

Nearshore Features & Alongshore Transport

Alongshore sediment transport is usually represented as a function of incident wave conditions, shoreline orientation and beach slope. However, a range of nearshore features can modify how alongshore transport works.

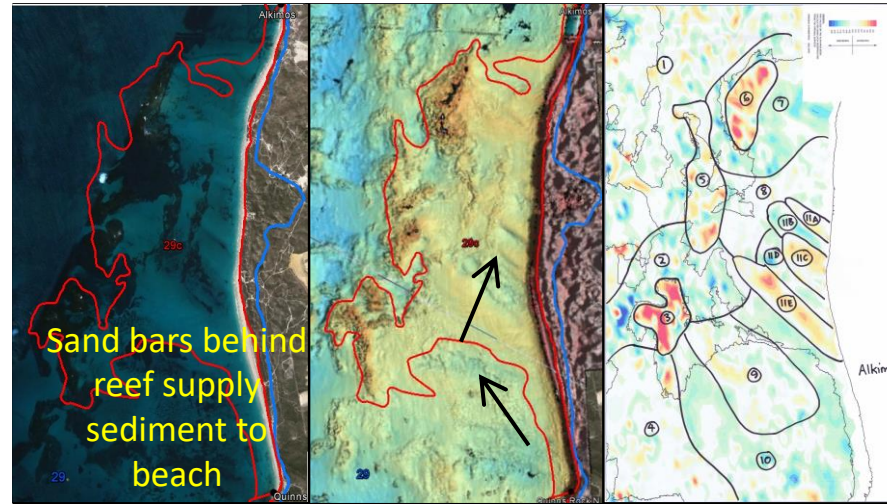
Many of the features are ephemeral, including beach position, scarps, cusps and migratory lobes. These features may need high frequency observations to characterise their influence.

Nearshore bars, which can interact with storm bars further offshore, modify the alignment of the lower breaker zone, reducing alongshore transport, and increasing onshore transfer.

Nearshore reefs create areas of wave sheltering. For large reefs, tombola or cusped forelands can form. For smaller reefs, sheltering can create a temporary, often seasonal, sediment storage area, which gradually feeds the adjacent shore.

Headlands cause realignment, which can locally modify gross alongshore transport, but net transport must remain the same, through bypassing.

Spits can occur where there is high variability of alongshore transport, including seasonality. The body of the spit provides temporary storage.



Nearshore features often act to provide a local balancing mechanism, that spatially 'smooths out' alongshore transport. However, each mechanism is sensitive to different types of disturbance (e.g. storm intensity, storm direction, seasonal supply). This creates an opportunity for 'hotspot' response, or heightened shoreline variability at these sites.

