

Do captive California sea lions (*Zalophus californianus*) benefit from participation in demonstrations?

VARIATIONS IN SALIVA AND FAECAL CORTISOL LEVELS

LAUREL BRENTON

A little about cortisol...

- ▶ Steroid hormone, Glucocorticoid class
- ▶ HPA axis
 - ▶ Hypothalamus → CRH
 - ▶ Anterior Pituitary → ACH
 - ▶ Adrenals → Cortisol
- ▶ Samples
 - ▶ Blood, Saliva, Urine, Faeces, Sweat
- ▶ Cyclic variations

A little about my subjects...

- ▶ California sea lions (*Zalophus californianus*)
 - ▶ Blair Drummond in Stirling, Scotland
 - ▶ 4 female sea lions
 - ▶ Flamingo Land in York, England
 - ▶ 4 male sea lions
 - ▶ 3 castrated
 - ▶ 1 intact



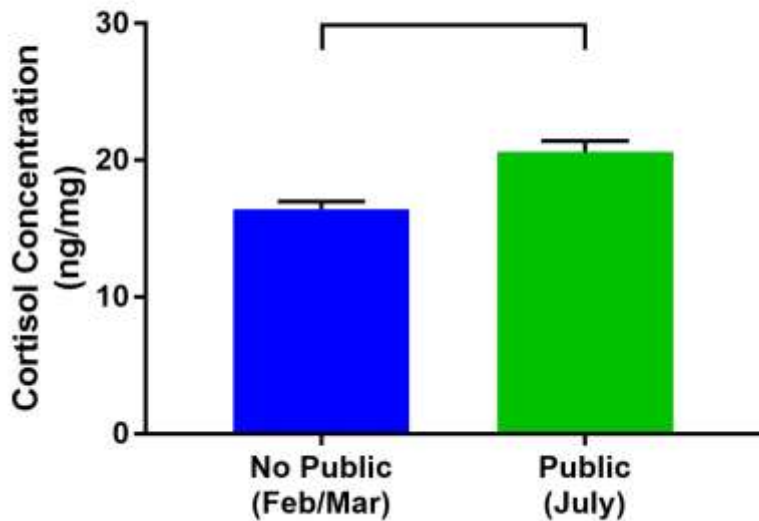
A little about sampling...

- ▶ Saliva samples
 - ▶ Collected daily during 4 week blocks
 - ▶ 4pm show
- ▶ Facial samples
 - ▶ Collected up to 5 times a week
 - ▶ Morning

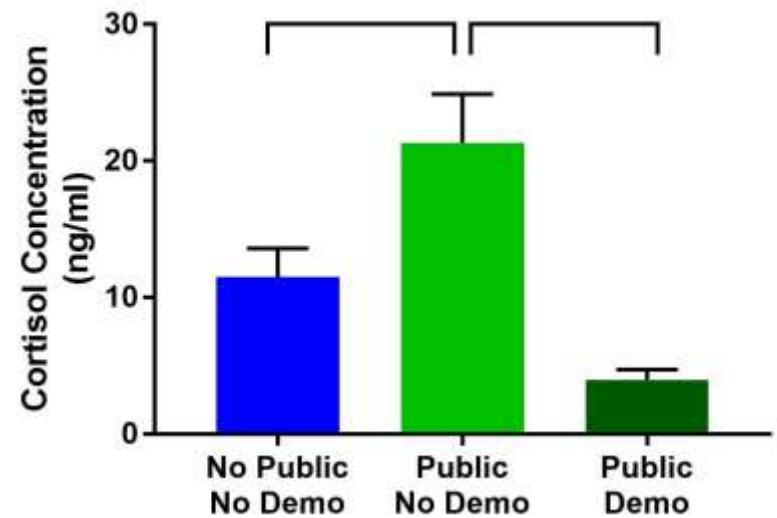


A little Blair Drummond results...

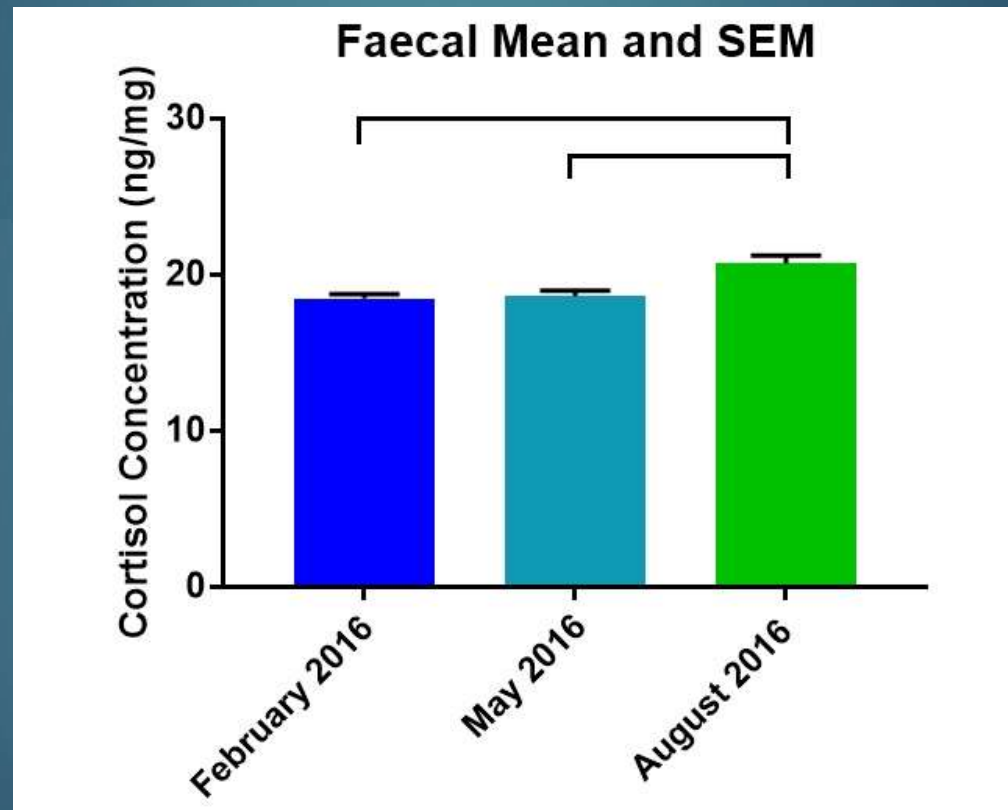
BDSP 2015 Faecal Mean and SEM



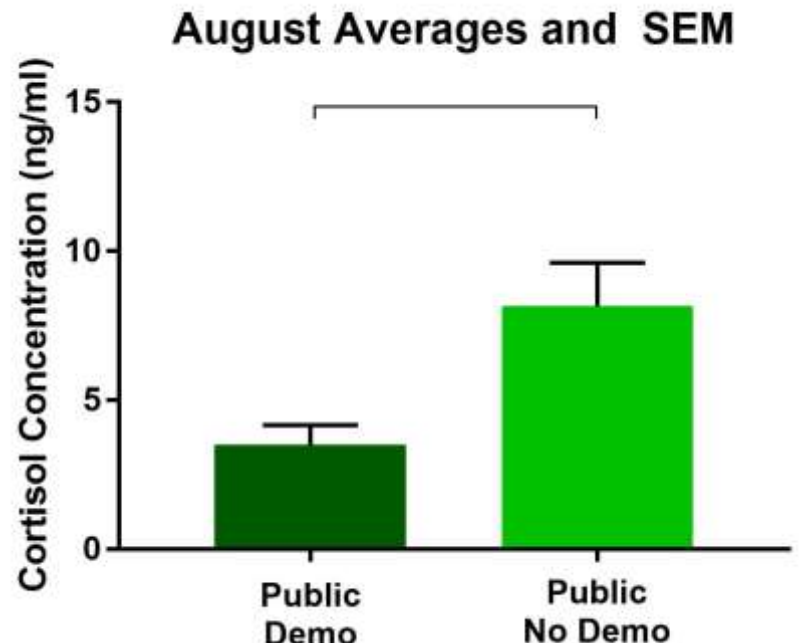
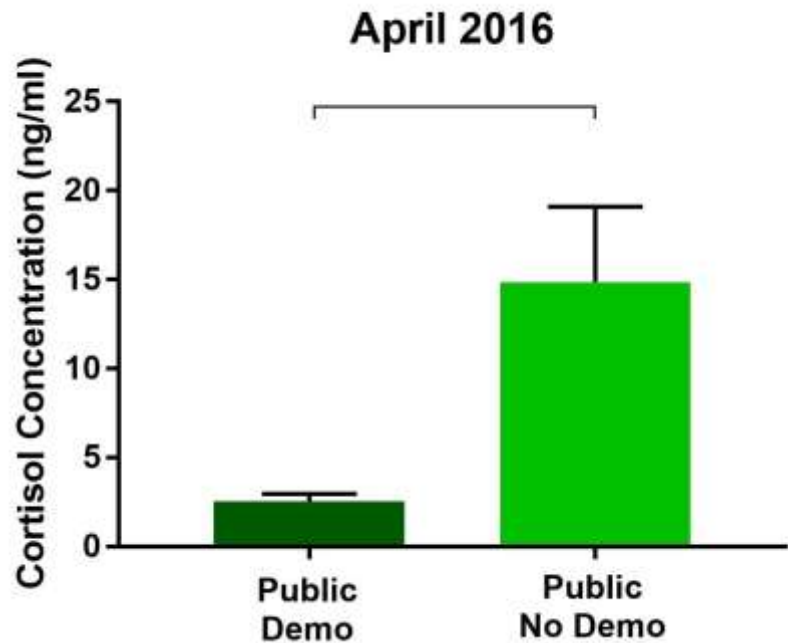
BDSP 2015 Saliva Mean and SEM



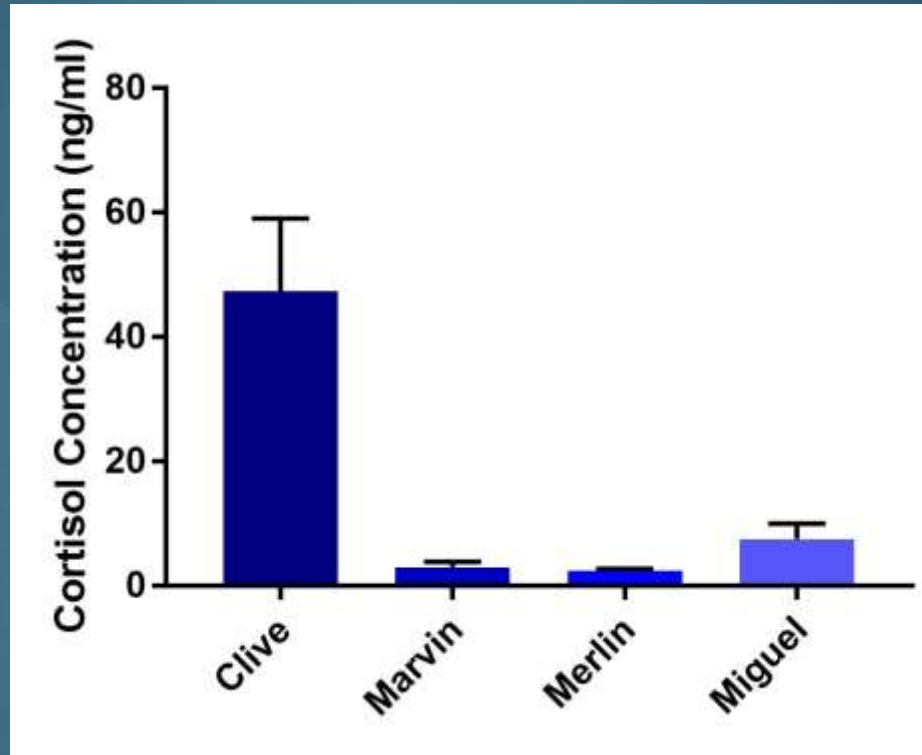
A little of Flamingo Land results...



A little more Flamingo Land...



A little look at February 2016...



A little about implications...

- ▶ Seasonal effect seen in Faecal results
 - ▶ Higher in summer
 - ▶ Coincides with breeding season and annual shedding
- ▶ Demonstrations lead to lower cortisol levels
 - ▶ Saliva cortisol is lowest after demonstrations
 - ▶ Even lower than seasonal low, when they are just fed
 - ▶ Often even in looking at individual sea lions
 - ▶ Enrichment (Physical, Mental, Emotional)
- ▶ Is lower cortisol important?

Questions?

