**A noisy dinner? Passive acoustic monitoring on the predator-prey interactions between Indo-Pacific humpback dolphins and croakers**

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**Introduction**

Indo-Pacific humpback dolphin (*Sousa chinensis*)
- Coastal and estuarine species
- Croakers, anchovies, and sardines are the most important prey families (Barros et al. 2004)

Croaker
- Benthic species in shallow coastal waters
- At least 20 species in Taiwanese waters
- Nighttime chorus (Mok et al. 2011)

Do humpback dolphins alter their distribution and behavior according to the calling behavior of croakers?

**Study Area**

Figure 1. Map of study area. Humpback dolphins were frequently encountered near the stations B & C according to visual observations.

**Passive Acoustic Monitoring**

SM2+ recorders & HTI-96-MIN hydrophone
- Sensitivity: -165 dB re 1 V/μPa
- Sampling rate: 96 kHz
- Data collection: 2013 – 2014 (>1000 hours)
- Bottom mounted by anchors

**Analysis of Acoustic Data**

Echolocation clicks
- Automatic detection based on signal-to-noise ratios in two frequency bands: <8 kHz & >20 kHz
- Time resolution: 1 ms

Croaker chorus
- Identify the chorusing period based on the threshold of median(SPL) + 3 dB

**Predator-Prey Interactions**

Spatial variations of detection results
- More echolocation clicks and short-range biosonars at stations B, C
- Longer duration of croaker chorus at stations B, C, D

Croaker chorus

Diurnal variations of detection results
- Croaker choruses were most evident between 6 P.M. and 4 A.M.
- More clicks were detected between 9 P.M. and 12 P.M.

**Conclusion and outlook**

- Humpback dolphins prefer shallow waters with prominent croaker calls
- The diurnal behavior of humpback dolphins could be associated with the croakers, but was not completely matched
- Further investigations by using hydrophone arrays are necessary

**References**


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