



Around 14 percent of coral reefs have disappeared since 2009 | Photo source Pixabay

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## UNDERWATER CORAL 'CITIES' AIM TO REVIVE MARINE LIFE



SCIENCE

### A Portuguese company has a plan to save the world's coral by building engineered reefs

**Spotted:** According to the UN Environment Programme, coral reefs support around 25 percent of marine species, and they are a source of coastal protection, food and economic security for hundreds of millions of people. At the same time, thanks to pollution and global warming, they are fast disappearing – around 14 percent of the world's coral reefs have disappeared since 2009. This is the tragedy that Blue Oasis Technology hopes to reverse.

Blue Oasis has developed engineered underwater 'cities' that are designed to save coral. The structures are made up of 55-tonne modules that are lowered into the ocean with a crane, as well as smaller, stackable modules. Each 'eco building block' is made from an eco-friendly concrete produced using recycled industrial waste combined with food waste, all sourced locally. The modules mirror the original underwater landscape.

Once in place, the artificial reef can be seeded with transplanted lab-grown corals engineered to be more resilient to higher temperatures. Blue Oasis have also developed a data monitor, the Bluboxx, which livestreams data on temperature, acidity and salinity. This information allows researchers to monitor the effects of warming, CO2 absorption and current flow in real time, and should help them to develop better mitigation strategies.

There have been other attempts to stimulate new reef production with an artificial base, but Dutch engineer and scuba diver Jeroen Van de Waal, who founded Blue Oasis Technology, says the key to this project is scalability. "There are literally dozens of startups today that have beautiful ideas, but their solutions are not scalable", [points out](#) Van de Waal. "They are very small and won't work in many

oceans because the hydrodynamics in these oceans are too wild and too strong for these small reef modules to survive”.

As the world’s oceans warm up, researchers are in a desperate race to learn enough about coral reefs to save them from extinction. Blue Oasis’s data boxes and engineered reefs may be an important part of this, but at Springwise we have seen a number of innovations aimed at saving coral. These range from using [bacteria](#) to protect the coral from heat stress, to a complete [coral restoration system](#) that transplants corals and monitors their growth.

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### **Takeaway:**

In addition to scalability, Blue Oasis has also made sure its projects can be monetised. There will be built in fishing zones between reef formations, boosting local fish populations and opportunities for allocating fishing concessions. The reefs can also be used to grow other marine life for harvesting, such as oysters, crustaceans and seaweed. Blue Oasis’ first two reefs will be launched in 2022 – one in Sultan Iskandar Marine Park, Malaysia, and the other along the Comporta coastline of Portugal. The reef in Malaysia will also be used as a training ground for scuba divers. Eventually, Blue Oasis hopes to see a backbone of engineered reefs and Bluboxxes all across the world, reviving all the world’s coral ecosystems.