2017

Behavioral preferences within the Southern Resident killer whale (Orcinus orca) population at Lime Kiln Point State Park

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Introduction

- The Southern Resident killer whales (SRKWs, Orcinus orca) are an iconic species in the Pacific Northwest.
- Population comprised of 83 total whales in three pods (J, K, L). Each individual can be identified by the gray area behind their dorsal fin called a **saddle patch**.
- Listed as endangered in 2005 due to:
  - lack of prey (Chinook salmon)
  - environmental contaminants
  - vessel traffic creating noise pollution
- Frequently display an array of behaviors called “percussives” because they create a splash and elicit a sound on the water’s surface
- **Objectives:**
  (1) examine the type/frequency of percussives between different age and sex classes
  (2) identify potential factors that may influence their occurrence, such as group composition and position in the study area

Study conducted with contributed funding from USU’s Honors Program.

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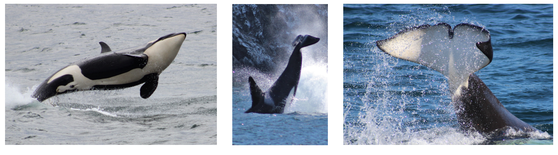
Methods

- **Age class categorization:**
  - calves (0-1 yr)
  - juveniles (2-10 yrs.)
  - subadult males (11-19 yrs.)
  - adult females (>11 yrs.)
  - adult males (>20 yrs.)
- Daily data collection took place from shore at from 0900 to 1700 between 20 May and 10 August 2016.
- Study area was a rectangular section of the Haro Strait, just offshore from the Lime Kiln lighthouse on San Juan Island in Washington state.

Behavioral Categories

Percussive, above-surface behaviors:



breach *cartwheel* *tail slap*

Non-percussive, above-surface behaviors:

spyhop *kelping* *rollover*

Preliminary Results

- Over the course of the summer, we had a total of 21 whale days (out of an 83-day study period) with 34 total passbys.
- Of those passbys, 24 contained percussive behaviors: 10 from J pod, 7 from L pod, 4 from J & K pods, and 3 from J & L pods.
- We observed a total of 219 percussive and 91 non-percussive behaviors, which are analyzed in the **figure 1, 2 & 3**.

Figure 1: Total percussive behaviors by type

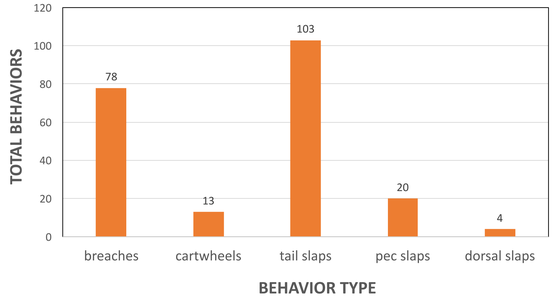


Figure 1: Total percussive behaviors by sex and age class

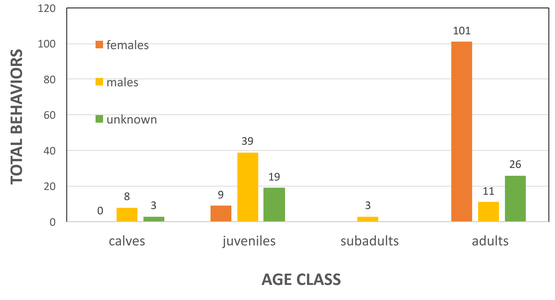
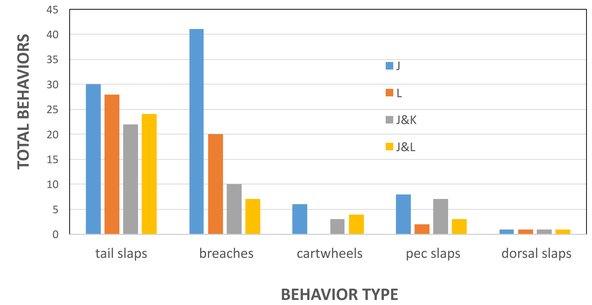


Figure 3: Total percussive behaviors by pod



Conclusions/Discussion

Initial results:

- Adult females performed the greatest number of behaviors
- Tail slaps were most common behavior performed
- Frequency of behaviors may vary by pod
- Some individuals (i.e. juvenile male J47 and adult female L82) had a strong influence on the number of behaviors performed within a single encounter

Implications:

- Reason for performing percussive behaviors is unknown, though it has been hypothesized to relate to intragroup communication, hunting techniques, etc., some of which may be indicators for overall behavior

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