Healthy Land & Water

State of SEQ Stewardship Report

Delivering an environment for future generations to thrive

Healthy Land & Water

Citation

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About Healthy Land & Water

Healthy Land & Water is the peak environmental group for South East Queensland. For over 20 years it has been dedicated to investing in and leading initiatives to build the prosperity, liveability, and sustainability of our 'future region'. A healthy environment also supports a vibrant economy, strong livelihoods, great lifestyles and the happiness and well-being of the community. Healthy Land & Water is focused on **delivering an environment for future generations to thrive**.

Our success and strength stems from our extensive knowledge, science and evidence which informs investment in our environment. We are experts in research, monitoring, evaluation and project management. Our team has led many thousands of projects to restore waterways and landscapes, improve native habitats, manage weeds, protect native species, inform policy and educate communities on the best ways to improve and protect the environment.

Working in partnership with Traditional Owners, government, private industry, utilities and the community, Healthy Land & Water delivers innovative and science-based solutions to challenges affecting the environment. Through a combination of scientific expertise and on-ground management works, Healthy Land & Water **leads and connects through science, big data and actions that will preserve and enhance our natural assets and support resilient regions long into the future**.

Disclaimer

Traditional Owner acknowledgement

We acknowledge that the place we now live in has been nurtured by Australia's First Peoples for tens of thousands of years. We believe the spiritual, cultural and physical consciousness gained through this custodianship is vital to maintaining the future of our region.

Contact details

For further information about Healthy Land & Water www.hlw.org.au, please email info@hlw.org.au or telephone (07) 3177 9100.

Acknowledgements

Healthy Land & Water would like to thank all those who contributed to the Stewardship Program. Core partners include the Queensland Government and local governments of South East Queensland (SEQ) including, Sunshine Coast Council, Noosa Council, Somerset Regional Council, Redland City Council, Ipswich City Council, Lockyer Valley Regional Council, water service providers Urban Utilities and Unitywater.

We would also like to acknowledge all those who are contributing to the collective stewardship of the land and waterways of the region, whether through advocacy, awareness and education, planning and policy, funding and resources, on-ground action, engineering solutions, monitoring and research, and individual actions.

This initiative has collated available information on the breadth of land and water stewardship activities that are occurring in the region, with the aim that it will in time inform future land and water stewardship. The quantitative information provided here represents a substantial sample, but not a complete assessment of the level of stewardship effort in the region. It has set a strong foundation from which to build in future years.

Collaborators and data providers

Queensland Government
Noosa Council
Sunshine Coast Council
Ipswich City Council
Brisbane City Council
Somerset Regional Council
Lockyer Valley Regional Council
Logan City Council
Redland City Council
Seqwater
Urban Utilities
Unitywater
South East Queensland Catchments Members Association
Landcare and community groups of the region
Sea Shepherd
Healthy Land & Water

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Executive summary

Environmental stewardship represents the collective efforts of individuals and organisations in maintaining and enhancing ecosystems and the services they provide to generate intergenerational benefits for people[1].

In recent times, the South East Queensland region has experienced rapid population growth and land-use change, while simultaneously being increasingly impacted by the effects of climate change. As a result of this, regional ecosystems and landscape processes have been degraded and disrupted. Many organisations and individuals are actively responding to maintain and enhance ecosystems and natural assets, to sustain human well-being today and into the future.

A range of activities can be considered stewardship, including investment that increases the capacity of individuals or organisations to manage ecosystems and natural assets in a sustainable manner, adoption of practices that reduce or mitigate negative impacts, planning or policy that regulates or mitigates negative impacts, and building knowledge, capacity or raising awareness.

The SEQ Stewardship Program is an initiative of the Ecosystem Health Monitoring Program (EHMP) and Report Card, and is the first attempt at a regional scale assessment of stewardship effort with a focus on catchment and waterway management. The South East Queensland Stewardship Program key objectives are to 1. Increase awareness of stewardship success in South East Queensland, and 2. Learn from stewardship.

The State of SEQ Stewardship Report (This Report) aims to provide a quantitative and qualitative assessment of stewardship in the region. To support the assessment, a framework for reporting was developed in collaboration with partners of the program and broader catchment and waterway management community. The framework defines themes, indicators and metrics to support the assessment of stewardship at the regional scale. Themes include: First Nations cultural resource management, freshwater ecosystems, estuarine and coastal ecosystems, urban waterways, sustainable agriculture, and community stewardship.

Data covering the relevant themes and indicators was then collated to enable quantitative and qualitative assessments from various sources, including public and non-datasets. Indicator assessments are based on data collected over a five-year period 2019-2024. Importantly, some indicator assessments presented in this report are based on limited information, and do not reflect the true level of activity across the thematic areas.

Overall, this initiative sets a foundation from which to build, recognising that the focus may adapt as broader values and perspectives are reflected in the program. Also, as data collection and management improve across critical areas, such as on-ground activities, it is anticipated that the power of the indicator-based assessments presented here to inform future stewardship practice wil also increase.

Below, we outline key findings identified under each of the Stewardship themes. A representation of place-based stewardship activities as reported through this initiative, across all theme areas is presented in Figure 1. There are many reasons to celebrate the outcomes of past stewardship efforts

that provide a legacy of benefit for people and the environment, while also recognising the continued and increased effort required to conserve and enhance catchments and waterways of the region.

First Nations stewardship

Aboriginal and Torres Strait Islander peoples have been the caretakers of Country for at least 65,000 years. They have a leading role in the stewardship of waterways, actively managing the land and waters of the region. Traditional Owner rights, interests, and aspirations for land and water management are being increasingly recognised in law and policy. Information on the extent to which Traditional Owners and First Nations peoples' rights and aspirations are being reflected through law and policy, identifies where progress is being made and where gaps remain.

Recently, the Kabi Kabi peoples were recognised as holding Native Title over the Sunshine Coast Region. This adds to previous positive determinations for the Quandamooka and Jinibara peoples. Over 230,000 hectares of land and sea in South East Queensland have been formally recognised with Native Title rights and interests. This makes Traditional Owners the largest non-government landholders in the region.

SEQ Traditional Owner Natural Asset Management key statistics

- 8,575 Cultural heritage sites formally recorded in South East Queensland.
- 14 Indigenous Land Use Agreements have been formalised within South East Queensland, covering 372,556 ha.
- Over 230,00 hectares of land and sea have been formally recognised with Native Title rights and interests (exclusive and non-exclusive).
- Traditional Owners are now the largest non-government landholders in South East Queensland.
- The three largest sand islands in the world are actively managed by Traditional Owners (two through joint management).

In many landscapes, First Nations groups are empowered to effect large-scale positive change in waterway conservation and restoration throughout SEQ landscapes. As a result, residents within the region continue to benefit from First Nations' long-term custodianship of land and water.

Freshwater ecosystems

South East Queensland has a diversity of freshwater ecosystems, which support numerous native plant and animal species. Initiatives aiming to conserve and rehabilitate freshwater ecosystems within the region include protected area management, the conservation and planting of native vegetation along waterways, as well as the removal of fish barriers and the construction of fish passages. Improved understanding of species' distribution (i.e. Platypus) is also a key conservation initiative within SEQ. While these initiatives may differ in scale and focus, they all contribute to the collective stewardship of the region's freshwater ecosystems."

Recently, water utilities have invested in catchment management activities, including riparian vegetation conservation and rehabilitation activities. Seqwater's Source Water Protection Program aims to increase potable water security in the region by undertaking targeted investment in water quality improvements and catchment resilience.

Federal, state and local governments are also implementing a range of strategies and are delivering works alongside communities to conserve and enhance freshwater ecosystems. For example, the Resilient Rivers initiative commits to investing $40 million from 2023 to 2028 to improve

the health and resilience of the region's rivers and waterways. The Federal Government is also investing in urban waterways through the Urban Rivers and Catchments Program.

Landcare and community groups continue to have a key role in the conservation and rehabilitation of creek corridors. Much of this work is delivered by volunteers as part of local community groups and supported through Local Government.

Freshwater ecosystems key statistics 2019-2024

- Over 72 projects and 689 sites.
- 37% of remnant natural freshwater wetlands (inc. riverine) areas fall within protected areas.
- Over 230,000 native plants have been planted in riparian habitats.
- Over 2,000 hectares of riparian land have been treated for weeds.
- Over 60 community groups are participating rehabilitation of freshwater ecosystems.

This combined effort is maintaining and enhancing freshwater ecosystems' condition and services, such as water quality protection and habitat provision in many areas across the region. However, substantial improvements in freshwater ecosystem condition at the whole of catchment scale are yet to be realised. Effective planning and policy are also critical to minimise and prevent environmental harm, and to ensure targeted rehabilitation efforts have a net positive effect on catchment condition.

Estuarine and coastal ecosystems

South East Queensland's coastal estuarine and marine ecosystems are unique, supporting rich biodiversity alongside cultural and social values. For instance, both the Noosa River (and its associated lake systems) and Quandamooka (Moreton Bay) are internationally recognised for their exceptional biodiversity values.

Initiatives aiming to conserve and rehabilitate these systems include protected area management, the active restoration of wetlands, including saltmarsh and reducing threats such as pollution, debris and plastic. Raising awareness and educating residents regarding local biodiversity values is also an important initiative within SEQ's estuarine marine environments.

Water utilities, local government and communities are actively working to rehabilitate estuarine wetlands and other coastal habitats, recognising the multiple ecosystem services they can provide, including flood protection, habitat provision, nutrient processing, carbon sequestration and recreational and social value.

Estuarine and coastal ecosystems key statistics 2019-2024

- 49 projects and 165 sites.
- 37% of remnant estuarine intertidal wetlands fall within protected areas.
- Over 21,000 trees and other native plants have been planted in estuarine and coastal habitats.
- Over 5,000 hectares have been treated for pest animals.
- Over 10,000 kilograms of litter or debris have been removed from coastal habitats.
- Over 400 volunteers have participated in on-ground activities.
- Over 60 community groups are participating rehabilitation of freshwater ecosystems.

The high level of social and cultural connections that residents have with coastal areas is also reflected in the level of stewardship activity in these environments. Communities and volunteer

groups actively manage coastal areas and participate in citizen science initiatives such as water quality and coral reef monitoring, shorebird surveys and litter and debris clean-ups.

Urban waterways

South East Queensland has a large and expanding urban footprint. Established and rapidly developing urban areas place pressures on aquatic ecosystems. These pressures include increasing pollution, water extraction, destruction and other direct disturbances to habitats.

Local governments and water service providers have key responsibilities in the effective management of urban water.

Integrated water management is a holistic collaborative approach to water management that considers how the delivery of water alongside the management of wastewater and stormwater can positively contribute to water security, urban amenity and public and environmental health

An assessment of Urban Water Stewardship in South East Queensland (based on three council areas) has found that the average level of stewardship practice for local government is in line with best practice for developing areas, at a current minimum standard for established urban areas and in line with current best practice for point sources.

For established urban areas, key focal areas include: Undertaking Urban Stormwater Management Planning as part of broader Total Water Cycle management planning or similar (strategic catchment plans), improving asset maintenance processes and identifying where new or retrofitted stormwater treatment infrastructure is needed. However, given the level of urban development in the region, what is considered best practice may not be sufficient to adequately manage and/or mitigate the impacts of rapid urban growth.

Urban waterways key statistics 2019-2024

Level of urban water stewardship practice across established urban areas – current minimum standard.

Level of urban water stewardship practice across developing urban areas – In line with current best practice.

Level of urban water stewardship practice for point sources (STPs) – In line with current best practice.

Sewage treatment plant average nitrogen removal efficiency ~94% - leading practice level 2, slightly below what is considered "best practice" (level 1).

Over 10,000 kilograms of litter or debris have been removed from coastal habitats.

Over 400 volunteers have participated in on-ground activities.

Over 60 community groups are participating rehabilitation of freshwater ecosystems.

As the population grows, there is an increasing demand for sewerage services. The total nutrient load discharged to some estuaries is increasing alongside population growth. Further, sewage overflows often occur during high rainfall and flood events. Innovative engineering solutions are required to address these challenges.

Innovations in sewage processing is key to the management of point source impacts on SEQ waterways. The level of nutrient release to waterways from sewage treatment plants in dense urban areas is typically constrained by the treatment technology used. Nutrient removal efficacy can be used as an indicator of the relative performance of nutrient management in these areas.

The average level of nitrogen removal efficiency of sewage treatment plants operating in SEQ is ~94%. This means that on average 94% of the nitrogen received at the plant via the sewerage

network is removed during the treatment process. This is equivalent to leading practice level 2, which is slightly below what is considered "best practice" (level 1).

Sustainable agriculture

South East Queensland produces a substantial portion of Queensland's total agricultural commodities. Rural areas make up approximately 1.9 million hectares or 85% of the South East Queensland (SEQ) landscape, much of which is managed by farmers.

Implementation of sustainable agricultural practice requires vision, persistence, innovation, and often up-front and ongoing expenses. Many organisations and individuals contribute to sustainable agriculture practices across the region, including farmers, industry groups, government, and local communities.

The agricultural industry, government, and natural resource management organisations are actively investing to support farmers in managing land sustainably. These investments often take the form of best management practice improvement programs, capacity-building or extension activities.

Sustainable agriculture key statistics 2019-2024

- Over 23 projects and 42 sites.
- >80% of land in South East Queensland is managed by farmers.
- Over 1500 landowners have been engaged in sustainable agriculture capacity-building programs.
- Over 135 extension services have been provided to landowners.
- Over 18 sustainable agriculture demonstration sites have been established.

Natural resource management organisations, including Healthy Land & Water, have been delivering extension and capacity-building services across South East Queensland, through funding from the state and federal governments.

Sustainable agriculture capacity building and on-ground behaviour change programs across the region are resulting in measurable improvements in land condition, enhancing agricultural productivity and farm enterprise sustainability.

Community stewardship

Community organisations and individuals play a significant role in stewarding the landscapes and waterways of the region. Community groups include local Bushcare and Coast Care groups, friends of groups, community garden groups, and citizen science groups.

There are many benefits of community-led land and water stewardship activities. For example, these activities reflect local knowledge, can result in increased connection of residents to natural areas and increase local social connections. Over the last five years, community groups of the region have played a leading role in the delivery of on-ground conservation and rehabilitation initiatives.

Despite facing many challenges, community-led environmental initiatives in South East Queensland achieve impressive outcomes. Challenges faced by many community groups include funding constraints, which limit the ability to plan and execute long-term conservation projects, insufficient participation in on-ground activities, and capacity limitations, including time, resources, coordination support, skills, and knowledge.

Individuals also play an important role in landscape stewardship. One in four residents of the region indicates they have participated in, or undertaken stewardship actions, with most acting independently rather than as part of a group. For individuals participating in stewardship actions,

the most frequent activity is picking up litter. Many landholders in the region have committed to conserving remnant and high-value ecosystem on their property through conservation covenants, delivered through the Land for Wildlife program.

Community stewardship key statistics 2019-2024

- Over 81 projects and 222 sites.
- Over 60 community groups are active in conservation and rehabilitation initiatives.
- Over 4,500 volunteers have participated in community-led stewardship initiatives.
- Community groups have planted over 50,000 plants to restore native habitats.
- 25% of residents in South East Queensland undertake stewardship activities.
- Residents have a relatively high level of water literacy compared to the national average.

The relative water literacy of communities can influence their willingness and readiness to change behaviour and/or accept changes in practice. Targeted engagement with South East Queensland residents focused on improving water treatment and drinking water sources and supply will likely increase the communities' willingness to change behaviour in pursuit of sustainable urban water objectives.

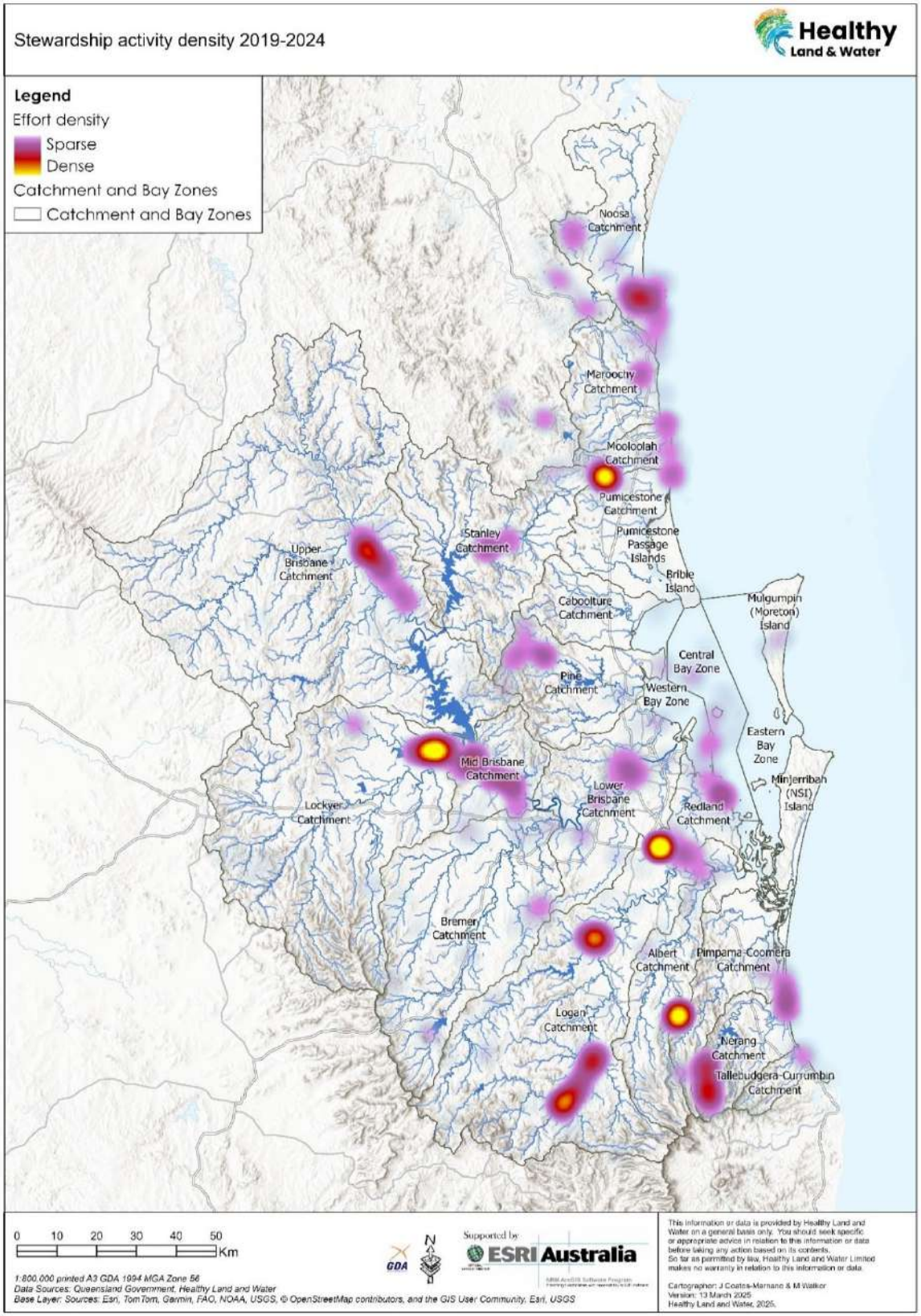

***Figure 1**: Reported stewardship activities in South East Queensland 2019-2024 (point data is presented as a density heatmap in an effort to protect confidentiality).*

Introduction

South East Queensland waterways and catchments

From the headwater streams of the Gondwana rainforests to the tidal channels and seagrass meadows of Quandamooka (Moreton Bay), the region has a wide variety of waterways, each with unique features and ecology. The diversity of waterways and landscapes contributes to the region's rich biodiversity, supporting over 154 native plant communities, and many thousands of species of animals, including fish, birds and mammals.

The region's waterways also hold high cultural and social significance, supporting community wellbeing and underpinning the lifestyle of residents of the region[1]. Catchments and waterways also provide many economic values, such as water provision for agricultural, industrial and domestic uses, along with tourism opportunities and fisheries[2].

Unfortunately, there are significant historical and ongoing threats to the region's catchments and waterways that present a risk to these irreplaceable values. These include habitat loss and fragmentation, river regulation and unsustainable water extraction, pollution, introduced species, and climate change[3]. As a result, the environmental condition of many catchments and waterways is currently poor or very poor (**Figure** 2).

The region is also experiencing rapid land-use change, as one of the fastest growing regions in terms of population in Australia. This is predicted to intensify, with a forecasted 2.2 million people expected to migrate to the region over the next 25 years.

The frequency and intensity of climate-induced disturbances, such as floods and droughts, combined with ongoing land-use change, are threatening the health of waterways within the region. Many organisations, individuals, and groups are actively managing waterways and catchments within SEQ, with the goal of improving and maintaining benefits for people and the environment as various challenges arise.

What is stewardship?

Stewardship represents the collective efforts of individuals and organisations in maintaining and enhancing ecosystems and the services they provide to generate intergenerational benefits for people. Collaborative planning and action at the landscape scale that considers a range of perspectives, values, and interests improves outcomes of these efforts. A range of activities that aim to affect change can be considered stewardship actions and may be undertaken by both individuals and organisations[4]. These can include:

- Active management of natural resources to build resilience or protect and enhance their condition.
- Investment that increases the capacity of individuals or organisations to manage natural assets in an ethically responsible and sustainable manner, including community engagement.

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[1] Dean, A., Shultz, T. 2024 South East Queensland Catchments Social Monitoring Program for HLW – 2024 Research Report.
[2] Thurstan R, Fraser K, Brewer D, Buckley S, Dinesen Z, Skewes T, Courtney T & Pollock B (2019) 'Fishers and fisheries of Moreton Bay'. In Tibbetts IR, Rothlisberg PC, Neil DT, Homburg TA, Brewer DT & Arthington AH (Eds), Moreton Bay Quandamooka & Catchment: Past, present, and future, The Moreton Bay Foundation. Brisbane, Australia.
[3] Arthington, A, Kennard, M,J., Mackay, S, J., James, C., Ronan, M. 2019. Freshwater wetlands of Moreton Bay Quandamooka and catchments: Biodiversity, ecology, threats and management., Moreton Bay Quandamooka & Catchment: Past, present, and future., pp. 319.-333
[4] Nasplezes R, Bolzenius J, Wood A, Davis R, Maxwell P, Rissik D, Ross H (2019). Stewardship as a driver for environmental improvement in Moreton Bay. In Tibbetts, I.R., Rothlisberg, P.C., Neil, D.T., Homburg, T.A., Brewer, D.T., & Arthington, A.H. (Editors). Moreton Bay *Quandamooka* & Catchment: *Past, present, and future*. The Moreton Bay Foundation. Brisbane, Australia. Available from: https://moretonbayfoundation.org/.

- Adoption of practices that reduce or mitigate negative impacts associated with certain activities.
- Policy and planning that mitigates or regulates negative impacts of resource use or development on the environment and natural resources.
- Actions taken by individuals, including private landholders, to actively protect and manage land and waterway condition.

This program of work focuses on stewardship actions that target catchment and waterway conservation and enhancement across the region. Many diverse groups and institutions undertake land and water stewardship activities in South East Queensland. They also have different drivers that direct their objectives, reflecting place and interlinked social and cultural values. These groups and institutions include:

- First Nations peoples.
- federal, state and local government.
- Educational institutions (universities, schools).
- Utility service providers (water, electricity etc.).
- Natural Resource Management Organisations.
- Non-Government-Organisations (e.g. The Nature Conservancy, WWF, etc).
- Landcare and community groups (e.g. catchment and Landcare groups).
- Private landholders.
- Individuals.
- Businesses.

SEQ Stewardship Program goals and theory of change

Context

For over 25 years, the regional Ecosystem Health Monitoring Program (EHMP) has tracked the condition of South East Queensland's catchments and waterways with results published via an annual Report Card. A primary goal of the program is to act as a regional monitoring, evaluation and reporting component of management strategies targeting catchment and waterway conservation and rehabilitation.

Reliable information on the diversity and scale of catchment and waterway management activities and investments has been insufficient. Without this information, it is very challenging to coordinate effort and evaluate the effectiveness of collective investments in catchment and waterway management and stewardship.

Stewardship Program goals

The stewardship program goals and objectives were established in collaboration with the state and local governments of South East Queensland, water service providers, and the broader catchment management network in the region. This program will adapt and improve as broader perspectives, values and interests are reflected in the initiative. This broader program aims to be an accompanying product to the Ecosystem Health Monitoring Program and assessment of catchment and waterway health (Report Card) (**Figure** 2). A Report Card and Stewardship Report will be produced in alternating years.

SEQ Stewardship Program goals and objectives

Goal: Foster stewardship to protect and restore waterways and catchment health and resilience.

Objective 1: Increase awareness of stewardship success in South East Queensland:

- 1a: Build community awareness, action and support for waterway and catchment conservation and condition enhancement.
- 1b: Showcase, celebrate, and inspire stewardship action.

Objective 2: Learn from stewardship:

- 2a: Track and report on the breadth of stewardship activity
- 2b: Provide evidence and support continued improvement in stewardship activities.
- 2c: Develop guiding principles for landscape and waterway place-based stewardship.

The products of this works were developed with specific reference to the goals and objectives. The key products include:

- **Local success stories** – showcasing successful local-scale stewardship initiatives.
- **Regional stewardship stories** – showcasing broader initiatives being undertaken at a regional scale.
- **State of SEQ Stewardship Report** – Quantitative assessment of stewardship effort.
- **Stewardship Mapping Tool** – a web map of stewardship activities or projects across SEQ.
- **A Stewardship website** - All products are available through the stewardship website.

The relationship between these products and the program objectives is outlined in **Table** 1.

***Table** 1: Stewardship program products and aligned objectives.*

Product	Aligned objectives
Local success stories	Showcase, celebrate, and inspire stewardship action. Build community awareness, action and support for waterway and catchment conservation and condition enhancement.
Regional stewardship stories	Showcase, celebrate, and inspire stewardship action. Build community awareness, action and support for waterway and catchment conservation and condition enhancement.
State of Stewardship Report	Track and report on the breadth of stewardship activity. Provide evidence and support for continued improvement in stewardship activities.
Stewardship Mapping Tool	Track and report on the breadth of stewardship activity.

State of SEQ Stewardship Report

The *State of SEQ Stewardship Report* aims to provide a quantitative assessment of stewardship activities, aiming to support objective 2 (learn from stewardship). The *State of SEQ Stewardship Report* provides the tracking and reporting mechanism for the program (2a), and an evidence base from which to support continued improvement in stewardship activities.

In time, it is intended that the *State of SEQ Stewardship Report* will also:

1. Identify where and what type of management activities are occurring within the context of catchment and waterway condition and pressures.

2. Increase transparency in terms of specific organisations and the actions they take to protect and enhance existing environmental values.
3. Assess the current level of stewardship in the context of what is required to conserve and enhance existing values, including under population growth and climate change scenarios.
4. Support gap identification of regions or stewardship activities that have yet to be addressed to improve social and environmental outcomes.
5. Improve our assessments of the value of historic investments in waterway and catchment management at multiple landscape scales.

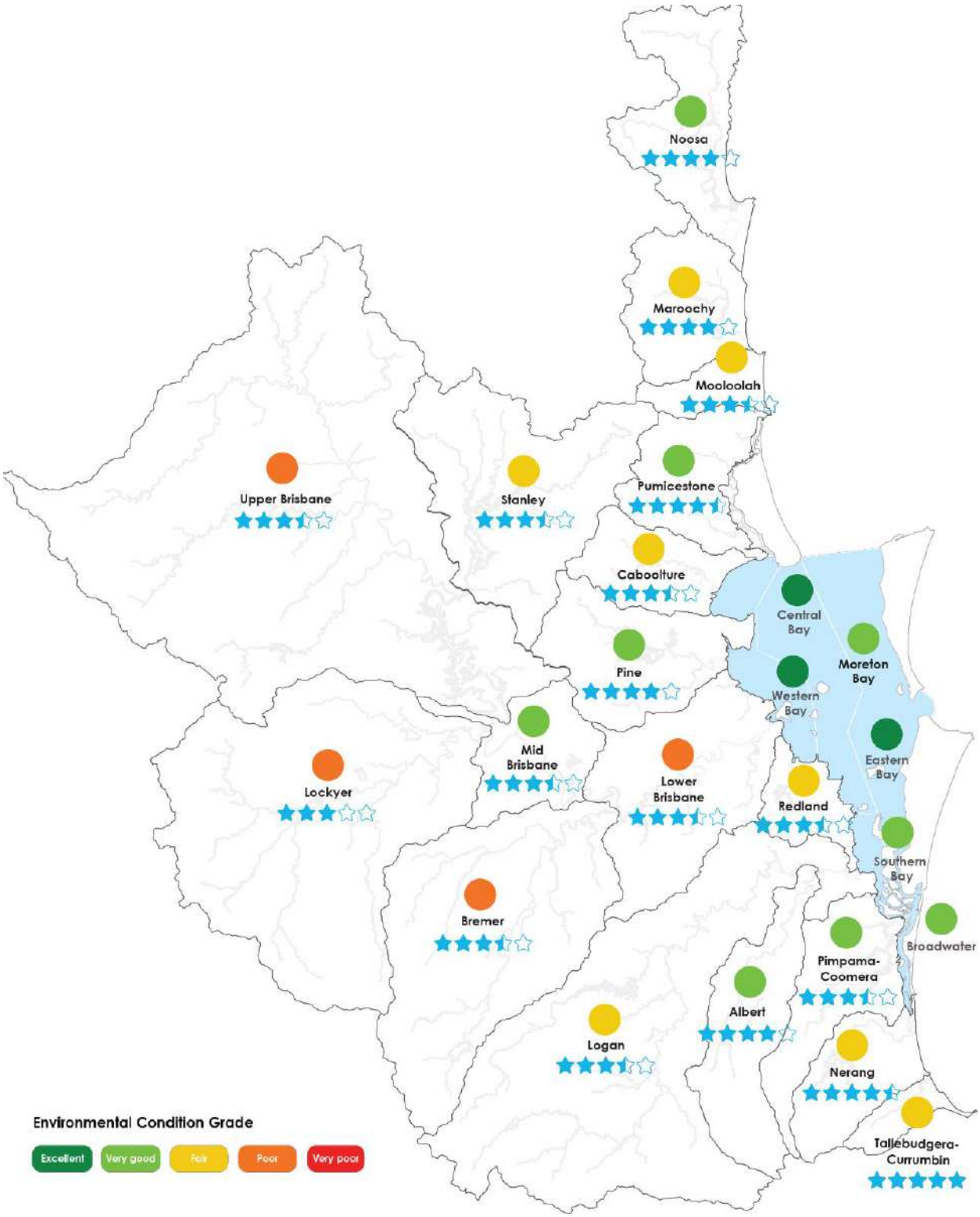


Figure 2: *Environmental condition of South East Queensland catchments and waterways - Report Card 2023.*

Approach

This *State of SEQ Stewardship Report* has been developed in collaboration with state government, local governments, water service providers, and the broader NRM community. This process was iterative and involved the following steps:

- Initial scoping and conceptual development.
- State of Stewardship Indicator Framework.
- Workshops and product co-design.
- Data sourcing and management.
- Product development.

State of SEQ Stewardship indicator framework

The State of SEQ Stewardship indicator framework outlines the structure of stewardship reporting, that includes themes, indicators and metrics (**Figure** 3, **Table** 1). The list of indicators presented in this report is provided in **Table 1**, with the full initial list provided in APPENDIX A: Complete key indicator list. This framework has been adapted and enhanced through stakeholder consultation and aligns with the South East Queensland Natural Resource Management Plan. The core themes include:

- Freshwater ecosystems.
- Estuarine and coastal ecosystems.
- Urban waterways.
- Sustainable agriculture.
- Community stewardship.
- First Nations.

The First Nations cultural resource management indicators were previously developed with guidance from Healthy Land & Water's Indigenous Engagement Strategy Committee.

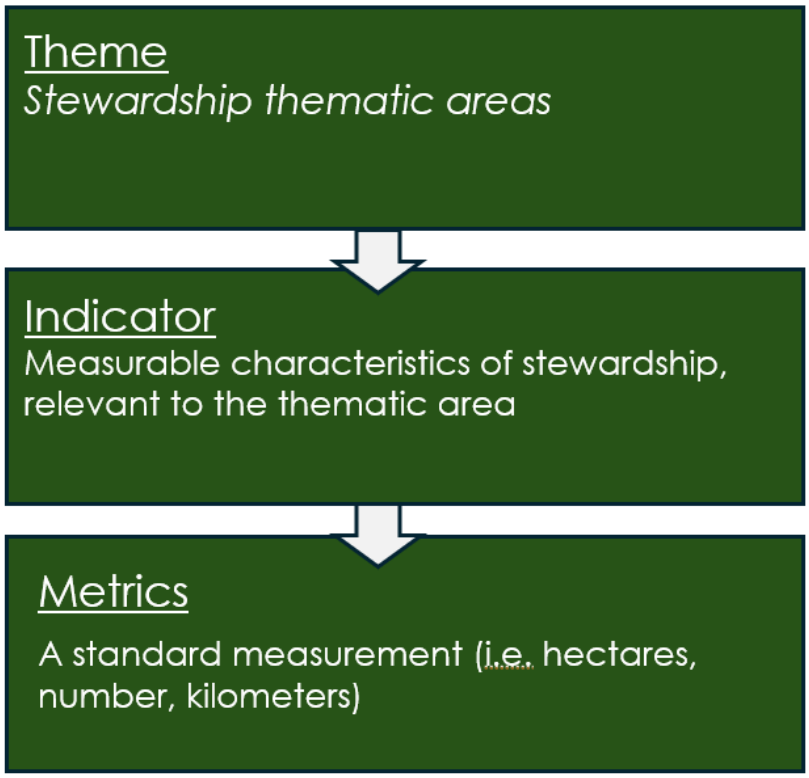


***Figure** 3: State of Stewardship Framework – relationship between themes, indicators and metrics.*

Data acquisition, management and key indicator assessments

Data to support indicator assessments was collated from a range of publicly available data, and data available on request from local government, state government, NGOs, and water utilities. Data was also sourced from the EHMP social monitoring program, workshops with key stakeholders, events, and landholder engagement registers, along with other sources. Data on stewardship activities collected across the themes and indicators is currently being managed within a centralised database to improve the efficiency of reporting. The detailed data collection and data management methods are recorded in *The State of SEQ Stewardship Methods Manual*.

Key indicator assessments are data-driven assessments of the status and breadth of stewardship activity. The indicator assessments included in this report have been selected based on relevance and data availability (

Table 2). It is expected that the key indicator list will be refined as the program matures. This is not an exhaustive list of all efforts undertaken in the region and largely reflects a snapshot of effort based on relevant data that could be readily shared by key partners of the program.

Data for each indicator assessment was considered either:

- Limited: Considered to represent a limited sample and therefore does not support a robust assessment of the indicator.
- Moderate: Considered to represent a moderate sample supporting a partial assessment of the indicator.
- Good: Considered to represent adequate sample to support a reliable assessment of the indicator.

Data privacy

All efforts have been taken to manage any sensitive information collected through this initiative. These efforts include:

- Only collecting and managing information required for the primary function of the initiative.
- Providing stakeholders and data providers with access to their own information, and the right to seek its correction.
- Publishing and sharing data in line with data providers' agreements and associated conditions.

Table 2: *State of Stewardship Report – key indicators (2025 Report).*

Theme	ID	Key indicator	Category
Cultural resource management	CRM01	Recognition of rights and interests.	Empowering.
	CRM02	Cultural referrals.	Empowering.
	CRM03	Cultural surveys.	Knowledge and understanding.
	CRM04	Cultural protection and management.	Planning and policy.
Freshwater ecosystems	FW01	Freshwater wetlands, creeks and rivers within protected areas.	Policy and planning.
	FW02	Riparian zone rehabilitation.	On-ground action.
	FW03	Freshwater stream or wetland rehabilitation.	On-ground action.
Estuarine and coastal ecosystems	EC01	Estuarine wetlands in protected areas.	Policy and planning.
	EC02	Restoring estuarine, coastal and marine ecosystems.	On-ground action.
	EC03	Reducing threats to estuarine, coastal and marine ecosystems.	On-ground action.
Urban waterways	UW01	Urban water stewardship progress in South East Queensland.	Policy and planning.
	UW02	Sewage treatment nitrogen removal efficiency.	Engineered solutions.
Sustainable agriculture	SA01	Land-holder engagement and capacity.	Empowering.
	SA02	On-ground behaviour change.	On-ground action.
Community stewardship	CS01	Community-led conservation and restoration effort.	On-ground action.
	CS02	Individual stewardship of South East Queensland residents.	Empowering.
	CS03	Water literacy of South East Queensland residents.	Empowering.

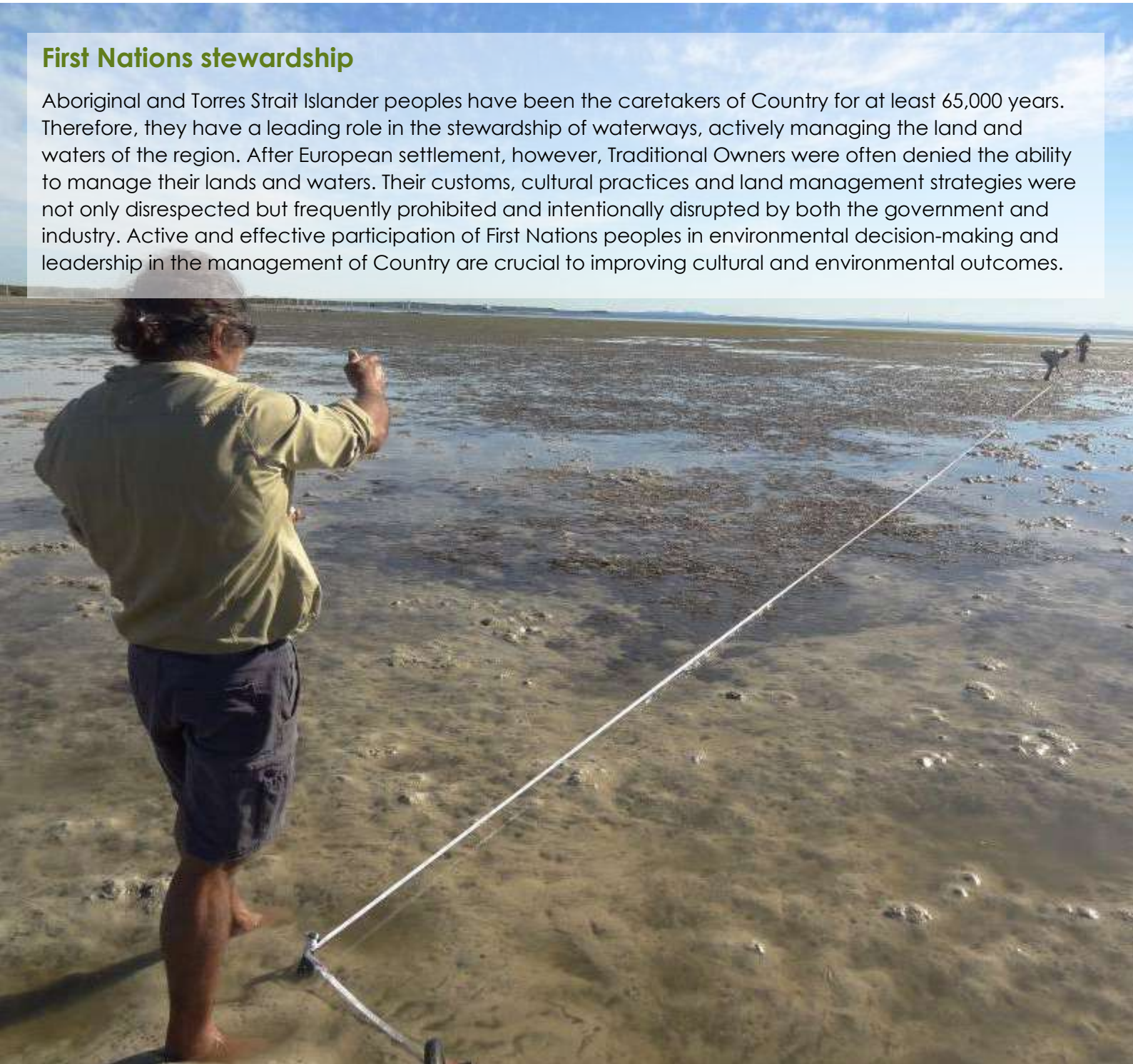
People, place and environment

Many diverse groups and institutions engage in land and water stewardship activities in South East Queensland. Each group is driven by different objectives, which often reflect the group's specific purpose and place. These groups and institutions include:

- First Nations peoples.
- Educational Institutions.
- Federal, state and local governments.
- Water service providers and bulk water suppliers.
- Natural resource management organisations.
- Non-government organisations
- Community groups.
- Private landholders.
- Businesses.

First Nations stewardship

Aboriginal and Torres Strait Islander peoples have been the caretakers of Country for at least 65,000 years. Therefore, they have a leading role in the stewardship of waterways, actively managing the land and waters of the region. After European settlement, however, Traditional Owners were often denied the ability to manage their lands and waters. Their customs, cultural practices and land management strategies were not only disrespected but frequently prohibited and intentionally disrupted by both the government and industry. Active and effective participation of First Nations peoples in environmental decision-making and leadership in the management of Country are crucial to improving cultural and environmental outcomes.



Federal, state and local governments

Australia's three-tiered government system provides essential services to citizens through revenue raised via taxes, fees, and various charges. These funds support the development and implementation of policies and legislation across federal, state, and local jurisdictions. In the context of waterway and land management, the three levels of government have varying levels of responsibility that can overlap. Some examples of how different levels of government may influence environmental stewardship in the region are provided below.

Federal government

At a national level, the key piece of environmental legislation is the *Environmental Protection and Biodiversity Conservation Act 1999*. This act protects and manages Australia's environment, including the protection of native species and ecological communities. Generally, this act only applies to the environments that are listed as Matters of National Environmental Significance (MNES), and therefore only protects and manages nationally and internally significant species and habitats. This includes landscapes such as the Ramsar wetland of Moreton Bay and Gondwanan rainforests, and species such as migratory shorebirds and east coast koalas. The federal government also sets the national water policy, with a primary focus on water governance across multiple jurisdictions (i.e. Murray-Darling Basin).

State government

The Queensland Government has extensive roles and responsibilities with respect to conservation and environmental management. The state government has the power to make laws over environmental matters. Some of the key pieces of environmental legislation are the *Environmental Protection Act 1994,* the *Water Act 2000,* and the *Vegetation Management Act 1999.* These set out the guidelines by which government, industry, and individuals go about interacting and managing natural resources. With respect to waterways, the state has a responsibility to monitor waterway health and enforce organisation compliance and monitoring requirements as set out in the *Environmental Protection* and *Water Supply Act.* Another key state government instrument is the State Planning Policy, which expresses the Queensland Government's interests in, and policies for, a range of land use planning matters.

Local government

Local governments have responsibilities across town and land-use planning, building approvals, and water and sewerage services. The primary legislation under which local government operate is the *Local Government Act 2009* (LGA). Local governments also manage parkland and bushland reserves and waterway corridors. When making updates to local town-planning schemes, local governments also integrate the State Planning Policy to ensure state interests are reflected at a local government scale. Urban water management and planning is also a core responsibility of local governments.

The three levels of government also work closely to deliver major initiatives or services. Recently, the SEQ City Deal committed $40 million over the next five years (until the end of the 2028 financial year) to fund works to improve the health and resilience of the region's rivers and waterways. The SEQ City Deal, through the Resilient River's Initiative, aims to deliver outcomes to ensure a healthy, sustainable and liveable region through new investments in urban amenities and blue and green environmental assets.

Water service providers

Water service providers are organisations responsible for the supply of water and sewerage services. In South East Queensland, Seqwater is the Queensland bulk water supplier responsible for delivering a safe, secure and cost-effective bulk water supply for more than 3 million people.

Bulk water supply authority – Seqwater

Seqwater manages the region's water supply and aspects of catchment health. The utility also offers community recreation facilities and provides water to businesses, including irrigators and manufacturers. Urban water use accounts for more than 70% of water consumption in the region. Rapid population growth in SEQ is therefore placing increased pressure on the availability of a safe potable water supply[5]. Further, major water supply catchments within the region (maybe list the catchments) have a high proportion of agricultural land and rivers in poor condition, which can present significant risks to source water quality and impact water supply reliability. To safeguard drinking water sources, Seqwater is increasing investments in catchment management, specifically within water supply catchments.

Water distribution and sewerage services

Water distribution and sewerage services are managed by different organisations depending on the Local Government Area. Urban Utilities provides water distribution and sewerage services within the Brisbane, Ipswich, Scenic Rim and Somerset Local Government areas. Unitywater provides water distribution and sewerage services within the Noosa, Sunshine Coast, and City of Moreton Bay local government areas. City of Gold Coast Council, Redlands Council and City of Logan Council manage water distribution and sewerage services. Releases from sewage treatment plants to waterways and land are regulated by the Queensland Government under the *Environmental Protection Act* (1994).

Natural Resource Management organisations

There are 12 regional Natural Resource Management (NRM) organisations working across Queensland to manage land, water, soil, plants and animals for the benefit of people and the environment. NRM organisations aim to take a whole-of-landscape approach to land and water management. In South East Queensland, Healthy Land & Water is the nationally recognised NRM organisation for the region, and delivery partner for Federal initiatives targeting natural asset conservation and enhancement.

NRM organisations are guided by regional Natural Resource Management (NRM)Plans, developed in consultation with government, community and industry and outline targets for natural assets. The regional NRM bodies partner with government, First Nations groups, the community and environmental groups, including Landcare to deliver activities across the region.

Landcare and community groups

Landcare groups were established through federal funding to support locally led land and water management initiatives. These grassroots groups specialise in on-ground conservation and rehabilitation works. There are many landcare, catchment and community groups working across South East Queensland coordinating on-ground rehabilitation works. South East Queensland local

[5] South East Queensland Water Security Program 2023. Seqwater.

governments actively support these initiatives by providing grants and essential resources. These groups may include:

- Catchment groups or associations (Examples: Pine River Catchment Association, Noosa Integrated Catchment Associations, Sunshine Coast Bushcare, Mary River Catchment Coordinating Committee.
- Local volunteer groups such as Take Action for Pumicestone Passage and Bribie Island Environmental Protection Association Inc.
- Community and Landcare groups (Example: Noosa and District Landcare).

The South East Queensland Catchments Members Association (SEQCMA) forms a strategic alliance between community, government and industry partners dedicated to addressing environmental challenges across the region. The association brings different community stakeholders together to improve and protect lands, forests, bushland, waterways, wetlands and coastal regions.

Private landholders and individuals

The majority of land in South East Queensland is privately owned. The management practices implemented by landholders directly impact both terrestrial and aquatic ecosystem health throughout the region. With such vast areas falling under private ownership, individual landholders and community participation are crucial to the success of regional conservation, rehabilitation and natural resource management efforts. A range of government-funded programs provide incentives and support for landowners to improve land and waterway condition. As an example, the Land for Wildlife program is assisting over 5,000 landholders in the region to manage wildlife habitat on their properties[6].

[6] Land For Wildlife SEQ, 2024. Annual Report 2023-2024.

Thematic indicator assessments

Freshwater ecosystems

South East Queensland has a diversity of freshwater ecosystems, including large permanent rivers, ephemeral upland creeks and freshwater wetlands. The region has more than 16,000 kilometres of rivers and streams, 143,400 hectares of all wetland types and groundwater sources[7].

Freshwater ecosystems provide essential ecosystem services such as drinking water provision, habitat provision, while also providing critical ecological functions including nutrient cycling, soil formation and flood regulation. These ecosystems support diverse aquatic and terrestrial life-forms, including the iconic Australian Lung Fish (*Neoceratodus forsteri)* and platypus (*Ornithorhynchus anatinus*).

While naturally adapted to South East Queensland's variable climate, these freshwater ecosystems face mounting pressure from land-use change and climate extremes. Key threats include climate change, water extraction, invasive animal and plant species, pollution, land-use change and resource extraction (mining).

Each year, the freshwater stream health of catchments across South East Queensland is assessed as part of the EHMP. Overall, stream health in South East Queensland has shown to be "fair"[8]. Recent years of high rainfall and flood events have restored flow connectivity, improving fish habitat conditions within freshwater ecosystems. However, the expanding populations of non-native invasive freshwater fish such as the pearl cichlid (*Geophagus braziliensis*) and Mozambique Tilapia (*Oreochromis mossambicus*) present a key threat to native fish communities.

Freshwater ecosystem stewardship key indicators

Key indicators supporting the assessment of freshwater ecosystem stewardship are outlined in **Table 3**. This supports an initial assessment of stewardship activity relevant to freshwater ecosystem conservation and rehabilitation in the region.

***Table 3**: Freshwater ecosystem stewardship key indicators.*

Indicator ID	Key indicators
FW01	Freshwater wetlands, creeks and rivers within protected areas.
FW02	Riparian zone rehabilitation.
FW03	Freshwater of wetland rehabilitation.
FW04	Reducing threats to freshwater ecosystems.

[7] https://www.hlw.org.au/region/about/natural-assets/water#gsc.tab=0.
[8] Healthy Land and Water, 2023 Report Card Catchment Summaries.

***Figure 4**: Upper Noosa River 2023.*

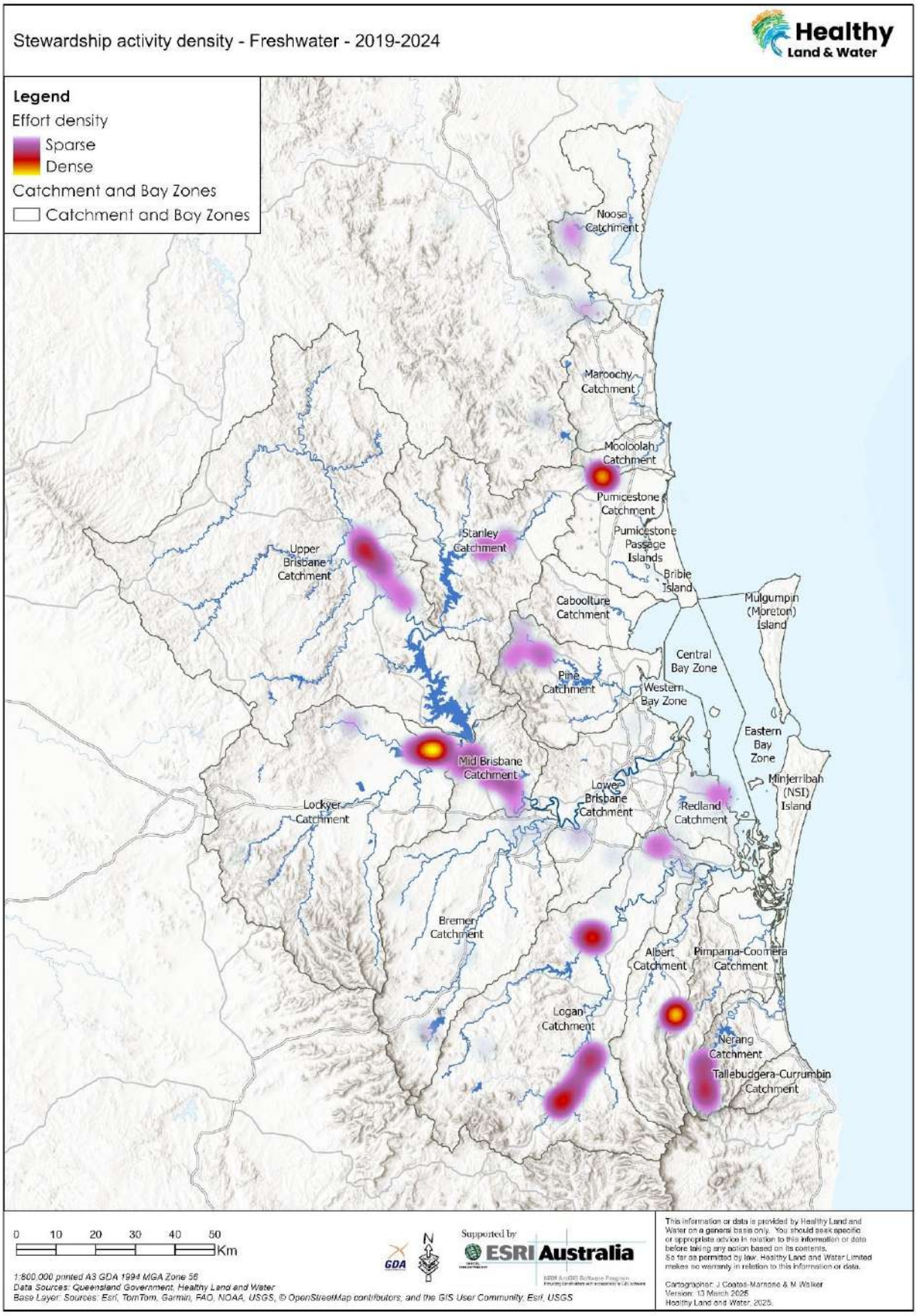


***Figure 5**: Stewardship activity density freshwater theme 2019-2024.*

Freshwater wetlands and rivers within protected areas

Category	Planning and policy
Data source(s)	Queensland Government
Data quality	Good

Why this indicator?

Many freshwater wetlands and riverine ecosystems have been irreversibly degraded or removed entirely from the landscape over the last 200 years. The designation of protected areas in South East Queensland is undertaken to conserve and restore terrestrial and aquatic ecosystems. Achieving freshwater ecosystem conservation outcomes through protective measures requires a design that reflects the diverse elements of the waterscape. However, protection of freshwater biodiversity within designated areas is largely an outcome of association with terrestrial reserves. Assessing the diversity and types of freshwater ecosystems that are currently represented within the protected area footprint of South East Queensland can inform continued conservation planning.

Assessment

The total area and relative proportion of natural (H1) freshwater wetlands within protected areas with a high level of protection was calculated for the SEQ region, and for each catchment and bay island respectively. A high level of protection was defined as land areas that fell under either:

- Conservation Parks - *Nature Conservation Act* 1992.
- National Park (including scientific) - *Nature Conservation Act* 1992.
- Nature Refuges - *Nature Conservation Act* 1992.

Wetland mapping was provided by the Queensland Government[9].

Key findings

37% of remanent natural freshwater wetlands (including riverine) areas fall within areas of managed protection in the region, representing ~40,600 hectares (

[9] State of Queensland (Department of Environment and Science) 2023. Updated data available at http://qldspatial.information.qld.gov.au/catalogue//.

Table 4). Catchments with the largest total areas of remnant natural wetlands include the Noosa (19,128 hectares), Lockyer (2,381 hectares), Maroochy (1,371 hectares) and Pumicestone (1,273 hectares) catchments. The Noosa catchment has the highest percentage of remnant natural freshwater wetlands that fall within protected areas at ~80%, the next highest is the Mooloolah catchment at 34%, followed by Pimpama-Coomera (25%) and Maroochy (24%).

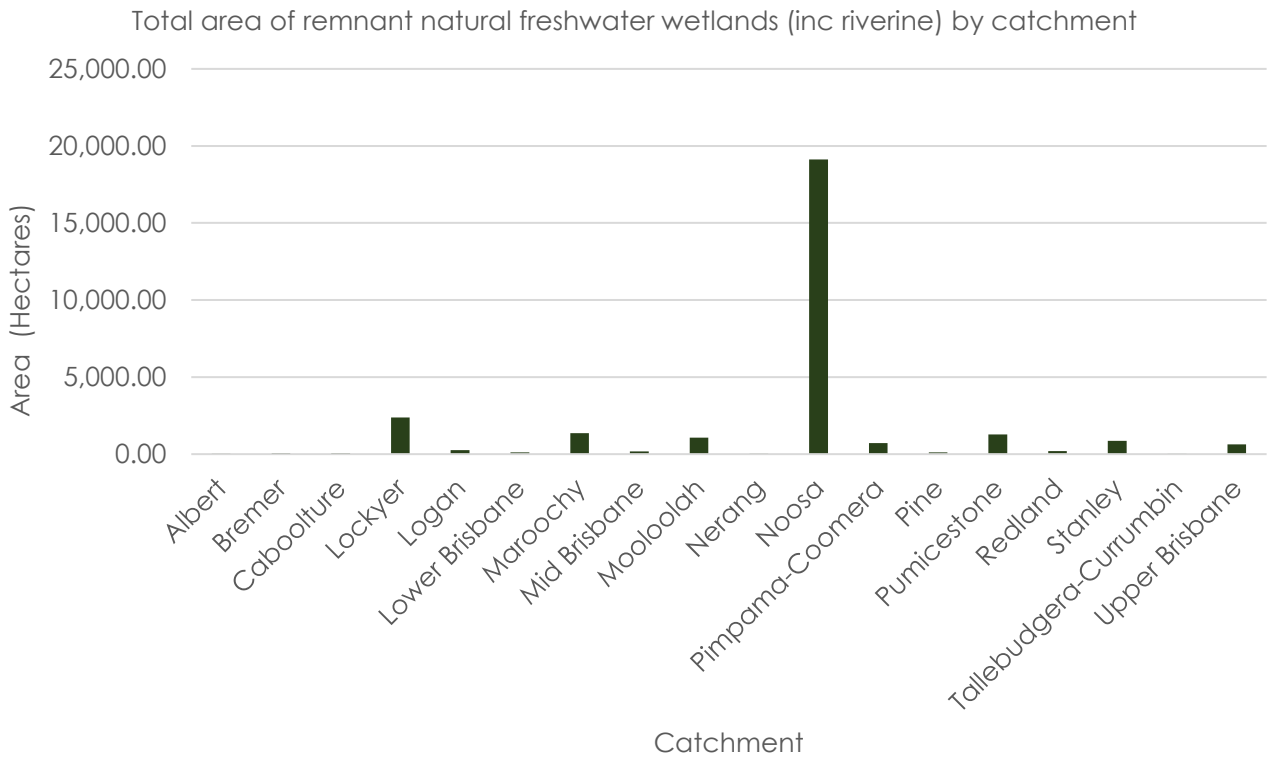


***Figure 6**: Total area of remnant natural freshwater wetlands (H1), including riverine by catchment.*

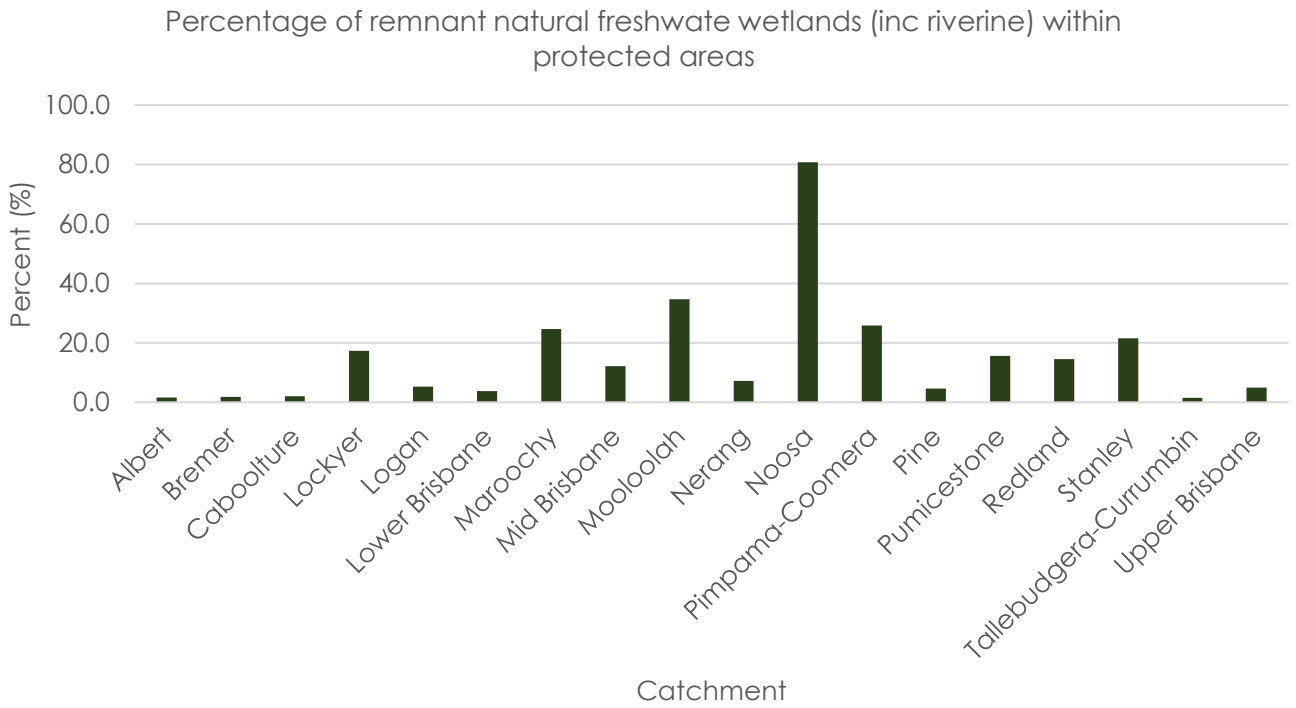


***Figure 7**: Percentage of remnant natural freshwater wetlands (H1), including riverine, within protected areas by catchment.*

***Table 4**: Percentage and area of lacustrine, palustrine and riverine wetlands within protected areas by catchment.*

Catchment	Lacustrine		Palustrine		Riverine		All	
	%	Area (Ha)	%	Area	%	Area	%	Area
Albert	N/A		0%	0.2	2%	27.3	1.6%	27.5
Bremer	N/A		1%	11.5	3%	60.2	1.8%	71.8
Caboolture	N/A		2%	49.8	3%	13.1	2.0%	62.9
Lockyer	N/A		0%		18%	2,381.6	17.4%	2,381.6
Logan	N/A		12%	197.0	2%	62.3	5.3%	259.4
Lower Brisbane	N/A		2%	28.9	5%	87.0	3.8%	116.0
Maroochy	N/A		39%	1,249.4	5%	121.8	24.7%	1,371.2
Mid-Brisbane	N/A		0%		12%	182.5	12.1%	182.5
Mooloolah	0%		49%	923.4	12%	149.2	34.7%	1,072.6
Nerang	N/A		2%	3.4	9%	34.9	7.2%	38.3
Noosa	100%	211.7	85%	18,424.0	29%	492.9	80.8%	19,128.7
Pimpama-Coomera	N/A		34%	663.7	6%	44.6	25.9%	708.4
Pine	N/A		1%	11.8	7%	104.9	4.6%	116.7
Pumicestone	N/A		17%	1,222.1	6%	51.5	15.6%	1,273.6
Redland	N/A		14%	198.7	16%	6.4	14.55	205.2
Stanley	N/A		0%		23%	866.6	21.6%	866.6
Tallebudgera-Currumbin	N/A		4%	4.0	0%	0.5	1.5%	4.6
Upper Brisbane	N/A		0%		5%	624.9	4.9%	624.9
Islands								
Bribie Island	100%	34.4	93%	11.5	100%	0.4	93.5%	6,488.6
Mulgumpin	75%	232.8	87%	49.8			86.0%	4,124.3
Minjerribah	100%	174.9	100%				99.7%	1,424.9
South Stradbroke	N/A		94%	197.0			93.9%	146.4

Riparian zone rehabilitation

Category	On ground action
Data source(s)	Local governments, utilities, NGOs, community groups
Data quality	Limited

Why this indicator?
Riparian areas provide both water quality regulation and aquatic habitat provisioning services. Key objectives of riparian rehabilitation include reducing fine sediment pollution, reducing the loss of high-quality agricultural soils, improving water quality in water supply catchments, improving freshwater aquatic ecosystem biodiversity, and enhancing cultural and recreational values. Many organisations across the region take action to rehabilitate these critical landscape areas.

Assessment
Available data on activities targeting riparian rehabilitation in SEQ was collated to understand the breadth of activity types and effort across the region. This initial assessment aims to provide an overview of the breadth of activity and the total effort of on-ground activity targeting riparian rehabilitation in the region.

Key findings
Management interventions targeting riparian rehabilitation within South East Queensland typically include habitat restoration and rehabilitation, weed control, and erosion management (streambank stabilisation works).

Over the last 5 years, over 48 projects have been delivered with 610 discrete project sites (**Table 5**). From 2019 to 2024, over 133,000 plants have been planted in riparian zones, over 1,9000 hectares have been treated for weeds, and 18 hectares of riparian land has been managed for erosion (some of these numbers are shown in **Table 6**).

***Table 5**: Riparian zone rehabilitation primary intervention types.*

Primary intervention type	Project number (reported)
Habitat restoration/rehabilitation	31
Weed control	9
Erosion management	13

***Table 6**: Riparian zone rehabilitation summary metrics 2019-2024.*

Metric	Value (reported)
Number of plants planted	225,732
Area treated for weeds (hectares)	1,918
Number of weed surveys	309
Area treated for erosion (hectares)	18.5

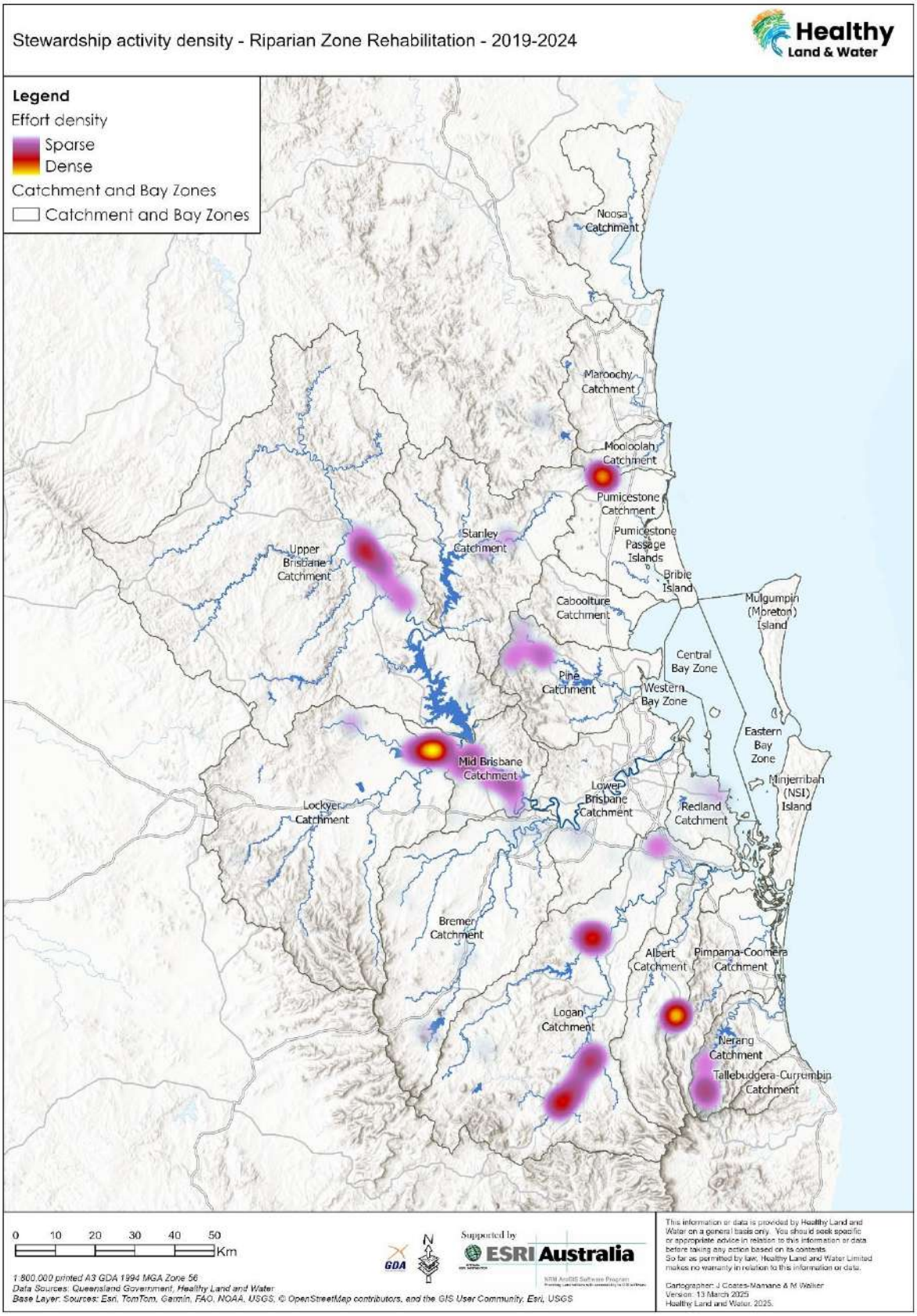


***Figure 8**: Stewardship activity density riparian zone rehabilitation 2019-2024.*

Freshwater stream or wetland rehabilitation

Category	On ground action
Data source(s)	Local governments, utilities, NGOs, community groups
Data quality	Limited

Why?

Many freshwater streams and wetlands in South East Queensland are degraded due to historical and ongoing threats and disturbances. However, many initiatives across the region are aiming to rehabilitate streams and wetlands. Some of these activities include:

- Instream habitat rehabilitation (re-snagging).
- Aquatic vegetation planting.
- Barrier removal works to enhance longitudinal connectivity.

Assessment

While numerous excellent projects have been completed across SEQ, the data received was not of sufficient quantity to provide a meaningful summary of activity.

Reducing threats to freshwater ecosystems

Category	On ground action
Data source(s)	Local governments, utilities, NGOs, community groups
Data quality	Poor

Why?

Threats to freshwater ecosystem include habitat loss, animal species, consumptive water use, pollution, and climate change. Threat reduction activities in South East Queensland can include:

- Pest animal surveys and control.
- Limiting access from stock, vehicles and other physical disturbances.
- Litter management and removal.
- Monitoring threats and evaluating management.

Assessment

Available data on activities aiming to reduce threats to freshwater ecosystems were collated to understand the breadth of activity types and effort across the region. This initial assessment aims to provide an overview of the breadth of and the total effort of on-ground activity targeting threat reduction in the region.

Key findings

Management interventions targeting threat management within South East Queensland freshwater ecosystems (**Table 7**) include litter and debris removal, access control and erosion management. From 2019-2024, 64,000 litres of litter and debris have been removed from creeks and rivers of the region, and 22.5 km of access control have been completed (**Table 8**).

Table 7: *Reducing threats to freshwater ecosystems primary intervention types.*

Primary intervention type	Project number (reported)
Litter/debris removal	1
Access control	7

Table 8: *Summary metrics reducing threats to freshwater ecosystems.*

Metric	Value (reported)
Volume of litter removed (litres)	64,000
Length (km) of access control installed	24.52

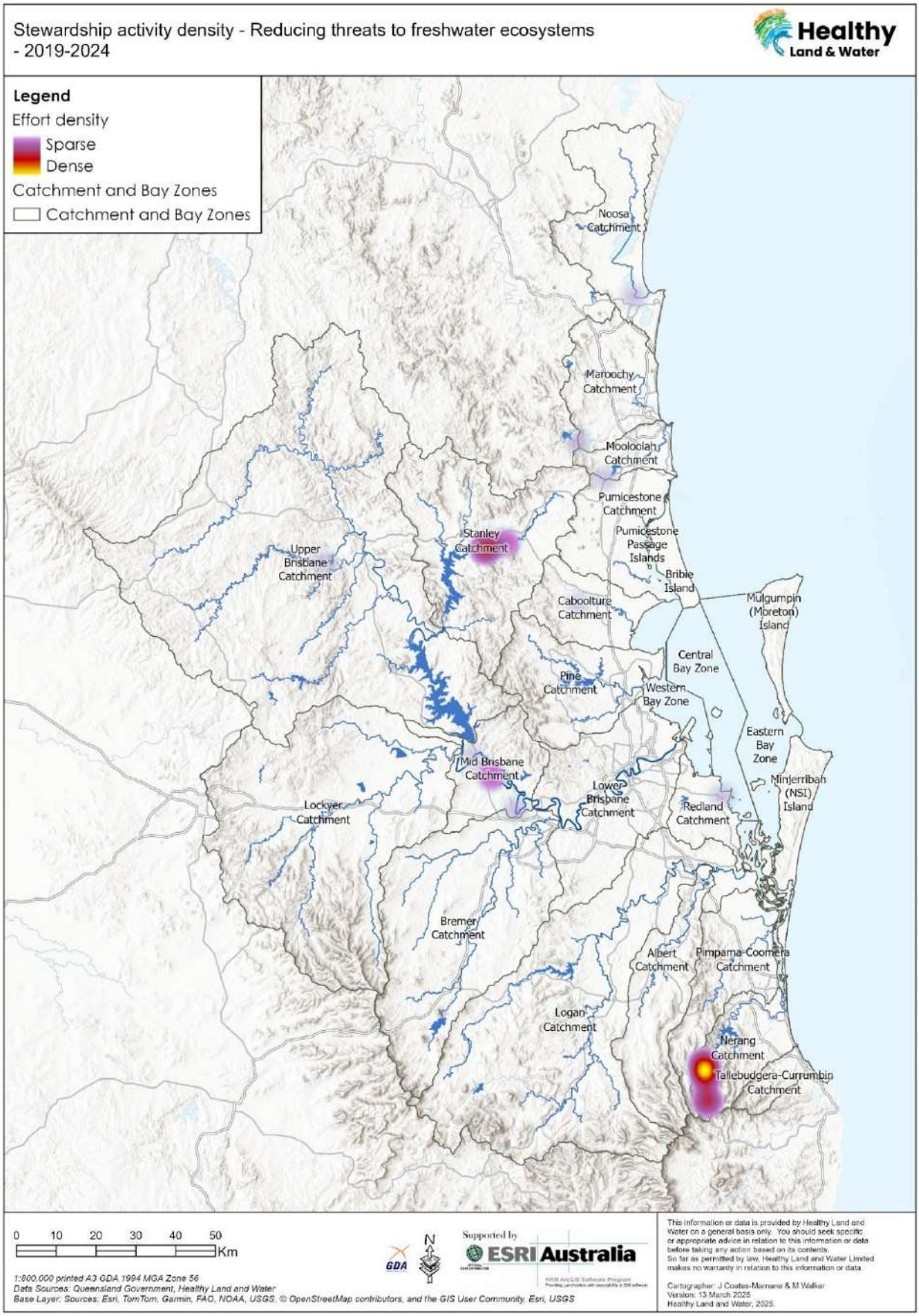


Figure 9: *Stewardship activity density reducing threats to freshwater ecosystems 2019-2024.*

Estuarine and coastal ecosystems

Estuarine coastal and marine ecosystems of South East Queensland include mangroves, seagrass meadows, saltmarsh, coral reef and rocky and sandy beaches. These habitats are highly valued culturally, socially and economically. Significant features of the South East Queensland coastal system include:

- The Noosa River estuary internationally recognised as a Biosphere Reserve.
- The Sunshine Coast beaches, Maroochy and Mooloolah estuaries, and inshore coral reefs.
- Pumicestone Passage.
- Moreton Bay and Islands are internationally recognised for their biodiversity value under the RAMSAR Convention.
- Estuaries, intertidal areas and mudflats of the western bay.
- The Gold Coast broadwater and estuaries.

Moreton Bay has been internationally recognised for its biodiversity values and as a critical habitat for migratory shorebirds under the Ramsar Convention. The bay and associated estuaries provide substantial sociocultural and economic benefits to the residents of the region, supporting some of Queensland's most productive fisheries across Indigenous, commercial, and recreational sectors[10].

Many of the region's estuaries are highly urbanised, with a long history of human disturbance including significant channel modification. These disturbances have triggered ecological challenges such as seagrass die-off and periodic blooms of toxic cyanobacterial species such as *Lyngbya majuscula*. The bay and estuarine systems face mounting pressures from pollution, ecosystem alteration, climate change impacts, population expansion, and resource extraction.

Estuarine, coastal and marine ecosystems stewardship key indicators

Key indicators supporting the assessment of freshwater ecosystem stewardship are outlined in **Table 9**. This supports an initial assessment of stewardship activity relevant to estuarine and coastal conservation and rehabilitation in the region.

***Table 9**: Estuarine and coastal ecosystem stewardship key indicators.*

Indicator ID	Key indicators
ECM01	Estuarine intertidal wetlands in protected areas
ECM02	Restoring estuarine and coastal ecosystems
ECM03	Reducing threats to estuarine and coastal ecosystems

[10] Thurstan R, Fraser K, Brewer D, Buckley S, Dinesen Z, Skewes T, Courtney T & Pollock B (2019) 'Fishers and fisheries of Moreton Bay'. In Tibbetts IR, Rothlisberg PC, Neil DT, Homburg TA, Brewer DT & Arthington AH (Eds), *Moreton Bay Quandamooka & Catchment: Past, present, and future*, The Moreton Bay Foundation. Brisbane, Australia.

***Figure 10**: Pumicestone passage 2023.*

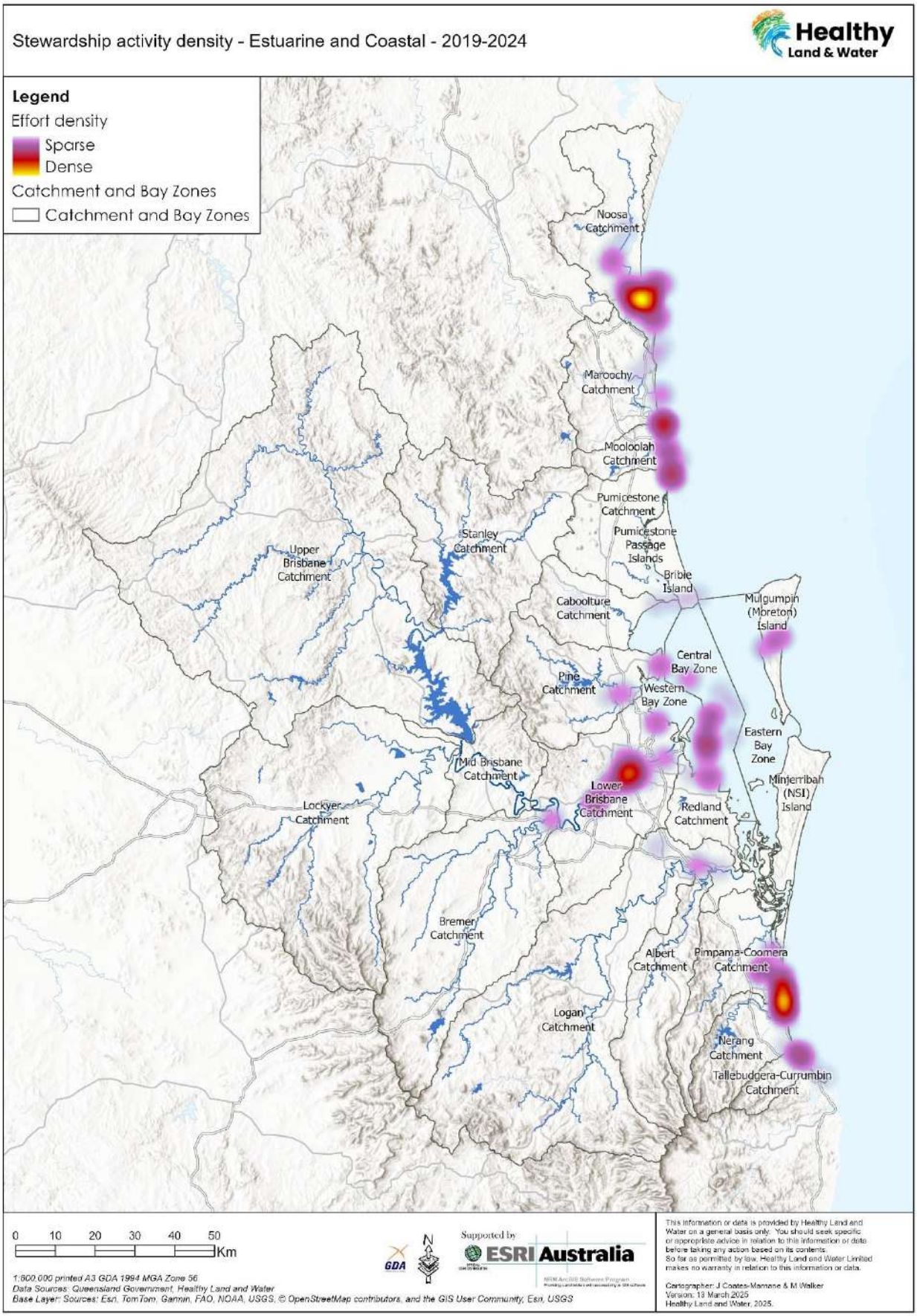


***Figure 11**: Stewardship activity density estuarine and coastal theme 2019-2024.*

Estuarine intertidal wetlands in protected areas

Category	Planning and policy
Data source(s)	Queensland Government
Data quality	Good

Why?
Over the last 200 years, significant portions of intertidal estuarine wetlands have been irreversibly degraded or completely eliminated from South East Queensland's landscape. Protected area designations across the region aim to conserve and restore these vital terrestrial and aquatic ecosystems. The region's intertidal estuarine wetlands include saltmarsh, saltpans, mangroves, and mud and sandflats. Assessing both the total area and proportion of estuarine intertidal wetlands within the protected areas provides insights for ongoing conservation planning.

Assessment
The total area and relative proportion of natural (H1) estuarine wetlands within highly protected areas was calculated for each catchment, bay zone and island in South East Queensland. A high level of managed protection was defined as land areas that fell within either:

- Marine Park (Habitat Protection Zones, Conservation Zones and Marine National Park Zones).
- Fish habitat – *Fisheries Act 1994*.
- Conservation Parks - Nature Conservation Act 1992.
- National Park (inc. Scientific) - *Nature Conservation Act 1992*.
- Nature Refuges - Nature Conservation Act 1992.

Estuarine intertidal wetlands mapping was provided by the Queensland Government[11].

Key findings
68% of remanent estuarine intertidal wetland (roughly 40,600 hectares) fall within managed protection areas (**Table 10**). Catchments with the largest total areas of remnant estuarine intertidal wetlands include Pimpama-Coomera (3,205 hectares), Pine (2,242 hectares) and Pumicestone (2,370 hectares). Although small in total area, estuarine intertidal wetlands of the bay zones and islands (Mulgumpin, Minjerribah) are well represented in protected areas (>90%), with the exception of Western Bay (<90%). In the Pimpama-Coomera catchment, approximately 73% of the 3,205 hectares of intertidal estuarine wetlands are secured within managed protection areas.

[11] State of Queensland (Department of Environment and Science) 2023. Updated data available at http://qldspatial.information.qld.gov.au/catalogue//.

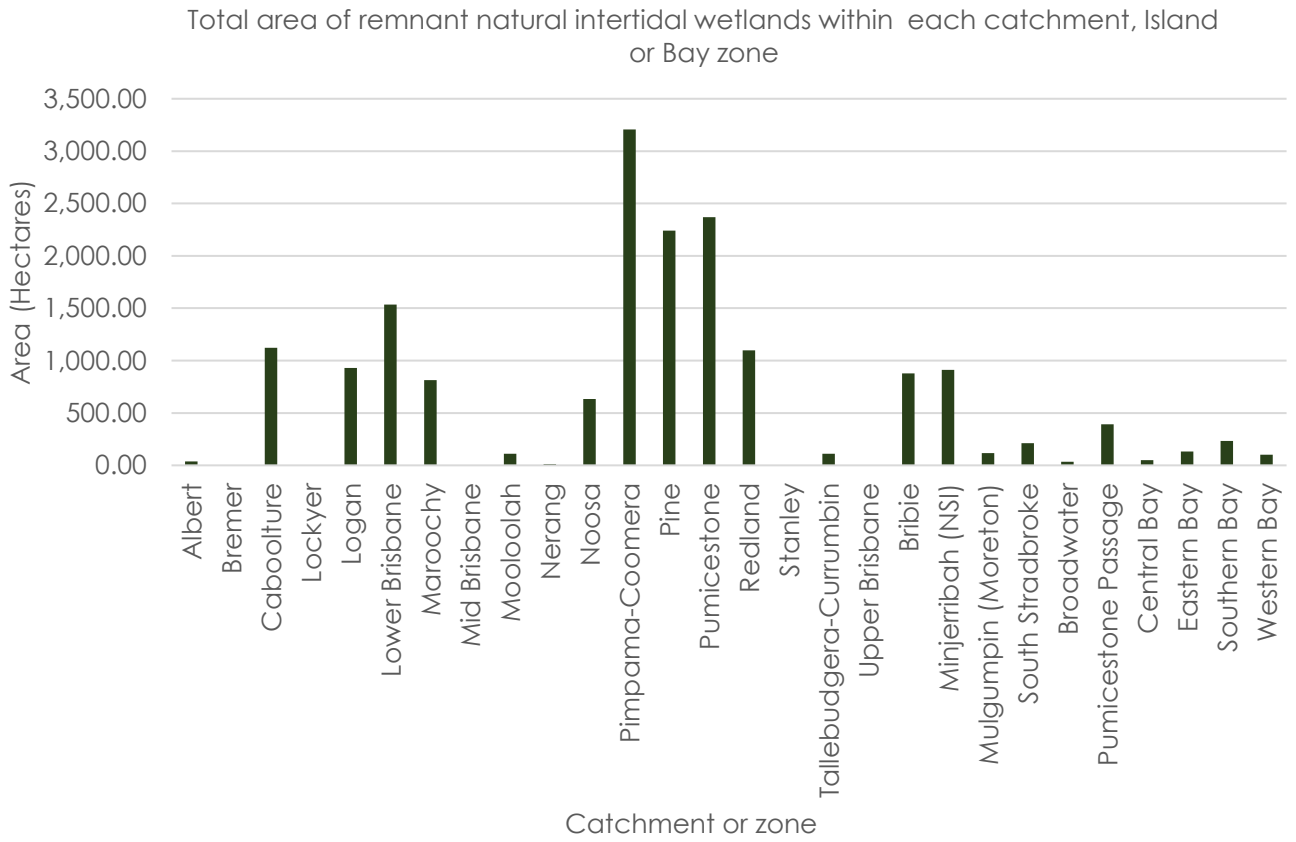


***Figure 12**: Total area of remnant natural intertidal wetlands with each catchment, island or bay zone.*

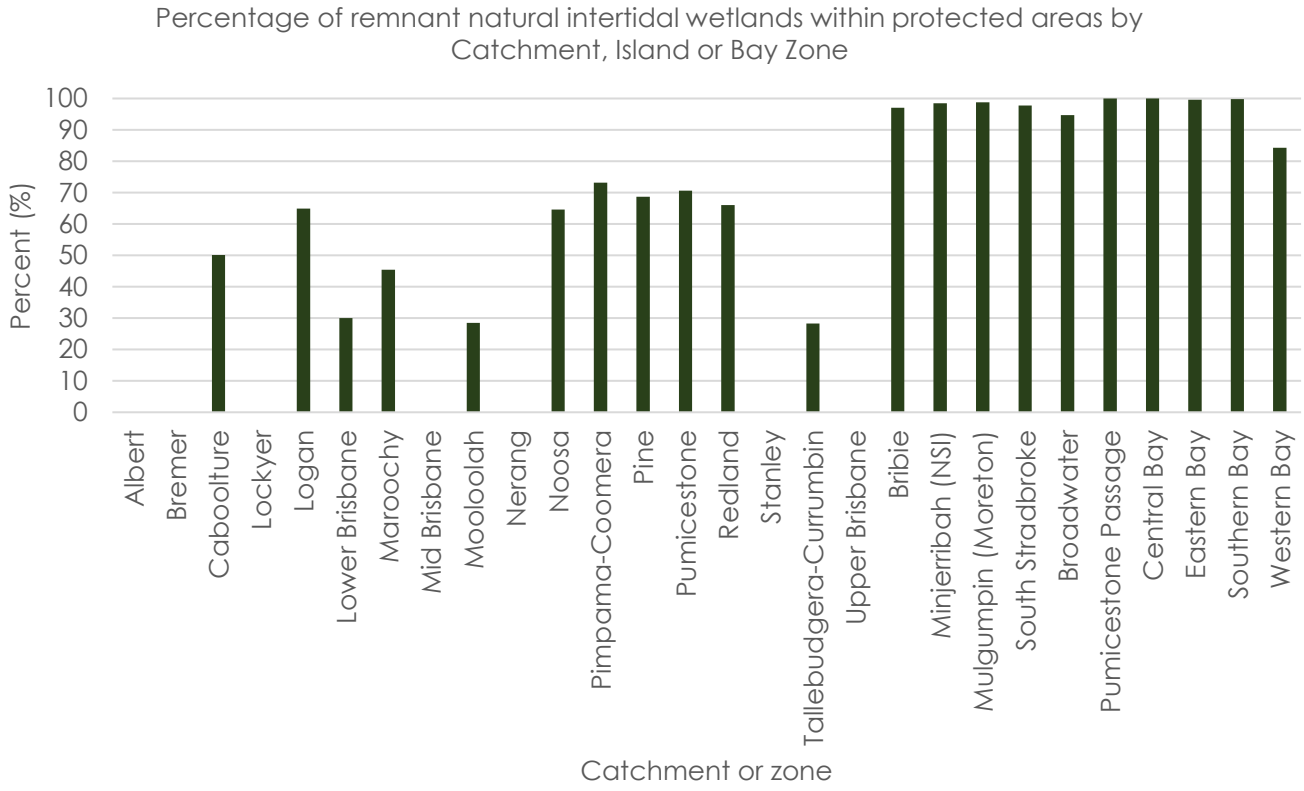


***Figure 13:** Percentage of remnant natural intertidal wetlands with each catchment, island or bay zone.*

***Table 10**: Percentage and area of intertidal wetlands (saltmarsh, saltpan, mangrove, seagrass, mudflats) within protected areas by catchment.*

Catchment	Intertidal wetlands	
	%	Area (Ha)
Albert	0%	
Bremer	N/A	
Caboolture	50%	561.8
Lockyer	N/A	
Logan	65%	603.9
Lower Brisbane	30%	461.6
Maroochy	45%	368.9
Mid-Brisbane	N/A	
Mooloolah	29%	31.5
Nerang	0%	
Noosa	65%	409.8
Pimpama-Coomera	73%	2,347.0
Pine	69%	1,540.7
Pumicestone	71%	1,675.6
Redland	66%	725.3
Stanley	N/A	
Tallebudgera-Currumbin	28%	31.1
Upper Brisbane	N/A	
Islands		
Bribie Island	97%	851.3
Minjerribah	98%	898.4
Mulgumpin	99%	115.7
South Stradbroke	98%	207.1
Bays and passages		
Broadwater	95%	31.35
Pumicestone Passage	100%	391.2
Central Bay	100%	48.57
Eastern Bay	100%	132.78
Southern Bay	100%	234.02
Western Bay	84%	84.95

Restoring estuarine and coastal ecosystems

Category	On ground action
Data source(s)	Local government, NRMs, community groups
Data quality	Limited

Why?
Many estuarine and coastal ecosystems in the region have been degraded or are under threat. Restoration of estuarine and coastal habitats that have been lost or degraded, can enhance biodiversity values and re-establish important ecosystem services. On-ground activities to retore estuarine and coastal ecosystem can include:

- Hydrological restoration – re-introducing tidal waters.
- Revegetation with native species (e.g. Mangroves).
- Establishing key habitats such as shellfish reefs.
- Invasive weed control.
- Shorebird mapping and restoration.
- Shellfish restoration studies.

Assessment
Available data on activities aiming to restore estuarine and coastal ecosystems were collated to understand the breadth of activity types and efforts across the region. This initial assessment aims to provide an overview of the breadth of activity and total effort of activity.

Key findings
Over 7 projects have been reported from 2019-2024 (**Table 11**). These include projects targeted at habitat restoration and rehabilitation works. Some of these efforts involved planting over 1,900 plants to re-establish coastal vegetation. (**Table 12**).

***Table 11**: Restoring estuarine and coastal ecosystems' primary intervention types.*

Primary intervention type	Project number (reported)
Habitat restoration/ rehabilitation	7
Erosion management	2
Weed control	1

***Table 12:** Restoring estuarine and coastal ecosystems summary metrics 2019-2024.*

Metric	Value (reported)
Number of plants planted	21,900
Area treated for weeds (hectares)	157
Area (Ha) of erosion management	60.2

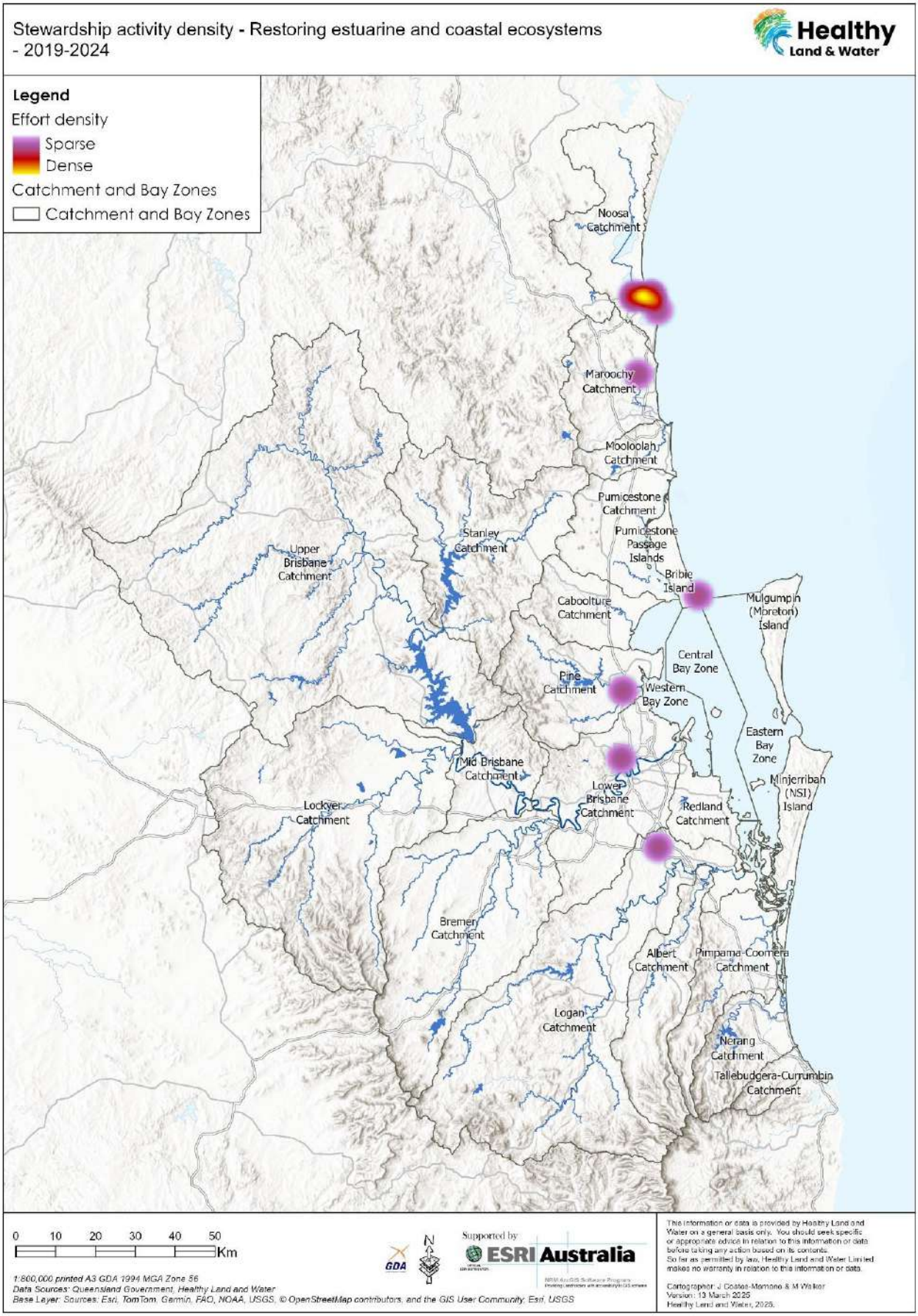


***Figure 14**: Stewardship activity density – restoring estuarine and coastal ecosystems.*

Reducing threats to estuarine and coastal ecosystems

Category	On ground action
Data source(s)	NGOs, local governments
Data quality	Moderate

Why?
Threats to estuarine and coastal ecosystem include habitat loss, invasive plant and animal species, pollution, litter and debris, and climate change. Threat reduction activities in South East Queensland can include:

- Access control.
- Litter/debris removal.

Assessment
Available data on activities aiming to reduce threats to estuarine and coastal ecosystems were collated to understand the breadth of activity types and effort across the region. This initial assessment aims to provide an overview of the breath of activity and the total effort of activity.

Key findings
Threat reduction activities undertaken include access control, erosion management, litter and debris removal and pest animal control (**Table 13**). Over 22,000 kg of litter/ debris have been removed from estuarine waterways and over 57 hectares have been treated for weeds (**Table 14**).

Table 13: *Reducing threats to estuarine and coastal ecosystems - intervention types.*

Primary intervention type	Project number (reported)
Access control	1
Litter/debris removal	9
Pest animal control	1

Table 14: *Reducing threats to estuarine, coastal and marine ecosystems key metrics 2017-2024.*

Metric	Value (reported)
Weight (kg) of litter/ debris removed	22,250
Area treated for pest animals (Hectares)	5,374
Number of training/ workshop/seminar events	169

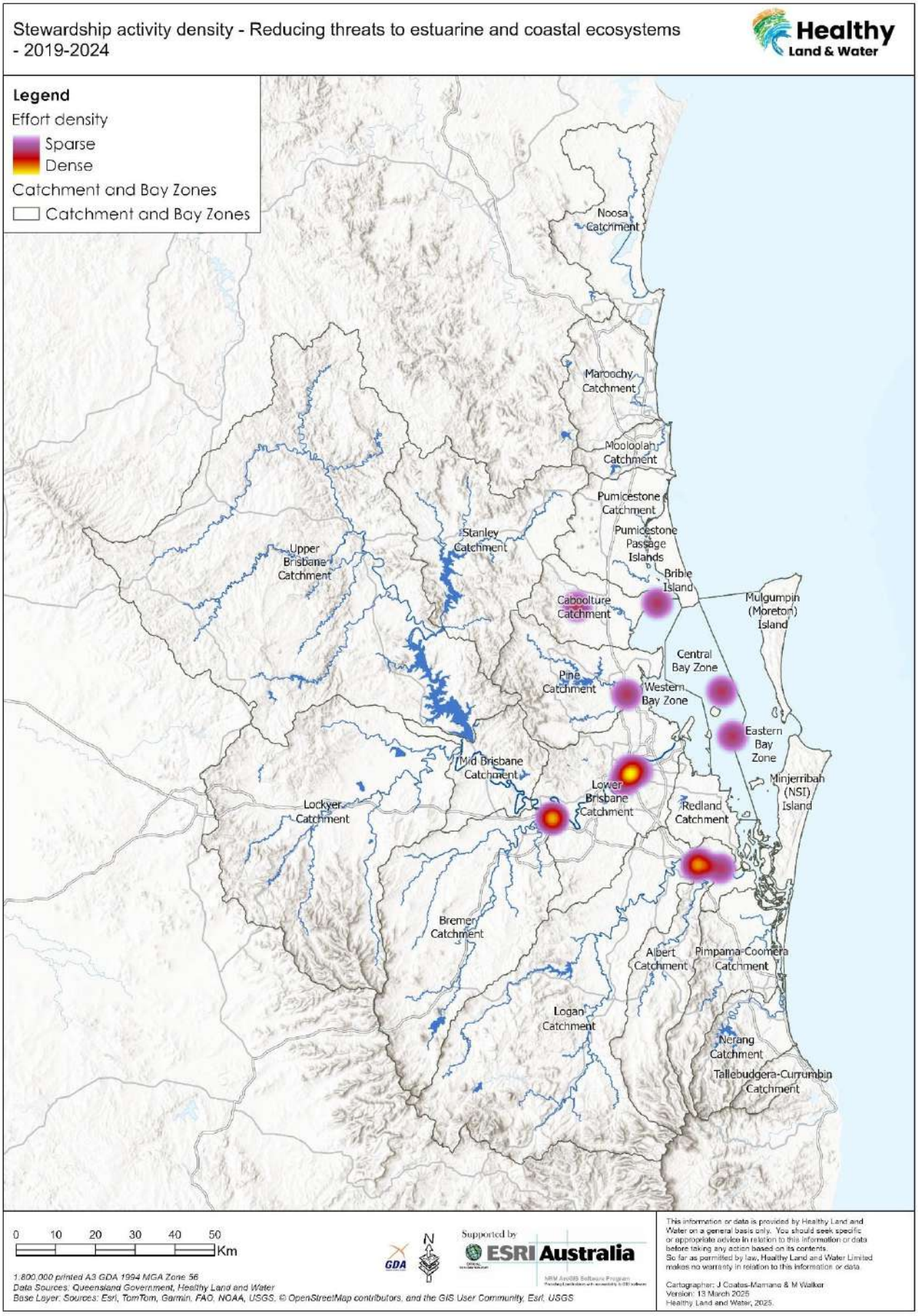


***Figure 15**: Stewardship activity density reducing threats to estuarine and coastal ecosystems 2019-2024.*

***Figure 16**: Community litter and debris collection in estuaries.*

Urban waterways

The landscape and waterways of the region are why many people enjoy living in the South East Queensland Region. This is complemented by a pleasant climate, economic opportunities and amenities, which is also why the region has experienced many years of continued population growth. As a result of this growth, the urban footprint has expanded over the past two decades. Recent development plans have added an additional 5,000 hectares to the designated urban footprint[12].

Rapidly developing urban areas and established areas can place pressures on catchment values and aquatic ecosystems. These can include:

- Increases in stormwater run-off and associated pollutants to waterways, including sediment, nutrients, organic matter and hydrocarbons.
- Increases in point source pollution releases into waterways from sewage treatment plants.
- Direct disturbances and channelisation of natural streams and creeks.
- An increase in demand for potable water supply, sourced from local water supply catchments.
- Increases in pollution from development and construction sites.

Integrated water management is a holistic collaborative approach to water management that considers how the delivery of water, wastewater, and stormwater services can contribute to water security, public and environmental health and urban amenities.

State and local governments, along with water service providers, have a high level of responsibility and influence on how urban areas are planned and how the built environment interacts with the water cycle and waterways. Residents can also take actions to minimise adverse impacts of buildings, backyards and construction sites. Other organisations with substantial roles in urban water management in South East Queensland include:

- Natural Resource Management organisations.
- Developers and the construction industry.

A number of enabling strategies and initiatives have been developed across institutions to improve urban water management in South East Queensland. These include:

- State government stormwater management design objectives.
- Water service provider integrated water planning.
- Local governments' Total Water Cycle Management Planning.
- The Water by Design Initiative.
- The Urban Water Stewardship Framework.

Urban waterways' key indicators

Key indicators supporting the assessment of freshwater ecosystem stewardship and outlined in **Table 15**. This supports an initial assessment of stewardship activity relevant to urban waterways in the region.

Table 15: *Urban waterways stewardship key indicators.*

Indicator ID	Key indicators
UW01	Urban water stewardship progress in South East Queensland.
UW02	Wastewater nitrogen removal efficiency.

[12] ShapingSeq 2023. The Department of State Development, Infrastructure, Local Government and Planning. 2-23.

Figure 17: Urban waterway in Brisbane.

Urban water stewardship progress in SEQ

Category	Policy and planning
Data source(s)	Local governments of South East Queensland (3 councils)
Data quality	Moderate

Why?

The Urban Water Stewardship Framework (UWSF) is supporting Queensland local governments and the development and construction industry to evaluate their urban water management practices and identifying opportunities for improvement[13]. Local governments in Queensland play a crucial role in managing urban water pollution and maintaining and protecting the health of local waterways for the benefit of their communities. Improved water quality outcomes are not only ecologically significant, but they enhance liveability.

Assessment

In 2024, three local governments within South East Queensland (Noosa, Redlands and Logan Councils) participated in a pilot project to test and validate the framework's applicability to their context to ensure it is fit-for-purpose and aligned with the needs of council.

The pilot involved undertaking a one-day workshop with each local government and key staff from relevant council departments including:

- Planning and policy.
- Development assessment and compliance.
- Infrastructure and maintenance.
- Parks and natural areas.
- Environmental management.
- Sewage treatment plant operations and management.

At the workshop, the staff discussed and assessed their organisation's practices and processes against sixty-six (66) urban water management activities. The activities covered aspects of council's planning and governance; infrastructure management and maintenance; social approaches; and monitoring, evaluation, reporting and improvement. They are broken up into three main themes:

- **Developing urban:** strategic urban planning, erosion and sediment control during the construction phase and the design and installation of stormwater quality treatment systems on new developments.
- **Established urban:** strategic stormwater management planning, asset management and retrofitting that is inclusive of catchment management and restoration objectives.
- **Point source:** sewage treatment plant and sewer network operation and maintenance.

An important objective of this process is for all levels of government to use the USWF results as an evidence-based foundation to inform investment and support strategies for improving urban water management. Targeted investment and support increase the likelihood of achieving real urban water management improvement and positive water quality outcomes for local waterways. The following sections outline the key results and findings of the UWSF assessments.

[13]Queensland Government, Department of Environment and Science, 2022. Urban Water Stewardship Framework.

Key Findings

The average level of urban water stewardship practice established urban – current minimum standard. The average level within developing urban is in line with current best practice. The level of practice for point source management is in line with current best practice.

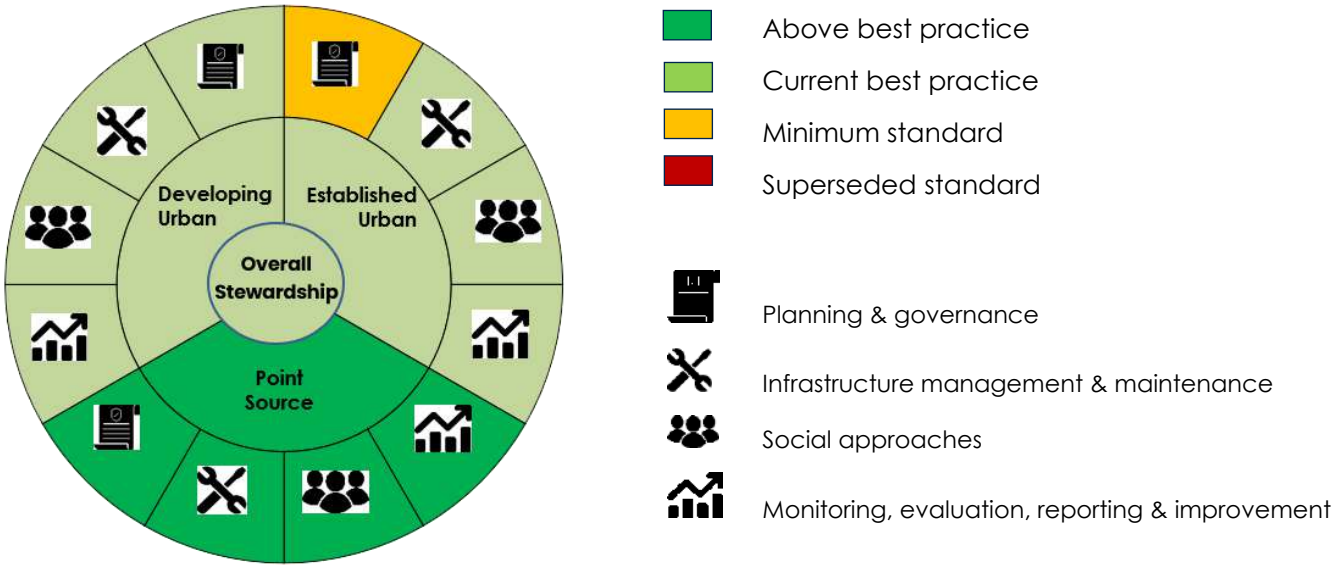


***Figure 18**: Averaged Urban Water Stewardship overall results for pilot councils in SEQ, and relative level of practice.*

Developing urban

The average level of practice for Developing Urban is in line with best practice. This indicates that developing urban practices are in line with best practice guidelines, or where these are not available, are a slight improvement on what is considered as industry standard practice. This level of overall practice is considered a low risk to water quality. Some examples of high-performing areas:

- Integration of water quality state interests in local planning instruments.
- Industry education and awareness programs in relation to erosion and sediment control, which is leading to improvements in erosion and sediment control practice on development sites.
- Ensuring suitably qualified persons prepare erosion and sediment control (ESC) plans and site-based stormwater management plans (SBSMPs) for master planned developments.
- Appropriate use of available enforcement measures for clear breaches of ESC and stormwater management-related development conditions, particularly on high and medium-risk sites.
- Dedicated ESC compliance officers who proactively monitor development sites and ensure the legislation is enforced.

Some areas where improvements can be made:

- Developing and implementing LGA-wide Total Water Cycle Management Plan or similar to provide strategic direction to achieving integrated urban water management outcomes across the city.
- Improving community recognition of Water Sensitive Urban Design (WSUD) practices, to increase advocacy for low-impact design such as stormwater capture and reuse and use of permeable surfaces.
- Incorporating WSUD principles and best practice stormwater management measures, including objectives for water quality and quantity in the design of Council infrastructure projects.
- Enforcing the development industry to install ESC measures prior to clearing land and commencing works on development sites.
- Improving local planning schemes to ensure reference to current legislation.
- Improving ESC policies and procedures for council work sites.

Established urban

The average level of practice for Established Urban is at a current minimum standard that satisfies regulatory requirements or is considered industry standard but not in line with best practice guidelines. This overall level of practice is considered a moderate risk to water quality. Some examples of high-performing areas:

- Supporting the delivery of local water quality monitoring programs with major stakeholder groups.
- Regular inspection of stormwater treatment devices to ensure they are installed and maintained in accordance with council standards.
- Community engagement and education on the importance of maintaining waterway health and encouraging involvement in waterway care, such as litter clean-up and riparian restoration activities.

Some areas where improvements can be made:

- Incorporate TWCM principles into urban stormwater management.
- Develop an Urban Stormwater Quality Management Plan (USQMP) to strategically identify and implement stormwater quality treatment measures in established urban areas.
- Employ stormwater management guidelines for open space maintenance activities to ensure protection of the receiving environment.
- Identifying where new or retrofitted stormwater treatment infrastructure is needed in established urban areas.
- Ensuring stormwater quality is included as a consideration for strategic infrastructure planning.
- Increase WSUD asset maintenance funding to ensure the functionality and longevity of WSUD assets.

Point source

Results for Point Source indicate that the Councils are currently implementing best practices for Point Source. Some examples of high-performing areas:

- Biosolid reuse or assessments of the feasibility of beneficial reuse schemes14.
- Trade waste-permitting15.
- Dry weather nitrogen load management.
- Use of early warning fault detection systems.

Urban Water Stewardship Framework Implementation

The three local councils provided positive feedback on the UWSF assessment process and found the results useful to help them identify target areas for improvement. To obtain a more comprehensive picture of urban water management practice across the whole of the SEQ region, the UWSF assessment will need to be completed by all SEQ local governments, which will be an aim of the program in the coming years.

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[14] Biosolids is the name given to treated sewage sludge, a by-product of wastewater treatment, that can be used for beneficial purposes like soil amendment and composting.
[15] Trade waste refers to the non-sewage liquid waste produced by commercial and industrial activities, which can include oils, grease, chemicals, and solids, and requires proper management to prevent environmental, health and sewer system damage.

Sewage treatment nitrogen removal efficiency

Category	Engineering solutions
Data source(s)	Water service providers
Data quality	Moderate

Why?

Managing nitrogen releases to waterways from sewage treatment plants (STPs) is an important part of aquatic ecosystem health protection to reduce risks of harmful or nuisance algal blooms occurring.

An STP's efficiency is a key indicator of the level of practice with respect to managing nitrogen impacts in urban areas. Efficiency is measured as the STPs rate of sewage nitrogen removal. Monitoring efficiency is essential in urban areas where there are sustained sewage releases to urban receiving waters. The Queensland Government Department of Environment, Tourism and Science (DETSI) has recently released guidelines for Leading Practice Sewage Treatment Plant Environmental Management[16].

In response to significant population growth pressures, sewerage service providers in SEQ continue to invest to prudently manage projected increases in municipal sewage flows. These environmental management activities may relate to design, operation, maintenance or monitoring of sewage treatment processes. There are currently over 56 individual sewage treatment plants operating in SEQ.

Nitrogen removal efficiencies for STPs in SEQ were calculated based on publicly available data for sewage service providers of SEQ to assess level of practice, based on these guidelines.

Assessment

An average nitrogen removal efficiency for each sewage service provider in SEQ was calculated based on an estimate of the total mass of nitrogen in sewage flows received from connected residential properties, and the total mass of nitrogen in treated sewage discharged into receiving waters in a financial year. Data was sourced from the annual Federal Government National Pollution Inventory (NPI) and the Urban National Performance Reports (UNPR), which publishes information on the service quality of sewerage service providers.

The total mass of nitrogen in sewage received by each STP was estimated based on the number of connected residential properties, SEQ's average household size, and an estimate of per capita excretion of nitrogen (Equation 1). The average household size for SEQ in 2021 was 2.55 residents. The annual excretion of nitrogen per capita is ~4.8 kg[17].

Equation 1

$$Mass\ of\ nitrogen\ influent\ (tonnes) = Connected\ residential\ properties * Average\ household\ size * Per\ capita\ nitrogen\ excretion$$

[16] Ramsay, I, Sudarjanto, G, Pambrun, V, and Barry, E. 2024. Leading Practice Review of Sewage Treatment Plant Environmental Management in Queensland. Brisbane: Department of Environment, Science and Innovation, Queensland Government.
[17] Mulder, A., 2003 The quest for sustainable nitrogen removal technologies. Water Science & Technology 48(1):67-75.

The total mass of nitrogen in treated sewage (effluent) released into receiving waters by each STP was collated from NPI data. These two data sets were used to estimate the average annual nitrogen removal efficiency for all STPs operated by each sewerage service provider in SEQ, for a given financial year (Equation 2).

Equation 2

$$Nitrogen\ removal\ efficiency = 1 - \left(\frac{Mass\ of\ nitrogen\ influent}{Mass\ of\ nutrigen\ effluent}\right)$$

Note: this is a conservative assessment of nitrogen removal efficiency as the trade waste (permitted industrial and commercial waste discharged to sewer) nitrogen loads are not included in the estimate of the total mass of nitrogen in sewage received by each STP (Equation 1).

The Queensland Government defines leading practice as "*management approaches currently being used in Queensland that achieve the highest levels of nutrient removal from sewage*"[18]. Using 60mg/L as the average concentration of nitrogen in untreated sewage, the equivalent % nitrogen removal efficiency thresholds are:

- Leading Practice 1: 96.7% removal.
- Leading Practice 2: 94.2% removal.
- Leading Practice 3: 91.7% removal.

Key findings

Based on this conservative assessment, the average level of practice for nitrogen removal efficiency based on Queensland Guidelines is Leading Practice 2 (94.2% removal), slightly below what is considered "best practice" (level 1). (**Table 16**). This indicates sewerage service providers in SEQ have significantly invested in leading practice sewage treatment technology and are currently operating STPs at a relatively high-performance level.

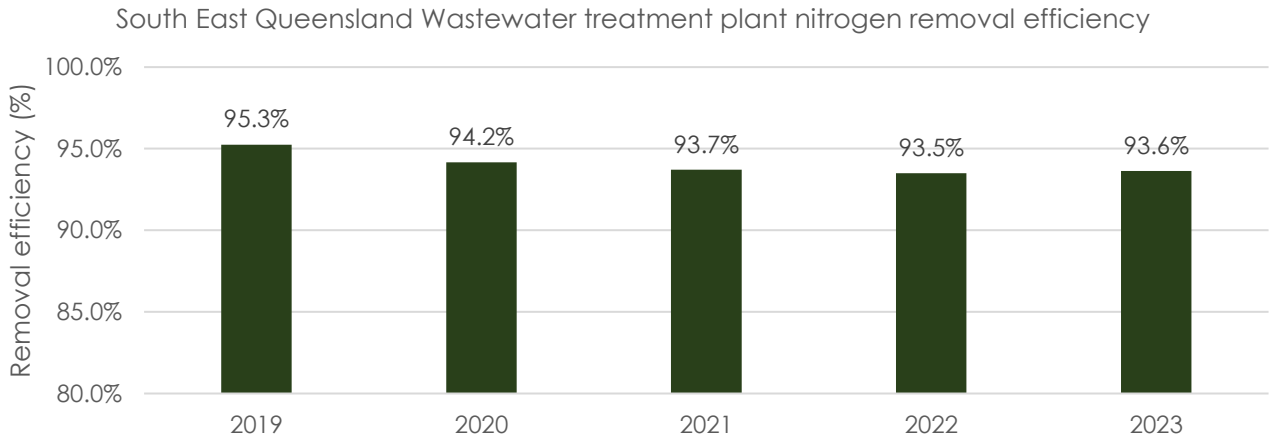

***Figure 19**: South East Queensland estimated the average nitrogen removal efficiency of wastewater treatment plants operated by Queensland Urban Utilities, Unitywater, City of Gold Coast, Redland City Council and Logan City Council (FY 22-23).*

[18] Ramsay, I, Sudarjanto, G, Pambrun, V, and Barry, E. 2024. Leading Practice Review of Sewage Treatment Plant Environmental Management in Queensland. Brisbane: Department of Environment, Science and Innovation, Queensland Government.

***Table 16**: Wastewater nitrogen removal efficiency key summary statistics.*

Metric	Value
Average nitrogen removal efficiency of South East Queensland sewage treatment plants (%).	94.2

***Figure 20**: Luggage Point sewage treatment plant in the early 2000s.*

Sustainable agriculture

South East Queensland produces a substantial portion of Queensland's total agricultural commodities. Rural areas make up approximately 1.9 million hectares or 85% of the South East Queensland landscape, much of which is managed by farmers.

Protecting and sustainably managing agricultural land in SEQ is crucial to safeguard the capacity of the region to produce food and fibre for local communities and broader markets. Given the extensive area of land managed by farmers, they play a central role in the conservation and management of other natural values, including the region's waterways and rich biodiversity.

Farmers in the region are faced with many challenges in maintaining viable enterprises, such as climate extremes, cost of production, profit margins and market uncertainty. These challenges can place pressure on already stretched land and water resources.

The management of agricultural land in South East Queensland significantly influences the health of waterways, including the region's creeks, rivers, estuaries and coasts. In some cases, poor agricultural land management continues to threaten water security and waterway health.

The uptake of sustainable agricultural practices in the region can enhance the long-term viability of farm enterprises, supporting regional communities, and in many cases can have positive outcomes for waterways and catchments.

What is sustainable agriculture?

Sustainable agricultural practices are those that are economically viable and enhance the environmental quality and the resource base on which agriculture depends, such as the soils, water, plants, as well as pollinators such as insects.

Practices are specific to different types of agriculture, such as horticulture, grazing, or market gardens. These practices may be broadly known and shared between generations of farmers, while others are new innovations in response to emerging and ongoing challenges.

Implementing sustainable agricultural practices requires vision, persistence, innovation, and often upfront and ongoing expenses. Many organisations and individuals contribute to sustainable agriculture practices uptake across the region, including industry groups, government, and local

communities. The agricultural Industry, government and Natural Resource Management organisations are actively investing to support farmers in managing land sustainably. These investments often take the form of best management practice improvement programs or capacity-building extension activities, such as:

- Landholder engagement and capacity-building activities that assist landholders through knowledge exchange and training.
- On-ground behavior change programs to assist landholders to identify and implement improved practices to enhance enterprise sustainability and profitability.

Sustainable agriculture stewardship key indicators

Key indicators supporting the assessment of sustainable agriculture stewardship are listed in **Table 17**. This supports an initial assessment of stewardship activity relevant to sustainable agricultural practice in the region.

Table 17: *Sustainable agriculture stewardship key indicators.*

Indicator ID	Key indicators
SA01	Landholder engagement and capacity building.
SA02	Best management practice improvement programs.

Figure 21*: Erosion control and pasture management field day 2022.*

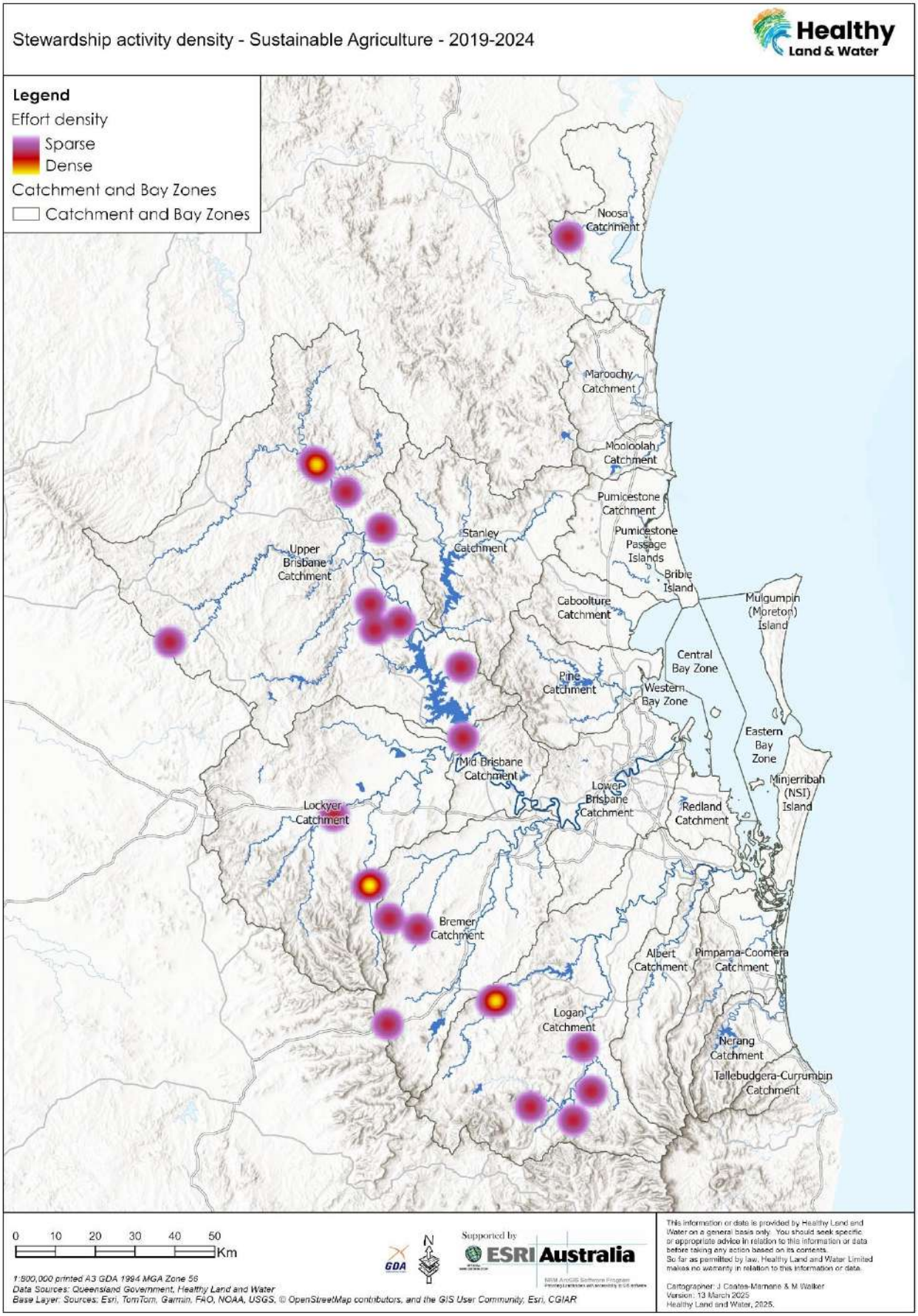

Figure 22: *Stewardship activity density sustainable agriculture 2019-2024.*

Landholder engagement and capacity building

Category	Empowering
Data source(s)	Healthy Land &Water
Data quality	Good

Why?

Capacity-building activities that assist landholders through knowledge exchange and training activities can improve agricultural productivity and enhance natural assets on which agriculture depends. Activities can include workshops and training, field days and demonstration sites. These activities can increase the level of awareness of landholders of different topics, increase landholder confidence in implementing new practices and promote peer-to-peer learning within agricultural communities.

Assessment

Available data on landholder engagement and capacity-building activities was collated. Activities delivered in South East Queensland are delivered under partnership models with other NRM organisations and funded by federal, state and local governments as well as industry associations. A summary of landholder engagement and capacity building activities delivered in South East Queensland under the following programs was collated, representing the following investments made from 2019-2024:

- Regional Land Partnerships Program (Agriculture).
- Regional Agriculture Landcare Facilitator.
- Natural Resource Investment Program.
- Natural Resource Recovery Program.
- Future Drought Fund.

Key findings

Agricultural landholders in South East Queensland have participated in a range of capacity-building and knowledge-sharing activities. These include participation in soil health, soil erosion management, native vegetation management and climate adaptation workshops. Since 2019, over 1500 agricultural landholders have participated in training or capacity-building workshops (**Table 18**), representing an equivalent land area of over 92,000 hectares (**Table 19**). In the last 5 years, over 18 sustainable agriculture demonstration sites have been established and over 135 landholders have been supported through direct extension services (**Table 18**).

When landholders who participated in these programs were asked if their involvement in the program events/activities, increased their understanding, skills and capacity to make on-farm changes, the majority of participants indicated an increase (**Figure 23**: Level of improvement reported by participating landholders in sustainable agriculture capacity-building workshops. Weighted average 1 = No Improvement, 3 = Fair Improvement, 5 = Excellent Improvement. Responses = 130.**Figure 23**). In addition, following participation in these workshops over 50% of landholders indicated they are planning to make changes in management and over 70% had already made changes in management (**Table 20**).

***Table 18**: Landholder engagement and capacity building key metrics 2019-2024.*

Metric	Value (reported)
Number of landholders engaged in capacity-building activities.	1569
Number of sustainable agriculture demonstration sites established.	18
Number of extension services (property visits).	135

***Table 19**: People engaged by land management theme 2019-2024.*

Theme	Landholders engaged	Total equivalent land area managed (Hectares)
Soil health	337	9760
Soil erosion management	598	48,849
Native vegetation management	564	29,858
Climate adaptation	70	3,970
Total	**1569**	**92,437**

***Figure 23**: Level of improvement reported by participating landholders in sustainable agriculture capacity-building workshops. Weighted average 1 = No Improvement, 3 = Fair Improvement, 5 = Excellent Improvement. Responses = 130[19].*

[19] Healthy Land and Water, 2023. End of Program Survey - National Landcare Program Regional Land Partnerships 2019-2023

***Table 20**: Level of behaviour change reported following participation in sustainable agriculture capacity-building workshops.*

Which of the below statements apply best to the managed practices on your property(ies) since attending a workshop or training	%
I have not made changes, and I am not planning to make changes	7.9
I am planning to make (more) changes	50.0
I have made changes	74.5

>Responses: 130[20]

[20] Healthy Land and Water, 2023. End of Program Survey - National Landcare Program Regional Land Partnerships 2019-2023

On-ground behaviour change programs – grazing

Category	On-ground action
Data source(s)	Healthy Land & Water
Data quality	Moderate

Why?
Agricultural land and water management practices have a direct influence on farm enterprise sustainability. The adoption of sustainable agricultural practice in the region can enhance the long-term viability of farm enterprises, though can require vision and up-front and ongoing expenses. A range of programs assist grazing and horticultural landholders in the region to adopt sustainable agricultural practices. Within the grazing sector these activities can include:

- Preventing erosion through improved ground cover, pasture and grazing management.
- Implementing cost effective erosion control measures to minimise soils and nutrient loss.
- Improving soils health – managing organic matter, tillage and cropping practices.
- Riparian zone fencing and off-stream watering.

Assessment
Available data on on-ground behaviour change program activities was collected. Activities delivered in South East Queensland are delivered under partnership models funded by federal, state and local governments as well as industry associations, such as:

- Regional Land Partnerships Program (Agriculture).
- Regional Agriculture Landcare Facilitator.
- Natural Resource Investment Program.
- Natural Resource Recovery Program.

Key findings
The reported area of land under best management practice agreements in South East Queensland is 1,234 hectares (**Table 22**). Over 180 property management or site plans have been developed (**Table 22**) and over 10 on-ground projects have been delivered (**Table 21**).

Table 21: *On-ground projects delivered.*

Primary intervention type	Project number (reported)
Access control.	2
Capacity building and knowledge sharing.	1
Best management practice improvement – grazing.	9

Table 22: *Sustainable agriculture – programs grazing lands key metrics 2017-2024.*

Metric	Value (reported)
Number of people engaged/attendees.	230
Number of farm/project/site plans developed.	181
Area (hectares) under BMP agreements.	1,234

Community stewardship

Community-led conservation in South East Queensland is motivated by passion, knowledge and skills and is built out of respect and recognition of the environmental significance of the region's distinctive habitats. These efforts protect, maintain and improve ecosystem health and resilience, build social connections, promote health and wellbeing, strengthen cultural values and contribute to the character of our region.

The beauty of community conservation is in the diverse ways in which it is practiced. Volunteers participate in environmental awareness programs, on-ground rehabilitation and revegetation projects, debris collection, citizen science and advocacy. Some people volunteer regularly, while others contribute occasionally through events like tree planting or community cleanup days.

In 2023, 64% of Queenslanders volunteered, contributing 719.8 million hours valued at $117.8 billion. While formal volunteering remains vital, informal contributions account for 44.4% of participation, showing the strong culture of environmental engagement across Queensland.

Community stewardship key indicators

Key indicators supporting the assessment of community stewardship are outlined in **Table 23**. This supports an initial assessment of stewardship activity relevant to freshwater ecosystem conservation and rehabilitation in the region.

***Table 23**: Community stewardship key indicators.*

Indicator ID	Key indicators
CS01	Community-led conservation and restoration effort.
CS04	Individual stewardship of South East Queensland residents.
CS05	Water literacy of South East Queensland residents.

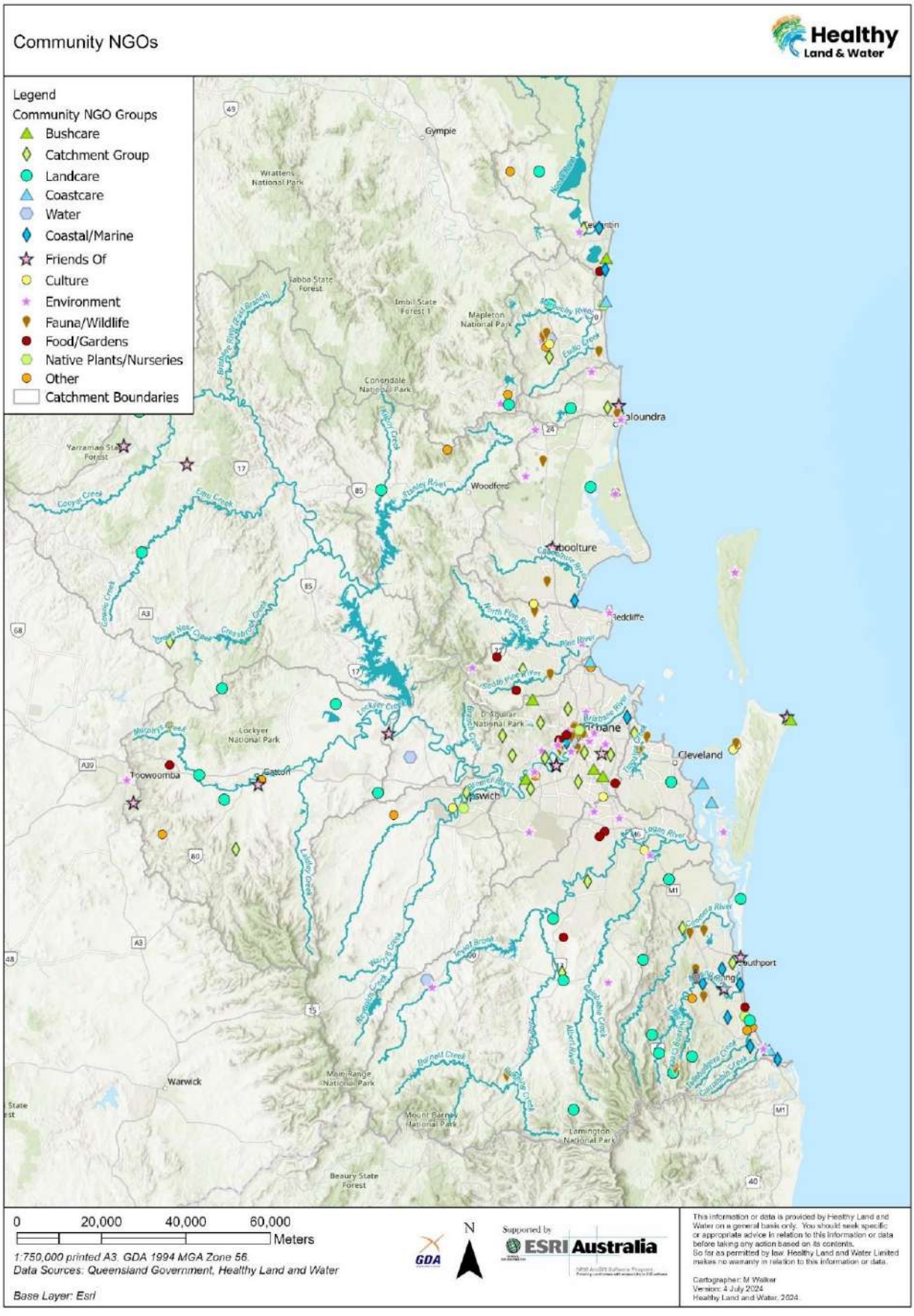

***Figure 24**: Community environmental non-government organisations of South East Queensland – reported (not exhaustive).*

Community-led conservation and rehabilitation

Category	On-ground action
Data source(s)	Community groups and local governments
Data quality	Poor

Why this indicator?

Community-led conservation and restoration has been a core element of environmental management in Australia for many decades. This has been facilitated by major investments from government over many decades in community development, such as federal funding for Landcare (1987), establishment of the Natural Heritage Trust (1997), Caring for Country Program (2008) and the Green Army (2014) [21]. These investments have driven a high level of focus on community-based stewardship action, which continues today. Government continues to support this with ongoing funding, including small grants for Landcare, Bushcare, catchment and Coastcare groups across the region.

There are many benefits of communities leading local environmental stewardship activities, including social and cultural outcomes[22]. Some of these benefits include:

- Activities reflect local knowledge, including insights into values and threats.
- Increased connection of residents to natural areas, and inspiration to conserve and rehabilitate areas.
- Fostering local community champions for environmental stewardship.
- Activities can foster community social connections and increase social capital.
- Local networks of environmental stewards have been sustained over many years or even decades.
- Environmental education for communities.

Assessment

Available data on the breadth of conservation and restoration efforts led by community groups was collated. This initial assessment aims to provide an overview of the breadth of activity and total effort of on-ground activity led by these groups.

Key findings

In South East Queensland, there is a very high level of community leadership and participation in conservation and rehabilitation initiatives. There are many community stewardship organisations actively conducting habitat restoration, litter removal and weed control across the region (

[21] Hajkowicz, S. (2009) 'The evolution of Australia's natural resource management programs: Towards improved targeting and evaluation of investments', Land Use Policy 26: 471–8.

[22] Church, Emma (2024). *Connecting communities to act for nature: the value of social connection for stewardship action.* PhD Thesis, School of the Environment, The University of Queensland.

Table 24). Key on-ground activities undertaken by community groups include habitat restoration, litter and debris removal, and weed control. Between 2019 and 2024, over 56 community groups planted over 43,000 plants, with volunteers contributing many thousands of hours of labor (**Table 25**).

Table 24: *Community-led conservation and restoration effort intervention types.*

Primary intervention type	Project number (reported)
Habitat restoration/rehabilitation	16
Litter/ debris removal	3
Weed control	1

Table 25*: Reducing threats to estuarine, coastal and marine ecosystems key metrics 2017-2024.*

Metric	Value (reported)
Number of community groups	Over 56
Number of plants planted	43,921
Number of volunteers	4585
Number of hours spent on ground activities	2,403
Volume of litter removed (Litres)	708

Figure 25*: Local residents undertaking rehabilitation in the Enoggera Creek Catchment.*

Individual stewardship

Category	On-ground action
Data source(s)	South East Queensland Social Monitoring Program (EHMP)
Data quality	Moderate

Why this indicator?

Individual actions significantly impact waterway health across our region. Personal stewardship takes many forms: joining conservation activities, removing litter, and participating in advocacy for conservation and rehabilitation. Stewardship specific to private landholders may include managing invasive weed species, reducing household or garden chemical use or restoring native habitats. The collective actions of residents directly influences the condition of our natural assets. Understanding what motivates stewardship behaviours can inform initiatives aiming to increase individual stewardship in key areas.

Assessment

As part of the routine social monitoring program, in 2024 we surveyed over 3000 residents throughout South East Queensland to measure their level of engagement in general stewardship activities and stewardship on private land[23]. This aimed to measure both past stewardship behaviours and willingness to undertake stewardship actions in the future, including specific activities of private landholders.

Key findings

One in four residents (25%) indicates they have participated or undertaken stewardship actions, with most acting independently rather than as part of a group. Litter collection is the most common activity, with residents actively removing waste from parks, bushland, waterways and public spaces. Other frequent activities include keeping pests contained at night, reducing chemical use and encouraging others to protect natural areas. (

[23] Dean, A., Shultz, T. 2024 South East Queensland Catchments Social Monitoring Program for HLW. 2024 Research Report.

Table 26).

For residents with half-acre properties or larger, stewardship activities expand to include restoring habitat, managing fire risks, removing weeds, reducing soil erosion, protecting riverbanks and installing water-sensitive urban design features. Residents whose land adjoined waterways were found to be more likely to undertake these activities. Across most stewardship actions, respondents with riparian zones report higher levels of engagement ("Yes, within the last 12 months" and "Yes, not in the last 12 months") compared to those without riparian zones.

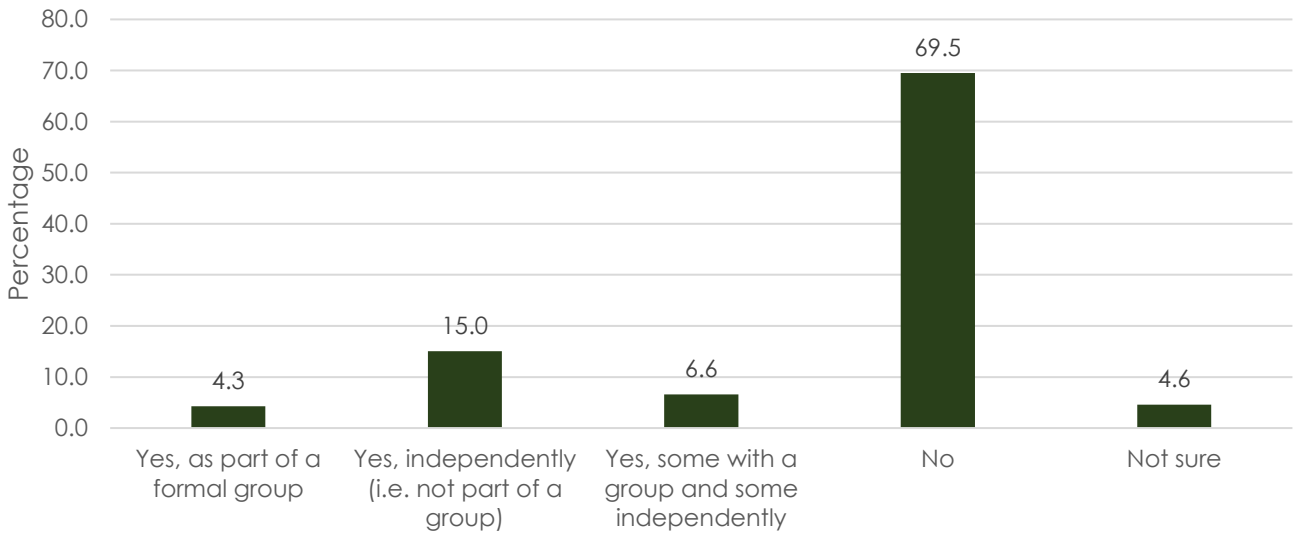

***Figure 26**: Proportion of respondents that have undertaken stewardship actions (n=3231).*

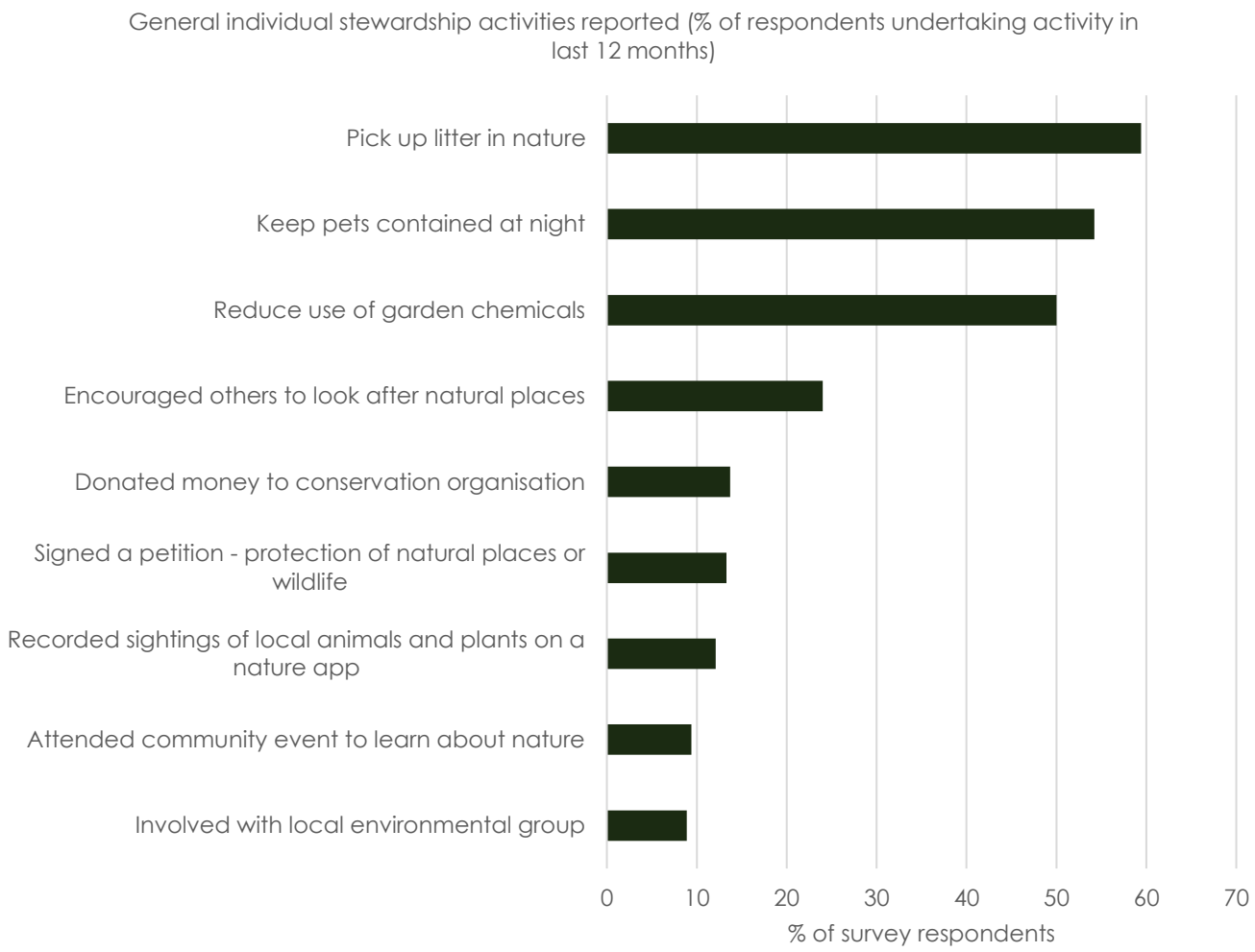

***Figure 27**: Relative frequency of general stewardship activities (% of respondents undertaking activity in the last 12 months).*

***Table 26**: Number and percentage of survey respondents participating in general stewardship activities.*

Action	Yes, within the last 12 months	Yes, but not in the last 12 months	No, but willing to consider	No, and not willing	N/A
Pick up litter in nature	1919 (59.4%)	408 (12.6%)	677 (21.0%)	147 (4.5%)	79 (2.4%)
Keep pets contained at night	1752 (54.2%)	107 (3.3%)	192 (5.9%)	83 (2.6%)	1095 (33.9%)
Reduce use of garden chemicals	1616 (50.0%)	302 (9.3%)	605 (18.7%)	280 (8.7%)	426 (13.2%)
Donated money to conservation organisation	442 (13.7%)	468 (14.5%)	1490 (46.1%)	830 (25.7%)	
Signed a petition - protection of natural places or wildlife	431 (13.3%)	363 (11.2%)	1932 (59.8%)	503 (15.6%)	
Encouraged others to look after natural places	777 (24.0%)	390 (12.1%)	1516 (46.9%)	545 (16.9%)	
Involved with local environmental group	287 (8.9%)	345 (10.7%)	1807 (55.9%)	791 (24.5%)	
Attended community event to learn about nature	305 (9.4%)	406 (12.6%)	1726 (53.4%)	792 (24.5%)	
Recorded sightings of local animals and plants on a nature app	392 (12.1%)	271 (8.4%)	1895 (58.7%)	672 (20.8%)	

***Table 27**: Percentage of survey participants who live on at least half land undertaking stewardship activities.*

Action	Yes (last 12 months)		Yes (not last 12 months)		No, but willing		No, not willing	
	Yes	No	Yes	No	Yes	No	Yes	No
Restored habitat (planted trees/vegetation)	45.1%	38.9%	35.3%	23.5%	17.6%	28.4%	2.0%	9.3%
Managed fire risks (controlled burns)	25.5%	19.1%	29.4%	13.6%	36.3%	48.1%	8.8%	19.1%
Removed weeds/invasive plants	63.7%	57.4%	19.6%	19.1%	13.7%	19.1%	2.9%	4.3%
Reduced soil erosion	29.4%	17.9%	27.5%	17.3%	35.3%	51.9%	7.8%	13.0%
Protected riverbanks (planted buffer zones)	23.5%	6.2%	30.4%	9.3%	30.4%	20.4%	12.7%	8.6%
Installed features to reduce stormwater (e.g. swales)	26.5%	16.0%	32.4%	19.1%	36.3%	50.6%	4.9%	14.2%


HEALTHY WATERWAYS

Water literacy of South East Queensland residents

Category	Empowering
Data source(s)	South East Queensland Social Monitoring Program (EHMP)
Data quality	Good

Why?

Water literacy includes knowledge about water sources, water management and water-related issues[24]. Urban water sustainability depends significantly on individual and community behaviours. Research shows that communities with higher water literacy demonstrate greater willingness to adopt new practices or accept changes in practice. Establishing and tracking the community's knowledge and understanding of urban water management can be used as the basis to guide more targeted engagement strategies to increase literacy in key areas.

Assessment

The Cooperative Research Centre (CRC) for Water Sensitive Cities have developed the water literacy index. This index is determined from surveying a population and asking questions that assess knowledge of factors that impact on water quality, knowledge of water treatment and management, and general knowledge of catchments and the water cycle.

Residents of South East Queensland were surveyed as part of the EHMP Social Monitoring program in 2023[25]. Each knowledge area was converted to a relative level of water literacy by averaging the proportion of respondents who correctly agreed/strongly agreed or correctly disagreed/strongly disagreed (depending on the wording of the question) across each knowledge area. Results for South East Queensland can also be compared with a sample of the broader Australian population to explore the relative literacy of residents.

Key findings

South East Queensland residents have higher overall water literacy compared to the broader Australian population. Regional strengths include an excellent understanding of factors that positively and negatively affect waterway health. However, knowledge gaps exist regarding water treatment processes and drinking water supply systems (***Figure 28***). Targeted engagement with South East Queensland residents, to increase knowledge of urban water management, focusing on water treatment and drinking water sources and supply, will likely increase the communities' willingness and readiness to change behaviour in pursuit of sustainable urban water management.

[24] Fielding, K., Karnadewi, F., Newton, F., & Mitchell, E. (2015) A National Survey of Australians' Water Literacy and Water-related Attitudes, Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities.
[25] University of Queensland & Healthy Land and Water, 2023 South East Queensland Catchments Water Benefits 2023 Research Report.

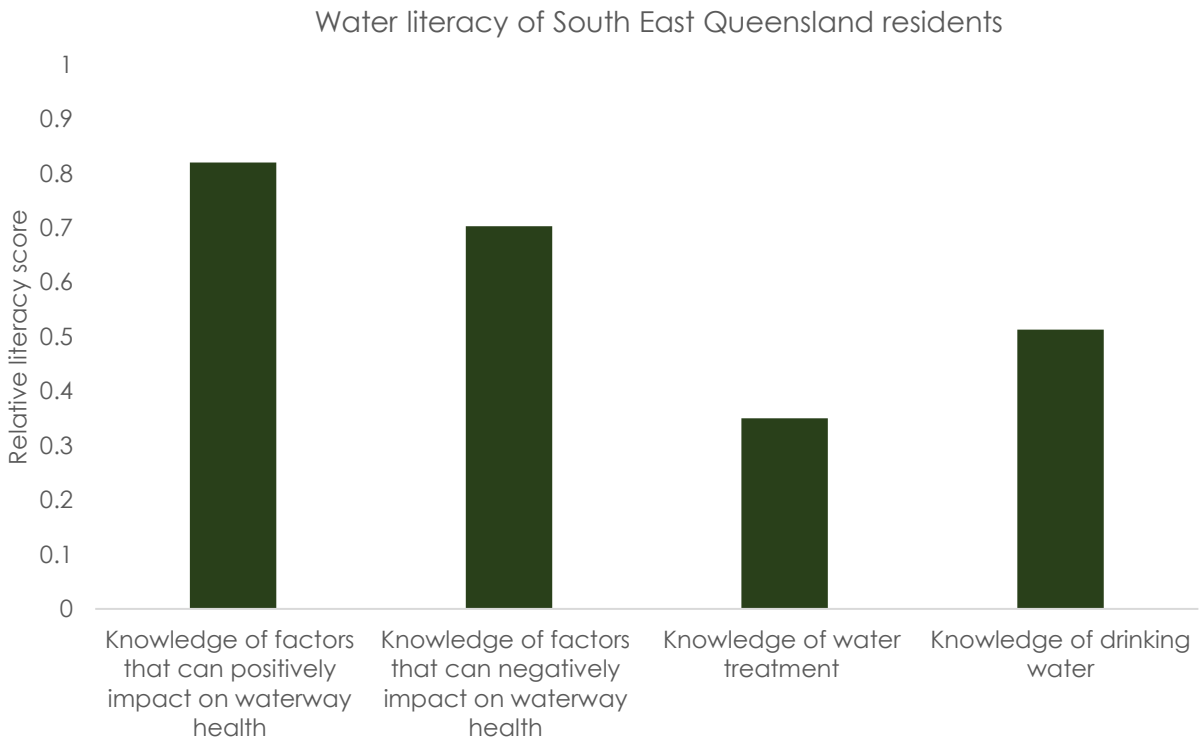

Figure 28: *Water literacy of South East Queensland residents – relative score (1 = high literacy, 0.1= low literacy).*

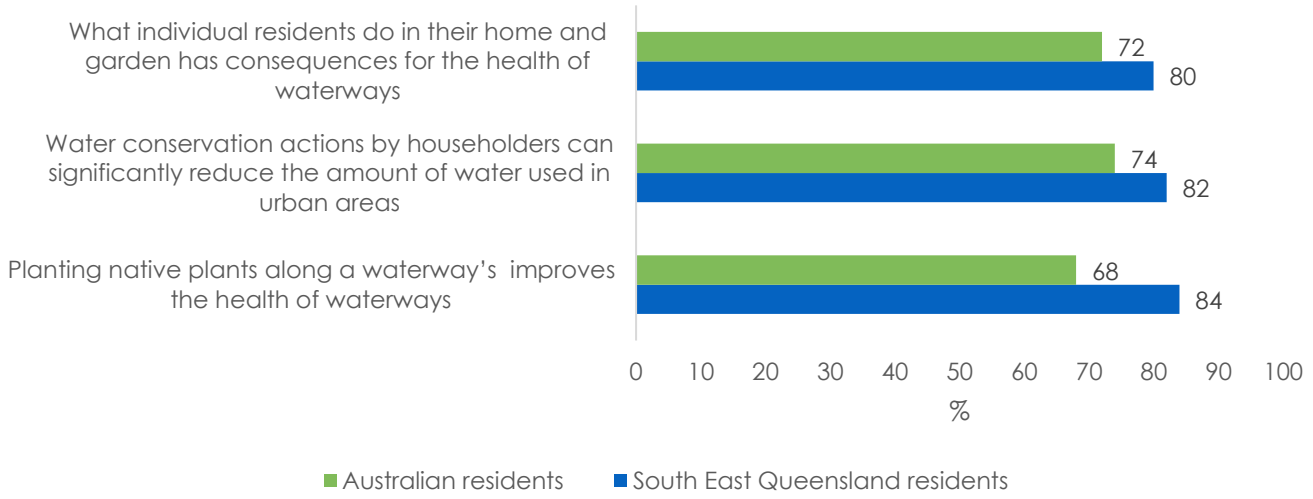

Figure 29*: Knowledge of factors that can positively impact waterway health. Percentages represent the proportion of respondents who correctly agreed/strongly agreed or correctly disagreed/strongly disagreed (depending on the wording of the question).*

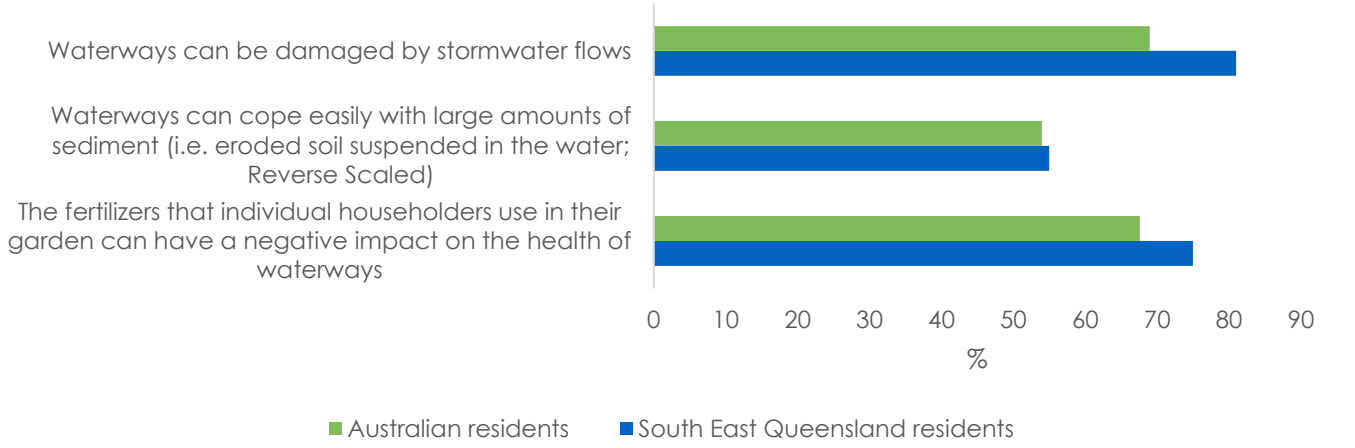

***Figure 30**: Knowledge of factors that can negatively impact waterway health. Percentages represent the proportion of respondents who correctly agreed/strongly agreed or correctly disagreed/strongly disagreed (depending on the wording of the question).*

***Figure 31:** Knowledge of water treatment. Percentages represent the proportion of respondents who correctly agreed/strongly agreed or correctly disagreed/strongly disagreed (depending on the wording of the question).*

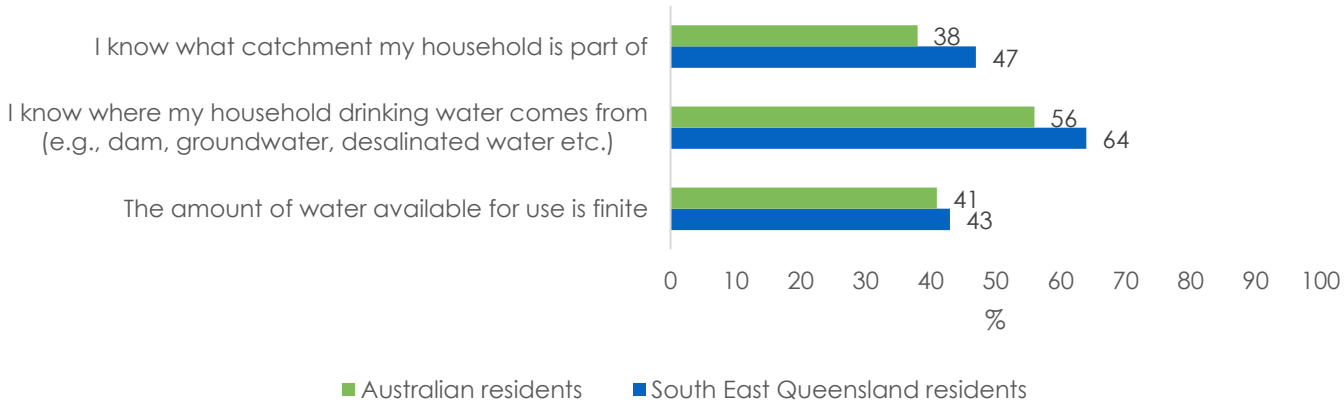

***Figure 32:** Knowledge of drinking water and catchments. Percentages represent the proportion of respondents who correctly agreed/strongly agreed or correctly disagreed/strongly disagreed (depending on the wording of the question).*

First Nations cultural resource management

In recognition that First Nations peoples have an important and leading role in caring for Country, cultural resource management indicators have been developed to highlight where First Nations stewardship is being enabled. These indicators were developed in consultation with Healthy Land & Water's Indigenous Strategy Committee. The Cultural Resource Management Indicators include the following:

1. Recognition of rights and interest.
2. Cultural referral.
3. Cultural surveys.
4. Cultural protection and management.

Key findings

As of 2025, over 230,000 hectares of land and sea in South East Queensland was formally recognised with Native Title rights and interests. The area expanded significantly when the Kabi Kabi peoples were recognised to hold Native Title over 356,345 hectares of the Sunshine Coast Region in 2024. This makes Traditional Owners the largest non-government landholders in the region.

Key facts:

- 8,575 Cultural Heritage Sites formally recorded in South East Queensland.
- 14 Indigenous Land Use Agreements have been formalised within South East Queensland, covering 372,556 hectares.
- Over 230,000 hectares of land and sea have been formally recognised with Native Title rights and interests (exclusive and non-exclusive).
- Traditional Owners are now the largest non-government landholders in South East Queensland.
- The three largest sand islands in the world are being actively managed by Traditional Owner groups (two through joint management).

***Table** 28: Cultural resource management Indicators quick facts.*

ID	Key indicators	Quick facts
CRM01	Recognition of rights and interests	**9%** *of the areas across the region have been fully recognised through Native Title.*
CRM 02	Cultural referral	**84%** *of the region has First Nation parties identified and recognised to lead the decisions relating to Aboriginal cultural heritage.*
CRM 03	Cultural surveys	**15,630 ha (0.62%)** *of the region is covered by a fully completed archaeological survey.*
CRM 04	Cultural protection and management	**20%** *of the region's documented sites have Cultural Heritage Management Plans in place.*

Recognition of rights and interests

Native Title is the lead legislation that describes the recognition by the Australian legal system of rights and interests of Aboriginal and Torres Strait Islander peoples to land and waters according to their traditional laws and customs. The rights and interests protected under the *Native Title Act 1993* find some reflection in the Indigenous values of natural and cultural heritage protected under the *Environment Protection and Biodiversity Conservation Act 1999*[26]. A determination of Native Title is a decision by the Federal Court whether rights and interests of Traditional Owners exist in relation to a particular area of land or waters. The Queensland Government publishes a spatial layer that is an indicator of where Native Title is considered likely to persist, subject to a Federal Court Determination.[27] This is indicative only and is based on tenure history. This indicator is viewed as a mechanism to highlight where First Nations rights and interests are being recognised by the Federal Court.

Cultural referral

The *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* establish the framework for identifying Aboriginal and Torres Strait Islander parties responsible for the assessment and management of cultural heritage. This recognition occurs through Native Title claims registered in the Federal Court of Australia under the *Commonwealth Native Title Act 1993,* with alternative mechanisms available where no Native Title application exists. This indicator tracks areas where cultural heritage is being referred to as a First Nation (there are still a number of gaps in the region where no party is identified). The *Cultural referral* indicator highlights where First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage.

Cultural surveys

A cultural heritage study is a comprehensive study of Aboriginal or Torres Strait Islander cultural heritage conducted under Part 6 of the *Aboriginal Cultural Heritage Act 2003* or *Torres Strait Islander Cultural Heritage Act 2003*. The findings of the cultural heritage study are recorded on the Aboriginal and Torres Strait Islander cultural heritage register. This information is confidential. It is necessary to obtain landholder consent to undertake a study over an area, and the Aboriginal or Torres Strait Islander party for the area must also be involved.

The Queensland Government Aboriginal cultural heritage database contains information about cultural heritage sites and places collected over a period of more than 40 years. This database has restricted access and levels of information are only available to certain users depending on the situation (i.e. Aboriginal parties have full viewing access for their area of interest while other land users will only be provided limited access that does not fully reveal the cultural material).

A Cultural Heritage Management Plan is an agreement between a land user and the recognised First Nation developed under the Cultural Heritage Acts. The Cultural Heritage Management Plan explains how land use activities can be managed to avoid or minimise harm to Aboriginal or Torres Strait Islander cultural heritage. Any land user can voluntarily develop and seek approval of a Cultural Heritage Management Plan. This indicator is viewed as a mechanism to highlight the level of management being enacted for the cultural heritage values within a catchment. Land and Sea Ranger organisations are actively developing their work plans to align with these priorities.

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[26] Janke T, Cumpston Z, Hill R, Woodward E, Harkness P & von Gavel S & Morrison J (2021). Australia state of the environment 2021: Indigenous, independent report to the Australian Government Minister for the Environment, Commonwealth of Australia, Canberra, DOI: 10.26194/3JDV-NH67.

[27] *Land subject to Native Title - indication only* © State of Queensland (Department of Resources) 2022.

Conclusions and recommendations

There are many reasons to celebrate the outcomes of past stewardship efforts that continue to leave a legacy of benefits for people and the environment, while also recognising the continued and increased effort required to conserve and enhance catchments and waterways of the region.

Currently, a comprehensive assessment of stewardship is hindered by both a lack of data and suitable benchmarks with which to evaluate effort. Improved data quality and quantity, and establishing suitable benchmarks will improve quantitative stewardship assessments.

It is recommended that data management and benchmarks for stewardship activity and outcomes be the primary focus for this program going forward. This will require resourcing and increased coordination and alignment across the many organisations and individuals actively stewarding landscapes and waterways of the region.

Recommendations

These recommendations were developed during the final stages of this work in consultation with key partners. These recommendations are targeted to:

1) Initially enhance our collective ability to understand the full breadth of land and water management effort that is occurring in South East Queensland.

2) Improve benchmarking to assess the relative status of stewardship across different themes.

Understanding where investments are made and their outcomes

Improving data collection and management systems, particularly for on-ground initiatives, will increase our ability to preserve and enhance our catchment and waterway assets and understand the return of our collective investment.

Recommendation #1: Develop and/or align standard monitoring and reporting frameworks and tools for natural resource management programs delivered across South East Queensland.

Recommendation #2: Implement a consistent and adequate level of resourcing for natural asset monitoring and evaluation to support knowledge sharing and continual improvement.

Recommendation #3: Report and publicly share outcomes of significant investments in natural asset conservation or enhancement programs to build trust, knowledge and capacity.

Understanding the relative status of stewardship - are we on or off track?

For some themes and indicators, useful benchmarks have been established to assess status. However, for many areas, this remains an important area for development. Establishing benchmarks for stewardship effort across different themes and indicators will improve the impact of the initiative. It will achieve this by illustrating how the current level of stewardship compares to other regions, it will also assess the level of progress towards local or regional targets.

Recommendation #4: Establish benchmarks for stewardship indicators to support data-driven assessment of stewardship effort status (i.e. on track, off track).

Planning for the future

The Stewardship Reporting Program is a trial for SEQ to support improved understanding of the efforts being undertaken to protect and restore SEQ waterway and catchment health. It is anticipated that the program will change and evolve over time. Future updates and improvements of the report may include:

- Linking stewardship actions to existing or newly established strategies or management targets.
- Increased alignment (to avoid duplication) with Natural Resource Management planning and reporting.
- Assessment at a finer spatial scale, such as catchments, consistent with the EHMP and Report Card.

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APPENDIX A: Complete key indicator list

Theme	ID	Key indicator	Category
Cultural resource management	CRM01	Recognition of rights and interests.	Empowering
	CRM02	Cultural referrals.	Empowering
	CRM03	Cultural surveys.	Monitoring and research
	CRM04	Cultural protection and management.	Policy and planning
Freshwater ecosystems	FW01	Freshwater wetlands, creeks and rivers within protected areas.	Policy and planning
	FW02	Riparian zone rehabilitation.	On-ground action
	FW03	Freshwater stream or wetland rehabilitation.	On-ground action
	FW04	Reducing threats to freshwater ecosystems.	On-ground action
	FW05	Freshwater ecosystem monitoring, surveys and research	Monitoring and research
Estuarine and coastal ecosystems	EC01	Estuarine intertidal wetlands in protected areas.	Policy and planning
	EC02	Restoring estuarine, coastal and marine ecosystems.	On-ground action
	EC03	Reducing threats to estuarine, coastal and marine ecosystems.	On-ground action
	EC04	Estuarine and coastal ecosystem monitoring, surveys and research	Monitoring and research
Urban waterways	UW01	Urban water stewardship progress in South East Queensland.	Policy and planning
	UW02	Wastewater nitrogen removal efficiency.	Engineered solutions
Sustainable agriculture	SA01	Land-holder engagement and capacity.	Empowering
	SA02	On-ground behaviour change.	On-ground action
	SA03	Natural asset monitoring, surveys and research	Monitoring and research
Community stewardship	CS01	Community-led conservation and restoration effort.	On-ground action
	CS02	Individual stewardship of South East Queensland residents.	Empowering
	CS03	Water literacy of South East Queensland residents.	Empowering
	CS04	Private land and waterway conservation (LFW)	On-ground action
	CS05	Citizen Science Initiatives	Monitoring and research

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