Revisiting the problem of very old landforms

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It seems strange that Twidale has written three similar articles on older landforms, attempting to convince fellow geomorphologists that they are, in fact, exceptionally old. Twidale's first article was written in 1976,[1] in which he argued that landforms could be tens to hundreds of millions of years old. This was contrary to popular belief articulated by Thornbury in 1954:

> "Little of the earth's topography is older than Tertiary [Paleogene and Neogene], and most of it is no older than Pleistocene."[2]

Twidale revisited the problem again in 1998[3] then dusted off the arguments and discussed the problem further in 2016, with a focus on Australia.[4] Unfortunately, despite these more recent publications, little new information has been added since 1976. So why has he been persistent over 40 years? His main reason seems to be that very old landforms, such as planation surfaces and inselbergs, are contrary to the uniformitarian principle but still exist.

Modern erosion rates too high

According to the uniformitarian principle, present day rates of erosion are several orders of magnitude too rapid for the landforms to have survived to the present day.[5] Erosion rates are based mainly on climate and relief and vary significantly, with the highest rates of erosion being in high mountains with high rainfall. For example, a mountain basin in Taiwan has been measured to erode at 2.65–5.17 mm/yr.[6] But even dry areas, like southern and central Australia, have erosion rates of 5–35 mm/1,000 years.[7] On this basis the world's average rate of erosion must be over 40 mm/1,000 years.[5] At the present rate of erosion, all of the continents would be reduced to sea level in 10 Ma based on river output to the oceans.[8] However, there are other processes that would slow erosion. Several secular geologists have estimated that this reduced rate would flatten all of the continents in less than 50 Ma.

Despite Twidale's writing, it appears many geomorphologists still don't believe the landforms are that old. Indeed Twidale complained in his 2016 article:

> "Hence the almost universal view that with the exception of exhumed forms, few landscape features predate the late Cenozoic [i.e. Miocene, Pliocene, Pleistocene, and Holocene in the geological timescale]."[9]

However, Twidale believes these landforms are much older than the late Cenozoic.

Why are landforms so 'old'?

Radiometric and fossil dates are primarily what Twidale and other geomorphologists and geologists point to when claiming a landform is very old, as apparently deep time is more sacred among secular scientists than uniformitarianism. Many of these so-called 'very old' landforms are in Australia.[10–12] Some planation surfaces in Australia, those that have not been exhumed (during the Flood), have remained flat since the Paleozoic or Mesozoic. For instance, the planation surface on Kangaroo Island, South Australia (figure 1), is believed to be over 150 Ma old.[13] Ollier claims a super-old planation surface of Precambrian age, older than 540 Ma, is the Kimberley Plateau of north-west Australia.[14] Such old planation surfaces also exist in other parts of the world:

> "Surfaces and forms of earliest Cenozoic and Mesozoic age ranges [~50–250 Ma] persist in many parts of the world".[15]

Twidale and Campbell further state:

> "In geological terms, in other words, there ought to be no landforms or land surfaces, even in areas eroded according to the scarp retreat model, of an age greater than Oligocene [about 30 Ma], and certainly no

Figure 1. Figure 1. The remarkable erosion surface on Kangaroo Island, South Australia, southwest of Adelaide, that is supposed to have existed for more than 150 Ma.

older than the Cainozoic [less than 65 Ma].”[15]

How could these landforms have survived for so many eons, given the fact that they are eroding today at relatively high rates? It is possible to claim that continuous uplift rejuvenates mountain ranges, but that would not account for the preservation of old planation surfaces or inselbergs, which would have continued to erode away. Since many mountain ranges still have mountaintop planation surfaces,[16,17] rejuvenation is not a plausible explanation.

Any new suggestions for preserving mechanisms?

I have previously dealt with various mechanisms that could possibly reduce surface erosion rates. These include a resistant cap rock, a dry climate, and preservation by glaciers. I also pointed out that within the long-age paradigm Australia’s mostly dry climate today was not always so in the past.[18] According to plate tectonics, Australia was recently in the wet mid latitudes where erosion would have been faster.

Twidale and others continue to search for preserving mechanisms, believing the dates are absolute and there must be an explanation because the landforms *still exist*:

“Yet, many features that are several tens of millions, or even a few hundreds of millions of years old, remain incredible. On the other hand, it can be argued that since these landforms exist, they must be possible.”[19]

This is the logical fallacy of begging the question.

In his most recent article Twidale now seems to downgrade the activity of rivers and streams:

“Third, though widely active in shaping the land surface, rivers *per se* are not as effective as has been supposed (e.g. Baker, 1988).”[20]

He hangs onto the idea of resistant rock at drainage divides, but he overlooks the consequences that slow erosion at these locations would only preserve *ridge landforms* longer. It does not help the preservation of many other landforms, such as planation surfaces and inselbergs, which are extensive in Africa and Australia.

Powerful, objective evidence against deep time

What are claimed to be ‘very old’ landforms, especially planation surfaces and inselbergs, continue to be objective evidence that the reliability of radiometric and fossil dates is greatly exaggerated.[18] According to erosion rates today, there should not be any planation surfaces older than a few hundred thousand to a few million years within the uniformitarian timescale. This result confirms what creation scientists have been saying for years; that there is something seriously wrong with dates that number in the millions and billions of years. This agrees with the RATE (Radioisotopes and the Age of The Earth) project which demonstrated radioactive dates have serious theoretical problems, and proposes that there was a period of accelerated radiometric decay during the past approximately 6,000 years of biblical Earth history.[21,22] However, the origin of landforms that are difficult, if not impossible, to explain by uniformitarianism, can be readily explained by Flood runoff.[23,24]

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