

SEA URCHIN NURSERY IS HELPING THE CORAL

Sea urchins protect the coral reefs in the Caribbean. But their numbers are a fraction of what they used to be. A new 'nursery' for sea urchins is aimed at changing that.

Before 1983, the coral reefs around Saba and Saint Eustatius were strewn with *Diadema antillarum* sea urchins. Then a mysterious disease, probably a bacteria, caused the population to collapse within a year. It has never recovered from that blow, explains PhD student Alwin Hylkema. The decline of the sea urchin is bad for the coral. Sea urchins protect coral by feeding on macroalgae. Hylkema: 'Sea urchins graze the reef clean, creating space for the coral larvae to establish themselves. Coral needs space. But space is in short supply because algae are taking over the reef. This is affecting the coral's resilience and there is no potential for recovery.' The Diadema project wants to change that. The project aims both at protecting the young sea urchins and helping them establish

themselves. According to Hylkema, that is where things go wrong. 'Research shows that there are quite a lot of sea urchin larvae at some locations. But they don't get established or after doing so, they fall prey to predators.' So not enough sea urchins survive their infancy. Previous attempts to do something about that were mainly focused on breeding sea urchins ashore. But that is complicated and time-consuming,

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says Hylkema. The Diadema project wants to establish and protect the sea urchins on the reef itself. In practice this means developing a 'Diadema booster', which is a structure in which sea urchins can lodge themselves and grow up safely before setting off into the big wide world. You could call it a



▲ Macroalgae are taking over the coral reef around Saba and Saint Eustatius. *Diadema antillarum* offers a solution, because it eats macroalgae.

nursery or crèche. The first trials have already taken place. They were partly about the choice of material for optimizing sea urchin establishment. Materials tested underwater include pieces of artificial grass, rope, shower mats and bio-balls (for filtering aquaria). The Diadema booster will not save the coral single-handedly. 'But

bringing back the sea urchins will undoubtedly have a positive impact on the coral. It will grow, which will create more habitats and places of refuge for new young sea urchins. It helps make the coral more resilient in the face of pollution and the warming of the water, both of which stimulate the growth of macroalgae.' **® RK**