

6. Why Are These Hills Here?

These hills are made of soft shale, just like the surrounding land which has weathered down pretty flat. Why didn't these parts weather down?

The answer lies on the surface: like armor, boulders of much harder rock protect the hills from erosion.

The hills are here because of the strong boulders protecting them, but **where did all the boulders come from?** Like detectives solving crimes, geologists use the clues in the rocks to piece together events. As you look at this little knoll and hike up Opal Hill, try to find all the clues you can to solve the puzzle of where the boulders came from! Some are pointed out here.

Clue:

Beds in the soft shale are all horizontal over a large area. In the hard rocks above, beds slope, or dip, every which way and are all broken up.

Clue:

To the west, Red Hill has no hard boulders at all! Instead, its top is protected by a reddish layer of river gravel.

Clue:

This enlarged map of the Opal Hill area shows there are strings of boulders where individual beds, often dipping uphill, can be followed across the hill. The surface of the hill is hummocky, not smooth.

beds

Clue:

The corners of the boulders are pretty angular, not rounded by being rolled in a river. \

Clue:

Erosion is constantly plucking away at the hill's soft shale, and boulders that were once on top of the hill are gradually moving down the hillsides.

