

Philip Barnes

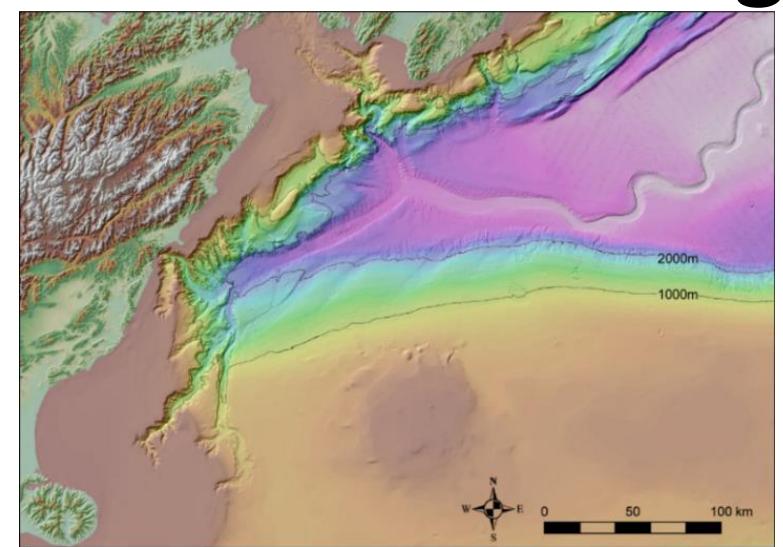
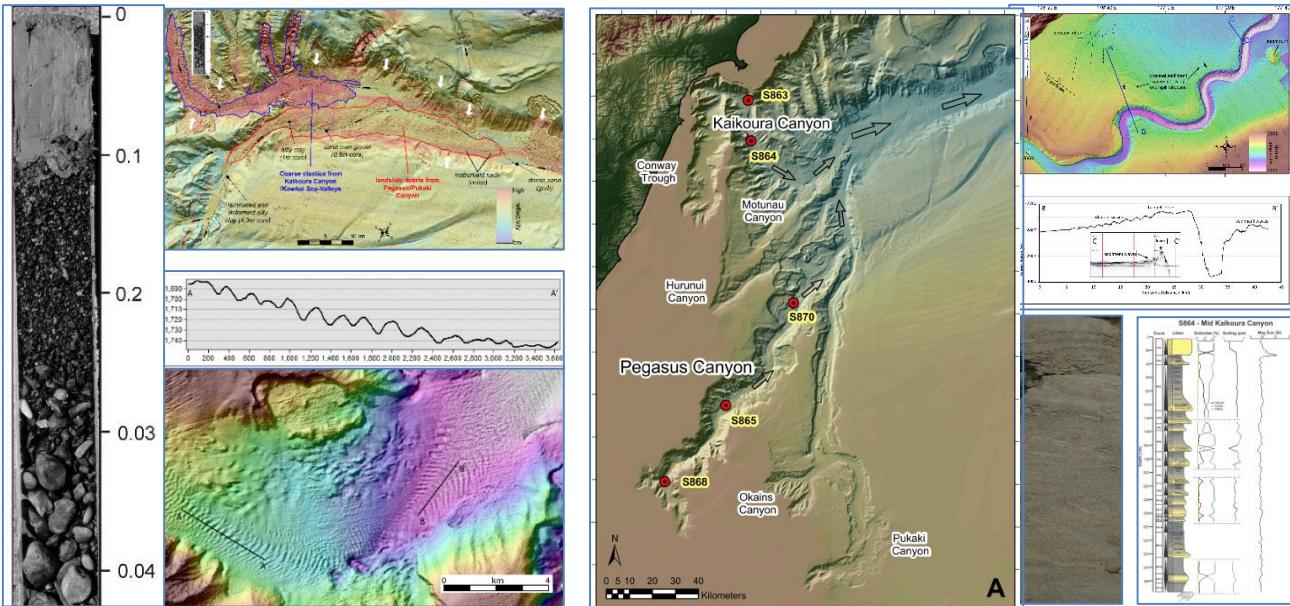
1. Southern Hikurangi – Canyons to channel turbidite processes
2. SHAKE – Southern Hikurangi subduction fault behaviour
3. Thrust wedge structural modelling

Ingo Pecher

4. Tuaheni landslides
5. Gas hydrates – Tuaheni
 - O2020 survey
 - Pegasus Basin 3D model and hydrates

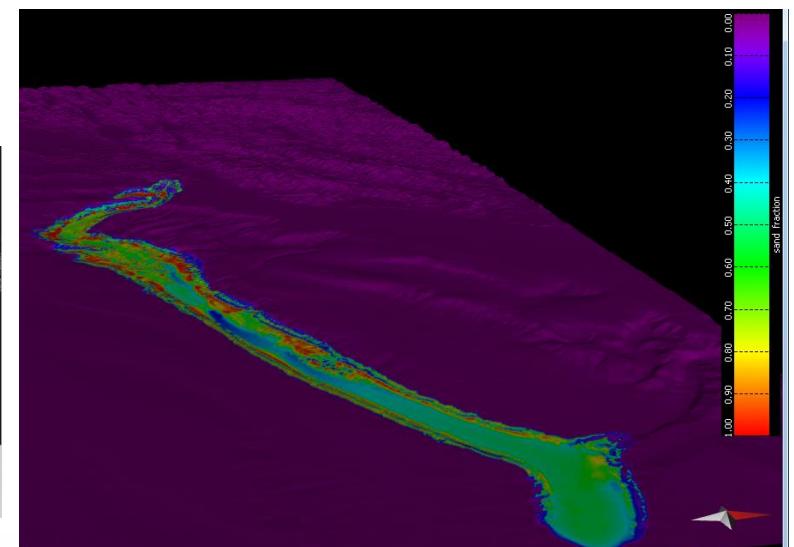
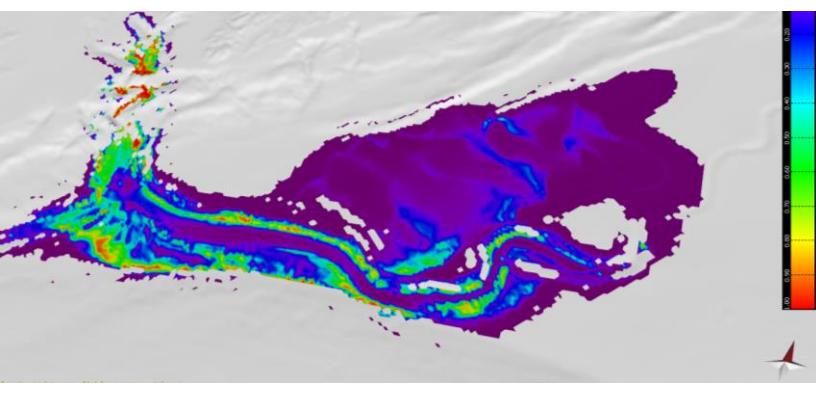
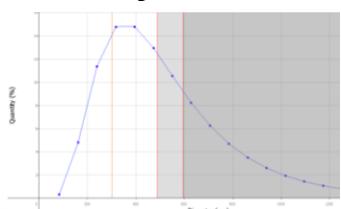
L. Quaternary surface processes

Southern Hikurangi



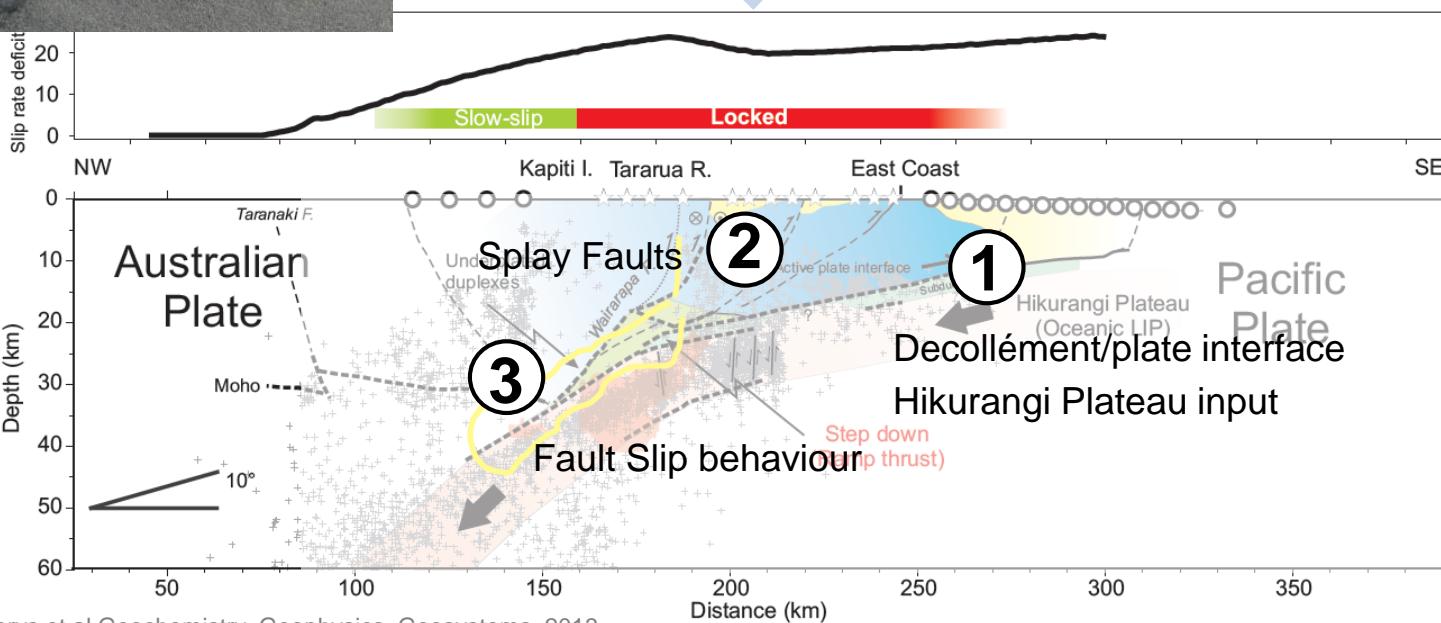
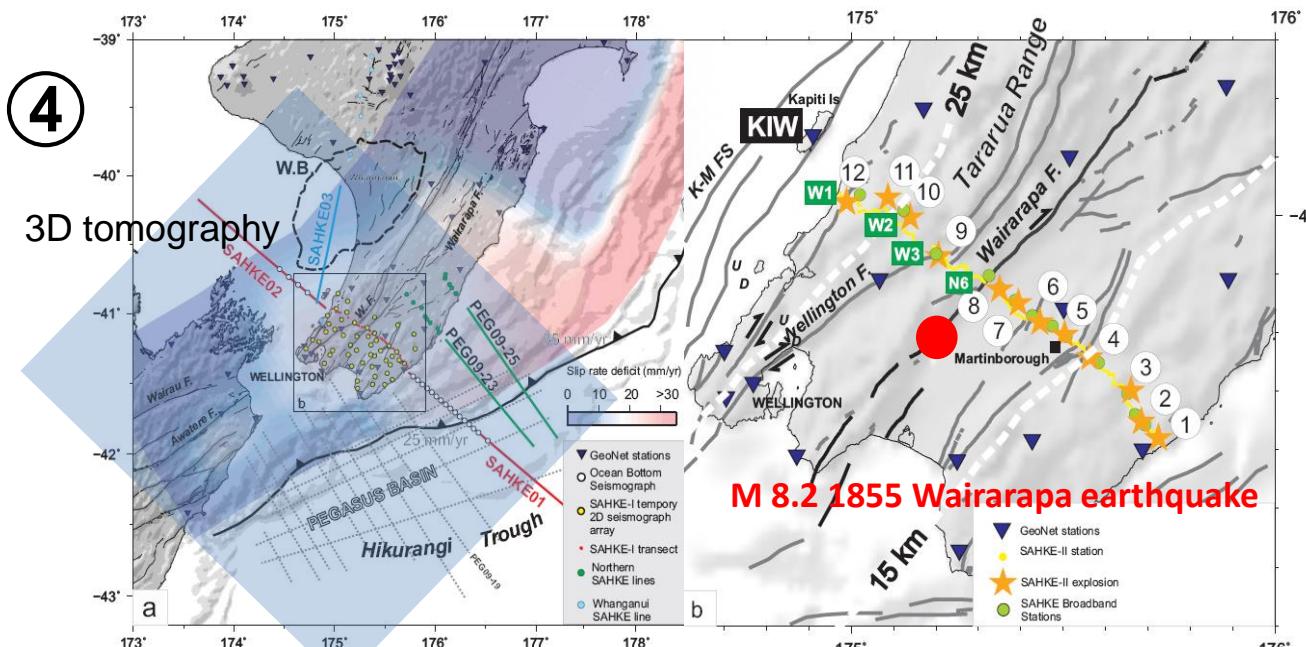
Modelling of southern Hikurangi turbidity currents

- Midland valley MOVE

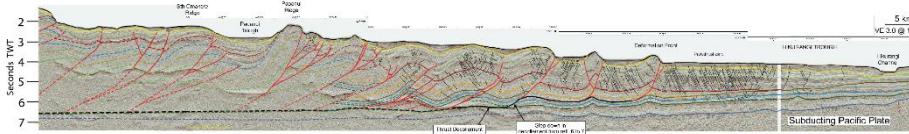
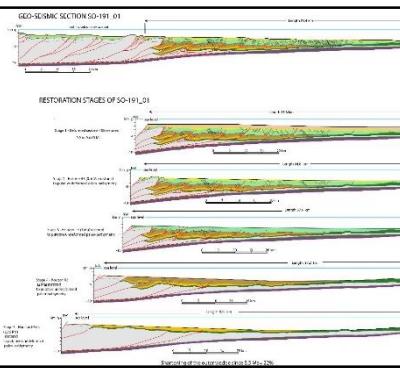
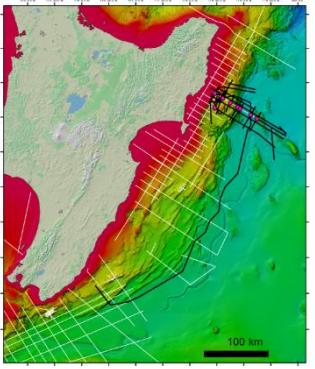


Philip Barnes, Joshu Mountjoy, John Mitchell, Arne Pallentin, Geoffroy Lamarche, Tim Kane (NIWA); Charlie Paull (MBARI, USA); Lorna Strachan, Brett Ripp, Matt Jeromson (UoA); Leo Chaumillon, Marie Argoud (cnam, Intechmer, France; Joesph Fourier, Grenoble, France); Gareth Crutchley, Karsten Kroeger (GNS)

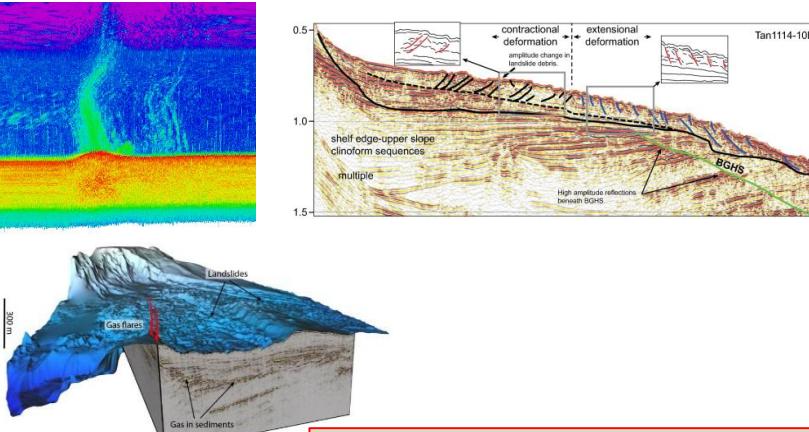
SAHKE 2009 - Present: Active and passive seismology GNS, VUW, ERI, USC



On going studies



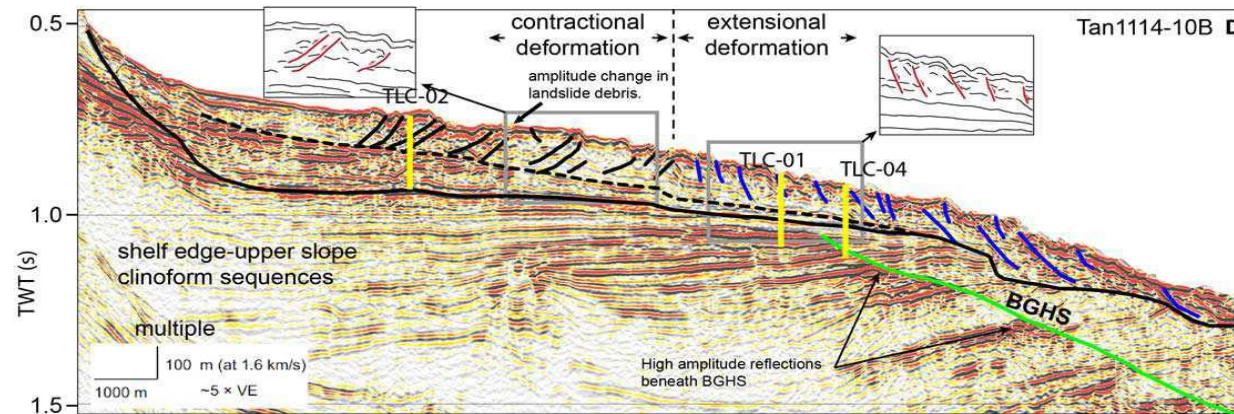
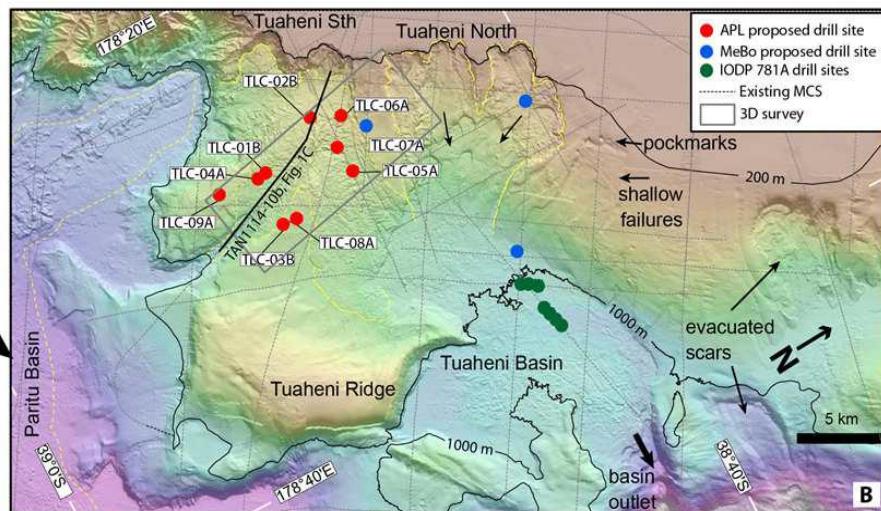
2 Tuaheni low velocity active landslide complex



- Gas hydrate system proposed to control ongoing active deformation
- Widespread methane seeps – local region of shallow, high density seepage
- 2014 P-Cable survey complete (3D structure, fluid pathways, velocity)
- MeBo drilling scheduled 2016 (geotechnical and landslide model)
- IODP APL-841 (in-situ and intact hydrate sample measurements)

Joshu Mountjoy; Ingo Pecher; Gareth Crutchley; Sebastian Krastel; Marta Torres ;Joerg Bialas; Aaron Micallef; Stuart Henrys

APL: Creeping Gas Hydrate Slides



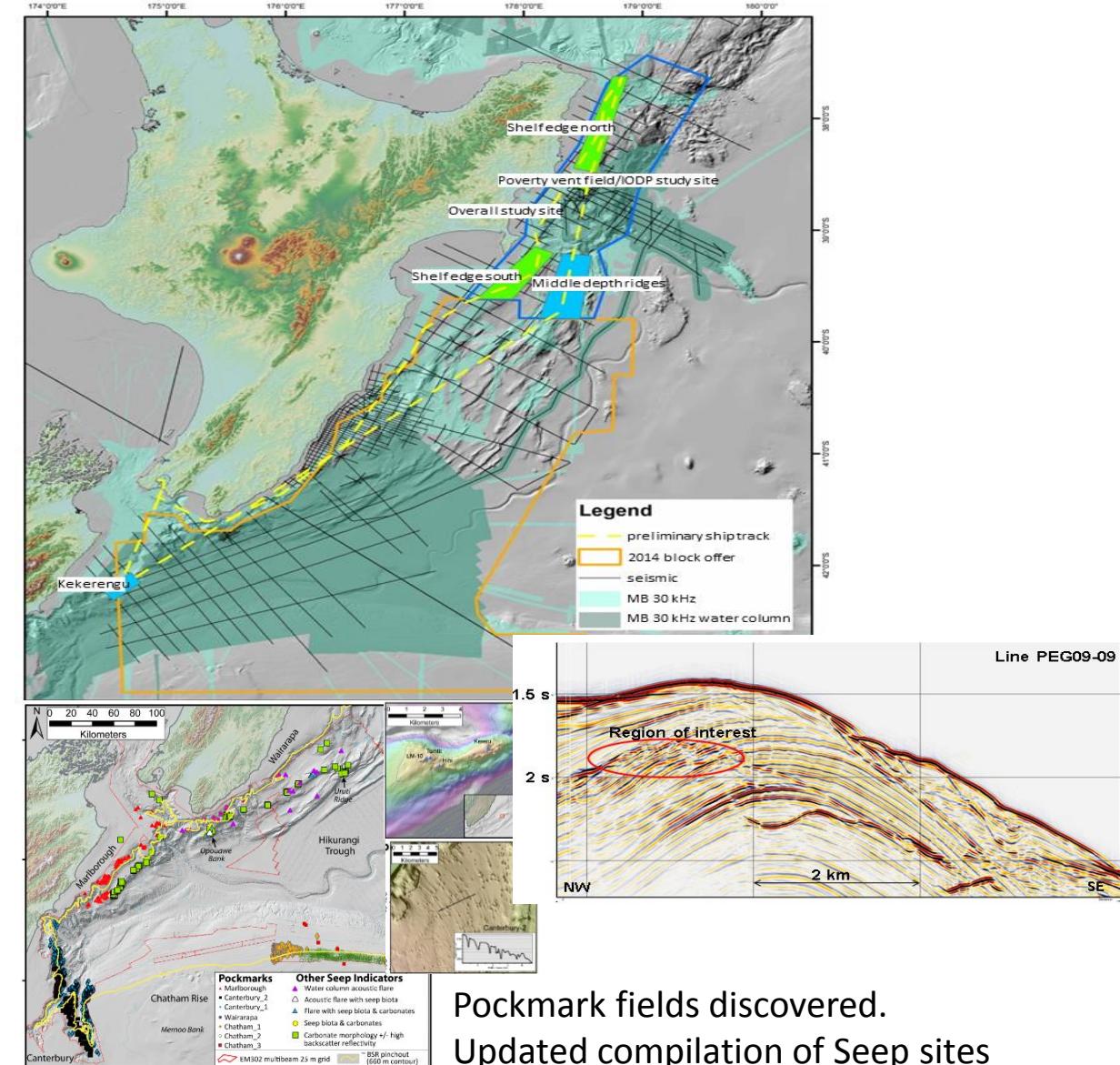
Proposed drilling program

Main hole (TLC-01): Pressure coring followed by shore-based lab. analyses

All holes: LWD (Stratigraphic information from MeBo cores)

R/V Tangaroa, OS2020 Survey, tentatively 6/2015, Objectives:

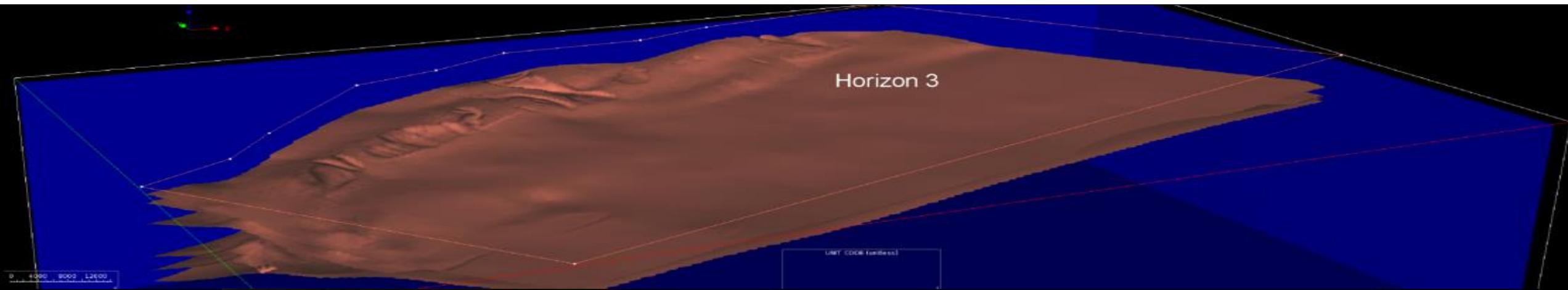
- Seep reconnaissance - Source characteristics (geochem.)
- Seafloor communities (biology) - Plumbing systems (geophys.)
- Gas hydrate deposits (geophys.) - Seafloor sampling (geology)



Pockmark fields discovered.
Updated compilation of Seep sites

Pegasus Basin gas hydrate research:

- 3D geological model



- High-density velocity analysis
(Crutchley et al., submitted)

