



# Monitoring to Action: Mangrove Local Action Plans

Turning community knowledge  
into coastal protection

**A practical framework for translating MangroveWatch  
community science data into community-led action**

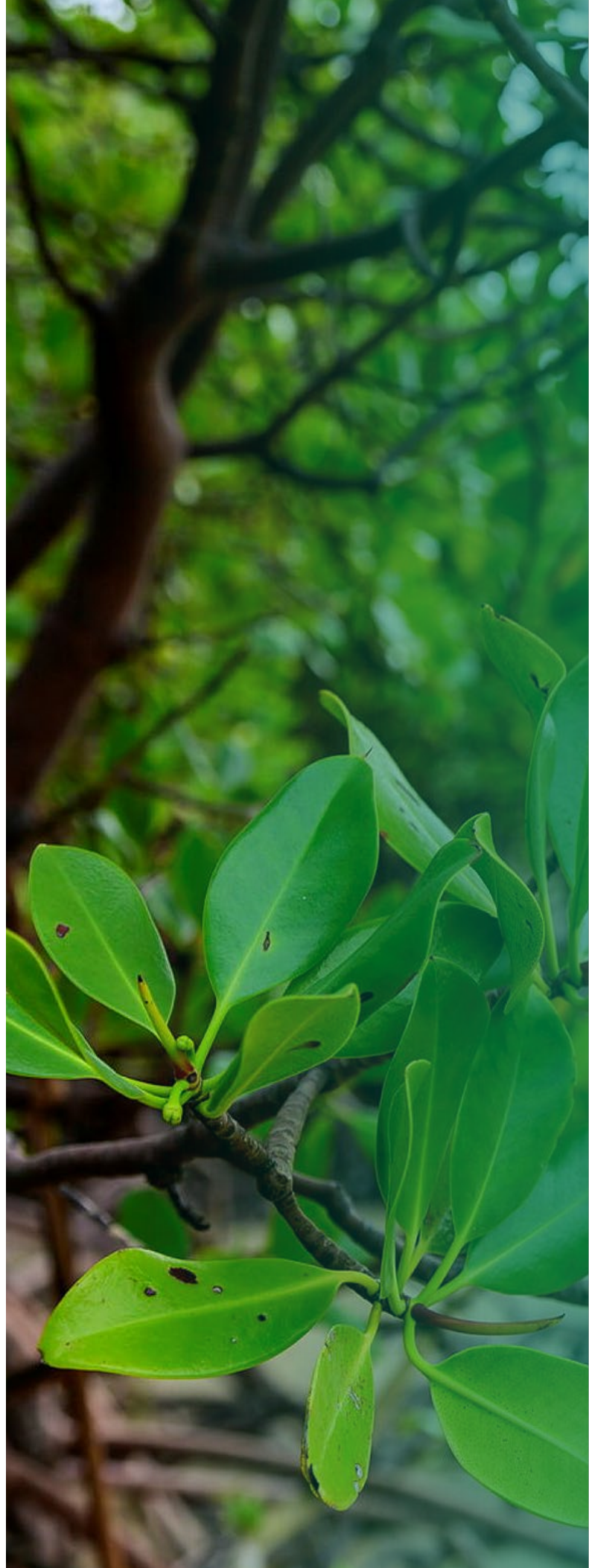


The Local Action Plan framework and guide is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation, and Cairns & Far North Environment Centre, Earthwatch Australia, and MangroveWatch.

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# Purpose

## Your guide for local action

This document is for people who care for coastal wetlands.

It's designed to support **grassroot community groups and Traditional Custodians** in developing and carrying out local actions that:



These actions are guided by a **Local Action Plan (LAP)** Framework — a flexible, scalable tool first piloted in the Wet Tropics using mangrove data. It's designed to work across different levels of local capacity, resources, and needs.

Inside, you'll find practical guidance on using the **LAP Framework** to protect and restore coastal wetlands — with real examples and lessons from the Wet Tropics MangroveWatch Chapter, led by Cairns and Far North Environment Centre (CAFNEC) in partnership with Earthwatch Australia.

We hope this guide helps others take the first steps toward planning and leading local efforts to protect and restore coastal wetlands.

# Why LAPs are needed

## Why coastal wetlands matter

Coastal wetlands — including tidal ecosystems like mangroves and saltmarshes — are among the most important and most threatened environments on Earth. These places provide vital wildlife habitat, protect shorelines, and support both cultural connection and economic life.

In Far North Queensland, Traditional Custodians and local communities saw their tidal wetlands being built over, washed away, and increasingly damaged and degraded. These were places they lived beside, fished in, relied on, and are deeply connected to.

Seeing them disappear, people knew that simply reporting the damage wasn't enough. They knew they needed to do more than just watch it happen. But what?

## Turning monitoring to meaningful action

MangroveWatch was originally started as a way for communities and Traditional Custodians to monitor the health of their local tidal wetlands — collecting real-world data to track damage and change over time.

What that monitoring revealed was a confronting truth: tidal wetlands across the region were facing growing pressure from pollution, erosion, weed infestations, habitat loss, and the impacts of climate change. The problems were clear — but they felt too big to tackle.

What was missing was a way to break those challenges down. To turn a big, complex issue into something that could be acted on — locally, practically, and together.

That's where the idea for Local Action Plans started — a simple way to turn knowledge into action with local communities in the lead.



Teachers and community leaders survey saltmarsh at Yorkeys Knob as part of Earthwatch TeachLive program. Photo by Earthwatch Australia

# What's a Local Action Plan (LAP)?

A Local Action Plan is a simple, structured way for communities to turn what they know into action.

It helps connect local knowledge, Traditional Ecological and Cultural Knowledge, and environmental monitoring data with practical steps to protect and restore coastal areas. Whether it's planning a mangrove clean-up, tackling erosion, restoring fish habitat, or raising local awareness – LAPs help bring people together, focus effort, and get things moving.

But here's the key: the framework stays the same, while the content is shaped by the local context. That means LAPs follow a common structure, making them easier to replicate, scale, and compare across different places – even though each one looks a little different in practice.

## Wetland facts



More than half of the world's mangrove species occur in Australian waters including the Great Barrier Reef.

### Coastal Wetland ecosystems:

- Stabilise shorelines and prevent erosion
- Provide nursery habitat for marine life
- Are feeding grounds for unique coastal wildlife
- Store carbon and reduce greenhouse gases
- Filter runoff to improve water quality flowing to the Reef and coastal waters
- Hold inherent cultural values
- Are popular recreational spots



### But they're at risk from:

- Invasive weeds and feral animals
- Pollution and runoff
- Urban development
- Climate impacts like sea level rise, cyclones, and flooding



## What is the MangroveWatch program?



Citizen scientists are everyday people who contribute to environmental knowledge by collecting data, observing changes, and sharing insights about their local area.

In the MangroveWatch program, citizen scientists include:

- Traditional Custodians, community members, and school students
- Trained volunteers using MangroveWatch methods to monitor mangrove and saltmarsh conditions
- People who live near, care about, and are connected to wetlands

They may not have a scientific degree or background – but they bring essential knowledge, commitment, and perspective to every Local Action Plan.

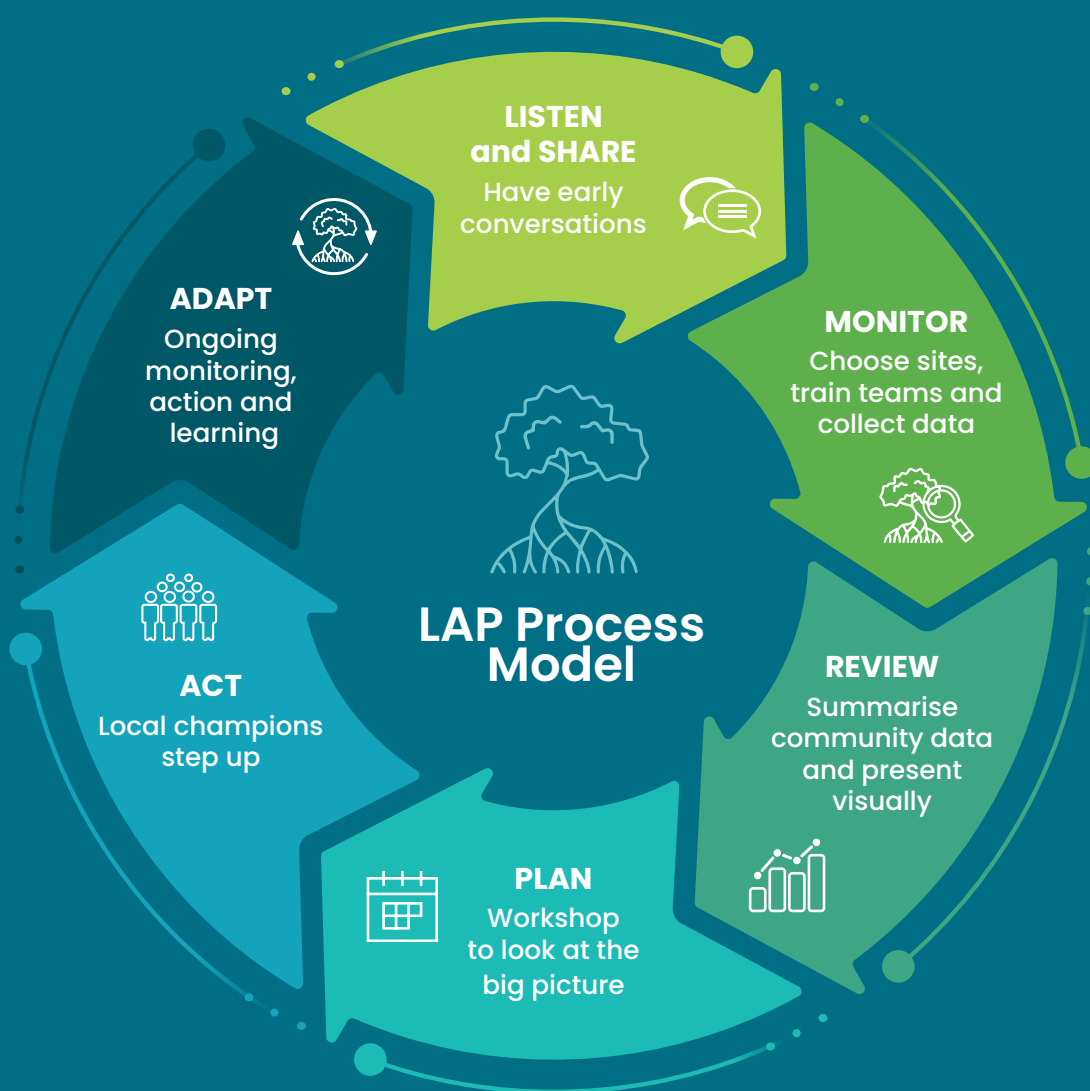


Maggie Mangroovers Mangrove Monitoring. Photo by Emma Muench, GBRF

# How a LAP works

## The process behind a Local Action Plan

Local Action Plans aren't built in a meeting or written in a vacuum. They're grown from the ground up – shaped by community conversations, local monitoring, and on-Country knowledge sharing. Ongoing mangrove monitoring by the community helps to document resulting changes from project activities.



What makes them work is that everyone involved brings something important to the table, and the process is designed to keep moving forward, even if slowly at first.

# How it comes together

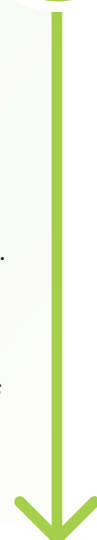
## Listen & Share

### Have early conversations

Have early conversations with Traditional Custodians to understand their perspectives and aspirations. This helps build alignment around shared goals and potential ways of working together on monitoring and planning.

Then, talk to key partners – including land managers, local groups, scientists, and community volunteers – to explore shared priorities.\* These conversations can also help identify which estuaries or wetlands matter most to people: places where they live, fish, walk, or care for Country. Be sure to share your ideas too.

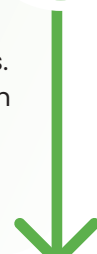
*\* When engaging with Traditional Custodians, make sure that permission to work on Country is formally obtained through the appropriate organisation, board, or group of Elders. Early discussions should also focus on how to build respectful, long-term relationships – both at the management level and in day-to-day collaboration.*



## Monitor

### Choose monitoring sites, train teams & collect data

Work with Traditional Custodians, community members, and partners to choose monitoring sites. Then, train local citizen scientists to use MangroveWatch methods and collect shoreline condition data. Monitoring is done together – in the estuary, on Country – building skills and shared understanding along the way.



## Review

### Summarise community data and present visually

After a period of monitoring (ideally one to two years), the data is mapped and reviewed to show trends over time – such as erosion, weed spread, sediment build-up, and habitat changes. An Earthwatch scientist helps interpret what the data means. Presenting this information through spatial maps helps highlight areas of concern and supports decision-making about where and how to take action. Spatial data is especially useful for pinpointing the places and pressures that matter most – helping to shape practical next steps.



# How it comes together

## Plan

### Workshop to look at the big picture

The visually presented data is shared back with the community. Workshops create space to connect science, Traditional Knowledge, and local experience to understand trends and shape ideas. Together, the group identifies what matters most to protect or fix – and starts designing realistic actions to do it.



## Act

### Local champions step up

Community members or partners step forward to help drive specific actions forward, with support from the local coordinator. Or community might identify an organization who could help drive action. After the workshop, detailed project plans are drafted, and efforts begin to find grants, in-kind support, or local collaboration. LAP leaders report enhanced skills and confidence to develop and lead their own projects, including seeking further funding.



## Adapt

### Ongoing monitoring, action + learning

Monthly meetings provide a space for LAP leaders and partners to come together and discuss progress and challenges as part of an action learning cycle. The community keeps collecting data – not just to monitor the wetlands, but to see what difference their actions are making.



Shoreline video MangroveWatch surveys of the Barron River with Yirrganydji Land & Sea Rangers. Photo by Jock Mackenzie

“

It's great to get out there and work with the community and CAFNEC. When the team comes together, it's just go, go, go. Everyone knows their roles, what to do, and gets hands-on to help.



Gabi Plumm



Volunteers participating in saltmarsh SAVER surveys.  
Photo by: Jock Mackenzie

### Why this flexibility matters



- Different communities have different capacities & contexts
- Some actions need to be fast and visible to build momentum
- Other actions need time, funding, and expertise to grow

The LAP framework creates room for all of these — and helps guide the right kind of support to the right kind of project.

“

Every LAP Project follows a different clock. Some start fast. Some take time. What matters is listening first, then building together.



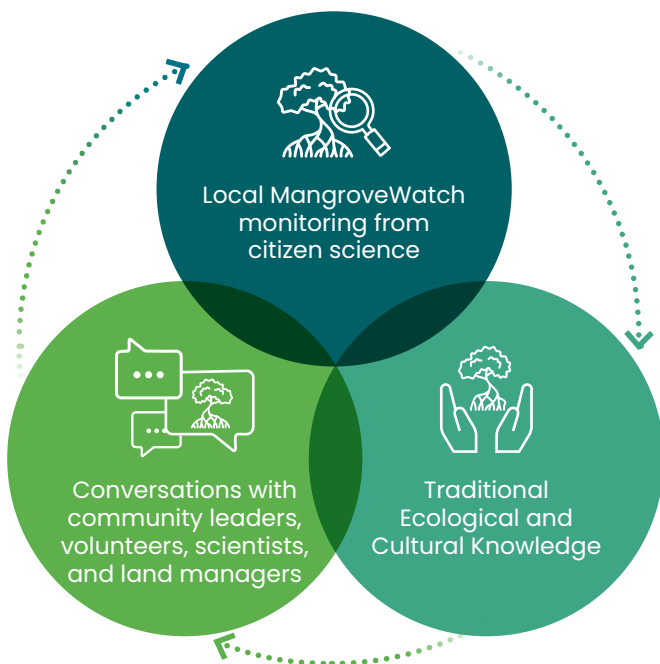
# How LAPs help bridge the gap

## Connecting local actions

Local action can feel scattered or reactive if there's no framework to bring it together.

LAPs provide that structure. They connect:

- Local MangroveWatch monitoring from citizen science with
- Traditional Ecological and Cultural Knowledge, and
- Conversations with community leaders, volunteers, scientists, and land managers



By connecting these inputs, LAPs create a plan that's both strategic and achievable — with local ownership, clear goals, and practical actions. It's grounded in lived experience, is culturally informed, and locally led. And because the framework brings everything together, it's easier to see what's changing and adjust the plan when needed. This helps communities stay on track, even as conditions shift.



## Contributions towards Reef 2050 Plan

LAPs also support broader-scale impact by aligning with the Reef 2050 Long-Term Sustainability Plan (The Reef 2050 Plan), the Australian and Queensland governments' long-term strategy for protecting and managing the Great Barrier Reef.

They offer a practical way for communities to contribute to national goals — including the Work Area to “*Protect, rehabilitate and restore Reef habitats*”, and the stewardship objective that “*people and communities take individual and collective action to maintain Reef resilience.*”

# Types of projects

## What comes out of a LAP?

The short answer: it depends. And that's the point.

Because LAPs are shaped by the people and the place, the projects that come out of them look different across locations. But over time, a pattern has emerged — most projects fall into three broad categories, each with different levels of complexity and support needs.

## Three common project types

### Action-Ready Projects

Smaller efforts that can be rolled out quickly by LAP Leaders with minimal funding or support. This generally occurs because there are existing networks to leverage for resources and partnerships. These can be one-time events or longer initiatives.

#### Examples:

- Community clean-ups
- Local education events
- Signage or campaigns
- Walking on Country with Elders Day
- Drone surveys



### Major Projects

Bigger initiatives that require more planning, coordination, and resources — often involving multiple partners and multiple years of commitment.

#### Examples:

- Revegetation or weed management
- Nature-based erosion control trials
- Buffer zone enhancement



### Advocacy Projects

Projects that require community advocacy led by LAP Leaders before on-ground works can be delivered. This often requires meetings with local, state, and federal government in addition to multiple partnerships.

#### Examples:

- Technical restoration (e.g. hydrology repair)
- Council policy updates or land-use changes
- Funding applications for infrastructure or research



# On-ground examples



## What does local action look like?

Across the Wet Tropics, Local Action Plans have already sparked projects which are in various stages of development and implementation – some small, some large, all driven by local knowledge and passion.

Here are three snapshots showing the diversity of what is possible when communities take the lead.

### Barr Creek fish habitat area Revegetation project

#### Led by Rob Williams

As part of the local LAP, Rob helped coordinate a community-led response to the long-term decline of the Barr Creek Fish Habitat Area. Drawing on local knowledge and networks, he catalysed a set of actions – including mapping, fencing, and tree planting – to enhance ecological resilience. Following Cyclone Jasper, he worked with local council to organise a cleanup, helping minimise impacts in this 50 hectare wetland system. This work continues with Holloways Beach Coastcare for ongoing revegetation and maintenance.

The LAP framework helped bring these efforts together and provided the structure needed to keep momentum going. The trees planted at Barr Creek will support landward mangrove migration as sea levels rise – future-proofing habitat for fish and wildlife and buffering the coast against the impacts of climate change.

### Cardwell Foreshore Erosion control project

#### Led by Vito Napoli & Gabi Plumm

The southern Cardwell foreshore is experiencing erosion from local development, storm damage, and wave action. Local LAP leader Vito (supported by Gabi) proposed a permeable bamboo fence to reduce erosion and begin restoring the mangrove mudbank, supporting mangrove reestablishment.

He has been progressing through approvals to undertake this restoration activity. A drone LiDAR survey was conducted to understand site elevation and inform the project design. A coastal engineer was hired to assess the coastal processes and confirm the credibility of the proposed actions.

With these feasibility steps in place, the pre-permit application process is progressing. The next step is a phased collaboration with local partners including Council and other not-for-profits to build momentum for nature-based adaptation solutions.



“

This project feels like serendipity. I had this idea for a long time, and then with the local action plan, it's been amazing how it's been picked up and carried.

Vito Napoli



## Mulgrave River School education project

Led by Rachel Platte & Clive Murray

Young people are the future carers of local wetlands.

LAP leaders Rachel and Clive leveraged existing networks to engage with the local schools and educate kids both in and outside of the classroom.

Field trips provided students with hands-on learning opportunities, and they left with a story to tell their families to encourage further awareness. This has also filled a gap in the local school systems regarding coastal wetlands.

“

The faces of those little ones are filled with so much joy when we go out on excursions—it's amazing how they get so involved. ☺☺

Clive Murray

“

It's a really immersive experience that opens up their world. It's great to see the kids' excitement and engagement. ☺☺

Rachel Platte

### What these projects share



Even though they're different, each one:

- Started with a local concern or opportunity
- Used MangroveWatch data to inform action
- Brought people together in new ways
- Made visible change, fast or slow



Mulgrave LAP leaders prepare to teach local school kids. Photo by Rachel Platte

# The Wet Tropics journey

## How the Wet Tropics LAP framework took shape

The LAP framework didn't appear overnight. It was built step-by-step over several years through real-world testing, local feedback, and an evolving partnership between community groups, scientists, Traditional Custodians and funders.

Here's a quick look at how it all came together:

### Launch of monitoring 2016–2019

- CAFNEC partners with Earthwatch Australia and MangroveWatch to coordinate the local chapter for the Wet Tropics

### LAP idea emerges 2021

- LAP concept internally proposed and discussed as a next step among partners
- Collaborative design with partners begins using the Conservation Standards
- Draft framework takes shape, with community input

### LAP iteration and on-ground actions 2023–2025

- Estuary-specific LAP workshops held at three more sites
- GBRF, EWA, and CAFNEC begin designing the framework based on learnings from four site locations
- Community-led plans implemented across multiple estuaries
- Ongoing support and peer learning embedded
- Data tracking and project impact stories emerge

### 2019–2020 Growth of network

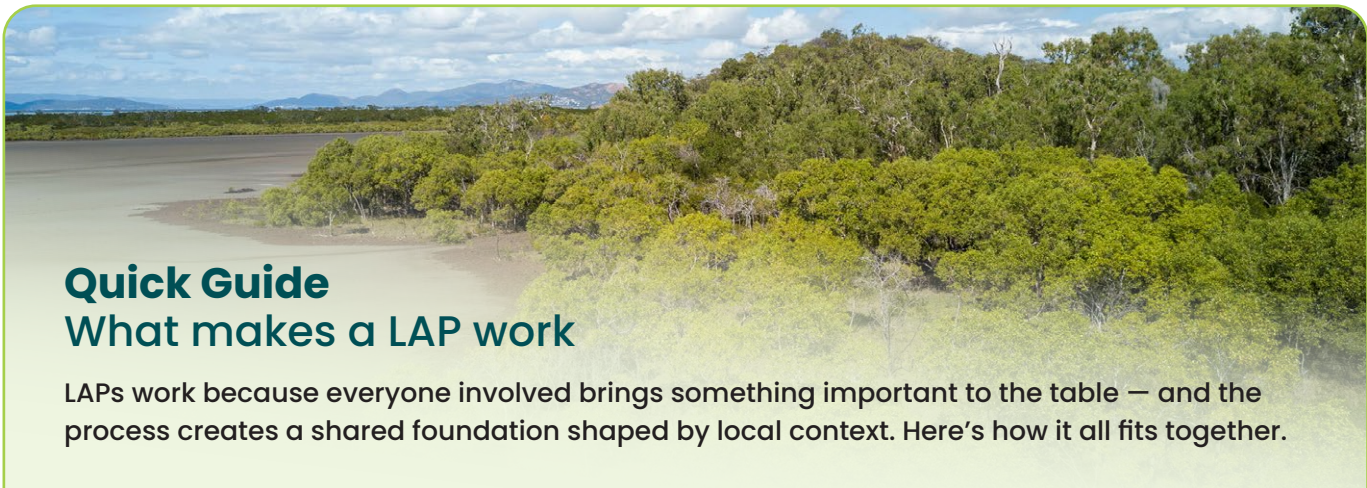
- CAFNEC secures multi-year funding from GBRF/RTP to expand the MangroveWatch Chapter. Community training grows through CAFNEC and Earthwatch
- Local volunteer and partner organisations are more aware of mangrove conditions in their local estuaries and report a desire to utilise the data they are collecting

### 2022 Launch of LAPs

- Estuary-specific LAP workshops held in 2 sites
- Feedback shapes structure and delivery of LAP workshops
- Monitoring begins to feed directly into designing and planning

### Beyond the Wet Tropics

- Model tested in Mackay, Townsville and Yunbenun (Magnetic Island)
- Traditional Custodian-led LAPs developed with support from Earthwatch
- National and Pacific-scale applications under consideration
- Supporting community-led disaster recovery and preparedness in Wet Tropics and beyond



## Quick Guide

### What makes a LAP work

LAPs work because everyone involved brings something important to the table — and the process creates a shared foundation shaped by local context. Here's how it all fits together.

#### Common framework

Connecting data, knowledge and people in a shared structure

- Makes it easier to build a plan using shared steps and structure
- Enables consistent processes across locations for comparison and learning
- Supports scaling up and tracking progress over time

#### Local content & context

Grounding the plan in lived experience and local priorities

- Ensures community needs and priorities are reflected in the plan
- Brings together Traditional Ecological and Cultural Knowledge with on-ground data
- Makes the plan realistic and achievable by factoring in local resourcing and conditions
- Keeps coordination local — led by people who know the place

#### Pathways for leadership

Creating space for local leaders to grow and drive change

- Keeps communities in the driver's seat, strengthening ownership and belonging
- Supports a range of leadership types — not just formal roles
- Builds momentum through regular check-ins with LAP leaders and key partners

#### Evidence-driven approach

Combining local insight with real data to guide action

- Helps prioritise practical, flexible actions that work on the ground
- Brings together evidence and lived experience for better decisions
- Recognises and values community expertise and knowledge networks
- Uses monitoring to adjust delivery and improve over time



#### What success looks like

##### How we know a LAP is working

- Traditional Custodians feel respected, heard, and in control of what's shared
- Community members see progress and feel part of something bigger
- Data is being used — not shelved — to guide real decisions
- Projects reflect the place, not just the plan
- Wetlands are healthier because of the work



Mangroves, Yunbenun. Photo by Kobie Rhodes

Top: Mangroves, Yunbenun. Photo by Kobie Rhodes

# What we have learned

## Lessons from the Wet Tropics

Building a Local Action Plan isn't a one-size-fits-all process — and it doesn't happen overnight. But after several years of trial, feedback, and action, a few core lessons have stood out.

These reflections aren't just helpful for those involved — they're shared here to help others get started, avoid common roadblocks, and build stronger plans in new places.



### Start with relationships, not forms

Engage Traditional Custodians early and meaningfully. Respect cultural protocols and build trust before any action is proposed. Be willing to slow down to do this well.



### Early wins build confidence

Quick, visible actions (such as clean-ups or signage) can help galvanise support and boost morale while larger projects take shape.



### Permits and regulations can stall good ideas

Some restoration work faces real administrative hurdles. Bring technical experts in early to understand what's possible and where flexibility exists.



### Take stock of readiness

As you start out, reflect with community on what is in place and what areas you want to develop further. Understanding these early can help guide how you work collectively and build phased approaches to grow efforts.



### Leadership comes in many forms

Sometimes leadership looks like running workshops. Sometimes it looks like making a quiet phone call or inviting the right person to a meeting. Make space for different strengths.



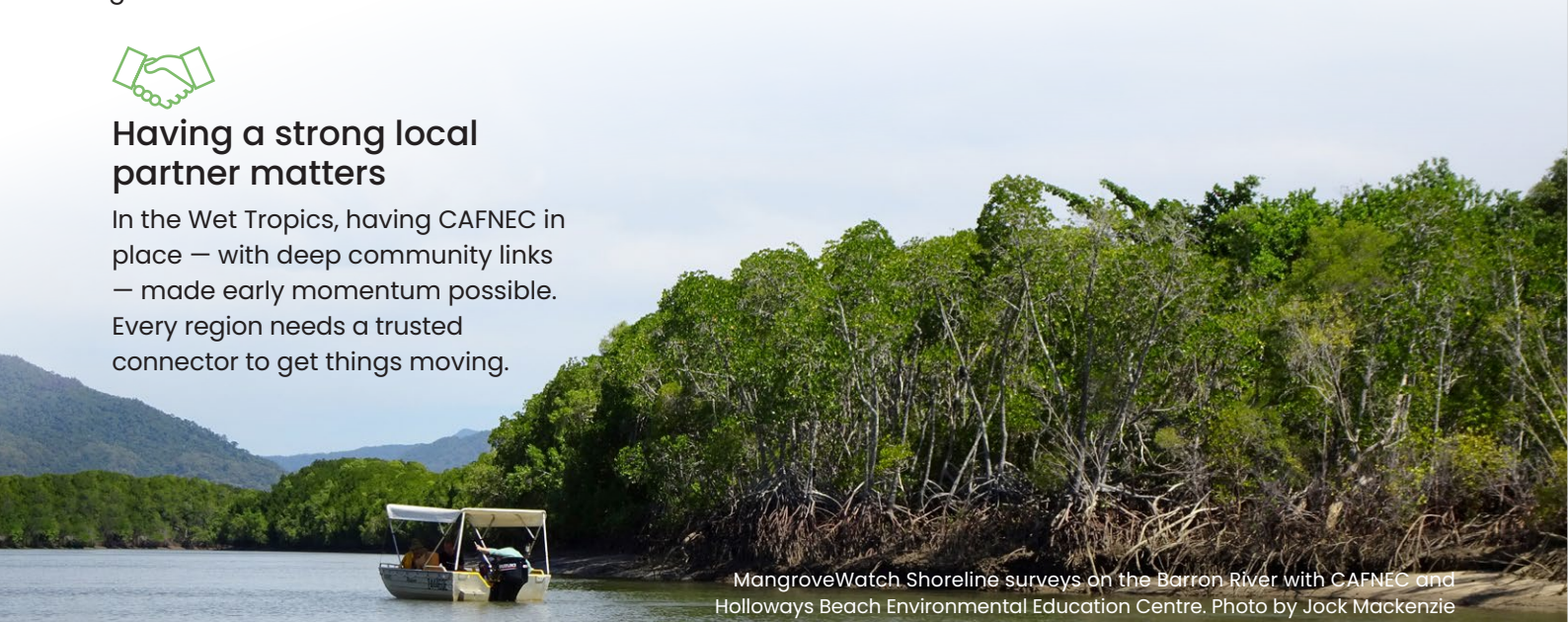
### Long-term funding makes a big difference

Sustainable impact takes time. Multi-year support gives communities breathing room to plan, test, adapt and scale.



### Having a strong local partner matters

In the Wet Tropics, having CAFNEC in place — with deep community links — made early momentum possible. Every region needs a trusted connector to get things moving.



MangroveWatch Shoreline surveys on the Barron River with CAFNEC and Holloways Beach Environmental Education Centre. Photo by Jock Mackenzie

# Looking ahead

## Where to from here?

The on-ground evidence is clear: community-led Local Action Plans don't just work — they work because they're local.

The Wet Tropics experience shows that when communities are supported to lead, they create plans that reflect local values and drive meaningful change.

With a shared framework that allows for local adaptation, the LAP model offers something rare: a way to scale without losing what makes each place unique.

That's why the next step isn't just more plans — it's more communities with the support they need to lead.



Yunbenun Magnetic Island. Photo by Kobie Rhodes

## Key priorities in the Wet Tropics

- ◉ **Deepen two-way dialogue with Traditional Custodians** — continuing the shift toward a First Nations-led model supported by local communities, where that aligns with local aspirations.
- ◉ **Strengthen and expand partnerships** that help deliver on LAP priorities and sustain action.
- ◉ **Keep building a diverse, coordinated network** that brings together different strengths, capacities, and perspectives.
- ◉ **Continue contributing tidal wetland data** to the Wet Tropics Waterways Report Card — ensuring local insights drive long-term, region-wide action.

## Scaling the Impact in other places

- ◉ **New LAPs are already underway** in places like Mackay and Yunbenun (Magnetic Island), supported by Earthwatch and the Great Barrier Reef Foundation.
- ◉ **Traditional Custodian-led plans are expanding** across north Queensland, incorporating cultural knowledge and community priorities.
- ◉ **The model is ready for wider use** — in other estuaries, other regions, and other citizen science programs focused on locally driven nature repair.

Local Action Plans don't need to be perfect. They just need people who care, a process that works, and the support to take that first step.

# The Wet Tropics model

## Who makes it happen?

In the Wet Tropics, the LAP framework has been brought to life by a network of committed partners – each playing a different role but working toward a shared goal.

The model was designed to be practical, flexible and community-first. It's not about imposing a plan – it's about building something local people can own, shape, and lead.

## Key roles in the LAP network

### Traditional Custodians

- Provide free, prior and informed consent before any work begins
- Share cultural and ecological knowledge where appropriate
- Lead activities and guide protocols where desired

### Community volunteers

- Bring local knowledge and context
- Help with fieldwork and monitoring
- Collaboratively design projects based on lived experience
- Step up as LAP leaders to drive implementation

### Local delivery partner (Cairns & Far North Environment Centre)

- Builds and maintains relationships with Traditional Custodians and local groups
- Coordinates volunteers and provides mentorship to LAP leaders
- Manages communication, planning, grants, and admin

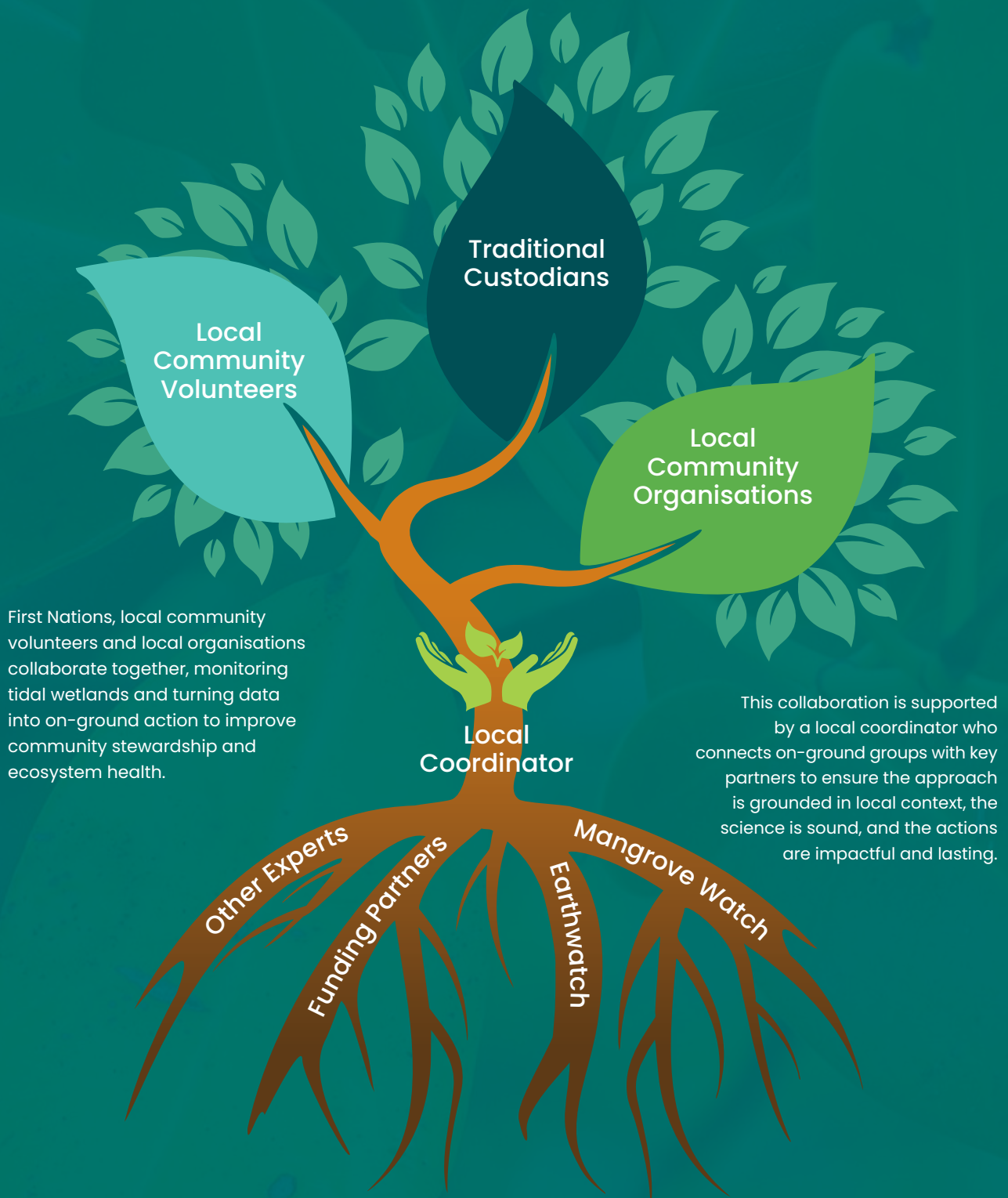
### Science & technical enabler (Earthwatch / MangroveWatch)

- Provides training, technical tools, data analysis, and reporting
- Supports workshop delivery and citizen science design
- Liaises with report card partners and broader Reef network

### Project partners and funders


- Support specific actions, offer technical expertise, or co-deliver activities
- Provide funding or in-kind support, and help tell the story of impact

# Monitoring and Local Action Plan Group



The Local Action Plan model was developed by a partnership between CAFNEC, Earthwatch and GBRF



It brings the community together when everyone's involved, and I really love that atmosphere. People start dreaming big, and from that, things happen. You get local action plans, and people start wanting to be a part of it. 

LAP leader

# Glossary of Acronyms

Acronym	Full Term	Context / Description
LAP	Local Action Plan	A simple, structured framework that helps communities turn local knowledge, cultural insights, and environmental data into practical actions for protecting and restoring coastal areas.
CAFNEC	Cairns and Far North Environment Centre	Local delivery partner coordinating the LAP Program
GBRF	Great Barrier Reef Foundation	Funder and program partner
EWA	Earthwatch Australia	Scientific and technical partner
RTP	Reef Trust Partnership	A partnership between GBRF and the Australian Government to deliver reef protection programs
LiDAR	Light Detection and Ranging	A remote sensing technology that uses laser light to measure distances and create detailed 3D representations of objects and environments.
FPIC	Free, Prior and Informed Consent	Cultural protocol used when seeking Traditional Custodian involvement in projects or decisions

## Learn more


<https://earthwatch.org.au/research/wetlands-reefs>

<https://cafneec.org.au/mangrovetwatch-wet-tropics-chapter/>

<https://barrierreef.org/what-we-do/reef-trust-partnership/community-reef-protection>

I drove past that habitat for years thinking, someone should do something about that ... then one day, I realised ... I can do something about that.

**Rob Williams**



If you're ready to get started – or just want to learn more . . . we're here to help.

For questions about work in the Wet Tropics, contact: [projects@cafneec.org.au](mailto:projects@cafneec.org.au)

For questions about broader LAP uses, contact: [hello@earthwatch.org.au](mailto:hello@earthwatch.org.au)

Yunbenun Magnetic Island Mangroves. Photo by Kobie Rhodes



We acknowledge the valuable contributions of Traditional Custodians upon whose land we work and live: Gimuy Walubara Yidinji, Mandingalbay Authentic Indigenous Tours and Mandingalbay Yidinji Aboriginal Corporation RNTBC, Dawul Wuru Aboriginal Corporation and Yirrganydji Indigenous Land and Sea Rangers, Madjandji Aboriginal Corporation and Madjaybana Rangers, Jaragun Ecoservices, Goondoi Arts Aboriginal Corporation, Mandubarra Aboriginal Land and Sea Inc., Mamu Aboriginal Corporation RNTBC, and Giringun Aboriginal Corporation. We are proud to work and learn alongside Traditional Custodians in caring for culture and community.

### Project Partners

Cardwell and Surrounds Progress Association  
Daradgee Environmental Education Centre  
Franklin Islands Reef Cruises  
Holloways Beach CoastCare  
Holloways Beach Environmental Education Centre  
Mulgrave Landcare and Catchment Group Inc  
Wet Tropics Waterways

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Great Barrier  
Reef Foundation

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