

## GEOLOGIC IMPACTS OF THE GULF WAR

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Three years have passed since the Gulf War, but its environmental impacts are still etched on the terrain. Foremost among the irreparable damages are changes to the terrain due to the digging of trenches, building walls of soil, and otherwise disturbing the desert pavement in and around Kuwait. The disruption of the usually one-grain thick layer of pebbles on the desert floor exposes soil to wind action. Furthermore, changing the contours of the normally flat land increases resistance to the wind, and thereby, increases the potential of particle transport until the land is peneplained. This condition has increased the frequency and the ferocity of dust storms in the region. It has also resulted in the formation of new sand drifts and dunes along roads in northern Kuwait.

The second effect on the geology of the region is that of the oil spill in the Gulf water. Hundreds of miles of the western coastline of the Gulf were affected by oil. Petroleum "mats" have settled on coral reefs and in other ways have reduced the Gulf water productivity.

The third effect is related to the damage caused by oil well fires in terms of the potential damage to the petroleum reservoirs. Photographs from SPOT and Landsat Thematic Mapper illustrate evidence for the formation of a layer of "oilcrete" as a result of the deposition of petroleum droplets and soot on the desert floor. These images can help in monitoring environmental change in the future.