**Year-Round Dive Characteristics of Male Beluga Whales from the Eastern Beaufort Sea Population Indicate Seasonal Shifts in Foraging Strategies**

**Supplementary Material 1: Wildlife Computers Tag Programming Settings**

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**List of tables**

*Table provided in supplementary attached excel file*

**Table S1:** Tag programming settings and information on data received

**1. Overview**

This document and associated table contains information on settings used in programming the SPLASH10-F-238, SPLASH10-F-321 and MiniPAT tags (Wildlife Computers Ltd., Redmond, WA, USA) used in this study, and diagnostic information on the quantity of Fastloc-GPS and depth time-series data messages received.

**2. Tag programming**

***3.1 SPLASH tags***

Tags were programmed with the objective of collecting Fastloc-GPS location data and depth time-series data through the year, with priority given to summer months. Transmission limits were set higher during the summer due to uncertainties in tag retention time, and lowered from fall onwards to extend battery life and facilitate collection of data for as long as possible. The remotely-deployed SPLASH10-F-321 tags were programmed to collect and transmit more data as tag retention time would be unlikely to exceed the battery life. A number of different programming set ups were trialed to help inform on future studies (see Supplementary Table 1).

After analyzing the 2018 data it was evident that the tag with the highest transmission limit settings (LC2018#1, daily transmission limit during July = 1040, see Supplementary Table 1), was only able to transmit a maximum of 880-980 messages per day at the 25 s repetition rate, due to animal behavior. This tag was the first tag to run out of battery in 2018 (two other tags had shorter deployments, but likely due to the tag falling off the animal, as battery voltage was still high); and this information was used to guide decisions on programming tags in 2019.

Tags must be ‘wet’ to start recording data, which is identified by conductivity between the wet/dry sensor washers (see <https://static.wildlifecomputers.com/manuals/SPLASH-User-Guide.pdf>). Belugas were tagged within estuarine waters, and during 2018 a number of tags failed to deploy immediately, likely due to the low salinity waters failing to pass the wet/dry sensor threshold. Consequently, prior to the 2019 season, Wildlife Computers modified the SPLASH10-F-238 tags we planned to deploy to better enable tags to read as ‘wet’ when in the low salinity estuarine waters. In 2019 however, these tags transmitted far fewer messages than in 2018, and failed earlier (see Supplementary Table 1); so there may have been some malfunctions related to these modifications.

***3.1.1 Consistent settings among tags***

Some settings were consistent among deployments, below are the details of the key settings relevant to our deployments for each tab in the MK10 host software v1.26.3002.

***Archive***

Archival sampling intervals: 1 sec for all data streams

***Data to transmit***

Histogram and behavior sampling interval: 1 sec

Hours of data summarized in each histogram: 24

Time-series data interval: 75 sec

Time-series duty-cycling: Never

When to collect: All days and all months

Transmission control, buffer duration: 3 days

***When to collect***

Collection days: All days and months

***When to transmit***

Accumulate: checked

Optimize for battery life: checked

***Pop-up (SPLASH10-F-321 tags)***

Hours at a constant depth before tether corrodes: 24

***3.2 MiniPATs***

The secondary tags (MiniPATs) were all programmed to collect and transmit as much data as possible, as it was assumed that battery duration would exceed tag retention time. Tags were programmed to collect and transmit light level and SST geolocation; daily data; depth and temperature time-series data at 75 s sampling intervals; mixed layer temperature, depth and temperature profiles, and time-at-temperature and time-at-depth histograms summarized over 24 hours. Tags were programmed to release after 92 days.