Republic of Namibia
Ministry of Environment and Tourism

Sossusvlei

Is there life out there?

Facing a sea of sand where temperatures soar to over 40°C during the day and plunge to below freezing at night and where the sight of water is often a mirage, one could be forgiven for thinking that nothing could survive out here.

But look closely. There is life. It moves under the sand, scurries over the dunes and has adapted in a myriad of wildly wonderful ways to survive at Sossusvlei.

Follow the tiny tracks at the base of the dunes and they just might lead you to one of at least 200 species of tenebrionid beetles living in the Namib, including the only white tenebrionid yet discovered. Larger tracks in the sand might belong to black-backed jackal or gemsbok, or might be the split-toed track left behind by an ostrich.

Wacky, water-wise adaptations

On misty mornings, you might see the fog-basking beetle, *Onymacris unguicularis*. This fascinating beetle creeps to the crest of the dune, drops its head, extends its hind legs, tilts forward and lets it body serve as a condensation surface for fog. Soon droplets of water form on its back and slide down towards its mouth. While the fog persists, this head-standing beetle may take on as much as 40% of its original weight in water.

The shovel-snouted lizard, *Meroles anchietae*, has a very uncommon adaptation that allows it to endure waterless days in the Namib. Most animals have a lining that maximises water absorption from their diet. But this lizard stores water in its body, keeping it almost free of body salts, for more than a month. It doesn't have to stand on its head for water; it has its own internal freshwater reservoir.

Other animals take advantage of the desert's intermittent fog by drinking droplets that condense on their skin or by digging trenches in the sand to collect moisture, while many insects drink the drops that collect on plants and rocks.

The gemsbok, *Oryx gazella*, survives weeks without drinking water by not allowing moisture to escape from its body. It simply stops sweating. At such times its body temperature, normally around 39°C, might reach as high as 45°C. This is possible because of another intriguing adaptation. At the base of the gemsbok's brain is a network of fine blood vessels where the hot blood from the heart is cooled against the blood draining from the nasal sinuses before entering the brain. So while you might feel that your brain is frying in the desert, the gemsbok doesn't.

Beat the heat

During the heat of the day, the long-legged beetle *Onymacris plana* runs across the scorching sand at a speed of 1 metre per second. Dashing from one tuft of vegetation to the next, the beetle creates extra wind over its body that lowers its temperature by up to 10°C. But it must keep running. If it stood still for long, it would die of hyperthermia. As crazy as it might sound, this is the only land animal known to use exercise-induced cooling.

To cope with the extreme heat radiating from dune surfaces the shovel-snouted lizard, *Meroles anchietae*, performs a fascinating 'thermal dance', lifting two feet off the ground for a few seconds at a time in alternate fashion (left front foot with right rear foot, and vice versa).

Another animal that appears to dance across the dunes is the sidewinder adder, *Bitis peringueyi*. Look for a beautiful broken S-pattern running up the dunes that marks the sidewinder's movement across the sand. The pattern often ends near a tuft of desert grass where the snake curls its body and shimmies into the sand, leaving only its eyes exposed to look out for prey.

Sand athletes

As you slide down the slipface, keep those tiny creatures that try to make a home in the free-moving sand in mind. The shape of the sand makes it impractical for burrowing, but it does allow sufficient flow of air that animals can swim in and out of it and some, like the golden mole (*Eremitalpa granti namibensis*) live almost entirely within the sand. So extreme is the golden mole's adaptation to life in the sand, that it has no need for eyes and so, over time, it has evolved without them.

One of the 163 spiders found in the Namib, the 'wheeling spider', *Carparachne aureoflava*, uses wheeling to escape danger. When threatened by the female pompilid wasp, a specialist spider-hunter that paralyses its prey before laying an egg on its body and burying it in the sand, the wheeling spider does a short run, curls its legs into semi-circles, flips its body sideways and rotates wheel-like at high speed to get away, an active adaptation that even James Bond would envy.

Who's there?

At night when you can no longer see tracks, listen. There are clues to even more life in the desert, like the 'knock-knock' sound emitted by barking geckos. This twilight chorus, a sound that is synonymous with the desert, is remarkably similar to two river pebbles being hit together. One species has a five-knock beat and another a three. A gecko knocks and in time, its knock is answered, but only by one of the same species.

Day or night, there is extraordinary life out there. So bark, beat, slip, slide, sweat and enjoy it with the fascinating creatures of the Namib.

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Environmental Care Code

Please adhere to the following:

- **Keep to existing roads and tracks.**
- **Do not litter.**
- **Do not remove any plants or animals from the park.**
- **Follow the rules and regulations as printed on your permit.**

Have fun!

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