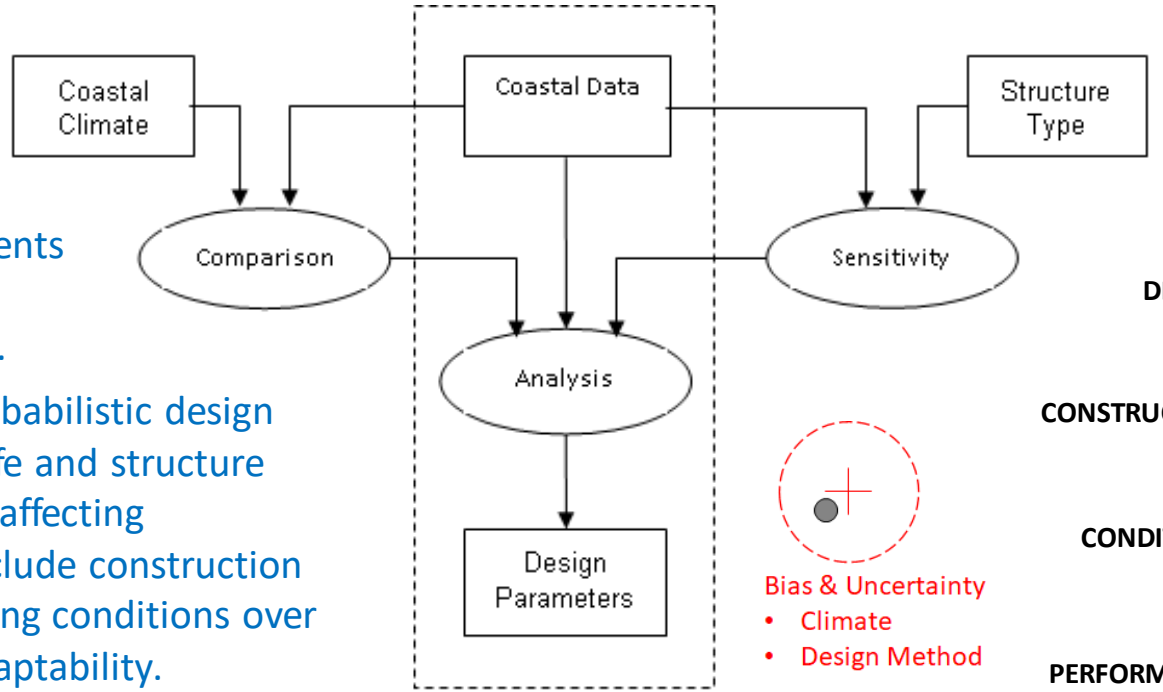
Coastal Engineering Design Criteria

Coastal design criteria are used to define an expected standard of performance for a proposed facility under certain coastal conditions. Criteria may apply to various components of the facility or characteristics of performance. Criteria typically include:

- operational conditions
- structural limits
- service requirements
- failure modes
- maintenance requirements
- construction
- environmental impacts.

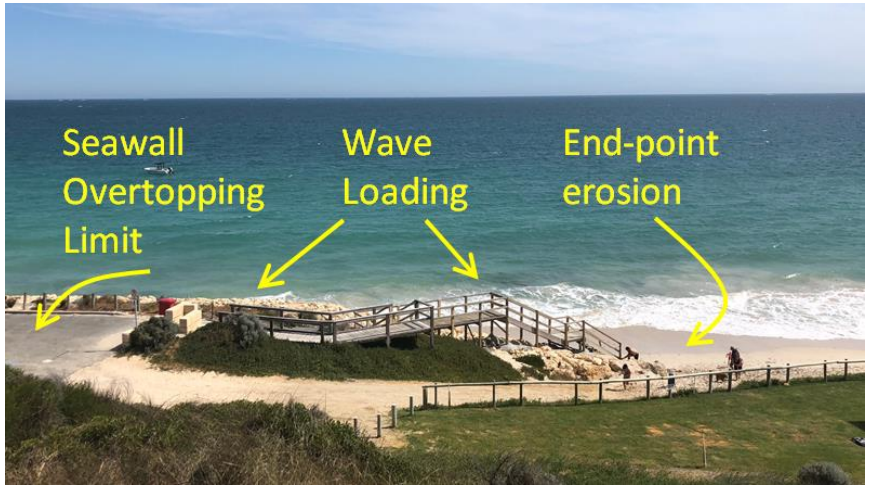
Common practice uses probabilistic design criteria, based on design life and structure importance. Other factors affecting performance likelihood include construction methods, life-cycle, changing conditions over time, maintenance and adaptability.

Setting a single probabilistic design criteria (e.g. 100-year ARI design wave for armour stability) provides opportunity for considerable variation of design performance. A more consistent risk profile can be established through consideration of other influential factors.



Potential bias and uncertainty of both the derived coastal climate and the design method should be recognised when undertaking design.

The relative importance of different factors is influenced by structural sensitivity and event recurrence distribution. For example, in



southwest WA the 'flat' wave and water level climate can give enhanced significance to fatigue or change such as armour settlement.

DESIGN	Design Philosophy	Design Criteria	Design Methods
CONSTRUCTION	Construction Materials	Construction Workmanship	Interface with Surrounds
CONDITIONS	Conditions Experienced	Change to Surrounds	
PERFORMANCE	Structure Deformation	Structure Life-cycle	Maintenance Regime

Effective development of coastal design criteria requires understanding of the coastal climate, design methods and structural characteristics.

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