

Coastal Vulnerability Assessment Western Australia Projects List

	Project	Reference Details	Study Area	Project Objectives	Project Type*
NATIONAL	Smartline (2010)	University of Tasmania	National	The Smartline Coastal Geographic Map of Australia is a detailed map of the coastal landform types (geomorphology) of continental Australia and most adjacent islands. Creation of this map is useful in assessing the vulnerability of Australia's coast to sea-level rise.	1.
	Coastal Digital Elevation Model	Australian Government - Department of Climate Change	National	The creation of a national Digital Elevation Model (DEM) was the highest priority task identified for the national risk assessment. DEMs provide a three dimensional model of the ground surface topography and are critical to assessing risk from inundation in low-lying areas. The mid resolution DEM covers the entire coast derived from SPOT High Resolution Stereoscopic Reference3D (SPOT) satellite imagery.	1.
	Climate Change Risks to Australia's Coast: A First Pass National Assessment (2009)	Australian Government - Department of Climate Change and Energy Efficiency	National	This report presents the findings of the first national assessment of the risks of climate change for the whole of Australia's coastal zone. The objectives of the first pass national coastal risk assessment are to: <ul style="list-style-type: none"> Initial assessment of the Climate Change (CC) implications for Australia's coastal regions. Identify high risk areas to CC impacts. Identify impediments to developing effective coastal adaptation responses. Help identify national priorities for adaptation to reduce CC risk in the coastal zone. 	2. & 3.
	Climate Change Risks to Coastal Buildings and Infrastructure: A Supplement to the First Pass National Assessment (2011)	Australian Government - Department of Climate Change and Energy Efficiency	National	This document supplements the analysis presented in the <i>Climate Change Risks to Australia's Coast (2009)</i> – See above for report details. The document provides additional data on the exposure of commercial buildings, light industrial buildings, and transport systems (road, rail, tramways) in Australia's coastal areas. Existing data on residential properties is also reported in the document, as well as subsequent modelling of projected population change and implications for the exposure levels of residential properties.	2. & 3.
	Estimating Sea Level Extremes (2009)	Antarctic Climate & Ecosystems Cooperative Research Centre	National	Web tool specifically designed for designers, planners and policymakers to assist in understanding how to: <ul style="list-style-type: none"> Assess the risk to existing assets from sea level rise and plan appropriate adaptation Set appropriate design codes and planning strategies for future developments. 	1. 2. 3.& 4
	Climate Change in Australia: Technical Report (2007)	CSIRO Adaptation Flagship	National	This report, developed by CSIRO and the Bureau of Meteorology through the Australian Climate Change Science Program, provides: <ul style="list-style-type: none"> Information on observed climate change over Australia and the likely causes Projections of changes to about 30 climate variables Information on how to use the projections in risk assessments The projections focus on the years 2030, 2050 and 2070 for various greenhouse gas emission scenarios.	1.
	Commonwealth Sea Level Rise Risk Maps	Department of Climate Change and Energy Efficiency	National	Sea level rise inundation maps have been developed for selected urbanised coast around Australia. Three sea level rise scenarios for the period around 2100 are used: low (0.5 metres), medium (0.8 metres) and high (1.1 metres). These heights are added to highest astronomical tide to give the 'inundation scenarios'. The project aims to communicate sea level rise risk to coastal communities and the private sector in a way that will engage these communities and help them prepare for future climate risks. The maps have been produced using a 'bucket fill' methodology with no allowance for local or regional factors such as storms and coastal erosion.	1. & 2.
	The Critical Decade 2013: Climate Change Science, Risks and Responses	Climate Council (Independently reformed from the previous Federal Government's Climate Commission)	National	Two years ago in its report titled <i>The Critical Decade: Climate science, risks and responses</i> , the Climate Commission stated that this decade, 2011-2020, is the decade to decisively begin the journey to decarbonise our economy, thereby reducing the risks posed by climate change. One quarter of the way through the critical decade they present an update of their current knowledge of risks to our communities and the responses.	3.

<p>STATE AND REGIONAL</p>		<p>Coastal Compartments & Sediment Cells</p>	<p>Department of Planning</p>	<p>Statewide – Strategic, regional and local scales</p>	<p>The aims include identifying the principal landforms and processes of the coast and nearshore waters as well as for comparative purposes to establish areas of relative susceptibility to environmental change. To identify a hierarchy of planning units based on natural coastal systems similar to the approach used to identify river catchments. The marine and coastal planning units should approximately accord with mapping scales commonly used for the preparation of statutory plans.</p>	<p>1. & 2.</p>
		<p>WA Coast Project – Coastal Compartments & Sediment Cells</p> <ul style="list-style-type: none"> ▪ Pilbara (2012) ▪ Gascoyne (2012) ▪ Lancelin to Kalbarri (2011) ▪ Rottnest Island (2011) ▪ Cape Naturaliste to Lancelin (2011) 	<p>Geological Survey of Western Australia</p>	<p>Pilbara, Gascoyne, Lancelin to Kalbarri, Rottnest Island and Cape Naturaliste to Lancelin.</p>	<p>The Geological Survey of Western Australia recognises the importance of geology and geomorphology as the framework underpinning decisions in the coastal zone. The surveys characterise the geomorphology and geology of the nearshore, foreshore and backshore at a high level of detail using the 'Smartline' mapping concept. Additional datasets include a detailed assessment of the 198 beaches in the study area, a large-scale geomorphological map of the coastal zone, and an atlas of aerial-oblique photographs of the coast. The results of the study are aimed at coastal engineers, planners, managers and organisations that are involved in developing and implementing coastal management plans. The data provides a sound scientific basis for decision making and should be applied to underpin strategic coastal planning and management decisions.</p>	<p>1. & 2.</p>
		<p>Climate Change Scenarios for Initial Assessment of Risk in Accordance with Risk Management Guidance (2006)</p>	<p>Canberra, A.C.T. Australian Greenhouse Office.</p>	<p>South West Region</p>	<p>This report provides regional climate change scenarios for South Western Australia for use in the initial assessment of risks as recommended by the Australian Government. These scenarios have been prepared by CSIRO for the Australian Greenhouse Office.</p>	<p>1.</p>
		<p>Coastal Sediment Cells Between Cape Naturaliste and the Moore River (2012)</p>	<p>Report prepared by Damara WA Pty Ltd and Geological Survey of WA for the Department of Transport</p>	<p>Between Cape Naturaliste and the Moore River</p>	<p>The report aim was to identify and map boundaries for two dimensional sediment cells at each of the three spatial scales, along approximately 350km of coast. The ultimate objectives of determining the cells were to:</p> <ul style="list-style-type: none"> • Define 'natural' management units informing the spatial extent of future local studies; • Identify single or adjoining cells where joint coastal management will be required by neighbouring coastal managers; • Establish a framework for linking marine and terrestrial projects that is founded on the connectivity of coastal landforms, which supports integrated coastal planning and management; and • Indicate areas of coast where estimation of the coastal sediment budget would provide a useful tool for coastal planning and management. 	<p>1. & 2.</p>
		<p>Natural Hazard Risk in Perth, Western Australia (2005)</p>	<p>Geoscience Australia</p>	<p>Covers Perth Metropolitan Area</p>	<p>Hazard risk assessment by Geoscience Australia and collaborating agencies (notably Bureau of Meteorology and local governments). This study is aimed at estimating the impact on the Perth community of several sudden-onset natural hazards. The natural hazards considered are both meteorological and terrestrial in origin. The hazards investigated most comprehensively are riverine floods in the Swan and Canning Rivers, severe winds in metropolitan Perth, and earthquakes in the Perth region.</p>	<p>1. & 2.</p>
<p>SUB- REGIONAL TO LOCAL</p>		<p>Climate Change Risk Assessment and Adaptation Analysis: Central Perth</p>	<p>City of Perth, City of Vincent, Metropolitan Redevelopment Authority</p>	<p>Central Perth Area - administrative boundaries of the City of Perth, MRA and the City of Vincent</p>	<p>A partnership between the City of Perth, City of Vincent and MRA Central commissioned an investigation into the key impacts of projected climate change.</p> <p>The project aims to better understand the impacts of climate change in the project area, and to identify and assess the risks posed by climate change to buildings (existing and future) and their users. Identifying and understanding a potential adaptation process was a key part of phase 2.</p>	<p>2. & 3.</p>
		<p>Natural Hazard Risk in Perth, Western Australia (2005)</p>	<p>Geoscience Australia</p>	<p>Covers Perth Metropolitan Area</p>	<p>Hazard risk assessment by Geoscience Australia and collaborating agencies (notably Bureau of Meteorology and local governments). This study is aimed at estimating the impact on the Perth community of several sudden-onset natural hazards. The natural hazards considered are both meteorological and terrestrial in origin. The hazards investigated most comprehensively are riverine floods in the Swan and Canning Rivers, severe winds in metropolitan Perth, and earthquakes in the Perth region.</p>	<p>1. & 2.</p>

		Climate Change Risk Assessment Project (2010)	Swan River Trust	Windan Bridge (Swan) to Riverton Bridge (Canning)	The study provides a methodology to assist local governments to identify which foreshore assets in the Swan Canning Riverpark are most at risk from sea level rise. This information will help prioritise and target local government adaptation strategies.	2.
		Cockburn Coastal Vulnerability Values and Risk Assessment	City of Cockburn, City of Rockingham, City of Fremantle, City of Kwinana, Department of Defence (Defence Support and Reform Group) & Cockburn Sound Management Council	The Cockburn Sound and Owen Anchorage coastal strip between Fremantle Fishing Boat Harbour and Point Peron, Rockingham, including the east coast of Garden Island	<p>This project is a staged delivery undertaken by the Cockburn Sound Coastal Alliance, led by the City of Cockburn and incorporating:</p> <ol style="list-style-type: none"> 1. A Coastal Vulnerability Assessment that identifies the erosion and inundation threat to the coastal strip associated with coastal processes and climate change induced sea level rise over timescales out to Year 2110 for various sea level rise scenarios and potential storm events. (Undertaken by consultants CZM, Damara, Oceanica and UWA's SESE); 2. A Values and Risk Assessment that identifies the natural and built coastal assets at risk from the coastal processes and sea level rise (drawing on the outcomes of the Stage 1 Vulnerability Study), and the respective values, functions and the services these assets provide, including environmental services. Via a risk assessment process the "values at risk" are identified and quantified via a number of different measures including economic, socio economic, cultural/heritage and ecological. The consultant then assesses various adaptation options for potential incorporation into Adaptation Plans; 3. The development of Flexible Adaptation Plans for the various section of coastline (and Stakeholders) drawing on the previous two stages and involving additional stakeholder consultation on values etc. 4. A close out appraisal of the adopted methodology and outcomes of the Project, intended to be presented as a case study for reference by other Local Government Authorities and the various other interested parties, due for completion by June 2014. 	1. 2. & 3.
		Vulnerability of the Cottesloe Foreshore to the Potential Impacts of Climate Change (2008)	Town of Cottesloe	Cottesloe foreshore	<p>The main aim of the Cottesloe Climate Change Vulnerability Assessment Project was to establish potential risk to existing key coastal infrastructure under a range of future climate scenarios. The overriding objectives to achieve this aim were:</p> <ul style="list-style-type: none"> • Analysis of contemporary coastal conditions (environmental conditions and resultant coastal change) • Determination of scenarios for future climate change • Prediction of impacts on the physical coastal environment • Implications of physical change for existing infrastructure. <p>In addition, the possible strategic alternatives for adaptation were also considered.</p>	2. 3. & 4.
		Northern Perth Metropolitan Coast Coastal Setback Study (2005) & Southern Perth Metropolitan Coast Coastal Setback Study (2005)	Department for Planning and Infrastructure (now Department of Planning) and M P Rogers & Associates	Cook Lump to Fremantle & Fremantle to Singleton	<p>In 2005, the Department for Planning and Infrastructure (DPI) commissioned two studies of coastal process along the Perth metropolitan coastline. The aim of the studies were to provide a preliminary assessment of the physical processes setback line, using schedule 1 in Statement of Planning Policy No. 2.6 State Coastal Planning Policy (SPP 2.6) as gazetted 2003.</p> <p>The studies were used to help determine where future management focus may be required and to identify where any proposed development may need more detailed coastal engineering studies.</p> <p>Please note: The State Planning Policy No. 2.6 State Coastal Planning Policy was fully reviewed and gazetted in July 2013. For further information see the SPP 2.6 row under 'State and Regional' (above).</p>	1. & 2.
		Coastal Flooding of the Swan River and the Effects of Climate Change Induced Mean Sea Level Rise (2012)	The University of Western Australia	Swan River	<p>The aim of this study is to assess the vulnerability of the Swan River region to coastal flooding resulting from extreme sea level events in relation to predicted rises in mean sea level. A range of intensities of extreme sea level events will be looked at under present and possible future sea level conditions. To achieve this, the specific objectives of this study were defined as:</p> <ul style="list-style-type: none"> • To produce an accurate two dimensional, high-resolution model of the Swan River; • To determine inundation levels caused by extreme sea level events relative to mean higher high water; and • To evaluate possible implications faced by the surrounding communities. 	1. & 2.

		Town of Cambridge Coastal Vulnerability Study	Town of Cambridge	Town of Cambridge coast	A coastal vulnerability investigation for physical coastal processes for the Town's coastline (approx. 5km) to inform future coastal planning and management. A draft has been completed by MP Rogers and Associates.	1. & 2.
		Climate Change Response Strategy (2012)	City of Rockingham	Rockingham	The purpose of this strategy is to: <ul style="list-style-type: none"> • Provide an overview of what climate change is and how it could potentially impact the organisation and its activities; • Address those strategic community plan aspirations that would be affected by the variables associated with climate change and to link this to the City's operations; • Provide a "vehicle" through which the identified community and organisational strategic objectives can be driven through targeted mitigation and adaptation actions that have been developed through a risk analysis process. 	3. & 4.
		Adapting to Climate Change in the City of Melville 2012-2017	City of Melville	Melville	A risk analysis for impacts of climate change in the future, with priority actions to be carried out in order for the City of Melville to adapt.	3.
		Scarborough Beach Climate Change Risk Assessment Project (2010)	City of Stirling	Scarborough Beach	The aim was to assess the vulnerability of Scarborough Beach to climate change and integrate mitigating strategies to address these risks within a reviewed Master Plan for the area.	2.
	Peel	Mandurah Coastal Zone Climate Change Risk Assessment and Adaptation Plan 2009	City of Mandurah	Mandurah	To identify and prioritise risks arising from climate change, develop strategies to manage them, and to develop a climate change adaptation plan.	2. 3. & 4.
		Climate Change Impact Modelling, and Quantifying Coastal Development	Geoscience Australia Department of Climate Change and Energy Efficiency (DCE)	Rockingham to Bunbury	The overarching objective of this project is to provide additional spatial information products to inform the National Coastal Vulnerability Assessment (NCVA), which complement existing NCVA projects and support a more comprehensive and credible assessment of climate change risks in the coastal zone. This study will undertake detailed modelling of coastal impacts under current climate and future climate change scenarios for the area south of Perth, from Rockingham to Bunbury.	1. & 2.
		The Yalgorup Coast: Binningup to Cape Bouvard, WA (2009)	Damara WA Pty Ltd for the Department of Planning and Department of Environment and Conservation	Binningup to Cape Bouvard	The objective of this project was to describe the geomorphology of the Yalgorup Coast and identify areas of relative instability between Binningup and Cape Bouvard, including sections of the beach and barrier dune potentially subject to risk in response to projected environmental change.	1. & 2.
		Regional Climate Change Impact Modelling for Mandurah, Western Australia (2012)	Geoscience Australia	Mandurah	This project has three aims: <ul style="list-style-type: none"> • To assess the feasibility of integrating coastal recession and hydrodynamic storm-tide inundation modelling outputs in order to assess the vulnerability of Mandurah LGA to a change in environmental conditions under a range of future climate scenarios; • To build on the National Coastal Risk Assessment and perform a more detailed coastal vulnerability, impact and exposure analysis at Mandurah; • To complete spatial analysis to identify the exposure of buildings, roads, bridges and rail infrastructure to the modelled hazards and to estimate exposure costs where available. 	1. & 2.
	South West	Bunbury Storm Surge Modelling (2012)	Department of Planning & Geoscience Australia	Bunbury	The WAPC, together with the Department of Planning, engaged the services of Geoscience Australia to undertake an assessment of Bunbury's coastal vulnerability. This study uses the latest modelling techniques to improve our understanding of the consequences for Bunbury of a storm surge event, both under present conditions and in future scenarios where climate change has caused sea levels to rise.	1. & 2.
		Busselton Storm Surge Modelling (2014)	Department of Planning & Geoscience Australia	Busselton	The WAPC, together with the Department of Planning have engaged the services of Geoscience Australia to undertake an assessment of Busselton's coastal vulnerability by modelling storm surge and flooding scenarios. The results from this study are expected in May 2013.	1. & 2.

		Developing Flexible Adaptation Pathways for the Peron Naturaliste Coastal Region of WA 2011-2012	Peron Naturaliste Partnership (Local Governments between Cape Peron and Cape Naturaliste)	Cape Peron to Cape Naturaliste	The key reason for this project is to ensure the Peron Naturaliste Coastal Region is adequately prepared to respond to the impacts of climate change. The project will develop adaptation planning options for the region, which will help to deliver the following two specific project outcomes: <ul style="list-style-type: none"> An economic-based regional test of adaptation options to treat identified impacts of coastal climate change; and A detailed demonstration of several coastal adaptation pathways and options at a local scale. 	3.
Great Southern		Climate Change: Whole of Landscape Analysis of the Impacts and Options for the South Coast Region (2009)	South Coast Natural Resource Management	South Coast Region	The aim of the project is to identify the potential risks and impacts of climate change and seasonal variability on the natural resource assets, land and seascapes, industries and communities of the South Coast region of Western Australia, to allow the South Coast community to develop actions and set priorities to minimise the impacts of climate change on the environment and the community.	2. & 3.
Wheatbelt		The Coast of the Shires of Gingin and Dandaragan, Western Australia: Geology, Geomorphology and Vulnerability (2012)	Damara WA Pty Ltd and Geological Survey of Western Australia for the Department of Planning and Department of Transport	Shire of Gingin and Shire of Dandaragan	Provide a strategic planning guidance, management strategies and direction on appropriate land uses for future subdivision and development of coastal land in the Shire of Gingin and Shire of Dandaragan by the identification of sediment cells that define coastal stability and susceptibility to change the coastal zone.	1. & 4.
Mid West		Dongara to Cape Burney Coastal Study (2011)	Department of Planning	Dongara to Cape Burney	The Study includes information that may be of assistance in progressing strategic planning for this part of the coast and comprises of: <ul style="list-style-type: none"> The Dongara to Cape Burney Visual Landscape Assessment aims to assess landscape features in order to develop landscape management objectives and design guidelines within the Dongara to Cape Burney area. The Dongara to Cape Burney Western Australia: Geomorphology report describes the geomorphology of the coast between the northern limit of the Dongara Townsite and the mouth of the Greenough River at Cape Burney South. This will assist to identify areas of relative instability including sections of the beach and dune system that are potentially subject to environmental change. This assessment has been on-going and this report is proposed to be superseded by an all-encompassing Mid West assessment. This assessment is expected to be completed by the end of 2011. The Dongara to Cape Burney Flora and Vegetation Survey was undertaken in 2008, and re-surveyed in 2011. It aims to provide a regional context of native vegetation in the Greater Geraldton region to allow informed planning decisions to be made.	2. 3. & 4.
		Coastal Processes and Coastal Management Options for Greys to Sunset Beach (2010)	City of Greater Geraldton, Geraldton Port Authority & Department of Transport	Sunset Beach to Greys Beach (City of Greater Geraldton)	Aims are to understand coastal processes in the region, and use that knowledge to inform the coastal management priorities and practices of the City of Greater Geraldton.	2. & 3.
		BROC Climate Change Adaptation Action Plan (2010)	City of Greater Geraldton	City of Geraldton-Greenough, Shire of Northampton, Shire of Irwin, Shire of Chapman Valley	1. Identify and prioritise risks: The Batavia Regional Organisation of Councils (BROC) consortium identified 68 individual risks as well as 12 potential opportunities posed by climate change impacts to its operations and responsibilities. The risks were rated from low to extreme using a risk profile index for near and long term exposure time periods of 2030 and 2070 respectively. 2. Develop Strategies: The BROC consortium developed strategies for managing risks, adaptive actions, and building resilience within communities. An analysis of proposed actions was consolidated to a total of 63 actions comprising 34 higher priority actions and 29 lower priority actions. 3. Identify knowledge gaps: The knowledge gaps are largely associated with the uncertainty of the science in predicting the degree of climate change especially for the long term projections to 2070. For this reason the high emission scenario (A1FI) was chosen for the risk	2. & 3.

					assessment using a precautionary approach for 2070, whereas the 2030 projections were based on the mid-range scenarios (A1BI).	
		Mid West Regional Council Climate Change Risk Assessment and Adaptation Action Plan (2010)	Mid West Regional Council	Shires of Coorow, Carnamah, Mingenew, Morawa, Mullewa, Perenjori and Three Springs	<p>Key objectives:</p> <ul style="list-style-type: none"> • Identification, analysis and evaluation of climate change risks to future financial, infrastructure and environmental assets and associated services of member Councils. • Formulation of a series of strategies by member Councils and the MWRC to manage identified climate change risks. • Creating 'local ownership' and instilling the capacity within member Councils to address the impacts of climate change by encouraging personal involvement in developing and implementing adaptation. • Capacity building within member Councils to enhance the understanding of, and to build resilience to climate change. • Identification to climate change risks that require further investigation beyond the scope of the study. <p>Integration of results from the climate change risk assessment and adaptation responses into Climate Change Adaptation Action Plans for the member Councils and the MWRC.</p>	2. 3. & 4.
		The Coast of the Shires of Coorow to Northampton, Mid West, WA: Geology, Geomorphology and Vulnerability (2012)	Damara WA Pty Ltd and Geological Survey of Western Australia for the Department of Planning and Department of Transport	Shires along the Mid West coast	<p>The objectives of the project are to:</p> <p>Describe the geomorphology of the coast of the Shires of Coorow to Northampton in Western Australia; Determine land systems or structures that are susceptible to change over a long period; Identify landforms that are currently unstable; and assess the vulnerability of different parts of the coast to projected change in metocean forcing.</p>	1. 2. & 4.
	Gascoyne	Cyclonic Inundation and Coastal Process Modelling (2009)	Department for Planning and Infrastructure (now Department of Planning)	Carnarvon	<p>Global Environment Modelling Services were commissioned to carry out a study that would examine the impact of storm surge inundation and coastal processes at Carnarvon. The aims of the study were to determine:</p> <ul style="list-style-type: none"> • Areas affected by cyclonic inundation; • Stability of Babbage Island spit during significant cyclonic events; • Appropriate coastal development setbacks; • Finished floor levels for development; and • Any required protection works and management strategies in order to minimise the risk of damage to future development. 	1. & 2.
		Cyclonic Inundation Modelling for Coral Bay (2005)	Shire of Carnarvon and Ningaloo Sustainable Development Office (no longer operational)	Coral Bay	<p>Global Environment Modelling Services were commissioned by the Ningaloo Sustainable Development Office to undertake a study to identify storm surge inundation levels at Coral Bay. The study included storm surge inundation and associated wave run-up and overtopping impact levels for several designated cyclone events. The design storms were based on Category 4 and 5 cyclones impacting Coral Bay on a 'worst' track basis and coinciding with mean spring tide.</p>	1. & 2.
		The Coast of the Shires of Shark Bay to Exmouth, Western Australia: Geology, Geomorphology and Vulnerability (2012)	Damara WA Pty Ltd and Geological Survey of Western Australia for the Department of Planning and Department of Transport	Shires along the Gascoyne coast	<p>The objectives of the project are to:</p> <p>Describe the geomorphology of the coast of the Shires of Shark Bay, Carnarvon and Exmouth at a broad, strategic planning scale; Describe the land systems and landforms comprising the coast to indicate potential coastal responses to projected change in metocean forcing; and to identify the nature and degree of investigation required to support management proposals for the land system or landform under consideration.</p>	1. 2. & 4.
	Pilbara	Port Hedland Coastal Vulnerability Study (2011)	Landcorp, Department of Planning and Department of Water	Port Hedland, Wedgefield, South Hedland and Shellborough	<p>To evaluate the combined effects of coastal inundation (flooding and storm surge) arising from cyclonic events for the Town of Port Hedland and the surrounding area, and to also assess shoreline stability over planning periods of up to 100 years (2110).</p> <p>This study is critical in identifying development opportunities and constraints for Port Hedland to meet the infrastructure requirements as population doubles over the next 15 years.</p>	1. 2. & 3.

		Onslow Townsite Planning Coastal Setbacks & Development Levels (Draft July 2011)	Landcorp, Department of Planning and Department of Water	4 Mile Creek to Beadon Creek	Landcorp commissioned M P Rogers & Associates Pty Ltd to assess the appropriate setback to account for the action of physical coastal processes in line with SPP2.6 as well as to investigate potential coastal inundation in order to determine the appropriate development levels. This report has been split into two parts, the first dealing with the coastal setback assessment while the second part investigates the extent of potential coastal inundation. This report presents the data, methods and findings of the Onslow Coastal Setback and Development Levels study.	1. & 2.
		Karratha Coastal Vulnerability Study (2012)	Landcorp, Department of Planning and Department of Water	Karratha and Dampier	The purpose of this study is to: <ul style="list-style-type: none"> Evaluate the combined effects of storm surge, coastal inundation and shoreline movement on the future expansion of the townsite for Karratha (including Dampier townsite); and Provide estimates of the storm surge components and total water levels for a range of design return periods along Karratha coastline. (A hydraulic model is required as a part of this study). 	1. & 2.
		Geology, Geomorphology & Vulnerability of the Pilbara Coast, in the Shires of Ashburton, East Pilbara and Roebourne, and the Town of Port Hedland, Western Australia (December 2013)	Damara WA Pty Ltd and Geological Survey of Western Australia for the Department of Planning	Pilbara coast between Hope Point (Exmouth Gulf) and Tryon Point (north of Eighty Mile Beach)	The objectives of the project are to: Describe the geomorphology of the coast of the Shires of Ashburton, East Pilbara and Roebourne and the Town of Port Hedland at a broad, strategic planning scale; Describe the land systems and landforms comprising the coast to indicate potential coastal responses to projected change in metocean forcing; and to identify the nature and degree of investigation required to support management proposals for the land system or landform under consideration.	1. 2. & 4.
	Kimberley					
	Goldfields-Esperance					

***Key for Project Types:**

1. Data Collection/Interpretation (i.e. the project involves investigation of Metocean Processes, Biological Drivers, Understanding Processes, Data Acquisition)
2. Vulnerability Assessment/Risk Assessment (identification and evaluation of the consequences for infrastructure, communities and natural assets)
3. Adaptation Plan (following risk / impact / vulnerability assessments, identification of actions or responses)
4. Strategy
5. Policy

Coastal Management Plan Assistance Program – Current CHRMAP projects:

- Gingin and Dandaragan Coastal Hazard Risk Management & Adaptation Plan
- Shire of Augusta-Margaret River Coastal Hazard Risk Management & Adaptation Plan
- Shire of Harvey Coastal Hazard Risk Management & Adaptation Plan
- Shire of Esperance Coastal Hazard Risk Management & Adaptation Plan
- Shire of Irwin Coastal Hazard Risk Management & Adaptation Plan