

Plants in Oman and UAE: Part 3 - Rich desert and poor desert

Most of the UAE's territory is covered with sand which forms a variety of desert environments. Indeed, a 'desert' can assume various features, such as white desert, red desert, vast desert, tiny desert, rich desert, or poor desert. The differences in desert colours comes from the different substances making up the sand. White deserts are rich in calcium carbonate, and the red deserts are red from oxidised iron adhering to the sand. Various factors such as the size of the sand particles, their quantity and strength, wind directions and the existence of any blocking objects determine the size of dunes. So what makes the difference between the rich and poor deserts ?

In today's Arabia (Arabian Peninsular) the value of a desert is often associated with oil, but the natural richness of a desert is formed by its water and the green vegetation that is nurtured by the water. In visiting a number of plantation sites in UAE, we observed that, however many trees were planted by humans in a naturally poor desert, the desert remained poor and dry - a far cry from the richness of natural dunes.

What all the rich deserts have in common is plenty of good ground water. In such deserts trees can grow by extending their roots down to the ground water, and the trees form small colony, which in turn spread as green patches. Bushes also grow around the tree patches and, however roughly, further the reaches of the greenery. After winter rain, herbaceous plants start shooting up around the bushes. This is the image of rich deserts. On the other hand, poor deserts are poor in ground water, with little or no green vegetation although some salt resistant vegetation may be seen.

Both rich and poor deserts receive more or less the same amount of rainfall and the temperature conditions are also the same. However, even some grasses and flowers, whose survival totally depends on seasonal rainfall, can be seen in greater abundance in rich deserts than in poor deserts. The reason for this is thought to be that in rich deserts various types of plants exist and influence each other, which may be creating a milder and easier environment for other plants to grow in. That is, in rich deserts with abundant ground water of good quality there are trees with roots reaching the ground water level, and bushes take up their positions (although it is unknown whether their roots grow as deep as the ground water level) in the shadows of such trees and behind dunes blocking the wind. Then, on the ground covered by the bushes the temperature becomes even lower, and water from rainfall is held in the soil. Seeds of various seasonal grasses and flowers can be well kept and nurtured, and all shoot at once after the winter rain. It is easy to imagine that, in former times, the Bedouins would bring their cattle to the rich green deserts for grazing in such flowering seasons. Still today, some Bedouin elders do come to rich deserts to collect shoots and seeds of edible plants.

Rich deserts with plentiful water resources and vegetation are very valuable in dry areas, and such deserts are often targeted for ground water exploitation or agricultural development projects. However, such development projects have to be carried out without damaging the precious vegetation of the deserts. Also, the greening of deserts by means of extending the vegetation of rich deserts to surrounding places may be possible in such extremely dry areas as UAE, and this can be seen as the most environmentally sound method of desert greening.



Rich desert: Various plants can be seen



Poor desert: There is virtually no vegetation. Low land between sand dunes is a saline marsh.