

SANDIA REPORT

SAND2019-8459

Printed 07-18-2019



Sandia
National
Laboratories

X-Ray CT Scans – Set 4

John P. Korbin

Prepared by
Sandia National Laboratories
Albuquerque, New Mexico
87185 and Livermore,
California 94550

Issued by Sandia National Laboratories, operated for the United States Department of Energy by National Technology & Engineering Solutions of Sandia, LLC.

NOTICE: This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government, nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors, or their employees, make any warranty, express or implied, or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represent that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government, any agency thereof, or any of their contractors or subcontractors. The views and opinions expressed herein do not necessarily state or reflect those of the United States Government, any agency thereof, or any of their contractors.

Printed in the United States of America. This report has been reproduced directly from the best available copy.

Available to DOE and DOE contractors from

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831

Telephone: (865) 576-8401
Facsimile: (865) 576-5728
E-Mail: reports@osti.gov
Online ordering: <http://www.osti.gov/scitech>

Available to the public from

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Rd
Alexandria, VA 22312

Telephone: (800) 553-6847
Facsimile: (703) 605-6900
E-Mail: orders@ntis.gov
Online order: <https://classic.ntis.gov/help/order-methods/>



ABSTRACT

A collection of x-ray computed tomography scans of the skulls of six Mexican wolves, *Canis lupus baileyi*.

ACKNOWLEDGEMENTS

I would like to thank the generosity of our collaboration partners – without your willingness to take risks, to share knowledge and to passionately pursue STEM outreach this project would not have been possible.

- Dr. Joseph Cook
- Dr. Jonathan L. Dunnum
- Ms. Adrienne Raniszewski

Museum of Southwestern Biology, Division of Mammals

Contents

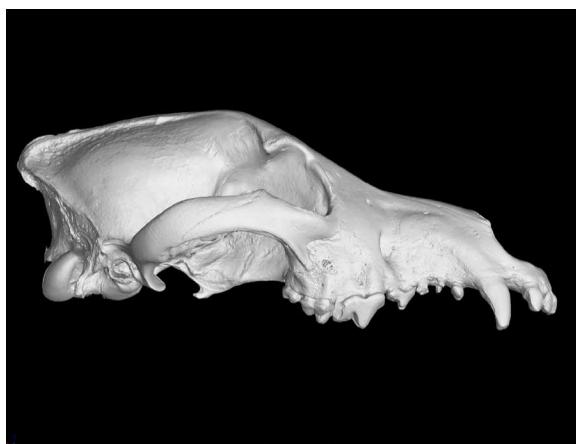
Carnivora

Chrysochloridae

Canis lupus baileyi	
MSB 142637	6
MSB 142754	9
MSB 160124	12
MSB 160135	15
MSB 160145	18
MSB 160149	21

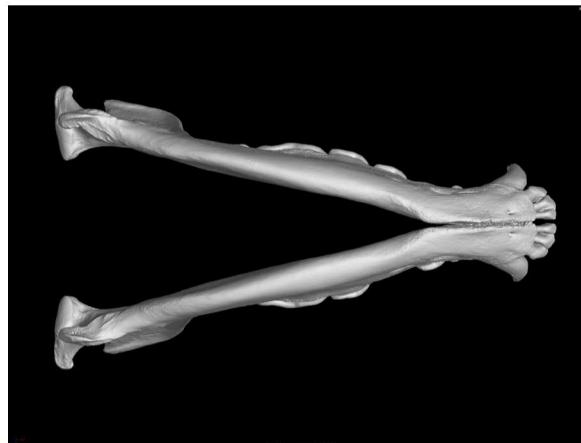
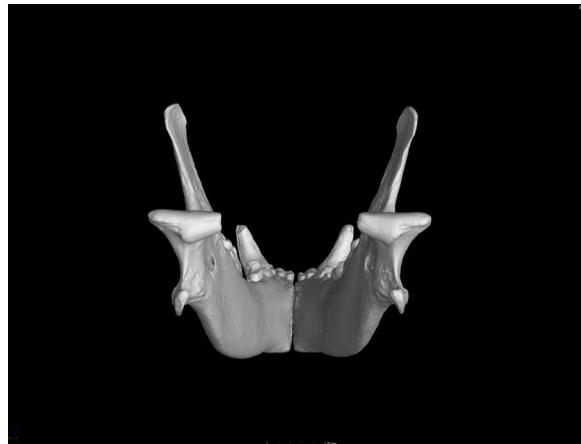
MSB 142637: *Canis lupus baileyi*

Cranium: 114.39 μm resolution



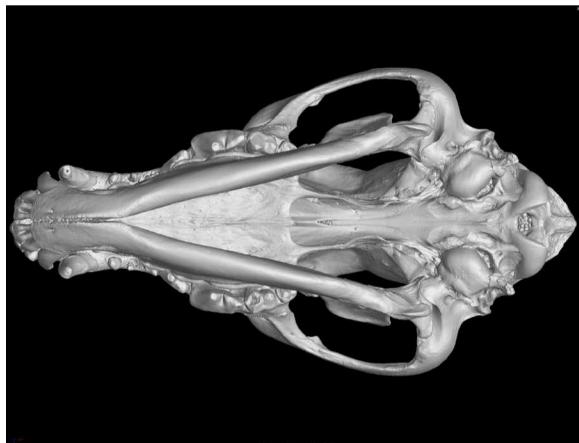
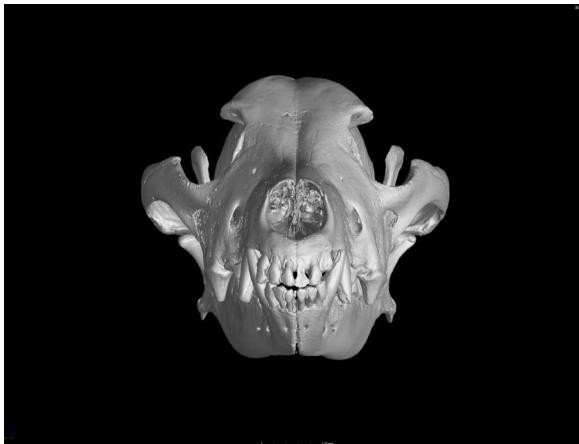
MSB 142637: *Canis lupus baileyi*

Mandible: 102.97 μm resolution



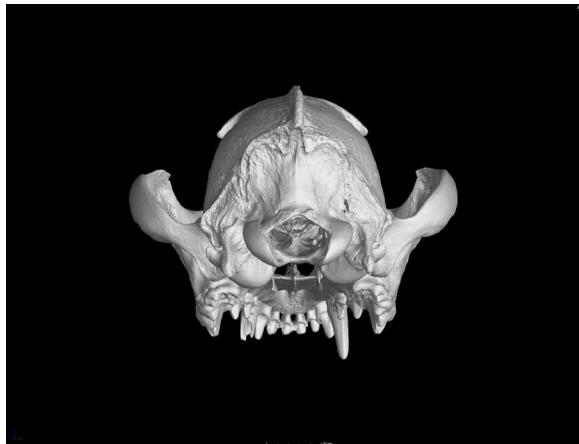
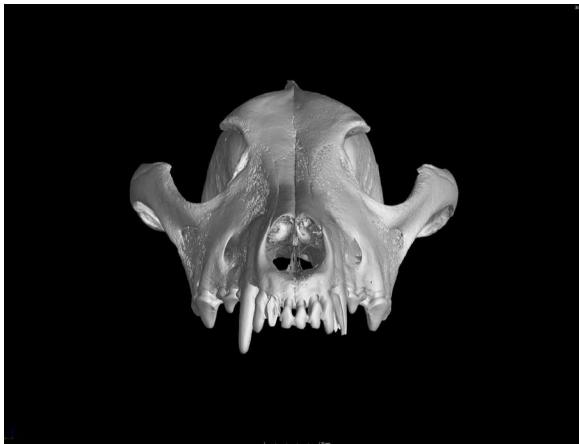
MSB 142637: *Canis lupus baileyi*

Skull: 135 μm resolution



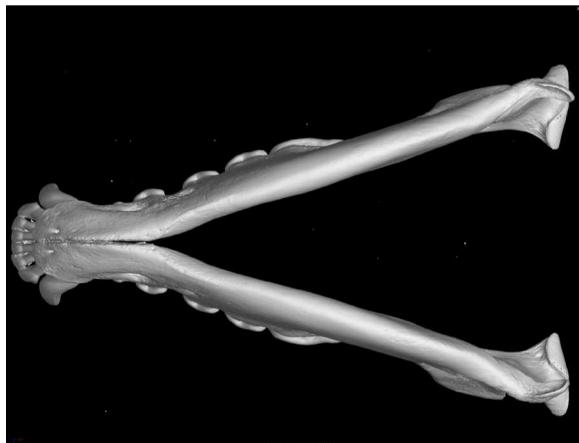
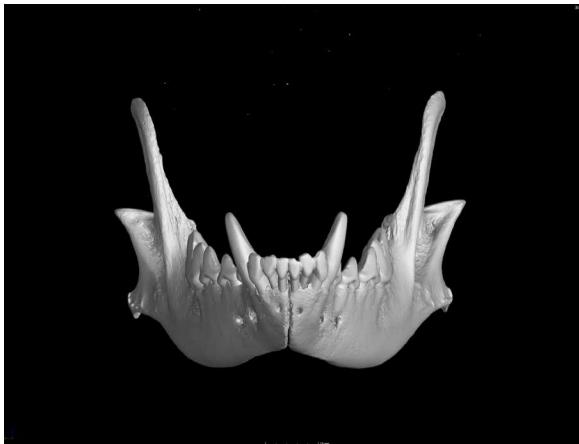
MSB 142754: *Canis lupus baileyi*

Cranium: 120 μm resolution



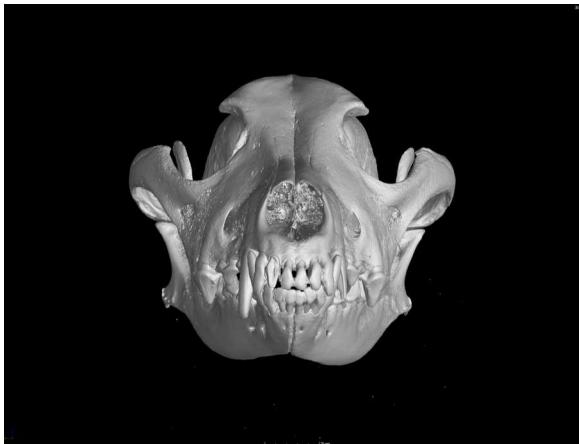
MSB 142754: *Canis lupus baileyi*

Mandible: 120 μm resolution



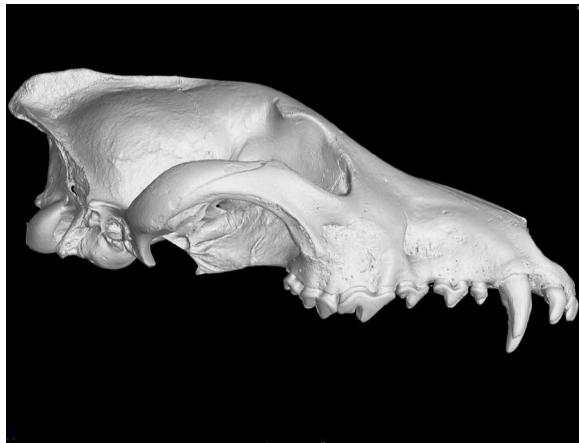
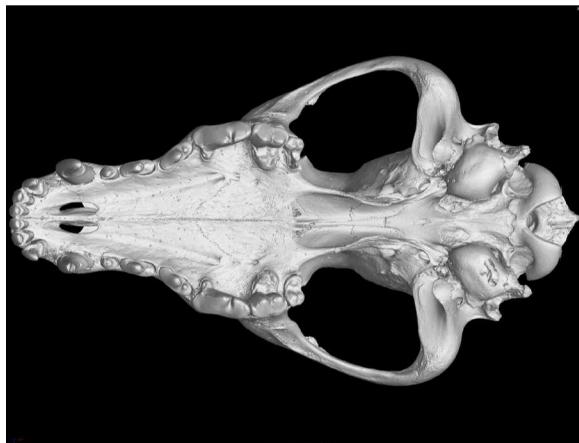
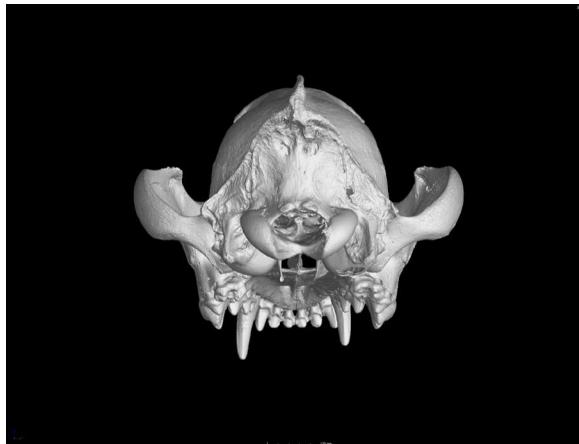
MSB 142754: *Canis lupus baileyi*

Skull: 120 μm resolution



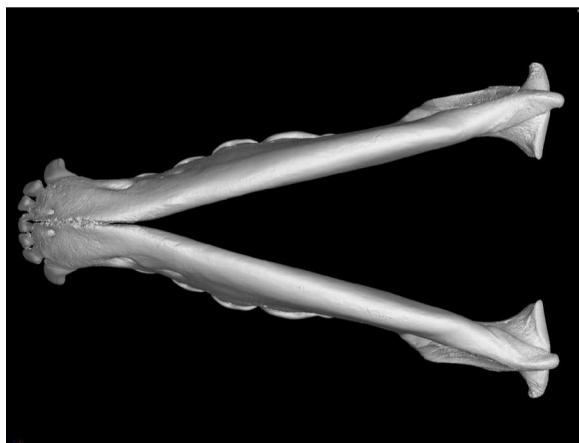
MSB 160124: *Canis lupus baileyi*

Cranium: 110 μm resolution



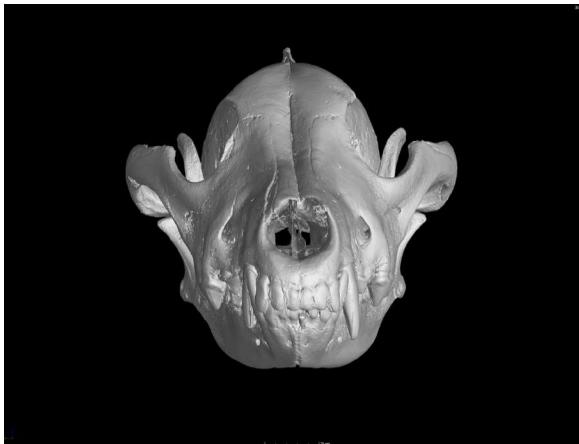
MSB 160124: *Canis lupus baileyi*

Mandible: 95 μm resolution



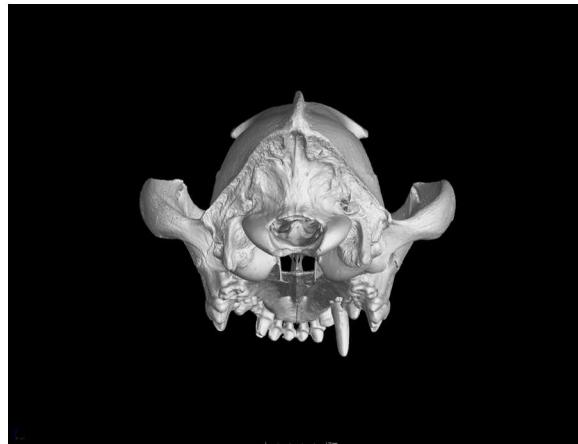
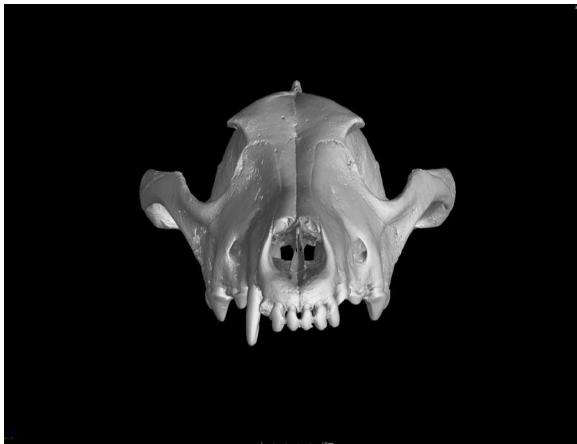
MSB 160124: *Canis lupus baileyi*

Skull: 128.83 μm resolution



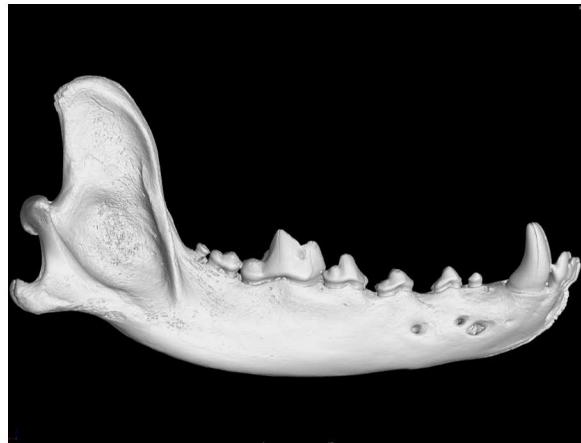
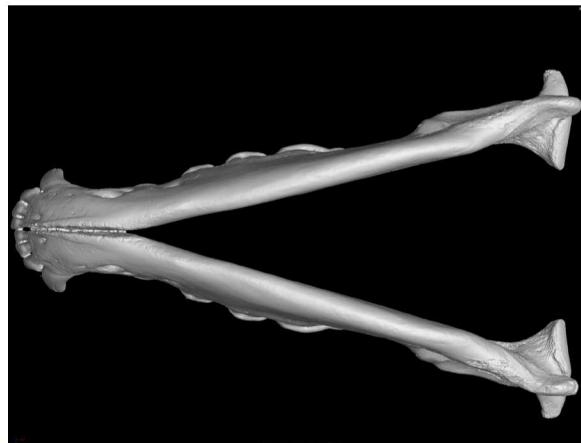
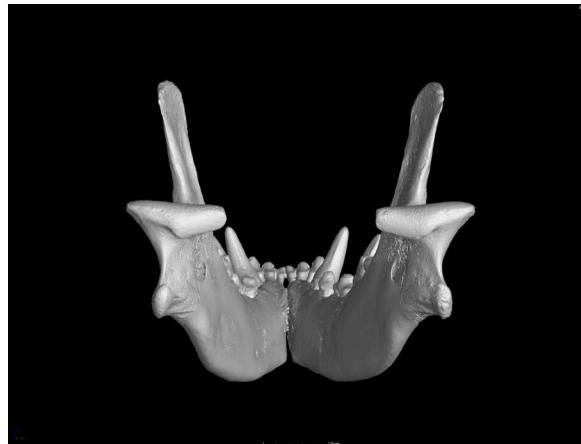
MSB 160135: *Canis lupus baileyi*

Cranium: 125 μm resolution



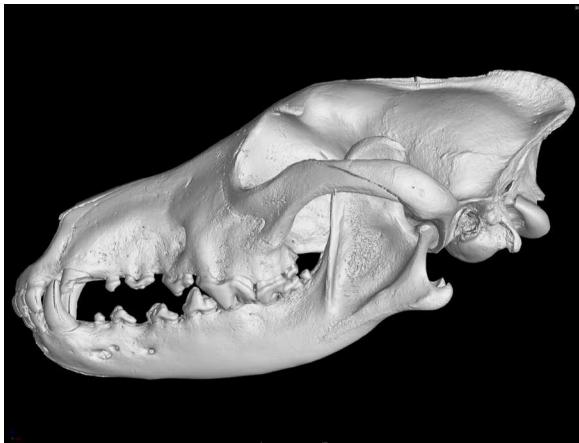
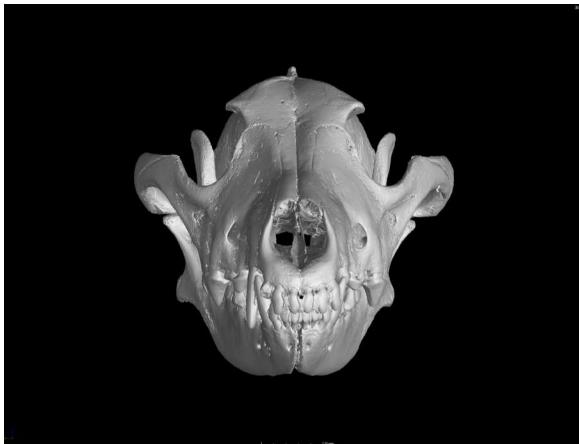
MSB 160135: *Canis lupus baileyi*

Mandible: 120 μm resolution



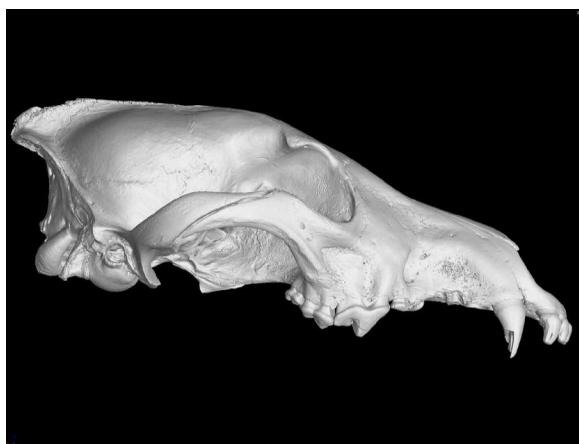
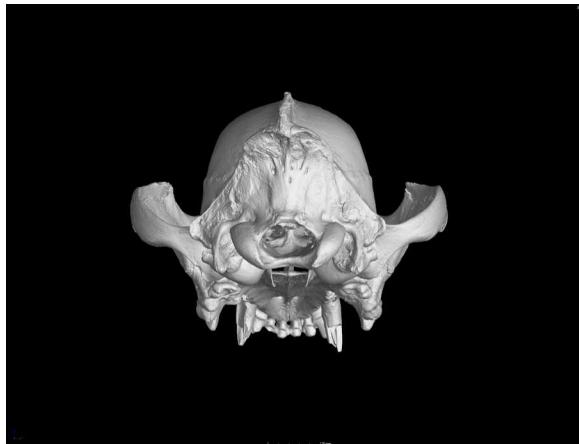
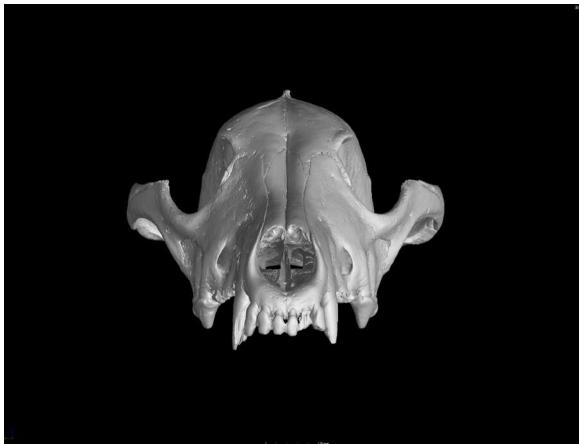
MSB 160135: *Canis lupus baileyi*

Skull: 130 μm resolution



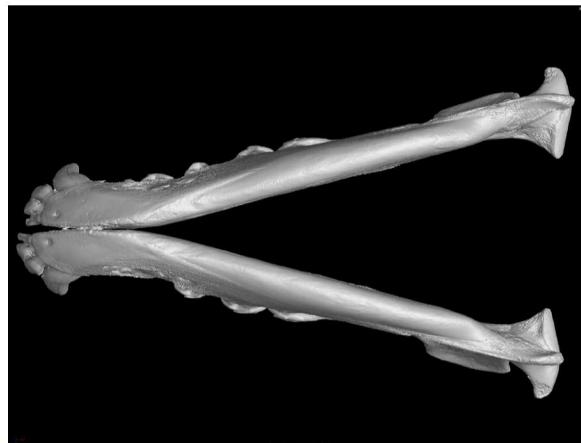
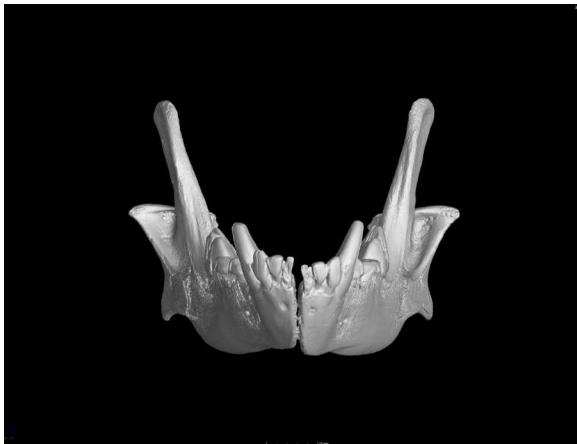
MSB 160145: *Canis lupus baileyi*

Cranium: 120 μm resolution



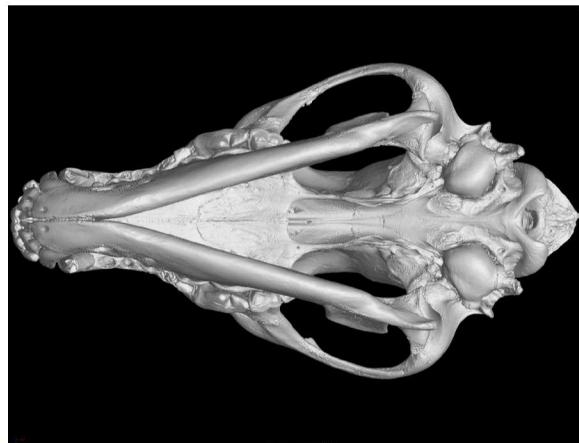
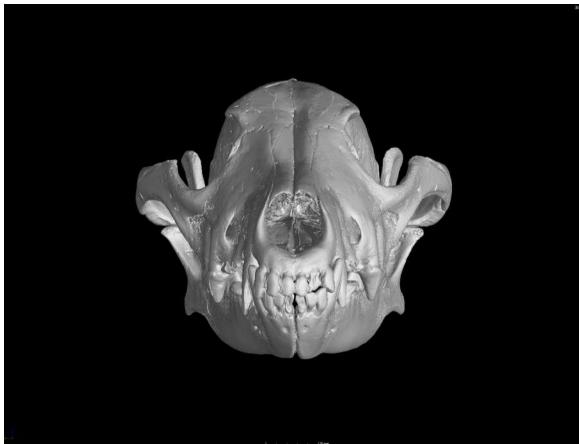
MSB 160145: *Canis lupus baileyi*

Mandible: 120 μm resolution



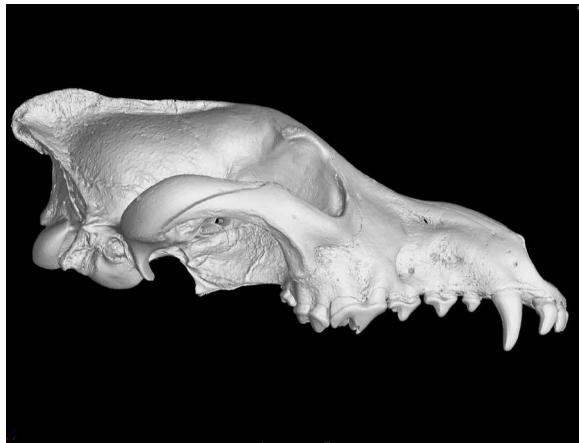
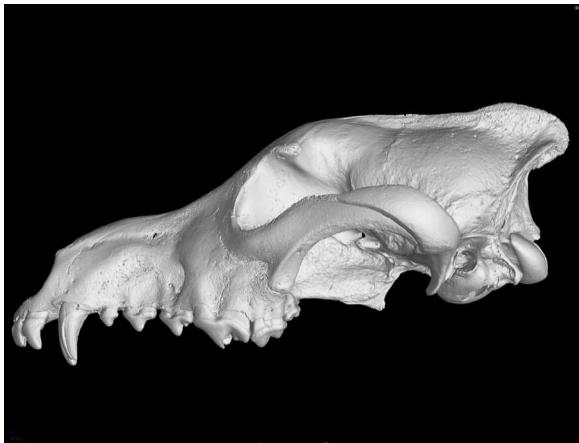
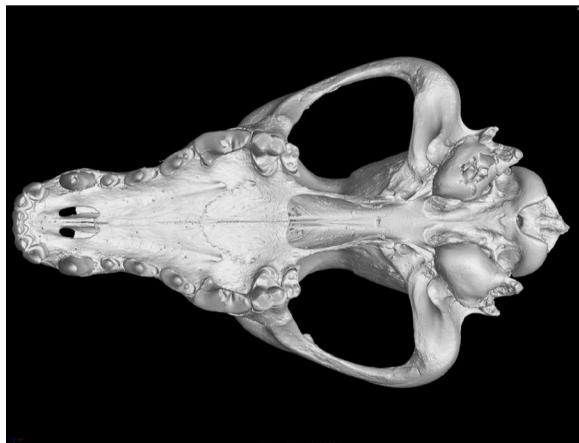
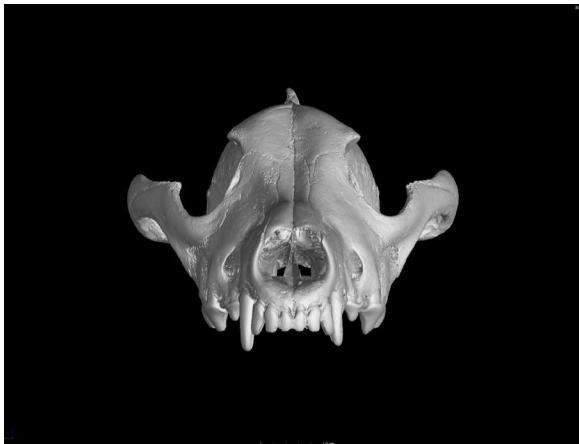
MSB 160145: *Canis lupus baileyi*

Skull: 120 μm resolution



MSB 160149: *Canis lupus baileyi*

Cranium: 125 μm resolution



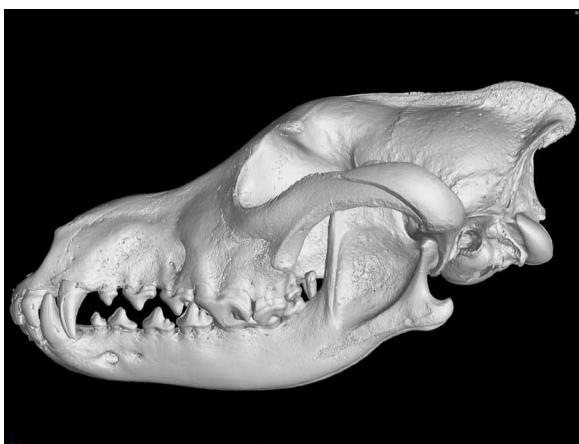
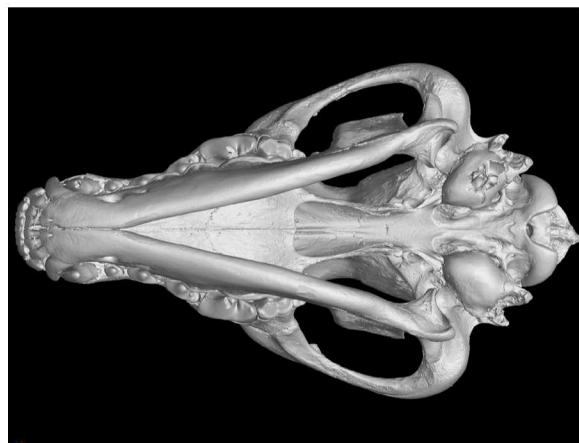
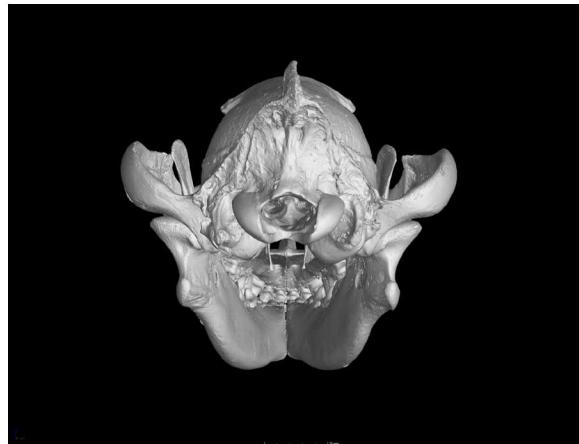
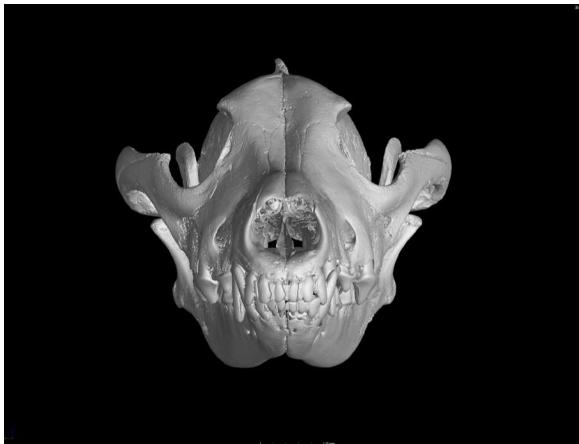
MSB 160149: *Canis lupus baileyi*

Mandible: 120 μm resolution



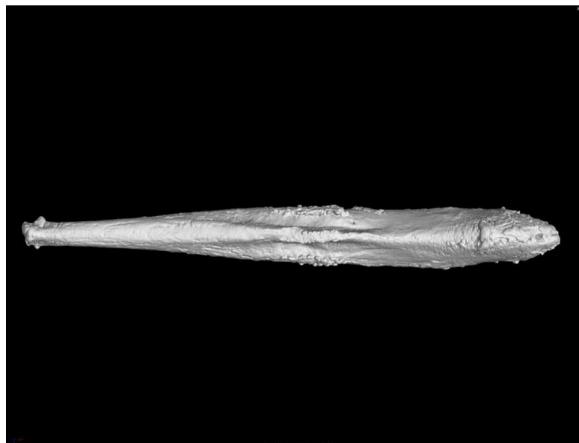
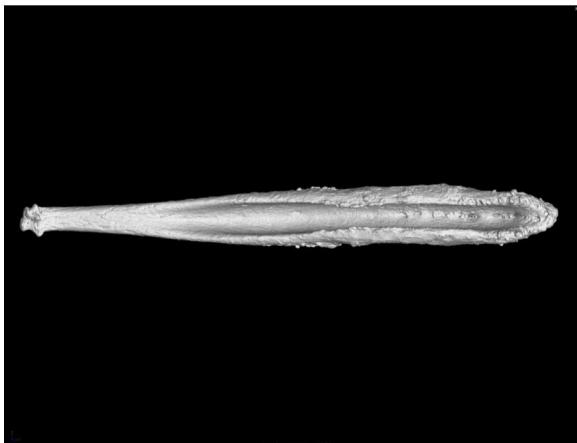
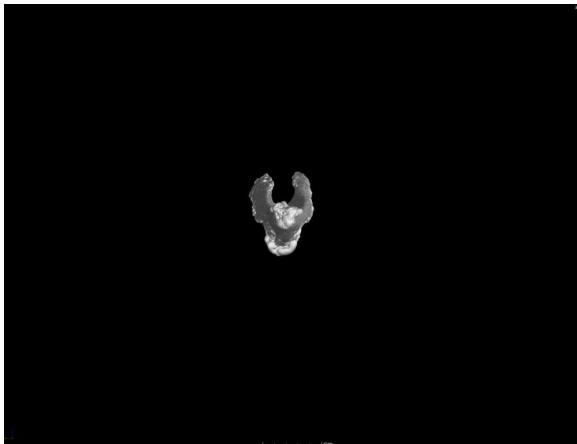
MSB 160149: *Canis lupus baileyi*

Skull: 130 μm resolution



MSB 160149: *Canis lupus baileyi*

Baculum: 50 μm resolution



DISTRIBUTION

Email—External (encrypt for OUO)

Name	Company Email Address	Company Name
Dr. Joseph Cook	cookjose@unm.edu	University of New Mexico, Museum of Southwestern Biology
Dr. Jonathan Dunnum	jldunnum@unm.edu	University of New Mexico, Museum of Southwestern Biology
Ms. Adrienne Raniszewski	aranis@unm.edu	University of New Mexico, Museum of Southwestern Biology

Email—Internal

Name	Org.	Sandia Email Address
Technical Library	9536	libref@sandia.gov

This page left blank

This page left blank



**Sandia
National
Laboratories**

Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.