Individual identity in hind and calf contact calls of Siberian wapiti Cervus elaphus sibiricus during separation

Olga V. Sibiryakova, Ilya A. Volodin, Elena V. Volodina
Lomonosov Moscow State University, Russia
Moscow Zoo, Russia
osibiryakova@bk.ru
http://www.bioacoustica.org

- Mother-offspring vocal recognition is critically important for survival of the young for many mammals.
- Vocal recognition is based on individual features of calls and known for many ungulates.
- Red deer is the species with a broad distribution area from Europe to Asia that forms many subspecies displaying a strong divergence of vocal characteristics.
- Unknown whether some differences exist in vocal recognition between subspecies.

Materials and Methods

- Russia, Kostroma region, velvet antlers farm, December 2015
- Recorder Marantz PMD-660 with an AKG-C-1000S microphone or a Sennheiser KE-1000 microphone.
- Contact calls of mothers and 5-6-month-old offspring emitted during 5 days after separation for winter keeping.
- 134 oral (open-mouth) calls from 9 mothers (14-15 per individual) and 129 oral calls from 9 young (10-15 per individual).

Acoustic analysis

- Duration
- Fundamental frequency (maximum, begin and end)
- Power variables (Peak frequency, 3 quartiles)

Results

- Whereas western subspecies of Red deer and other ungulates display ontogenetic increase of fundamental frequency (that might be account by the age-related increase of the vocal folds), Siberian wapiti mothers and young have not significant differences in the maximum fundamental frequency (1.44±0.25 kHz and 1.46±0.24 kHz respectively).

In comparison with Iberian Red deer: (Sibiryakova et al., 2015)

- Siberian wapiti mothers and young have extremely high vocal individuality.
- Both mothers and young have the same cues to individuality in the oral contact calls: duration as well as begin and maximum fundamental frequency.

Supported by the Russian Science Foundation, grant No 14-14-00237