



University of Nevada, Reno

28 October 2013

Dear Dr. Cook,

I am writing to request a loan of 8 *Neotoma cinerea* and 5 *N. lepida* tissues, and 52 *N. cinerea* skulls from the MSB.

The tissues are for a project assessing whether paleomidden subfossil frequency data are good indicators of *Neotoma cinerea* and *N. lepida* Holocene population size fluctuations in the Great Basin. The paleomidden data will be compared to demographic histories modeled from genetic patterns (cytochrome *b*, and later nuclear loci) to determine if these two indicators of demographic history are concordant. Because good geographic representation is essential for the coalescent modeling, every available *Neotoma* tissue from the Great Basin region will improve our datasets which currently include about 60 specimens from various museums and my own collecting.

According to Arctos, one of the requested specimens (MSB 212539) is still frozen whole. If it's possible to get a tissue from this animal, that would be great.

The skulls will be used for a separate geometrics morphometrics project investigating ontogenetic patterns in *N. cinerea*. Our question is whether populations in warm climates, which are smaller-bodied in accord with Bergmann's Rule, are also paedomorphic relative to the larger-bodied, cold climate populations. If so, it could indicate that evolutionary processes such as neoteny or progenesis are involved with climate adaptation in this species. I will address this question using 3D landmark data collected with a microscribe, courtesy of the MVZ at UC Berkeley. The skulls will be held in place using soft museum putty, similar to if they were arranged for 2D photography, and I will use the microscribe stylus to digitize each landmark in 3D space. The 52 MSB specimens are a genuinely important part of this dataset which will include over 600 skulls from several museums.

I will need to drive the skulls 4 hours from Reno, NV, to Berkeley, CA, to digitize them at the MVZ. There, they would be frozen 1-2 days before coming into the museum proper. If this is problematic, please let me know. Bringing the microscribe to Reno to digitize the skulls is a last option, though it's not guaranteed to be available to remove from the MVZ. For temporary specimen storage in Reno, we are excited to have recently built a new museum space with appropriate security, cabinetry, and pest monitoring.

If needed, our FedEx account number here is 3008-9371-6. Specimens can be mailed to:

Dr. Marjorie Matocq (c/o Angela Hornsby)
University of Nevada
Natural Resources MS-186
1664 N. Virginia St.
Reno, NV 89557

Finally, now is a good time to thank you for allowing me to work with your *N. cinerea* specimens previously. Please find our resulting manuscripts from the last year attached in the email.

Many thanks,

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