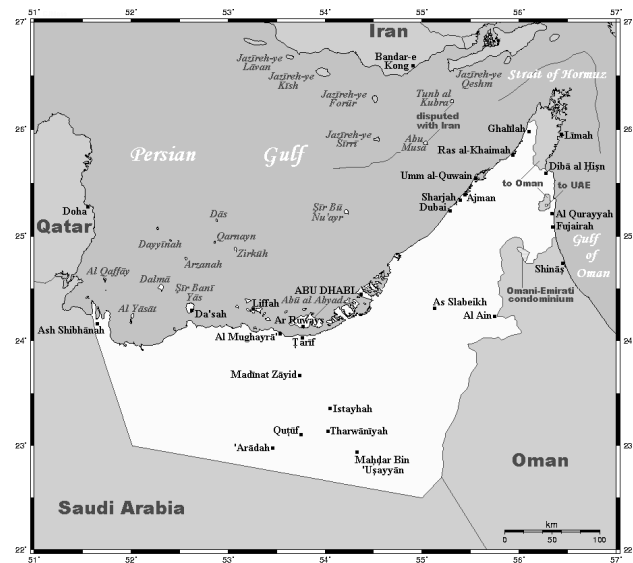


Coastal land reclamation in the United Arab Emirates

The United Arab Emirates (UAE) borders Saudi Arabia to the south and Oman to the east. It has a coastline on the Persian Gulf and is located on the Arabian Peninsula. UAE is made up of seven Emirates. The largest Emirate is Abu Dhabi which as well as being the capital is also a centre for business and industry. The other large business centre is Dubai.



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UAEOMC Map © Kelisi

Industry in Dubai had been based on oil but the government was aware that oil reserves would not last forever and that they would have to diversify (have different types of industry) to create money for the country. One of the new industries was tourism. With a limited coastline, however, the government decided to undergo a series of coastal land reclamation projects. Land reclamation usually involves dredging sand and sediment from the sea bed and using it to build new land in the sea.

Abu Dhabi

Abu Dhabi's coastline continues to expand as a result of land reclamation. Examples of areas which now exist due to land reclamation include the Al Raha Beach development and Lulu Island. These man-made islands were created by dredging sand from the sea bed and using it to fill in coastal salt flats called sabkhas. Examples of areas built on sabkha flats include The Mussafah Industrial Area and The Industrial City of Abu Dhabi.

Dubai

Although the hot climate is attractive to tourists, Dubai only had 70KM of coastline so they decided to undergo huge land reclamation projects to expand the coastline and develop luxury residential areas as well as the development of leisure and recreational services. In 2005 Palm Jumeirah was completed. The man-made island consisted of an estimated 110million m₃ of dredged sand. Since then there have been a large number of other land reclamation projects including 'The World' which used 325 million m₃ of dredged sediment. Today there is approximately 1000KM of coastline; fourteen times as much as there was originally.



The Palm Jumeirah © Jason Mrachina



Land reclamation in Dubai © Are Jay

Land reclamation in the UAE has had a number of economic benefits (more land available for infrastructure and development, growth of tourist industry, development and sale of expensive real estate) but both Abu Dhabi and Dubai have experienced negative impacts of artificial coastal creation.

Marine ecosystems have been altered as a result of the dredging and land reclamation process which has buried coral reefs and oyster beds with sediment. These features were habitats to a large number of marine animals and as a result there has been a breakdown in the ecosystem and a decrease in commercial fishing. The coral reefs also acted as a natural barrier to the waves and helped limit coastal erosion.



Socotra Cormorant © Nepenthes.

The location of the man-made islands has also led to the loss of many of the country's salt flats, which has destroyed natural habitats and had a negative impact on flora and fauna for example the loss of habitat for the Socotra Cormorant, a rare sea bird.

Other problems include coastal erosion of UAE's natural beaches. In Dubai, The Palm disrupts the natural pattern of longshore drift as waves are forced around the structure and as a result less sand is being transported to and deposited on the natural beaches at Jumeirah. Consequently, there has been accelerated coastal erosion in some areas and significant deposition in others. Although a breakwater barrier has been constructed to protect The Palm this too is under constant threat of coastal erosion as the sea fights to return to its natural state.