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DISTINGUISHING GENDERS BY VOICE WITHOUT CAPTURE AND HANDLING

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Zoo and wildlife management faces a problem of bird sexing, as many bird taxa lack any gender differences in size and coloration. The problematic groups are numerous and include geese, cranes, rallies, raptors, owls, parrots, doves, auks, shearwaters, and some passerines. Behavioural observations are unreliable, as many birds without external sex dimorphism often establish same-sex pairs, not differing by behaviour from heterosexual pairs. The widespread techniques, based on genetic, laparoscopy or cloacal inspection, need in capture followed by rather painful handling, that is at least unpleasant for birds. Moreover, in hands of inexperienced keepers these methods are unreliable and potentially traumatic for the birds, what is especially undesirable with rare species. This talk reviews own and literature data on an alternative non-invasive approach of bird sexing based on the structure of their calls. We focus mainly on species where one call per individual is already sufficient for 100% reliable sexing. In addition, we consider the cases when reliable sexing is possible by a sex-specific vocal displays or duet parties. In many cases the reliable sexing is possible just by ear (e.g. for white-faced whistling ducks *Dendrocygna viduata*, cranes *Grus japonensis* and *Grus vipio*, white-rumped munia *Lonchura striata*,yelkouan shearwaters *Puffinus yelkouan*, American coot *Fulica americana*, pukeko *Porphyrio porphyrio*). In some other cases, it would be necessary to record a call and to visualize it spectrogram using inexpensive acoustic equipment and free available software (e.g. whistling ducks *D. fulvus*, *D. autumnalis*, *D. arborea*, collared doves *Streptopelia decaocto*, orange-bellied fruit doves*Ptilinopus iozonus*, Mediterranean Cory's shearwater *Calonectris diomedea*, Leach's storm-petrels *Oceanodroma leucorhoa*, oriental white storks*Ciconia boyciana*). Of course, the bioacoustical sexing is restricted when birds are silent or call rarely. We propose a simple way to provoke vocalization using playbacks of calls available from sound libraries, what is especially actual when only a single or few birds of a given species are kept in an enclosure. We conclude that acoustic sexing may represent a feasible alternative to the classical invasive sexing techniques both in the wild and in zoo management practice.

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