

CHANGE *over* TIME

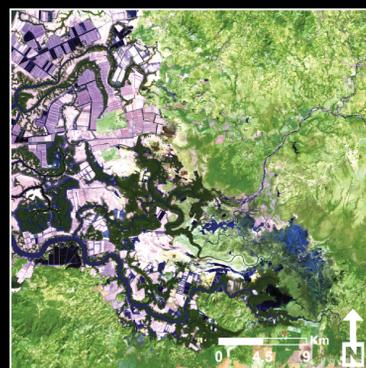
Landsat: Observing Land Cover Change since 1972

Gulf of Fonseca, Honduras

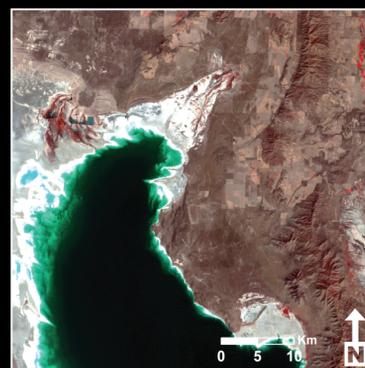
Honduras is one of Latin America's top producers of cultured shrimp. Huge areas around the Gulf of Fonseca delta have been converted to shrimp farms. When active and filled, the ponds appear dark. When drained, the ponds are pink.



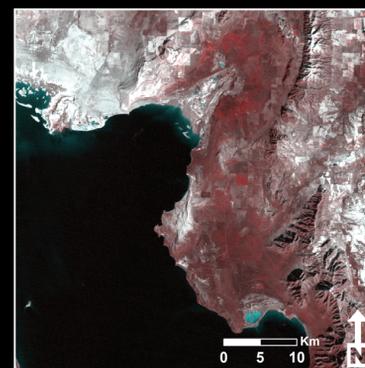
1987



2011



1972



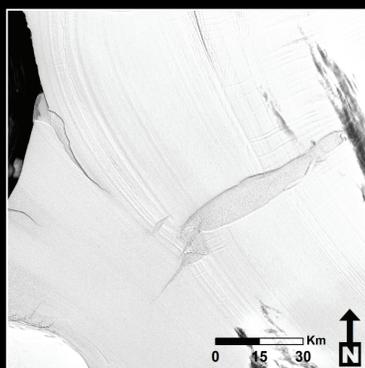
1987

Great Salt Lake, Utah

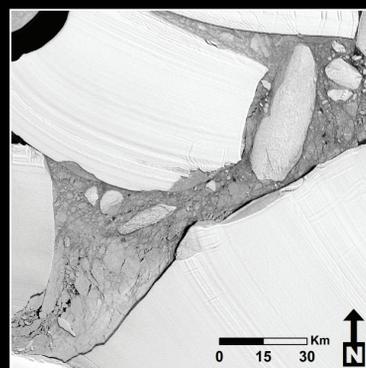
Great Salt Lake is shallow for its size—about 70 miles long and 30 miles wide, but only about 40 feet deep. Even a small rise in water level means large changes in the surface area of the lake. Rainy weather in the 1980s brought the lake to high levels.

Filchner Ice Shelf, Antarctica

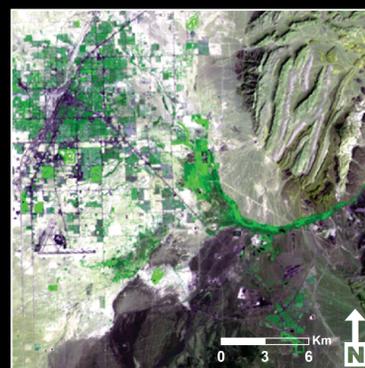
Ice shelves form where glaciers flow into the ocean. In 1986, an area the size of Connecticut broke off the Filchner Ice Shelf, forming several large icebergs that traveled as far as South America. These images show near-infrared reflectance, which discriminates well between ice and water.



1973



1986



1972



2013

Las Vegas, Nevada

Between 1972 and 2013, the population of Las Vegas grew from 273,000 to over 2 million. Spurred by expansion of the gaming and tourism industries, Las Vegas is one of the fastest growing metropolitan areas in the United States.

Imperial Valley, California

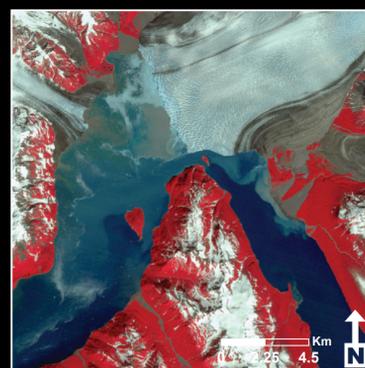
The Imperial Valley lies on the border of California and Mexico. The international border is visible because of the different intensity of vegetation, shown in bright green. The right part of the images shows the growing cities of Calexico and Mexicali.



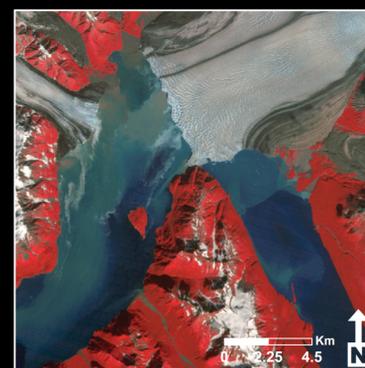
1992



2013



1985



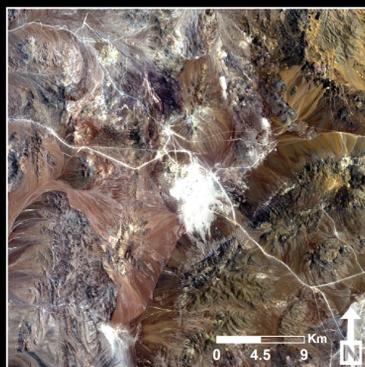
1986

Hubbard Glacier, Alaska

An unusual event on the coast of Alaska was observed with satellite imagery in 1986. A glacier slid down a valley and blocked a fiord from the rest of the bay. The fiord then turned into a temporary lake. The water's level rose 25 meters before the glacier dam gave way a few months later.

Escondida Mine, Chile

Isolated in Chile's Atacama Desert, the open-pit Escondida Mine is the world's largest source of copper. To conserve water and minimize environmental impacts, Escondida created a tailings impoundment that has expanded along with its mining operations.



1989



2013



1993



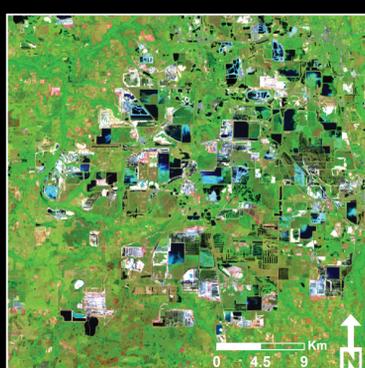
2010

Isahaya Bay, Japan

The controversial Isahaya Bay Reclamation Project has been blamed for recent reduced harvests of fish and seaweed (nori). The 1993 image shows the bay before a sea wall was built.

Phosphate Mines, Florida

The world's most productive source of phosphate, a critical nutrient for modern agriculture, lies south of Orlando, Florida. These images show the expansion of the mined area. As the mines shift southward, the land is reclaimed and returns to green.



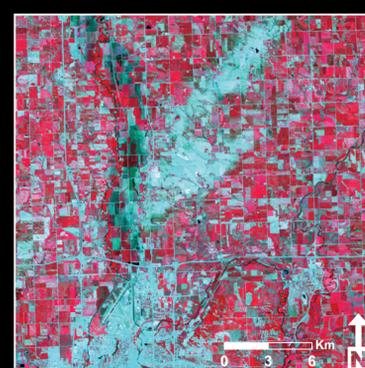
1986



2013



1995



1997

Hailstorm, Sioux Falls, SD

On Sunday, July 13, 1997, an unusually severe hailstorm just missed Sioux Falls, SD. But it pounded the surrounding cropland with baseball to softball-sized hail. Healthy crops appear bright red. Some of these fields appear blue/gray where the hailstorm converted the cropland into bare soil.