

September 2024

# Coral Reef Insight

Inception to the Programme

Harnessing Artificial Intelligence for the monitoring  
and conservation of coral reefs

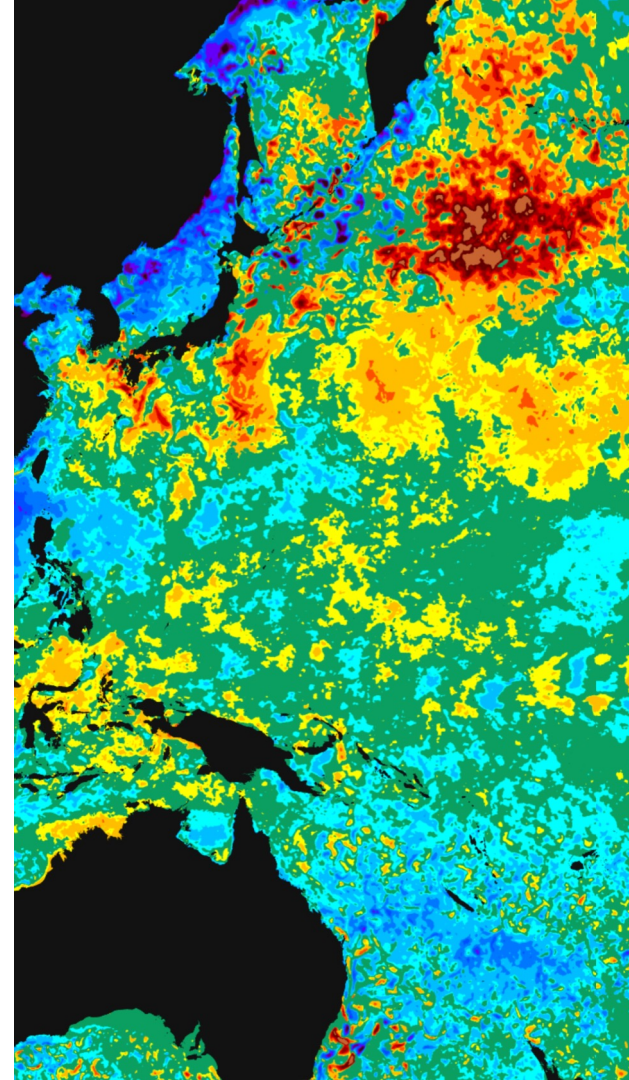


# The Challenge for Coral Reef Conservation

Actions to address the rapid decline in coral reef ecosystems are needed across different scales. However, barriers to participation and limited access to actionable knowledge to make evidence-based decisions often hinder participation from local communities in the effective management of natural resources.

Current conservation efforts are limited by data gaps and resource constraints and there is a pressing need for data-driven solutions to improve monitoring and decision-making.

With recent advances in the accessibility and reliability of AI technology, the Coral Reef Insight programme has been conceived to understand it might be leveraged to standardise, enhance and scale monitoring and conservation efforts.

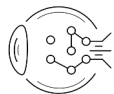


The Programme Objective:

**Identify at least one viable, scalable use-case for Artificial Intelligence (AI) to support the collection, analysis and interpretation of data for the monitoring and evaluation of the health of reefs and local communities in the CRRI target countries.**

# Opportunity Areas

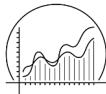
From preliminary research and discussions among partners, 3 key opportunity areas relevant to advances in AI have been identified for further investigation:



## Detection and Recognition

What data formats and sources can be used to train AI for better recognition? E.g. sensors, aerial photography, sound.

What other kinds of surveys or data collection initiatives can benefit from the application of machine learning? E.g. fish species, environmental data



## Predictive Modelling

How can we better identify reefs at risk of bleaching, overfishing, disease or damage?

How can we simulate the impact of conservation efforts, policy change, or climate change scenarios?

How can we model how environmental changes impact local communities (e.g., food security)?



## Decision Support

How can generative AI be leveraged to help diverse audience groups make sense of data, and encourage action?

How can action be prompted contextually and in real-time, reducing response times and eliminating feedback loops?

# Approach & Timeline

The inception phase includes the following milestones:

*September 2024*

## Discovery & Exploration

Market/theme scan for relevant tools and technology. Consultation with communities to develop use cases.

*November 2024*

## Partner Engagement

Converge on technology and use cases. Define and engage partners for contribution to the Summit.

*March 2025*

## Coral Reefs & AI Summit

Partners to demonstrate technology solutions. Workshops to brainstorm and align on possible applications to reef conservation.

*April 2025*

## Proposal Development

Analysis, strategy, scoping and solution documentation developed to guide the implementation phase of the programme.

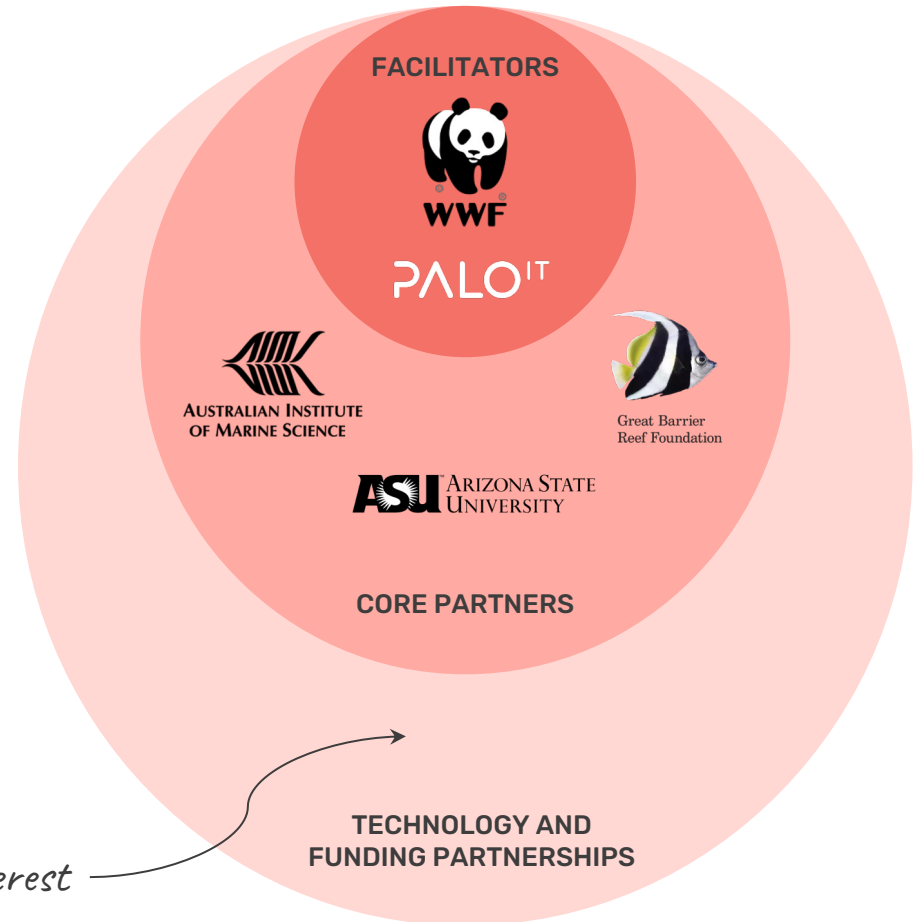
*June 2025*

**Proposal Submitted**

# Partners and Collaborators

The inception programme brings together a working group with extensive experience at the intersection of technology and reef monitoring and conservation.

- PALO IT has led technical development for the CRRRI's Monitoring and Evaluation system
- AIMS has developed AI and machine learning technologies to support the monitoring of reefs across the globe ([ReefCloud](#))
- ASU is responsible for the ongoing development of the [Allen Coral Atlas](#)
- GBRF invests in innovative ideas and designs real-world, scalable conservation programs in Australia and the Pacific





# Register your interest or support

- Technology providers who may have a solution that aligns to our opportunity areas
- Funding partners who are aligned with the outcomes of Coral Reef Insight, and who would also like to explore emerging technologies

If you would like to learn more, please reach out to:



**Carol Phua**

Global Coral Reef  
Initiative Leader  
WWF

[cphua@wwf.org.au](mailto:cphua@wwf.org.au)



**Mark Boehm**

Head of Product  
Design & Strategy  
PALO IT

[mboehm@palo-it.com](mailto:mboehm@palo-it.com)





Coral Reef  
Rescue Initiative

**Thank you**

