

Rapid Post-Flood Speciation: A Critique of the Young-Earth Model

by Greg Moore

Creationists disagree on the extent of Noah's Flood. The main reason young-earth creationists insist the Flood was a global event is their model demands it. The Flood is the mechanism they use to explain the earth's geological features. Rather than forming over millions or billions of years as most scientists believe, young-earth creationists maintain the earth's features are the result of global floodwaters and processes that accompanied the Flood, like erosion, volcanism and tectonics.¹ They also attribute the majority of the fossil record, virtually everything below the Tertiary strata, to the Flood.²

One problem for the global-Flood view is explaining how the earth was repopulated with land animals after the Flood. Young-earth creationists who recognize the problem of fitting all the land animals on the ark now conclude Noah only took pairs of the Genesis "kinds." These, they say, were the ancestral seeds God provided to repopulate the world. As the "kinds" left the ark, they gave rise to the many different species on Earth today. For example, horses, zebras and donkeys descended from an equine "kind," dogs, wolves, coyotes and jackals from a canine "kind," and cattle, bison and water buffalos from a cattle "kind."³

If true, the amount of post-Flood speciation must have been staggering. Young-earth creationists estimate Noah took 8,000 to 20,000 species on the ark. They also say a significant number of these species went extinct shortly after the Flood.^{4,5} Based on their dating method, approximately 7 million species have existed since the Flood-about 2 million have gone extinct and 5 million are alive today. Therefore, nearly 7 million species must have arisen from far less than 20,000 species in a time frame of a few hundred years.⁶

How could new species have appeared so fast? Young-earth creationists say the "kinds" on the ark had a built-in capacity for change.⁷ Within each "kind" was created a rich genetic coding that permitted them to shift their major characteristics to adapt to a wide range of post-Flood environments.⁸ They say this genetic system would have generated new species rather quickly because the changes occurred through recombination of existing genes in the rich genomes of the "kinds," not mutations as evolution requires.⁹

According to the young-earth model, this rapid speciation was triggered by environmental pressure working on small, isolated populations. After the Flood, the earth experienced several hundred years of residual catastrophism.¹⁰ As the animals left the ark, small groups became

¹ Steven A. Austin, John R. Baumgardner, et al., "[Catastrophic Plate Tectonics: A Global Flood Model of Earth History](#)"

² Andrew Snelling, "Where are all the Human Fossils?" *Creation* 14:1 (Dec-Feb 1992), pp. 28-33.

³ Mike Brown, "[Biological Revolution](#)"

⁴ Jonathan Sarfati, "How did all the animals fit on Noah's Ark?" *Creation* 19:1 (Mar-May 1997), pp. 16-19.

⁵ John Morris, "How Could all the Animals Get on Board Noah's Ark?" *BTG No. 39b*, (March 1992).

⁶ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), p. 91

⁷ David Catchpoole and Carl Wieland, "Speedy Species Surprise," *Creation* 23:2 (Mar-May 2001), pp. 13-15.

⁸ Mike Brown, "[Biological Revolution](#)"

⁹ Henry M. Morris, "The Microwave of Evolution," *Back to Genesis* #152 (August 2001).

¹⁰ Steven A. Austin, John R. Baumgardner, et al., "[Catastrophic Plate Tectonics: A Global Flood Model of Earth History](#)".

geographically isolated. Each group, having a small gene pool, suffered genetic loss as they reproduced—each losing a different portion of their original genetic information. Thus, over time, each group started looking, acting and living differently than original "kind."¹¹

Young-earth creationists insist the Biblical account of history not only accommodates such rapid speciation but requires it.¹² However, many creationists consider the fixity of species to be a central pillar of biblical creationism. Given the implications of the young-earth model, it is important to take a critical look at some of the assumptions.

Post-Flood Conditions

The young-earth model is predicated on the belief the Flood was a worldwide catastrophe that left the earth ecologically unstable with earthquakes, volcanoes, temperature fluctuations and harmful radiation.¹³ However, the global-Flood model contradicts a vast body of geological and geophysical data.¹⁴ Scientists find no evidence of recent tectonics, volcanism or erosion on a scale nearly as great as the global Flood model requires.¹⁵ There are also too many organisms in the fossil record to assert they came from a single generation of living creatures that were killed by the Flood—the earth simply could not support that many organisms.^{16,17}

In fact, if the Flood was as catastrophic as young-earth creationists maintain, it is doubtful anything would have survived. The young-earth model would require vertical land erosion of more than 700 feet per day and tectonic uplift of more than 200 vertical feet per day. Anything more than just one foot of erosion or tectonic uplift is sufficient to destroy most modern cities. Though the ark was seaworthy for a local flood, the G-forces produced by such cataclysmic movements would have destroyed it and its occupants.¹⁸

Some species also argue against the global-Flood model. The opossum, for example, shows little change over millions of years. The Cretaceous opossum of 70 million years ago—which most young-earth creationists would classify as pre-Flood because the fossils are found in strata they classify as Flood deposits¹⁹—is very much like the opossum of today. Such continuous series of similar fossils tells us no divergence has occurred. This indicates the opossum and other species experienced fairly uniform conditions before and after the Flood.²⁰

Equally important, the Bible does not state the Flood changed the earth. Nowhere does the Bible speak of the volcanism, mountain uplift and continent formation embedded in the young-earth model. Nor is there any indication the post-Flood world was unstable. If that were the case, surely Noah would have expressed concern about the post-Flood conditions and God would have given Noah special instructions on how he was to survive. Instead, the Bible tells us Noah and

¹¹ Mike Brown, "[Biological Revolution](#)"

¹² David Catchpoole and Carl Wieland, "Speedy Species Surprise," [Creation](#) 23:2 (Mar-May 2001), pp. 13-15.

¹³ Paul S. Taylor, "[Noah's Ark, Part II](#)"

¹⁴ Hugh Ross, "[The Waters of the Flood](#)"

¹⁵ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), p. 149.

¹⁶ Alan Hayward, "[Flood Geology and Related Fallacies](#)".

¹⁷ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), p. 151.

¹⁸ Richard F. Aulie, "The Doctrine of Special Creation, Part II. Catastrophism," [JASA](#) 27 June 79), pp:75-79.

¹⁹ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), pp. 148-149.

²⁰ Andrew Snelling, "Where are all the Human Fossils?" [Creation](#) 14:1 (Dec-Feb 1992), pp. 28-33.

his family immediately began farming and planted a vineyard-impossible if the conditions were as harsh as young-earth creationists suggest.²¹

Animals on the Ark

The young-earth model assumes Noah took pairs of the originally created "kinds" on the ark-virtually everything but insects and sea creatures.²² However, the Genesis flood account uses two different Hebrew words, nephesh and basar, to describe the animals taken aboard the ark. The word nephesh refers to "soulish" creatures that can relate to humans. The word basar refers to certain birds and mammals that interact with humans.²³ Thus, the ark did not contain representatives of all the originally created "kinds." It only contained certain species of birds and mammals that lived within the reach of the Flood's devastation and were important to Noah's short-term survival.

The young-earth model also assumes the animals on the ark were unique-they possessed special genetic coding that allowed them to quickly adapt to the post-Flood environment and produce new species. However, nowhere does Bible state the animals on the ark were different or endowed with special qualities. Nor is there a single example from field research that supports this claim. If modern species descended from common ancestors on the ark, we would expect to find evidence of intermediate forms. We would also expect to see thousands of new species arising today. However, nothing we observe suggests today's species descended from common ancestors on the ark.²⁴

In fact, rapid post-Flood extinctions seem to argue against the position the ark animals were endowed with special qualities. Young-earth creationists maintain God programmed the animals so they could survive and repopulate the earth. Yet, according to their model, a significant number of animals became extinct shortly after the Flood. For example, they contend Noah took dinosaurs on the ark but they were not able to survive the harsh post-Flood conditions and went extinct.²⁵ If God endowed the ark animals with special qualities so they would survive, why did so many species go extinct? And, if only certain animals were endowed these special qualities, why did God have Noah take the other animals aboard the ark?

Life Outside the Ark

Young-earth creationists maintain some organisms were able to survive a global Flood-aquatic creatures, plants and insects. They assume the aquatic creatures, being aquatic, would not be endangered by global floodwaters. They reason some organisms were able to adjust to the change in salinity caused by the mixing of fresh and salt water, while others survived in pockets or layers of fresh and saltwater.²⁶⁻²⁷ However, if the Flood was a global event, the floodwaters would have been brackish, which would have killed most of the amphibians, freshwater fish and many of the ocean species because each type is adapted to live within a particular salinity

²¹ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), pp. 148-149.

²² John Morris, "How Could all the Animals Get on Board Noah's Ark?" [BTG No. 39b](#), (March 1992).

²³ Hugh Ross, "[Noah's Floating Zoo](#)".

²⁴ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), p. 151.

²⁵ Paul S. Taylor, "[After the Flood What Happened to Dinosaurs?](#)"

²⁶ Ken Hamm, Jonathan Sarfati, et al., "[How Did Freshwater and Saltwater Fish Survive the Flood?](#)" *The Revised & Expanded Answers Book*, (Master Books, 2001) Chapter 14.

²⁷ Kenneth Cumming, "How Could Fish Survive the Genesis Flood?" [Impact No. 222](#), (December 1991).

range.²⁸ Organisms on the ocean floor would not have been able to survive the tremendous increase in water pressure.²⁹ It is also doubtful pockets of fresh and saltwater would have persisted for eleven months given the violent geological processes they say accompanied the Flood.

Young-earth creationists contend plants survived in floating masses of vegetation or germinated from floating seeds.³⁰ However, if the Flood was global, the world's plant life would have suffered irreparable damage.³¹ Most plants would have been buried by hundreds of feet of sediment. Few of the plants and seeds that floated on the surface would have survived submergence in water, particularly salt water, for many months.³² Those that did survive would be unlikely to grow since most plants require very particular soil conditions-conditions unlikely to exist based on the catastrophic global-Flood model.³³

Most young-creationists suggest insects survived by "hitching a ride" on floating vegetation mats and flood debris. The problem is most species of insects live in specialized environments that involve complex ecological relationships with other insects.³⁴ Most insects also depend on plants, some on particular species of plants. Some even require a particular part of a particular plant of a particular age.³⁵ Thus, most insects would not have survived a global flood unless they were accompanied by the plants and insects that play critical roles in their complex life cycles. The odds of these systems remaining intact through a catastrophic global flood are virtually zero.

Post-Flood Migration

The young-earth model assumes today's land-dwelling animals migrated to their present locations after the Flood.³⁶ This is not something that is stated in the Bible but something young-earth creationists infer from God's command in Genesis 1 that the created "kinds" were to "fill the earth." As stated earlier, the Flood account does not state the animals on the ark were the originally created "kinds." Nor does the Bible state the animals on the ark were to "fill the earth." God's instructions was they were to "multiply, be fruitful and increase in number."³⁷

In fact, the global-Flood model argues against such a migration. Some young-earth creationists contend continental drift-the process by which the continents separated and moved to their present locations-occurred during the Flood.^{38,39} According to their model, the Flood was

²⁸ Glen R Morton, "The Mediterranean Flood," [PSCF 49](#) (December 1997).

²⁹ Bernard Ramm, *The Christian View of Science and Scripture*, (MI, Erdmans, 1954), p. 244.

³⁰ Ken Hamm, Jonathan Sarfati, et al., "[How Did Freshwater and Saltwater Fish Survive the Flood?](#)" *The Revised & Expanded Answers Book*, (Master Books, 2001) Chapter 14.

³¹ Bernard Ramm, *The Christian View of Science and Scripture*, (MI, Erdmans, 1954), pp. 244-245.

³² John McClintok and James Strong, *Cyclopedia of Biblical, Theological and Ecclesiastical Literature*, (MI, Baker Books, 1968), p. 739.

³³ Mark Isaac, "[Claim CH542: All Existing Kinds of Plants Could Have Survived Noah's Flood](#)".

³⁴ "Noah's Ark, Insects Not Invited on Board," [Investigator Magazine 49](#) (June 1996).

³⁵ "[Floating Vegetation Mats](#)," CARM Discussion Board, March 2000.

³⁶ Don Batten, "Ligers and wholphins? What Next?" [Creation Ex Nihilo 22:3](#) (June-Aug 2000), pp. 28-33.

³⁷ "Bring out with you every living thing of all flesh that is with you, birds and animals and every creeping thing that creeps on the earth, that they may breed abundantly on the earth, and be fruitful and multiply on the earth." (*Genesis 8:17*) (NIV)

³⁸ Ken Ham, Jonathan Sarfati, Carl Wieland, "[What About Continental Drift?](#)" *The Revised & Expanded Answers Book*, (Master Books, 2001), Chapter 11.

followed by a major Ice Age that lowered sea levels and exposed land bridges between the continents.⁴⁰ However, the ocean depth between some continents is so great that even a significant drop in sea level would not expose land bridges. In addition, some species would have difficulty using the known land bridges. The distances would be too great for slow, delicate species. Other species couldn't tolerate the temperatures, such as the chilling cold of the land bridge between Siberia and Alaska.⁴¹

Other young-earth creationists propose the continental break-up occurred after the Flood, in the days of Peleg.⁴² However, if continental drift occurred after the Flood, it is doubtful anything on the earth could have survived the deadly earthquakes, volcanoes and mountain uplift. By delaying the migration to the days of Peleg-about halfway through the generations from Noah to Abraham-their model also significantly shortens the timeframe available for speciation. Assuming much of the speciation occurred after the animals reached their new environs, this leaves a timeframe of much less than a 100 years based on the young-earth dating method.

Young-earth creationists admit this post-Flood migration would have taken many generations to complete.⁴³ If true, we would expect to find evidence of a major radiation from Ararat. However, there is no fossil evidence to support such a mass migration. In fact, many animals, such as the Australian endemic families, have no fossil record outside of their current realm.⁴⁴ Another problem for the young-earth model is explaining what animals ate on this long journey. Some herbivores have specialized diets. Were these plants flourishing all along their migratory routes? And, with only a breeding pair of each species available, how would there have been enough new deaths to meet the food requirements of the carnivores?⁴⁵

Rapid Speciation

The young-earth model assumes the animals on the ark were able to produce new species in a few hundred years. We know this is the maximum timeframe because historical records indicate some of the subtypes were in existence by then. However, animals, especially advanced animals, simply do not and cannot change at such rapid rates. If speciation really does operate this fast, why does any line exist at all that is stable enough and distinct enough to be called a species? Why is not the world filled with intermediate forms of every conceivable kind? Why have some species not changed from their ancestors in the fossil record?⁴⁶ And why do we not witness thousands of animals species developing from others today?⁴⁷

³⁹ Stuart E. Nevins, "Continental Drift, Plate Tectonics and the Bible" *Impact No. 32*, (Feb 2001).

⁴⁰ Ken Ham, Jonathan Sarfati, et al., "[How Did Animals Get From the Ark to Places Such as Australia?](#)" *The Revised & Expanded Answers Book*, (Master Books, 2001), Chapter 17.

⁴¹ David F. Siemens, Jr., "Some Relatively Non-Technical Problems with Flood Geology," *PSCF 44* (Sept 92) pp. 169-174.

⁴² Ken Ham, Jonathan Sarfati, et al., "[How Did Animals Get From the Ark to Places Such as Australia?](#)" *The Revised & Expanded Answers Book*, (Master Books, 2001), Chapter 17.

⁴³ Mike Brown, "[Biological Revolution](#)".

⁴⁴ Dr. Walter J. Veith, "[Post Deluge Speciation and Redistribution](#)," p. 2.

⁴⁵ David F. Siemens, Jr., "Some Relatively Non-Technical Problems with Flood Geology," *PSCF 44* (Sept 92) pp. 169-174.

⁴⁶ Percival Davis and Dean H. Kenyon, *Of Pandas and People*, (Texas, Haughton Publishing, 1993), pp. 88-89.

⁴⁷ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), p. 151.

Young-earth creationists say no reputable creationist denies the fact of speciation.⁴⁸ They also say examples of rapid adaptation-even to the extent of producing new species-abound.⁴⁹ As evidence, they point to populations of mosquitoes, salmon and other creatures that no longer interbreed with their main populations.^{50,51} However, these are examples of reproductive isolation-as subpopulations get isolated they often won't interbreed with the main population due to behavioral reasons. For example, fish living in the same lake can acquire different food choices, which leads to different sizes and different mating preferences. For the young-earth model to be true, these processes need to be able to produce macro changes and new organisms.

Ironically, many evolutionists now question whether descent through modification (natural selection working on random genetic variations or mutations) can produce the amount of change required to account for the diverse body plans and organs animals exhibit. Studies indicate few populations have the capacity to survive even normal environmental fluctuations.⁵² They also indicate small, isolated populations are not an advantage but a disadvantage because they give rise to serious genetic defects.⁵³ Thus, the young-earth contention that genetic shuffling is capable of producing limitless biological change is more an article of faith than fact.⁵⁴ Like punctuated equilibrium, the young-earth model would suffer from reduced fitness due to the expression of detrimental recessive mutations.

Horizontal Change

According to the young-earth model, the changes in species were horizontal and at the same level of complexity.⁵⁵ However, this is not what we observe. An example is the so-called daughter species of the Bear "kind." Sloth Bears have a specialized head and dental structure that creates a vacuum device for consuming termites. Polar Bears have webbed feet and specialized fur, dentition and digestive tracts. The Panda Bear has a specialized thumb, head, reproductive system and esophagus.⁵⁶ In claiming these changes were horizontal, young-earth creationists do the same thing evolutionists do: they extrapolate microevolutionary changes over long periods of time to produce new biological structures without considering the requisite organic and physiologic adaptations that are required.

Young-earth creationists claim the original "kinds" were designed with more allele variation (alleles are different versions of the same gene) than we observe in current species. According to their theory, the alleles segregated to produce today's species. This is problematic for several reasons. First, genetic differences between alleles are never very great. Second, alleles segregate

⁴⁸ Jonathan Sarfati, "[Argument: Natural Selection Leads to Speciation](#)," *Refuting Evolution 2* (Master Books, 2003), Chapter 4.

⁴⁹ Don Batten, "[Punctuated Equilibrium: Come of Age?](#)" *Creation Ex Nihilo Technical Journal* 8:2 (1994), pp. 131-137.

⁵⁰ David Catchpoole and Carl Wieland, "Speedy Species Surprise," *Creation 23:2* (Mar-May 2001), pp. 13-15.

⁵¹ Jonathan Sarfati, "[Argument: Natural Selection Leads to Speciation](#)," *Refuting Evolution 2* (Master Books, 2003), Chapter 4.

⁵² Simberloff, Daniel, "The Contribution of Population and Community Biology to Conservation Science," *Annual Review of Ecology and Systematics*, 19 (1988) pp. 473-511.

⁵³ M. E. Soulé, et al, "No Need to Isolate Genetics," *Science*, Vol. 282 (1998), p. 1658.

⁵⁴ Lane P. Lester, Raymond G. Bohlin, *The Natural Limits to Biological Change*, (Dallas, Probe Books, 1989), pp. 141-142.

⁵⁵ "What Were the Originally Created Kinds of Plant and Animals?" [ICR FAQ #45](#).

⁵⁶ David J. Tyler, "[Adaptions in the Bear Family](#)," *Creation Matters*, Vol. 2, No. 5 (Sep-Oct 1997).

randomly unless they are closely linked, in which case they tend to be inherited together. Independent alleles would have segregated to the fullest extent between the creation and the Flood-about 1,500 years by their calculations-producing all possible species well before the Flood. Third, linked alleles segregate much too slowly to support the young-earth speciation timetable.

Young-earth creationists also maintain the changes that produced new species were not evolutionary in nature. The reason, they say, is "information." Evolution involves the mutation of new genes and new genetic information. Thus, evolution is a process of progress where better and better species evolve. Speciation, on the other hand, is a degradative process. Through the reproduction of a limited number of individuals, genetic information is recombined and genes and/or gene function is lost. Thus, the daughter species have less "information" than the parent population. Therefore, since no new information is produced in their model, they say it cannot be called evolution.^{57,58}

However, while young-earth creationists assert no new information is being produced, they do indirectly argue for new information. A gene sequence is basically a combination of letters. The information conveyed by the sequence is both syntactic and semantic-the genes occur in a certain order (syntactic information) and certain sequences have meaning attached to them (semantic information). Thus, when genes are shuffled and the sequence changes, the code changes and takes on a new meaning. Thus, the changes young-earth creationists attribute to genetic reshufflings are the result of new instructions-new functional semantic information-that is conveyed by the new, reshuffled genetic sequence.⁵⁹

Defining the "Kinds"

Young-earth creationists contend the "kinds" on the ark were species-stable, reproducing populations that did not interbreed with other populations-but different from what we define as species. Since the "kinds" were able to fragment into the subtypes we see today, they must have been larger than today's species and probably corresponded to what we define as the genus or family level.⁶⁰ There are two ways, they say, modern species can be determined to be descendants of the original "kinds." As long as two creatures can hybridize, they must be descended from the same kind. Also, if two creatures can hybridize with the same third creature, they must all be members of the same kind.⁶¹

Young-earth creationists point to a host of seemingly distinct animals in a family that can produce hybrid progeny (e.g., horses and donkeys, lions and tigers, dolphins and whales, etc.) as evidence species are descended from the same created "kind."⁶² The problem with this approach is even though these species may, in some instances, interbreed in captivity, they generally do not do so in the wild. Crossbreeding animals in a zoo or laboratory proves nothing. For the young-earth claim to be true, every animal in a family would have to hybridize naturally. All of the changes observed in the laboratory or breeding pen are limited. What breeders accomplish is

⁵⁷ Don Batten, "[Ligers and wholphins? What Next?](#)" *Creation Ex Nihilo* 22:3 (June-Aug 2000), pp. 28-33.

⁵⁸ "What Were the Originally Created Kinds of Plant and Animals?" [ICR FAQ #45](#).

⁵⁹ Hugh Ross and Fazale Rana, "[Lions, Tigers and Ligers, Oh My!](#)" (On-line Audio Tape #142, November 2000).

⁶⁰ "What Were the Originally Created Kinds of Plant and Animals?" [ICR FAQ #45](#).

⁶¹ Jonathan Sarfati, "[Argument: Natural Selection Leads to Speciation](#)," *Refuting Evolution 2* (Master Books, 2003), Chapter 4.

⁶² Don Batten, "[Ligers and wholphins? What Next?](#)" *Creation Ex Nihilo* 22:3 (June-Aug 2000), pp. 28-33.

diversification with a given type. What is needed is the origin of new types.⁶³ Biologists have not been able to observe the entire sequence of animal species fragmenting into two or more morphologically species. In the vast majority of cases, the rate of change is so slow that it has not even been possible to detect an increase in the amount of differentiation.⁶⁴

Final Thoughts

Flood geology bears all the signs of an idea that has not been carefully thought through.⁶⁵ While the young-earth speciation model is not evolution in the molecules-to-man meaning of the term, it is still evolution. Evolution also refers to limited common descent-the idea that groups of organisms have descended from a common ancestor-and to the mechanisms responsible for change, chiefly natural selection acting on random variations or mutations.⁶⁶ In reality, young-earth creationists appeal to the same processes evolutionists do, except mutation. The only significant difference is the timeframe-they propose speciation rates far faster than even the most optimistic Darwinist would dare to suggest.⁶⁷

Young-earth creationists maintain the Bible does not teach that God created all the species we have today, just as they are today.⁶⁸ They also claim few, if any, creationists have ever advocated the idea of absolute fixity of the species.⁶⁹ This is not true. Many creationists have and do see the fixity of the species as a critical element of the biblical doctrine of special creation. The problem is the young-earth speciation model is not derived from the evidence-either biblical or scientific-it is driven by the necessities of the global-Flood model. Thus, while young-earth creationists want us to accept the global-Flood view as the authentic Biblical account of what happened, much of their model is the product of conjecture and extra-biblical imagination.

Reasons to Believe's position is the species were specially created by God and began with their distinctive features already intact. We maintain descent with modification is not capable of producing new species regardless of the timeframe. We would concede speciation might occur with plants and with organisms at the level of microbes-bacteria, protists, fungi and viruses-(i.e., those species that have large population sizes with short generation times) but not to anything above that level. Thus, it is very ironic we are accused of being theistic evolutionists and compromisers when it is the young-earth creationists' model that is siding with evolutionists.

The fixity of species is what separates special creation from theistic evolution and Darwinian evolution. Before we abandon this principle, let's make sure the facts warrant it.

⁶³ Percival Davis and Dean H. Kenyon, *Of Pandas and People*, (Texas, Haughton Publishing, 1993), pp. 11-12

⁶⁴ Paul and Ann Erlich, *Extinctions: The Causes and Consequences of the Disappearance of Species*, (NY, Ballantine Books, 1981)

⁶⁵ Alan Hayward, "[Flood Geology and Related Fallacies](#)".

⁶⁶ Stephen C. Meyer and Michael Newton Keas, "[The Meanings of Evolution](#)," The Discovery Institute.

⁶⁷ Hugh Ross, *The Genesis Question*, first edition, (CO, Nav Press, 1998), pp. 91-92.

⁶⁸ Don Batten, "[Ligers and wholphins? What Next?](#)" *Creation Ex Nihilo* 22:3 (June-Aug 2000), pp. 28-33.

⁶⁹ Henry M. Morris, "[The Microwave of Evolution](#)," *Back to Genesis* #152 (August 2001).