Final Report

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Project Title: *An Archaeological Meta-Analysis of Indigenous Turtle Use in Ancient Mesoamerica*

1.1 Project Summary

This project consisted of a meta-analysis of archaeological, ethnohistoric, and ethnographic studies to trace turtle use across Mesoamerica from 1500 BCE to 1700 CE. It aimed (1) to map the spatiotemporal distribution and intensity of Indigenous exploitation of the critically endangered Central American river turtle (Dermatemys mawii) and (2) to provide historical context for ongoing ancient-DNA and isotopic analyses and conservation initiatives of this species.

1.2 Project Outcomes and Impacts

This project produced the first region-wide meta-analysis of Indigenous use of freshwater turtles in Mesoamerica, with emphasis on the critically endangered Central American river turtle (Dermatemys mawii). We examined 286 publications reporting reptile remains from 151 archaeological sites dated 1500 BCE – 1700 CE. The CA river turtle was identified at 48 sites (~40 % of those with turtle remains) and accounts for 8,808 of 28,167 reptile bones. In addition, about 50 ethnohistoric and ethnographic sources were reviewed, with 14 containing relevant information for the project. Unsurprisingly, the geographic distribution of the CA river turtle at archaeological sites largely mirrors the species' modern range. Yet, bones were also found well outside that range, providing evidence that whole turtles or selected parts were traded from the Preclassic through Postclassic periods. In addition, the dataset documents a remarkable 3,200-year continuum of river turtle use by Indigenous groups. Early deposits show a predominantly ritual use of the animal. By the Classic period (250-900 CE), the animal became an elite delicacy, while later contexts show a more widespread consumption by both elite and non-elite members of Mesoamerican societies. Turtle shells were routinely repurposed and sometimes transformed into musical instruments and ornaments, underscoring the species' economic and cultural value. During the review, we noted major data gaps: over 60 % of turtle remains were classified only as "Testudines" (i.e., turtles), and many reports lacked detailed taxonomic, skeletal, or modification data. Limited training in identifying turtle bones and the small number of comprehensive comparative collections for reptiles are partly to blame. To address this, we will develop an open-access morphometric guide to enable accurate species-level identifications of Mesoamerican freshwater turtles; completion is anticipated within two years. Student engagement was another key impact. Two undergraduate students participated fully in all aspects of the research, co-authored a conference paper at the Neotropical Zooarchaeology Work Group V meeting (Santiago, Chile), and are co-authors of the forthcoming Open Context dataset (>3,000 standardized data points). By making these data freely available, the project supports future anthropological scholarship while documenting long-term baselines that can inform ongoing conservation initiatives for D. mawii.