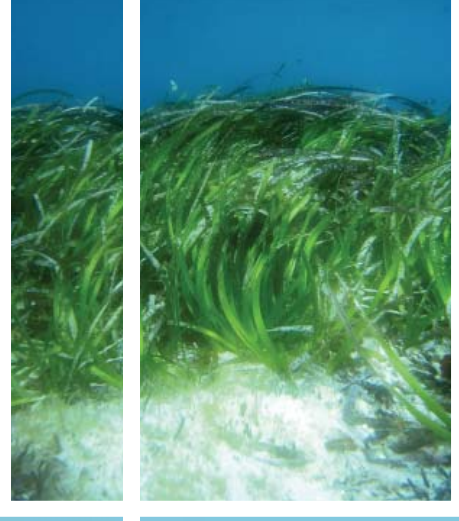
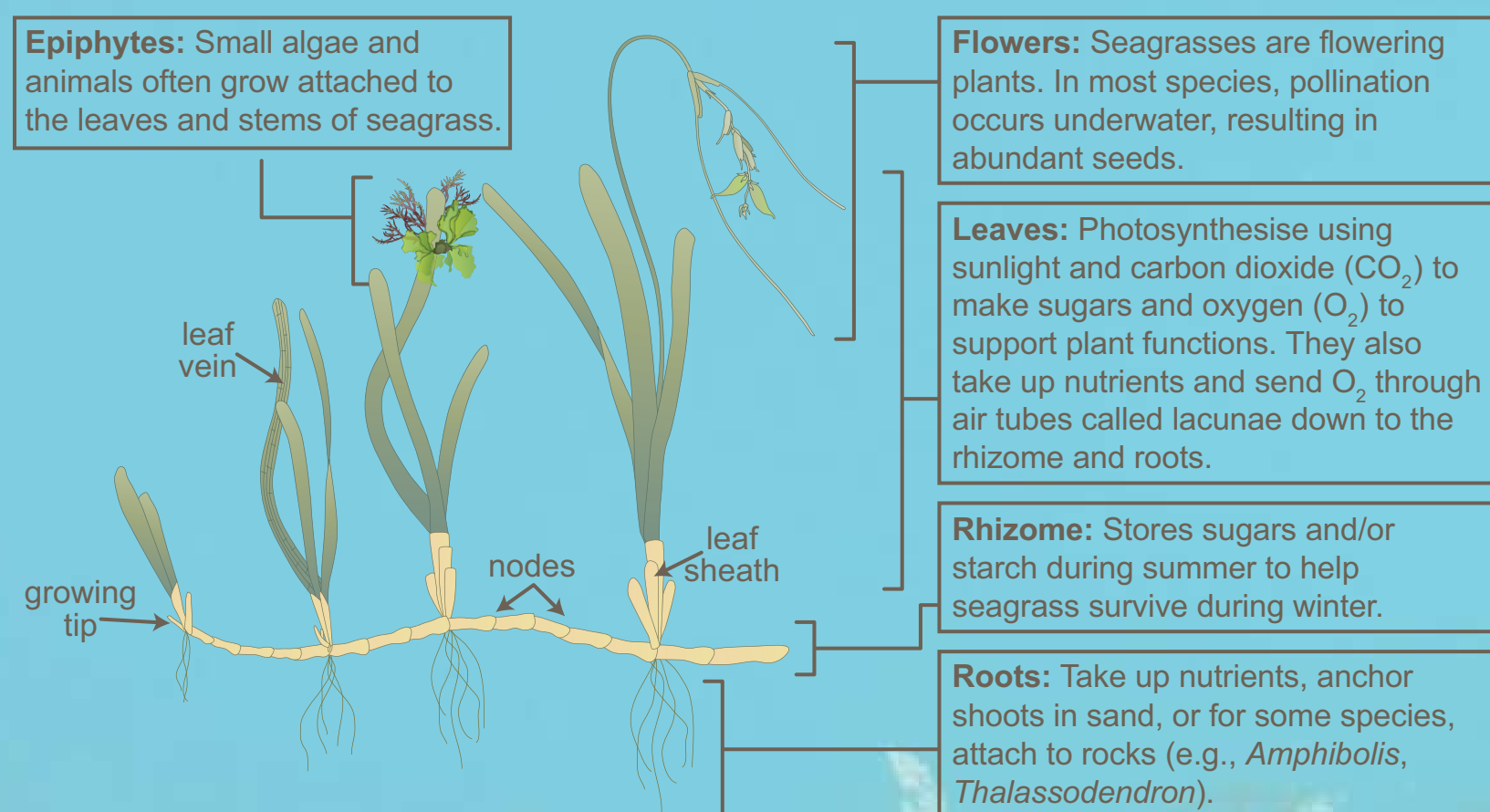


# SEAGRASSES OF SOUTHWEST AUSTRALIA



Southwest Australia has warm temperate water with a mixture of tropical influences from the Leeuwin Current and cool southern waters. This mixing of tropical and temperate water results in diverse seagrass communities occurring in a wide variety of coastal habitats. Almost half of the world's ~60 seagrass species can be found along this 1,500 km of coast. Seagrasses are important to the marine environment as they stabilise sediments and trap nutrients, helping to maintain water quality. They provide key nursery habitats for invertebrates and fishes, including commercially important species. Southwest Australian seagrass meadows are unique and are both regionally and globally significant.

## General characteristics of seagrass



## Seagrasses vs. macroalgae

Seagrasses generally grow on sandy or muddy sediments and are unrelated to macroalgae (seaweeds) that mostly grow on rocky reefs. Seagrasses produce flowers, pollen, and seeds, have complex sugar transport similar to land plants, and obtain most of their nutrients from the sediment. Macroalgae have no flowers, have simple transport, and acquire most of their nutrients from the water.

## Robust with ribbon leaves



**Posidonia australis**  
**Leaves:** ribbon  
 • 2–3 per shoot  
 • 8–16 mm wide, <100 cm long  
 • basal meristem  
**Rhizomes:** <10 mm diameter  
 • enclosed in coarse fibres  
**Habitat:** subtidal <10–12 m  
 • monospecific or mixed meadows



**Posidonia sinuosa**  
**Leaves:** ribbon, convex, and stiff  
 • 1–2 per shoot  
 • 6–10 mm wide, <120 cm long  
 • basal meristem  
**Rhizomes:** <5 mm wide  
 • enclosed in dark scales  
**Roots:** anchoring roots 35–40 cm long  
**Habitat:** subtidal <15–20 m  
 • monospecific or mixed meadows

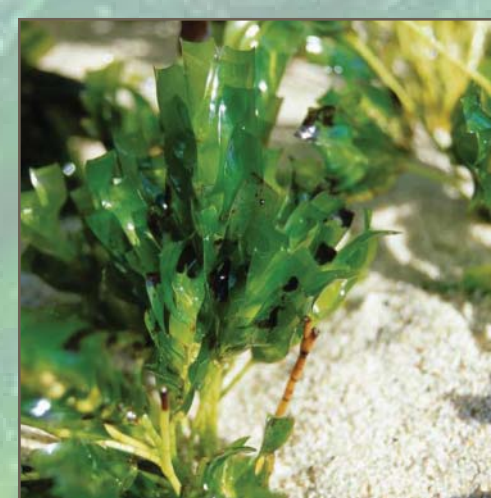


**Posidonia angustifolia**  
**Leaves:** ribbon  
 • 2–3 per shoot  
 • 4–8 mm wide, <80 cm long  
 • basal meristem  
**Rhizomes:** robust, <5 mm wide  
 • enclosed in fine pale fibres  
**Habitat:** subtidal <35 m  
 • mostly monospecific

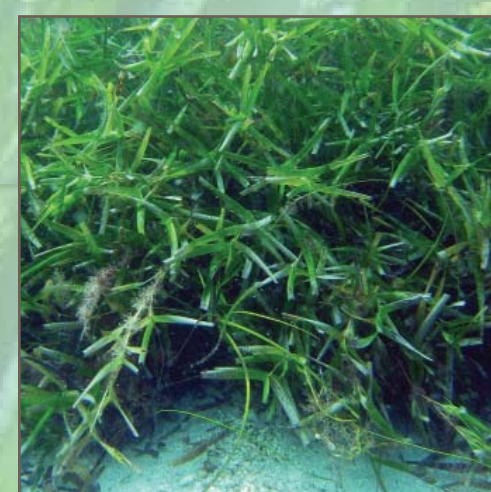


**Posidonia ostenfeldii group**  
**Leaves:** long and tough  
 • 2–3 per shoot  
 • 1–12 mm wide, 120 cm long  
 • basal meristem  
**Rhizomes:** 2–4 mm wide  
 • enclosed in fine pale fibres  
**Roots:** anchoring roots robust, <50 cm  
**Habitat:** subtidal <15–25 m  
 • monospecific or with *A. griffithii*

## Robust with wiry stems



**Amphibolis antarctica**  
**Leaves:** stiff  
 • clusters on wire-like stems  
 • 7–15 per cluster  
 • 4–8 mm wide, 2–5 cm long  
 • leaf bases not overlapping  
**Rhizomes:** <3 mm wide, wire-like roots  
**Stems:** <1–2 m long  
**Habitat:** subtidal <30 m, may be on rocks  
 • monospecific and mixed meadows



**Amphibolis griffithii**  
**Leaves:** stiff  
 • clusters on wire-like stems  
 • 3–7 leaves per cluster  
 • 2–5 mm wide, 4–8 cm long  
 • leaf bases overlapping  
**Rhizomes:** <2 mm wide; wire-like roots  
**Stems:** <1–1.5 m long  
**Habitat:** subtidal <25 m, may be on rocks  
 • monospecific and mixed meadows

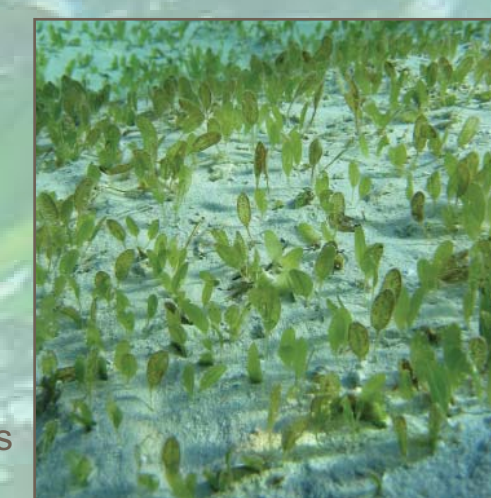


**Heterozostera nigricaulis**  
**Leaves:** ribbon  
 • 2 mm wide, 5–15 cm long  
 • basal meristem  
**Stems:** <30 leaf scars on black stems  
**Roots:** soft, 5–7 cm long  
**Habitat:** intertidal/subtidal 0–15 m  
 • monospecific or under other species



**Thalassodendron pachyrhizum**  
**Leaves:** flexible, very thin ribbon  
 • in clusters of 4–5  
 • leaf tip serrated  
 • 8–15 mm wide, 10–15 cm long  
**Stems:** thick, dark-coloured,  
 • <30 leaf scars on stems  
**Rhizomes:** robust, <5 mm wide  
**Roots:** black, rarely branched  
**Habitat:** subtidal 5–54 m, on rocks

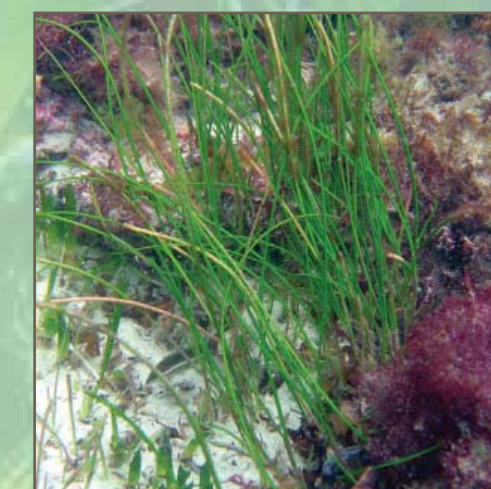
## Less robust species



**Halophila ovalis**  
**Leaves:** paddle-shaped  
 • flat, in pairs  
 • 1–1.5 cm wide, 2–5 cm long  
 • basal meristem  
**Rhizomes:** thin, 1–2 mm wide  
 • rhizome and roots highly ephemeral  
**Habitat:** subtidal <35 m  
 • monospecific or under larger species



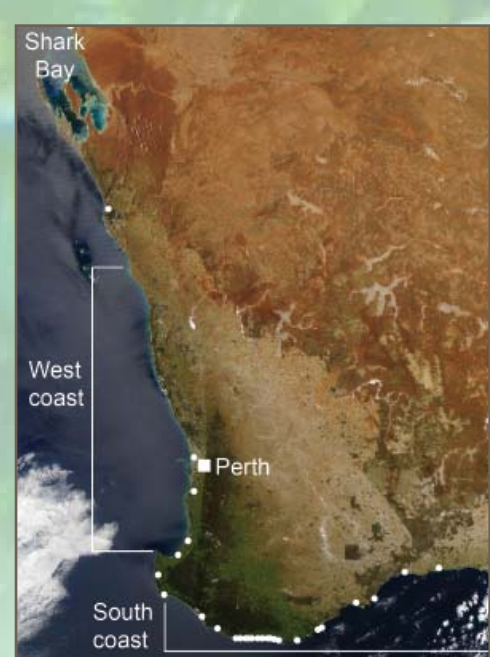
**Heterozostera polychlamys**  
**Leaves:** ribbon  
 • 2 mm wide, 5–15 cm long  
 • basal meristems  
**Stems:** four leaf scars before first branch  
 • short-lived stems  
**Roots:** soft, 5–7 cm long  
**Habitat:** subtidal 3–35 m  
 • monospecific or under other species



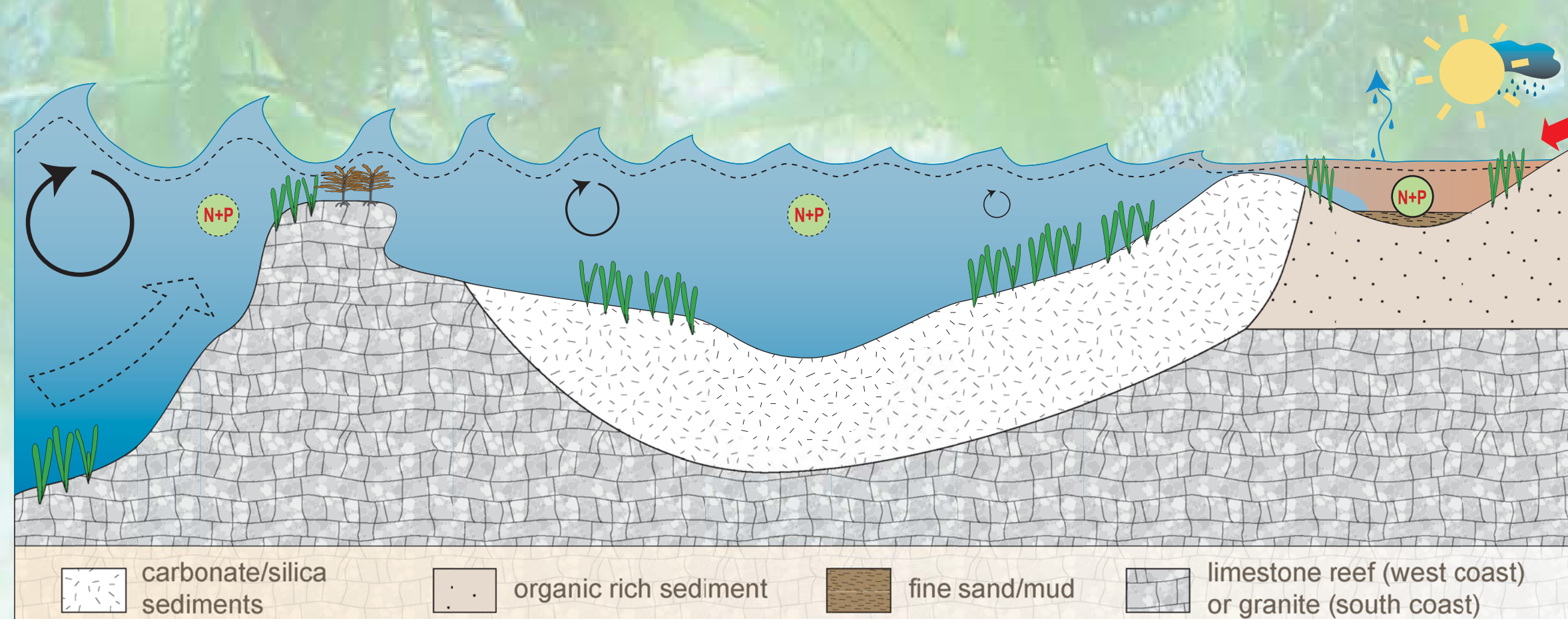
**Syringodium isoetifolium**  
**Leaves:** succulent cylindrical  
 • tapers to a point  
 • 4–5 per shoot  
 • 1–2 mm wide, 10–20 cm long  
 • basal meristem  
**Rhizomes:** thin, fleshy white colour  
**Habitat:** subtidal <10 m  
 • small patches, or under other species



**Ruppia megacarpa**  
**Leaves:** cylindrical  
 • 0.2–1 mm wide, 10–20 cm long  
 • apical meristem  
**Stems:** thin, flexible  
**Flowers:** float at surface on a long, coiled stem  
**Habitat:** intertidal <3 m  
 • mostly monospecific



Satellite photo showing the location of the three distinct seagrass habitats of southwest Australia: west coast, south coast, and estuaries (indicated by dots).



- Different seagrass species have their own environmental niche.
- Lack of upwelling results in nutrient-poor waters.
- Mediterranean climate, with low rainfall and high summer evaporation.
- The southwest coastline is microtidal (<1m) resulting in very limited intertidal habitats.
- Sheltered estuaries are rich in nutrients.
- Hydrodynamic stress decreases in sheltered areas.