

# Clay



River Keepers

Deer tracks in the clay sediment leftover from the 2009 flood.

The Fargo and Moorhead areas lie on the lake bottom of what was once Lake Agassiz. As a result, approximately 105 feet of fertile, clay-rich lake sediments leftover from Lake Agassiz underlie Fargo-Moorhead. These sediments help make up the Red River, which has large amounts of clay in its riverbed. The clay in the Red River causes many of its distinguishing features, including its murkiness, its reddish brown color, and the sliminess of the river banks. The nutrient-rich clay also results in the high fertility of the Red River Valley.

### Clay-Based Soil

Because of the large amounts of water that clay-based soils hold, they often crust and crack when they dry out. Dried clay soils have a rigid, concrete-like consistency, which causes these large cracks. The photos on this sign, which were taken at the Living Lab in summer 2009, display what cracked clay soils look like. The problem with

cracked soil is that it is so dry and dense that it hinders root penetration. As a result, seedlings may have trouble emerging from such dense soil. However, clay soils are easy to keep moist and therefore offer more benefits than disadvantages to the Red River Valley agricultural community. Clay soils become very slippery when wet. This is one of the reasons some river banks slump. Another interpretive sign at the Lab explains this process.

The jar on the left contains black soil. The jar in the middle contains sandy soil. The jar on the right contains clay-based soil taken directly from the Red River. Notice the color and texture differences between the soils in each jar. The clay-based soil looks thicker and has a more distinct color than the other two, making it recognizable as the base of the Red River.



Red River Zoo

A deer track in the clay.