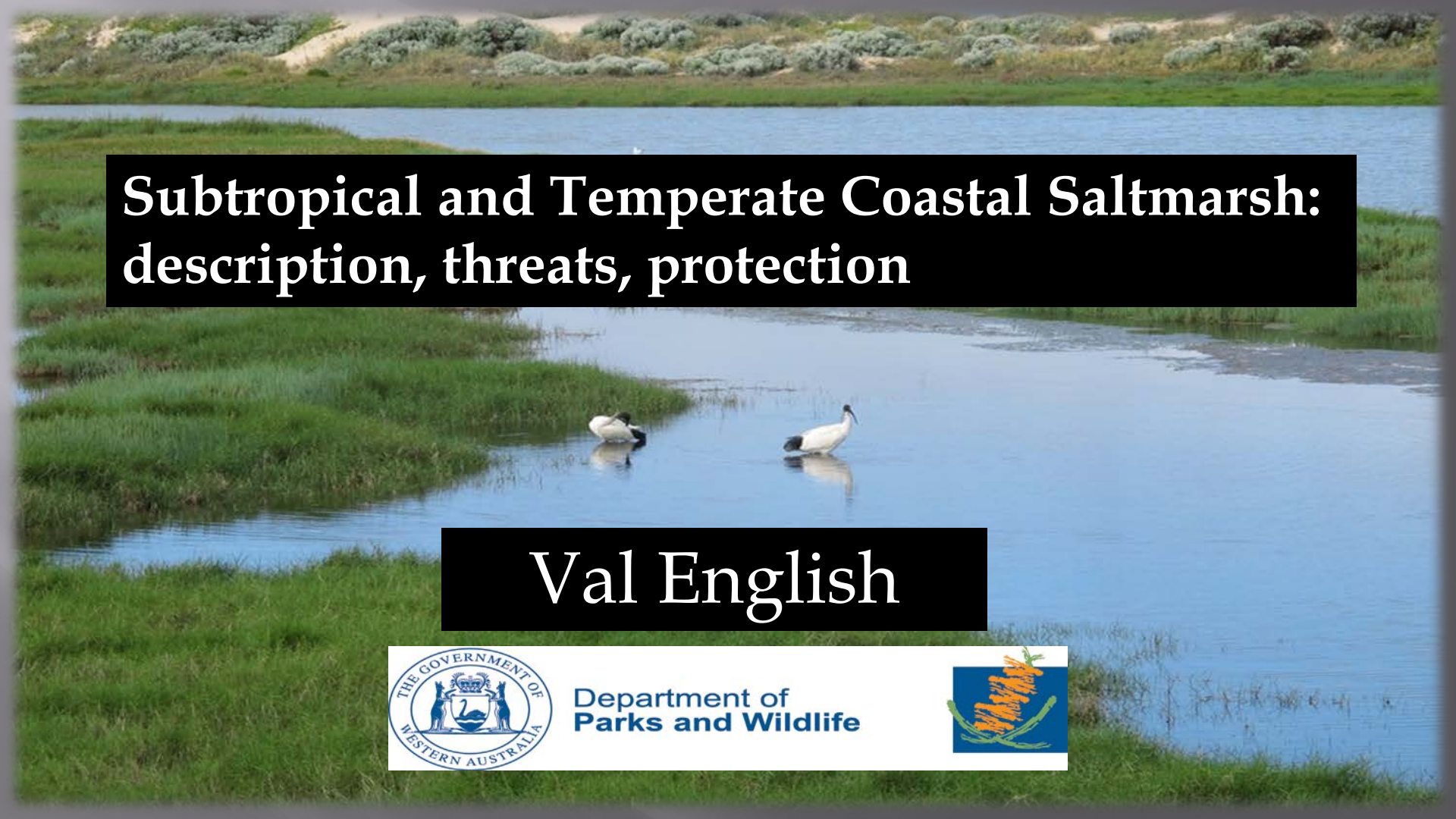
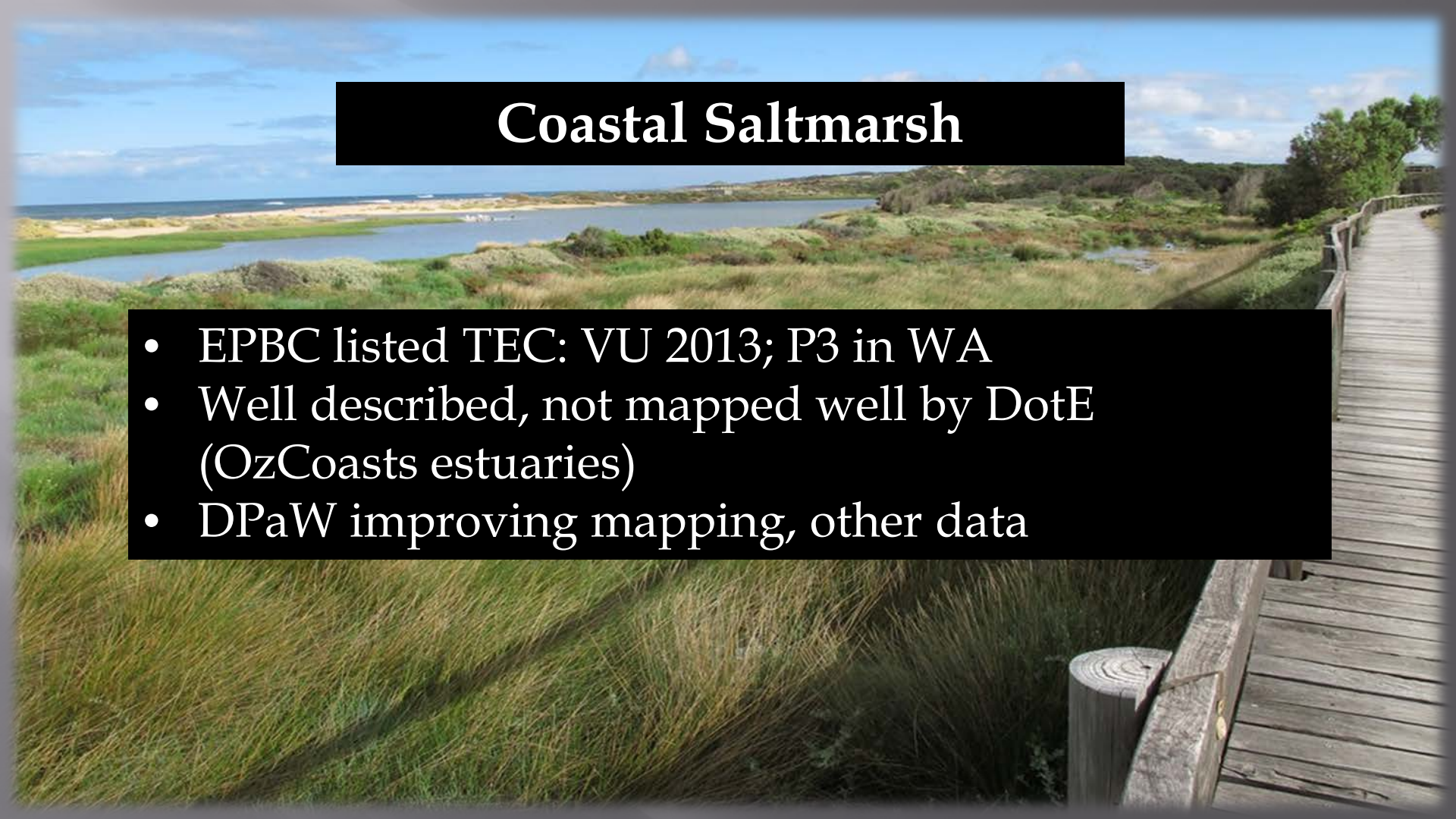


Subtropical and Temperate Coastal Saltmarsh: description, threats, protection

Val English

THE GOVERNMENT OF WESTERN AUSTRALIA
Department of Parks and Wildlife

Coastal Saltmarsh

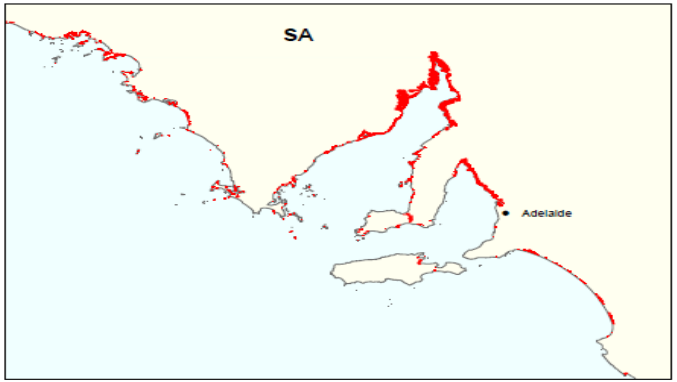


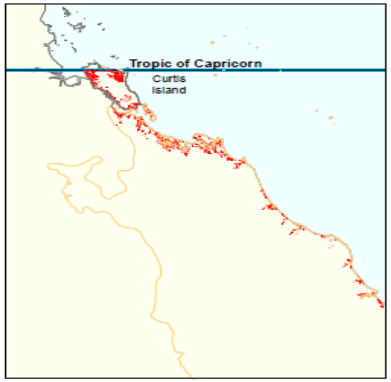
- EPBC listed TEC: VU 2013; P3 in WA
- Well described, not mapped well by DotE (OzCoasts estuaries)
- DPaW improving mapping, other data

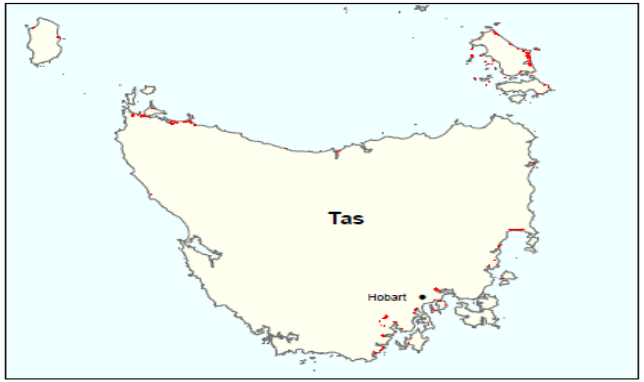
Distribution

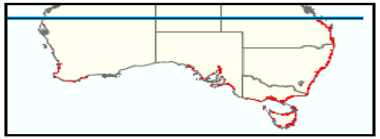
- Narrow coastal margin in subtropical and temperate climatic zones south of 26°S latitude in WA (23°S eastern).
- 6 States: Queensland, NSW, Victoria, Tasmania, SA, SW WA
- On some islands
- Shark Bay stated N limit (Carnarvon mapped as EPBC limit)
- Southern/eastern extent in WA: estuaries near Esperance
- 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

N

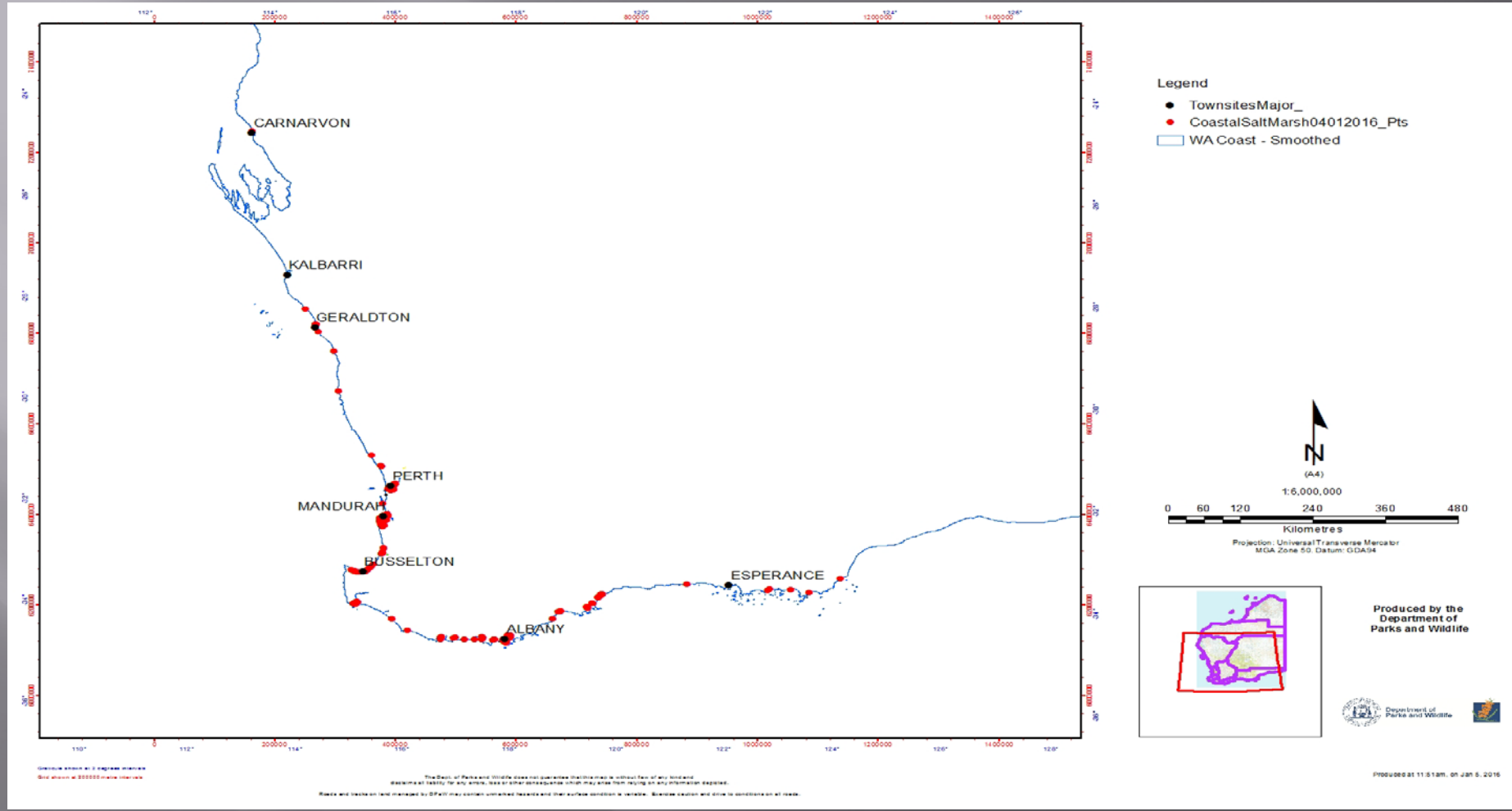
Australian Government
Department of Sustainability, Environment, Water, Population and Communities

Method and Source:
EVCs (9, 10 and 11) mapped from 'Victorian Ecological Vegetation Classes' (EVCs), Victorian Department of Sustainability and environment, 2008.
Mapped Unit 'p509' from SCIVI (South Coast - Illawarra 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*, DECC, 2006.
Regional Ecosystems (12.1.2, 12.2.15, 11.1.1,11.1.2, and 11.1.3) mapped from: QLD Regional Ecosystems vegetatiopn layer 1:100,000, Queensland Herbarium, Department of Environment and Resource Management, © Queensland Government, 2009.
For SA, a number of source codes selected within 2km of coastline; and for Tas., source codes (AHS, ARS andASS) from National Vegetation Information System (NVIS) Version 4.1, NVIS data and Major Vegetation Groups and Subgroups were compiled by ERIN, Sustainability, Environment, Water, Population and Communities based on NVIS data provided by the State and Territory and Commonwealth organisations responsible for egetation mapping and management, 2011.
Mapped 'SaltmarshSaltflat' for geomorphic habitat environments (facies) for Australian coastal waterways - where no other dataset is used. Coastal waterways goemorphic habitat mapping, clipped to -23deg. (Tropic of Capricorn), to represent sub-tropical and temperate zones, 1:100,000 © Commonwealth of Australia (OzCoasts, Geoscience Australia) 2006.

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) 2006.
Coastline 1:100:000 © Commonwealth of Australia (Geoscience Australia) 2003.
Geodetic lines 1:100,000 © Commonwealth of Australia (Geoscience Australia) 2008.

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


CARNARVON
KALBARRI
GERALDTON
PERTH
MANDURAH
BUSSELTON
ALBANY
ESPERANCE
Legend
TownsitesMajor_
CoastalSaltMarsh04012016_Pts
WA Coast - Smoothed
N
(A4)
1:6,000,000
0 60 120 240 360 480
Kilometres
Projection: Universal Transverse Mercator
MGA Zone 50. Datum: GDA94
Produced by the Department of Parks and Wildlife
Department of Parks and Wildlife
Produced at 11:51am. on Jan 5, 2016

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 (sedgelands, grasslands, herbfields, mudflats)
- Vegetation generally <0.5m tall
- 95 flora species known - WA Coastal Saltmarsh; very species rich
- SW WA: important world centre of endemicity, diversity of saline adapted groups including Samphires (*Tecticornia*), *Samolus* (water pimpernel), *Triglochin* (arrow grass) (G. Keighery)


Suaeda australis
Sarcocornia quinqueflora
Sporobolous virginicus
Triglochin striata
Juncus kraussii

Dongara

Baigup wetlands

Furnissdale

Shark Bay Birridas – gypsum claypans


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

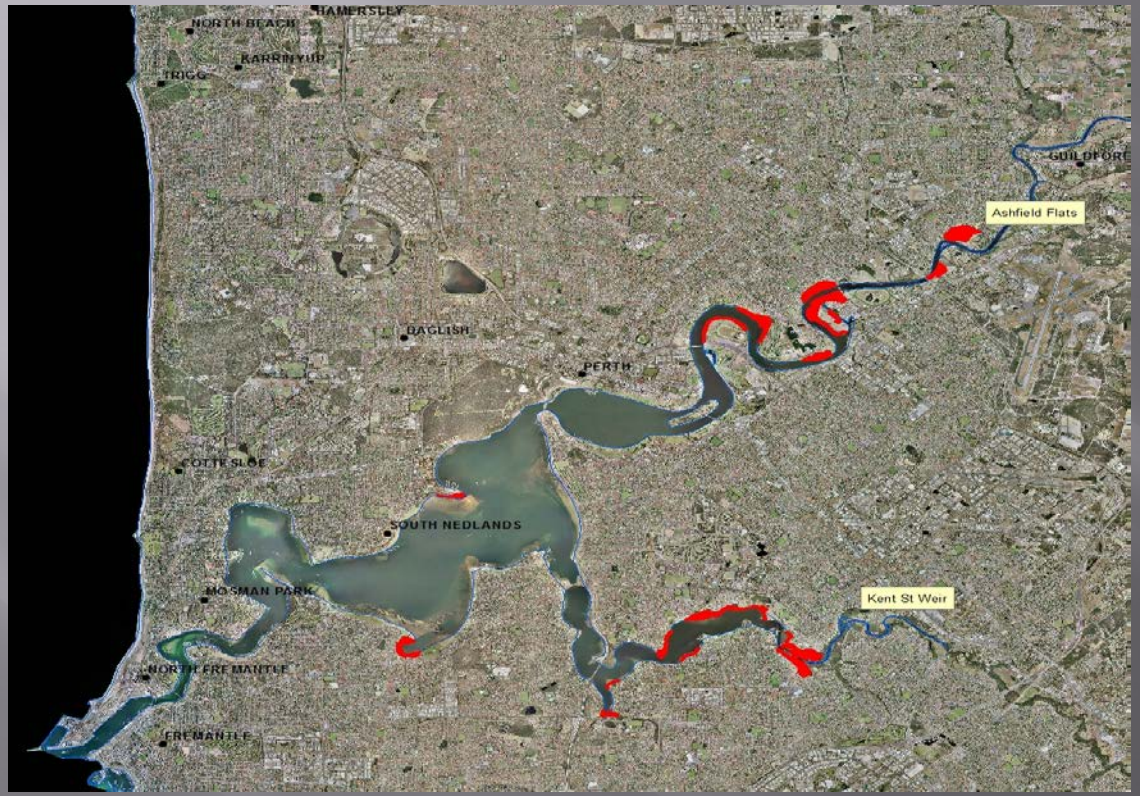

Ashfield Flats


Midwest

Management

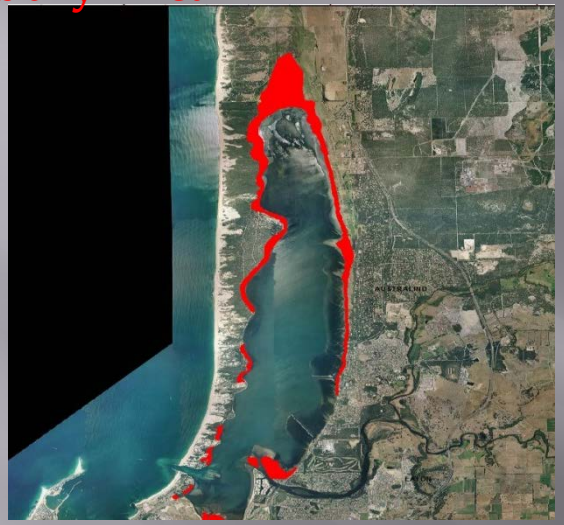
- Improving mapping (incl. condition)
  - Geraldton, Albany, Shark Bay surveys
  - DPaW Regional/District, specialist staff
  - Volunteer/Friends groups
  - Healthy Wetland Habitats surveys

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