What ever happened to Alaskan abalone?

Insights and historical comparisons of pinto abalone populations in Southeast Alaska

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Photo: H. McClain
Southeast Alaska
pinto abalone northern range

Sheet'ka Kwaan (Sitka)
Lingít Aaní
(Tlingít land, space)
Southeast Alaska Pinto Abalone

Gunýaa (Tlingit) Haliotis kamtschatkana

Only species of abalone in Alaska

Habitat
- Most common 0 – 10 meters depth in Alaska

Traditional, Customary, and Subsistence Harvest
- Intertidal harvest
- More common snorkel

Sheet'ka Kwaan (Sitka)
Lingít Aaní

≥ 89mm

Until 2013: 50 per day/person
Now: 5 per day/person
Abalone Stewards in Southeast Alaska (Gunýaa)

Tlingit and Haida Traditional (unceded) Territories

Stewards since time immemorial

Tlingit = People of the tides

“Tide is out the table is set”

Photo: Mike Miller
Whatever happened?

No Surveys of Sea Otter population growth for the last 10 years

Otter Relocation

1964 - 1968: 402
NOW: 25,000 +
Potential to grow 3x
(Tinker et al. 2019)
How are AK abalone doing?
How are AK abalone doing?

1) **Need: Current metrics**

   Following sea otter re-establishment

   **General Question:** What are current regional and local abalone
   - Demographic metrics (sizes, densities)
   - reproductive potential
   following local sea otter re-establishment

2) **Need: Past baselines (?)**

   How do these metrics compare historically...?
Density Transect Surveys
Southeast Regional Densities/Sizes

- Mean Overall Density
  - Sitka: 1.57/m²
  - Prince of Wales: 0.0453/m²
  - Dixon Entrance: 0.667/m²

Letters indicate Tukey Pairwise Comparisons (all dissimilar)

TWhite unpublished data
Southeast Regional Sizes/ “recruitment”

Visual Recruitment recorded by density transects across regions

TWhite unpublished data
Southeast Adult Pinto Aggregation

TWhite unpublished data

- Mean Nearest Neighbor Distance (m)
  - Sitka
  - Prince of Wales
  - Dixon Entrance

- Clark Evans index ("R")

Map showing locations in Alaska with data points indicating aggregations.
Southeast Adult Pinto Aggregation

Region
- Sitka
- Prince of Wales
- Dixon Entrance

TWhite unpublished data
Southeast Regional Sizes Aggregation

Adult aggregation IMPORTANT, but... not too aggregated

>>potential adult conspecific pre-settlement effect

Rule of three!
1. Population size structure shifted to smaller size classes, fewer overall abalone

2. Catch per minute was significantly lower in 2019 from timed swims done sporadically in late 1970’s - 1980s

3. Changes were greatest in areas of current otter occupation and prior commercial harvest
Whatever happened to Alaska abalone?

Abalone persist in the presence of otters and following commercial harvest in reduced number and density. Decrease in frequency of large sizes. Evidence of recruitment in all regions. Significant local differences in populations that are managed the same. Very few historical & baseline data.
Whatever happened to Alaska abalone?

**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.
WAYS OF KNOWING
ABALONE & SEA OTTERS
In SITKA SOUND

NPRB Project #2115
Character Illustrations: Sienna Reid (Koodzi)
Background/Animator: Jessica Kendall-Bar
This research took place on Tlingit and Haida Peoples land

Thank you
Gunalchéesh tlein Háw'aa

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