



Water: The Tie that Binds



Have you seen images of White Sands with water in between each dune? Have you ever wondered why that happens? Within the Chihuahuan Desert, White Sands functions as an island; an oasis of life formed with water. At White Sands, groundwater can be found only 12-36 inches below the dunefield surface, keeping the dunes humid even during the hottest months of the year.

The presence of the high ground water is essential for keeping the world's largest gypsum dunefield from blowing away. Water seeps up from the ground table and makes even the tallest dunes moist. Only a few feet under the interdunal areas lies what is called a perched water table. This means that the water is held above the normal water table by a barrier.

Water is not only the key ingredient that keeps the dunes from blowing away, but it is also a key ingredient in the formation of the dunes. It is hard to imagine the process that allowed the dunes to exist today because of their vast extension, yet the mineral that composes the sand is very rarely found in sand form. The Tularosa Basin, where White Sands is located, is surrounded by mountains filled with the mineral gypsum found in sedimentary rock form. This rock gets to the lowest part of the basin, Lake Lucero and Alkali Flat, and then the selenite crystals form. Water is the transportation for this mineral to get down to this low area.

Since the monument was formed the connection between the dunes and water was known to be very important, but not well understood. In 2009 a hydrological investigation was started to better understand the role of water at White Sands. The study is still ongoing, but so far there have been many unexpected discoveries. We now know that the water at the eastern edge of the dunes is much younger and not as saline as the water on the western edge of the dunes. Another interesting fact is that the water in a dune can be only 50 years old and very fresh compared to the water at the base of the dunes that can be over 6,000 years old. We also know that plants grow much better in the areas where the water table is below 24 inches.

Water is not only important for the formation and the maintaining of the dunes at White Sands, it also sustains life! Many plants and animals rely on the water at White Sands. You may be wondering how this water gets replenished? It all depends on our rain season, or monsoon season,

how much water there will be at White Sands. This season is typically from the months of July through September and sometimes October. Depending on the amount of rain, water will fill Lake Lucero and sometimes even the interdunal areas. The life at White Sands appreciate this rain. Sometimes we even get visitors other than humans, such as our migratory birds!



Rain falling on the dunes