CSB INTO PRACTICE

DEPLOYMENT BEST PRACTICES

THE INTERNATIONAL SEAKEEPERS SOCIETY
ORANGE FORCE MARINE
MARCH 2025

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THE INTERNATIONAL SEAKEEPERS SOCIETY

DISCUSSION TOPICS

THE INTERNATIONAL SEAKEEPERS SOCIETY

- Engaging a Supportive Community

- Creating and Refining feedback mechanisms (e.g., data quality, contribution, etc.)

- Implementing Incentives

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- Installation and Monitoring Support (e.g., are we getting good data from an installation)

- Operational Maintenance & Troubleshooting

- Implementation Strategies (best practices, options for who executes the collection - COTS, DIY, etc.)

FINDING A CROWD

✅ Citizen Science is a Collaborative Effort: Success relies on

teamwork and community engagement.

✅ Leveraging Local Resources: Engaging fishers, dive vessels,

charter vessels, yachts, local industries, search and rescue

teams, and ferries for data collection and support.

United States | United Kingdom | South Pacific | Singapore | Bangladesh

VESSEL PROFILE SELECTION

Different Routes

Appropriate Speed

Sails Often

Broad Area Coverage

RECREATIONAL VESSELS

Engaged Crew

Vessels of any & all sizes

Private Boat & Yacht Owners

Philanthropic & motivated

Participation & communication

IMPLEMENTATION BEST PRACTICES

1. Have a Plan

- ✅ Select the right vessel profile
- ✅ Understand the vessel setup; NMEA and navigation suites
- ✅ Choose the right data logger for the right situation
- ✅ Select the communication mode; ship's/marina wifi, cellular or other
- ✅ Gather information in advance

2. Installation Scenarios

- ✅ Recreational vessels (can be simple - DIY)
- ✅ Commercial vessels (more complex/may require additional electronics/electric support)

3. Test the Install

- ✅ Metadata entry
- ✅ Processing setup, destop or cloud
- ✅ Test & verify data quality

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SELECTING YOUR LOGGER

🚩 **Choosing the Right Logger**

- **WIBL** - Advanced Capabilities for Detailed Data Collection

- **YDVR** - Affordable & Widely Accessible Option

- **OFM** - Includes Software & Submission Report

🚩 **Selecting a Communication Model**

- Choose the best connection

- If using wifi, get the information in advance

INSTALLATION EXPERIENCES

- **Installation Overview**

  - **Installation Types** - NMEA 2000, NMEA 0183, OFM with standalone GPS.

- **Installation Considerations**

  - Send a Manual - if not technician is available

  - Vessel Types: Recreational (Simple, DIY-friendly) & Commercial (Complex, may need extra support).

  - Equipment Setup: Enable position & depth broadcast on chart plotter.

- **Data Collection & Submission**

  - Collect & Submit Metadata - Via Google Form

  - Ensure Compliance - Seabed 2030 Agreement Letter

DATA TESTING

POST-INSTALLATION DATA CHECK

✅ **Test Data Quality** - Verify accuracy after installation.

✅ **Check Metadata** - Ensure all required details are recorded.

✅ **Verify Readings** - Confirm time, GNSS, and depth are correctly logged in the NMEA system.

✅ **Validate Offsets** - Ensure they make sense.

✅ **Resolve GPS Conflicts** - Watch for discrepancies (AIS interference possible).

DATA RETRIEVAL

🏴 **Quarterly Data Management**

- Retrieve, process, and submit data **Every 3 Months**.

🏴 **Hands-On Challenge**

- Choose the best connection

- If using wifi

VISUAL FEEDBACK & INCENTIVIZATION

✅ **Identify Missing Depths**

Detect gaps in echo sounder data due to depth or bottom characteristics.

✅ **Performance Statistics**

Track data per customer fleet, logger, vessel, and fleet comparisons.

✅ **Actionable Visualizations**

Help operators understand coverage areas and plan future routes.

PROVIDING MAPS AS FEEDBACK

✅ **Manual Processing Option**

Can be done without automation.

✅ **GIS Applications**

Useful for mapping and analysis.

✅ **Time-Consuming but Feasible**

Requires effort but is achievable.
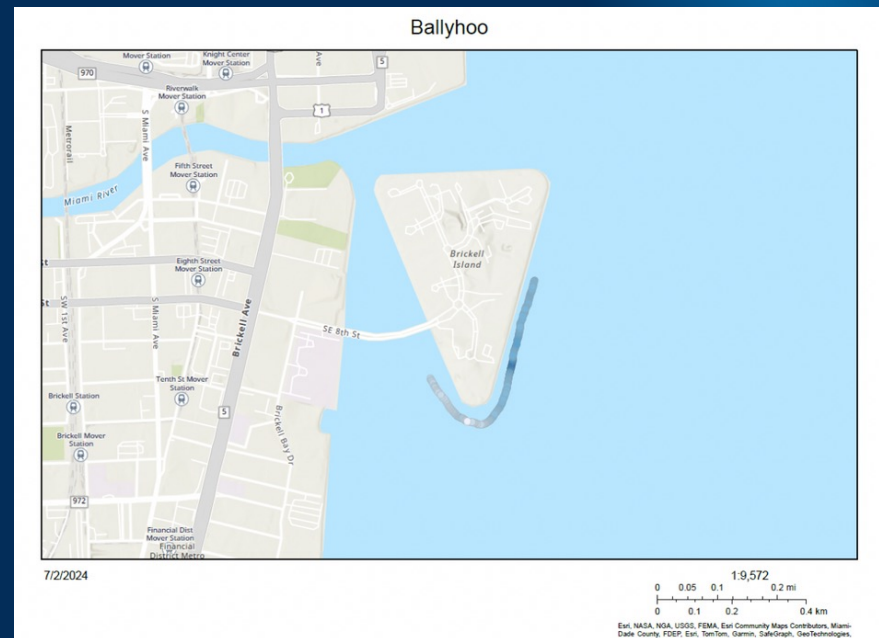
FLEET MANAGEMENT

✅ **Monitoring & Data Collection**

- Monitor data collection progress and last known area.

✅ **Proven Business Case – OFM**

- 6 active customers.

- 20 distinct data collection areas.

- 50+ loggers in use.

- 25 million pings recorded.

- 46,000 NM traveled.

- 8,600 hours logged.

HOW WE MANAGE THE FLEET

Low-Tech Data Management

- Spreadsheets for data organization.

Data Collection Overview

- 180+ vessels equipped with loggers.

- 50,000+ files submitted to DCDB.

- Mostly YDVR loggers.

SUMMARY OF PAIN POINTS DISCUSSED

✓ **Key Considerations for Implementation**

- What vessels to engage?

- What logger to choose?

- Data management

- Getting data off the vessel

- Data processing and submission

- Fleet management and feedback

- Metrics

DATA MANAGEMENT & PROCESSING CONSIDERATIONS
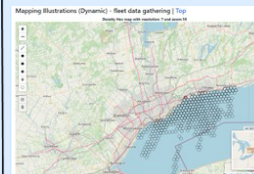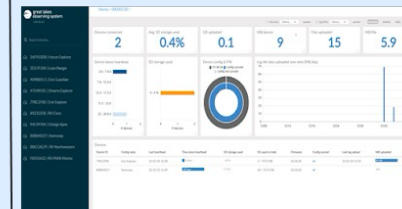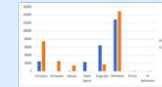
DATA MANAGEMENT AND PROCESSING CONSIDERATIONS

1.What data is available

   a. Position, depth, time

   b. Weather info

   c. Instrumentation

   d. Other

2.Conversion options - formats

   a. Data - XYZT, CSV, GEOJSON

   b. Visual - LAS

3. Distribution of data

   a. IHO DCDB

   b. To others for uses

   c. To yourself

   d. Via AWS S3, Dropbox, HTTP, others

4. Have data that needs to be processed?

   a. Upload to cloud (ie dropbox)

   b. OFM solution will copy, process, and distribute

       data on your behalf under your credentials

   c. Results returned to dropbox

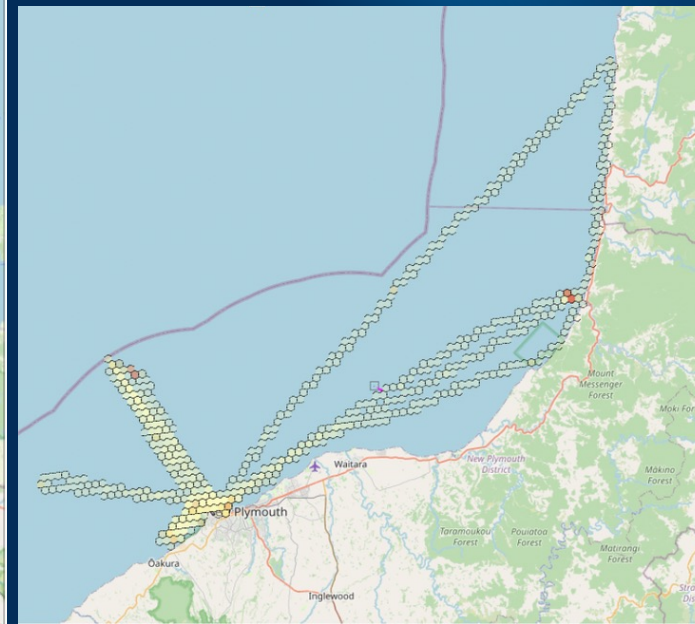# HOW TO GET STARTED?
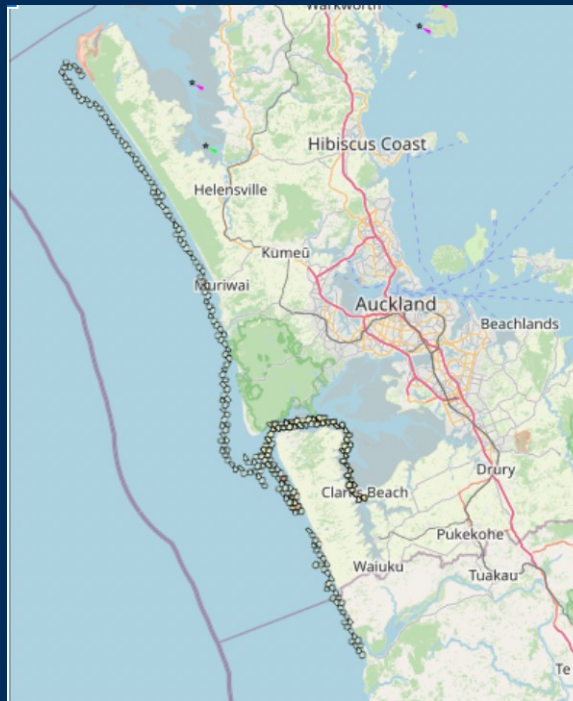## START A PILOT PROJECT, PROVE THE CONCEPT

- ✔ **NIWA Orca has been online and collecting data since January 2025**

- ✔ **As a pilot project in the South Pacific**

  ~300K pings

  650+nm

  88+ hours

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KEY TAKEAWAYS FOR SERVICES MODEL

* YOUR TIME IS VALUABLE - MAXIMIZE IT *

- ✅ **Budget:** subscription models versus one-time capital costs

- ✅ **Human efforts:** how much time can you spare versus your primary responsibilities

- ✅ **Technical skills:** what is needed and how available is it to support the effort

OFM CSB Offering

FINAL WORDS

- ✅ **Multiple Paths to Success:** Adapt to your resources and goals.

- ✅ **Engage the Right Audience:** Select and attract participants.

- ✅ **Assess Resources: Determine time and budget commitment.**

- ✅ **Data Management Approach – Decide if internal management is feasible.**

- ✅ **Customize Workflow – Develop a tailored data management process.**

THANK YOU FOR JOINING US.

Connect with us to join the SeaKeepers mission.

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