



KELSO DUNES

NATIONAL NATURAL LANDMARK

SEAS OF SAND

The Kelso Dune complex includes some of the highest dunes (600 ft, 160 meters) in the region. Few people realize that these magnificent dunes form only a small part of a much larger sand transportation system that includes the Devil's Playground.

Take a look beyond the sea of sand that makes up the most active part of Kelso Dunes. At the margins of the main dune field you'll see light-colored, lumpy surfaces scattered with desert plants. These are older, relict dunes that have been stabilized by the binding power of plant roots. Look a bit farther and you'll see that many of the nearby mountain slopes are mantled with sheets of sand, especially near their bases. The light-colored, actively-moving

sand sheets are easiest to see. Other sand sheets have been stabilized by plants. These inactive, or relict, sand sheets have a darker color, so they blend in with the surrounding hill slopes. All of these wind-blown sand accumulations together make up the Kelso Dune complex.

A CLOSE-UP LOOK AT KELSO DUNE SAND

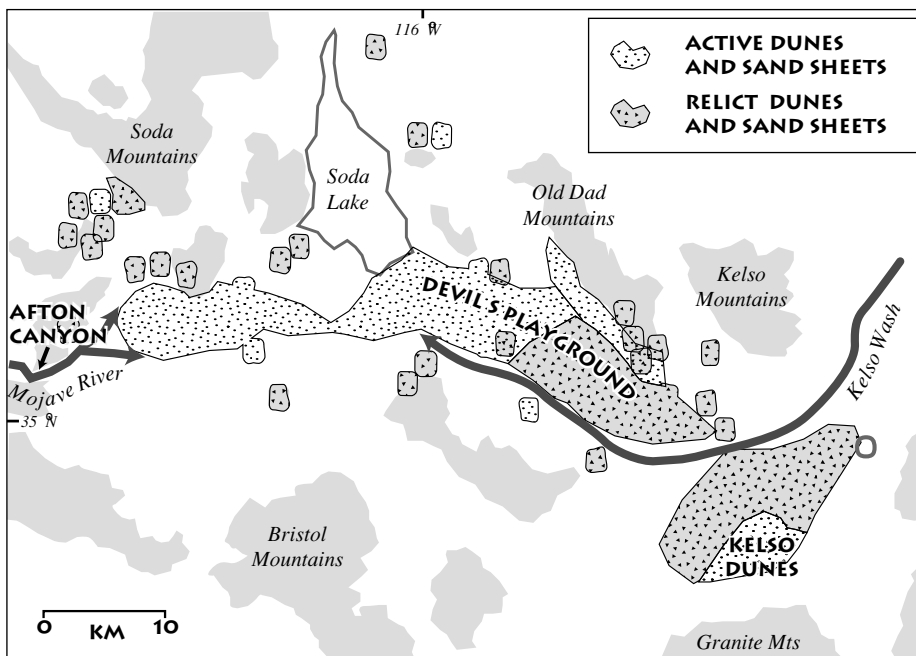
From a distance Kelso's sand grains might look monotonously similar. A closer look reveals that sand is made up of minerals and tiny pieces rock that were once part of larger rocks. Most of the sand grains you'll see at Kelso Dunes are made of the light-colored minerals quartz and feldspar. Black, iron-rich magnetite and amphibole tend to be concentrated on the surfaces of dune crests. It's easy to pick out the magnetite from the amphibole by dragging a magnet across the sand. As the name

implies, magnetite is magnetic and will be attracted to the magnet, leaving dark amphibole grains behind.

BACK TO THE SOURCE

A huge amount of sand we needed to build Kelso Dunes' delicate wind-created sculptures, but geologists studying Mojave National Preserve discovered that no new sand is moving in to replenish the dunes. Where did the sand originally come from? What made it stop accumulating? This extraordinary dune system has an unexpectedly mysterious history.

By studying the mineral composition and shapes of sand grains that make up Kelso Dunes, geologists have been able track down the original source for Kelso's sand. Most grains were probably eroded from granitic rocks in the San Bernadino Mountains and were carried



Map of Kelso Dune complex showing active and relict dunes and sand sheets