

A MERI Plan for the Yawuru Indigenous Protected Area

Prepared for Nyamba Buru Yawuru

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How to use the MERI plan

SECTION 1: Introduction and Concepts

Talks about: the ideas and language behind Monitoring, Evaluation, Reporting and Improvement (MERI)

Use this to: get a general understanding of MERI

SECTION 2: Structure and Content

Talks about: this is the main detail of the MERI – what to monitor, questions to answer, gaps to fill

Use this to: guide the work to be done for a MERI

SECTION 3: Committee

Talks about: how to work with a review committee to guide the use of the MERI

Use this to: set up and run a monitoring committee

SECTION 4: Backbone

Talks about: the back office systems and tools that might be needed to support this process

Use this to: guide setting up software, hardware and operational needs

SECTION 5: Implementation

Talks about: how the levels of reporting fit together

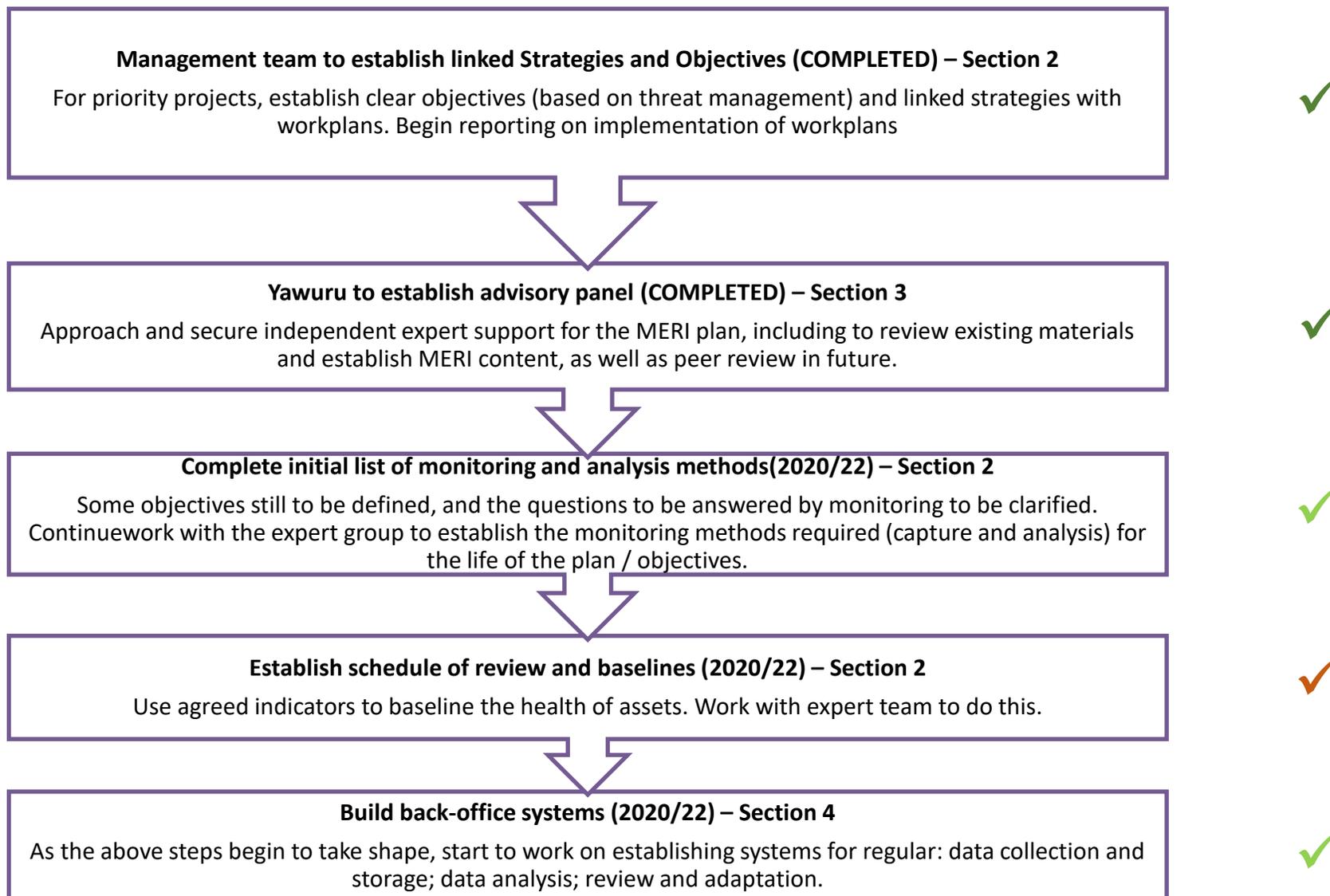
Use this to: implement this MERI plan

SECTION 6: Appendices and Attachments

Talks about: detailed additional bits and pieces that are helpful but not essential

Use this to: enhance your understanding of the other sections

What needs to happen first



1. Introduction

- Talks about:* the ideas and language behind Monitoring, Evaluation, Reporting and Improvement (MERI)
- Use this to:* get a general understanding of MERI

Introduction

Monitoring, Evaluation, Reporting and Improvement (MERI) plans are guides for managers to use to decide if their actions are having an impact as they implement their management plans.

The MERI plan sets out:

- **Monitoring:** What will we monitor?
- **Evaluation:** Did we answer our questions?
- **Reporting:** Who will we tell?
- **Improvement:** What changes do we need to make?

A 'good' MERI Plan will show how we think Actions (Outputs), Outcomes and Impact are related, and the indicators needed to prove there is a relationship. The MERI plan should have:

- **Indicators:** measurable, precise, consistent, sensitive
- **Strategies:** linked to objectives, focused, strategic, feasible, and appropriate
- **Goals / Objectives:** specific, measurable, achievable, relevant, and time limited (SMART)

*A **Management Plan** sets out what we think is going to happen – which things we will do, what impact we think we will have*

*A **Monitoring, Evaluation, Reporting and Improvement Plan** sets out how we are going to check, and what we will do with the results*

Learning the language of MERI

Working with MERI plans can introduce a lot of new, and sometimes confusing, language. It is important to remember that the terms 'fit' together to tell a story, and by remembering the story it can help us remember the terms. There are two parts to the story – the Plan and the MERI.

The Plan part, from the *Walyjalajala nagulagabu birrangun buru Plan of Management 2016 – 2026* is:

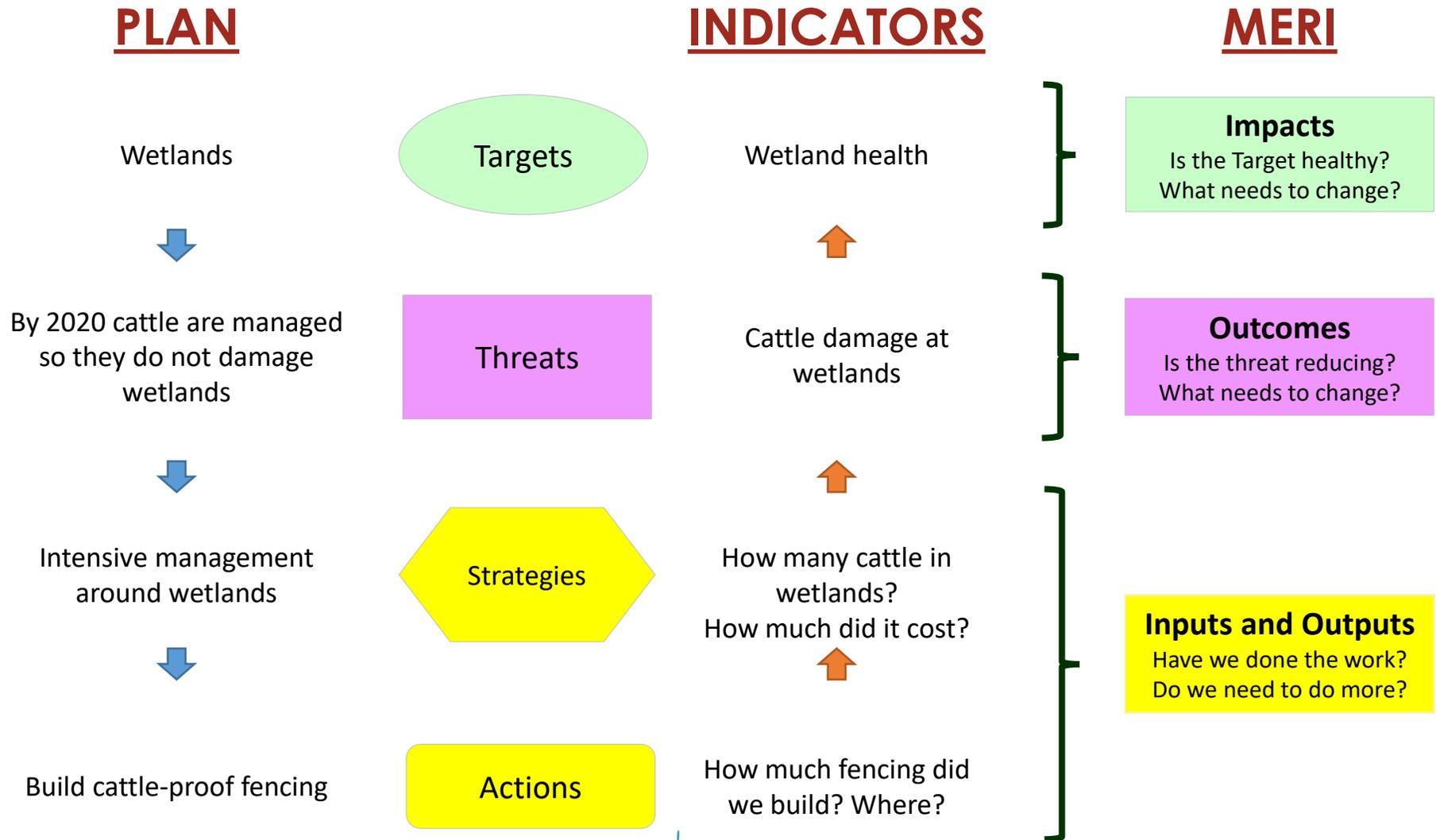
- The plan tells us where we are trying to go (**Vision**), what is important to us (**Targets**) and what problems are getting in our way (**Threats**);
- The plan also says what we want to achieve on the way to our Vision (**Goals / Objectives**) and the jobs we need to do to get there (**Strategies**);
- Because we know what the Strategies are, we can go out and do **Actions**

The MERI part starts from the Actions:

- To see if our plan is working we check (Measure) things that tell us what is happening (**Indicators**)
- We look at the Actions (**Inputs**) and what work we get done (**Outputs**)
- We then see if our Threats have changed (**Outcomes**)
- And then see if our Targets are any healthier (**Impacts**)

The Language of MERI - Illustrated

This diagram shows how the ideas on the previous page fit together



The more we measure, the more confident we can be

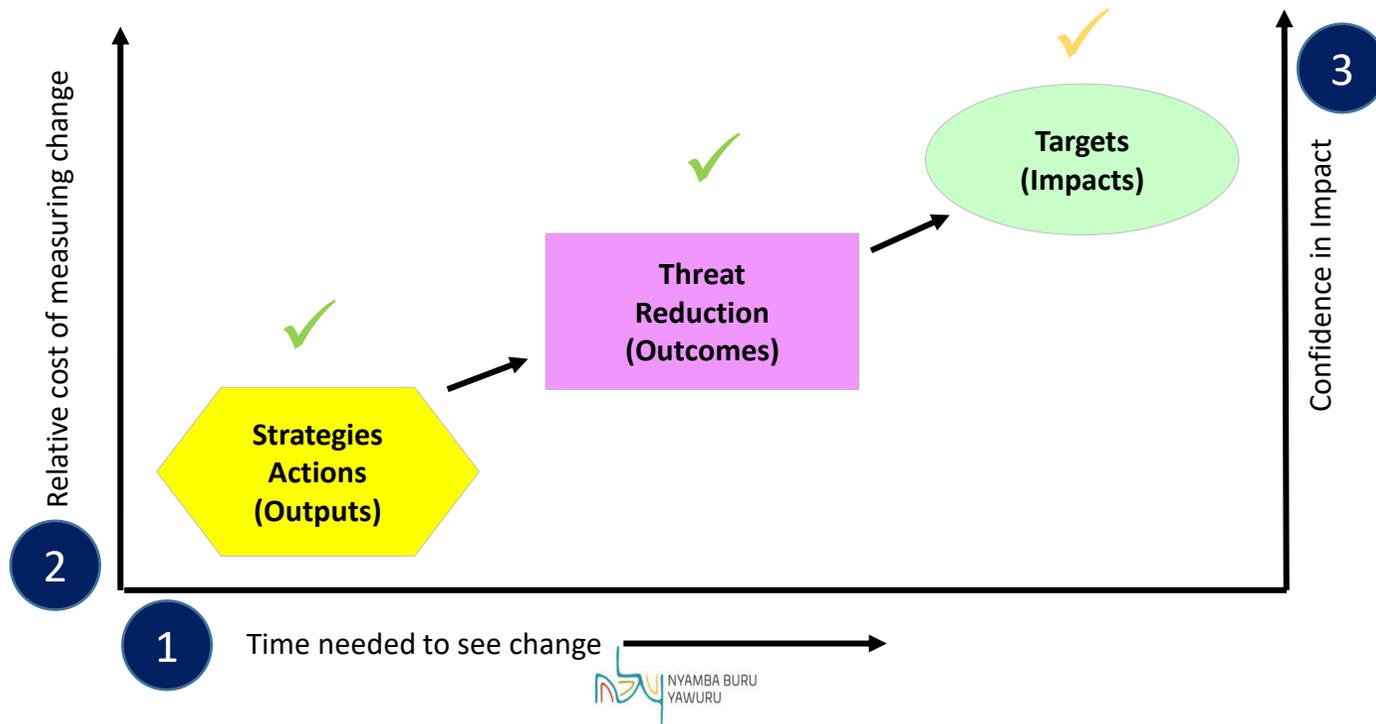
We want to be confident that our Inputs and Outputs are leading to an Impact.

When we first start using the MERI we are not usually confident about the Impact we are having. As we begin to measure our work, we start to measure Strategies, and their **Outputs**.

As we progress, and use more time and funds, we become more confident as we can start to see changes in the Threat, or **Outcomes**. Then as more time passes we can then begin to see the **Impact** we are having on the Targets.

So, as we do more work and monitoring:

- The time **1** and cost **2** of measuring change increases, but
- Our confidence **3** in the impact also increases



2. Structure and Content

Talks about:

this is the main detail of the MERI – what to monitor, questions to answer, gaps to fill

Use this to:

guide the work to be done for a MERI

Structure and content of a MERI plan

This Section is broken up into 5 parts:

PART 1: Fitting it together

A short section to show how the parts of the plan and MERI fit together to tell the story of achievement

PART 2: Targets (Impacts)

Sets out the work required for completion of an understanding of the impact of the work

PART 3: Objectives (Threats and Outcomes)

Looks at the next level of monitoring, largely, although not entirely, revolving around the resolution of threats. Discusses setting objectives and indicators to measure them.

PART 4: Strategies (Inputs and Outputs)

Sets out the main strategies and the work to be done to complete the development of an implementable strategic plan and work plan

PART 5: Audience

Who will be reported to and what will they be told.

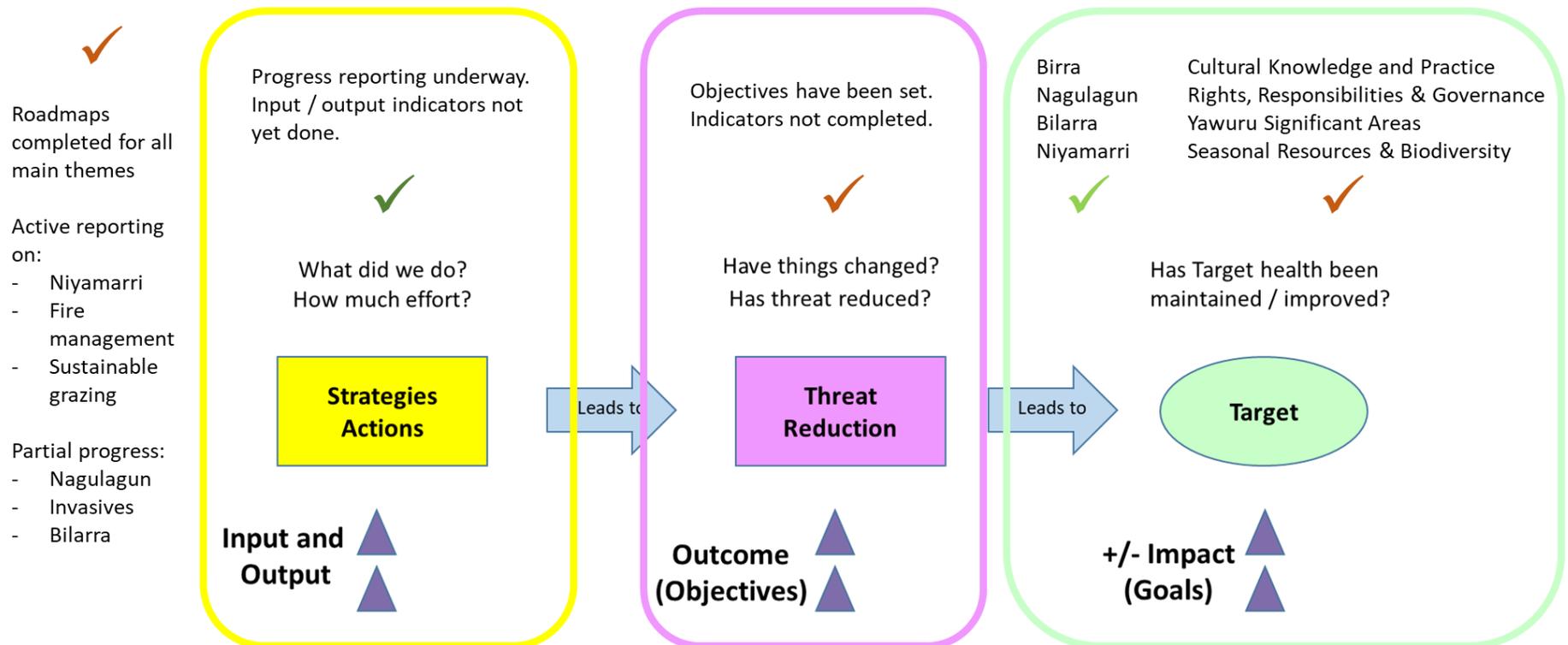
2.1 Fitting it together

What is in our MERI?

The MERI fits together in a simple 'logic'.

"The "logic" comes in when you can say that this strategy will take these **inputs** (resources) to produce these **outputs** (workshops, flyers, educational curricula, maps, and so on), which will lead to these **outcomes** (objectives), which will eventually lead to the intended **impacts** (goals of the project). Your logic is tested as you explain how your project proceeds from the strategies and activities to achieving the ultimate goals. " (Audubon 2011)

This is shown in the simple diagram below.



Establishing a 'starting point' or baseline

Getting the MERI to work, that is to tell the story of the impacts of our activities, we need to make sure each part of the logic is present, and the story between them is also clear.

For each we need:

Strategies / Actions

Strategies that are clear, linked to our Goals and Objectives, and feasible. Strategies should be written so that it is clear exactly what is expected and the activities required to achieve it can be seen. This should be then translated into a workplan with responsibilities and resources clearly assigned.

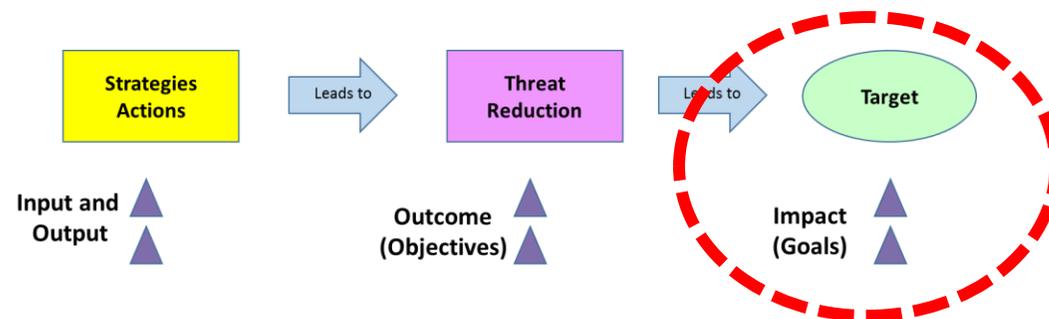
Threat Reduction

- Objectives are about improvement – from what level of threat to what by when?
 - Set current Threat rank – Low, Medium, High, Very High
 - Indicator measurements for moving from one rating to another

Targets Impact

- Set current Target condition – Poor, Fair, Good, Very Good
- Indicator measurements for moving from one rating to another

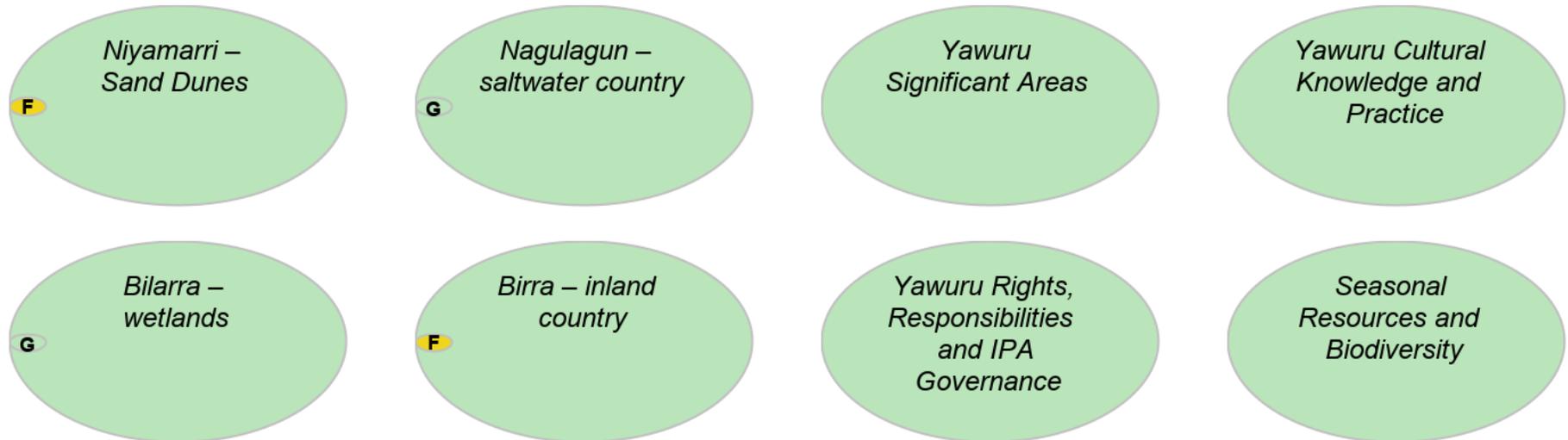
2.2 Target (Impact)



Targets

Targets are the cultural, environmental or human welfare assets in the IPA, and are the 'building blocks' of the work the IPA will do. Typically a plan will be aiming to make the Targets as healthy as possible, and will be working to protect those that are already healthy, or improve the healthy of those that are not.

In the *Walyjalajala nagulagabu birrangun buru Plan of Management 2016 – 2026* there are eight Targets – see below.



MERI for the Targets

For the purposes of the **MERI plan** the Targets need to have:

1. A clearly established understanding of the **baseline** (starting) status
2. Clear **indicators** and agreed '**levels**' that those indicators need to reach
3. A SMART **goal**, using the indicators

With these things in place we can:

1. Know what we need to monitor, and determine the methods for monitoring and analysis
2. When we analyse the results of our monitoring we can say if we are seeing a changed 'level'
3. And therefore we can say if the status has moved from the baseline

Poor
Imminent Loss

Allowing the factor to remain in this condition for an extended period will make restoration or preventing extirpation practically impossible

Fair
Vulnerable

The factor lies outside of its range of acceptable variation & requires human intervention. If unchecked, the target will be vulnerable to serious degradation

Good
Minimum Integrity

The factor is functioning within its range of acceptable variation; it may require some human intervention

Very Good
Optimal Integrity

The factor is functioning at an ecologically desirable status, and requires little human intervention

So, for each Target we need to:

1. Define key characteristics
2. Identify indicator(s) for each characteristic
3. Develop a rating scale for each indicator, using the categories of Very Good, Good, Fair, or Poor.
4. Define the current status and desired future status for your target
5. Develop a goal / goals that move us toward a 'Good' rating
6. Select the monitoring and analysis methods needed to determine if things have changed (see Implementation)

We have completed this in draft for two of the Targets, and this work needs to be completed for the remaining targets

How we report

Target health

We decide the health of our targets by setting up ‘thresholds’ or ratings for our indicators in pre-determined categories. Monitoring provides the data to decide which rating the indicator receives. We then add these together to give an overall score for the Target

Poor	Restoration increasingly difficult; may result in extirpation
Fair	Outside acceptable range of variation; requires intervention
Good	Acceptable range of variation; some intervention required
Very Good	Desirable; requires little intervention for maintenance

Confidence:		What is the Trend	
Intensive Assessment		Unknown	?
Expert Knowledge		Strong increase	↑
Sampling Based		Mild increase	↗
Rapid Assessment		Flat	→
Rough guess		Mild Decrease	↘
Not Specified		Strong Decrease	↓

For each rating above, and for indicators on Goals and Objectives, we give a level of confidence in the result and indicate the trend

The Current Health of Our Targets

TARGET	Rating	Trend	Confidence
Birra – inland country	Fair		
Bilarra – wetlands	Good		
Nagulagun – saltwater country	Good		
Niyamarri – Sand Dunes	Fair		
Seasonal Resources and Biodiversity	Not Specified		
Yawuru Cultural Knowledge and Practice	Not Specified		
Yawuru Rights, Responsibilities and IPA Governance	Not Specified		
Yawuru Significant Areas	Not Specified		

Birra – inland country (Fair)

Attribute	Indicator	Level				Current Status	Source
		Poor	Fair	Good	Very Good		
Fauna	Bush meat abundance	None	Less than historical average	Stable compared to historical average	More than historical average	Good	Rough Guess
	Indicator species (bilby, beetles, culturally important)	Gone	Decreasing	Present	Increasing	Fair	Rough Guess
Flora	% native species	None	Less than reference sites	Same as reference sites	More than reference sites	Fair	Expert Knowledge
	Food plants / medicinal plants	None	Less than historical availability	Stable compared to historical availability	More than historical availability	Good	Rough Guess

Goals:

1. Yawuru pindan country has key indicator species (bilby, beetles, culturally important) and a good* fire regime and good** vegetation cover.
 - * note - good is defined in health table
 - ** note - good is defined in health table and linked to reference sites

Monitoring Methods associated with Birra

Indicator (from Table)	Method	Who	When	\$\$	Where does the information go	Who will do the Analysis	What will we decide
Fauna Indicator species (bilby, beetles, culturally important)	FAUNA_CAM. Camera trapping for SHW / Bilby: Camera trapping for Spectacled Hare Wallaby and Bilby. Also will pick up threats (ferals). Number of sites across the IPA. Already done some surveys (3). Will include goanna camera trapping with USyd. To develop Long-Term protocol.	Country managers with training / support	Project-focused. Goanna monitoring set up after USyd	Initially USyd then Yawuru	Usyd (shared data agreement) . Yawuru database	Depending on purpose	Population trends – P/F/G/VG Management responses
Focus on goanna	FAUNA_OBS. General observations of native fauna: Record incidental observations of fauna. Country Managers have fauna siting app in Fulcrum.	TO / Country managers	Ad hoc	Wages	Fulcrum / Yawuru database	Yawuru (map with what appears where)	
	FAUNA_PIT. Pitfall trapping: Pitfall trapping for small mammals / reptiles at same sites as other monitoring occurring, with cameras also. Time intensive so would need to think about how extensive / frequent. Likely to pick up changes in reptiles more rapidly than small mammals	Country managers with training / support With partners / other projects	Once per Over multi-year rotation to manage workload	Specific funds	To be discussed with partners (eg DBCA)	To be discussed with partners (eg DBCA)	
Fauna Bush meat abundance	YAWURU_INTERVIEW. Knowledge-holder interviews – bush foods (meats / plants). Survey work by Yawuru Country Managers (coordinated with NBY social survey work). Ask / report through newsletters	Country managers with support	Annually	Yawuru or external funds	Yawuru database	Bruce / Researcher / Partner	Population trends – P/F/G/VG Changes
Flora Food plants / medicinal plants	Consider need for ethics / approvals for use of data particularly with partners to allow publication. Ensure ethics needs incorporated into process even if not formalised. Need advice on appropriate interviews / approaches.						Management responses

Monitoring Methods associated with Birra

Indicator	Method	Who	When	\$\$	Where does the information go	Who will do the Analysis	What will we decide
Flora % native flora species	VEG_TRANS . Reference sites (eg Rangeland Condition sites) for vegetation monitoring: <ul style="list-style-type: none"> • Several in each land system. Distance from water – need to 1.5-3k from water to manage for grazing impacts. • Reference list of species. Find somewhere that is in 'ideal'. • Adapt method used in Bilarra – 100m transect with 3 plots. Includes photos • %-based measurement around veg structure / ground cover. • look at compositions / cover along the transect in Pindan, at fixed locations 	Country managers with training / support	Early on 2 times / year, then Annually, then longer time frames (once ever 2-3 years). Site selection and timing linked to fauna work	Yawuru	Yawuru database	Yawuru with support (researcher)	Species composition compared to reference sites – more or less – P/F/G/VG Management responses

Note: need for supporting training for Yawuru country managers to support analysis.
 Partner with training institutions to provide this capacity

Flora – we are not keeping track of % native species but we are in wetlands so perhaps similar methodology could be used here but would have to have fenced reference communities to compare. Also we are not looking at any indicator species

Nagulagun – saltwater country (Good)

Attribute	Indicator	Level				Current Status	Source
		Poor	Fair	Good	Very Good		
Fishing	Trend in cultural catch (fish, shellfish, turtle, dugong, other)	TBD	TBD	TBD	TBD	Very Good	Rough Guess
Seagrass State	Seagrass cover (median % cover)	0	>0 <20th percentile	>= 20th percentile, <50th percentile	>= 50th percentile	Very Good	Intensive Assessment
	Seagrass seed bank	0	>-95%CI from long-term mean and >0	<-95%CI from long-term mean	>= long-term mean	Good	Intensive Assessment
Water quality in Nagulagun	Nutrient load in Nagulagun	TBD	TBD	TBD	TBD	Fair	Not Specified

Goals:

1. By 2025 ecological function and condition of Nagulagun is maintained as 'good'* (water quality is ANZECC TBD, and Seagrass > 60% cover) in order to protect the cultural values and biodiversity of Roebuck Bay
2. When Goal set for Yawuru Cultural Knowledge and Practice copy across

Monitoring Methods associated with Nagulagun

Indicator	Method	Who	When	\$\$	Where does the information go	Who will do the Analysis	What will we decide
Seagrass cover Seagrass seed bank	NAG_SEA. Long-term seagrass monitoring. Long-term monitoring of seagrass meadows at 3 sites within the Port of Broome boundary (outside the Marine Park). Monitoring occurs at 50 × 50 m sites, not permanently marked, due to high use of the mudflats. Positions are marked at 0 m and 50 m points for all three transects at each site using GPS (accuracy ±3 m). This ensures that the same site is monitored at each sampling event. At each site, observers used a 50cm x 50cm quadrat (not anchored to the substrate) to record estimates of seagrass percent cover (only shoots that originated in the quadrat were included), species composition, presence of reproductive structures (e.g., flowers, seeds/fruits), evidence of herbivory (e.g., turtle grazing/cropping or dugong feeding burrows) and visual/tactile estimation of sediment grain size composition (0-2 cm below the sediment/water surface). Epiphyte and macroalgae cover were also measured. McKenzie et al 2017*	JCU / DBCA / Rangers	From January 2012, seed data collection commenced at regular intervals every 3 months		JCU	JCU	Change in seagrass diversity – P/F/G/VG
Water quality in Nagulagun	Data to be provided by DBCA						Water quality improving / getting worse – P/F/G/VG
Trend in cultural catch (fish, shellfish, turtle, dugong, other)	YAWURU_INTERVIEW. Knowledge-holder interviews – bush foods (meats / plants). Survey work by Yawuru Country Managers (coordinated with NBY social survey work). Ask / report through newsletters Consider need for ethics / approvals for use of data particularly with partners to allow publication. Ensure ethics needs incorporated into process even if not formalised. Need advice on appropriate interviews / approaches. YAWURU_DIARY. Fishing diary	Country managers with support	Annually	Yawuru or external funds	Yawuru database	Bruce / Researcher / Partner	Is the trend increase / decrease in cultural catch

*McKenzie, L.J., Yoshida, R.L., Langlois, L., Rau, J., Weatherall, K., Bishop, F., Bain, D., Ferguson, S. and Lindsay, M. (2017). *Long-term seagrass monitoring in Roebuck Bay, Broome: Report on the first 10 years*. A report for the Broome Community Seagrass Monitoring Project, Environs Kimberley. Centre for Tropical Water & Aquatic Ecosystem Research (TropWATER) report 17/35. James Cook University, Cairns, Australia. 44 pp.

Bilarra – wetlands (Good)

Indicator	Level				Current Status	Source
	Poor	Fair	Good	Very Good		
Birds					Good	Not Specified
Reeds / vegetation in 'riparian' zone (Condition of lake margins)	No mature reeds / grass, no recovery		'Healthy' shrubs and tussocks	Mature reeds / growing vegetation	Good	Rough Guess
Water level / water duration	Dry in the times when should be wet / really fast dropping / filling			High water level when expected / 'normal' dropping / filling	Good	Rough Guess
Wetland Water Quality	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>	<i>Not Specified</i>	<i>Not Specified</i>

Goals:

1. Wetland vegetation is intact to support the biodiversity of habitats, including those for migratory birds
2. Improved health of springs and natural water points

Monitoring Methods associated with Bilarra

Indicator	Method	Who	When	\$\$	Where does the information go	Who will do the Analysis	What will we decide
Birds	BIRD. Bird Surveys: Talk to Broome Bird Observatory and see what methods they use, and train Country Managers. Likely: Number of species (observation) and crakes / rails (calls). Look at where BBO going and see if can do at other sites. Link to grazing and KWAT sites. Types of birds indicate what is in the lake. Link to goanna work	TOs / BBO / Country managers	Regular visit – 2x year. Timed around migration (mid/late dry and wet) Also whenever they visit for ad hoc observations	Yawuru for Country Managers	BBO will collect own data. Yawuru to get data from them. Yawuru data to own database	Collaborate with BBO / researchers	Population increase / decrease Composition change – P/F/G/VG Management response – eg cattle exclusion during nesting
Reeds / vegetation in 'riparian' zone (Condition of lake margins)	KWAT. Kimberley Wetland Assessment tool at Zone 1 IPA sites: Kimberley Wetland Assessment tool at Zone 1 IPA sites including Mimyargaman, Ram paddock, and Lake Yidirr. 100-m transect with 3 5x5m vegetation monitoring plots in each transect and a water quality and bank assessment for each transect. Water quality: turbidity, pH and conductivity	Country managers with training / support	Monitoring would be undertaken annually during the late dry season (end of dry), or following exclusion of cattle from riparian areas, and start of dry.	Initially research project but also Yawuru to est additional plots	Initially with UWA, then come to Yawuru to consolidate. Form set up in iTracker but need to convert to Fulcrum	Initially with UWA but long-term Yawuru	Vegetation structure, plant cover and regeneration, and water quality. – P/F/G/VG Cattle impacts, invasive species
Wetland water quality	YAWURU_OBS. Bilarra Traditional Owner Observations. People need to be trained and supported to record TO feeling about place. Link to other methods recording TK / observations (interview / photos)	Country managers with support	Annually	Yawuru or external funds	Yawuru database	Bruce / Researcher / Partner	Management response

Monitoring Methods associated with Bilarra

Indicator	Method	Who	When	\$\$	Where does the information go	Who will do the Analysis	What will we decide
Water level / water duration (Extent of water)	WATER_REMOTE: Surface Water: Analysis of remote sense (Sentinel) data. Needs to be monitored in a non-intrusive way for cultural reasons. Site specific.	Country Managers	If needed	Yawuru	Yawuru database	GIS person	Water levels against seasonal expectations – P/F/G/VG Determine water source so can link to impact upstream
	WATER_LOG: Data loggers for sites that are culturally ok.	Yawuru / Dept of Water	Quarterly	Yawuru	Department of Water (managed confidentially)	Dept of Water	
	WATER_PIEZ: Piezometer monitoring (long-term groundwater monitoring)	Yawuru / Dept of Water	Quarterly	Yawuru	Yawuru database	Yawuru	
	WATER_PHOTO: Photo point monitoring for springs	Country Managers	Every 2 months	Yawuru	Yawuru database	Yawuru	

Niyamarri – Sand Dunes (Fair)

Indicator	Level				Current Status	Source
	Poor	Fair	Good	Very Good		
% of areas of bare ground on dunes	Not Specified	Increasing		Stable	Fair	Rough Guess
Availability of gubbinge / bush fruits when they want in season – satisfaction	Not Specified	None available		Some available	Fair	Rough Guess
Monsoonal vine thickets — mayingan manja balu - at the southern end	Not Specified	Reduced / reducing extent	Extent at 2017 with some reduction	Stable at 2017 extent	Fair	Rough Guess

Goals:

1. By 2027 sand dunes and monsoon vine thickets are at least at 2017 extent with good bush tucker and healthy native plant and animal populations

Monitoring Methods associated with Niyamarri

Indicator	Method	Who	When	\$\$	Where does the information go	Who will do the Analysis	What will we decide
Availability of gubbinge / bush fruits when they want in season – satisfaction	<p>Knowledge-holder interviews – bush foods (meats / plants). Need advice on appropriate interviews / approaches.</p> <p>Ask / report through newsletters</p> <p>Consider need for ethics / approvals for use of data particularly with partners to allow publication. Ensure ethics needs incorporated into process even if not formalised</p>	Country managers with support	Annually	Yawuru or external funds	Yawuru database	Bruce / Researcher / Partner	
*% of areas of bare ground on dunes	<p>Drone-based transects developed with the Shire to measure changes in dune system over time (coastal hazard erosion). Spectral analysis of drone data</p>	Country Managers with Shire and then Country Managers on FFS	TBD	FFS	Yawuru and Shire – likely to be Shire	Shire consultant	<p>Is the erosion getting better / worse?</p> <p>Linked to management intervention</p>
*Monsoonal vine thickets – mayingan manja balu - at the southern end	TBD – Talk to EK						<p>Detecting reduction from threats – interest is mostly in relation to threats. Quality of the edge.</p>

Yawuru Cultural Knowledge and Practice (Not Specified)

Indicator	Level				Current Status
	Poor	Fair	Good	Very Good	
Yawuru people are satisfied that Cultural Knowledge and Practice is continuing / strong	TBD	TBD	TBD	TBD	To be determined
Yawuru people are satisfied that Cultural Knowledge and Practice is safe	Knowledge and practice is not recorded / stored / accessible			Knowledge and practice is comprehensively recorded and stored so that it can be seen for many generations	To be determined
Using Yawuru language - Language taught in school / language used in management	No language taught No signage	Limited language taught Limited signage	TBD students in school Signage at most Parks	TBD students in school Signage at all Parks	To be determined
Sharing knowledge on country between senior people and the rangers	Senior people rarely (1-2 / year) work with rangers on country			Senior people regularly (1 / month) work with rangers on country	To be determined
Yawuru knowledge holders 'looking at the country' seasonally	knowledge holders 'concerned' country is in poor condition according to the season	knowledge holders 'concerned' country is in fair condition according to the season	knowledge holders 'happy' country is good condition according to the season	knowledge holders 'happy' country is very good condition according to the season	Determined every year looking across the seasons in a year
Use of Yawuru knowledge in other monitoring / science (number of 'external' science projects including Yawuru knowledge)			# reports / report back where Yawuru knowledge is incorporated into findings		Use of cultural knowledge in securing higher level skills from western perspective
Yawuru access to country – trips on country	TBD	TBD	TBD	TBD	To be determined

LANG_YKP. Use of Yawuru Language on country	The use of Yawuru language helps create meaning for Yawuru and others. Measures of:- interpretive materials- signage- naming- Yawuru people going through the language course
SATIS_YKP_YAW. Satisfaction survey of Yawuru people	Combining qualitative and quantitative approaches. A narrative (qualitative) approach, linked to factually-based survey. Do the survey seasonally, but integrate with all of Yawuru
VISIT_YKP_YAW. Yawuru visits to country	Looking at the number and type of trips to country that are organised by the Corporation, including school visits, holiday camps, cultural visits. Look at measures such as:- Elder participation- number of visits / trips- Gender / age- activity mix

Yawuru Rights, Responsibilities and IPA Governance (Not Specified)

Indicator	Level				Current Status
	Poor	Fair	Good	Very Good	
Participation and engagement in <i>external</i> decision-making in number and types of meetings (shows participation / engagement)	Rarely involved in decision-making meetings	TBD	TBD	# Park Board meetings # ??? meetings	To be determined
Satisfaction of Yawuru with Yawuru Rights, Responsibilities and IPA Governance	Unsatisfied		Satisfied	Very satisfied	To be determined
Culturally appropriate Yawuru access to country (photo-view collation of access)	Yawuru people have restricted access to all parts of their country	Yawuru people have access to many parts of their country	Yawuru people have access to most parts of their country	Yawuru people have free / unfettered access to all parts of their country	To be determined
Decisions for management are made with direction of Yawuru L&S sub-committee (internal)				# L&S IPA meeting	To be determined
Capacity / capability of Yawuru people in governance				Level of completion from western? Cultural competence	To be determined
Awareness of Yawuru ownership, culture and management					To be determined

SATIS_YRR_YAW. Satisfaction survey of Yawuru people	Combining qualitative and quantitative approaches. A narrative (qualitative) approach, linked to factually-based survey. Do the survey seasonally, but integrate with all of Yawuru
VISIT_YRR_YAW. Yawuru visits to country	Looking at the number and type of trips to country that are organised by the Corporation, including school visits, holiday camps, cultural visits. Look at measures such as:- Elder participation- number of visits / trips- Gender / age- activity mix

Goals:

Yawuru Rights

1. Country Managers skilled and self managing- leading the management program in the IPA
2. Improved health and well-being of community and culture: mabu liyan, mabu ngarrungu
3. Yawuru people are managing the Yawuru IPA capably and effectively, with good governance and sound evaluation processes

Yawuru Significant Areas (Not Specified)

Indicator	Level				Current Status
	Poor	Fair	Good	Very Good	
Protection to uphold cultural integrity					To be determined
Significant are alive / living					To be determined
Level of disturbance				Undisturbed	To be determined
Knowledge of them / recorded				Yawuru significant areas mapped / known on all Yawuru country	To be determined
Health measure of other targets	No other targets Good or better	Few other targets Good or better	Most other targets Good or better	Other targets Good or better	To be determined

Yawuru Significant Areas

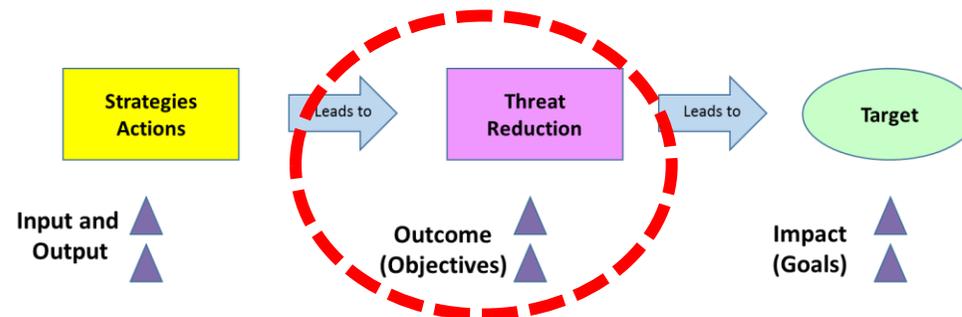
1. Further disturbance of Yawuru significant areas in the IPA is minimised from 2017 amount and reversed where possible

Seasonal Resources and Biodiversity (Not Specified)

Indicator	Level				Current Status	Source
	Poor	Fair	Good	Very Good		
Culturally significant species (Bush meat etc) abundance	None	Less than historical average	Stable compared to historical average	More than historical average	Good	Rough Guess
Applying Yawuru knowledge (availability / harvest / use / seasonality)					To be determined	
Yawuru knowledge holders 'looking at the country'				knowledge holders 'happy' country is very good condition	To be determined	

DIARY_SRB_TAKE. Fish diary / hunting diary	Linked to seasonal calendar
INT_SRB_YAW. Knowledge-holder interviews	<p>Knowledge-holder interviews – bush foods (meats / plants). Survey work by Yawuru Country Managers (coordinated with NBY social survey work).</p> <p>Ask / report through newsletters</p> <p>Consider need for ethics / approvals for use of data particularly with partners to allow publication. Ensure ethics needs incorporated into process even if not formalised. Need advice on appropriate interviews / approaches.</p>

2.3 Threats (Outcomes)



Threats

Threats are a human activity that directly or indirectly degrade a target. A project typically identifies stakeholders that are responsible for specific threats. It is also helpful to decide between direct threats (the thing that directly causes problems) and indirect threats (something that makes the threat happen). For example, a direct threat would be 'wild fire' and an indirect threat 'lack of capacity to fight fires'.

The threats that have been identified to date are listed below.

L <i>Nutrient run-off into Roebuck Bay</i>	<i>Climate Change</i>	L <i>Cattle</i>	L <i>Loss of access to country</i>
L <i>Growth in tourism</i>	L <i>Overfishing</i>	<i>Invasive Species (weeds)</i>	<i>Failure to transmit cultural knowledge</i>
M <i>Urban development</i>	<i>Mining resource exploration and development</i>	M <i>Invasive Species (animals)</i>	L <i>Unsustainable harvesting of food resources</i>
M <i>Unmanaged vehicle access</i>	<i>Broadscale Agriculture in the Region</i>	<i>Invasive Species (marine pests)</i>	L <i>Inappropriate fire</i>

MERI for the Threats

For the purposes of the **MERI plan**, highly ranked **Threats** need to have:

1. A clearly established understanding of the **baseline** (starting) threat level
2. Clear **indicators** and agreed '**levels**' that those indicators need to reach
3. A SMART **objective**, using the indicators

With these things in place we can:

1. Know what we need to monitor, and determine the methods for monitoring and analysis
2. When we analyse the results of our monitoring we can say if we are seeing a changed 'level'
3. And therefore we can say if the threat has improved

So, for each Threat we need to:

1. Rank the threat against the Targets it impacts
2. Set an objective for how we want the Threat to change
3. Identify the indicator we will measure to see if the threat has changed (the indicator should ideally measure something to do with size, severity or permanence)
4. Select the monitoring and analysis methods needed to determine if things have changed

How we report

Threat objectives

We have set some objectives that we want to reach for the levels of our threats. But for many of them we have not set indicators, or thresholds we want those indicators to reach. We are using this table to set those now.

THREAT THRESHOLDS (connected back to threat rating – Scope, Severity, Irreversibility)	
LOW	Desirable status (low area / impact); requires little intervention
MEDIUM	Moderate area / impact; some intervention required for maintenance.
HIGH	High area / impact; requires significant human intervention.
VERY HIGH	Widespread; return to healthy state increasingly difficult; may result in total loss of values.

Confidence:		What is the Trend	
Intensive Assessment		Unknown	?
Expert Knowledge		Strong increase	
Sampling Based		Mild increase	
Rapid Assessment		Flat	
Rough guess		Mild Decrease	
Not Specified		Strong Decrease	

For each rating, and for indicators on Goals and Objectives, we give a level of confidence in the result and indicate the trend

Niyamarri – Sand Dunes (Access)

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
By 2022, all inappropriate tracks have been closed with damaged dunes rehabilitated and successful public messaging program delivered to encourage appropriate track use	<i>Unmanaged vehicle access</i>	<i>Vehicles accessing</i>	TBD	TBD	TBD	TBD	<p>Track counters need to go where tracks are going over the dunes</p> <ul style="list-style-type: none"> - types of vehicles (incl motorbikes) - timing of vehicles <p>Rather than guessing using data / information to inform. Whoever reading need to report timing / type etc</p> <p>Need to establish baseline linked to track condition so can say 'x vehicles / day = condition; y vehicles / day = condition).</p> <p>Matched to observations from JM rangers</p> <p>Have already closed off some tracks. Will also influence new track locations / design</p>

Fire Management

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
Increased diversity (size, age, intensity, seasonality)* of fire in the landscape reduces the extent and impact of inappropriate fire	Inappropriate fire (wildfire)	Dampier fire Project uses three spatial metrics <ul style="list-style-type: none"> • <i>A lot of country burning every year and hot fires</i> • <i>Fires are all very big instead of being small</i> • <i>A lot of the country has burnt in last 1-2 years (want some that is older)</i> 	Lift measures from the Dampier Fire Program				Use Dampier fire reporting structure. Bring Dampier Reporting structure back to TAG members to be discussed Bring out NAFI fire scar maps and show them to members – bigger scars etc shows still inappropriate
Well-trained fire management team, comprising Yawuru and partners, is integrating traditional principles to manage wild fires in Yawuru country.		‘Output’ indicators linked to Strategy <ul style="list-style-type: none"> • Did the fire meet the purpose • Training of team • Length of fire-break 	No training / uninsured / not accredited			Trained / Insured / Accredited	
Life and property protected		<ul style="list-style-type: none"> • To be determined 					

Sustainable cattle grazing

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
By 2022, all Zone 1 Cat 4 areas assessed for protection are cattle-free and protected from future cattle impacts	Overgrazing by cattle	Evidence of cattle – presence / cattle impacts	Greater impact than surrounds	No difference between Z1 Cat4 and surrounds		No evidence of cattle in Z1 Cat 4	Ranger reporting observation – start picket and flagging tape. Already starting with wetland monitoring
By 2022, all Zone 1 Cat VI areas identified in the Plan are managed so that cattle grazing pressure can be controlled and strategic grazing can take place.		Cattle grazing pressure (- Bare ground, vegetation, diversity)	TBD (seasonal range)	TBD (seasonal range)	TBD (seasonal range)	TBD (seasonal range)	Sustainable cattle grazing project can provide some data to provide thresholds. Thresholds will change year on year Spatial analysis
By 2022, impact from cattle grazing in Zone 2 Cat VI is being reduced and monitored			TBD (seasonal range)	TBD (seasonal range)	TBD (seasonal range)	TBD (seasonal range)	

Bilarra - wetlands

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
Yawuru rights in groundwater management are promoted and secured	<i>Groundwater over-extraction to support Broadscale Agriculture in the Region (grape farm, pivot irrigation, growing hay)</i>	<i>Water allocation</i> Volume of extraction? Type of extraction? Agriculture expansion?	Significant overallocation 'destroys' values	Over allocation impacts values		Sustainable allocation ensure maintenance of Yawuru values	<p>Jo will be able to provide specific information to report against this</p> <p>Objective v threat – Broadscale Ag is the threat. Yawuru not have say in this. Change objective to “Yawuru rights in groundwater management are promoted and respected”?</p> <p>Volume of extraction – need to show doing the right thing. Needs comprehensive Groundwater Management strategy</p>

Nagulagun

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
Nutrient and stormwater run-off into Roebuck Bay is reduced significantly (TBD) by XXXX (Nutrient run-off into Roebuck Bay) so that Lymbya blooms are minimised and seagrass maintained	Nutrient runoff into Roebuck Bay	Lymbya blooms <ul style="list-style-type: none"> - Nitrogen - high water temp - Light penetrate 	Set threshold levels going into bay that maintain seagrass and limit lymbya				Water quality monitoring to pick up nitrogen – what is the source? Without marine science program hard to see how can influence Need to work with other partners to develop 'program' to address this Consider looking at mangroves / mangrove health (indicator of Nagulagun health).
Recreational and customary resource use (fish, marine fauna) are at a level (TBD) that maintains healthy stocks (TBD)	Overfishing	Difficulty to catch fish / marine resources					Healthy stocks assessed through data and information from commercial fisheries data

Invasive species (Weeds and Animals)

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
All springs are in good condition, free of weeds and cattle, and with unimpeded groundwater flow.	Weeds	Area free of weeds					
Reduced incidence of weeds, particularly WONS with on going management		Total area of weeds of different species					
Cane toad invasion is mitigated and threatened species are protected	Animals						
Reduced feral animal numbers							Include Other grazers - horses

Yawuru knowledge and practice

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
Yawuru cultural knowledge and practice is recorded, active and being passed on to younger generations.	Failure to transmit cultural knowledge						
Yawuru seasonal framework is adopted in all Yawuru country management plans and activities, to provide indicators to assess climate changes to Yawuru country	Climate Change						

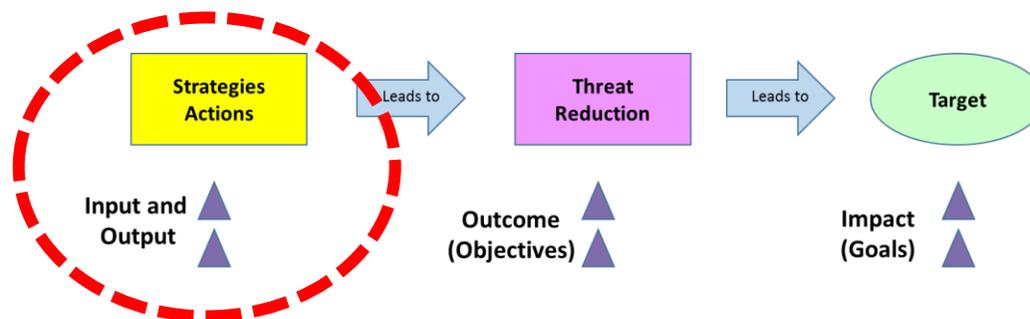
Landscape condition, connectivity and access

OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
A connected and well-managed conservation estate is reached across the diverse tenures of Yawuru country.	Loss of access to country						
Yawuru people, especially the youth, are accessing country for cultural, educational and recreational purposes							

Seasonal Resources and Biodiversity

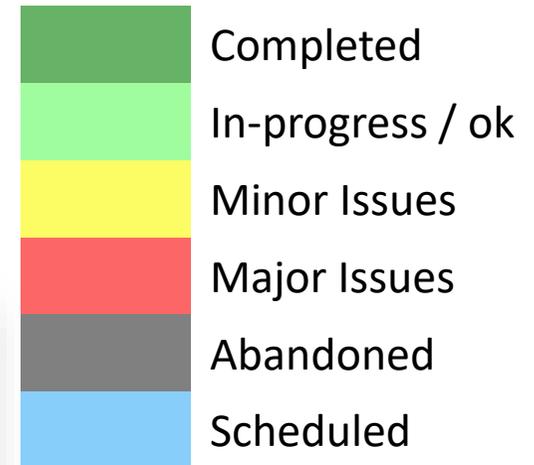
OBJECTIVE	THREAT	INDICATOR	VERY HIGH	HIGH	MEDIUM	LOW	METHOD
Ecologically-sustainable harvesting of species practised by Yawuru and other users	Unsustainable harvesting of food resources						
Traditional hunting and harvesting areas in pindan country are being protected and are accessible to Yawuru people							

2.4 Strategies (Inputs and Outputs)

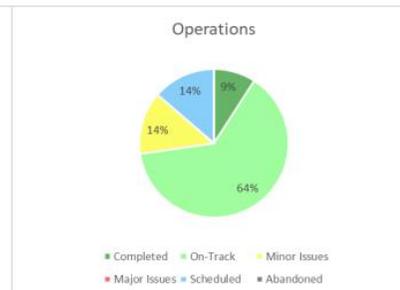
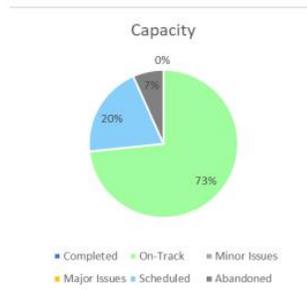
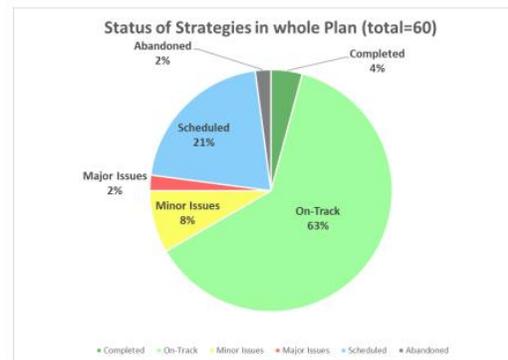


Are we doing the projects?

At the end of every quarter, the project team should meet and review progress with the Strategies / Activities set out in the plan, and rate their progress according to the scale on the right. This will produce a progress report for each project / strategy and overall (example below).

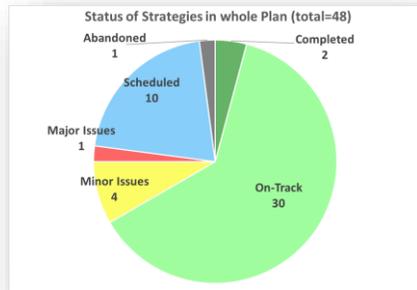


Summary

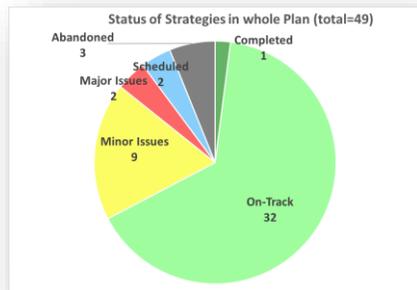


Implementing Strategies across the Whole Plan 2020

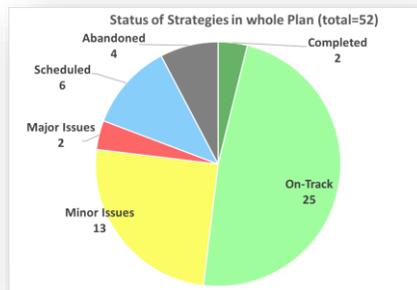
2017



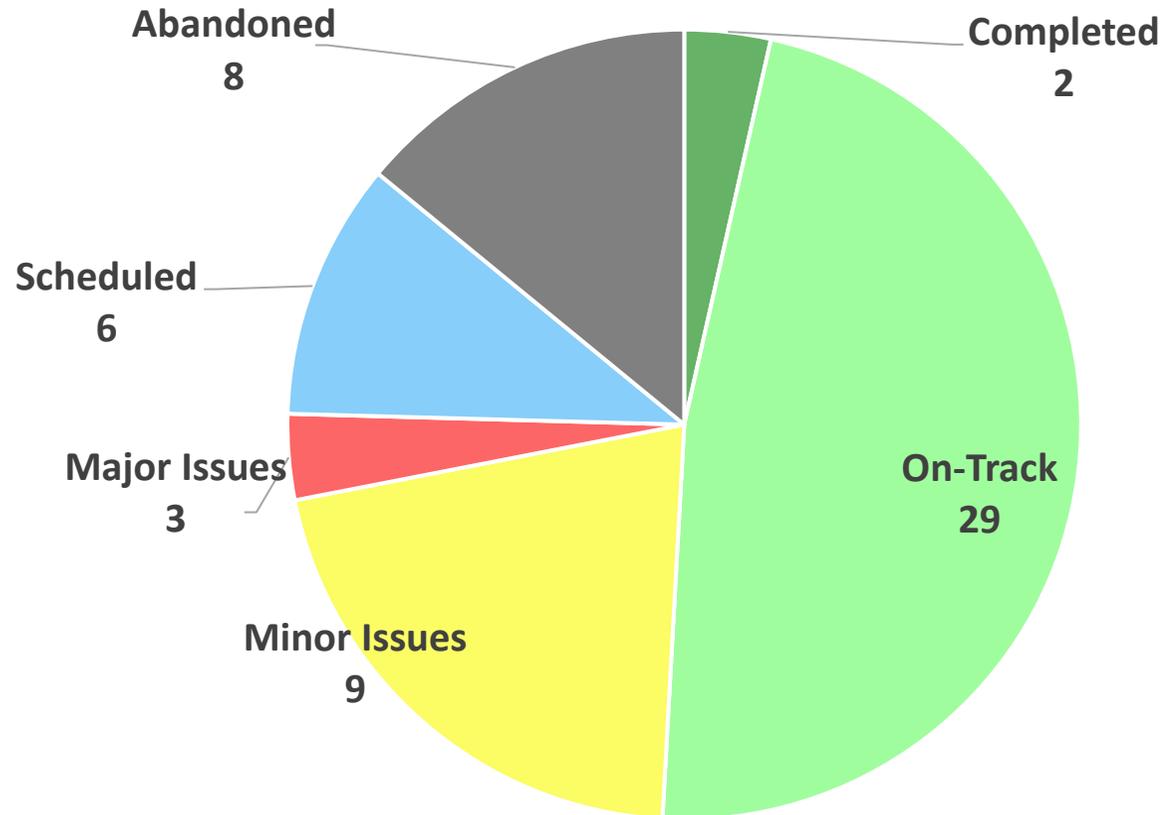
2018



2019



Status of Strategies in whole Plan (total=57)



Projects – organising our work

Project Progress

	2017	2018	2019	2020
CAPACITY				
Yawuru Rights, Responsibilities and IPA Governance	On-Track	On-Track	On-Track	On-Track
Landscape condition, connectivity and access	On-Track	On-Track	On-Track	On-Track
Knowledge Management and Decision-making	On-Track	On-Track	On-Track	On-Track
Communications, Education and Interpretation	On-Track	Scheduled	On-Track	On-Track
Securing income through various means	On-Track	On-Track	On-Track	On-Track
FOUNDATION				
Yawuru knowledge and practice	On-Track	On-Track	On-Track	On-Track
Yawuru significant areas	Major Issues	On-Track	On-Track	On-Track
Seasonal Resources and Biodiversity	On-Track	On-Track	On-Track	On-Track
OPERATIONS				
Niyamarri – Sand Dunes (Access)	On-Track	Minor Issues	Minor Issues	On-Track
Bilarra - wetlands	On-Track	On-Track	On-Track	On-Track
Nagulagun – saltwater country	On-Track	Minor Issues	Minor Issues	On-Track
Fire Management	Not Specified	Minor Issues	On-Track	On-Track
Invasive species (Weeds and Animals)	Minor Issues	Minor Issues	Minor Issues	Minor Issues
Sustainable cattle grazing	On-Track	Minor Issues	Minor Issues	Minor Issues

Example report: Operations – Minor / Major Issues

Project	Strategy Name	Progress Date	Progress Status	Progress Status Details	TAG comments	Team Response
Invasive species (Weeds and Animals)						
	Assess impacts of cane toad invasion on popular harvest animals, such as goanna, and develop appropriate seasonal harvest practices to adjust to these changes.	2020-10-30	Minor Issues	Sustainable Grazing monitoring includes a rapid assessment of goanna activity as measured by number of burrows at each site. Additional goanna monitoring should be developed at other sites. Monitoring would likely target important wetland sites and Zone 1 areas of the IPA. WWF is likely able to provide assistance for developing an annual goanna monitoring program for the IPA. This should be discussed with WWF for design and implementation in 2021 as it will be necessary to capture a few years of baseline data before the cane toads arrive. WWF can liaise with Georgia Ward-Fear to help design a monitoring program that is similar to the monitoring that was conducted by Lachlan Pruitt in 2019.	<p>Did goanna monitoring 2019 across the Kimberley.</p> <p>Discussed to do on yearly basis but have not progressed.</p> <p>Need to decide if need to do annual (rapid) monitoring for goanna.</p> <p>TAG notes need to look over all strategies related to seasonal resources and harvesting particularly building consistent understanding across Projects</p> <p>Need to talk about resource / use with neighbours</p> <p>TAG note need for monitoring to look at impact from toads but also look at sustainable harvest. Using size distribution not just numbers. Annual monitoring worthwhile (end of year and beginning of year)</p>	<p>Links to previous 2</p> <p>Put TAG notes in Progress status</p> <p>DONE</p>
	Develop strategies to monitor and reduce impacts of feral cats with stakeholders and partners	2020-10-30	On Track	<p>Camera trap survey supported by NRM Rangelands found limited feral cat activity on the IPA however the survey should be repeated annual and immediately following the wet to capture times when cats are likely to be more active.</p> <p>Feral cat control work using leg-hold traps cannot go ahead unless under a research project. Consider small scale cage trapping at fenced spring sites within sheep camp and Ram paddock. Traps need to be checked early and any trapped cats brought to the Broome vet hospital.</p>	<p>Not any good way to control cats. Have done contracts with cage traps but not successful other than small scale Limited by regulations. Can do through better fire and grazing management to minimize impact but direct control limited effectiveness.</p> <p>Not necessarily flag a major issue because have delivered on the strategy, it is the outcome that is a problem.</p> <p>TAG notes that Yawuru could consider 'felixer' grooming traps (investigate purchase for trial)</p> <p>TAG notes change to ON TRACK</p>	<p>Change to On-TRACK</p> <p>Copy across material from TAG discussion</p> <p>DONE</p>

2.5 Audiences and their information needs

Who do we need to tell? What do we tell them?

The key reason we use MERI is to tell people (ourselves and others) how we are progressing. The people we want to talk to are our [Audiences](#), and they are a mix of stakeholders, partners and community members. The table here is a guide to the different types of information we want to provide to the different audiences, and what we want them to do with the information we provide.

AUDIENCE	HOW OFTEN	MAIN INFORMATION NEED	OUTPUT	OUTCOME	IMPACT	MEDIA TYPE	DESIRED ACTION
PBC Board	Quarterly	Return on investment What is working and why Healthy country status	X	X	X	Board meetings / papers General information and demonstrate links to cultural plan	Project support
Land and Sea Subcommittee	Quarterly	Milestones (outcomes) Report on Targets (impact)	-	X	X	Meetings with reports Newsletters / Facebook	
NBY	Quarterly	What is working and why (outcomes)	-	X	-	Technical progress report Maps / Pictures	Project support
Land and Sea Unit Station Manager	Weekly	What is working and why (Strategies / actions) (outputs)	X	-	-	Team meetings Database Maps / pictures	Strategies adjusted
Yawuru community	Quarterly	Bushtucker plentiful (impact) Country is being looked after / Yawuru actively engaged and employed (output / outcome)	X	X	-	Meetings with reports Newsletters / Facebook / Radio Community field trips	
	Annually	Info pack @ AGM	X	X	-	Report format that people can use / read	Support for program
NIPE (ILC)	Quarterly	Feedback on monitoring Milestones on target Completion of activities	X	X	-	Quarterly meetings Technical progress report Maps / Pictures	Adjust pastoral management
Australian Government / PM&C	Bi-Annual	How management is in balance Evidence of MERI plan Progress report (outputs, outcomes, impacts)	X	X	X	Full MERI report Online and / or report Maps / pictures / Stories	Increased / continued funding and support

(cont)

AUDIENCE	HOW OFTEN	MAIN INFORMATION NEED	OUTPUT	OUTCOME	IMPACT	MEDIA TYPE	DESIRED ACTION
DPAW (Joint management) and Shire	Ongoing	How MERI aligns with Joint Management plans (x4)	X	X	X	Meetings Joint projects	
NGOs (EK, WWF, RBWG, NRM)	Ongoing	Awareness of MERI plan Priorities (Quarterly? / Yearly?) Regional monitoring opportunities	-	X	X	Meetings Joint projects	
Core partners	Quarterly or less	What is working and why (Outcomes) How to improve How to work together	-	X	-	Technical reports Presentations Meetings Maps / pictures / Stories	Funding and support Feedback
Researchers and institutions	Ad hoc	Healthy country programs exist Protocols for research	-	X	X	Protocols Websit Meetings / information sharing	
Development proponents (oil & gas; sands; tourism; agriculture)	Ad hoc	MERI Plan priorities Key objectives	X	X	X	Negotiations	
General Public	Ad hoc	Awareness of activities and programs People on country Outcomes (success)	X	X	X	Facebook Newsletters Press releases / TV / Radio	
Other Ranger Groups	Ad hoc	Awareness of MERI plan Priorities (Quarterly? / Yearly?) Regional monitoring opportunities	X	X	X	Research partners to provide information / resources	
Education (schools)	Ad hoc	TBD	X	X	X	Build module to get work being done into curriculum	Yawuru learning built into schools

3. Technical Advisory Group

Talks about: how to work with a review committee to guide the use of the MERI

Use this to: set up and run a Technical Advisory Group

Rationale for a Technical Advisory Group

The IPA plan is structured around an adaptive management framework where the results of regular monitoring of specified indicators inform a continuing planning cycle. Plans are amended and updated as required so that work stays on track to achieving the Yawuru vision.

Indicators for monitoring are being selected by traditional owners and other experts and include both natural and cultural elements of the IPA. They include indicators for checking on cultural responsibilities, habitats and species, and availability and taste of bush foods. They are (or will be) listed in the MERI Plan.

Indicators are measurable entities used to assess progress with the plan. Some indicators are objective and some are subjective – particularly those that relate to cultural responsibilities.

There is limited data available on some of the key indicators for Yawuru country and the ratings for the indicators, and in some instances the indicators themselves, may need refining as data from research and monitoring becomes available.

Data, once collected, is stored and can then be manipulated to produce a range of reports. It is also a goal to link monitoring for the plan with the Yawuru GIS, both of which are in the early stages of development.

Within a Technical Advisory Committee (TAG), data/information can be interpreted by TAG members based on their unique experiences and expertise. Local Indigenous knowledge holders, Traditional Owners, Indigenous rangers, ecologists, anthropologists, funders and planners all bring unique worldviews and techniques for interpreting MERI data.

TAG workshops function to facilitate ‘two-way’ integrated MERI work that produces not only an enriched picture of Country, but potentially also innovative solutions to remedy capacity gaps that might exist between the different cultural perspectives.

A TAG can support the IPA management team to become disciplined in its undertaking of monitoring and evaluation, and where annual TAG meetings become institutionalised that can ensure progress.

A diverse expertise is required to support the Yawuru management team in using and reporting on the indicators for the plan. Further, the use of external experts can bring both fresh perspectives and additional credibility and validity to the results reported by Yawuru.

Role of a Technical Advisory Group

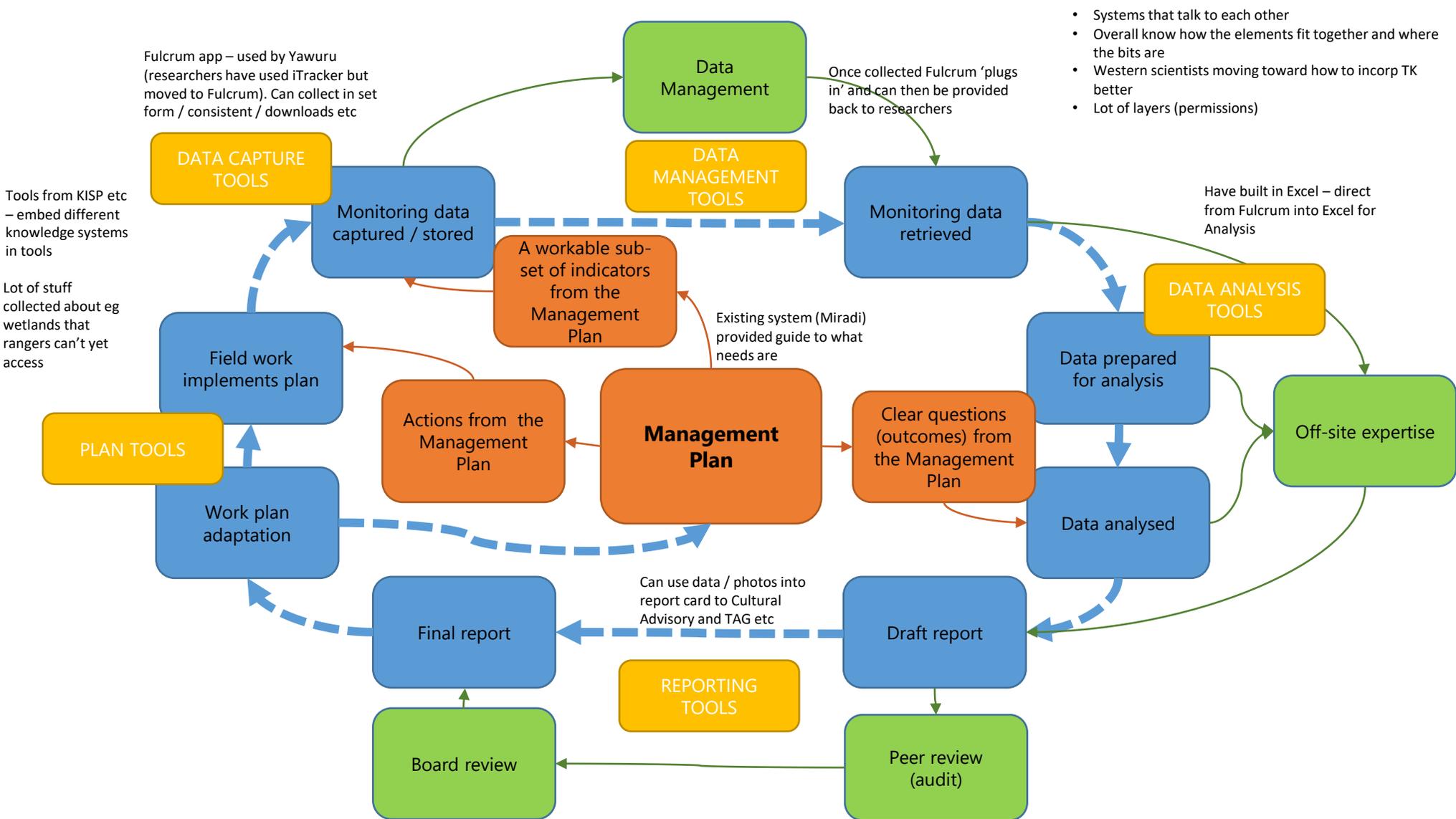
- A TAG would be a panel of cultural and natural heritage experts that can review monitoring reports and provide expert opinion and recommendations to the Yawuru Land and Sea sub-Committee to say if:
 - the IPA Plan is being used for management of the IPA;
 - the IPA Plan is achieving it's objectives and vision; and
 - the best Yawuru and western knowledge and practice is being used to implement and monitor the Plan.
- The committee might meet biannually initially to develop and refine a shared understanding of its' purpose and role. Once established, the TAG would then meet annually to review monitoring reports from country managers, scientists and others implementing the IPA plan.
- Committee members might also provide advice and support to the IPA team between meetings from time to time.
- A TAG meeting might involve:
 - presentations from operational staff on progress;
 - detailed review of indicators / monitoring for specific projects / Targets; and,
 - some field visits to allow discussion of issues.
- The meetings need to occur at a 'pace' that supports effective cross-cultural communication, and may happen by phone link

4. Backbone

Talks about: *the back office systems and tools that might be needed to support this process*

Use this to: *guide setting up software, hardware and operational needs*

NOTE: Requires further discussion.



Backbone: Use of the Plan

OS-based PoM

The Plan of Management is the basis of the MERI approach. The Plan of Management should contain sufficient detail and be structured to allow effective definition of a workplan, indicators and objectives / goals. All elements should tie back to the Plan of Management (not the printed document).

Actions from plan

Actions to be carried out should be linked to the strategic direction established by the Plan of Management. A workplan provides this link.

Rationalised indicators from Plan

The Plan of Management will initially likely have a wide range of candidate indicators (see previous sections). These should be rationalised to a short list of essential indicators to be monitored in the field, and for subsequent analysis.

Clear questions from PoM

Analysis of data captured during monitoring should be directed by specific questions posed by the management plan relating to mitigation / reduction of threats (objectives) or improvement in the health of targets (goals). The answers to these questions then drive adaptation.

Backbone: Tools to adopt

PoM TOOLS

Tools in this context refers to either electronic or paper / process tools. Tools for the Plan for Management should enable maintenance of and easy access to all aspects of the plan to service the various MERI needs: extracting goals, objectives, indicators, workplans, and recording results (not necessarily data).

DATA CAPTURE TOOLS

Tools for use in the field that are both simple to use and able to capture the data required by the monitoring approach. These can be electronic or otherwise, but should allow for rapid feedback and use across multiple platforms and ease of data retrieval.

DATA MANAGEMENT TOOLS

Data needs to be stored, maintained over a number of years, and retrieved in order to support the MERI. Tools here include data bases and / or cloud-based storage. They should be widely accessible for data capture, secure for maintenance and robust for retrieval.

DATA ANALYSIS TOOLS

These will be specific to the type of data and analysis.

REPORTING TOOLS

It can take a long time to transform data into information and present it in a digestible way that can be used by stakeholders. Making this 'real time' or systematic can help this significantly.

Backbone: Steps to follow

Field work implements plan

This is simply taking the workplan and doing the work

Monitoring data captured / stored

Either as the work is done (ie during weed control) or specifically (ie baseline assessment). Data is captured in the field and transferred into storage.

Monitoring data retrieved

When it is time to report on the Plan (at one or all of the above times) the data is retrieved from storage by whoever needs to do the analysis. This should be able to be done by the person who needs it as they need it, rather than relying on a third party.

Data prepared for analysis

Data analysed

The data is analysed against the question being asked.

Draft report

The initial analysis is compiled into a draft report and reviewed.

Final report

The final report is accepted.

Work plan adaptation

The work plan is amended according to the results of the analysis and final decisions made.

Backbone: Involving others

Data Management

Data management can happen locally, but may be able to be supported by off-site solutions (eg cloud-based systems)

Off-site expertise

In many cases the expertise (or simply time capacity) for the analysis will not be available locally and so may be needed from external sources. These may be linked to the expert panel, although ideally not for conflict of interest purposes.

Peer review (audit)

Ideally any significant analysis (mostly around outcomes and impact, rather than outputs) would be peer-reviewed. This would be the role of the expert panel..

Board review

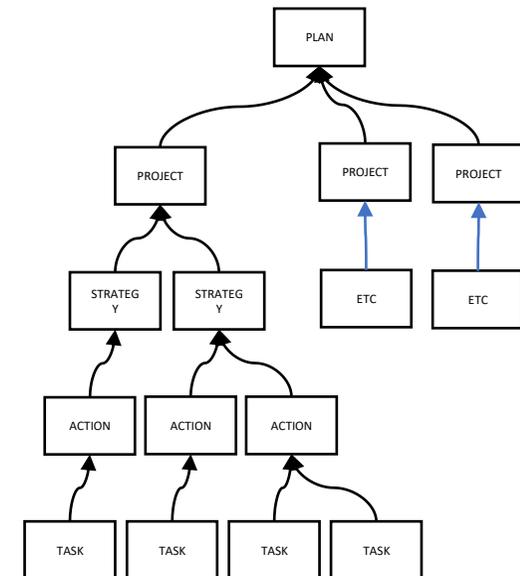
It is critical that final direction and decisions made on the basis of the analysis (MERI) rest with the Board / governing body. They may choose to accept or reject findings, but must be allowed to do so to maintain ownership and control.

5. Implementation

Talks about: how the levels of reporting fit together
Use this to: implement this MERI plan

Who reports on what?

What LEVEL of reporting?	Who
5. Plan (eg IPA Plan)	Advisory Group
4. Project (eg Fire Management)	Whole Country Management team
3. Strategy (eg Annual cycle of prescribed burning)	Country Managers + Coordinator
2. Activity (eg Preparation for burning)	Individual Country Manager
1. Task (eg Roadside signs)	Individual Country Manager



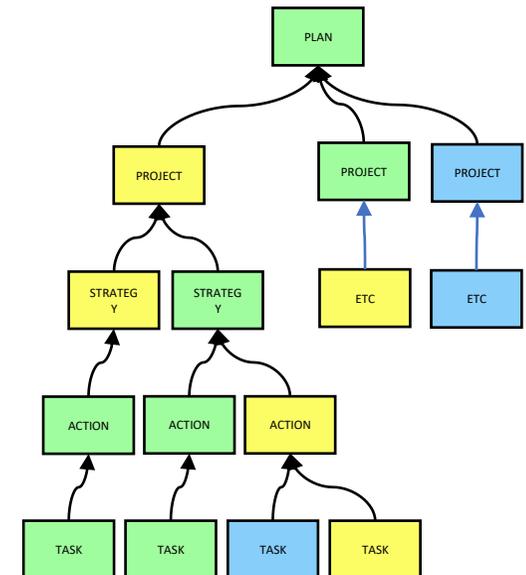
Example

What LEVEL of reporting?	Who	Process	Final Rating
5. Plan (eg IPA Plan)	Advisory Group	Advisory Group reviews all ratings across all Projects and thinks that Fire should actually be rated as 'Minor Issues' but that the Plan as a whole is 'On Track'	On Track
4. Project (eg Fire Management)	Senior Managers	Senior Managers get together once a year and look at all the results and reports and decide how they see fire. Agree that there are some issues but think that overall Fire is 'On Track'.	Minor Issues
3. Strategy (eg Annual cycle of prescribed burning)	Country Managers + Coordinator	Coordinator & Country Managers look at all Actions and think ok but want to show that there are some small problems with the Strategy – report as 'Minor Issues' during annual fire planning meeting	Minor Issues
2. Action (eg Preparation for burning)	Individual Country Manager	Country Manager looks at the tasks and / or thinks the Action is going fine - reports as 'On Track' as job is being done	On Track
1. Task (eg Roadside signs)	Individual Country Manager	Country Manager thinks the Task is going fine - reports as 'On Track' as job is being done	On Track

Example

What LEVEL of reporting?	Who
5. Plan (eg IPA Plan)	Advisory Group
4. Project (eg Fire Management)	Whole Country Management team
3. Strategy (eg Annual cycle of prescribed burning)	Country Managers + Coordinator
2. Activity (eg Preparation for burning)	Individual Country Manager
1. Task (eg Roadside signs)	Individual Country Manager

RATING	EXAMPLE
Not specified	We really don't know and have no information
Scheduled for future implementation	We have not got around to this yet, but we will
On-Track - Ongoing, generally on track	We are doing it, and it is all going as we expected (more or less)
Minor Issues - Ongoing, has minor issues that need attention	We are doing it, but there have been some delays due to weather / technical problems
Major Issues - Ongoing, major issues that need attention	We are doing it, but there have been some significant delays that we are not sure we can resolve
Completed - Successfully accomplished	We did it
Abandoned - No longer relevant or useful	We don't think we need to do this anymore



Another example

- If we were driving (**Strategy**) from Broome to Perth (**Project**)
- We set off (**Action**) and stop for Food / Fuel at Roebuck Roadhouse (**Task**)
 - They don't have the food we want (**Task** - **Minor Issues**)
 - But they do have fuel (**Task** – **On Track**)
- We can keep going (**Activity** - **On track**)
- We will camp somewhere tonight but not sure where (**Activity** – **Scheduled**)
- We are hungry so we need to stop again soon (**Strategy** – **Minor Issues**)
- We should arrive in Perth on time though (**Project** – **On Track**)
- But ...
- The next day the engine blows up (**Strategy** – **Major Issues**)
- So we will be late to Perth (**Project** – **Minor Issues**)

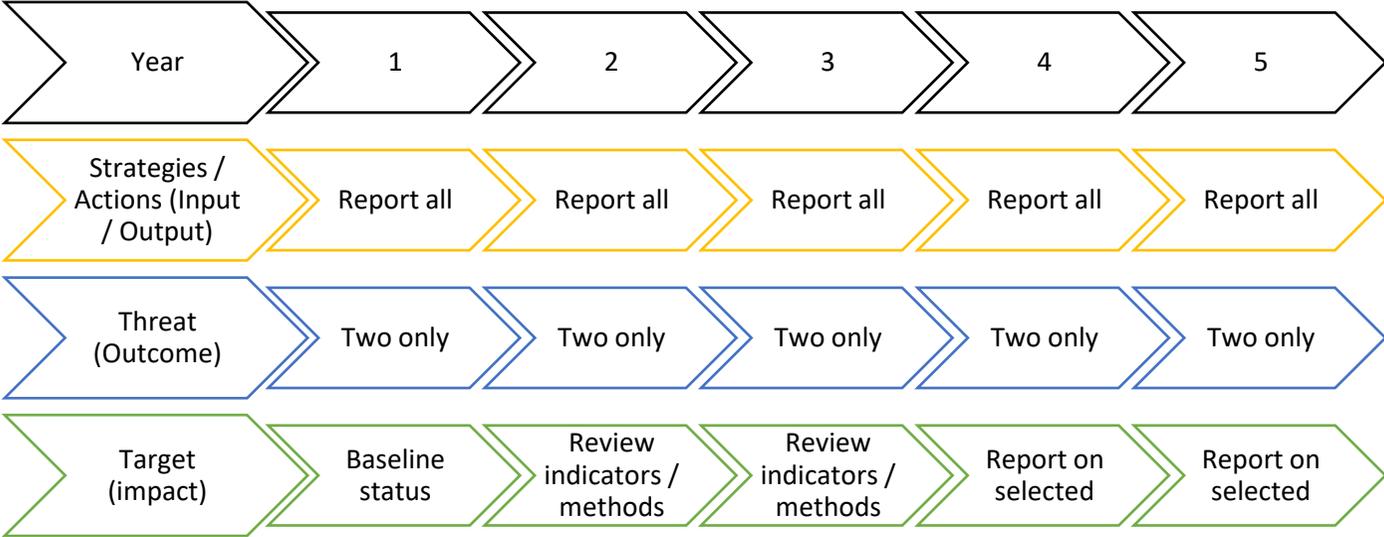
6. Reporting

Talks about: the steps needed to report progress
Use this to: set out when to report what parts of the plan

Reporting cycle

Not all things need to be reported at all times. Input and outputs will need to be reported and reviewed regularly, whereas outcomes and impacts will be reported less often.

An example timetable might be something like below.



6. Appendices and attachments

Talks about: detailed additional bits and pieces that are helpful but not essential

Use this to: enhance your understanding of the other sections

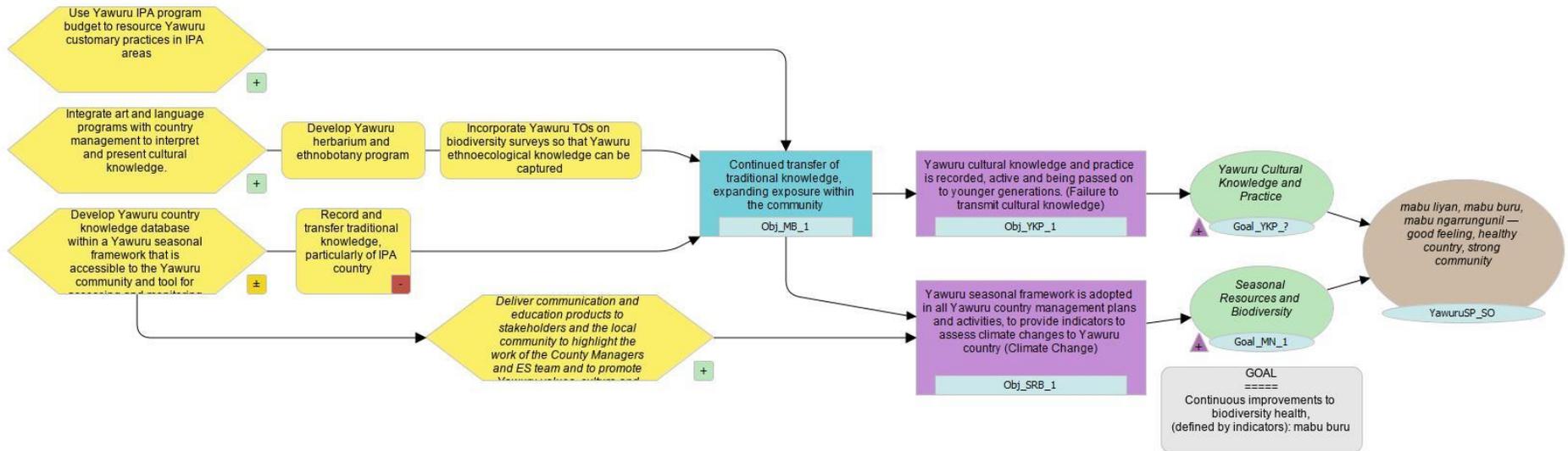
Roadmaps

Project roadmaps that guide implementation and MERI

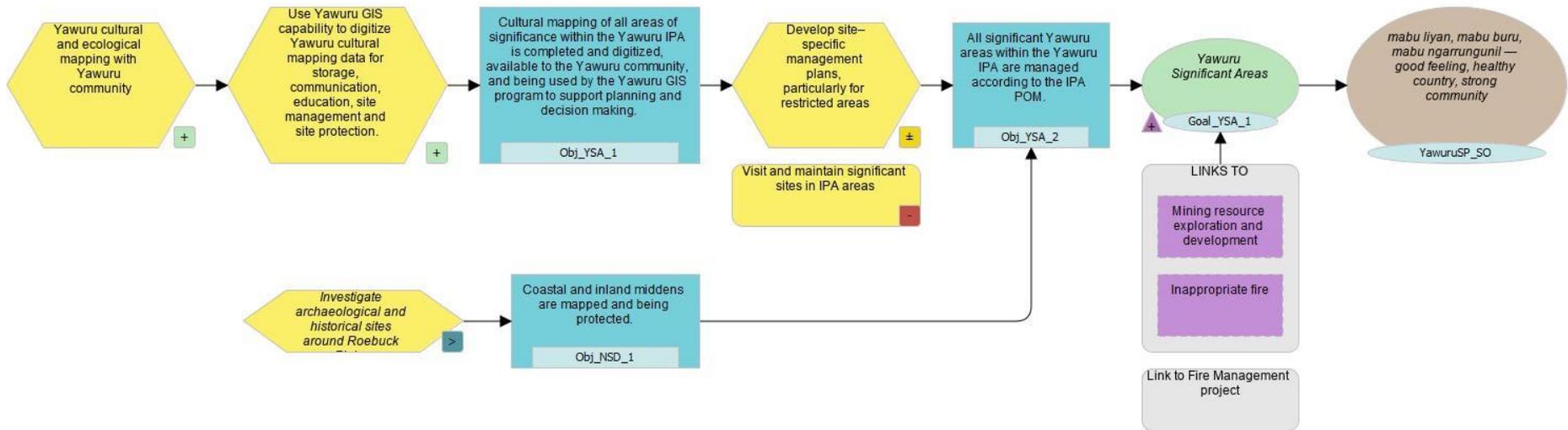
Legend Table

 Project	 Strategy
 Conceptual Model	 Goal
 Results Chain	 Objective
 Target	 Indicator
 Human Wellbeing Target	 Stress
 Biophysical Factor	 Text Box
 Biophysical Result	 Group Box
 Direct Threat	 Task
 Contributing Factor	 Method
 Intermediate Result	 Activity
 Threat Reduction Result	 Monitoring Activity
	 Measurement

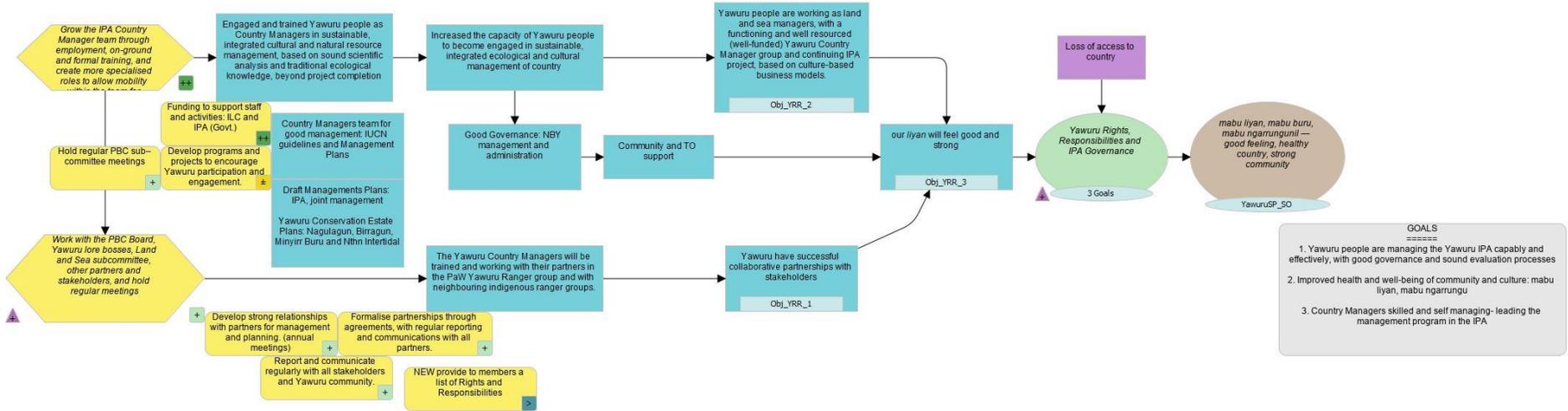
01. Yawuru knowledge and practice



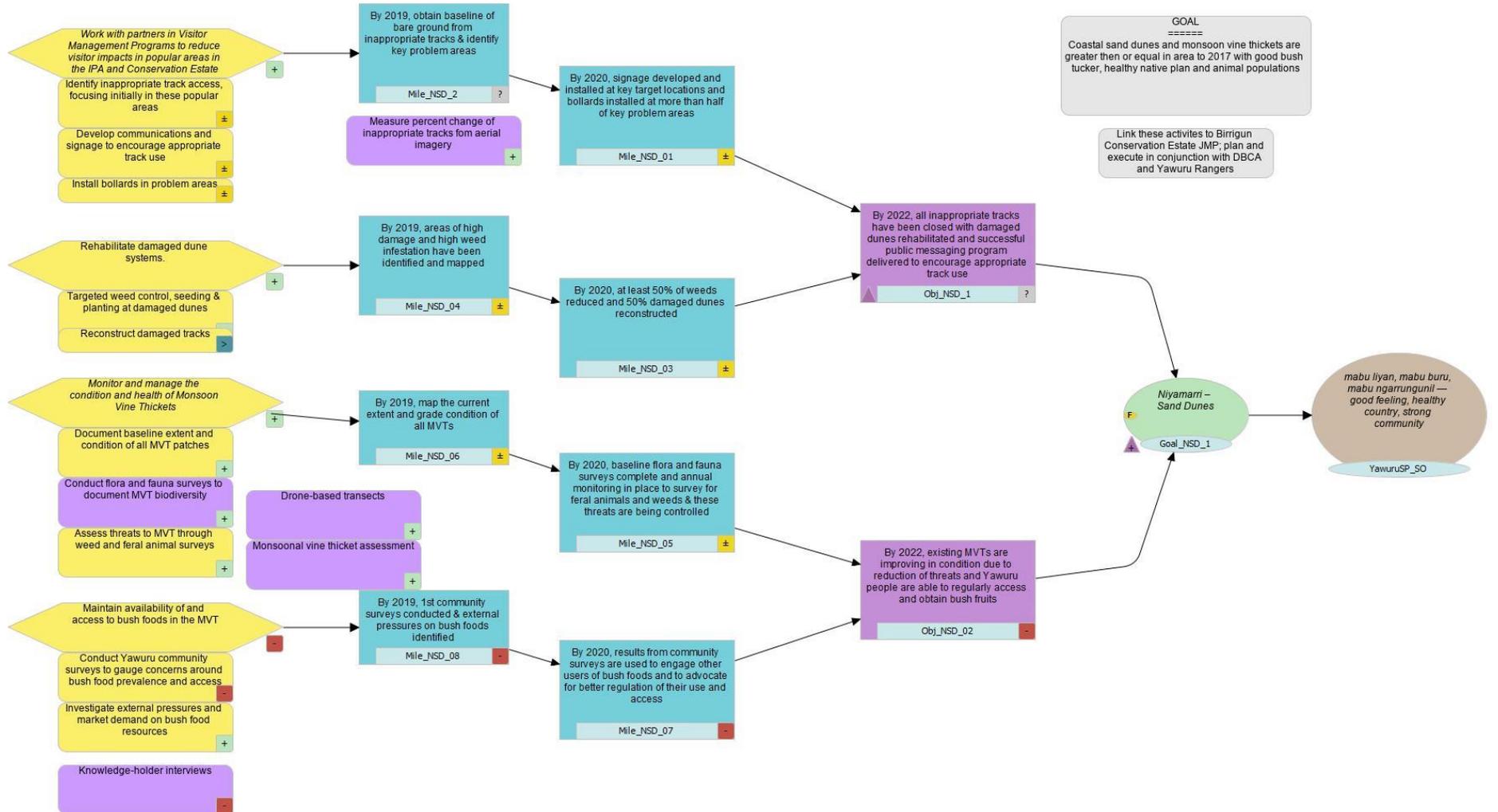
02. Yawuru significant areas



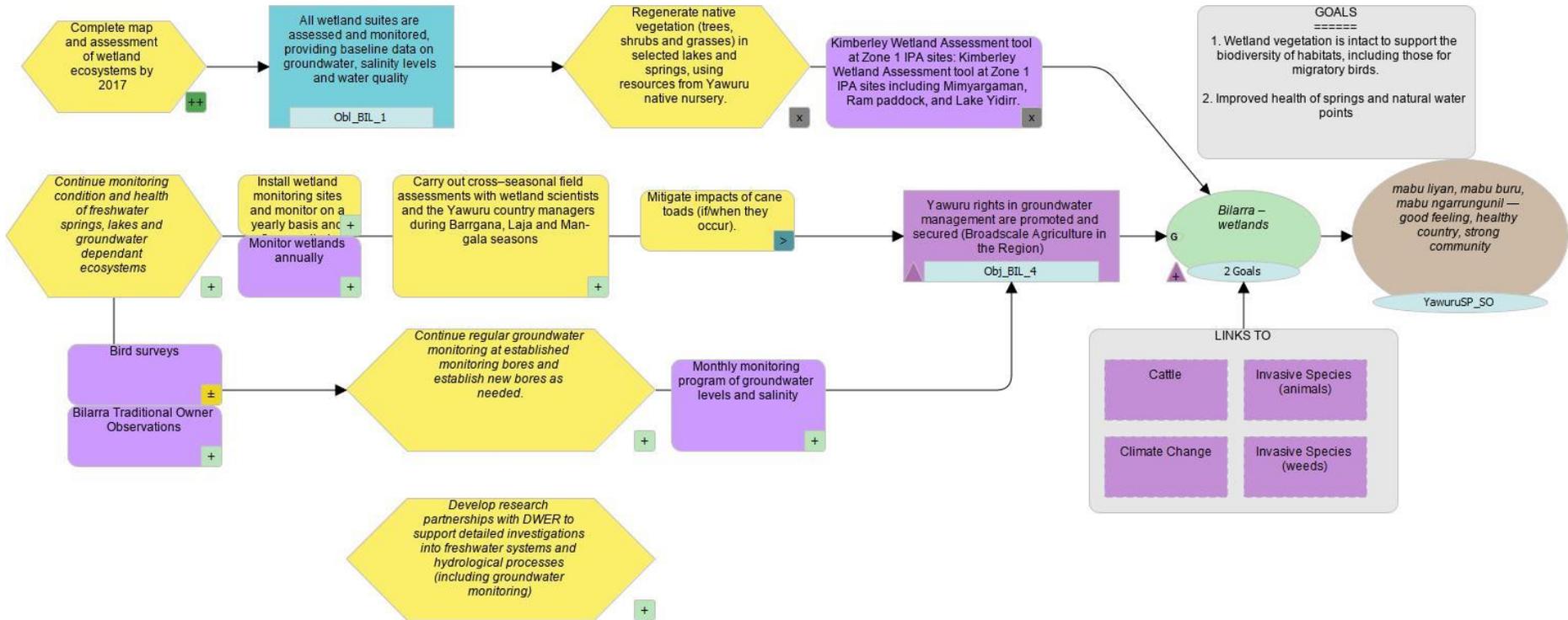
03. Yawuru Rights, Responsibilities and IPA Governance



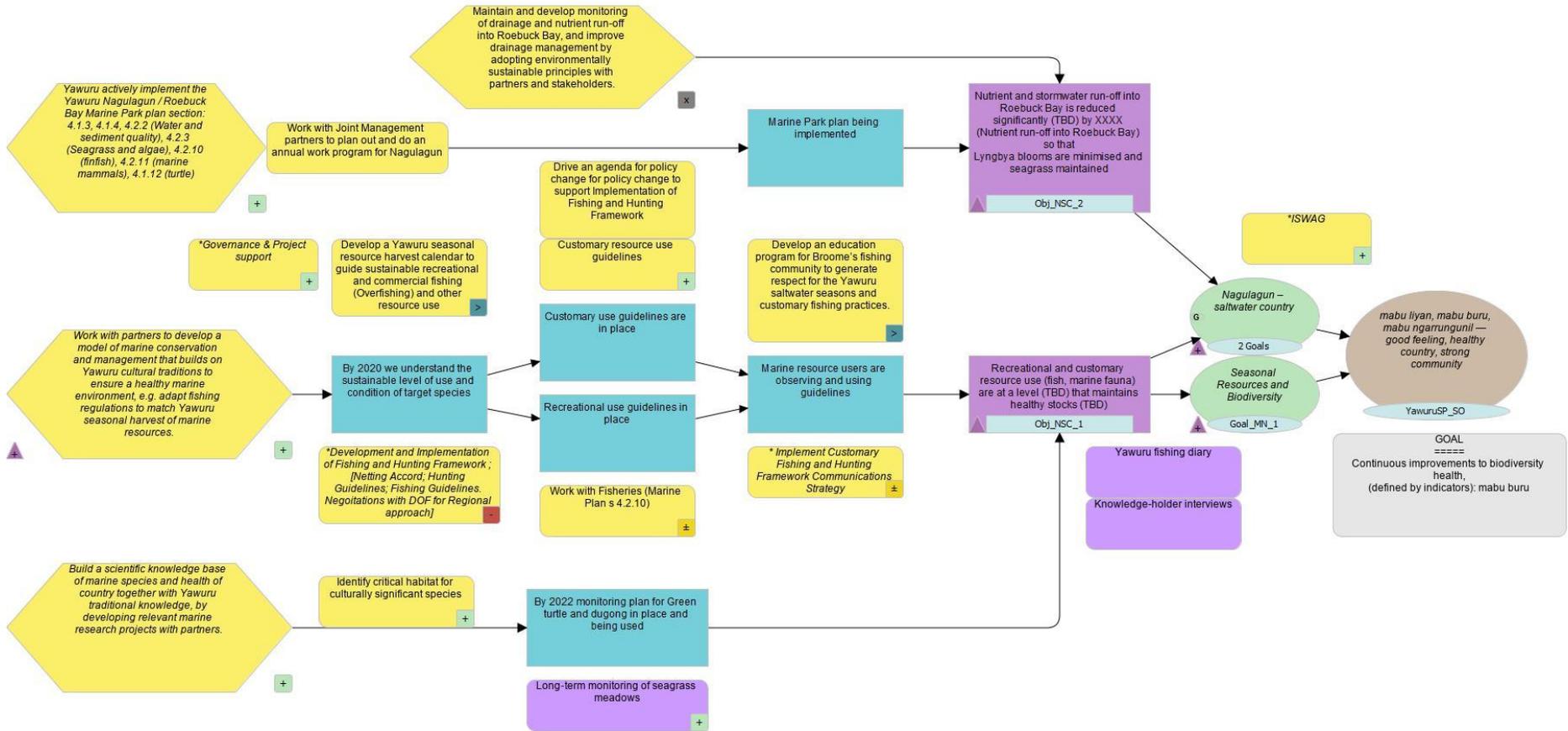
04. Niyamarri – Sand Dunes (Access)



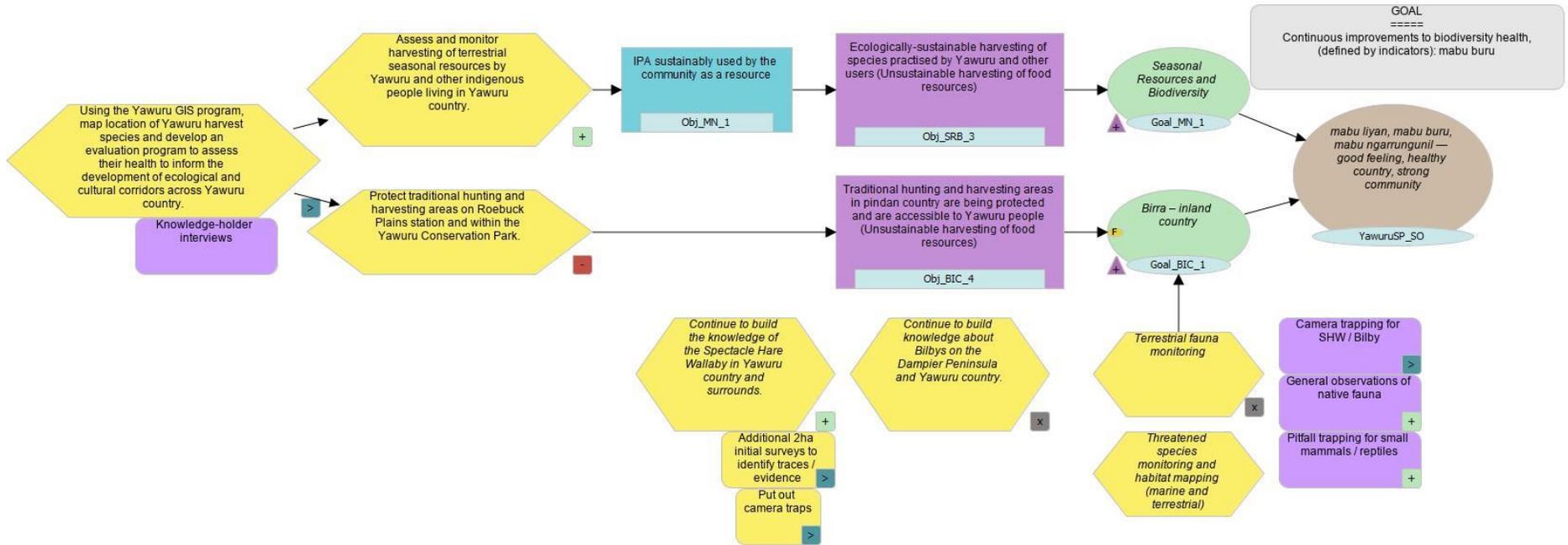
05. Bilarra - wetlands



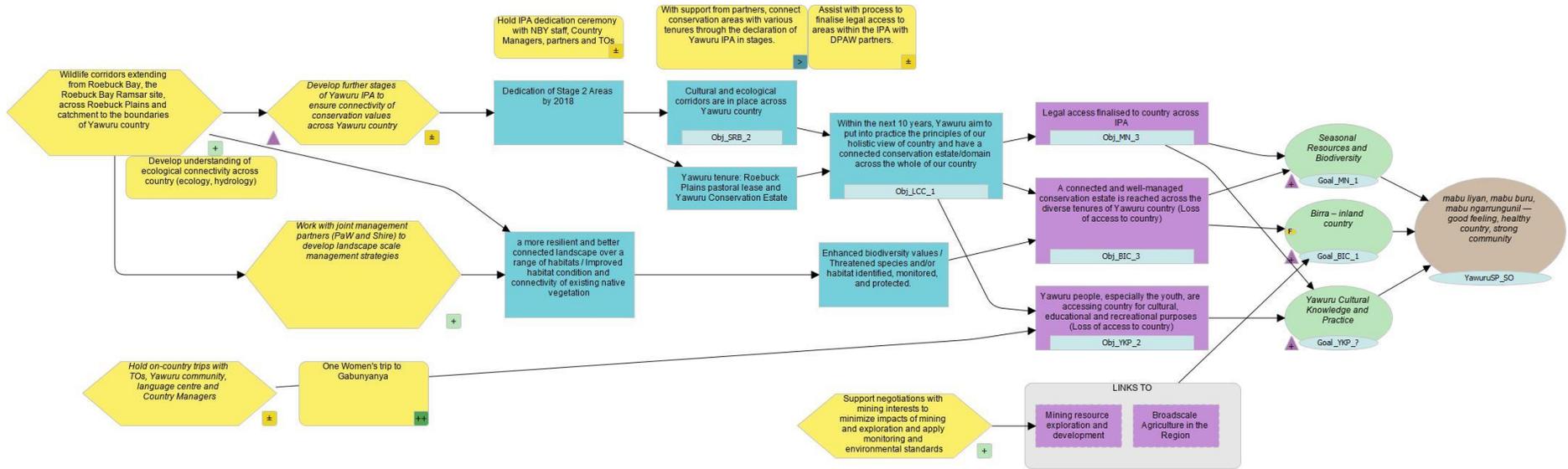
06. Nagulagun – saltwater country



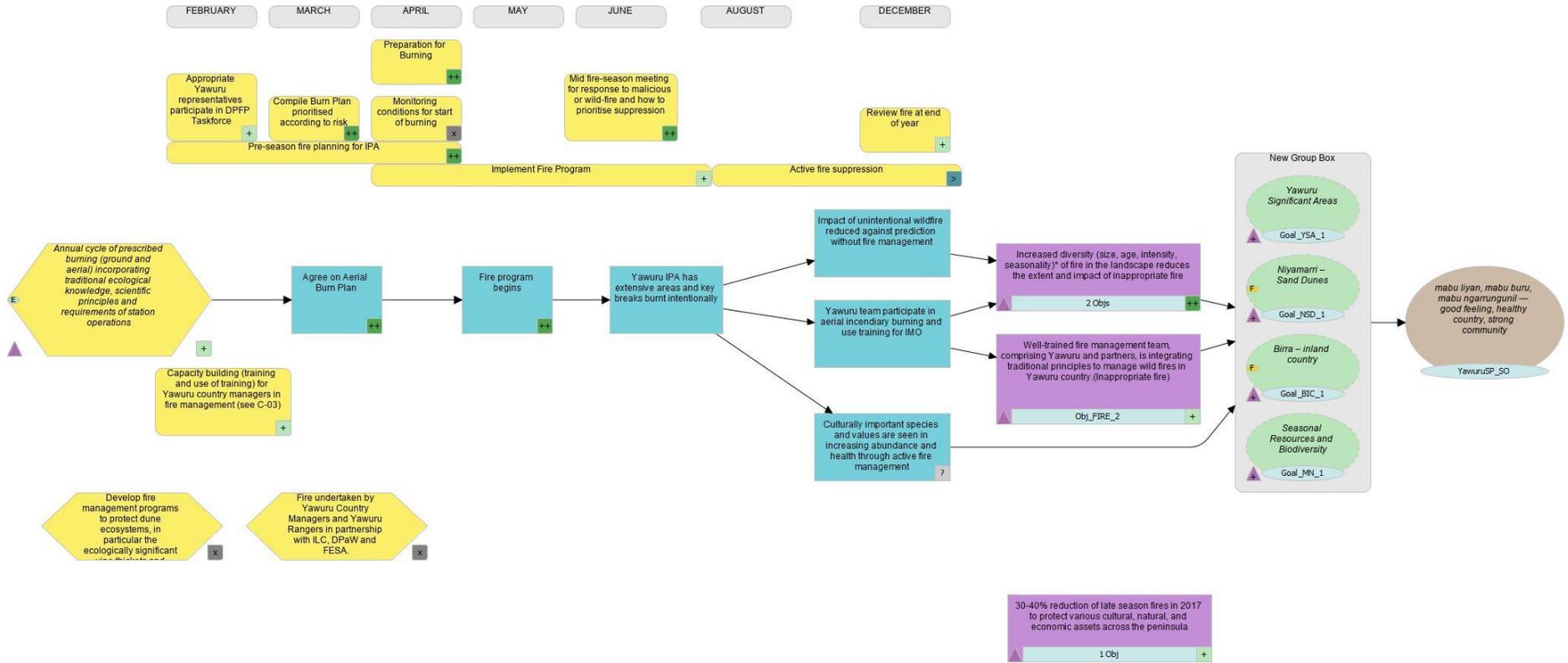
07. Seasonal Resources and Biodiversity



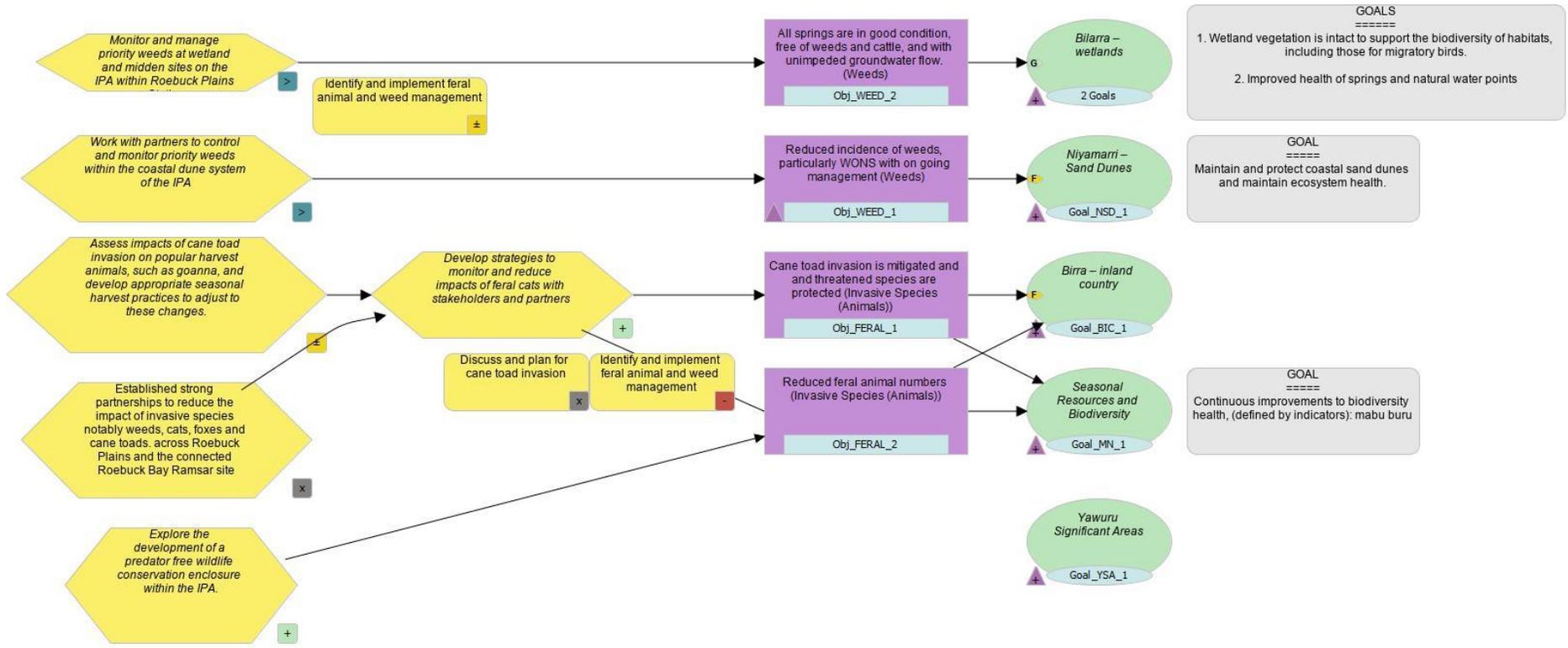
08. Landscape condition, connectivity and access



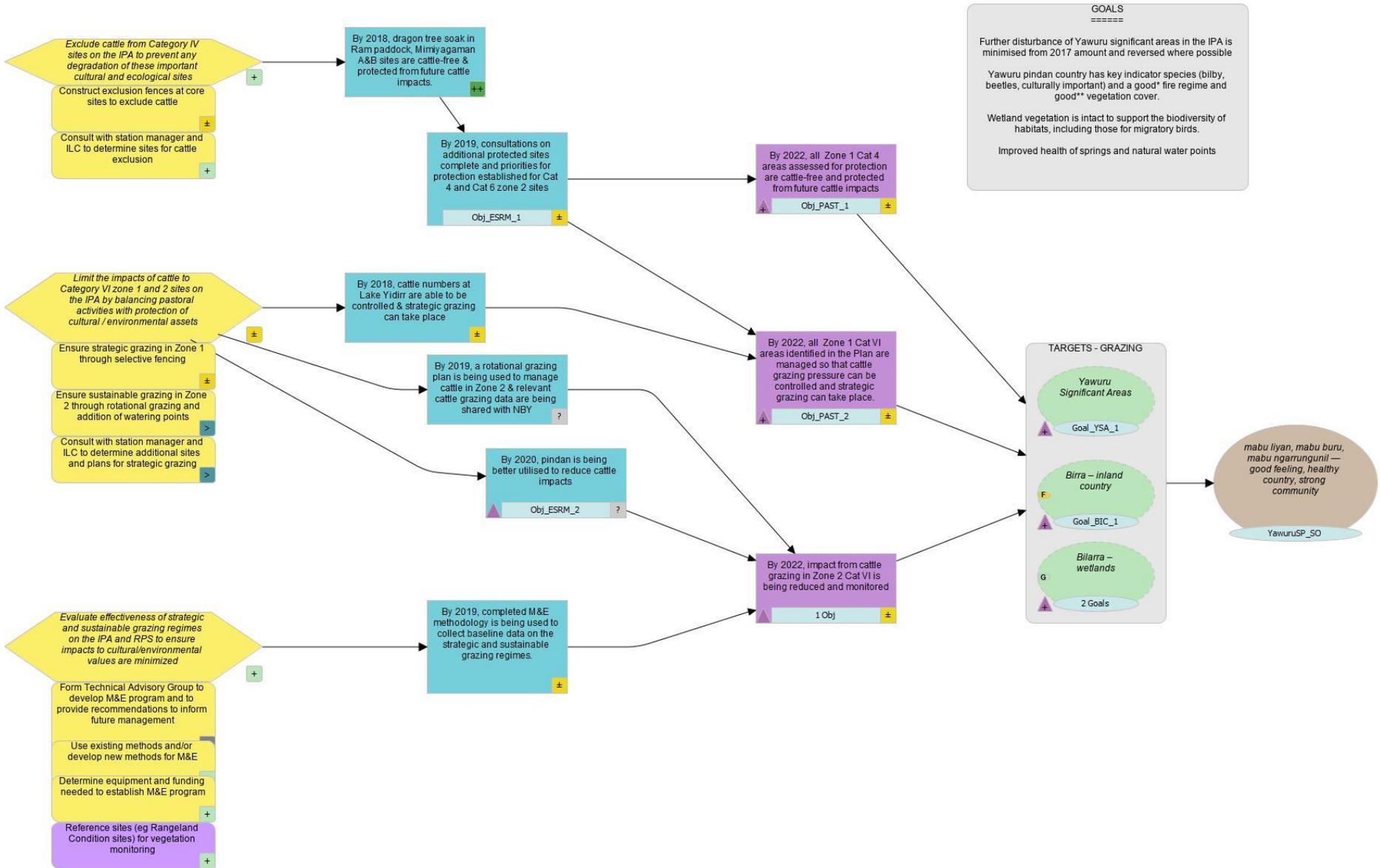
09 - Fire management



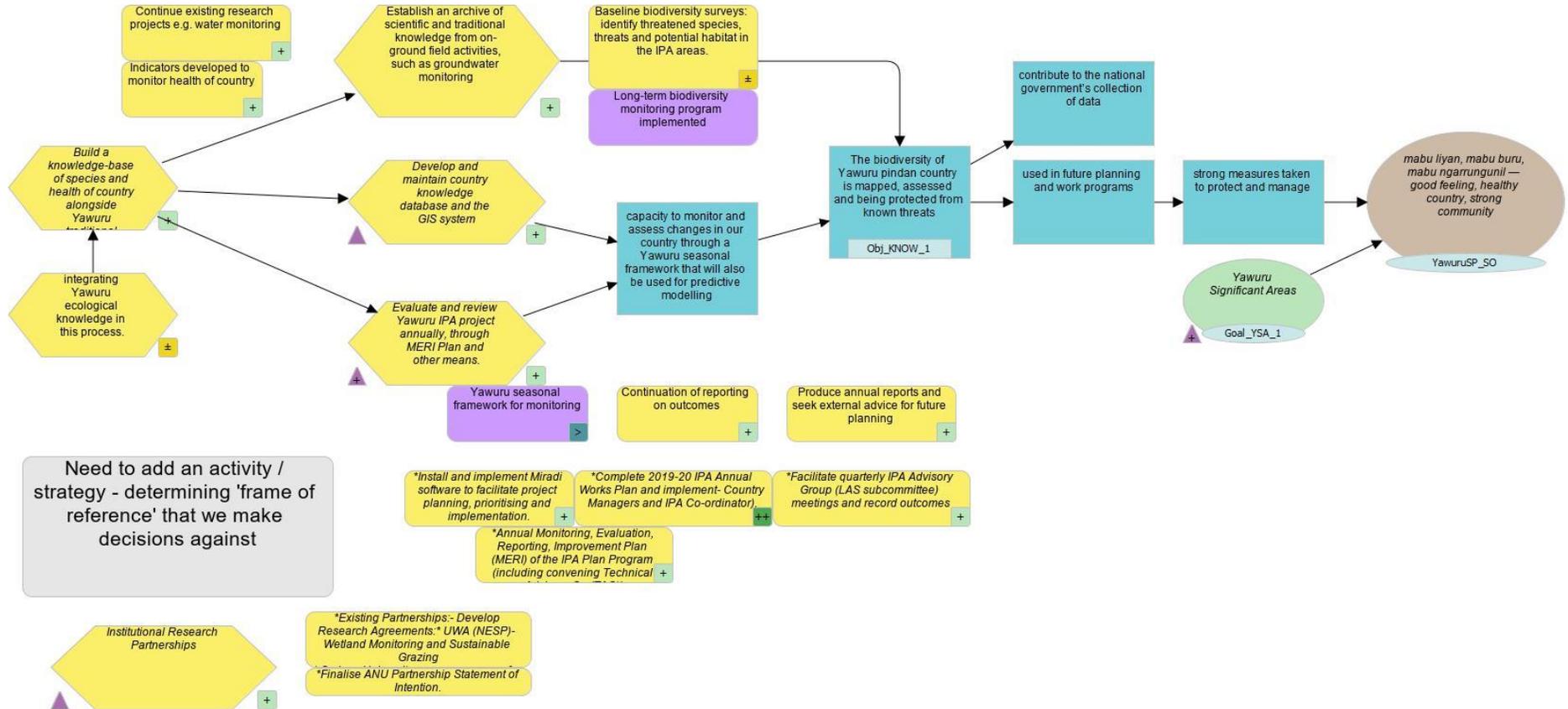
10. Invasive species (Weeds and Animals)



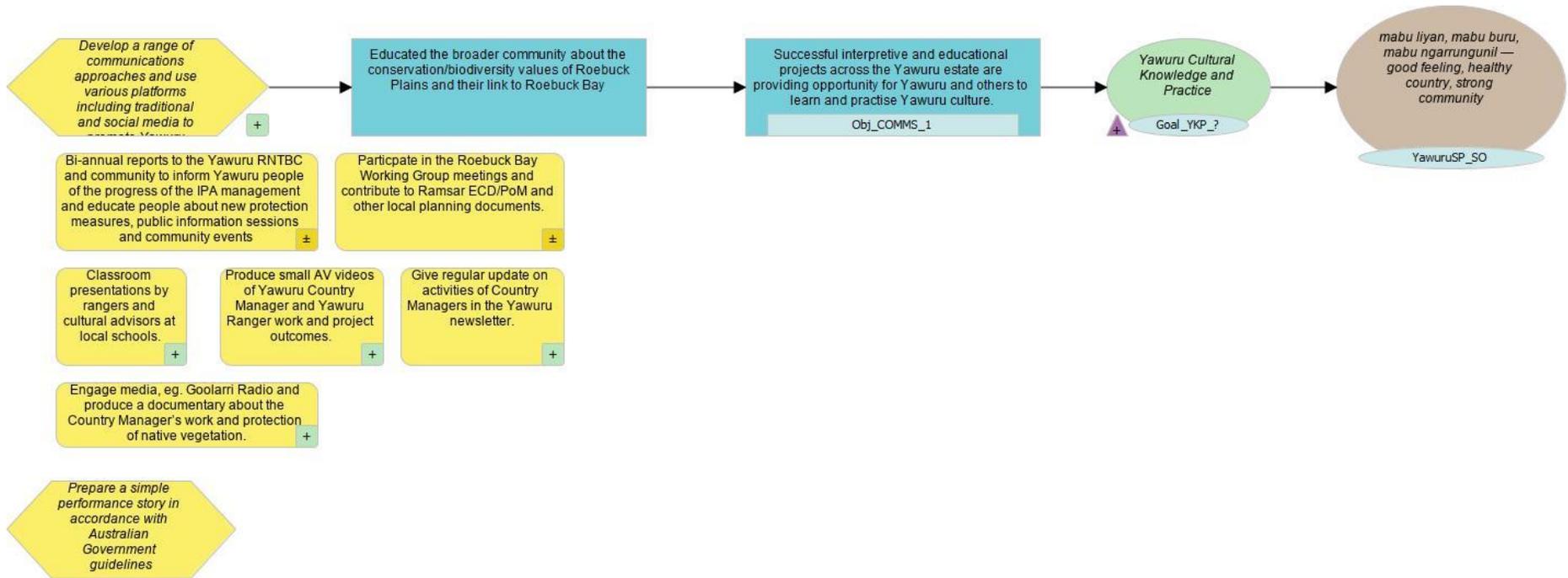
11. Sustainable cattle grazing



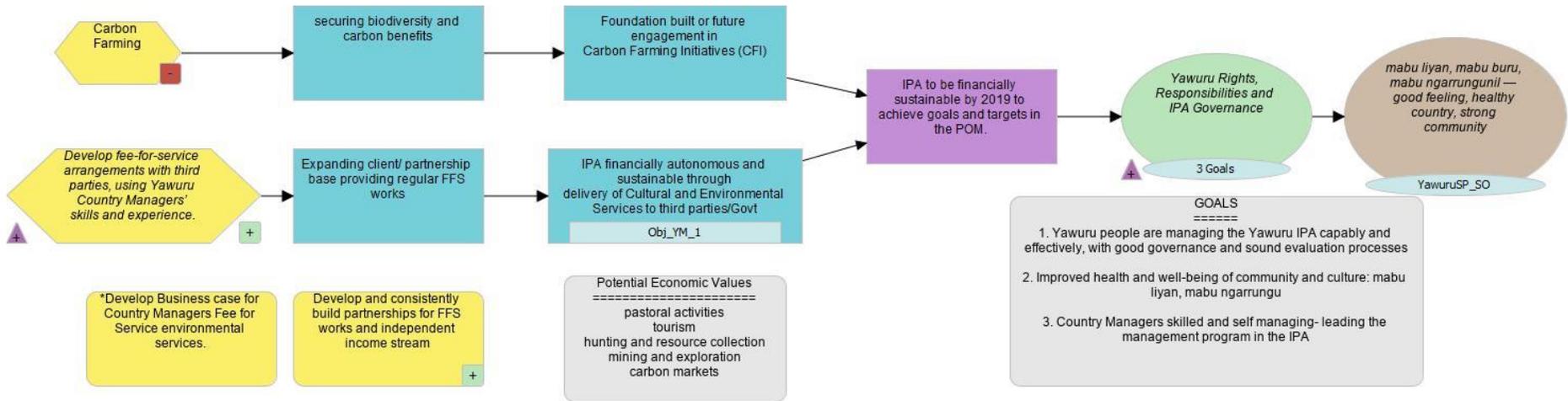
12. Knowledge Management and Decision-making



13. Communications, Education and Interpretation



14. Securing income through various means



Glossary

A longer list of words that are hard to remember

Glossary

Adaptive management—An approach to conservation planning in which testing and monitoring are integrated into a project’s design and management. This kind of approach provides ongoing feedback that improves management decisions as the project progresses.

Actions—Specific tasks that help achieve one or more objectives. Actions are also called activities, interventions, responses, or strategic actions. When grouped together to achieve a goal, activities become strategies. Also called **Activity**

Contributing factor—Circumstances that help create a problem or threat to your targets, but might not be the only cause of the problem. For example, logging policies, demand for fish, and lack of access to renewable electricity can all be contributing factors. Contributing factors are sometimes referred to as root causes, although a root cause is the ultimate reason for a problem and a contributing factor might include threats that have several root causes. For example, if a threat to a species is overhunting, one contributing factor might be poor enforcement of wildlife laws. Root causes might be the hunters’ need for food or cultural norms that promote hunting.

Evaluation—An assessment of the degree to which an activity or project is achieving its goals and objectives. Evaluation and monitoring are closely related, and both aim to judge the effectiveness of a particular activity or project. In general, evaluation is the broad umbrella under which activities such as monitoring and assessment fall.

Goal—A broad statement that describes one or more impacts that a project should have on its conservation targets. While the project’s vision describes the ultimate, broad aim of the project, the project’s goals provide more specific statements of the impacts that are expected to help achieve the vision. Objectives, on the other hand, are more specific than goals, and describe how goals will be met. Good goals are linked to targets, impact oriented, measurable, time limited, and specific.

Indicator—A measurable factor that indicates progress toward an objective. Changes in a conservation target, a change in a threat, and changes in behaviour are all examples of indicators. It is related to a specific information need such as the status of animal or habitat target, change in a threat, or progress toward an objective. An indicator defines what you are trying to measure but should not include the desired level or trend that you wish to see. Good indicators are measurable, precise, consistent, and sensitive.

Logic model—A graphic that displays a project’s goals, objectives, and indicators of success. Also called a “logical framework,” logic models are most often presented as a matrix that displays a project’s specific activities, expected outcomes, and measures of success. The aim of a logic model is to provide a shorthand display of the logic guiding the execution of a project and is a tool for explaining your theory of change.

Monitoring—The periodic collection and analysis of data to check progress toward a project’s goals and objectives. The periodic collection and evaluation of data relative to stated project goals and objectives. (Many people often also refer to this process as monitoring and evaluation (abbreviated M&E)).

Method— A specific technique used to collect data to measure an indicator. A good method should meet the criteria of accurate, reliable, cost-effective, feasible, and appropriate.

Objective—A statement that details a specific desired outcome of a project. Objectives should help a project reach its goals, which ultimately will help the project achieve its vision. A typical project will have multiple objectives. If the project is well conceptualized and designed, realization of all the project’s objectives should lead to the fulfillment of the project’s vision. A good objective meets the criteria of being: specific, measurable, achievable, relevant, and time limited.

Operational Plan— A plan that includes analyses of: funding required; human capacity and skills and other non-financial resources required; risk assessment and mitigation; and estimate of project lifespan and exit strategy.

Outcomes—what you get by implementing a strategy. Needs to be related to objective to be useful (see **Examples** below)

Outputs—the amount of something produced by a person, machine, or industry (see **Examples** below)

Program—A group of projects that together aim to achieve a common broad vision. For example, a program with a mission to protect a broad geographic area might include projects focused on the protection of specific species or habitats within that geographic area.

Glossary

Project—A set of activities guided by practitioners to achieve defined goals and objectives. Projects are the basic unit of conservation work, and, when grouped together to achieve a common broad vision, create programs. Some people use programs and projects interchangeably, since projects and programs

Result—The desired future state of a target or factor. Results include impacts which are linked to targets and outcomes which are linked to threats and opportunities

Results chain—A graphic that displays the logical sequence that links a project strategy to one or more conservation targets. The steps in a results chain should be linked in an “if-then” fashion that explains the causal links between specific project activities, the expected outcomes of the activity, and the effect those outcomes should have on the conservation target.

Scope—The broad geographic focus of a project. The scope can also include other elements, defined by a planning group.

Stakeholder—Any individual, group, or institution that has a vested interest in the natural resources of the project area or may be affected by project activities. Stakeholders are all the people or groups whose participation and support are critical to a project’s success.

Strategic plan—The overall plan for a project that describes the project’s scope, vision, targets, goals, and objectives. The plan should also detail the strategies to be used to achieve the objectives, the practitioners and stakeholders who will be involved, plans for monitoring and evaluation, and operational considerations such as funding, risk assessment, project timing, and others. A strategic plan is sometimes divided into strategic goals and operational goals, as well as component parts that include an action plan, monitoring plan, and an operational plan.

Strategy—A group of actions with a common focus that work together to reduce threats, capitalize on opportunities, or restore natural systems and protect human welfare. Strategies include one or more activities and are designed to achieve specific objectives and goals. A good strategy is linked, focused, feasible, and appropriate.

Target—One or more elements of biodiversity or human welfare at a project site. Biodiversity targets could be a species, habitat, ecological system, or ecological process that a project has chosen to focus on. If a project is focused on a particular geographic area or ecological system, the targets should represent the full suite of biodiversity in the area. For example, a project focused on a particular riparian habitat might include targets such as key species of trees, grasses, mammals, fish, insects, and amphibians.

Nested Targets—values and assets whose needs are looked after in one or more Targets.

Threat—A human activity that directly or indirectly degrades a target. A project typically identifies stakeholders that are responsible for specific threats. Some sources also differentiate between direct threats and indirect threats (contributing factors and root causes are indirect threats).

Vision—A description of the ultimate condition that a project is working to achieve.

Work plan—A short-term schedule for implementing an action or monitoring plan. Work plans typically list tasks required, who will be responsible for each task, when each task will need to be undertaken, and how much money and other resources will be required

Examples of outputs and outcomes

Outputs (examples for ecological and social outcomes) (Audubon 2011)

People:

- Number of participants/volunteers involved*
 - Person hours (hours worked by volunteers/participants)*
 - Number of work days*
 - Diversity of participants (number breakdowns and estimates ideal)*
 - Number of underserved and new populations reached*
 - Number of organization's members involved*
- Number of trees
 - Native grasses (square metres, hectares)
 - Ground cover, shrubs, woody vegetation
- Invasive species removed
 - Species
 - Volume
 - Percentage of coverage (reduction)
 - Number of erosion sites removed
 - Size (acres)
 - Other specific improvements
 - Monitoring
 - Size of area monitored
 - Number of species monitored
 - Number of GIS maps generated
 - Reports completed
- Number of low-energy light bulbs installed
 - Other quantifiable accomplishments
- *Input or output depending on goals of project

Media/Communication:

- Number of press releases
- Type of press outlet (for example, television, newspaper, journal, national magazine, or newsletter)
- Distribution level of press outlet (size of distribution area such as national, regional, state, metropolitan area, city, or town)
- Number of interviews
- Website (number of unique visitors)

Water

- Litres captured or saved
- Number of cisterns
- Surface area converted from impervious surface
- Surface area of converted landscaping (square feet, square meters)
- Number of low-water landscapes/gardens installed
- Other quantifiable accomplishments

Ecological:

- Habitat
 - Hectares restored
 - Hectares improved
- Vegetation planted

Energy

Outcomes (Audubon 2011)

People:

- Number of people who perform the targeted behaviour
- Behaviour measure (standardized instrument that assesses intention to act)
- Increased knowledge of XX issue
- More positive attitude toward XX species

Ecological:

- Habitat
 - See outputs (outputs list may serve as outcomes depending on scale of project and goals)
 - Population trends in target species
 - Threat assessment (post-program)
 - Development impacts reduced (directly measured or qualitatively described)
 - Threat impacts reduced (directly measured or qualitatively described)
 - Number of species protected
 - Diversity of species protected
 - Survival rates improved
 - Increased productivity (specific ecosystem services protected)
 - Population sizes of target species observed
 - Decrease in nest abandonment
- Water
 - See outputs
 - Water quality improvements

- Water availability

- Policy changes

• Energy

- Reduction in kilowatts used (quantified)
- Reduction in carbon emissions (quantified)
- Kilos of material recycled
- Carbon/ecological footprint
- Policy changes