

# Unfolding Designs in the Galápagos Islands

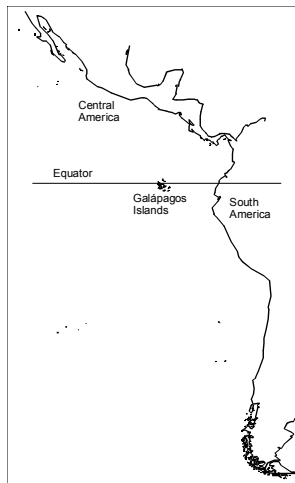
by  
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To a biologist, the name Galápagos Islands evokes a sense of wonder, mystery, and longing. Why?—because of the biological uniqueness of the Galápagos.

The Galápagos became famous in 1839 when Charles Darwin published a journal of observations he made as a young naturalist aboard the HMS *Beagle* as it circumnavigated the globe. In the Galápagos Darwin found giant tortoises that feed on giant prickly-pear cacti, iguana lizards that swim in the ocean and feed on seaweed, finches with a range of remarkable beak shapes, and many species of ocean birds and sea lions that lack fear of humans.

His experiences there contributed to his developing the theory of evolution. Fascinated by Darwin's writings, many biologists have conducted research there and made the archipelago famous as a site to theorize about evolution. So for a biologist, actually seeing these strange organisms in their unique habitats can be a personal highlight.

The Galápagos Islands straddle the equator about 600 miles off the west coast of Ecuador in the eastern Pacific. However, these are not tropical isles with waving palm trees and lush rain forests. There are no warm, moisture-laden winds to blow across these outposts of the sea. The winds that blow here are cold and dry,



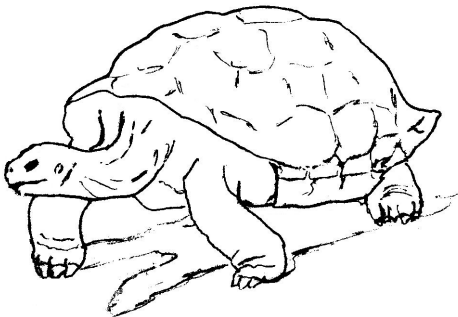
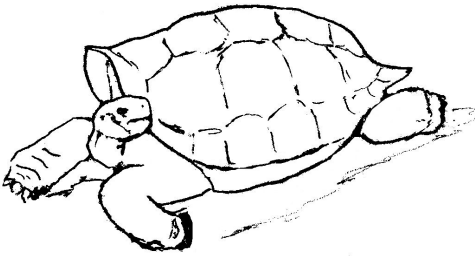
despite being on the equator, because they blow from the deserts of Peru and hug the cold ocean currents surging up from the Antarctic.

No, these points of land are mostly barren volcanic ash, cinders, and lava fields covered by desert plants, if covered by plants at all. One has to climb nearly 1000 feet in elevation on the higher volcanic mountains where clouds can form to provide the moisture necessary for a green, leafy forest. Below that, tree cacti, spiny bushes, and skeletal trees sprout and drop leaves in rhythm with the sporadic rains that occur and form a forest of sorts, more properly called a “dry forest” or “thorn forest.”

The animals and plants are unique because they appear to have adaptations that allow them to function effectively in these odd environments but that often make them look very different from close relatives. Evolution theory attributes these differences to natural selection by the environment. Creation theory, instead, attributes the oddities in these creatures to the unfolding of designs endowed by their Creator.

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The ecological relationship of the giant tortoises and prickly-pear cacti is an excellent example of these differing views. There is only one species of tortoise on the islands but two different forms—the **saddleback** with a slot in the top shell for the neck to stretch upward, and the **domed shell** without the slot. Each island usually has only a single form. Some scientists have hypothesized that tortoises with slotted shells survived best in the dry areas, as they could reach higher in the bushes for food. Some have suggested that prickly pears became taller to keep out of the reach of the hungry tortoises. Perhaps the greatest difficulty for the



hypotheses is that on the lowest, driest islands in the northern Galápagos where saddlebacks are common, low, sprawling prickly pears grow instead of tall ones. If tortoises were evolving a neck slot to reach higher vegetation, why are they on islands with low shrubby food sources?

Are these ideas true? If so, we would expect that saddlebacks should occur on islands with tall prickly pears or on islands with scarce food supplies. Actually, neither of these expectations are borne out. Some saddlebacks occur on islands with high slopes and moist vegetation where food is plentiful.

And why do the tree cacti grow much higher than the tortoises can possibly reach? Again the theory of natural selection allows for the change to be only as big as the selection pressure. In other words, a cactus has to grow only a little taller than the tortoises to survive. A cactus that grows several feet taller must expend more energy and would reproduce more slowly than one just above tortoise height.

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This would work against survival, selecting for cacti just out of reach of the tortoise. But this is not what we see in the Galápagos. We also find prickly-pear trees in some locations of South and North America where giant tortoises do not occur.

Creation biology can contribute to this debate by suggesting hypotheses that flow from a Biblical worldview and that would not occur to conventional biologists. One such hypothesis would be: Both shell forms function equally well in the desert zone of the Galápagos. Whether one design or another developed on a particular island should be due to a random draw of the genes, rather than being driven by the food source. As a result, some saddleback individuals overall should be more genetically similar to some dome-shells than to other saddlebacks. Indeed, some data have already been collected that supports this hypothesis.

Prickly pears might grow as trees simply as part of their normal life habit, like other trees. These ideas need to be tested with more data.

Clearly, there are many points in the tortoise and cactus histories that need to be researched. This makes for exciting, challenging work. Other Galápagos groups such as Darwin's finches also offer creation biologists a wealth of research opportunities.

God gave the study and management mandate to Adam in Genesis 1:28 (“...rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground.”) and again to Noah in Genesis 7:2. Certainly that mandate is still with us today. As creation biologists, we should study and understand the unique creatures of the Galápagos for God’s glory.

**For further reading:**

Wood, TC. 2005. A Creationist Review and Preliminary Analysis of the History, Geology, Climate, and Biology of the Galápagos Islands. *CORE Issues in Creation* 1:1-241 + 8 pls.

