

Campbell Island 2017/18

NZ SEALION PATHOLOGY INVESTIGATION

Preliminary Findings

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Wild Vet Care



Campbell Island Locations

Davis

Paradise

Beeman Base

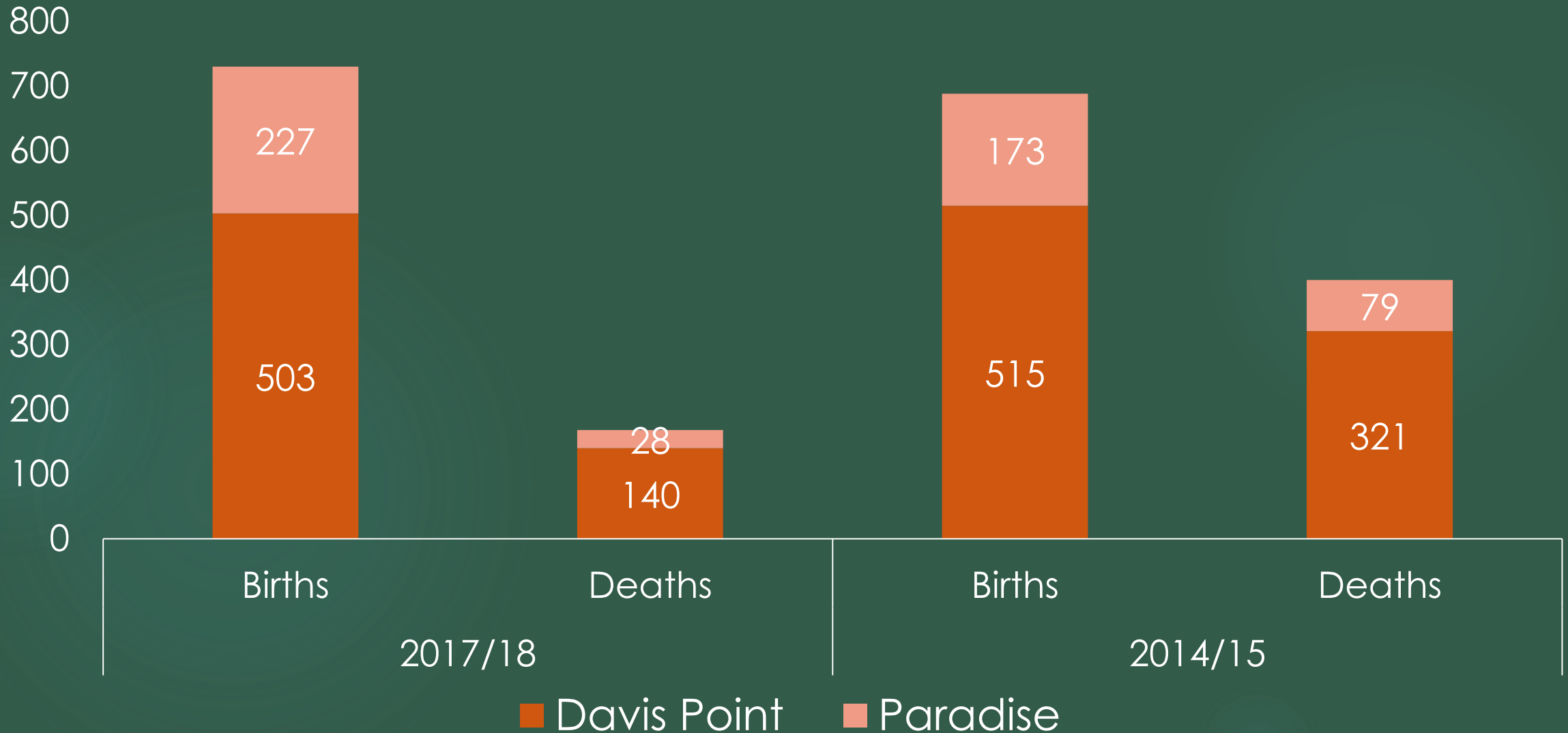


Campbell 2017/18 Necropsies

- ▶ Est of Total Pup Production
 - ▶ 734
- ▶ # Pups found dead
 - ▶ 168
- ▶ # Necropsied =42
 - ▶ Davis colony n= 37
 - ▶ Paradise colony n= 5



The number of pup births and deaths compared by year and colony location



Paradise Colony

- ▶ Est Pup Production = 227
- ▶ Pup deaths = 28
 - ▶ Paradise East n=2
 - ▶ Paradise West n=26
 - ▶ Majority of dead were severely scavenged skeletons





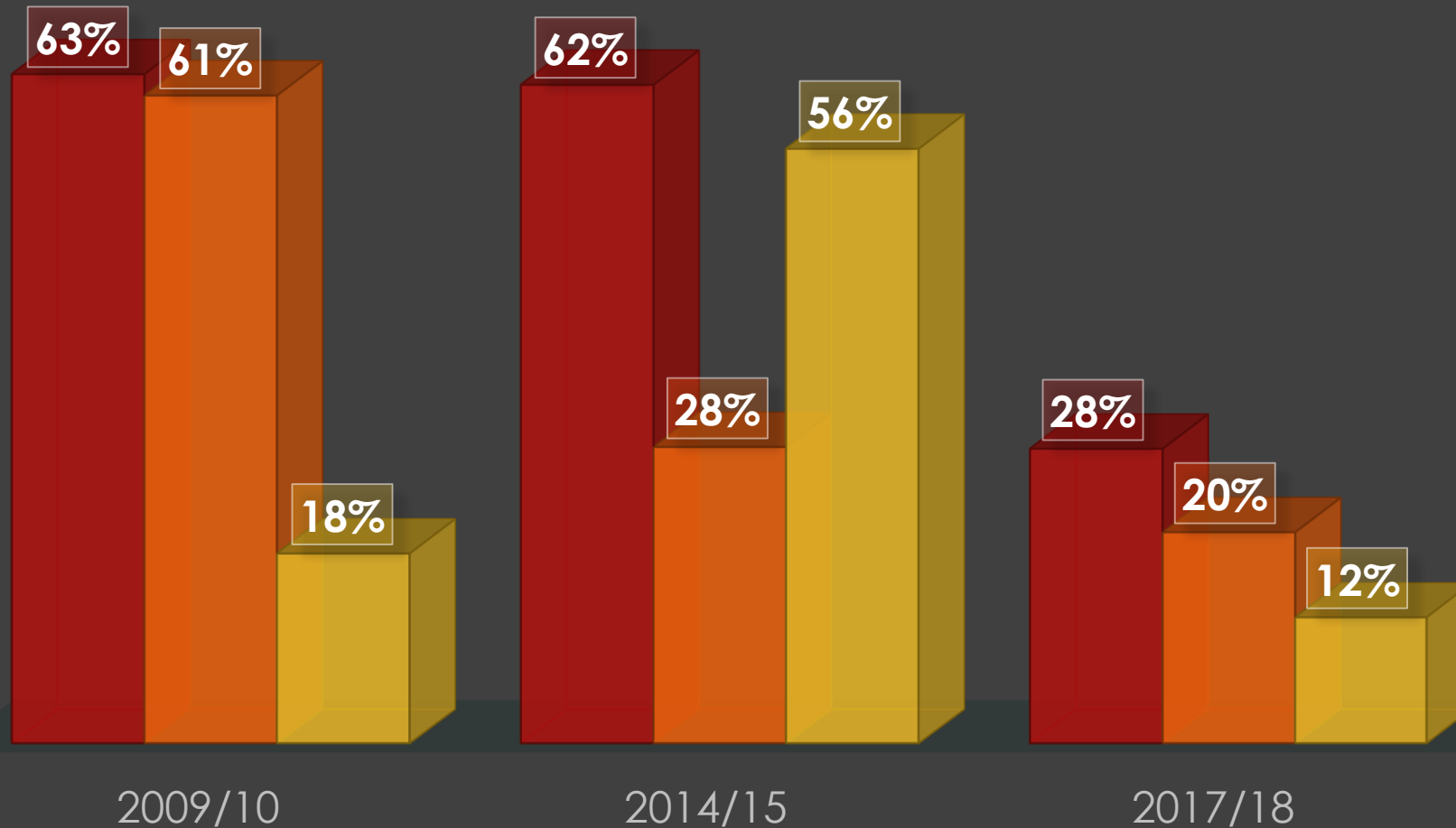
Paradise Necropsies n=5



- ▶ 2 too autolysed
- ▶ 1 x Open-suspected trauma
- ▶ 1 x Cecocolic volvulus
- ▶ 1 x Starvation, hookworm enteritis, myiasis-(severely fly blown), pyometra → euthanized

CHANGES IN MORTALITY RATE BY LOCATION OVER THE LAST 3 SAMPLING SEASONS

■ Davis Point ■ Paradise East ■ Paradise West



Davis Colony

- ▶ Est Pup Production 503
- ▶ Dead 140
 - ▶ Rock n=75
 - ▶ Bog n=65
 - ▶ Necropsy= 37



Davis - Bog Colony (65 dead)





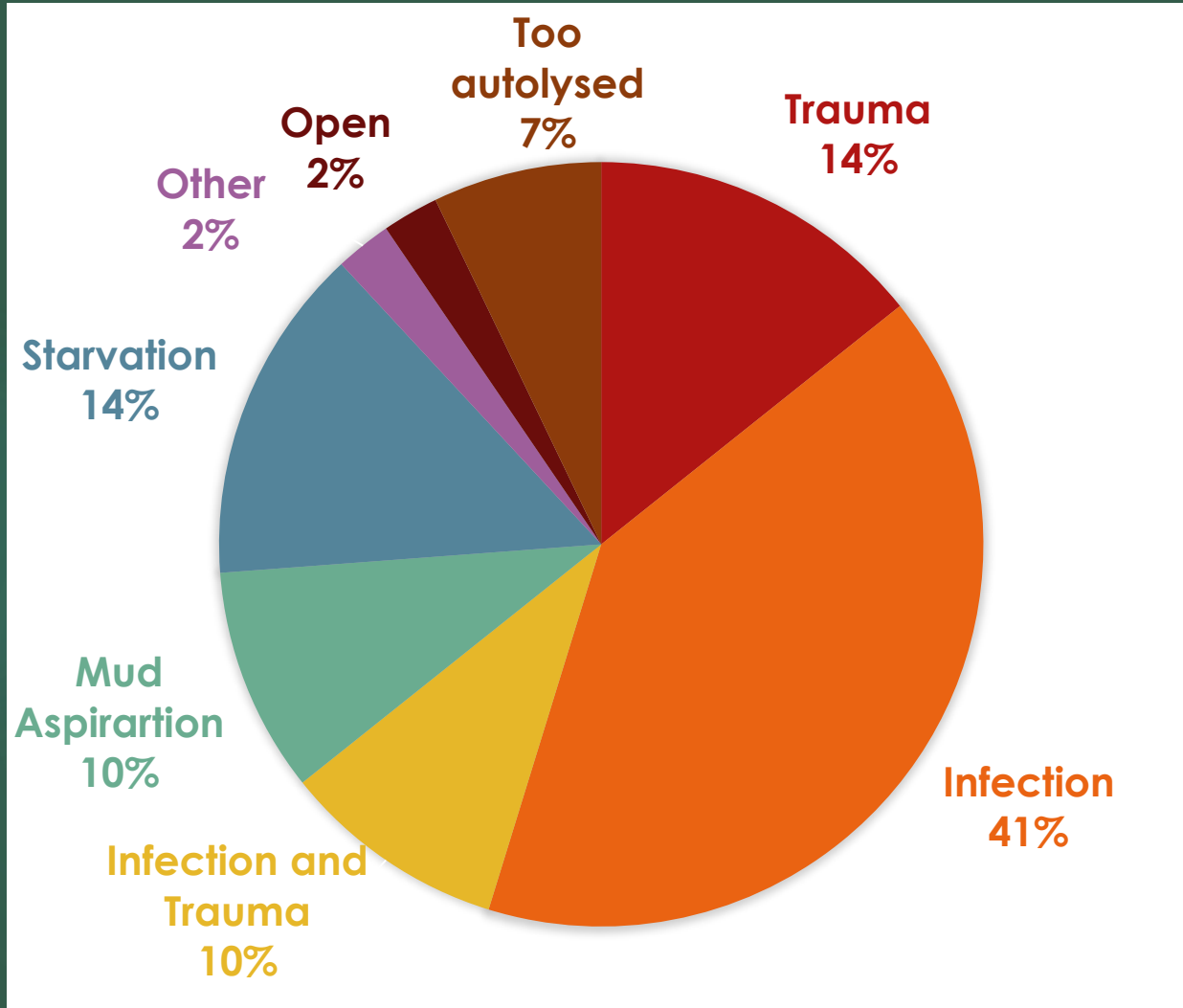
Davis Rock Colony (75 dead)







Primary causes of death



Most pups had multiple aetiologies.

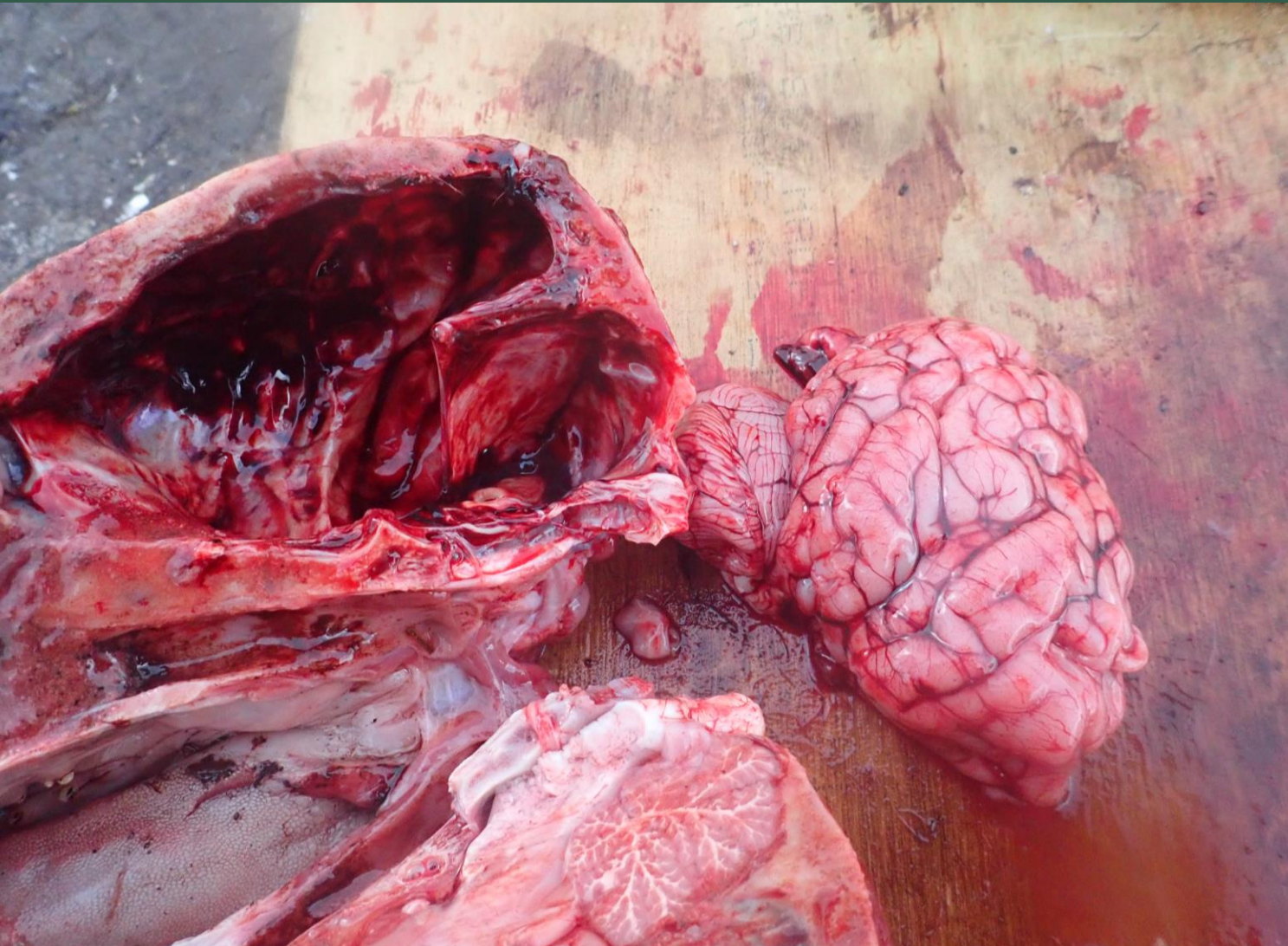
- ▶ Secondary Trauma = 14%
- ▶ Secondary Infection = 16%
- ▶ Also starving = 7%

Trauma

- ▶ Bite wounds
- ▶ Brain and spinal haemorrhage
- ▶ Internal haemorrhage
- ▶ Cerebella herniation
- ▶ Skull fractures
- ▶ Misadventure
- ▶ Flipper and chin abrasions



Head trauma



Bite wounds to head and neck 18%

Bruising around the shoulders 28%

Cerebellar herniation 8%

Fractures to the skull 13%

Subdural haemorrhage 38% of pups

(Range 5-90% of cranium)

Cervicospinal epidural haemorrhage 41%

Flipper and chin abrasions



- ▶ Fore flippers = 69%
- ▶ Hind flippers = 36%
- ▶ Chin = 33 %





Infection

- ▶ Upper respiratory tract infections
- ▶ Pneumonia
- ▶ Pyometra
- ▶ Cystitis
- ▶ Umbilical abscesses
- ▶ Omphalitis
- ▶ Polyarthritits
- ▶ Hepatitis
- ▶ Nephritis
- ▶ Dermatitis



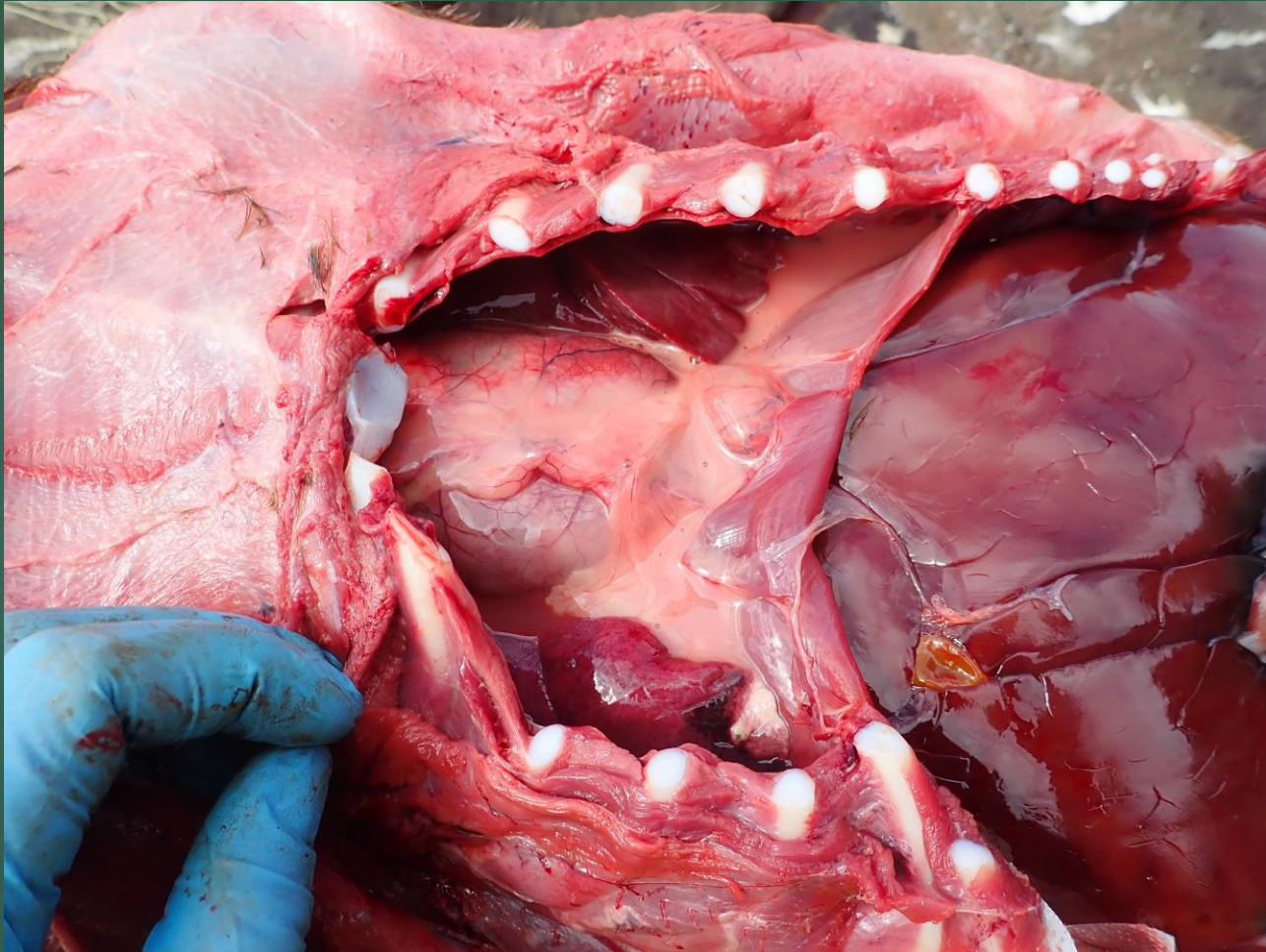
*Klebsiella?, Streptococcus?
Further culture and histology required for
definitive diagnosis*

Common clinical signs

- Conjunctivitis
- Nasal discharge
- Respiratory distress
- Has not been fed recently
- +/-Swollen flippers



Respiratory tract infections

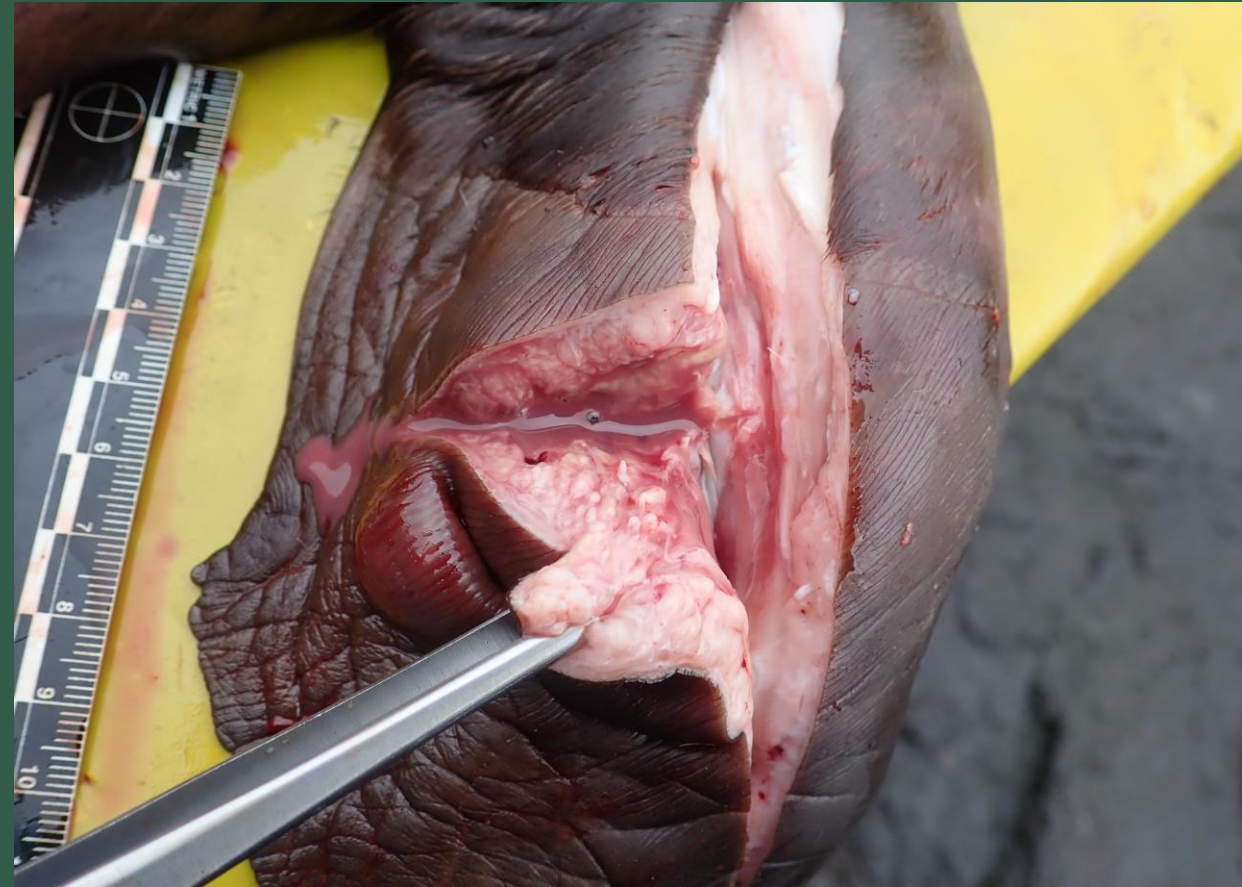


- ▶ Conjunctivitis 15-24%
- ▶ Pneumonia 39-56%
- ▶ Pyothorax 8%
- ▶ Lung lesions 13%

Umbilical abscesses in 8% of pups
Infected umbilicus 13%



Purulent Polyarthrititis in 23% of cases





Ulcerative dermatitis 15% of pups



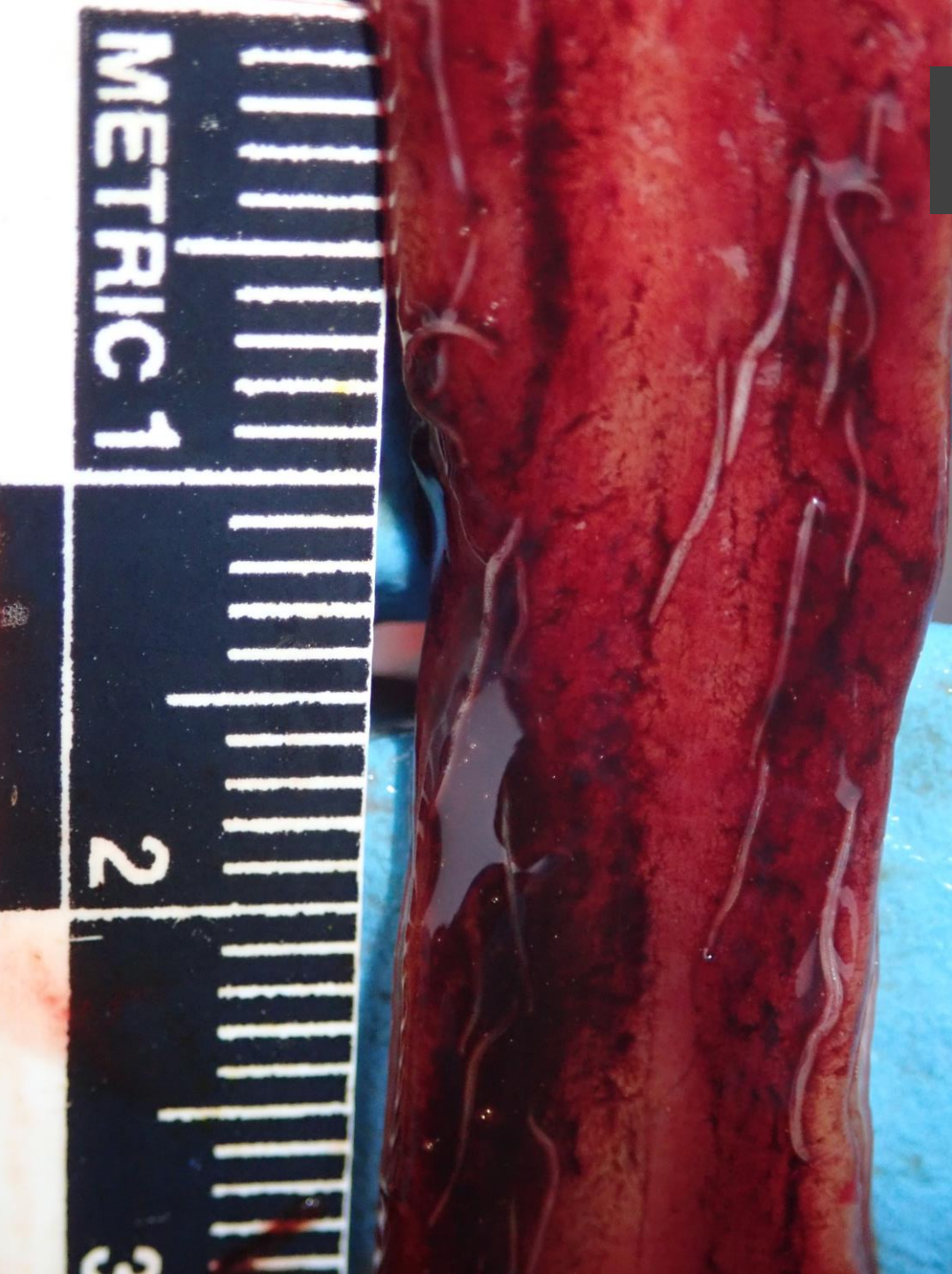
Starvation

- ▶ <2mm blubber
- ▶ Many pups with poor body condition scores
- ▶ All had severe hookworm and enteric haemorrhage
- ▶ Effect of additional infection and trauma



Hookworm Enteritis

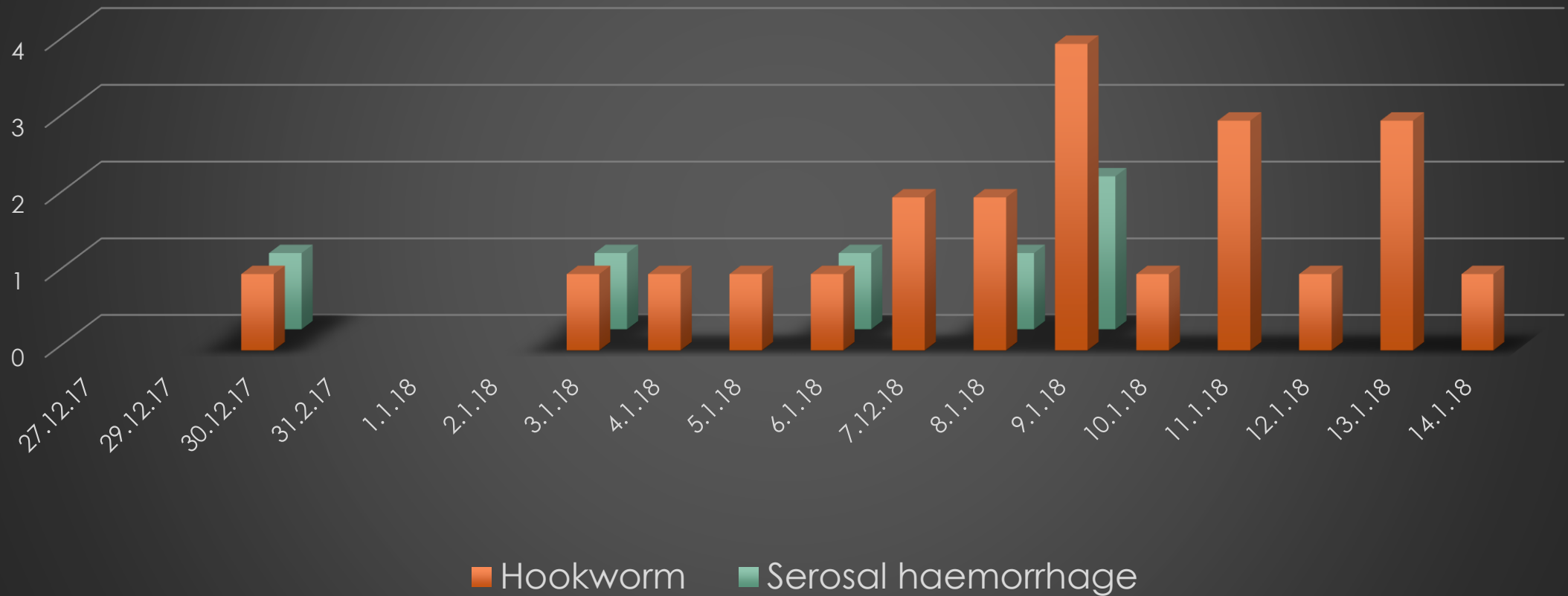
- ▶ Of 37 necropsies (that included intestines)
 - ▶ 62% Hookworms present
 - ▶ 65% Enteric haemorrhage
 - ▶ 16% Circular serosal haemorrhage



Hookworm with Serosal Haemorrhage

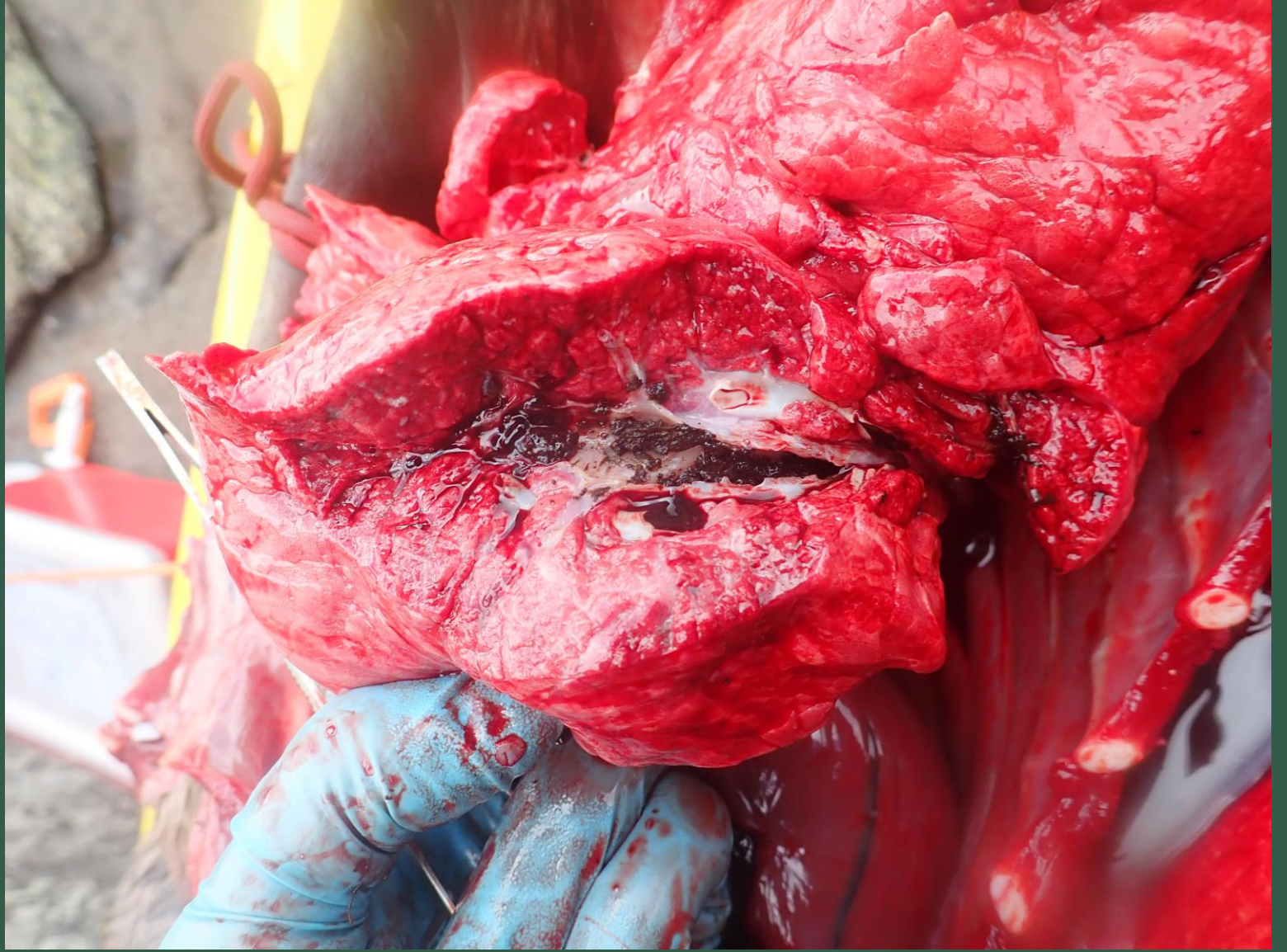


Incidence of Hookworm presence and serosal haemorrhages in Davis pup necropsies over time.



Mud aspiration n=4

- ▶ Mud inhaled into the trachea or bronchioles
 - ▶ Trauma
 - ▶ Infection
 - ▶ Periparturient death



Top of Mud Waterfall



Mud Waterfall



Mud Waterfall

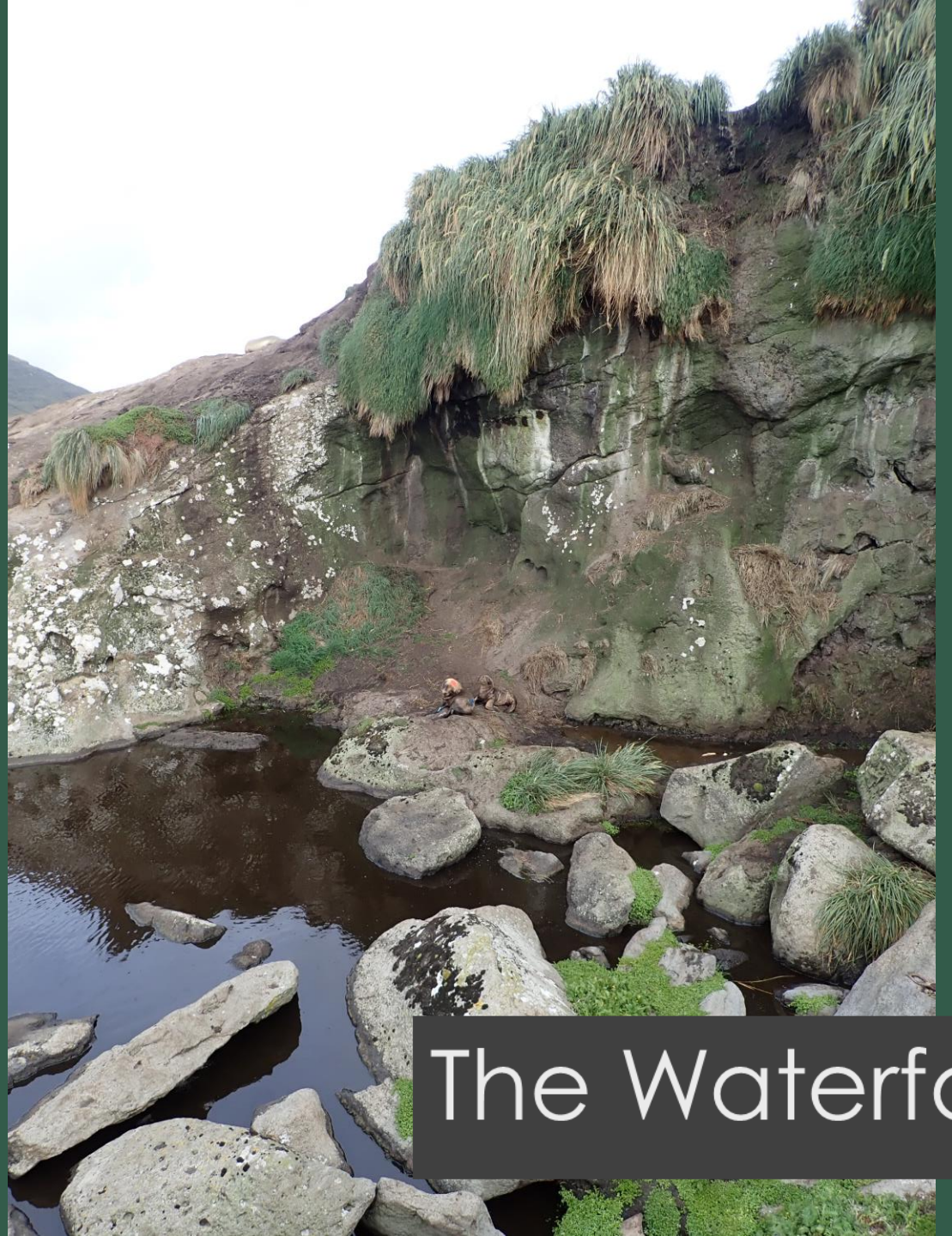




Bottom of Mud Waterfall



The Waterfall



The Waterfall

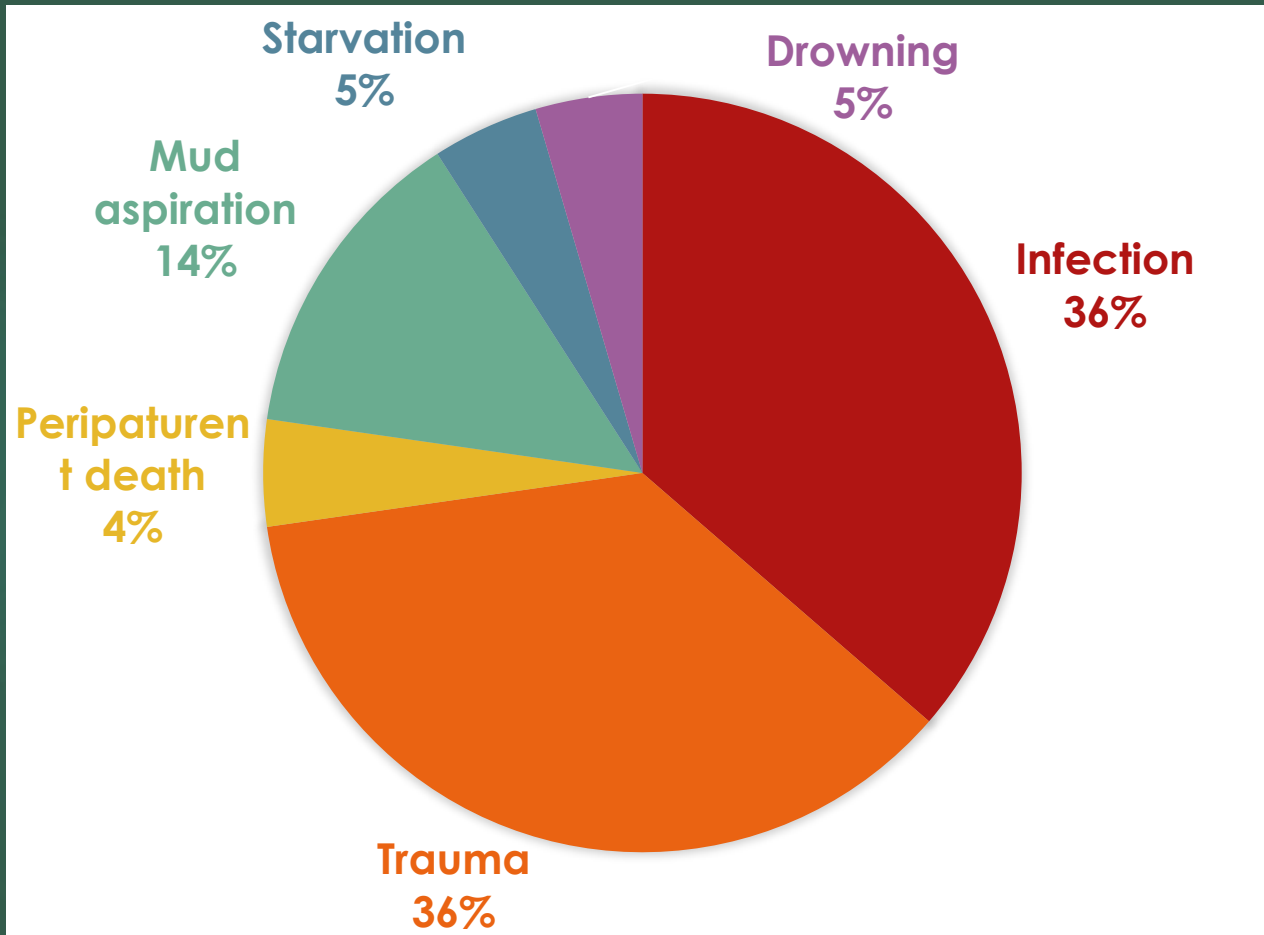
The Waterfall





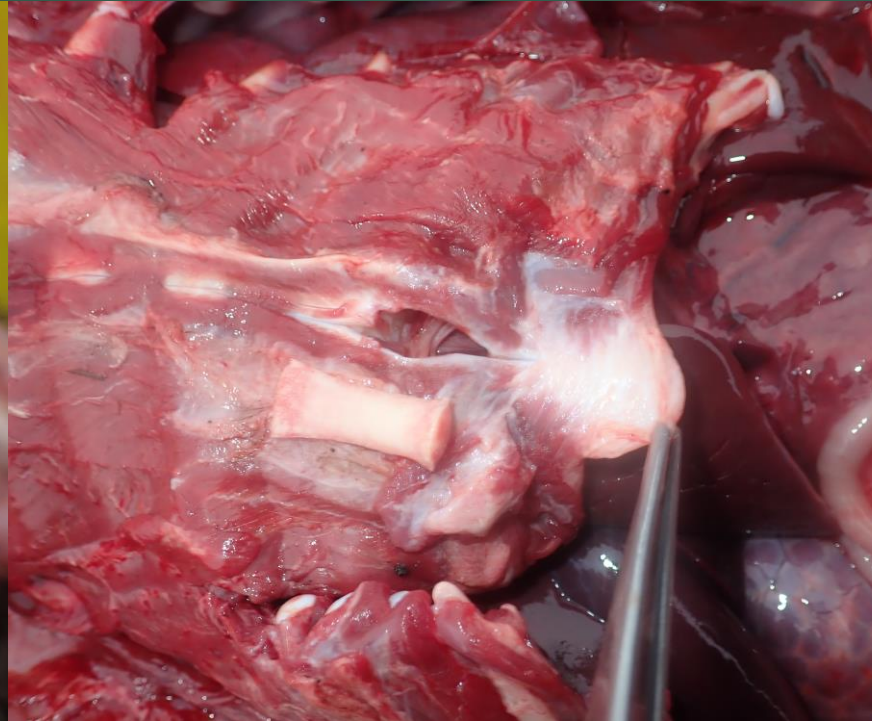


Causes of death found near mud waterfalls



- ▶ 12 pups were found dead near mud waterfalls
- ▶ Wide range of causes
- ▶ Blubber depth 14-3mm
- ▶ 7 males 5 females

37 Case study

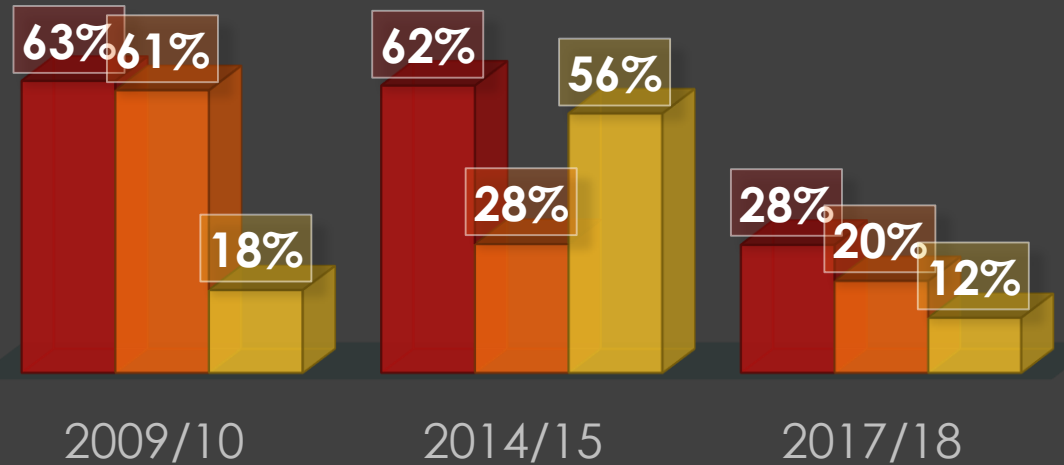


Sampling site logistics



CHANGES IN MORTALITY RATE BY LOCATION OVER THE LAST 3 SAMPLING SEASONS

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Factors that may influence mortality rates at different colony sites

- ▶ Ability to find dead pups
- ▶ Weather
- ▶ Moving paradise colony site
- ▶ Time of sampling
 - ▶ Hookworm
 - ▶ Klebsiella

Davis



Paradise



Paradise PM room

- ▶ Paradise 19-24 Dec
 - ▶ 5 Days
- ▶ Davis 27 Dec-14 Jan
 - ▶ 19 Days
- ▶ Paradise 18-24 Jan
 - ▶ 6 Days



Davis PM Room









Liquid Nitrogen Storage at Davis



Liquid Nitrogen Storage: Davis









Lign

Camp

Mud Waterfall

PM's

Storage

Loading zone

Easiest Path

Thank you !





Questions?



















