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Introduction:

- Little is known about belugas in managed care. Previous studies evaluated socio-sexual behavior in belugas across multiple facilities, but little data has been collected on their spatial use within a habitat (i.e., Hill, et al., 2015).
- In previous studies (i.e., Hill, et al., 2019) females spent more time alone, whereas the males were much more engaged with each other. High rates of male locomotor play activities were also found in previous research (Hill, et al., 2021).
- This longitudinal study of social behaviors evaluated the social interactions between three belugas by studying their swim patterns and spatial use of their habitat in a managed care environment.

Method:

- Subjects: Housed at Mystic Aquarium in Mystic, Connecticut
 - Male A (AM) – 18-year-old
 - Female A (AF1)– Estimated 40-year-old
 - Female B (AF2)– Estimated 40-year-old
- Video data were recording using continuous sampling (Altman, et., 1974).
- 16 videos were coded for behavior and location
 - Each video was approximately 27 min.
 - Videos were recorded April - September 2021
 - Videos were coded by Independent raters (over 90% reliability)
 - Starting and ending location for each behavior was coded if the individual moved locations (See Fig. 1.)



Figure 1: *Habitat Sections*

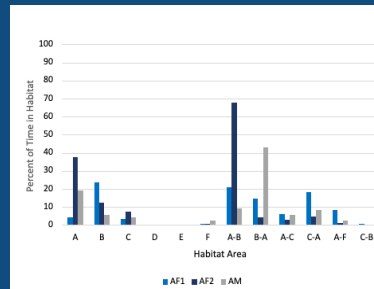


Figure 2: *Percentage of Time per Location*

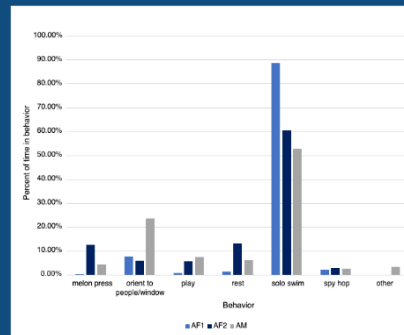


Figure 3: *Percentage of Time per Behavior*

Results:

- An activity budget was calculated for behavior and habitat location. Refer to both Figure 2 and Figure 3.
- The majority of time for these three adults was spent in solo swimming.

Discussion:

- Females tended to behave more independently, while the male interacted at the underwater viewing window with aquarium guests. Lilley, et. al, (2020) also found that adult females behaved independently.
- Mixed age and sex groups tends to diversity behavior of belugas in aquariums (Hill et al., 2015). The current research supports this welfare application.
- Social group composition, complexity of the environment, habitat configuration, and enrichment are important to consider for welfare assessments in managed care settings. (Hill & Nollens, 2019).
- These findings may benefit both captive and wild populations through a greater understanding of beluga behavior (Hill et al, 2021).

References:



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Figure 4: *Image of Male A*