**Biomass Comparisons:**

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| Tropic Level: | Desert: | Ocean: | Woods: |
| Producers |  |  |  |
| Primary Consumers |  |  |  |
| Secondary Consumers |  |  |  |
| Tertiary Consumers |  |  |  |
|  |  |  |  |

What Is the Biomass of the Desert? Biomass describes the total mass of living matter in a defined area. The concept helps scientists categorize different ecosystems by biological productivity. Zones with high biomass, like a rainforest, are high in productivity. On the other extreme, desert ecosystems have the lowest biomass on Earth, but that does not mean that deserts have zero biomass. On the contrary, desert biomass includes unique organisms often found nowhere else on earth.

The largest proportion of the desert's biomass consists of plants. Because of the desert's limited water, only plants that require little water can survive. Most commonly, these take the form of cacti. Cacti are adapted to the desert environment because they retain water for long periods of time. Unlike non­-desert plants, cacti grow extremely slowly, and lack true leaves. Instead, they have hard protective spines and, frequently, protruding thorns. This is an evolutionary adaptation meant to discourage herbivorous predators.

Herbivorous Rodents and Reptiles: The second largest proportion of the desert's biomass comes in the form of small rodents and reptiles. Like their desert plant counterparts, these animals are well ­suited to dry and sunny environments. They rely on plants ­­ including cacti ­­ for food, though they generally eat very little. The desert kangaroo rat does not drink. Its only source of water comes from water produced by its own metabolism of food. Reptiles are cold­blooded, which allows them to eat little but remain warm in the desert's hot sun. The chuckwalla is an example of a herbivorous desert reptile.

Carnivorous Reptiles and Arachnids: The third largest proportion of the desert's biomass is meat ­eating reptiles and spiders. In the driest deserts, this level of life will be the highest on the food chain. It includes animals like poisonous rodent­ eating snakes, tarantulas and insect ­eating lizards. Like the prey it consumes, these animals tend to be cold­blooded and eat relatively little. The zebra tailed lizard, for example, eats insects and smaller lizards, and regulates its body temperature by efficiently absorbing the Sun's heat. Carnivorous Mammals and Birds Not all deserts in the world will include meat­ eating mammals and birds in their biomass. Deserts that are extremely dry ­­ like the Atacama Desert ­­ will have too little vegetation and herbivorous life to provide enough food to these carnivorous predators. Other deserts with more vegetation, however, can support life as complex as hawks and coyotes. In general, these parts of the biomass will be scavengers who eat off already­ dead animals. Because there is so little food for them to survive off of, these complex animals form only a very tiny fraction of the total biomass of the desert.





