

OUTLINE EXISTING DATABASE

Bathymetry

- EM300 + backscatter
- EM12D + backscatter

Sub-bottom

- 1000 km of 3.5 kHz (of variable quality)
- 200+ km of MCS (good quality, reprocessed)

Seabed Samples

- ~1 dozen piston cores
- 3 multicores with Pb-210 and ash stratigraphy
- 2+ dredges with nannofossils

Water-column Data

- 4-5 CTD casts upslope from trough
- 2-3 ADCP Anchor stations on shelf break; one a Poverty Gap w/ CTDs
- Satellite data – SST, visible, dynamic height, etc.
- Oceanographic mooring nearby

Modelling

- Debris flow
- Hemipelagic sedimentation
- Turbidity currents
- Submarine failures

GAPS

1. Identify zones of active deposition? (today and throughout Holocene)
 - 1) Short cores w/ Be-7, Pb-210, Cs-137 and tephra chronology.
 - 2) Chirp sonar coverage
2. Evaluate modern sediment supply and escape.
 - 1) as above
 - 2) CTD casts before and following events
 - 3) Moorings with current meters, sed traps, thermistors, transmissometers
 - 4) Surface plume transport investigations with satellites and ground-truth
 - 5) Develop 3D models slope transport processes
3. Importance of intra-slope transport
 - 1) Multibeam and Chirp
 - 2) Process-based modeling of submarine gully erosion
 - 3) Develop 3D and integrated models of slope-erosion processes
4. Evaluate tectonic-sediment interactions over short- and long- (pre-Holocene) timescales.
 - 1) Chirp evaluations w/ coring of fault activity
 - 2) Parallel structural investigation involving MCS
 - 3) Development of models considering tectonic changes and process effects.