

Restoring Kurnell's lost underwater forests PROGRESS REPORT August 2019

A Progress Report from the Sydney Institute of Marine Science (SIMS) Foundation prepared for the Breen Initiative





Restoring Kurnell's lost underwater forests

Project update

Progress

At Kurnell, SIMS scientists have continued to maintain an area of approximately 35 x 45 m² clear of urchins. Teams of up to four divers, plus a boat driver, have been surveying and maintaining the site periodically and the clearing effort has resulted in over 4800 urchins being removed.

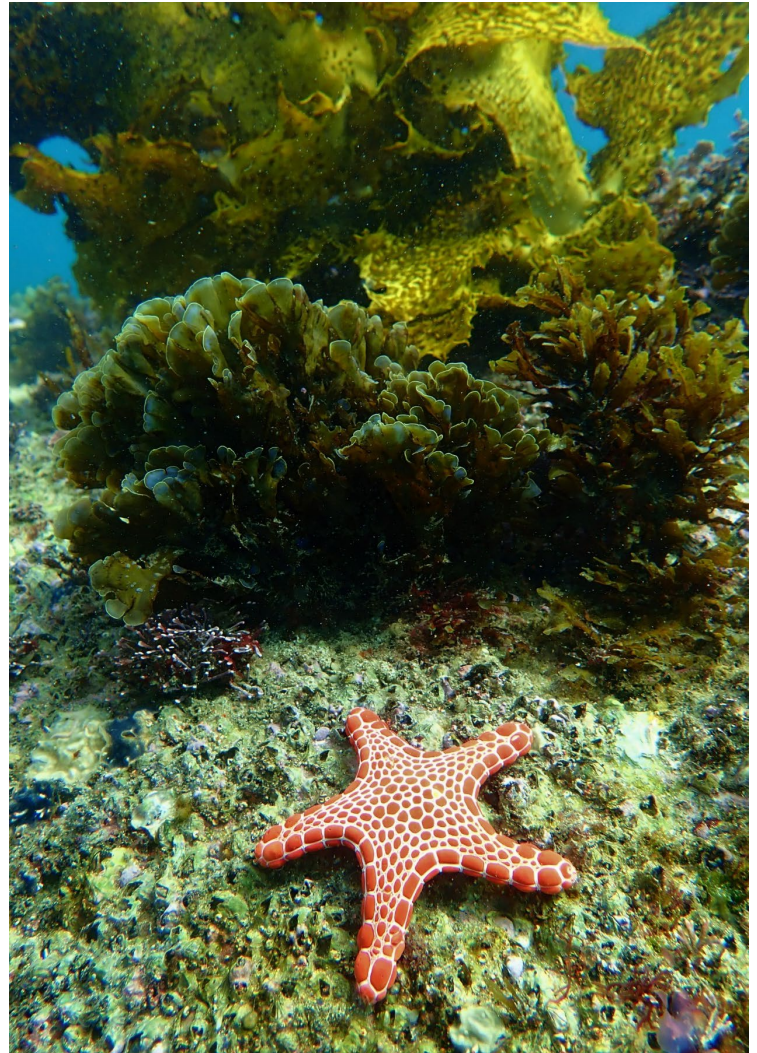
As well as this 'urchin-removal' site, SIMS has also continued to survey three reference sites (i.e. no intervention) - two at Kurnell and one at La Perouse. The team therefore have the appropriate dataset to quantify the effects of urchin removals on the benthos (the flora and fauna on the seabed) and fish communities since the start of the restoration project. We have now visited these study sites on 30 different occasions since April, 2018.

The results of urchin clearing have been dramatic, with clear signs of underwater seaweed forests (including kelp!) starting to grow in areas that were previously completely barren. We have also noticed the return of various seaweed-associated marine life on recent visits.

The team will continue to maintain the site clear of urchins to give these newly recruited plants the best chance of growing into future mature underwater forests. The next stage of the project will entail the restoration of crayweed.

Challenges

Despite the challenges presented by the extensive legislative prerequisites for crayweed transplantation, SIMS has continued to progress the process of obtaining the permits needed, such as the NSW DPI permit for translocating flora and fauna and the Crownlands permit for mat attachment. We are in the process of obtaining the final permit by RMS needed to start planting crayweed at Kurnell following the effective urchin removal.



A Vermilion Biscuit Star alongside new seaweed recruiting at the Kurnell study site.

Thank you

The continued support from the Breen Initiative towards this visionary project is greatly appreciated as we move closer towards restoring Kurnell's lost underwater forests.



Restoring Kurnell's lost underwater forests

Underwater forests at Kurnell are thriving!

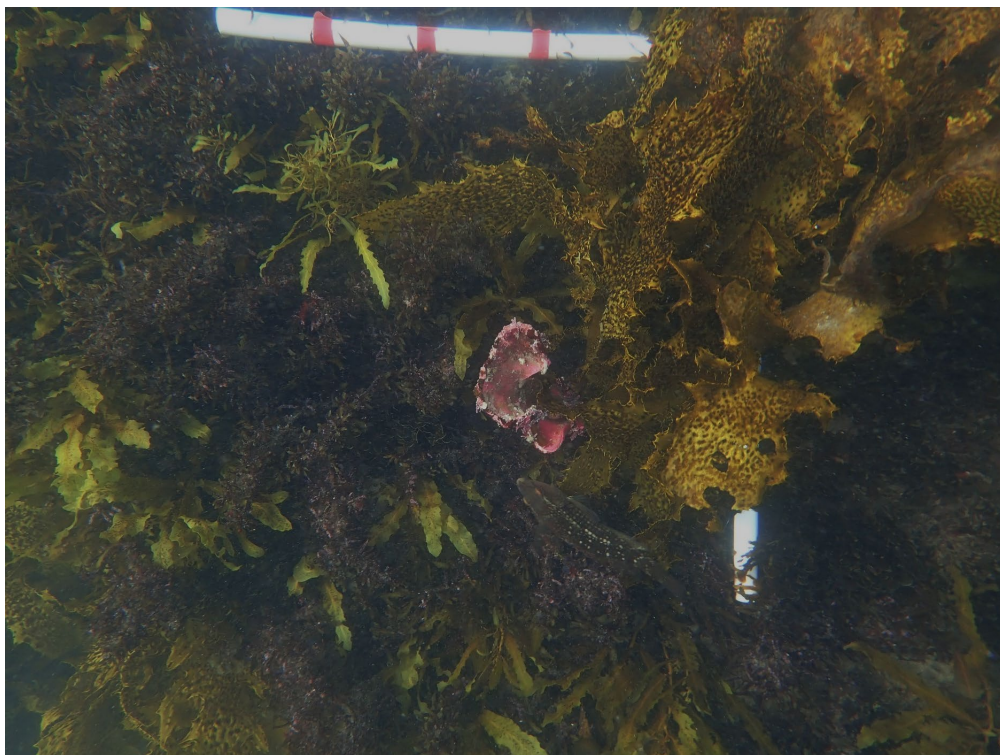


'Barren' site in July, 2018



Same site in December, 2018

A 'barren' study site at Kurnell, located in an area that was completely barren of seaweed prior to the removal of urchins. The permanent marker (in pink) has enabled us to monitor the re-establishment of seaweed into this previously barren habitat over time. In our most recent survey (August, 2019), the marker was almost completely surrounded with new seaweed, including kelp!



Same site in August, 2019!



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Underwater forests can now be seen from space!

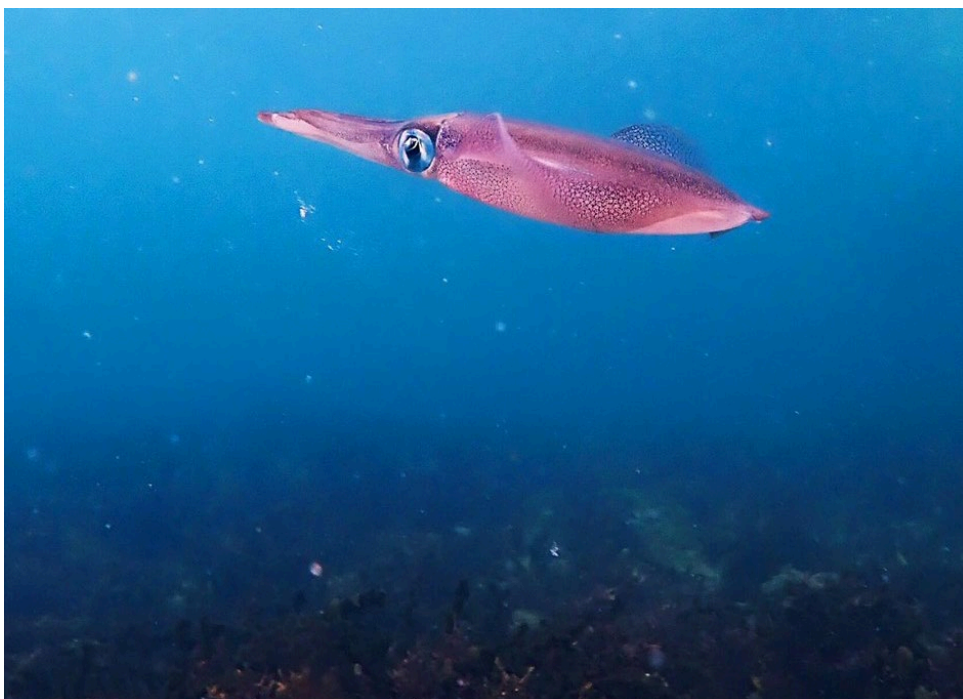


Study site at Kurnell on 18th August, 2018



Same site on 25th April, 2019

Two aerial images of the study site at Kurnell. The increase of dark patches within the area outlined (in red) is the re-establishment of seaweed into this previously barren habitat.



A southern calamari observed at the Kurnell study site during a recent visit. Calamari use the underwater forest habitat for camouflage and to hunt the many small fish that also inhabit these forests.