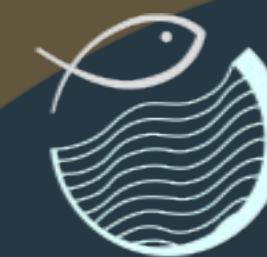


# A seismic shift in engagement with the fishing industry?

A case study of the Prion 3D Marine Seismic Survey  
in Bass Strait.

Linda French and Andrew Sullivan



Seafood Industry  
Australia  
The Voice of Australian Seafood

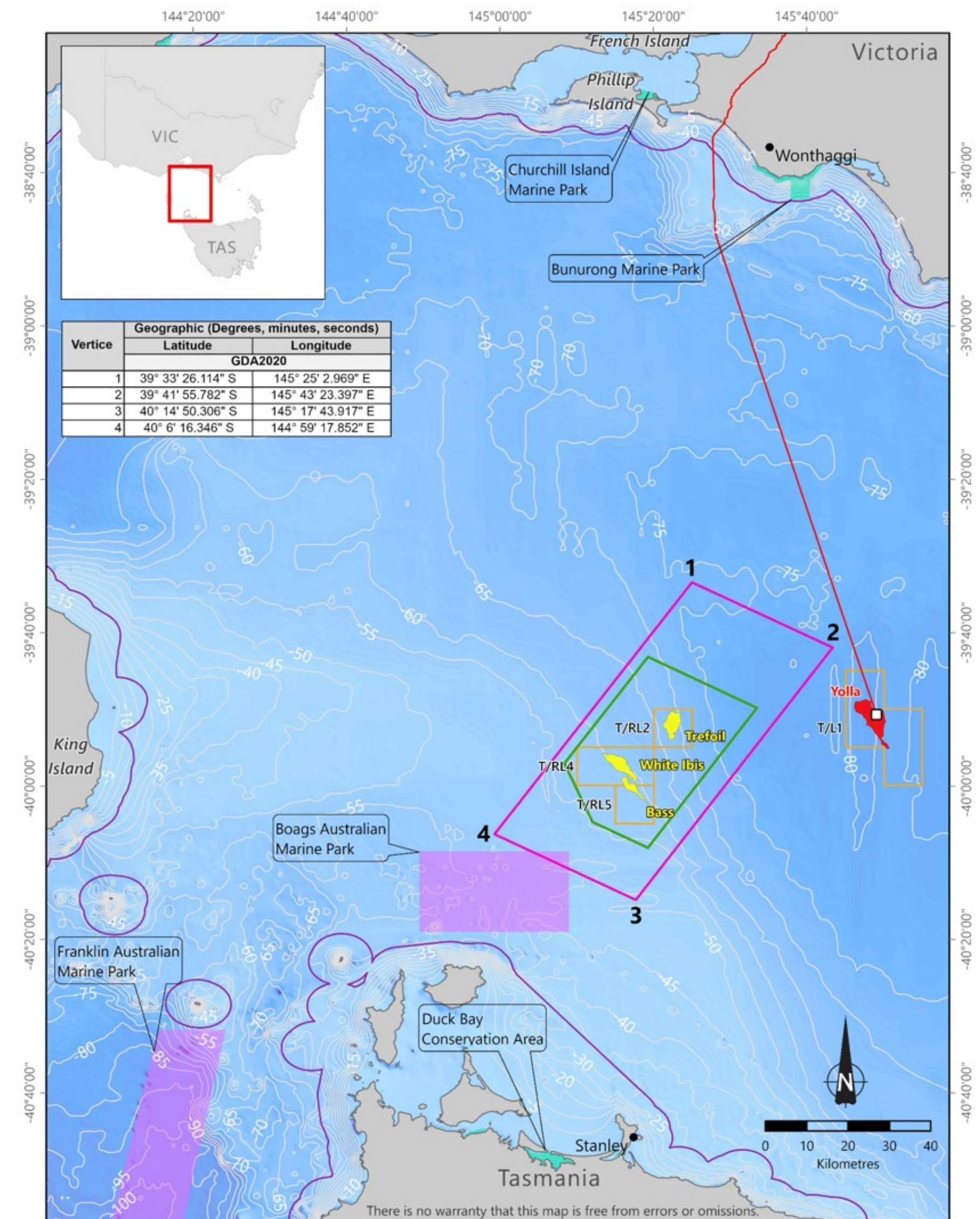


**FRDC**  
FISHERIES RESEARCH AND  
DEVELOPMENT CORPORATION

27.4705°S • 153.0260°E

# Prion 3D Marine Seismic Survey

- Tasmanian waters: 80 km east of King Island, 58 km north of Stanley:
- Water depths: 50 – 80 m
- Acquisition area: 1,075 km<sup>2</sup>
- Operational area: 2,172 km<sup>2</sup>
- Stakeholder consultation from December 2019 and ongoing.
- Ran for 35 days - 11 November to 16 December 2021.
- Short stoppage to mitigate whale presence.
- No disturbance to fishing or shipping activity.
- Completed successfully and safely.



Data Sources: GP Info ('Gas field' and 'Prospect'); Department of Agriculture, Water and the Environment. Coordinates: GDA 2020

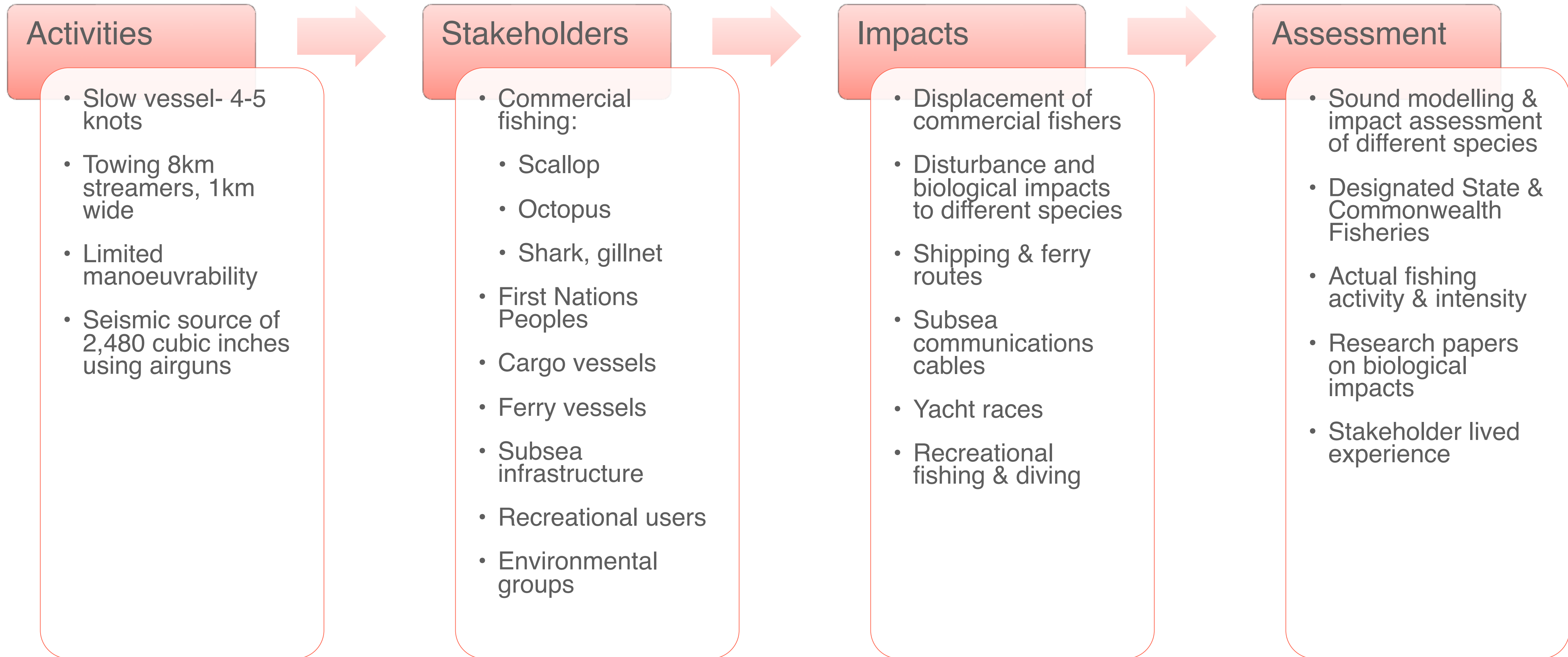
- Yolla platform
- Gas pipeline
- Coastal Waters (3nm limit)
- Gas field
- Prospects
- Beach operated permits
- Prion seismic survey acquisition area
- Prion seismic survey operational area
- Australian marine parks
- State marine parks



23/09/2021 | BG20-0025C



# Understanding stakeholders and impacts



# Coexistence.....

ABC RURAL

**Scientist calls for more research into seismic surveys as they leave lobsters flat on their backs**

Tas Country Hour / By Hugh Hogan



**'Barely a scallop': fears oil and gas exploration will destroy fisheries**

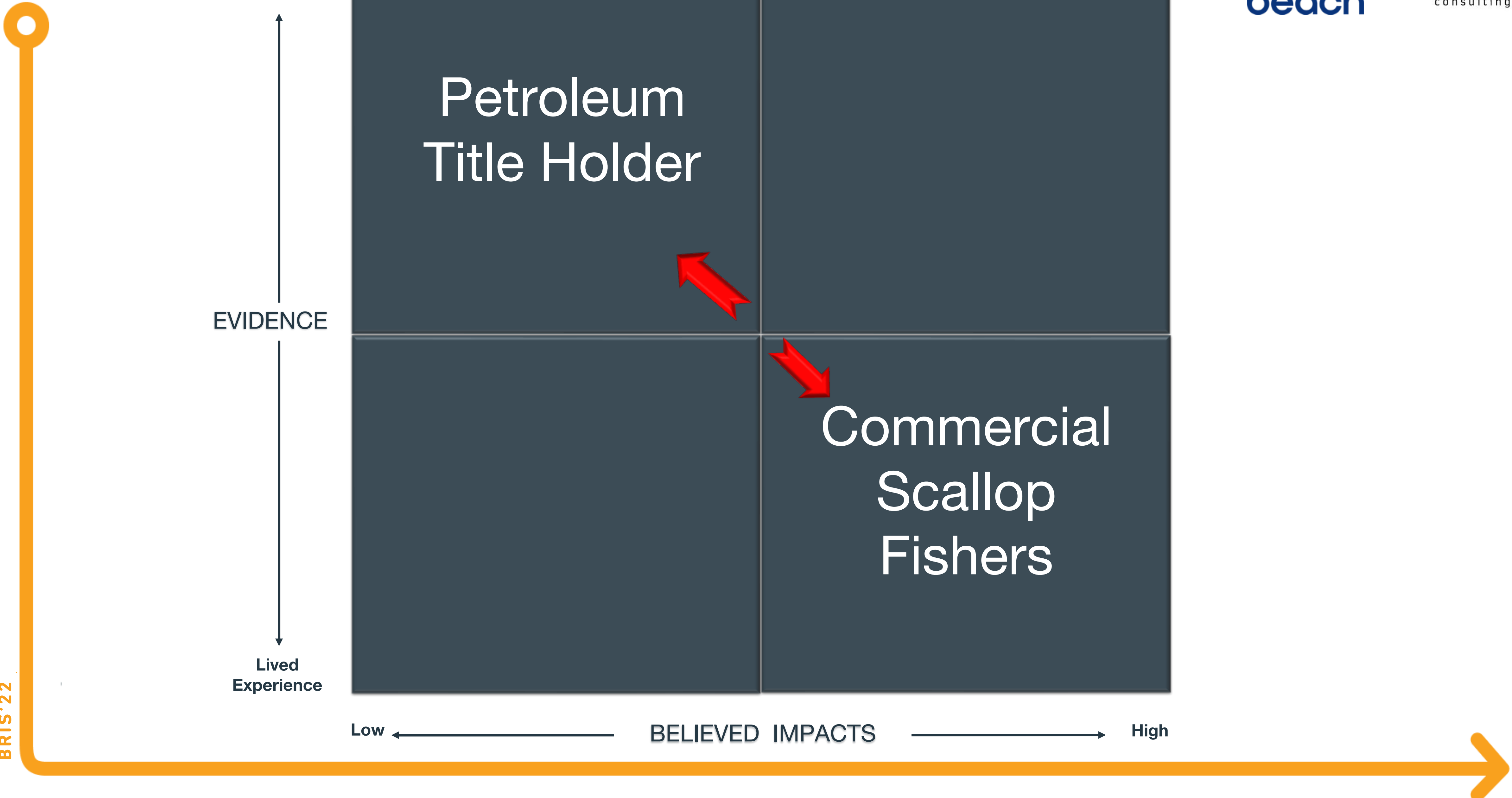
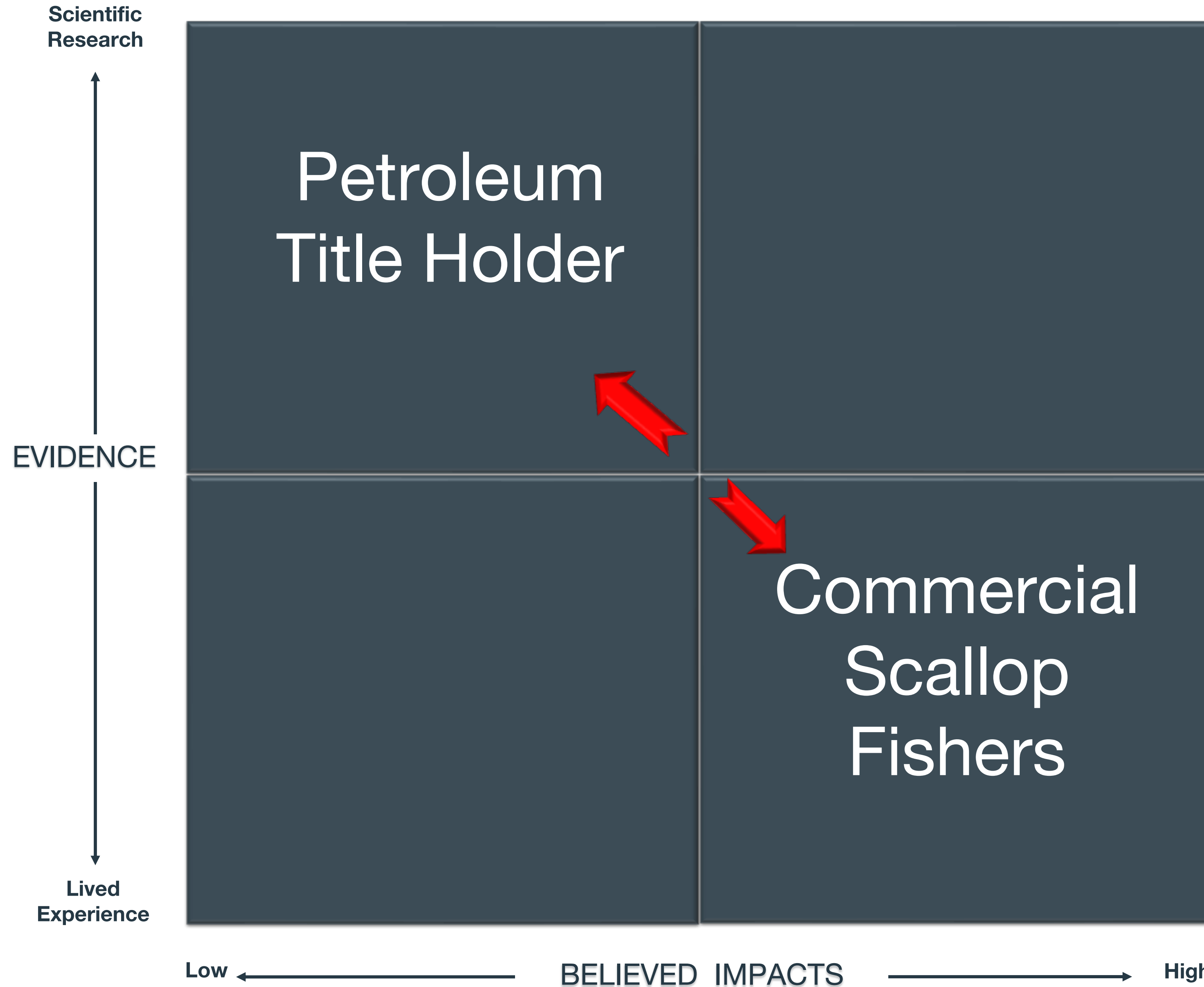
The seafood industry in Tasmania and Victoria is worried about seismic testing and point to research backing their concerns



**Scallop deaths linked to seismic surveys being carried out on seabed, Tasmanian report finds**

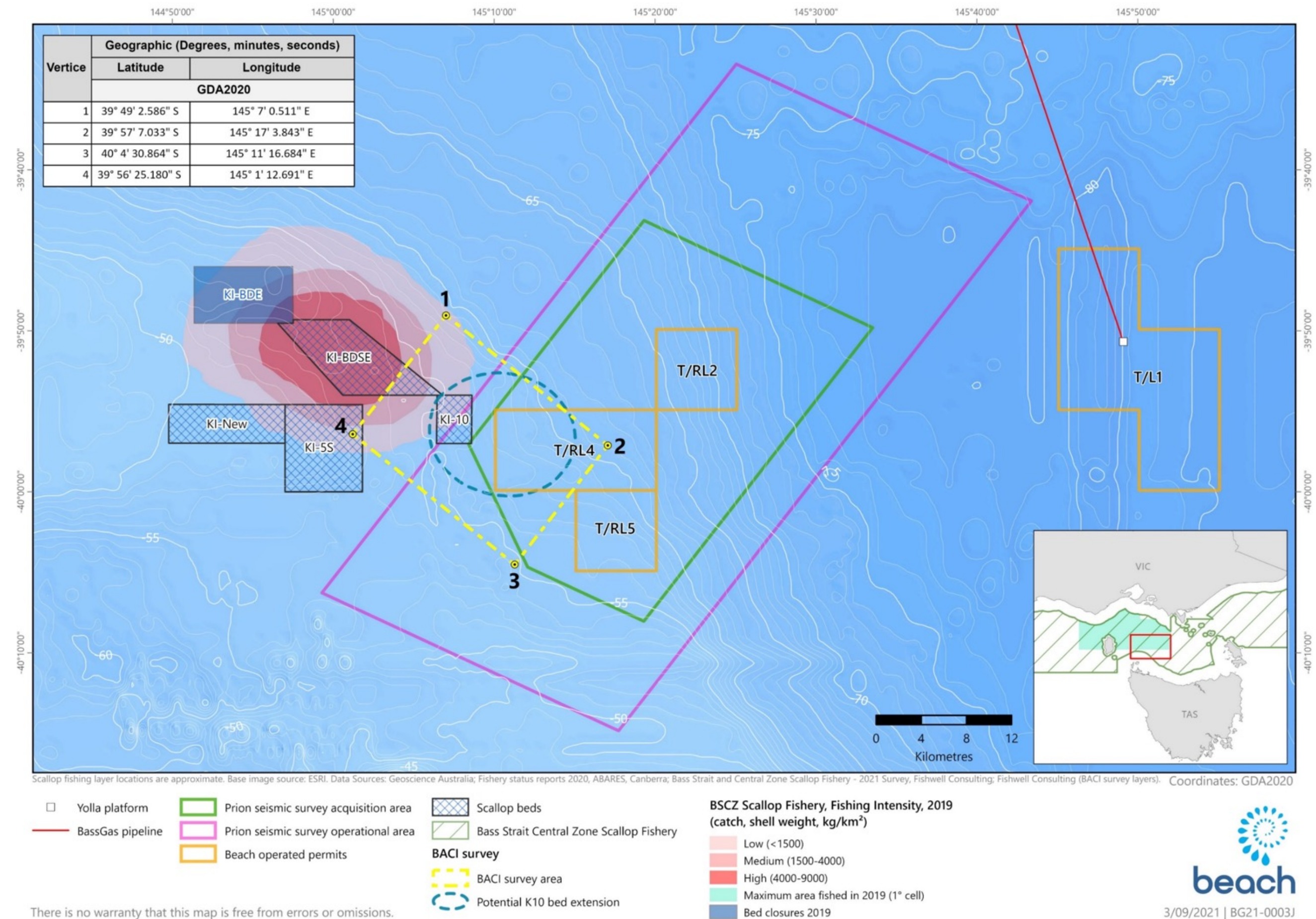
By Elise Fantin

# Starting Position – engagement intransigence

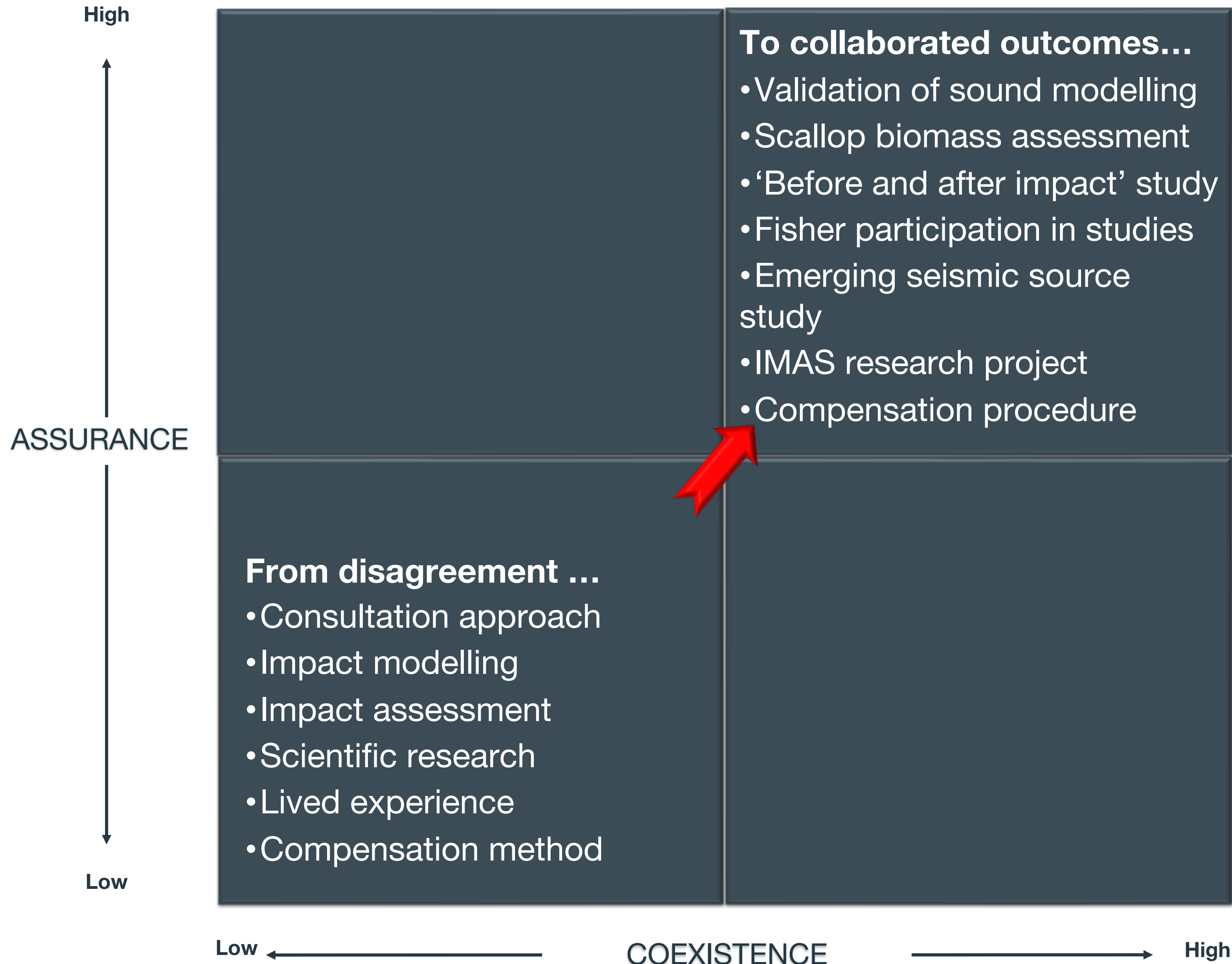


# Scallop fishery assessment

- Prion Survey area not commercially fished for scallop.
- Scientific literature indicated seismic surveys do not cause mass mortality to scallop.
- Sound modelling showed potential impacts from seismic source to scallop at the seabed at distance of up to 8 metres.
- Closest low intensity commercially fished scallop bed was 2.6km from seismic source.
- Beach reduced south-west corner of Prion Survey after consultation.
- Scallop fishers remained concerned based on their lived experience.



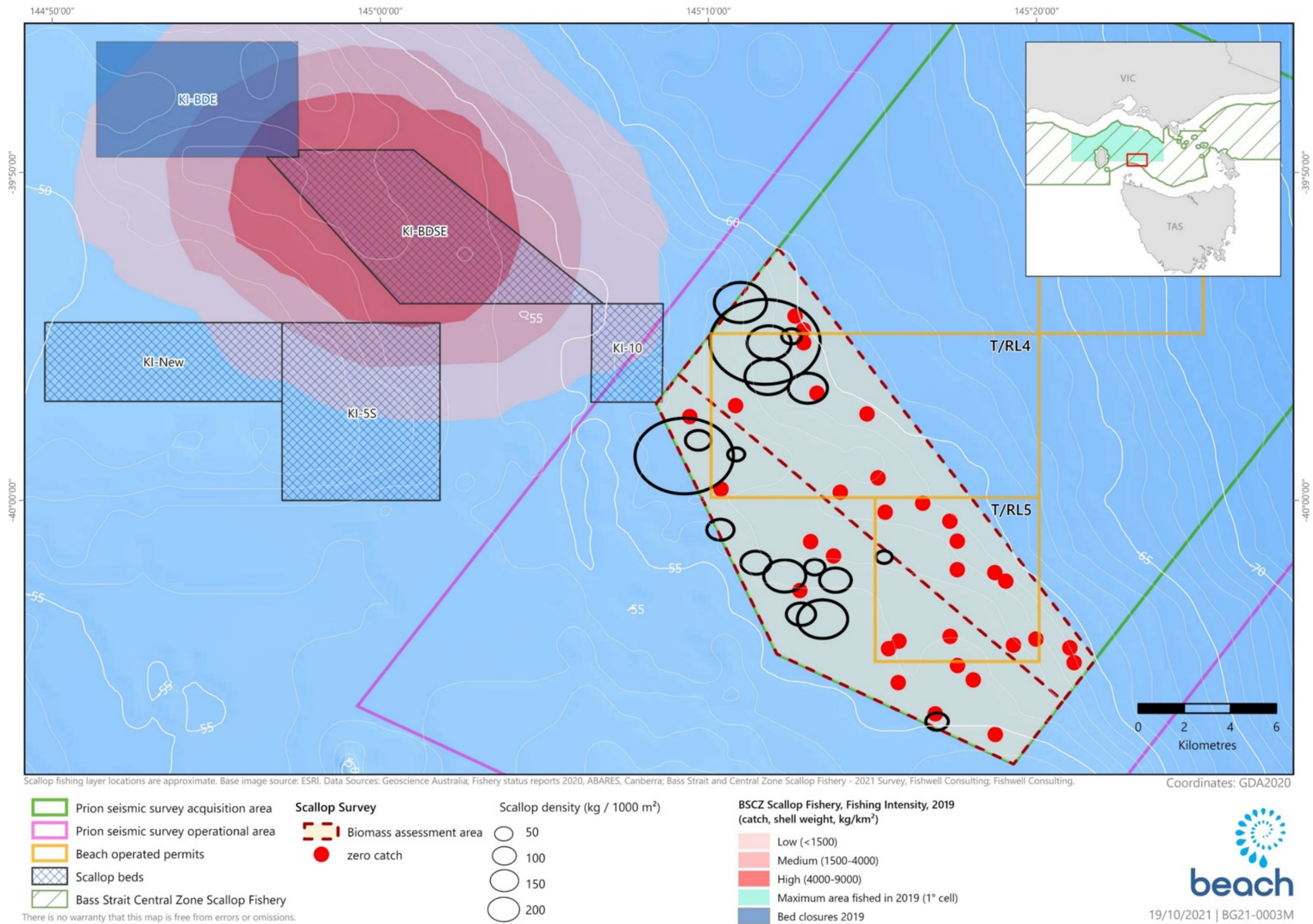
# Collaborated outcomes leading to assurance and coexistence



# BACI Study



- Beach contracted Fishwell Consulting, trusted by scallop industry.
- Fishwell Consulting, contracted scallop fishers for BACI scallop dredging.
- Independent observers on vessels.
- Research activity licenced by AFMA.
- Assessed biomass in potential scallop habitat in southern Prion Survey Area.
- Enabled determination of BACI sites.
- BACI methodology, sites and timing planned with scallop industry participants.





# BACI Results

- 'Before' BACI completed 5 – 14 September 2021.
- 'After' BACI completed 19 – 22 April 2022.
- Results presented to Beach and scallop fishing sector in Launceston on 31 May 2022:

*“Overall, the BACI analysis revealed no evidence of impact from the Prion MSS on scallop density measured by either weight (kg/1000m<sup>2</sup>, p=0.97) or number (individuals/1000m<sup>2</sup>, p=0.89).”*

- Friendly call from scallop fisher on 15 August 2022 confirmed:

*“Scallops still not DEAD”*



# Collaborative Research Project

Beach, IMAS, FRDC, Curtin Uni, DNRE (Tas), BSSIA



## Objectives

To determine the effect of new seismic source technologies on:

- Geophysical data quality
- Sound levels received at sea floor
- Physiological impact on scallop and lobster.

## Seismic technologies tested

- eSource™ : sound waves with reduced high frequency
- Distributed source: lower sound pressure and peak amplitude levels
- Various seismic source sizes: 300, 700, 1260, 2480\* cubic inches.

## Scallop and lobster research

- Scallop and lobster in cages on the seabed at different test & control locations.
- Sound monitoring equipment to verify sound exposure levels.
- IMAS studied specimens exposed to different seismic source technologies, compared differences (and to control group), and over different time periods.
- IMAS will publish a peer reviewed paper in 2023.



# Collaboration, innovation and recognition



36 RESOURCE SHARING

## Safer seismic surveys the goal for Bass Strait fisheries



A two-year FRDC-funded study is investigating different seismic survey methods that could protect fisheries while giving oil and gas explorers the data they need

By Chris Clark

1 JUNE 2022 FISH

Southern Rock Lobsters exposed to seismic blasts are collected for longer-term monitoring of the impacts. Photo: Davis Houston

Following a growing number of studies that identify the impact of traditional seismic survey techniques on marine species, FRDC has backed new research in Bass Strait to investigate alternative technologies. The project focuses on two species, the Commercial Scallop (*Pecten fumatus*) and the Southern Rock Lobster (*Jasus edwardsii*). The project's principal investigator is Dr Ryan Day from the Institute for Marine and Antarctic Studies (IMAS) at the University of Tasmania. He says there is an urgent need to compare the current industry standard seismic techniques to alternative methods and determine the relative impact of each on marine animals. "It would move us into a position to start mitigating the impacts of seismic surveys, rather than the situation we currently have, where each individual seismic survey causes a large degree of angst for a large number of stakeholders," he adds. IMAS has partnered with Curtin University in Western Australia on the project. Both have a long history of researching scallops and rock lobsters and the impacts of seismic surveys. FRDC has provided funding and support, and Beach Energy has funded critical access to a seismic survey vessel. Other partners include the Bass Strait Scallop Industry Association, which represents commercial scallop fishers working the Commonwealth Bass Strait Central Zone Scallop Fishery, and Tasmania's Department of Primary Industries, Park, Water and Environment. Ryan says that research from 2012 to 2016 showed that standard air gun seismic surveys damaged the biochemistry of the scallop haemolymph - the equivalent of its blood. "Scallops weren't able to regulate the different components of the blood, which indicates they were physiologically compromised. They changed their behaviour as well. They tended to bury themselves more quickly into the sand when exposed to seismic waves - the higher the seismic level, the more quickly they recessed into the sand," Ryan says. In the case of rock lobsters, research found that the sensory organ that functions in a similar way to a human inner ear is principally affected, impacting their sense of gravity and movement. "Seismic activity impaired their coordination, so they couldn't easily right themselves when placed on their backs," he explains. In the current research project, the research team placed scallops and lobsters in baskets 60 metres down onto the sea floor off King Island, in



Beach Energy has received the APPEA Award for 'Project Environment Excellence' for collaborating with fishers to develop an extensive research program into the potential impacts of marine seismic surveys on scallop and lobsters.



# “One Voice, One future”

# Questions.....