

Josh M. London, PhD
7600 Sand Point Way NE . Seattle, Washington, 98115 . josh.london@noaa.gov"

To: Suzanne Prange
Academic Editor
PeerJ Life & Environment

19 August 2024

Additional Revisions to Manuscript 2022:04:72978

Dr. Prange

I sincerely appreciate the additional feedback from the reviewers and am pleased to hear you support publication of this article in *PeerJ*. I was, unfortunately, on leave for a portion of the past few weeks and thus was unable to make the initial 15 day deadline. I have revised the manuscript in response to feedback from reviewer M. Carter and have provided additional details below. I especially appreciated Matt's suggestion for a new title and some of his thoughts regarding the ordering of topics.

I also want to take a moment and thank the *PeerJ* staff for their previous efforts and dedication ensuring the formatting details, accessibility, and data access were all finalized during the previous submission.

Sincerely

Josh M. London, PhD
Wildlife Biologist
Alaska Fisheries Science Center, NOAA Fisheries

Response to Comments from M Carter

The reviewer provided a useful suggestion regarding the manuscript title and the order in which particular topics are presented. We have re-titled the manuscript per their suggestion to *Spring haul-out behavior of seals in the Bering and Chukchi Seas: implications for abundance estimation*. Additionally we have made minor edits to the Abstract and Introduction in response to the reviewer's suggestions regarding topic order.

L59: Typo? "Trends" rather than "trend"?

Fixed

L111: Maybe outline for non-specialist readers that adhering bio-loggers to hair is the conventional approach for most devices on pinnipeds.

The text now reads:

These devices are designed to collect data through the molt period (when those adhered to the hair – a more conventional method – would fall off) and, in some situations, provide multiple years of data.

L113: Given the final sentence of the previous paragraph, I think it's important to detail that you're not using a continuous 16-year dataset from one device here, rather you have compiled data collected from multiple devices spanning a 16-year period.

The text now reads:

In this study, we used data collected from multiple bio-logging deployments spanning a 16-year period to investigate the haul-out behavior of bearded, ribbon, and spotted seals in the Bering and Chukchi seas.

L138: What is meant by "primary literature" here? I can't see any references associated with the deployments.

The supplemental table lists primary literature associated with each study where additional details regarding the capture techniques, etc can be found. I've update the text for additional clarification:

We refer readers to the primary literature for detailed capture and bio-logger attachment methods (see publications listed in Supplemental Material S1)

L156-157: Can you clarify this? Is it that you get erroneous haulout records where the animal is actually at sea and thus there is a bias introduced into the percentage time hauled out estimate that is used to scale the abundance estimates? In cases where flipper-mounted tags were not deployed, did you use any spatial cleaning method to identify and remove these (i.e. if they are clearly offshore according to the associated location data)? Or is this complicated by lack of knowledge about sea ice presence?

The text currently states *bio-loggers attached to the head or dorsal region are often dry while the seal is floating at the surface, inducing a slight positive bias in the hourly percent-dry values reported by the bio-logger*. We're not sure how we could efficiently improve the specifics of this statement. Because seals must put their heads out of the water to breath, tags attached to the head or dorsal region will naturally spend more time out of the water compared to the flipper. This results in a slight bias.

L365 and 383: Perhaps interesting to note from an ontogeny perspective that the diurnal pattern of haulout seems to develop in YOY from a very young age for both ribbon and spotted seals.

An additional sentence was added to highlight this

L430: Repetition of "higher latitudes".

Fixed

L463: Can you comment on the ontogeny of haulout behaviour seen in pups for these species? It seems interesting that they adopt the diel pattern in haulout behaviour so soon after weaning as presumably

they are not moulting? Can you unpack this in the context of existing knowledge, if any exists? If none exists, perhaps draw attention to its novelty?

Additional text was added to note this ontogeny.

L474: "Both of which provide" (not "provides").

Fixed

L523-524: Can you give an idea of the magnitude of this bias?

The Conn & Trukhanova 2023 paper describes the bias in detail related to the inclusion of age and stage so the text was edited to more directly encourage the readers to see that paper for more details. We don't currently have the framework to measure the magnitude of the bias but it might be possible after we've completed updated abundance estimates from recent surveys.

L567-569: I think this statement would be much more impactful if we had some idea of the magnitude of bias in abundance estimates from not accounting for these factors.

Agreed. Unfortunately, including this and conducting the additional analysis would exceed the expectations of 'minor revisions' and delay publication. We will keep this in mind for future analyses and manuscripts.