Noosa Council

Integrated Coastal Management Solutions for Open Coasts

Case Study

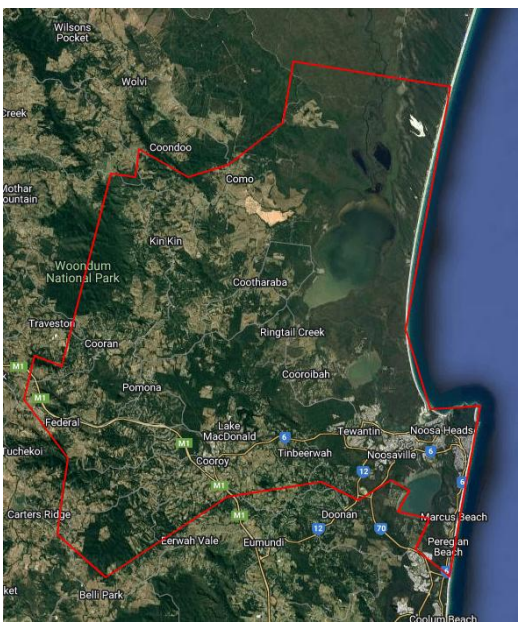
Introduction

- Noosa's Coastal Hazards Adaptation Plan identified the importance of "implementing measures that support and enhance dunes, beach health and natural coastal processes as soon as possible."
- Localised beach monitoring using multi-scale and multi-technology solutions was identified as a critical adaptation response to build a strong evidence base for decision making, improve hazard modelling, and support an adaptive management approach
- Long-term beach nourishment was identified as the preferred adaptation response for Peregian Beach, Marcus Beach, Castaway Beach, Sunrise Beach & Sunshine Beach

Project Details

- Council partnered with UniSC, UQ, UNSW and EOMAP to monitor its coastline using a multi-scale, multi-tech approach
- Council undertook a detailed sand supply investigation to determine the suitability and reliability of potential sources of sand for future nourishment of the Eastern Beaches

Project Location



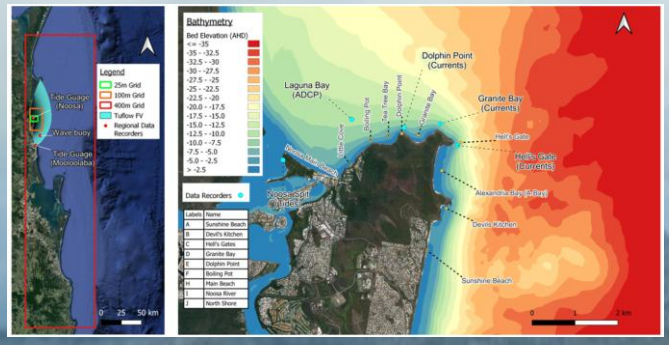
NOOSA Council

QCoast2100

LGAQ

Every Queensland community deserves to be a liveable one

Queensland Government



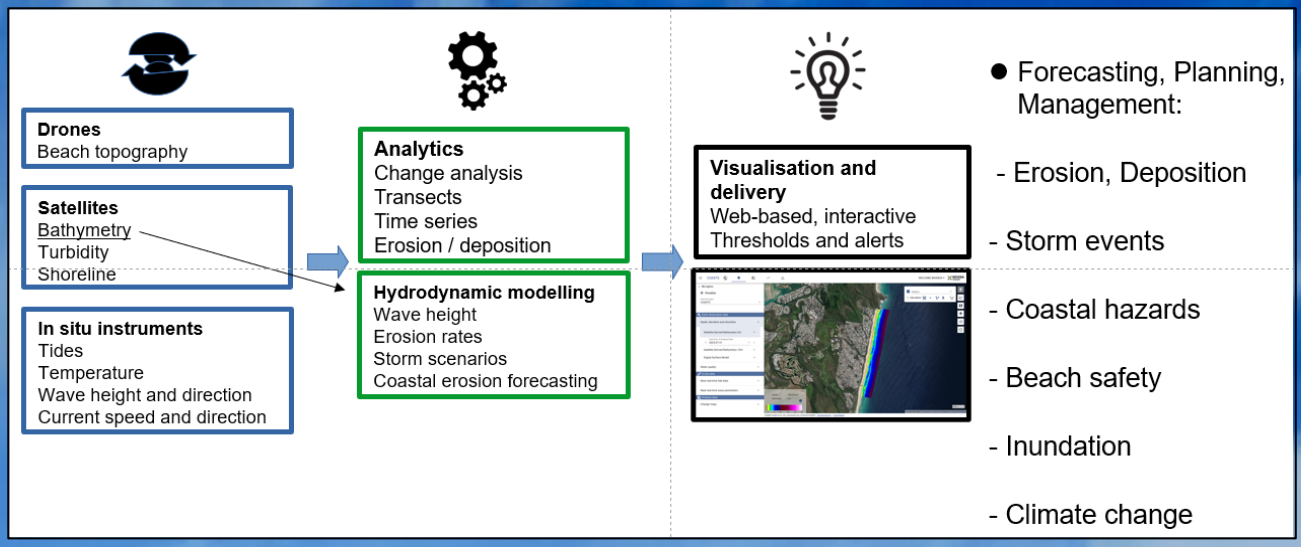
Coastal Monitoring

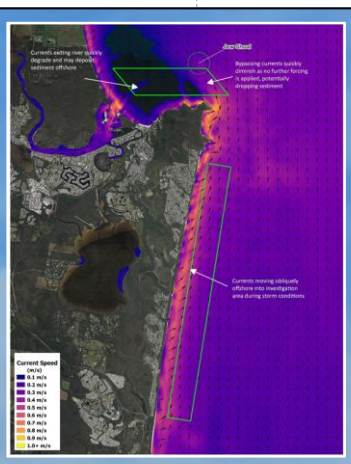
- ATV RTK-GPS Beach Surveys
- ETA Transects
- UAV LiDAR & Photogrammetry Surveys
- EOMAP's Satellite-derived Bathymetry (10m and 2m resolution)
- XBeach & SWAN Modelling
- Single- & Multi-Beam Echo Sounding
- CoastSnap Citizen Science

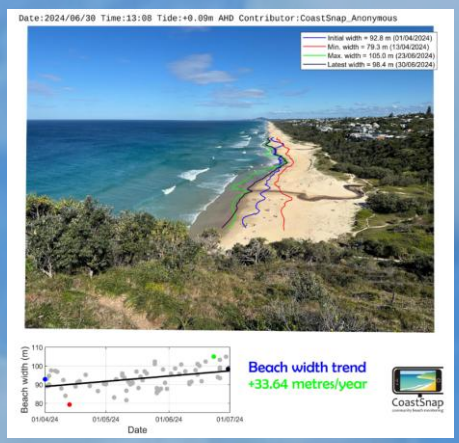
Sand Supply Investigation

- Literature Review
- Constraints Assessment
- Legislative & Policy Analysis
- Coastal Process Modelling
- Site Investigations
  - Acoustic Investigation (bathymetry, backscatter & sub-bottom profiling)
  - Physical Investigations (sediment sampling)

"This project was unique and impactful as it not only collected vast amounts of data using field surveys and remote sensing but also developed an innovative decision-support dashboard to visualize, analyse, and forecast the data collected so that it would be useful for everyday coastal management" – Shayan Barmand, Project Lead, Noosa Council







Problems / Challenges

- Establishing contracts with Universities takes time. It's important to start early, have a template research agreement and data sharing agreement ready to go at the start.
- Flexibility in timeframes for field surveys due to adverse weather and unexpected equipment failures. Recommend a healthy timeframe for delivery of offshore/nearshore field monitoring.
- Resourcing challenges due to staff changes

Outcomes

- Viable sources of offshore sand identified
- Ongoing coastal monitoring program established
- Innovative decision-support tool with visualisation, analysis & forecasting capabilities developed
- Questions over problem coastal creeks and erosion risk addressed
- Satellite-derived bathymetry effectively trialled
- Citizen science coastal monitoring established

Project Partners

For more information

Please contact us

Shayan Barmand, Project Coordinator, Climate Change Adaptation, Noosa Council

Shayan.barmand@noosa.qld.gov.au

Noosa.qld.gov.au