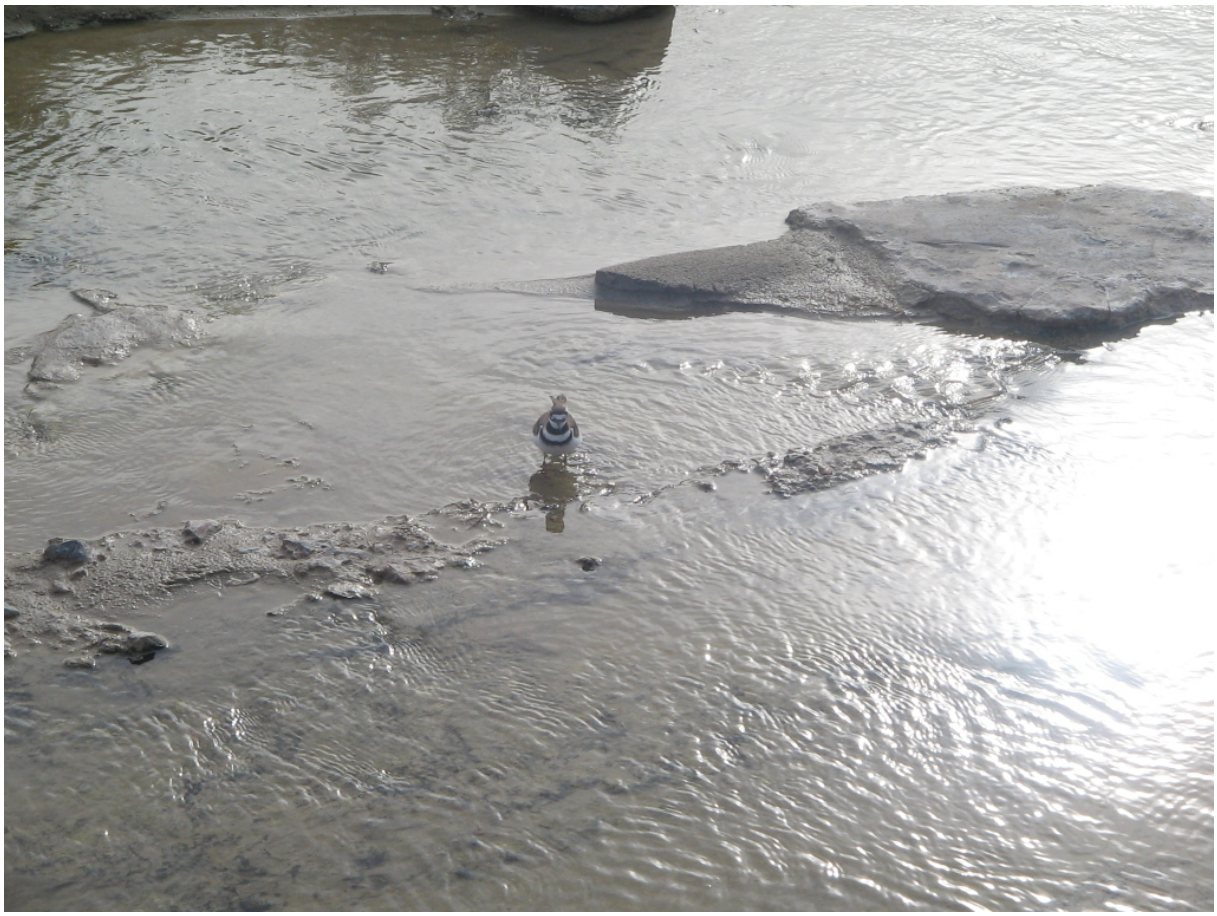
Halite

Photo taken March 2010 Death Valley NP in California

Halite is the mineral that we more commonly refer to as salt or salt crystals. The chemical formula is NaCl (sodium chloride).

Halite can sometimes be found in desert areas, as a result of the drying up of lake beds or other enclosed bodies of water that had only internal drainage available. These salt beds can cover large expanses and range from a light scattering of very small evaporite crystals to hundreds of meters thick. One place to view naturally-occurring halite crystals is Death Valley National Park in Southern California.

While there are certainly many important and interesting characteristics of halite or salt crystals, I am going to use this paper instead to describe the experience of viewing and exploring the salt beds in Death Valley National park. We study science to understand the world around us but very often it takes the curiosity of seeing and asking questions before we get to the science itself. Though I went out into the desert knowing and understanding quite a bit about halite, I sat quietly with many other park visitors in awe of the visual impact of a bright white shining desert and the tiny crystals that formed in piles and stacks and interesting designs in the very shallow water that we encountered at one portion of the park.



The high salinity of Salt creek makes it an environment unsuitable for many animals, the pupfish being a rare exception. Though it is very hard to tell with this photo, the creek was full of mating pupfish during the time of our visit. The creek was also very shallow and very salty, with halite crystals covering much of the landscape. The next picture

shows part of the walkway along Salt Creek, with halite crystals visible on the surrounding areas.

Salt Creek is a major drainage area for Death Valley.

The Badwater Basin is another major drainage area in the park. The salt flats in Badwater Basin are spectacular, covering miles and ranging from a very thin covering to many feet deep. The views of them are sometimes deceiving-- from a distance you may see a complete covering of white, only to walk out to the center of it to find that there are some areas that have very little covering of evaporates and simply look like dried mud when you are up close. The photo at the beginning of this is from one such area in the middle of Badwater Basin. The camera was

directed to show as much of the salt crystals as possible but the surrounding area often looked barren.

The most stunning views of the evaporites were at the pools of Badwater Basin's salt pan (which covers over 200 square miles!), where we also found shallow water which both reflected the sky and showed brilliant white upon arrival.

Another feature of this area was the jagged structures that formed out of the salt crystals. In the photo below you can see how strange the salty mixture looks when it dries onto mud near the pools.

The salt flats make this landscape feel unlike any other in the park. To be able to relate the tiny cubes with which we melt ice in the winter or season our food to this fascinating area really helps us to appreciate the natural processes that go on in the world outside of our influence.