Reliable data disconfirm a late Cenozoic post-Flood boundary

Marcus R. Ross

Once again I thank Tas Walker and *Journal of Creation* for engaging in and facilitating this discussion. What began as a critique on my paper on the Flood/post-Flood boundary has expanded to many other issues. This is fitting, as the methods by which young-earth creationists seek to understand the geological history of our planet vary significantly between two distinct camps, and as such evaluations done using one set of parameters (e.g. using the Paleobiology Database) invite discussions on the background assumptions and methods behind those parameters (such as the acceptance of the geological column and reliability of fossil identifications).

Since Walker's second letter[1] covers a wide array of topics, I will divide my response into several units. The reader should not take my silence on unaddressed issues to indicate either their acceptance or dismissal; it simply reflects constraints on space and the need to address what I believe are the most salient points.

Mishandling of the literature

One of the most troublesome issues I find with Walker's response is his handling of paleontological writings to support his arguments. Walker presses two ancient quotes into service, neither of which reflects current paleontology nor supports his arguments. The first is a 41-year-old quote about subjectivity in paleontological classification. Aside from the fact that Derek Ager would never have agreed with Walker's application of his quote[2], reread Walker's section and ask, what relevance do these concerns about invertebrate paleontology have to do with Cenozoic North American mammalian fossils? In contrast with invertebrates, North American mammals have no differences in a) the Phanerozoic eras under investigation, b) anatomical terminology, c) classification variances between phyla and/or classes, or d) language between countries (US and Canada). The quote was abducted from original context and misapplied to the issues at hand.

The second quote is worse. Here Walker quotes G.G. Simpson (via Donald Prothero), who laments the poor status of rhinoceros fossil taxonomy in 1945, some *69 years ago*! Yet if Walker continued reading the two paragraphs following his lifted quote, he would have learned how this has changed to the point that Prothero states, *on the same page*, "the

huge number of unidentified rhino bones in collections all over the world can now be identified."[3] Walker's misleading arrogation of these writers' works is infuriating, because *it leads readers away from the truth*. It sadly but unreservedly warrants the charge of quote-mining, and I take no pleasure in stating this.

The K-Pg boundary

Regarding Walker's assertions that the K-Pg impact materials may have separate (or even non-impact) sources, these issues have been thoroughly addressed in the geological literature. The unity of the debris is confirmed by many lines of evidence (e.g. shared unique geochemical signatures in the clay layers, specific impact-derived [not volcanic] features of the shocked quartz, lack of appropriate volcanism to distribute iridium on a global scale, etc.). Prominent evolutionist critics of impact-driven extinction scenarios no longer make these arguments.[4]

Walker then asks, if the trans-Atlantic correlations are correct, "Were the sediments in the US and the Netherlands part of the same depositional basin? Were they deposited at exactly the same time?"[5] To which my answers are no, and yes. By the time of the impact (during the latest phase of the Flood), North America and Europe had already split and were not depositionally linked,[6] while the impact materials and near-identical fossil assemblages are independent data that confirm the event was synchronous on both continents. So we have evidence of a single event during the Flood with preserved evidence on multiple continents. This should be *exciting* to creationists!

Evaluation of boundary-crossing genera

Like his handling of the literature, Walker's evaluation of the fossil data I presented is frustrating. He discusses the Bovidae and Rhinoceratidae, two of the most obvious outliers in the data sets I analyzed, as if their fossil distributions are normative and therefore the mammal record affirms a high post-Flood boundary. In my original analysis,[7] I found that among 28 families, 23% of genera crossed a post-Flood boundary selected at the Pliocene/Pleistocene boundary (roughly equivalent to Walker's 'late Cenozoic'[8]). In contrast to the average, Walker chose two families whose crossing rates are 6.3% and 0%, then submits four possible scenarios for how the lone boundary-crossing bovid (*Ovis*) might be explained. Before evaluating these two scenarios, let us consider two other groups from my paper: the Canidae and Felidae.[7] In contrast to Walker selections, these families lie above and below the average crossing rate, respectively.

Of the 25 North American canid genera, three (12%) cross the boundary: *Canis*, *Vulpes* and *Urocyon*. These are familiar genera with extant species, representing the dogs-wolves-coyotes, 'true' foxes, and gray foxes, respectively. Among the felids, nine of 15 genera (60%) cross a high post-Flood boundary, including the extant genera *Felis* and *Lynx*. According to Walker's argument, the identification of literally thousands of these fossils must be systematically in error. Yet we are looking here at fossils of *living genera* known throughout the North American continent and beyond.

Does Walker really believe that an evolutionary worldview prevents paleontologists from distinguishing fossils of a red fox (*Vulpes vulpes*) from a dire wolf (*Canis dirus*)? Or a cougar (*Felis concolor*) from a bobcat (*Lynx rufus*)? If so, then he is mistaken. I was trained how to distinguish among these very same genera, and their identifications are based on skeletal and dental characters, not bias or worldview. Given that these are genera with living species, many non-paleontologists[9] could also confirm the identity of these fossils.

Walker's discussion of *Ovis* runs aground on these same problems. *Ovis* includes some of the most familiar mammals to all of mankind: sheep, goats and rams. Domesticated since Abel (and again after Noah), their anatomy is easily distinguished as different from other bovid genera, and among various *Ovis* species by even the untrained eye. Walker's claims of mistaken identification are nullified by the evidence on display in the museums, pastures, and barnyards of the world.

To avoid the problem of boundary-crossing genera, Walker provides four possible scenarios. The first two potentially define the created kind at the genus or even species level. The former is problematic and the latter is unacceptable. The third and fourth scenarios require us to believe that highly trained and observant geologists and paleontologists are either incompetent or too agenda-driven to recognize real geological relationships or proper fossil identifications. As shown above, this is a non-starter.

Fossils are real data

This leads to an overarching problem with Walker's treatment of fossils. He seems to think of them as constructs of evolutionary theory, not data. Yet fossils are recognizable physical objects every bit as informative to geologists as the minerals and structures of a rock. Walker would not (I hope!) challenge every instance of ooids or garnet in the rock record. Why chafe at all the rhinos?

If Walker had read any one of the dozens of morphological descriptions in the book by Prothero he quoted,[3] he would have discovered that fossil genera are diagnosed by highly specific physical characters that are distinct from even closely related taxa from the same baramin. There is always some subjectivity in classification (it is, after all, a human endeavour), but the question is one of reliability. Can fossils

be consistently identified to certain taxonomic levels given diagnostic preserved material? That answer is an unqualified 'yes'. This is why Walker's plea for 'further investigation' rings hollow, since in practice this means that he claims the right to call into question the identification and/or provenance of thousands upon thousands of fossils.[10]

And so I ask: On what basis should we trust Walker's dismissal of fossils he has not observed, and for which he has no expertise in identifying? My own experiences with fossil collections and evolutionary paleontologists over the past 20 years provide no sympathy for Walker's unrestrained skepticism of their work. So unless and until Walker can provide specific, character-based, morphological reasons for his assertions of gross fossil misidentification, the multitude of fossil occurrences incongruent with his proposed geological model should make us reassess the model, not the fossils.

How to move forward

Each day that I was in secular university geology classes, I came home with a multitude of questions on my mind. What was fact? What was reasonable inference? What was speculation? What was error? But most important was: How would I integrate the information I learned that day with my understanding of God, Creation, and the Flood? This is the question that both excites and terrifies me to this very day. Sometimes it is easy to see the relationship of geological and fossil data to the Flood, while in other instances it is much more difficult. Yet this is the only path forward.

In analyzing the fossil data, this is what we know:

1. North America has an abundant record of mammal fossils in Cenozoic deposits.
2. These fossils are accurately identified and documented. Those researchers, such as myself, who have spent time in collections, can verify that this work has been done (and done well).
3. Patterns of fossils in the sedimentary record allow us to make correlations between units that are not physically connected, allowing long-range correlations to be constructed and compared.
4. These patterns indicate that the distribution of mammal genera does not display the 'clean break' in the late Cenozoic expected if this was the Flood/post-Flood boundary. Instead, 23% of the mammal genera surveyed crossed this proposed boundary.
5. In other continents, the same pattern is repeated with very different mammal fossils.

The natural conclusion drawn from these facts, namely that mammal distributions reflect post-Flood diversification, is but one of many reasons why a 'late Cenozoic' placement of the Flood/post-Flood boundary is untenable. In order to avoid this conclusion, one must argue that these North American (and Australian, and African, etc.) mammals left the continent to board the Ark, then returned to their continent of origin despite radical changes in geography, climate, vegetation, and continental location. Either that, or, as Walker claims, the taxonomic and geologic assignment of fossils is mistaken in all of the thousands of cases where the fossil record disconfirms his position. I conclude instead that the fossil record is reliably understood and that the post-Flood boundary lies deeper, likely at or near the K-Pg boundary.

References

1. Walker, T., Research needed to resolve questions with late Cenozoic post-Flood boundary, *J. Creation* **28**(2):26–29, 2014.
2. As Walker notes in his letter, Ager was a contributor to the authoritative series, *Treatise on Invertebrate Paleontology*. No doubt Ager believed that the vast majority of fossil taxa described therein (including the brachiopod data he contributed) were identified properly.
3. Prothero, D.R., *The Evolution of North American Rhinoceroses*, Cambridge University Press, Cambridge, UK, p. 2, 2005.
4. See Archibald, J.D. and Fastovsky, D.E., Dinosaur Extinction; in: *The Dinosauria*, 2nd edn, University of California Press, Berkeley, CA, 2004. These co-authors are on opposite sides of the extinction debate, and Archibald (gradualist) makes no use of the arguments that Walker presents.
5. Walker, ref. 1, pp. 62–65.
6. Easily recognized by their sedimentary character: clastic (USA) vs carbonate (The Netherlands).
7. See table 1 from Ross, M.R., Evaluating potential post-Flood boundaries with biostratigraphy—the Pliocene/Pleistocene boundary, *J. Creation* **26**(2):82–87, 2012; creation.com/biostratigraphy-post-flood-boundary. See especially supplemental figures 6 and 7 at creation.com/pliocene-pleistocene-boundary.
8. But as noted in my first response, Walker's use of this term is self-defeating.
9. Including hunters, farmers, park rangers, veterinarians, and amateur naturalists, etc.
10. Note that Walker's second letter includes only suppositions; it does not evaluate any *actual* collection records of *Ovis* fossils.