

Mesozoic Ecosystems

Mesozoic land ecosystems were both imaginable and familiar to us today in many ways, but it was also different in several important ways. Many of our modern types of plants and animals, as well as their de-facto modes of operation today simply did not exist during this time period. However, the fundamentals of how ecosystems work were the same back then as they are today. The *web of life* that existed then is still very familiar as it is today.

There were four fundamental groups of organisms in Mesozoic land ecosystems. These are the *producers*, *primary consumers*, *secondary consumers*, and *decomposers*. The producers consisted of plants and *some* bacteria (plants took up the overwhelming majority). Plants use energy from the sun through photosynthesis to provide the energy in an ecosystem. The plants that existed during the majority of this time were two. The first, gymnosperms, are plants that release their seeds and are not dependent on bodies of water to survive/reproduce. The second, pteridophytes, consist of plants that rely on bodies of water to reproduce (i.e. ferns, horsetails, etc.). Primary consumers consist of herbivores, organisms that feed on producers for energy. During the Mesozoic, primary consumers were mostly dinosaurs such as hadrosaurs (duck-billed dinosaurs), and ceratopsians (like triceratops). Secondary consumers consist of animals that feed on primary consumers (carnivores). These animals are the ‘top’ of the food chain and are the final step before decomposition. The textbook example of this is the *Tyrannosaurus Rex*, but this group also included the clade of *theropods*, of which Tyrannosaurs belong. Another example is the *allosaur*. Finally, decomposers are where the detritus of an ecosystem sits. They consist of mainly bugs, fungus, bacteria, etc. that break down other dead organisms, giving the energy back into the system by enriching soil and other means.