

WAYS OF KNOWING

Abalone & Sea Otters in Sitka Alaska

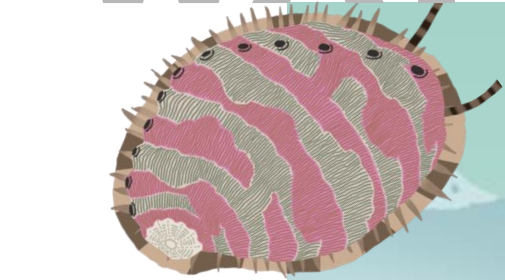


Taylor White

Dr. Pete Raimondi

University of California Santa Cruz Ecology/Evo Biology

The Community of Sheet'ka (Sitka)



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What Ways?



Western Science







Indigenous Knowledge



Placed based knowledge that comes from time and experience



Local Knowledge



Character Illustrations: Sienna Reid (Xoodzi)
Background/Animator: Jessica Kendall-Bar

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GOALS

Pairing Ways

1. Develop the collective understanding of current, historical, and future dynamics of abalone, and sea otters

AT LOCAL SCALE

Important to harvesters



25 individuals
- 7 otter harvesters

- 5 tour guides

- 5 ex-commercial fishers

- 12 Indigenous

Nearly all harvest/harvested abalone

2. Support tribal and stakeholder sovereignty in the management and future research of these important species



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Why? Inspired by limits

> Western Science <

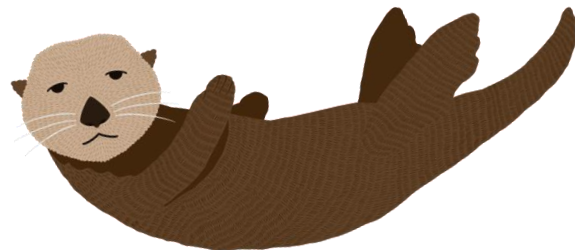
Southeast Alaska Pinto abalone

- Limited available historical & baseline data
- Limited ongoing harvest information



LIMITED LOCAL DATA ON SEA OTTERS!

- Limited survey



H. McClain

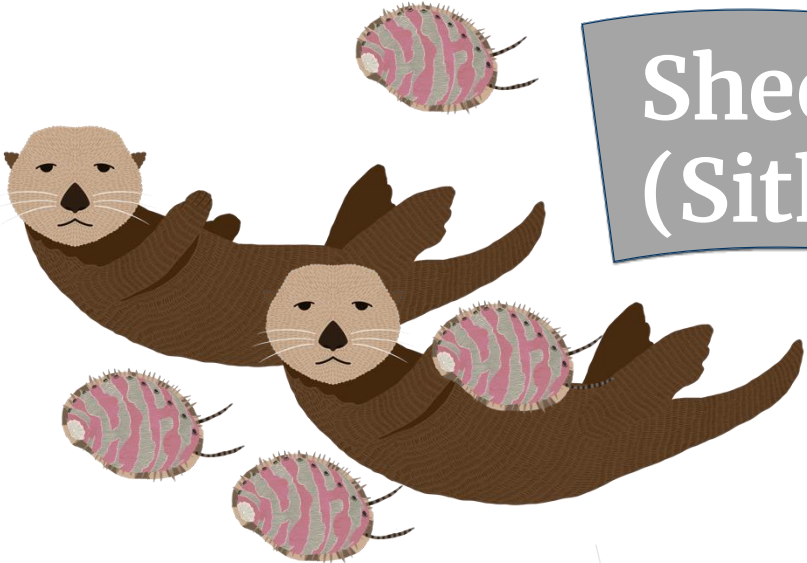


H. E. Johnson



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Differing densities, histories



Sheet'ka Kwaan
(Sitka) $1.57/m^2$

Abalone & Otter

VERY different across
Southeast

local scales too



Prince of Wales
 $0.0453/m^2$



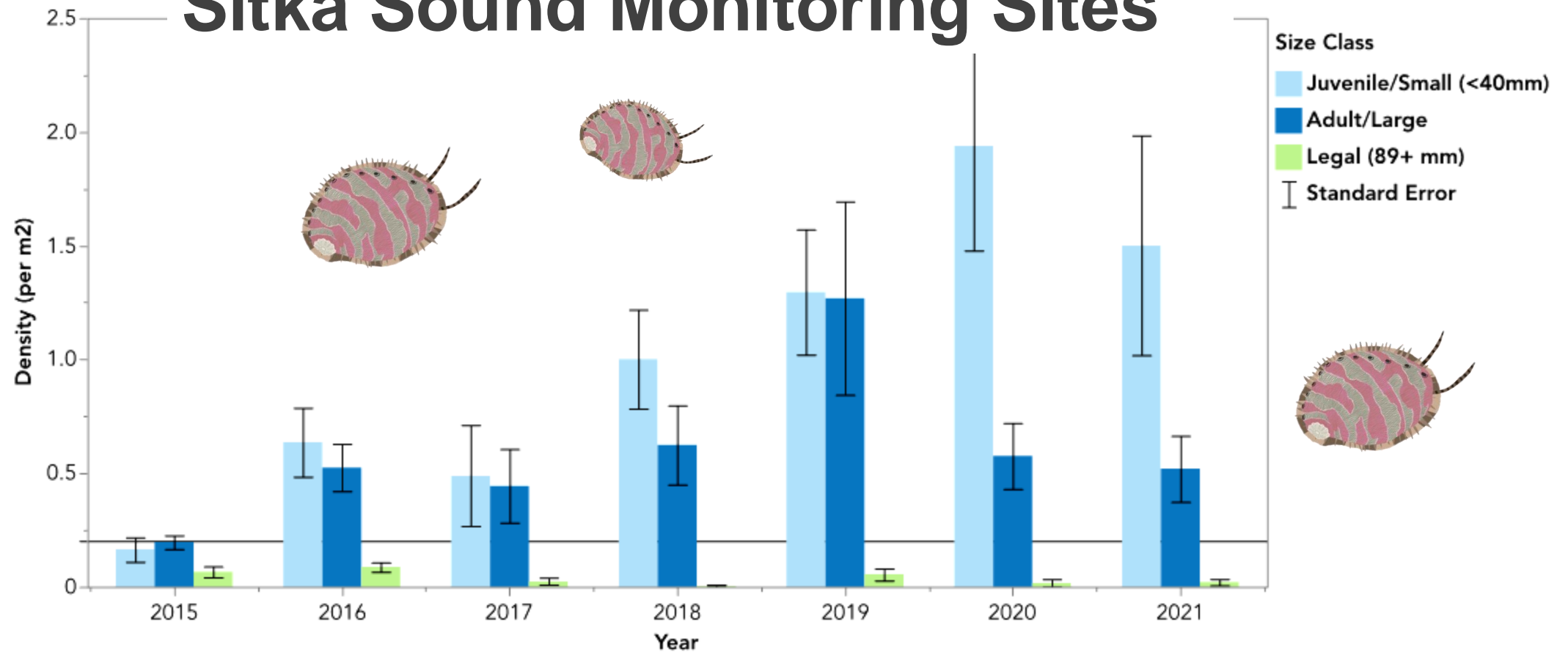
Ketchikan $0.667/m^2$

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Abalone densities across Sitka

Sitka Sound Monitoring Sites



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IMPORTANT to understand changes at the local scales important to local harvesters

POWER in local and Indigenous Knowledge

Paired knowledge = better understanding and a mutual benefit for all when done intentionally, with respect and support of other ways of knowing



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When did otters return? What happened?



Initial occupation:

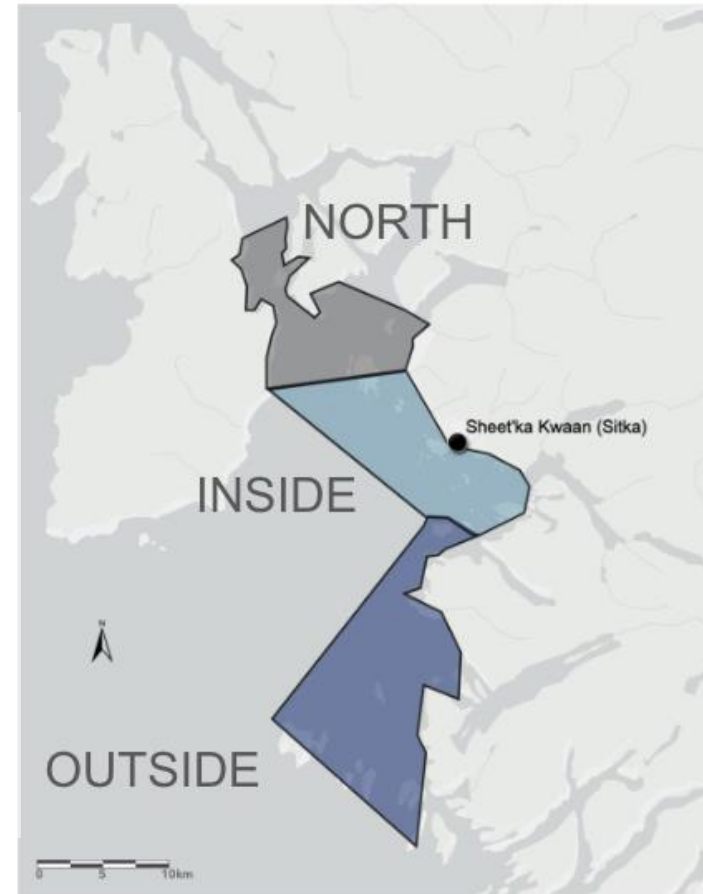
- 3 - 6 months and clams, abalone no longer available at harvest sites

After some discussion:

“where’d everything go!?”

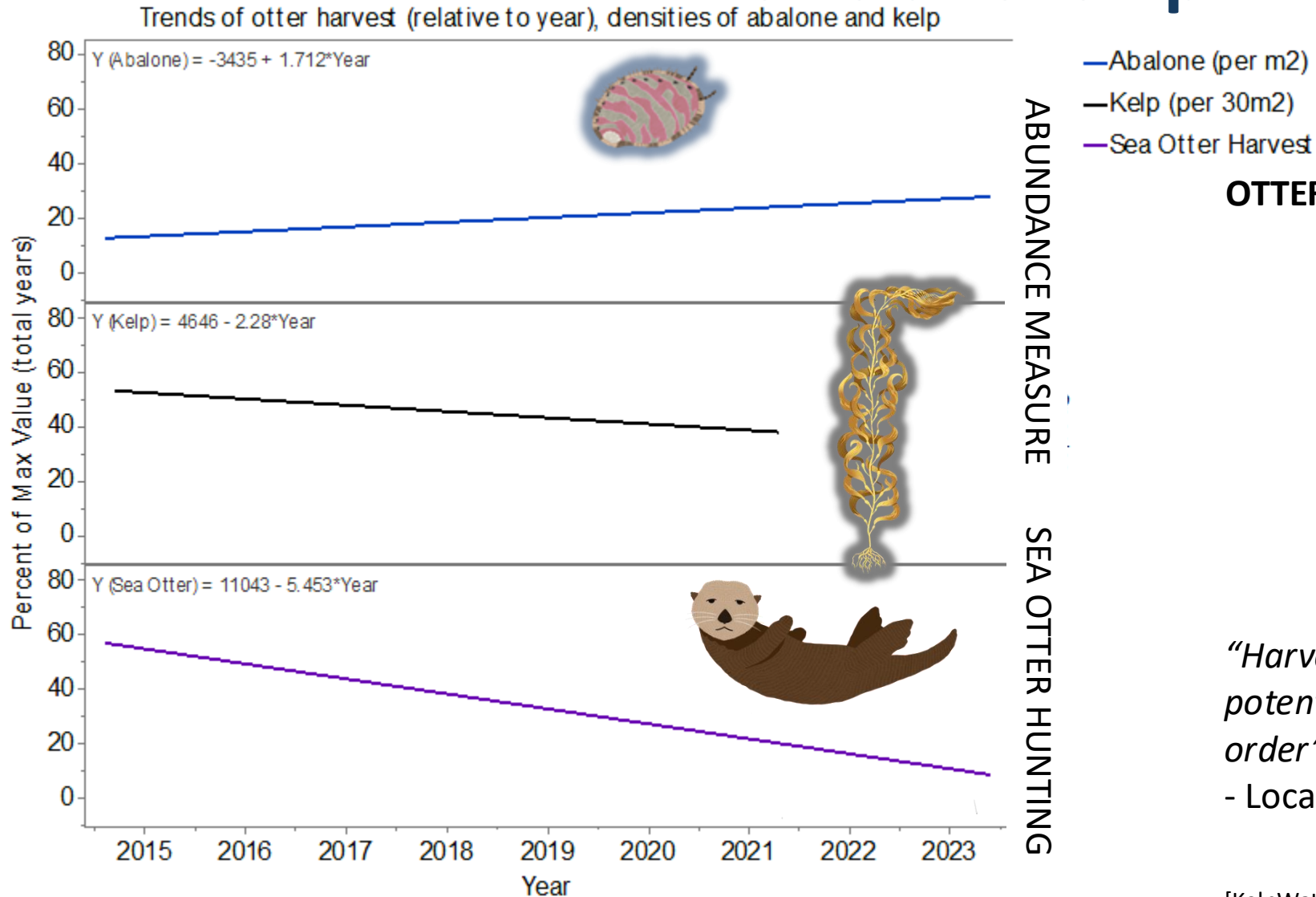
I was on the anti-otter band wagon... but it wasn’t really the otters”

- ex. commercial fisherman, abalone harvester



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NO relationship with abalone?



OTTERS & HARVEST ARE IMPORTANT



“Harvest driven by opportunity, effort, potential market, then shellfish in that order”

- Local Otter Harvester

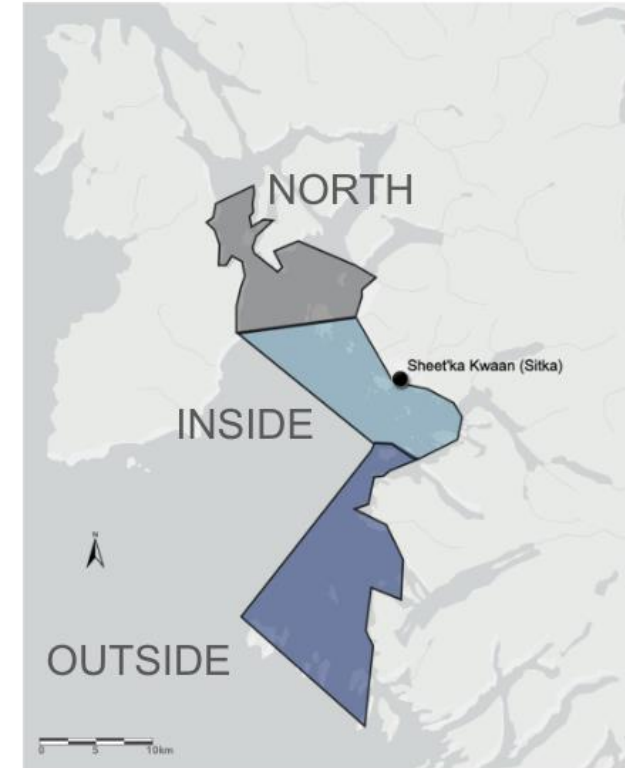
Decline following heavier harvest in 2013

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pre-liminary, collaborative findings

1. Perceived Negative Impacts of Sea Otter \neq *Current*, Large Scale Otter Impact for Abalone
2. Interactions at large scales are are complex & better informed by species interactions at local scales

humans, sea stars, birds, other weasel species, and indirect otter effects impact abalone populations greatly at smaller scales



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Questions to Explore & Management

Local and Indigenous Knowledge

Project Contributions:

- > YEARS of added information
- > Finer Scale information
- > Local otter occupation times
- > Changes to local sea otter and abalone abundance
- > Otter behavior changes
- > reasons for harvesting or not harvesting (socioeconomic or ecological)
- > Harvest hotspots (and areas of struck and loss)

Co-production on new questions to explore!

(at the local scales most important!)



A Few Management Recommendations

- > Rotating abalone harvest sites
- > Increased policing
- > Involve younger individuals
- > NO PERMITS
- > Only shore picking, as done historically
- > Track heavy harvest areas, local sea otter diets, and a model for otter re-establishing populations

“let’s avoid the effects felt by initial re-establishment of sea otters”

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Abalone & Sea Otters in Southeast Alaska

Diverse Knowledge Systems for the Examination of Localized Dynamics of Sea Otters and

Abalone Populations in Sitka Sound AK

NPRB Project #2115 UCSC IRB # HS-FY2021-74



This research took place on

Lingít Aaní

Thank you

Gunalchéesh tlein



Special Thanks to:



STA: Jeff Feldpausch, Chuck Miller

Character Illustrator: Sienna Reid (Xoodzi)

Background/Animator: Jessica Kendall-Bar

Project insight: Mike Miller

Data and assistance: B. Weitzman local otter modelling; S.Hanchet, B.Benter (USFWS)

AND ALL PROJECT PARTICIPANTS

KEEP UP WITH LOCAL ABALONE: Akabalone.com or twhite1@ucsc.edu