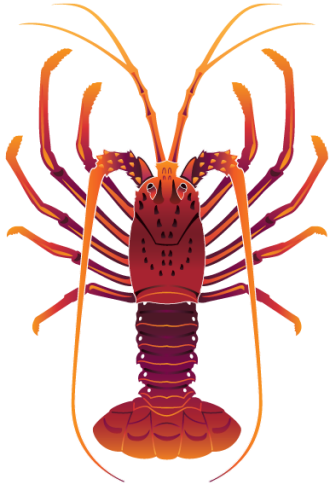
Western Rock Lobster

A digital transformation journey

Thursday, 20 November 2025

2025 Forum for Operational Oceanography - Fremantle

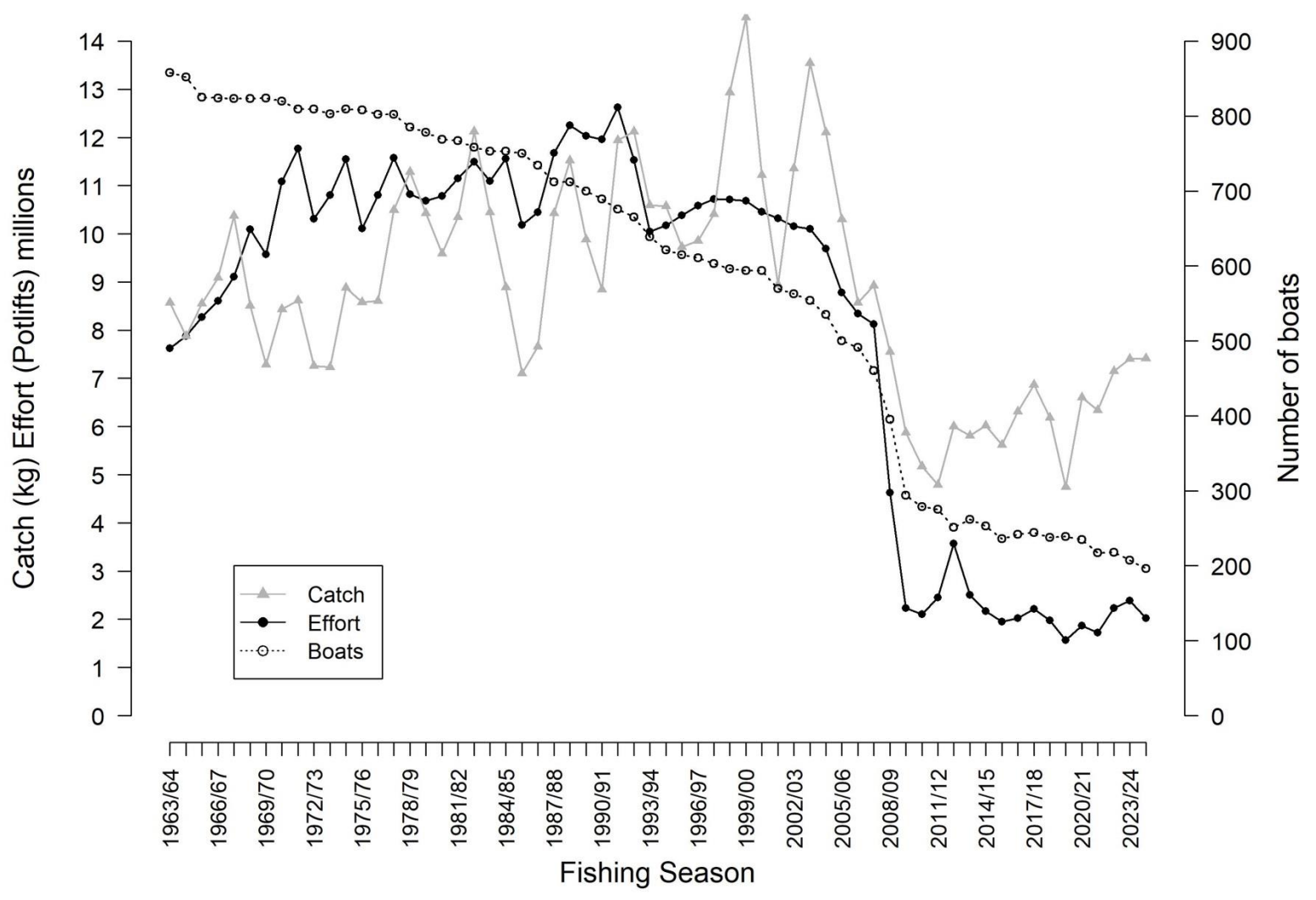


Western Rock Lobster

World leading sustainable fishery

CERTIFIED SUSTAINABLE SEAFOOD MSC www.msc.org

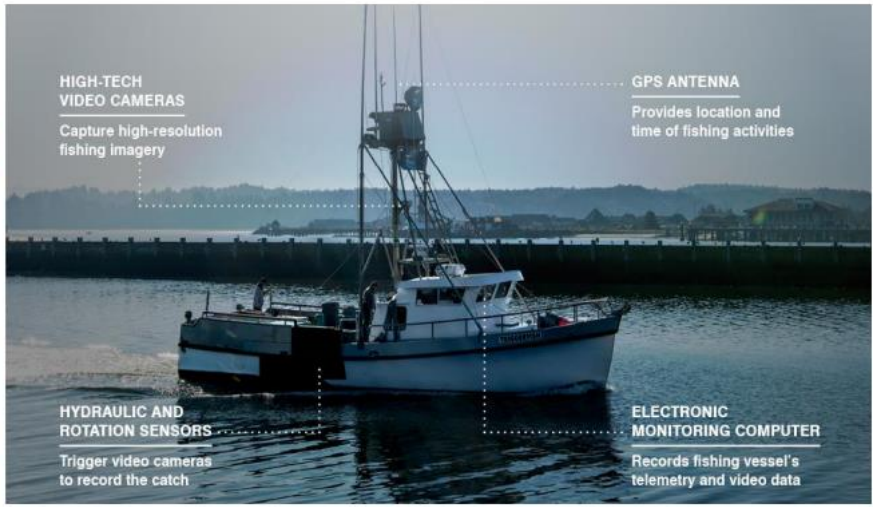
Historical Catch and Effort



The Journey

THE PAST

THE PRESENT



THE FUTURE

Every industry has challenges and opportunities

Digital technology can help resolve challenges and leverage opportunities to grow GVP and maintain competitiveness as the world changes

Data in Agriculture – The Farmer Analogy

Five key facts about data-enabled farming across the past 10 years:

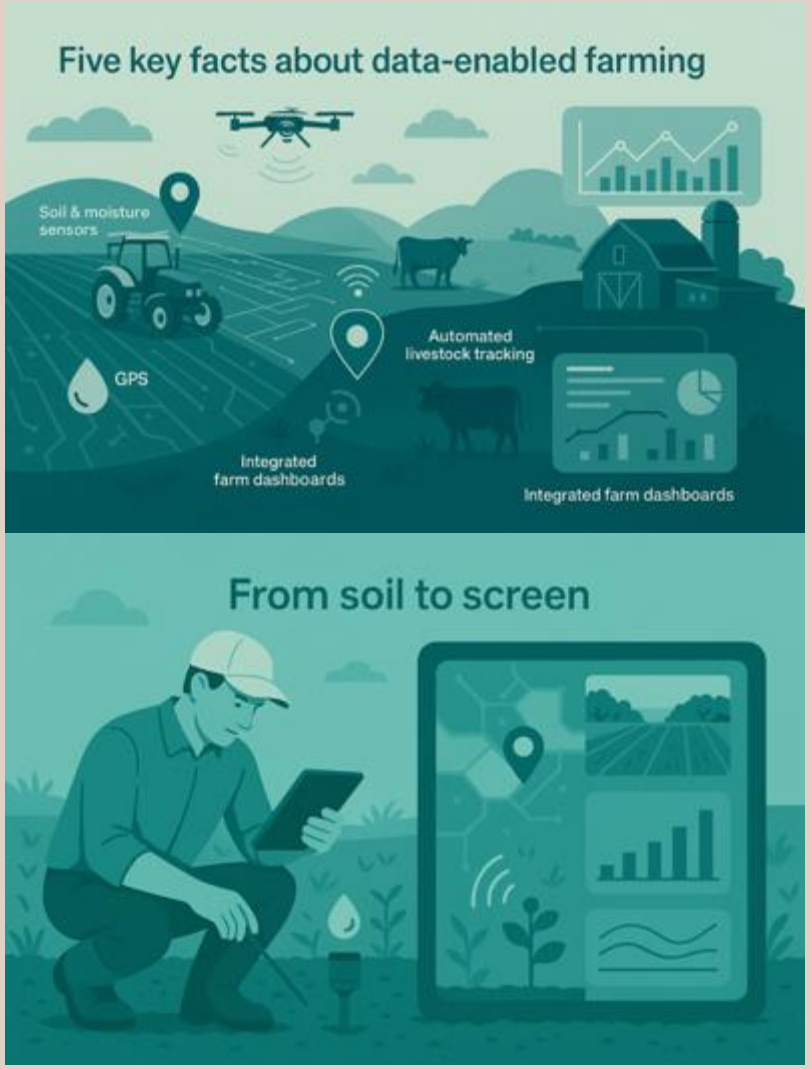
1. **Soil & moisture sensors** – enable *real-time irrigation control* and water savings of up to 30%.

2. **GPS-guided machinery** – *reduces fuel use by 10–15%* and increases precision in planting and fertiliser use.

3. **Satellite & drone imaging** – detects crop stress early, improving *yield prediction accuracy by 20%*.

4. **Automated livestock tracking** – uses RFID and AI to *cut manual labour hours by 25%*.

5. **Integrated farm dashboards** – combine cost, weather, and yield data for *profit-driven decisions*.



Diverse Fisher Operations

Quota distribution between active boats in the fishery.

130 boats

51 boats

25 boats

≈ 2,000

≈ 2,000

≈ 2,000

≈ 800

TACC

25/26

6,800 Tonnes

Industry Digital Strategy

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Unit Registry & Quota Trading Platform

- real time view of the ownership of entitlements
- trade of entitlements across members and processors

Website

- Community can purchase lobster, learn about industry, "meet' fishers, view recipes

Member portal &/or app

All member services surfaced in member portal, also in a member app.

Market Insights & Supply Chain Dashboards

- Transparency and visibility of price and product distribution
- Members understand the market outlook
- Visibility and transparency – catch to plate

Catch reporting, scanning, weighing, grading

- Easy, seamless recording and reporting, direct to DPIRD and Processors
- On deck scanning and tracking tech to enable product traceability.

Whale migration tracking

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BoB Sales

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- Database Platform
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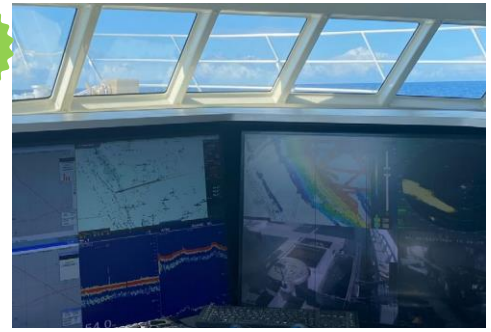
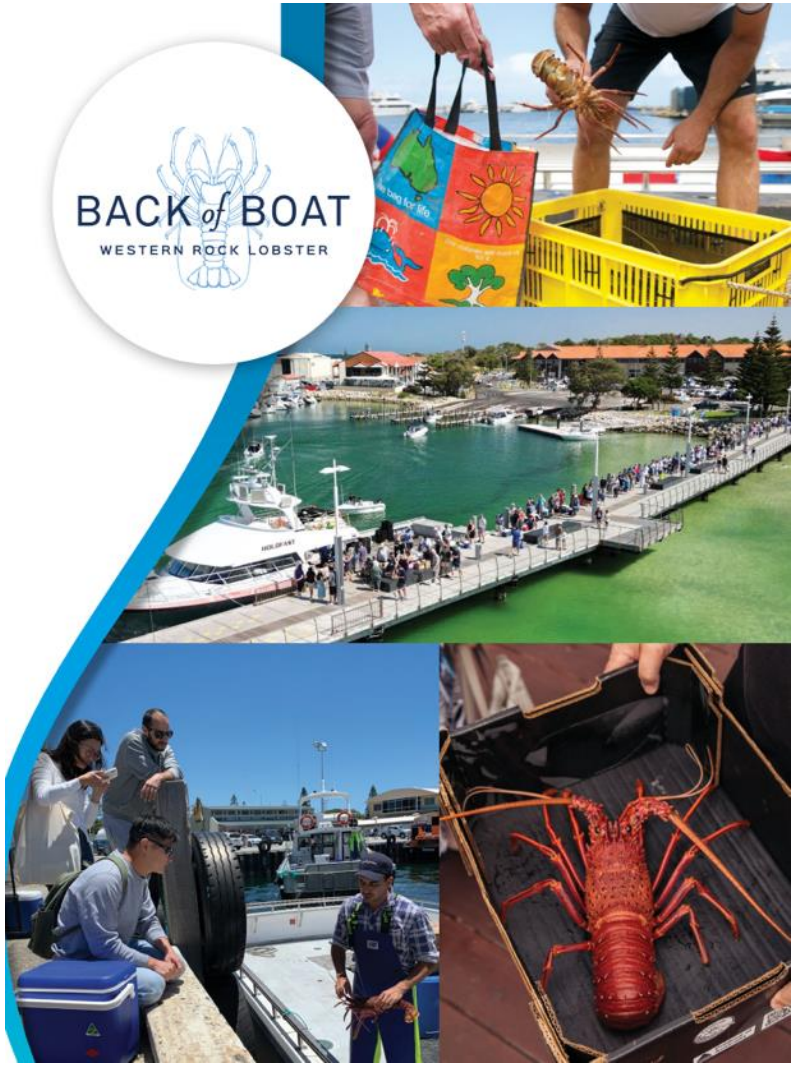
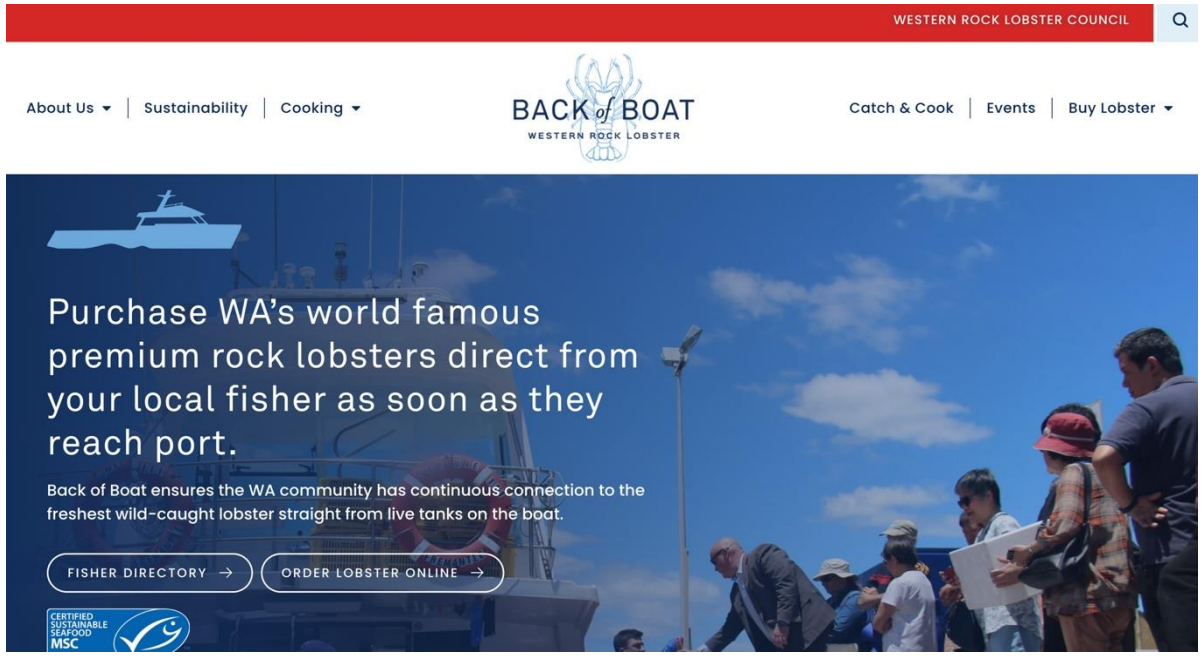
- Office Productivity Platform



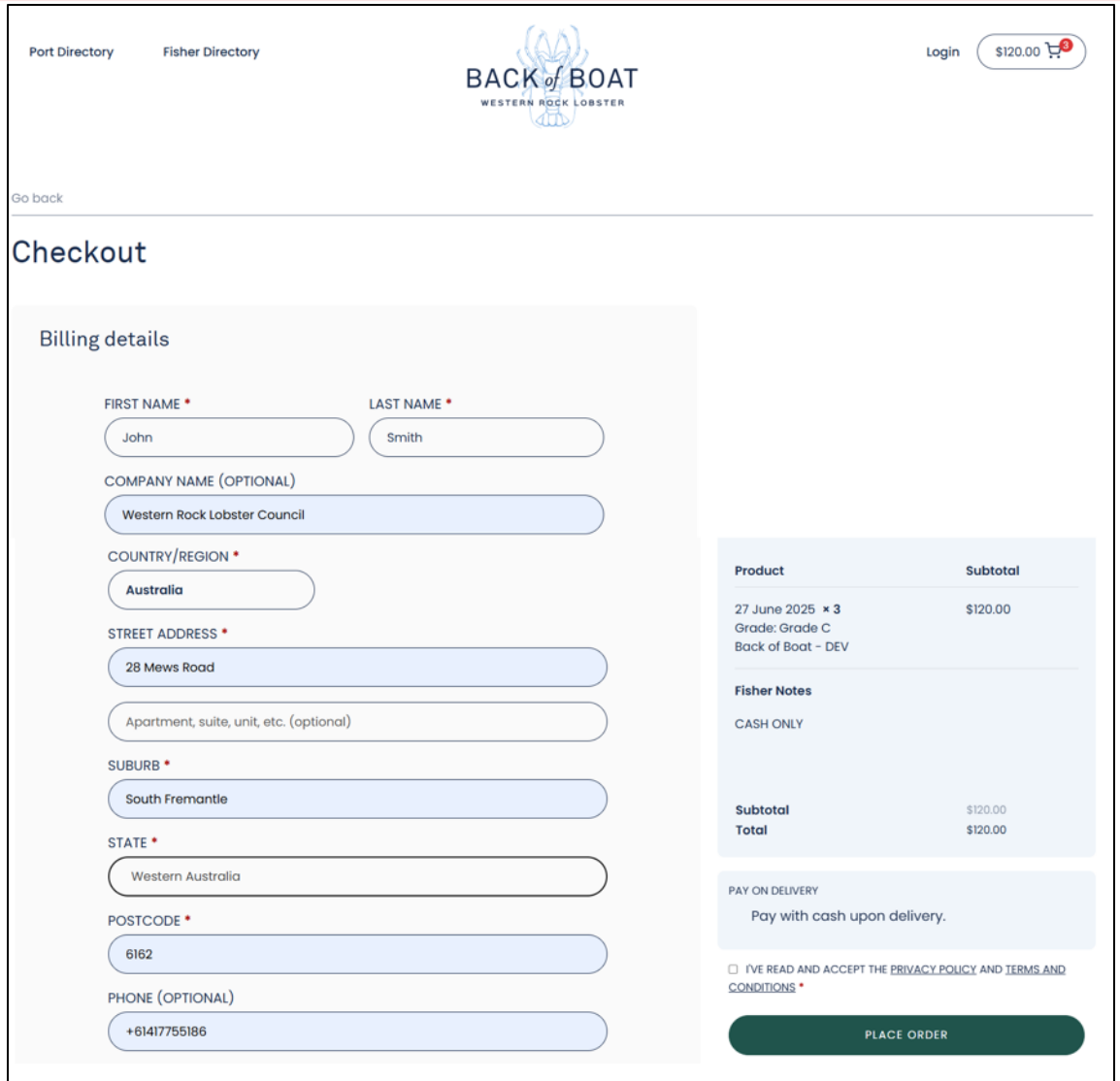
Back of Boat – www.BackofBoat.com

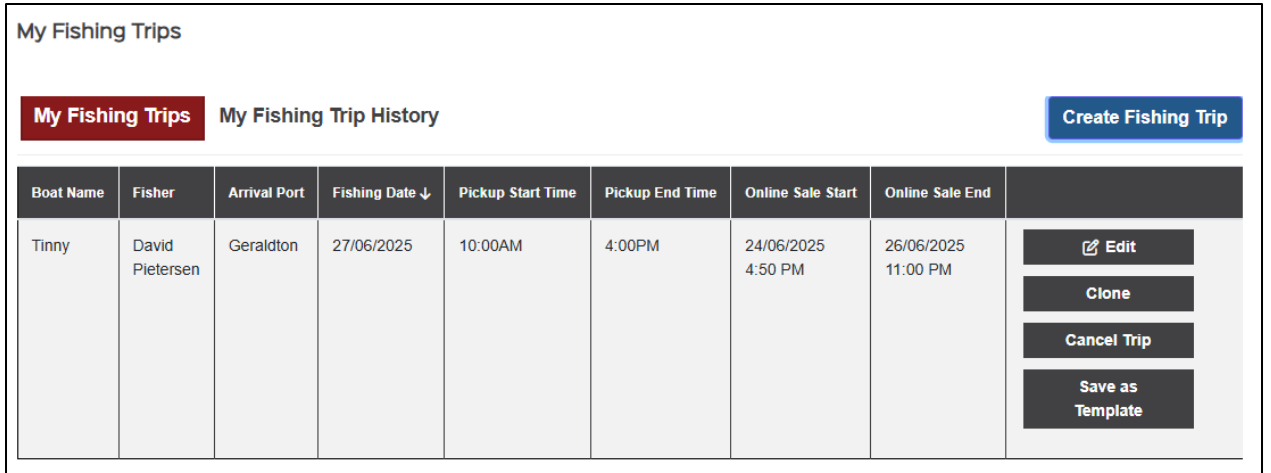


- ✓ The Back of Boat initiative continues to evolve, ensuring that the western rock lobster industry remains sustainable and accessible for all Western Australians.
- ✓ By fostering transparency and community engagement, it sets a benchmark for community connection within the broader seafood industry.



Back of Boat - e-commerce platform





Catch Recording - Understanding the Business Problem

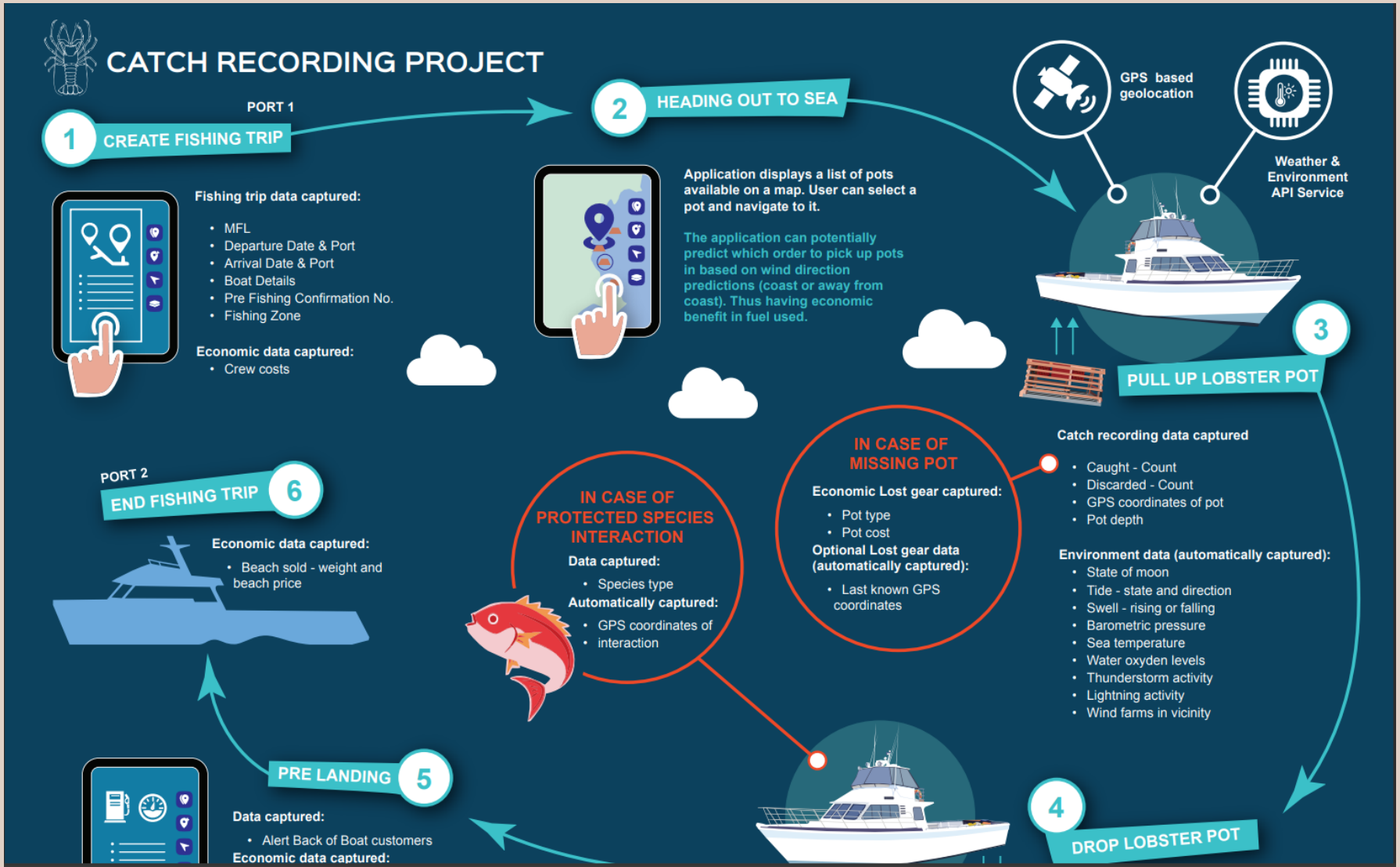
Inefficiencies in the economics of fishing lead to decreased profitability and operational effectiveness;

Crucial industry knowledge transfer is inadequate to future generations which poses a risk to the sustainability of fishing practices in WA;

Significant environment and operational threats affect the industry e.g. wind farms, climate change;

Multiple data entry points lead to operational inefficiencies for fishers.

Catch Recording - Understanding the Business Problem



Our journey began by learning the business, one trip at a time

"FishOps is redefining how Western Rock Lobster fishers record, manage, and act on information — bringing the same data-driven precision that's transformed modern farming to the sea."

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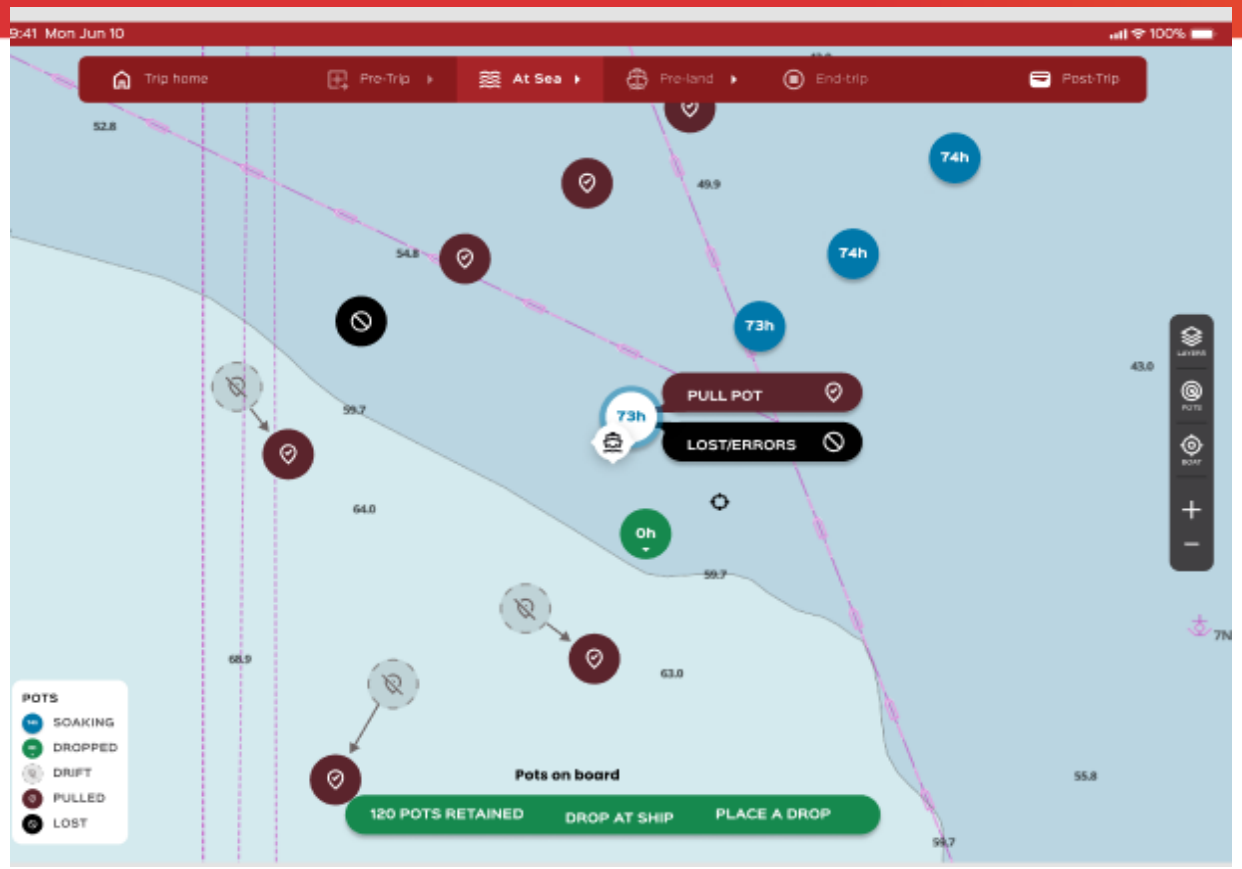
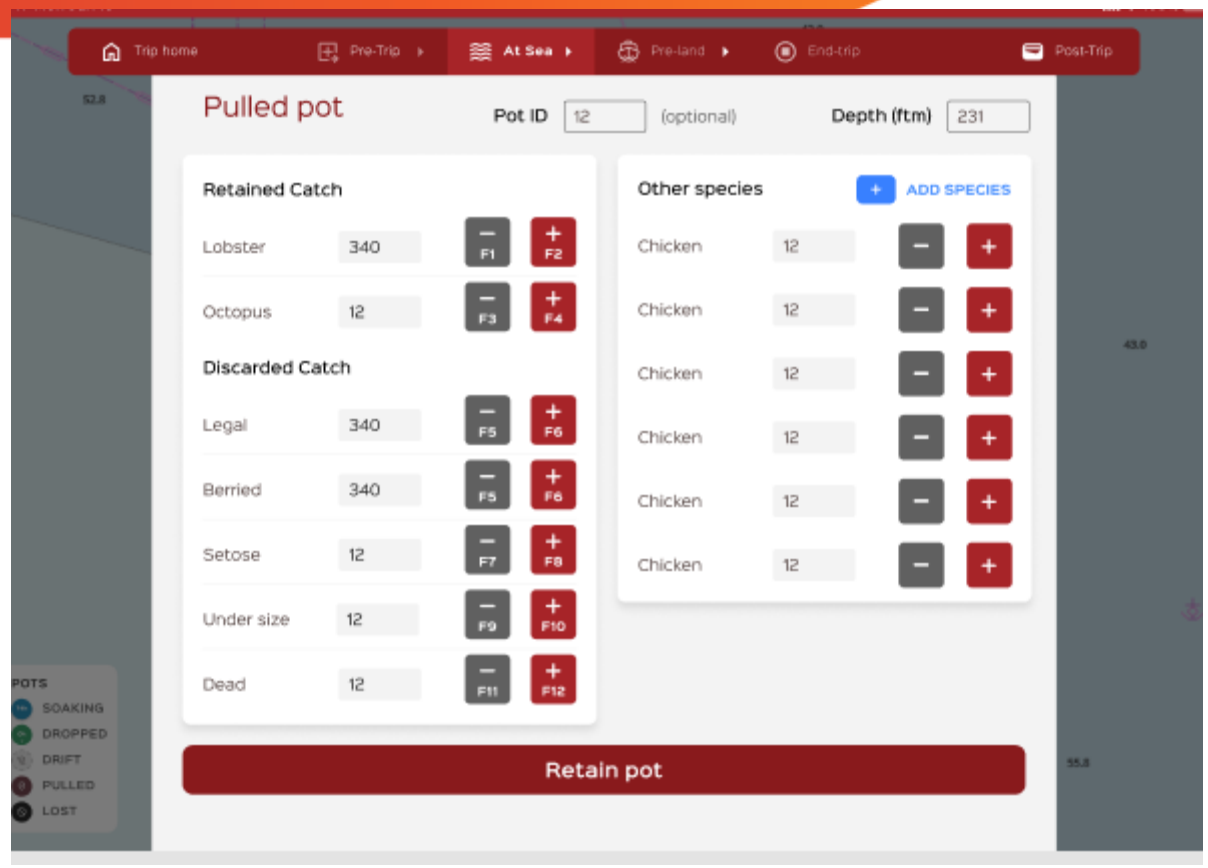
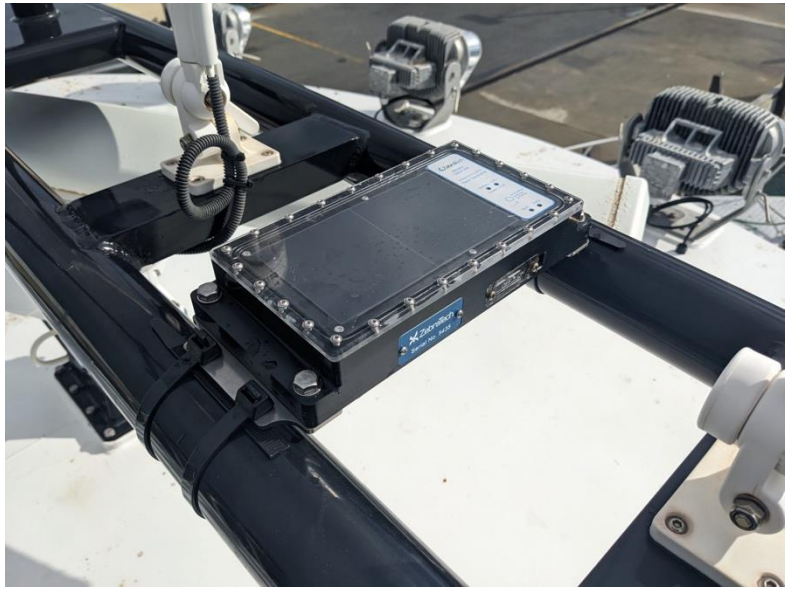
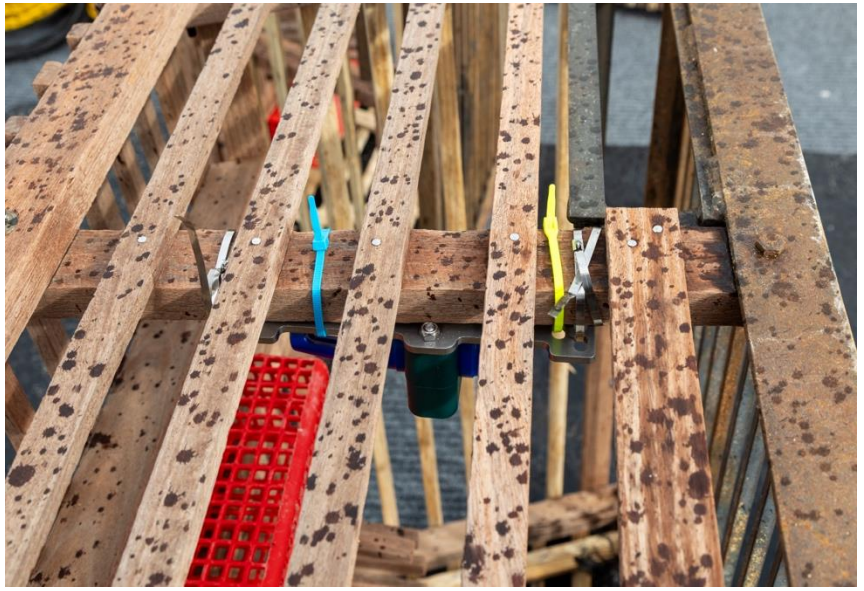
FishOps - Catch Recording Application





FishSOOP - Subsea Data Collection





May 2025 – 2 Vessels with 6 sensors each

Nov 2025 – Additional 8 vessels with 4 sensors each

Future – More vessels, more sensors, different sensors/metrics

FishSOOP - Subsea Data Collection

Pot Lift Date

26/05/2025 24/06/2025

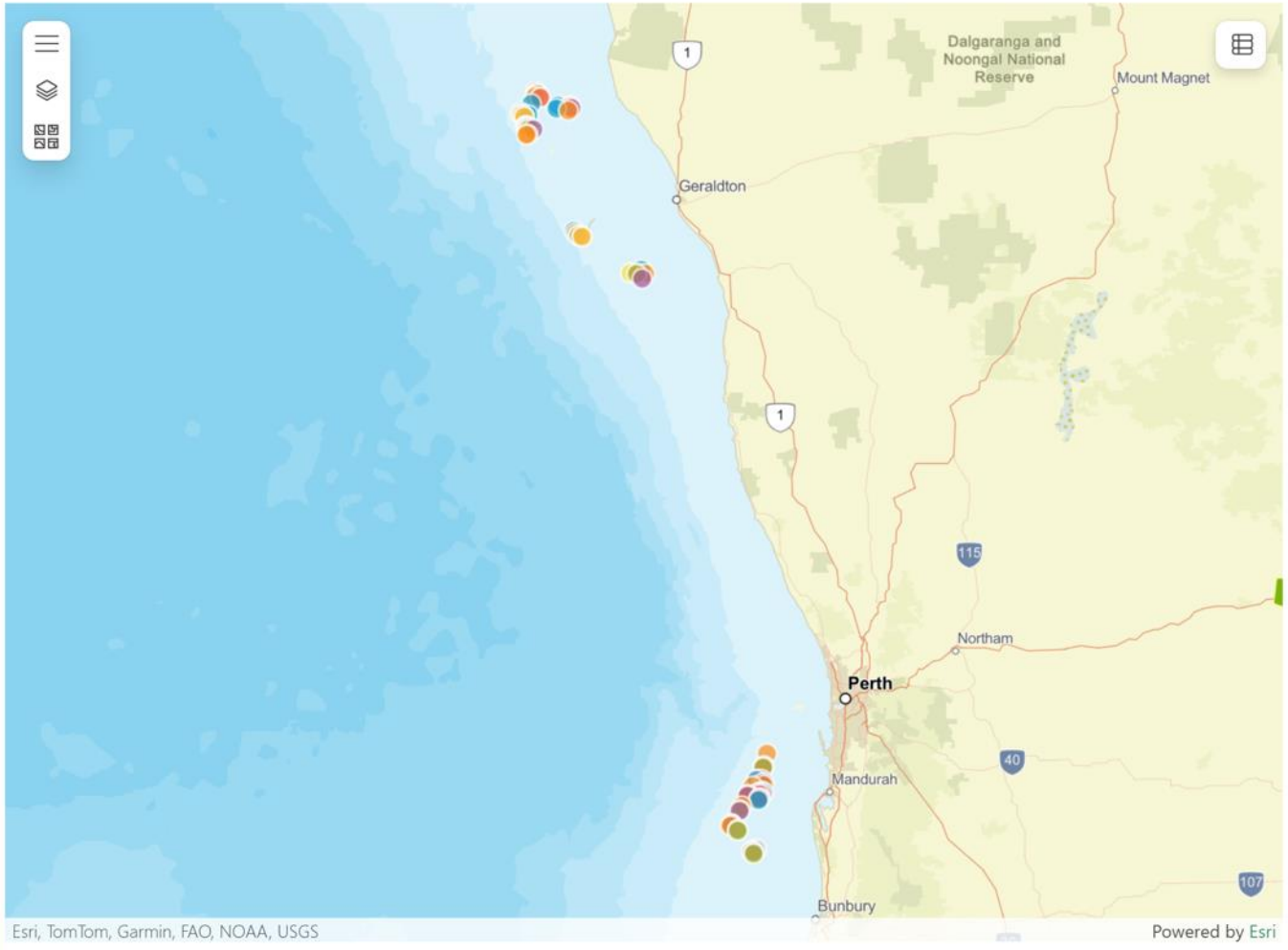
Vessel

[redacted]

Pot Depth	Samples
25m to 50m	33
50m to 75m	59
Total	**92**

Hours In Water	Samples
Up To 1 Day	16
Between 1 and 2 Days	34
Between 2 and 3 Days	24
Between 3 and 4 Days	4
Between 4 and 5 Days	7
Between 5 and 6 Days	7
Total	**92**

FishSOOP Subsurface Data Sample Locations



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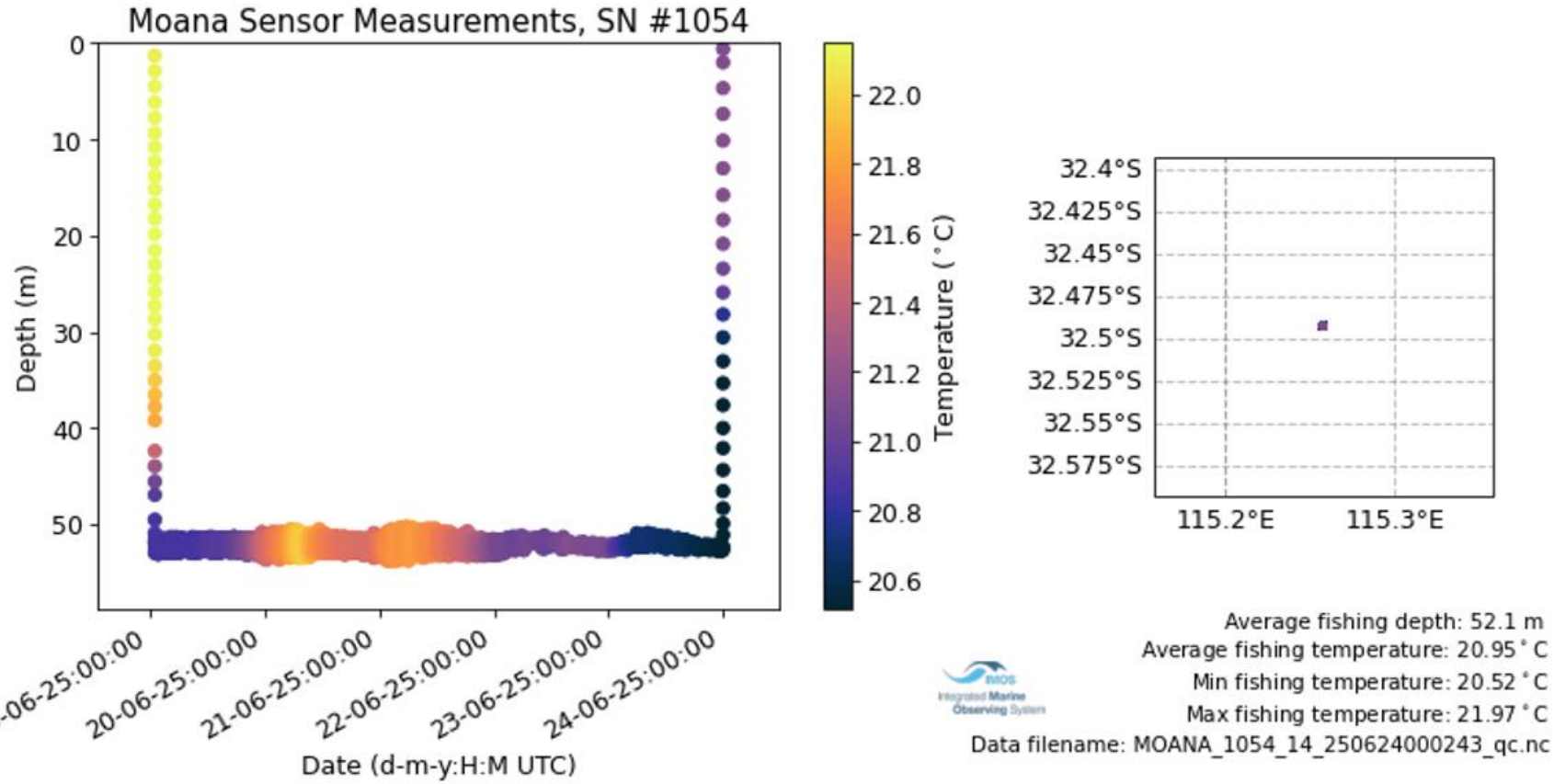

Average fishing depth: 52.1 m
Average fishing temperature: 20.95 °C
Min fishing temperature: 20.52 °C
Max fishing temperature: 21.97 °C
Data filename: MOANA_1054_14_250624000243_qc.nc

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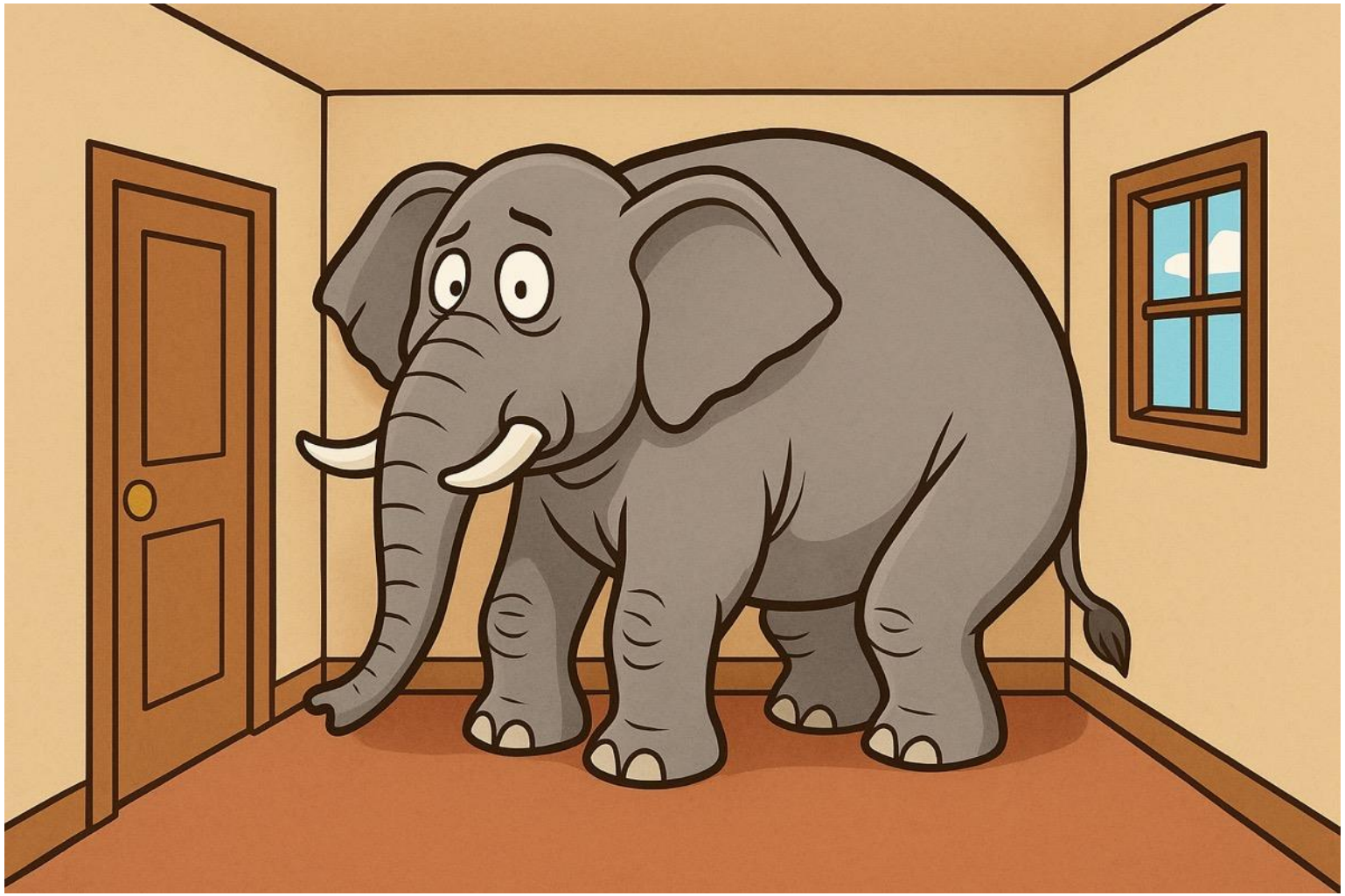
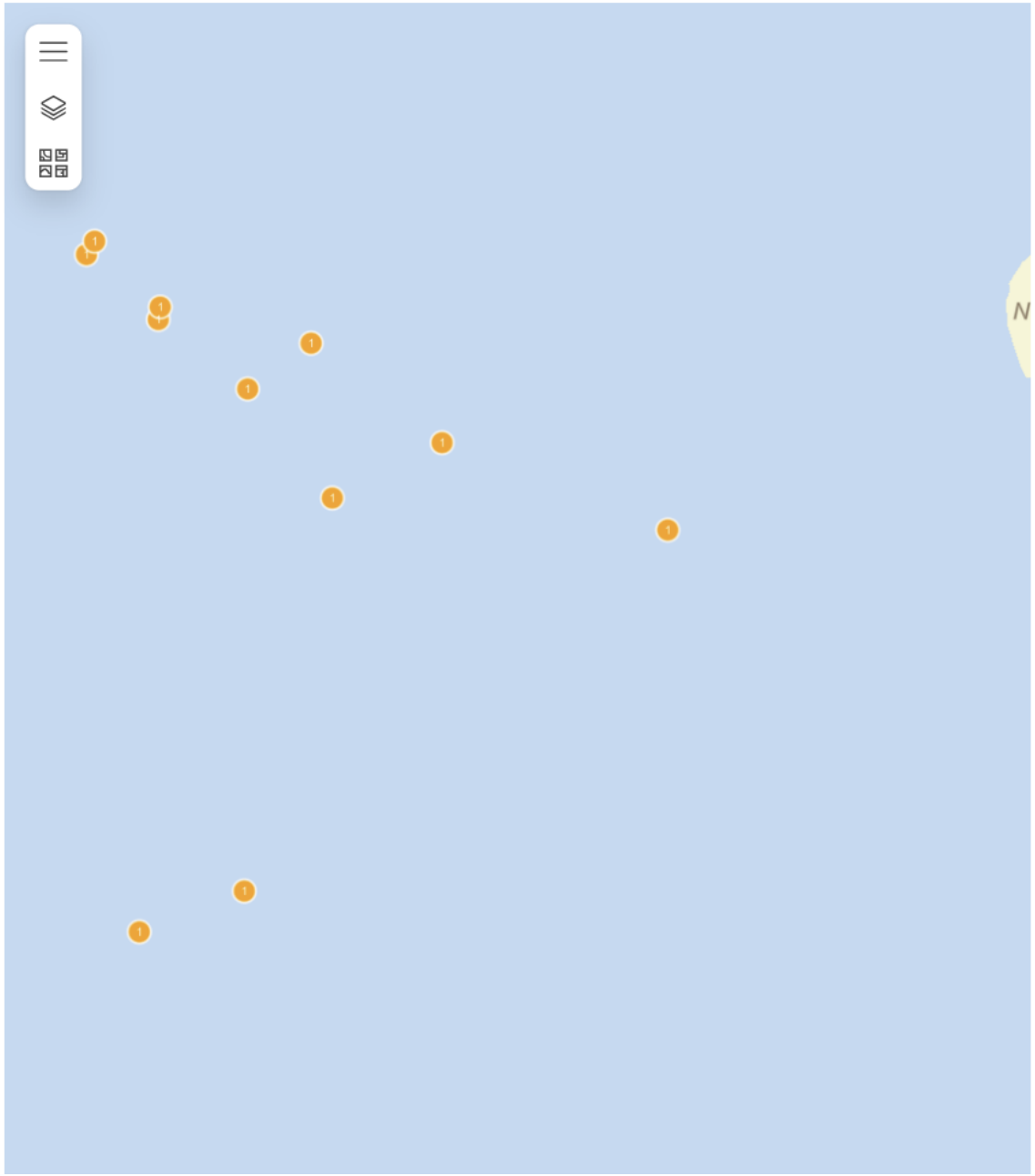
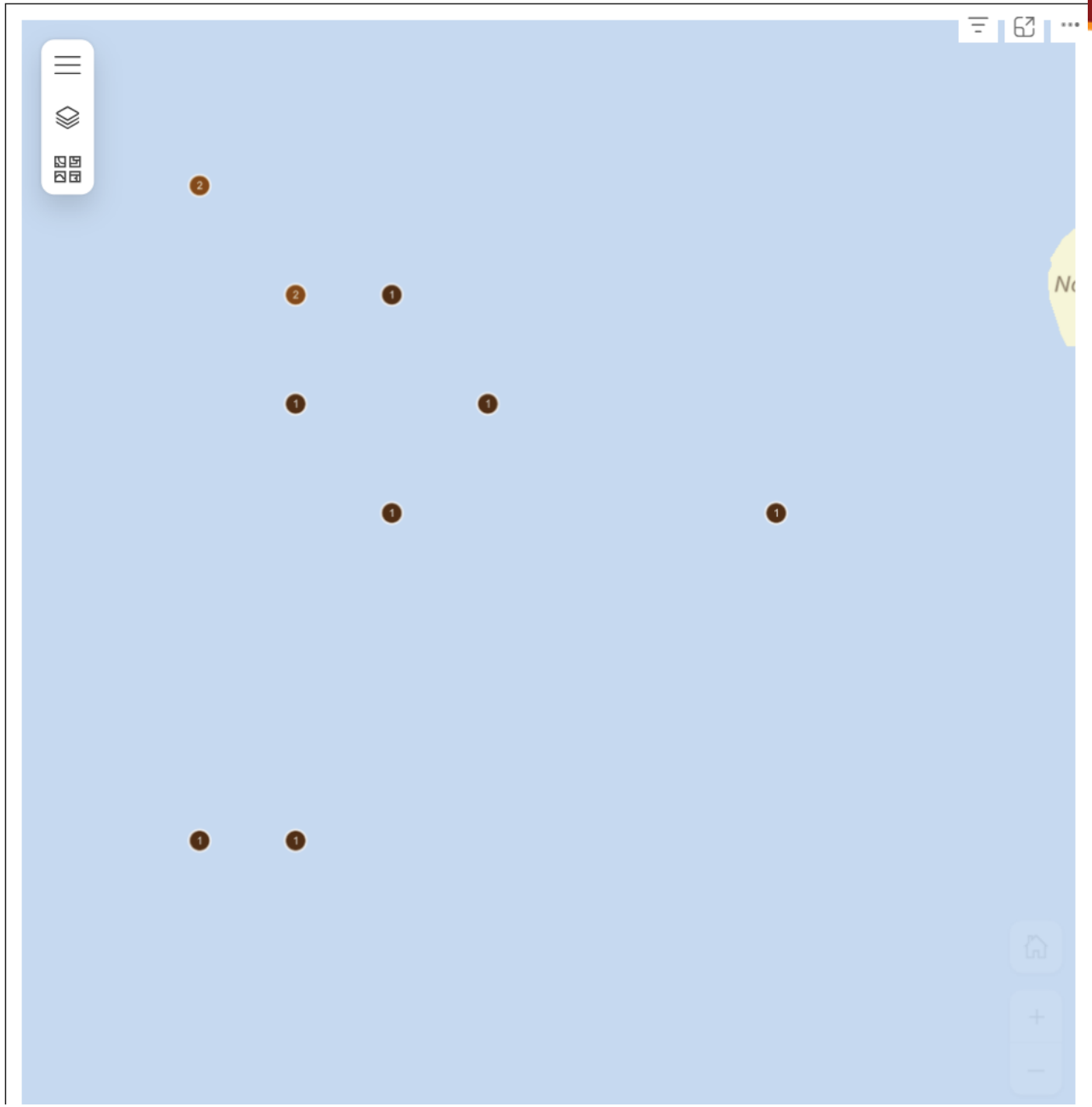


Sharing Commercially Sensitive Data

Trust in research and government sectors.

Conflicting needs of Individual vs Fishery vs National vs Global Responsibility





The Next Wave

Business Drivers

- Enhance Operational Efficiency and Profitability
- Capture, Preserve Essential Industry knowledge
- Streamline Compliance and Reporting processes
- Reduce Compliance Burden to foster a more inclusive industry for junior entrants

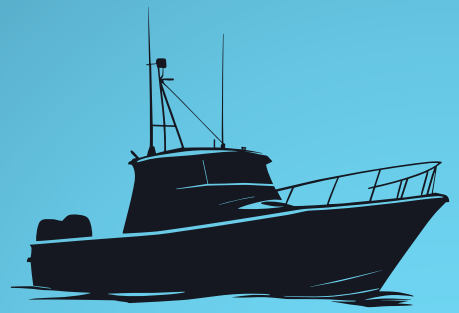
The Power of Data

- Centralised, accurate data → stronger evidence for management and markets.
- Opportunity for AI insights (e.g., predictive pot placement).
- Builds trust: fishers own their data, industry benefits collectively.
- Supports WRL's sustainability credentials and future certification work.

Every pot pulled, every trip logged — each data point builds a clearer picture of our fishery's future.

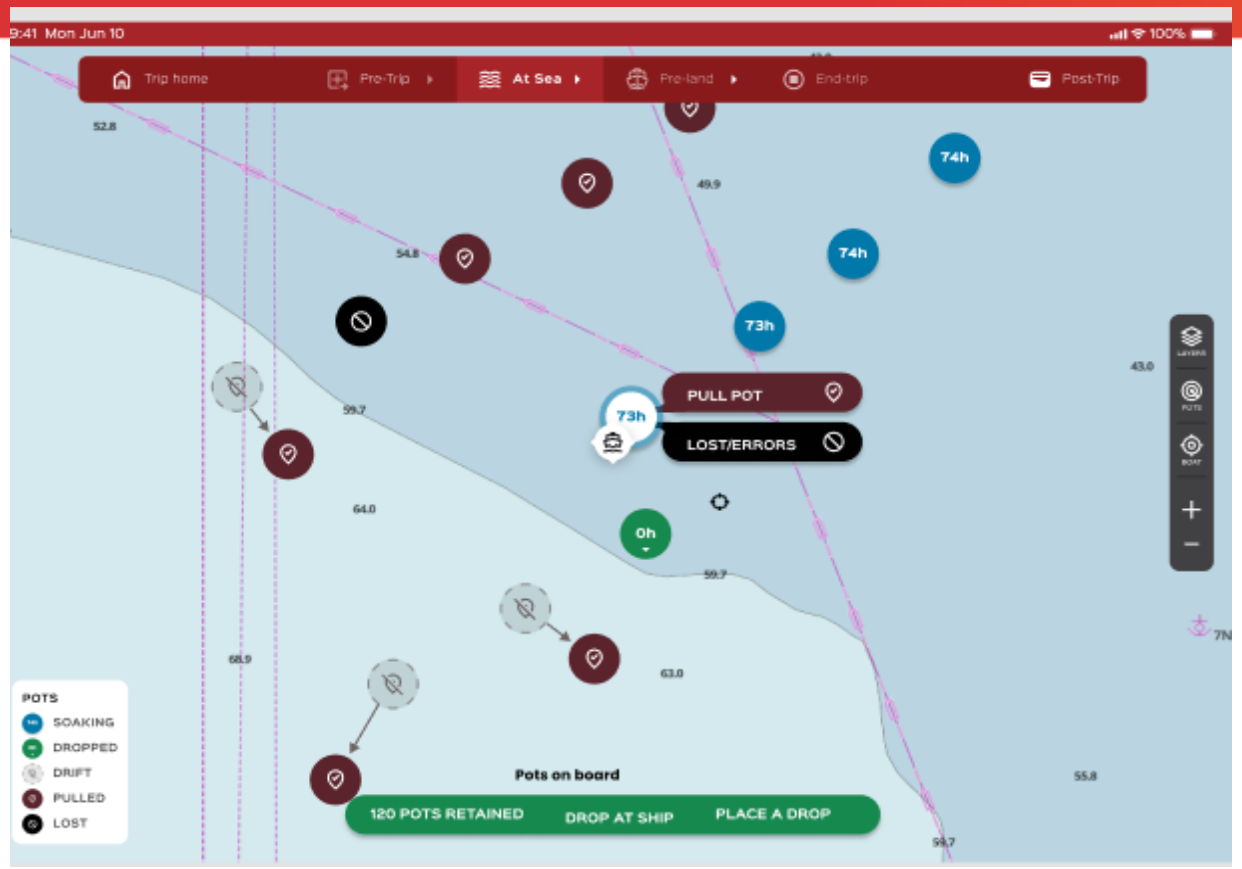
Together, this information tells the story of our industry in real time — helping fishers work smarter, managers make informed decisions, and ensuring the sustainability of our oceans for generations to come."

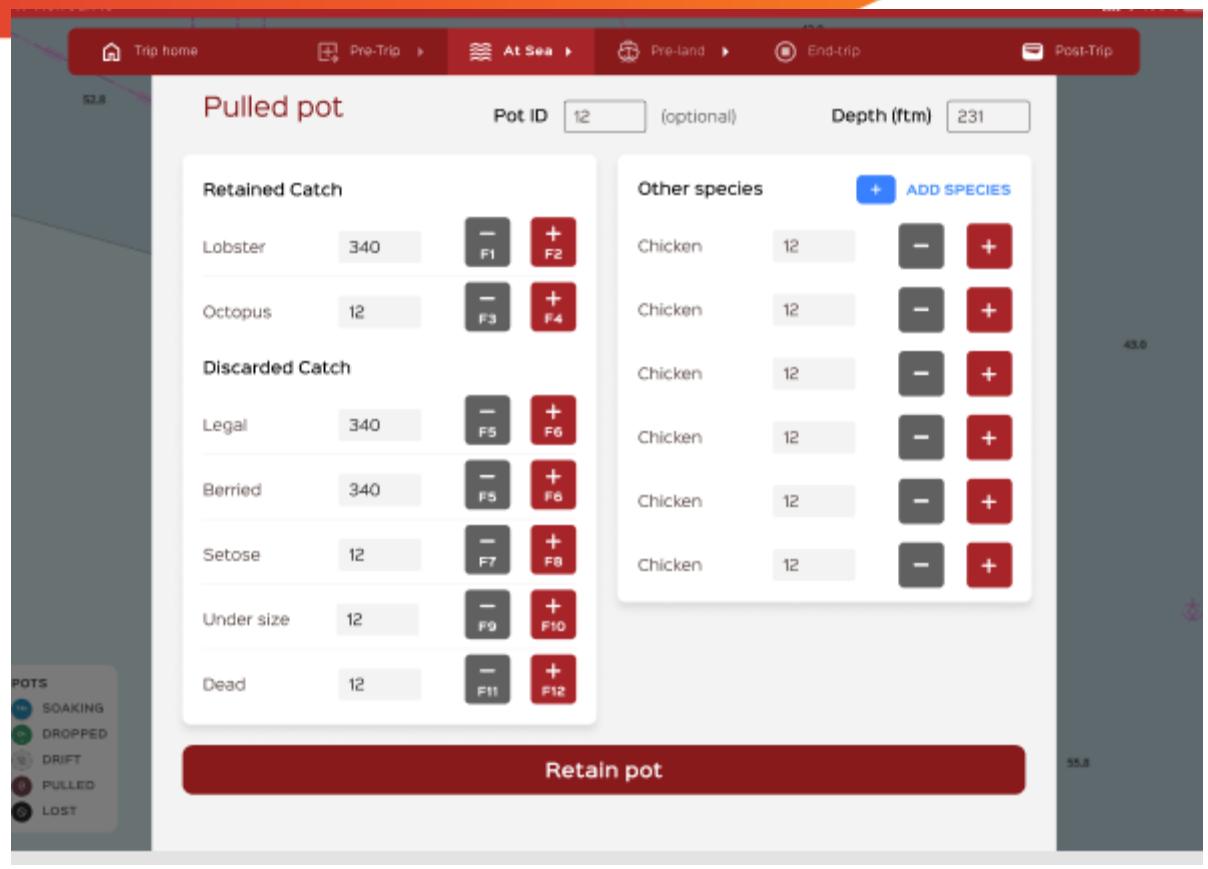
FishOps – Product Roadmap



1. REEF CONTOUR LAYER
   Safer Navigation
2. SHOW ZONE BOUNDARIES AND CLOSED AREAS
   Compliance and Security in Zones
3. IMPROVED BATHYMETRY
   Accurate Depth Indicator
4. BREADCRUMB TRAIL
   In-trip Vessel Tracking (Vessel Tracking History)
5. DEVICE INTEGRAtiON
   Precise Location
6. STREAMLINE CATCH RECORDING
   Navigation with Streamlined Catch Entry
7. BLOCK/ AREA CATCH SUBTOTALS
   Regional Clarity
8. IDENTIFY BROKEN GEAR
   Accurate Maintenance Cost-Logging
9. CUSTOM CATCH SETTINGS
   Personalisation within User Control
10. RANGE RING SETTINGS
    Fuel Efficiency, Improved Accuracy to Target
11. PLOTTER FUNCTIONS
    Improved Direction, Distance Measurement
12. APP PERFORMANCE ENHANCEMENT
    Improved Device Performance, Endurance
13. BYCATCH/ DISCARD SPECIES IDENTIFICATION
    Quick Reporting
14. 1-TOUCH POT PULL
    Instant Logging

FishOps Future - Catch Reporting Application





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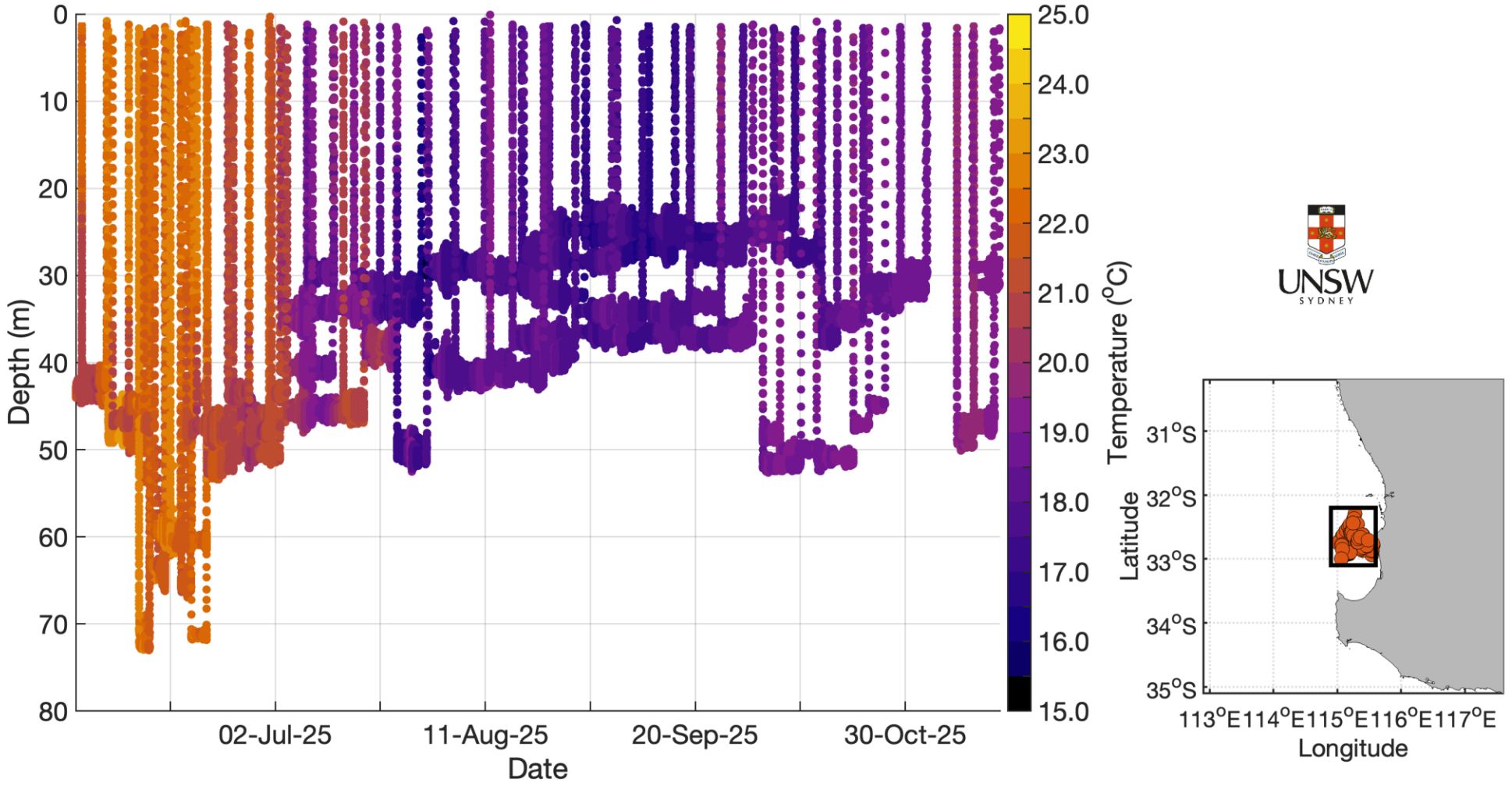
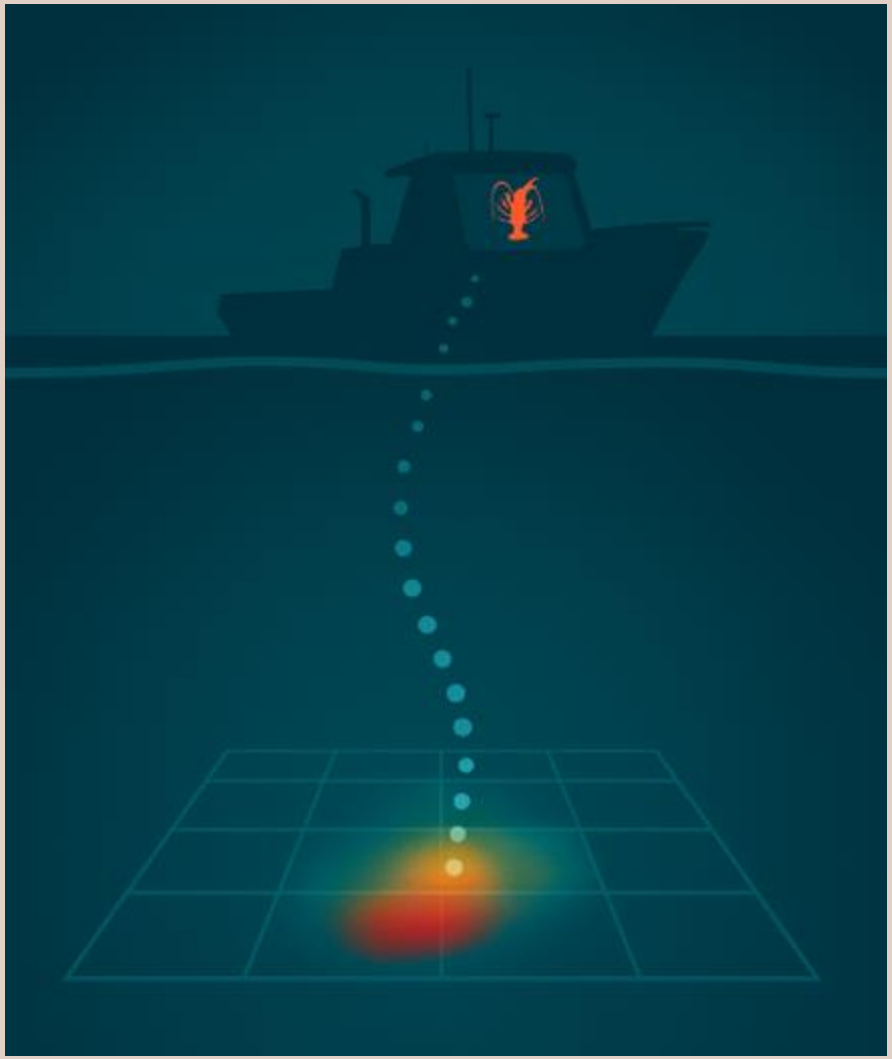


Once We Have the Data…



"With historical catch data, weather, water temperature, moon phase and swell conditions all connected…"

"…FishOps can help predict the **most likely areas for strong catch** — before you even leave the harbour."

"Decisions will shift from gut feel to **data-backed strategy**, combining your experience with technology."

"You'll know: *With this swell, this water temp, and this time of year — history tells me to drop here.*"

"No more wasted fuel. No more empty pots. Just smarter, more efficient trips."

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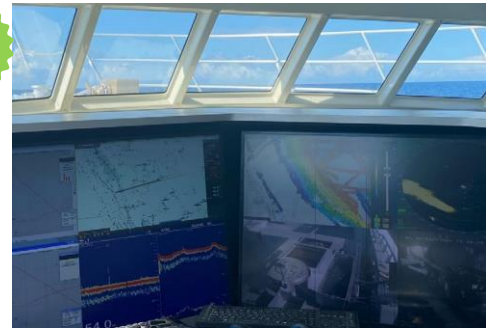
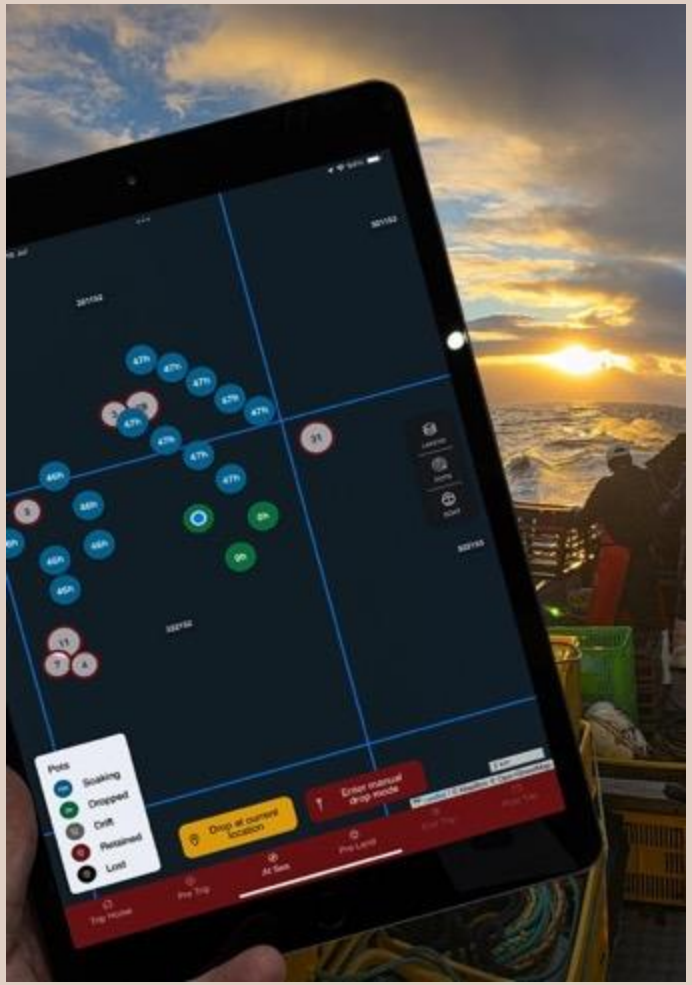


Questions?



David Pietersen

INDUSTRY DIGITAL STRATEGY PROGRAM MANAGER

Western Rock Lobster
Industry Digital Strategy

FRDC | Fisheries Research and Development Corporation