

Management of Pevensey shingle ridge

- Situated on English Channel coastline between Beachy Head and Hastings;
- Protects 10,000 properties, railway, roads, caravan parks, Pevensey and Hooe Levels from flooding;
- Protects > 100 properties from erosion;
- Pevensey Levels are RAMSAR, SSSI, SAC, SPA.

Management of Pevensey shingle ridge

- Barrier beaches can be overtopped by large waves, may leak or roll-back landward, and ultimately may breach;
- temporary flooding events did occur at Pevensey in 1926, 1935, 1965 and 1999

Management of Pevensey shingle ridge

- Environment Agency is empowered under the Water Resources Act 1991 to manage flood risk from the main rivers and the sea.
- 88 of the local authorities are maritime district councils & have powers to protect the land against coastal erosion under the Coastal Protection Act (1949)
- Water Framework Directive

Management of Pevensey shingle ridge

- Shoreline Management Plans
 - Scale of sediment cell
 - Non statutory
 - Four policy options
 - Hold the line;
 - Advance the line;
 - Managed realignment;
 - No Active Intervention.
- Strategy Studies
 - Scale of sediment sub-cell
- Schemes
 - Local to sub-cell scale

Management of Pevensey shingle ridge

Management today:

- removal of about 140 relict groynes, leaving only 10 groynes at locations with a significant change in beach orientation;
- periodic renourishment of the beach using shingle imported from an offshore dredge site (Owers Bank);
- bypassing shingle round Sovereign Harbour to main beach;

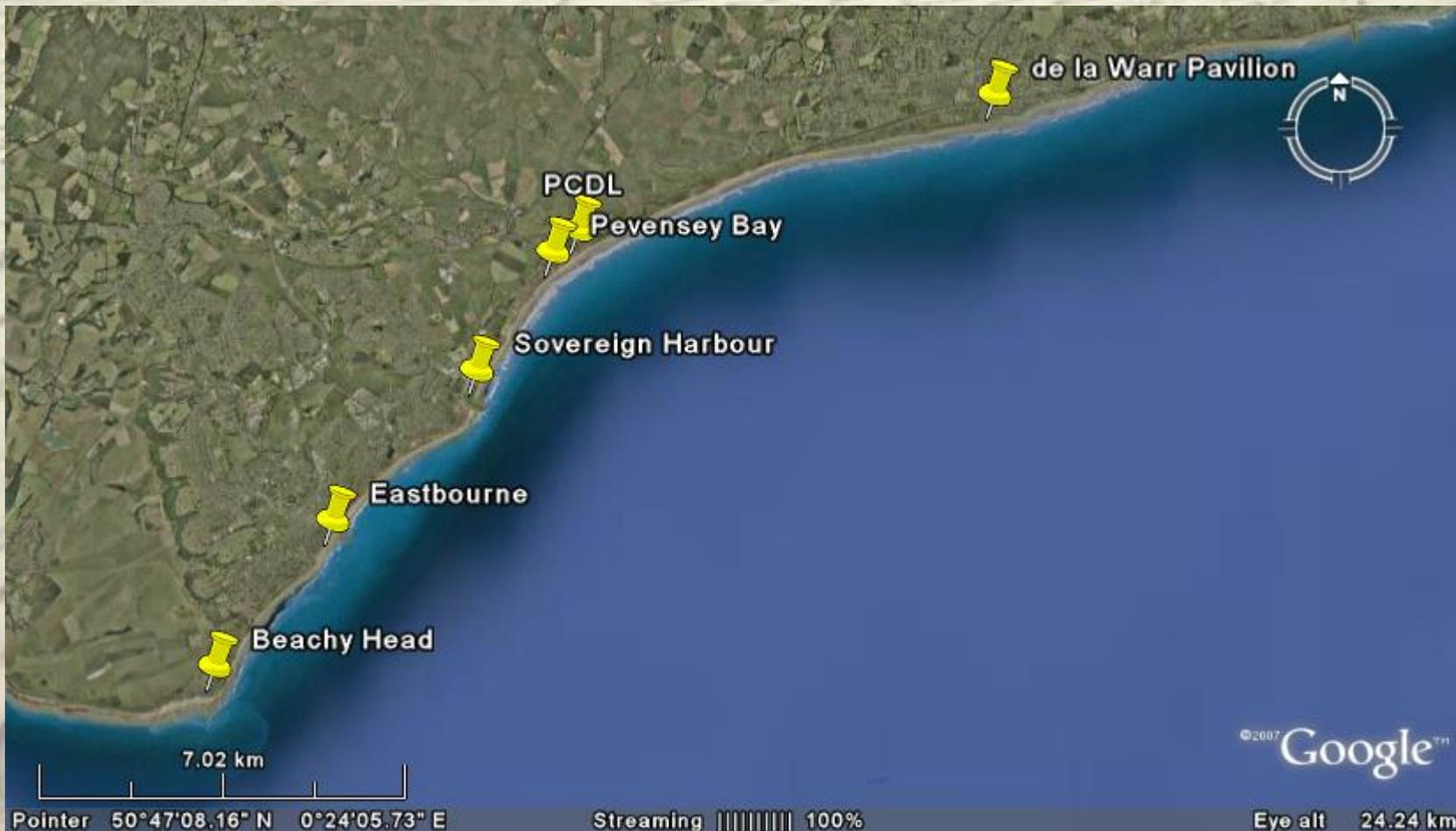
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Management today:

- recycling shingle to depleted areas (generally involving movement of shingle in lorries along the beach from east to west as net transport is from west to east);
- re-profiling of beach to push shingle back towards the ridge crest.

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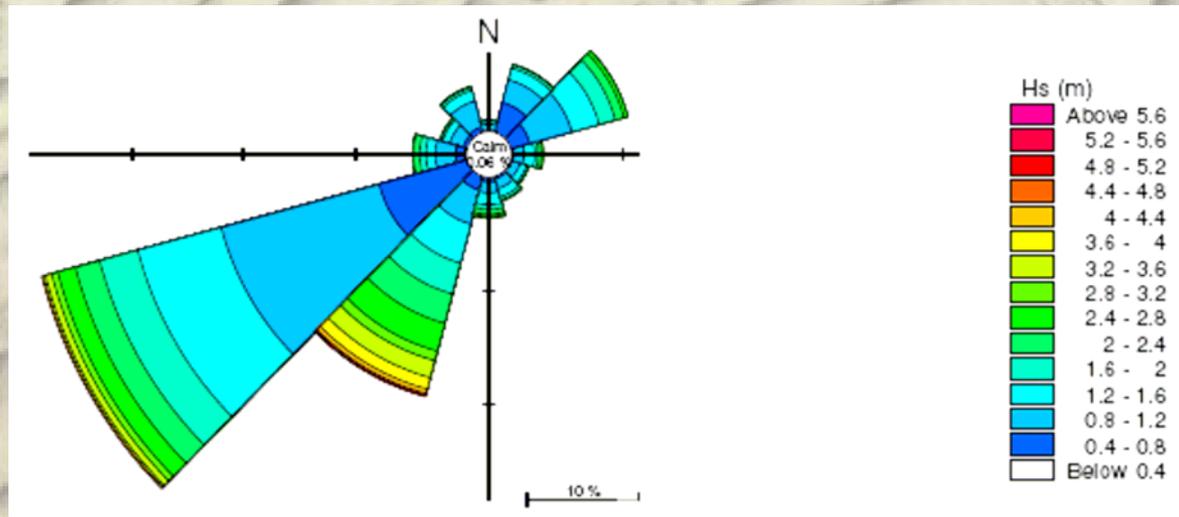
Coastal Processes



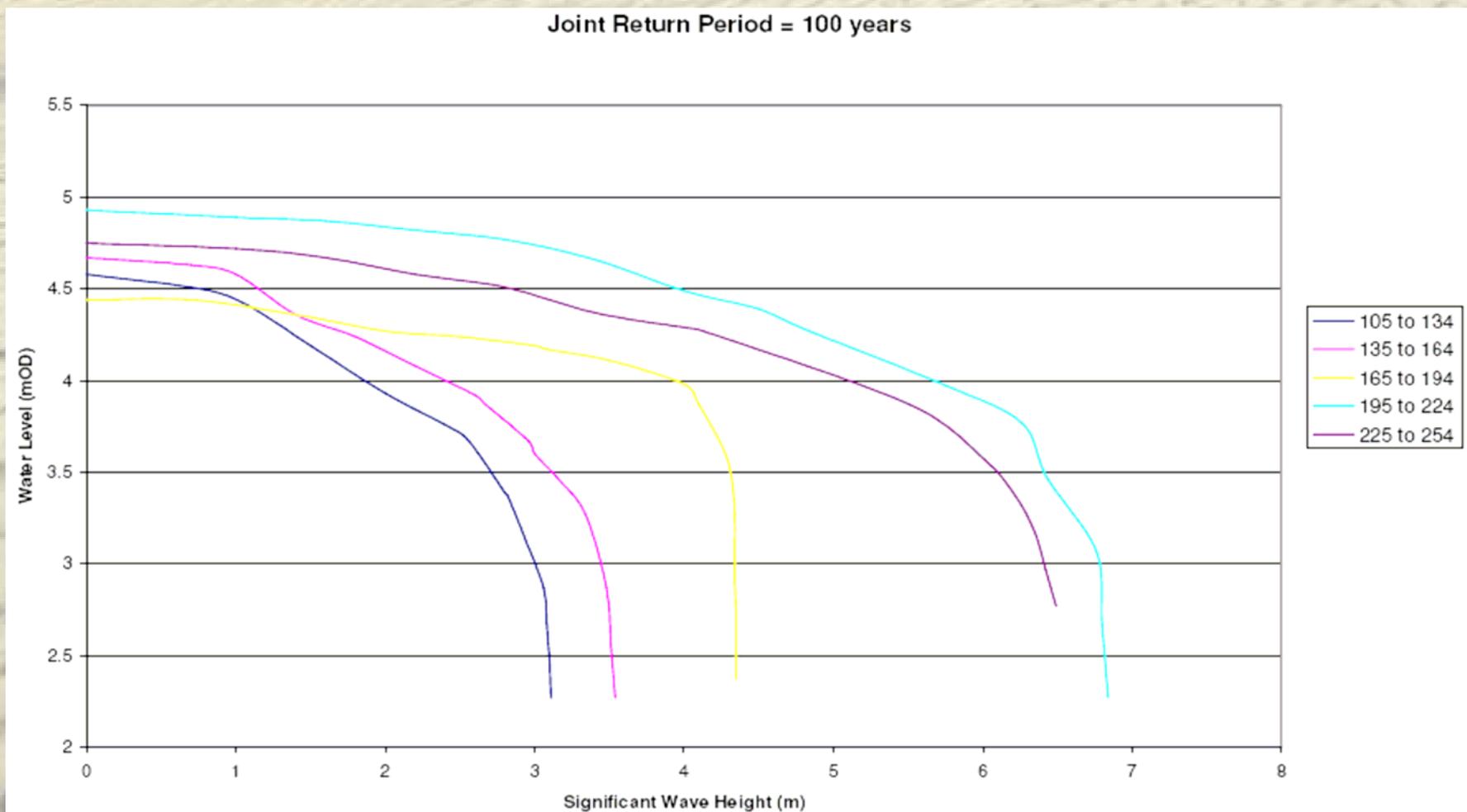
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Waves

- Inshore directional wave buoy (2003 on)
- Offshore numerical wave models



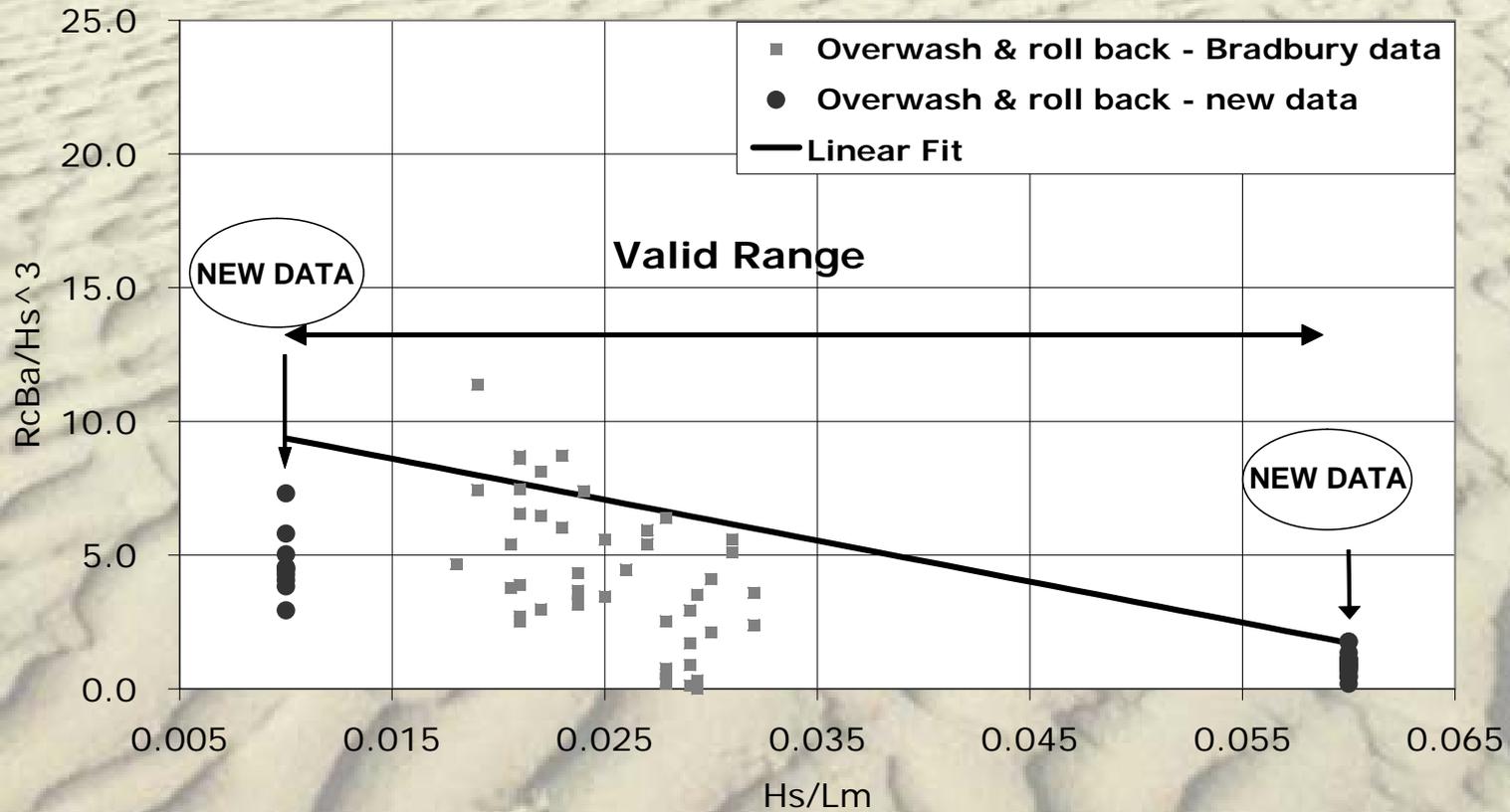
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Breaching of barrier beach:
Threshold equation -

$$\frac{R_C B_A}{H_S^3} < -153.1 \frac{H_S}{L_M} + 10.9$$

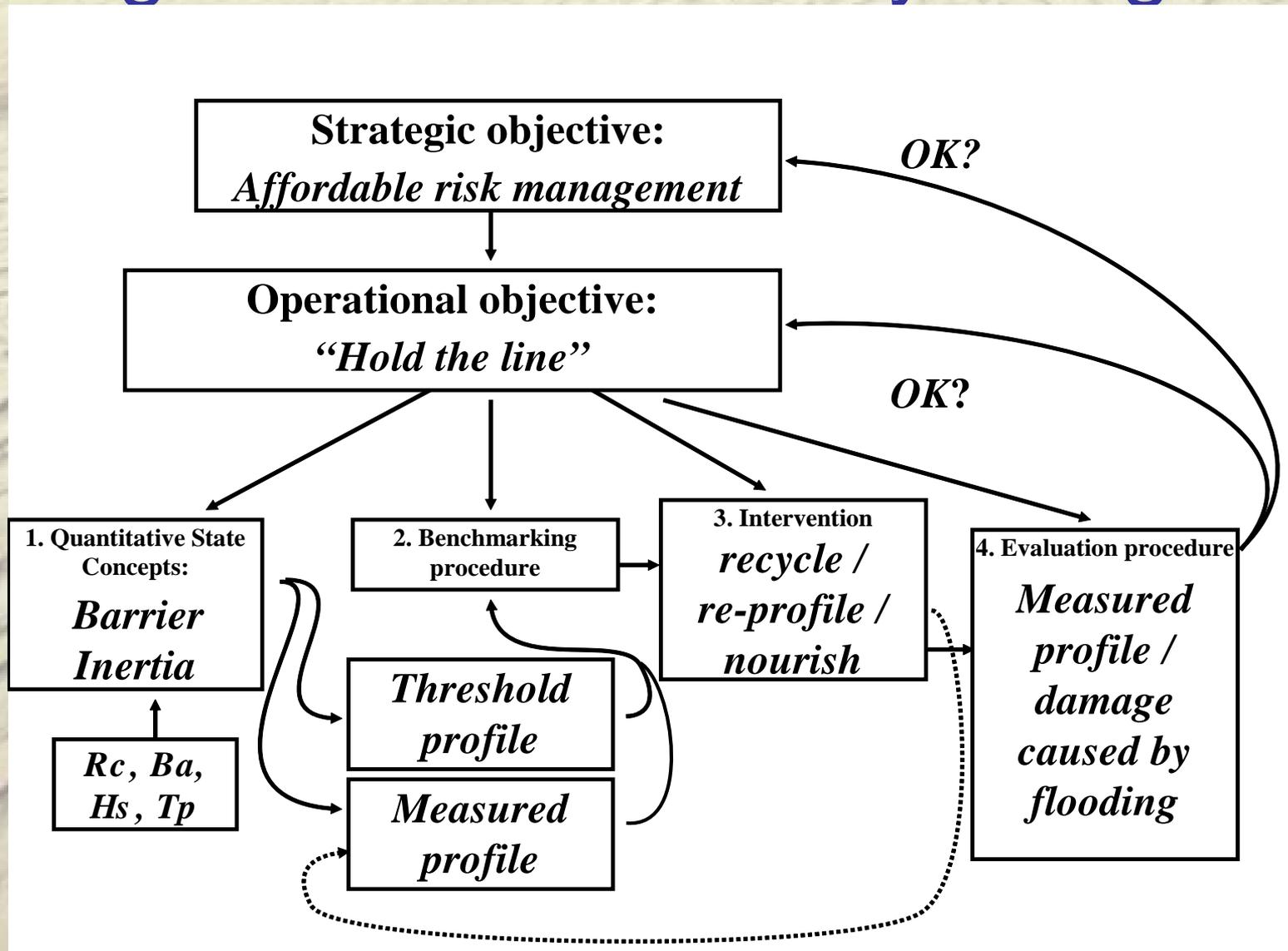


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Management options

- Now – 2025: Hold the line
 - Recharge, recycle, reprofile;
- 2025 – 2055: Hold the line;
 - As above, but may need to have more hard engineering;
- 2056 – 2105: Hold the line
 - May need substantial engineering structures;
 - Alter nature of coast (tourism/ecology)

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Key concepts

- Resilience;
- Strategic sediment reservoirs;
- Favourable sediment status;
- Coastal sediment management plan;