Matrilineal Tendencies in *Orcinus Orca*

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Abstract

In recent years the Bigg's population has increased their presence in the Salish Sea, waterways that often have increased vessel presence which can pose a threat to this growing population of orca. Through using collected data points from the past few years, I sorted through locations of sightings to see if individual matrilines truly have tendencies in their travel patterns.

Methods

This study was split into 2 sections, sightings history and behavior demonstrated.

For sightings history, following 4 different matrilines of killer whales [T18s, T65As, T99s, and T123s] their locations over the years can be mapped out through previously collected coordinates.

As for behavior demonstrated, it will be recorded under multiple predefined categories on a data sheet.

Figure 1. Data collection sheet used during field work.

Results

The results are split into multiple pie charts dependent on matriline, it compares the presence of each matriline in each sector of the Salish Sea between 2019 and 2021 to determine if there are truly discrepancies between matrilines in which portions of the Salish Sea they prefer to spend their time in.

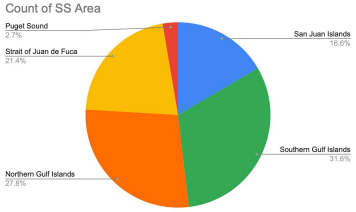

Figure 2. T18 matrilines' time spent in each sector of the Salish Sea charted out.

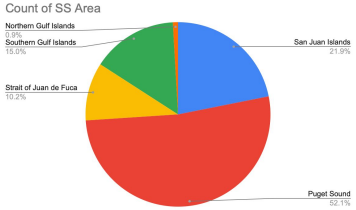

Figure 3. T65A matrilines' time spent in each sector of the Salish Sea charted out.

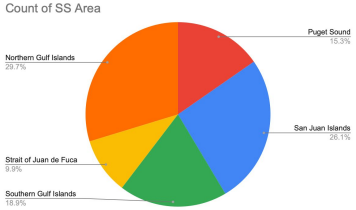

Figure 4. T99 matrilines' time spent in each sector of the Salish Sea charted out.

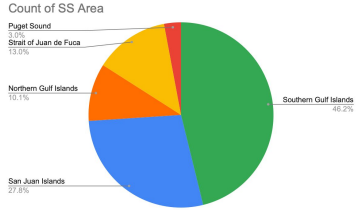

Figure 5. T123 matrilines' time spent in each sector of the Salish Sea charted out.

Discussion

My hypothesis that different matrilines would have preferences as to which sector of the Salish Sea they would tend to travel in was supported. While there are certain matrilines that have a more even split in where they spent their time in the Salish Sea, multiple matrilines had large discrepancies in amount of time spent in each sector of the Salish Sea. The data used for charting out prevalence of a matriline is heavily reliant on sightings by eye, meaning that sightings data is less likely in more remote areas without sightings networks.

Conclusion

The data found suggests that individual Bigg's *Orcinus Orca* matrilines will utilize areas of the Salish Sea at different degrees. These findings could help to indicate certain quadrants in the Salish Sea to have more protection based on usage by the killer whales, alongside promotion of boating safety around whales in certain quadrants in which a boater is more likely to find killer whales.

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