

Subtropical and Temperate Coastal Saltmarsh: description, threats, protection

Val English



Department of
Parks and Wildlife



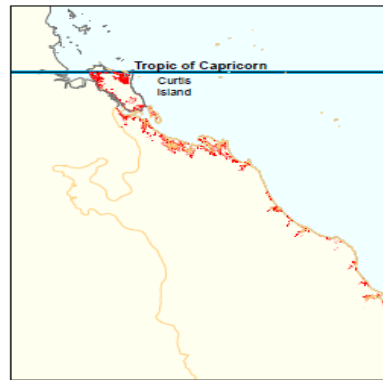
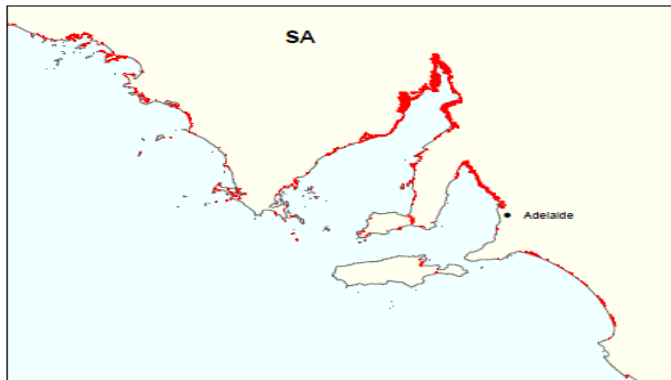


Coastal Saltmarsh

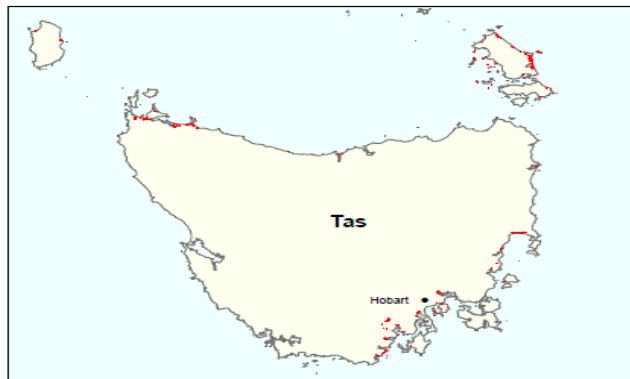
- EPBC listed TEC: VU 2013; P3 in WA
- Well described, not mapped well by DotE (OzCoasts estuaries)
- DPaW improving mapping, other data

Distribution

- Narrow coastal margin in subtropical and temperate climatic zones south of 26°S latitude in WA (23°S eastern).
- 6 States: Queensland, NSW, Victoria, Tasmania, SA, SW WA
- On some islands
- Shark Bay stated N limit (Carnarvon mapped as EPBC limit)
- Southern/ eastern extent in WA: estuaries near Esperance
- Most significant: estuaries of SCP (Swan-Canning, Peel-Harvey, Leschenault and Vasse-Wonnerup).
- DPaW current mapping – 246 occs, total ~4,300ha



DRAFT



Subtropical and Temperate Coastal Saltmarsh Ecological Community

Legend

- Major localities
- Tropic of Capricorn
- Subtropical and Temperate Coastal Saltmarsh EC



Projection: Geographic
Datum: GDA 1994



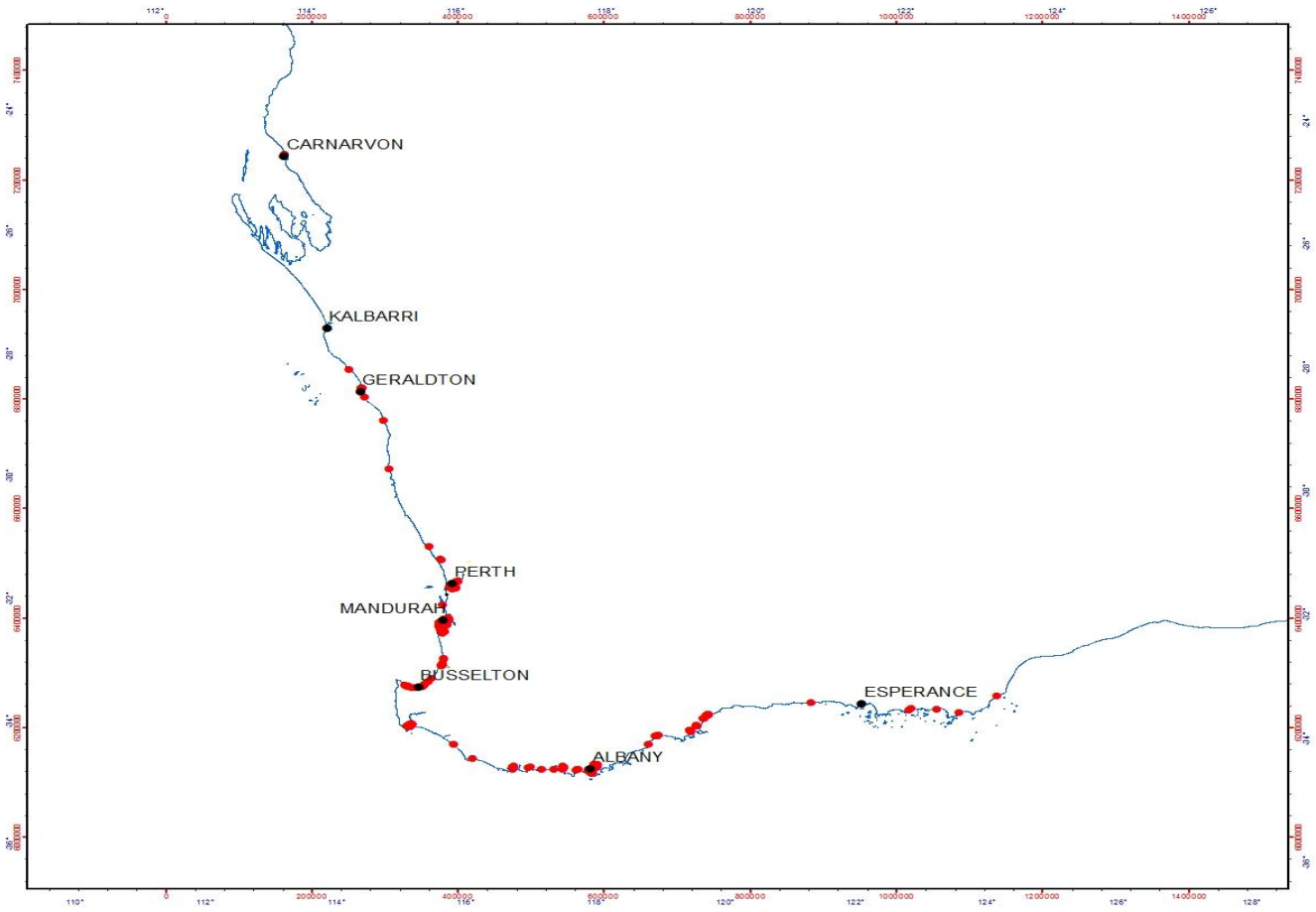

Australian Government
 Department of Sustainability, Environment, Water, Population and Communities

Method and Source:
 VIC (8, 10 and 11) mapped from 'Victorian Ecological Vegetation Classes' (EVCC), Victorian Department of Sustainability and Environment, 2006.
 Mapped Unit 19509 from SCVI (South Coast - Ilexera Vegetation Integration) 1:100,000, Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands, Version 1.0, Tozer, et al. DECIC, 2006.
 Regional Ecosystems (12.1.2, 12.2.15, 11.1.1, 11.1.2, and 11.1.3) mapped from: QLD Regional Ecosystems vegetation layer 1:100,000, Queensland Herbarium, Department of Environment and Resource Management, © Queensland Government, 2008.
 For SA, a number of source codes selected within 2km of coastline; and for Tas, source codes (AHS, ARS and ASB) from National Vegetation Information System (NVIS) Version 4.1, NVIS data and Major Vegetation Groups and Subgroups were compiled by ERN, Sustainability, Environment, Water, Population and Communities based on NVIS data provided by the State and Territory and Commonwealth organisations responsible for vegetation mapping and management, 2011.
 Mapped 'Saltmarsh/Saltflat' for geomorphic habitat environments (facies) for Australian coastal waterways - where no other dataset is used. Coastal waterways geomorphic habitat mapping, clipped to >20deg (Tropic of Capricorn), to represent sub-tropical and temperate zones, 1:100,000 © Commonwealth of Australia (Geoscience Australia) 2008.
 Polygon outlines have been enlarged to improve visibility and are not an accurate representation of reality.

Localities 1:1,000,000, © Commonwealth of Australia (Geoscience Australia) 2008.
 Coastline 1:100,000 © Commonwealth of Australia (Geoscience Australia) 2009.
 Geodetic lines 1:100,000 © Commonwealth of Australia (Geoscience Australia) 2008.

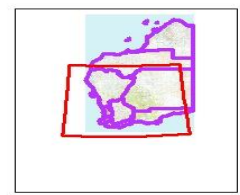
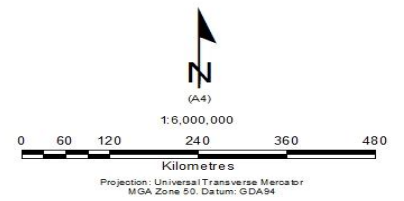
Disclaimer:
 The information presented in this map has been provided by a range of groups and agencies. While every effort has been made to ensure accuracy and completeness, no guarantee is given, nor responsibility taken by the Commonwealth for errors or omissions, and the Commonwealth does not accept responsibility in respect of any information or advice given in relation to, or as a consequence of, anything contained herein. The map has been collated from a range of sources, with data at various resolutions. Data used are assumed to be correct as received from the data supplier.

Produced by:
 ERN (Environmental Resources Information Network)
 Australian Government Department of Sustainability, Environment, Water, Population and Communities
 June 2013
 © Commonwealth of Australia, 2013.



Legend

- TownsitesMajor_
- CoastalSaltMarsh04012016_Pts
- WA Coast - Smoothed



**Produced by the
Department of
Parks and Wildlife**



Produced at 11:51 am, on Jan 5, 2016

Distance shown at 0.5 degree intervals
Grid shown at 200000 metre intervals

The Dept. of Parks and Wildlife does not guarantee the accuracy of any data and does not accept liability for any errors, loss or other consequences which may arise from relying on any information displayed. Roads and tracks on land managed by DPoW may contain unmarked hazards and their surface condition is variable. Exercise caution and drive in conditions on all roads.



Description

- Recognised nationally and globally as ecosystem of high ecological value increasingly under threat
- Extensive ecosystem services:
 - filtering surface water flowing to ocean
 - carbon sequestration
 - fish nursery habitat; provision of food and nutrients for fauna,
 - buffers coastlines and riverbanks
- Increasing diversity of saltmarsh plant species with increasing latitude

Description

- Dense to patchy areas of characteristic coastal saltmarsh plant species (incl. bare sediment)
- Has connection with tidal regime
- On coastal margin, estuaries, coastal embayments, low wave energy coasts
- May occur on offshore coastal islands
- Primarily on sandy, muddy substrate, includes coastal clay pans

Description

Exclusions:

- saltmarsh on inland saline soils with no tidal connection
- near coastal patches disconnected from tidal regime (once connected).
- seepage zones on rocky areas above tidal limit; headlands subject to wind blown salt
- saltmarsh with $> 50\%$ weeds (i.e. must be dominated by native spp)
- $>50\%$ tree cover
- land permanently replaced with crops, urban areas etc.

Description

- Most common families: Chenopodiaceae and Poaceae
- Mainly salt-tolerant vegetation (halophytes): grasses, herbs, reeds, sedges, shrubs.
- Includes saltbush flats, many other vegetation types (sedgeland, grasslands, herbfields, mudflats)
- Vegetation generally <0.5m tall
- 95 flora species known - WA Coastal Saltmarsh; very species rich
- SW WA: important world centre of endemism, diversity of saline adapted groups including Samphires (*Tecticornia*), Samolus (water pimpernel), *Triglochin* (arrow grass) (G. Keighery)



Dongara



Baigup wetlands

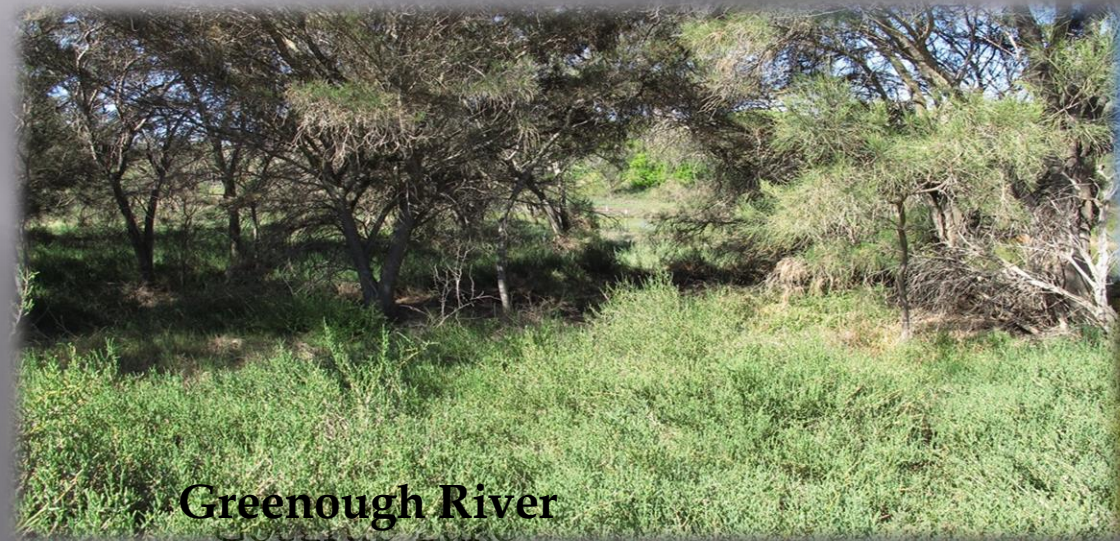
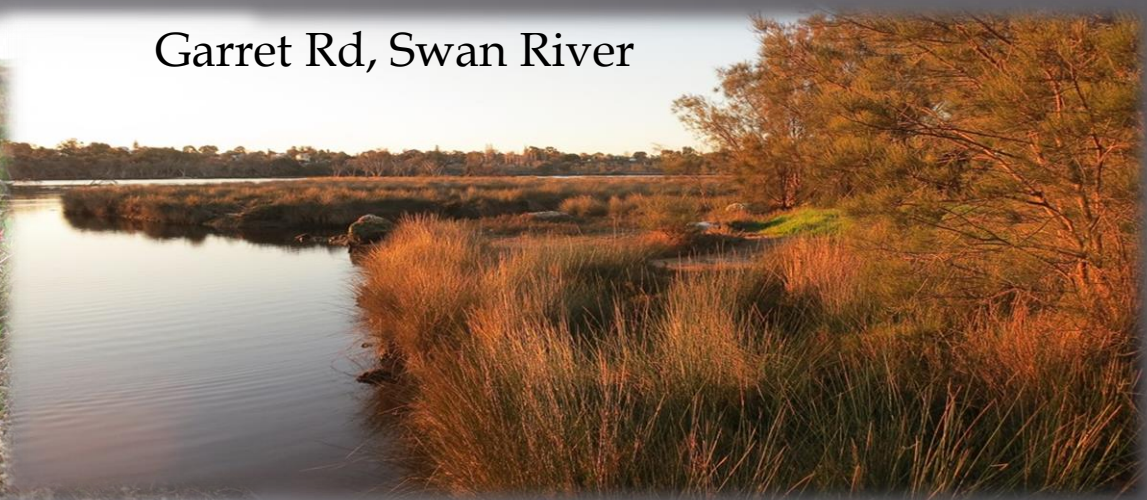


Furnissdale

Rockingham



Garret Rd, Swan River



Greenough River



Reinscourt Busselton

Ascot Waters

02/11/2015 18:04

02/11/2015 18:01

02/11/2015 18:01

02/11/2015 17:57

02/11/2015 18:00

Samolus

Threats

Estimated ~50% loss of coastal salt marsh in WA:

- *Clearing and fragmentation*: can further degrade. Loss of ecological function (tidal links, food web dynamics etc)
- *'Land-claim' or infilling*: areas cleared and converted for urban, industry, agriculture.
- *Altered Hydrology/Tidal restriction*: developments impacting groundwater access and surface runoff (freshwater and tidal).
- *Weeds*: replacing native plants, changing vegetation structure
- *Climate Change*: changes to temperature, sea level, storm frequency, sediment dynamics
- *Other*: Recreation, eutrophication, acid sulfate, grazing, insect control, fire regimes



Ashfield Flats



Coodanup



Ashfield Flats



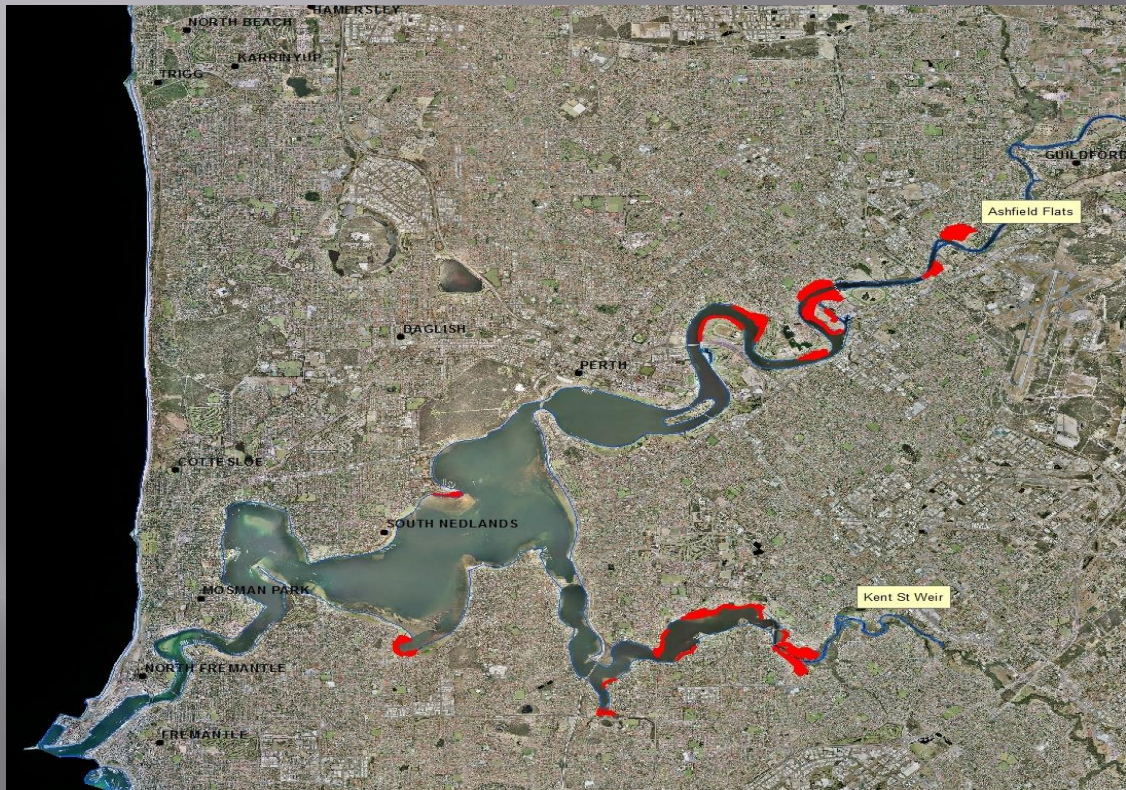
Midwest



Management

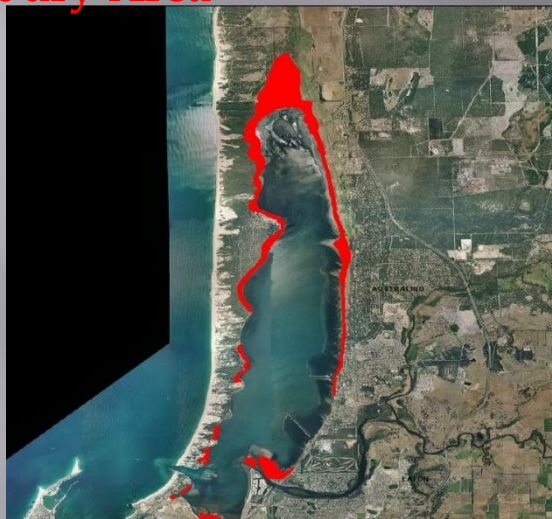
- Improving mapping (incl. condition)
 - Geraldton, Albany, Shark Bay surveys
 - DPaW Regional/District, specialist staff
 - Volunteer/Friends groups
 - Healthy Wetland Habitats surveys

Swan-Canning

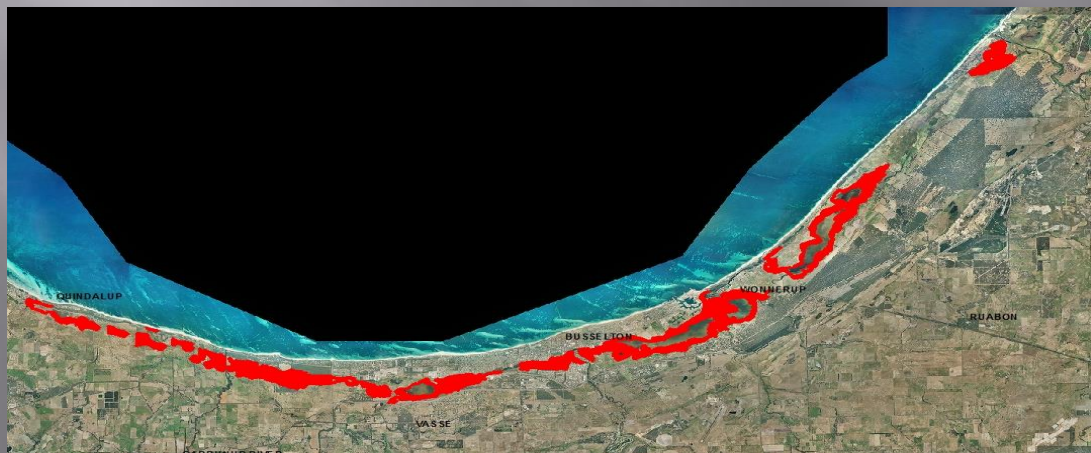


Mandurah area

Bunbury Area



Augusta area



Busselton area



Management

- Controls on land clearing (eg land clearing regulations)
- Manage hydrology (eg through EIA/planning)
- Information and advice to stakeholders (eg HWH)
- Weed control (eg Friends Groups, HWH, LGAs)
- Other land management eg recreation, grazing, fire
- Climate Change? Research into impacts and amelioration

Conclusion

EPBC (and State) listing of coastal saltmarsh;
opportunities and incentives:

- Improving mapping
- Increased awareness of significance
- Improved management: potential federal resources for rehabilitation/management; HWH
- Improved outcomes in EIA