

# Post-glacial flooding of coastal margins within the biblical timeframe of Peleg

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It has been well established that during the Ice Age the mean sea level was lower than present levels, but it is now increasingly recognized that the ice layers collapsed suddenly with a rapid rise in sea level, perhaps by tens of metres, in a matter of weeks or months. This new understanding is finding its way into popular scientific thinking, with claims that sudden rises in sea level produced the many recorded flood accounts, including the Genesis account, and the Gilgamesh Epic. Christians must address these assertions in order to uphold the integrity of Scripture within a biblical timeframe. The main continents were joined by land bridges during the Ice Age, and were subsequently divided by rising sea levels. Scripture itself mentions a division of the earth during the time of Peleg, and one source notes that *Peleg* literally means 'water course, division'. This paper will address the issues raised by researchers in order to defend the biblical account, and show that Genesis 10:25 and Genesis 11:1–9 may refer to the rapid rise in sea levels at the end of the Ice Age with a corresponding division of the earth. This Pelegic division by water should be seen as separate from the earlier Noahic Deluge.

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### Sea level changes

Evidences for large-scale changes in sea level during the Ice Age are found all over the earth. They include the tracks of old river beds and flooded valleys that now lie many metres under the sea. It has been proposed that all of the Persian Gulf was dry land, with the shore close to where the Strait of Hormuz is today. There is also evidence that the water level in the Black Sea was once much lower, too. The amount of water in the Gulf of Aqaba and the Red Sea may have been significantly less as well, much as the Dead Sea is today, and the English Channel appears to have been largely dry, being merely an extension of the Rhine, Seine

and Thames. When we put these ideas into the post-Flood model, we begin to see that for many years after the Flood, Europe, Africa, Arabia and Asia existed as one huge area of land, interspersed with large salt- or fresh-water lakes. North America was also joined to Asia via a dry Bering Strait during the time of glacial maximum.

At the peak of the Ice Age, the sea level was much lower than its current position. Estimates of maximum sea level changes vary, but are generally given at about 115 m below present-day levels.<sup>1</sup> This is a combination of a 165-m depth of water removed from the ocean to form the ice layers, less a 50 m isostatic compensation from a rising ocean floor. During this time, huge amounts of water were locked up in ice layers perhaps several thousand metres thick. However, Michael Oard considers these figures may be too great. Oard instead suggests that the sea level fell only around 50 to 60 m below present levels by the time of glacial maximum,<sup>2</sup> with a possible average ice depth of 906 m in the northern hemisphere and 1,673 m in the southern hemisphere.<sup>3</sup> However, in a previous paper it was noted that an increase in atmospheric dimethyl-sulfide (DMS-(CH<sub>3</sub>)<sub>2</sub>S) from phytoplankton blooms during the Ice Age period may have increased cloud condensation nuclei (CCN) and cloud liquid water content (LWC) over the open ocean with less water falling out as drizzle.<sup>4</sup> It was commented that this scenario 'may have produced heavier precipitation over ice layers during the Ice Age period than current creationist estimates allow'.<sup>5</sup>

Further research is necessary to determine how significant the effect of greater CCN and LWC would have been on the growth of the ice layers and the lowering of mean sea level. However, the disagreement between Oard's figure of 60 m sea level reduction, and the corresponding uniformitarian estimate of 115 m does not have significant bearing on this present research. It may be noted as well that the aftereffects of the Noahic Flood itself would have added to the complexity of sea floor and sea level changes.

Some scientists now believe that the large ice sheets and glacial lakes collapsed very rapidly, with the sea level rising quickly by tens of metres in a matter of a few weeks or months. Oard has recently demonstrated, for instance, that Lake Missoula flooded catastrophically, as an ice dam holding back 2,220 km<sup>3</sup> suddenly gave way with the body of water draining out in a couple of days.<sup>6</sup>

Professor Shaw from the University of Alberta has studied drumlins in North America and Canada, ranging in height from 6 m to 60 m, and claims they are formed through water running under tremendous pressure under the ice sheets.<sup>7</sup> Together with other evidence from rogen moraines and hummocky landscapes, he considers the implications to be that the ice sheets were partly floating on water, and that 'Volumes of water required to sustain such floods would have been on the order 10<sup>6</sup> km<sup>3</sup>, equivalent to a rise of several metres in sea level over a matter of weeks'.<sup>8</sup> This scenario would have knock-on effects, with fresh-water turbidity currents affecting ocean circulations

and global climate, and changes in sea level and crustal loading destabilizing other ice sheets.<sup>8</sup> There may have been several of these catastrophic collapses over a period of weeks or months, and the rise in sea level would have quickly spilled over the low-lying dry land.

It may be noted, however, that other uniformitarian geologists have criticized Shaw's work in the past because of its catastrophic implications. However, Shaw has continued his research and considers evidence to be building in his favour. He comments, for instance, with regard to the structure and form of the Livingston Lake drumlins in northern Saskatchewan, that they are 'infills of inverted erosional marks scoured in the ice-bed by subglacial meltwater'.<sup>9</sup> Oard finds appeal in these ideas, and comments, 'Catastrophic "dewatering" and rapid formation of drumlins are expected during deglaciation in a post-Flood, ice-age model. Consequently, this model may provide the missing key for explaining the origin of drumlins.'<sup>10</sup>

Not only are scientists finding increasing evidence for a rapid breakdown of the ice layers, but they are also trying to use the evidence for rapidly rising sea levels to account for the many flood stories from around the world, including the biblical account itself as a watered-down, local flood. For instance Pitman and Ryan have proposed that a Black Sea flood event, caused by glacial melt water, led to the Noahic Flood account.<sup>11</sup> Graham Hancock's book *Underworld, Flooded Kingdoms of the Ice Age*<sup>12</sup> and Stephen Oppenheimer's book *Eden in the East, The Drowned Continent of Southeast Asia*<sup>13</sup> both present evidence for a rise in sea level during the post-Ice Age period. These authors give a lot of evidence from around the world, and it is not possible to review it all here, but it must be remembered that sea level changes have continued after the end of the Ice Age as the earth's crust has adjusted to loss of the massive ice caps.

Those who believe in the accuracy of God's Word need to address the points that such researchers raise. A watery division of the earth in the time of Peleg, as recorded in Genesis 10:25, offers a compelling answer to the critics of the biblical account, being a separate and subsequent event to the Noahic Deluge itself.

### In the days of Peleg

'Two sons were born to Eber: One was named Peleg, because in his time the earth was divided' (Genesis 10:25).

Most scholars have proposed that the context of this verse is found in the scattering of peoples across the face of the earth, and division of languages following the construction of the Tower of Babel as described in Genesis 11:1–9. This may well form a partial answer, but is it possible that the earth was literally divided at this time as well? Why, for instance, does the reference to Peleg suggest the earth was divided, when the context and focus of Genesis

10 and 11 are the distribution and scattering of people and nations?

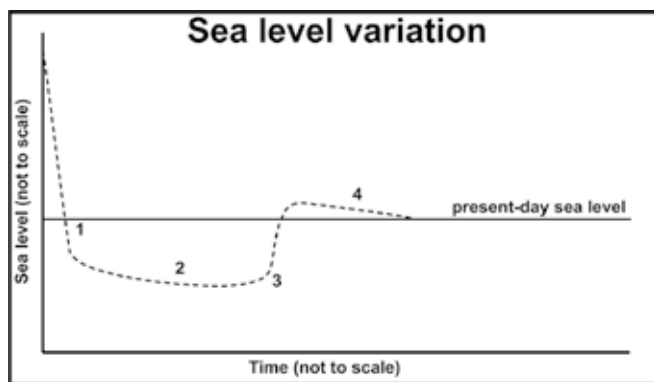
It has been suggested by some<sup>14,15</sup> that the text may refer to the separation of continents to their present position. Though some tectonic activity may have occurred to change sea levels at this time, the amount of energy required to move the landmasses would effectively have reproduced the Flood of Noah and thus continental movement is unlikely.<sup>16</sup>

A third possibility is that in the days of Peleg, the whole earth may literally have been divided by rising sea levels. Indeed, Wiseman has noted that *Peleg* means 'water course, division' (Assyr: Plagu).<sup>17</sup> John Morris also considers it possible that the biblical reference is to the separation of the land by rising sea levels at the end of the Ice Age, which reinforced the separation of people and confusion of languages in Genesis 11.<sup>18</sup> Sudden rises in sea level in the plain of Shinar (modern day Iraq and the Persian Gulf) may also have been the catalyst for the dispersal, with lost pasture land, flooded cities, and fearful thoughts of the Noahic Deluge itself causing a retreat to the hills and dispersal.

Bill Cooper notes that *Peleg* appears as the noun *pulukka* in Akkadian, which means 'a dividing up of territory by means of boundaries and borders'.<sup>19</sup> The Akkadian verb is *palaku*—'to divide'. Wiseman suggests that the Assyrian *Plagu*, meaning 'water course, division', may be a reference to the construction of 'artificial irrigation canals' during the time of Peleg, and the noun *Plagu* referred to land division by canals and irrigation systems. However, it is hard to reconcile the building of canals through a period of division and scattering of people, as people tend to dig canals in times of stability and peaceful settlement. It is likely that canals had been dug prior to Peleg, and again afterwards. Genesis 11:1–9 also records that it was God who scattered the people, not a division by man-made drainage ditches. Instead, Peleg may have been named after a natural watery inundation that divided the land and scattered the people in the Plain of Shinar during this time. The English word *pelagic* is also derived from Peleg, and used to refer to aquatic life living within the ocean. The changes in sea level under this scenario are shown in figure 1.

### Date of Peleg relative to Noahic Flood

According to the Masoretic Text, which is used for the more traditional Old Testament translations, Peleg was born 101 years after the Flood, and lived for 239 years.<sup>20</sup> There is insufficient space to go into the detailed question of gaps in the genealogical record of Genesis 10, which Whitcomb and Morris once proposed were possible,<sup>21</sup> suffice it to say that Sarfati comprehensively answers this question. Sarfati asserts that 'Contextual, linguistic and historical analyses of the book of Genesis confirm that the *chronogenealogies* are a complete record with no gaps.'<sup>22</sup> Sarfati also compares the Masoretic Text against the Septuagint and considers



**Figure 1.** Comparison of changes in sea level relative to today's level. (1) The end of the Noahic Flood. (2) Sea level reduced approximately 60 to 115 m below present-day levels with exposed sea floor connecting all continents, except Australia, via land bridges. (3) The sea level rose rapidly to above present-day levels, causing Flandrian transgression flooding, covering low-lying coastal margins, and divided the land within Peleg's lifespan. Oppenheimer suggests a height of 5 m above present-day levels. (4) The sea level slowly falls back to present-day levels.

the former more reliable. According to the Masoretic Text, Peleg lived from 101 to 340 years after the Flood, constraining the time period for this hypothesized link of Peleg to the sudden end of the Ice Age.

Michael Oard suggests, as a likely 'ballpark' figure, that glacial maximum occurred around 500 years after the Flood, followed by a relatively slow 200 years of melting.<sup>23</sup> However, he considers it possible that glacial maximum may have occurred up to 250 years earlier.<sup>24</sup> If the event in question is to be fitted within the lifespan of Peleg, then glacial maximum, and the sudden collapse of the ice layers, would most likely have occurred from 250 to 340 years after the Noahic Flood. In a previous paper, I argued for shortening the time to glacial maximum based on massive oceanic and volcanic sulfate aerosol release, and loss of carbon dioxide to the ocean, as these combined mechanisms would provide greater cooling and more rapid growth of the ice layers than previously considered.<sup>25</sup> As a result, a period to glacial maximum of 300 years was considered feasible as a revised 'ballpark' figure based on Oard's wider findings.

### The Persian Gulf and evidence of marine and river flooding

The archaeology and geology of the Persian Gulf and southern Iraq have been carefully studied and mapped over the years. Woolley's pit F was excavated to a depth of 17 m in the early twentieth century, underneath the Royal Cemetery at Ur, where he found human artefacts under three to four metres of pure sediment. Woolley was careful to have the sediment examined, and it appeared to have derived from higher up the Euphrates Valley, suggesting a river flood was responsible. Woolley comments that 'microscopic

analysis proved that it was water-laid, subject to the action of gentle currents, and it was composed of material brought down from the middle reaches of the Euphrates'.<sup>26</sup>

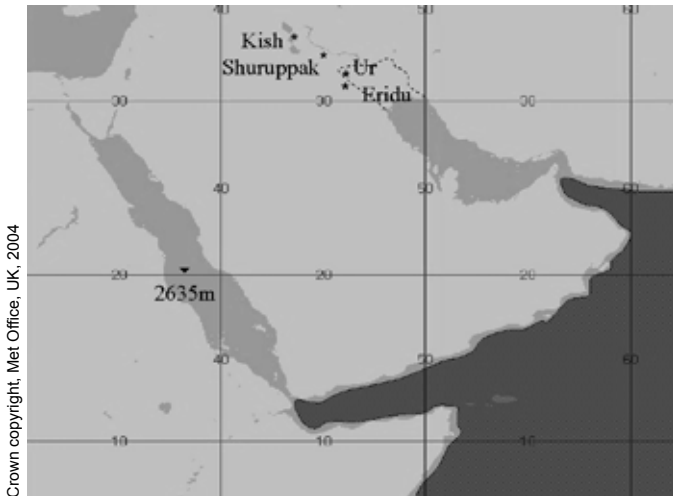
Archaeological evidence such as pottery fragments, clay figurines and burnt mud-bricks, and lack of metallic remains, from beneath this flood layer, was claimed by Woolley to have come from the stated Neolithic al-Ubaid period, and that above largely from the Uruk period. Woolley announced his findings as the discovery of the flood of Utnapishtim (Babylonian Noah) in a letter to *The Times* printed on the 16 March 1929.

Others were quick to disagree. A colleague of Woolley, Langdon, claimed that he had found similar evidence of a flood the previous year at Kish, dated to 2600 BC, and linked it to Utnapishtim's flood.<sup>27</sup> Kish is much farther inland than Ur, making any flood here fluvial. Another colleague of Woolley, present at the early Ur excavations, was Mallowan, who suggested many years later that Utnapishtim's flood occurred around 2900 BC.<sup>28</sup> This he claimed made the Ur flood older still, and appealed instead to fluvial flood deposits found at Shuruppak, modern Fara, as being that of the famous flood. The Sumerian King List (SKL) records Shuruppak as the last city before the flood. Mallowan also proposed that the Ur flood was of maritime origin. Previous researchers, such as John Pye Smith claimed that the Noahic Flood was a fluvial event, simply confined to Mesopotamia.<sup>29</sup>

Juris Zarins<sup>30</sup> has presented evidence of a maritime inundation of southern Iraq, carefully mapping out the coastline at the end of the Ice Age. This places Ur underwater, but interestingly Eridu, only 20 km south-east, remained free of any flood deposits. It is noted, however, that an eight-metre ridge separates Eridu from Ur. Oppenheimer has used this research, together with other research, to demonstrate that rising waters in the Gulf flooded to a height of approximately three to five metres above the present-day sea level, carving out the coastline as far as Ur some 180 km from today's shoreline.<sup>31</sup> Kurt Lambeck<sup>32</sup> also proposed that a gradual rise in sea level as a result of melting ice caps flooded the whole of the Gulf, covering southern Iraq, to between 16000 BC and 3000 BC through a series of events. This suggests that the flooding of coastal margins, known as a Flandrian transgression of the sea,<sup>33</sup> covered much of what is now southern Iraq before settling back sometime later. These dates, and secular research, tie in with uniformitarian dating for the end of the Ice Age, but within a biblical understanding, and given creationist work on a rapid end to the Ice Age, there is good reason to reject these uniformitarian dates.<sup>34</sup>

Oppenheimer agrees with Zarins that a Flandrian transgression may account for the flood deposits at Ur,<sup>30</sup> which were found by Woolley's now famous excavation.<sup>35</sup> Oppenheimer has, however, noted that the top of the flood deposit is around four metres above today's sea level, suggesting a maritime cause for this flooding.<sup>36</sup> He does,





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**Figure 2.** Changes in the coastline of the Persian Gulf. The Indian Ocean is drawn to around 115 m below current levels, with the Persian Gulf dry. The dotted line shows the extent of coastal flooding across southern Iraq as proposed by Zarins [ref. 30]. This 4- to 5-metre-deep Flandrian transgression may have led to the flood deposits at Ur. The coast later retreated to the present-day position.<sup>32</sup>

though, acknowledge the terrestrial nature of the deposits in the Ur pit, suggesting the area lay under the maritime estuary of the Euphrates with river-borne silt settling out.

David Rohl also suggests that the flood deposits in the Ur pit mark a major flood division between the Ubaid and Uruk period, giving a date of 3100 BC for the Noahic Flood.<sup>37</sup> Once again these dates rely on uniformitarian assumptions and may be rejected in a creationist context. The changes in coastline of the Persian Gulf are shown in figure 2.

The SKL makes mention of a flood, but this flood should most likely be considered a reference to the Noahic Flood itself. However, cities mentioned from before this flood, especially Eridu with no flood deposits, and Shuruppak (Fara) also appear as real archaeological places. If pre-Flood cities were completely destroyed as the Genesis Flood account suggests, then a different explanation is required. One explanation is that these places may have been named after earlier settlements, just as North American and Australian settlers named towns after real places from their country of origin. Many researchers have found the SKL extremely hard to interpret, and there may have been some artistic licence in its use of earlier place names as well. Interestingly, the SKL does record that the third ruler of the dynasty of Kish was called *Palakinatim*, possibly an Akkadian reference to the Sumerian Peleg, and living after the Noahic Flood at Kish. This may be considered a tentative reference to a subsequent watery division within the SKL itself.<sup>38</sup>

From a creationist perspective, it may be accepted that a maritime or estuarine flood did indeed leave Woolley's flood deposits at Ur, as proposed by Zarins and Oppenheimer, but bearing in mind the global scale of the Noahic Flood

from massive sedimentary rock layers, these lesser deposits should be ascribed to another local event instead. It may instead be proposed that responsibility for the Ur deposits was a watery division in the time of Peleg, possibly of maritime origin, flooding coastal margins.

However, this does not answer the question of the source of other fluvial deposits that lie at Shuruppak and Kish. Bearing in mind the presence of so much terrestrial sediment, it may be proposed that the Euphrates also suffered fluvial flooding during the time of Peleg, perhaps as a result of melting glaciers in the Ararat and Zagros Mountain ranges at the end of the Ice Age. Further research would be necessary to determine whether this is feasible.

### Archaeological evidence from North Africa

Von Fange has given evidence that areas of the Sahara desert were once covered by water with remains of fertile ecosystems and human fishing artefacts found.<sup>39</sup> Von Fange comments that 'One of these is the account of the travels of the Argonauts who sailed from the Mediterranean across the Sahara.'<sup>40</sup> The Piri Reis map fragments ... also include a large portion of the Sahara that shows a network of lakes and rivers which could well have been navigable in historic times.<sup>41</sup> Von Fange also believes that the Sphinx was built during a wetter climate.

Oard also highlights strong evidence that the Sahara desert was well watered in the recent past. Many mammal fossils have been found in the eastern Sahara in what is now very dry desert. These include elephant, hippopotamus, buffalo, crocodile, giraffe, antelope and rhinoceros. In fact some crocodiles still survive in the western Sahara desert in small lakes. Ground-penetrating radar also shows parts of the western Sahara to have once been covered in a river network, some as big as the Nile itself. Lake Chad was also once 1,000 km long, in an area that is now nearly an entire desert.<sup>42</sup> The presence of rock paintings and carvings suggests that this wetter climate occurred during, or after, the time of dispersal of people from the Plain of Shinar.

David Rohl has also looked at the ancient history of Egypt and has found evidence for wetter climates during the period of dispersal. He shows that there are drawings of high-bow boats along the route of Wadi Hammamat and Wadi Barramiya, and he suggests the first Egyptians, descendants of Mizraim, brother of Cush, carried their boats across the desert.<sup>43</sup> It is instead possible that they were able to sail their boats across the desert.

According to the SKL (see table 1), Cush, too, settled among the mountains after a sea journey, during the time that the people were scattered.<sup>44</sup> From the SKL, Papke shows how Meskiagkasher can be identified as the biblical Cush.<sup>45</sup>

'Meskiagkasher, son of Utu, became high priest and king, reigned 324 years. Meskiagkasher went down into the sea and

came out at the mountains.<sup>43</sup>

As an interesting aside, Papke also identifies Enmerkar, the son of Meskiagkasher, as Nimrod, the mighty hunter before the Lord, and like the Genesis account Enmerkar is a build of cities including Uruk (biblical Erech) and Eridu (possibly the biblical Babylon). Whereas Cush and Nimrod's brothers settled in Africa and the Red Sea area after the dispersal of people, according to *Genesis 10:11* Nimrod moved north to Assyria and built more cities.<sup>46</sup>

According to one Russian researcher, Proussakov, the emergence of the first Egyptian kings is tied in with a Flandrian transgression in the Nile Delta. This was a result of

‘the Mediterranean transgression in the Nile Delta within the post-glacial (Flandrian) eustatic transgression of the World Ocean. According to Herodotus, however, in the time of the first Egyptian kings, the Delta was totally inundated; in conformity with this information, the archaeological data show that the early Egyptian state was born in the Valley. It is suggested here that the Delta was inundated by the catastrophic Mediterranean transgression which drastically changed the geo-political situation in Egypt.’<sup>47</sup>

It is therefore likely that in the early Egyptian period large areas of the Sahara Desert were navigable, much as the Nile valley is today. In the model presented here, the evidence for a wetter Sahara would fit in with a Flandrian transgression covering parts of the Sahara Desert and lower Nile area, and would tie in with the dispersal of peoples following the confusion of languages, which occurred during the time of Peleg. Oard also suggests that ancient pluvial lakes that are now dry give evidence of heavier rainfall during the Ice Age period itself.<sup>42</sup> While

this is accepted as a real possibility, it does not discount the likelihood of coastal flooding from rising sea levels as ice layers collapsed as well.

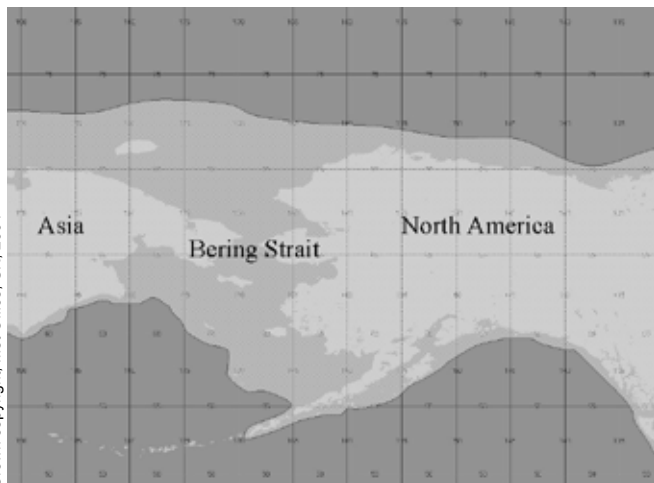
There is also some evidence for sea level changes within the Mediterranean, but this evidence remains controversial and a full discussion is beyond the scope of this paper. However, the massive evaporites on the sea floor from the claimed Messinian crisis should most likely be attributed to the Noahic Flood itself within a biblical timeframe.

### A Black Sea flood?

In 1997, marine geologists Bill Ryan and Walt Pitman proposed that the Black Sea was suddenly inundated with water from the Mediterranean Sea, when the narrow Bosphorus channel was breached by rising oceanic water, as a result of the melting ice caps.<sup>48</sup> The suggestion has been made that this rise in sea level of about 110 m led to the Noahic Flood legends with a sudden inundation of salty water. Ryan comments, ‘We have convincing evidence that a flood took place in the Black Sea. The evidence that it is the same one as in the Bible and in *The Epic of Gilgamesh* is circumstantial ...’<sup>49</sup> Others disagree. Tas Walker, for instance, has considered the evidence and concludes that it is not the Flood of Noah, but that if it occurred at all, it did so after the Flood as a result of slowly melting ice layers, perhaps as late as 1650 BC.<sup>50</sup> Walker also notes that other scientists have called into question the evidence, and this flood may disappear completely. Later researchers concluded that water actually flowed out of the Black Sea into the Mediterranean Sea, and not the other way around.<sup>51</sup> It is of course possible that icy melt-water flowed into the Black Sea from the north, and the dates Walker has used are based on Oard's value of glacial maximum 500 years after the Flood, followed by a gradual melt over 200 years. Problems remain in attempting to reach a firm conclusion on the Black Sea flood, but if this event were part of the division of land in the time of Peleg, then it would have occurred earlier at about 2150 to 2050 BC and divided South-east Asia from Europe.

### The English Channel and other exposed land

Other land was also exposed during this time, but was later subject to coastal flooding from rising sea levels. The English Channel and North Sea were largely dry with evidence of river courses running much further out to sea than the present coastline. Subsequently, the sea level rose by some 100 m as glacial water melted. *The Observer* reported preliminary findings by a group of scientists from Imperial College London.<sup>52,53</sup> The group of researchers, led by Sanjeev Gupta, carried out an initial investigation using the latest sonar devices, to create a three-dimensional image of the sea floor along the submerged river bed of the



**Figure 3.** Changes in the coastline around the Bering Strait. The approximate 115-metre contour below present-day sea levels is drawn. Asia and North America were later divided by rising glacial meltwaters.

Arun that runs out from Littlehampton. Gupta is reported as saying,

“The topography was incredibly detailed, rich and complex. We could see the river bed that the Arun had created thousands of years ago and examine the bays and cliffs along its valley. We could see a rocky ledge that might have formed a waterfall . . . We could also see where boats have since sunk and settled on top of this landscape.”<sup>52</sup>

This river is reported to have then flowed into a larger valley carved out by a combined Thames, Rhine and Seine. The ICL team plan further investigations around the English coast. Oard also highlights the fact that mammoth remains have been found on the bottom of the North Sea, indicating the sea floor was once dry land here as well. These appear to have been buried in locality, appearing largely undamaged with articulated bones, and in ten years some 2,000 molars have been found from dredging on the Dogger Bank.<sup>54</sup> In Cornwall, England, the Fal and Tamar estuaries, for instance, are drowned, steep-sided river valleys, known as rias. Other flat estuaries, such as the Somerset levels and Thames estuary, give evidence of post-glacial transgression as well.

The Bering Strait was most likely dry, too, linking Asia to the American continents. This is shown in figure 3, and discussed in some detail by Oard.<sup>55</sup> A number of researchers have shown how western Indonesia was joined together by an exposed Sunda shelf, an area of land joining Borneo, Sumatra, Java to the Malayan peninsular.<sup>54</sup> New Guinea, Australia and Tasmania also existed as a giant island known as Sahul, but unlike Sunda, this island remaining separate from the Asian mainland.<sup>56</sup> Alfred Russell Wallace and Thomas Huxley highlighted, and attempted to delineate, the markedly different fauna and flora that exists between

the two lands.<sup>57</sup> The likely sea level at glacial maximum is shown in figure 4, with the coastline drawn about 100 m below current levels.

Later, during the post-Ice Age period, the sea level rose above present-day levels. Harry Allen has presented evidence for a higher sea level in the past with mangrove swamps extending much father inland across northern Australia and South-east Asia, compared to present day coastlines.<sup>58</sup> In northern Australia, Arnhem Land, for instance, shows evidence of shell caves some 25 to 30 km further inland than the current mangrove swamps.<sup>58</sup> Once again this may be considered evidence of Flandrian transgression flooding occurring as glacial ice layers broke up rapidly.

As the sea rose, these waters flooded coastal margins and literally divided the whole earth, as recorded in Genesis 10:25. This scenario also gives an explanation to the distribution of animals around the world. With most of the continents connected via land bridges for a period of several hundred years, land animals would have been able to recolonize the earth.

### Conclusion

In the secondary *Pelegic* flood model presented here, it is assumed that the Ice Age was caused by excessive volcanic and oceanic release of sulfate aerosols, and other climatic changes, following the catastrophic shock of the Noahic Flood. Milankovitch’s theory has previously been shown to be inadequate in accounting for the cooling that led to the Ice Age, and a timeframe for the Ice Age period, in line with the biblical account is accepted instead.

The evidence from studies of the English Channel, North Sea, Persian Gulf, South-east Asia and Australian coastal regions show that the sea level was much lower during the Ice Age period, but then rose rapidly as the ice layers collapsed suddenly, even temporarily to higher levels than today through Flandrian transgression flooding.

Secular researchers claim that the worldwide flood stories, including Noah’s Flood account, are in fact references to this rising sea level at the end of the Ice Age. Thus, they dismiss the global scale of the Noahic Flood, and ascribe shallow flood deposits in southern Iraq to the Noahic Flood event; or as an alternative, a Black Sea flood is suggested. These ideas are passing into popular scientific folklore and being used to discredit the biblical account, and creationists must respond to these assertions to uphold the integrity of Scripture.

One possible response to these assertions is that a second, but lesser, Pelegic flooding event is itself documented in the biblical text as a separate and subsequent event to the Noahic Deluge. This is based partly on evidence from the name of Peleg, which means *water course, division*, and coastal flooding in this time may account for the flood deposits found in southern Iraq at Ur. Evidence for this



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**Figure 4.** Changes in the coastline around Indonesia and Australia. This map shows the coastline approximately 115 m below mean sea level. It indicates the size and shape of the coastline of Sahul and Sunda at glacial maximum with large amounts of land exposed. Sahul remained isolated from other continents during this period.<sup>59,60</sup>

### Extracts from the Sumerian King List

(In) Shuruppak, Ubartutu(k) became king and reigned 18,600 years. One king reigned 18,600 years.

Five cities were they; eight kings reigned their 241,200 years. (Then) the flood swept thereover [Noah's Flood?]. After the flood had swept thereover (and) when kingship was lowered (again) from heaven, the kingship was (re-established) in Kish.

#### The First Dynasty of Kish

- (1) Ga[...]ur ('harrow')—reigned 1,200 years
  - (2) Destroyed! Legible only to heavenly Nidaba (goddess of writing)—reigned 960 years
  - (3) Palakinatim [Peleg]—reigned 900 years
- ... (The Dynasty of Kish continues with 23 kings in all)

Twenty three kings (thus) ruled for 24,510 years, 3 months and 3.5 days. Kish was smitten with weapons (and) its kingship was removed to (the city of) Eanna (the temple precinct of Uruk).

#### The First Dynasty of Uruk

- (1) Meskiagkasher [Cush], son of Utu, became high priest and king—reigned 324 years. Meskiagkasher went down into the sea and came out at the mountains.
- (2) Enmerker [Nimrod the Hunter], son of Meskiagkasher, king of Uruk, the one who built Uruk [Erech]—reigned 420 years
- (3) Lualbanda, a shepherd—reigned 1,200 years
- (4) Dumuzi(d), the {...}, his city was Kua{ra}—reigned 100 years
- (5) Gilgamesh, his father was lillu-demon, a high priest of Kullab—reigned 126 years

... (The Dynasty of Uruk continues with 12 kings in all)

**Table 1.** Extract from the Sumerian King List to show mention of biblical characters. Dates do not agree with the biblical account. (Sourced from: Rohl, ref. 39, pp.164–165). Rohl maintains that the dynasties of Kish and Uruk were contemporaneous, despite the apparent reference that kingship transferred to Uruk after 23 kings. Rohl comments that 'Kish remained in overall control of Sumer even into the reign of Gilgamesh, the fifth ruler in the dynastic line of Uruk.' (Rohl, ref. 39, pp.164–165). Also the names contained within the list are a mixture of Sumerian and Akkadian, and it shows different city states competing for political power. The best cuneiform tablet is in the Ashmolean Museum, Oxford, UK, and dated to c.1816 BC, from the time of King Sinmagir Dynasty of Isin. (Rohl, ref. 39, p. 36). Biblical identification added in square brackets [ ]. Other emphasis added by Rohl. Text in parentheses ( ) added for readability and/or information. Text in braces { } unreadable in original.

watery inundation may also exist in the Sumerian King List where Cush, Nimrod and Peleg appear. Cush is seen making a journey by sea, a likely reference to the dispersal of people, and Nimrod moves north to build more cities. Under this scenario, the Ubaid period would run until the time of Peleg, with the Uruk period after, although such strict separation is inadequate as the Uruk ruler Gilgamesh is found visiting the Ubaid founder Utnapishtim in the Gilgamesh Epic.

If creationists are to fit the evidence for the flooding of coastal margins at the end of the Ice Age into the traditional biblical timeframe of Peleg, a period of 101 to 340 years after the Noahic Flood, then the time to glacial maximum needs to be lowered to the lower end of Oard's estimated range. A revised 'ballpark' figure of 300 years has been proposed. The sudden rise in sea level may have been the cause of the dispersion of people recorded in Genesis 11, and thus reinforced the division of people after the event with loss of pasture land, and fear of the Deluge itself causing a flight to safer ground.

There is also evidence from other ancient texts and archaeology that parts of the Sahara Desert, Egypt and Mesopotamia were flooded for a time. Ancient accounts also talk of water-borne travel during the time of dispersal, even over what is now dry land. Further research is needed to determine what other evidence exists from ancient texts and archaeology for the division and dispersal of people during this time.

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