

PUBLIKATIONER 2023

Peer-reviewed Scientific papers

Ahmad S, MH Drag, SM Salleh, Z Cai, MO Nielsen. Gene coexpression network analysis reveals perirenal adipose tissue as an important target of prenatal malnutrition in sheep. *Physiological Genomics* 2023, 55(9): 392-413.
[10.1152/physiolgenomics.00128.2022](https://doi.org/10.1152/physiolgenomics.00128.2022)

Bergeron LA, S Besenbacher, J Zheng, P Li, MF Bertelsen, B Quintard, JI Hoffman, Z Li, J St. Leger, C Shao, J Stiller, MTP Gilbert, MH Schierup, G Zhang. Evolution of the germline mutation rate across vertebrates. *Nature*. 2023, 615(7951):285-291. <https://doi.org/10.1038/s41586-023-05752-y>

Beumer LT, NM Schmidt, J Pohle, J Signer, M Chimienti, JP Desforges, LH Hansen, SH Pedersen, DA Rudd, M Stelvig, FM van Beest. Accounting for behaviour in fine-scale habitat selection: A case study highlighting methodological intricacies. *Journal of Animal Ecology* 2023, 92(10): 1937-1953.
[10.1111/1365-2656.13984](https://doi.org/10.1111/1365-2656.13984)

Bolton RL, A Mooney, MT Pettit, AE Bolton, L Morgan, GJ Drake, R Appeltant, SL Walker, JD Gillis, C Hvilsted. Resurrecting biodiversity: advanced assisted reproductive technologies and biobanking. *Reproduction and Fertility* 2023, 3(3).
[10.1530/RAF-22-0005](https://doi.org/10.1530/RAF-22-0005)

Bryant KL, PR Manger, MF Bertelsen, AA Khrapitchev, J Sallet, RA Benn, RB Mars. A comprehensive atlas of white matter tracts in a lesser ape, the lar gibbon. *Brain Structure and Function* 2023, Oct 31.
<https://doi.org/10.1007/s00429-023-02709-9>

Donaldson AC, PE Buss, A Fuller, LCR Meyer. Effects of three immobilizing drug combinations on ventilation, gas exchange and metabolism in free-living African lions (*Panthera leo*). *Conservation Physiology* 2023, 11(1): [coad059](#).
[10.1093/conphys/coad059](https://doi.org/10.1093/conphys/coad059).

Drag MH, KB Debes, CS Franck, M Flethøj, MK Lyhne, JE Møller, TP Ludvigsen, T Jespersen, LH Olsen, TO Kilpeläinen. Nanopore sequencing reveals

methylation changes associated with obesity in circulating cell-free DNA from Göttingen Minipigs, Epigenetics 2023, 18:1, 2199374,
<https://doi.org/10.1080/15592294.2023.2199374>

Fomsgaard AS, SA Tahas, K Spiess, C Polacek, J Fonager, GJ Belsham. Unbiased Virus Detection in a Danish Zoo Using a Portable Metagenomic Sequencing System, Viruses 2023, 15(6), 1399
<https://doi.org/10.3390/v15061399>

Gao H, et al. (inkl. Peter Frandsen og Christina Hvilsom). The landscape of tolerated genetic variation in humans and primates. SCIENCE 2023, Vol 380, Issue 6648 <https://doi.org/10.1126/science.abn8197>

Gunner RM, RP Wilson, MD Holton, NC Bennett, AN Alagaili, MF Bertelsen, O Mohammed, T Wang, PR Manger, K Ismael, M Scantlebury. Examination of head versus body heading may help clarify the extent to which animal movement pathways are structured by environmental cues? Movement Ecology 2023, 11(1):71. <https://doi.org/10.1186/s40462-023-00432-y>

Koops K, T Humle, P Frandsen, M Fitzgerald, L D'Auvergne, HA Jackson, C Børsting, HR Siegismund, AG Soumah, C Hvilsom. Genetics as a novel tool in mining impact assessment and biomonitoring of critically endangered western chimpanzees in the Nimba Mountains, Guinea. Conservation Science and Practice 2023, 5(4), e12898. <https://doi.org/10.1111/csp2.12898>

Kristensen L, JQ Zardob, SM Hansen, MF Bertelsen, AKO Alstrup, T Wang, CJA Williams. Effect of atropine and propofol on the minimum anaesthetic concentration of isoflurane in the freshwater turtle *Trachemys scripta* (yellow-bellied slider). Vet. Anaest. Analg. 2023, 50(2):180-187.

Kuderna LFK, et al. (inkl. Peter Frandsen og Christina Hvilsom). A global catalog of whole-genome diversity from 233 primate species SCIENCE 2023, Vol 380, Issue 6648, pp. 906-913 <https://doi.org/10.1126/science.abn7829>

Li M, X Li, Z Wu, G Zhang, N Wang, M Dou, S Liu, C Yang, G Meng, H Sun, C Hvilsom, G Xie, Y Li, ZH Li, W Wang, Y Jiang, R Heller, Y Wang. Convergent molecular evolution of thermogenesis and circadian rhythm in Arctic ruminants.

Proceedings of the Royal Society B-Biological Sciences 2023, 290(1999).
[10.1098/rspb.2023.0538](https://doi.org/10.1098/rspb.2023.0538)

Malungo IB, R Mokale, MF Bertelsen, PR Manger. Cholinergic, catecholaminergic, serotonergic and orexinergic neuronal populations in the brain of the lesser hedgehog tenrec (*Echinops telfairi*). Anatomical Record (Hoboken) 2023, 306(4):844-878. Anatomical Record (Hoboken) 2023, 306(4):844-878.

<https://anatomypubs.onlinelibrary.wiley.com/doi/full/10.1002/ar.25092>

Mosbacher JB, JP Desforges, A Michelsen, SV Hansson, M Stelvig, I Eulaers, C Sonne, R Dietz, BM Jansen, TM Ciesielski, S Lierhagen, TP Flaten, G Le Roux, MR Aggerbeck, NM Schmidt. Hair mineral levels as indicator of wildlife demographics? -a pilot study of muskoxen. Polar Research 2023, 41.
[10.33265/polar.v41.8543](https://doi.org/10.33265/polar.v41.8543)

Oddes D, A Ngwenya, IB Malungo, A Burkevica, T Hard, MF Bertelsen, MA Spocter, DM Scantlebury, PR Manger. Orexinergic neurons in the hypothalamus of an Asiatic lion, an African lion, and a Southeast African cheetah. Journal of Comparative Neurology 2023; 531(3): 366-389. [10.1002/cne.25431](https://doi.org/10.1002/cne.25431)

Rasmussen L, C Fontseré, ID Soto-Calderón, R Guillén, A Savage, AJ Hansen, C Hvilsted, MTP Gilbert. Assessing the genetic composition of cotton-top tamarins (*Saguinus oedipus*) before sweeping anthropogenic impact, Molecular Ecology 2023, 00:1-14. <https://onlinelibrary.wiley.com/doi/full/10.1111/mec.17130>

Schmidt NM, A Michelsen, LH Hansen, MR Aggerbeck, M Stelvig, S Kutz, JB Mosbacher. Sequential analysis of δ15n in guard hair suggests late gestation is the most critical period for muskox calf recruitment. Rapid Communications in Mass Spectrometry 2023, 37(6): e9470. [10.1002/rcm.9470](https://doi.org/10.1002/rcm.9470)

Schuppe ER, L Cantin, M Chakraborty, MT Biegler, ER Jarvis, CC Chen, E Hara, MF Bertelsen, CC Witt, ED Jarvis, MJ Fuxjager. Forebrain nuclei linked to woodpecker territorial drum displays mirror those that enable vocal learning in songbirds. Plos Biology 2023, 20(9): e3001751. [10.1371/journal.pbio.3001751](https://doi.org/10.1371/journal.pbio.3001751)

Shepherd CR, BTC Leupen, SS Nelson, L Gomez, JA Allcock, S Bruslund, C Dingle, V Nijman. Global commercialisation, under-reported trade, and the need

for increased international regulation of a non-CITES listed songbird. Journal of Asian Ornithology 2023, 39:71–77.

Skovlund CR, B Forkman, T Lund, B Mistry, SS Nielsen, P Sandøe. Perceptions of the rabbit as a low investment ‘starter pet’ lead to negative impacts on its welfare: Results of two Danish surveys. Animal Welfare 2023, 32, E45.

<https://doi.org/10.1017/awf.2023.41>

Skovlund CR, MK Kirchner, B Contiero, S Ellegaard, X Manteca, M Stelvig, O Tallo-Parra, B Forkman. Qualitative behavior assessment for zoo-housed polar bears (*Ursus maritimus*): Intra- and inter-day consistency and association to other indicators of welfare, Applied Animal Behaviour Science 2023, 263; 105942
<https://doi.org/10.1016/j.applanim.2023.105942>

Tidière M, F Colchero, J Staerk, MJ Adkesson, DH Andersen, L Bland, M Böye, S Brando, I Clegg, S Cubaynes, A Cutting, D De Man, AE Derocher, C Dorsey, W Elgar, E Gaglione, K Anderson Hansen, A Jungheim, J Kok, G Laule, AL Goya, L Miller, T Montreal-Pawlowsky, K Mucha, MA Owen, SD Petersen, N Pilfold, D Richardson, ES Richardson, D Sabo, N Sato, N., Shellabarger, W., Skovlund, C.R., Tomisawa, K., Trautwein, S.E., Bonn, W. Van, Elk, C. Van, Von Fersen, L., Wahlberg, M., Zhang, P., Zhang, X., Conde, D.A.. (2023) Survival improvements of marine mammals in zoological institutions mirror historical advances in human longevity. Proceedings of the Royal Society B: Biological Sciences 290. <https://doi.org/10.1098/rspb.2023.1895>

Turvey ST, TE Jeffree, AA Macdonald, K Leus, RJ Kennerley, RJ Maharadatunkamsi, AC Kitchener AC. Continued survival of the elusive Seram orange melomys (*Melomys fulgens*), Mammalia 2023, 87(3):271-275.
<https://doi.org/10.1515/mammalia-2022-0135>

Van de Weyer Y, LJ Rowden, A Guthrie, SA Tahas. Rectal prolapse in the Sulawesi crested black macaque (*Macaca nigra*): morbidity, mortality, and risk factors. Journal of Zoo and Wildlife Medicine 2023, 53(4):722-732. [10.1638/2021-0143](https://doi.org/10.1638/2021-0143)

Wittwer A, M Roller, DWH Müller, MF Bertelsen, LB Lackey, B Steck, R Biddle, L Versteege, M Clauss. Historical development of the survivorship of zoo rhinoceroses-A comparative historical analysis. Zoo Biol. 2023 Jun 23.
<https://doi.org/10.1002/zoo.21793>

Other scientific publications

Abreu S, C Grøndahl. Immobilizing the captive hippopotamus (*Hippopotamus amphibius*): a case study on a non-conventional multimodal approach. Proceedings of the American Association of Zoo Veterinarians Conference 2023, p90.

Abreu S, C Sauer, R Fiuzza, SA Tahas. Soft tissue mineralisation and hypervitaminosis d in captive Tasmanian wombats (*Vombatus ursinus tasmaniensis*). Proceedings of the Zoo and Wildlife Health Conference 2023, p53.

Bailey C, J Burton, S Islamia, Yonathan, M Alaze, J Andrews, I Chandra, M Fitzpatrick, J Forys, L Frantz, A Humphreys, C Hvilsom, K Leus, S Pentawati, A Putnam, G Semiadi, C Smith, C Traeholt, K Traylor-Holzer, Y Tri Hastuti, L Tumbelaka, H Wahyudi. Global Species Management Plan for Anoa (*Bubalus* sp.), Banteng (*Bos javanicus*), Babirusa (*Babirousa* sp.) and Sumatran tiger (*Panthera tigris sumatrae*): Masterplan 2023-2025. World Association of Zoos and Aquariums, Barcelona, Spain.

Bruslund S, S Wilson S, F von Houwald, M Zimmermann. New Tools for Conservation, Zooquaria 2023, 117: 10-11
<https://www.eaza.net/assets/Uploads/Zooquaria/ZQIssues/2023/ZQ117-web.pdf>

Bruslund, S. et al. Songbirds in Trade Database (version 1.0). Monitor Conservation Research Society. Accessed on 30-09-2023 at
<https://www.sitdb.org/>

Skovlund CR. Improving the welfare system. Zooquaria 2023, 118 (Summer 2023): 29
<https://www.eaza.net/assets/Uploads/Zooquaria/ZQIssues/2023/ZQ118-v5-webLR.pdf>

Dutitre EM, SA Tahas, C Grøndahl, MF Bertelsen. Accuracy and precision of two methods of non-invasive blood pressure measurements in a rodent and two primate species commonly encountered in zoological collections. Proceedings of the Zoo and Wildlife Health Conference 2023, p24.

Ellegaard S, S Bruslund, M Schwarz. Beetle-mania in Denmark, WAZA News 2023, 4: 35-36.

Hanel J, G Dick, K Pynnonnen-Oudman, W van Lint, K Leus, M Corlay. (eds.) Regional Collection Plan for the EAZA Raptor Taxon Advisory Group – Birds of Prey, First edition. EAZA Executive Office, 2023.

Lawrenz A, K Gries, A-K Oerke A-K, K Leus, R van der Meer, M Voorham, D de Man. Long-term management plan for the African elephant (*Loxodonta africana*) EAZA Ex situ Programme (EEP), Amsterdam 2023.

Leus K Population Management. In: Meireles JP & S Hofman (2023) EAZA Best Practice Guidelines for Okapi (*Okapia johnstoni*). 1st edition. European Association of Zoos and Aquariums, Amsterdam, The Netherlands.

Martin LF, S Abreu, EM Dutitre, C Grøndahl, SA Tahas, MF Bertelsen. Three cases of heterotopic hair causing corneal ulcers and granulomatous inflammation along the oropharyngeal ring in Javan mouse deer (*Tragulus javanicus*). Proceedings of the American Association of Zoo Veterinarians Conference 2023, p53.

Martin LF, I Clavadetscher, JM Hatt, M Clauss. Survey of husbandry, feeding management and potential influencing factors on the body condition score of zoo-housed giraffes (*Giraffa camelopardalis* spp.). Proceedings of the Zoo and Wildlife Health Conference 2023, p61.

Helsen P, C Hvilsted, A Mękarska. Safe deposits. Zooquaria 2023, 118 (Summer 2023): 19
<https://www.eaza.net/assets/Uploads/Zooquaria/ZQIssues/2023/ZQ118-v5-webLR.pdf>

Schmidt H, J Kappelhof, K Leus, R van der Meer, M Voorham, D de Man. Long-term management plan for the Asian elephant (*Elephas maximus*) EAZA Ex situ Programme (EEP). Rotterdam Zoo, The Netherlands 2023.

Tahas SA, S Abreu, T Hoornweg, C Kruger-Velema, T Søland, A von Wenck, C Grøndahl, MF Bertelsen, A Krogh. The use of daily thromboelastography and

glucocorticoid treatment in a case of elephant endotheliotropic herpesvirus hemorrhagic disease. Proceedings of the American Association of Zoo Veterinarians Conference 2023, p105.

Tahas SA, NM Schmidt, F van Beest, JB Moscbacher, LH Hansen, M Stelvig, C Grøndahl, MF Bertelsen. Things you don't learn from books: tips from the field for anaesthetising and biological sampling of wild muskoxen (*Ovibos moschatus*) above the artic circle. Proceedings of the Zoo and Wildlife Health Conference 2023, p67.

Thomsen E, A Sonne, MF Bertelsen, E Vermeulen, A Ganswindt, T Wang, J Ochala. Fine-regulation of myosin relaxed states in vertebrate muscle. Faseb Journal 2023; 36. [10.1096/fasebj.2022.36.S1.R4611](https://doi.org/10.1096/fasebj.2022.36.S1.R4611).

Williams C, MF Bertelsen. Anesthesia and Analgesia in Amphibians. In Dyson MC, P Jirkof, J Lofgren, EA Nunamarker, D Pand (Eds.) Anesthesia and Analgesia in Laboratory Animals, 3rd Ed. Academic Press, London, UK, 2023, Pp. 600-628.

Williams C, MF Bertelsen. Anesthesia and Analgesia in Reptiles. In Dyson MC, P Jirkof, J Lofgren, EA Nunamarker, D Pand (Eds.) Anesthesia and Analgesia in Amphibians Animals, 3rd Ed. Academic Press, London, UK, 2023, Pp. 629-646.

Woollhead J, A Petersen, B Normander, AK Garn, F Feyeh. Beskyttet natur efter international standard, Vand og Jord 2023, 30(2):84-87.

<https://online.flippingbook.com/view/784356257>