

Protection of our marine life requires more resilience

September 14 2015, by Janis Pickwick

Management of the world's marine habitats needs to look beyond only Marine Protected Areas and put achieving ecosystem resilience at the top of the agenda, according to research by an international group of scientists led by Dr Richard Unsworth at Swansea University.

Our oceans and coasts are changing rapidly due to human impacts. But our very existence depends on the resources and functions that their biodiversity and productive habitats provide. Learning to manage the habitats and biodiversity within our oceans and coasts is one of the greatest challenges of this century.

Management of our coasts typically takes the approach of establishing Marine Protected Areas, controlling fishing, or regulating industrial activity. But in the face of the increasing threat of climate change we need to take measures that increase the [resilience](#) of our oceans and coasts to ensure they survive into the future (Ecological resilience is "the capacity of an ecosystem to absorb repeated disturbances or shocks and adapt to change without fundamentally switching to an alternative stable state").

The research published online this week in *Marine Pollution Bulletin* examined the [ecosystem resilience](#) of [seagrass meadows](#) globally. The work shows how the resilience of these productive ecosystems is becoming compromised by a range of local to global disturbances and stressors, resulting in ecological regime shifts that undermine their long-term viability.

The paper examines over 150 sources in the academic literature and illustrates how the management of these systems needs to consider a series of features and modifiers that act as interacting influences on the resilience of the ecosystem (see figure). The paper concludes by providing a series of simple actions that marine conservation managers can take to improve ecosystem resilience. Dr Richard Unsworth said: "The resilience of marine ecosystems is influenced by many factors, such as the health and proximity of adjacent habitats; the water quality; the supply of larvae and the presence of human disturbance. Management of biodiverse and important marine ecosystems like seagrass needs to consider more than just simple location specific protection, but instead consider the biological and environmental influences beyond the extent of its distribution."

Seagrass meadows are the 'Prairies of the Sea'. They are highly productive shallow water marine and coastal habitats comprised of marine plants. These threatened habitats provide important food and shelter for animals in the sea.

Globally there is estimated to be over 600000km² of seagrass. Seagrass is important for storing carbon, providing juvenile fish nursery [habitat](#), pumping oxygen into the air and protecting the Worlds [coasts](#) from erosion.

More information: "A framework for the resilience of seagrass ecosystems," *Marine Pollution Bulletin*, Available online 2 September 2015, ISSN 0025-326X, [dx.doi.org/10.1016/j.marpolbul.2015.08.016](https://doi.org/10.1016/j.marpolbul.2015.08.016)

Provided by Swansea University

Citation: Protection of our marine life requires more resilience (2015, September 14) retrieved

25 April 2024 from <https://phys.org/news/2015-09-marine-life-requires-resilience.html>

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