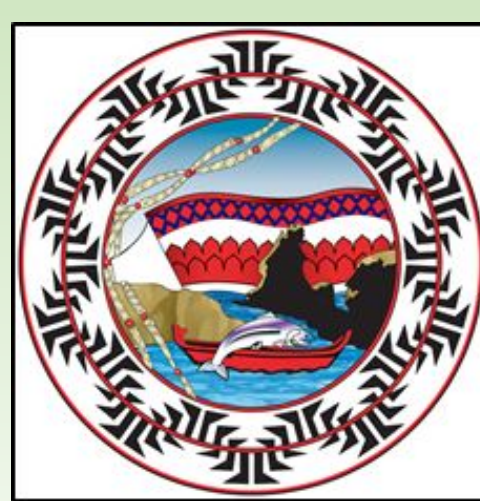


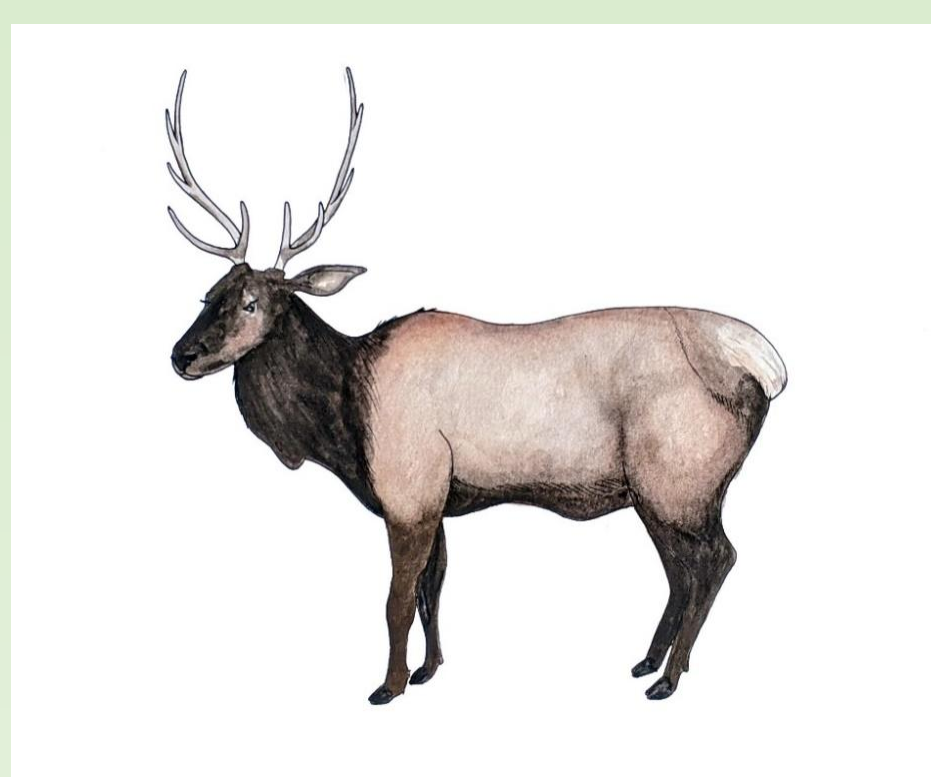
# Understanding Traditional Ecological Knowledge on Elk Through a Yurok Cultural Lens

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## Introduction

- Yurok TEK is conceptualized as *hlkelonah 'ue-megetohl*, “a system where Yurok people and wildlife collaboratively strive to create and maintain balance of the Earth via physical and spiritual management in tandem”.
- Roosevelt elk (*Meweehl*; *Cervus canadensis roosevelti*, hereafter “elk”), is an important cultural and subsistence resource for the Yurok people. The Yurok tribal community and government is interested in restoring elk within Yurok jurisdictions to benefit the Yurok community and elk population.



Roosevelt elk in California persist only in Humboldt, Del Norte, Siskiyou, and Mendocino Counties. Intense hunting by European settlers began in the mid-1800s and the elk's range was significantly reduced.

## Research Objectives

- To gain an understanding of TEK related to elk through the Yurok cultural lens.

## Study Area



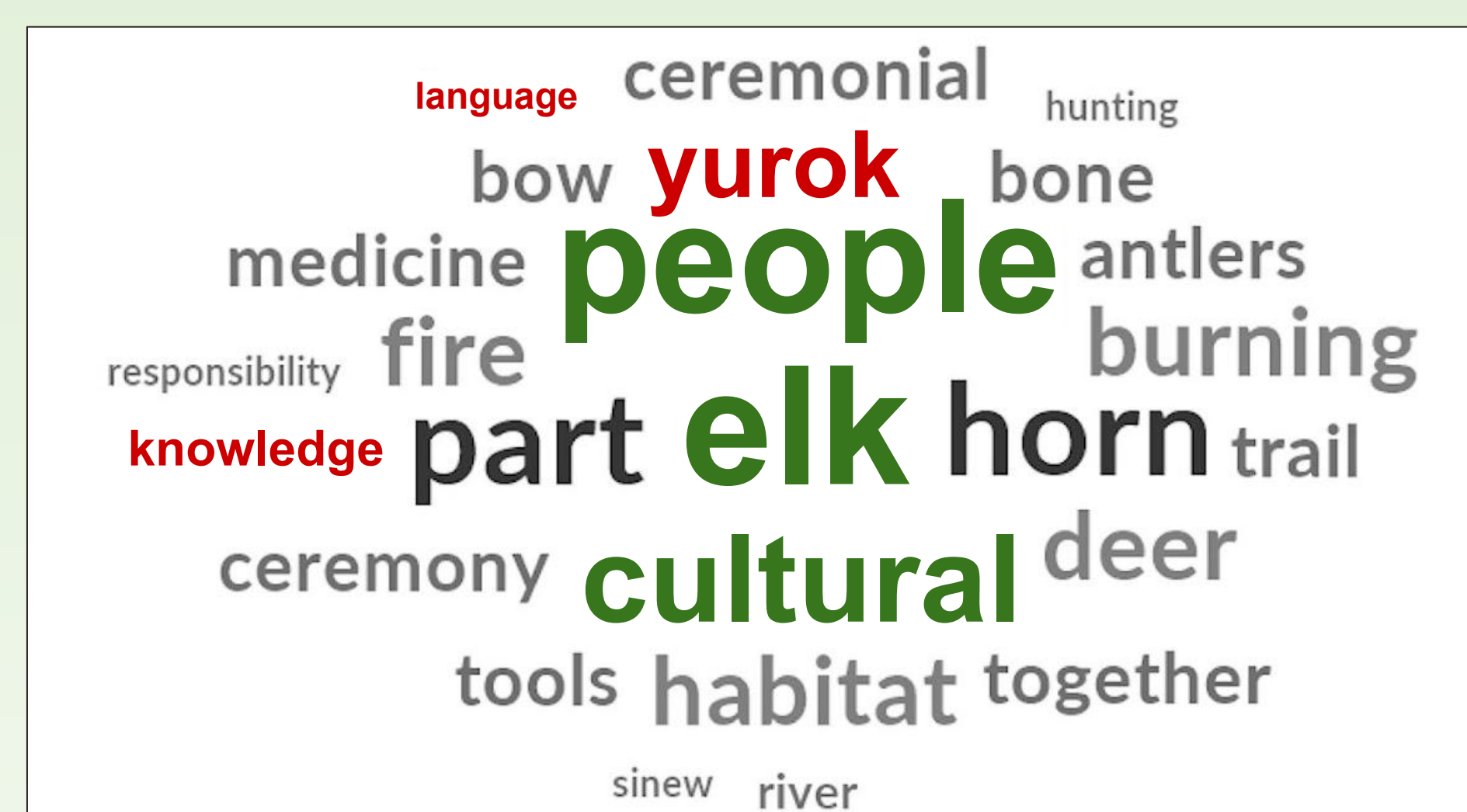
## Methods

### Interview Procedures and Questions

- Interviewed three adult male participants culturally-affiliated with Yurok: P1 P2 P3
- How has land management impacted elk populations in Yurok ancestral lands, elk diets, and elk habitats?
- Can lands managed by the Yurok Tribe sustainably maintain elk populations?
- Do current Yurok tribal conservation methods follow traditional ways?
- Are elk habitats on Yurok lands producing nutritional forage stands?
- What areas do elk prefer to forage on and do these preferences matter pre/ post-parturition?
- What words in the Yurok language are used to describe elk or things relating to elk?
- What sort of items can be made from elk and how do or did these items integrate into Yurok culture and ceremony?

### Interview Analysis

- A thematic/ qualitative analysis approach to analyze the content of the interviews.
- Coded information from the interview transcripts that relate to topics determined *a priori*: language, items made from elk, and elk management.



Word cloud made using Nvivo software representing 25 most frequently used terms in interviews.

## Acknowledgments

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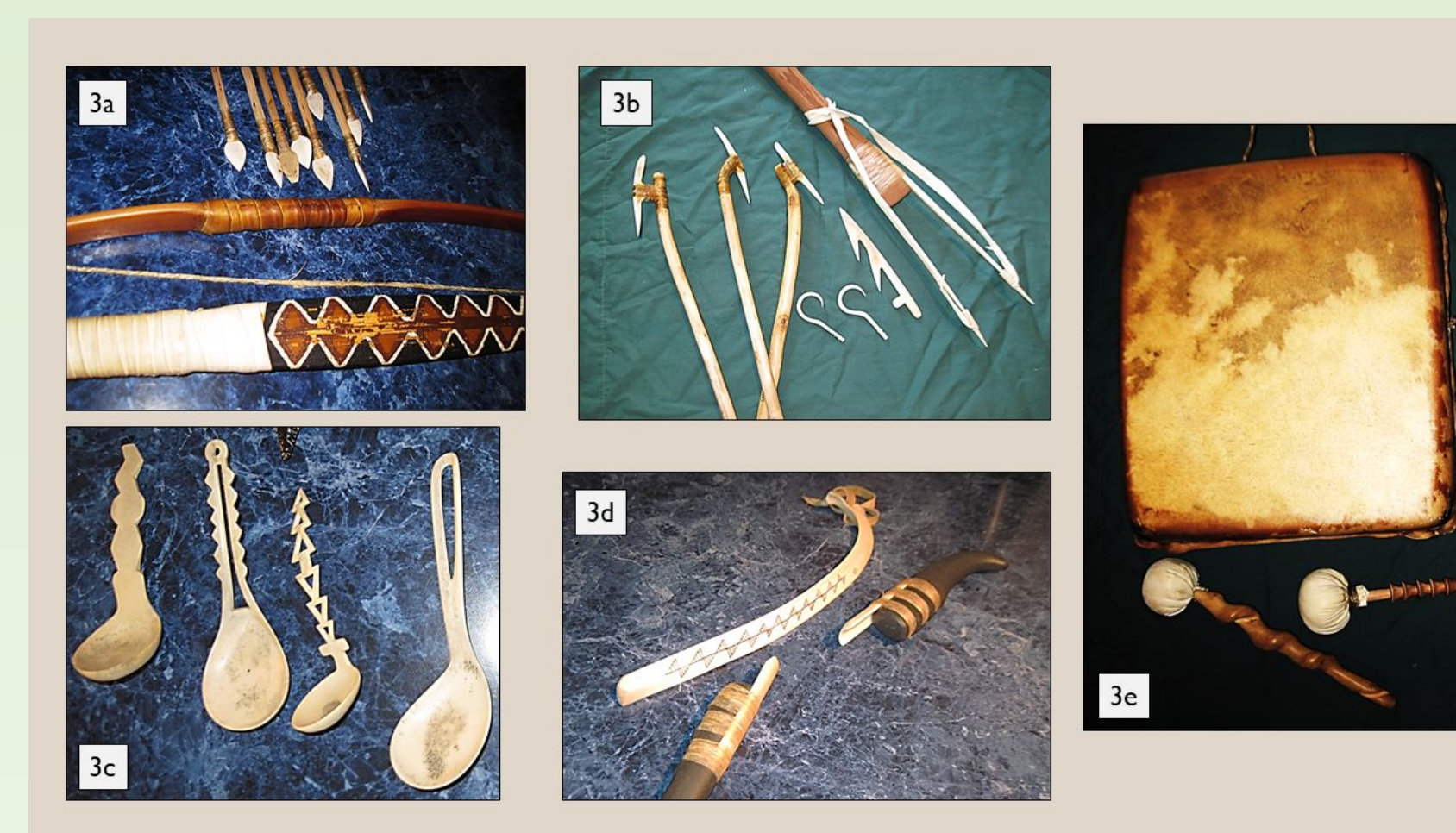
## Results

### Yurok Language

- We reported Yurok language as a theme, given the importance of language in Yurok TEK and ongoing efforts in language revitalization by the Yurok Tribe.
- P1 and P3 used Yurok language in their interviews:
  - “*tekwonekws*”, a redwood trunk where valuables are kept.
  - “*Cheek*” (dentalium), traditional currency.
  - “*we-s'ech*” refers to an elk's antlers.
  - kKnewsep*, translates to “long prairie”.

### Items Made from Elk

- P1 explained how many carving tools made with elk antler or bone were made specifically for certain sized projects.
- P2 explained how elk was an important in making good fishing tools that included hooks, toggles, harpoons, and net shuttles.



3a: Top: Arrow tips. Bottom: Sinew made into bow string. 3b: Left to right: Eel hooks, fishing hooks, harpoon. 3c: Spoons. 3d: Top left: Towel (rib bone). 3e: Drum and drum sticks.

### Elk in Ceremony

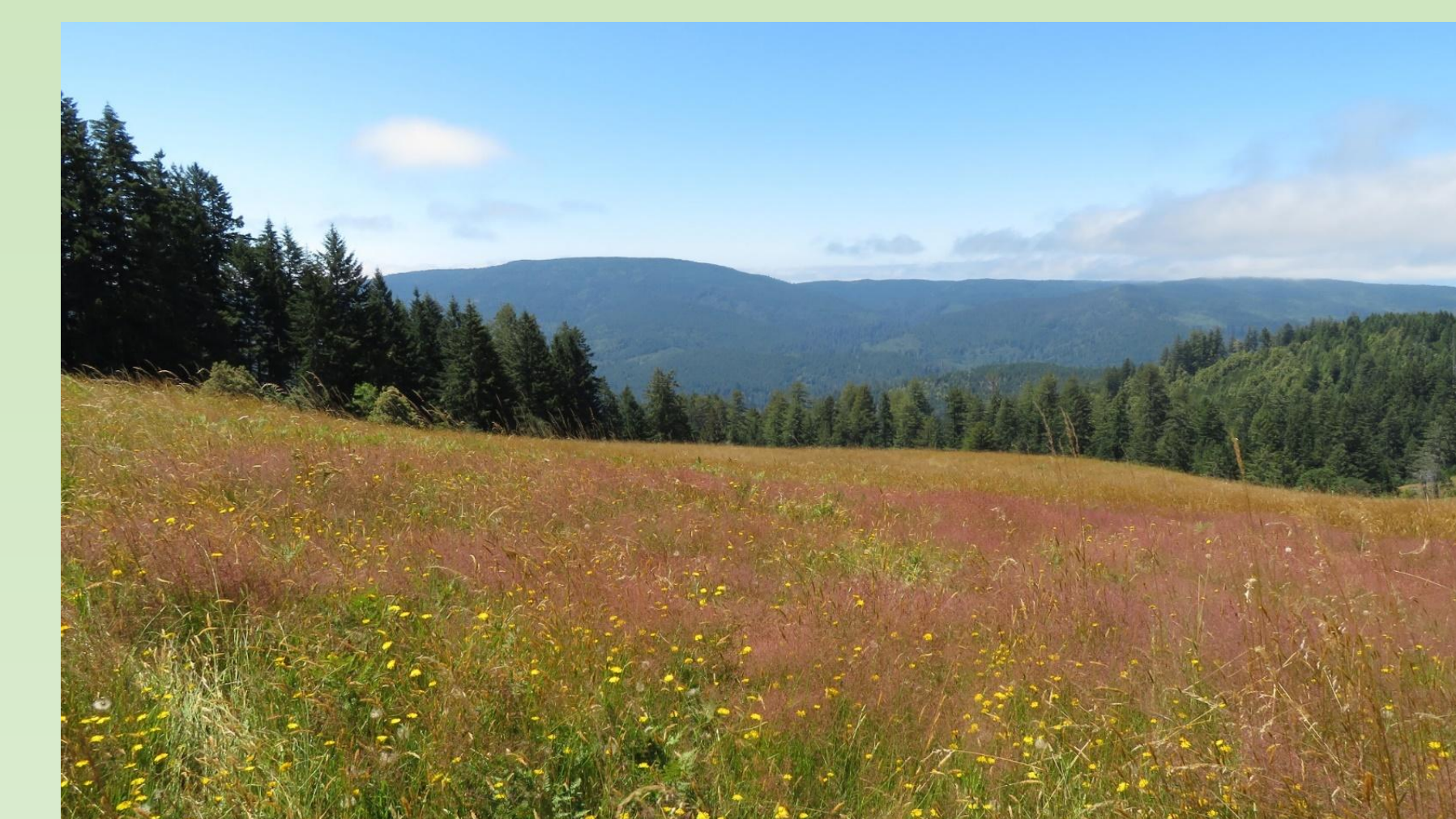
- Sinew is used to bind together items such as jewelry, clothing and ceremonial dance feathers known as “morning feathers.”
- P3 referenced the spiritual component of elk materials beyond their utilitarian contribution to ceremony:

“Think only good thoughts” when crafting regalia or drums.

The importance of feeding others as it is good medicine, with specific protocols to show respect for the animal harvested.

### Elk Habitat and Management

- P1 and P2 both placed major emphasis on the importance of habitat and traditional prescribed burns.
- There was a mention of broader cross-jurisdictional elk management between tribes and agencies.



Bald Hills Prairie, within Redwood National Park near the Yurok reservation, where a large herd of Roosevelt elk (*meweehl*) persists.

### Continuance of Yurok TEK as related to Elk

- All our participants described various aspects of TEK through the Yurok cultural lens and how their knowledge comes from what they learned and were taught by people in their communities that included cultural knowledge.

## Discussion

- An understanding of the cultural connection between the Yurok people and elk can give researchers insights to Yurok land management.
- This analysis provided feedback on how Yurok TEK can beneficially contribute to elk management restoration planning both within Yurok tribally managed lands, and through co-management with other relevant entities throughout Yurok ancestral territory, by identifying the ways in which elk have historically integrated with the socio-cultural landscape in this region, and how they may do so again.