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# Water and ecosystems services in Cape York

Opportunities for First Nations

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**Watertrust  
Australia** Ltd

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### **Credits**

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Watertrust Australia acknowledges the Traditional Owners of Country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures, and to their Elders past and present.

# Scope of this chapter

The Cape York region is remote and sparsely populated, with fewer than 20,000 people spread over 15 million hectares, 56% of whom identify as Aboriginal or Torres Strait Islander. The remarkable diversity of ecosystems in Cape York co-evolved over tens of thousands of years with human management. This “mosaic of inter-locking habitats of rare integrity”<sup>36</sup> includes wetlands, monsoonal rivers, tropical rainforest, heathlands, savanna woodlands and dune fields of national and global significance<sup>9</sup>. Off the east coast is the World Heritage Great Barrier Reef and near its south-eastern corner is the Wet Tropics World Heritage Area. The Cape York region has approximately 4 million hectares of indigenous owned or jointly managed national parks and private protected areas on Indigenous and pastoral land.

A significant body of work over the past 15 years has examined the potential for First Nations in Cape York to benefit economically from the actions they take to conserve and restore Cape York’s ecosystems<sup>5,25,36,44,49,54</sup>. Preece et al.(2016) highlight the scale of the opportunity by conservatively estimating the value of ecosystems services across Cape York at A\$180billion/yr, of which 62% was associated with coral reefs, 20% was associated with woodlands and 8% was associated with coastal systems. Evaluating the potential and constraints of Payment for Ecosystem Services markets on First Nations Land in Cape York, Winer et al. (2012) comment that “remoteness and limited economic options in Cape York, combined with the outstanding natural heritage value of the region, mean that payments for land management to deliver ecosystems services could be an important pathway in future for improving social outcomes in indigenous communities and creating economic opportunity. They added that “current barriers to participation by indigenous communities in Cape York in PES [Payments for Ecosystems Services] markets, including legislative constraints and the existence of weak First Nations land and property rights – must be overcome”<sup>54</sup>.

Preece et al. (2016) express a similar view, saying that for Cape York, “the development of an ecosystem services market is imperative if ecosystem services are to compete with economic activities. Ecosystem services such as biodiversity services have been shown to decline severely without a market value that influences land use decisions. Australia is starting to develop models for providing incentives through an ecosystem service market. The Australian government’s carbon offset program, the carbon farming initiative, allows market-based savanna burning following accredited methods. These can generate greater returns than pastoralism and deliver multiple benefits including for ecosystems and capacity building for Indigenous land managers”<sup>36</sup>. Waltham et al. (2021) identify “multiple and growing opportunities for financing wetland restoration within the Great Barrier Reef catchment, whether it be for water quality improvement, increased farm production, carbon sequestration, fishery support, cultural benefit” but identify challenges with funding mechanisms<sup>49</sup>.

To enable an assessment of opportunities for First Nations in Cape York to manage water to benefit from ecosystems services schemes, this report first (i) discusses the different types of ecosystems services, (ii) traces the emergence of market mechanisms to incentivise action in protecting and restoring ecosystems services and (iii) summarizes recent experiences of First Nations peoples in Australia with ecosystems services schemes. It then provides a summary of the range of existing and emerging market mechanisms that potentially could be accessed by First Nations people in Cape York for protecting and enhancing water-related ecosystems services. It focuses specifically on market mechanisms relevant to (i) First Nations water-holders who make decisions and take actions that directly deliver water-related ecosystems services (i.e. directly related to water provisioned in Cape York ) and (ii) First Nations land managers who make decisions and take actions that indirectly deliver water-related ecosystems services.

# Ecosystems services – concepts and practice

Over the past twenty-five years, there has been increasing recognition of the diversity of critical benefits that ecosystems provide human society as well as growing alarm at the rapid pace of decline and loss of ecosystems worldwide.<sup>4,55</sup> This growing awareness coincided with the release of the Millennium Ecosystem Assessment (MEA)<sup>28</sup> in 2005 which brought global attention to the importance and vulnerability of ecosystems services and to the distinction that ecosystems provide not just tangible services (such as food, fibre and water), but equally important and less visible services, including cultural and social values.

The term ‘ecosystem services’ first appeared in the literature in the 1960’s and has since become widely used, both as a concept and as an approach to demonstrating, assessing and valuing the benefits provided to human society by nature<sup>4,27</sup>. Ecosystem services are commonly defined as ‘the characteristics, functions and processes of ecosystems that directly or indirectly contribute to human well-being’<sup>28</sup>. The ecosystems that provide these services are often referred to as ‘natural capital’.

The MEA defined four categories of ecosystems services<sup>15</sup>:

## 1. Provisioning services

Direct benefits secured by ecosystems such as secure water supplies, food, timber and fibre.

## 2. Regulating services

Direct benefits secured by ecosystems that regulate environmental processes such as flooding and erosion control, pollination and water quality.

## 3. Cultural services

Non-material benefits provided by ecosystems including cultural identity, spiritual values, cultural water flows, aesthetic values, recreation and aesthetic values<sup>23</sup>.

## 4. Supporting services

Processes that are essential to supporting other critical ecosystems services, such as soil formation, nutrient cycling and sustaining habitats to maintain biodiversity. These services contribute indirectly to human well-being by maintaining the essential processes and functions necessary for provisioning, regulating, and cultural services.

Most provisioning services are ‘private goods’. Most regulating services are ‘public goods’ and most cultural services are a mix of private and public goods<sup>15</sup>.

All four categories include water as an ecosystems service in itself (such as supply of drinking water from healthy catchments as a provisioning service). They also include water as a critical *enabler* of other ecosystems services (such as the protection of riparian zones to ensure water flows that maintain and restore wetlands, the delivery of water flows to rivers to support seasonal conditions for fish breeding and the provision of flows to maintain cultural connection and identity with rivers). The term *water-related ecosystems services* is used in this chapter to cover both water as an ecosystems service and the ecosystems services enabled by water through decisions that land managers and waterholders make to maintain natural capital.

Table 1 provides examples of water-related ecosystems services based on a literature review by Grizzetti et.al (2016)<sup>20</sup>.

**Table 1:** Examples of water-related ecosystem services.

<b>Ecosystems Service</b>	<b>Category</b>	<b>Type</b>	<b>Example</b>
1. Fisheries & Aquaculture	Provisioning	Direct	Fish catch
2. Water (drinking)	Provisioning	Direct	Water for domestic use
3. Water (non-drinking)	Provisioning	Direct	Water for agriculture
4. Biotic materials	Provisioning	Direct	Wood from riparian zones
5. Water purification	Regulating	Indirect	Removal of fertiliser residues
6. Erosion prevention	Regulating	Indirect	Vegetation stabilising river banks
7. Flood protection	Regulating	Indirect	Vegetation slowing water flow
8. Maintaining habitats	Regulating	Indirect	Habitats as fish nurseries
9. Spiritual value	Cultural	Non-use	Emblematic species & locations
10. Recreation	Cultural	Direct	Recreational fishing

## 2.1 Market-based instruments and ecosystems services

In the two decades since the release of the MEA, there has been a surge of interest in understanding how to put an economic value on ecosystem services as a precursor to developing market-based instruments (MBIs) to encourage investment in protecting, managing and restoring ecosystems services while addressing the related societal and human well-being needs.

In 2012, the United Nations (UN) established the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as an independent body to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. The IPBES now has close to 140 member countries. Also in 2012, the UN created the System of Environmental Economic Accounting (SEEA) which created the SEEA Ecosystem Accounting system (SEEA-EA) to value ecosystem services and natural capital in biophysical and, where there is a direct economic value of the ecosystems services, monetary terms. In support of SEEA, the Common International Classification of Ecosystem Services (CICES) was launched<sup>1</sup>. CICES standardizes the description of ecosystem services globally. The SEEA-EA provides a framework for integrating environmental and economic data. The IPBES produces scientific assessments based on this integrated data, informing policies related to biodiversity and ecosystems. The SEEA-EA is now being applied globally to better understand the interconnection between the natural environment and the human economy, with Australia as one lead implementer<sup>43,47</sup>.

Some have criticised the use of these accounting approaches to value ecosystems services in monetary terms as a too utilitarian commodification of nature resulting in the reward of overly-simplistic and averaged management practices that can hamper resilient outcomes and local ways of valuing nature. Others argue, however, that putting an economic value on ecosystems services is essential to enable effective policies, mechanisms and trade-off decisions. Linking the concept of ecosystems services with economic valuation and established assessment methods, the argument goes, has more resonance with decision makers<sup>10,14,15,48</sup>.

<sup>1</sup><https://cices.eu/>

A diverse range of MBIs has been developed to protect and enhance ecosystems services<sup>15,40</sup>. Pirard and colleagues group these into six categories, which we cluster here as two:<sup>34,35</sup>

### 2.1.1 Price mechanisms

- (i) **Regulatory price controls** such as taxes and levies
- (ii) **Voluntary price signals**, such as certification schemes (e.g. sustainably logged timber) that verify provision of ecosystems services to buyers of a product
- (iii) **Direct contracts** between those seeking to incentivise provision of ecosystems services and the providers (typically producers or landowners). These include *payments for ecosystems services* (PES). While PES mechanisms vary greatly in their degree of commodification and sources of funding<sup>22</sup>, they are mostly voluntary transactions in which natural capital managers, either individually or collectively, are compensated for the actions they take to protect or enhance well-defined ecosystems services<sup>10,18,40,45</sup>. PES mechanisms rarely function as markets and often require significant government, private sector or philanthropic catalytic support.

Examples in Australia of direct contracts include conservation agreements between state governments and landholders (e.g. the Queensland government's Land Restoration Fund<sup>ii</sup> discussed later in this chapter) and the Caring for Country (CfC) program, for which the Commonwealth government was the largest funder. CfC funded Indigenous Rangers to protect and enhance natural capital. While the ecosystems services are typically not well defined, the activities are, including coastal quarantine surveillance, fire management, weed and feral animal control, biodiversity conservation and wetland restoration. These activities are often implemented in Indigenous Protected Areas (IPAs)<sup>iii</sup>. As at June 2023, there were 82 IPAs in Australia covering 87 million hectares<sup>40</sup>.

- (iv) **Auctions** which can be seen as a variant of PES mechanisms where the price paid for provision of ecosystems services is set as a result of competition, usually as part of government programs. An example in Australia was the Victorian government's BushTender scheme in which "landholders competitively bid for government investment in return for providing improved biodiversity outcomes on their land. Successful tenders were those that offered the best environmental value for money, with successful landholders receiving periodic payments for management activities under a five-year agreement with the Victorian Government"<sup>iv</sup>.

### 2.1.2 Market mechanisms

- (i) **Markets for Products** where a product is traded with the direct or indirect intention of supporting conservation of natural capital (e.g. Kakadu plum (*Terminalia ferdinandiana*) harvested from the woodlands of northwestern Australia to eastern Arnhem Land).
- (ii) **Markets for Environmental Credits** where natural capital managers are issued with 'credits' (usually in the form of certificates) representing the quantum of ecosystems services they provide through specific actions/projects. These credits can then be traded in an open market with variable monetary value. Two current examples in Australia are (i) the Carbon Farming Initiative (CFI, discussed later in this chapter)<sup>24</sup>, which is a project-based, baseline-and-credit carbon offset certification scheme. Carbon reduction projects earn ACCUs (the Australian Carbon Credit Unit which represents one tonne of carbon dioxide

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<sup>ii</sup><https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund>

<sup>iii</sup><https://www.niaa.gov.au/indigenous-affairs/environment/indigenous-protected-areas-ipas>

<sup>iv</sup><https://www.environment.vic.gov.au/innovative-market-approaches/bushtender>

equivalent stored that would otherwise have been released into the atmosphere) which are purchased by the private voluntary market or by the Emissions Reduction Fund through a blind reverse auction process and (ii) the privately-managed Reef Credit scheme (discussed later in this chapter)<sup>v</sup>, where each Reef Credit is a tradeable unit representing 1kg of nutrient or 538kgs of sediment prevented from entering the Great Barrier Reef. Private brokers work with landholders to establish Reef Credit projects and secure buyers for the generated credits.

The terms ‘environmental credits’ and ‘environmental offsets’ are often mistakenly used interchangeably. Generally speaking, an **environmental credit** refers to a tradeable certificate which seeks to quantify an environmental outcome. For example, the World Economic Forum defines a ‘biodiversity credit’ as ‘a verifiable, quantifiable and tradeable financial instrument that rewards positive nature and biodiversity outcomes (e.g. species, ecosystems and natural habitats) through the creation and sale of either land or ocean-based biodiversity units over a fixed period.’ Once a particular claim is made by the purchaser of the credit (i.e. a claim by a company that it has invested in a credit that is supporting the restoration of a particular piece of habitat), it should be retired from circulation to avoid double claiming.

An **environmental offset** refers to an activity that is intended to ‘compensate’ for some form of environmental impact by the party who purchases it (for example a carbon offset is intended to ‘compensate’ for the equivalent volume carbon or carbon equivalent emitted by the purchaser). In this sense, there is a specific relationship between the impact and the offset. An offset may be underpinned by a credit of some sort (for example a ‘carbon credit’ or a ‘water quality credit’). While the credit itself is tradeable, once it is used to ‘compensate’ for another activity, it is deemed an offset and must be retired from circulation, again to avoid double claiming. International best practice holds that environmental offsets should only be used in accordance with the mitigation hierarchy. This involves ‘first avoiding potential impacts on biodiversity, minimizing unavoidable impacts and restoring biodiversity damaged by any project, before any remaining impacts are offset. Those offsets must typically benefit the same biodiversity features as those affected – that is, they must be ‘like-for-like’. This is important, especially when the requirement for an offset is because the affected species or ecosystem is already threatened’.<sup>26</sup>

It is also important to differentiate between ‘bundling’ and ‘stacking’ of environmental credits. **Credit bundling** is where multiple ecosystems services, that *cannot* be disentangled, are bundled together as a combined ‘ecosystem credit’. An example in Queensland is the Land Restoration Fund, which pays for bundled ‘co-benefits’ (First Nations, environmental and socioeconomic co-benefits) delivered on top of carbon farming projects. **Credit stacking** is where multiple ecosystems services (e.g. carbon sequestration and biodiversity enhancement) are being delivered that *can* be disentangled, and so they are ‘stacked’ and credited separately. A single scheme can receive payments from more than one buyer for the various ecosystems services it provides<sup>17,46</sup>. Bundling and stacking of environmental credits is becoming more common in MBIs but it also comes with risks, given the complex trade-offs that can exist between ecosystems services (e.g. between enhancing biodiversity and maximizing carbon sequestration) sometimes resulting in perverse outcomes. Some argue bundling and stacking have advantages over credits for single environmental services, as paying for multiple ecosystem services might increase the chances of more-robust environmental outcomes (e.g. wetland restoration instead of just riparian revegetation)<sup>46</sup>.

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<sup>v</sup><https://eco-markets.org.au/reef-credits/>



### 2.1.3 New market-based instruments

New MBIs continue to emerge globally as they are increasingly seen to (i) be cost-effective ways of supporting ecosystems services (ii) encourage innovation and (iii) unlock new sources of funding for protection of natural capital and ecosystems services. An example in Australia is the recently-legislated Nature Repair Market. In December 2022, parties to the global Convention on Biological Diversity (including Australia), adopted the *Kunming-Montreal Global Biodiversity Framework* (KMGBF)<sup>vi</sup>. The framework establishes the global biodiversity action agenda for the next decade, including:

- (i) halting the extinction of threatened species,
- (ii) ensuring at least 30 per cent of areas of degraded terrestrial inland water, and coastal and marine ecosystems are under effective restoration by 2030,
- (iii) reducing the rates of introduction and establishment of invasive alien species by at least 50 per cent, by 2030 (known colloquially as ‘30x30’)
- (iv) reducing pollution impacts on biodiversity
- (v) minimising the impact of climate change on biodiversity

At the convention, Australia committed to mobilise additional domestic resources for nature and put policies in place that help to unlock private financial flows. The subsequent *Nature Repair Act 2023* (Cth), which came into effect in December 2023, establishes the Nature Repair Market (a market for environmental credits discussed later in this chapter) to mobilise private investment in biodiversity projects that collectively contribute to meeting the KMGBF commitments.

It is important to note that MBIs are not a ‘silver bullet’ for protecting and enhancing ecosystems services. They have a role to play, but alongside enforceable environmental laws (such as providing legal protection for critically endangered natural capital) and other regulatory mechanisms. Furthermore, to be effective, MBIs need to be locally relevant and embedded in sound regulatory frameworks to avoid perverse outcomes. Experience has also shown that MBIs can be difficult to implement where there is (i) a lack of clarity on property rights, (ii) uncertainty around the additionality of the ecosystems services provided (iii) a lack of robust methodologies to ensure the integrity of the market mechanism and (iv) no clear market demand (which is discussed in more detail in section 3.4).

## 2.2 Actions enabled by market-based instruments

Rigonato et al. (2023) evaluated 236 research papers that reported provision of water-related ecosystems services in response to a wide range of MBIs<sup>38</sup>. They identify three types of action taken by land managers in response to those MBIs:

- 1. Native vegetation conservation**, with the water-related ecosystems services provided including protecting and enhancing water quality, securing water for communities and economic activities and buffering water supply through extreme events such as drought. One example cited was from a Monarch Butterfly Biosphere Reserve program in Mexico helped to avoid deforestation, maintaining water dynamics and trout production (important for local communities), increase the flow of tourists to the reserve and led to forest recovery in areas critical for the cycle of the butterfly.

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<sup>vi</sup><https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222>

- 2. Native vegetation restoration**, with the water-related ecosystems services provided including improving both water quality and quantity, wetland restoration and increasing local biodiversity. One example from Brazil incentivised forest restoration in a small watershed that resulted in improved water quality and increased functional connection for wildlife between the landscape's forest patches.
- 3. Implementation of better agricultural practices**, with the water-related ecosystems services provided including reduced flow of pollutants and sediments to water bodies, regulating aquifer recharge and discharge and optimizing the use of freshwater flows. Conservation agriculture (CA) techniques fit into this definition. CA involves a range of integrated agronomic practices (especially reduced or no-tillage, permanent organic soil cover by retaining crop residues, and crop rotations, including cover crops) that increase carbon stocks in soil, reduce runoff and waterway sedimentation and reduce chemical use<sup>32</sup>. While large areas of conservation agriculture have been implemented throughout the developed world driven by long-term sustainability (notably soybean production in Brazil and wheat-legume rotations in Australia), the combination of incentives and regulatory mechanisms have been used successfully with small scale farming systems throughout the developing world to deliver improvements in water quality in catchments (see examples from Malawi<sup>7</sup> and Eastern Indonesia<sup>33</sup>).

While all three types of action are essentially land management practices, each can equally represent critical water management practices that protect and enhance ecosystems services, such as allocating water for wetland restoration or selling water rights to buyers who need to provide additional environmental flows in rivers.

## 2.3 First Nations and ecosystems services

Given that 57% of Australia's landmass is owned, managed, or has some form of right recognised for First Nations, it is inevitable that the growing ambitions to protect and restore ecosystems services (such as meeting the intent of the Kunming-Montreal Global Biodiversity Framework), will intersect substantially with First Nations rights and interests. Over the past two decades, implementation in Australia of government and private ecosystems services schemes based on a range of MBIs has produced a body of experience on how these approaches fit with First Nations values. Two larger challenges emerge from this body of experience that are relevant for future implementation of ecosystems services schemes in Cape York:

### 2.3.1 Integrating Cultural Ecosystems Services into MBIs.

The SEEA-EA defines Cultural Ecosystems Services (CES) as "the experiential and intangible services related to the perceived or actual qualities of ecosystems whose existence and functioning contributes to a range of cultural benefits". From the perspective of Australian First Nations peoples, the concept of CES is inextricably linked with the spiritual, physical and cultural well-being that flows from First Nations profoundly-held connection to country. CES have proven to be the most difficult of the four types of ecosystems services to integrate into MBIs<sup>1,16,23,42</sup>.

There is a significant body of work emphasizing that First Nations peoples have been, and remain, central to the maintenance of ecosystems in Australia and that caring for Country is critical for First Nations' spiritual, physical and cultural wellbeing. Caring for Country is much more than actions taken to deliver discrete biophysical outcomes. It encompasses deep cultural obligations to care for sacred sites, stories and food sources and to ensure spiritual revival and connection with ancestors for the generations to come. It is a reciprocal relationship between people and Country; a notion that 'if you look after Country, Country will look after you'<sup>6,39,56</sup>.

Preece et al. (2016) comment that this reciprocal relationship is the main driver behind their high valuation of ecosystems services in Cape York. “The value of cultural ecosystem services, such as the deeply held connection to country that Australian Indigenous people have, is greater than or at least comparable to regulating or provisioning services”<sup>36</sup>.

Pyke et al. (2018)<sup>37</sup> illustrate this two-way relationship through a study of wetlands management by the Bardi Jawi and Nyul Nyul peoples of north-west Western Australia. Their management practices include maintaining particular riparian and aquatic plant assemblages, physically removing wetland plants, controlling vegetation through fire (which increased or sustain flows into surface water bodies and flushed out sediment) and physically removing sediment from small pools and springs to maintain water quality (a practice which can be at odds with ecologists who perceive removing sediment and riparian vegetation as ecologically disruptive). These intentional practices “are not solely resource-directed but inseparably related to cultural obligations, ways of life and spiritual beliefs. Both Bardi Jawi and Nyul Nyul traditional owners described how sometimes wetland maintenance was not considered a discrete ‘activity’ but occurred as a part of life”.

This reciprocal relationship between First Nations and Country (or the two-way flow of cultural ecosystems services) challenges the definitions of ecosystem services in the MEA (2005) and the SEEA-EA as ‘a one-way benefit flow from ecosystem assets to people’<sup>30,40</sup>.

Normyle et al. (2023)<sup>30</sup> reviewed 48 publications that define and measure CES from the perspective of Indigenous people and concluded that the benefits arising from CES:

- (i) often represent a shared, community experience which differs from western conceptions of value which emphasise the individual. Accounting for and rewarding collective notions of value is a challenge for current ecosystems accounting systems.
- (ii) are often overlapping or intertwined, challenging current ecosystems accounting systems where interactions of Indigenous people with ecosystems can result in multiple two-way provisioning and cultural ecosystems services.

These observations are potentially important for Cape York in that, increasingly, environmental valuations are being incorporated into ecosystems service schemes in Australia and there is growing interest in valuation and incorporation of CES into MBIs (for example Normyle et al. (2022)<sup>29</sup> and ecosystems services valuations (for example Sangha et al. (2017)<sup>42</sup>. The Queensland Land Restoration Fund already makes provisions to value First Nations co-benefits in carbon farming projects through estimates of the cost of delivering those benefits through other means.

### 2.3.2 Enabling First Nations-led ecosystems services schemes

The reciprocal relationship between First Nations and Country has had a profound effect on the development of First Nations-led ecosystems services schemes in Australia, with customary burning of tropical savannas being a prominent and well documented example<sup>2,19,39,41,51,52</sup>.

In Arnhem Land, customary burning of savannas in the early- and mid-dry season was practiced for millennia. These cool fires, that generally go out overnight, created a patchily burnt landscape with natural firebreaks that limited the extent of destructive wildfires in the hot late-dry season<sup>2</sup>. With the depopulation of large areas of the Arnhem Land Plateau, the lack of customary burning meant that, by the 1990s, destructive late-dry season fires became a recurring annual event.

In 1997, the West Arnhem Land Fire Abatement (WALFA) project was established to try to reduce the incidence of destructive late season wildfires through the reintroduction of customary burning earlier in the season. WALFA was a collaboration between Western scientists, five emerging Aboriginal ranger groups and traditional owners and was funded by the Natural Heritage Trust and the Tropical Savannas Management Cooperative Research Centre from 1995–2009. During this period, the collaboration between western and First Nations' knowledge systems established the methods for re-introduction of customary burning and the comprehensive scientific evidence to quantify the contributions made by customary burning to both biodiversity conservation and carbon emissions reduction.

This foundational work led to a new funding arrangement for WALFA. In 2006, the energy company Conoco Phillips, in exchange for a licence to liquefy natural gas for export, agreed to offset its industrial carbon emissions by providing long-term (17 years) indexed funding of \$1 million per year to maintain annual controlled burning across 28,000 km<sup>2</sup> of western Arnhem Land.

The foundational work of WALFA also contributed to the 2012 acceptance of customary savanna burning as an approved carbon abatement methodology by the Australian government under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth), which subsequently led to the registration of over 70 savanna-burning projects across northern Australia<sup>2</sup>. It also led to WALFA registering as a First Nations not-for-profit company in 2013, eligible to earn and sell ACCUs.

As opportunities were identified to use carbon-offsetting to implement customary savanna burning across all of Arnhem Land, WALFA became Arnhem Land Fire Abatement (ALFA). ALFA now generates ACCUs from 6 'deliberate and nuanced' customary savanna burning programs, covering 87,000 km<sup>2</sup> of country and representing 11 Aboriginal ranger groups consisting of Traditional Owners and their families. Between 2015 and 2022, these programs generated 5.3 million ACCUs.<sup>vii</sup> Revenue from the sale of ACCUs is reinvested back into the Aboriginal ranger groups to provide local employment while preserving culture and the environment.

Evaluating the impact of WALFA/ALFA customary burning over a 12 year period, Evans and Russell-Smith (2019)<sup>19</sup> concluded "the regional fire regime has transitioned from late dry season, wildfire-dominated to being characterised by a majority of fires occurring as small, early dry season prescribed burns. Although overall area burnt has not significantly decreased, most ecological threshold metrics have improved...".

The evolution of customary savanna burning in Arnhem Land, from a project to a large program funded by carbon credits, provides valuable insights about processes and practices that will likely have relevance to implementation of similar ecosystems services schemes in Cape York, notably the new Nature Repair Market. These insights include:

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<sup>vii</sup><https://www.alfant.com.au/>

- (i) **It took time to develop the foundational science.** It took a long collaboration between First Nations peoples and western scientists to blend western and First Nations' knowledge systems, develop the burning methods and compile the scientific evidence of the benefits of customary savanna burning that was compelling enough to enable carbon trading. ALFA projects today are only able to earn ACCUs because of the integrity of the Savanna Fire Management (SFM) method, which is based on this long collaboration and decades of peer-reviewed scientific research.
- (ii) **It took time to develop essential relationships.** Just to commence the program of customary burning, traditional owners of numerous discrete land estates had to voluntarily join their lands together like a 'savanna-burning environmental commons'. To achieve this, "extensive and expensive consultations were conducted with key members of about 300 land-owning groups to garner their free, prior and informed consent to savanna burning on their land"<sup>3</sup>. Maintaining those relationships remains a core component of maintaining the customary savanna burning program.
- (iii) **It took time to build critical organisational capacity.** ALFA operates in a complex context, managing across two domains - First Nations and the non-indigenous corporate and government sectors. It engages with an ecosystems services mechanism that requires a high degree of technical capability and rigorous monitoring and reporting requirements. It works within a changing regulatory environment. It also has to manage customary burning across a huge area of remote savannas within a fixed time window. Building these complex capabilities with a small team working across two domains takes time.
- (iv) **Early financial support was pivotal.** When ALFA was formed in 2015, it secured ACCUs for retrospective abatements back to 2011. This support gave ALFA the leeway to do points (ii) and (iii) above. Early financial support was also critical in funding the foundational science described in point (i).

# Opportunities in Cape York

Ecosystem services and associated MBIs have developed apace over the last decade in particular. The most advanced of these instruments and associated markets are linked to carbon abatement and/or emissions avoidance. Some of these carbon schemes, standards and methods<sup>i</sup> are legislative in nature and generate credits that can be used for compliance purposes (that is, to satisfy a regulatory requirement to reduce and/or offset greenhouse gas emissions with approved credits) as well as to meet voluntary net-zero targets. Others are non-legislative, with demand for credits from these schemes driven by the voluntary market.

Local and international carbon markets have developed in response to international climate negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) and associated national laws and policies. Further, the UNFCCC's 30-year history, the prominence of annual meetings of the Conference of the Parties (COPs), media attention and growing consumer awareness have meant that an increasing number of businesses have voluntarily set net-zero targets which they are able to meet through a combination of emission reductions and carbon credits and offsets.

Against this backdrop, it is not difficult to see why carbon markets and associated investment into them have evolved much more rapidly than MBIs linked to different ecosystem services. There are, however, signs that both state and non-state actors are beginning to understand that nature – ecosystems, species, waterways – are under serious threat and that failure to change course will have catastrophic consequences for the environment and humans.

This has resulted in growing demand for Nature-based carbon projects that not only sequester carbon, but generate verified social and environmental 'co-benefits'. It has also resulted in a nascent but growing body of (predominantly non-legislative) schemes, standards and methods for Nature-based ecosystems services schemes (that focus specifically on improving the health of one or more ecosystem service, generating verified nature credits). While demand for standalone nature credits is relatively small, it is plausible that this will change in the coming decade in response to growing awareness about the importance of restoring and protecting nature, and more specifically to emerging disclosure frameworks such as the TNFD.

This section of the chapter sets out current and emerging opportunities – both legislative and non-legislative – that potentially could be accessed by First Nations people in Cape York to create economic benefits for protecting and enhancing water-related ecosystems services (with a focus on water allocations under the CYPHA reserve).

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<sup>i</sup>The following definitions apply for the purposes of this section:

**Scheme** refers to the collection of documents and associated governance mechanisms (for example standards, methodologies and the relevant administrative body) that together facilitate a MBI.

**Project** refers to different instances of implementing a MBI within a specific context.

**Method** or **Methodology** is a technical instrument that sets out the specific rules that apply to particular types of projects. Methods usually include accounting or equivalent rules which set out how carbon sequestration or habitat improvement is to be measured and accounted for over time.

**Standard** refers to the overarching rules that apply to projects developed under each relevant method or methodology. In some instances, there may be supplementary standards that can be implemented (for example social and cultural standards) in addition to the core standard. The equivalent in a legislated framework is a statute (such as the CFI Act).

## 3.1 Legislative schemes applicable in Queensland

### 3.1.1 Carbon-based ecosystems services schemes

#### Introduction

As described earlier, landscapes generate multiple ecosystem services, of which carbon sequestration is but one, discrete service. While it is likely that a range of environmental markets connected to various ecosystem services will develop over the next decade, a significant amount of current private investment for various forms of landscape conservation and repair is linked to carbon credits and markets.

Carbon markets can be divided into compliance markets and voluntary markets. Compliance carbon markets are driven by legislation which applies to certain entities (for example the Safeguard Mechanism in Australia)<sup>ii</sup>. These laws place ‘a requirement on industry to reduce emissions (demand side) and allows for the purchase and/or trading of carbon emissions through the creation of carbon credits (supply side)<sup>iii</sup>. Voluntary carbon markets are driven by entities (often businesses) that choose to invest in carbon projects, credits and offsets to in order to meet voluntary net-zero targets.

Of particular relevance to this chapter is the growing demand for high-quality credits associated with verifiable environmental, social and cultural ‘co-benefits’ of carbon credit schemes<sup>iv</sup>. With this in mind, it is important to consider potential existing and future opportunities for First Nations peoples to protect and restore water-dependent biodiversity in the Cape York region under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) (CFI Act)<sup>v</sup>.

The CFI Act is a piece of Commonwealth legislation that allows for the development and adoption of carbon farming methods and the registration of associated projects. Adopted in 2011, it is an example of a MBI which helps to create a market for carbon credits and carbon offsets. A significant number of projects have been developed under this Act, a full list of which is available in the project register<sup>vi</sup>.

Carbon farming methods fall into two broad categories: those that remove greenhouse gas emissions (GHG) from the atmosphere and those that avoid or prevent the release of GHG emissions (although some do both). Methods currently cover projects across agriculture, energy efficiency, landfill and waste, mining oil and gas, transport and vegetation<sup>vii</sup>.

Carbon farming projects that are developed in accordance with the rules set out in a particular method, the CFI Act and the CFI Rule<sup>viii</sup> are eligible for approval and registration by the Clean Energy Regulator (CER). Registered projects that follow the necessary requirements can claim Australian Carbon Credit Units (ACCUs), which are a type of carbon credit. One ACCU is

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<sup>ii</sup>National Greenhouse and Energy Reporting Act 2007 (Cth), See also for further information:

<https://cer.gov.au/schemes/safeguard-mechanism: :text=The%20Safeguard%20Mechanism%20requires%20Australia%27s,must%20manage%20any%20excess%20emissions> (accessed 24 April 2024).

<sup>iii</sup>[https://carbonmarketinstitute.org/app/uploads/2021/06/CMI\\_Fact\\_Sheet\\_2\\_Carbon-Markets-101.pdf](https://carbonmarketinstitute.org/app/uploads/2021/06/CMI_Fact_Sheet_2_Carbon-Markets-101.pdf) (accessed 24 April 2024).

<sup>iv</sup>See for example: Forest Trends’ Ecosystem Marketplace. 2023. State of the Voluntary Carbon Markets 2023. Washington DC: Forest Trends Association.

<sup>v</sup><https://www.legislation.gov.au/C2011A00101/latest/text> (accessed 28 April 2024)

<sup>vi</sup><https://cer.gov.au/markets/reports-and-data/accu-project-and-contract-register?view=Projects> (accessed 24 April 2024)

<sup>vii</sup>See the following link for a list of methods: <https://cer.gov.au/schemes/australian-carbon-credit-unit-scheme/accu-scheme-methods> (accessed 8 April 2024).

<sup>viii</sup>Carbon Credits (Carbon Farming Initiative) Rule 2015 (Cth).

equivalent to one tonne of carbon dioxide (CO<sub>2</sub>) or carbon dioxide equivalent (CO<sub>2</sub>e). Projects are subject to permanence obligations, which means that they must be maintained for the relevant permanence period (either 25 or 100 years)<sup>ix</sup>.

### **Eligibility and financial viability**

When considering whether a carbon-related project could generate revenue in the Cape York region linked to water-related ecosystems services, it is necessary to consider eligibility criteria stipulated under the CFI Act, eligibility criteria stipulated under a given method, and the financial viability of the proposed project. These will be briefly discussed in turn.

First, the CFI Act sets out specific eligibility criteria that apply to all methods and projects. These include, but are not limited to, a requirement that the project be new<sup>x</sup>; a requirement that the project is not otherwise required to be developed by law<sup>xi</sup>; and the necessary legal right to carry out the project<sup>xii</sup>. The legal right to carry out the project can cover a range of matters and includes the rights to the carbon associated with the project (for example the carbon sequestration rights in the land on which a vegetation project is to be undertaken, which is discussed in more detail below)<sup>xiii</sup>.

Second, each method is unique and includes specific rules for that method about how it is to be developed, as well as up front eligibility criteria. This means that the method can only be used in circumstances where these criteria are met. Criteria can include, for example, the presence of a physical barrier preventing the tide from inundating a coastal floodplain<sup>xiv</sup>, a maximum amount of average yearly rainfall<sup>xv</sup>, or a requirement that the project be undertaken in a particular geographic region<sup>xvi</sup>.

Third, the costs associated with developing a project under a particular method will also vary which, together with other factors, will affect its financial viability. Financial modelling for a particular project can help project proponents understand how much a project will cost to develop and maintain over its permanence period and the minimum price per ACCU required to generate the desired profit (and whether the ACCU price needs to be supplemented by some other form of revenue, such as a government grant).

### **Land tenure and carbon sequestration rights**

Another relevant consideration is the relationship between land tenure and carbon sequestration rights (also known as carbon abatement rights). This is because it is necessary to possess these rights in order to qualify as a project proponent under the CFI Act and in turn take direct custody of

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<sup>ix</sup>CFI Act, s. 86A.

<sup>x</sup>CFI Act, s. 27(4A)(a).

<sup>xi</sup>CFI Act, s. 27(4A)(b).

<sup>xii</sup>CFI Act, s. 5 (definition of 'project proponent').

<sup>xiii</sup>CFI Act, s. 43.

<sup>xiv</sup>Carbon Credits (Carbon Farming Initiative – Tidal Restoration of Blue Carbon Ecosystems) Methodology Determination 2022 (Blue Carbon Method).

<sup>xv</sup>Carbon Credits (Carbon Farming Initiative – (Carbon Farming Initiative) (Reforestation by Environmental or Mallee Plantings – FullCAM) Methodology Determination 2014 (Environmental Planting Method). See cl. 2.3(6), (7) according to which mallee eucalypt plantings are only permissible in areas that receive 600 millimetres or less of long-term average rainfall, unless the planting meets the requirements for a specific calibration.

<sup>xvi</sup>For example the Carbon Credits (Carbon Farming Initiative – Savanna Fire Management – Sequestration and Emissions Avoidance) Methodology Determination 2018 (sequestration and emissions avoidance method) and Carbon Credits (Carbon Farming Initiative – Savanna Fire Management – Emissions Avoidance) Methodology Determination 2018 (emissions avoidance only method) (Savanna Burning Methods). These Methods only apply in Northern Australia



ACCUs generated from any such project<sup>xvii</sup>. There are a number of circumstances in which Indigenous people clearly own the carbon sequestration rights associated with a particular property. These include where they:

- (i) have freehold title
- (ii) have a freeholding lease
- (iii) have exclusive native title<sup>xviii</sup>

over a particular piece of land.

Where First Nations people have only non-exclusive native title, they do not own the carbon sequestration rights for the land in question. It is possible, however, for non-exclusive native title holders (or indeed any First Nations person) to have carbon sequestration rights transferred to them under a contract or deed, to then act as project proponent and to directly benefit from the sale of ACCUs. It is also possible to enter into other benefit sharing arrangements with the owner of the land (for example the Crown). Specialist legal advice should be sought on a case-by-case basis about these opportunities.

## Methods

This report does not provide an in-depth analysis of all carbon farming methods that could apply in the Cape York region<sup>xix</sup>. Rather, it touches on three methods that either directly or indirectly relate to water and notes whether they could apply in the area.

### (i) Blue Carbon Method

Cape York includes several thousand kilometres of coastline and coastal floodplains. As such, it is worth considering the potential applicability of the *Blue Carbon Method*<sup>13</sup> under the CFI Act<sup>xx</sup>.

Briefly, a significant amount of infrastructure has been constructed in coastal areas of Australia to drain the floodplain and to prevent the tide from inundating adjacent floodplains. The construction of such infrastructure has resulted in the loss of tidally dependent ecosystems such as saltmarshes and mangroves and has allowed the land to be reclaimed and used for other purposes, including agriculture.

The Blue Carbon Method may apply in circumstances where such infrastructure exists and can be modified or removed to allow the tide to be reintroduced and in turn re-stimulate the growth of the lost coastal 'blue carbon' wetland. It does not apply in the absence of such infrastructure and where a wetland is intact (that is, it is not an 'avoided deforestation' method).

While there is significant blue carbon stock in the form of intact mangroves in the Cape York region<sup>xxi</sup>, it would appear that there are relatively few tidal barriers in place<sup>xxii</sup>. As such, the application of the Blue Carbon Method in this region is likely to be limited. The development of a locally specific blue carbon method may, however, yield more opportunities.

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<sup>xvii</sup>CFI Act, s.5 (definition of project proponent) and s.43 (carbon sequestration rights).

<sup>xviii</sup>Under the CFI Act, the Registered Native Title Body Corporate (RNTBC) is deemed to hold these rights.

<sup>xix</sup>for a description of all current methods under the CFI, see [https://www.dcceew.gov.au/climate-change/emissions-reduction/emissions-reduction-fund/methods#toc\\_0](https://www.dcceew.gov.au/climate-change/emissions-reduction/emissions-reduction-fund/methods#toc_0)

<sup>xx</sup><https://www.legislation.gov.au/F2022L00046/asmade/text>

<sup>xxi</sup>[https://www.bluecarbonlab.org/wp-content/uploads/2020/07/QLDBlue\\_FinalReport\\_June2020.pdf](https://www.bluecarbonlab.org/wp-content/uploads/2020/07/QLDBlue_FinalReport_June2020.pdf)

<sup>xxii</sup>based on analysis by Restore Blue.

Finally, it is important to note that the intertidal zone is not subject to exclusive native title. Rather, the High Court has held that it may only be subject to non-exclusive native title<sup>xxiii</sup>. As noted above, this has implications for ownership of the carbon sequestration rights. To reiterate, however, it is possible for these rights to be transferred from one party to another under a deed. And again, where First Nations people have a freehold lease or freehold title over land that is eligible under this method, they will also own the rights to the carbon<sup>xxiv</sup>.

## (ii) Environmental Planting Method

The *Environmental Planting Method*<sup>11</sup> under the CFI Act<sup>xxv</sup> involves planting a mixture of native species, or mallee trees (although the latter would not be suitable in Cape York<sup>xxvi</sup>). ACCUs are generated as a consequence of the carbon sequestered in the growing vegetation.

The planting must be new, permanent and undertaken on a site that had not been forested during the five years prior to commencement<sup>xxvii</sup>. Further, the site may not contain woody biomass or an invasive native scrub species that need to be cleared in order for planting to occur, other than known weed species required or authorised by law to be cleared<sup>xxviii</sup>. Relevantly, Cape York Natural Resource Management (a not-for-profit organisation and registered charity) has indicated that this combination of eligibility criteria is 'rare' in the region<sup>xxix</sup>, which in turn suggests that opportunities under this method are likely to be limited.

It is important to note that while this method is due to expire in September 2024, the Australian Government has indicated that it will be prioritising an updated, replacement version<sup>xxx</sup>.

## (iii) Soil carbon methods

There are currently two Soil Carbon Methods: the *Carbon Credits (Carbon Farming Initiative – Estimation of Soil Organic Carbon Sequestration using Measurement and Models) Methodology Determination 2021* (Organic Soil Carbon Method)<sup>xxxi</sup> (see CER (2020)<sup>12</sup>) and the *Carbon Credits (Carbon Farming Initiative – Estimating Sequestration of Carbon in Soil Using Default Values) Methodology Determination 2015* (Default Values Soil Carbon Method)<sup>xxxii</sup>.

Both the Organic Soil Carbon Method and the Default Values Soil Carbon Method require an authorised change in agricultural practice which can reasonably be expected to increase the

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<sup>xxiii</sup> *Commonwealth of Australia v Yarmirr; Yarmirr v Northern Territory* [2001] HCA 56. However note that non-exclusive native title rights may co-exist with rights under Aboriginal land rights legislation. See for example *Northern Territory of Australia & Anor v Arnhem Land Aboriginal Land Trust & Ors* (2008) HCA 29.

<sup>xxiv</sup> Subject to any law to the contrary, or in circumstances where they have chosen to transfer these rights to another party.

<sup>xxv</sup> <https://www.legislation.gov.au/F2014L01212/2015-07-01/text> accessed 28 April 2024.

<sup>xxvi</sup> Environmental Planting Method, s. 2.2.

<sup>xxvii</sup> Environmental Planting Method, s. 2.3(4).

<sup>xxviii</sup> Environmental Planting Method, s. 2.3(3).

<sup>xxix</sup> <https://capeyorknrm.com.au/ecb/carbon#:text=The%20Permanent%20Environmental%20Plantings%20method,must%20not%20have%20been%20cleared.> (accessed 15 April 2024).

<sup>xxx</sup> [https://www.dcceew.gov.au/climate-change/emissions-reduction/emissions-reduction-fund/methods/reforestation-by-environmental-or-mallee-plantings-fullcam#toc\\_1](https://www.dcceew.gov.au/climate-change/emissions-reduction/emissions-reduction-fund/methods/reforestation-by-environmental-or-mallee-plantings-fullcam#toc_1) (accessed 15 April 2024)

<sup>xxxi</sup> <https://www.legislation.gov.au/F2021L01696/asmade/text> accessed on 28 April 2024

<sup>xxxii</sup> <https://www.legislation.gov.au/F2015L01163/latest/text> accessed 28 April 2024

amount of carbon that is stored in affected soil. Both authorise ‘new irrigation activities’, but the way in which this term is defined is different in each method.

The Organic Soil Carbon Method defines it to mean ‘new or additional irrigation applied to land in a project area for a project using water obtained through irrigation efficiency savings made after the date on which the [project was approved by the CER]<sup>xxxiii</sup>. The Default Values Soil Carbon Method includes a more involved definition, but leaves room for the possibility of new irrigation involving something other than water linked to irrigation efficiency savings. Specifically, it is possible under this method to use water to irrigate a site as long as the relevant water access entitlement was obtained after the project application was submitted to the CER for assessment under the CFI Act and a minimum of 2 megalitres of water per hectare per year is applied to the project site<sup>xxxiv</sup>.

### **Implications for water-related ecosystems services in Cape York**

Two of the CFI methods considered here (the Blue Carbon Method and Environmental Planting Method) are likely to have limited application in the Cape York region. There may, however, be localised instances where the Soil Carbon Methods can be applied, but likely related to intensive rather than extensive systems, such as for irrigated perennial forage banks where there is a verifiable improvement in soil carbon. In all cases, however, advice about the possible applicability of these methods (including financial implications) should be sought on a case-by-case basis.

In principle, there might be instances where some methods (such as the Environmental Planting Method) benefit from the use of a CYPHA water allocation (such as ensuring establishment of native vegetation to protect riparian areas and wetlands). It may also be possible to use a water allocation that is not linked to irrigation efficiency savings for a soil carbon project under the Default Values Soil Carbon Method. This is of course subject to meeting all necessary requirements under that method, which amongst other things would require expert advice about the likelihood of a project increasing soil carbon sequestration in the Cape York region (taking into account relevant climatic factors, including existing soil types, rainfall and so on).

It is worth noting here that a recent review by Henry (2023)<sup>21</sup> concluded that while “altering the stocking rate, duration or intensity of grazing to promote soil vegetation cover and/or improve soil health” is an eligible activity under the Organic Soil Carbon method, “prospects for livestock producers in Australia’s north receiving substantial ACCUs for this activity do not look promising” as the impact of these activities on soil organic carbon is constrained by climate and soil factors. One activity that Henry (2023) does highlight, however, which has potential to provide benefits for cattle producers and eligibility for ACCUs is the establishment of permanent, irrigated fodder banks for supplementary feed, especially if there is documented evidence linking the fodder banks to carbon sequestration in the soil. Even where this is the case, however, the intensity of management and high initial investment required, mean that irrigated fodder banks will mostly only be financially viable for cattle fattening rather than breeding enterprises, and hence will likely have limited applicability in the Cape York region.

Two key observations follow from these findings. The first is the importance of developing locally relevant methods under the CFI Act. That is, methods that clearly enable Traditional Owners in the Cape York region to develop and benefit from carbon farming projects on their Country. Water-related methods that are currently being investigated and which may have greater relevance in Cape York include the ‘feral-ungulate method to reduce greenhouse gas emissions from wetlands’. The presence of pigs, buffalo and cattle in wetlands changes vegetation cover, disturbs soils, increases erosion, reduces water quality, impacts biodiversity, and increases greenhouse gas release through trampling of wetland substrates. There is growing interest in

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<sup>xxxiii</sup>Organic Soil Carbon Method, cl.5 (definitions).

<sup>xxxiv</sup>The Default Values Soil Carbon Method, cl.34.

developing a new carbon abatement method under the CFI related to feral ungulate control.

The second observation is the importance of actively developing additional, non-carbon related sources of funding – both public and private – to support the conservation and restoration of water-dependent ecosystems and associated services in Cape York. This is particularly true in light of the fact that most private investment available for ecosystem-related protection and restoration is currently linked to carbon-based ecosystems services schemes and credits.

## 3.1.2 Nature-based ecosystems services schemes

### 3.1.2.1 The Nature Repair Act 2023 (Cth)

#### Introduction

The *Nature Repair Act 2023* (Cth) (NRA)<sup>xxxv</sup> was adopted by the Australian Parliament in late 2023. While the Act will not be fully operational until the delegated legislation has been adopted (including methodologies to support projects), it is an example of a MBI which is intended to create a market for biodiversity credits.

While its structure is similar to that of the CFI Act (and contains some similar concepts), its objects are quite different. These objects include, amongst other things, ‘to promote the enhancement and protection of biodiversity in native species in Australia’, to ‘support and promote the unique role of Aboriginal persons and Torres Strait Islanders in enhancing and protecting biodiversity in native species in Australia’ and to ‘enable the use of the knowledge of Aboriginal persons and Torres Strait Islanders related to biodiversity in native species in Australia, guided by the owners of that knowledge’<sup>xxxvi</sup>.

The NRA aims to create ‘biodiversity projects’ that ‘enhance and protect’ biodiversity in native species<sup>xxxvii</sup>. Each project that is to be registered must nominate one of three permanence periods: 25 years, 100 years, or the period specified in the relevant method<sup>xxxviii</sup>. The project proponent of each registered project is eligible to be issued with a single, tradeable ‘biodiversity certificate’<sup>xxxix</sup> which may not be used as a biodiversity offset to meet any compliance obligation in Australia<sup>xl</sup>.

It is worth noting that Australia’s central piece of environmental legislation, the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act), has been subject to extensive criticism and review and will likely be replaced by new legislation as part of the current Commonwealth government’s ‘Nature Positive’ plan<sup>xli</sup>. It is, as yet, unclear how this new legislation will interact with the NRA (beyond a prohibition on the use of biodiversity certificates to meet any offsetting obligations imposed on a developer who has obtained an approval under any replacement statute).

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<sup>xxxv</sup><https://www.legislation.gov.au/C2023A00121/asmade/text> accessed 28 April 2024

<sup>xxxvi</sup>Nature Repair Act, s. 3(a), (d).

<sup>xxxvii</sup>Nature Repair Act, Part 2.

<sup>xxxviii</sup>Nature Repair Act, s. 34.

<sup>xxxix</sup>Nature Repair Act, s. 67.

<sup>xl</sup>Nature Repair Act, s. 76A and definition of ‘environmental offsetting measure’ in s.7.

<sup>xli</sup><https://www.dcceew.gov.au/environment/epbc/epbc-act-reform> (accessed 24 April 2024).

## Eligibility

Much like the CFI Act, the NRA requires biodiversity projects to be underpinned by, and comply with, a specific method<sup>xlii</sup>. At the time of writing, no such methods had been adopted, although it is conceivable that future methods relating to water-dependent ecosystems will be developed.

Once methods have been developed, it will be necessary for a proposed project to satisfy the eligibility criteria contained therein, as well as the generally applicable requirements set out in the Act. The latter includes but is not limited to:

- (i) the legal right to act as project proponent. To qualify as a project proponent, it is necessary to own the land; to have a freeholding lease and the terms of the lease are consistent with carrying out the project<sup>xliii</sup>; or to be the RNTBC representing Traditional Owners who hold native title<sup>xliv</sup> over the land in question (the Title Holder), or alternatively to have the consent of the relevant Title Holder to act as the proponent<sup>xlv</sup>.
- (ii) obtaining any necessary approvals (for example under state environment and planning laws) prior to being issued a biodiversity certificate<sup>xlvi</sup>; and
- (iii) obtaining the consent of any relevant 'eligible interest holder' prior to being issued with a biodiversity certificate<sup>xlvii</sup>. An eligible interest holder is a person or entity with a legally recognised interest in the land. The Crown is an eligible interest holder in Crown land subject to non-exclusive native title<sup>xlviii</sup>.

'Excluded projects', which will be defined in rules made by the Minister, will not be eligible for registration<sup>xlix</sup>. When deciding whether to make such rules, the Minister must have regard to whether the kind of project in question could have a material adverse impact on one or more matters listed in the Act. These include but are not limited to water availability, biodiversity (other than the kinds of biodiversity addressed by the project), any local community of Aboriginal or Torres Strait Islands with a connection to the project area and land access for agriculture<sup>l</sup>.

## Land Tenure

Biodiversity projects can be undertaken on Crown and non-Crown tenures<sup>li</sup> and on both land and in Australian waters (which includes inland waterways, the intertidal zone and the marine environment within 12 nautical miles of the low water mark)<sup>lii</sup>.

As noted above, the RNTBC for land subject to either exclusive or non-exclusive native title

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<sup>xlii</sup>Nature Repair Act, ss. 15(4)(b), 45.

<sup>xliii</sup>Nature Repair Act, s.15(6)(a).

<sup>xliv</sup>As with the CFI Act, it is the RNTBC that is deemed to be the project proponent, unless its consent is provided to another party to act in this capacity. See Nature Repair Act, s.15(6)(b).

<sup>xlv</sup>Nature Repair Act, s.15(6)(a)(iv),(v).

<sup>xlvi</sup>Nature Repair Act, s.17.

<sup>xlvii</sup>Nature Repair act, s. 18.

<sup>xlviii</sup>Nature Repair Act, s.89(4).

<sup>xlix</sup>Nature Repair Act, s.15(4)(o).

<sup>l</sup>Nature Repair Act, s. 33.

<sup>li</sup>Nature Repair Act, s.15(5).

<sup>lii</sup>Nature Repair Act, s. 7 (definitions of 'area' and 'Australian waters').

over the project area may act as project proponent. However, non-exclusive native title holders must obtain the consent of the owner of the land to act as proponent<sup>liii</sup>. Further, consent from any relevant eligible interest holder(s) must also be sought prior to being issued with a biodiversity certificate for the project<sup>liv</sup>.

Biodiversity projects can of course be undertaken on land that is subject to state and territory Aboriginal land rights legislation. However, in some specific circumstances the Crown or a Minister will be considered an eligible interest holder and their consent will be required to undertake the project<sup>lv</sup>.

### **Interaction with the CFI Act**

The NRA is intended to interact with the CFI Act and in appropriate circumstances, to allow for a project to be registered under each piece of legislation and to claim both ACCUs and a biodiversity certificate<sup>lvi</sup>. Further details regarding the concurrent operation of these statutes will be included in subordinate legislation (rules), which have not yet been adopted. Beyond this, careful consideration will need to be given to any claims made regarding the attributes of an ACCU versus a biodiversity certificate to avoid potentially falling foul of misleading and deceptive conduct provisions in the Corporations Act 2001 (Cth) (Corporations Act)<sup>lvii</sup> and/or the Australian Consumer Law (ACL)<sup>lviii</sup>.

### **Financial considerations**

It is unclear what the market may be willing to pay for different kinds of biodiversity certificates. There is also uncertainty regarding demand for these certificates. In any case, and without any additional subsidy, grant or revenue stream, the price per certificate will need to be sufficient to make any project financially viable for project proponents and any third-party investors over the lifetime of the project. This is equally true of certificates purchased by the private sector or alternatively by the Commonwealth Government under Part 6 of the NRA. This situation contrasts with that at commencement of projects under the CFI act, when the Emissions Reduction Fund was created with \$2.6 billion to incentivise projects to reduce emissions or store carbon.

Projects that are deemed eligible for registration under the CFI Act and NRA will in theory be able to benefit from two streams of revenue through credit stacking and/or bundling (ACCUs and the biodiversity certificate), which could make more-complex and expensive restoration projects financially viable. In the absence of any legislative rules (which are yet to be adopted), however, it is difficult to make any definitive statements about this option.

Further, many biodiversity projects will not involve a complementary CFI method and as such will not be able to benefit from the more established financing streams and demand drivers associated with carbon projects and credits.

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<sup>liii</sup>Nature Repair Act, s.15(6)(iv).

<sup>liv</sup>Nature Repair Act, ss.89, 90.

<sup>lv</sup>Nature Repair Act, s. 90(6),(7).

<sup>lvi</sup>Nature Repair Act, s.7 (definition of 'project area' which includes a reference to 'a registered project under a related scheme', which is in turn defined to include a project registered under the CFI Act.)

<sup>lvii</sup>Corporations Act, ss. 1041E, 1041F and 1041H.

<sup>lviii</sup>ACL, s.18.

## Implications for water-related ecosystem services in Cape York

Implementation of the NRA will only be possible once legislative rules and methods have been developed and adopted. In the meantime, it is difficult to offer a detailed analysis of the barriers and opportunities associated with this new piece of legislation. Some more-general observations are, however, possible. Possible opportunities enabled by the NRA include:

- the Act's objects highlight the unique role of Indigenous peoples in protecting and restoring nature. Accordingly, there should be opportunities for the Traditional Owners of Cape York to drive the development of locally relevant methods.
- the Act provides for biodiversity projects to be undertaken in waterways and coastal and marine environments. This in theory allows for the creation of methods applicable to water-dependent biodiversity.
- the CYPHA reserve could, therefore, conceivably be used by Cape York Traditional Owners to support the development of biodiversity projects involving water-dependent biodiversity and/or ecosystems (such as remediation of degraded riparian areas through vegetation management and exclusion of stock and feral species).

Possible challenges include:

- insufficient time, funding and resources to support the development of methods by Indigenous people that are relevant to the Cape York region (note the essential foundational inputs described earlier that were provided through WALFA to establish the Savanna Burning Method)
- non-exclusive native title holders require the consent of the owner of the land to act as project proponent for a biodiversity project.
- native title holders who wish to act as project proponent will still need to obtain the consent of any eligible interest holder.
- non-exclusive native title holders will need to obtain consent from the Crown and/or other interest holders to undertake projects in waterways or in the intertidal zone<sup>lix</sup>
- complex and expensive permitting processes under state environment and planning laws, particularly for restoration projects in or around waterways or in the coastal zone.<sup>8</sup>
- where there is a RNTBC representing Traditional Owners with native title over the relevant site, the body corporate must either be the project proponent or give their consent to a third-party project proponent to undertake or register a biodiversity project. This is irrespective of whether it is exclusive or non-exclusive native title<sup>lx</sup>

The ability to use CYPHA water allocations to support biodiversity projects under the NRA will depend on the specific methods that are developed. There may be an opportunity to influence method development while the NRA is in its infancy to ensure that locally relevant methods are approved and adopted, including (if scientifically and culturally appropriate) methods that could work synergistically with a CYPHA water allocation.

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<sup>lix</sup>Waterways and the intertidal zone are often classified as Crown land (unless a valid land grant has been made to a third party).

<sup>lx</sup>Nature Repair Act, s.15(6)(b). See also definition of 'native title area' in s.7.

### 3.1.2.2 Environmental Offsets Act 2014 (QLD)

#### Introduction

Environmental offsetting in Queensland is regulated under the *Environmental Offsets Act 2014* (QLD) (Environmental Offsets Act), *Environmental Offsets Regulation 2014* (Environmental Offsets Regulation) and the *Queensland Environmental Offsets Policy* (Offsets Policy)<sup>lxi</sup>. The Act is fully operational and has been used to generate a number of offset sites and projects. These are recorded in an offsets register<sup>lxii</sup>.

Environmental offsets may be required as a condition of an approval or permit<sup>lxiii</sup> where a prescribed activity has a 'significant residual impact' on a 'prescribed environmental matter'. According to the Act, they are intended to 'counterbalance' that impact<sup>lxiv</sup>. Prescribed activities include, but are not limited to, taking a protected plant under the *Nature Conservation Act 1992* (QLD) (Nature Conservation Act) and development for which an environmental offset may be required under a State Development Assessment Provision (SDAP)<sup>lxv</sup>.

Prescribed environmental matters are set out in Schedule 2 of the *Environmental Offsets Regulation*. This list includes Matters of State Environmental Significance (MSES). MSES include, for example, plants and animals protected under the *Nature Conservation Act* and essential habitat for protected animals listed under the *Vegetation Management Act 1999* (QLD).

Significant residual impact is defined as an 'adverse impact, whether direct or indirect, of a prescribed activity on all or part of a prescribed environmental matter that (a) remains, or will or is likely to remain, (whether temporarily or permanently) despite on-site mitigation measures for the prescribed activity; and (b) is, or will or is likely to be, significant.'<sup>lxvi</sup> The Significant Residual Impact Guideline is used to assess whether an impact is a significant, residual one<sup>lxvii</sup>.

The Offsets Policy provides that offsets must meet the following principles:

- (i) Offsets will not replace or undermine existing environmental standards or regulatory requirements, or be used to allow development in areas otherwise prohibited through legislation or policy.
- (ii) Impacts must first be avoided, then mitigated, before considering the use of offsets for any remaining impact.
- (iii) Offsets must achieve a conservation outcome that counterbalances the significant residual impact for which the offset was required.
- (iv) Offsets must provide environmental values as similar as possible to those being lost.
- (v) Offset provision must minimise the time-lag between the impact and delivery of the offset.

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<sup>lxi</sup>Environmental Offsets Regulation, cl. 6. Queensland Environmental Offsets Policy, version 1.15 (dated December 2023).

<sup>lxii</sup><https://www.qld.gov.au/environment/management/environmental/offsets/registers> (accessed 24 April 2024).

<sup>lxiii</sup>Environmental Offsets Act, Part 5.

<sup>lxiv</sup>Environmental Offsets Act, s. 7(2).

<sup>lxv</sup>Environmental Offsets Regulation, Schedule 1.

<sup>lxvi</sup>Environmental Offsets Act, s. 8.

<sup>lxvii</sup>Queensland Environmental Offsets Policy. Significant Residual Impact Guideline. 2014.



- (vi) Offsets must provide additional protection to environmental values at risk, or additional management actions to improve environmental values.
- (vii) Where legal security is required, offsets must be legally secured for the duration of the impact on the prescribed environmental matter.

### **How do environmental offsets work?**

A landholder can formally register all or part of their land as a potential offset site. There are two mechanisms by which they can do this: via an expression of interest<sup>lxviii</sup>, or as an advanced offsets site<sup>lxix</sup>. Registering an advanced offset site involves more work and upfront cost (for example a baseline ecological study is required), but these sites are prioritised for environmental offsets because a certain amount of verified data about the site has already been provided<sup>lxx</sup>.

To be eligible to be registered as an advanced offset site, it is necessary to demonstrate that the site contains or is capable of containing a prescribed environmental matter<sup>lxxi</sup>, which includes Matters of National Environmental Significance (MNES), MSES and Matters of Local Environmental Significance (MLES)<sup>lxxii</sup>. Registration of an advanced offset site is not legally binding. However, if the site is considered suitable for an environmental offset and the landholder decides to proceed, it will then be necessary to enter into a legally binding agreement with the party who is required to obtain the offset. Most offset sites are then classified as a 'legally secured offsets area'<sup>lxxiii</sup>. The site will have to be maintained as such until the offset obligation ceases, which varies from case to case<sup>lxxiv</sup>.

### **Implications for water-related ecosystem services in Cape York**

Environmental offsets may offer an opportunity for Traditional Owners in Cape York to generate income from land (including water-dependent ecosystems, such as wetlands) that meet the eligibility requirements set out in the Environmental Offsets Act, Environmental Offsets Regulation and Offsets Policy. While registering an eligible site as an advanced offsets site will result in that site being prioritised over sites that are merely registered via an expression of interest, this does involve additional work and up-front expense and does not guarantee that the site will be selected to provide offsets.

In theory, a CYPHA water allocation could be used to support the maintenance or restoration of an offsets. This could be on Indigenous-owned land or alternatively on land owned by another party (who paid to use the allocation). However, more specific research would be needed to test the validity of this hypothesis in relation to specific contexts in the Cape York region (taking into account the climate, restoration and maintenance opportunities, and the specific water allocation).

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<sup>lxviii</sup> See <https://www.qld.gov.au/environment/management/environmental/offsets/provider#step2b> (accessed 16 April 2024).

<sup>lxix</sup> Environmental Offsets Act, ss.90(1)(b), 93(2)(b); Environmental Offsets Regulations, Part 6; Offsets Policy, Appendix 5.

<sup>lxx</sup> See <https://www.qld.gov.au/environment/management/environmental/offsets/provider#step2b> (accessed 16 April 2024).

<sup>lxxi</sup> Environmental Offsets Policy, Appendix 5.

<sup>lxxii</sup> Environmental Offsets Regulation, cl. 10. Offsets Policy, cl.1.2, Appendix 5.

<sup>lxxiii</sup> Environmental Offsets Act, s.29. Offsets Policy, cl. 2.3.1.4.

<sup>lxxiv</sup> Offsets Policy, cl. 2.3.1.5.

### 3.1.2.3 Water quality offsets

#### Introduction

The *Environmental Protection Act 1994* (QLD) (EP Act) and *Environmental Protection Regulation 2019* (QLD) (EP Regulation) require proponents of prescribed ‘Environmentally Relevant Activities’ (ERA) to obtain an ‘environmental authority’ (a type of permit) which entitles them to release contaminants into the environment in accordance with the law (including conditions placed on the environmental authority). ERAs include a range of activities (for example aquaculture, abattoirs) that discharge pollutants into waterways (inland, estuarine and marine)<sup>lxxv</sup>.

#### How do water quality offsets work?

The EP Act provides for environmental authorities to include an ‘environmental offset condition’ (which is distinct from environmental offsets for the purposes of the *Environmental Offsets Act*)<sup>lxxvi</sup>. Some environmental authorities that permit the discharge of wastewater into receiving waters may be eligible to have an offset condition included pursuant to the *Point Source Water Quality Policy 2019* (PSWQ Policy). This allows the holder of the authority to undertake an approved activity (for example wetland rehabilitation) that improves water quality outcomes in relation to prescribed offset contaminants (nitrogen, phosphorus and suspended solids)<sup>lxxvii</sup>. This improvement can then be claimed as a water quality offset by the holder of the environmental authority. The scheme is operational, although it is not clear how many entities have used it to vary conditions on their environmental authority<sup>lxxviii</sup>.

There are several criteria that must be satisfied before a water quality offset project can be approved under the PSWQ Policy. These include, but are not limited to:

- (i) a requirement that the water quality offset project be underpinned by an accredited scientific/engineering approach for design, construction, evaluation and monitoring of the project. This must be reviewed and signed off by a Registered Professional Engineer Queensland for diffuse source water quality offsets.
- (ii) a prohibition on counting water quality offsets twice (i.e. they must not be required under some other law and be genuinely additional).
- (iii) a requirement that the water quality offset project improve water quality in the receiving waters into which contaminants are discharged by the holder of the environmental authority (although, if justified and approved, the project can be in a different catchment or basin – as long as the receiving waters are the same).<sup>lxxix</sup>

While the PSWQ Policy is not an MBI, it does state that it may be possible for the scheme to interact with approved market-based mechanisms (such as the Reef Credits scheme), on the condition that this occurs in accordance with the Policy<sup>lxxx</sup>.

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<sup>lxxv</sup>EP Act, s.19; EP Regulation, cl. 19 and Schedule 2.

<sup>lxxvi</sup>EP Act, s. 207(1)(c), (d), s.209.

<sup>lxxvii</sup>PSWQ Policy, s.4.

<sup>lxxviii</sup>While there is a register of environmental authorities in QLD, it does not have a specific ‘offset’ search term, which would make searching for specific conditions relevant to the PSWQ Policy very time consuming. See: <https://apps.des.qld.gov.au/public-register/search/ea.php> (accessed 24 April 2024).

<sup>lxxix</sup>PSWQ Policy, ss. 6.1 to 6.5 inclusive.

<sup>lxxx</sup>PSWQ Policy, s. 5.1.2.

## Implications for water-related ecosystem services in Cape York

There may be opportunities for Cape York Traditional Owners to work with holders of an environmental authority to develop one or more approved Water Quality Offset projects on their Country. Perhaps the most significant challenges are first, identifying the holder of an authority who wishes to develop a Water Quality Offset project, second, identifying a potential project on Country and third, ensuring that the project meets all requirements under the PSWQ Policy (including in relation to the project improving water quality outcomes in the same receiving waters).

In theory, some water quality improvement projects could benefit from the use of a CYPHA water allocation. This could be on Indigenous-owned land or alternatively on land owned by another party (who paid to use the allocation). However, more specific research would be required to test the validity of this hypothesis in relation to the Cape York region and the specific CYPHA water allocation in question.

## 3.2 Non-legislative schemes applicable in Queensland

In recent years, there has been increased interest in voluntary, non-statutory environmental crediting schemes both in Australia and abroad. The advisory firm Pollination comments that ‘there is significant awareness and support for the development of high integrity and technically rigorous biodiversity credit schemes and products all over the world.’<sup>50</sup>. This section summarizes the voluntary schemes with most relevance to water-related ecosystems services in the Cape York region.

### 3.2.1 International carbon schemes

#### Introduction

International carbon markets are underpinned by a number of (generally not-for-profit) bodies and associated methods and standards, some of which relate to water-dependent ecosystems (in particular different kinds of wetlands). Demand for the carbon credits generated under these schemes is driven by voluntary, net zero commitments. Carbon credits from nature-based carbon projects associated with verifiable co-benefits are becoming increasingly sought after and are able to command a premium price. There are number of international, voluntary carbon schemes which collectively have become known as the voluntary carbon market (VCM). These schemes are examples of MBIs which helps to create a market for carbon credits and carbon offsets.

The two largest schemes are administered by American not-for-profit Verra<sup>lxxxi</sup> and Swiss not-for-profit Gold Standard<sup>lxxxii</sup>. Verra, like many other private entities in this field, oversees a number of standards, methodologies and associated modules which can be used to develop and register projects that in turn generate carbon credits. Broadly speaking, standards set out the overarching rules that set out how projects are to be developed, verified and audited, methodologies contain rules that relate to specific types of projects, while modules set out additional requirements for specific methodologies.

Some of these methodologies relate to tidal and non-tidal wetlands, including:

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<sup>lxxxi</sup><https://verra.org/> (accessed 15 April 2024).

<sup>lxxxii</sup><https://www.goldstandard.org/> (accessed 15 April 2024).

- (i) VM0033 Methodology for Tidal Wetland and Seagrass Restoration, v2.1 (Verra Blue Carbon Method)<sup>lxxxiii</sup>
- (ii) VM0048 Reducing Emissions from Deforestation and Forest Degradation, v1.0 (Verra Deforestation Method)<sup>lxxxiv</sup>

In combination with specific standards and modules, these methodologies can be used to not only account for the restoration of a wetland, but for social, cultural and other environmental co-benefits. For example, Stage 1 of the Delta Blue Carbon project in Pakistan, which involves mangrove restoration, was underpinned by an earlier version of the Verra Blue Carbon Method, as well as Verra's Verified Carbon Standard Program as well as its Climate, Community & Biodiversity Standards Program. Credits generated from the project have to date traded at a significant premium relative to other nature-based Redd+ projects<sup>lxxxv</sup>.

The Verra Blue Carbon Method and Verra Deforestation Method have been used to support a number of projects around the world. Information about these projects is available in the Verra Registry<sup>lxxxvi</sup>.

### **Implications for water-related ecosystems in Cape York**

There may be opportunities to explore the use of one or more of these voluntary standards and methodologies that provide for the restoration of water-dependent ecosystems (in particular wetlands) in Cape York. More detailed analysis would be required to understand the potential scale of this opportunity.

It is worth noting, however, that many of the same challenges that apply to carbon farming projects under the CFI Act also apply to projects developed under a voluntary method. Feasibility studies, monitoring, verification and reporting, legal processes and registration and ongoing site maintenance can be complex, time consuming and above all, expensive (particularly when done to a high standard). As such, it is necessary to ensure that projects are adequately financed and capable of generating the return required to render them viable. While carbon credits with verified co-benefits do trade at a premium on voluntary carbon markets, they do not tend to fetch as much as ACCUs with verified co-benefits. However, project financials would need to be assessed on a case-by-case basis and expert advice sought from suitably qualified experts.

In theory, a CYPHA water allocation could be used to support the restoration of wetlands under one of these international carbon methods. This could be on Indigenous-owned land or alternatively on land owned by another party (who paid to use the allocation). However, more specific research would be required to test the validity of this hypothesis in relation to the Cape York region (taking into account the climate, rainfall, restoration opportunities and the water allocation).

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<sup>lxxxiii</sup><https://verra.org/methodologies/vm0033-methodology-for-tidal-wetland-and-seagrass-restoration-v2-1/>

<sup>lxxxiv</sup><https://verra.org/methodologies/vm0048-reducing-emissions-from-deforestation-and-forest-degradation-v1-0/>

<sup>lxxxv</sup> As noted above, blue carbon credits from the Delta Blue project located in the Indus Delta in Pakistan traded at US\$29.72/t which is more than a 40% premium on the equivalent spot price for REDD+ nature-based credits of the same vintage. See <https://www.brecorder.com/news/40248329> and <https://www.reuters.com/business/environment/carbon-exchange-cix-completes-250000-tonne-carbon-credit-auction-2022-11-04/> (accessed 15 March 2024).

<sup>lxxxvi</sup><https://verra.org/registry/overview/> (accessed 24 April 2024).

### 3.2.2 Local voluntary environmental credit schemes

As noted above, there has been a proliferation of voluntary, private-sector or NGO led environmental crediting schemes around the world. Many of these are linked to biodiversity<sup>50</sup>, whilst others relate to, for example, plastic pollution<sup>lxxxvii</sup> or water quality<sup>lxxxviii</sup>. These schemes are examples of MBLs that help to create a market for environment credits and possibly offsets (depending on the rules governing the scheme). This section will briefly touch on two such schemes that are operational in Queensland and potentially relevant to water-related ecosystems services in Cape York: Reef Credits and NaturePlus™ Credits. A third scheme that is currently under development (Cassowary Credits<sup>lxxxix</sup>.) is not covered here as it is applicable only to a relatively small area of the wet tropics in the southeastern corner of Cape York and is currently under development.

#### 3.2.2.1 Reef Credits

The Reef Credits scheme was developed with funding from the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation, and Queensland Government. The scheme, which was launched in 2017, supports land managers to change their land practices in a way that improves water quality outcomes in the Great Barrier Reef catchment (GBR catchment). These changes generate a tradeable unit which is known as a 'Reef Credit'. Each credit represents a quantified volume of nutrient, pesticide or sediment that has not entered the GBR catchment as a consequence of the change in land use. The scheme is also intended to contribute to the water improvement targets set under the Reef 2050 Water Quality Improvement Plan.

The scheme, administered by Eco-Markets Australia, is underpinned by the Reef Credit Standard, which sets out the rules and requirements applicable to projects. It is further supported by methodologies, which set out the validation, registration, monitoring, verification, crediting, issuance and transaction requirements for projects. The scheme allows projects to be included in a central registry. The registry also allows uniquely identified credits to be issued, transferred and retired<sup>xc</sup>.

There are currently three approved methodologies: the Dissolved Inorganic Matter Method (DIM Method); the Gully Method; and the Wastewater Method. Importantly, it is possible to develop and seek approval of new methods that support 'any practice change or ecosystem repair activities that are able to reduce or remove pollutants entering the Great Barrier Reef'<sup>xcii</sup>. This could in theory extend to a method that could benefit from the use of CYPHA water allocations.

According to Eco-Markets Australia, participants in the scheme have prevented more than 44 tonnes of dissolved inorganic nitrogen from entering the Great Barrier Reef and generated more than \$2.7 million in returns since its inception in 2017<sup>xcii</sup>. Further, Reef Credits issued under the DIM Method have been sold for \$100/Credit<sup>xciii</sup>.

Reef Credits are only applicable where changes to land management measurably improve

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<sup>lxxxvii</sup>See for example: <https://greencollar.com.au/what-are-plastic-credits-and-how-are-they-generated/> (accessed 18 April 2024).

<sup>lxxxviii</sup>See for example: <https://eco-markets.org.au/reef-credits/> (accessed 18 April 2024).

<sup>lxxxix</sup><https://terrain.org.au/what-we-do/biodiversity/cassowary-credit-scheme/> (accessed 20 April 2024).

<sup>xc</sup><https://eco-markets.org.au/rules-and-requirements/> (accessed 20 April 2024).

<sup>xcii</sup><https://eco-markets.org.au/methodologies/> (accessed 27 April 2024).

<sup>xciii</sup><https://eco-markets.org.au/2024/03/26/ema-quarterly-market-snapshot-mar-24/> (accessed 24 April 2024).

<sup>xciii</sup><https://eco-markets.org.au/2024/03/26/ema-quarterly-market-snapshot-mar-24/> (accessed 20 April 2024).

the quality of water flowing to the Reef. Where water quality is already high, such as where catchments have intact native vegetation and little farming activity, the requirement for 'additionality' (that is, improvement in environmental condition) would preclude activities that preserve existing high water quality from receiving Reef Credits.

### 3.2.2.2 NaturePlus™ Credits

NaturePlus™ is a biodiversity credit scheme that was developed by Australian environmental market developer, GreenCollar. Currently in its Beta phase, NaturePlus™ is being used for 20 projects, two of which have been issued with credits<sup>xciv</sup>. The scheme is underpinned by the NaturePlus Standard – Version 1 (Standard). It is anticipated that the Standard will be updated, and that the scheme will move from the Beta phase to fully operational in due course. The Standard is designed to work with methodologies that have been accredited by Accounting for Nature (AFN)<sup>xcv</sup>, while projects themselves are underpinned by certified environmental accounts provided for under the AFN Framework<sup>xcvi</sup>.

One NaturePlus™ credit equals one hectare of active restoration or conservation of habitat or species. Credits are only awarded to projects 'that have already delivered third-party audited and certified uplift in environmental condition' and the scheme works with 'methods that span native vegetation, fauna, soil, fresh water and marine environments'<sup>xcvii</sup>.

It appears possible to develop a method under NaturePlus™ that is particular to the conditions and opportunities in the Cape York region and seek accreditation by AFN. This could in turn allow for the generation and sale of NaturePlus™ credits.

### 3.2.2.3 Implications for water-related ecosystems in Cape York

There are clear opportunities to develop credits that are locally relevant to the Cape York Traditional Owners. One of the benefits of such credits is that Traditional Owners can drive the process and ensure that the credits are entirely relevant to their circumstances and can operate at scale on the land that they own and/or manage. Developing high integrity credits and the surrounding standards, methods and governance processes does, however, take time and is highly technical and resource intensive. External funding is generally required (as was the case with Reef Credits). There are also questions regarding demand drivers for such credits (as opposed to demand for carbon credits), particularly in the short term. Demand drivers are discussed in more detail in the next section.

The ability to use CYPHA water allocations to support a voluntary environmental crediting project depends on the particular scheme and its standard(s) and method(s), as well as local environmental factors. Most rigorous methods require clear evidence of 'additionality' (that is, improvement in environmental condition). This is an important consideration in a region which has a high level of intact biodiversity. There may be opportunities, where there is a clear biodiversity benefit in a particular location, to use a CYPHA water allocation for the creation of an artificial wetland on degraded land.

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<sup>xciv</sup><https://naturepluscredits.com/> (accessed 24 April 2024).

<sup>xcv</sup><https://www.accountingfornature.org/method-catalogue> (accessed 24 April 2024).

<sup>xcvi</sup> Accounting for Nature® is an independent not-for-profit organisation that has developed an evidence-based accounting standard to establish the condition of environmental assets. <https://www.accountingfornature.org/> (accessed 24 April 2024).

<sup>xcvii</sup><https://naturepluscredits.com/about-natureplus/> (accessed 24 April 2024).

### 3.3 Queensland water law

Water laws in most Australian jurisdictions have been amended over the last two decades to facilitate the legal separation of land and water. This has resulted – with some exceptions – in water being a separate property right, capable of being permanently and temporarily (seasonally) traded in accordance with applicable laws and rules, as well as leased and mortgaged. This separation also occurred under the *Native Title Act 1993* (Cth) which coincided with the unbundling of water rights from land titles under the National Water Initiative when it was first conceived in the early 1990s<sup>31</sup>. Native title rights with respect to water are commonly legally recognised as right to access and take water, only for the purposes of satisfying personal, domestic, social, cultural, religious, spiritual or non-commercial communal needs, including the observance of traditional laws and customs. The CYPHA reserve is one of just a few examples of a statutory system that aims to recognise First Nations’ rights to control, manage and use water for purposes other than under native title rights.

While the separation of land and water has generated considerable ongoing debate, this section focuses on potential opportunities that are created to derive income from the current licensing and broader legal framework in Queensland in relation to water allocations under the CYPHA reserve.

The first of these opportunities is temporary trade (in Queensland known as ‘seasonal assignment’) of water for the purposes of generating a particular environmental outcome. For example, some or all of the water that could be extracted under a particular entitlement can be assigned to a third party wishing to procure specific environmental outcomes (subject to adhering to all relevant rules governing the proposed seasonal assignment)<sup>xcviii</sup>.

The second opportunity, which is likely a long-shot for Cape York but covered here for completeness, is ‘cease to pump’ conditions on water entitlements. As the term suggests, this involves abstaining from pumping at specific times and for defined durations in order to allow sufficient water to flow downstream to support a particular environmental outcome, or to maintain the health of an aquifer and any connected surface water sources. Cease-to-pump conditions do not generally give rise to any direct right to generate income. That is, they are simply mandatory conditions that must be adhered to, like any other condition attached to a water entitlement. Where cease-to-pump arrangements are voluntary, however, and go above and beyond ‘business as usual’, it may be possible to seek payment for not exercising the usual right to extract water. This is most likely to be feasible where it can be demonstrated that not extracting the water will generate specific environmental outcomes that are in the broader public interest.

This does raise questions about who would pay for seasonal assignments or foregone-pumping of water to procure specific environmental outcomes. The first potential ‘investor’ is government – as is the case with the buyback of water licences for the environment in the Murray Darling Basin. This is because government has a specific mandate under its different environmental laws to maintain and/or improve the environment. The second could be a company that has voluntarily applied the Taskforce on Nature Related Financial Disclosures (TNFD) framework to its operations (see section 3.4.2), and as a consequence is seeking to contribute to nature restoration. That same company may have other social and cultural targets, which could in turn render a First Nations led project particularly attractive.

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<sup>xcviii</sup>Rules regarding trade and in particular the seasonal assignment of water are set out in the Water Act 2000 (QLD), Water Regulation 2016 (QLD), Cape York Water Management Protocol and Water Plan (Cape York) 2019).

More generally, these opportunities depend on a site-by-site assessment of current environmental condition and the role that water could play in improving ecosystem health and habitat for different species. An opportunity that could be pursued is how water allocations under the CYPHA reserve could be used to support the creation of artificial wetlands on cleared agricultural land<sup>xcix</sup>. Artificial wetlands are recognised as a category of wetland under Article 1 of the Ramsar Convention on Wetlands<sup>o</sup>. This approach is particularly relevant where an artificial wetland could create habitat for one or more species that is listed under state and/or federal environmental laws.

## 3.4 Drivers of Demand

The preceding analysis has highlighted different legal, voluntary and statutory frameworks which enable the creation of MBIs (such as credits and/or offsets) linked to the protection or enhancement of one or more ecosystem services. Creating a MBI does not, however, in-and-of-itself give rise to a market for those ‘products’. Rather, it depends on a range of factors, including demand, which in economics refers to the ‘quantity of a good or service that consumers are willing and able to buy at a given price.’

In Australia, various drivers of demand for MBIs are in place or emerging, including (i) compliance obligations under the Safeguard Mechanism, (ii) local and foreign businesses and investors that have voluntarily set net-zero targets and therefore are seeking high-quality credits and (iii) funding mechanisms established by governments to deliver on their responsibilities for improving environmental outcomes. These drivers of demand for ecosystem service-related MBIs can create opportunities for First Nations people in the Cape York region.

### 3.4.1 Drivers of demand for nature-based carbon projects and credits

While there are different kinds of tradeable carbon products, when talking about water-related ecosystem services in the Cape York region, the most relevant of these are nature-based carbon markets – markets underpinned by carbon projects that also conserve and/or repair nature.

The global nature-based carbon market was valued at approximately \$US600 million in 2020<sup>ci</sup> and the voluntary carbon market – which includes nature-based carbon projects and associated credits/offsets – was valued at \$US2 billion in 2021. By comparison, the value of global markets for tradeable carbon credits was estimated at \$US950 billion in 2023<sup>cii</sup>, although this figure largely represents compliance-based emissions trading schemes.

In Australia, one of the drivers of demand for MBIs is funds established by governments to invest in approved carbon projects directly and/or to buy carbon credits from such projects.

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<sup>xcix</sup>for a summary of issues see [https://www.ramsar.org/sites/default/files/documents/library/bn13\\_agriculture\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/bn13_agriculture_e.pdf)

<sup>o</sup><https://www.ramsar.org/sites/default/files/documents/library/manual6-2013-e.pdf>; Article 1 states “For the purpose of this Convention wetlands are areas of marsh, fen, peatland or water, whether natural or **artificial**, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”

<sup>ci</sup><https://carboncredits.com/nature-based-carbon-offsets-crucial-in-the-road-to-net-zero/#:~:text=The%20nature%20based%20carbon%20offset,in%20the%20voluntary%20carbon%20market.> (accessed 27 April 2024).

<sup>cii</sup><https://www.reuters.com/markets/commodities/global-carbon-markets-value-hit-record-949-bln-last-year-lseg-2024-02-12/> (accessed 26 April 2024)



The most important of these demand-supporting projects in Queensland is the Land Restoration Fund (LRF).

The LRF, which was created in 2017 by the Queensland Government, is a \$500 million fund established to support nature-based carbon projects with verified environmental, social and cultural co-benefits. The LRF is operated in accordance with its Priority Investment Plan, the most recent version of which has outlined three priority areas for investment:

- (i) land restoration to improve the health of wetlands and coastal ecosystems, including the Great Barrier Reef
- (ii) land restoration for threatened species and biodiversity
- (iii) restoration for social and economic sustainability<sup>ciii</sup>

To be eligible for funding, it is necessary for a proposed project to meet at least one of the investment priority areas stipulated in the current Priority Investment Plan, be new, require no more than \$10 million from the LRF, have a proposed contract length of between 5 and 15 years and deliver co-benefits recognised by the LRF<sup>civ</sup>. It must also involve the use of a nature-based (or land sector) carbon method accredited under the CFI Act. These comprise agricultural methods, vegetation methods and savanna burning methods<sup>cv</sup>.

At the time of writing, the LRF has had three funding rounds, the first two of which resulted in 20 projects and more than 1.1 million ACCUs being contracted. According to the LRF, these ACCUs have attracted a significant premium on account of their co-benefits. More specifically, the median ACCU price paid by the LRF for round 1 was \$52 and for round 2 was \$81<sup>cvi</sup>.

According to the LRF, there are opportunities in Far North Queensland that fall into the three priority areas and across different carbon methods. There are a number of contracted LRF projects in the Cape York region, however further opportunities (including those that could benefit from the use of a CYPHA water allocation) would need to be assessed on a case-by-case basis.

While they can play a critical catalytic role, a potential challenge for government funding mechanisms like the LRF is they are subject to the uncertainties of changing political fortunes if they do not have strong support across all sides of politics.

### 3.4.2 Drivers of demand for nature markets and credits

As discussed earlier, nature crediting schemes are proliferating in Australia and around the world. The majority of these are non-statutory and voluntary in nature. In light of this, it is important to assess the shorter and longer-term drivers of demand for these projects and associated credits.

It is clear that the private sector's interest in biodiversity has significantly increased over the last few years<sup>53</sup>. This is evidenced by the unprecedented level of participation by the business and financial sectors at COP 15 of the Convention on Biological Diversity (CBD) in

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<sup>ciii</sup>[https://www.qld.gov.au/\\_data/assets/pdf\\_file/0024/116547/lrf-priority-investment-plan.pdf](https://www.qld.gov.au/_data/assets/pdf_file/0024/116547/lrf-priority-investment-plan.pdf) (accessed 27 April 2024).

<sup>civ</sup>[https://www.qld.gov.au/\\_data/assets/pdf\\_file/0021/375114/lrf-project-eligibility-checklist-rnd3.pdf](https://www.qld.gov.au/_data/assets/pdf_file/0021/375114/lrf-project-eligibility-checklist-rnd3.pdf) (accessed 27 April 2024).

<sup>cv</sup><https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund/about/carbon-farming-methods> (accessed 28 April 2024).

<sup>cvi</sup><https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund/funded-projects/investment-rounds-report> (accessed 27 April 2024).

2022<sup>cvii</sup>, the establishment of new nature funds by institutional and other investors<sup>cviii</sup> and the development of the Taskforce on Nature Related Financial Disclosures (TNFD)<sup>cix</sup>. The last of these, the TNFD, is a framework for businesses to voluntarily assess and disclose their nature-related risks and impacts. Some jurisdictions have indicated that they will adopt legislation which makes disclosure under the TNFD mandatory<sup>50</sup>.

Consistently with these themes, the 'business case' for investing in nature has been described as first, mitigating exposure to nature-related risks and creating value in accordance with the TNFD framework and second, contributing to nature targets, including those set under the CBD at COP 15 (in the Kunming-Montreal Global Biodiversity Framework). Turning this business case into demand at scale is another matter, and requires the following<sup>50</sup>:

- (i) building purchaser awareness and confidence;
- (ii) securing partnerships with high-profile actors in the private sector (to encourage broader confidence in nature credits);
- (iii) clear guidance on how credits are aligned with frameworks such as TNFD;
- (iv) clear guidance on how credits are aligned with national and global biodiversity targets; and
- (v) confidence in public claims about credits and associated benefits to nature. This is of course linked to the integrity of the credit and underlying project.

Against this backdrop, it is fair to say that the demand-side for nature credits and markets is still to be proven at scale, but that the conditions are growing for this to potentially change in the coming decade. In the meantime, securing direct partnerships with private sector actors who wish to invest in specific projects and obtain a stream of high-quality nature (and possibly carbon) credits may be one viable option to explore in the Cape York region. Again, this may involve the use of existing crediting schemes (to the extent that they are appropriate) or require the development of a new scheme or schemes.

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<sup>cvii</sup><https://www.gtlaw.com.au/knowledge/global-biodiversity-cop-key-outcomes-what-they-mean-business> (accessed 27 April 2024).

<sup>cviii</sup>See for example: <https://www.newprivatemarkets.com/seven-funds-investing-in-nature-based-solutions/> (accessed 27 April 2024).

<sup>cix</sup><https://tnfd.global/> (accessed 27 April 2024).

# Summary and Conclusions

This report assessed the potential for First Nations people in Cape York to access market mechanisms that have been established to protect and enhance ecosystems services. It focused specifically on water-related ecosystems services, which comprise both water as an ecosystems service in itself (such as water that sustains seasonal fish breeding) and other ecosystems services that are enabled by water (such as the variety of ecosystems services provided by healthy wetlands which rely on water). The aim was to clarify economic opportunities for First Nations water-holders to make decisions and take actions with water allocated under the CYPHA reserve that would directly protect or enhance water-related ecosystems services.

Three broad types of market mechanisms with this potential were assessed:

- (i) **Carbon-based ecosystems services schemes**, enabled by standards and methods set under the Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth) (CFI) and International carbon schemes, involving projects that earn carbon credits using approved methods that sequester carbon.

These are the most well-established mechanisms in Australia. Three methods under the CFI were considered potentially relevant, of which two (the Blue Carbon Method and Environmental Planting Method) are likely to have limited practical application to water-related ecosystems services in the Cape York region. The Organic Soil Carbon method may have application with an example being perennial fodder banks that can be verified to significantly increase soil carbon sequestration and that also require water provisioned under the CYPHA reserve to establish and maintain these systems. The intensity of management and high initial investment required for these fodder banks, however, means they will need high market payoff and hence will likely have limited applicability in the Cape York region.

- (ii) **Nature-based ecosystems services schemes**, enabled by standards and methods set by NGOs and governments and involving projects that earn environmental credits and/or offsets using approved methods that directly protect or enhance biodiversity. Five mechanisms are reviewed: three legislative mechanisms (the *Nature Repair Act 2023* (Cth), the *Environmental Offsets Act 2014* (QLD) and Water Quality offsets enabled under the *Environmental Protection Act 1994* (QLD) and two local voluntary environmental credit schemes (Reef Credits and NaturePlus™ Credits).

Several of these are promising, emerging mechanisms in Australia, developed and managed by both the NGO and government sectors. Of particular note is the intent of many of these mechanisms to explicitly benefit First Nations people. There are, however, substantial and sometimes complex preconditions that need to be met before these mechanisms can become robust options for First Nations people in Cape York. There will, for example, be significant lead time needed for methods to be established under the Nature Repair Act and potentially complex challenges associated with consent processes for all but exclusive native title / freehold land. The ability to use water allocations under the CYPHA reserve in these schemes remains unclear as specific methods do not yet exist.

One potential future opportunity for using water allocations under the CYPHA reserve with nature-based ecosystems services schemes is the creation of artificial wetlands on cleared / degraded agricultural and grazing land (noting that artificial wetlands are recognised as a category of wetland under the Ramsar Convention on Wetlands). This approach is particularly relevant where an artificial wetland could create habitat for one or more species that are listed under state and/or federal environmental laws.

- (iii) **Nature-based carbon projects**, that earn both carbon credits (using approved methods to sequester carbon) and environmental credits (using approved methods that deliver environmental co-benefits) OR earn premium value carbon credits because of high-integrity environmental co-benefits.

In Australia, interest in nature-based carbon projects and associated credits/offsets is expanding rapidly from entities that have compliance obligations under the Safeguard Mechanism; local and foreign businesses that have voluntarily set net-zero targets; investors; and governments. An important example of government driven demand in Queensland, relevant to First Nations people in Cape York is the Queensland Government's Land Restoration Fund (LRF), which is a \$500 million fund established to support nature-based carbon projects with verified environmental, social and cultural co-benefits. The LRF focuses on (i) land restoration to improve the health of wetlands and coastal ecosystems, including the Great Barrier Reef, (ii) land restoration for threatened species and biodiversity and (iii) restoration for social and economic sustainability. Notably co-benefits under the LRF explicitly include First Nations benefits. There are possibilities in Cape York that fall into these three priority areas of the LRF however specific opportunities associated with CYPHA water allocations would need to be assessed on a case-by-case basis.

New methods are being developed for nature-based carbon projects relevant to northern Australia such as the 'feral-ungulate (pigs, cattle, buffalo) method' to reduce greenhouse gas emissions from wetlands. The presence of pigs, buffalo and cattle in wetlands changes vegetation cover, disturbs soils, increases erosion, reduces water quality, impacts biodiversity, and increases greenhouse gas release through trampling of wetland substrates. This method, if developed, would likely provide premium carbon credits based on biodiversity co-benefits.

The demand for nature-based carbon projects and nature-based ecosystems services schemes is still to be proven at scale, but the conditions are growing for this to change in the coming decade.

A separate possible opportunity for generating income from water allocations under the CYPHA reserve is 'seasonal assignment' of water for the purposes of generating a particular environmental outcome as set out in the in the Water Act 2000 (QLD), Water Regulation 2016 (QLD) and Cape York Water Management Protocol and Water Plan (Cape York) (2019). It is unclear how this could be enabled given the highly season nature of the CYPHA water allocations and general lack of water storages and connectivity across the Cape York region, but it may be possible on a case-by-case basis.

In addition to seasonal assignments, there are 'cease-to-pump' arrangements on water entitlements in other parts of Australia where a water holder might be compensated for voluntarily or compulsorily not extracting water in order to generate specific environmental outcomes. This is likely to be a 'long shot' for water allocated under the CYPHA reserve.

In conclusion, the opportunities to tap into ecosystems services markets using water provisioned under the CYPHA reserve are currently very limited as a result of the types of market mechanisms available. The current opportunities with these markets lie largely in the way that land is managed to deliver water-related ecosystems services rather than in the way water is managed. Several speculative opportunities for the CYPHA water allocations have been identified but none are actionable without further detailed analysis. Furthermore, most current methods in ecosystems services markets require clear evidence of 'additionality' (that is, improvement in environmental condition), which is a challenge in a region which has a relatively high level of intact biodiversity and high quality of ecosystems services.

With an eye to the future, however, there is an opportunity over the next decade to influence the development of required new methods for emergent Nature-based schemes that are potentially relevant to CYPHA water allocations. Development of rigorous, independently-verifiable methods to underpin emerging nature-based carbon projects and nature-based ecosystems services schemes (notably the Nature Repair Market) will be essential to ensure the integrity of those mechanisms, especially to tap into growing private sector investor interest. It may be timely for First Nations-led organisations (such as NAILSMA and CYLC) to seek opportunities to influence method development to (i) ensure that culturally appropriate methods are developed that create future opportunities for Cape York First nations linked to the CYPHA reserve and (ii) explore ways to reward protecting and enhancing water-related ecosystems services that are already in relatively good condition.

# Acronyms

<b>ACCU</b>	Australian Carbon Credit Unit
<b>AFN</b>	Accounting for Nature
<b>ALFA</b>	Arnhem Land Fire Abatement
<b>CA</b>	Conservation Agriculture
<b>CER</b>	Clean Energy Regulator
<b>CES</b>	Cultural Environmental Services
<b>CFI</b>	<i>Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth)</i>
<b>CICES</b>	Common International Classification of Ecosystem Services
<b>CYLC</b>	Cape York Land Council
<b>CYPHA</b>	Cape York Protected Heritage Area
<b>ERA</b>	Environmentally Relevant Activities (Qld)
<b>IPA</b>	Indigenous Protected Area
<b>IPBES</b>	Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services
<b>KMGBF</b>	Kunming–Montreal Global Biodiversity Framework
<b>LRF</b>	Land Restoration Fund (Qld)
<b>MBI</b>	Market Based Instrument
<b>MEA</b>	Millenium Ecosystem Assessment
<b>MLES</b>	Matters of Local Environmental Significance (Qld)
<b>MNES</b>	Matters of National Environmental Significance (Qld)
<b>MSES</b>	Matters of State Environmental Significance (Qld)
<b>NAILSMA</b>	North Australian Indigenous Land and Sea Management Alliance Ltd.
<b>NGO</b>	Non Government Organisation
<b>NRA</b>	<i>Nature Repair Act 2023 (Cth)</i>
<b>PES</b>	Payments for Ecosystems Services
<b>RNTBC</b>	Registered Native Title Body Corporate
<b>SEEA</b>	System of Environmental Economic Accounting
<b>SEEA-EA</b>	SEEA Ecosystem Accounting system
<b>SFM</b>	Savanna Fire Management
<b>TNFD</b>	Taskforce on Nature Related Financial Disclosures
<b>VCM</b>	Voluntary Carbon Method
<b>WALFA</b>	West Arnhem Land Fire Abatement

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