

3D models related to the publication: Size Variation under Domestication: Conservatism in the inner ear shape of wolves, dogs and dingoes

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Abstract

The present 3D Dataset contains the 3D models analyzed in the following publication: Size variation under domestication: Conservatism in the inner ear shape of wolves, dogs and dingoes. Scientific Reports 7, Article number: 13330, <https://doi.org/10.1038/s41598-017-13523-9>.

Keywords: cochlea, feralisation, petrosal, semicircular canal, zooarchaeology

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INTRODUCTION

The present dataset contains 3D virtual endocasts of 39 modern dogs (*Canis lupus familiaris*) from 20 different breeds, 21 prehistoric specimens, 24 wolves (*Canis lupus*) as well as eight dingoes (*Canis lupus dingo*), see table 1 and figure 1. In this study we assessed the intraspecific variation in the morphology of the inner ear using a semilandmark based geometric morphometric approach.

METHODS

3D surface models of the left inner ear of the specimens were generated by manually colouring the bony labyrinth in Avizo® 8.0, Avizo® 8.1.0. (FEI Visualization Science Group, Germany) and in Geomagic Wrap® 2013 64-Bit-Version (2013.0.1.1206). If the left inner ear was incomplete, the right inner ear was modelled and mirrored. The 3D surfaces are provided in VTK polydata format, which can be opened with VTK based software (for example ISE-MeshTools, Lebrun, 2014).

ACKNOWLEDGEMENTS

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Lebrun, R. (2014). ISE-MeshTools, a 3D interactive fossil reconstruction freeware. 12th Annual Meeting of EAVP,

Torino, Italy; 06/2014.

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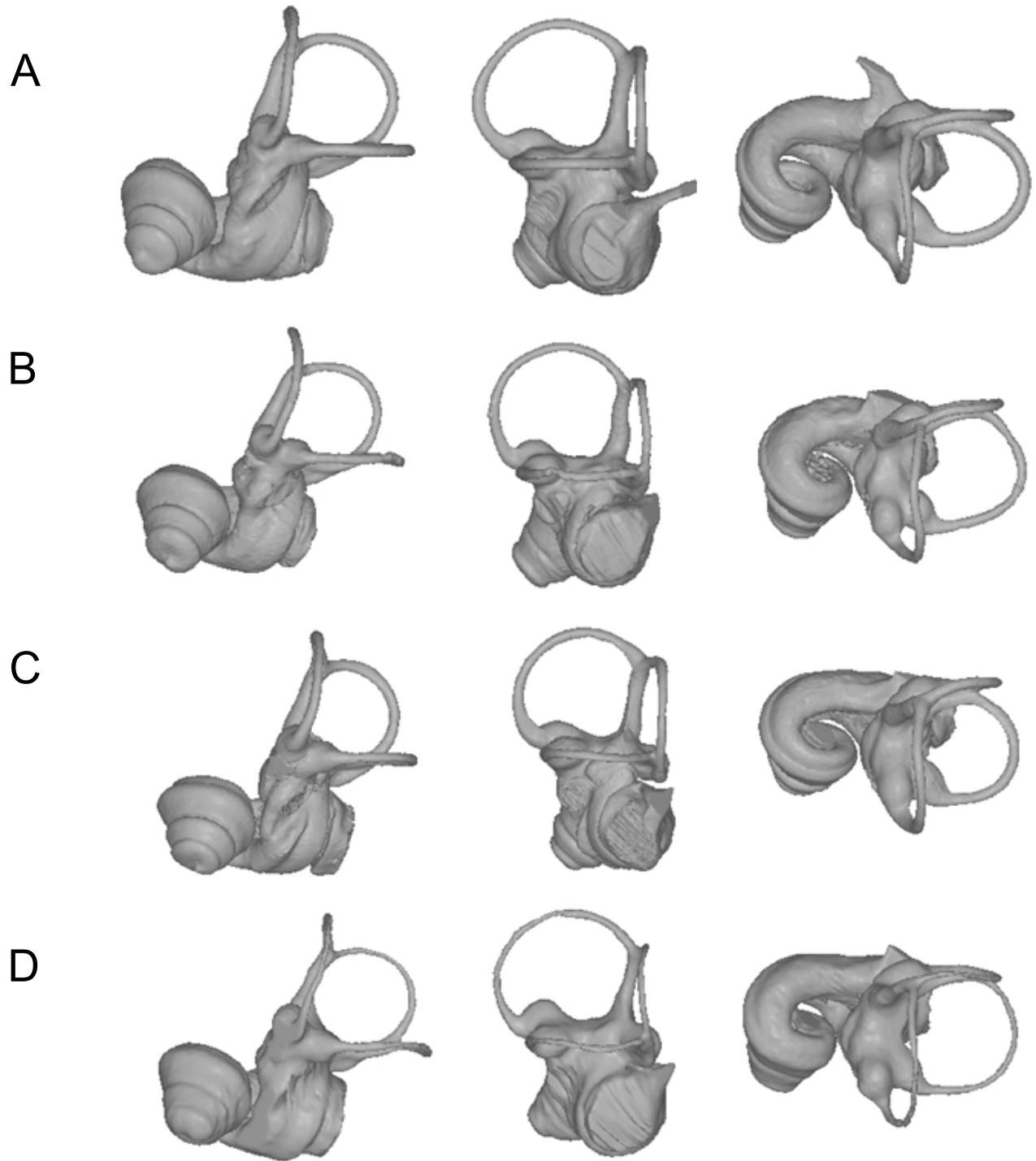


Figure 1. 3D virtual endocast of the left inner ear of A: wolf (ZMUZH 20201); B: prehistoric dog (ZMUZH A.VII.); C: modern dog (PIMUZ A/V 2847, Boxer); D: dingo (M38587) in anterolateral, posterolateral and dorsal view.

Model IDs	Taxon	Description	Collection
M6297	<i>Canis lupus dingo</i>	Dingo	AM, Sydney
M24153	<i>Canis lupus dingo</i>	Dingo	AM, Sydney
M33608	<i>Canis lupus dingo</i>	Dingo	AM, Sydney
M38587	<i>Canis lupus dingo</i>	Dingo	AM, Sydney
M39960	<i>Canis lupus</i>	Wolf	AM, Sydney
NMB2761	<i>Canis lupus</i>	Wolf	NMB, Basel
NMB5258	<i>Canis lupus</i>	Wolf	NMB, Basel
NMB8381	<i>Canis lupus</i>	Wolf	NMB, Basel
NMB8635	<i>Canis lupus</i>	Wolf	NMB, Basel
NMB11019	<i>Canis lupus arabs</i>	Arabian wolf	NMB, Basel
NMB12078	<i>Canis lupus familiaris</i>	Modern dog: Poodle	NMB, Basel
NMB12079	<i>Canis lupus familiaris</i>	Modern dog: Poodle	NMB, Basel
NMB12080	<i>Canis lupus familiaris</i>	Modern dog: Labrador Retriever	NMB, Basel
NMB12081	<i>Canis lupus familiaris</i>	Modern dog: Labrador Retriever	NMB, Basel
NMBEA.403.	<i>Canis lupus familiaris</i>	Prehistoric dog	NMB, Basel
NMBEA.5.a.	<i>Canis lupus familiaris</i>	Prehistoric dog	NMB, Basel
NMBC.1362	<i>Canis lupus lycaon</i>	Eastern wolf	NMB, Basel
NMBNoNb	<i>Canis lupus occidentalis</i>	Mackenzie Wolf	NMB, Basel
NMBSCM320	<i>Canis lupus</i>	Wolf	NMB, Basel
NMBZ309	<i>Canis lupus</i>	Wolf	NMB, Basel
NMBE1051209	<i>Canis lupus familiaris</i>	Modern dog: Afghan Greyhound	NMBE, Bern
NMBE16	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
NMBE1051226	<i>Canis lupus familiaris</i>	Modern dog: Afghan Greyhound	NMBE, Bern
NMBE1051381	<i>Canis lupus familiaris</i>	Modern dog: Akita Inu	NMBE, Bern
NMBE1051418	<i>Canis lupus familiaris</i>	Modern dog: Akita Inu	NMBE, Bern
NMBE-BUR-1057	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
NMBE-DUR-1124	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
NMBE-LAT-1119	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
NMBE-LAT-1136	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
NMBE-LUS-1095	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
NMBE-LUS-1102	<i>Canis lupus familiaris</i>	Prehistoric dog	NMBE, Bern
PIMUZA/V2831	<i>Canis lupus familiaris</i>	Modern dog: Dachshund	PIM, Zürich
PIMUZA/V2832	<i>Canis lupus familiaris</i>	Modern dog: Foxterrier	PIM, Zürich
PIMUZA/V2834	<i>Canis lupus familiaris</i>	Modern dog: Appenzeller Mountain Dog	PIM, Zürich
PIMUZA/V2835	<i>Canis lupus familiaris</i>	Modern dog: German Shepherd	PIM, Zürich
PIMUZA/V2836	<i>Canis lupus familiaris</i>	Modern dog: Boxer	PIM, Zürich
PIMUZA/V2837	<i>Canis lupus familiaris</i>	Modern dog: German Shepherd	PIM, Zürich
PIMUZA/V2845	<i>Canis lupus familiaris</i>	Modern dog: Dachshund	PIM, Zürich
PIMUZA/V2846	<i>Canis lupus familiaris</i>	Modern dog: Boxer	PIM, Zürich
PIMUZA/V2847	<i>Canis lupus familiaris</i>	Modern dog: Boxer	PIM, Zürich
PIMUZA/V3000	<i>Canis lupus familiaris</i>	Modern dog: Boxer	PIM, Zürich
PIMUZA/V3001	<i>Canis lupus familiaris</i>	Modern dog: Foxterrier	PIM, Zürich
SZ7926	<i>Canis lupus familiaris</i>	Modern dog: Cocker spaniel	ZS, Tübingen
SZ7929	<i>Canis lupus familiaris</i>	Modern dog: Cocker spaniel	ZS, Tübingen
SZ7930	<i>Canis lupus familiaris</i>	Modern dog: Cocker spaniel	ZS, Tübingen
SZ7958	<i>Canis lupus familiaris</i>	Modern dog: Chow chow	ZS, Tübingen
SZ7959	<i>Canis lupus familiaris</i>	Modern dog: Chow chow	ZS, Tübingen
SZ7961	<i>Canis lupus familiaris</i>	Modern dog: Chow chow	ZS, Tübingen
TMMM-150	<i>Canis lupus familiaris</i>	Modern dog: Chihuahua	TMM, Austin
UMZCK.3016	<i>Canis lupus familiaris</i>	Modern dog (unknown breed)	UMZ, Cambridge
UMZCK.3141	<i>Canis lupus</i>	Wolf	UMZ, Cambridge
UMZCK.3149	<i>Canis lupus</i>	Wolf	UMZ, Cambridge
UMZCK.3150.1	<i>Canis lupus</i>	Wolf	UMZ, Cambridge
UMZCK.3152	<i>Canis lupus</i>	Wolf	UMZ, Cambridge

UMZCK.3221	<i>Canis lupus dingo Blumenbach</i>	Dingo	UMZ, Cambridge
UMZCK.3223	<i>Canis lupus dingo Blumenbach</i>	Dingo	UMZ, Cambridge
UniSydFVS45	<i>Canis lupus dingo</i>	Dingo	FVS, Sydney
UNSWZ354	<i>Canis lupus dingo</i>	Dingo	UNSW, Sydney
ZMUZH10166	<i>Canis lupus familiaris</i>	Modern dog: Pug	ZM, Zürich
ZMUZH10175	<i>Canis lupus familiaris</i>	Modern dog: Pug	ZM, Zürich
ZMUZH10342	<i>Canis lupus familiaris</i>	Modern dog: St. Bernard	ZM, Zürich
ZMUZH10343	<i>Canis lupus familiaris</i>	Modern dog: St. Bernard	ZM, Zürich
ZMUZH13766	<i>Canis lupus familiaris</i>	Modern dog: Eskimo Dog	ZM, Zürich
ZMUZH13854	<i>Canis lupus Grey</i>	Wolf	ZM, Zürich
ZMUZH14842	<i>Canis lupus familiaris</i>	Modern dog: St. Bernard	ZM, Zürich
ZMUZH15858	<i>Canis lupus</i>	Wolf	ZM, Zürich
ZMUZH17118	<i>Canis lupus</i>	Wolf	ZM, Zürich
ZMUZH17210	<i>Canis lupus occidentalis</i>	Mackenzie Wolf	ZM, Zürich
ZMUZH17602	<i>Canis lupus chanco</i>	Tibetan wolf	ZM, Zürich
ZMUZH17603	<i>Canis lupus chanco</i>	Tibetan wolf	ZM, Zürich
ZMUZH17612	<i>Canis lupus chanco</i>	Tibetan wolf	ZM, Zürich
ZMUZH17711	<i>Canis lupus familiaris</i>	Modern dog: Ibizan Hound	ZM, Zürich
ZMUZH17712	<i>Canis lupus familiaris</i>	Modern dog: Northafrican Greyhound (Sloughi)	ZM, Zürich
ZMUZH17713	<i>Canis lupus familiaris</i>	Modern dog: Russian greyhound (Borzoi)	ZM, Zürich
ZMUZH17714	<i>Canis lupus familiaris</i>	Modern dog: Caucasian Shepherd Dog	ZM, Zürich
ZMUZH17715	<i>Canis lupus familiaris</i>	Modern dog: Caucasian Shepherd Dog	ZM, Zürich
ZMUZH17717	<i>Canis lupus familiaris</i>	Modern dog: Maremma Sheepdog	ZM, Zürich
ZMUZH18082	<i>Canis lupus chanco</i>	Tibetan wolf	ZM, Zürich
ZMUZH20201	<i>Canis lupus chanco</i>	Tibetan wolf	ZM, Zürich
ZMUZH20202	<i>Canis lupus chanco</i>	Tibetan wolf	ZM, Zürich
ZMUZHA.6.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHA.II.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHA.IV.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHA.VI.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHA.VII.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHA.VIII.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHEz.2.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHEz.E.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHF.48.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHTerp.1.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHWe.6.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich
ZMUZHWyn.9.	<i>Canis lupus familiaris</i>	Prehistoric dog	ZM, Zürich

Table 1. List of all the specimens included in the study and the institution they are housed at. AM, Sydney: Australian Museum, Sydney, Australia. FVS, Sydney: University of Sydney, Faculty of Veterinary Science, Sydney, Australia. NBM, Basel: Naturhistorisches Museum Basel, Switzerland. NMBE, Bern: Naturhistorisches Museum der Burggemeinde Bern, Switzerland. PIM, Zürich: Palaeontological Museum of the University of Zürich, Switzerland. TMM, Austin: Texas Memorial Museum, Austin, Texas, USA. UMZ, Cambridge: University Museum of Zoology, University of Cambridge. UNSW, Sydney: University of New South Wales, Sydney, Australia. ZM, Zürich: Zoological Museum of the University of Zürich, Switzerland. ZS, Tübingen: Zoologische Schausammlung, Universität Tübingen, Germany.