The problem can't be ignored

Looking back at 50 years of response to coastal erosion

Professor Rodger Tomlinson
Director, Griffith Centre for Coastal Management
Ignorance of history is not a valid, nor credible, scientific position.

Angus Gordon, 2013
1828 – Tweed falsely named the Clarence

Acknowledgement for old photos and figures: Robert Longhurst, “Tallebudgera to the Tweed” and “Southport”
• Intermittent breakthrough at Narrowneck in the 1800s
• 1920s Main Road construction
• 1920s timber walls constructed at Narrowneck.
Narrowneck

1950s – 1970s
Broadwater

1891
Periods of extreme storminess – 1860s-1890s, 1930s, 1950s-1970s, 2009 - ?

Major cyclones and East Coast Lows 1954, 1967, 1972, 1974
Coastal erosion and inundation caused during the stormy period of the 1960s and early 1970s caused major damage at Byron Bay, the Gold Coast and Narabeen/Collaroy.
• Jan – May 1967: Cyclones Dinah, Barbara, Dulcie, Elaine and Glenda

• June 1967: 3 East Coast Lows

• 8 million cubic metres of sand eroded from beaches

• > 1 in 100 year impact
Scale of Disaster

- Houses lost, beach reserve and foreshore lost, extensive damage to public infrastructure
  - 1967 – 3 years for economic recovery of Gold Coast
  - Events ranked >1 in 100 year
Response to Extreme Events

- Byron Bay
  - Erosion studies, NSW Coastal Management Guidelines
  - Town seawall (groyne effect at Belongil)
  - Setback lines (planned retreat) incorporated into LEP (1988)
  - Temporary protection works, legal action – ongoing
- Recent activity
  - CMP
  - Court decision to allow temporary structures
  - Plan for seawall as a long term solution (Council will bill the owners)
Response to Extreme Events - Collaroy

- Seawalls built to protect high rise after 1967
- 1980s – 2000s multiple studies
- 1990s emergency rock dumped by government
- 1990s – 2000s failed buy back scheme
- 2002 protests against seawall
- 2015 – CZMP formalised seawall option
Response to June 2016

- Extra rock at street ends
- Geobags at vulnerable area
- Concept of seawall design underway
- Unresolved issues about ownership, public and private land
- Insurance – some paid some didn’t
- Under administration – paying for the wall and charging the residents
- Still issues with the new Coastal Protection Act
Response to Extreme Events

- Gold Coast
  - 1960s-1970s
    - individuals took action
      - car bodies, concrete blocks, old tyres
    - Army, State and Local govt.
      - Sandbags, rocks

Source: GCCC
Response to Extreme Events

- Gold Coast – 50 years of researched and planned action
  - Erosion studies, formation of BPA (1968), Coastal Management Act (1973)
  - Gradual implementation of management plan – seawalls, groynes, entrance training, nourishment (Delft Report)
  - Gold Coast Shoreline Management Plan (2010)
  - Shoreline projects
  - Ocean Beaches Strategy
  - Local Planning Scheme – seawalls, building excavation

  - Palm Beach Shoreline Project
  - Northern Beaches Project
  - Seawall completion

- State Government
  - Revitalised Coastal Management Planning and Coastal Hazard Adaptation Strategies
Lessons Learnt (and not learnt) for the future

- Past strategies have yet to be tested in 1960-1970s conditions due to calm period
  - Gold Coast Protection and Management designed for 1967 conditions
  - Byron Bay “planned retreat” was not a solution for management of extreme events - assumes property owners will abide by LEP and move. Seawalls.
  - Narrabeen/Collaroy ad-hoc buy-back didn’t protect remaining properties. Seawall?
- Strategies need legal back-up
  - Byron Bay legal challenges to statutory set-back
  - Gold Coast - responsibility for private seawall
- New financial models needed
  - Buy-back useless unless all properties included at a set price (not market price)
  - Insurance
- Setback (retreat) needs a parallel legal and social framework for transition
  - Our laws of tenure don’t reflect our laws of nature
  - Irrelevant for the Gold Coast
- Future planning based on “a line in the sand” and average long-term projections does not align with climate variability and extremes
Coastal Erosion Management

2 main approaches to managing beach erosion
• Last line of defence – A-Line Seawall
• Maintain beach width with nourishment
Gold Coast Beach Nourishment Totals

Main Beach to Surfers: 4 mil m³

South Burleigh: 1.2 mil m³

Palm Beach: 1.8 mil m³

Southern Gold Coast Beaches (Kirra to Duranbah): 17.45 mil m³
Often Supposed Roadblocks

- Lack of a range of management options.......NO
- Inability to design solutions (walls, nourishment etc)....NO
- Lack of Planning controls....not really although some need clarification
- Lack of capacity at Government and consultant organisations......partially
- Lack of methodology for CZMPs/CMPs......NO
- Lack of tools such as CBAs that satisfy Treasury.......NO
Often Supposed Roadblocks

- Lack of a range of management options........NO
- Inability to design solutions (walls, nourishment etc)....NO
- Lack of Planning controls....not really although some need clarification
- Lack of capacity at Government and consultant organisations......partially
- Lack of methodology for CZMPs/CMPs.......NO
- Lack of tools such as CBAs that satisfy Treasury........NO
Real Roadblocks - Stakeholders resistance
Real Roadblocks - Institutional

- Lack of a mechanism to **IMPLEMENT** the social contracts required to resolve competing interests - **Line in the sand**

- Detail of what is planned up front, before consultation, not just concept design - consultation realistic and not just “telling” or “workshops” or “focus groups”