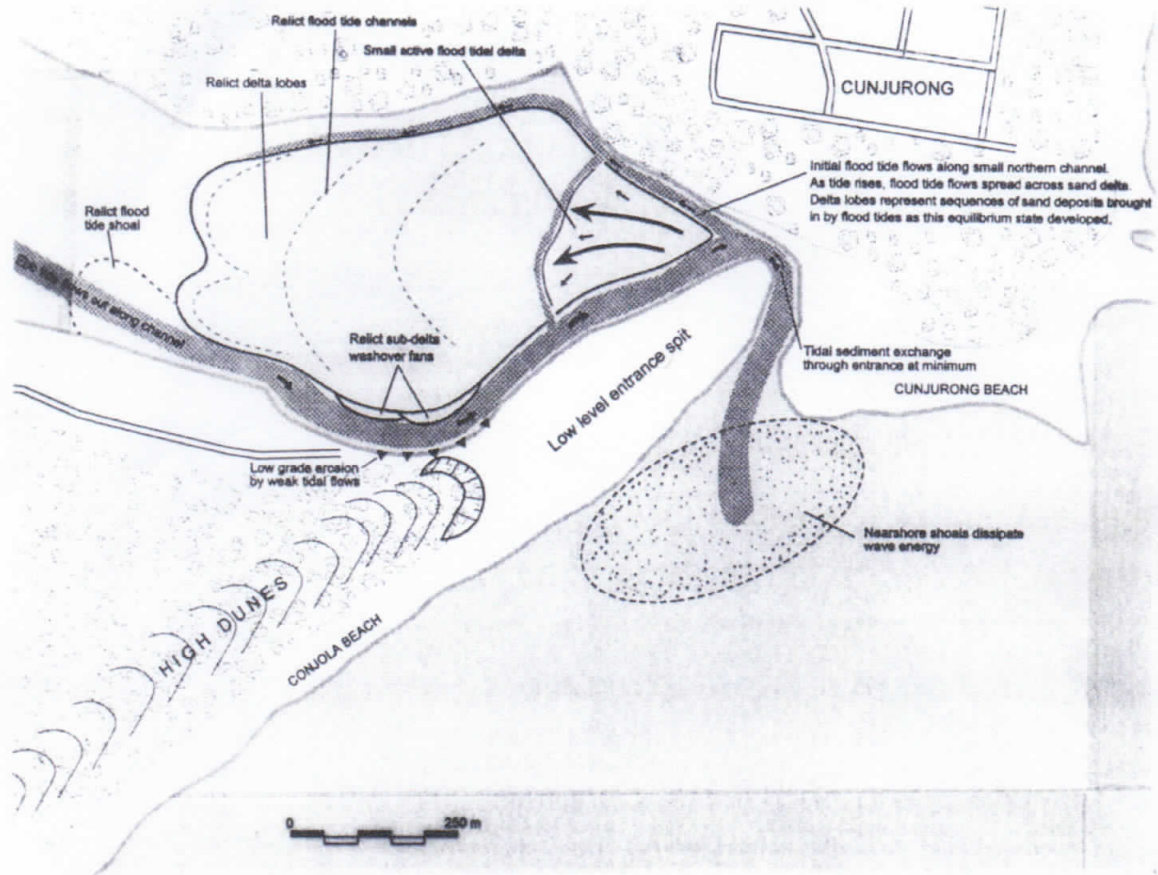




- 2 years.

**STORM WASHOVER**

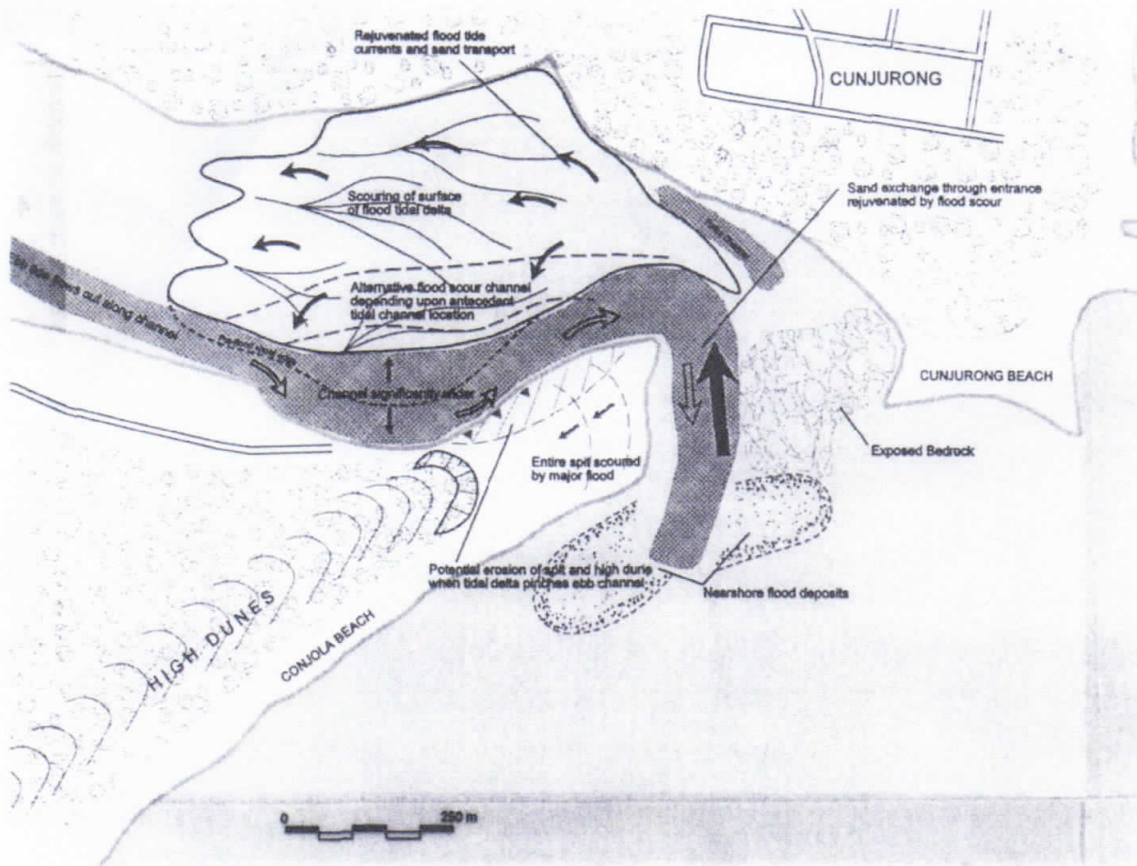
sudden change caused by major to severe storm waves washing over the entrance spit leading to blocking of the entrance channel. Entrance closure is likely to ensue.



**REGIME ENTRANCE STATE**

The broad features of the *Regime* entrance state are:

- Entrance is hard against the northern shoreline and channel is quite small;
- Small tidal exchange with limited tidal range in lake – average lake level is elevated well above mean sea level;
- Flood tide delta and low level entrance spit relatively stable but prone to instability from:
  1. Floods cutting through spit and opening up lake and rejuvenating tidal exchange;
  2. Severe coastal storm overtopping the entrance sand spit and pushing large deposits of sand westwards and potentially closing the entrance;
  3. Lengthy dry spell (*several years*) allowing wind-blown sand to slowly close off the narrow entrance channel.

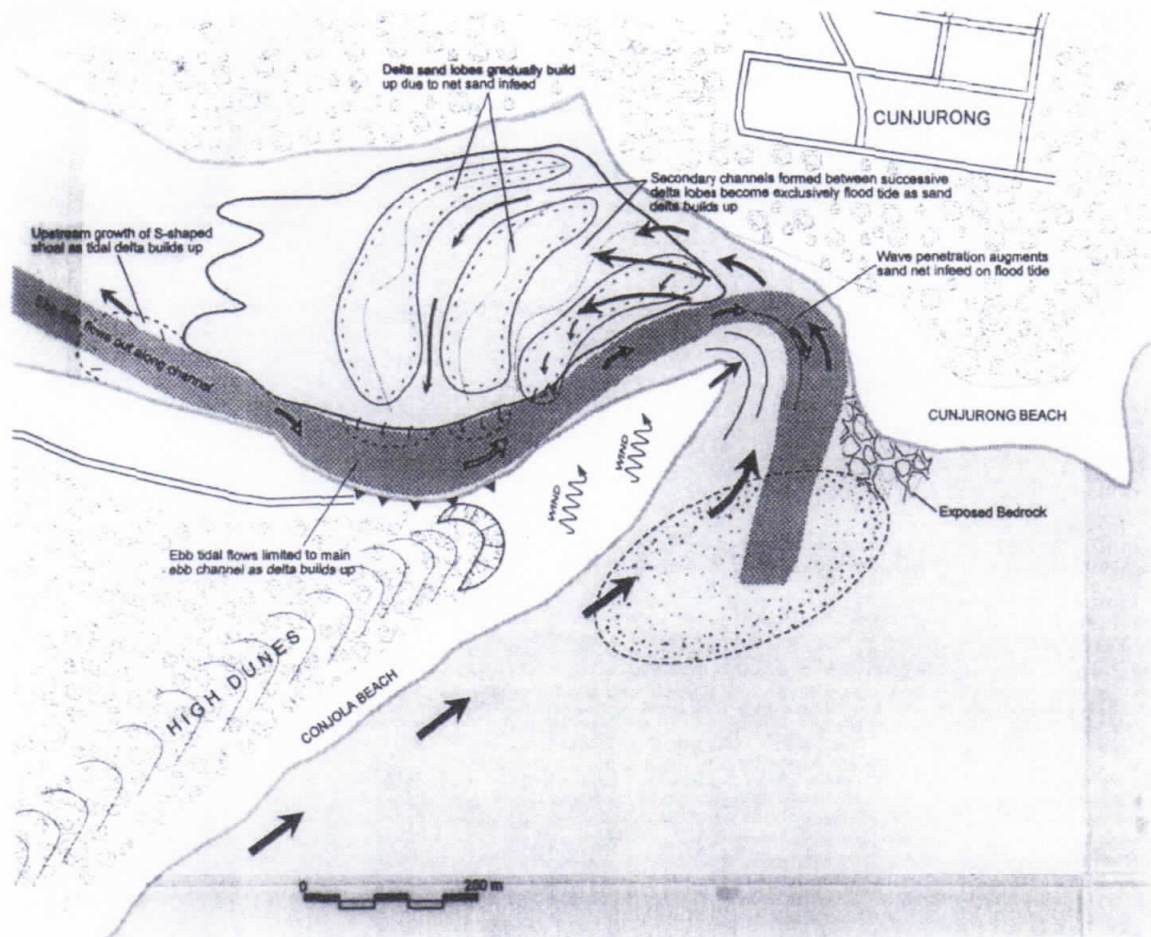


### FLOOD SCoured ENTRANCE STATE

The broad features of the *Flood Scoured* entrance are:-

- Scour expands entrance throat, enlarging channel more to the south;
- Flood tide delta scoured at southern edge and over entire surface (*evidenced by channeling pattern*);
- Flood scour deposits placed in nearshore zone as large shallow bar;
- Due to proximity of flood sediment deposits and increased tidal flows, the entrance is primed for:
  1. Rapid onshore movement of previously flood scoured deposits combined with normal longshore transport of sand from Conjola Beach into the entrance area.
  2. Pronounced net infeed of sediment thereby increasing shoal build-up across flood tidal delta.

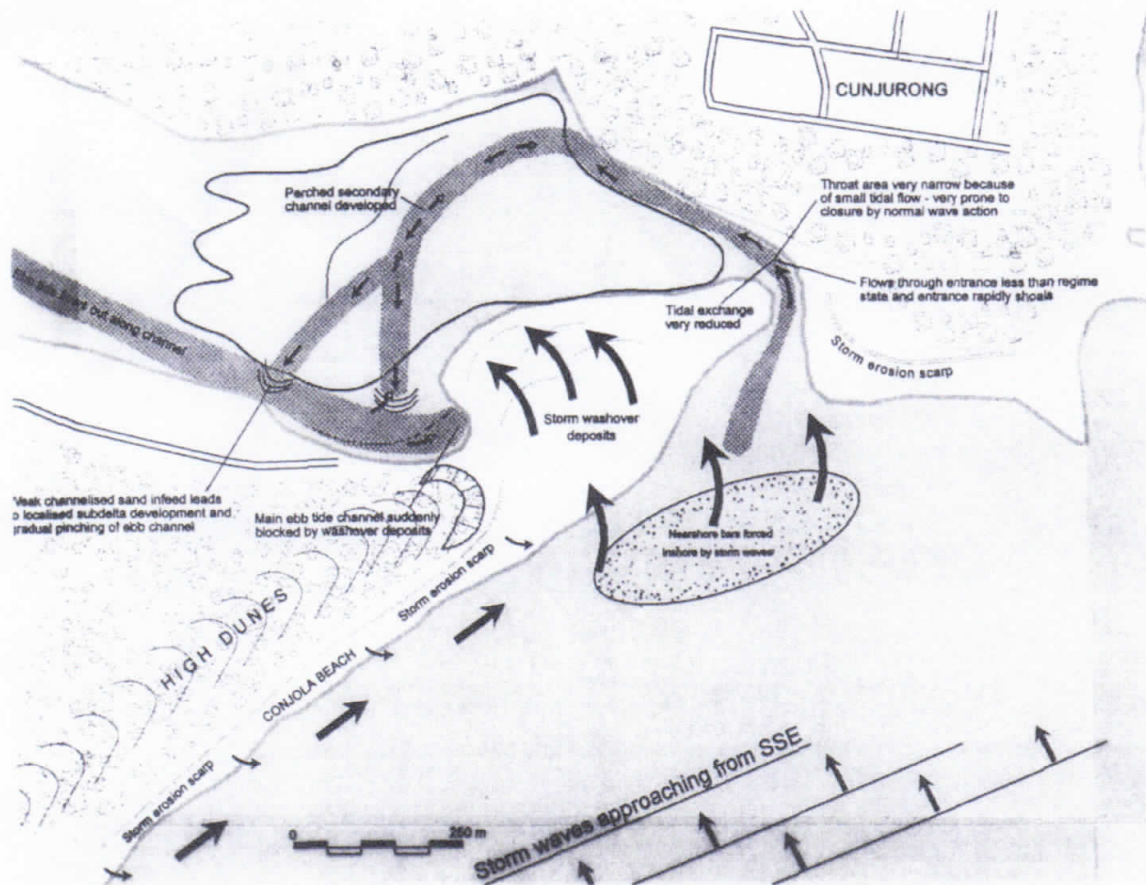




### INTERMEDIATE ENTRANCE STATE

The broad features of the *Intermediate* entrance state are:

- Sediment has mobilised into entrance via onshore movement of flood deposits as well as longshore and wind transport, viz:
  1. Entrance spit has migrated northwards;
  2. Flood tidal delta lobes have built up significantly;
- These changes combine to reduce tidal flows, though there is still a net infeed of sediment;
- Entrance will gradually reduce unless reopened by flood;
- Closure may be catalysed by storm supply of large amount of sediment.



**STORM WASHOVER ENTRANCE STATE**

The broad features of the *Storm Washover* entrance state are:-

- Washover deposits ie 'fans' cut off fluvial channel/primary ebb channel;
- Ebb channel becomes perched on flood delta lobes leading to suddenly and substantially diminished tidal flows;
- Flood tide tends to re-establish northern perimeter channel;
- Sediment infeed is reduced but continues to pinch primary ebb channel which eventually disappears;
- Further washover leads to closure.

**PHOTOGRAMMETRY**

A photogrammetric analysis of selected aerial photos of the entrance was carried out by DLWC (*Coastal Branch*). Detailed cross sections of the entrance spit and flood tidal delta are provided in Technical Appendix 2. It is interesting to note that a very high entrance spit, which had been identified