

Bat Species Identification



For Bat Carers

Gail Armstrong

Bat carer for over 20 years, nearly 1,000 bats cared for

Flight cage for preparing juvenile bats for release

Juvenile Daubenton's bat that developed rabies

Illegally landed Silver haired bat from North America

First Nathusius' pipistrelle found in Lancashire

First Leisler's bat in North Lancashire

Bats & the Law

Wildlife & Countryside Act 1981

Habitats Regulations 2010

(tidies up all amendments since 1994)

Countryside & Rights of Way (CRoW)
Act 2000

Special Areas of Conservation

Sites of Special Scientific Interest

It is an offence to :

- **Deliberately capture, injure or kill a bat**
- **Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats**
- **Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)**
- **Intentionally or recklessly obstruct access to a bat roost**
- **Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat**

Defences

- Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release
- Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Types of Licence

- Volunteer Bat Roost Visitor licence
- Survey Licence
- European Protected Species Mitigation (EPSM) licence
- Low impact class licence
- Research Project Licence
- Possession Licence
- * No licence required for bat care *

A bit about Rabies

Vaccination



In 1885, Louis Pasteur gave the first rabies vaccination



About 50,000 people die from rabies each year. Mainly in Asia/Africa from dog bites

Rabies Symptoms

Usually start with fever, malaise, sore throat and headache

May progress to irritability/aggression and abnormal sensations around the site of the original wound

Usually takes the form of either dumb or furious symptoms

Dumb: ascending paralysis, drooling or foaming at the mouth

Furious: hyperexcitability, spasms, hydrophobia due to constricted throat

Usually complications of the cardiovascular systems, CNS or respiratory system cause death

Common vampire bat (*Desmodus rotundus*)



Bat Rabies

First diagnosed in Trinidad in 1931
(Desmodus rotundus - the common vampire)

First insectivorous bat in 1953

First European bat in 1954

Different rabies viruses exist

Four human deaths in Finland, Russia,
Ukraine and UK

Lyssaviruses

11 Genotypes so far discovered + 4 not classified yet

Classical rabies

Australian Bat

European bat-2

Irkut bat

Aravan bat

Khujand bat

European bat-1

Duvenhage bat

Mokola (not in bats)

Lagos bat

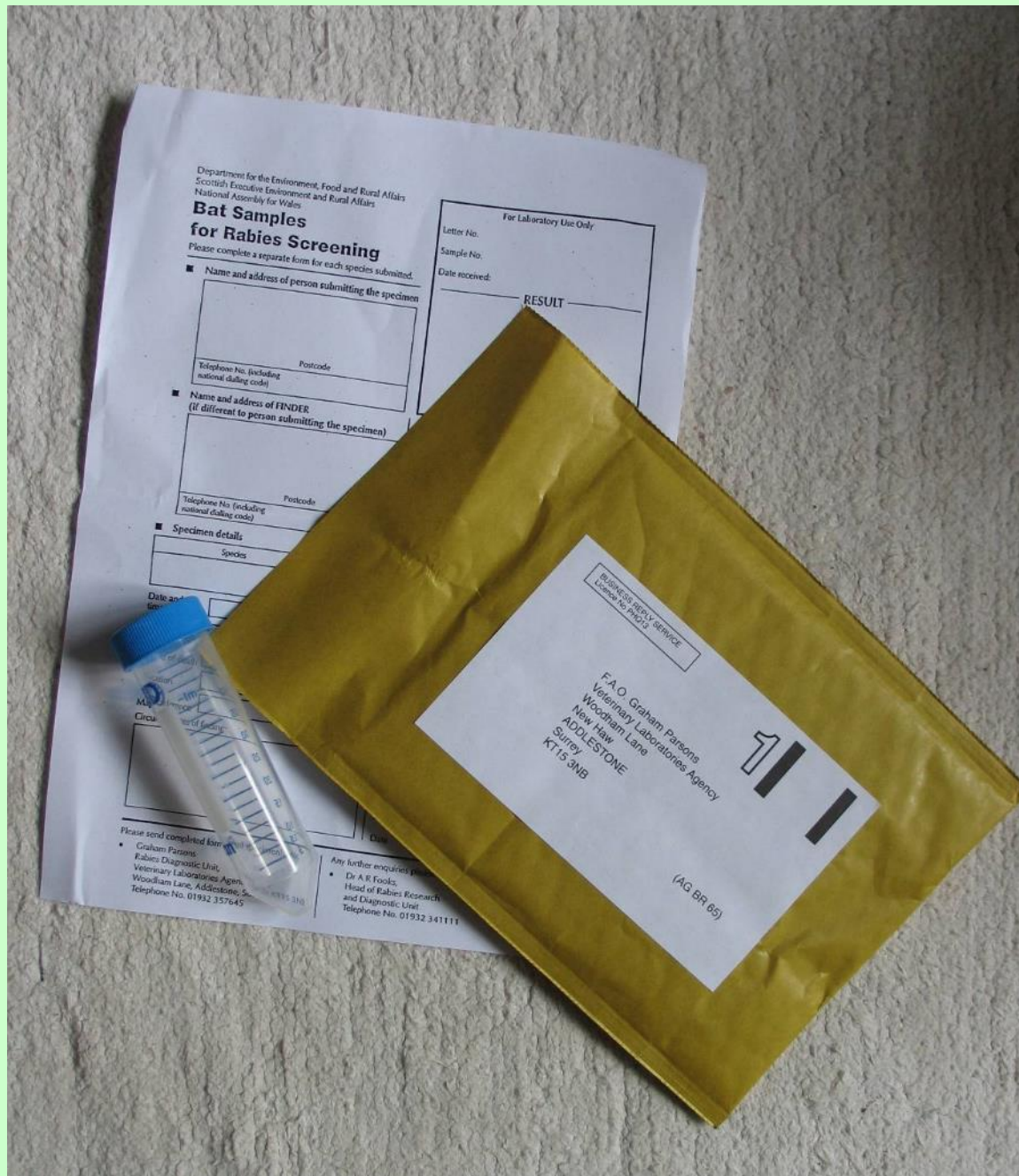
West Caucasian bat

Ikoma*

Shimoni bat *

Bokeloh bat *

Lleida bat * (first detected in 2011 in *M. Schreibersii*)



Passive
surveillance
programme

Bat with EBLV2 in the UK

May 1996	Newhaven, Sussex
September 2002	North Lancashire
November 2002	Angus, Scotland (Human case)
October 2003	South Lancashire
September 2004	Staines, Surrey
September 2006	Oxfordshire
August 2007	Shropshire
May 2008	Surrey (bat in captivity since August 2007)
August 2008	Perthshire (active surveillance project)
October 2008	Shropshire
September 2009	West Lothian
July 2014	Shropshire
August 2016	West Yorkshire
September 2016	Northumberland
September 2017	Derbyshire

Assessing Risk...How dangerous are bats?

To be in danger of catching rabies from a bat....

1. First, come across a bat infected with rabies
2. The bat bites you hard enough to inject some virus
3. You are not currently vaccinated
4. You take no action (post-exposure prophylaxis)

Mitigating Risk

Don't get bitten by bats

Err.....

That's it

Vaccination

Anti-rabies prophylaxis was developed to protect against classical rabies

Current vaccine is thought have reduced effectiveness against EBLv2 and poor effectiveness against EBLv1

BUT.....

No-one with up to date vaccination against rabies has ever died from EBLv

Vaccination Regime

- 1 mL - intramuscular deltoid region - at days 0, 7 and 28. The third dose can be given on day 21
- A single reinforcing dose is then given, one year after the primary course has been completed, to those at regular and continued risk
- Further doses should be given at 3 to 5 yearly intervals thereafter to those at regular and continued risk

Handling Captive
Bats well is a
really important
skill for bat
carers

To get information from the bat in your care you need to be able to ...

- Bring a bat under basic control and hold it in a calm and confident manner
- Determine sex of bat
- Determine approximate age of bat
- **Be able to look closely at various identification features**
- Determine breeding status (male & female)

Tips

1. Always wear gloves or use a cloth (not just for your sake)
2. Spend time finding a way of handling and manipulating the bat that is comfortable and right for you
3. Bat needs to breath (chest goes up and down) so don't squeeze too hard
4. Bat feels safe in a crevice so will not struggle if you can mimic this



Some techniques
best avoided

Some techniques
best avoided





Some
techniques
best
avoided

Okay (with
care)



Torpid bats - don't get caught out!

-feels cold to the touch
-moves in a sluggish way
-easy to handle
-takes time to wake up
-vibrates and shakes while doing so
-tries to take flight when ready



Playing Dead



Newborn Natterer's bat





Pipistrelle baby - size comparison

Basic Control









Sexing a bat





Breeding status



Buccal Glands





Ageing a bat





Adult bats have
“knobbly”
knuckles



Juvenile bats
have open
knuckles



Adult Bat



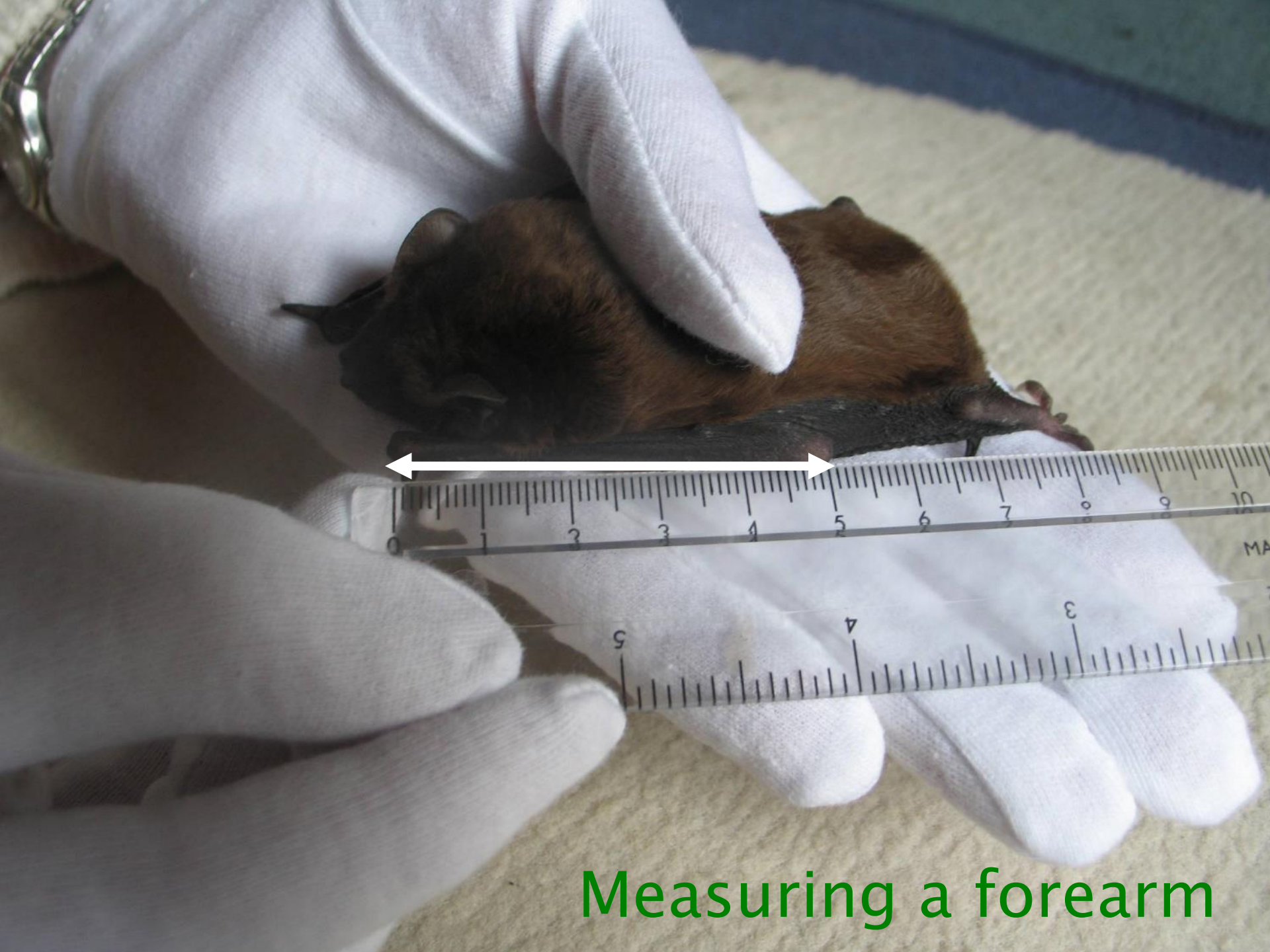


Juvenile Bat



Juveniles are greyer than adults

Weigh & Measure



Measuring a forearm

Measuring a forearm







OPERATION

Place scale on a horizontal flat surface, press ON/OFF key to turn on the scale.

Wait until "0.0" or "0.00" is displayed.

Put the object(s) on the weighing platform.

Using the MODE key, you can switch between weighing units.

TARE WEIGHING

Turn on scale as described above.

Place a tray or container on the scale platform.

Press TARE and "0.0" or "0.00" will be displayed.

Add the "Net Weight"

CAUTION

Press key for a few seconds, Display will show "CAL"

Press key again, Display will show "PASS" then return to normal weighing mode.

174.5

Capacity: 100g

Graduation: 0.01g

MODE

ON
OFF

TARE

Identification Features

A couple of tips

1. Always look closely and identify the common bat species in a consistent way. You will immediately notice when something is different
2. Every key is different and usually gives only one ID feature to differentiate confusing species. Get used to using several keys for multiple features on similar species



Small – approx half of palm width

Small Bats

Pipistrelles (3 species)

Lesser Horseshoe

Small Myotis (3 species)

Daubenton's

Long eared (*)

Medium – nearly palm width



Medium Bats

Natterer's

Barbastelle

Bechstein's

Leisler's

Long eared (*)



Large – more than palm width

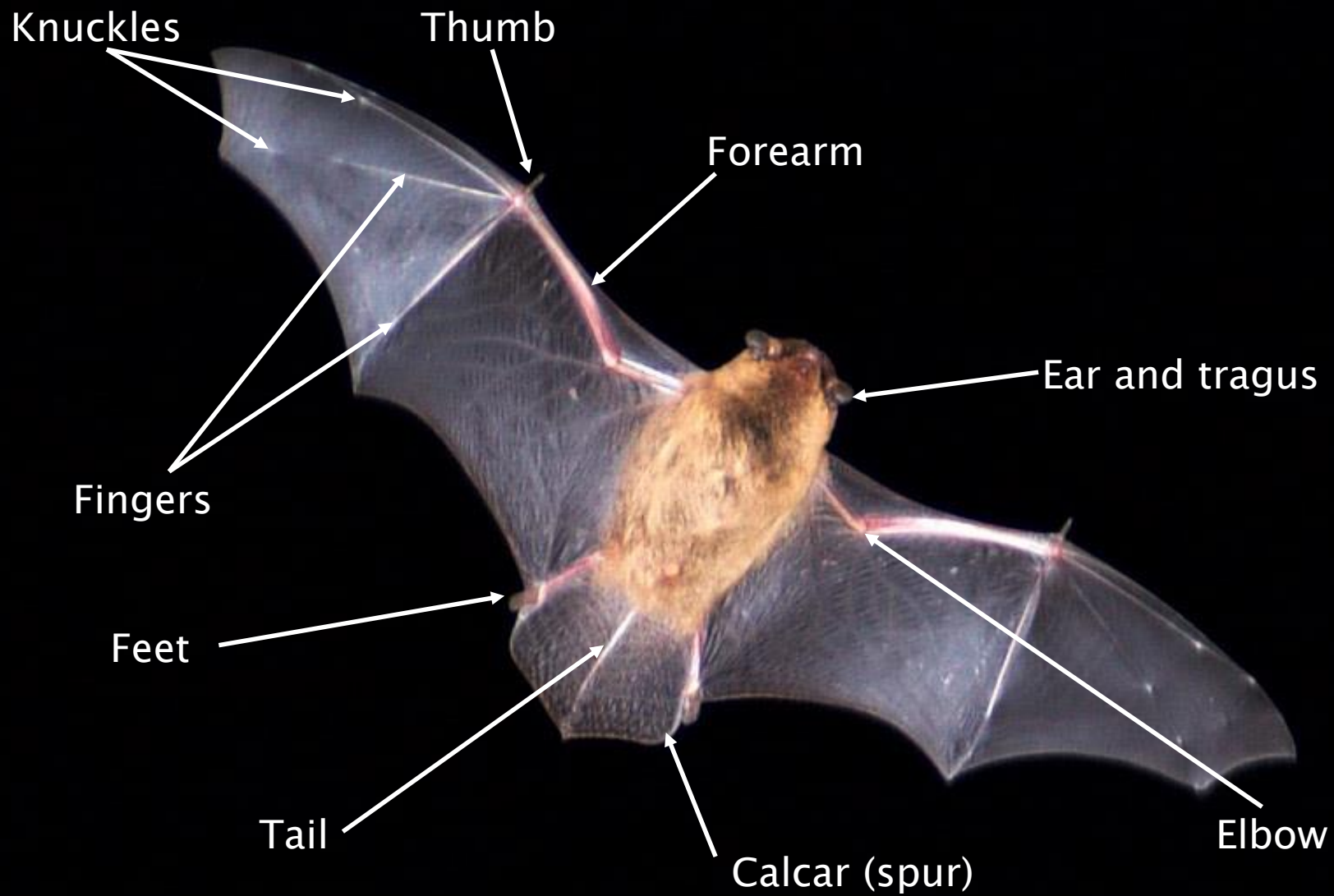
Large Bats

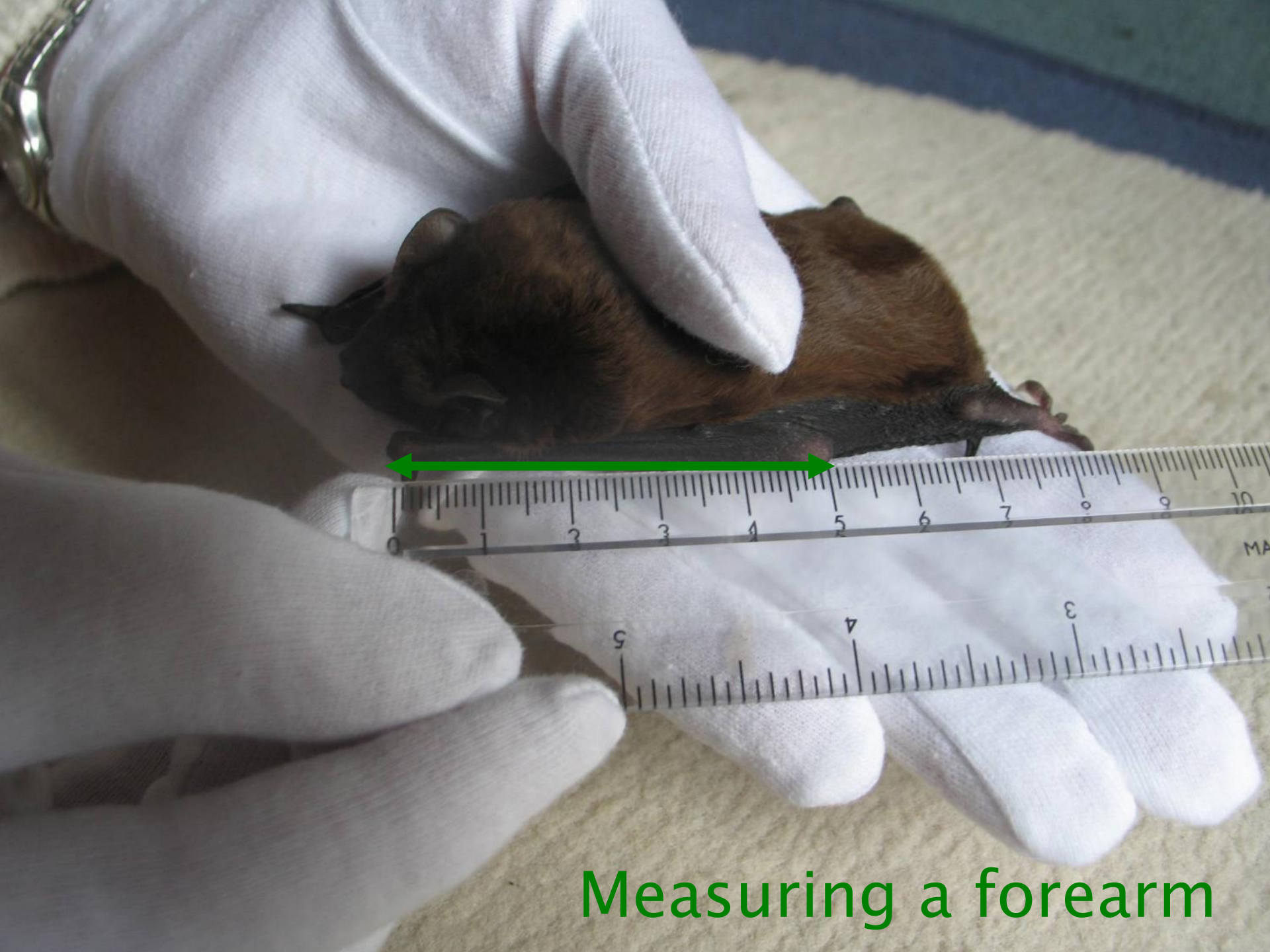
Serotine

Noctule

Greater Horseshoe

Mouse-eared





Measuring a forearm

Ear shape



Rounded or
pointed tip?

Ear style



Set well down
on head or not

Rounded Tips



Pipistrellus

Rounded Tips



Nyctalus

Rounded Tips



Eptesicus

Pointed or Tapered Tips



Myotis

Pointed or Tapered Tips



Myotis

Pointed or Tapered Tips



Myotis

Long ears



Plecotus

Ears meet
on head
when
upright

Long ears



Plecotus, Ears fold back at rest

Ears meet on head



Barbastelle

Others





Tragus shape
and length

- Long and thin or short and fat
- Pointed or blunt
- Mushroom shaped
- Outer edge concave or convex
- Length in proportion to ear size
- Absent



Small Myotis

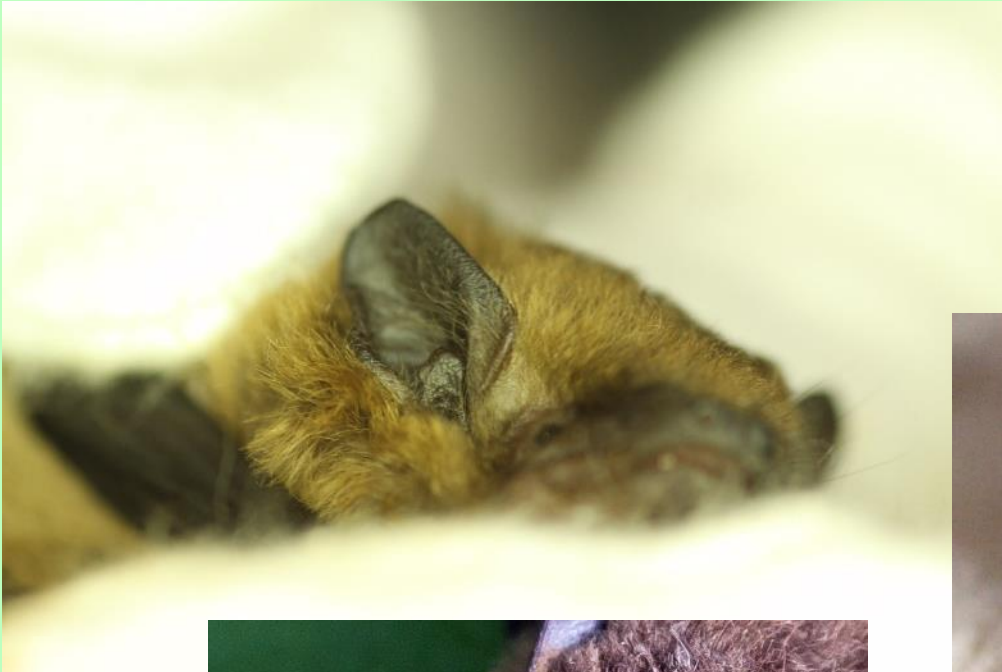
Whiskered

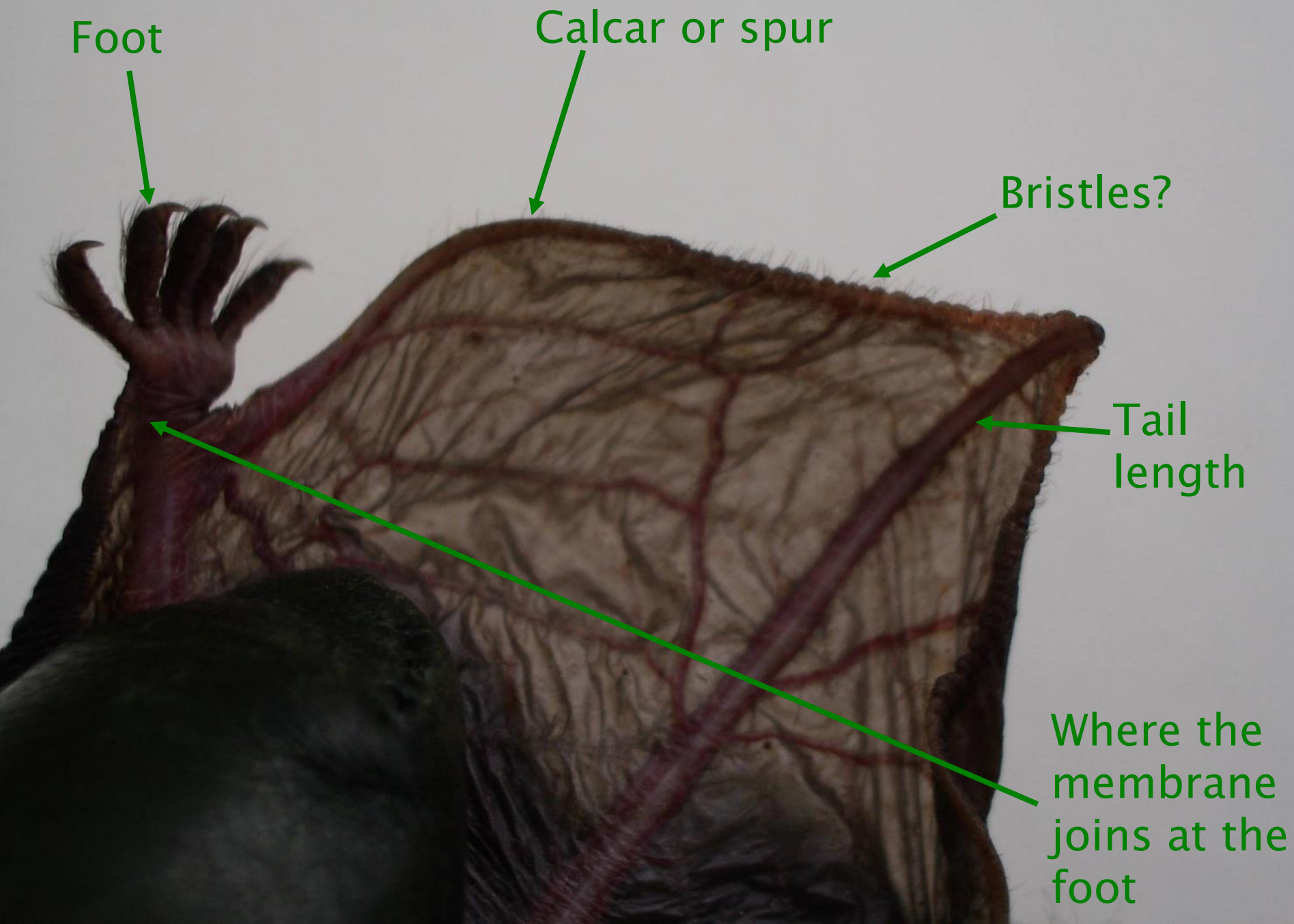


Nyctalus



Pipistrellus







**Post calcareal
lobe**

Bats with post-calcarial lobe

Pipistrellus (3 species)

Nyctalus (2 species)

(Small in Serotine & Barbastelle)

Straight calcar

Whiskered

Brandt's

Alcathoe

Daubenton



S-shaped Calcar



Natterer's



Membrane joins here

Most species



Large foot and
membrane clear of foot

Daubenton's

Fur colour can confuse



Same species or not?



Or not
much fur
at all.....



Fur colour – Dorsal darker than Ventral?

Myotis sp. and Nathusius pipistrelle

Fur colour
uniform



Noctule
Pipistrelle



Fur texture

Shaggy?



Fur texture

Short and
Sleek?



Careful though
with grounded
bats

If it's not
grooming, it
might appear
more shaggy
than it should
due to dirty
fur!

Common

Soprano

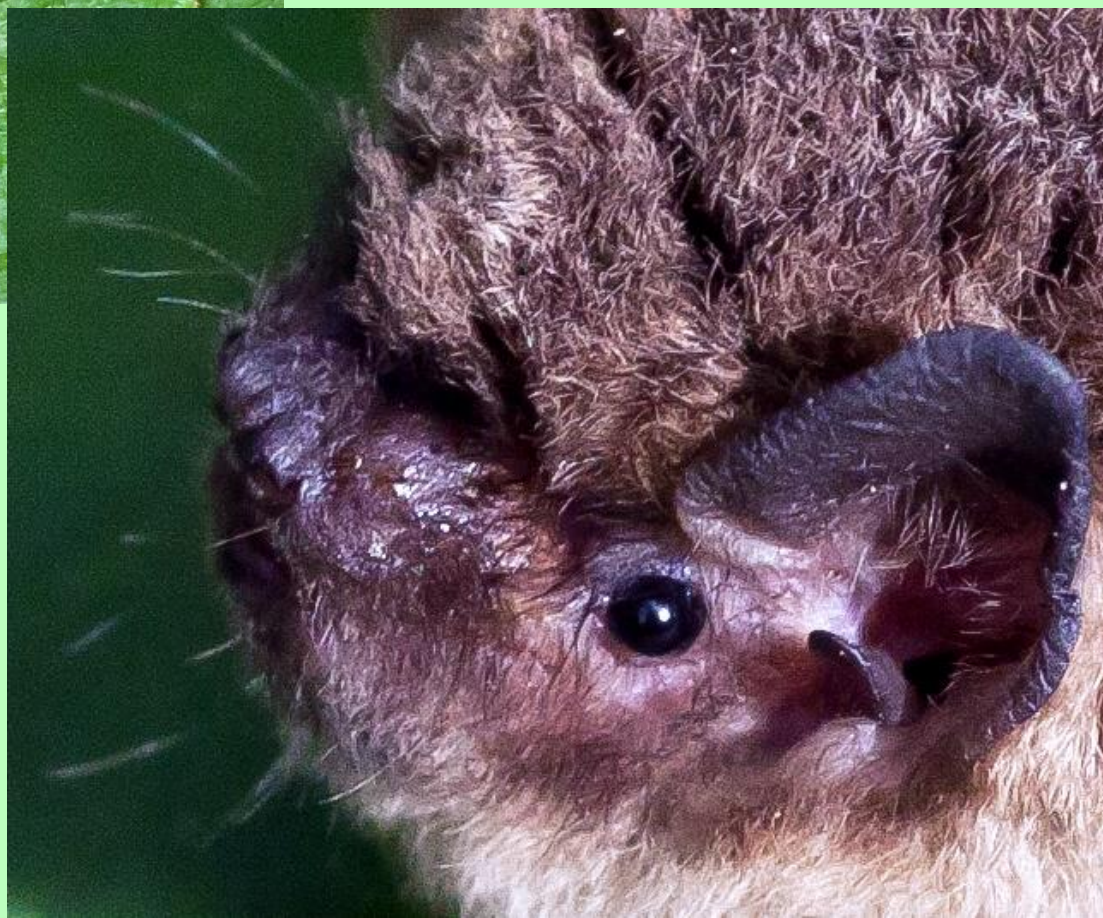


Membrane and face colour



Muzzle shape

Soprano
pipistrelle muzzle
is broader and
rounder than
Common pip.



Wing venation





Nathusius'

Relative tail
lengths



Common

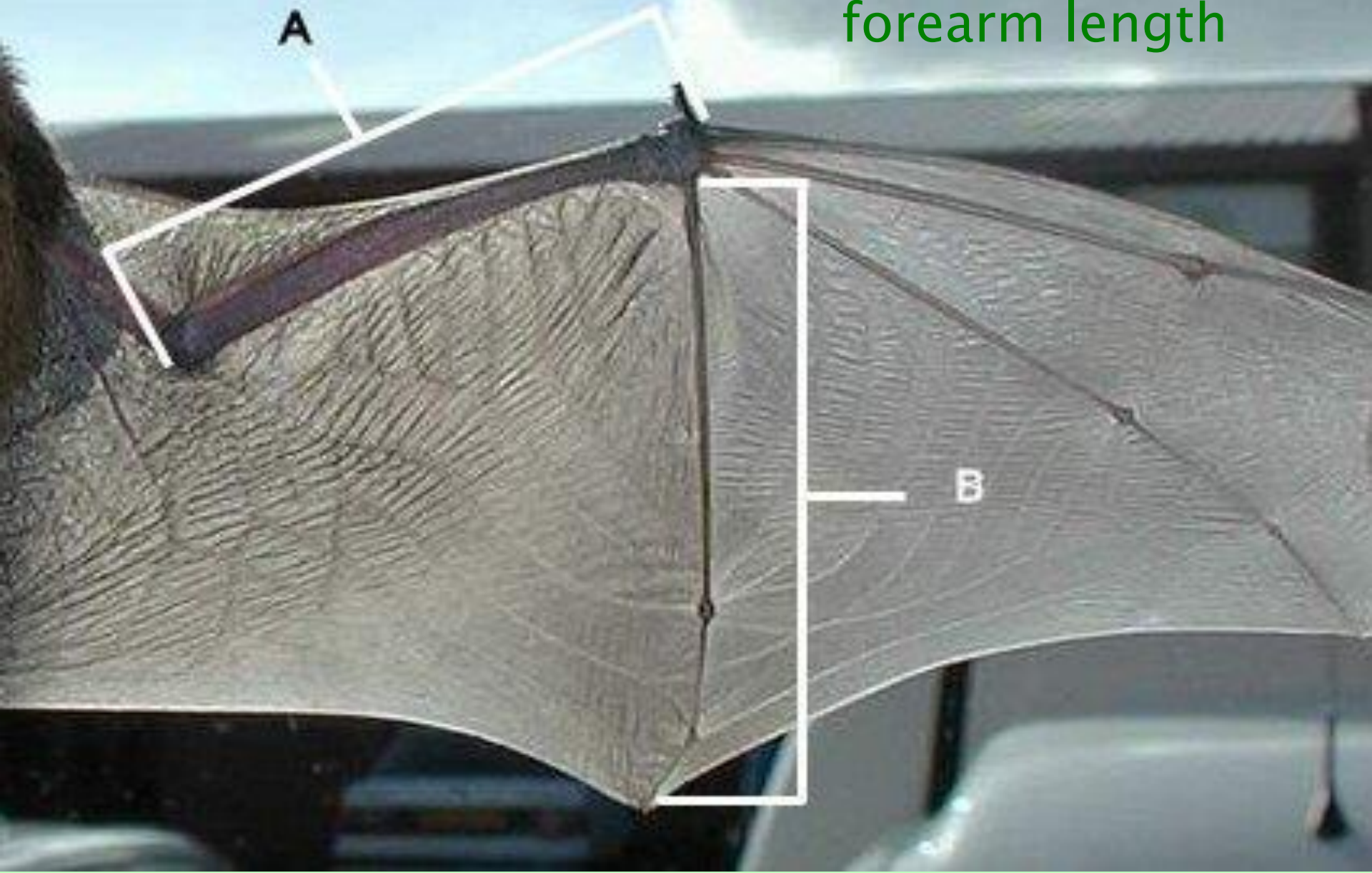



Nathusius' Pipistrelle



Long
distance
flyers need
powerful
shoulders

Measure fifth finger
and divide it by
forearm length



A close-up photograph of a dog's genital area. A white, textured glove is visible on the right side, with its fingers partially spread. The dog's fur is dark and appears to be a mix of black and brown. The background is a light-colored, textured surface, possibly a towel or paper. The text "Penis shape" is written in green in the upper right corner, and "Whiskered" is written in green in the lower left corner.

Penis
shape

Whiskered

Penis
Colour



Soprano



Be ready for anything

Photo Credits

John Martin

Dave Marshall

Steve Lamb

Brian Hancock

Pat Waring