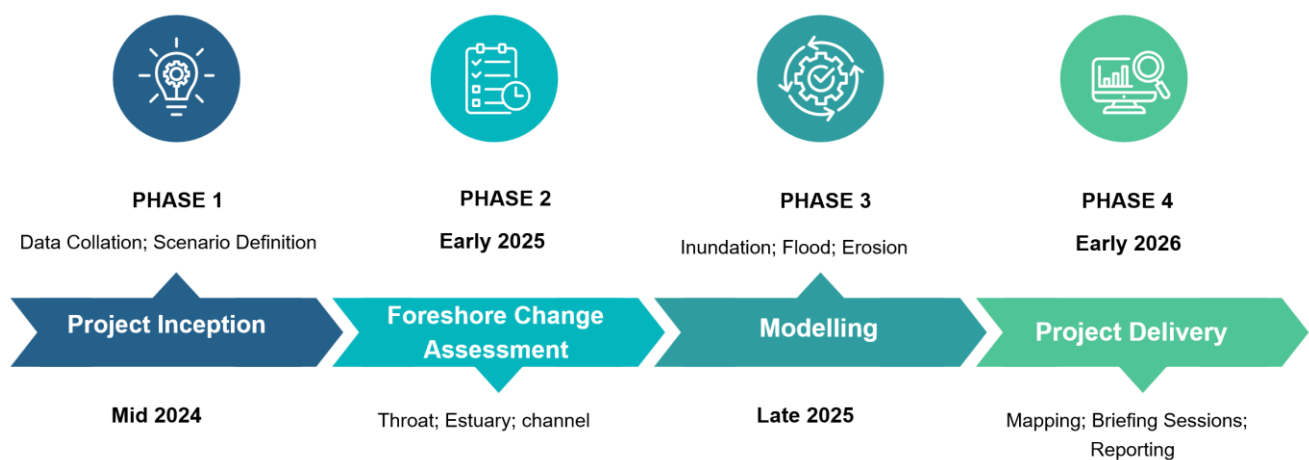


# Swan Canning Riverpark foreshore Risk identification and mapping project

The Department of Biodiversity, Conservation and Attractions (DBCA) is undertaking a project for the Swan River (Derbal Yirragan) and Canning River (Djarlgarro) to identify, understand and communicate risk to the Riverpark from erosion, inundation and climate change impacts.

The project is due for completion in early 2026 and will produce foreshore risk maps for the Swan Canning Riverpark (Riverpark) to inform risk assessments, and adaptive planning and management responses.



## Project Update: Phase 2 Foreshore Change Assessment

Phase 2 focused on understanding the different parts of the river system (domains), considering physical changes to the river foreshores and riverbed. The approach has been to identify drivers of change in the Swan-Canning system, characterise how the system responds, interpret active processes and predict future change. It is acknowledged that using past river behaviour to make predictions is challenged by the Swan-Canning's complex river morphology, its long history of dredging, reclamation and walling, plus an extended period without major floods.

### Foreshore Change Assessment – why does it matter?

Different parts of the river have discrete modes of response to:

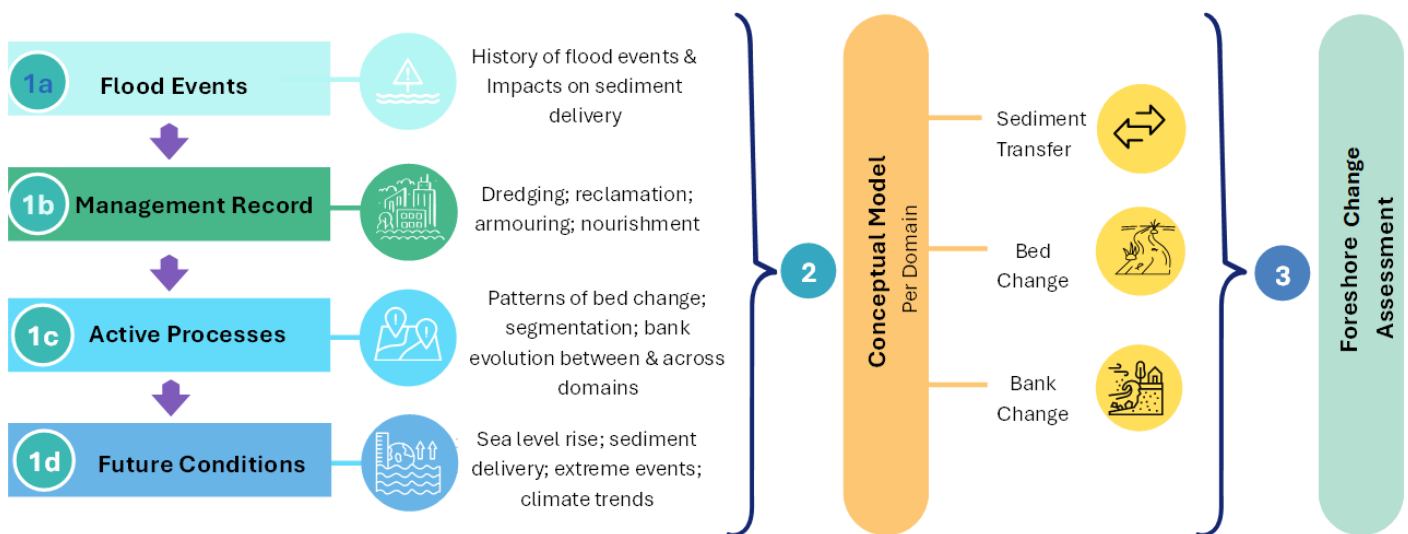
- Water motions, wave energy and flooding, including sea level rise.
- Foreshore sediment supply.
- Human modifications.

Undertaking the Foreshore Change Assessment to understand how these components interact is critical to developing conceptual models for predicting change, for consideration in adaptation planning.

Phase 2 assessment has included:

- Demarcation of river domains using an evidence-based understanding of how sections of the river respond and interact.
- Identification of major river modifications, flood variability and sea level changes to the system.
- Evaluation of bed and bank change in each river domain, including understanding erosion and deposition.

Three steps to complete the Foreshore Change Assessment (Phase 2) are summarised below. Step 1 representing physical process evaluations, Step 2 involved formulation of conceptual models for sediment transfers, bed and bank change, with step 3 identifying potential for foreshore change.



### Implications of Assessment for Foreshore Management

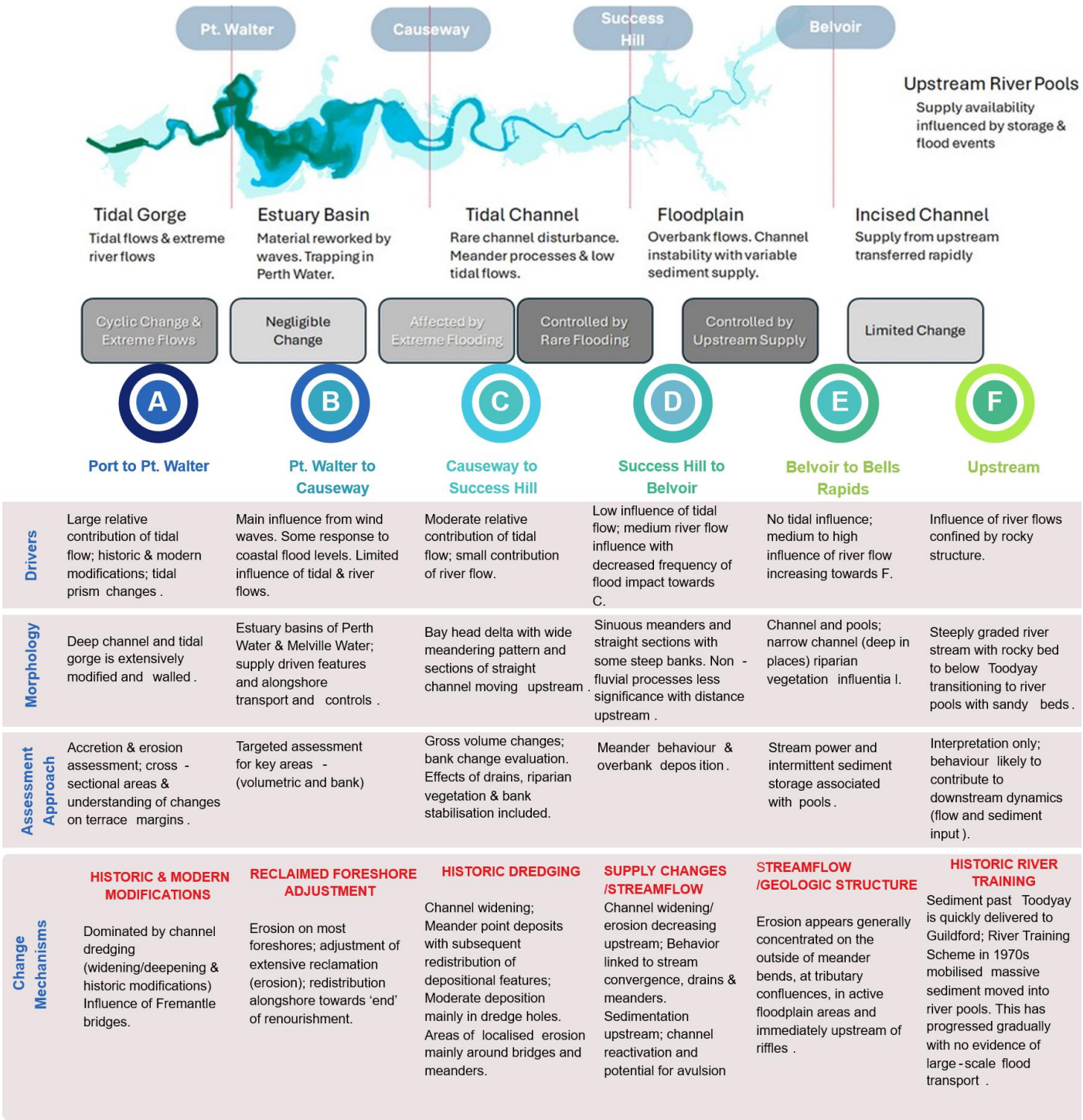
Understanding how the Swan-Canning system can change, including response to flood events or sea level rise, is critical for targeting management effort. Although many present-day problems are persistent responses to actions from previous decades, future climate change or a moderate river flood will cause issues that have not been part of foreshore management over the last 40 years. Recognising how the river system changes is important to avoid maladaptation, where actions fail to work, or create new problems.

Assessment of bed and bank change has confirmed distinct behaviour between domains. This is summarised for the Swan-Avon River System from Fremantle (Domain A) to Darling Scarp (Domain F) and for Canning River System from Melville Water (Domain C) to Canning, Wungong and Victoria dams (Domain F). Understanding of mechanisms for change and active processes supports identification of those that may be triggered by future climate conditions or flood events. This provides relevant guidance for erosion and inundation risk assessment, assisting Foreshore Land Managers in ongoing development of foreshore adaptation plans.

### What's Next?

The next project phase involves consideration of inundation and flood modelling outputs in the context of the foreshore change assessment, to predict likely future change at a river reach scale. Outcomes of the assessment will be used to produce foreshore risk maps of the Riverpark at 2025, 2050 and 2125 and identify foreshore assets subject to hazard. Foreshore risk maps will be presented and discussed with Foreshore Land Managers at a series of upcoming briefing sessions on disaster risk planning and management across the Riverpark.

Swan-Avon River System Domains & Dynamics





## Canning River System Domains & Dynamics

