



Western Washington University
Western CEDAR

Salish Sea Ecosystem Conference

2022 Salish Sea Ecosystem Conference
(Online)

Apr 26th, 4:30 PM - 5:00 PM

Unusual Open Water Grouping Behavior in Salish Sea Harbor Seals (*Phoca vitulina richardii*)

Trevor Derie
Pacific Mammal Research

Follow this and additional works at: <https://cedar.wwu.edu/ssec>

Derie, Trevor, "Unusual Open Water Grouping Behavior in Salish Sea Harbor Seals (*Phoca vitulina richardii*)" (2022). *Salish Sea Ecosystem Conference*. 182.
<https://cedar.wwu.edu/ssec/2022ssec/allsessions/182>

This Event is brought to you for free and open access by the Conferences and Events at Western CEDAR. It has been accepted for inclusion in Salish Sea Ecosystem Conference by an authorized administrator of Western CEDAR. For more information, please contact westerncedar@wwu.edu.

Unusual Open Water Grouping Behavior in Salish Sea Harbor Seals (*Phoca vitulina richardii*)

Trevor Derie¹, Katrina MacIver¹, Dave Anderson², Laurie Shuster^{2,3}, Cindy R. Elliser¹

¹ Pacific Mammal Research, 1513 A Ave, Anacortes, WA 98221, USA.
² Cascadia Research Collective, 218½ West 4th Avenue, Olympia, WA 98501, USA
³ Pierce College, 9401 Farwest Drive SW, Lakewood, WA 98498, USA

Abstract

Most pinniped species are relatively solitary when in water, but some species, most notably the otariids, will form large groupings (referred to as rafts) in open water for thermoregulation or rest, as well as participating in group foraging behaviors. Alternatively, individuals of many species may concentrate in one area, forming foraging aggregations when prey are in high abundance. Open water grouping behavior that is distanced from haulout sites is less common in phocid species, and in particular has not been documented in the literature for harbor seals (*Phoca vitulina richardii*). In the Salish Sea, the inland waters of Washington, United States and British Columbia, Canada, harbor seals are the most abundant pinniped species. Recent observations in two locations in the south and central Salish Sea have documented large groupings ranging from 6 to 150 individuals not located near haulout sites (more than at least 1 kilometer from known large group haulout locations). These observations occurred between April-June 2019-2021 off Fidalgo Island (n=31) and 2017-2021 in various locations of southern and central Puget Sound (n=10). These groups consisted of only adults/juveniles floating together within 1-2 body lengths of each other, unlike larger aggregations where individuals are in the same area, but not necessarily as a group. Most observations included systematic diving where individuals took turns periodically diving, appearing to be foraging, while others remained at the surface. In some occurrences the animals were resting, travelling or socializing. This behavior appears to differ from the rafting behavior observed in otariids. Though harbor seals are known to habitually haul out together on beaches or islands, grouping behavior while in the water, like that observed here, has not been previously described. It is likely that these large groupings are foraging events, however continued monitoring of these occurrences and further analysis of behavior is needed.

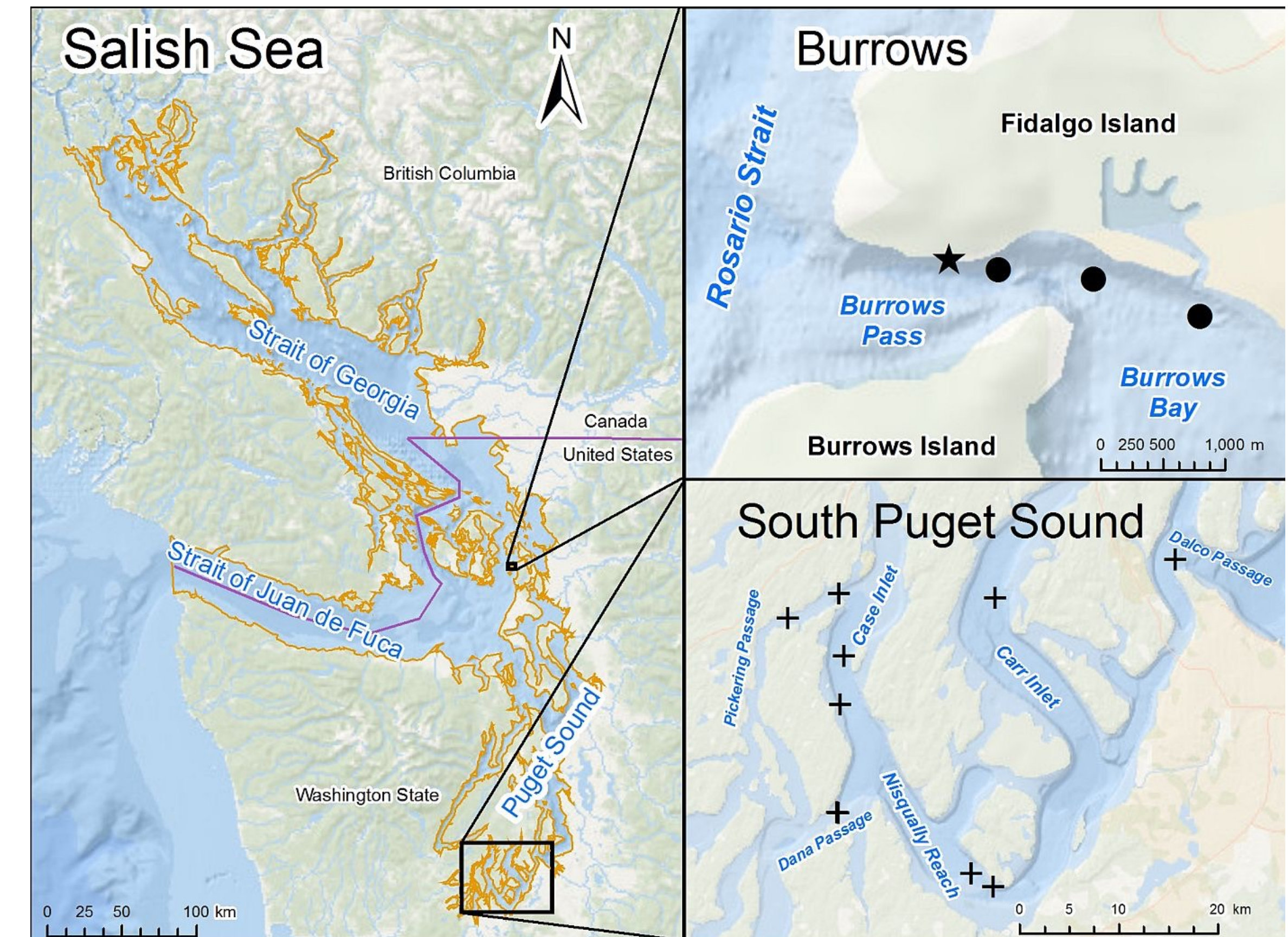


Figure 1 Harbor seal aggregation locations

Introduction

- Unlike otariids, harbor seals rarely congregate in open water away from haul out sites.
- Recent observations have been made in the Salish Sea of >50 individual harbor seals close together in areas >1km from haul out sites.

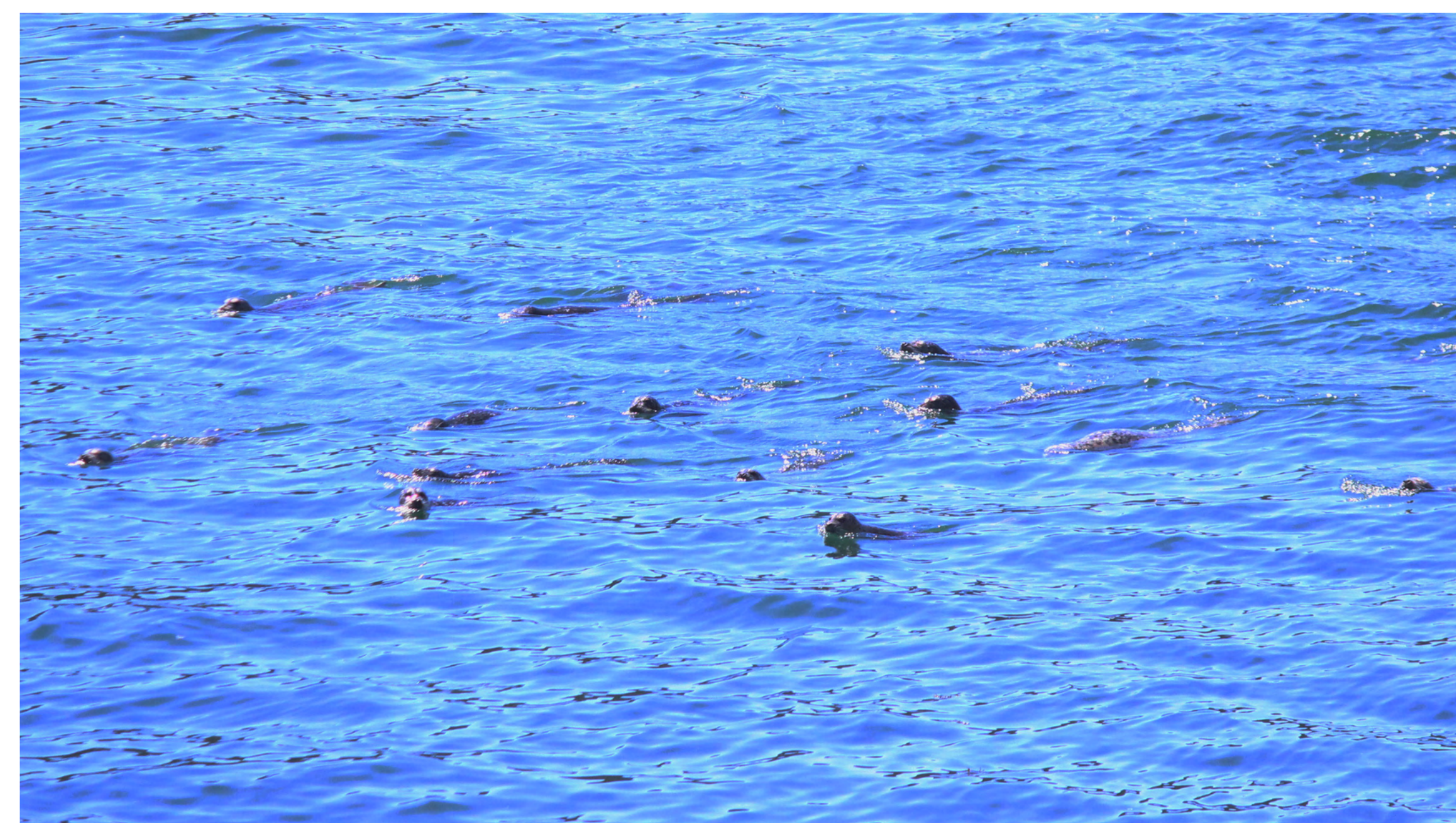


Figure 2 Example of harbor seal aggregation

Results

- Burrows Bay: 31 occurrences since 2019 in April-June with the majority in May (n=24). Of all occurrences, 26 were during flood or slack high tide.
- SPS and CPS: 10 occurrences since 2017 throughout the year and in various locations. Sightings distributed with greater variation in relation to tidal phase.
- Grouping behavior in Burrows Bay consisted primarily of floating together and inverting at the surface with periodic diving indicative of foraging.
- Grouping behavior in SPS and CPS consisted of similar foraging behavior but with some animals resting, travelling or socializing.

Takeaways

- Behaviors observed indicate these are likely foraging events.
- Seems to be a relatively new behavior.
- Differs from otariid rafting behavior as no clear signs of resting or thermoregulation.
- Other possibilities include social behaviors (mating, play) or protection from predators, though these are unlikely possibilities.
- Continued future monitoring of congregating behavior and possible associated events needed.

Contact: cindy.elliser@pacmam.org; +1 (360) 202-2860; <https://pacmam.org/wp/>

Methods

- Land-based observations in Burrows Bay (Fidalgo Island, Washington).
- Boat-based observations in South and Central Puget Sound (SPS and CPS, Washington).
- Photos and videos taken to document behaviors and photo-identification.
- Large groups identified as adults/juveniles floating together within 1-2 body lengths of each other.



Figure 3 Example of harbor seal aggregation



Figure 4 Inverted harbor seal surfacing indicative of foraging behavior