

High-frequency calls as a potential tool for population monitoring in nature of an endangered canid, the dhole *Cuon alpinus*



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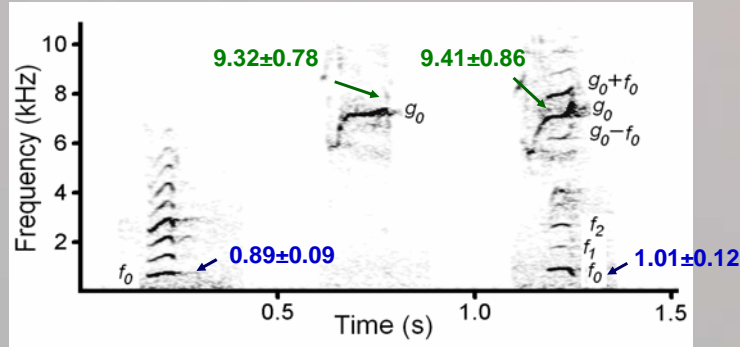
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Dholes or Asiatic wild dogs live in large packs and are very vocal throughout a year and especially during the breeding season. Dholes produce monophonic low-frequency yaps, high-frequency squeaks and biphonic yap-squeaks.



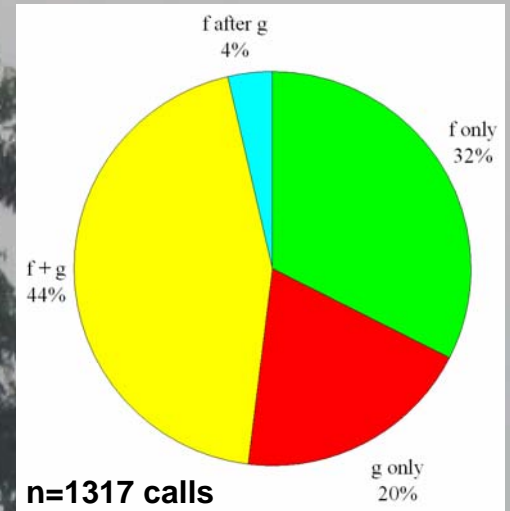
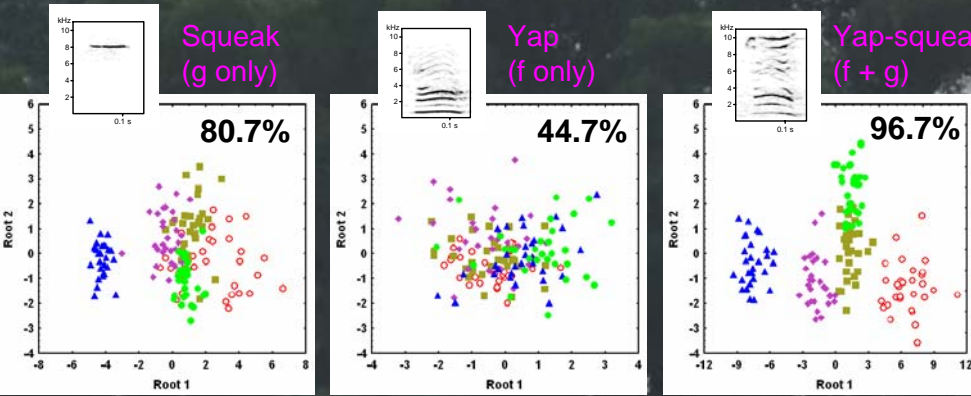
n=104, n=98, n=89

$f_{0max} \text{ single} < f_{0max} \text{ biphon} (p < 0.001)$
 $g_{0max} \text{ single} = g_{0max} \text{ biphon} (p = 0.81)$



High-frequency and biphonic calls are presented in both sexes at all ages

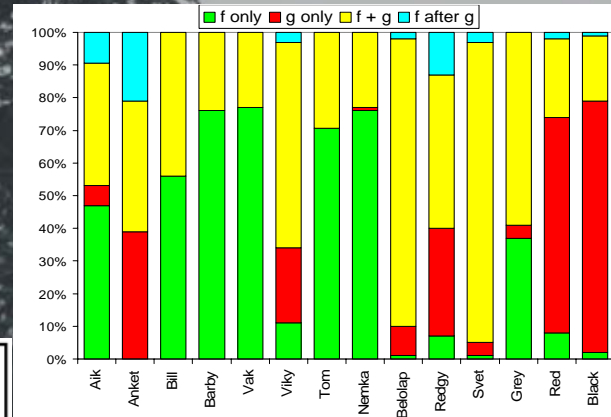
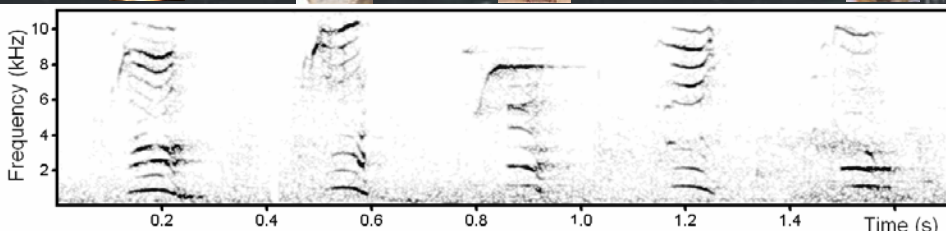
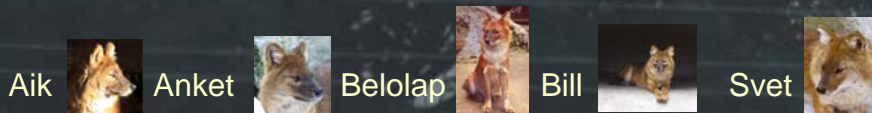
Squeaks and especially yap-squeaks of the dhole are extremely individualistic



classifying individuals with DFA

This enables identifying different packs by signature yap-squeaks of focal individuals.

- Svet
- Belolap
- ◆ Redgy
- ▲ Red
- Grey



- Volodin I.A., Volodina E.V. Biphonation as a prominent feature of the dhole *Cuon alpinus* sounds. *Bioacoustics*, 2002, **13**:105-120.
- Volodina E.V., Volodin I.A., Isaeva I.V., Unck C. Biphonation may function to enhance individual recognition in the dhole, *Cuon alpinus*. *Ethology*, 2006, **112**:815-825.
- Frey R., Volodin I., Fritsch G., Volodina E. Potential sources of high frequency and biphonic vocalization in the dhole (*Cuon alpinus*). *PLoS ONE*, 2016, **11**(1):e0146330.