

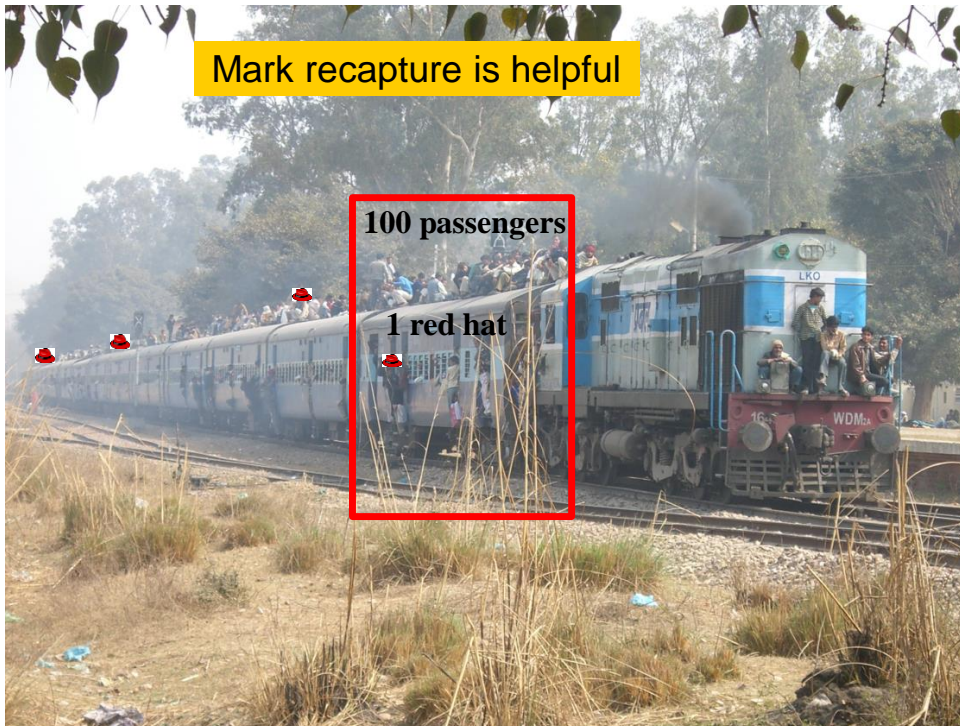
May 14, Cebu, Philippine

Transect line survey - how to count animals by receiving sounds

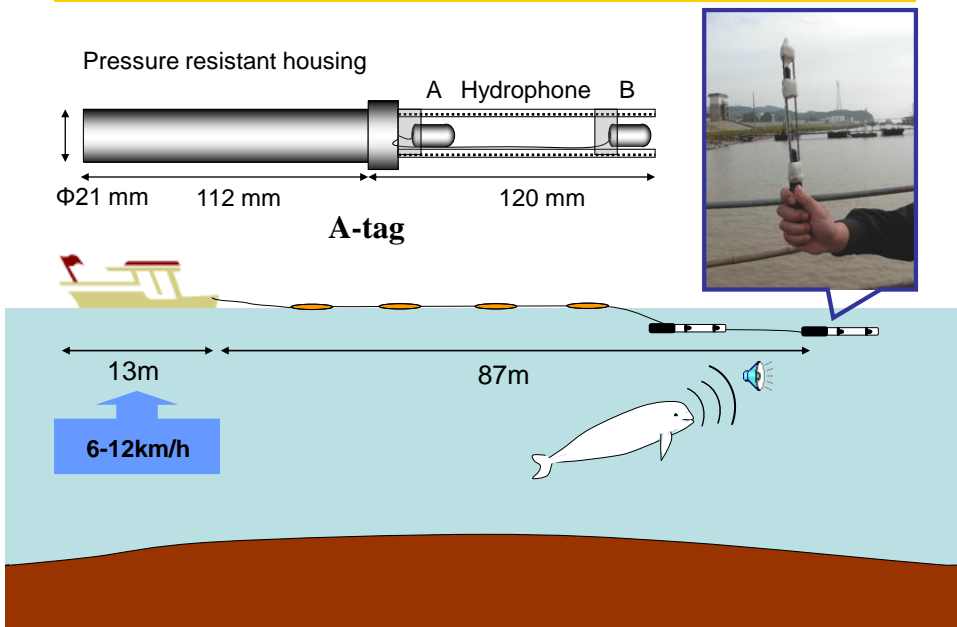
Tomonari Akamatsu (Fisheries Research Agency, Japan)



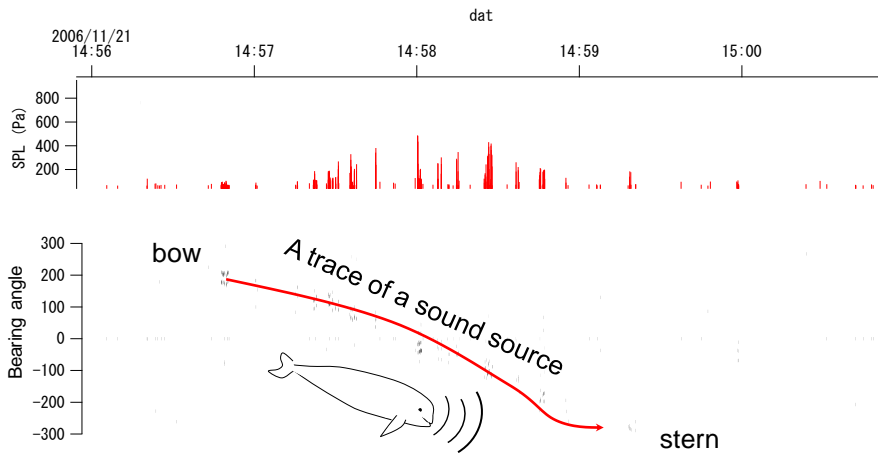




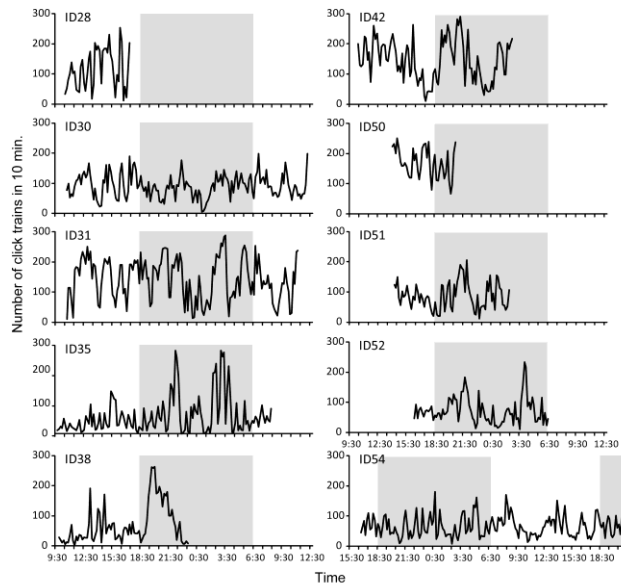
Acoustic-Visual Mark Recapture



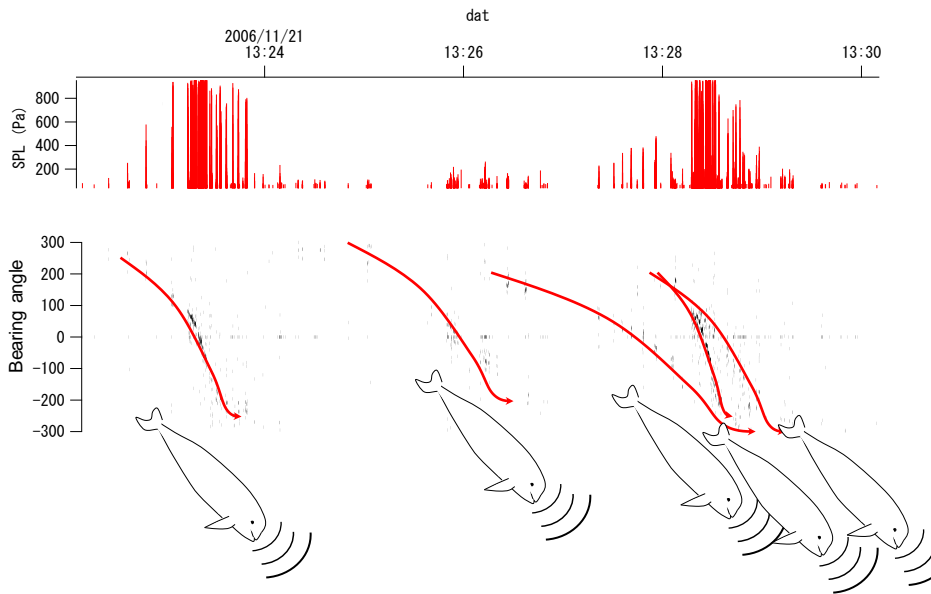
Number of independent sound sources



Kimura, S. et al. (2013) Variation in the production rate of biosonar signals in freshwater porpoises, *J. Acoust. Soc. Am.*, in press.



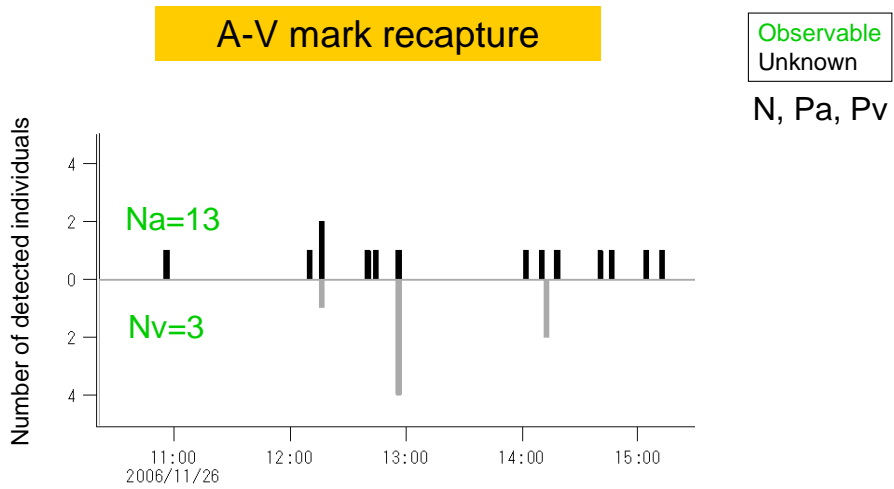
Number of independent sound sources



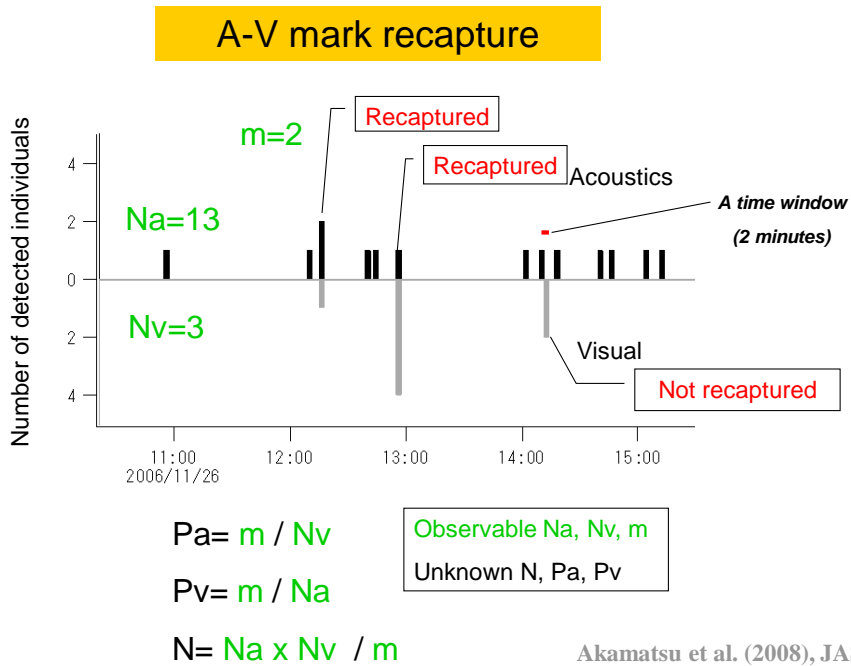
Density Estimation

Animal Density

$$= \frac{\text{Number of independent observed sound sources}}{\text{Detection probability within observable range} \times \text{Observed area}}$$



Akamatsu et al. (2008), JASA



Akamatsu et al. (2008), JASA

Thank you for listening.

*Greatly appreciate so many colleagues,
friends, funding sources, organizations and
animals.*