

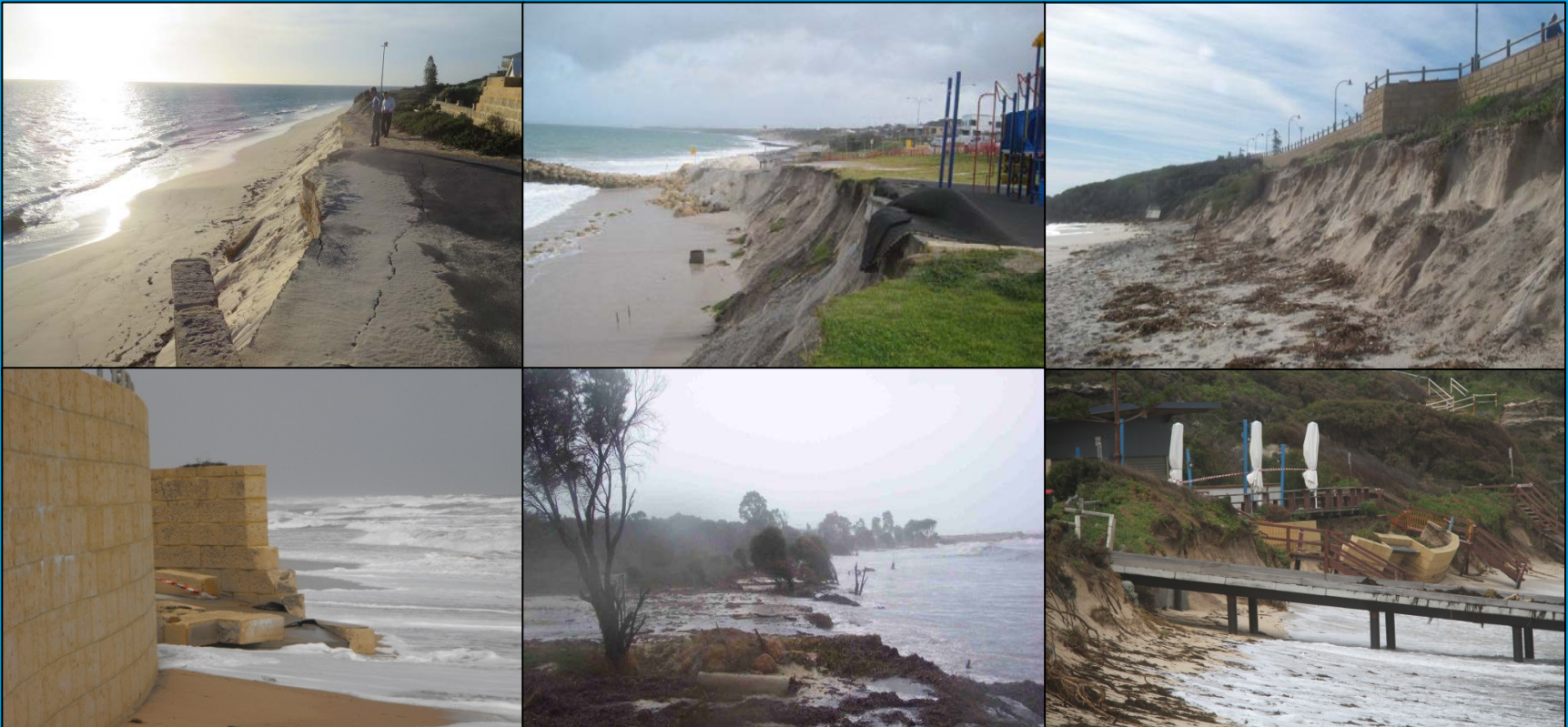


Department of
Transport

ACCARNSI

Coastal Management Hotspots in WA

Timothy Stead, Coastal Scientist – Department of Transport (DoT)





DoT's coastal legacy

- DoT manages more than 40 maritime facilities across WA
- DoT plans, approves, provides, manages, and maintains maritime facilities
- Diverse and challenging coastline to manage



LEGEND

- ★ DoT Managed Port
- DoT Managed Boat Harbours
- ▲ Other DoT Maritime Facilities
- Region Boundary





The Coastal Management group

- 5 coastal engineers & scientists
- Acquire, analyse, maintain and present data relating to the coastal zone
- Provide expertise and advice on coastal management matters and coastal zone/project planning
- Developed idea of Coastal Management Hotspots alongside Department of Planning (DoP) to scope management needs

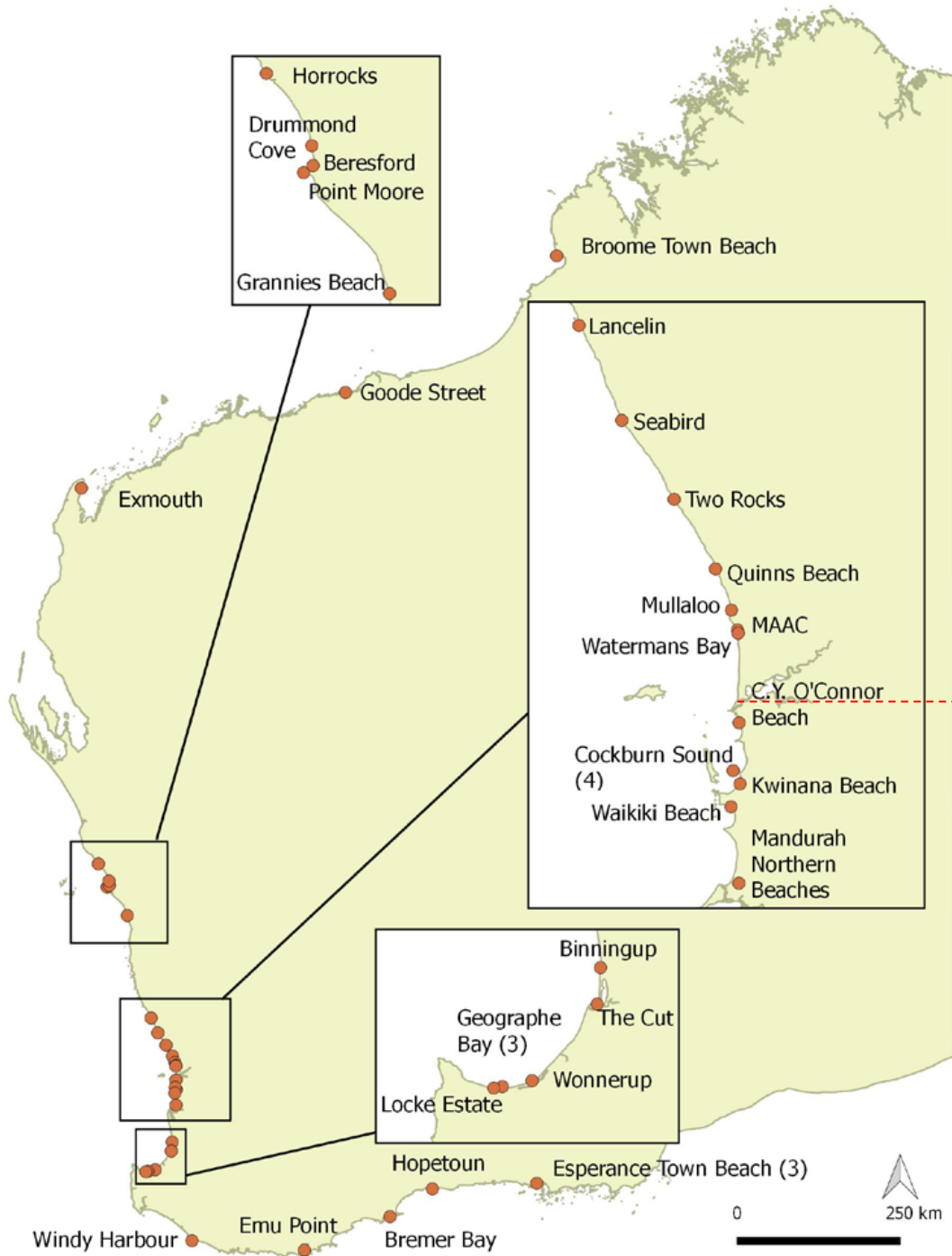
Management Note: Western Australia does not have special purpose coastal protection legislation to assign responsibility for coastal management to a particular agency or Minister. Common Law is often applied to assign responsibility.



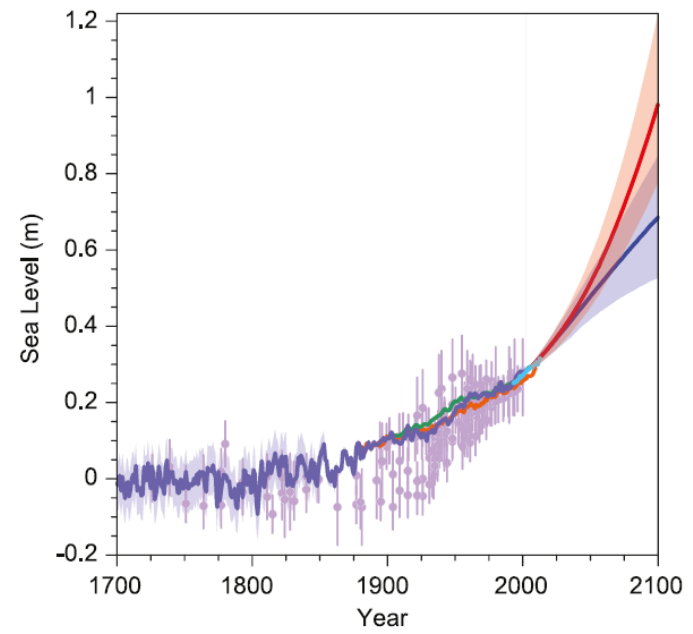
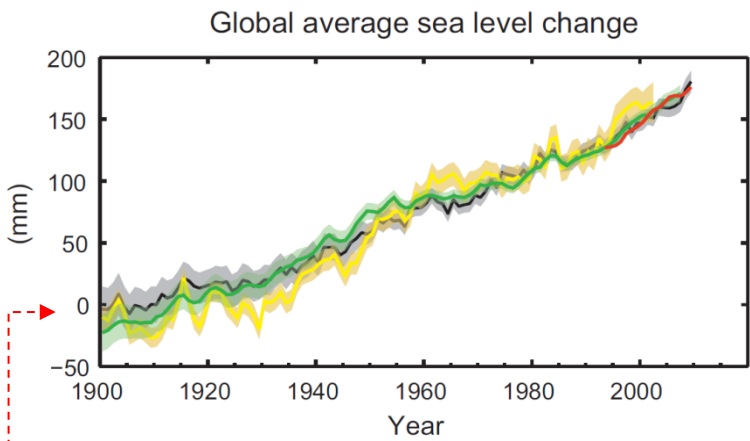
Coastal management hotspots

So what defines a hotspot?

- 30 locations identified from local government management queries/ historical requests for funding
- Sites briefly assessed for vulnerability and asset risk
- Locations with both high vulnerability to hazards and a high value of assets were considered a “hotspot”.



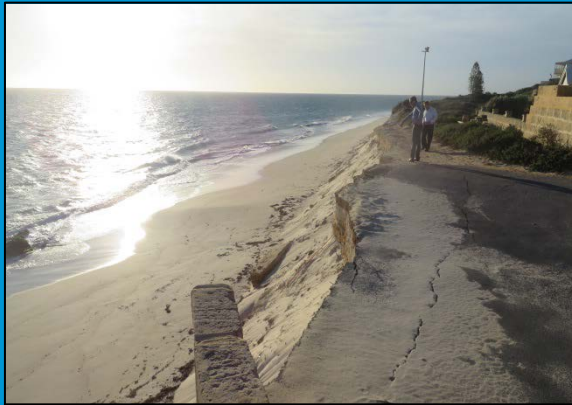
IPCC AR5 (2013)





A closer look

Seabird



Quinns



Watermans Bay



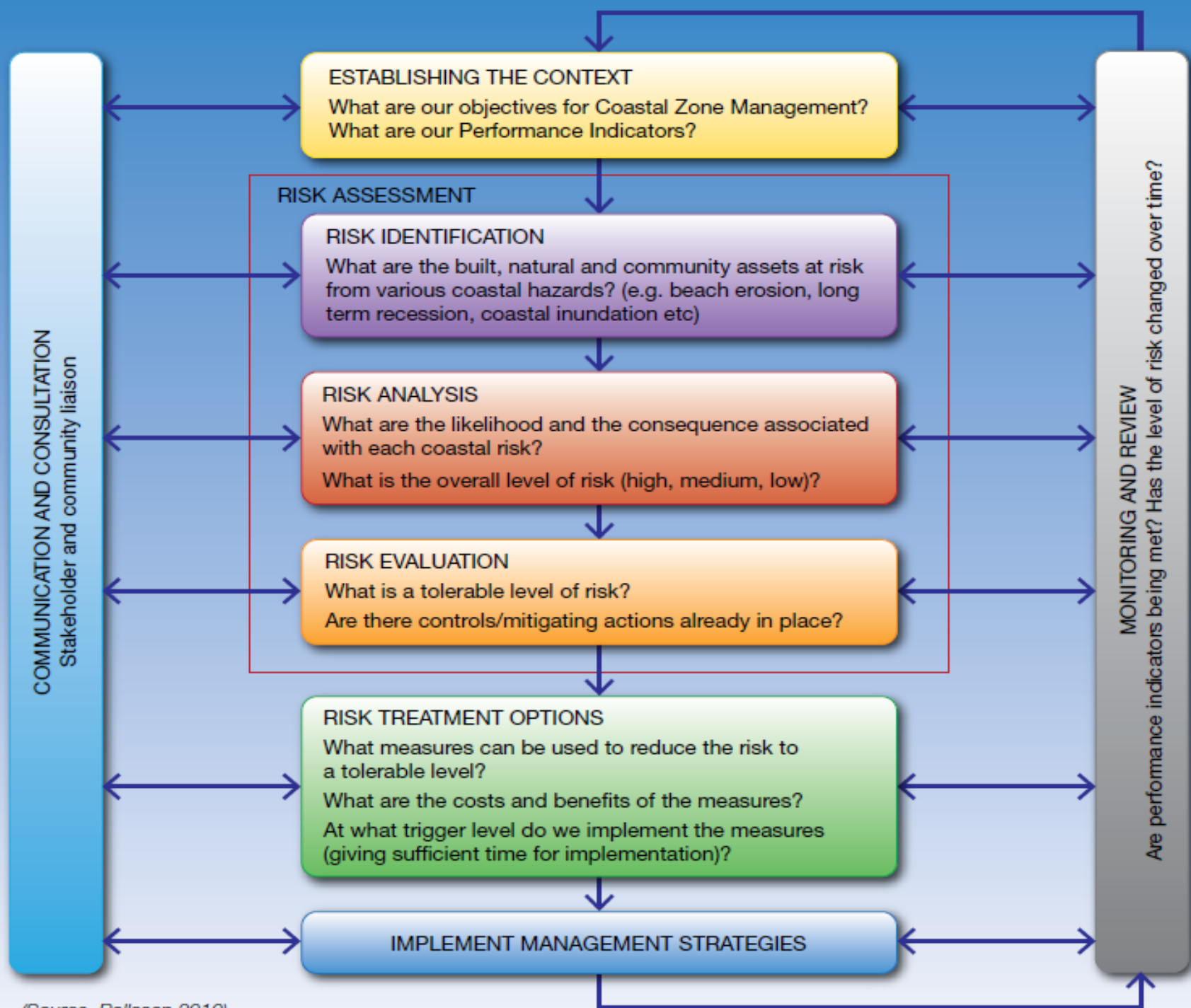
Binningup



Geographe Bay

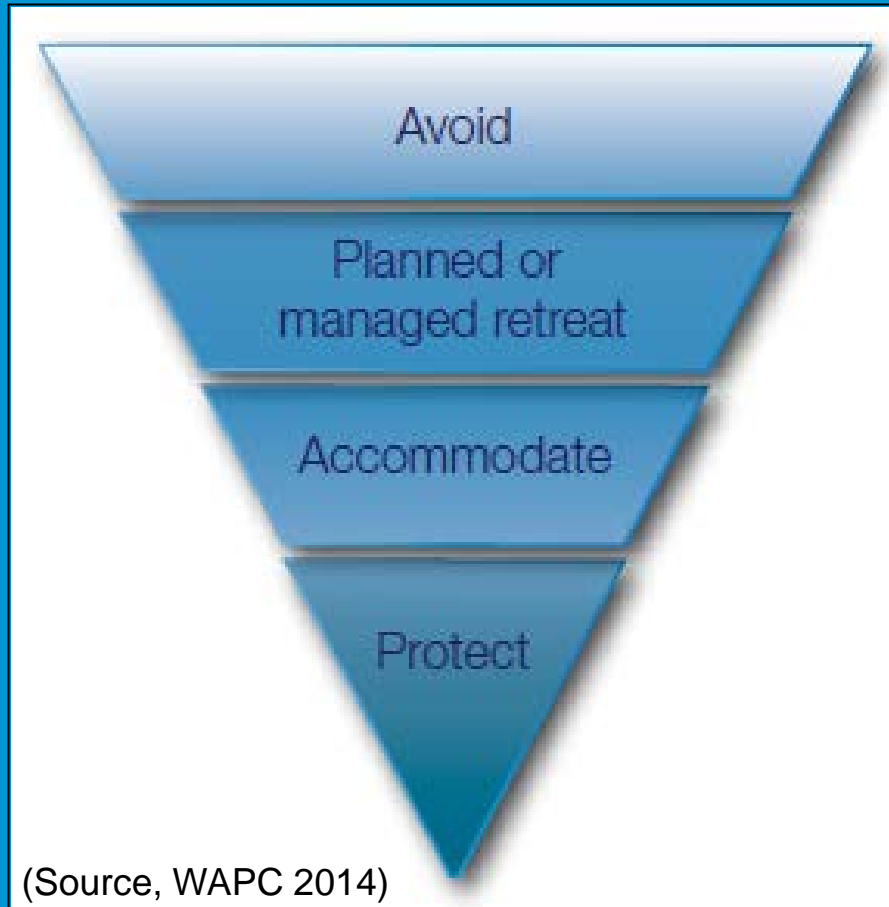


Margaret River





Adaptation Hierarchy





Assessment by Seashore (2016) with DoP

Preliminary Analysis of 30 hotspots to assess assets at risk, erosion hazards, site prioritisation, management pathways, and knowledge gaps

Assets at Risk:

Asset class	Imminent	Expected	Projected
	(0-5 years)	(5-25 years)	(25+ years)
Private	2	5	16
Leasehold	5	9	12
Road/Rail	3	12	25
Services	3	6	18
Recreation	25	27	27
Boating	10	13	13
SLSC/rescue	1	3	4

Projected Cost Estimates

- \$40-100M in 5 yrs
- \$150-450M in 25 yrs

More assets become threatened over time...



CHRMAP process is needed for hotspots

Coastal Hazard Risk Management and Adaptation Planning (CHRMAP)

- Only general assets at risk were identified
- Communication strategies required
- Identify which stage each hotspot is at within the CHRMAP process

Option	Timeframe			
	Existing	Imminent (0-5 years)	Expected (5-25 years)	Projected (25+ years)
Avoid	10	7	2	1
Retreat	6	5	21	19
Accommodate	14	18	17	12
Protect	19	21	17	17

Note: each hotspot may require more than one type of adaptation strategy

Two Rocks Hotspot

Classic marina example: accretion on one side, erosion on the other

- 1 of 10 Perth hotspots
- Houses and road threatened
- Good range of metocean data, lack of geophysical data
- Need to understand vulnerability before assessing risk and adaptation pathways



Dunes North of Marina



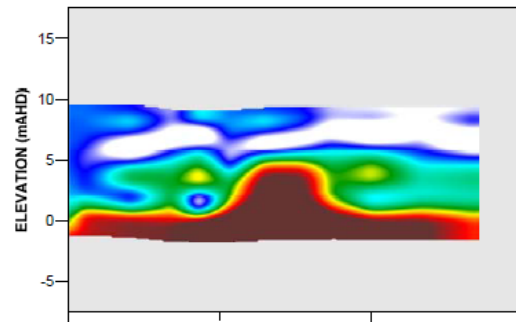
Underlying rock north of marina was studied with Aurecon and GBGMAPS



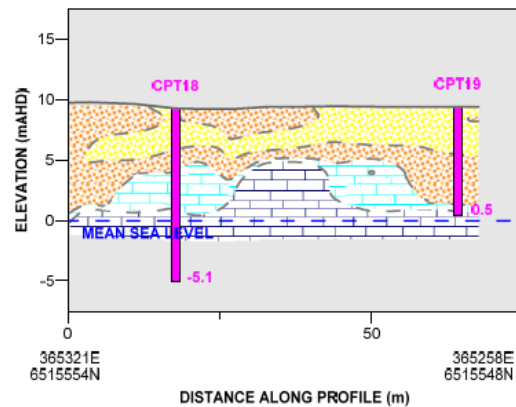
Advanced Sub-surface Investigations



**DUNE TRANSECT 2 - SEISMIC S-WAVE VELOCITY SECTION
ACROSS SHORE**



**DUNE TRANSECT 2 - INTERPRETED SECTION
ACROSS SHORE**

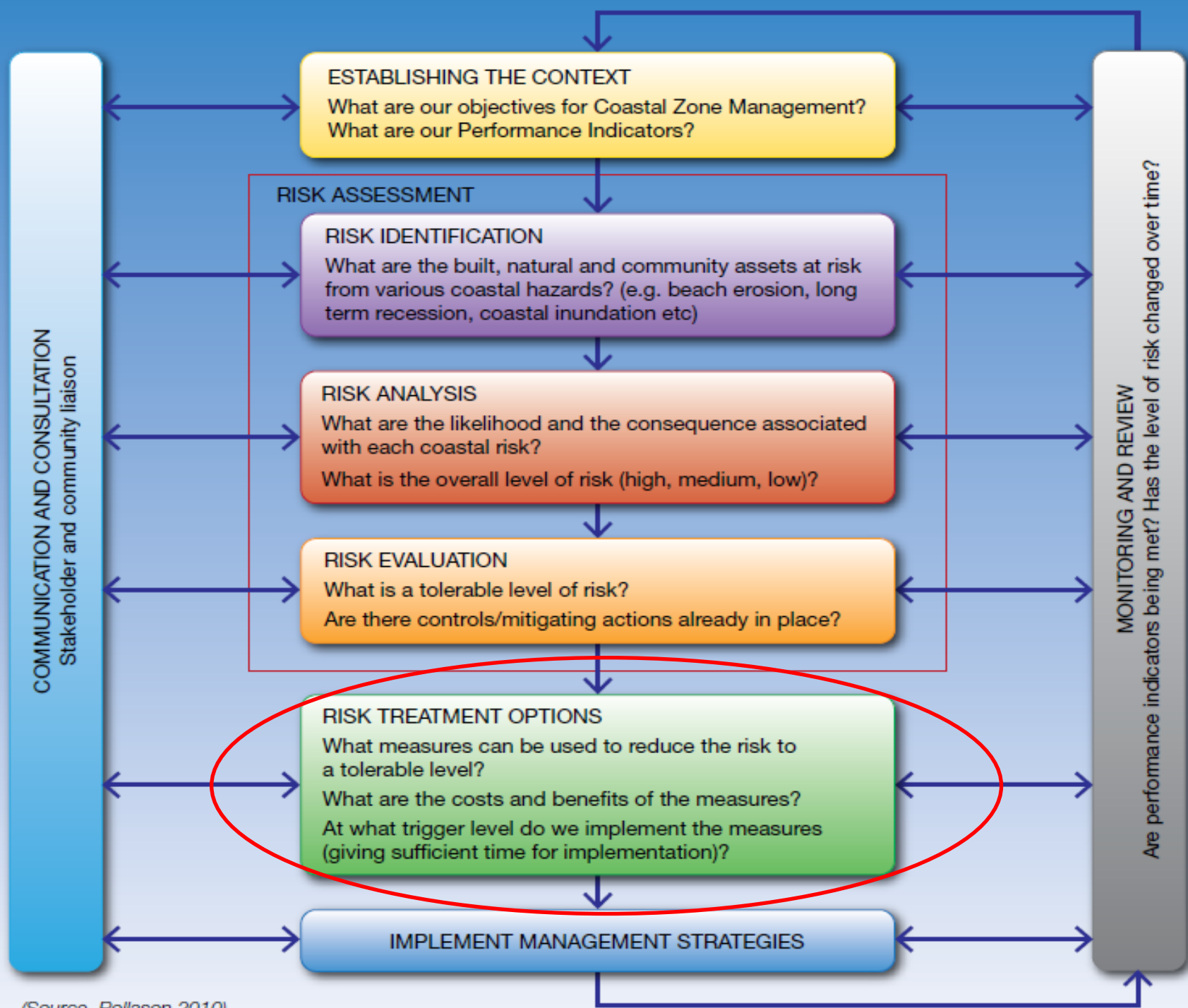




Potential rocky ridge between beach and infrastructure: free protection?



← Marina to the South





Future challenges at hotspot locations

Coastal management considerations:

- Community desires
- Policy framework
- Limited data and management expertise
- **Funding**



What next?

Staged approach to hotspot planning/management

- Coastal Management Advisory Group
- Expand original list to >30 hotspots
- Collaboration between experienced WA researchers, managers, and government with DoP
- Focus on data collection and knowledge gaps
- Education and guidance
- (Long-term) CHRMAP creation and implementation



Department of
Transport

ACCARNSI

Thanks for Listening! Questions?

