Noah’s Ark – A Feasibility Study

Interpreting Noah’s Ark and the Great Flood as real history

Jason D. Browning
October 2009
Johan Huibers Ark
Netherlands
One-fifth size
2 Peter 3:3 First of all, you must understand that in the last days scoffers will come, scoffing and following their own evil desires. They will say, “Where is this ‘coming’ he promised? Ever since our fathers died, everything goes on as it has since the beginning of creation.” But they deliberately forget that long ago by God's word the heavens existed and the earth was formed out of water and by water. By these waters also the world of that time was deluged and destroyed.
'A flood of biblical proportions—enough to fill the Mediterranean Sea—gushed down from the highlands of Mars a billion or so years ago, the latest pictures from the Pathfinder confirmed Monday.'

________________________________________

Cincinnati Enquirer,
Ancient gullies suggest ‘key ingredient for life,’
OH ADAM! THIS IS SUCH A PERFECT WORLD!!

YES EVE! IT'S "VERY GOOD" JUST LIKE GOD SAID!
Millions of Years

Fossil Record

Pain
Death
Killing
Disease
Thorns
Struggle
Suffering
Extinction

©AiG 2001
Overview

- The Book of Genesis describes how God destroyed the face of the earth through a year-long global flood, because of the “great wickedness” of the people.
- Noah and his family survived, along with representative animals, on a large boat (the ark).
- Many regard this account as a myth, or as an exaggeration of an actual local flood event.
- Could Noah’s ark have occurred as described?
  - John Woodmorappe has performed a scientific study of the animal handling requirements of the ark and other issues and concludes that all potential problems have reasonable possible non-miraculous solutions.
“Noah’s Ark: A Feasibility Study” by John Woodmorappe, published in 1996 by the Institute for Creation Research

Woodmorappe has a B.A. and M.A. in Geology, and a B.A. in Biology

Also wrote book “Studies in Flood Geology”
Timelines of History

**Biblical Creationism**
- Creation in 6 days
- Global flood
- Tower of Babel
- Ice Age
- Christ on earth
- End times, new heaven and earth

- 6-15,000 years ago
- ~5,000
- ~4,500
- 2,000
- Today

**Evolution**
- ???
- Big Bang
- Earth forms
- First life
- First humans
- Universe dies of heat death

- 7-20 billion years ago
- 4.6B
- ~3.5B
- 100,000
The Genesis Flood

Described in Genesis chapters 6-9

- **6:5** The LORD saw how great man’s wickedness on the earth had become
- **6:6** The LORD was grieved that he had made man on the earth
- **6:8** But Noah found favor in the eyes of the LORD.
- **6:14** So make yourself an ark of cypress wood
- **6:17** I am going to bring floodwaters on the earth to destroy all life under the heavens, every creature that has the breath of life in it. Everything on earth will perish.
- **6:19** You are to bring into the ark two of all living creatures, male and female, to keep them alive with you.
- **6:21** You are to take every kind of food that is to be eaten and store it away as food for you and for them.
“No, no. ... Not this one. Too many bells and whistles.”
• Noah had up to 100 years to plan and build
• He was probably well off (blessed by God)
• He could have hired help
WHAT DID GOD REALLY MEAN BY, ‘BUILD AN ARK’?

EXPERTS SAY A FLOOD LIKE THAT COULD NEVER HAPPEN!

YOU DON’T THINK GOD WILL SEND A LITERAL FLOOD, DO YOU?

YOU’D NEVER FIT ALL THOSE ANIMALS IN THE ARK!

AN ARK IS A SILLY IDEA!

As it was in the days of Noah ...
Ark Specifications

Genesis 6:14-16:

- 437 feet long, 73 feet wide, 44 feet high
- Three decks
- A door in the side
- Ark “window” was continuous slot under the roof eaves, 18 inches high
- Made out of “gopher” wood (teak or other hardened wood)
- Sealed with “pitch” inside and out
Noah’s Ark

Genesis 6:14-16

437 feet long
73 ft wide
44 ft high

© AiG 2002
Feb 10: Noah, his family, animals enter the ark
Feb 17: “All the springs of the great deep burst forth” and rain falls for 40 days and nights
Water floods the earth for 150 days
Jul 17: Ark comes to rest on the mountains of Ararat
Waters recede steadily
Oct 1: Tops of mountains become visible
Nov 9: Noah sends raven - returns; 7 more days dove brings olive leaf; 7 more days dove doesn’t return (Nov 23)
Jan 1: Water had dried up from the earth
Feb 27: The earth was completely dry and ark unloads
• The ark was big enough for many more people
• Everyone was probably invited to enter
CREATIONWISE

Look at that beautiful rainbow! It's a promise from God that he'll never again flood the entire earth as he did in Noah's Day!

He told you it was just a 'localized' flood? That's what he said!

My Christian college professor said that Noah's flood didn't cover the entire earth.

*Genesis 9:8-17
SO HE BELIEVES THAT GOD PROMISED TO NEVER AGAIN SEND A ‘LOCALIZED’ FLOOD?
Competing Views of the Geologic Column

Evolution:
- Evolution of animals of increasing higher orders
- Pre-flood, flood boundary

Flood:
- More mobile, smarter animals
- Habitat zones:
  - Various Land
  - Near-ocean
  - Ocean
- Simpler shaped
Common belief about fish fossil formation – dead fish sinks to bottom and is gradually covered by sediment.
The observed fact today – dead fish float and remains are quickly scavenged.
Fossil formation requires quick burial through a catastrophic event!
Mud hardens to form the intact fossil
FLOOD

c. 2500 BC
Who Was on the Ark?

- Land mammals
- Land reptiles
- Terrestrial birds
- Dinosaurs
- Amphibians
- Some animals now extinct
- Eight people

- Representative animals from each genus, *not species*
- The genus is the smallest division of plants and animals that can be recognized without scientific study
- Up to 16,000 animals (maybe as few as 2,000)
- Large-sized were juveniles
- Median size = a small rat
- Only 11% larger than a sheep
Animal Space, Food, Water Needs

- Ark situation equivalent to intensive livestock confinement (not a zoo)
  - Temporary captivity, need only to survive in reasonable health
- Animal housing: 46.8% of ark floor space
  - 2.5 sq. meters for juvenile of largest animals
- Food: 6-12% of interior ark volume
  - Compressed hay, dried fruit, meat, fish
- Water: 9.4% of ark volume
  - Or could have collected rainwater
Waste Management

- 12 tons of wet excreta produced daily (12 cubic meters) - comparable to intensive poultry house
- Animal enclosures designed to minimize cleaning
  - Sloped, non-bedded floors
  - Slatted floors with manure pits
  - Thick sanitary bedding with no excreta removal
  - Manure gutters (animals can’t turn around)
- Use of biological pest control (ducks, cats, mongooses)
- Vermicomposting (use of earthworms to biodegrade manure)
Figure 1. Animal enclosures with sloped, self-cleaning floors, emptying into a manure gutter or pit. (Left inset shows cage closeup.)
### Ark Inventory by Mass

<table>
<thead>
<tr>
<th>Category</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty Ark</td>
<td>4,000</td>
</tr>
<tr>
<td>Biomass at start</td>
<td>111</td>
</tr>
<tr>
<td>Biomass at end</td>
<td>411</td>
</tr>
<tr>
<td>Food at start</td>
<td>2,500</td>
</tr>
<tr>
<td>Water at start</td>
<td>4,070</td>
</tr>
<tr>
<td>Total needed</td>
<td>11,000</td>
</tr>
<tr>
<td>Cargo capacity</td>
<td>17,000</td>
</tr>
<tr>
<td>Spare mass</td>
<td>6,000</td>
</tr>
</tbody>
</table>
Both Noah (Gen 6:19, 7:2) and God (Gen 6:20, 7:9, 7:15) were involved (reproduction of Figure 6 from book)
Factors Lessening Difficulties of Gathering Animals

- Antediluvian world was much different
  - (Possibly) Just one continent (Pangea)
  - Warm climate throughout (probably not due to “vapor canopy”)
  - Animals were more evenly distributed

- Animals did not fear humans (Gen 9:2)
- Animals were originally vegetarians (Gen 1:30)
- Migration instinct may have been introduced at this time (Gen 6:20)
- Hibernation instinct may have been introduced at this time
Other Alleged Ark Difficulties

- Building a large wooden vessel
- Care of the animals by eight people
- Animals that eat fresh or live food, or have special diets
- Animals that have differing climate needs
- Heat buildup in the ark
- Illumination in the ark
- Violent flood waters, large waves (tsunamis)
After the Flood

- (Possible) Breakup of the unified landmass during the flood (catastrophic plate tectonics) (Gen 7:11)
- Mountain ranges formed as plates collide
- Introduction of varying climates and seasons (Gen 8:22)
- People and animals given permission to eat meat (Gen 9:3)
- Introduction of hydrological cycle - possibly no rain prior to the flood (as there we no rainbows, Gen 9:12-14)
- An ice age caused by excess heat in the oceans and barren landmasses
- Drastic climate changes lead to extinction of the dinosaurs and many other animals
Catastrophic Plate Tectonics – One Pre-Flood Continent (Pangea)
**Catastrophic Plate Tectonics**

- **Speeded-up version of standard plate tectonics**
  - The pre-flood ocean floor plates are forced below the continent plates
  - Occurs in a catastrophic fashion due to the potential for thermal runaway in silicate rock (minerals that form over 90% of the earth’s crust)
- **Began with the start of the flood**
  - Genesis 7:11 “on that day all the springs of the great deep burst forth”
- **Was largely completed by the end of the year-long flood**
Plate Tectonics Illustration

Magma is generated at subduction zones where dense oceanic plates are pushed under lighter continental plates.
CPT Modeling
From www.globalflood.org

After 15 days

After 25 days
Ice Age – A Natural Result of the Flood

Greater cloudiness (volcanic dust)

Cooler land (stripped of vegetation) (snow-cover cooling)

Much warmer ocean (fountains of the deep) (plate movement friction)

From Oard, “An Ice Age Caused by the Genesis Flood”
Duration of the Ice Age

![Graph showing the duration of the Ice Age]

- Ice Volume
- Time

- Flood
- 500 yrs
- 700 yrs
- Today
“Fountains of the deep” break open
Hot water gushes into oceans

End of flood
Waters drain off land
Still warm from volcanic activity and plate movements

More evaporation from the oceans = more snow and rain
Ocean evaporates faster
Much more snow & rain after the flood
Snow over much larger area due to volcano dust blocking sun

Land cooler due to volcano dust
Snow does not melt in summer

Eventually oceans cool and dust clears away
Ice age is over
500 years to build up
200 years to melt back
Recovery After the Flood

- Survival of organisms outside the ark
  - Water salinity stratification allowed some fresh, brackish, and salt-water fish to survive
  - Large floating mats of vegetation
  - Seeds buried and re-exhumed by erosion, or floated

- Food sources after the flood
  - Plants, seaweed, fungi, carrion, fish, insects, earthworms, rodents
  - Three months between first dry land and emergence of animals gives time for some plants to grow
Recovery After the Flood

- Repopulation of the world
  - Animals migrated from Ararat
  - Mountain landing: encouraged fragmentation of populations; offered varying ecological zones

- Genetic diversity and speciation
  - Rapid post-flood speciation
  - Modern examples of single-pair founders
  - A single pair possesses most of the genetic diversity of the parent population
Conclusions

- The flood is necessary to explain the geologic column.
- There is historical and physical evidence that a global flood has occurred about 4,500 years ago
  - World-wide flood traditions
  - Early European written history back to Noah
  - Population build-up statistics
  - Sedimentary rock formations covering continent size regions
  - Great fossil beds
  - Interior mountains made of ocean bottom rocks
- It is feasible that a barge/ark could have been built to carry about 16,000 animals + food + water
  - Only needed representatives of each genus, not species
  - Median animal size = small rat
- Eight people could care for the animals
  - Some animals in hibernation state
  - Labor-saving housing systems
- God was involved of course, but continuous miracles were not necessary
- The history of the Bible can be trusted!