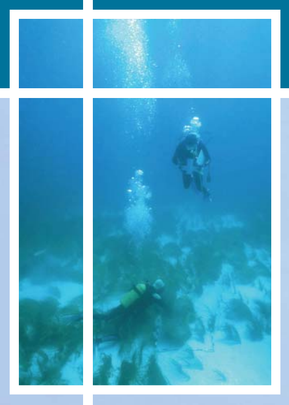
Seagrasses of southwest Australia: South Coast



On the south coast, a diverse range of seagrasses grow in habitats protected from the full force of waves by islands and headlands. South coast seagrasses grow on silica sand to a depth of about 30 m and on carbonate sand beyond 30 m depth. Many seagrasses grow in these sheltered zones, including most of the species found on the west coast. Beyond the shelter of the headlands, waves roll in from the open ocean and seagrasses are subjected to very high wave action. Only those species with special adaptations to strong water movement are able to persist.

Catherine Collier

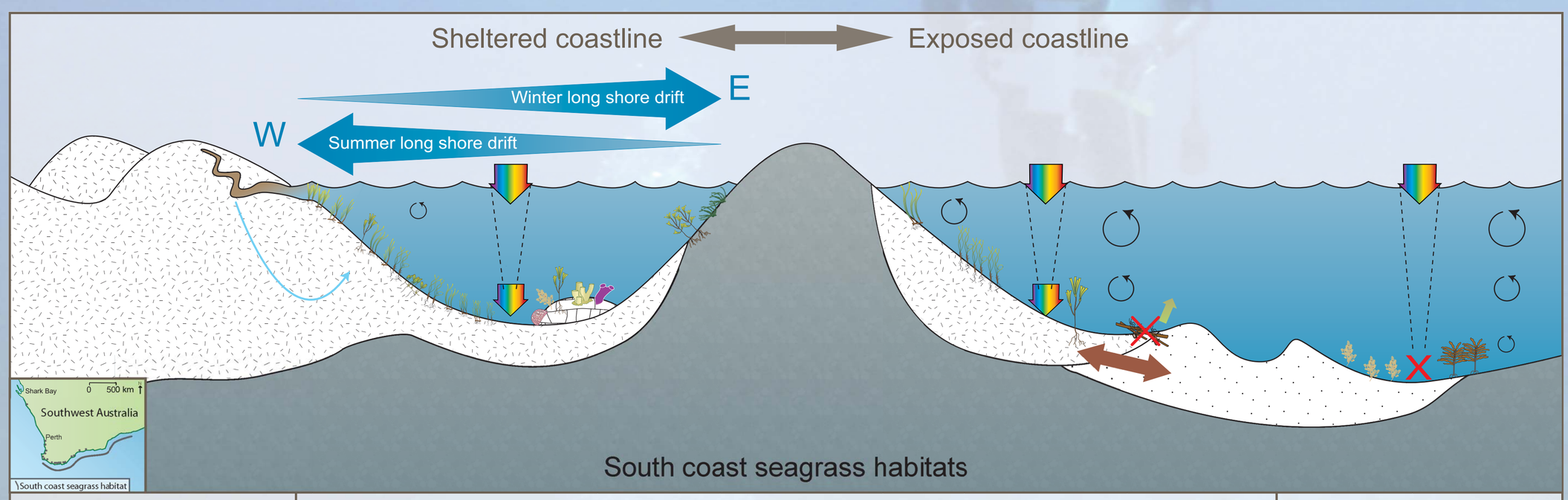
Justin McDonald

Justin McDonald

Extensive seagrass meadows grow in the shelter of islands and headlands (top).

Posidonia coriacea *can withstand high water movement due to tough leaves and deep roots (middle).*

Sea squirts (ascidians) are common on the wiry stems of Amphibolis griffithii *(bottom).*

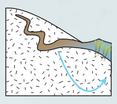


Catherine Collier

Granite headlands

Granite headlands and dome-shaped islands protect shallow and diverse seagrass meadows from the full force of Southern Ocean swells.

Posidonia sinuosa, *P. australis*, *P. ostenfeldii* group, *Amphibolis griffithii*, *A. antarctica*, *Halophila ovalis*, *H. decipiens*, and *Heterozostera sp.*.	**Seagrass species**	In this very clear water, *Posidonia sinuosa*, and *P. ostenfeldii* group, grow to 30–35 m, *Amphibolis* spp. to 34–40 m, and *Halophila ovalis* and *H. decipiens* to 45–50 m.
High light availability in sheltered bays support a diversity of seagrass species.	**Light availability**	Very clear waters results in high light availability allowing seagrasses to grow at depth.
Granite headlands and small islands provide protection from large oceanic swells.	**Physical stressors**	Lack of protection from headlands or barrier islands results in high water movement from southern ocean swells.
The predominantly silica sand was formed by erosion from granite rock on shore.	**Sediment**	Invertebrates and macroalgae growing in these coastal habitats die and break down to form carbonate sand offshore.
A large amount of beach wrack and detritus accumulation occurs in sheltered bays.	**Detritus**	High sediment movement results in a lack of detritus buildup along exposed coastlines.



Small seasonal creeks flow into these sheltered bays and associated groundwater percolation can be a source of nitrogen and phosphorus to these seagrass meadows.

Solitary coral · Ascidian · *Hormosira banksii*

Sponge · *Sargassum sp.* · *Ecklonia sp.*

Hans Lambers

Exposed coastline

Seagrass seeds are cast up on the long white silica-sand beaches from seagrasses growing offshore (10–30 m deep) in the very clear waters beyond the reach of breaking waves.

Management issues

Coastal development

The construction footprint from marinas, ports, and jetties results in infilling and land reclamation, directly removing seagrass meadows, as well as interrupting natural movement of sediment along the coast. Trawling and anchor/mooring damage also impact upon seagrass meadows.

Dieter Tinkely

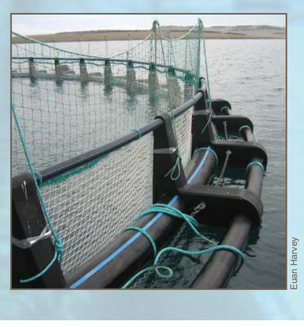
Reduced water quality

Even though relatively few people live on the south coast, nutrient inputs from farming, industry, and sewage can impact seagrass. The Albany harbours were noted globally as significant cases of seagrass loss.

Kleryn Klinmster

Aquaculture

Potential threats to seagrasses exist from proposed caged blackfin tuna farming and from abalone and other land-based aquaculture. These include nutrient addition from feeding, increasing light attenuation, and introduced marine pests.



Euan Harvey

Management responses

Careful site selection and education

Interruption of natural sand movement by constructing breakwaters should be minimised and marinas and jetties should be located to minimise loss of seagrass habitat. Education of boat owners will help reduce seagrass loss caused by moorings and anchors.

Reduce inputs of nutrients and sediments

Catchment management to reduce soil erosion, improving wastewater treatment, and minimising outputs from industry can all assist in improving coastal water quality to maintain seagrass meadows.

Location and monitoring

Minimising the impact of aquaculture will require careful location into areas with high water exchange, and nutrient outputs should be carefully controlled. Careful monitoring will be essential to determine the extent of impacts.

Background photo:
Conducting seagrass research in Two People's Bay.
Photographer: Gary Kendrick

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