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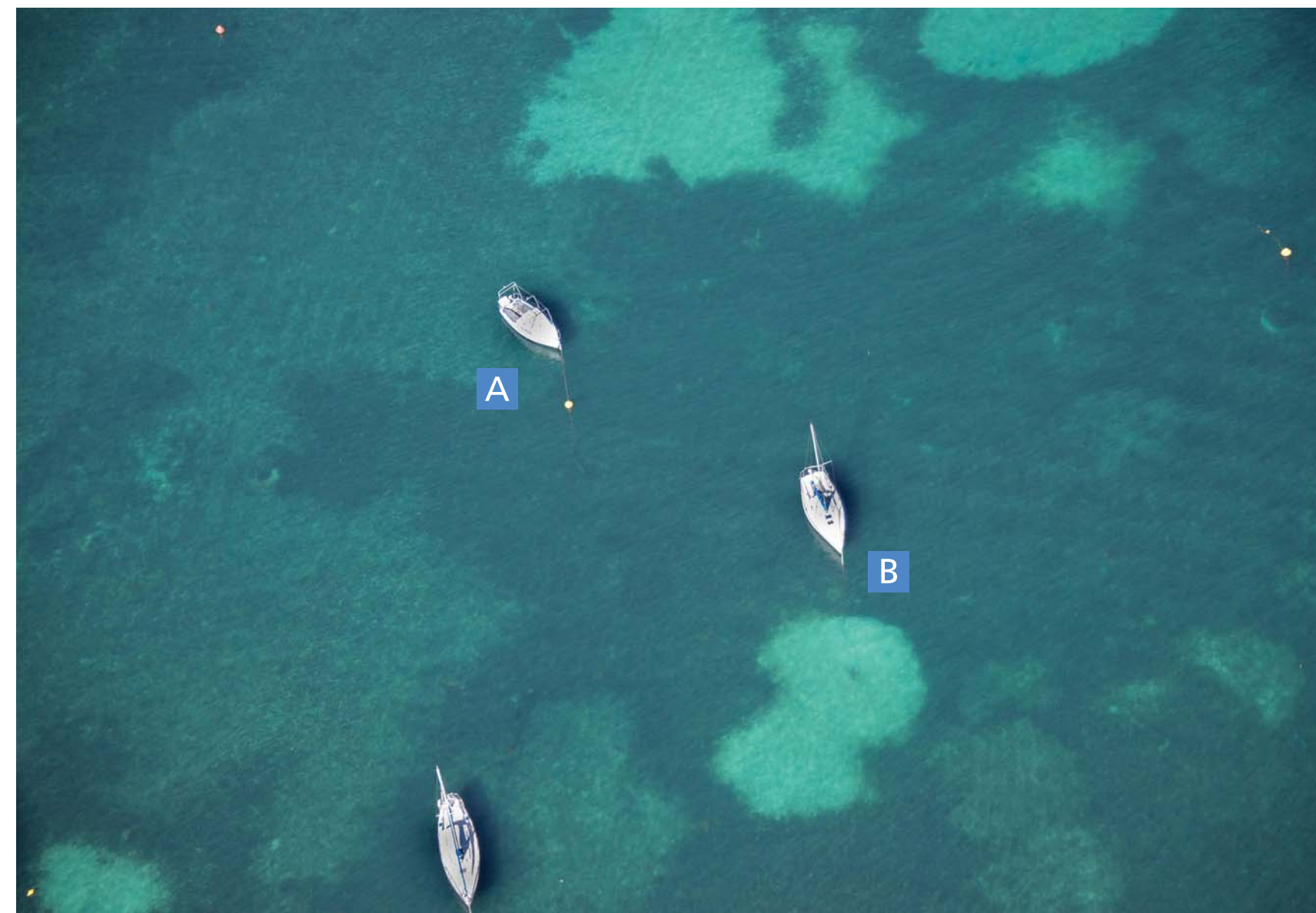
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# ENVIRONMENTALLY FRIENDLY MOORINGS

TIME TO STOP DRAGGING THE CHAIN AND *going round in circles*

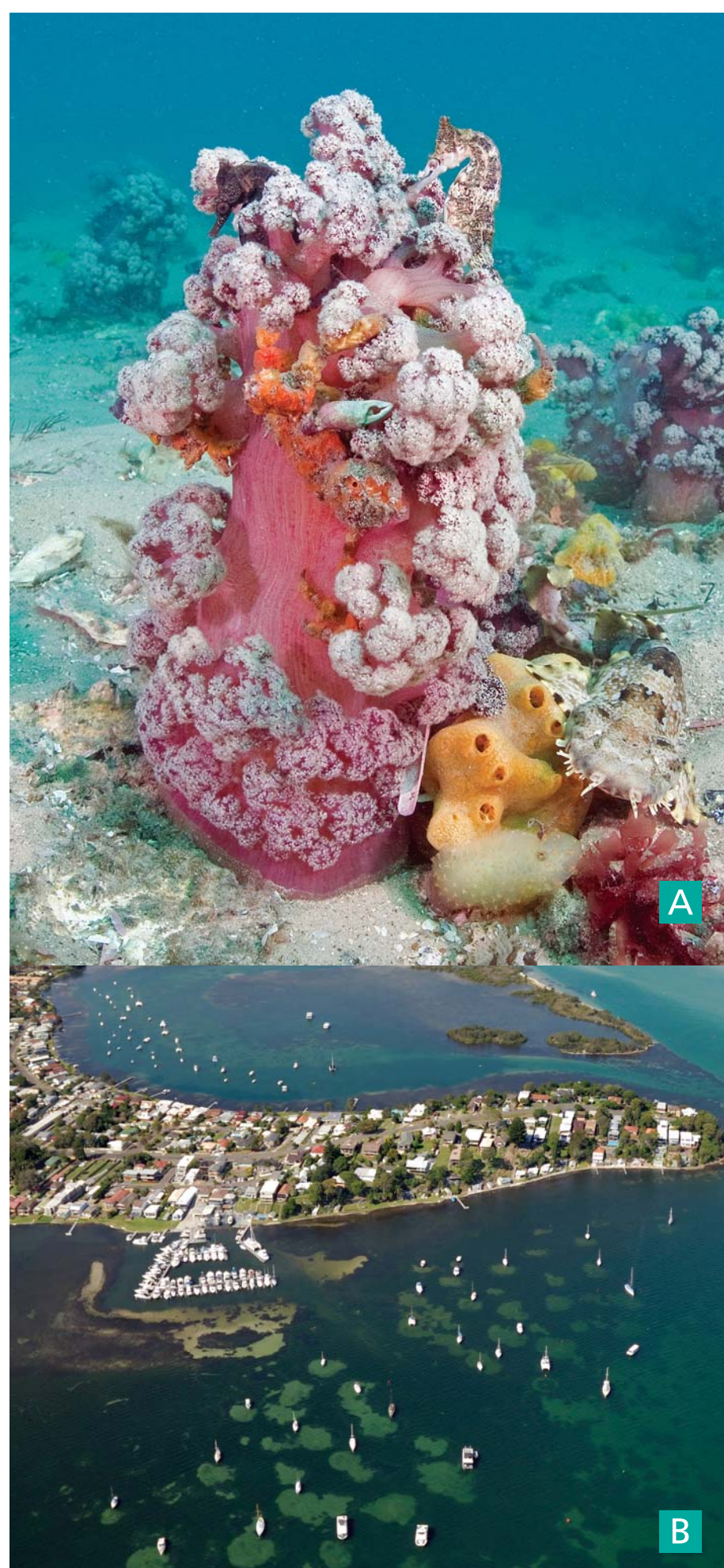
Environmentally friendly moorings, or EFMs, have been installed around Australia and the world to protect sensitive habitats, such as seagrass, from the impacts of conventional block and chain moorings. Since 2008, over 100 public and private moorings in New South Wales have been upgraded to EFMs, and over 230 now installed in Moreton Bay, South-East Queensland.<sup>1</sup>



## Seagrass recovery AFTER EFM INSTALLATION

A number of EFM upgrades have been monitored in NSW, and at Shoal Bay (Port Stephens) seagrass recovery was monitored for 2 years after EFM installation in 2008.<sup>5</sup> By 2010, the seagrasses *Zostera muelleri* subsp. *capricorni* and *Halophila* spp. had fully recolonised the former scour areas, and in June 2016 the endangered seagrass *Posidonia australis* was also found within the former scours. Monitoring sites at Pittwater and Manly showed different levels of recolonisation, suggesting that environmental factors affect seagrass recovery potential.

**Figure 4** Vessels at Shoal Bay: [A] attached to seagrass friendly mooring; [B] attached to block and chain with scouring. [Photo Bill Gladstone]



**Figure 1** [A] Soft coral habitat in Port Stephens [Photo David Harasti]; [B] Seagrass scours at Marks Point, Lake Macquarie [Photo Tim Glasby].

## Impacts of CONVENTIONAL MOORINGS

Block and chain moorings placed in sensitive seabed habitats can cause extensive damage. NSW Department of Primary Industries recently estimated that 114,875 m<sup>2</sup> of seagrass had been lost in Lake Macquarie as a result of scouring from mooring chains.<sup>2</sup> Mooring damage to the rare soft coral *Dendronephthya australis* has been recorded in Port Stephens, and a 96% decline in the protected White's Seahorse *Hippocampus whitei* at the Seahorse Gardens site in this same area has been attributed to habitat loss from mooring damage.<sup>3</sup> A monetary value of \$18,368 has also been calculated for the damage to seagrass caused by the average mooring scour in the Hunter region, compared to the cost of an EFM of \$3,300.<sup>2</sup>

## Safe, secure, ASSURED AND INSURED

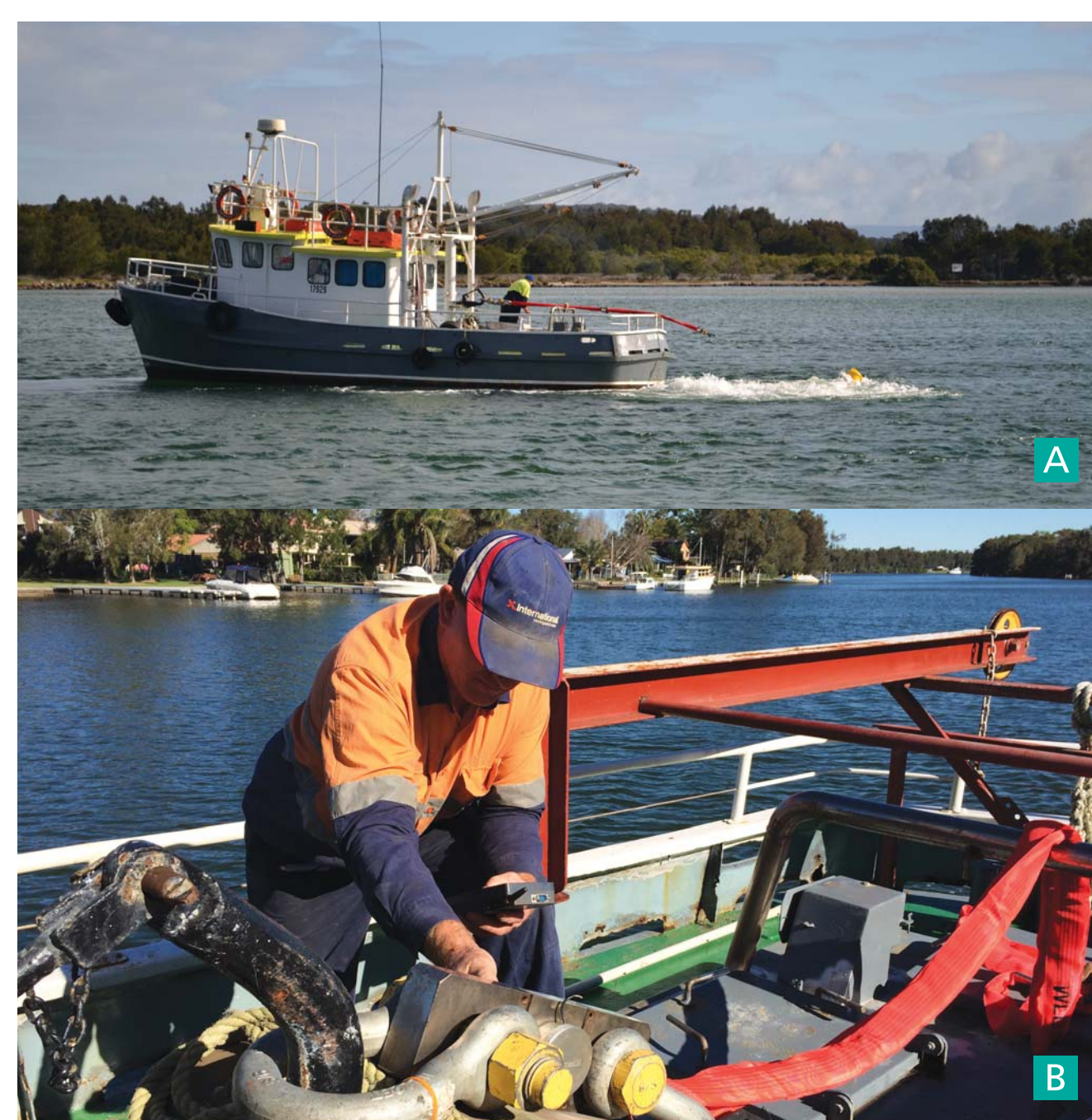
Two EFM designs are being used in NSW and Queensland: the Seagrass Friendly Mooring, and the Eco Mooring (see Figure 2). Both designs use the powerful holding capacity of a screwpile anchor, have been independently tested and certified, and are covered by product and professional indemnity insurance.

## Overcoming BARRIERS TO CHANGE

Barriers to the widespread uptake of EFMs have included building confidence in EFM designs, and the cost disparity between block and chains (~\$1,000) and EFMs (\$3,300). In 2014, Hunter Local Land Services coordinated an EFM demonstration in Lake Macquarie, comparing EFMs and block and chain moorings. Moorings were pulled on by a tugboat, and real-time loads were measured using an in-line load cell (Figure 3). EFM moorings outperformed traditional block and chain moorings in this demonstration.<sup>4</sup>



**Figure 2** [A] Seagrass friendly mooring ready to be installed at Belmont, Lake Macquarie [Photo Des Maslen]; [B] seagrass friendly mooring at Shoal Bay [Photo Bill Gladstone].



**Figure 3** [A] Tugboat pulling on a mooring; [B] setting up an in-line load cell.

## Sharing the cost LAKE MACQUARIE MOORING UPGRADE PROJECT

Most EFMs installed in NSW have been through grants that paid the full cost of upgrading, but Hunter LLS is currently encouraging boat owners to share the cost by offering a 50% rebate program in Lake Macquarie. Funding has been provided from the Recreational Fishing Trust Habitat Action Grants and the Australian Government's National Landcare Program.<sup>6</sup>



### MOORING OWNER PROFILE

Barry Gow and Janet White were recipients of a rebate to upgrade their mooring in Lake Macquarie and told Hunter LLS they were very satisfied.

"I'd been thinking about upgrading our mooring for some time, mainly because I'm concerned about the environmental impacts of the traditional mooring on the sea bed. The cost was always quite prohibitive, so when I heard about the rebate incentive on offer I applied straight away."

Janet White [9 September 2016]

## Time FOR CHANGE

In February 2016 the NSW Marine Estate Management Authority discussion paper on the Hawkesbury Shelf marine bioregion assessment listed moorings as a current area of reform.<sup>7</sup> The discussion paper states that "Transport for NSW and the Department of Primary Industries are investigating transitional arrangements for mandating the use of Environmentally Friendly Moorings in environmentally sensitive areas in the next 3-5 years."

While the intent of this statement is encouraging, it is recommended that the transitional arrangement have a definite timeframe for mandating EFMs but with effective consultation with boat owners and the boating industry about EFMs. Mooring damage to sensitive habitats represents a cost to the commercial and recreational fishing industries and the broader community, and there is a case for boat owners to bear, or at least share, the cost of upgrading to EFMs. Barriers to the uptake of EFMs clearly exist but can be overcome by making the most of the lessons learnt from EFM projects and programs to date.

## References AND INFORMATION

- [1] Bolzenius, J. (2016), personal communication.
- [2] Glasby, T. and West G. (2015), Estimating losses of *Posidonia australis* due to boat moorings in Lake Macquarie, Port Stephens and Wallis Lake, NSW Department of Primary Industries, Fisheries Final Report, Series No.147.
- [3] Harasti, D. (2016), Declining seahorse populations linked to loss of essential marine habitats. *Marine Ecology Progress Series*, 546:173-181.
- [4] See video <<https://youtu.be/nHsKVm9UMxQ>>.
- [5] Gladstone, W. (2011), Monitoring of seagrass friendly moorings in Shoal Bay: Report of 2010 Monitoring. Final report to OnWater Marine Services Pty Ltd., Sydney.
- [6] For more information see the Hunter LLS website: <<http://hunter.lls.nsw.gov.au/our-region/projects-and-programs/environmentally-friendly-moorings-project>>
- [7] Marine Estate Management Authority (2016), Discussion paper: Hawkesbury Shelf marine bioregion assessment: Suggested management initiatives, 44pp.