Acoustic variation in Siberian wapiti

Cervus elaphus sibiricus: effects of sex and age

- Red deer Cervus elaphus is the widespread species, originated in Middle Asia and then slowly spread to Asia and further to Northern America, and to Europe.
- Red deer forms many subspecies displaying a strong divergence of vocal characteristics.
- The call fundamental frequency (f0) is the main demarcating acoustic trait between European and Asian/American branches of red deer. European subspecies produce calls with low maximum f0 (52-270 Hz), the Asian and American subspecies produce calls with very high maximum f0 (660-2080 Hz).
- In stags and hinds, f0 values are closer within than between subspecies. Red deer adult males use rutting calls for deterring rival males and for attracting receptive females, and adult females and calves use contact calls for mother-offspring communication.
- Studying vocal divergence across subspecies and sex and age-classes of Cervus elaphus might help in tracing the evolution of vocal communication in this species.

Conclusion:
- This is the first study reporting the emission of contact calls in red deer stags and the second study (after Feighney et al. 2006) reporting the emission of bugles by red deer hinds.
- Siberian wapiti calf contact calls (both oral and nasal) have the same maximum fundamental frequency as hinds.
- As compared to other subspecies of Cervus elaphus, contact calls of calves and hinds as well as bugles of stags and hinds in Siberian wapiti were closer in fundamental frequency to American subspecies than to European subspecies, being substantially higher than in any European subspecies of Cervus elaphus and higher than in an Asian subspecies C. e. xanthopygus.

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