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Chapter 9

Noah's Flood and Its Geological Implications

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In 1965, I first met John Whitcomb during a conference at Beth Eden Baptist Church in Denver, Colorado. At that time I purchased and read *The Genesis Flood*.¹ As a recipient of a National Science Foundation grant to pursue wildlife ecology research at Colorado State University's Pingree Park Campus the previous year, I had an intense interest in the created world and its processes. That book captivated my attention and deepened my biblical convictions concerning creation and biblical catastrophism. Little did I know that 11 years later I would be sitting again at his feet in the Doctor of Theology program at Grace Theological Seminary in Winona Lake, Indiana. It is a great privilege to honor my mentor with this essay.

Genesis specifies the terminus dates for the commencement (Gen. 7:11) and the conclusion (8:14) of the Flood. Therefore, unless one approaches the text with extreme prejudice and modifies it to his or her own liking, the Flood was 371 days in duration. As a global cataclysm, the Flood most likely involved an upheaval of the earth's crust, severe rain, storm surges, gigantic billows of waves, tsunamis, and tectonic denudation. The Flood narrative describes three stages for the event: (1) 150 days of prevailing waters, (2) 165 days of receding waters, and (3) 56 days of drying.

Unless otherwise noted, all Scripture in this chapter is from the NKJV of the Bible.

1. John C. Whitcomb Jr. and Henry M. Morris, *The Genesis Flood: The Biblical Record and Its Scientific Implications* (Philadelphia, PA: Presbyterian and Reformed, 1961, 7th printing 1965).

The Hebrew grammar of Genesis 8:3, I will submit, supports a large-scale, back and forth, circulating motion that could have had profound effects in shaping the new landscape. A detailed examination of the Flood narrative's literary structure and grammar reveals a number of sequential chains of events. Such sequences help to construct a consistent chronology for the Flood. Since geologic processes related to the Noahic Flood have been the subject of considerable debate, such a chronology could be extremely helpful for the placement of stratigraphic Flood boundaries² in the earth's rock record.³

The *A Priori* Status of the Biblical Record of the Flood

All study of the Flood needs to begin with the biblical record itself. Careful analysis of the record in Genesis 6–8 should be the only basis upon which anyone considers potential geologic implications. However, in spite of the revelatory nature of the biblical record, many evangelical scholars continue to give up valuable ground to secular scientists and liberal biblical critics. Evangelicals too often attempt to baptize secular and humanistic theories in evangelical waters without realizing that those theories and their methodologies have never been converted. While there are valuable kernels of truth buried within contemporary critical and so-called “scientific” studies, evangelicals must take great care to irradiate the material with the Word of God so as not to unknowingly and unintentionally introduce secularized thinking into the Church.

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2. Obviously, the dates and boundaries of the uniformitarian stratigraphic column with its evolutionary and excessive time scale cannot be accepted as conclusive. Instead, Flood geologists must develop independent stratigraphic columns on the basis of the evidence in the rock record without the taint of uniformitarianism, evolution, and the presumption of an old earth. See, Carl R. Froede Jr., “The Global Stratigraphic Record,” in *Creation Ex Nihilo Technical Journal* 11/1 (1997): p. 40–43. That does not rule out the possibility that there might be some degree of overlap between the uniformitarian and biblical stratigraphic columns. For a discussion of potential overlap, see Bernard E. Northrup, “Identifying the Noahic Flood in Historical Geology: Part One,” 1:173–179, and “Identifying the Noahic Flood in Historical Geology: Part Two,” 1:181–185, in *Proceedings of the Second International Conference on Creationism Held July 30–August 4, 1990*, 2 vols., ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1990). Steven A. Austin and Kurt P. Wise, “The Pre-Flood/Flood Boundary: As Defined in Grand Canyon, Arizona and Eastern Mojave Desert, California,” in *Proceedings of the Third International Conference on Creationism Held July 18–23, 1994*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1994), p. 38–39, present five characteristics that should make up the geologic signature of the pre-Flood/Flood boundary.
 3. For an earlier publication of some aspects of this study and its geological implications, see William D. Barrick and Roger Sigler, “Hebrew and Geologic Analysis of the Chronology and Parallelism of the Flood: Implications for Interpretation of the Geologic Record,” in *Proceedings of the Fifth International Conference on Creationism Held August 4–9, 2003*, ed. by Robert L. Ivey, Jr. (Pittsburgh, PA: Creation Science Fellowship, 2003), p. 397–408.

Far too many evangelicals have allowed the *a priori* nature of the biblical text to slip away by making it subject to external confirmation. In *What Did the Biblical Writers Know and When Did They Know It?* William Dever declares that “one unimpeachable witness in the court of history is sufficient.”⁴ However, he betrays his prejudice by elevating secular extrabiblical evidence over the evidence of Scripture — he trusts the one and distrusts the other. Robert Dick Wilson, on the other hand, did not see any need for independent confirmation of Scripture from an external historical source. He ably defended the *a priori* nature of biblical evidence in his classical work, *A Scientific Investigation of the Old Testament*.⁵ Wilson’s view was that the Scripture’s testimony is sufficient in and of itself without additional external confirmation. Sadly, Dever’s problem is one that he seems to recognize in others, but does not see in himself. Later in the same book he asks, “How is it that the biblical texts are always approached with postmodernism’s typical ‘hermeneutics of suspicion,’ but the nonbiblical texts are taken at face value? It seems to be that the Bible is automatically held guilty unless proven innocent.”⁶ He almost sounds like Robert Dick Wilson.

Above all else, the evangelical exegete/expositor must accept the OT text as the inerrant and authoritative Word of God. This was one of the principles that John Whitcomb hammered home time and time again in the classroom and in private and public discussion. Adhering consistently to this declaration of faith will require an equal admission of one’s own ignorance and of one’s inability to resolve every problem. Our ignorance, however, should never become the excuse for compromising the integrity of the OT.

Bernard Northrup, another one of my mentors, warns against building models that lean “too heavily on the authority of historical geology, warping the biblical evidence to fit it.”⁷ He warns against refusing “to allow the Scriptures to be the final authority in all scientific research.”⁸

4. William G. Dever, *What Did the Biblical Writers Know and When Did They Know It? What Archaeology Can Tell Us about the Reality of Ancient Israel* (Grand Rapids, MI: Eerdmans, 2001), p. 118. Dever was commenting specifically about the Merneptah stele (known also as the “Israel Stele” because of its mention of Israel). For a detailed review of this volume, see William D. Barrick, “Review of William G. Dever, *What Did the Biblical Writers Know and When Did They Know It? What Archaeology Can Tell Us about the Reality of Ancient Israel.*” *The Master’s Seminary Journal* 13/2 (Fall 2002): p. 275–279.

5. Robert Dick Wilson, *A Scientific Investigation of the Old Testament* (reprint; Chicago, IL: Moody Press, 1959). Unfortunately, Wilson himself did not take an unambiguous stance for a young earth and a universal deluge in Noah’s day (*Ibid.*, p. 8). He may have been influenced by the so-called scientific evidence of his day that insisted upon the earth being millions of years old. I am not using Wilson for his view on Gen. 1. I am using him for his defense of the *a priori* nature of Scripture.

6. Dever, *What Did the Biblical Writers Know and When Did They Know It*, p. 128.

7. Northrup, “Identifying the Noahic Flood in Historical Geology: Part One,” p. 173.

8. *Ibid.*

An area of substantial abuse by both liberals and evangelicals is the relationship of archaeological evidence to the biblical record concerning the Flood. For some scholars, the various universal Flood accounts are merely the result of “the inclination to offer etiological explanations for mountain lakes and seashell deposits.”⁹ Brian Schmidt reasons that universal Flood legends are not really a worldwide phenomenon, because of their absence in Egyptian literature.¹⁰ However, as Kenneth Kitchen so aptly observes, the patriarchal tradition was preserved by Israel in Egypt until the Exodus.¹¹

The Flood narrative reveals clues about the mechanisms and the timing of geologic processes during the event. The language that permeates this passage clearly indicates that the disruption of the earth’s surface was comprehensive and global. Such a description is founded upon semantic clues provided by phraseology, literary devices, and context. Geological implications must be derived from the collective impact of the entire narrative. Apart from the global and catastrophic description inherent in the entire pericope, one element that requires attention is that of chronology. Correlation between the chronology of the Flood and the geologic record must be built upon the bedrock foundation of sound biblical exegesis.

The Biblical Chronology of the Flood Narrative

Although scholars have produced some interesting discussions concerning the Flood’s chronology as revealed in the Flood narrative, most of the attention has been given to source criticism.¹² Division of the narrative into two or three hypothetical sources assumes an evolution of the text through a number of redactions before it reached its current canonical form. Such an approach fails to provide an objective exegetical treatment of the text reflecting its inherent unity and integrity. However, even if one were to assume a source-critical approach to the text, the chronological elements cannot be ignored. Barré recognized this fact, declaring:

Contrary to the opinion [of] some commentators, none of the numbers found in Genesis 7–8 can be regarded as “approximations.”

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9. Brian B. Schmidt, “Flood Narratives of Ancient Western Asia,” in *Civilizations of the Ancient Near East*, 4 vols. in 2 vols., ed. by Jack M. Sasson (Peabody, MA: Hendrickson, 1995), 2:2337.
 10. *Ibid.*, 2:2338.
 11. K.A. Kitchen, *On the Reliability of the Old Testament* (Grand Rapids, MI: Eerdmans, 2003), p. 427.
 12. Niels Peter Lemche, “The Chronology in the Story of the Flood,” *Journal for the Study of the Old Testament* 18 (Oct 1980): p. 52–62; Frederick H. Cryer, “The Interrelationships of Gen. 5,32; 11,10–11 and the Chronology of the Flood (Gen 6–9),” *Biblica* 66/2 (1985): p. 241–261; Lloyd M. Barré, “The Riddle of the Flood Chronology,” *Journal for the Study of the Old Testament* 41 (June 1988): p. 3–20; Schmidt, “Flood Narratives of Ancient Western Asia,” p. 2343–2344.

All of the chronological data contained in both J and P cohere only if they are taken literally.¹³

Literary Issues

Moses employed various literary devices in the composition of the biblical account of the Flood. Repetition of words, phrases, and subject matter contribute to the literary structure of the account. For example, Mathews identifies merismus¹⁴ as one of the literary devices that contributes to the global and catastrophic proportions of the Flood: “The immense flood-waters involve the flow of waters from below and from above, a merism indicating the complete transformation of the terrestrial structures.”¹⁵

The text describes the coming catastrophe in a progressively intense series of statements: (1) all flesh will be destroyed (6:7), (2) all flesh and the earth itself are to be destroyed (6:12–13), and (3) everything upon the earth will be destroyed by a great deluge of water (6:17). The description of destruction of life in 7:4 is expanded in the details of 7:10–23. Occasionally there are instances of localized symmetry within the passage. One occurrence is in 7:17–24 where “flood” or “waters” (the equivalent of “flood”) occur repeatedly — often followed by “upon the earth.”

There are at least three identifiable chiasms¹⁶ within the Flood narrative. They appear to introduce each of the main sections of the Flood narrative proper. In 7:11b the first chiasm is both semantic (“burst open”//“opened” and “all the fountains of

13. Barré, “The Riddle of the Flood Chronology,” p. 16. An endnote indicates that Barré was referring to the view of K. Budde that many of the numbers were approximations (Ibid., p. 20).

14. Merismus expresses totality by an abbreviated presentation of extreme pairs like “ladies and gentlemen” (= everyone) or “body and soul” (= the whole person). See Wilfred G.E. Watson, *Classical Hebrew Poetry: A Guide to its Techniques*, Journal for the Study of the Old Testament Supplement Series 26 (Sheffield, England: JSOT Press, 1984), p. 321.

15. Kenneth A. Mathews, *Genesis 1–11:26*, New American Commentary 1A (Nashville, TN: Broadman & Holman, 1996), p. 377–378.

16. By chiasm is meant “a series (a, b, c, ...) and its inversion (. . . , c, b, a) taken together as a combined unit. In Hebrew poetry such a unit is generally a parallel couplet, so that the combined (chiastic) unit would be a, b, c // c, b, a. The components of such a series are usually sub-units of the sentence, considered semantically or grammatically. . . . When the components (a, b, c, etc.) are not parts of the sentence but complete lines, then larger chiastic patterns emerge” — Watson, *Classical Hebrew Poetry*, p. 201–202.

The Hebrew structure of 7:11b can be mapped as follows (retaining the English translation in the same order as the wording of the Hebrew):

- A** on that day burst open
 B all the fountains of the great deep
 B' and the windows of the sky
A' were opened.

See U. Cassuto, *A Commentary on the Book of Genesis: Part II — From Noah to Abraham, Genesis V 19–XI 32*, trans. by Israel Abrahams (Jerusalem: Magnes Press, 1992 reprint of 1964 edition), p. 84.

the great deep”//“the windows of the sky”) and grammatical (Niphal perfect verb// Niphal perfect verb and feminine plural subject//feminine plural subject). The structure focuses on the central elements of the chiasm describing the deluge’s sources of water. The second chiasm (7:19–20)¹⁷ commences the second major section of the Flood narrative proper. Its focus is on the declaration that all the highest mountains had been covered by the Flood waters. The third chiasm occurs in 8:5.¹⁸ Its focus is on the timing of the Flood, marking the date on which the tops of the mountains reappeared from beneath the waters. Functioning as a pair, the first chiasm marks the commencement of the mechanisms producing the deluge of waters covering the earth while the third marks the uncovering of the earth that resulted from the cessation of those same mechanisms. Thus, these two chiasms balance each other, enhancing the symmetry of the Flood narrative’s structure.

Due to apparent parallels throughout the pericope, some commentators identify an extended chiasitic (or inverted) parallelism.¹⁹ Gordon Wenham observes

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17. The structure of 7:19–20 is a 3-part chiasm with each half followed by the same expegetical *wayyiqtol* verb (“so that . . . covered”; see more discussion in footnote 68, below):

A The waters
 B prevailed
 C even more over the earth
 D so that all the highest mountains that were under the
 entire sky were covered.
 C' Fifteen cubits upwards
 B' prevailed
 A' the waters
 D' so that they covered the mountains.

18. The structure of 8:5 is a grammatically matched 3-part chiasm: “waters” as subject // “mountaintops” as subject, “were continually receding” as verb // “appeared” as verb, “until the 10th month” as adverbial modifier // “on the 1st day of the 10th month” as adverbial modifier:

A The waters
 B were continually decreasing
 C until the 10th month.
 C' On the 1st day of the 10th month
 B' appeared
 A' the mountaintops

19. Gordon J. Wenham, “The Coherence of the Flood Narrative,” in *I Studied Inscriptions from before the Flood: Ancient Near Eastern, Literary, and Linguistic Approaches to Genesis 1–11*, ed. by Richard S. Hess and David Toshio Tsumura (Winona Lake, IN: Eisenbrauns, 1994), p. 437–438; David A. Dorsey, *The Literary Structure of the Old Testament: A Commentary on Genesis-Malachi* (Grand Rapids, MI: Baker, 1999), p. 52. For a critique of Dorsey’s chiasitic structure, see William D. Barrick, “The Chronology and Mechanisms of the Noahic Flood Based upon an Analysis of the Hebrew Text of Genesis 6–8” (unpublished paper; ETS Far West Region Annual Meeting, April 19, 2002), p. 1–6.

that the periods of time in the Flood narrative “form a symmetrical pattern, 7, 7, 40, 150, 150, 40, 7, 7.”²⁰ He concludes that a “closer examination suggests that some of these time spans are mentioned purely in order to achieve symmetry in the palistrophe.”²¹ Even without Wenham’s larger chiasmic arrangement of the full Flood narrative, the three lesser chiasms, the repetitions of terms, and the progressively intense series of statements prove that this passage is a sophisticated and coherent narrative.

Unfortunately, some scholars have attempted to argue for the catastrophic and universal nature of the Flood on the basis of isolated word studies of key terms in the Flood narrative. Responding to the hypothesis that the Hebrew *māḥâ* (מָחָה, “blot out”) indicates an obliteration of all evidence of life (including any fossil record),²² David Fouts and Kurt Wise demonstrate conclusively that such argumentation is invalidated by an adequate analysis of the use of the Hebrew word throughout the Old Testament.²³ In another example, E.A. Speiser declared that the Hebrew *gešem* (גֶּשֶׁם) refers to a “heavy rain” and “signifies abnormal rainfall,”²⁴ unlike the normal rain usually intended by *māṭār* (מָטָר). However, as Mark Futado (a trained climatologist and Hebraist) points out, “[t]he modern reader can discern no difference between *gešem* and *māṭār*.”²⁵ Due to the significance of rain in the moisture-starved regions of the Ancient Near East (including Canaan), Hebrew possesses a very rich vocabulary that the Old Testament employs for describing such precipitation. Specialized terms for severe rains include *zerem* (זֶרֶם; cf. Isa. 4:6; 25:4 twice; 28:2 twice; 30:30; 32:2; Job 24:8), *sagrîr* (סַגְרִיר; cf. Prov. 27:13), *sāpîah* (סַפִּיחַ; Job 14:19), and *šā’îr* (שָׂאִיר;²⁶ cf. Deut. 32:2)²⁷ — none of which are employed in the Flood narrative.

20. Wenham, “The Coherence of the Flood Narrative,” p. 437–438.

21. *Ibid.*, p. 439. “Palistrophe” is a synonym for “chiasm.”

22. E.g., Steven J. Robinson, “The Flood in Genesis: What Does the Text Tell Geologists?” in *Proceedings of the Fourth International Conference on Creationism Held August 3-8, 1998*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1998), p. 466.

23. David M. Fouts and Kurt P. Wise, “Blotting Out and Breaking Up: Miscellaneous Hebrew Studies in Geocatastrophism,” in *Proceedings of the Fourth International Conference on Creationism Held August 3-8, 1998*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1998), p. 217–220.

24. E.A. Speiser, *Genesis*, Anchor Bible (Garden City, NY: Doubleday, 1964), p. 53.

25. Mark D. Futado, “גֶּשֶׁם,” in *New International Dictionary of Old Testament Theology & Exegesis*, [hereafter *NIDOTTE*] 5 vols., ed. by Willem A. VanGemeren (Grand Rapids, MI: Zondervan, 1997), 1:901.

26. For a detailed discussion regarding proposed meanings for this *hapax legomenon*, see Ludwig Koehler and Walter Baumgartner, eds., *The Hebrew and Aramaic Lexicon of the Old Testament* [hereafter *HALOT*], rev. by Walter Baumgartner and Johann Jakob Stamm, trans. and ed. by M.E.J. Richardson (Leiden, The Netherlands: E. J. Brill, 1996), 3:1341–1342.

27. Futado, “גֶּשֶׁם,” 1:901. In the discussion above I have listed all occurrences of each of the four terms.

Another term subject to much speculation is the word מְבוּל (*mabbûl*). According to Koehler and Baumgartner's lexicon, מְבוּל is related to the Akkadian *biblu*, *bubbulu*, meaning "deluge."²⁸ The Hebrew word is probably derived from the Hebrew root בָּבַל (*yābal*) meaning "pour rain" or "cloudburst."²⁹ The Akkadian *biblu* can have the meaning of a "devastating flood."³⁰ The same meaning has been identified with *bubbulu* (*bibbulu*, *bumbulu*).³¹ It is possible that the word is an example of onomatopoeia, "the imitation of a sound *within the rules of the language* concerned."³² If it is onomatopoeic,³³ the word might be imitating the gurgling or bubbling sound of falling rain or flowing water.³⁴ Such a sonic derivation would be similar to that of נֶבֶל (*nēbel*)³⁵ or בַּקְבֹּוּק/בַּקְבֹּוּק (*baqbûq/baqbuq*).³⁶ Lexicographers recognize both as onomatopoeic.³⁷ Some earlier experts on semitic languages linked מְבוּל to the Hebrew root נָבַל (*nbl*),³⁸ but such a relationship finds little acceptance today.³⁹ A problem with the association of מְבוּל with *biblu* is that these terms are not employed in any of the Akkadian flood stories.⁴⁰ The Sumerian flood epic of Atrahasis, for example,

28. HALOT, 2:541.

29. Ibid., 2:383. See, also, Cassuto, *Genesis: Part II*, p. 66–67.

30. Ignace J. Gelb, A. Leo Oppenheim, Erica Reiner et al., eds., *The Assyrian Dictionary of the Oriental Institute of the University of Chicago* [hereafter CAD] (Chicago, IL: The Oriental Institute, 1965), 2:221.

31. Ibid., 2:298.

32. Watson, *Classical Hebrew Poetry*, p. 234.

33. A word whose sound is imitative of the sound of the noise or action designated by the word, e.g., gurgle, hiss or meow.

34. גֶּשֶׁם might also be onomatopoeic in origin. In Bangladesh (where I served as a missionary for 15 years) the Bengali language contains many words for rain that are related to the respective sounds made by various types of rain. A drizzling rain is *dhop-dhop*, imitating the sound of the drops of water that fall from leaves. A more steady rain may be referred to by *jhim-jhim*, imitating its sound — something that is akin, perhaps to the sound that might be represented by גֶּשֶׁם. Association with the English "gush" might not be equivalent since it connotes something that could be far more forceful.

35. *nēbel* I = "jar [for wine or oil]," *nēbel* II = "harp" — I and II represent two different Hebrew root words that are homonyms with two totally different meanings (cp. "through" and "threw" in English).

36. *baqbûq/baqbuq* means "bottle." The word is derived from the sound of an inverted bottle emptying out its liquid contents. In English we often represent such a sound with *glug-glug*.

37. K. Seybold, "נֶבֶל," in *Theological Dictionary of the Old Testament* [hereafter TDOT], ed. by G. Johannes Botterweck, Helmer Ringgren, and Heinz-Josef Fabry, trans. by David E. Green (Grand Rapids, MI: Eerdmans, 1998), 9:172.

38. Cf. Marcus Jastrow, *A Dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic Literature*, 2 vols. (Brooklyn, NY: P. Shalom, 1967), 1:724.

39. P. Stenmans, "מְבוּל," in TDOT, trans. by Douglas W. Stott (Grand Rapids, MI: Eerdmans, 1997), 8:61.

40. Walter C. Kaiser, Jr., "מְבוּל," in *Theological Wordbook of the Old Testament* [hereafter

utilizes the word *abûbu*.⁴¹ Occurrences of *abûbu* refer to a devastating cosmic deluge.⁴² However, the absence of the phonetic element *l* is problematic for any direct association with מְבוּיֹל. Therefore, the etymology of מְבוּיֹל remains uncertain.⁴³ מְבוּיֹל could be related to the Akkadian *wabālu* (“wash away [by water]”).⁴⁴ Other words for “flood” in Akkadian include *butuqtu* (“flood, inundation”)⁴⁵ and *milu* (“seasonal flooding of the rivers”).⁴⁶

In Jewish Aramaic literature, the Hebrew term has been borrowed and utilized unaltered.⁴⁷ The most likely reason for the New Testament writers’ choice of κατακλυσμός (*kataklysmos*, from whence the English obtains “cataclysm”) is that the Septuagint always translated מְבוּיֹל with κατακλυσμός.⁴⁸ However, κατακλυσμός was not reserved just for מְבוּיֹל. It is also used to translate שְׁטָפָה (*šēṭēp*, “flood, torrent, inundation”) in Psalm 32:6 (LXX, 31:6) and Daniel 9:26 (Theodotion⁴⁹). By the time of the New Testament, κατακλυσμός had also been used to translate נָהָר (*nāhār*, “river, torrent”) in Sirach (Ecclesiasticus) 39:22.⁵⁰

One interpreter concludes that the relationship of the verb גָּבַר (*gābar*, “prevailed”; 7:18, 19, 20, 24) to warfare depicts the Flood waters as being “on the warpath, on a rampage” and “underscores the fearful results of God’s judgment.”⁵¹ However, in the Qal stem גָּבַר’s semantic range includes “be superior,” “achieve,” and “increase.”⁵² To impose the connotations of warfare and judgment upon its

TWOT], 2 vols., ed. by R. Laird Harris, Gleason L. Archer, Jr., and Bruce K. Waltke (Chicago: Moody Press, 1980), 1:489.

41. W.G. Lambert and A.R. Millard, *Atra-hasis: The Babylonian Story of the Flood* (London: Oxford University Press, 1969), p. 91 (III.i.37).
42. *CAD* (1964), 1:77.
43. Stenmans, “מְבוּיֹל,” *TDOT*, 8:61. See, also, Michael A. Grisanti, “מְבוּיֹל,” in *NIDOTTE*, 2:835–836. Recent studies in the materials from Ebla have revealed the “bilingual equation A-KUL = *ma-ba-lum*” (Cyrus H. Gordon, “Eblaitica,” in *Eblaitica: Essays on the Ebla Archives and Eblaite Language*, ed. by Cyrus H. Gordon, Gary A. Rendsburg, and Nathan H. Winter [Winona Lake, IN: Eisenbrauns, 1987], 1:28; citing *Materiali epigrafici di Ebla*, 272, #640b). This equation “translates Sumerian A ‘water’ + KUL ‘heavy’ into Eblaite as *ma-ba-lum*, which calls to mind Hebrew מְבוּיֹל” (ibid.).
44. H.A. Hoffner, “יִבֵּל,” in *TDOT*, ed. by G. Johannes Botterweck and Helmer Ringgren, trans. by David E. Green (Grand Rapids, MI: Eerdmans, 1997), 5:364.
45. *CAD* (1965), 2:357.
46. *CAD* (1977), 10:221.
47. Jastrow, *A Dictionary of the Targumim*, 1:725.
48. Cf. Edwin Hatch and Henry A. Redpath, eds., *A Concordance to the Septuagint and the Other Greek Versions of the Old Testament*, 2 vols. (Graz, Austria: Akademische Druck- u. Verlagsanstalt, 1975), 1:734a.
49. Theodotion is the name of one of LXX’s daughter translations of the OT into Greek.
50. Ibid., 1:181b.
51. John C. Jeske, “Exegetical Brief: Genesis 7 — The Flood Prevailed,” *Wisconsin Lutheran Quarterly* 95/3 (Summer 1998): p. 210–211.
52. *HALOT*, 1:175.

use in the Qal is an unwarranted restriction (or expansion?)⁵³ of the semantic field of the word.⁵⁴

It is abundantly clear from the language of the Flood narrative that the disruption of the earth's surface was comprehensive and global.⁵⁵ Such a description is not dependent upon the imposition of questionable etymological analyses for the individual terms employed in the passage. Individual words in and of themselves make no direct contribution to the task of determining the geologic consequences of Flood mechanisms. Rather, such contributions must be founded upon the sounder semantic clues provided by phraseology, literary devices, and context — the collective impact of the entire narrative.

How long was each mechanism at work on the terrestrial surface and sub-surface? Given the specific parameters of their duration, what kind of effect can be expected? Is it possible to identify any correlation between the chronology of the Flood and known geologic stratification? The Flood narrative provides us with the mechanisms and their duration. Such information might be pertinent for constructing a model identifying potential geological results.

Translation with Chronological Notations

The following translation attempts to bring out the sequential nature of the primary layering of *wayyiqtol* verb forms. These verb forms are characteristic of Hebrew narrative and normally indicate a chronological sequence of the actions thus represented.⁵⁶

Introduction to the Flood Narrative Proper (7:6–10)

7:6 Noah was 600 years old when the Flood came — waters *came* upon the earth. **7:7** Thus Noah, his sons, his wife, and his sons' wives went⁵⁷ with him into the ark away from the Flood waters. **7:8** The clean beasts and the beasts that were not clean, the flying creatures and all that crept on the ground **7:9** came⁵⁸ two

53. Some interpreters take the connotation of warfare as being inherent in the Hebrew root word, thus restricting the root to only this type of meaning. However, it is equally possible that the connotation of warfare is an unwarranted expansion of the root, which simply means “prevail” when water is the subject of the verb. Thus, Jeske has abused the root by expanding it to include warfare.

54. For a discussion of such exegetical fallacies with regard to word studies, see D.A. Carson, *Exegetical Fallacies* (Grand Rapids, MI: Baker, 1984), p. 25–66.

55. Henry M. Morris, *The Genesis Record: A Scientific and Devotional Commentary on the Book of Beginnings* (Grand Rapids, MI: Baker, 1976), p. 683–686, lists 100 reasons for understanding the Flood as a truly global catastrophe.

56. “Situations described with *wayyiqtol* are mostly temporally or logically succeeding” (Bruce K. Waltke and M. O’Connor, *An Introduction to Biblical Hebrew Syntax* [Winona Lake, IN: Eisenbrauns, 1990], p. 547 [§33.2.1a]). “Most noteworthy in narrative is the way *wayyiqtol* traces the thread of discourse” (Ibid., p. 549 [§33.2.1c]).

57. This is the first of the *wayyiqtol* verbs that comprise the sequence of events described in the Flood narrative proper following the disjunctive clause of 7:6 that sets the stage.

58. Here the preceding *wayyiqtol* is followed by the same root (נִבַּח, *bôḥ*) in the suffix

by two to Noah into the ark — male and female just as God had commanded Noah. **7:10** Then **7 days passed** [600/02/10-600/02/16]⁵⁹ and the Flood waters came upon the earth.⁶⁰

I. First Section of the Flood Narrative (7:11-18)

7:11 In the 600th year of Noah's life, in the 2nd month, on the 17th day of that month⁶¹ [600/02/17 – day 1]—on that day the fountains of the great deep burst open and the windows of the sky were opened.⁶²

conjugation. This verb is not sequential or consequential to the preceding *wayyiqtol*. It merely represents the action in an unrelated (i.e., grammatically accidental) fashion, viewing it as an independent whole rather than as an action dependent on another action in the immediate context. For a fuller and more detailed discussion, I highly recommend the treatment of Waltke and O'Connor, *An Introduction to Biblical Hebrew Syntax*, p. 455–563 (§§29-33). Their clearest depiction of the distinctive implications of the suffix conjugation (perfect) vs. prefix conjugation (imperfect) is to be found in their discussion of the use of the prefix conjugation in future time (511, §31.6.2a). The same distinctions apply even in narrative past contexts.

59. In the translation, the references to chronological time are in bold font face followed by an italics bracket with the year (based on Noah's age, see v. 6), month, and day. Thus, 600/02/10 = in Noah's 600th year, in the second month, and on the tenth day. This date is not in bold, because it is not identified in this specific fashion in the text — it is deduced from the time reference. In 7:11, however, the text identifies the specific year, month, and day, so those numbers are in bold.
60. An alternative translation would be, "When seven days had passed, the Flood waters came upon the earth." The meaning is not essentially different.
61. This non-*waw* temporal circumstantial clause of 7:11 is paralleled by the same kind of clause in the last verse of this section, 8:14, which constitutes an *inclusio* marking the structural boundaries of the main Flood narrative. See footnote 63, below.
62. "Great deep": Note the other occurrences of רְבוּבֵי הַתְּהוֹמוֹת (*tehôm rabbâ*) in the OT: Isa. 51:10; Amos 7:4; Ps. 36:7; 78:15. In all of these passages it is clear that the sea is intended. "Great" is not in a qualitative sense, but in a quantitative sense — the concept is that of "a great depth" similar to the concept in the English by "deep sea." Cf. the discussion of this Hebrew phrase in U. Cassuto, *Biblical and Oriental Studies*, 2 vols., trans. by Israel Abrahams (Jerusalem: Magnes Press, 1975), 2:38. Therefore, the "fountains of the great deep" appear at first blush to refer to submarine springs that burst open on the ocean bottom, pouring more water into the ocean basin(s). However, the "great depth" can refer to subterranean as well as submarine sources, as argued by Fouts and Wise, "Blotting Out and Breaking Up: Miscellaneous Hebrew Studies in Geocatastrophism," p. 220–222.

"Burst open": The employment of suffix conjugation verbs (perfects: "burst open" and "were opened") in this verse signal that a new chain of sequential events is being initiated with these verbs as their grammatical head. The verb בָּקַעַת (*bāqa'*) is employed with the same object (מַעְיָנִים, *ma'eṣyān*) in Ps. 74:15 where it appears to have the sense of emptying out or draining. In Judg. 15:19 [here the verb seems to apply to the rock (not the water) in the hollow place, which was broken open so water could come out]; in Isa. 35:6; 63:12 and Ps. 78:15, the same verb is used to describe the pouring out of

7:12 When⁶³ the rain came⁶⁴ upon the earth **for 40 days and 40 nights** [600/02/17-600/03/26 – days 1-40], 7:13 on that very day Noah, Shem, Ham, and Japheth (Noah's sons), Noah's wife, and his sons' three wives entered the ark with him — 7:14 they and every animal according to its kind, every land animal according to its kind, every crawler creeping on the earth according to its kind, and every flying creature according to its kind (every flying creature of every sort). 7:15 Thus they came to Noah into the ark; two by two out of all flesh in which was the spirit of life. 7:16 The ones coming were male and female out of all flesh. They came just as God had commanded him. So YHWH shut

large quantities of water from the earth or from rock. It is obvious, that for the water to come out in such a fashion, the earth or the rock would have to split or divide in some fashion, just like the splitting open of the ground in Num. 16:31 where the same verb is employed. Prov. 3:20 (בְּרָעְתוּ תְהוֹמוֹת נִבְקָעוּ) *b'eda'etô t'ehômôt nibqā'û* — “by His knowledge the deeps burst open”) might refer to the creation of dry land in the midst of the waters in Gen. 1:9 or to the passage under discussion (7:11). The Niphal is best translated as an active; cf. Fouts and Wise, “Blotting Out and Breaking Up: Miscellaneous Hebrew Studies in Geocatastrophism,” p. 220.

“Windows of the sky were opened”: “[T]he expression connotes that during the Flood it did not rain in normal measure, but the windows of heaven were opened wide and the water poured from them in large quantities without any restraint” (Cassuto, *Genesis: Part II*, p. 87). The terminology (“windows of the sky”) seems to be a strong indication that the rains were global (Fouts and Wise, “Blotting Out and Breaking Up: Miscellaneous Hebrew Studies in Geocatastrophism,” p. 222).

63. The employment of וַיְהִי (*way'ehî*) in 7:12 parallels that of וַיְהִי (*way'ehî*) in the next to last verse of this section, 8:13 — another inclusio confirming the 7:11//8:14 inclusio marking the limits of the Flood narrative (see footnote 61, above).
64. The וַיְהִי (*way'ehî*) construction is followed by the circumstantial clause of v. 13–14 and suffix conjugation (perfect) verb (בָּא, *bā'*). That suffix conjugation verb becomes the lead verb for the series (or, chain) of nine *wayyiqtol* verbs that follow it in v. 15–18. There are nine chronologically sequential actions:
- (1) The animals entered the ark (וַיָּבֹאוּ, *wayyābō'û*) (v. 15a).
 - (2) Then God shut the door (וַיִּסְגֹּר, *wayyisgōr*) (v. 16b).
 - (3) Then the deluge came upon the earth for 40 days (וַיְהִי, *way'ehî*) (v. 17a).
 - (4) Then the waters increased (וַיִּרְבּוּ, *wayyirbū*) (v. 17b) — increase following the 40 days.
 - (5) Then the ark became sea borne (וַיִּשָּׂא, *wayyis'û*) (v. 17c) — the result of that increase in waters.
 - (6) Then the ark rose above the land (וַתָּרָם, *wattārām*) (v. 17d) — the result of continuing increase of waters.
 - (7) Then the waters prevailed (וַיִּגְבְּרוּ, *wayyigb'ērū*) (v. 18a) — all landforms finally disappeared beneath the water.
 - (8) Then the waters increased even more (וַיִּרְבּוּ, *wayyirbū*) (v. 18b) — a clear indication of the mechanisms for producing water continuing.
 - (9) Then the ark sailed upon the waters (וַתֵּלֶךְ, *wattēlēk*) (v. 18c) — the action of the ark until the day it grounded on the mountains of Ararat.

him in. 7:17 Then the flood occurred **for 40 days**⁶⁵ upon the earth. The waters continued to increase so that they bore the ark, raising it up off the ground. 7:18 Then the waters prevailed and increased greatly upon the earth so that the ark moved on the surface of the waters.

II. Second Section of the Flood Narrative (7:19–8:4)

7:19 The waters prevailed⁶⁶ even more over the earth so that all the highest mountains that were under the entire sky were covered. 7:20 Fifteen cubits upwards the waters prevailed so that they covered the mountains. 7:21 Thus all flesh perished⁶⁷ — that which crept upon the earth among flying creatures, beasts, animals, and every swarming thing upon the earth, as well as all mankind. 7:22 Everything possessing the breath of life in its nostrils among everything that was

65. “Only one who does not understand the structure of the verse, or its meaning, can regard it as a redundant repetition of what was stated in v. 12” (Cassuto, *Genesis: Part II*, p. 93). This verse refers to the same 40 days as in v. 12, but the focus is on the ark’s floating on the waters. The ark was lifted off the surface of the ground on the 40th day, but the mechanisms for submerging the earth continued until the 151st day (8:3). S.E. McEvenue agrees that these 40 days were the period of time required for the ark to become sea borne (*The Narrative Style of the Priestly Writer*, *Analecta Biblica* 80 [Rome: Biblical Institute Press, 1971], p. 63). According to H. Freedman, Abraham Ibn Ezra (b. 1092) had reached the same conclusion nearly a millennium ago: “forty days. This was already stated in verse 12. The repetition teaches that only after forty days of rain was the ark lifted up, but until then it remained stationary” — “The Book of Genesis,” in *The Soncino Chumash: The Five Books of Moses with Haphtaroth*, 2nd ed., ed. by A. Cohen (London: Soncino Press, 1983), p. 38–39.

Jeske writes, “Many Bible readers have the impression that after rising to maximum height during the first forty days, the floodwaters for the next 110 days simply remained sluggishly and sullenly at flood stage” (“Exegetical Brief,” p. 210). His description of raging waters upon the earth’s surface falls short of the biblical description because he ignores the statement that it was not until the 150th day that the rain and the submarine eruptions of underground water ceased.

66. Verses 7:19–8:4 are a new section. The verb form reverts to a suffix conjugation (perfect) since the chain of *wayyiqtol* verbs have been broken. Just as the verb root *גבר* (*gbr*, “prevail”) had been chosen to express the submersion of all land forms in 7:18a (by implication), so here the same verb root is chosen to express the submersion of all the highest mountains and all terrestrial life forms in v. 19. As a suffix conjugation verb, it views the action as a whole without reference to relationships. The twofold statement (with the *wayyiqtol* *וַיִּכְסֶה* [*wayyikussû*] employed as an exegetical [cf. Waltke and O’Connor, *An Introduction to Biblical Hebrew Syntax*, §33.2.2) clarifies the preceding reference to prevailing waters and then moves on to the main topic of this section, the submersion of all life forms so that they “expired” (*וַיָּגוּ*, *wayyigwa’*). It is also significant that a 3-part chiasm introduces this section break. See footnote 17, above.

67. The difficulty with attempting a chronology regarding the submersion and death of all life forms is that v. 19–22 provide only the submersion of the mountains as the time marker — which could be anywhere between the 40th and the 150th days.

on dry ground — everything — died. **7:23** So He obliterated⁶⁸ all living beings from the ground from mankind to beast, to creeping thing, even to flying creature. They were obliterated from the earth. Then⁶⁹ only Noah and those with him in the ark were left. **7:24** Thus the waters prevailed⁷⁰ upon the earth **for 150 days** [600/02/17-600/07/16 - days 1-150].⁷¹ **8:1** Then God remembered Noah and all the animals and beasts that were in the ark with him. God caused a wind to

68. Just as the submersion of the mountains involved a double *wayyiqtol* from one root in v. 19–20 (see footnote 62, above), so also the writer employs a double *wayyiqtol* from one root in v. 23 (וַיִּמַח [wayyimāḥ] and וַיִּמְחֶה [wayyimāḥû]) to describe the obliteration of all life forms. Also, just as those previous *wayyiqtol*s were exegetical, so are these.

69. From this point the sequential/consequential *wayyiqtol* chain presents ten sequential actions:

(1) Then only those on the ark remained (וַיִּשְׁאֶר [wayyisšā'er] (7:23b).

(2) Then the waters continued to prevail (וַיִּגְבְּרוּ [wayyigbbru] (7:24) to a total of 150 days .

(3) Then God remembered (וַיִּזְכֹּר [wayyizkor] (8:1a) Noah.

(4) Then God caused the wind to blow (וַיַּעֲבֵר [wayya'ābēr] (8:1b).

(5) Then the waters began to subside (וַיִּשְׁבּוּ [wayyisšobu] (8:1c) — as an immediate result of the wind.

(6) Then the sources for the waters were blocked up (וַיִּסְתְּרוּ [wayyissākrū] (8:2a).

(7) Then the rain was withheld (וַיִּכְלֵא [wayyikkālē] (8:2b).

(8) Then began to recede continually (וַיִּשְׁבּוּ [wayyisšobu] (8:3a).

(9) Then they continued to decrease (וַיִּהְיֶה [wayyahs'eru] (8:3b).

(10) Then the ark came to rest (וַתָּנַח [wattānah] (8:4).

70. N.A. Mundhenk argues that translating 7:24 provides some of the “most serious translation problems” of the Flood narrative (“The Dates of the Flood,” *Bible Translator* 45/2 [Apr 1994]: p. 210). He concludes that the translation of the Revised English Bible “is especially unfortunate. It says, ‘when the water had increased over the earth for a hundred and fifty days,’ which suggests that the waters continued to get deeper for this whole time. For this to be true there would have to be new water coming from somewhere all through this time, even after the rain stopped” (ibid., p. 211). In order to take this position with regard to 7:24, Mundhenk also had to alter 8:2, where it appears that the Flood mechanisms ceased at the end of the 150 days, not at the end of the first 40 days. Regarding 8:2, Mundhenk writes, “Many translations give the impression that the rain and the water from under the earth continued to flow until the time that God made the wind begin to blow. But the time when the source of the Flood stopped is given in 7:17 as 40 days” (ibid.). However, 8:2 is clearly the reversal of 7:11; 8:2 represents the cessation of those mechanisms set in motion in 7:11.

71. These 150 days included the original 40 days. Comparing 7:11 and 8:4 makes this inclusion certain. See, also, Mathews, *Genesis 1:1–11:26*, 376; Wenham, *Genesis 1–15*, p. 180. Ibn Ezra was convinced that the text taught that the mechanisms of the Flood continued throughout those 150 days. Freedman’s reference drawn from Ibn Ezra states, “Moreover, it continued raining intermittently, whereas during the first forty days it rained incessantly” (“The Book of Genesis,” p. 39).

blow over the earth so that the waters began to subside. **8:2** So the fountains of the deep and the windows of the sky were blocked and the rain from the sky was withheld. **8:3** Then the waters were turning back from upon the earth, going and returning *little by little* so that they continued to decrease **at the end of those 150 days**⁷² [600/07/17 – day 151]. **8:4** Thus, on the **17th day of the 7th month** the ark came to rest in the mountains of Ararat.

III. Third Section of the Flood Narrative (8:5–12)

8:5⁷³ The waters were continually decreasing until⁷⁴ the **10th month. On the 1st day of the 10th month** [600/10/01 – day 225] the mountaintops appeared. **8:6** Then **at the end of 40 days**⁷⁵ [600/10/02–600/11/11 – days 226–265] Noah opened the hatch of the ark that he had made **8:7** and he sent⁷⁶ a raven out [600/11/12 – day 266].⁷⁷ It went back and forth until the water was dried up from upon the earth.⁷⁸ **8:8** Then he sent a dove out from him [600/11/19 – day 273] to see if the waters were scant upon the surface of the ground. **8:9** But⁷⁹

72. Wenham correctly observes that “the natural way to take the references to the 150 days in 7:24 and 8:3 is that they refer to the same period” (“The Coherence of the Flood Narrative,” p. 444).

73. By means of a *waw* + non-verb (disjunctive clause) and a 3-part chiasm (see footnote 18, above), the final major section of the Flood narrative commences.

74. “Until” (עַד, ‘ad) “often indicates not the end of a process but the completion of an important part of it” (Cassuto, *Genesis: Part II*, p. 106). In this particular instance, the significant event is the emergence of the tops of the mountains on day 225.

75. If וַיִּהְיֶה (wayehi) is taken as macrosyntactical, the following wayyiqtol would not be considered sequential and would become the lead verb for the following sequential/consequential wayyiqtol. An alternative translation could be: “When 40 days had ended, Noah opened the ark’s window that he had made.” The meaning is not different, however. If the 40 days began on the same day that the mountaintops emerged, then the dates would be 600/10/01–600/11/10 and would also affect the dates (by one day) for the sending out of the raven and the dove.

76. This wayyiqtol verb is the first in a chain laying out three sequential/consequential actions:

(1) Then Noah sent out (וַיִּשְׁלַח, wayeshallah) (8:7a) the raven.

(2) Then the raven flew (וַיִּבֹּט, wayyebot) (8:7b) to and fro.

(3) Then Noah sent out (וַיִּשְׁלַח, wayeshallah) (8:8) the dove.

77. See 8:10. “[I]t is clear from v. 10 that according to the Biblical narrative seven days passed between the sending forth of the raven and the first time he sent the dove” (Cassuto, *Genesis: Part II*, p. 110; cf., also, Gordon J. Wenham, *Genesis 1–15*, Word Biblical Commentary [Waco, TX: Word, 1987], p. 186).

78. In the case of the raven, it never brought anything back. Every time it was sent out, it returned — until the waters had totally receded. Evidently Noah believed it would be wise to send a second kind of bird since the raven would have been looking for carrion instead of vegetation. It seems from the text that the birds were sent out every seven days and that they probably returned on the same day that they were sent out (cf. 8:11).

79. The negative disjunctive clause interrupts the chain of wayyiqtol verbs and brings

the dove did not find a resting place for its foot, so it returned to him in the ark because the waters were over the surface of the whole earth. Thus he reached out and retrieved it and brought it into the ark with him. **8:10** When **another 7 days** [600/11/20-600/11/26 – days 274-280] had passed, he again sent the dove [600/11/26 – day 280] from the ark **8:11** and it returned to him at evening with a freshly picked olive leaf in its mouth!⁸⁰ Then Noah knew that the waters were scant upon the earth. **8:12** When **yet another 7 days** [600/11/27-600/12/03 – days 281-287] had passed, he sent out the dove [600/12/03 – day 287] but⁸¹ it did not return to him any more.

Conclusion to the Flood Narrative Proper (8:13–14)

8:13 On the 1st day of the 1st month of the 601st year⁸² [601/01/01 – day 315], the waters were drying up⁸³ from the surface of the ground. So Noah

the first sub-section to a close. The suffix conjugation (perfect) verb (מָשָׁעָה, *māšē'ā*) becomes the lead verb for the subsequent *wayyiqtol* chain comprising ten sequential/consequential actions:

- (1) Then the dove returned (וָשָׁב, *wattāšāb*) (8:9b) to Noah.
 - (2) Then Noah stretched out (וַיִּשְׁלַח, *wayyis'elah*) (8:9ca) his hand.
 - (3) Then Noah took (וַיִּקַּח, *wayyiqqāḥehā*) (8:9cb) the dove.
 - (4) Then Noah brought (וַיָּבֵא, *wayyābē'*) (8:9d) the dove into the ark.
 - (5) Then seven more days passed (וַיָּהֶל, *wayyāḥel*) (8:10a).
 - (6) Then Noah again sent out (וַיִּשְׁלַח, *wayyōseḥ šallah*) (8:10b) the dove.
 - (7) Then the dove came back (וָשָׁב, *wattābō'*) (8:11a) to him.
 - (8) Then Noah knew (וַיֵּדַע, *wayyēda'*) (8:11b) the condition of the earth's surface.
 - (9) Then seven more days passed (וַיָּהֶל, *wayyiyāḥel*) (8:12a).
 - (10) Then Noah sent out (וַיִּשְׁלַח, *way'sallah*) (8:12ba) the dove for the last time.
80. 8:11ab is a parenthetical comment introduced by וַיִּדְבַּר (v^e*hinnēh*) as a *waw* + non-verb disjunctive clause. As a parenthetical comment providing background information, it does not radically interrupt the *wayyiqtol* chain which picks up after it.
81. Just as in 8:9 (see footnote 73, above), a negative disjunctive clause interrupts the flow of the narrative. This time, however, its suffix conjugation (perfect) verb does not become the lead verb for a subsequent *wayyiqtol* chain. It closes the final sub-section of the narrative (cf. Robert B. Chisholm, Jr., *From Exegesis to Exposition: A Practical Guide to Using Biblical Hebrew* [Grand Rapids, MI: Baker, 1998], p. 127, #7).
82. The וַיְהִי (vay^e*hî*) is followed by this circumstantial clause of v. 13 and suffix conjugation (perfect) verb (וַיִּרְבֵּי, *hārbū*). That suffix conjugation verb becomes the lead verb for the series (or chain) of two *wayyiqtol* verbs that follow it expressing chronologically sequential actions:
- (1) Then Noah removed (וַיִּסָּר, *wayyāsar*) (8:13ba) the hatch of the ark.
 - (2) Then Noah observed (וַיִּרְאֵה, *wayyar^e*) (8:13bb) that the ground was drying up.
83. It appears that, on day 315, even though the surface had lost the layer of water over it, it was still too wet below the surface to walk upon it. This is basically the view taken by R.W.L. Moberly, “Why Did Noah Send Out a Raven?” *Vetus Testamentum* 50/3 (2000): p. 351: “The juxtaposition of *hṛb* in v. 13 with *ybs* in v. 14 clearly indicates a distinction — presumably between a muddy, boggy mess and firm, hard ground — in which *ybs* is the term for the complete disappearance of the flood waters from the earth”

removed the ark's cover. Then he observed that the surface of the ground was drying up.

8:14 On the 27th day of the 2nd month [601/02/27 – day 371] the land was dry.⁸⁴

The above translation reveals the sequential nature of the primary layering of *wayyiqtol* verb forms. These verb forms are characteristic of Hebrew narrative and normally indicate a chronological sequence of the actions presented. The temporal circumstantial clause at the beginning of 7:11 is paralleled by the same kind of clause in the last verse, 8:14 — an inclusio marking the structure of the main Flood narrative. The employment of *way'hi* in 7:12 parallels that of *way'hi* in the next to the last verse, 8:13 — another inclusio confirming the 7:11//8:14 inclusio marking the limits of the Flood narrative. Therefore, the introduction to the Flood narrative proper occurs in 7:6–10. The Flood narrative itself is composed of three major sections: (1) 7:11–18; (2) 7:19–8:4; and (3) 8:5–12. The conclusion of the Flood narrative proper occurs in 8:13–14. The difficulty with attempting a chronology regarding the submersion and death of all land-dwelling, air-breathing life forms is that 7:19–22 provides only the submersion of the mountains as the time marker — which occurs sometime between the 40th and the 150th days.

Two-Fold Purpose of the Flood

During the first 150 days, the flood waters destroyed all terrestrial life and obscured the original continent(s). God restrained the heavy rains after the first 150 days (not after 40 days)⁸⁵ and He stopped the fountains of the deep and the windows of heaven at that same time. It appears from the text that the significance of the first 40 days of the Flood lies in the floating of the ark on the 40th day.⁸⁶ Destruction of all living things outside the ark was the purpose of the first 150 days. The purpose of the next 165 days followed by the 56 days was to make

on day 371. Both major 11th-century rabbis, Rashi and Ibn Ezra, took the description in v. 13 to refer to the drying of only the top surface of the ground and that it left the ground insufficiently firm to walk upon (Freedman, “The Book of Genesis,” p. 42). Wenham, *Genesis 1–15*, p. 187. See footnote 78, above.

84. According to Wenham, “Nearly two months elapsed between Noah’s looking out of the ark to see the earth is ‘drying’ *הרב* till it was ‘dried out’ *יבש*. This distinction between the two roots is also attested in Isa. 19:5; Job 14:11; and Jer. 50:38” (*Genesis 1–15*, p. 187). Job 14:11 is a significant pairing of the two roots in that the “verb ‘dry up’ *הרב*, speaking of waters (12:15), expresses the result of the action expressed by *יבש* (Gen. 8:13)” — E. Dhorme, *A Commentary on the Book of Job*, trans. by Harold Knight (Nashville, TN: Thomas Nelson, 1984), p. 200.
85. Contra John Woodmorappe, “Hypercanes as a Cause of the 40-Day Global Flood Rainfall,” in *Proceedings of the Fourth International Conference on Creationism Held August 3–8, 1998*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1998), p. 645–658.
86. Contra Robinson, “The Flood in Genesis: What Does the Text Tell Geologists?” p. 468.

the earth suitable for life — an apparent replication of the original process of creation (1:2–19). The waters returned back to the ocean basins and achieved relative stability⁸⁷ by day 300.

Overall, the purpose of the Flood is two-fold: (1) The first 150 days are a global cataclysmic judgment; (2) the following 221 days are for cleansing and reconstruction.⁸⁸ The statement, “God remembered Noah” (8:1), does not mean that God had forgotten about Noah. It refers to God taking action to make the earth suitable again for the inhabitants of the ark and their descendants.⁸⁹ This “remembrance” is first demonstrated by the ark coming to rest on the following day (day 151) during the initial stages of subsidence (8:1–4). At the end of 150 days, the wind and the blocking of the sources caused the waters to subside and continually decline for 221 days. Thus, the purpose of the first 150 days was to obliterate all terrestrial life and the purpose of the next 221 days was to restore the earth to a livable condition.

Prevailing Phase

The destructive phase of prevailing waters during the first 150 days was caused by the eruptions of the fountains of the great deep and torrential rain. The fact that the fountains of the great deep are mentioned before the rains, both here and in 8:1, suggests that the fountains were the primary source of water that flooded the earth.

This Hebrew verb **בקע** (“burst open”) is used in Numbers 16:31 to refer to a small earthquake that took Korah and his family and belongings into the earth. In Judges 15:19 it refers to the breaking of rock to release water, and in Zechariah 14:4 it refers to a major mountain-splitting and valley-forming earthquake. So this word is loaded with geological significance. It indicates that in the prevailing phase of floodwaters there was massive tectonic activity in the crust of the earth. These earthquakes would have caused volcanoes and tsunamis (as earthquakes do today) on a global scale, with incredible destructive power.

The phrase “windows of heaven” (7:11; 8:2) is a Hebrew idiom or metaphor, which apparently means a great pouring out (e.g., 2 Kings 7:19; Isa. 24:18; Mal. 3:10). These processes began on day 1 and ended on day 150. During the first 150 days, rising water is mentioned no less than three times. From day 1, torrential rain and flooding caused the water level to increase and rise. On the 40th day, the water level was sufficient to lift the ark off the ground surface (Gen. 7:17), as previously recognized by Holt.⁹⁰ After this, the waters increased greatly so that

87. “Relative stability” indicates that the environment was stable enough for the dove that Noah sent out from the ark to find a place of rest and security.

88. Bruce K. Waltke, *Genesis: A Commentary* (Grand Rapids, MI: Zondervan, 2001), p. 140.

89. Claus Westermann, *Genesis 1–11: A Commentary*, trans. by J.J. Scullion (Minneapolis, MN: Augsburg Publishing House, 1984), p. 441.

90. Roy D. Holt, “Evidence for a Late Cainozoic Flood/post-Flood Boundary,” *Creation Ex Nihilo Technical Journal* 10/1 (April 1996): p. 130.

the ark floated freely on the water surface (7:18). Then the waters continued to rise and all the pre-Flood mountains were covered (7:19–20). After the highest regions became submerged, all flesh (all land-dwelling, air-breathing creatures) died (7:21). The significance of the first 40 days (7:12, 17) is with raising the ark off the ground surface, not when the rain stopped and not when the land creatures died.

Based on a misunderstanding of 7:4, it is a common misconception that rain (and the whole Flood for that matter) ceased after 40 days. In reality the detailed account of the Flood in 7:11–24 is an expansion of the generalized prophetic announcement of 7:4. It is sequential also: that all life would be destroyed at some point after the 40th day as clearly revealed in 7:11–24. Neither the single verse (7:4) nor the detailed expansion (7:11–24) claim that rain would cease after 40 days. Flood models based upon isolated key word studies are mistaken and so are geologic models based on 7:4 alone.

Subsiding Phase — A Key Interpretative Issue Involving Mechanism

Genesis 8:1 marks the turning point in the Flood. When the mechanisms cease at the end of 150 days, the writer describes a constant back and forth motion of the waters as they return to a relatively stable state over the course of the following 165 days. Studies of the Flood narrative have typically treated 8:3 as though it was nothing but a simple statement of the continuous recession of the waters after the first 150 days. Potentially, this verse has much to contribute to the discussion of Flood hydrodynamics.⁹¹ Best's recent study of the Noachic Flood in the light of the Sumerian epic of Ziusudra focused on 8:3 in one of its appendixes.⁹² Although he utilizes the text to support his adherence to a localized riverine flood, he still confirmed that the phrase “going and returning” (translation above for 8:3) is best understood as a reference to “ebbing and flooding.”⁹³ The following three observations lead to the same conclusion.

Observation 1: In the first half of Genesis 8:3 (וַיָּשׁוּבוּ הַמַּיִם מֵעַל הָאָרֶץ הַלְיֹדֶף וְשׁוּבָה, *wayyāšubū hammayim mē'al hā'āreṣ hālōḏēf wāšōḇ*) the primary verb is וַיָּשׁוּבוּ (*wayyāšubū*), a verb of motion: “were returning” or “were turning back.”⁹⁴ An example of such movement is seen in the description of the cycle of winds in Ecclesiastes 1:6 — “The wind blows to the south and goes around to the north; around and around goes the wind, and on its circuits the wind returns (שׁוּבָה, *sāḇ*)” (ESV⁹⁵). The same verb root is repeated as the final word (וְשׁוּבָה, *wāšōḇ*) in this

91. Northrup, “Identifying the Noachic Flood in Historical Geology: Part One,” p. 177, notes the significance of the Hebrew text here and discusses one geologic result.

92. Robert M. Best, *Noah's Ark and the Ziusudra Epic: Sumerian Origins of the Flood Myth* (Fort Myers, FL: Enlil Press, 1999).

93. *Ibid.*, p. 281.

94. Waltke and O'Connor, *An Introduction to Biblical Hebrew Syntax*, p. 589 (§35.3.2b-c).

95. *The Holy Bible: English Standard Version* (Wheaton, IL: Crossway, 2001).

half of the verse, forming a kind of *inclusio* (or envelope figure) that helps to augment the focus on this particular motion by delimiting this half-verse.⁹⁶ Wenham declares, “Exactly the same description is given of the Red Sea returning to its place in Exodus 14:26, 28, and the Jordan likewise, in Joshua 4:18.”⁹⁷ However, he must be speaking only of the employment of וַיָּשׁוּבוּ (*wayyāšubû*), for none of the other passages have the additional double-verb construction (וַיָּשׁוּבוּ . . . הָלֹךְ וְשׁוֹב . . . וַיָּשׁוּבוּ *wayyāšubû . . . hālôk wāsôb*).

Observation 2: The combination of two infinitive absolutes in the final phrase (וְהָלֹךְ וְשׁוֹב, *hālôk wāsôb*) is an adverbial hendiadys in which the first verb is the adverbial modifier of the second: “continually returning.”⁹⁸ The main infinitive (וְשׁוֹב, *wāsôb*) is functioning as a gerund expressing the circumstance⁹⁹ of the primary verb (וַיָּשׁוּבוּ, *wayyāšubû*): “Then the waters were turning back . . . continually returning.” By thus repeating the primary verb with the cognate infinitive absolute, “the writer or speaker wants to indicate that he is especially interested in it or to demand that the reader or hearer give especial attention to it.”¹⁰⁰ הָלֹךְ (*hālôk*) is an intensifying infinitive absolute (normally paronomastic — playing on the primary verb root or sense).¹⁰¹ When הָלֹךְ (*hālôk*) is employed in this fashion, it normally stresses continuous action.¹⁰² Two different interpretations have arisen from this Hebrew construction. On the one hand, H.C. Leupold claimed that it “amounts to: ‘they subsided with a very pronounced fall.’”¹⁰³ This appears to be the view upon which Henry Morris depended when he claimed that the Hebrew expression “indicates a quite rapid subsidence.”¹⁰⁴ On the other hand, Gordon Wenham explained that it places an emphasis on “the long time in which the waters continued to decline.”¹⁰⁵ Such a view was also offered by Umberto Cassuto:

96. Watson, *Classical Hebrew Poetry*, p. 282–285.

97. Wenham, *Genesis 1–15*, p. 184.

98. Frederic Clarke Putnam, *Hebrew Bible Insert* (Quakertown, PA: Stylus Publishing, 1996), §2.3.2.

99. Cf. Gary A. Long, *Grammatical Concepts 101 for Biblical Hebrew: Learning Biblical Hebrew Grammatical Concepts through English Grammar* (Peabody, MA: Hendrickson, 2002), p. 83.

100. T. Muraoka, *Emphatic Words and Structures in Biblical Hebrew* (Jerusalem: Magnes Press, 1985), p. 92.

101. Waltke and O’Connor, *An Introduction to Biblical Hebrew Syntax*, §35.3.2b-c. Cf. E. Kautzsch, ed., *Gesenius’ Hebrew Grammar*, 2nd English ed., trans. and ed. by A.E. Cowley (Oxford: Clarendon Press, 1910), §113*r-s, u*; hereafter referred to as GKC.

102. Ibid. Cf. Putnam, *Hebrew Bible Insert*, §2.3.2; Paul Joüon, *A Grammar of Biblical Hebrew*, trans. and rev. by T. Muraoka, *Subsidia Biblica 14/II* (Rome: Pontifical Biblical Institute, 1996), §123s.

103. H.C. Leupold, *Exposition of Genesis*, 2 vols. (Grand Rapids, MI: Baker, 1970 reprint of 1942 ed.), 1:310.

104. Morris, *The Genesis Record*, p. 207.

105. Wenham, *Genesis 1–15*, p. 153.

The process is, of course, protracted: the waters return, *going and returning* — little by little. When the fountains burst forth, the waters gushed out from there with force and speed, and when the windows of the heavens were opened, the water poured down from them fast and furious; but now that these openings, below and above, have been closed, the waters recede slowly, by a gradual and continuous movement, according to the normal way of nature.¹⁰⁶

In what could be taken as agreement with this second interpretation, some commentators and translators have chosen to bring out the concept of a steady or gradual receding of the waters.¹⁰⁷ Employing Genesis 8:3 as their example, Hans Bauer and Pontus Leander pointed out that the grammar expresses the continual nature of the action of the water as it “subsided more and more” with both a going and a returning motion.¹⁰⁸

Observation 3: וְשׁוֹב הַיָּם הַלּוֹךְ occurs nowhere else in the Hebrew OT. However, there are two similar constructions in the immediate context:

1. verse 5: וְהַמָּיִם הַיּוֹרְדִים הָלֹךְ וְהַסּוֹר (w^ehammāy-m hāyû hālôk̄ w^ehāsôr):¹⁰⁹ “and the waters were continually decreasing”
2. verse 7: וַיָּצֵא יְצוּאָה וְשׁוֹב (wayyēsē’ yāšô’ wāsôb̄): “[the raven] went back and forth”

The clause in verse 7 is closer in structure and meaning to the clause in verse 3 than verse 5. וַיָּצֵא יְצוּאָה וְשׁוֹב (wayyēsē’ yāšô’ wāsôb̄) is best translated by *flying back and forth*¹¹⁰ rather than *went out just to come back again (soon)*.¹¹¹ In his discussion of verse 7, Moberly concludes that, no matter how one might take the idiom with the infinitive absolutes, “either way the general sense of ceaseless movement is clear.”¹¹² Indeed, this “repeated idiom suggests a possible parallelism between the movement of the receding waters and the flight of the raven.”¹¹³ By analogy, therefore, the receding waters are described by the same grammar and phraseology as the raven’s flight: as being in continuous

106. Cassuto, *Genesis: Part II*, p. 102.

107. Westermann, *Genesis 1–11*, p. 389 (“receded gradually”; cf. NLT and NRSV); Nahum M. Sarna, *Genesis*, JPS Torah Commentary (Philadelphia, PA: Jewish Publication Society, 1989), p. 56 (“receded steadily”; cf. NJPS, NASB, and NIV).

108. “. . . um die Fortdauer der Handlung auszudrücken: . . . ‘und sie (kehrten zurück ein Gehen und ein Zurückkehren, d. h.) verliehen sich immer mehr’ ” — Hans Bauer and Pontus Leander, *Historische Grammatik der hebräischen Sprache des alten Testamentes* (Halle, Germany: Max Niemeyer, 1922), p. 277 (§36 e’).

109. This construction with הָיָא (hāyâ) followed by the infinitive absolute הַלּוֹךְ (hālôk̄), occurs only here in the OT.

110. Waltke and O’Connor, *An Introduction to Biblical Hebrew Syntax*, p. 590 (§35.3.2c).

111. Joüon-Muraoka, *A Grammar of Biblical Hebrew*, §123m.

112. Moberly, “Why Did Noah Send Out a Raven?” p. 350.

113. *Ibid.*, p. 350–351.

motion “going and returning — little by little.”¹¹⁴ It is interesting to observe that the same construction in modern Hebrew (*hālōk wāšōb*) refers to a round trip.¹¹⁵

The first half of 8:3 speaks of the movement of Flood waters. “Returning” or “receding” describes that motion. Since the first verb (*wayyašubū*) is a *wayyiqtol*, it indicates that this action follows chronologically the cessation of the mechanisms described in 8:2. The description concerns the abating or decreasing of the waters from off the land masses which, at this point, are still submerged. The roots and forms of the last two Hebrew words in 8:3a (*hālōk wāšōb*) present a forceful picture. The two words together focus on the concept of a continual recession of the water. However, it is not a focus on mere recession or abatement. That concept is specified with a related construction and a different second verb in 8:5. That which is involved here is more parallel to what is stated concerning the raven in 8:7 — it was continually going and returning (flying back and forth). Applying this concept to 8:3 reveals that the waters were in a constant back and forth motion.¹¹⁶

In conclusion, the apparent intent of the text is to describe the receding waters of the Noahic Flood as being in a constant ebbing and flowing motion. Such movement could be augmented by the absence of extensive land barriers, making for wave motion of grand proportions that could have had a profound effect in the shaping of the earth’s surface.¹¹⁷ Even submerged land masses would feel the scouring and depositional effects of the intermittent surges, retreats, and resurgence of water. Once the water had receded below the highest landforms, massive waves could have been crashing over and against those forms, carving them and forming them into a totally new landscape from that which existed prior to the Flood.

Summary of Chronology

For clarity, the table on the following page presents the chronological summary of the Flood in Genesis 7:11–8:14. For the purpose of this chapter, no detailed defense of the 30-day month will be presented. Support can be found in the sources both in defense of the 30-day month and opposed to it.¹¹⁸

114. Cassuto, *Genesis: Part II*, p. 102.

115. Best, *Noah’s Ark and the Ziusudra Epic*, p. 281.

116. Contra Leupold, *Exposition of Genesis*, 1:310.

117. Whitcomb and Morris, *The Genesis Flood*, p. 100, 269. See, also, Harold W. Clark, *Fossils, Flood, and Fire* (Escondido, CA: Outdoor Pictures, 1968). Unfortunately, this ebbing and flowing movement of the receding waters is totally ignored by Tas Walker, “A Biblical Geologic Model,” in *Proceedings of the Third International Conference on Creationism Held July 18-23, 1994*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1994), p. 584–592.

118. See Jack Finegan, *Handbook of Biblical Chronology: Principles of Time Reckoning in the Ancient World and Problems of Chronology in the Bible* (Princeton, NJ: Princeton University Press, 1964), for arguments supporting the 30-day month in the Israelite

	Passage	Date	Duration	Stage	Flood Days
150	7:11	600/02/17	Rising Waters	Commencement of torrential rain and the bursting open of subterranean water sources (primarily beneath the sea floor)	1st
	7:12, 17	600/03/26	40 days	Rising waters result in floating of the ark	40th
	7:24 (cf. 8:3)	600/07/16	150 days	Continually rising waters due to rain and subterranean sources — all land creatures outside the ark die	150th
165	8:4	600/07/17	Receding Waters	Commencement of subsiding waters after the sources are stopped — ark grounded	151st
	8:5	600/10/01	74 days since ark grounded	Mountaintops appear	225th
	8:6	600/11/11	40 days	Noah opens ark's hatch	265th
	8:7	600/11/12?		Raven released	266th
	8:8	600/11/19?	7 days?	Dove released	273rd
	8:10	600/11/26?	7 days	Dove released and returns with olive leaf	280th
	8:12	600/12/03?	7 days	Dove released and does not return	287th
56	8:13	601/01/01	90 days since mountaintops appeared	Ground surface free of excess water	315th
	8:14	601/02/27	221 days since water sources were stopped	Land dry enough to disembark from the ark	371st

calendar. In addition, Cryer (see footnote 12, above) has adequately covered some of the arguments in support of 30-day months (“Interrelationship,” p. 256–257). For a recent critique of a lunar calendar in ancient Israel, see Bruce K. Gardner, *The Genesis Calendar: The Synchronistic Tradition in Genesis 1–11* (Lanham, MD: University Press of America, Inc., 2001). It should be pointed out, however, that even Gardner recognizes that in at least a portion of the Flood narrative, “the use of 30-day numbered months is evident (5 months = 150 days, in Gen. 7:24)” (*ibid.*, p. 183). In actuality, Gardner believes that there are at least two, possibly three, different calendars employed in the Flood narrative (*ibid.*, p. 184, 212–214). This is not a new position, however, a similar observation was made by John Skinner early in the 20th century (*A Critical and Exegetical Commentary on Genesis*, 2nd ed., International Critical Commentary

The verses of Genesis 7:13–16 are not included in the table above because they have no bearing on Flood chronology. “On the very same day” (v. 13) is a reference back to the same day previously noted by year, month, and day in 7:11, the day the Flood mechanisms began. The Hebrew is unambiguous in this emphatic declaration.

The Flood lasted one year and 11 days (or 371 days) based upon a 360-day year (12 months x 30 days/month).¹¹⁹ It is not known at what hour the Flood began on day 1, nor at what hour Noah left the ark on day 371. But, by definition, a day can mean either a full day or daylight portion thereof (Gen. 1:5). The 7 days prior to the Flood (7:4, 10) do not belong to the Flood chronology per se since they precede the onset of the mechanisms of the Flood. There are two main phases: 150 days of prevailing waters and 221 days of receding waters. The ark was lifted off the earth on the 40th day. After this, the waters kept rising until the antediluvian mountains were submerged. Then all land-dwelling, air-breathing creatures were destroyed. By the end of the 150th day only those in the ark were left (7:23).

The second mention of 150 days in 8:3 is a reference back to the same 150 days in 7:24. The turning point in the Flood is marked in 8:1. The waters began to abate at the end of the 150th day. The waters subsided just enough to allow the ark to land on high ground in the mountains of Ararat. This occurred at some unknown hour during day 151. The tops of the mountains emerged on day 225 (8:5). After this, a more narrow perspective of the earth’s condition ensues — the perspective from Noah’s viewpoint. Before 8:5 the language of the narrative is global. After the mountains appear, Noah waits 40 days. Then he sends out the birds over the next 4 weeks. The dove returned with the olive leaf on the 280th day, and did not return after it was released on the 287th day. On day 315, Noah observed that the ground surface was drying up. The earth is declared to be dry on day 371.

We may assume that the first vegetation attractive to the dove (the olive tree) had sprouted and had grown sufficiently that the dove could pluck a twig from it 14 days after Noah opened the ark’s hatch (54 days after the mountains

[Edinburgh: T. & T. Clark, 1976 reprint of 1930 ed.], p. 167–168). Both Skinner and Gardner were influenced heavily by the documentary hypothesis.

It should be noted that the debate over lunar versus solar calendars in regard to the Flood narrative has been taking place since the very earliest centuries of the Church. In his commentary on Genesis, Ephrem the Syrian (A.D. 308–373) said, “Notice then that even the generation of the house of Noah employed this reckoning of three hundred sixty-five days in a year. Why then should you say that it was the Chaldeans and Egyptians who invented and developed it?” — *Genesis 1–11*, ed. by Andrew Louth, Ancient Christian Commentary on Scripture: Old Testament 1 (Downers Grove, IL: InterVarsity Press, 2001), p. 143, citing “Commentary on Genesis,” 6.11.2–6.12.1, in *Fathers of the Church: A New Translation* (Washington, DC: Catholic University of America Press, 1994), 91:141–142.

119. See footnote 116, above.

had emerged from the waters and 128 days after the ark had grounded on the mountains of Ararat). Within the next 7 days, the vegetation was strong enough that the dove remained outside the ark because it had a place sufficiently above the fluctuations of the water level to rest itself. Therefore, releasing the raven and the dove involved a period of 21 days.

Noah could see that the surface of the ground was free of water 28 days following the final release of the dove. It was another 56 days before the ground had dried sufficiently that both man and beast could leave the ark and walk safely upon the surface of the earth. Thus, the 371 days of the Flood is more accurately a reference to the period of time that Noah and his family were resident in the ark. In essence, the Flood itself had ended when the surface of the ground was free of water on the 315th day. However, that does not mean that the waters had receded to pre-Flood levels. The water level may have remained significantly elevated for decades or even centuries. Residual effects of the Flood are not touched upon in the Flood narrative and those effects may have had profound results regarding post-Flood topography in many places.

Dissonant Chronologies

The supposed differences between the Masoretic Text, the Septuagint, the Qumran Genesis commentary (4Q252), and the Book of Jubilees are best resolved by understanding that the Hellenistic and Jewish settings produced chronologies that “actually reflect the struggle between the various *milieus* where lunar or solar calendars were in power.”¹²⁰ It seems fairly universal in the primary sources that the Noahic Flood lasted for approximately one year — whether that is taken as 354, 365, or 371 days.

Geological Inferences

The chronology presented above might present new data to be utilized in resolving some issues regarding geologic mechanisms and the timing of events. The primary geologic mechanisms are the activity of the “fountains of the deep” and the back and forth movements of the receding waters. The torrential rains also would have caused rivers to overflow their banks and produced massive erosion and mud slides even before the ocean waters engulfed the land. The timing of events, which have a bearing on geologic interpretations include (1) the death of terrestrial life, (2) the covering of antediluvian mountains, (3) the emergence of apparent new mountains, (4) the oscillation of receding waters, and (5) the overall sea level.

Global Tectonics

Some Flood geologists identify the fountains of the deep (7:11; 8:2) with both terrestrial and oceanic fountains.¹²¹ To flood all the land-masses of the

120. Moshe A. Zippor, “The Flood Chronology: Too Many an Accident,” *Dead Sea Discoveries* 4/2 (July 1997): p. 207–210.

121. Fouts and Wise, “Blotting Out and Breaking Up: Miscellaneous Hebrew Studies in

former world with both rain and oceanic waters requires an enormous catastrophic movement of the earth's crust.¹²² According to Morris:

Once the postulated pressure rise caused by the first "fountain" to crack open, the pressurized fluid would surge through at this point and further weaken nearby boundaries, until soon a worldwide chain reaction would develop, cleaving open all the fountains of the great deep throughout the world.¹²³

It is possible that the fountains of the deep that caused the Flood remain as prominent structures in the crust. Some Flood geologists¹²⁴ equate the world rift system (or spreading centers) with the fountains of the deep. Presently, the globe-encompassing world rift system does seem to be an obvious choice. Most of the 70,000-km-long world rift system is below sea level.¹²⁵ It is a deep-seated feature whether it underlies the land (e.g., Dead Sea Rift; East African Rift) or occurs on the various sea floors (e.g., mid-ocean ridges). Are there any other features of the crust besides the world rift system, or in conjunction with it, which could be possibilities? Another question is why and how did the fountains of the deep get stopped up? No

What about orogeny (mountain building processes) during the Flood? As far as the biblical text is concerned, the mountains of Ararat either were already formed or were at some stage in the orogenic processes before the end of the first 150 days. Otherwise, how could the ark land there on day 151? Apparently the mountains of Ararat were forming to some degree during the prevailing phase of the Flood. Could this mean that some other mountain belts of the world were also forming during the prevailing phase? Did the mountains of Ararat continue

Geocatastrophism," p. 220–222; Whitcomb and Morris, *The Genesis Flood*, p. 242.

122. One theory is a rapid catastrophic subduction of oceanic crust: John R. Baumgardner, "3-D Finite Element Simulation of the Global Tectonic Changes Accompanying Noah's Flood," in *Proceedings of the Second International Conference on Creationism Held July 30-August 4, 1990*, 2 vols., ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1990), 2:35–45.
123. Morris, *The Genesis Record*, p. 196.
124. E.g., Steven A. Austin et al., "Catastrophic Plate Tectonics: A Global Flood Model of Earth History," in *Proceedings of the Third International Conference on Creationism Held July 18-23, 1994*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1994), p. 609–621; John R. Baumgardner, "Catastrophic Plate Tectonics: The Geophysical Context of the Genesis Flood," *Technical Journal* 16/1 (2002): p. 58–63.; W.T. Brown, *In the Beginning: Compelling Evidence for Creation and the Flood*, 6th ed. (Phoenix, AZ: Center for Scientific Creation, 1995); Andrew A. Snelling, "Plate Tectonics: Have the Continents Really Moved Apart?" *Creation Ex Nihilo Technical Journal* 9/1 (April 1995): p. 18.
125. K.C. Condie, *Plate Tectonics & Crustal Evolution*, 3rd ed. (New York: Pergamon Press, 1989), Plate 1; R.W. and B.B. Decker, *Mountains of Fire* (New York: Cambridge University Press, 1991), p. 21–22.

to grow during the subsiding phase of the Flood and even afterward? On day 225, the tops of other mountains appeared. Did mountain building processes play a role in continental erosion and deposition, and the regressive large-scale back and forth water motion?¹²⁶

Continental Erosion and Deposition

The Flood narrative is very clear that waters rose progressively until all the high hills that were under the whole heavens were covered. Later, the waters receded in a back and forth manner until mountaintops appeared. This means that both subaerial (including fluvial) and submarine erosional and depositional sequences have occurred on the continent(s). But this does not necessarily mean that all the sequences were preserved. Likewise, the great ups and downs, and back and forth nature of waves could have temporarily exposed, then covered and then re-exposed and re-covered land surfaces during both the prevailing phase¹²⁷ and the subsiding stage of the Flood.¹²⁸

The prevailing phase of the Flood reformed the earth's surface and killed its terrestrial inhabitants. In the earliest stages of the Flood, it is probable that the pre-Flood world was altered significantly by severe erosion. The torrential rain and subaerial/fluvial geologic processes were probably the most effective during the first 40 days, before oceanic processes prevailed. At the same time, the oceans progressively transgressed the continent(s). Severe erosion was followed by submarine deposition.¹²⁹ Do any depositional remnants of the subaerial/fluvial processes (during the Flood's earliest stages) exist? Or were the eroded sediments (carried by fluvial waters) dispersed into oceanic waters when the two met? If so, what are the deposits' characteristics? Perhaps these deposits (if they exist) are buried under transgressive submarine sediments? If they do not exist, were they subducted?¹³⁰ From an oceanic perspective, the prevailing phase of the

126. Northrup associates crustal movements with the massive oscillation of receding Flood waters ("Identifying the Noahic Flood in Historical Geology: Part One," p. 178).

127. Cf. Berthault's question, "might not these successive tidal waves result from 'the fountains of the deep'?" — Guy Berthault, "Sedimentation Experiments: Is Extrapolation Appropriate? A Reply," *Creation Ex Nihilo Technical Journal* 11/1 (1997): p. 69.

128. E.g., Edmond W. Holroyd III, "Cavitation Processes During Catastrophic Floods," in *Proceedings of the Second International Conference on Creationism Held July 30-August 4, 1990*, 2 vols., ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science Fellowship, 1990), 2:101–113.

129. E.g., Steven A. Austin, ed., *Grand Canyon: Monument to Catastrophe* (Santee, CA: Institute for Creation Research, 1994), p. 69.

130. E.g., Austin et al., "Catastrophic Plate Tectonics: A Global Flood Model of Earth History," p. 609–621; Baumgardner, "Catastrophic Plate Tectonics: The Geophysical Context of the Genesis Flood," p. 58–63. For an empirical study, see Roger Sigler and Van Wingerden, "Submarine Flow and Slide Deposits in the Kingston Peak Formation, Kingston Range, Mojave Desert, California: Evidence for Catastrophic Initiation of Noah's Flood," in *Proceedings of the Fourth International Conference on Creationism Held August 3–8, 1998*, ed. by Robert E. Walsh (Pittsburgh, PA: Creation Science

Flood should be evidenced by an initial transgressive sequence(s) of submarine deposits. This initial sequence should be followed by other sequences of strata that show an earth submerged most of the time. Another issue involves the destruction or alteration of the antediluvian landscape (topographical features and the underlying structures of the crust). When the antediluvian mountains were covered, what was their fate?

As previously discussed, the subsiding phase of the Flood could be referred to (in large part) as the ebb and flow (or ebbing and flooding) stage.¹³¹ Austin reasons from his studies that the receding waters of the Flood “were rushing back and forth with an action resembling tidal movement, as the overall level of water progressively declined.”¹³² Such movement on a grand (up to continental) scale, augmented by either the absence and/or emergence of land barriers (8:5), would doubtless have a profound effect in the shaping of the earth’s surface.¹³³ This process occurred for at least 165 days.

The back and forth pattern should reveal itself in large-scale regressive and transgressive sedimentary sequences. Overall, the general trend should be primarily regressive. Seventy-five days passed from the time the ark landed until the mountaintops appeared. Apparently, most of the land surface was still submerged most of the time during these 75 days. Why did the waters keep returning? Could increases of submarine sedimentation (on land and in the oceans) with each regression play a role in continued transgressions? If so, could this repetitive process have continued until more volumetric places became available for the waters (e.g., deeper basins: oceanic or continental; land based rifts; caverns and voids within various strata)? After the mountains appeared, the coastlines changed constantly for the remainder of the Flood. Once the water had receded below the highest landforms, waves and currents would naturally rework those forms and rework sediments deposited previously during the Flood. Erosional and depositional sequences moved seaward, left some waters trapped in basins, and eventually gave way to the creation of new river systems.¹³⁴ Does an overall regressive sequence exist in the geologic record? Answers to these and other Flood-related questions await further geological studies.

Ultimately, the Flood’s forces reshaped the topography of the entire globe. Even Peter recognized this fact when he wrote, “The world that then *existed* perished, being flooded with water” (2 Pet. 3:6; NKJV). Therefore, it is presently impossible to locate antediluvian geographical features such as the garden in Eden or the four rivers of Eden.¹³⁵

Fellowship, 1998), p. 487–501.

131. See also Whitcomb and Morris, *The Genesis Flood*, p. 100.

132. Austin, ed., *Grand Canyon: Monument to Catastrophe*, p. 77.

133. Whitcomb and Morris, *The Genesis Flood*, p. 269.

134. *Ibid.*

135. Recent research indicates that great river valleys might follow antediluvian rifts in the crust through antediluvian Precambrian basement. But even if this theory accurately identifies the current Tigris-Euphrates river system with the Edenic river system, it might

Paleontological Considerations

Fossilization of land creatures including ichnofossils (i.e., tracks indicating the animal was still alive) may prove to be a key to help determine when certain sedimentary strata were deposited. This study demonstrates that all land-dwelling, air-breathing creatures died by the 150th day of the Flood. Therefore, the types of terrestrial fossils, which are possible during the first 150 days include (1) burial while still alive; (2) burial of dead carcasses; and (3) tracks or footprints. The sorting action of moving water involves dropping out streamlined structures “before rougher textured structures. Bodies with higher specific gravity (heavier for their size) fall before lighter ones. This applies to the sand, silt, etc., as well as to the bodies of dead creatures.”¹³⁶ In addition, various creatures inhabit different ecologic zones. Robbins describes the resulting order of deposition as follows:

Creatures living below sea level would naturally be found fossilized in lower layers than those living higher up in altitude. Those living well above sea level would tend to be found in the upper levels of sediments. The mobility of the animals themselves, as well as their method of locomotion, would influence where they most often would be found in the rocks. More mobile, active creatures would tend to escape for a time before being overwhelmed by a flood. Birds, flying insects, etc., having bodies of low specific gravity, would sink more slowly than worms and beetles. Clams, mussels, and the like would be expected to be found in the lowest deposits.¹³⁷

As far as footprints by various land animals are concerned, the following questions must be answered in any interpretation of the earth’s strata:

1. Were the tracks definitely made in Flood sediments during the first 150 days of the event?
2. Could the tracks have been made after the Flood (i.e., after the animals left the ark), but **within Flood sediments** while they were still soft (i.e., not lithified)?
3. Were the tracks made during post-Flood catastrophes and within post-Flood deposits?

be as much as “200–300 km west” of the antediluvian system and “the topography around the rivers . . . completely changed as a result of the Flood” and the Persian Gulf itself was “smaller in the immediate post-Flood period than it is today.” John Woodmorappe, “The Feasible Same-Site Reappearance of the Tigris-Euphrates River System after the Global Flood,” *Creation Research Society Quarterly* 39/2 (Sept 2002): p. 109, 114. This theory could also put an end to the dubious claim that the Flood had to be local since the names of two of Eden’s rivers were preserved in the post-Flood world.

136. Austin Robbins, “How Were Fossils Formed?” *Bible and Spade* 10/4 (Autumn 1997): p. 74.

137. *Ibid.*

It is possible that all three scenarios exist in the geologic rock record. Therefore, proper interpretation of the rock record must be based on many criteria.

Sea Level Curve

After the waters rose to their greatest depth, their level began falling at the end of the first 150 days. A sea level was obtained by the Flood's end. Where this sea level was in relation to the modern-day sea level is presently unknown. Could a search for a static shoreline in the upper levels of strata (toward the oceans) in the geologic record be helpful? Would this get us closer to the controversial Flood/post-Flood boundary? What effects might the massive oscillation of receding waters have on the possibility of a non-static shoreline?¹³⁸ Though an ice age is not mentioned in Scripture, many creation scientists think that the state of the oceans, land masses, and atmosphere at the end of the Flood would be conducive to producing an ice age that lasted for many centuries. How much would an ice age temporarily lower sea level below what it was at the end of the Flood and its level today? How would an ice age and different sea level aid the dispersion of the animals from the ark? What erosional features and fossilized remains are the result of the advancement and then melting back of glaciers? These post-Flood effects also require further investigations.

Conclusion

The determination of the nature and extent of the geologic consequences of the Noahic Flood are best derived from the primary witness: the scriptural narrative itself. Literary analysis presents a striking picture of a sophisticated, unified, and coherent narrative replete with literary devices designed to provide a structure that is purposefully composed. A formal introduction followed by a double framework of inclusions identifies the limits of the narrative (7:6–8:14). Three chiasms break the narrative into its primary sections:

7:6–10	– Formal pre-Flood introduction	
7:11–18	– 1st inclusio (7:11a)	}
	– 1st chiasm (7:11b)	
	– 2nd inclusio (7:12)	
7:19–8:4	– 2nd chiasm (7:19–20)	
	8:5–12 – 3rd chiasm (8:5)	
	8:13–14 – 2nd inclusio (8:13)	}
	– 1st inclusio (8:14)	

Word studies of terms like גֶּשֶׁם (*gešem*) and מַבּוּל (*mabbûl*) provide little upon which to construct a Flood model because terms are more constrained by context and usage within bound phrases than by etymological considerations. Lexical analyses too often pay too little attention to entire phrases and the overall

138. See Northrup, "Identifying the Noahic Flood in Historical Geology: Part One," p. 177.

context — both being the better determiners of an individual word's meaning in a particular passage. An objective reading of the Flood narrative in its context impresses the reader with the global and catastrophic nature of the Flood even if the terminology employed within the text is deemed ordinary.

Genesis 8:2 provides one of the principal contributions of the text to the chronology of the Flood. That text describes the reversal of the mechanisms that were first activated in 7:11. If language has any meaning, there can be little doubt that the biblical record presents a full 150 days in which the dual sources (the submarine “fountains” and rain) continued to provide water for the flooding process.

One of the most pertinent and overlooked factors the Flood account relates to the correct translation and understanding of Genesis 8:3. It reveals the ebb and flow of the receding waters. Such hydrologic forces on a global scale over a period of approximately 165 days after the rain and the eruption of submarine waters had ceased has profound significance for constructing a geological model of the Flood. Erosion and sedimentation would have taken place during the first 150 days of the Flood as well as in the last stages of the Flood. This raises a question: Would the ebb and flow of the last 165 days of the Flood and hydrodynamic forces in the post-Flood period produce a more ordered stratification than the original transgression of the waters in the first 150 days?

The Flood narrative's own detailed chronology should inform the placement of stratigraphic Flood boundaries in the earth's rock record. The chronological “dates” and the sequential nature of the *wayyiqtol* verbs employed within the Flood narrative provide a foundation for a linear development of events chronologically. It would be unwise to assume that exact correlations can be made to the various rock system boundaries of the uniformitarian geologic column. Nevertheless, existing Flood models should be revised to reflect the Flood narrative's testimony.

There are some problems that are not resolved by the *wayyiqtol* chains. One such problem involves a time-line for the deaths of the life forms that perished in the Flood waters. In 7:19–24 there are no definite clues to help establish such a time-line. What can be said with confidence is that the death of life-forms in the Flood waters took place before the end of the first 150 days (7:24).

This analysis of the biblical text is but a beginning. Even though there is room for refinement and an expansion of the details involved in the literary and syntactical analysis of the text, there is sufficient material for those with geological expertise to apply the results to the construction of a biblically sound and scientifically viable geologic model.