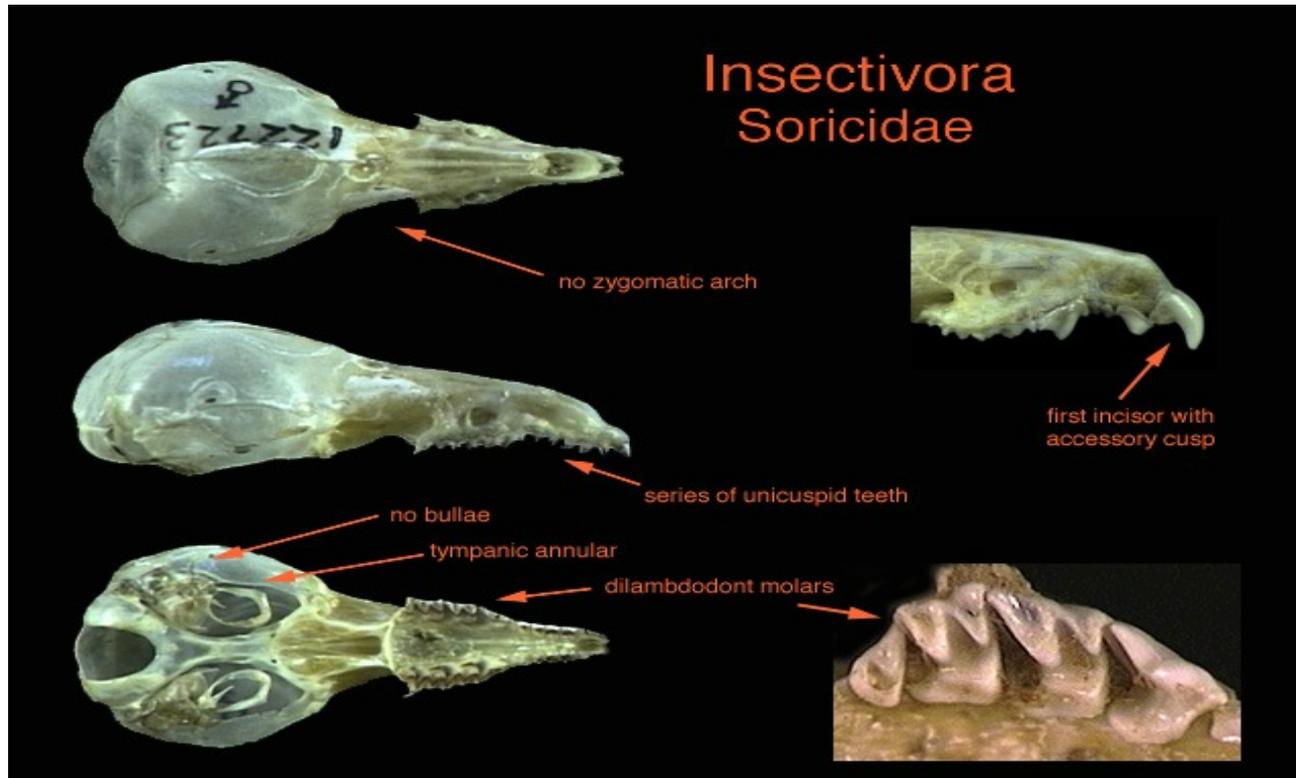


- 1) Dental formula = I5/4 C1/1 P3/3 M4/4
- 2) Prominent sagittal crest
- 3) Fenestrated palatines
- 4) Angular process medial from mandible



Opossums are marsupials: what infraclass is this?

Order Soricomorpha, Family Soricidae—shrews



- 1) Lack zygomatic arches, auditory bullae, and postorbital process
- 2) Teeth can be tipped with red or black (not always)
- 3) Dilambdodont dentition
- 4) Bicuspid upper incisors

Fun Shrew Facts

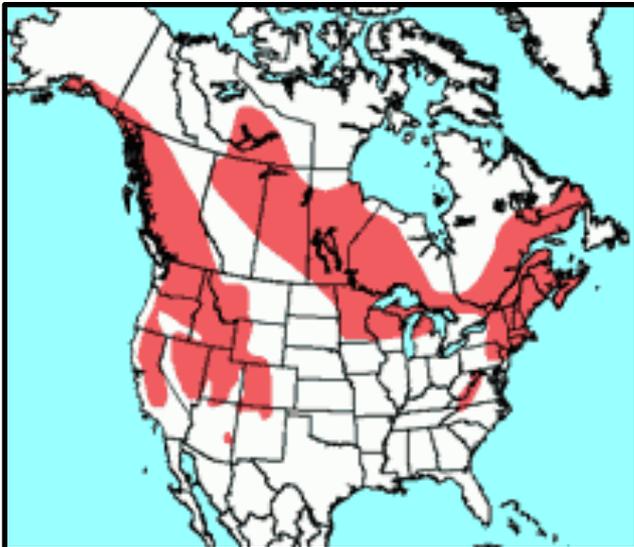
- Extremely fast metabolic rates
 - Sorex cinerus: 800 heartbeats/minute (faster than a hummingbird)
 - Makes some species hard to live-trap
 - Anne-Marie's not-secret method for collecting shrew skulls— “bottling”
- Some are venomous
 - Saliva has paralytic agents for immobilizing prey
 - What is the difference between venom and poison?



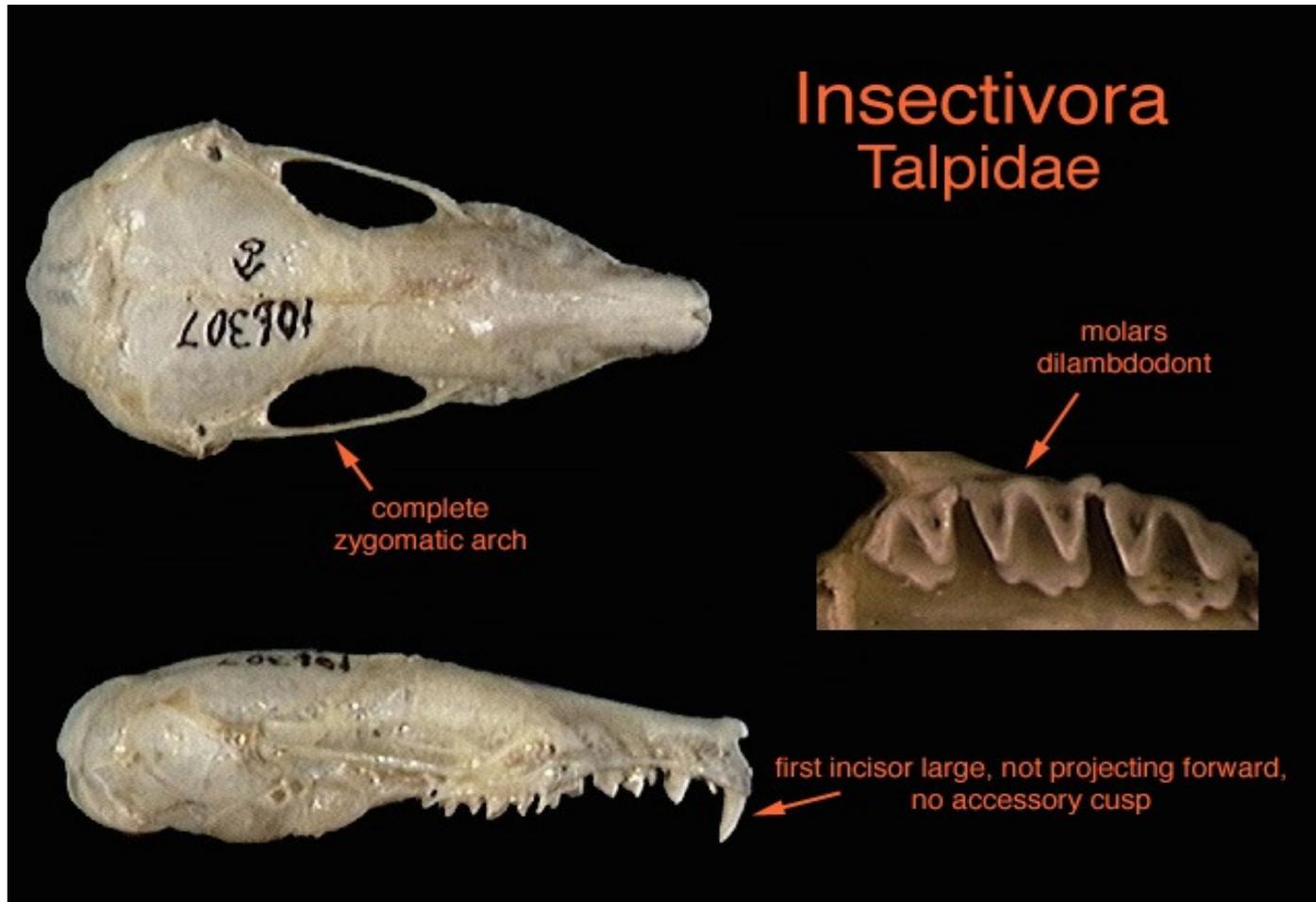
Family Soricidae
Sorex palustris
R. B. Forbes
ASM - MTL



Sorex palustris



Order Soricomorpha, Family Talpidae—moles

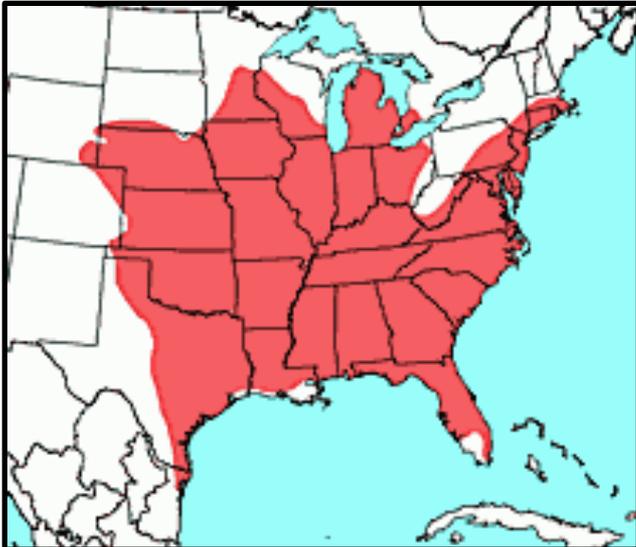


- 1) Complete zygomatic arches (contrast with Soricidae)
- 2) No dark tips on teeth
- 3) Dilambdodont dentition

Scalopus aquaticus



Photo courtesy of Kenneth C. Catania



Bats: Order Chiroptera

Suborders: Microchiroptera and Megachiroptera

- **Almost 1 in every 5 mammal species is a bat**
 - **187 genera, 950-1,200 species**
- **They are NOT blind and they are not all rabid**
- **Bats can live much longer than other mammals of the same size—up to 20 years**
- **Many species delay fertilization after mating**
- **A single brown bat can catch up to 1,200 mosquito-sized insects in *one hour* – ecosystem services**
- **Bats use echolocation to hunt**
- **But the bats don't always win**
- **How does a bat keep from deafening itself when it's echolocating?**

Antrozous pallidus (pallid bat)

- Typically found in dry, desert habitats

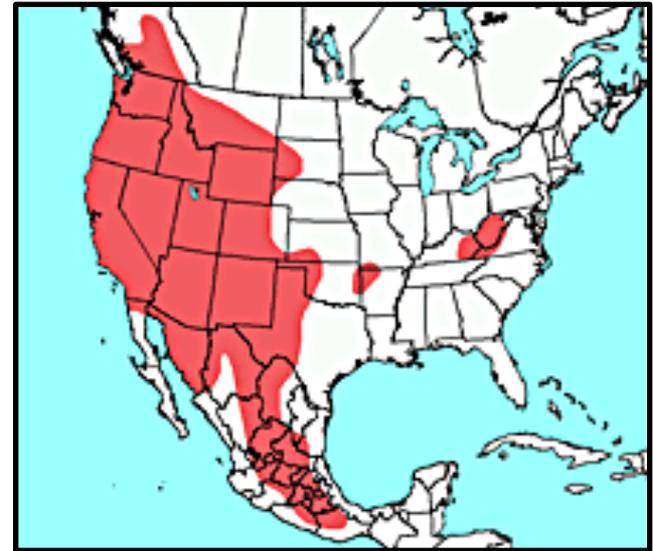
- 1) Light-colored pelage
- 2) Large, broad ears with long tragus
- 3) Pig-like snout



Corynorhinus townsendii

(Townsend's big-eared bat)

- Feed almost exclusively on moths
 - Curls ears over back of head while sleeping
- 1) Brown or brownish-gray pelage
 - 2) Large, somewhat narrowed ears with long tragus
 - 3) Conspicuous bumps anterior to nostrils



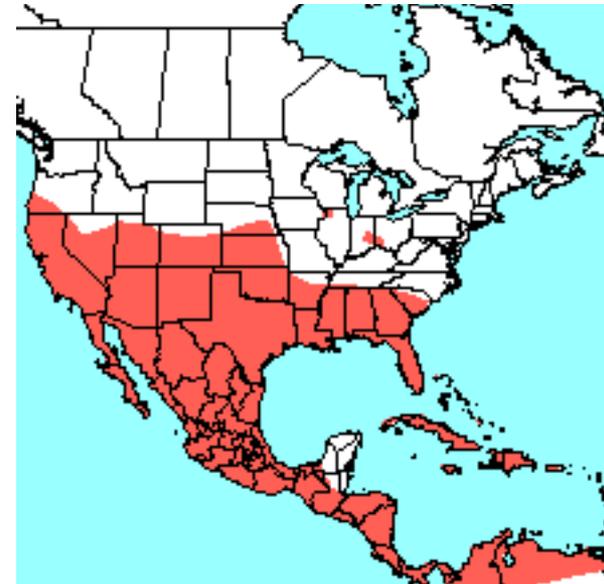


Tadarida brasiliensis

“Free-tailed” bats

Typically migrate to central and southern Mexico for the winter

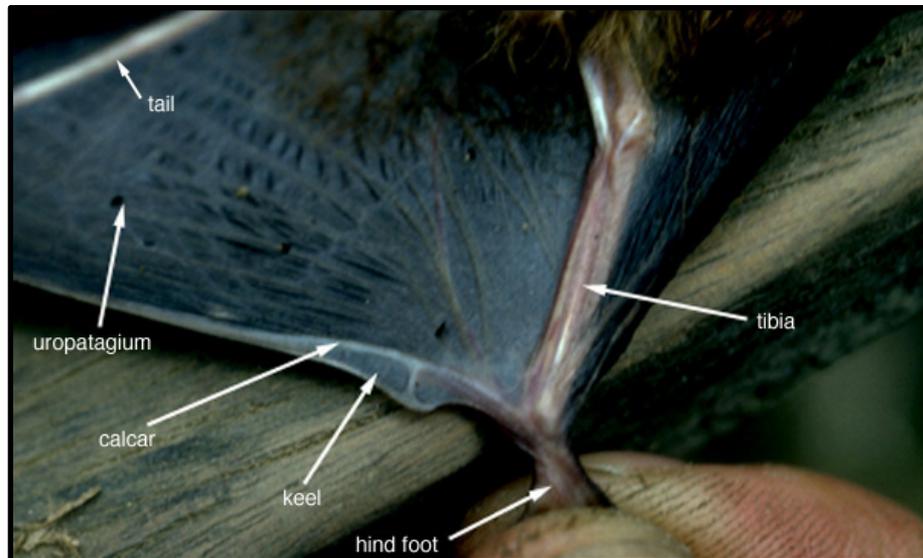
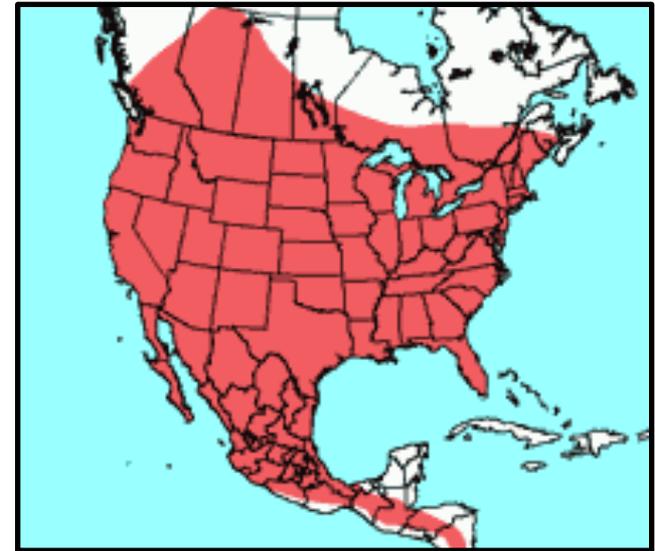
- Tail extends past uroptagium
- Ears broad, don't extend forwards past muzzle
- Wrinkled/creased lips



Eptesicus fuscus

(big brown bat)

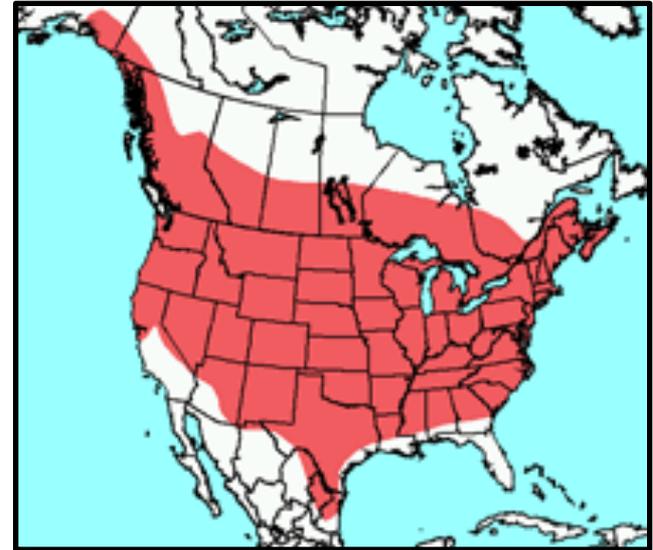
- Name means “house flyer”: often roosts in eaves
 - Packs on an extra 1/3 of its bodyweight for hibernation
- 1) Brown or brownish-gray pelage
 - 2) Keeled calcar
 - 3) Forearm >43 mm



Family Vespertilionidae
Eptesicus fuscus 10
G.L. Twist
ASM-MIL

Lasionycteris noctivagans (silver-haired bat)

- Migrate long distances
 - Frequently killed on wind farms
- 1) Dark pelage washed with silver
 - 2) Only base of uropatagium furred



Lasiurus borealis

(Eastern red bat)

- Copulate mid-flight
- Best suited for foraging in open habitats

1) Reddish pelage

2) Entire uropatagium furred

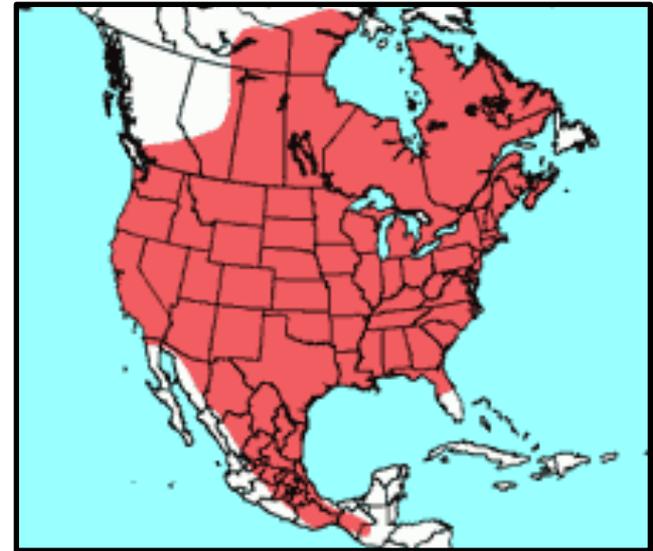


Lasiurus cinereus

(hoary bat)

- Roosts in trees, not caves (same for other Lasiurus)
- Can cover 24+ miles in a single night of foraging
- One of the longest-migrating bats—females leave a month earlier than males

- 1) Grayish, grizzled pelage
- 2) Entire uropatagium furred



Myotis spp.

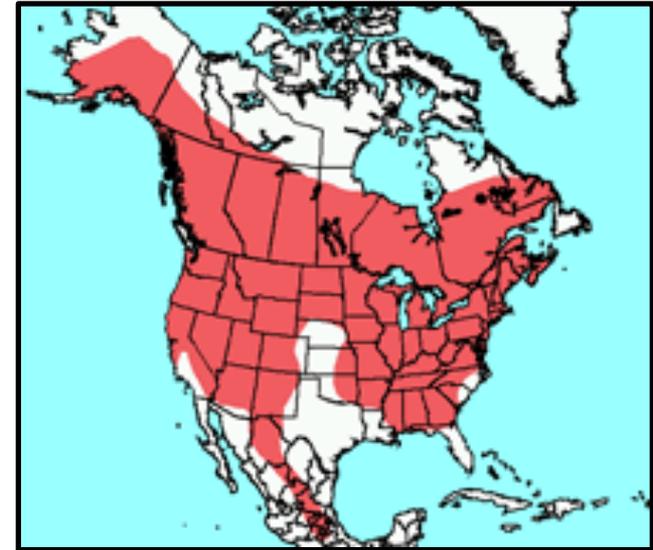
(mouse-eared bats)

- Some weigh little more than a penny
- Includes the endangered gray bat (*M. grisescens*) and Indiana bat (*M. sodalis*)

- 1) Brown pelage
- 2) Forearm length < 43 mm



Myotis lucifugus



For quiz:

- Identify species based on skins or distribution maps
- Know what order and family each species belongs to
- Know natural history facts for each species
- Know the new vocab terms (Slide 1)
- *Spelling counts* for Latin names (and always underline)
- Remember the next quiz covers Lab 3 and Lab 4

