

Underwater vocalisation of the Saimaa ringed seal (*Phoca hispida saimensis*)




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 Ringed seals are considered to be one of the least vocal pinnipeds

 Previous acoustic studies have shown that Saimaa ringed seals vocalise underwater using a series of rapid 'knocks'

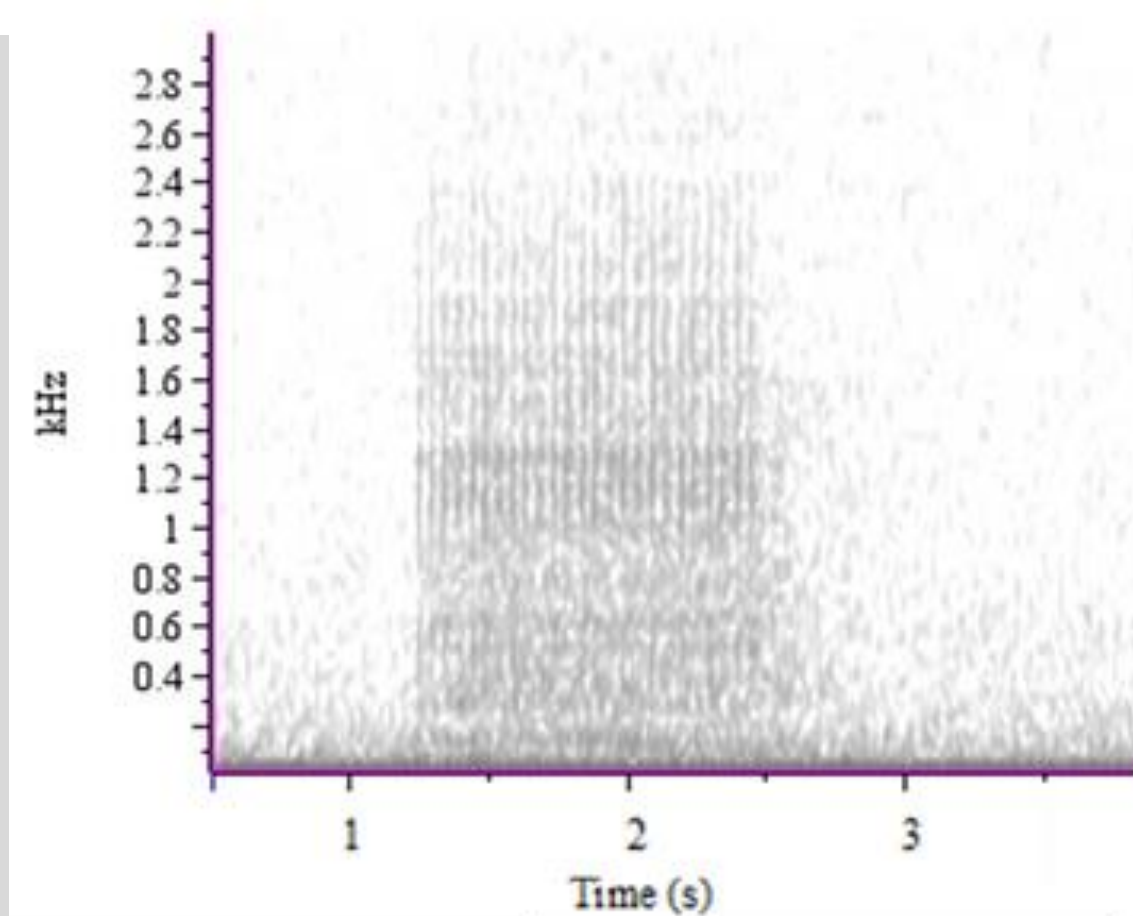
 Little is known about the nature or purpose of this vocalisation behaviour

 Underwater vocalisations were recorded with a hydrophone (SoundTrap ST600 STD) in Lake Haukivesi basin

 Continuous recordings were taken between 28.01.2022 and 01.07.2022

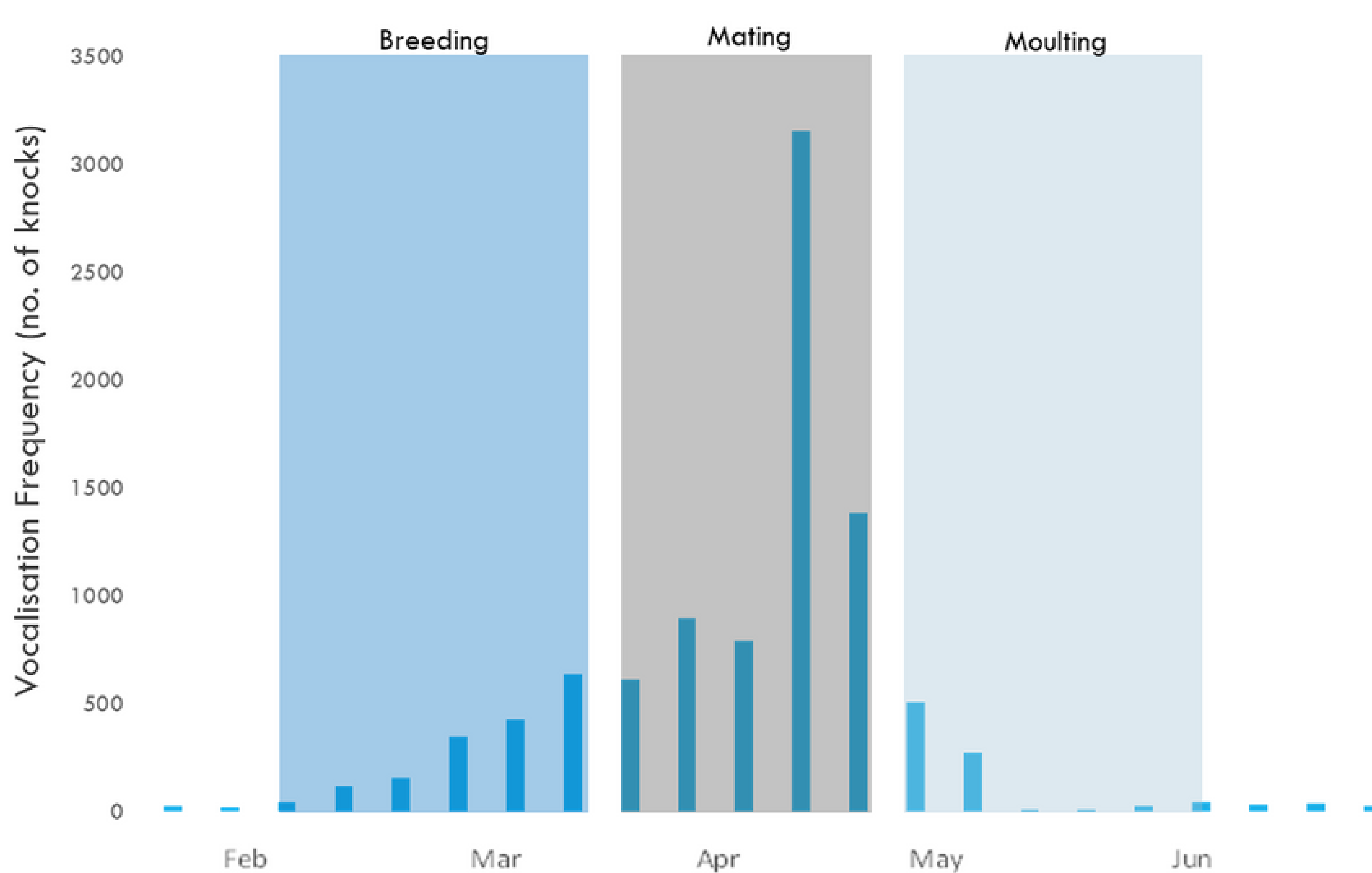
 Acoustic data was manually analysed using RavenLite software

A total of 9573 knocking events were detected across the entire 6-month recording



Recordings were obtained from just one location and, thus, it is not known how many different individuals were vocalising

- Vocalisation events consist of 13 - 43 individual knocks
- Average duration of each event was 1.464 seconds \pm SE 0.0029
- Vocalisations recorded in this study are distinguished from the slower and shorter knocking vocalisations associated with mother-pup communication (see Rautio et al. 2009)



- Variation in vocalisation frequency was found to fluctuate across seal annual lifecycle
- Activity was intensified during April, and this is the first study, which indicates timing of the peak of the mating period.
- Vocalisation frequency declined during the moult, when seals typically spend longer periods of time hauled-out

• This study presents the first examination of Saimaa ringed seal vocalisation across a prolonged period (covering breeding season)

• The characteristics of the knocking events were found to be very similar to those previously studied in ringed seals

• Vocalisation was suggested to be associated with Saimaa ringed seal mating behavior and likely used by males as a tool for mate attraction and/or territorial defense

• This distinctive vocalisation is easily identified and, thus, provides an opportunity to monitor the behaviour of the Saimaa ringed seal.

• Future research aims to further investigate this behaviour by assessing, for example, diel patterns with larger data set.



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Rogers, T. L. (2003). Factors influencing the acoustic behaviour of male phocid seals. *Aquatic Mammals*, 29(2), 247–260.

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