

ESTABLISHING CAPTIVE POPULATIONS OF WILD ANIMALS: COMMUNICATING WITH YOUR IACUC



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Integrating field and lab studies can be invaluable



Field studies:
Natural environment
Lack of control, manipulation



Lab studies:
Artificial environment
Ease of experimentation

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Bringing new species into captivity is challenging

Biological requirements

- Housing, husbandry

- Veterinary care

Regulatory requirements

- Exceptions to Guide

- Approval of new procedures

Extra regulatory burden

- Potential IACUC resistance

- Need to demonstrate suitability



Communication is key



Converting intuition into information

Turning doubts into data

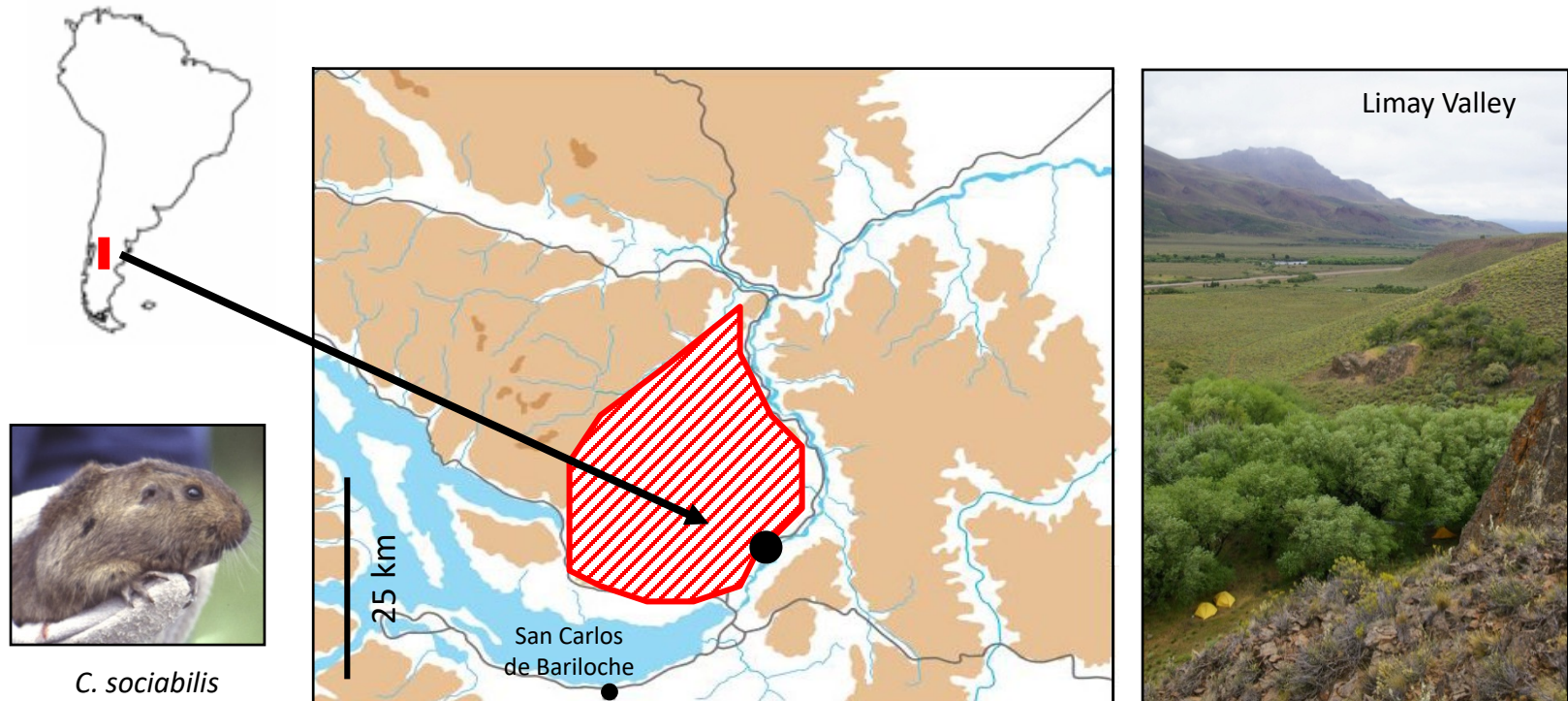
Be prepared to collect,
share data on efficacy of proposed practices

An example: colonial tuco-tucos



Group living, subterranean rodent
in the genus *Ctenomys*

Natural history of colonial tuco-tucos



Currently endemic to Parque Nacional Nahuel Huapi,
Neuquen Province, Argentina

Field studies of behavior and ecology

Extensive
mark-recapture



Intensive
radiotelemetry

Colonial tuco-tucos in captivity



Captive colony established in 1996
Only captive colony in existence!

There were challenges ...



... but overall we've been very successful.

Suggestions for success

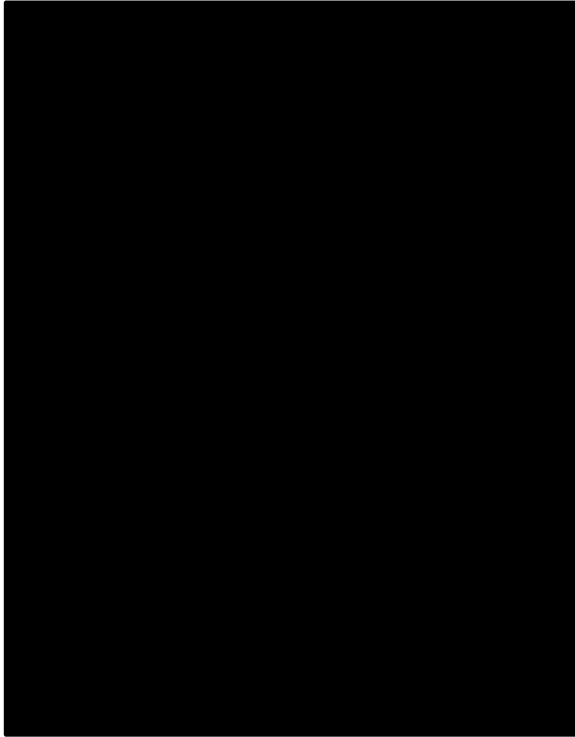


Make your case!
Convert intuition into information
Turn doubts into data

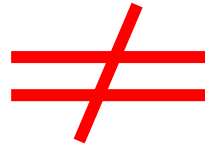
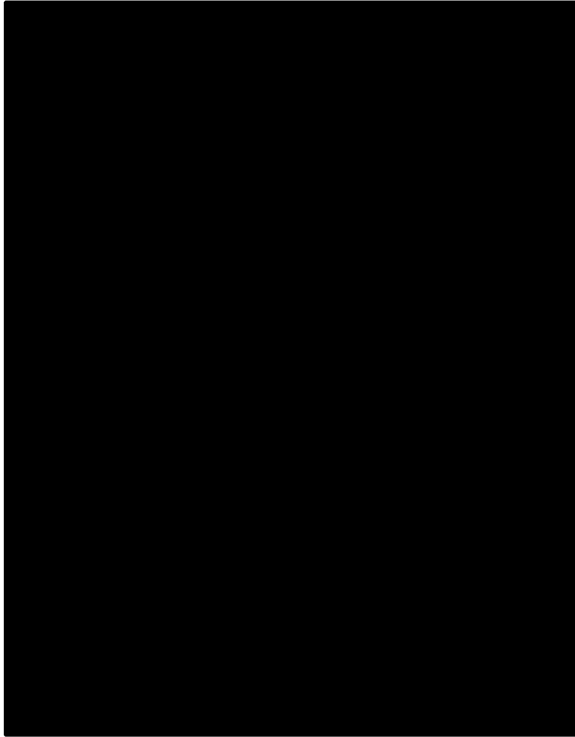
Example: ambient lighting in the lab



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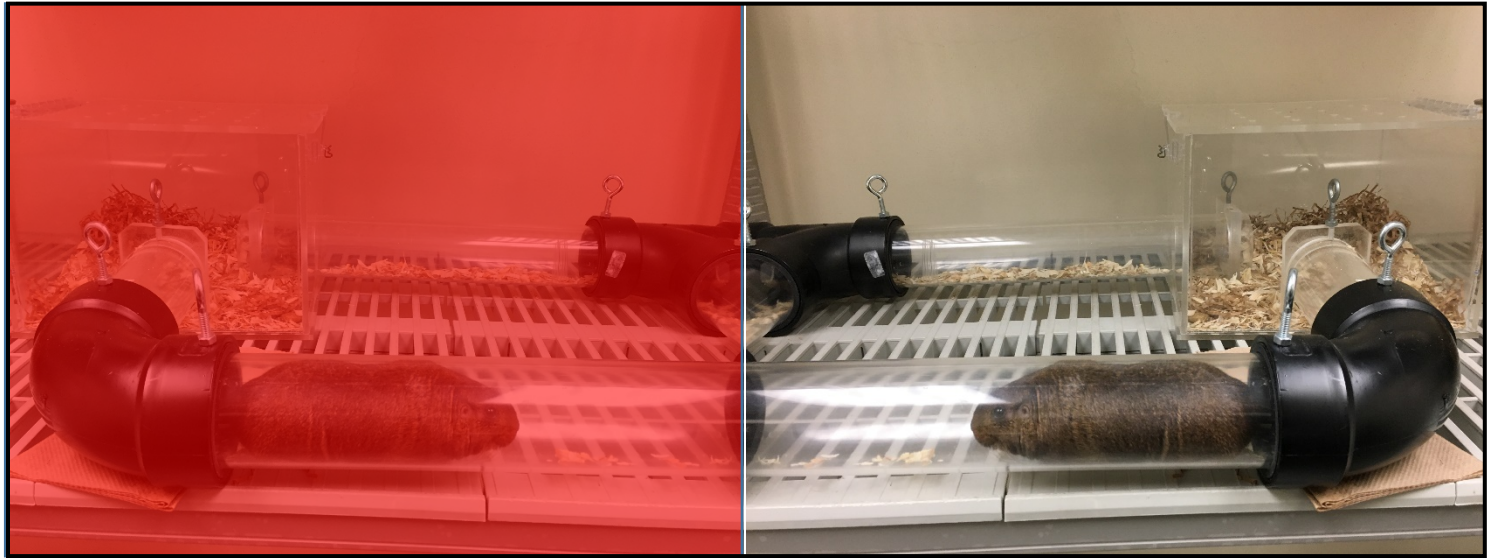


Example: ambient lighting in the lab



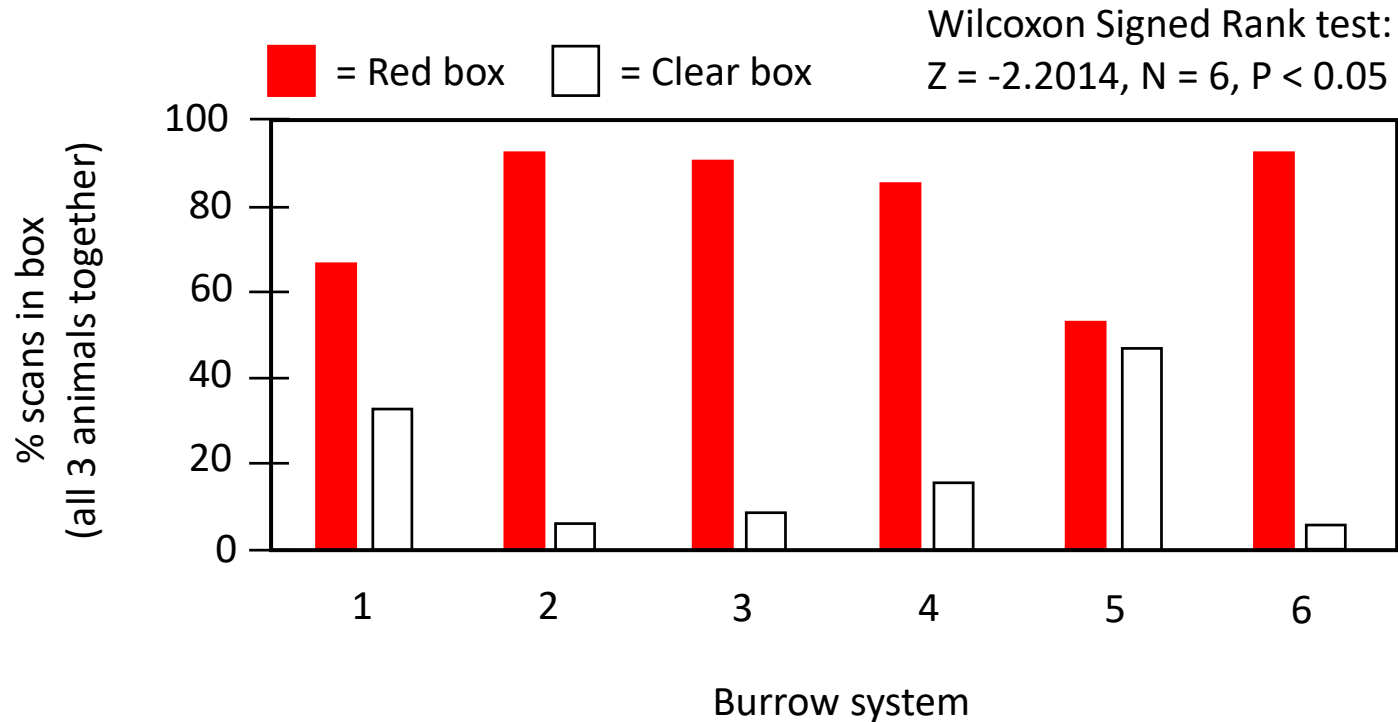
Difference in illumination
Need for animals to constantly be visible

Nest box preference study



Test effects of reduced lighting
Red = compromise with monitoring concerns

Nest box preference study



Surprise! Tucos prefer red (less illuminated) boxes

Consequences for husbandry



Resulting changes to housing conditions
Seems simple, but had to be done

Make it collaborative!

Engage animal care staff in research



Berkeley animal techs (L to R):
Abdullah Asif, Erik Lasker, Anna Chung, Daniel Campos,
Caroline Kim, Luwam Misghina

Wrapping up

Bringing exotic species into captivity:

Challenges

Biology

Regulatory burden

Suggested efficiencies

Communication

Data collection

Validation

Benefits

Better research!



Photo sources

Slide 2:

<https://greengroundswell.com/explorer-in-the-field/>

<https://elements.envato.com/woman-scientist-studying-chemical-liquid-in-lab-fl-WM6SY58>

Slide 3:

<https://www.asiliaafrica.com/great-wildebeest-migration/>

<https://www.theatlantic.com/photo/2019/01/photos-murmurations-starlings/579286>

<https://www.encountersnorth.org/humpback-whale-summary/2017/8/2/songs-and-sounds>

Slide 4:

<https://twitter.com/OregonZoo/status/1415351130859606019>

<https://www.standard.co.uk/news/world/naked-mole-rats-accents-study-chirp-b917854.html>

<https://www.pacificsciencecenter.org/life-sciences-blog/naked-mole-rats-go-nationwide>

Slide 5:

https://www.thestar.com/news/gta/2014/10/03/naked_mole_rats_ugly_sure_but_their_cancer_immunity_is_a_beautiful_thing.html

Slide 6:

https://www.reddit.com/r/InsiderMemeTrading/comments/axrcnn/yelling_bird_template/

Slide 11:

Anand Varma (<https://www.varmaphoto.com/>)

Slide 15:

<https://www.artsgardenideas.co.uk/veg-seeds/carrot-seeds/sweet-candle-carrot-seeds.php>

<https://doi.org/10.1093/jmammal/gyab089>

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<https://www.wallpaperbetter.com/animals-wallpaper/now-what-107693>

<https://www.lifehack.org/articles/technology/10-common-spreadsheet-mistakes-youre-probably-making.html>