

Advanced mooring systems around the world – Natural England Preliminary Report

Unfortunately, due to only a few days being spent on this 'report', it is not complete or extensive enough. One issue I encountered was differing terminology around the world. Search term for these moorings include Advanced Mooring Systems, Eco-Moorings, Environmentally Friendly mooring, Conservation moorings, and Seagrass moorings.

I also found some information of these 'advanced moorings' actually not being beneficial, or even harmful for seagrass beds. It seems a correctly chosen mooring and rope length and size are very important and cause scars in meadows. Some sources suggest that 3 years are enough for mooring scouring to fully recover if the bed is healthy (<https://www.mass.gov/doc/conservation-mooring-recommendations/download>).

I have contacted quite a few marinas, and mooring system companies however most of them haven't yet replied or haven't been able to provide adequate information.

- How many of these different systems are used around the world? Where and in what environmental conditions? What has been the performance of these systems?

Location	Number of moorings	Manufacturer	Length of time installed / area covered	Environmental conditions	Link
New Zealand		Marine Flex (available worldwide)		Rubber elastic mooring system in use for over 20 years, which can elongate by 200%. These moorings include screw anchor technology	Marine Flex® Elastic Moorings Screw Anchors Aquaculture Floats
Australia, Moreton Bay Southeast Queensland	230 + traditional moorings replaced	Environmentally friendly mooring (EFM) , Seagrass friendly mooring, and eco-mooring (Ezyrider and Seaflex are being considered)	15.39 ha is the total recovery area. 2009-13	Moorings deployed from a boat; helical screw drilled into seabed.	Environmentally Friendly Moorings - Healthy Land and Water (hlw.org.au)

Australia, Jervis Bay Marine Park and Frances Clements	70 screw, swing, and cyclone moorings	Cyclone, Screw and Swing moorings	Installed January 2008—09, replacing private owned moorings.	All of these moorings were located over a <i>P. australis</i> and <i>Zosterterra</i> spp. meadow at a depth range from 3-6m.	https://www.nature.com/articles/s41598-019-55425-y
Australia, Shoal Bay and Pittwater New South Wales		SUPERHOLD SCREWPILE MOORING ANCHOR		Can suit a wide variety of tidal ranges.	Seagrassmooring.com
UAE, Dubai		Ecocoasts Ecomoor moorings (based in Dubai, but operate around the world)		Elasticated ropes which can be used from depths of 2-20m, mostly used for navigational buoys so far.	Homepage - Ecocoast
USA, Burlington Vermont	56 in Burlington, and 108 in Point Bay marina	Single point moorings (swing moorings/elastic mooring system) + helix screw (freshwater only recommended but used in estuaries and marine environments)		Elastic can increase by 40%, and can be used at a variety of depths, ideally at 6m.	https://www.youtube.com/watch?v=sVBdLaUhwGE&ab_channel=HazelettMarine
USA, Massachusetts	Totalling 275	Eco-moorings and Hazelet moorings		MassBay Seagrass friendly moorings 'conservation moorings'. Seven harbour sites: Gloucester, Manchester-by-the-Sea, Boston, Wareham, Onset, West Falmouth and Quisset Harbors	https://www.mass.gov/doc/massport-conservation-moorings-and-effect-on-eelgrass-final-report-2019/download

Belmont Pier in Long Beach, California US	45	Eco-mooring systems attached to helix screws	2012		
Tampa Bay, Florida US		Supflex Pontoon Mooring Systems, Inc. – Superflex; Sealite USA LLC - Synthetic Mooring Solutions; American Underwater Contractors Inc. (AUC) – StormSoft Elastic Mooring Hazelett Marine - Conservation Elastic Mooring System	2018	Huge undertaking with a large variety of depths and moor sizes. Some of these are seagrass related others are just general moorings.	https://apps.dtic.mil/sti/pdfs/AD1061236.pdf Huge document with loads of info, unfortunately I haven't been able to go through this 100 pager.
St. Petersburg, Florida US	26	Eco-Mooring Systems	2011 commencing	Vinoy Yacht Basin Boatmoorings.com	https://boatmoorings.com/tos.php
New London, Connecticut US	41	Eco-mooring rodes and the Softlite mooring buoys with helical screw	2012	Moorings for a boat mooring field	https://boatmoorings.com/tos.php
San Juan Puerto Rico	45	Eco-moorings Elastic Mooring System		DownWind Yacht Sales. During a cat 5 hurricane, only Eco-mooring ribbed vessels survived and stayed in place.	https://www.ecomooringssystems.com/blogs/eco-mooring-systems-blog/147-brand-new-beneteau-oceanis-45-survives-two-hurricanes-in-puerto-rico

I have also found information about mooring companies themselves, some of which include the countries, states or cities they operate in but not exact numbers or locations. I think they are still quite useful especially if those companies follow up.

<https://apps.dtic.mil/sti/pdfs/AD1061236.pdf>

SEAFLEX

SEAFLEX ([SEAFLEX - The Mooring System](#)) have multiple sites and are active in Europe, North America, the Middle East and South Africa. SEAFLEX have buoys, moorings and screws. These are elastic environmentally friendly moorings which can elongate up to 100% of the original length.

ECOMOORING

ECOMOORING ([Home \(eco-mooring.com\)](#)) have very little information available on their website but seem to be fairly frequently used, especially in Australia.

Hazelett Marine

Hazelett ([Home - Hazelett Marine](#)) have conservation elastic mooring systems and are active at multiple sites around the world including the US, Mexico, Europe, Australia and the UAE. Their website seems to hint that a few key components of their moorings should only be used in freshwater, however confusingly most of their projects take place in estuarine and marine environments. Their moorings are also based on elastic and can stretch up to 100% of their original length.

Eco-mooring systems / elastic mooring systems

Mainly based in the US but also worldwide since 1992 (<https://www.ecomooringsystems.com/about-us>), Eco-Mooring systems and helix anchors are used for moorings, floating docks, navigational markers and beach marker buoys. These are applicable for the stormy seas of Iceland and the tropical south pacific islands. These again use elasticated rope and safely secure marine vessels.

I found a list of their US sites including the number of units in place: New London, Conn. 45 units; Sunny Isles Fl. 50 units; Beverly, Ma. 24 units; Manchester Ma. 70 units; Nantucket, Ma. 24 units; Long Beach, CA 45 units; Provincetown, Ma 1 test unit; Queensland, Australia 3 test units; St. Petersburg, Fl 13 units; New South Wales 5 test units; Falmouth, Ma 8 units; Kona , HI 1 test unit; and Hingham, Ma 18 units.