

# Artificial islands in the South China Sea

Landsat7 ETM acquired on 25 April 2000

Landsat8 OLI-TIRS acquired on from 23 May 2013 to 06 May 2015

Sentinel-2 MSI acquired from 25 March 2016 to 17 June 2022

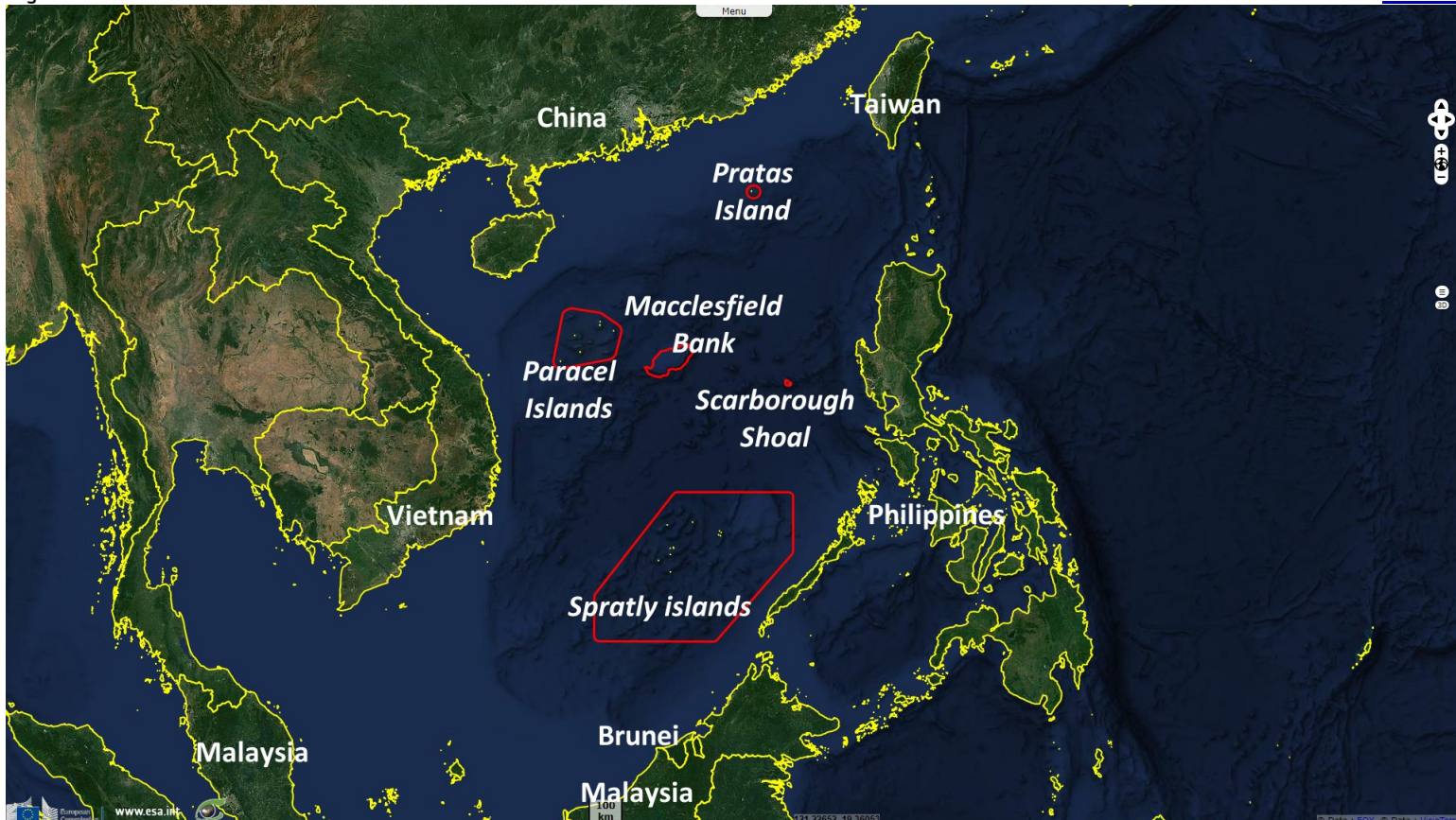
Author(s): Sentinel Vision team, VisioTerra, France - [syp@visioterra.fr](mailto:syp@visioterra.fr)

Keyword(s): South China Sea, Artificial Islands

[2D Layerstack](#)

Fig. 1 - Overview of the South China Sea.

[2D view](#)



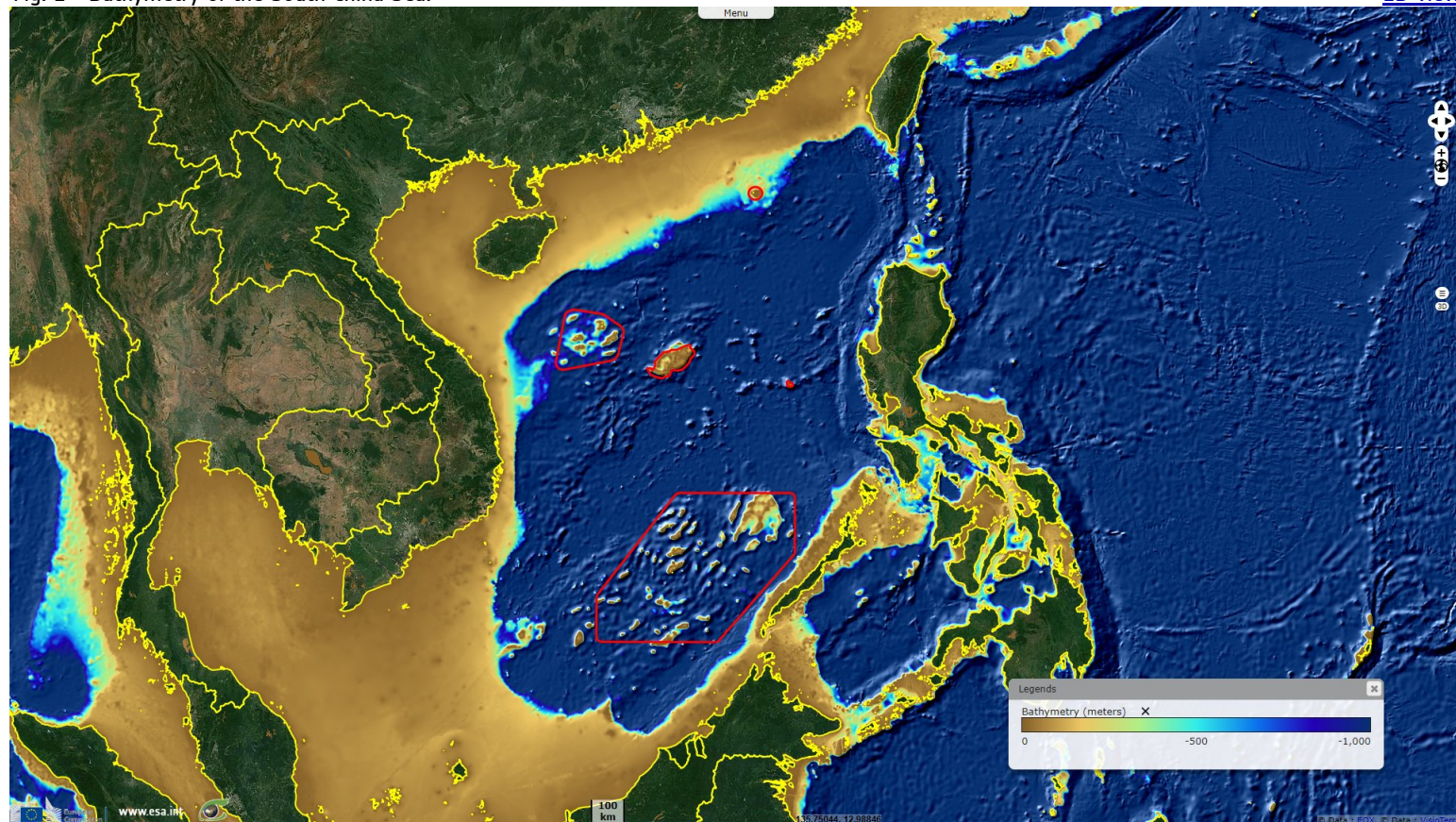
The South China Sea is located in the Western Pacific Ocean and covers approximately 3,500,000 km<sup>2</sup>. This marginal sea is surrounded by China, Taiwan, Philippines, Malaysia, Brunei, Thailand, Cambodia and Vietnam and includes several archipelagos which consist of small islands, cays, shoals, reefs, atolls and seamounts.

The significance of the region lies in the maritime shipping, fisheries, oil & gas, among other things. According to the United Nations Conference on Trade and Development (UNCTAD), 33% of the maritime shipping passes through the South China Sea (source [ChinaPower](#) making reference to [UNCTAD report](#)). Concerning oil & gas reserves, the U.S. Energy Information Administration (EIA) "estimates the South China Sea contains approximately 11 billion barrels of oil and 190 trillion cubic feet of natural gas in proved and probable reserves" (source [EIA](#)).



Fig. 2 - Bathymetry of the South China Sea.

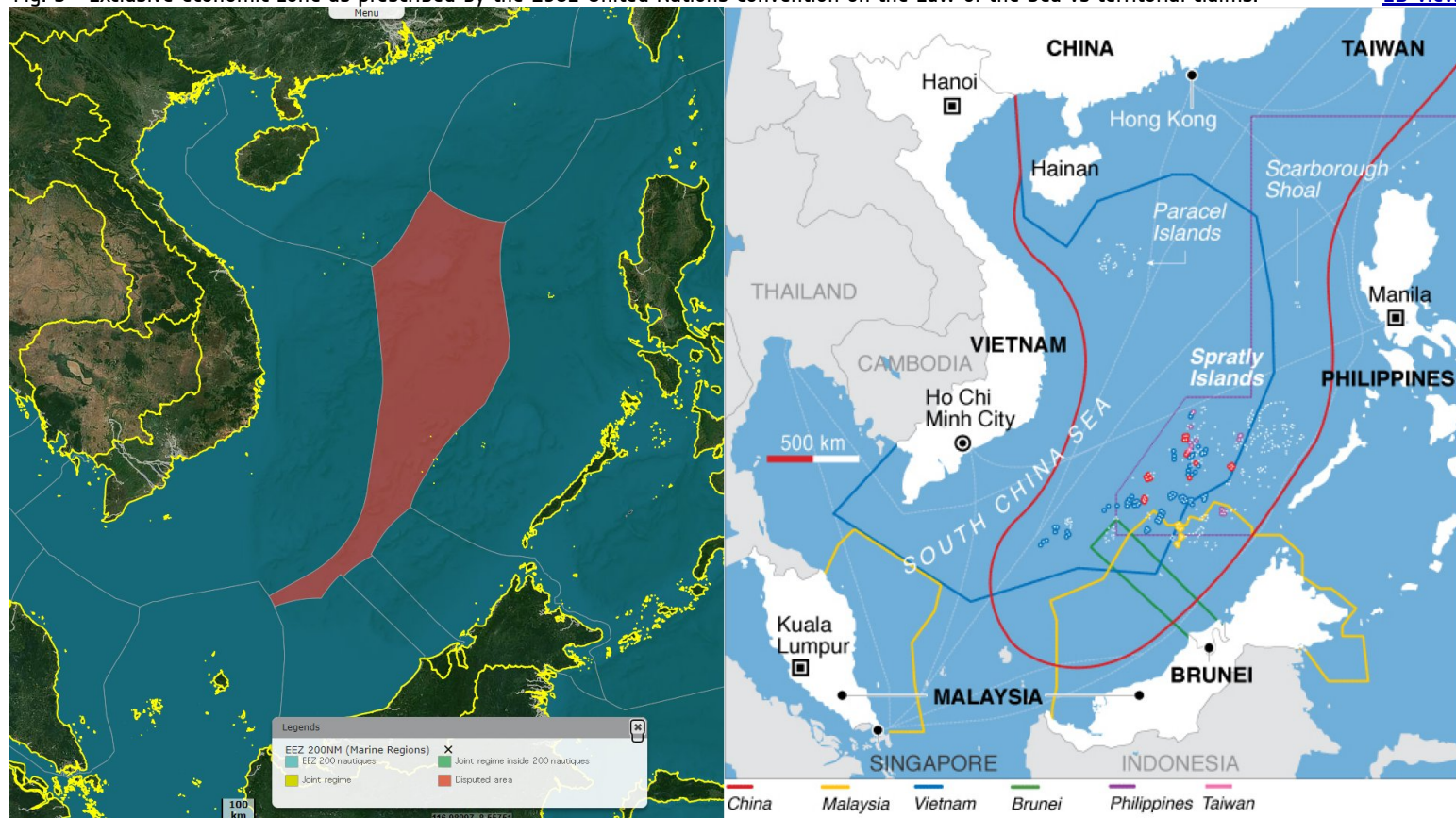
[2D view](#)



The depth of a large part of the South China Sea is less than 300m but can reach more than 5000m by location. Parcel Islands, Macclesfield Bank, Scarborough Shoal and Spratly Islands are located in the deepest part of the South China Sea.

Fig. 3 - Exclusive economic zone as prescribed by the 1982 United Nations Convention on the Law of the Sea vs territorial claims.

[2D view](#)

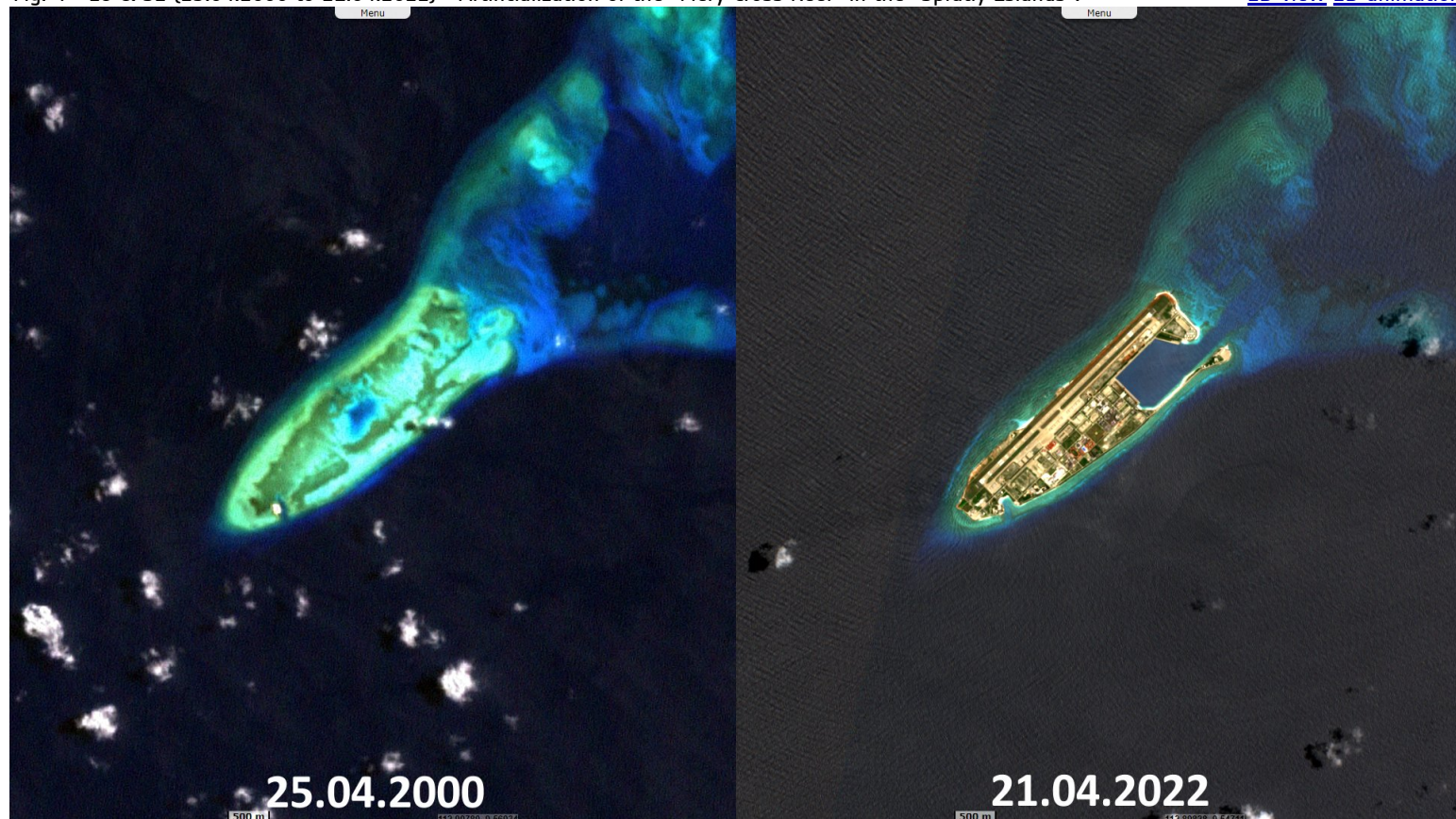


Due to the geostrategic importance of the region, several sovereign states dispute maritime boundaries and islands (source [Voice of America](#)). "In 2013, the PRC began island building in the Spratly Islands and the Parcel Islands region. According to Reuters, island building in the South China Sea primarily by Vietnam and the Philippines has been going on for decades; while China has come late to the island building game, its efforts have been on an unprecedented scale as it had from 2014 to 2016 constructed more new island surface than all other nations have constructed throughout history and as of 2016 placed military equipment on one of its artificial islands unlike the other claimants. A 2019 article in Voice of America that compared China and Vietnam's island building campaign in the South China Sea similarly noted that the reason why Vietnam in contradistinction to China has been subject to little international criticism and even support was because of the slower speed and widely perceived defensive nature of its island-building project." (source [Wikipedia](#)).



Fig. 4 - L8 & S2 (25.04.2000 to 21.04.2022) - Artificialization of the "Fiery Cross Reef" in the "Spratly Islands".

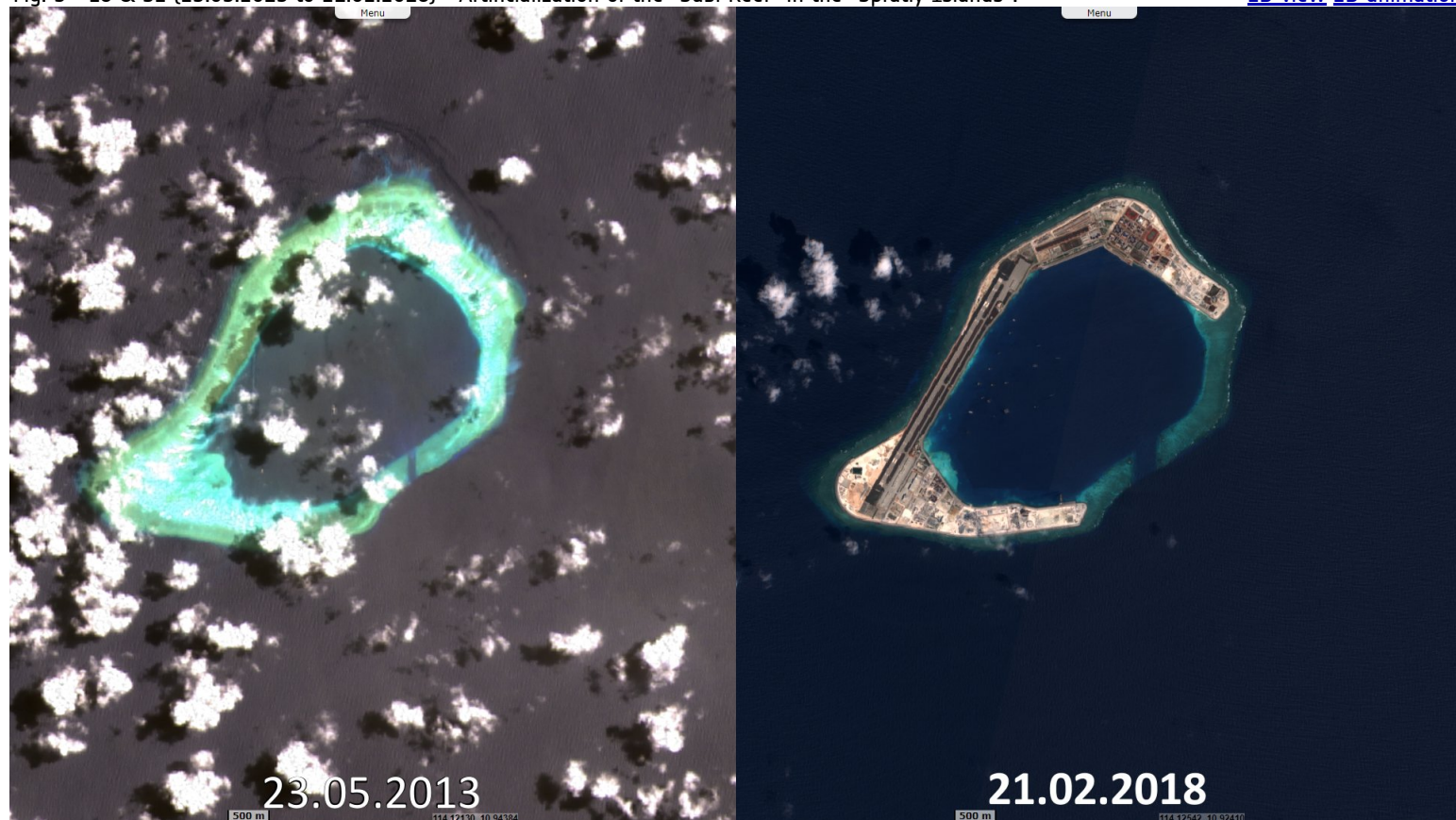
[2D view](#) [2D animation](#)



*"The reef was occupied by China (PRC) in early 1988, despite immediate opposition from Vietnam, which led to armed conflict at Johnson Reef South in March of that year. In 2014, the PRC commenced reclamation activity in the area, and it has been converted into an artificial island of 274 hectares (677 acres). There were around 200 Chinese troops on the reef in late 2014, though this number was likely to have increased significantly in 2015 with the addition of support personnel for the new airbase, including a 3,125-meter-long (1.9 mi) runway and associated early warning radar site."* (source [Wikipedia](#)).

Fig. 5 - L8 & S2 (23.05.2013 to 21.02.2018) - Artificialization of the "Subi Reef" in the "Spratly Islands".

[2D view](#) [2D animation](#)















*"During 2014, the PRC started reclaiming land at Subi Reef, and by the end of 2015 had developed it into an island of 3.95 square kilometres (1.53 sq mi), with a military base, a large harbor, and an airstrip of about 3,000 metres (9,800 ft). In November 2015, two U.S. B-52 strategic bombers flew in airspace near the area. They were contacted by Chinese ground control, but were allowed to continue their mission undeterred. In April 2016 a new lighthouse 55 meters (180') high commenced operations. A civilian test flight to the new airport was conducted by a passenger jet of Hainan Airlines on July 13, 2016."* (source [Wikipedia](#)).





"In 2014, land reclamation started inside the rims. The Philippines filed a diplomatic protest against China after the discovery of their reclamation activities. By January 2016, work was well advanced on developing a military base with a large harbour and a 2,644 metres (8,675 ft) runway, with the reclaimed land covering 558 hectares (1,380 acres). A civilian test flight to the runway was conducted by a China Southern Airlines passenger jet on 13 July 2016." (source [Wikipedia](#)).

*The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.  
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