



SWPHC 2024 - Nadi

Dual DriX Operations

Andrew Price

OCEAN INFINITY[®]

2023 Armada Update

- 78m Lean Crewed Vessels mobilized and undertaking projects
- Over the horizon operations executed onshore
- Force Multiplier operations
- RCC Strategy Released



Ocean Infinity & DriX

- 8m uncrewed USV
- Manufactured by eXail, France
- 'Force Multiplier' Concept

Safety of Navigation Surveys:

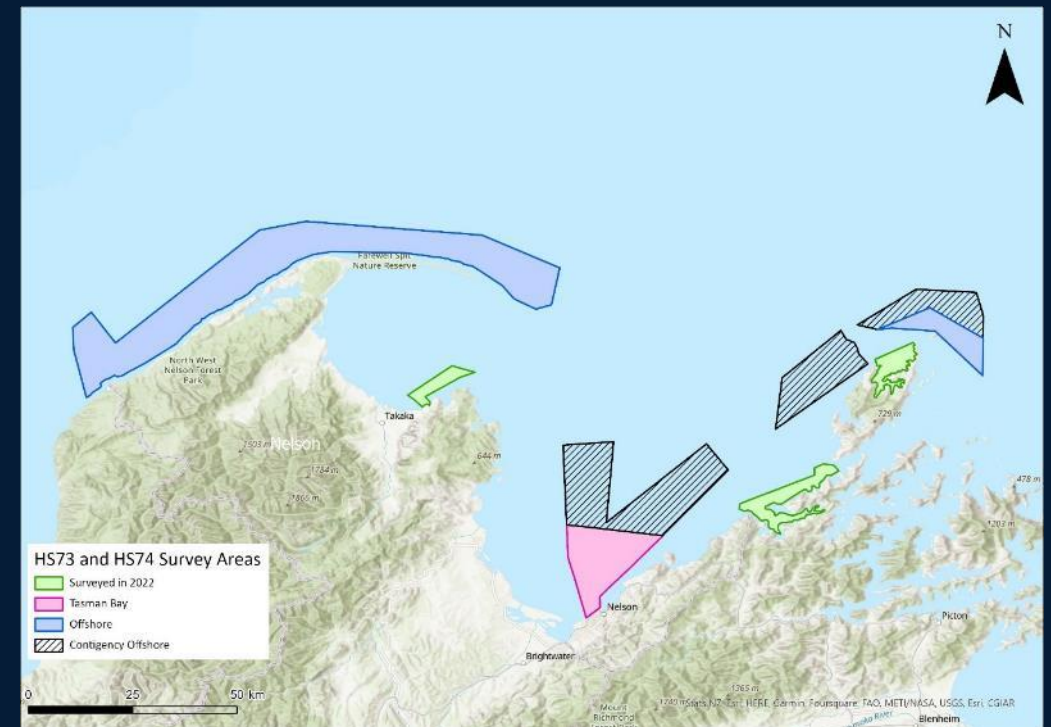
- 2018 – Pacific Regional Navigation Initiative (PRNI) – Kingdom of Tonga
- 2019 – Fiordland(NZ) Hydrographic Survey
- 2021 – Coromandel (NZ) Hydrographic Survey



- Nelson to Kahurangi Shoals and Western Marlborough Sounds - Offshore



- LINZ-1 Standard (1.5 x IHO Special Order)
- 349 nm²
- GNSS Tides with 5 x Tide Gauge sites to validate SEP model
- 3 Vessel Solution (2 x DriX) all with Kongsberg EM2040 MBES)
- Backscatter
- Water Column over wrecks and shoals

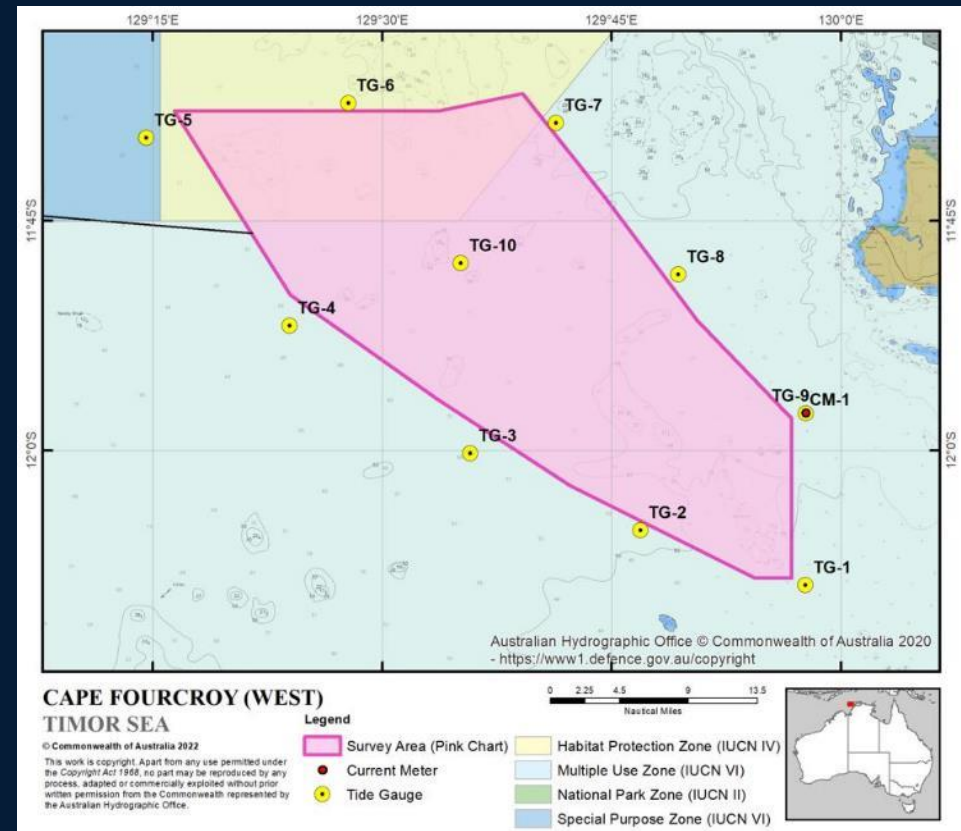


Dual DriX Projects 2023

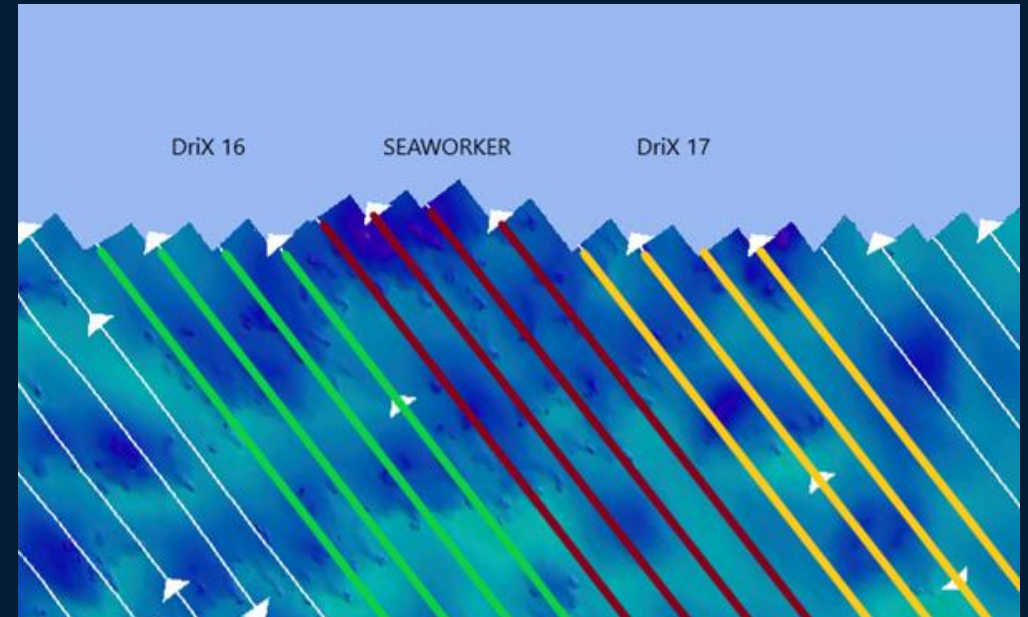
Two back-to-back projects completed in 2023 for Land Information New Zealand (LINZ) and the Australian Hydrographic Office under the HydroScheme Industry Partnership Programme. (HIPP)



- Cape Fourcroy (West) – 80km NW of Darwin, NT.
- IHO S44 Order 1a
- 600 nm²
- 10 x Tide Gauge stations
- 3 Vessel Solution (2 x DriX) all with Kongsberg EM2040 MBES)
- Backscatter
- Water Column over wrecks and shoals



Dual DriX Operational Procedures Fleet Management

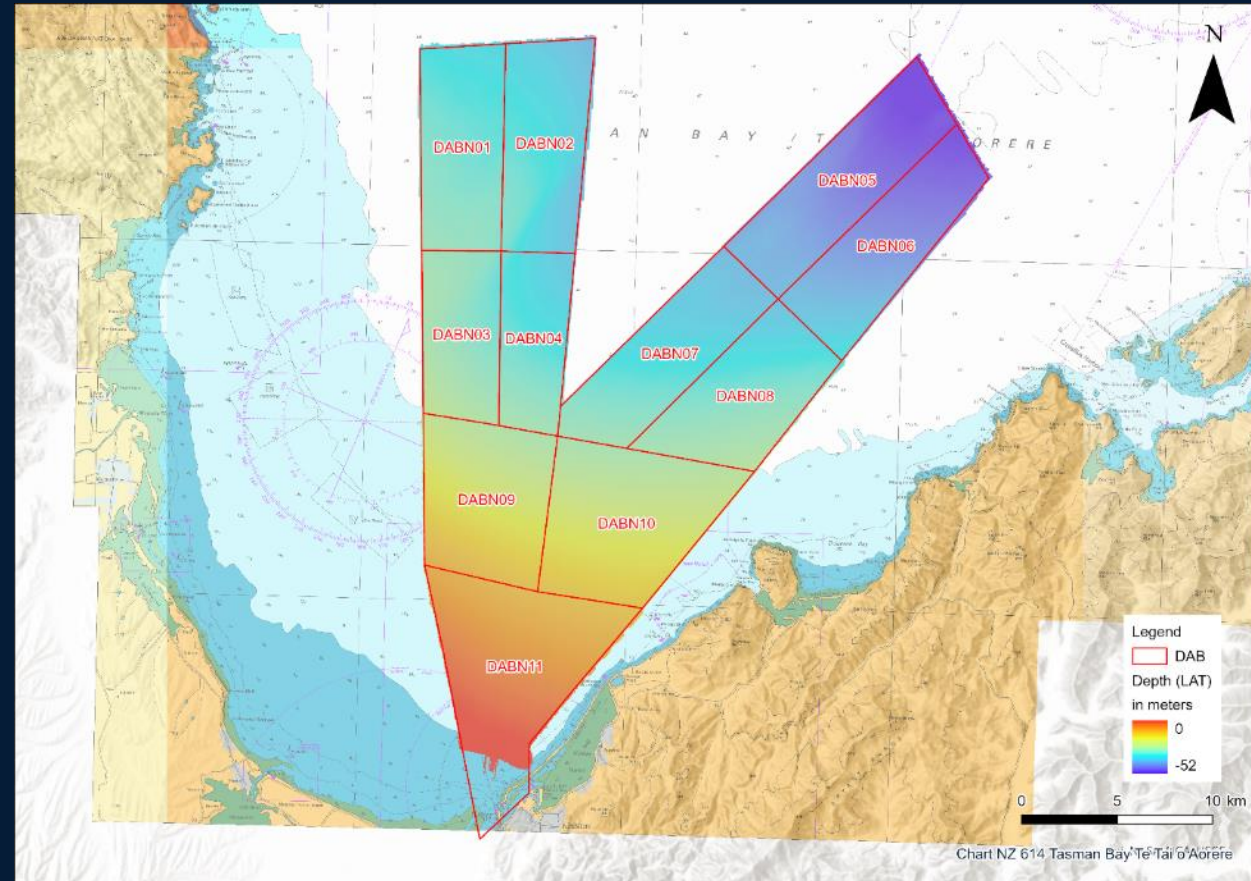
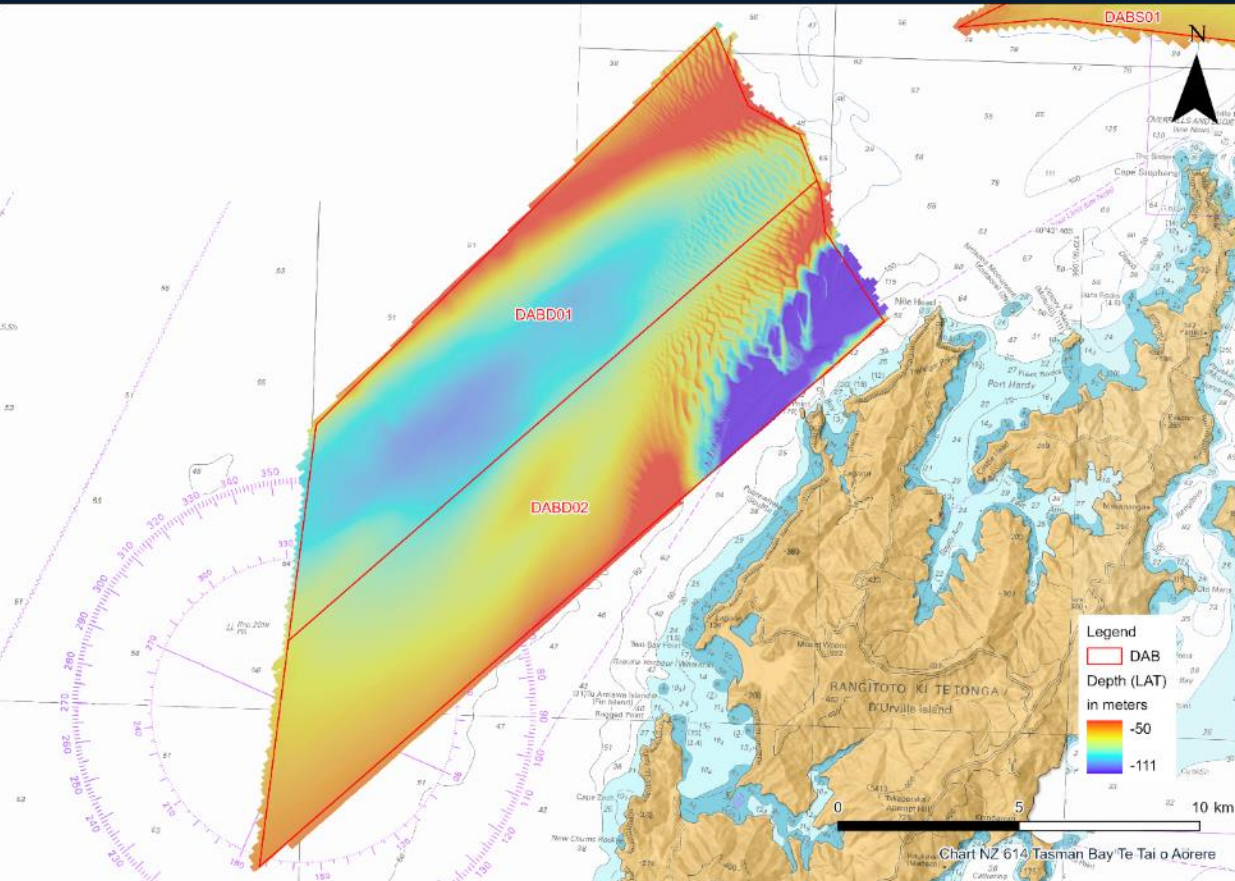


- 3 x identical survey systems (Kongsberg EM2040, iXblue INS, Veripos GNSS)
- DriX operated over Wifi system (within 1km of Mothership)
- All three vessels survey at same speed to maintain Wifi connection.
- DriX16 and D17 on opposite sides of Seaworker

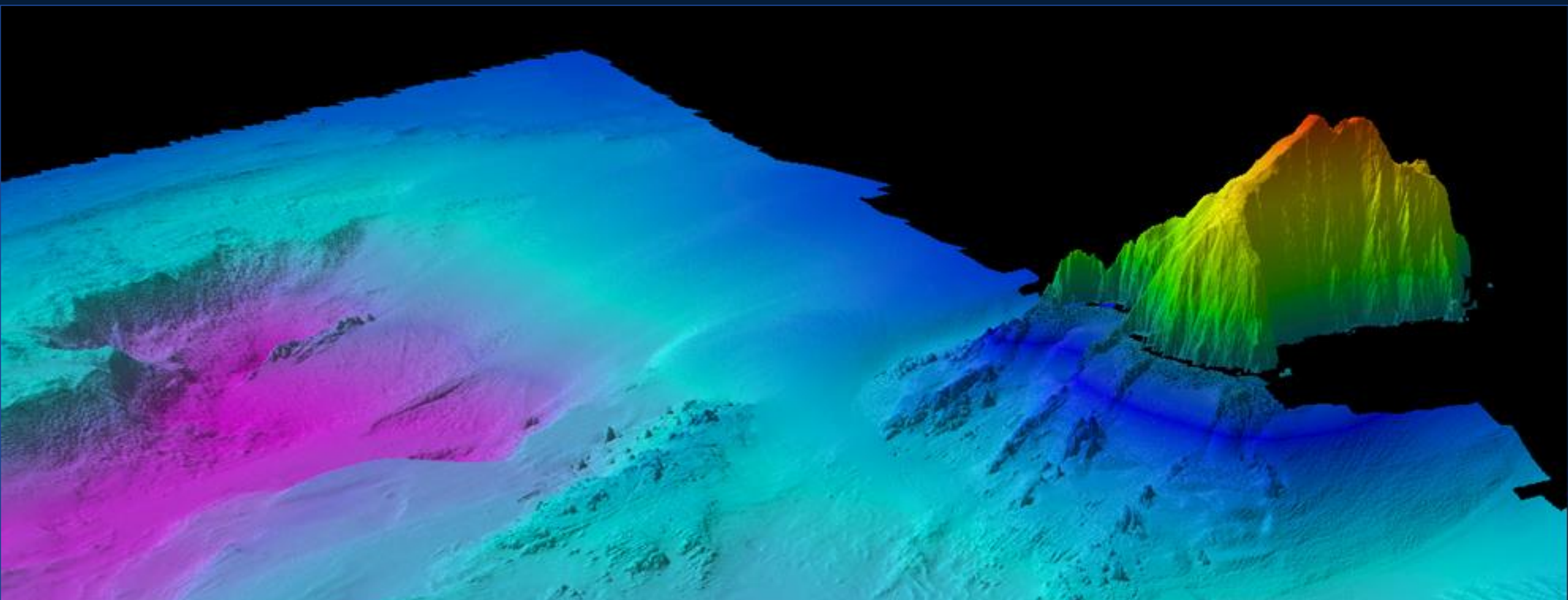
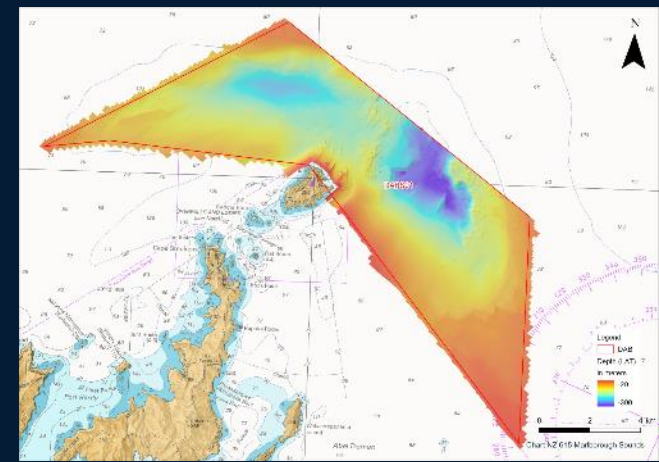
Mothership – MV Seaworker



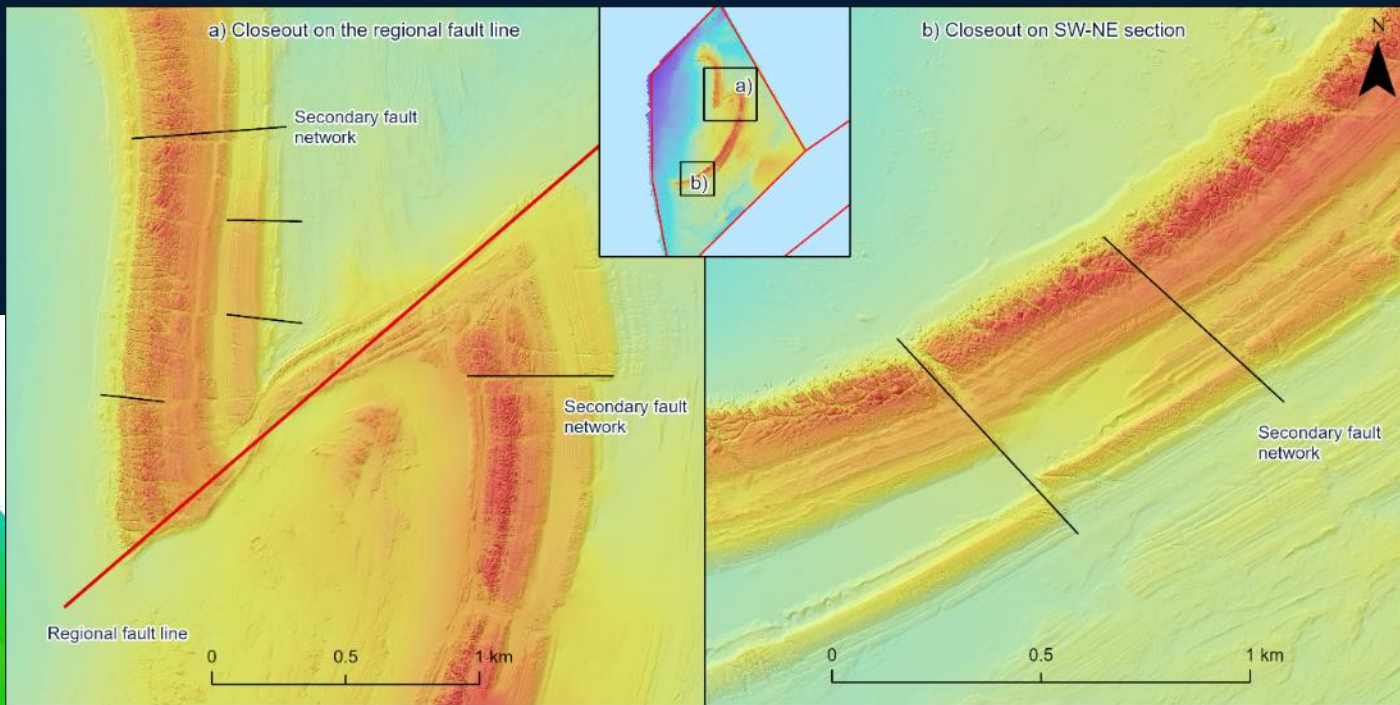
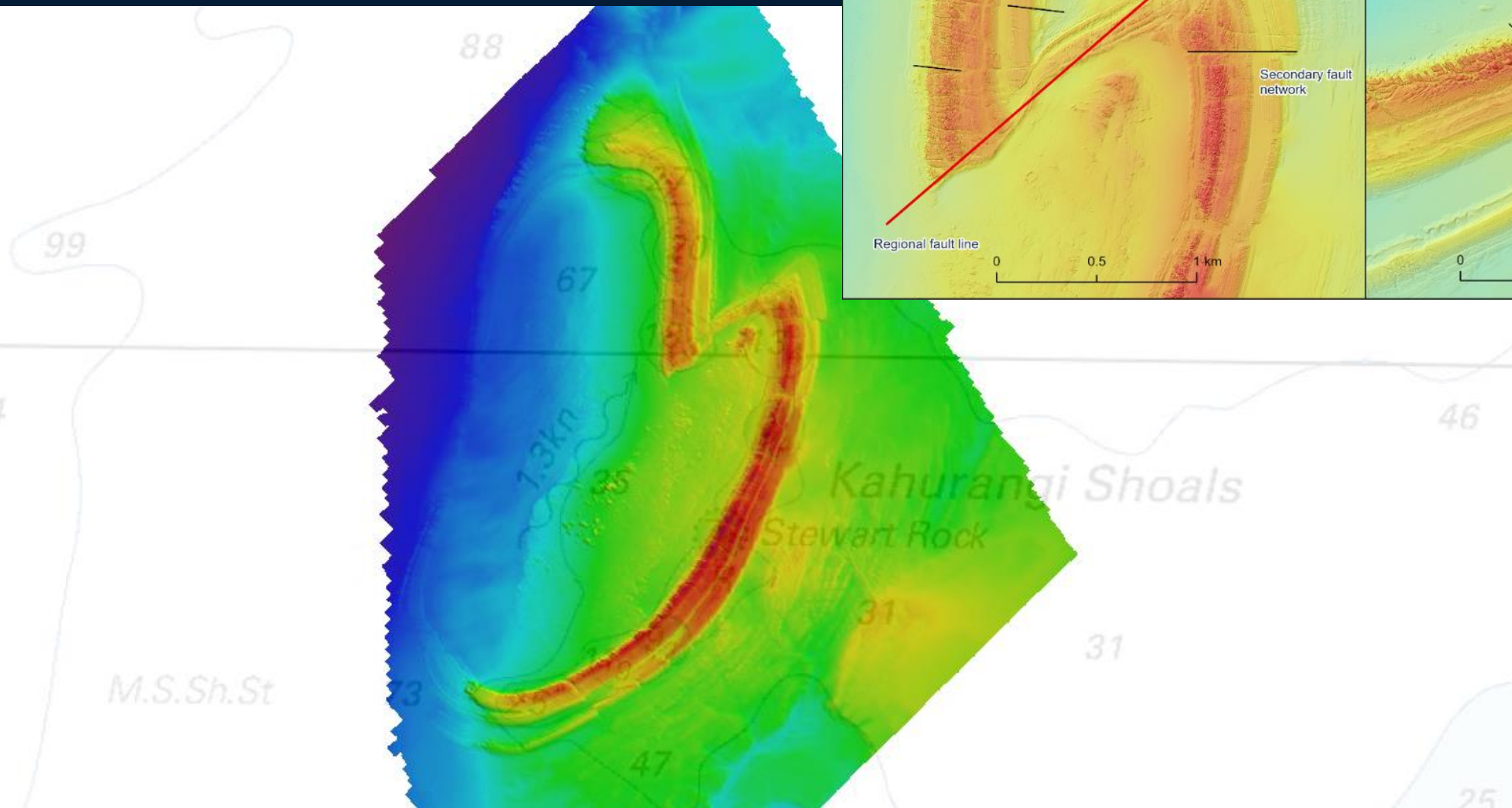
Final Dataset Nelson, NZ



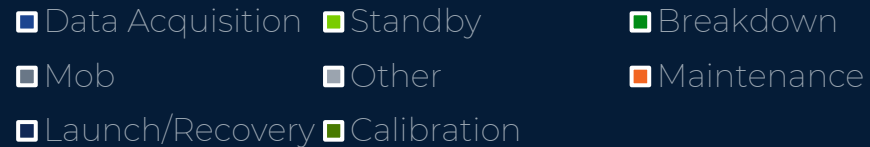
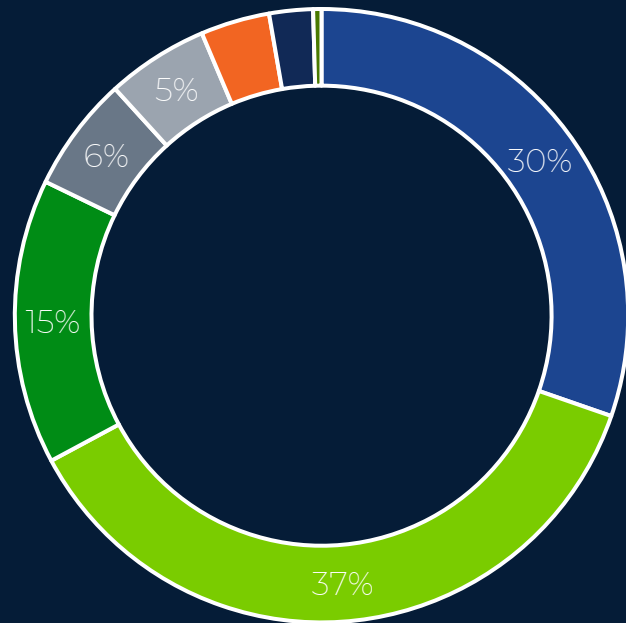
Stephens Island MBES & PGF LiDAR



Kahurangi Shoal



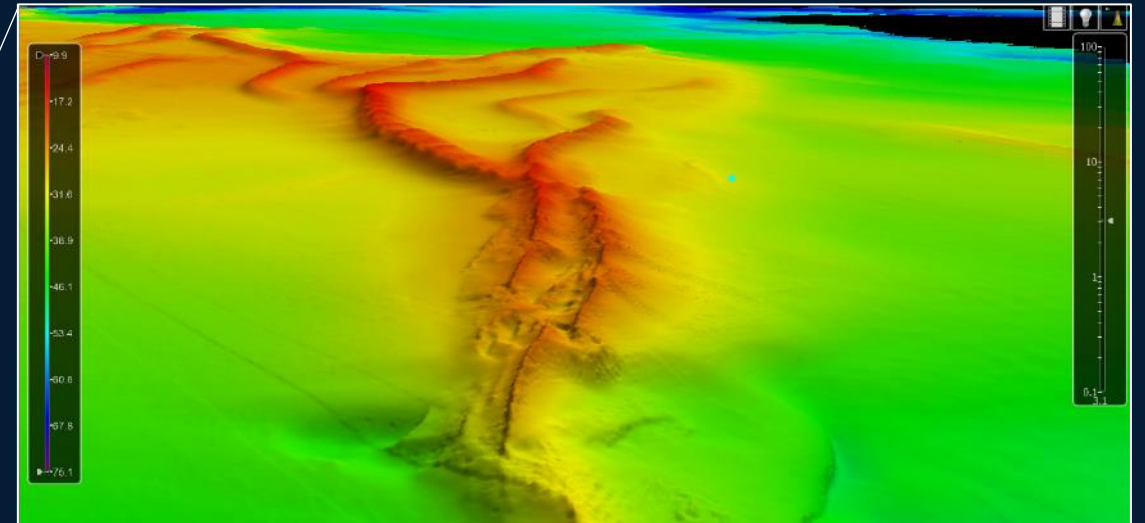
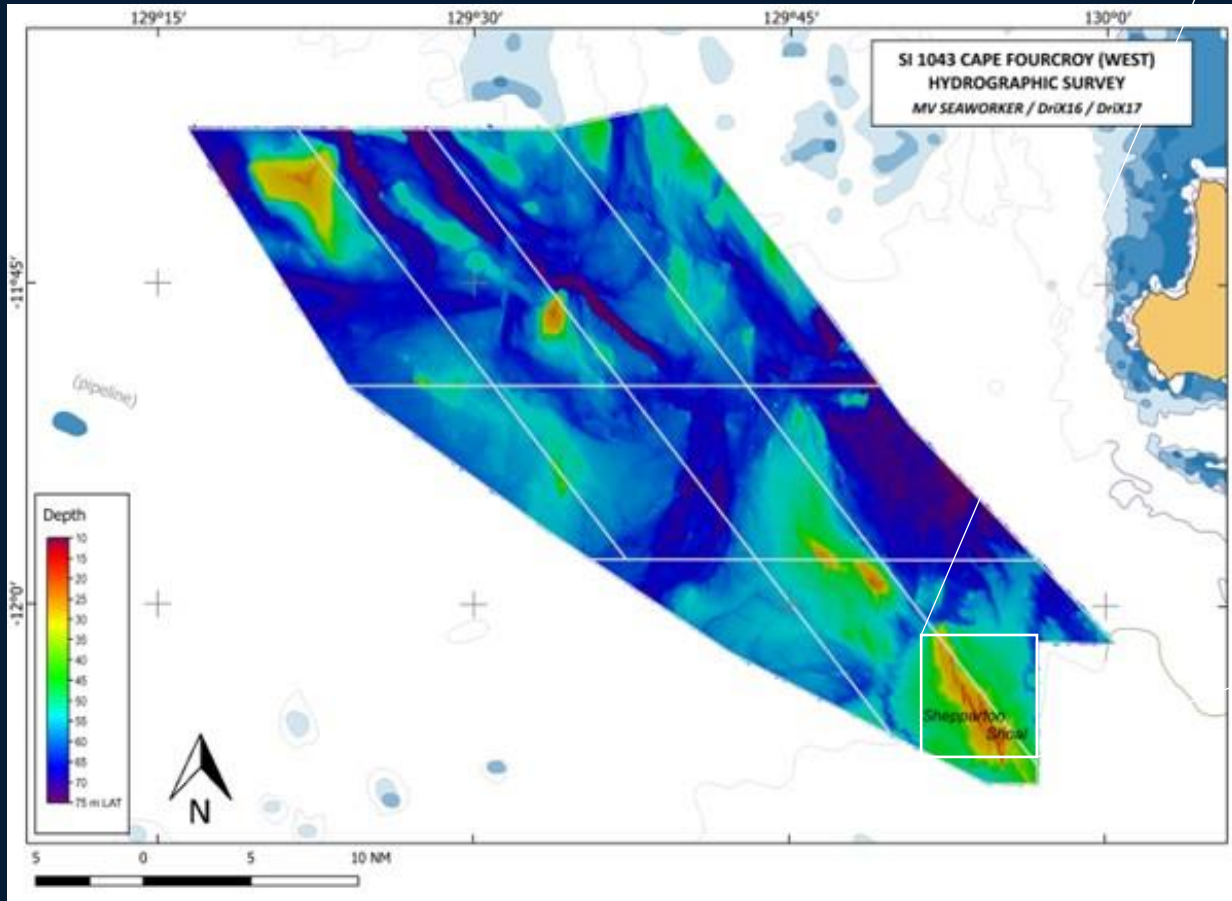
DriX Efficiencies – Nelson Project



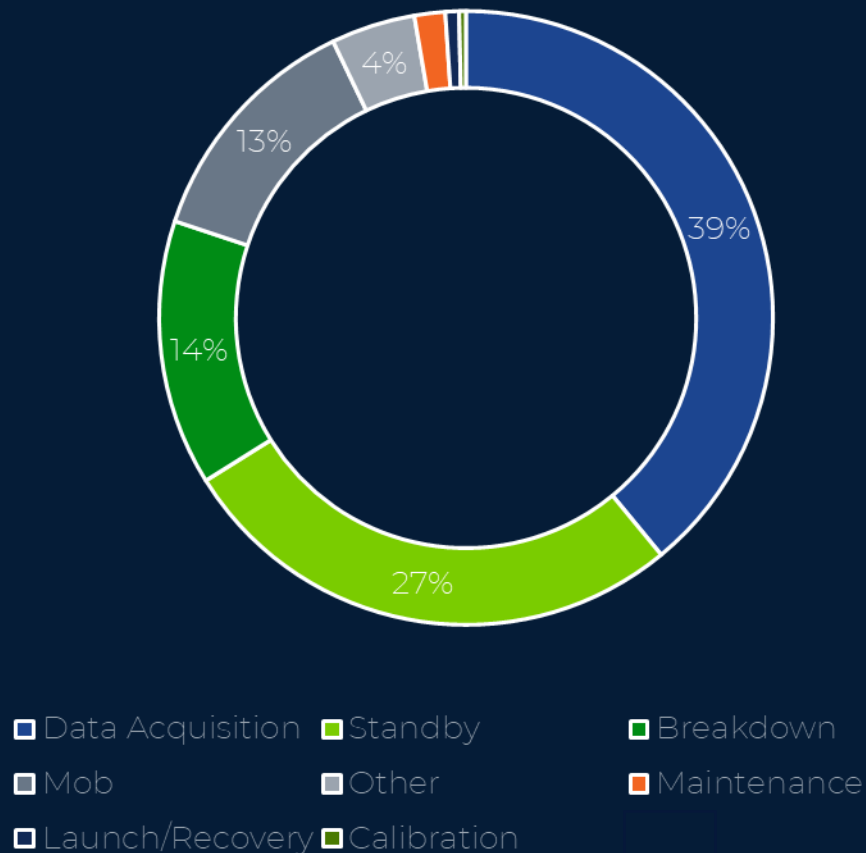
- 6,020 survey line nautical miles
- 3,074 nm Seaworker (51%)
- 1,058 nm DriX 16 (18%)
- 2,181 nm DriX 17 (36%)

- Project duration 82 days from mobilisation to demobilisation
- With just Seaworker project would have taken and extra 22 days (based on average survey speed of 6 knots and 22 effective hours per day)

Final Dataset Darwin, AU



DriX Efficiencies – Darwin Project



- 9,358 survey line nautical miles
- 3,942 nm Seaworker (42%)
- 2,208 nm DriX 16 (24%)
- 3,208 nm DriX 17 (34%)

- Project duration 58 days from mobilisation to demobilisation
- With just Seaworker project would have taken and extra 41 days (based on average survey speed of 6 knots and 22 effective hours per day)



Challenges:

- Launch & Recovery
- Vessel Crew familiarity with USV
- Lithium Batteries
- Minor Defects

Process Improvements

- Working with AMSA to bring DriX into Class 2C survey allowing operations beyond line of sight
- Working with CCOM to improve the launch and recovery process based on shared experiences with the DriX
- Kongsberg MBR to be fitted to allow operations up to 15 nm
- Starlink Marine to allow over the horizon operations
- Onboard Sound Velocity Profiling System to be developed
- Continuation of developments in the acquisition packages
- Stepping stone to Armada vessels in the region. Lessons learnt will be invaluable

Armada in the region



- Foundational projects for operating larger lean crewed vessels
- 36m vessel earmarked for Hydrography in South West Pacific Region
- Fully remote Sensor operation
- Remote Control Centre in Hobart



Thank You

Andrew Price



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