Green Building Council Australia

Nature positive roadmap

For new developments

FINAL for release

DATE

About this roadmap

How this roadmap was developed

The Green Building Council of Australia's *Nature Positive Roadmap for New Developments* has been developed to support the built environment sector to respond to growing national and global momentum toward nature-positive action. It seeks to align new developments with emerging goals for nature, while providing clear direction to support leadership across the industry.

The roadmap was developed with support the GPT Group. It was developed with the assistance of ARUP, Edge Impact, Culture to Country and Positive Futures, and builds on years of foundational work, industry collaboration, and engagement across the built environment sector. It has been informed through consultation with industry, government, finance practitioners and community stakeholders, as well as engagement with leading experts in sustainability, biodiversity and the built environment. It is designed to complement existing and evolving policy and regulatory frameworks, while helping to translate ambition into practical action.

Engagement with perspectives informed the development of the discussion paper that helped shape this roadmap. GBCA engaged Culture to Country, a 100% Aboriginal-owned business, to support engagement with First Nations stakeholders and to incorporate perspectives on Country, culture and custodianship. These perspectives have influenced the direction of the roadmap. GBCA recognises the essential role of First Nations knowledge, leadership and stewardship in achieving long-term outcomes for nature, and the importance of continuing to strengthen this engagement over time.

Nature-positive approaches will continue to evolve as science, policy and practice advance. GBCA will review and update this roadmap over time to ensure it remains relevant, credible and aligned with best available evidence.

Green Building Council Australia

About the Green Building Council of Australia

Established in 2002, Green Building Council of Australia (GBCA) is the nation's authority on sustainable buildings, communities and cities. Our vision is for healthy, resilient and positive places. Our purpose is to lead the sustainable transformation of the built environment. GBCA represents more than 550 individual companies with a combined annual turnover of more than $46 billion.

Acknowledgements

GBCA thanks the members of the Nature Roadmap Advisory Panel and contributing organisations for their expertise, time and collaboration in developing this roadmap. A full list of contributors is provided appendix X.

We at the Green Building Council of Australia recognise the Traditional Custodians of Country throughout Australia. We pay our respects to Elders past and present, and recognise their continuous connection to lands, skies and waters.

Australia's First People are the world's oldest continuous living culture, and Australia's first practitioners of sustainability. They have shaped the built environment for millennia with purpose-built architecture that responds to the unique character and challenges of the landscape. The Green Building Council of Australia recognises the power of the built environment to shape a future that cares for both people and planet. The choices we make today matter for the future of tomorrow.

Executive summary

Australia's natural systems are in peril. Land clearing, ecosystem degradation, erosion and sedimentation, spread of pests, altered fire regimes and diseases are key contributors to nature loss. Disconnected planning systems are encroaching into previously undeveloped areas with high biodiversity values and fragmenting ecosystems.

At the same time, Australia's environmental legislation – particularly the Environmental Protection Biodiversity Conservation Act (EPBC) was found to not adequately arrest species loss. The recent EPBC Act reforms seek to address identified gaps in integrated land use planning, consider cultural values, knowledge and leadership of First Nations peoples, and establish minimum standards for environmental protection. The GBCA welcomes this progress, and looks forward to supporting implementation of the Act.

To support a vision of healthy, positive and resilient places, this roadmap sets a vision for new developments to actively contribute towards national and international nature positive efforts. Importantly, this roadmap integrates the latest science, and aligns with international frameworks that focus and drive nature considerations into key decisions affecting businesses, developments and communities.

It recognises that our cities, buildings, and infrastructure must do more than minimise harm—they must actively protect and regenerate biodiversity and ecosystems.

The roadmap identifies five key challenges:

- Fragmented policy and weak implementation, undermines environmental outcomes and public trust.
- Accelerating land development is degrading ecosystems in Australia's most biodiverse and contested regions.
- A low circularity rate in Australia drives waste and missed opportunities for regenerative design.
- Resource use contributes to habitat loss, pollution, and water stress.
- Underinvestment in nature continues to reward destruction over restoration and regeneration.

And proposes five core principles, each supported by measurable targets:

- Prevent nature loss – Commit to protecting valuable natural systems on site and compensating for all residual impacts.
- Increase and connect nature – Restore ecosystems and reconnect fragmented habitats.
- Drive circularity – Encourage building reuse, and minimise waste and pollution through circular design.
- Choose low-impact materials – Avoid ecosystem harm from construction supply chains.
- Invest in nature – Embed funding for restoration and regenerative outcomes.

The roadmap translates global nature targets into actionable, measurable steps for new developments. Success will depend on strong policy integration, consistent data, and the inclusion of First Nations knowledge and leadership.

The nature challenge at a glance

Nature is being lost at a scale and speed unprecedented in human history. Human activity has fundamentally altered the Earth's land, oceans and ecosystems, driving rapid biodiversity loss and placing increasing pressure on the natural systems that support human health, economies and communities.

This decline is not occurring in isolation. Land-use change, resource extraction, pollution, climate change and invasive species are eroding ecosystems globally, while weakening the natural carbon sinks, water systems and ecological functions we depend on.

The built environment is both a contributor to this challenge and a critical lever for change. Decisions about where and how we build shape land clearing, material demand, water use and habitat fragmentation — but they also create opportunities to protect, restore and reconnect nature at scale.

As cities expand and demand for new development grows, the choices made now will determine whether future places continue to drive nature loss or actively contribute to nature's recovery.

"without significant reforms, governments will be forced into a series of untenable choices: between feeding people, meeting climate targets and preserving nature"[1]

- **75% of the world's land** has been significantly altered by human activity[2]
- **66% of oceans** are affected by human pressures[2]
- **1 million species** are currently threatened with extinction[2]
- **Wildlife populations have declined by 69%** globally since 1970[3]
- **Australia ranks among the worst globally** for mammal extinctions[4]
- **63% of threatened species in Australia occur in cities**[5]
- **Construction sector** products and services represent **22%** of consumption **extinction footprint** in Australia[6]
- The built environment is responsible for **40% of raw material consumption globally**[7]
- To meet Australia's carbon reduction target, the **Climate Change Authority** has recommended addressing nature related actions for example**, ceasing native timber logging, and a halving of re-clearing rates**[10]
- Between 2000 and 2017, **21% of all EPBC referrals were for residential developments**[8]
- In Australia, **up to 60% of land expected to become urban** by 2030 has not yet been developed[9]
- Land clearing and introduced species are responsible for most extinctions in Australia[4]

1. The emerging global crisis of land use King et al., Chatham House, 2023

2. *Global Assessment Report on Biodiversity and Ecosystem Services* IPBES, 2019

3. Living Planet Report WWF, 2022

4. *Ongoing unraveling of a continental fauna: Decline and extinction of Australian mammals* Woinarski et al., Proceedings of the National Academy of Sciences (PNAS), 2015

5. *Australia State of the Environment 2021 – Biodiversity* Australian Government, drawing on Doherty et al. (2021)

6. *A consumption-based analysis of extinction risk in Australia* Geschke, A. and Irwin, A., University of Sydney, 2023

7. *Global Resources Outlook 2019* United Nations Environment Programme (UNEP), 2019

8. EPBC Act referral data analysis (2000–2017) Australian Government, 2018

9. *Global forecasts of urban expansion to 2030* Seto et al., Proceedings of the National Academy of Sciences (PNAS)

10. *Sector Pathways Review* Climate Change Authority, 2023

What's holding us back?

The built environment has the potential to be a powerful force for nature recovery — but today, systemic barriers continue to lock in nature loss across planning, delivery and investment.

Key challenges for the built environment:

1. Weak and fragmented regulation

Inconsistent policy and enforcement undermine confidence and fail to prevent cumulative nature loss.

2. Pressure from intensifying urban development

Growth continues to lock in permanent ecological loss where nature is treated as a constraint, not an asset.

3. Low circularity rate and material inefficiency

Linear material use drives ongoing extraction, habitat loss and pollution.

4. Impacts of resource and water use

Rising demand intensifies ecosystem stress and climate vulnerability, particularly in cities.

5. Chronic underinvestment in nature

Financial systems continue to reward nature-degrading activity while nature-positive outcomes remain undervalued.

See appendix X for further detail.

System gaps that cut across all five challenges:

Failure to recognise and embed First Nations knowledge and connection to Country

The built environment system has historically overlooked First Nations custodianship, governance and deep ecological knowledge, limiting opportunities for more holistic, culturally grounded and effective outcomes for nature and community.

See appendix X for further detail.

A lack of reliable data, metrics and methodologies

Measuring nature is complex and inconsistent, unlike carbon, yet it's essential for managing biodiversity risks and opportunities. Without consistent, accessible biodiversity data and reporting tools, the built environment cannot act meaningfully on nature risks.

See appendix X for further detail.

International and domestic context influencing the roadmap

Australia's environmental policy settings are being reshaped following major reviews that revealed widespread ecosystem decline and gaps in environmental protection.

In response, the Government's Nature Positive Plan, the Nature Repair Act, and the 2025 EPBC reform bills collectively establish a more modern system—introducing NEPA, Environment Information Australia, national standards, improved development assessment, and Australia's first voluntary biodiversity market.

These reforms are supported by new national data infrastructure, including the Biodiversity Data Repository, and complementary policies such as the Circular Economy Framework, which aims to reduce material impacts and double national circularity by 2035.

These reforms sit within a global shift toward stronger nature protection: The Kunming–Montreal Global Biodiversity Framework, which Australia is a signatory to, and the Taskforce for Nature-related Financial Disclosures (TNFD), which is becoming embedded in corporate accounting standards.

Together, these global frameworks, national reviews, government reforms and industry guidance form the foundation of the roadmap. A description of each is provided in Appendix XX.

Timeline of the changing context

1999 EPBC Act established

2016 NSW Biodiversity Conservation Act introduced

2018 GBCA releases first *Building with Nature* paper

2020 Independent Review of the EPBC Act (Samuel Review)

2020 IPBES's Global Assessment for Biodiversity and Ecosystem Services

2021 TNFD formally launched

2021 State of the Environment Report published

2022 Australian Government releases Nature Positive Plan

2022 Kunming–Montreal Global Biodiversity Framework adopted

2023 GBCA releases *Building with Nature 2.0*

2023 Nature Repair Act passed

2024 Circular Economy Framework developed

2025 Nature Repair Market becomes operational

2025 EPBC Reform Bills passed, NEPA and EIA established, EIA begins Biodiversity Data Repository

2025 ISSB announces incorporation of TNFD guidance into future IFRS Sustainability Disclosure Standards

Why this roadmap is important to you

From investment and governance through to planning, design, delivery and long-term ownership, decisions made at every stage influence impacts on nature — and exposure to risk, opportunity and value creation.

This roadmap is designed to support informed, consistent action across the development lifecycle. The perspectives below highlight why a nature-positive approach is relevant to different roles, and how it can support better outcomes for projects, portfolios and communities

Leadership and capital	Nature-related risks and dependencies are increasingly material to governance, investment decisions and long-term value creation. Expectations from regulators, investors and markets are rising.	Supports informed decision-making, strengthens governance, and helps direct capital toward resilient, nature-positive outcomes while preparing for future disclosure and regulatory requirements.
Policy, planning and regulation	Planning, policy and regulation play a decisive role in protecting and restoring nature, yet outcomes are often fragmented across jurisdictions.	Provides a shared reference point that aligns industry action with national and international nature commitments, supporting more consistent policy, planning and investment outcomes.
Development and asset ownership	Development decisions have long-term impacts on nature, communities and asset performance, with increasing scrutiny from regulators, investors and customers.	Helps manage approval, regulatory and reputational risk while supporting the delivery of resilient, desirable and future-ready places.
Design and delivery	Early design choices and construction practices strongly influence on-site impacts, resilience and long-term performance.	Supports the integration of nature-positive principles into planning, design and construction, enabling high-quality project outcomes and professional leadership.
Supply chains and materials	Material extraction and production have significant impacts on nature, and expectations around transparency and performance are increasing.	Supports innovation in low-impact and circular materials, improves market positioning, and helps respond to customer and regulatory expectations.
Community and Country	Communities and First Nations Peoples hold deep place-based knowledge and experience the impacts of development most directly.	Supports culturally informed, place-based outcomes that strengthen connection to Country, protect cultural values, and deliver healthier, more liveable communities.

A Nature Positive Roadmap and its targets

Ginninderry, ACT (6 Star Green Star Communities v1.1)

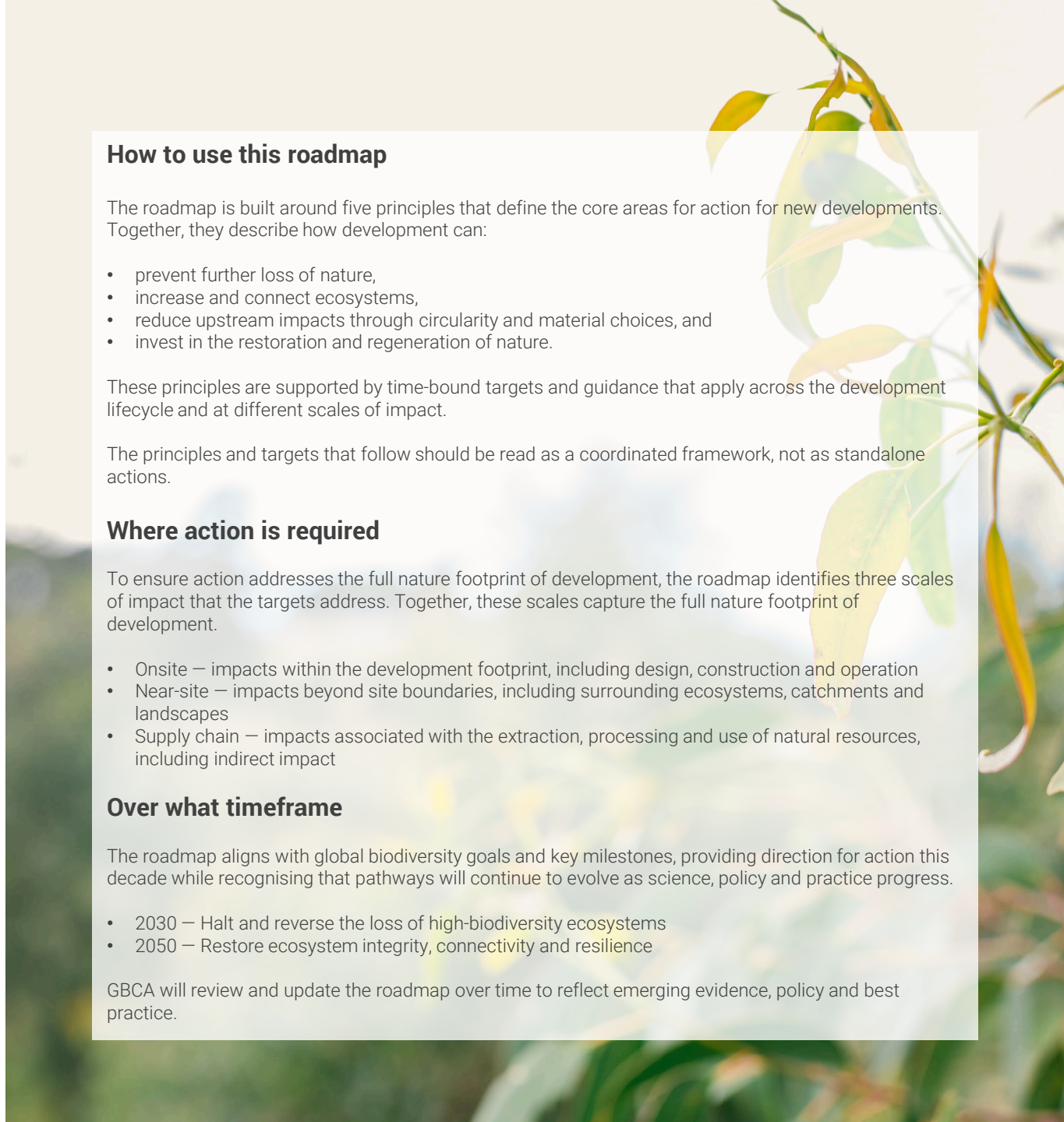
Introducing the Nature Positive Roadmap

The Nature Positive Roadmap for New Developments sets out how new developments can contribute to collective efforts to halt and reverse nature loss.

It provides a clear, practical framework to guide decision-making across the built environment, supporting industry leadership alongside evolving policy and regulatory reform.

The roadmap responds to the challenges facing new developments and translates national and global ambitions for nature into principles and targets that can be applied in practice.

While focused on new developments, the principles can also inform decision-making for existing buildings and precincts.



How to use this roadmap

The roadmap is built around five principles that define the core areas for action for new developments. Together, they describe how development can:

- prevent further loss of nature,
- increase and connect ecosystems,
- reduce upstream impacts through circularity and material choices, and
- invest in the restoration and regeneration of nature.

These principles are supported by time-bound targets and guidance that apply across the development lifecycle and at different scales of impact.

The principles and targets that follow should be read as a coordinated framework, not as standalone actions.

Where action is required

To ensure action addresses the full nature footprint of development, the roadmap identifies three scales of impact that the targets address. Together, these scales capture the full nature footprint of development.

- Onsite — impacts within the development footprint, including design, construction and operation
- Near-site — impacts beyond site boundaries, including surrounding ecosystems, catchments and landscapes
- Supply chain — impacts associated with the extraction, processing and use of natural resources, including indirect impact

Over what timeframe

The roadmap aligns with global biodiversity goals and key milestones, providing direction for action this decade while recognising that pathways will continue to evolve as science, policy and practice progress.

- 2030 — Halt and reverse the loss of high-biodiversity ecosystems
- 2050 — Restore ecosystem integrity, connectivity and resilience

GBCA will review and update the roadmap over time to reflect emerging evidence, policy and best practice.

A framework for action — supported by system-wide enablers

In response to the key challenges, the roadmap sets out five principles that define how the built environment can actively contribute to nature-positive outcomes.

Taken collectively, the principles address impacts across onsite, upstream (near sites) and downstream (supply chains), and provide a clear framework for the targets that follow.

Principles:

1. Prevent nature loss

Important biodiversity and ecosystems onsite and in surrounding areas are protected from development, preventing further nature loss and cumulative impacts.

2. Increase and connect nature

Biodiversity values are enhanced onsite by restoring and establishing connected habitats that support wildlife movement, ecosystem function and ecological integrity.

3. Drive circularity

The built environment shifts to circular practices that prioritise reuse and efficiency, reducing material extraction, pollution and ecosystem degradation across the value chain.

4. Choose low-impact materials

Nature-related impacts from materials are minimised through informed selection, transparency and traceability, supporting responsible sourcing and reducing hidden ecological harm.

5. Invest in nature

Ecosystems are protected, restored and regenerated through targeted investment in nature, delivering long-term environmental, social and economic benefits.

The enablers of success address the system gaps that limit progress today. They support the consistent application of the principles and enable the targets to be delivered in practice.

They recognise the need for data to facilitate evidence-based decision-making, and the contribution of First Nations knowledge for the benefit of community and society.

Enablers:

> Embed culture, community and connection to Country

Nature-positive outcomes are strengthened when development is grounded in Country and shaped through genuine partnership with Aboriginal and Torres Strait Islander peoples.

While the roadmap's targets focus on measurable environmental outcomes, long-term success depends on recognising and embedding First Nations leadership, values and knowledge across planning, design and delivery. Connection to Country is therefore integrated across all principles and actions, rather than addressed through standalone targets.

> Improve measurement, data and decision making

Nature-positive outcomes are enabled through robust ecological data, consistent metrics and integrated decision-making across the built environment.

Strengthening ecological literacy and reporting supports earlier action, clearer accountability and the integration of nature into everyday planning, design and procurement decisions.

See appendix X for further detail.

Nature Positive Roadmap for New Developments

Australia adopts Global Biodiversity Framework commitments → Halt and reverse nature loss by 2030 → Live in harmony with nature by 2050

Principles	Today	2028	2030	2035	2050
1 Prevent nature loss	Planning requires no net loss of high value biodiversity	Measure and report onsite biodiversity values.	Prioritise onsite protection to achieve no net loss, with restoration for residual impacts.		No onsite loss of moderate value biodiversity.
2 Increase and connect nature	Minimise construction-related impacts through planning.	Measure and report on biodiversity values onsite.		Deliver at least 10% biodiversity net gain, prioritising onsite gains.	Consider additional net gains over time, with greater weighting on onsite actions.
3 Drive circularity	Australian economy circularity rate is 4.4% , global rate is 7.5%	Measure built environment's circularity rate.	Achieve a 7.5% circularity rate for the built environment through "if not, then why" asset reuse policies.	Achieve a 15% circularity rate for the built environment through increased density and better housing.	Additional circularity rate increase will be proposed.
	Project level circularity rate is unknown	Measure and benchmark project-level circularity.	Achieve a 10% improvement in project-level circularity.	Achieve a 20% improvement in project-level circularity.	Additional circularity rate increase will be proposed.
4 Choose low-impact materials	Illegally harvested timber is prohibited in the supply chain.	Measure nature impacts of the top 10 materials and develop management plans.	Implement nature impact management plans for the top 10 materials.	Manufacturers of the top 10 materials must set biodiversity net gain targets.	All nature-related impacts from supply chain have been eliminated and compensated.
5 Invest in nature	Nature Repair Bill introduced 2023. By 2030 priority degraded areas are under effective restoration.	Measure and transparently disclose nature-related financial spend.	Invest in nature restoration to address Scope 3 impacts in large developments and infrastructure projects.		Nature restoration activities are commonplace as part of any project.

Enabled by — ***Embedding culture, community and connection to Country & improving measurement, data and decision-making***

Nature Positive Roadmap for new developments

		Today	2028	2030	2035	2050
		Australia adopts Global Biodiversity Commitments		Halt and reverse nature loss by 2030		Live in harmony with nature by 2050
1	**Prevent nature loss**	Planning requires no net loss of high value biodiversity.	Measure and report onsite biodiversity values.	Prioritise onsite protection to achieve no net loss, with restoration for residual impacts.		No onsite loss of moderate value biodiversity.
2	**Increase and connect nature**	Planning requires construction-related impacts to be minimised.	Measure and report onsite biodiversity values.		Deliver at least 10% biodiversity net gain, prioritising onsite gains.	Consider additional net gains over time, with greater weighting on onsite actions.
3	**Drive circularity**	Australia's economic circularity rate is 4.4%, global average of 7.5%.	Measure the built environment's circularity rate.	Achieve a 7.5% circularity rate across the built environment supported by reuse-first policies.	Achieve a 15% circularity rate across the built environment through efficient density planning.	Additional circularity rate increase will be proposed.
		Project-level circularity rate is unknown.	Establish project-level circularity methods and benchmarks.	Set project-level circularity benchmark requiring 10% improvement.	Set project-level circularity benchmark requiring 20% improvement.	Additional circularity rate increase will be proposed.
4	**Choose low-impact materials**	Regulations prohibit illegally harvested timber in supply chains.	Measure nature impacts of the top 10 materials and develop management plans.	Implement nature impact management plans for top 10 materials.	Manufacturers of the top 10 materials have biodiversity net gain targets in place.	All nature-related supply chain impacts are eliminated or fully compensated.
5	**Invest in nature**	National nature repair mechanisms are emerging, following the introduction of the Nature Repair Market.	Measure and transparently disclose nature-related financial spend.	Invest in nature restoration to address Scope 3 impacts in large developments and infrastructure projects.		Investment in nature restoration is standard practice across all projects.
	Enablers	***Embedding culture, community and connection to Country and improving measurement, data and decision making***				

What needs to happen in the next five years

1. Prevent nature loss

Define and map significant natural systems

Create nationally consistent criteria and spatial datasets for identifying important biodiversity, drawing from science and Indigenous knowledge and use this to identify 'no go' zones, thus helping clarify development approval processes and improving environmental outcomes.

Define 'unacceptable impacts'

Define 'unacceptable' impacts and environmental standards to establish a baseline from which to demonstrate improvements and no further loss of high value biodiversity.

Integrate net gain into planning systems

Embed biodiversity net gain, and avoidance-first requirements into planning policy, development approvals, and environmental assessment frameworks.

Implement the mitigation hierarchy

Mandate avoidance of impacts in areas of ecological or cultural value and ensure any nature investments are truly equivalent and long-term.

Standardise measurement and reporting

Develop robust, consistent methods for assessing nature losses and gains, with transparent public reporting.

Capacity building

Develop and implement cultural competency education programs to facilitate inclusion of Aboriginal and Torres Strait Islander cultural values in planning, design and construction.

Support Indigenous-led conservation and stewardship

Work in partnership with Traditional Custodians to protect cultural landscapes and integrate Traditional Ecological Knowledge into planning

2. Increase and connect nature

Standardise biodiversity net gain (BNG) methodology

Develop a nationally consistent, science-based framework for assessing biodiversity condition, baseline values, and uplift potential — aligned with emerging TNFD metrics and global best practice.

Advocate for ecological connectivity in planning

Strengthen planning requirements so developments consider and enhance ecological links between habitats, including corridors, stepping-stones, and species-specific movement pathways.

Advocate for bird's-eye view of ecological impacts assessment.

Support precinct-scale and catchment-scale approaches to deliver connected nature networks across urban regions.

Incentivise urban and regional restoration

Support large-scale revegetation, green infrastructure, and nature-based solutions in urban environments through grants, density bonuses, or integrated infrastructure funding.

Advocate for Biodiversity Net Gain in procurement and design briefs

Require biodiversity uplift targets in government and commercial developments—from site planning through to landscape and infrastructure design.

Advocate for monitoring of outcomes for EPBC compliance

Shift from compliance-based reporting to measuring ecological outcomes over time to track actual habitat condition, species movement and ecosystem function. Ensure monitoring is transparent, repeatable and clearly linked to BNG claims.

3. Drive circularity

Define and measure circularity in the built environment

Establish a consistent method for calculating circularity rate across material categories, lifecycle stages, and building typologies—aligned with ISO and EU standards.

Embed circularity in planning and building codes

Incentivise adaptive reuse, modular design, and design-for-disassembly through updated codes, procurement criteria, and rating tools.

Support circular supply chains

Encourage suppliers to provide reused, remanufactured, or recyclable materials, and invest in reverse logistics, take-back schemes, and local material recovery infrastructure.

De-risk circular procurement

Update government procurement policies to allow for reused and recycled materials and remove performance and liability barriers to innovation.

Track and disclose material flows

Require material passports, digital twins, or lifecycle assessments to track embedded impacts and material reuse potential over time.

4. Choose low-impact materials

Set material-specific targets

Set material-specific targets and trajectories that reflect whole-of-life impacts and avoid trade-offs between carbon and nature outcomes.

Phase out high-risk materials

Restrict or de-prioritise materials with high biodiversity or pollution risk – such as PVC, tropical hardwoods, or virgin aluminium – unless verifiably low-impact or third-party certified.

Improve supply chain transparency and traceability

Require suppliers to disclose material origin, production impacts, and compliance with environmental and human rights standards – using tools like Environmental Product Declarations, Forest Stewardship Council, Programme for the Endorsement of Forest Certification or digital product passports.

Promote local and regenerative materials

Encourage the use of locally sourced, bio-based, or regenerative materials that support regional ecosystems and reduce transport emissions.

Embed nature impact criteria in procurement

Update specifications and contracts to prioritise low-impact and responsibly sourced products – especially in public and institutional projects.

5. Invest in nature

Define methodology for calculating nature impact and investment

Define appropriate methodologies for calculating nature-related impact from products and materials used in development – where unknown, refer to embodied carbon impacts.

Define eligible investment types and outcomes

Clarify what qualifies as "nature investment," including restoration, land management, species recovery, and co-benefit initiatives (e.g. carbon + biodiversity).

Align investment with local priorities

Direct funding toward regionally significant ecosystems, and projects that align with local biodiversity strategies.

Build integrity into emerging nature markets

Support the development of high-integrity biodiversity credits, metrics, and registries to ensure that investments deliver real, measurable outcomes.

Incorporate investment into procurement and planning

Embed nature investment as a standard project requirement in government and institutional contracts – just like design quality or safety.

Invest in indigenous owned businesses

Support integration of Aboriginal and Torres Strait Islander knowledge and cultural practice in nature regeneration activities by prioritising spend in indigenous owned businesses.

Monitor and report restoration outcomes

Require transparency on how funds are used, what ecological gains are delivered, and how long-term stewardship is ensured.

What needs to happen in the next five years

	Define and benchmark	Voluntary markets and action	Policy and advocacy	If all of this happens where will be in five years
Prevent nature loss	Define 'unacceptable impacts' Standardise measurement & reporting Define & map significant natural systems	Cultural competency capacity building	Implement mitigation hierarchy *Advocate for outcome-based EPBC monitoring* Biodiversity net gain in procurement & design briefs	*A nationally consistent biodiversity net gain methodology is established and gaining adoption. Early-mover jurisdictions are embedding net gain into planning approvals, and the sector has shared language for measuring ecological outcomes.*
Increase and connect nature	Standardise biodiversity net gain methodology	Bird's-eye ecological assessment Indigenous-led conservation	Ecological connectivity in planning Integrate net gain into planning Incentivise urban restoration	*Precinct-scale ecological thinking is being piloted in key corridors. Cultural competency is growing, and the first Indigenous-led conservation partnerships are demonstrating genuine co-stewardship in practice.*
Drive circularity	Define & measure circularity	Track & disclose material flows Support circular supply chains Phase out high-risk materials *Pilot material passports & design-for-disassembly*	Embed circularity in codes De-risk circular procurement	*Circularity metrics are defined and appearing in procurement frameworks and rating tools. Leading projects are trialling material passports and design-for-disassembly. Target: 7.5% built-environment circularity rate by 2030.*
Choose low-impact materials	Define nature impact methodology *Set targets for top 10 construction materials*	Supply chain transparency Promote local & regenerative materials	Embed nature impact in procurement	*Methodologies for assessing nature impact of the top 10 construction materials are agreed and being tested. Early procurement policies preference low-impact products, and supply chain disclosure expectations are becoming clearer.*
Invest in nature	Define eligible investment types	Align investment with local priorities *Build integrity into the Nature Repair Market* Invest in Indigenous businesses	Investment into procurement & planning Advocate for restoration outcome reporting	

Australia adopts Global Biodiversity Framework commitments → Halt and reverse nature loss → Live in harmony with nature

Today | **2028** | **2030** | **2035** | **2050**

Planning requires no net loss of high value biodiversity

Measure and report onsite biodiversity values

Prioritise onsite protection to achieve no net loss of high value biodiversity. Compensate for residual loss by investing in restoration. .

No onsite loss of moderate value biodiversity.

Principle 1

Prevent nature loss

Onsite and near site

In Australia, the consumption of goods and services associated with the construction sector is the most significant consumption driver of extinction risk *. Habitat loss resulting from land use change and fragmentation joins invasive species and altered fire regimes as key drivers for nature loss.

Therefore, preventing further loss is an urgent first step in arresting and reversing this trend. Once lost, biodiversity is costly or impossible to restore.

Understanding the targets

This principle sets a pathway from today's planning controls to full protection of valuable natural systems onsite by 2050.

- **Today:** No net loss of high value biodiversity, with mitigation through avoidance, minimisation, and offsetting.
- **2030:** Deliver no net loss of high value biodiversity by priotising onsite protection and compensating any residual loss by investing in restoration.
- **2050:** No onsite loss of moderate to high value biodiversity, meaning development must avoid impacting key natural values within its footprint.

Key terms

No net loss	Development takes precaution to protect biodiversity values. If deemed necessary, development can remove or impact biodiversity values, but must compensate for losses through onsite solutions or off-site offsets or other financial contributions
No loss	Development does not remove or impact on-site biodiversity values.
Net gain	After avoiding and minimising impacts, the development, through restoration and offset actions, delivers biodiversity values that exceed the pre-development baseline

Nature value and protection scale

No protection	**No net loss of high value biodiversity**	**No loss of high value biodiversity**	**No onsite loss of moderate value biodiversity**	**No net loss of biodiversity**	**Net gain of biodiversity**
No nature protection controls in place.	No net loss of species, habitats, ecological and cultural features of national or international significance	No loss of species, habitats, ecological and cultural features of national or international significance.	No loss of species, habitats, ecological and cultural features of local, regional or state significance	No net loss of species, habitats, ecological and cultural features values post-development.	Increase on pre-development value in species, habitats, ecological and cultural features.

Kunming - Montreal GLOBAL BIODIVERSITY FRAMEWORK

Relevant targets:

1. Plan and Manage all Areas To Reduce Biodiversity Loss
3. Conserve 30% of Land, Waters and Seas
15. Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts

This is current Australian legislation

Principle 1

Prevent nature loss

Onsite and near site

Alkimos Beach, WA (6 Star Green Star Communities Pilot v.01)

Each development site has unique natural attributes. There are big opportunities to generate value for your customers and the community by firstly understanding this, and prioritizing protecting important natural features. But we need to go further by compensating for residual impacts through investing in nature restoration.

Dr Steve Ford

What needs to happen in the next five years

Define and map significant natural systems

Create nationally consistent criteria and spatial datasets for identifying important biodiversity, drawing from science and Indigenous knowledge and use this to identify 'no go' zones, thus helping clarify development approval processes and improving environmental outcomes.

Define 'unacceptable impacts'

Define 'unacceptable' impacts and environmental standards to establish a baseline from which to demonstrate improvements and no further loss of high value biodiversity.

Integrate net gain into planning systems

Embed biodiversity net gain, and avoidance-first requirements into planning policy, development approvals, and environmental assessment frameworks.

Implement the mitigation hierarchy

Mandate avoidance of impacts in areas of ecological or cultural value and ensure any nature investments are truly equivalent and long-term.

Standardise measurement and reporting

Develop robust, consistent methods for assessing nature losses and gains, with transparent public reporting.

Capacity building

Develop and implement cultural competency education programs to facilitate inclusion of Aboriginal and Torres Strait Islander cultural values in planning, design and construction.

Support Indigenous-led conservation and stewardship

Work in partnership with Traditional Custodians to protect cultural landscapes and integrate Traditional Ecological Knowledge into planning.

Case study snapshot

The Netherlands' "No Net Loss" Planning Policy

Under the Dutch Nature Conservation Act (now under the Environment and Planning Act), developments that could impact protected species or Natura 2000 sites must follow a strict mitigation hierarchy: avoid, minimise, and, if necessary, compensate. If impacts cannot be fully avoided, developers must implement measurable compensation measures, typically located near the affected area and ecologically relevant. These requirements are fully integrated into spatial planning and permitting, creating a strong legal basis for protecting high value biodiversity and enforcing no net loss of nature through development processes.

Principle 2

Increase and connect nature

Onsite and near site

Naarm 5 Star Green Star Design & As-Built

Place-based developments that consider and respond to local environmental and cultural contexts are an important part of regenerating nature and our relationship with it. Using Biodiversity Net Gain is a good way of informing design and demonstrating outcomes

XXXXX

What needs to happen in the next five years

1. **Standardise biodiversity net gain (BNG) methodology**
   Develop a nationally consistent, science-based framework for assessing biodiversity condition, baseline values, and uplift potential — aligned with emerging TNFD metrics and global best practice.

2. **Advocate for ecological connectivity in planning**
   Strengthen planning requirements so developments consider and enhance ecological links between habitats, including corridors, stepping-stones, and species-specific movement pathways.

3. **Advocate for bird's-eye view of ecological impacts assessment.**
   Support precinct-scale and catchment-scale approaches to deliver connected nature networks across urban regions.

4. **Advocate for Biodiversity Net Gain in procurement and design briefs**
   Require biodiversity uplift targets in government and commercial developments—from site planning through to landscape and infrastructure design.

5. **Advocate for monitoring of outcomes for EPBC compliance**
   Shift from compliance-based reporting to measuring ecological outcomes over time to track actual habitat condition, species movement and ecosystem function. Ensure monitoring is transparent, repeatable and clearly linked to BNG claims

6. **Incentivise urban and regional restoration**
   Support large-scale revegetation, green infrastructure, and nature-based solutions in urban environments through grants, density bonuses, or integrated infrastructure funding..

Case study snapshot

UK's Biodiversity Net Gain Regulation (Environment Act 2021).*

In England, all major developments must deliver at least a 10% measurable biodiversity net gain from 2024, secured for a minimum of 30 years. Gains are assessed using the national statutory biodiversity metric and enforced by local planning authorities. The policy supports both on-site and off-site improvements, driving innovation in habitat creation, ecological design, land restoration markets, and green infrastructure integration. It aims to increase and connect nature at a landscape scale through the planning system.

Principle 2

Increase and connect nature

Onsite and near site

Naarm 5 Star Green Star Design & As-Built

Place-based developments that consider and respond to local environmental and cultural contexts are an important part of regenerating nature and our relationship with it. Using Biodiversity Net Gain is a good way of informing design and demonstrating outcomes

XXXXX

What needs to happen in the next five years

Standardise biodiversity net gain (BNG) methodology

Develop a nationally consistent, science-based framework for assessing biodiversity condition, baseline values, and uplift potential — aligned with emerging TNFD metrics and global best practice.

Advocate for ecological connectivity in planning

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Australia adopts Global Biodiversity Framework commitments → Halt and reverse nature loss → Live in harmony with nature

Today	2028	2030	2035	2050
Australian economy circularity rate is 4.4%, global rate is 7.5%	Measure built environment's sector circularity rate.	Achieve circularity rate of 7.5% for built environment, through policies like as "if not, then why" reuse of asset policy.	Achieve circularity rate of 15% for built environment through policies that prioritise increased density and smaller dwellings	
Project level circularity rate is unknown	Measure and benchmark project-level circularity.	Achieve a 10% improvement in project-level circularity	Achieve a 20% improvement in project-level circularity	

Principle 3

Drive circularity

Onsite and in the supply chain

The built environment is responsible for over 50% of raw material extraction and a third of total waste. Resource extraction, processing, and disposal have profound impacts on biodiversity, land degradation, pollution, and water systems. A circular economy – where resources are kept in use for as long as possible, waste is eliminated, and natural systems are regenerated – is essential to transition towards a nature positive economy.

Kunming-Montreal GLOBAL BIODIVERSITY FRAMEWORK

Relevant targets:

7. Reduce pollution from all sources to levels that are not harmful to biodiversity
15. Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts
16. Enable Sustainable Consumption Choices To Reduce Waste and Overconsumption

Understanding the targets

This principle outlines a shift from waste minimisation today to a measurable increase in circularity across both the sector and individual projects by 2050:

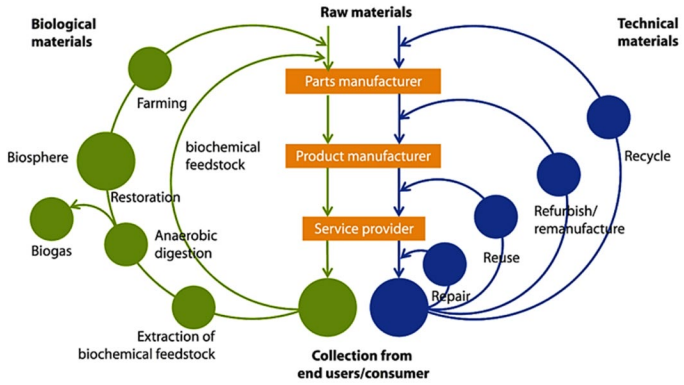
- **Today:** Apply basic circular economy principles and reduce construction waste.
- **2028:** Begin measuring circularity consistently at both sector and project levels to establish baselines
- **2030:** reach a 7.5% sector-wide circularity rate and set 10% improvement benchmark at the project level.
- **2035:** Double sector-wide circularity rate to 15% and improve on project level benchmark of 20%

The targets apply to construction, demolition, and operational phases — and require systemic industry change.

As industry develops a method to calculate circularity, and designs and implements strategies to increase this, targets will be introduced that are timely and ambitious.

Key terms

Circular economy	A system that designs out waste and pollution, keeps products and materials in use, and regenerates natural systems.
Circularity rate	The proportion of materials reused, recycled, repurposed, or designed to be regenerative, measured across a product or project lifecycle.



Source: MDPI

Calculating circularity

A country's circularity rate is calculated through Material Flow Analysis (MFA), which compares the volume of secondary (non-virgin) materials used to total material inputs, including domestic extraction and imports.74

Calculating the built environment's circularity rate will include:

- Mapping material flows at the precinct, building, and fitout levels, including imports and exports.
- Tracking key materials such as concrete, steel, aluminium, and timber by reuse and recycling rates.
- Capturing design strategies that extend asset life, enable disassembly, and reduce waste.
- Accounting for supply chain impacts, including embodied biodiversity loss, water use, and carbon emissions.
- Measuring stock accumulation, recognising that buildings store materials over decades, affecting inflow/outflow dynamics.

This approach would reflect both the linear losses and the circular gains across projects and regions—enabling targeted interventions and transparent benchmarking.

Principle 3

Drive circularity

Onsite and in the supply chain

The Quay 4 Star Multi Unit Residential Design

Circularity plays an important role in driving innovation, and reducing development footprints on natural systems.

XXXXX

What needs to happen in the next five years

Define and measure circularity in the built environment

Establish a consistent method for calculating circularity rate across material categories, lifecycle stages, and building typologies—aligned with ISO and EU standards.

Embed circularity in planning and building codes

Incentivise adaptive reuse, modular design, and design-for-disassembly through updated codes, procurement criteria, and rating tools.

Support circular supply chains

Encourage suppliers to provide reused, remanufactured, or recyclable materials, and invest in reverse logistics, take-back schemes, and local material recovery infrastructure.

De-risk circular procurement

Update government procurement policies to allow for reused and recycled materials and remove performance and liability barriers to innovation.

Track and disclose material flows

Require material passports, digital twins, or lifecycle assessments to track embedded impacts and material reuse potential over time.

Case study snapshot

Finland's Circular Economy Roadmap *

Finland was the first country to adopt a national circular economy strategy. In the built environment, this includes requirements for public buildings to use reused or recycled materials, lifecycle carbon and circularity assessments for planning approvals, and investment in digital platforms to track materials across buildings. The approach has reduced construction waste and created new business models in reuse and repair.

Australia adopts Global Biodiversity Framework commitments → Halt and reverse nature loss → Live in harmony with nature

Today: Illegally harvested timber is prohibited in the supply chain.

2028: Measure nature impacts of the top 10 materials and develop management plans.

2030: Implement nature impact management plans for the top 10 materials.

2035: Manufacturers of the top 10 materials must set biodiversity net gain targets.

2050: All nature-related impacts from supply chain have been eliminated and compensated.

Principle 4

Choose low-impact materials

Onsite and in the supply chain

Construction materials – especially steel, concrete, timber, aluminium, and plastics – are some of the most resource- and emissions-intensive products in the global economy. Their extraction and production can drive deforestation, water stress, pollution, and biodiversity loss. Choosing low-impact materials reduces demand for virgin resources, avoids damage to sensitive ecosystems, and sends market signals that reward sustainable supply chains.

Kunming-Montreal GLOBAL BIODIVERSITY FRAMEWORK

Relevant targets:

15. Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts

16. Enable Sustainable Consumption Choices To Reduce Waste and Overconsumption

Understanding the targets

This principle focuses on shifting material choices and supply chains toward ethical, traceable, and nature positive outcomes:

- **Today:** Use circular materials and avoid illegal deforestation-linked products.
- **2030–2050:** Top five materials used in projects must be nature positive — sustainably sourced, traceable, and aligned with circular economy.

Key terms

Nature positive materials	Materials that are sustainably sourced, responsibly manufactured, and regenerative or circular in nature.
Top five materials	High-volume or high-impact materials used most commonly in construction (typically steel, concrete, aluminium, timber, and glass, though this may vary by project type).
Illegally harvested	Timber or agricultural products linked to land clearing that violates national or international laws.

Using Responsible Products Framework to choose low impact materials

The GBCA's Responsible Products Framework evaluates products initiatives across criteria that show lower environmental impacts, are transparent, respect human rights and are considerate of a circular economy. The Framework is proposed to include a Nature category to evaluate products and services that are sourced in a manner that reduce their dependence on nature and seek to demonstrate efforts to achieve biodiversity net gain and compensation of all impacts. An overview of how nature has been integrated into Revision B of the Guidelines is below.

Responsible
- Corporate Commitment on Climate
- Corporate commitment on nature
- Environmental management
- Product carbon disclosure
- Environmental product declaration
- Indigenous consent
- Workforce inclusion

Positive
- Energy Use Reduction
- Energy Source
- Carbon Emissions Reduction
- Freshwater Reduction
- Water use

Healthy
- VOCs
- Manufacturing Health and Safety
- Substances
- Modern Slavery

Circular
- Circularity Measurement
- Product inflows
- Product use
- Product outflows
- Product stewardship
- Product identifier
- Packaging

Nature
- Nature disclosure
- Impacts to nature
- Chain of custody

Principle 4

Choose low-impact materials

Onsite and in the supply chain

The Exchange 4 Star Green Star Performance v1.1

I'd love to see us move from 'doing less harm' to really using nature regeneration as a driver of improving practice. I'm excited to see how this roadmap can contribute to that, and ways materials can restore ecosystems and promote First Nations cultural practices.

XXXXX

What needs to happen in the next five years

Set material-specific targets

Set material-specific targets and trajectories that reflect whole-of-life impacts and avoid trade-offs between carbon and nature outcomes.

Phase out high-risk materials

Restrict or de-prioritise materials with high biodiversity or pollution risk – such as PVC, tropical hardwoods, or virgin aluminium – unless verifiably low-impact or third-party certified.

Improve supply chain transparency and traceability

Require suppliers to disclose material origin, production impacts, and compliance with environmental and human rights standards – using tools like Environmental Product Declarations, Forest Stewardship Council, Programme for the Endorsement of Forest Certification or digital product passports.

Promote local and regenerative materials

Encourage the use of locally sourced, bio-based, or regenerative materials that support regional ecosystems and reduce transport emissions.

Embed nature impact criteria in procurement

Update specifications and contracts to prioritise low-impact and responsibly sourced products – especially in public and institutional projects.

Case study snapshot

European Union Green Public Procurement (GPP) Framework*

The EU's voluntary Green Public Procurement framework encourages public authorities to include environmental criteria – such as biodiversity protection, sustainable sourcing, and circularity – into their purchasing decisions. For building materials, the GPP includes specific guidance for timber, flooring, insulation, paints, and furniture, requiring products to be sustainably sourced, non-toxic, and durable. Many countries go further: for example, Sweden and Finland mandate FSC or PEFC-certified timber, while Denmark prioritises materials with low embodied carbon and environmental declarations. GPP demonstrates how policy can drive demand for low-impact, traceable, and nature positive products at scale.

Australia adopts Global Biodiversity Framework commitments → Halt and reverse nature loss → Live in harmony with nature

Today: Nature Repair Bill introduced 2023. By 2030 priority degraded areas are under effective restoration.

2028: Measure and transparently disclose nature-related financial spend.

2030: Large developments and infrastructure projects must invest in nature restoration to address Scope 3 impacts.

2035

2050: Nature restoration activities are commonplace as part of any project

Principle 5

Invest in nature

Nature provides both tangible and intangible benefits, and our reliance on it is profound. Therefore, investing in nature restoration is not merely a cost of 'doing good' but a vital step to ensure healthy ecosystems, societies, and economies.

This calls for proactive restoration efforts that go beyond offsetting direct development impacts and addressing indirect effects from the products and materials used in development.

Crucially, investing in nature supports climate goals and fosters economic opportunities for Indigenous communities.

Understanding the targets

This principle sets a path from baseline investment to consistent, outcome-driven restoration funding:

- **Today:** Begin accounting for residual biodiversity impacts and invest in nature improvements.
- **2028:** Review and disclose nature related spend on projects.
- **2030:** Offset all scope 3 carbon emissions of large and significant developments and infrastructure using nature-based solutions.
- **2050:** All projects invest in nature restoration activities.

Key terms

Nature investment	Financial contributions to ecosystem restoration, conservation, or regeneration activities, beyond regulatory requirements.
Nature-based solutions	Nature-based solutions (NbS) are actions that protect, manage, or restore ecosystems in ways that provide benefits to communities and ecosystems at the same time.
Net-positive outcomes	A measurable improvement in biodiversity condition or extent, after all impacts are accounted for.

Case Study: Investing in restoring underwater forests

Investa is a real estate investment manager, operator and developer. With a commitment to 'Transform Tomorrow' the company has set a target of net zero Scope 1 and 2 emissions by 2025. To move beyond net zero, Investa is investing in nature based solutions to achieve carbon reductions and nature restoration.

A partnership with the Sydney Institute of Marine Science project 'Operation Crayweed' which is looking to restore and regenerate crayweed. Crayweed which was previously abundant, has all but disappeared from Sydney's foreshore due to urbanisation and pollution. A highly productive seaweed, it supports Australia's most valuable fisheries, rock lobsters and abalone along with important microscopic organisms which maintain water quality and species diversity.

Crayweed also cycles nutrients and captures carbon, and Investa is working with the Sydney Institute of Marine Science and Operation Crayweed to develop natural capital accounting methodologies for the project.

This project seeks to re-establish crayweed along the 70km stretch of greater Sydney's foreshores. This is achieved by transplanting crayweed on reefs where they once occurred. After successful trials Investa is assisting in scaling this project up.

As well as providing nature regeneration benefits, this project facilitates staff engagement through volunteering.

Kunming-Montreal GLOBAL BIODIVERSITY FRAMEWORK

Relevant targets:

18. Reduce Harmful Incentives by at Least $500 Billion per Year, and Scale Up Positive Incentives for Biodiversity

19. Mobilise $200 Billion per Year for Biodiversity From all Sources, Including $30 Billion Through International Finance

Principle 5

Invest in nature

Burwood Brickworks 6 Stars Green Star Communities v1

The built environment has many dependencies on nature. Investing is nature restoration is not only good for the environment, but it also makes business sense.
xxxxx

What needs to happen in the next five years

Define methodology for calculating nature impact and investment

Define appropriate methodologies for calculating nature-related impact from products and materials used in development – where unknown, refer to embodied carbon impacts.

Define eligible investment types and outcomes

Clarify what qualifies as "nature investment," including restoration, land management, species recovery, and co-benefit initiatives (e.g. carbon + biodiversity).

Align investment with local priorities

Direct funding toward regionally significant ecosystems, and projects that align with local biodiversity strategies.

Build integrity into emerging nature markets

Support the development of high-integrity biodiversity credits, metrics, and registries to ensure that investments deliver real, measurable outcomes.

Incorporate investment into procurement and planning

Embed nature investment as a standard project requirement in government and institutional contracts – just like design quality or safety.

Invest in indigenous owned businesses

Support integration of Aboriginal and Torres Strait Islander knowledge and cultural practice in nature regeneration activities by prioritising spend in indigenous owned businesses.

Monitor and report restoration outcomes

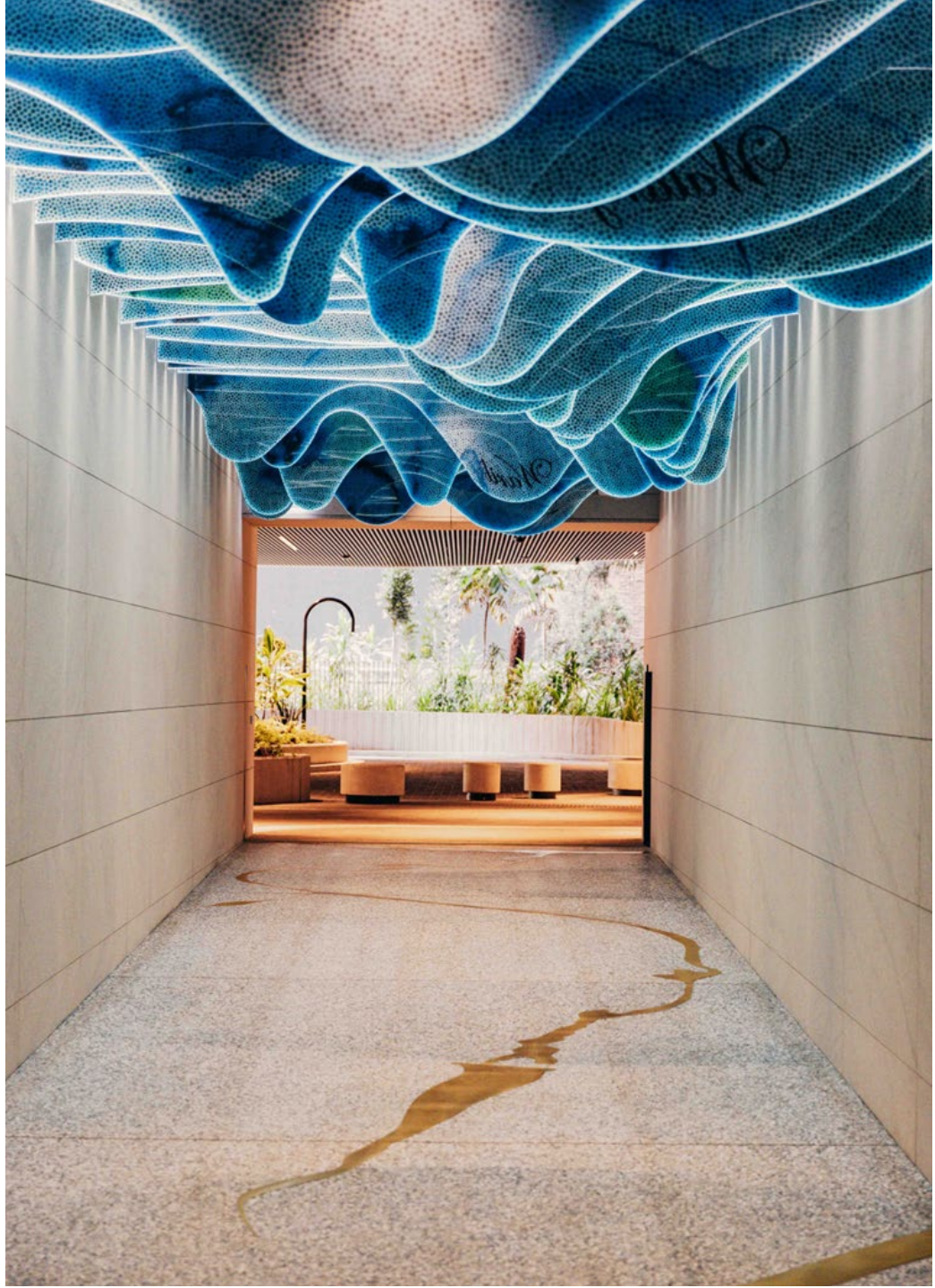
Require transparency on how funds are used, what ecological gains are delivered, and how long-term stewardship is ensured.

Case study snapshot

Latin America's "Water Funds" Model (The Nature Conservancy)*

In countries such as Colombia, infrastructure and utility providers invest a portion of their capital into upstream watershed restoration. These Water Funds finance forest regeneration, erosion control, and biodiversity protection, with long-term monitoring and community involvement. By tying investment to ecosystem services, these models show how public and private sectors can co-invest in nature with shared benefits.

Enablers for success



80 Ann St, QLD (6 Star Green Star Buildings v1)

Embedding culture, community and connection to Country

Aboriginal and Torres Strait Islander peoples possess a deep connection with Country, a term transcending physical land to encompass spiritual, cultural, and emotional ties.

The knowledge of land and waters gained through thousands of years of observation and caring for Country is a unique and important way to understand and respond to many environmental y facing Australia now, and into the future. This includes climate change and nature loss.

The traditional knowledge of Aboriginal and Torres Strait Islander peoples of Country provides a localised context that can contribute to the development of a built environment that also achieves a range of community benefits.

Nature is an integral part of caring for and connecting with Country which is expressed through cultural practices. Maintaining these connections within the built environment therefore becomes an essential way of not only preserving the environment but also maintaining continuity of culture and identity. Early and ongoing engagement with Aboriginal and Torres Strait Island peoples is fundamental to this.

Nature has always played an important role in culture and community. There are 370 million recorded indigenous people in the world.

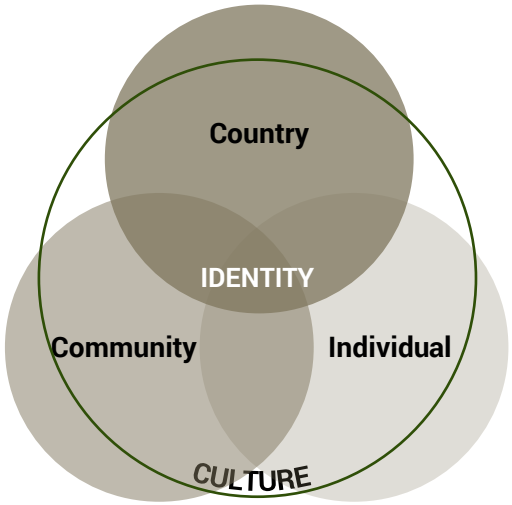


Figure 2. Interrelationships between Country, community and individuals. Adapted from NSW Government (2023), *Connecting with Country Framework.*

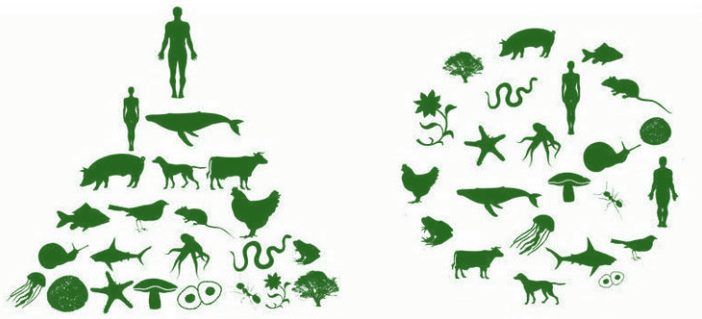


Figure 3: Human-centred or Country-centred diagram. Adapted from NSW Government (2023), Connecting with Country Framework, which itself adapts a diagram by Steffen Lehmann (2010)

While they make up only 5% of the world's population, they manage 18% of the land, and there are claims for more. Much of these areas are in biodiversity hotspots. As custodians of nature, indigenous people play a critical role in conservation and leading place-based solutions that contribute to nature positive outcomes.

The role of indigenous communities is a key part of the Kunming-Montreal Protocol, and the Taskforce on Nature Related Financial Disclosures.

The nature positive roadmap understands this, and has identified culture, community and connection to Country as an important enabler, thus facilitating achievement of all targets in the roadmap through:

- Respectful engagement with First Nations communities
- Support for place-based approaches led by Traditional Owners and Custodians
- Ensuring connection to Country is a core consideration in planning, design, and delivery
- Valuing cultural knowledge alongside ecological and technical expertise
- Building respectful partnerships and centering Country-led approaches are not only essential for justice and equity — they are key to regenerating and protecting nature.

Maintaining community and human connections to nature is crucial in creating a built environment that is respectful to the cultural and human values that nature provides.

Figure 2 and 3:
https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/discussion-papers/connecting-with-country-framework-2020.pdf

Measurement and data to facilitate decision-making

Standardised, credible, decision-useful data underpins global standards that enable companies and financial institutions to report and act on nature-related risks and opportunities.[67]

Nature related measurement and data assist in helping value nature, thus bringing its protection and regeneration into key business decisions. *

TNFD highlights the importance of improving data access and organisational capability, including consistent terminology and spatial data on the location and extent of impacts.[68]

Natural Capital Accounting is an economic-environmental accounting framework that seeks to value the tangible and intangible values nature provides in the form of ecosystem services (clean air, freshwater, food and fibre), as well as for cultural and spiritual values, essential for human health and wellbeing.

Incorporating this into decision making helps in understanding the risks and dependencies developments and business have on nature.

While the complexity of nature is noted, methodologies are evolving to understand and reflect these interdependencies, and establish standardized measurement collection and reporting.

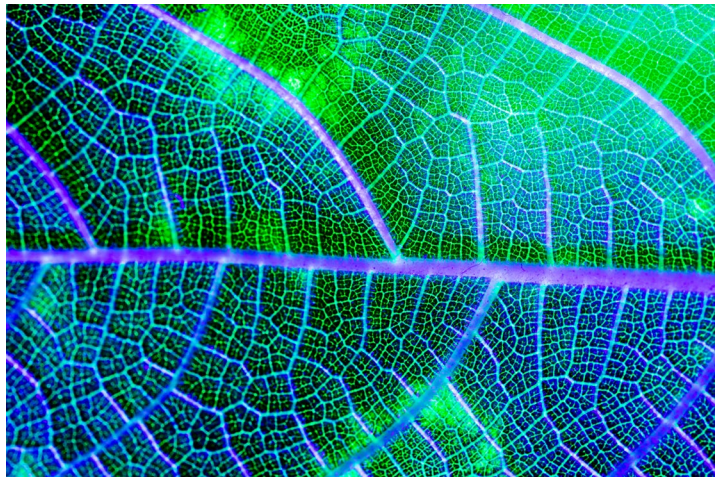
To support this, Australia has established Environment Information Australia, whose remit it is to improve environmental information, data and reporting.

Australia's Strategy for Nature also reinforces this, with platforms such as the National Vegetation Information System[69] and the Atlas of Living Australia[70] available to assist in identifying a site's biodiversity values.

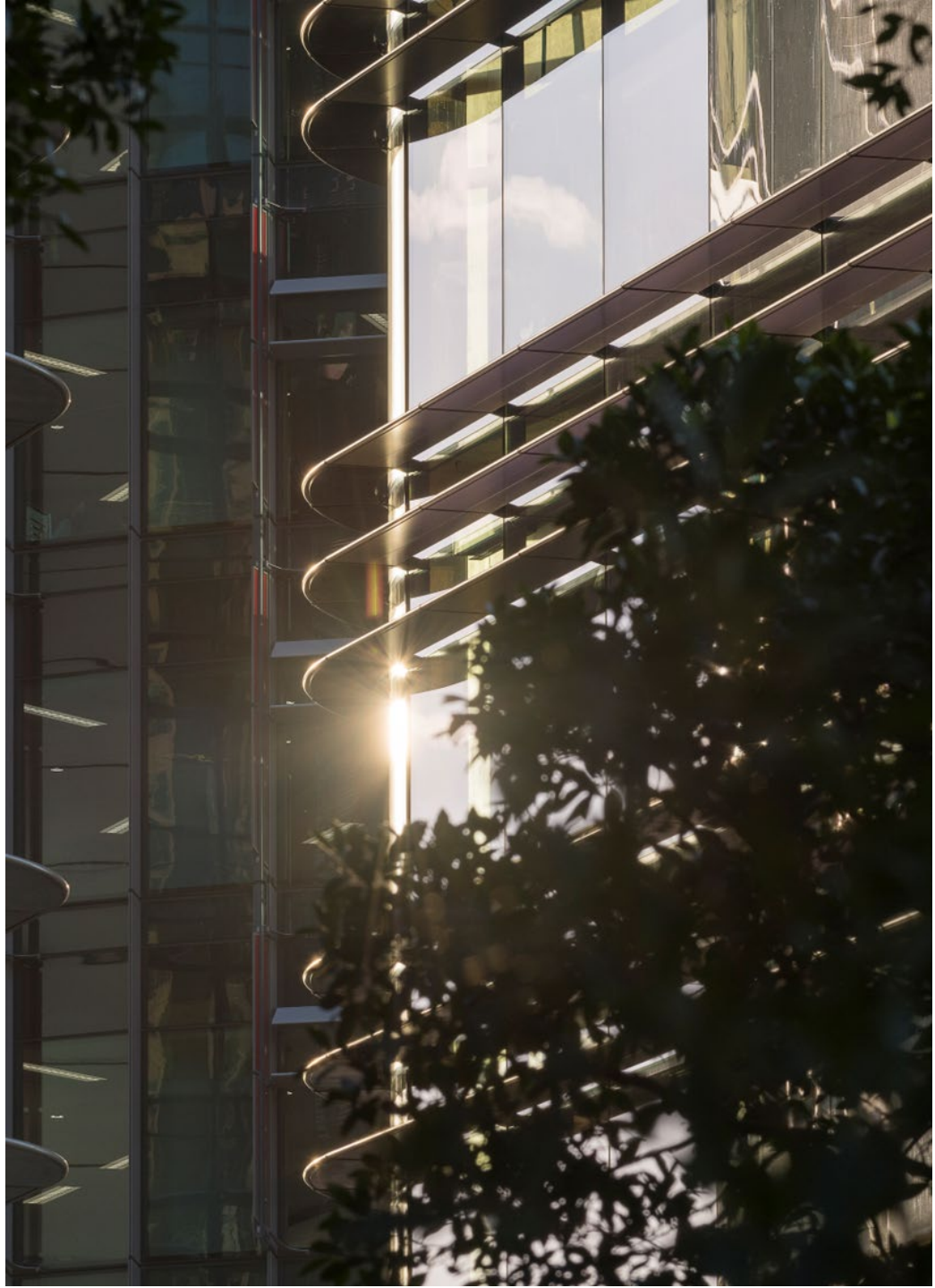
PLANR,[71] was developed by the Australian Government to support the Nature Repair Bill. It provides landowners with a site-specific snapshot of natural assets, with growing granularity. Tools like this show promise for better integrating nature into planning and design decisions in the built environment.

Global alignment in these methodologies is noted. Thos is why efforts by the Nature Positive Initiative (NPI), World Business Council for Sustainable Development (WBCSD), Capitals Coalition (CapsCo), Global Reporting Initiative (GRI), International Union for Conservation of Nature (IUCN), Taskforce on Nature-related Financial Disclosures (TNFD), and World Resources Institute (WRI) to develop a Nature Measurement Protocol are welcomed.

Coupled with onsite ecological observations, and First Nations knowledge, this roadmap and its targets is placing the value of nature at the centre of decision making for new developments.



Using the roadmap to assist with TNFD reporting



Alignment of nature roadmap to TNFD

During the development of the nature roadmap, the GBCA has engaged with the TNFD with the aim of aligning to and supporting industry uptake and reporting

The Taskforce on Nature Related Financial Disclosures (TNFD) is a voluntary disclosure framework built on four fundamental pillars: governance, strategy, risk and impact management, and targets and metrics.

A foundation of the TNFD is the LEAP Framework (Locate, Evaluate, Asses, Prepare). This framework is aimed at providing a consistent approach that can be used by organisations when undertaking nature related due diligence, and in preparing disclosure statements.

The nature roadmap applies to new developments. For organisations involved in development activity, and the supply chain that support it, the roadmap's framework supports the LEAP approach.

Table outlining alignment of LEAP framework and the nature positive roadmap for new developments

Locate	Locate the organisation's interface with nature Dependency and impact screening Interface with nature Interface with sensitive locations	By 2028, all sites must measure and report their biodiversity values found onsite. Targets in the roadmap then require no net loss of high value biodiversity found onsite by prioritising onsite protection, and compensating for residual impacts by 2030, and by 2050 this protection to extend to moderate value biodiversity. Through Green Star, Minimum Expectations apply to developments that contain and interface with sensitive species and ecological communities.
Evaluate	Evaluate dependencies and impacts on nature Identification of environmental assets, ecosystem services and impact drivers Identification of dependencies and impacts	The roadmap establishes a staged approach to benchmarking, measuring and reporting nature related risks. Developments are required to evaluate their nature and biodiversity values, evaluate impacts, and demonstrate no net loss of biodiversity, and net gain by 2035. Impacts and dependencies of the supply chain are addressed by requiring evaluation and reporting by 2028, and preparation of management plans to manage, mitigate and compensate for impacts over time.
Assess	Risk and opportunity identification Risk and opportunity measurement & prioritisation Risk & opportunity materiality assessment	The roadmap outlines a process to identify and report risks and opportunities related to new developments by 2028. Mitigation measures to manage impacts to sites, surrounding environments and supply chain to firstly demonstrate no net loss, and overtime biodiversity net gain are established as key target areas from 2030 to 2035.
Prepare	Develop strategy and resource allocation plans Set targets and report	The nature roadmap applies to new developments. It includes targets and actions to evaluate and report nature related risks, impacts and opportunities found onsite, to the surrounding environment and the supply chain. Targets have been developed to support outcomes contributing to nature positive efforts nationally and internationally. Through this, the roadmap is aligned and can support enterprise level disclosure and reporting.

Alignment of nature roadmap to TNFD

The TNFD sets out scopes of nature related impact. These scopes are direct operations, upstream, and downstream impacts. The nature roadmap has translated this for physical assets as onsite, near site and supply chains and includes targets and actions to not only minimize impacts to nature across these scopes but also compensate for all nature related impacts.

TNFD Scopes		Alignment of nature positive roadmap to TNFD scopes
Upstream		
	Construction materials	The principle of choosing low-impact materials is aimed at identifying nature related impacts of materials and working with the supply chain to minimise these, and over time compensate for all impacts.
Direct operations		
	Strategic planning	Preventing nature loss requires careful land use planning that protects high value natural systems. In addition to the 'Protect nature' targets, the roadmap will guide advocacy to limit development in previously undeveloped areas by incentivising building reuse and circularity.
	Site selection	Careful site selection is an important first step in protecting high value biodiversity The roadmap, through its targets promotes protection of high value biodiversity. The Circularity pillar promotes reuse of existing buildings.
	Design and materials selection	Supply chain impacts are addressed by targets and actions to minimise impacts from the supply chain, and compensate for nature negative activities. Additionally, the inclusion of biodiversity net gain targets will guide designs to not only prevent nature loss, but also increase and connect it.
	Construction	While not directly addressed by the roadmap, minimising environmental harm during construction is a mandatory requirements across all Green Star rating tools, and addressed through construction approval conditions.
	Operations and maintenance	An addendum to address existing buildings will be developed, to support nature positive actions by the built environment.
	Demolition	The roadmap includes circularity targets to encourage building reuse, and reduce demolition.
Downstream		
	Waste management	Circularity targets encourage reducing waste. Outside of the scope of the roadmap, Green Star includes mandatory requirements related to avoiding and managing waste effectively.
	Utilities	While not directly addressed by the nature roadmap, the GBCA's Climate Positive Roadmap addresses the source of energy and requires developments to be powered by renewables.
	Operations and tenant activities	An addendum to address existing buildings will be developed, which will include operations and tenant activities as part of its scope. The supply chain aspects of the roadmap apply to new fitouts, which facilitate reducing tenant and operational development related impacts.

How Green Star can help with undertaking TNFD risk and opportunities assessment

Adapted from *Tacking TNFD in property development and building construction.* September 2023, Australian Department of Climate Change, Energy. The Environment and Water

Nature related risk	Classification	Description	Green Star
Physical risk	Ecosystem service degradation Extreme weather related acute and chronic risks (landslide, storm damage, water level rise)	Increased local temperatures Increase rates and severity of flooding, storm damage and landslides Loss of productive ecosystems due to land conversion, and increased hardscapes.	Heat resilience Climate change resilience Impacts to Nature
	Water	Disruption to access to water resources Increased wastewater discharge	Water use Waterway protection
	Ecosystem *	Ecosystem service degradation Change to the state of nature Number of ecosystems impacted Change in ecosystem provision	Impacts to nature Biodiversity enhancement Nature connectivity
	Land	Land use change Invasive alien species introduction/ removal	Impacts to nature Biodiversity enhancement
Transition risk	Climate change	Greenhouse gas emissions	Energy use Energy Source Upfront carbon emission
	Policy & legal	Changing regulatory landscape Increase cost of regulatory compliance	Impacts to nature
	Market & reputation	Increase liability related to meeting national and international law Increase cost of materials Change in consumer preference Reputation risk and reduced social licence Reduced land available for development	Through regular updates, Green Star seeks to maintain alignment with international frameworks over time. The independent verification is a trusted brand that builds consumer confidence. The Minimum Expectations in Green Star outline transparent methods of demonstrating nature considerations. Alongside certification, Green Star helps deliver positive and resilient developments built responsibly for nature and people.

Nature related Opportunities	Description	Green Star
Resource efficiency	Use of energy and water efficient technologies reduces operating costs and impacts to nature	Green Star Future Focus rating tools contain minimum expectations that ensure new developments are more energy efficient and water efficient than typical new developments to get a rating. Depending on the star rating, they will likely exceed these requirements even more.
	Ecosystem protection, restoration and regeneration by integrating nature into designs. This helps improve local amenity, and improves habitats, and creates natural corridors	Green Star Future Focus rating tools include a nature category that follows the nature mitigation hierarchy, including a minimum expectation to manage impacts to sensitive sites. The new Nature Positive Pathway in Green Star Buildings v1.1 and Green Star Communities V2 introduces Biodiversity Net Gain requirements.
	Reduced operational costs and exposure to raw material price volatility through efficient and circular production systems and materials.	Circularity is promoted in Green Star through credits in the Responsible Category. Additionally, credits related to circularity have been developed, and introduced in recent revisions of the Building and fitouts tool.
Products and services	Sourcing low-impact and sustainably sourced materials reduces upstream nature impacts.	Responsible Products program scores produce certification schemes against a number of sustainability metric including nature.
Reputation	Increase in brand value through engagement with local communities and First Nations Peoples leads to developments that reflect the local cultural and socio-economic context.	Green Star is an independent verification, and trusted brand to allow your assets respond to changing consumer needs by delivering developments that are healthy, resilient, positive, built responsibly, and created to benefit people and nature.
Markets	Access to new sources of finance through nature-related green funds, bonds, loans or markets aimed at improving and restoring nature.	Green Star's independent verification, worldwide recognition and high performance criteria give you the opportunity to access green finance.
Resilience	Increasing asset and portfolio resilience by allocating capital toward developments that reduce and mitigate nature impacts, and those adopting efficient and less environmentally damaging technologies or with enhanced building sustainability performance.	Green Star's recognition in the marketplace and strong focus on climate change resilience and nature will help ensure the long term value of an asset.

Using the roadmap to assist with TNFD reporting

Organisations in the built environment sector can use this roadmap to begin embedding nature into their business practices.

When implemented, it aligns with the Taskforce on Nature-related Financial Disclosures (TNFD) and supports reporting at the organisational level.[86]

1

Review your interface with nature

Having a good understanding of your current practice and mapping this to the roadmap is a good place to start.

This should capture direct and indirect actions and key stakeholders you need to engage with.

At a site level, identify areas of highly important biodiversity. Within your supply chain, identify the nature related impacts of the top materials (by volume or cost), including timber.

Risk and impact management | LEAP

2

Prepare a nature positive plan

Develop a more detailed understanding, using one site or project.

This plan should include any important biodiversity present, including any features designated as important to Aboriginal or Torres Strait Islanders.

Use a biodiversity net gain tool to measure biodiversity onsite prior to development.

Strategy | Governance | Metrics and targets

3

Engage with stakeholders

First Nations engagement is paramount. Identify local organisations and seek feedback on the draft plan and any developed designs or building operations related actions.

Incorporate community participation activities and initiatives into plan.

Engage with suppliers on their nature related impacts, risks and opportunities.

Build internal capacity to be able to deliver on plan.

Risk and impact management | Strategy | Governance | Metrics and targets

4

Embed targets and actions

Once targets and actions have been confirmed, incorporate these into designs, and operational plans.

Establish roles and responsibilities and methods of measurement to evaluate effectiveness.

Incorporate nature positive into investment decisions, and identify opportunities to compensate for any direct, or indirect nature impacts.

Prioritise local actions that also benefit the community, including First Nations people.

Risk and impact management | Strategy | Governance | Metrics and targets

5

Implement

Work with stakeholders to implement the nature positive plan and actions. These actions will go across different levels of operational control within the built environment - whether design, construction or operations. They will also include upstream and downstream activities.

Risk and impact management

6

Monitor and report

Monitor implemented actions, and report on performance against the plan, and any lessons learnt.

Governance | Metrics and targets

Delivering the nature positive roadmap for new developments

Your role in delivering a nature positive built environment

	Between today and 2030	2030 to 2040	By 2050
Federal, State and Local Government	• Put in place planning policies that stop zoning of previously undeveloped land for development.	• Introduce biodiversity net gain requirements into planning and promote higher density, urban infill and regeneration.	• Land use zoning and planning avoids high value and moderate value biodiversity. • Density limits are increased to limit urban growth in undeveloped areas.
Boards, investors and financial institutions	• Undertake due diligence during site acquisition to consider biodiversity of high value.	• Drive investment to nature-based solutions to compensate for impacts and publicly report this.	• Drive investment to nature-based solutions to compensate for impacts and publicly report this.
Developers, owners and operators	• Protect high value ecosystems and apply the mitigation and conservation hierarchy to development activities. • Procure materials with lower nature related impacts. • Integrate 'Design with Country' into designs. • Measure and report on design's circularity rate, then incorporate principles into designs to improve this.	• Design and construct to increase nature onsite; and avoid negative impacts to important biodiversity in the surrounding environments. • Procure materials with low nature related impacts. • Integrate 'Design with Country' into designs and increase circular design.	• Co-design with community, including Aboriginal and Torres Strait Islander People. • Reuse and refurbish existing assets and developed on sites with limited (low) biodiversity value only. • Design and construction activities are nature positive and improve the biodiversity value of the site. • Procure materials that have no net nature negative impacts, • Compensate for all direct and supply chain impacts.
Materials manufacturers and product suppliers	• Review nature impacts and transparently disclose these. • Develop and implement nature positive plans.	• Increase circularity actions in the manufacture of products and materials. • Set nature positive targets. Compensate for nature impacts and avoid any impacts to high value species and ecosystems.	• Increase circularity actions in the manufacture of products and materials. • Compensate for all nature impacts publicly report on this.

GBCA's role in delivering nature positive outcomes

To help deliver our vision, support industry in the delivery of these actions, and lead the sustainable transformation of the built environment, we will:

Advocate

Work with all tiers of government to advocate for:

- Building on standards to protect nature and cultural heritage and assets by establishing an independent regulator.
- Alignment of land planning laws for better consistency and efficacy.
- Call for policies that support regeneration and repair (including government incentives and resources).
- Development of a national nature evaluation metric.
- Incorporate delivery of biodiversity net gain into planning.
- Ensuring like-for-like offsets demonstrate measurable improvement and are independently verified & monitored.
- Development of a circular economy calculation methodology.
- Inclusion of circular economy requirements into planning law.
- Research and reporting to monitor progress against the targets set out in this roadmap.

Collaborate

- Partner with key stakeholders across the value chain to facilitate partnerships and address gaps in knowledge and industry approaches.
- Work with partner peak bodies and leadership to align advocacy approaches.
- Champion advancements in innovation in the supply chain.
- Promote nature stewardship and investments that have co-benefits (e.g. indigenous, community, resilience).

Educate

- Building knowledge and capacity of all stakeholders through training and information.
- Work with other peak bodies to develop training, guides and tools to assist in the measuring and reporting on nature related impacts and achievement.
- Support the inclusion of nature and Indigenous design in development briefs.

Rate

- Use Green Star to provide a common framework for standards and assurance pathways to include nature in new developments.
- Update targets in Green Star, as this roadmap evolves over time.

Green Star's role in driving nature positive outcomes

As part of Future Focus, the rating system improved on its previous version by introducing a comprehensive 'Nature' category built on the principles of this Roadmap – and as the rating tool continues to evolve, nature will become more and more prominent.

Here's how Green Star will set industry up for success

Green Star Buildings

Since its release, the rating tool included five credits in the Nature category, and several that reward lower impact materials in the Responsible category. It also introduced a new credit to recognise First Nations involvement in projects.

The update to v1.1 goes further, establishing a Nature Positive Pathway that aims to drive industry to put nature at the heart of development.

In practice this means that:

- Buildings that register for a 6 Star rating must achieve a 10% biodiversity net gain. In addition, nature-related impacts will need to be reported to achieve a rating.
- From 2028, the 10% net gain requirement will apply to buildings registering for a 5 Star rating.
- From 2030, this will apply to buildings registering for a 4 Star rating.

In addition, a new credit 'Circularity' in the Positive category, will aim to help industry quantify its circularity rate, and improve it over time.

Green Star Communities v2

A significant upgrade to its predecessor, this rating tool, released in February 2025, features a significant focus on reducing nature-related impacts, and encouraging opportunities for positive outcomes.

The rating tool features a Nature category, which includes seven new nature-related credits. In addition, the rating tool includes requirements for upfront carbon reductions, and rewards low-impact materials. It also recognises the role of First Nations Peoples, with credits that embed cultural leadership and ensure that connection to Country is integrated into planning, design, and long-term management.

In addition, this rating tool also includes a Nature Positive Pathway. The requirement changes dependent on whether the precinct is on greenfield land or is an urban redevelopment. As a minimum,

- From 2027, projects that register for a 6 Star rating need to achieve a significant biodiversity net gain. 5 Star rated projects will need to show no net loss.
- From 2030, these requirements change, with 5 Star projects needing to show at least 10% net gain, and 4 Star projects needing to show no net loss.
- From 2033, all projects would need to show at least a 10% net gain.

Note: two additional Leadership Challenges will be released for Green Star Communities v2

Green Star Fitouts

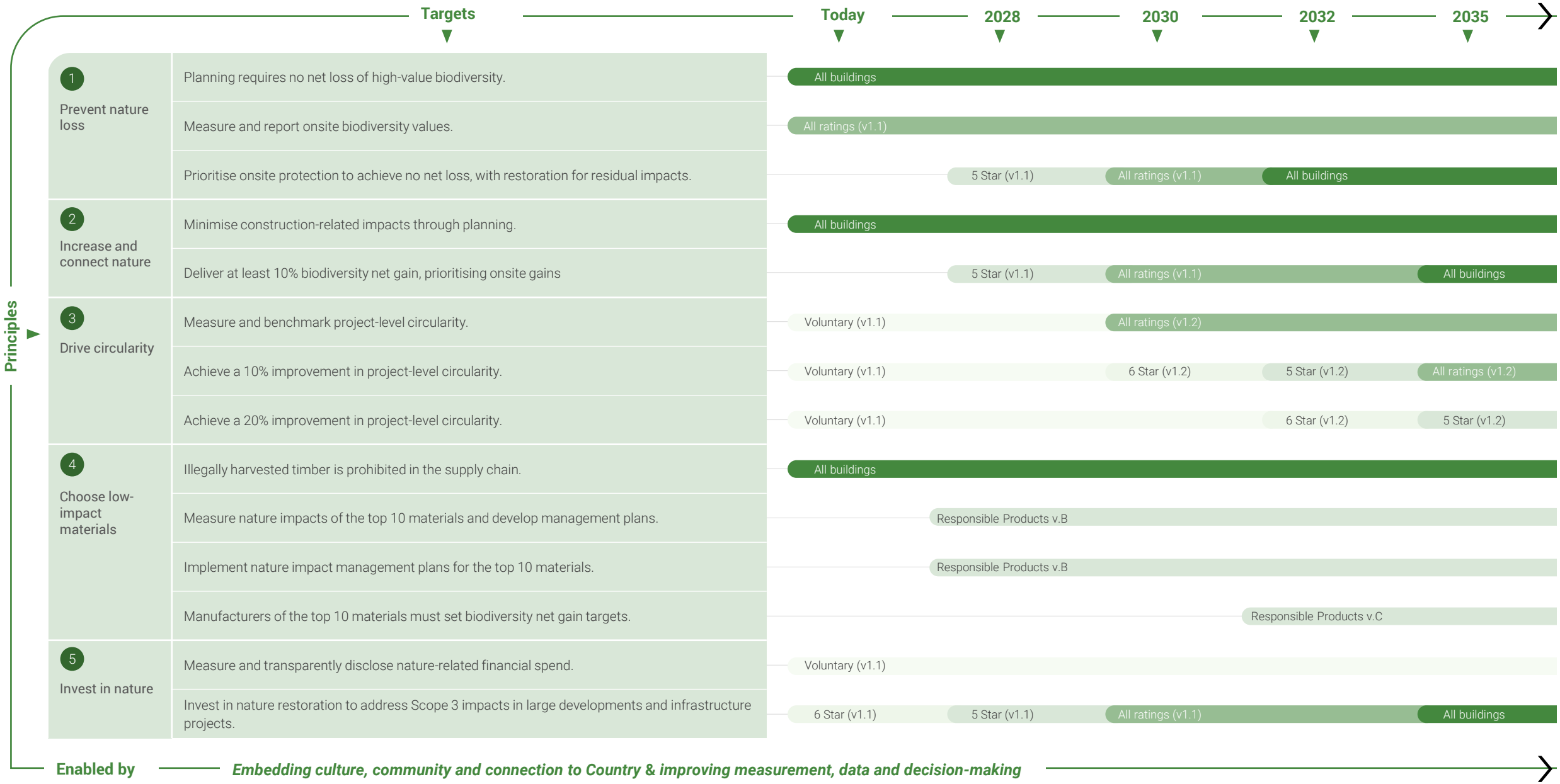
As nature-related site impacts are limited in this rating tool, the focus shifts strongly towards circularity. This rating tool features a new Circular category. The introduction of this category responds to the significant waste impact from fitout churn. It aims to both encourage reduction of waste at the end of the fitout, and to drive industry to adopt better design solutions and procurement practices at the design phase.

Responsible Products Framework

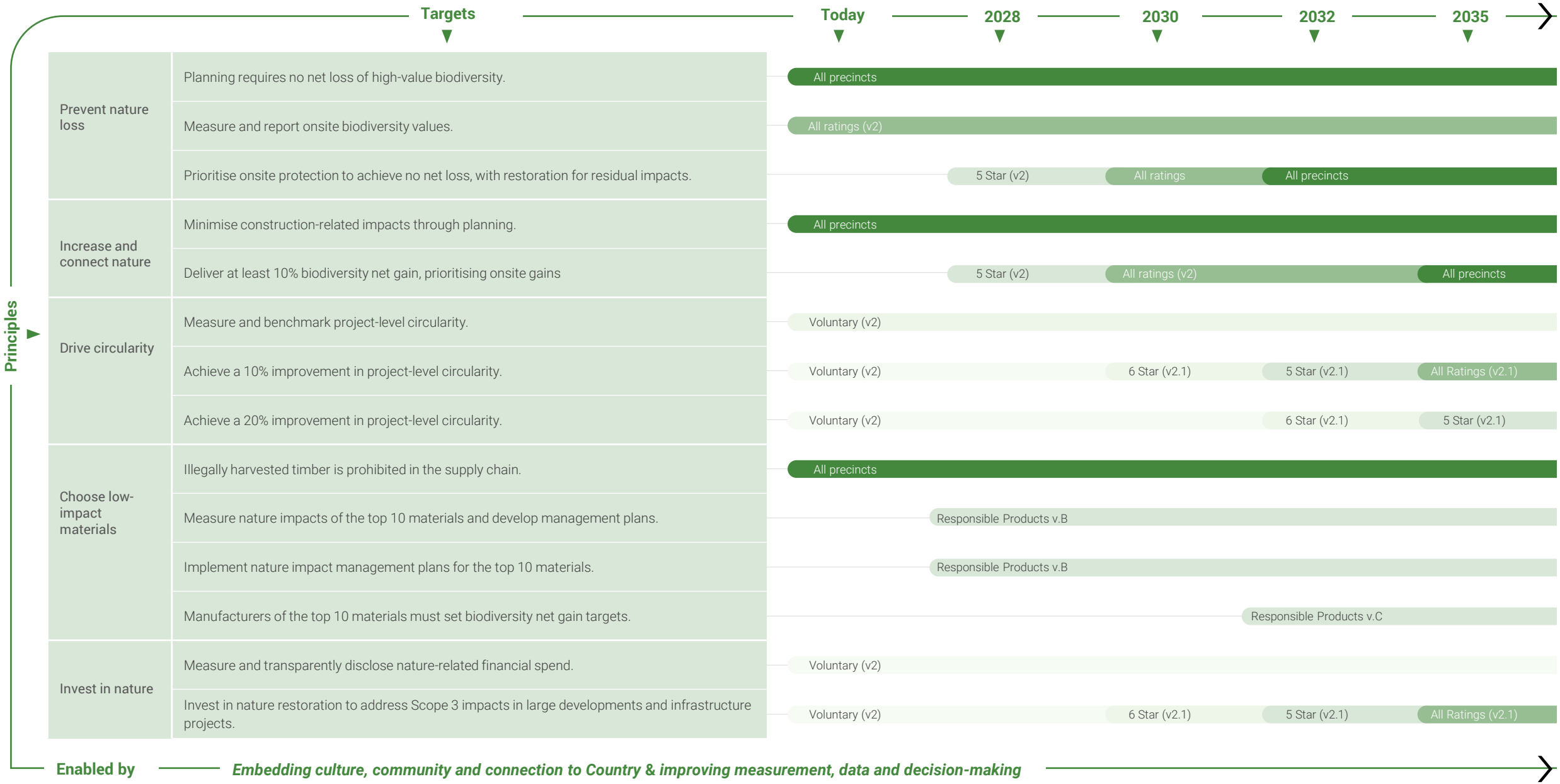
Part of all Green Star rating tools, the Responsible Products Framework defines the qualities that products assessed by independent initiatives, such as ecolabels, must comply with. Currently in development, version B of the framework will include new nature-related and circular-related criteria to encourage the recognition of products that deliver nature-positive outcomes.

Release of version B of the Framework is expected in 3rd quarter 2026, with initiatives expected to transition at some point in 2028.

Green Star Building's Nature Positive Pathway



Green Star Communities' Nature Positive Pathway



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Appendix 1. Glossary of terms

What we mean by nature and biodiversity

Figure 1: https://courses.lumenlearning.com/wm-biology2/chapter/the-diversity-of-life/

Throughout this document we use the terms *nature* and *biodiversity*. Where possible, we have aligned our definitions with established frameworks and internationally recognised standards.

What is nature?

Nature is at the core of all life and plays a crucial role in the functioning of local and global communities.

Nature can be described as 'all living entities and their interactions with other living or nonliving physical entities and processes, including biodiversity, land, freshwater, oceans, and climate. It comprises biotic (living) and abiotic (non-living) aspects which interact and depend on each other as a functional unit to create ecosystems where life can flourish.

A crucial part of nature is ecosystems – they are functional, connected, natural systems that contain 'a dynamic complex of plant, animal, fungi and microorganism communities and the non-living environment, interacting as a functional unit'. Ecosystem success relies on maintaining a fine balance of all communities.

Humans both impact and depend on nature. As such, there is no separation of humans and nature, and we exist within an interconnected, global socioecological system.

What is biodiversity?

Biodiversity is the variety of life forms that make up our natural world including animals, plants, fungi and microorganisms. In an ecosystem, each of these species and organisms work together to maintain balance and support life.

Biodiversity is the living part of nature – the plants, the animals, and the living systems that support these.

Important to a heathy and functioning biodiversity are:

- Genetic diversity
- Species diversity
- Ecosystem diversity
- Phylogenetic diversity.

Not all places on earth have the same levels of biodiversity. For example, the tropics are more biodiverse than deserts. Local context matters, and so does local biodiversity values.

Having biodiversity is an important factor in creating resilience in nature. It is one of the planetary boundaries that keeps the earth in balance.

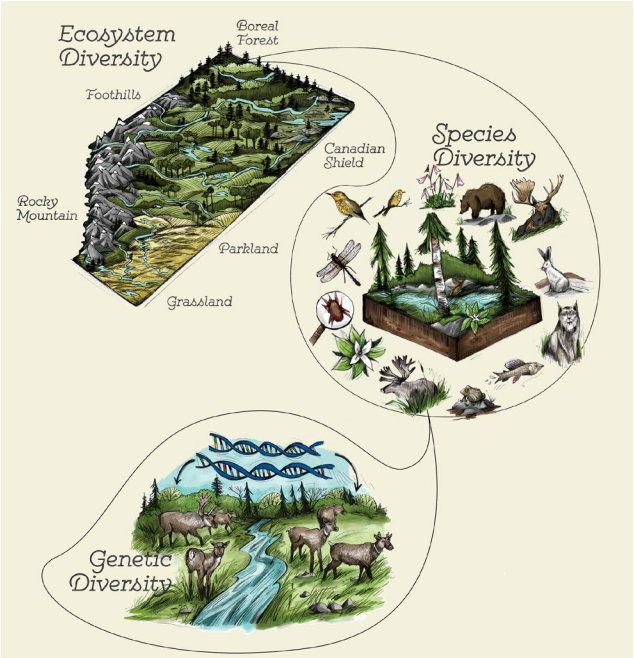


Figure 1: the diversity of life

Defining loss and gain of biodiversity

Definitions matter. This roadmap requires a shared understanding of some common terms around the concepts of loss, net loss net gain and value. This document uses the following definitions for purposes of the roadmap.

No protection

Development can remove any and all nature or biodiversity on-site and have no pollution control measures in place.

No loss of high value biodiversity

Development does not remove or impact on-site cultural, regional, state, national, or internationally protected biodiversity or nature. Protection is usually conferred to threatened or endangered species or areas with protected status.

No loss of biodiversity

Development does not remove or impact any biodiversity or nature from on-site

No net loss of high value biodiversity

Development takes precaution to protect on-site cultural, regional, state, national, or internationally protected biodiversity or nature. If deemed necessary, development can remove or impact this high value biodiversity, but it must compensate for losses through onsite solutions or off-site offsets or other financial contributions.

This is current Australian legislation

No net loss of moderate value biodiversity

Development takes precaution to protect nature and biodiversity that sustain ecosystem health and compensate when destruction is unavoidable. These areas, often common native species, secondary habitats, or modified landscapes, retain ecological function even if not globally rare or irreplaceable. Impacts should be minimised and offset to ensure long-term resilience and sustainability.

No net loss of biodiversity

Development takes precautions to protect all nature and biodiversity on-site and fully compensates for any unavoidable impacts. Losses are balanced by equivalent gains through on-site or off-site actions, ensuring that overall biodiversity value remains at least the same as before development.

Net gain of biodiversity

After avoiding and minimising impacts, the development, through restoration and offset actions, delivers biodiversity values that exceed the pre-development baseline. Gains are achieved through on-site enhancements or off-site conservation initiatives, ensuring long-term resilience.

Nature positive and the built environment

Definition of nature positive

In line with the mission of the Kunming-Montreal Global Biodiversity Framework, the Nature Positive Initiative defines *nature positive* as:

> "Nature Positive is global societal goal defined as 'halt and reverse nature loss by 2030 on a 2020 baseline, and achieve full recovery by 2050' To put this simply, it means ensuring more nature in the world in 2030 than in 2020 and continued after that".[83]

The World Business Council for Sustainable Development translates this definition for the built environment: "To align with the nature-positive goal, a building would need to deliver a net-positive benefit for nature throughout its whole life cycle with full implementation of the mitigation hierarchy to minimise harm and regenerate nature on a like-for like basis".[84]

This roadmap bills itself as a nature positive roadmap as it aims to ensure the built environment becomes aligned with this goal over time.

Building on these foundations, this roadmap proposes the following for how each of the below can contribute to the overarching nature positive goal:

- Nature positive buildings and precincts
- Nature positive fitouts
- Nature positive products and materials.

Each of these is explored in the following sections.

Point Cook Town Square, VIC (5 Star Green Star Communities v1)

Buildings and precincts

New building and precinct developments can contribute towards nature protection and regeneration, while embedding ecological, cultural, and community values throughout the planning, design, and delivery phases.

Key characteristics include:

- Early engagement with communities, including Aboriginal and Torres Strait Islander peoples, to inform design and ensure ecological and cultural values are respected.
- Undertake site analysis and identify nature values onsite. Retain and enhance valuable biodiversity, and cultural assets.
- Deliver Biodiversity Net Gain by prioritising onsite action.
- Avoid impacts to sensitive species and ecosystems, including those adjacent to the development site.
- Apply circular economy principles across design, construction, and operations to promote building reuse and reduce waste and resource demand.
- Responsibly source materials by engaging with supply chain on integrating identification of nature-related impacts, management and compensation through investment in restoration and regeneration in procurement processes.
- Invest in nature restoration by contributing to broader ecosystem and landscape-scale recovery.

Fitouts

While fitouts typically occur within existing buildings and have limited direct site-based nature impacts, they present opportunities to contribute to nature-positive outcomes through material selection, supply chain decisions, and design that fosters connection to nature:

- Prioritise low-impact, responsibly sourced materials, including reused, recycled, renewable, and certified products that minimise biodiversity loss and water use in their supply chains.
- Apply circular economy principles across planning, design, procurement, and construction – reducing waste, extending product life, and designing for disassembly and reuse.
- Engage with supply chains to understand and reduce nature-related impacts and invest in biodiversity restoration or conservation initiatives.
- Foster connection to nature using biophilic design principles — such as vegetation, natural light, organic forms, and sensory experience – to support occupant wellbeing and ecological literacy.
- Celebrate natural and cultural values through materiality, artwork, interpretation, and collaboration with Traditional Custodians.

Products and materials

The built environment is highly dependent on nature. Around 50% of construction materials are of natural origin, contributing to 40% of global energy use and 50% of waste. With up to 95% of environmental impacts embedded in the supply chain, products and materials offer a major opportunity to deliver nature positive outcomes beyond the site.[85]

The supply chain can contribute to nature positive outcomes by:

- Respecting Country and custodianship, recognising the rights, knowledge, and connection of Aboriginal and Torres Strait Islander peoples – and other Indigenous communities—hold with land and waters. This includes early engagement, protection of health and livelihoods, and culturally safe sourcing practices.
- Protecting ecological and cultural values at extraction sites, avoiding impacts on sensitive ecosystems, threatened species, and culturally significant areas. High conservation value are protected, with rehabilitation plans in place to mitigate impacts and maximise opportunities for restoration.
- Undertaking human rights due diligence, ensuring ethical labour, safe working conditions, and employment opportunities for Indigenous and local communities across the supply chain.
- Using sustainable and circular production practices,minimising energy, water, pollution, and waste through low-impact manufacturing and materials that are recycled, reused, renewable, or responsibly sourced.
- Material transparency and traceability, with clear disclosure of origin, environmental performance, and biodiversity impacts, supported by credible certifications and declarations.
- Restoring and investing in nature, accounting for the ecological impacts of material extraction and production. Contributions go beyond mitigation to support measurable, net-positive outcomes.
- Avoiding high-risk materials, especially those with unknown provenance or high biodiversity impact, unless impacts are verifiably mitigated through robust standards.
- Supporting for innovation, prioritising regenerative or low-impact materials that reduce ecosystem pressure and promote nature-based solutions.
- Establishing clear targets, transparent reporting, and collaboration across the supply chain are essential to ensure accountability and drive continuous improvement.

Other key terms

Biodiversity offset: A measurable conservation outcome that compensates for the impacts of a development.

Bioregion: A large, geographically distinct area that has a common climate, geology, landform, and vegetation and animal communities.

Connectivity: The degree of vegetation structural links between forest patches in a landscape. Connectivity facilitates species movement across a baseline and is the converse of fragmentation. (Department of Agriculture, Water and the Environment, 2020)

Deforestation: Deforestation is the conversion of forest to other land use independently of whether human-induced or not (UN FAO, 2020).

Ecosystem: Areas containing a dynamic complex of plant, animal and microorganism communities, and their non-living environment, interacting as a functional unit. (Australian Bureau of Statistics)

Ecosystem services: The benefits provided to humans through the transformations of resources (or environmental assets, including land, water, vegetation and atmosphere) into a flow of essential goods and services (Constanza et al. 1997).

Forestry: The industry of managing forests to meet to achieve human and environmental benefits. There are two common definitions of forests with distinct graduations within them:

- Plantation forests: forests, either public or private, used to grow and log timber.
- Primary forests: Public or privately owned undisturbed, or lightly disturbed biodiverse forests. In Australia, most logging of primary forests should be done so as to maintain its capacity to regenerate. "Primary forest" is used in this paper in line with scientific literature and international legislation.

Green spaces: Open, planted public spaces such as parks, gardens, recreational reserves, nature reserves.

Natural capital: The world's stocks of natural assets, which include geology, soil, air, water and all living things. It is from natural capital that humans derive a wide range of services, often called "ecosystem services", which make human life possible (UNCBD).

Nature based solutions: Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits (United Nations Environment Assembly 5 [UNEA-5])

Protection: Precautionary actions, procedures or installations undertaken to prevent or reduce harm to the elements of the material world that exist independently of human activity. (European Environment Information and Observation Network)

Regeneration: Ability of natural areas, species or ecosystems to recover and renew after disturbance. This can occur naturally, or through active intervention.

Resilience: Ability and capacity of an ecosystem to respond to disturbance and recover.

Restoration: The UN Decade on Ecosystem Restoration definition includes activities to prevent, halt and reverse degradation and can be understood as a continuum of practices not limited to rehabilitation and ecological restoration but including other practices such as ecosystem management (The World Bank [WB] 2022a).

Sensitive sites: Term used by Green Star to define sites with a high degree of ecological value, species, or protected status. It includes amongst other things prime agricultural land, marine parks, forests, offset areas, wetlands, or sites that support endangered species. Full details are available in the relevant Green Star credits.

Emission scopes: The GHG Protocol organises greenhouse gas emissions into three scopes for accounting and reporting purposes:

- Scope 1: Emissions from operations that are owned or controlled by the reporting company (e.g. gas use in a building.
- Scope 2: Emissions from the generation of purchased or acquired electricity, steam, heating or cooling consumed.
- Scope 3: Other indirect emissions, that occur in the value chain of the reporting company because of the company's activities but come from sources they do not own or control (e.g. emissions from the manufacture and use of products in construction, also known as embodied carbon).

Appendix 2. Why nature matters, and why the built environment must address its impacts to it

The state of nature

The world is experiencing an alarming loss of biodiversity due to human activity, marking the greatest rate of extinction in recorded history. This new epoch – called the Anthropocene started sometime between 1950 and 1954.[1] Globally, wildlife populations have declined by 69% since 1970, with freshwater species populations decreasing by 83%. These losses highlight the urgent need for change in how we interact with and manage our natural environment.[2] The built environment—alongside intensive agriculture, climate change, invasive species, pollution and other threatening processes—is a significant driver of this loss.

Humans have an innate connection to nature and that when people are connected to nature, they act to protect it and are more environmentally conscious. With the decline of nature, these connections are also fracturing (60% decline in human nature connections). Bringing nature into cities is one of the most effective ways to reengage and rebuild people's connection to nature.[*]

Human activity has irreversibly altered the earth with 75% of the world's land surfaces significantly changed. While this has brought human development and growth, it's also led to mass species extinction which continues unabated. Currently, one million of the world's 8 million species is under threat of extinction.[7]

In addition to land impacts, 66% of the world's oceans have been impacted by human activities, including from fisheries and pollution.[7] In fact, up to 38% of a building's total water use occurs upstream in its supply chain.[20] This "embodied water," like embodied carbon and embodied nature loss, underscores the impact that the built environment has on nature.

Plants, soils, and intact ecosystems are the world's largest terrestrial carbon sinks, storing over 2,100 gigatons of carbon – twice as much as all fossil fuel reserves. As the world races to limit warming to well below 2°C, protecting and restoring nature becomes essential. Even if energy emissions fall to zero, we will not meet climate goals without also addressing nature loss.[19]

The IPBES's 2020 Global Assessment for Biodiversity and Ecosystem Services identified five primary drivers of biodiversity loss:

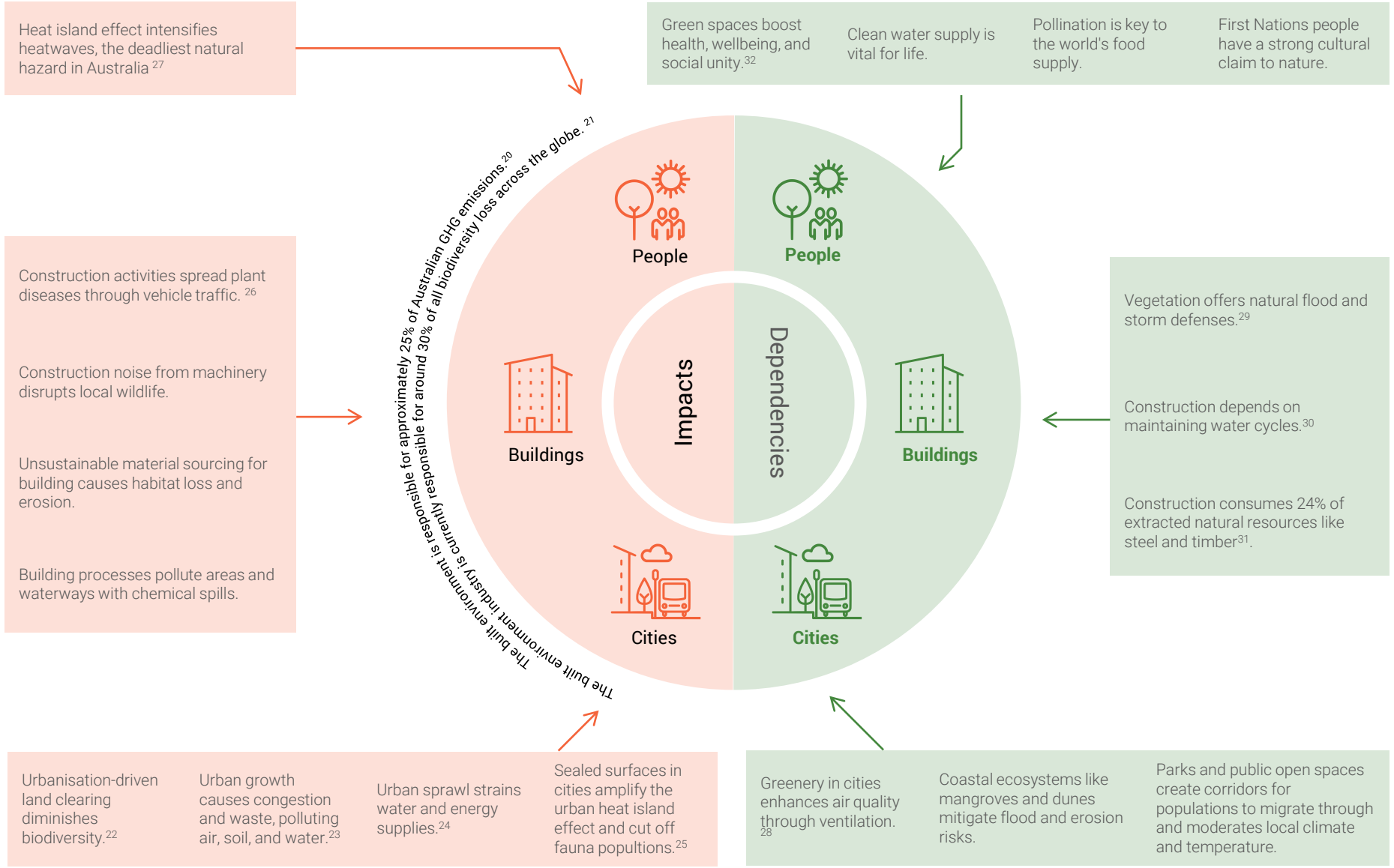
- **Land and sea-use change:** Such as deforestation, mining, agriculture, urban development and habitat fragmentation severely impact ecosystems.
- **Climate change:** The change in global climate patterns disrupts and alters habitats, wildlife activities and reproduction, ecosystem services, and drives species migration, posing significant risks to biodiversity.
- **Pollution:** A wide range of pollutants, including air contaminants, physical waste, and various forms of disturbance like noise, vibration, and light pollution, hinder wildlife activity and reproduction.
- **Exploitation of natural resources:** Activities such as the extraction of timber and minerals, including steel, are direct contributors to biodiversity loss.
- **Invasive species:** The introduction and spread of pests and weeds not only threaten native species but also have the potential to significantly alter ecosystems.

"In the absence of international cooperation on progressive policy action, the world simply will not have enough land to meet all of humanity's currently desired and envisioned uses by mid-century...To put it bluntly, without significant reforms, governments will be forced into a series of untenable choices: between feeding people, meeting climate targets and preserving nature"[35]

The value and benefits of nature

The built environment is intrinsically linked to nature and biodiversity, relying on them for its function while simultaneously impacting them.

Diagram adapted from: GBCA's Building with Nature 2.0, March 2023



Australia's land crunch and its impact on nature

At about 7.7 million km^2, Australia is the sixth largest country on earth. Unfortunately, all this land is competing for the same, or very similar resources.

Agriculture is the country's dominant land use (55%). Specifically, grazing on native vegetation accounts for 45% of land use, 9% by grazing on modified pastureland, 4% is cropland and horticulture, 2% is.[31] Conservation accounts for 23% of Australia's land mass, and urban development is 0.2%.

Most land parcels in major urban areas are zoned for residential primary use (80.4%). Transition/masterplan zoning is the second most common (5.4%), followed by primary production (4.1%). [34]

Land slated for development is primarily along the east coast and south-west coast of Australia which houses most of the population. It's also where other intensive land uses occur, including forestry, irrigated and intensive agriculture, manufacturing and mining.

Much of Australia's biodiversity is contained in the same areas. This competition for land and resources has led to these areas recording the highest number of threatened plant species per bioregion.

Despite efforts to protect nature there's been an 8% increase in the number of species listed as threatened, or those that had moved higher in the threat category and a 20% increase in the number of threatened ecological communities since 2016.[32]

Balancing competing demands on productive land is a major land use planning challenge for governments, now and over the coming decades, with Australia's population expected to grow to approximately 33 million by 2050 and peak soon after.[33]

Australia's built environment ranked third in terms of industry contribution to the nation's economy, contributing 7% to the Gross Domestic Product in 2023-24. This means that its impact on our natural environment is significant.

In Australia, urban expansion is one of the drivers for nature loss. Analysis of consumption of products and services across the economy identified the construction sector as representing '22% of the consumption extinction risk footprint'.* This was found to be 'driven in part by the prevalence of residential and commercial development as a threat which affects 23% of the 239 species in scope and has a direct connection to construction activity. Demand for construction also drives extinction via the accumulation of small impacts with the supply chains that support the sector.* Since 1990, 6.1 million hectares of primary forest has been converted to other land uses, including real estate development.[9]

Furthermore, Australian cities have been found to be hotspots for threatened species. They support more nationally threatened flora and fauna than all other non-urban land areas on a per unit basis. Of 99 cities (populations over 10,000) studied, 89% contained threatened species. Of Australia's 1,643 listed threatened species, 30% had distributions that intersected cities (25% of threatened plants and 46% of threatened animals), underscoring the importance of Australian cities in conservation efforts.

The significance of Australia's built environment's contribution towards species extinction differs from global patterns*. This emphasises the importance of the role of the built environment, in not only halting and reversing nature loss, but also the opportunity to contribute towards nature regeneration activities.

Most land earmarked for development is located along Australia's east and south-west coasts — the same regions that support most of the population. These areas are also heavily used for forestry, intensive agriculture, manufacturing and mining — and they contain much of Australia's remaining biodiversity.

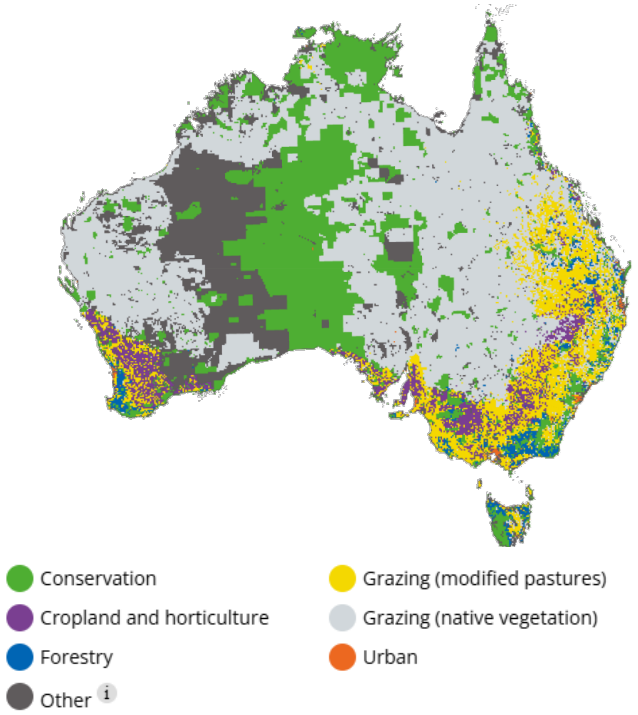


Figure 4: Locations and extent of major types of land use in Australia (SoE, 2017)

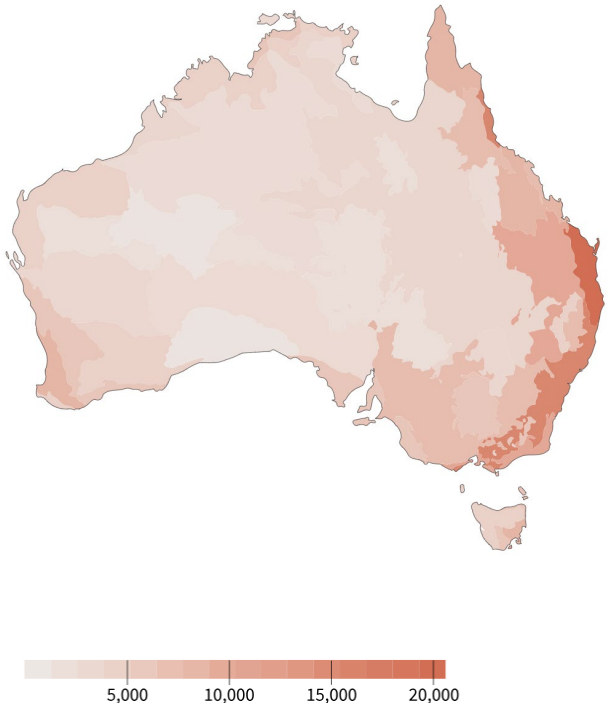


Figure 5: Number of species recorded from each Interim Biogeographic Regionalisation (SoE, 2021)

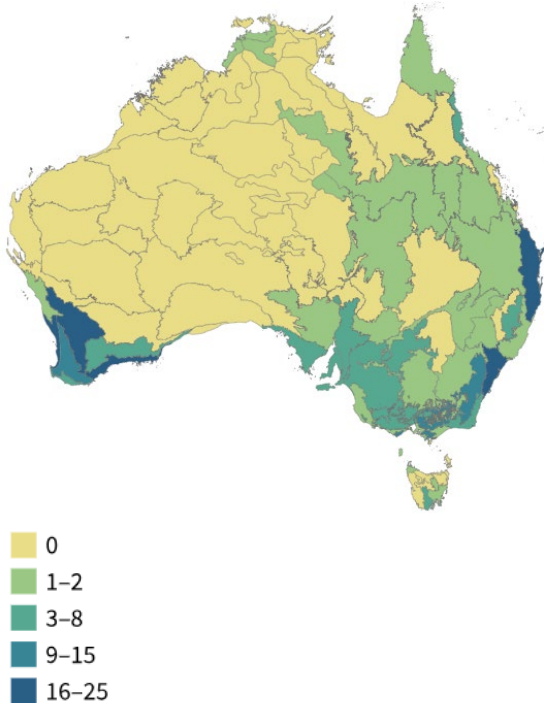


Figure 6: Number of species recorded as extremely rare with a high risk of extinction in next 10 years (SoE, 2021)

Figures 4,5,6 adapted from Climateworks Centre. Australia's Land Use [Interactive]. Climateworks Centre, 2023. Available at: https://climateworkscentre.org/land-use-futures/australias-land-use/

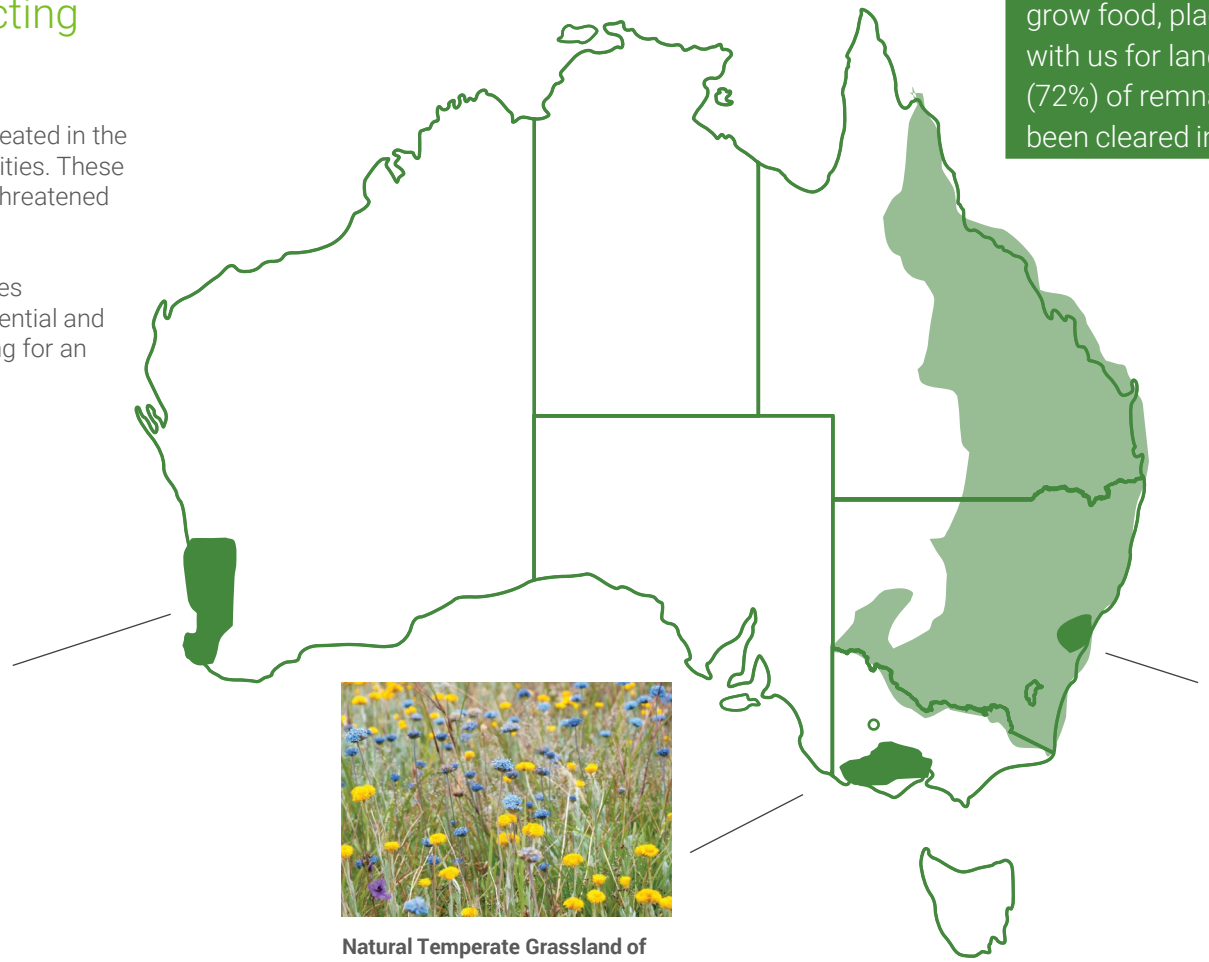
Critical ecosystems and species near major cities

Urban development in the outer growth areas of major cities is impacting important habitats.

New growth corridors are being created in the outer fringes of major Australian cities. These areas include important remnant threatened species and critical habitats.

The critical ecosystems and species highlighted here are found in residential and commercial developments applying for an EPBC Act exemption.

"The best habitat for koalas, with rich fertile soil for producing eucalyptus trees, are also the places where we prefer to live, work and grow food, placing koalas in competition with us for land. Almost three quarters (72%) of remnant core koala habitat has been cleared in SEQ since 1960".[36]



Banksia Woodlands of the Swan Coastal Plain. Listed as Endangered under the EPBC Act in 2016.[37]

Natural Temperate Grassland of the Victoria Volcanic Plain. Listed as Critically Endangered under the EPBC Act in 2008.[38]

Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Listed as Endangered under the EPBC Act in 2022.[40]

Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest. Listed as Critically Endangered under the EPBC Act in 2009.[39]

Banksia Woodlands of the Swan Coastal Plain

Location: Western Australia
Status: Endangered (EPBC Act 2016)

This ecological community once occurred widely as a continuous band around Perth and other coastal areas. It's estimated that approximately 60% of this ecological community has been lost.

The woodland provides habitat for over 20 nationally threatened species, including the red-tailed cockatoo, the western quoll and the western ringtail possum.

Banksia Woodland is managed via the Perth and Peel @3.5 million framework which also includes protection for Ramsar Wetlands and national heritage items.

The framework seeks to provide an additional 1 million dwellings through urban infill targets and development on vacant (undeveloped land) in urban areas.[41]

Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest

Location: New South Wales
Status: Critically Endangered (EPBC Act 2009)

Located in Sydney, the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (referred to as Cumberland Plain Woodland) is a Critically Endangered community. Only 6% of its original distribution remains and occurs in patches.[42]

The Cumberland Plain Woodland supports over 100 threatened and vulnerable species listed at the federal and state levels. It also supports the largest koala population in the Sydney basin.[43]

The Cumberland Plain Woodland is covered by the Western Sydney Strategic Assessment, and specifically, the Cumberland Plain Conservation Plan.

In addition to protection actions, the plan allows urban and industrial development through purchasing offsets.[44] A recent review by the NSW Government resulted in changes to the offsetting program which has informed the revised Strategic Assessment.[45]

Natural Temperate Grassland of the Victoria Volcanic Plain

Location: Victoria
Status: Critically Endangered (EPBC Act 2008)

Occurring in Victoria, only 5% remains of this important habitat.[46] Many patches of this ecological community are found on land slated for development within Melbourne's growth corridor and on public land like cemeteries, rail corridors and along roadsides.

This ecological community supports more than 20 plant species and 12 animal species listed as nationally threatened. It is managed by the Melbourne Strategic Assessment (MSA). This assessment aims to protect '20,000 hectares of the best remaining habitat by charging developers a levy to offset their biodiversity impacts.[47]

An independent review of this scheme found that while the design of the MSA is good, implementation is not, due to inadequate monitoring of effectiveness of measures and delays in purchasing offsite sites.[48]

Koala (combined populations of QLD, NSW and ACT)

Location: Queensland, New South Wales and Australian Capital Territory
Status: Endangered (EPBC Act 2022)

In February 2022, the koala populations of QLD, NSW and ACT were downgraded from *vulnerable* to *endangered* under the EPBC Act. This was due to the "prolonged drought, Black Summer bushfires, and cumulative impact of disease, urbanisation, and habitat loss over the last 20 years".[49]

In response, the Queensland Government developed the South-East Queensland Koala Conservation Strategy (2020-2025).[50]

The Koala Conservation Strategy seeks to protect habitat, restore habitat, and manage threats. It includes further research and community engagement amongst its recommendations.

Specific actions include the establishment of koala corridors, exclude areas containing MNES from the South-East Queensland Urban Footprint principles, align offsets with koala conservation protections, and provide assistance to local government to integrate koala conservation in planning policies.[50]

Australia's low circularity rate

To protect biodiversity and nature, we must rethink the entire lifecycle of products, processes, and materials – ensuring transparency, closing material loops, and regenerating degraded ecosystems.

Materials used for construction have significant impacts on nature. The construction of the built environment accounts for 50% of raw material extraction. It is responsible for 30% of biodiversity loss, 40% of waste and 40% of global carbon emissions.[51]

It's estimated that 95% of a building's nature impact is embodied in its materials.[52] These impacts include changes in land use, over-exploitation of natural resources, pollution and increased prevalence of invasive species. Most of these impacts can only be addressed at the time of building's construction. Once built, nature impacts still exist, but at a lower scale.

Over recent years, considerable efforts have gone into mapping and identifying hotspots in the supply chain when it comes to upfront carbon emissions. There is likely a strong relationship between upfront carbon and nature impacts, because the most used materials generally have the highest impacts.

These materials include concrete (including aggregates and cement), steel (including iron ore), aluminium, timber, asphalt and soil.[53] The built environment depends on these materials. In Europe, housing alone accounts for 30–50% of the use of materials such as sand, clay, limestone, stone, gravel, wood, iron, aluminium, and copper.[54]

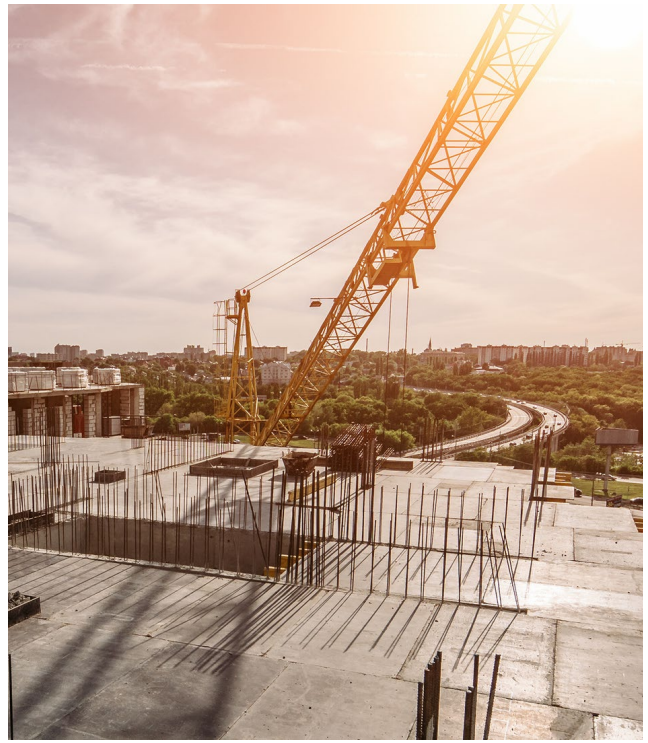
Australia is lagging other countries in how effectively and quickly we are transitioning to a circular economy. While the circularity of the global economy is 8%, Australia's is 4%. The sectors contributing most to Australia's materials footprint are housing and transport (53%), with food accounting for a further 22%.[55]

The *Australia's Circular Economy Framework* report found that Australia is one of the world's highest exporters of natural resources (more than half of materials extracted in Australia are exported). It also highlighted the opportunity for these sectors to make a significant contribution to improving Australia's rate of circularity.[56]

Under the scenarios studied, a circularity rate of 32% was achievable by increasing the rate of recycling, and reducing the use of fossil fuels, including for transport.

Circularity is not just about reusing and recycling of materials – circularity principles can also be used in other policy settings. and industry initiatives such as encouraging the reuse and refurbishment of existing assets, increasing density in our cities, designing for longevity, flexibility, adaptability and disassembly and avoiding construction-related waste to landfill. Establishing the necessary infrastructure to support these practices is a key challenge for the industry.

These principles also assist in helping reduce nature impacts from materials and products. They increase the reuse of materials and components and keep materials circulating in the economy longer – negating the need for new materials and their associated nature impacts.



Resource use and impacts on nature

Common materials

Material	Impacts	Opportunities
Concrete 	Most impacts occur during material extraction, quarrying and dredging for raw materials: limestone, aggregate, gypsum and production of cement. Impacts include habitat loss, intensive water use, disturbing ecosystems, land use change, air pollution, greenhouse gas emissions.	• Reuse and refurbish existing buildings. • Optimise design to minimise use of cement. • Maximise the use of recycled aggregate. • Use alternative materials and engage with supply chain to avoid extraction impacting sensitive ecosystems. • Invest in nature restoration to compensate for nature losses.
Steel 	Most impacts occur during material extraction through open-pit mining and extraction of coking coal, limestone and iron ore. Impacts include habitat loss, removal of fertile topsoil, intensive water use, disturbing ecosystems, land use change and pollution, to air, land and water.	• Reuse and refurbish existing buildings and maintain existing steel structures. • Optimise design to minimise use of steel. • Reuse as much existing steel as possible and maximise the use of recycled steel. • Use alternative materials and engage with supply chain to avoid extraction impacting sensitive ecosystems. • Invest in nature restoration to compensate for nature losses.
Timber 	There are different types of timber primary forest timber, and softwood and hardwood plantations Impacts include soil erosion and compaction, habitat fragmentation and degradation, disruption of water cycle and water pollution, land use change and impacts to indigenous and local communities reliant on forests.	• Reuse and refurbish existing buildings. • Optimise design to use timber appropriately. • Reuse as much existing timber and maximise the use of recycled timber products. • Engage with supply chain to avoid any use of illegally logged timber. • Support sustainable forestry and procure certified timber. • Invest in nature restoration to compensate for nature losses.
Asphalt 	Most impacts occur during material extraction of bitumen and aggregate (sand, gravel, and rock). Impacts include habitat loss, removal of fertile topsoil, sediment and erosion, and pollution to air and water.	• Reuse and refurbish existing buildings. • Optimise design to minimise use of concrete. • Reuse as much existing concrete as possible and maximise the use of recycled aggregate. • Use alternative materials and engage with supply chain to avoid extraction impacting sensitive ecosystems. • Invest in nature restoration to compensate for nature losses.
Plasterboard (gypsum) 	Most impacts occur during material extraction through open-cast mining. Impacts include habitat loss, intensive water use, disturbing ecosystems, land use change, air pollution, greenhouse gas emissions.	• Reuse and refurbish existing buildings. • Reuse as much existing plasterboard as possible, • Use alternative materials and engage with supply chain to specify high recycled content materials. Design to maximise future deconstruction and reuse. • Invest in nature restoration to compensate for nature losses.

With thanks to UKGBC for the information in this table. More detail can be found in their Embodied Ecological Impacts project here: Embodied Ecological Impacts | UKGBC

The impacts of the built environment on water

Water is a finite resource essential for all life. It is under increasing pressure from overconsumption, pollution, and the impacts of climate change.

Water is both a victim and a driver of environmental challenges – its scarcity, degradation, and disruption of natural cycles threaten ecosystems, economies, and communities. Water is also an impact multiplier – 90% of natural disasters are water-related, worsening in scale and severity each year.[57]

The built environment's impact on water

The built environment accounts for 15% of all freshwater consumption[58] across all stages of its lifecycle, from material production to construction and operations. It is a source of water pollution, generating stormwater and wastewater that needs to be treated, while also being heavily impacted by storms and flooding, which are increasing due to climate change.

Over the next four decades, the world will undergo an unprecedented wave of urban growth, making it essential for the building and construction sector to play a leading role in reducing water demand and mitigating the global water crisis.

Water consumption and depletion

The construction and operation of buildings require vast amounts of water. Urban expansion often leads to excessive groundwater extraction, reducing availability for ecosystems and depleting vital water sources such as aquifers.[59] Additionally, impervious surfaces (e.g., roads, pavements, and buildings) prevent natural infiltration, further disrupting the water cycle.

Pollution and water quality degradation

Urban runoff carries pollutants – including heavy metals, microplastics, and chemicals – into waterways, degrading water quality and threatening ecosystems.[60] Wastewater from buildings and industrial processes also contributes to nutrient loading, leading to issues such as algal blooms and ecosystem degradation.

Embodied water in construction and supply chains

Beyond direct consumption, the built environment also has a significant hidden water footprint through material production. Concrete, steel and timber production are water-intensive industries contributing to global water stress.

Climate change and hydrological disruptions

Climate change is intensifying hydrological extremes, with cities and towns facing both increased flooding and prolonged droughts. The built environment exacerbates these risks by altering natural water flows – impervious surfaces reduce groundwater recharge while poorly managed drainage systems heighten flood vulnerabilities.

The role of wetlands

Wetlands play a crucial role in regulating water cycles, improving water quality, and providing resilience against floods and droughts. However, rapid urban expansion has led to widespread wetland degradation, further compounding water challenges.[61]

For First Nations peoples, water is deeply connected to culture, identity, and Country. Traditional knowledge systems emphasise the interconnectedness of water, land, and community well-being. The 2021 State of the Environment Report highlights the ongoing impacts of colonial water management practices, which have often overlooked Indigenous water rights and knowledge.[62]

Lack of investment in nature

We are heavily dependent on nature.

Biodiversity remains the 'engine room of ecosystem services'[63] which is estimated to be valued at $44 trillion. As the health of ecosystem services deteriorates, the productivity of the ecosystem, or the ability for such ecosystems to continue to provide goods and services, drastically reduces, and in some cases abruptly stops.

Despite the significant role a thriving nature plays in economies, economic models don't capture the full breadth of natural systems values. The inadequacy of valuation means that financial flows are not directed towards improving nature, and damaging it is often seen as the least costly option.

Despite the need to invest in nature positive practices, the United Nations Environmental Programme (UNEP), in its State of Nature report, estimated that at least $7 trillion is invested towards nature negative activities, led by the private sector which invests $5 trillion.[64]

Private sector nature negative financial flows are primarily directed towards construction and engineering activities, alongside electric utilities, real estate operations, oil and gas and food production.

The majority of public sector investment went towards fossil fuel subsidies, followed by agriculture and forestry. And it keeps increasing, in 2023 it was $1.7 trillion, an increase of 55% from 2022.[64]

Compared to nature-negative investments, nature-positive investments – such as nature-based solutions – are significantly lagging. Currently, an estimated US$200 billion is being directed toward nature-positive initiatives. Of the total finance aimed at improving nature, 82% comes from government sources dedicated to environmental protection.[64]

The private sector is only investing $35 billion, with 57% of that going to biodiversity offsets and credits and sustainable supply chains. UNEP estimates that $11.7 billion was invested in offsets in 2022. It highlights the value of mandatory biodiversity offsetting schemes, such as Biodiversity Net Gain in the UK or the New South Wales (NSW) Biodiversity Offset Scheme in Australia. UNEP reviewed the validity of offsets as a nature-related strategy and considered that while there are challenges, "This analysis includes biodiversity offsets, with the rationale that, in their absence, there would be a greater loss of biodiversity. Mandatory offsetting schemes help to ensure that biodiversity loss is less than it would be if these schemes were not in place." [64]

The opportunities to achieve nature positive outcomes are significant. It's estimated that to meet global nature-related targets (which will also benefit climate change actions), investment needs to increase to $700 billion a year to meet the objectives of the Kunming Montreal Protocol*. Furthermore, the State of Nature report released in 2021 stated that a total investment of $8.1 trillion is required by 2050 to address the triple planetary crises of climate change, nature and land degradation.[64]

Land protection activities are a very cost-effective way of driving nature positive outcomes. According to UNEP, "Protection represents 80% of additional land area needed for nature-based solutions due to its cost-effectiveness while absorbing only 20% of additional nature-based solutions finance by 2030". Other opportunities include practices to manage land sustainably, alongside the major opportunities to restore degraded land.[64]

In fact, investing in nature in our cities is incredibly valuable. UNEP's State of Finance for Nature in Cities 2024 report notes that there is a significant gap in the investment on nature-based solutions for cities. UNEP estimates that only a third of the needed investment is currently occurring, and that there is a need to increase this from $200 billion to $543 billion.[65]

Another key element described in the report is the significant lack of data at the city level. To address this, further investment in data is needed across all aspects impacts: sites, near site impacts, and supply chain.

Nature-based solutions can have insurability benefits. For example, investments in land and forest management practices in fire-prone areas was found to reduce insurance premiums by 41% in the northern Sierra Nevada.[66]

Gaps in data, methods and metrics

Standardised, credible, decision-useful data is required to underpin global standards that enable companies and financial institutions to report and act on nature-related risks and opportunities.[67]

A key step in improving nature outcomes is setting baselines, targets, and tracking progress. But unlike carbon, which can be measured using widely accepted units and methodologies, biodiversity and ecosystem health are harder to quantify. Nature is highly localised, complex, and often qualitative – making standardisation difficult.

This is a core challenge for organisations in the built environment sector. While ecological surveys and environmental assessments are often required during development approvals, these typically capture limited spatial data and miss deeper insights into biodiversity quality and ecosystem resilience. Nature's qualitative elements – such as genetic diversity or ecosystem health – are particularly difficult to measure consistently.

For many, assessing and reporting on nature is a new frontier. A lack of internal expertise often leads to outsourcing, which can isolate nature-related considerations from broader business decisions. TNFD highlights the importance of improving data access and organisational capability, including consistent terminology and spatial data on the location and extent of impacts.[68]

Australia's Strategy for Nature reinforces the need for nationally consistent data to underpin better decision-making. Platforms like the National Vegetation Information System[69] and the Atlas of Living Australia[70] offer valuable data. However, biases remain, such as a focus on vertebrates over invertebrates, and limitations in tracking changes over time.

Ecosystem health is difficult to convert into standardised or investable metrics. However, this is essential for mainstreaming nature considerations into the built environment and beyond. That need is driving the development of new tools and platforms to bridge data and decision-making.

One such tool is PLANR,[71] developed by the Australian Government to support the Nature Repair Bill. It provides landowners with a site-specific snapshot of natural assets, with growing granularity. Tools like this show promise for better integrating nature into planning and design decisions in the built environment.

Improving how we measure, report, and act on nature will require a combination of better data systems, increased ecological literacy, and a shift from compliance-based approaches to proactive, integrated decision-making.

Integration of First Nations principles

Aboriginal and Torres Strait Islander people, Australia's First Nations, are the custodians of its lands, waters, and seas, and have lived in harmony with nature for millennia.

Aboriginal and Torres Strait Islander peoples possess a deep connection with 'Country', a term transcending physical land to encompass spiritual, cultural, and emotional ties. The 'Caring for Country' philosophy, contrasts sharply with Western practices of land and resource management. Instead of perceiving nature as property, this approach sees it as a living, sentient system, with humans acting as its stewards and custodians, continually adapting over time.

'Country' is multifaceted, encompassing the physical environment, spiritual beliefs, law, language, customs, ancestral wisdom, traditions, and kinship. Caring for Country is critical to maintaining cultural and links, identity, autonomy and health.

Embracing these holistic methods not only conserves the environment but also preserves cultural heritage. Involving First Nations in conservation strategies respects their rights and leverages their knowledge of natural cycles, essential for tackling climate change and safeguarding Australia's landscapes for future generations.

The urgency and complexity of challenges such as climate change and biodiversity loss, require a new approach. One where the knowledge and culture of Aboriginal and Torres Strait Islander peoples is valued, celebrated and integrated with Western knowledge and science to ensure the resilience of Australia's landscapes for future generations.

The below is a contemporary synthesis of widely recognised First Nations principles relating to Country, culture, and the built environment:

Environmental stewardship	Emphasises sustainable resource use and a commitment to future generations, driven by respect for Country.
Sustainability	Prioritises living in harmony with Country, adapting to natural cycles to ensure sustainable resource use.
Community-centred design	Designs spaces to meet the community's social and spiritual needs, reinforcing community cohesion.
Cultural significance	Integrates cultural symbols and traditions into the built environment, enhancing community resonance.
Interconnectedness	Acknowledges the interrelation of all elements, necessitating holistic planning in every change.
Seasonal adaptation	Considers natural cycles in building designs, aligning with environmental changes for energy efficiency.
Local materials	Prioritises local materials for minimal environmental impact and alignment with local aesthetics.
Ancestral knowledge	Employs traditional knowledge and methods in design and construction for their proven effectiveness.
Spirituality	Creates spaces specifically for spiritual practices, such as ceremonies and rituals.
Multi-generational planning	Ensures designs cater to both current and future generations for a sustainable legacy.

Appendix 3. The extended mitigation hierarchy (conservation hierarchy)

Evolution of the mitigation hierarchy

The Mitigation & Conservation Hierarchy - ICCS
iccs.org.uk

THE CONSERVATION HIERARCHY - Convention on Biological Diversity
cbd.int

The nature-positive goal and the mitigation hierarchy
iucn.org

Four steps for the Earth: mainstreaming the post-2020 global biodiversity framework
cell.com

The global policy and science community increasingly recognises that conserving remaining biodiversity will not be sufficient to address ongoing declines. Restoration and improvement of ecological condition are now emphasised alongside protection, and the built environment has a defined role within this broader transition. The concept of a nature positive future—where ecosystems are on a measurable path to recovery—is becoming a central organising principle in international biodiversity planning.

This direction is reflected in frameworks such as the Kunming-Montreal Global Biodiversity Framework, which calls for systemic, science-based and measurable action. Within these frameworks, the mitigation hierarchy, and its expanded form, the conservation hierarchy, provide the primary structure for guiding how human activities should first avoid and reduce impacts before contributing to restoration and regeneration.

The traditional mitigation hierarchy has been widely used for several decades and remains a robust foundation for managing development-related impacts: avoid first, then minimise, then restore, with offsetting as a last resort. However, both scientific assessments and implementation experience indicate that applying this sequence on a project-by-project basis is no longer adequate to meet national or global biodiversity goals. The conservation hierarchy extends this approach into a more comprehensive system that considers cumulative, historical and indirect impacts, and enables a wider set of actors—not only project proponents—to contribute to positive ecological outcomes. This expanded framing supports a broader suite of actions, from land-use planning to supply-chain decisions, and reflects research showing the importance of restoration, Indigenous knowledge systems, and mainstreaming biodiversity through routine policy and investment decisions.

The ICCS framework builds on this by setting out a structured process—goal-setting, implementation, monitoring and adaptation—under the “Four Steps for the Earth” model. It highlights the need for consistent terminology, transparent baselines and comparable metrics, which aligns with industry and government feedback gathered during the development of the Nature Positive Roadmap. Stakeholders across the Australian built environment sector have indicated a need for clearer guidance, alignment with emerging regulatory and reporting requirements, and a practical framework that reflects both ambition and feasibility.

The mitigation and conservation hierarchy offers such a structure. It can be integrated into planning systems, design processes, procurement decisions and landscape management. It also provides a framework that can incorporate cultural knowledge and Caring for Country principles, supporting approaches that recognise Country as a living system rather than a resource to be managed.

Applied consistently, the hierarchy supports governments in shaping planning and regulatory settings that better protect high-value ecosystems. It assists developers in making informed choices about site selection, materials and design. It gives investors and financial institutions a clearer basis for understanding dependencies, risks and impacts. Overall, it offers a structured pathway for shifting from reducing harm to contributing to ecological repair.

The hierarchy also responds directly to challenges identified by industry. It reduces reliance on offsets as a default solution by re-emphasising avoidance. It supports more nuanced assessments of biodiversity values across different contexts. It helps ensure claims of nature positive outcomes are grounded in transparent, consistent measurement and reporting.

As a result, the hierarchy provides a practical narrative for the Roadmap: protecting existing biodiversity, restoring degraded systems and enabling improvements in ecological condition where people live, work and gather. While not a complete solution on its own, it offers a coherent basis for action across the sector and supports GBCA’s role in guiding industry towards contributing to nature positive outcomes in Australia.

The mitigation and conservation hierarchy in more detail

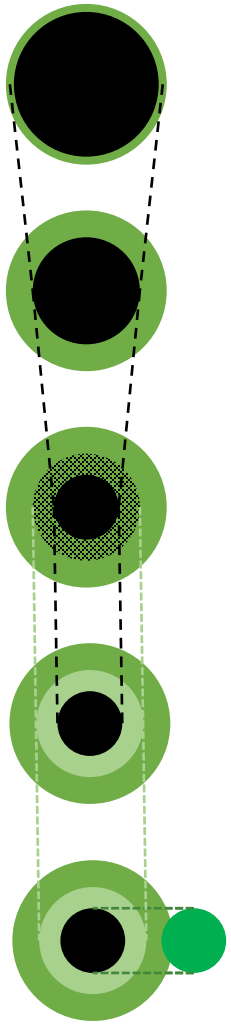
The mitigation hierarchy operates on the principle of no net loss in nature and biodiversity by aiming to avoid biodiversity loss as much as possible. The hierarchy of, avoid, minimise, restore, and offset is well known and has been used to inform land use planning and development decisions.

Historically the impact has been tied to activities specific to the land that is being developed. A more recent approach 'the Conservation hierarchy' (Refrain, Reduce, Restore, Renew) advocates for a proactive approach where compensation activities occur for supply chain impacts beyond the site, even where the impacts themselves are not explicitly known. This is addressed by also recognising the value of proactive conservation activities outside of the site.

With nature loss continuing, it underscores the need to move beyond no net loss, to net gain. Thus, a review of the nature hierarchy is necessary to ensure it delivers outcomes to restore nature and meet the Kumning-Montreal Framework targets.

Biodiversity impact | Avoided impact | Reduced impact | Restored biodiversity on site | Compensation activities

Description of the conservation hierarchy in concept



Biodiversity impact

If the mitigation and conservation strategy is not applied, it would result in a complete loss of biodiversity value.

Refrain

The first step is to avoid impacting or protecting existing biodiversity in a project, particularly sensitive flora and fauna on site or on surrounds.

Reduce

Next, impacts to nature should be reduced as far as practicable throughout the site, both directly and indirectly.

Restore

For areas affected by the development or habitat degraded prior to development, actively rehabilitate them, including reintroducing biodiversity previously removed.

Offset/Renew

Compensate for the remaining impacts, locally for development impacts, and through external conservation activities for supply chain impacts.

Appendix 4. The global focus on nature

Global efforts on progressing and aligning definitions, measurement, and reporting protocols

As key frameworks are developed and released to address nature-related risks and opportunities, consistent definitions and aligned frameworks are critical to moving industries towards outcomes that halt—and ultimately reverse—nature loss.

At the global policy level, the Kunming-Montreal Global Biodiversity Framework was adopted in December 2022 at the 15th Conference of the Parties (COP15) [4], setting out a vision of a world living in harmony with nature.

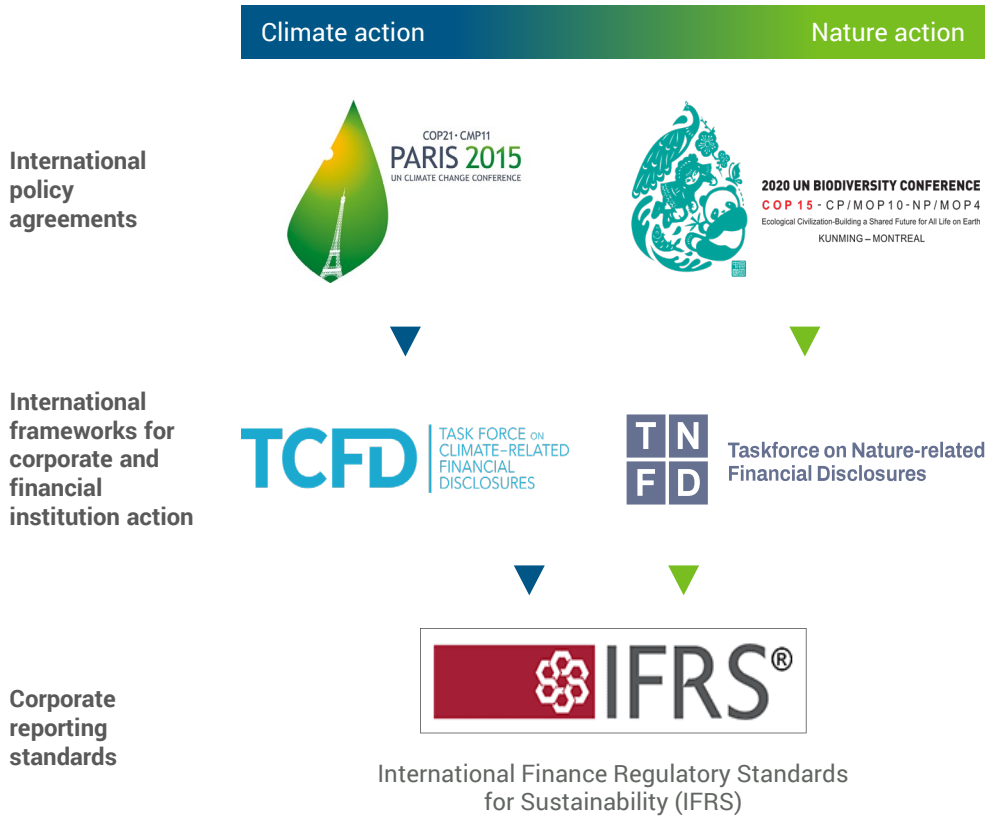
As a signatory to the Kunming-Montreal Global Biodiversity Framework, Australia has committed to ambitious targets, including protecting 30% of its land and seas by 2030. This commitment is reinforced through Australia's Strategy for Nature 2024–2030, which aims to halt and reverse biodiversity loss by 2030 and achieve a state of living in harmony with nature by 2050. [5]

In October 2025, global bodies announced the outcomes of efforts to align definitions, indicators, and metrics. The Nature Positive Initiative's work to define "nature positive" recognises it as a societal goal, demonstrated through the measurement and reporting of the state of nature.

Supporting this commitment, the TNFD released its final recommendations in September 2023 [6], providing organisations with guidance to identify, manage, and disclose nature-related financial risks, dependencies, and opportunities. With these recommendations now in place, nature-related financial disclosures are increasingly expected—and are likely to become mandatory over time.

To support consistent measurement and reporting, the Taskforce on Nature-related Financial Disclosures (TNFD) and the International Sustainability Standards Board (ISSB) announced a joint workstream to align and integrate the LEAP (Locate, Evaluate, Assess, Prepare) framework into international sustainable finance standards. Aligning these key international frameworks is expected to accelerate the uptake of nature-related reporting and embed nature considerations into decision-making.

Nature is following the same institutional pathway as climate: moving from global policy into mainstream financial reporting. As TNFD aligns with IFRS, nature-related disclosures will become more consistent, decision-useful, and increasingly expected—signalling a shift toward embedding nature considerations in core financial and strategic decisions.



Kunming-Montreal Global Biodiversity Framework

Adopted during the 15th meeting of the Conference of Parties (COP 15) in December 2022, the Kunming-Montreal Global Biodiversity Framework sets a vision for a world living in harmony with nature.

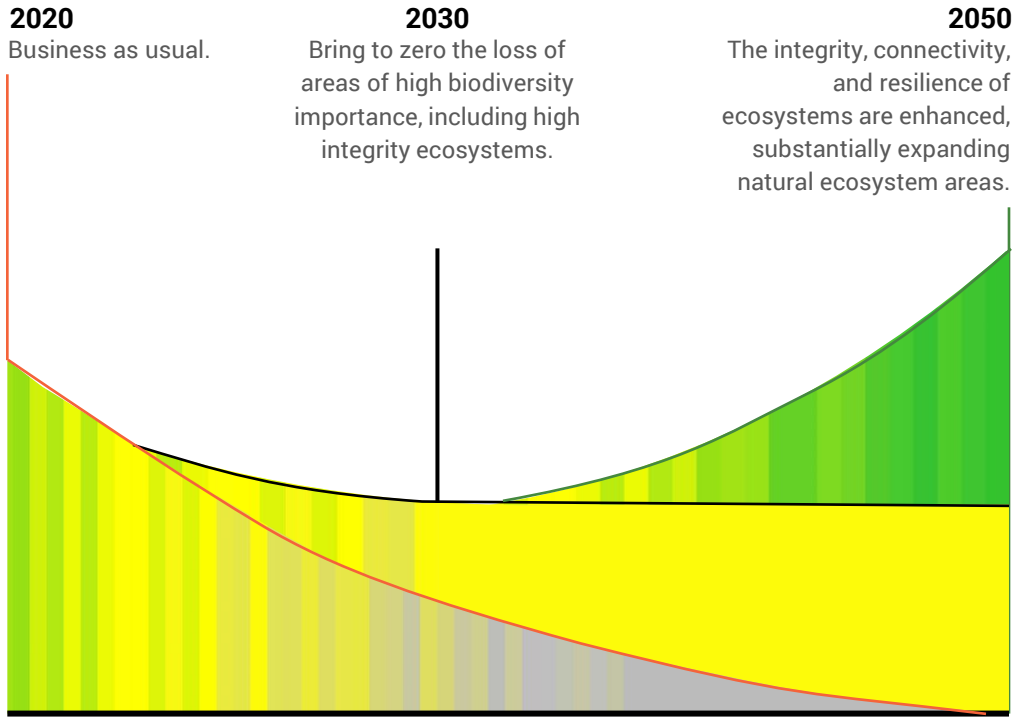
The Kunming-Montreal Framework aligns with the Sustainable Development Goals. It sets four long-term goals for 2050 and 23 targets for 2030. The full list of the targets can be seen in Appendix XX. The targets span the need to protect and restore nature and emphasise the importance of respecting the rights of Indigenous peoples and local communities and their role and contribution.

As a signatory to the Framework, Australia is already seeing and will continue to see significant policy changes in the built environment and other industries by as early as 2030. We can expect that:

- Zoning regulations will increasingly focus on mixed-use developments, efficient land use, and protecting sensitive ecological areas. Protection may be expanded to include areas crucial or adjacent to where threatened species exist. Additionally, protecting and enhancing ecosystems, particularly around urban areas through natural reserves and buffer zones, will become a priority.
- Biodiversity net gains will be mandatory, requiring developments to not only minimise harm but also actively enhance local biodiversity within development sites. This includes trends towards offsite nature restoration as part of broader ecological stewardship.
- Engagement with First Nations communities will be emphasised, incorporating traditional land stewardship practices into community planning. This ensures public spaces are sustainable, inclusive, and meet the community's broader needs.
- The supply chain will evolve to emphasise not only carbon impacts but also nature-related impacts, with a shift towards sustainably and ethically sourced materials. Suppliers will be required to adopt comprehensive sustainability practices, from sourcing to site, with strict management or cessation of sourcing from native forests.

As a signatory, Australia has committed to ambitious targets, including protecting 30% of its land and seas by 2030. Australia's Strategy for Nature 2024 – 2030 has a vision to 'halt and reverse biodiversity loss by 2030 and live in harmony with nature by 2050.

In Australia, this momentum is reflected in the Australian Government's Nature Positive Plan, which includes the Nature Positive Strategy and the Nature Repair Bill.72 These initiatives contribute to meeting Australia's commitment to the Global Biodiversity Framework and aim to protect ecosystems, stimulate investment in restoration, and recognise the leadership of First Nations people in achieving nature-positive outcomes. See Appendix XX for more information.



An illustration of the targets of the Kunming Montreal Protocol Stripes by biodiversitystripes.info

Kunming-Montreal Global Biodiversity Framework targets

The following is a concise summary of the full 23 targets for 2030

1. Plan and Manage all Areas To Reduce Biodiversity Loss

Ensure that all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management processes addressing land- and sea use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities.

2. Restore 30% of all Degraded Ecosystems

Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.

3. Conserve 30% of Land, Waters and Seas

Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.

4. Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts

Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.

5. Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species

Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spillover, applying the ecosystem approach, while respecting and protecting customary sustainable use by indigenous peoples and local communities.

6. Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact

Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent by 2030, and eradicating or controlling invasive alien species, especially in priority sites, such as islands.

7. Reduce Pollution to Levels That Are Not Harmful to Biodiversity

Reduce pollution risks and the negative impact of pollution from all sources by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services, considering cumulative effects, including. (a) by reducing excess nutrients lost to the environment by at least half, including through more efficient nutrient cycling and use; (b) by reducing the overall risk from pesticides and highly hazardous chemicals by at least half, including through integrated pest management, based on science, taking into account food security and livelihoods; and (c) by preventing, reducing, and working towards eliminating plastic pollution.

8. Minimize the Impacts of Climate Change on Biodiversity and Build Resilience

Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions, including through nature-based solutions and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity.

Kunming-Montreal Global Biodiversity Framework targets

The following is a concise summary of the full 23 targets for 2030

9. Manage Wild Species Sustainably To Benefit People

Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people, especially those in vulnerable situations and those most dependent on biodiversity, including through sustainable biodiversity-based activities, products and services that enhance biodiversity, and protecting and encouraging customary sustainable use by indigenous peoples and local communities.

10. Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry

Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices, such as sustainable intensification, agroecological and other innovative approaches, contributing to the resilience and long-term efficiency and productivity of these production systems, and to food security, conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services.

11. Restore, Maintain and Enhance Nature's Contributions to People

Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services, such as the regulation of air, water and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and/or ecosystem-based approaches for the benefit of all people and nature.

12. Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity

Significantly increase the area and quality, and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably, by mainstreaming the conservation and sustainable use of biodiversity, and ensure biodiversity-inclusive urban planning, enhancing native biodiversity, ecological connectivity and integrity, and improving human health and well-being and connection to nature, and contributing to inclusive and sustainable urbanization and to the provision of ecosystem functions and services.

13. Increase the Sharing of Benefits From Genetic Resources, Digital Sequence Information and Traditional Knowledge

Take effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits that arise from the utilization of genetic resources and from digital sequence information on genetic resources, as well as traditional knowledge associated with genetic resources, and facilitating appropriate access to genetic resources, and by 2030, facilitating a significant increase of the benefits shared, in accordance with applicable international access and benefit-sharing instruments.

14. Integrate Biodiversity in Decision-Making at Every Level

Ensure the full integration of biodiversity and its multiple values into policies, regulations, planning and development processes, poverty eradication strategies, strategic environmental assessments, environmental impact assessments and, as appropriate, national accounting, within and across all levels of government and across all sectors, in particular those with significant impacts on biodiversity, progressively aligning all relevant public and private activities, and fiscal and financial flows with the goals and targets of this framework.

15. Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts

Take legal, administrative or policy measures to encourage and enable business, and in particular to ensure that large and transnational companies and financial institutions:

(a) Regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity, including with requirements for all large as well as transnational companies and financial institutions along their operations, supply and value chains, and portfolios;

(b) Provide information needed to consumers to promote sustainable consumption patterns;

(c) Report on compliance with access and benefit-sharing regulations and measures, as applicable;

to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and promote actions to ensure sustainable patterns of production.

Kunming-Montreal Global Biodiversity Framework targets

The following is a concise summary of the full 23 targets for 2030

16. Enable Sustainable Consumption Choices To Reduce Waste and Overconsumption

Ensure that people are encouraged and enabled to make sustainable consumption choices, including by establishing supportive policy, legislative or regulatory frameworks, improving education and access to relevant and accurate information and alternatives, and by 2030, reduce the global footprint of consumption in an equitable manner, including through halving global food waste, significantly reducing overconsumption and substantially reducing waste generation, in order for all people to live well in harmony with Mother Earth.

17. Strengthen Biosafety and Distribute the Benefits of Biotechnology

Establish, strengthen capacity for, and implement in all countries, biosafety measures as set out in Article 8(g) of the Convention on Biological Diversity and measures for the handling of biotechnology and distribution of its benefits as set out in Article 19 of the Convention.

18. Reduce Harmful Incentives by at Least $500 Billion per Year, and Scale Up Positive Incentives for Biodiversity

Identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least $500 billion per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity.

19. Mobilize $200 Billion per Year for Biodiversity From all Sources, Including $30 Billion Through International Finance

Substantially and progressively increase the level of financial resources from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies and action plans, mobilizing at least $200 billion per year by 2030, including by:

(a) Increasing total biodiversity related international financial resources from developed countries, including official development assistance, and from countries that voluntarily assume obligations of developed country Parties, to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, to at least $20 billion per year by 2025, and to at least $30 billion per year by 2030;

(b) Significantly increasing domestic resource mobilization, facilitated by the preparation and implementation of national biodiversity finance plans or similar instruments according to national needs, priorities and circumstances;

(c) Leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments;

(d) Stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms, with environmental and social safeguards;

(e) Optimizing co-benefits and synergies of finance targeting the biodiversity and climate crises;

(f) Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions[1] and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity aimed at the conservation of biodiversity;

(g) Enhancing the effectiveness, efficiency and transparency of resource provision and use;

20. Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity

Strengthen capacity-building and development, access to and transfer of technology, and promote development of and access to innovation and technical and scientific cooperation, including through South South, North-South and triangular cooperation, to meet the needs for effective implementation, particularly in developing countries, fostering joint technology development and joint scientific research programs for the conservation and sustainable use of biodiversity and strengthening scientific research and monitoring capacities, commensurate with the ambition of the goals and targets of the Framework.

Kunming-Montreal Global Biodiversity Framework targets

The following is a concise summary of the full 23 targets for 2030

21. Ensure That Knowledge Is Available and Accessible To Guide Biodiversity Action

Ensure that the best available data, information and knowledge are accessible to decision makers, practitioners and the public to guide effective and equitable governance, integrated and participatory management of biodiversity, and to strengthen communication, awareness-raising, education, monitoring, research and knowledge management and, also in this context, traditional knowledge, innovations, practices and technologies of indigenous peoples and local communities should only be accessed with their free, prior and informed consent,[2] in accordance with national legislation.

22. Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all

Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.

23. Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action

Ensure gender equality in the implementation of the Framework through a gender-responsive approach, where all women and girls have equal opportunity and capacity to contribute to the three objectives of the Convention, including by recognizing their equal rights and access to land and natural resources and their full, equitable, meaningful and informed participation and leadership at all levels of action, engagement, policy and decision-making related to biodiversity.

The Taskforce on Nature-related Financial Disclosures

2015 set the stage for the emergence of net zero with the Paris Agreement. In 2022, the Kunming-Montreal Global Biodiversity Framework did the same for nature and biodiversity.

In September 2023, the Taskforce on Nature-related Financial Disclosures (TNFD) released its framework. This framework offers comprehensive recommendations and guidelines, enabling organisations to identify, report, and manage their nature-related financial risks, dependencies, and opportunities.

The voluntary disclosure framework is built on four fundamental pillars: governance, strategy, risk and impact management, and targets and metrics. The implications for the built environment sector are profound and multifaceted:

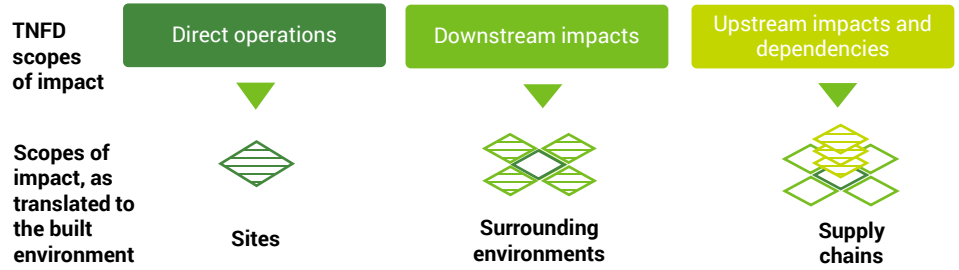
- Boards are required to integrate nature-related considerations into their fiduciary duties, encompassing risks, dependencies, and opportunities (known as a double materiality assessment).
- The scope of assessment and disclosure will expand beyond the immediate project site, encompassing both upstream and downstream impacts within the value chain.
- Industry will need to adopt a standardised methodology for quantifying and assessing biodiversity impacts.
- Establishing rigorous baselines to inform clear targets and timelines, in alignment with global frameworks, will be essential for measurable progress.
- Issues such as human rights, and effective engagement with First Nations people, including land use rights, must be considered as well.

The TNFD also sets out scopes identifying the impacts on nature from organisational activities: direct operations, upstream, and downstream impacts. Translating this to a physical assets, the impacts can be translated as: sites, surrounding environment, supply chains.

Addressing nature across spatial and time scales

The latest science and global trends, research, policies, and views from industry shows that nature should be considered across the development, operations, and end-of-life of an activity.

The TNFD also sets out scopes identifying the impacts on nature from organisational activities: direct operations, upstream, and downstream impacts. Translating this to a physical assets, the impacts can be translated as: sites, surrounding environment, supply chains.



The key metrics for the built environment according to the TNFD

For further information on the proposed TNFD metrics, please go to their Additional sector guidance for engineering, construction, and real estate.

Core indicator	Brief description
GHG emissions	As per IFRS S2 Climate-related disclosures
Total spatial footprint	Total spatial footprint includes managed, disturbed, and restored areas measured in square kilometres.
Extent of land/ freshwater/ocean-use change	Tracks changes in land, freshwater, or ocean area by use, ecosystem, and business activity, including impacts from infrastructure.
Extent of land/ freshwater/ ocean ecosystem conserved/ restored/ managed	Tracks ecosystem area managed or restored, and pollutant and wastewater releases.
Pollutants released to soil split by type	Amount of each type of pollutant released into soil, measured in tonnes.
Wastewater discharged	Monitors discharged water and pollutants, tracking volume, quality, and key pollutant levels.
Waste generation and disposal	Tracks waste, plastic use, and air pollutant emissions by type and disposal method.
Plastic pollution	Measures the total weight of plastics used or sold, detailing raw material content and the proportion of packaging that is reusable, compostable, or recyclable.
Non-GHG air pollutants	Records the volume and types of air pollutants released like particulate matter, nitrogen oxides, VOCs, sulphur oxides, and ammonia.
Water withdrawal and consumption from areas of water scarcity	Tracks how much water is taken and used from scarce sources, noting where the water comes from.
Quantity of high-risk natural commodities sourced from land/ocean/freshwater	Tracks the amount and types of high-risk natural commodities sourced from land, ocean, or freshwater, showing their share of total natural commodities.

Core indicator	Brief description
Measures against unintentional introduction of invasive alien species (IAS)	Tracks the share of high-risk activities managed to prevent accidental introduction of invasive species, or designed to be low risk.
Ecosystem condition & Species extinction risk	Organisations should report on ecosystem condition and extinction risk, following TNFD guidance. Metrics are still being standardised.
Resource use / replenishment	Records the volume of harmful spills and wastewater discharges exceeding standards, detailing the type of pollutant, ecosystem affected, and classification used.
Green space creation	Green space creation is measured by the area and type of planting, number of trees, and proportion of native species, as well as alignment with ecosystem connectivity plans.
Light pollution	Light pollution is assessed by tracking the number, type, brightness, and operation of outdoor lights, including their intensity, colour, and usage patterns at night.
Noise pollution	Noise pollution is assessed by comparing average noise levels before and during construction, and tracking any incidents exceeding regulatory standards.
Circular economy indicators	Measures the percentage of input materials and components that are recycled, reused, repurposed, or remanufactured in construction or refurbishment projects.
Value chain certification	Percentage of materials with verified environmental labels or declarations.
Water reuse	Amount of water recycled and reused, based on metered utility data.

Appendix 5. The changing Australian regulatory landscape

Australia's nature-related regulatory landscape

Australia has a complex weave of legislation aimed at protecting nature while balancing the need for development.

Central to Australia's nature protection legislative framework is the *Environment Protection Biodiversity Conservation Act 1999 (*EPBC Act*).* The purpose of this act is to protect nationally significant places, ecosystems, wildlife and heritage.[23]

The EPBC Act provides legal protection for Matters of National Environmental Significance (MNES) (which includes nationally threatened species, ecological communities and migratory species). It also allows the Environment Minister to approve developments considered nationally significant though they may have MNES. The EPBC Act establishes an agreement between the states and the federal government in approving state significant developments that have MNES.[24]

Where a controlled action is determined, the federal Environment Minister can delegate approval of that development to states through bilateral agreements. The agreements allow states and territories to assess proposals and impacts to MNES. Considerations include requirements to comply with a pre-agreed set of actions and conditions aimed at protecting viable ecosystems. These actions were determined by a process called 'Strategic Assessments'.[24]

Outside of MNES addressed by the EPBC Act, each state and territory government has relative autonomy over issues such as statutory approvals, flora and fauna protection, and biodiversity offsetting (a table detailing key policies in each state can be found in Appendix 2).[25]

Within existing laws, species and ecosystems are defined by the level of threat. This is used to guide and determine the urgency of action and prioritise resources for recovery. Each state and territory has legislation that outlines threats to local species and ecological communities. These determinations are based on the level of threat faced at the localised and state level. In addition, legislation includes the need to also protect critical habitats that are considered as essential to the survival of threatened species.[26]

The complexity in the interface between policies and legislation at different tiers of government is not adequately protecting nature and specifically, MNES.

The complexity of land use planning at different tiers of government is a key contributing factor to ineffective nature protection.

Avon Plains River Red Gum. Listed as Critically Endangered under the EPBC Act 2009. Image source: Greenfleet

Australia's nature-related regulatory landscape

Despite legislation being in place to protect nature at local, state and national levels, Australia's biodiversity continues to decline.

An independent review of the EPBC Act in 2020, known as the *Samuel Review* found that communities do "not trust the EPBC Act to deliver for the environment", and that the Act does not facilitate restoration of the environment. It also noted that inefficiency and duplication is placing an additional burden on projects without delivering the stated outcomes.

The review also highlighted:

- The lack of integration in land use planning and policies around nature protection at the different tiers of government is resulting in a piecemeal approach that's not delivering on the EPBC's purpose.
- The implementation of the legislative framework has significant gaps, with a critical one being the lack of consideration for cumulative impacts – as projects that have small impact are approved, even if the total amount of impact across the region is now significant.
- A lack of consideration for the wealth of knowledge held by Aboriginal and Torres Strait Islander People. Legislation is also not adequately considering the cultural significance of plants, animals and landscapes (ecological communities); nor cultural practices that can protect these from extinction.

In response, the Samuel Review makes 38 recommendations.[27] The full list of the Samuel Review recommendations can be found in Appendix 6.

Environmental legislation and the built environment

More than 60% of Australia's nationally listed species have been significantly affected by habitat loss and 13.2% of native vegetation has been replaced by resource extraction and production, and urban development. These numbers highlight the role the built environment can play in reversing this trend by protecting habitats before they become critical.[28]

A study into the gaps of the EPBC Act and the way it is governed was conducted. It found that between 2000 and 2017, 7.7 million hectares of habitat communities was removed, of which 93% was not referred to the federal government under the EPBC Act.[11] When considering referrals, it highlights residential developers as submitting most applications to remove MNES (21% of 2,058 referrals).

An independent study of the strategic assessments, including all urban development strategic assessments found that cumulative impacts were not adequately addressed.[29]

Another study of the Melbourne Strategic Assessment found similar results and highlighted the lack of state and federal alignment. The Commonwealth approval for this urban development (in 2010) includes the building of homes and a transport corridor within the Melbourne Urban Growth Boundary. Home to threatened species and ecological communities, the approval established a method to mitigate the removal of vegetation and impacts on seven MNES by establishing reserves and restoring wetlands.[30]

Despite the success of the design of the scheme and considerable stakeholder engagement, it has failed its environmental objectives due to "poor implementation". This includes a lack of equivalence and adequacy between what was cleared and what was offset and delayed acquisition of land for establishing reserves, lack of enforcement of responsibilities, and poor reporting on management outcomes.[30]

Together, these independent reviews paint a picture of legislation and land use planning not being aligned to meet the needs of industry, the community, or the environment. This places organisations across all sectors – including the built environment – in a position where legislative compliance alone cannot guarantee nature positive outcomes.

The changing Australian regulatory landscape

Responsibility for protecting nature is shared across all three levels of government – local, state, and federal.

Australia's nature-related regulatory framework operates across local, state and Commonwealth jurisdictions, creating a complex interface between land-use planning, environmental protection and development approval processes. While this framework seeks to balance nature protection with economic development and infrastructure delivery, its fragmentation has historically limited its effectiveness in halting biodiversity decline.

At the national level, the EPBC Act is the cornerstone of Australia's environmental legislation. The Act provides legal protection for Matters of National Environmental Significance (MNES), including nationally threatened species and ecological communities, World and National Heritage places, Ramsar wetlands and migratory species. Actions that are likely to have a significant impact on MNES may require assessment and approval by the Commonwealth Environment Minister.

Outside the scope of MNES, responsibility for land use planning, vegetation management and biodiversity protection largely rests with state and territory governments. Even where MNES are involved, assessment and approval functions may be delegated to states and territories through bilateral agreements, including through strategic assessments that approve classes of actions or development programs in advance.

In response to the Samuel Review (Independent review into the EPBC Act), reforms were made to the Act to address systematic weaknesses such as:

- poor integration between land -use planning and environmental regulation across jurisdictions
- a project-by-project assessment model that does not adequately address cumulative impacts
- significant gaps between legislative intent and on -ground implementation, particularly in offsetting, monitoring and compliance
- insufficient recognition of Aboriginal and Torres Strait Islander knowledge, cultural values and land-management practices.

Key elements of the reforms include the introduction of National Environmental Standards, the establishment of a strengthened federal environmental regulator with enhanced compliance and enforcement powers, improved environmental information and monitoring, and greater emphasis on strategic and regional planning to address cumulative impacts. Long-standing exemptions, including for certain forestry activities, are being wound back, restoring the Commonwealth's ability to intervene where nationally significant values may be affected.

These reforms are being implemented progressively, with detailed standards, regulations and transition arrangements still under development. As a result, Australia's nature-related regulatory landscape will continue to evolve over coming years.

Appendix 6 includes analysis on the Samuel Review recommendations, status of inclusion in the reform Bills, and implications to the built environment. In summary, while many of the reforms will facilitate development approvals and reduce complexity in applying legislation, details on National Environmental Standards are yet to emerge, creating some regulatory risk for new developments.

The domestic context influencing the roadmap

The following were assessed as part of the development of this roadmap.

Australia State of the Environment Report

A national assessment showing significant ecosystem decline, species loss, and degradation of Indigenous cultural and ecological knowledge. It highlights major governance failures and reinforces the need for stronger environmental protections.

Independent Review of the EPBC Act (Graeme Samuel Review)

A comprehensive review finding the EPBC Act ineffective and overly complex. It recommends national environmental standards, an independent regulator, and structural reforms to halt environmental decline.

Independent Review of the Biodiversity Conservation Act 2016 (Ken Henry Review, NSW)

Finds NSW biodiversity laws inconsistently applied and largely ineffective at reversing environmental decline, calling for strengthened protections and alignment with national standards.

Nature Positive Plan: Better for the Environment, Better for Business (Australian Government)

The Government's major environmental reform agenda. Commits to replacing the EPBC Act, establishing a new National Environmental Protection Agency (NEPA), improving regional planning, creating a biodiversity information portal, enabling nature markets, and strengthening First Nations participation.

Nature Repair Act 2023 & Nature Repair Market

Australia's world-first voluntary biodiversity market is now active. The first approved method — Replanting Native Forest and Woodland Ecosystems — and the Biodiversity Assessment Instrument are in force. Projects register with the Clean Energy Regulator and may co-locate with ACCU projects, but biodiversity certificates cannot be used as regulatory offsets.

EPBC Reform Bills 2025

A major overhaul creating the National Environmental Protection Agency (NEPA) and Environment Information Australia (EIA), introducing National Environmental Standards, new "unacceptable impact" tests, strengthened compliance powers, and a restoration charge framework. Fossil fuel actions face restrictions in streamlined pathways.

IPBES's Global Assessment for Biodiversity and Ecosystem Services

the most comprehensive evaluation of global biodiversity in over a decade. It identifies the five key drivers of biodiversity loss and presents evidence that nature is declining at rates unprecedented in human history, with one million species at risk of extinction. The assessment establishes a clear scientific basis for policy and industry responses, including those relevant to the built environment.

Australian Government's Circular Economy Framework

Sets a national ambition to double circularity by 2035, supported by targets to reduce Australia's material footprint, increase material productivity, and safely recover 80% of resources. Priorities include the built environment, industry, agriculture and food, and resources.

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Australia's primary environmental law. Following the 2025 reforms, major changes will commence progressively from 2026, including new approval tests, impact definitions, environmental standards and the establishment of NEPA and EIA.

Appendix 6. Frameworks to respect and celebrate First Nations explained

Appendix 4. Frameworks to respect and celebrate First Nations explained

The three main frameworks used for respecting and celebrating First Nations in Australia are: "Caring for Country," "Connecting with Country," and "Designing with Country".

These frameworks seek to embody the relationship between First Nations peoples and their traditional lands, waters, and cultures. Each concept, interconnected yet distinct, focuses on different aspects of environmental stewardship, urban planning, and architectural design.

Caring for Country

Focus: Centred on the holistic First Nations approach to environmental management and land care, this principle encompasses the practices, spiritual relationships, and cultural responsibilities First Nations peoples have towards their Country, ensuring its sustainability for future generations.

Application: Involves traditional ecological knowledge and practices such as controlled burning, sustainable hunting and fishing, and the preservation of sacred sites. "Caring for Country" is a continuous practice entailing cultural, spiritual, and physical activities linked to maintaining the land's health.

Connecting with Country

Focus: Often used to build a deeper understanding and relationship between non-First Nations people and the traditional lands they inhabit or interact with, highlighting the importance of Country and understanding First Nations peoples' ongoing connection to it.

Application: This framework is applied in educational, corporate, and governmental contexts to encourage practices that respect and acknowledge the deep connections First Nations peoples have with the land. It aims to build respect, recognition, and appreciation for First Nations cultures and their connections to Country in broader Australian society.

Designing with Country

Focus: Specifically refers to principles in architecture, urban planning, and design that respect and incorporate First Nations knowledge, culture, and connections to the land. It emphasises creating spaces that are harmonious with the natural environment, culturally appropriate, and reflective of First Nations values.

Application: Involves consulting with First Nations communities in the design process, using sustainable materials and practices, and designing spaces that facilitate cultural practices and connections to the land. Projects may incorporate cultural symbols, use local materials, or follow landforms in ways that respect and celebrate First Nations heritage and the natural environment.

Key Differences

Caring for Country revolves around traditional practices and the ongoing role of First Nations peoples in environmental stewardship.

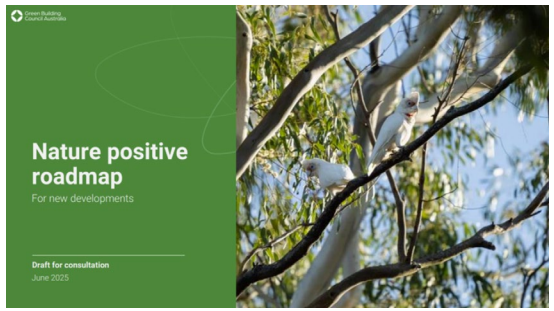
Connecting with Country focuses on building broader societal understanding and respect for First Nations peoples' connections to their traditional lands.

Designing with Country specifically applies to the built environment sector, integrating First Nations principles into design and planning to create spaces that respect and reflect First Nations culture and the natural landscape.

These need to be used collectively, these concepts promote a more inclusive, respectful, and sustainable approach to managing and interacting with the environment and built spaces, underscoring the significance of First Nations knowledge and connections to Country.

Appendix 7. The nature positive roadmap development process

The development of the Nature Roadmap



The development of the Nature Positive Roadmap was a multi-year process that began in 2022 at the first TRANSFORM conference.

With the support of **The GPT Group**, who joined as the official partners for this work, GBCA engaged **Deloitte** to create Building with Nature 2.0, and update to the 2018 release, which originally set out the new principles used for the Green Star Future Focus program.

Building with Nature 2.0, released in 2023, confirmed the need for a dedicated Nature Positive Roadmap to guide the sector in protecting and restoring nature. During this time, the Kunming-Montreal Protocol was signed, and the TNFD began significant activities. The Australian Government's State of the Environment Report was also launched. Building with Nature confirmed that a roadmap was needed for the sector.

GBCA then engaged **ARUP**, **Edge Impact** and **Culture to Country** consulting to develop a discussion paper outlining the issues that the roadmap should address once developed. Activities undertaken by the consulting team included:

- A literature scan, policies, and activities worldwide, identifying key areas that Australia could learn from, including the UK's Biodiversity Net Gain legislation.
- Leaders from government, consulting, development, supply chain, and industry associations met at four workshops in Brisbane, Melbourne, Perth, and Sydney. They examined strategies for biodiversity net gain, responsible greenfield development, improving supply chain transparency and data quality, and incorporating First Nations knowledge and Connection to Country.
- Culture to Country Consulting interviewed First Nations communities for GBCA, following AIATSIS ethics. Interviewees supported a shared vision for preserving natural areas, returning to traditional practices, and integrating these values into the built environment. They also identified challenges with implementing the Connecting with Country framework and recommended tailored solutions.

The development of the Nature Roadmap

Based on this work, GBCA released two Nature Roadmap Discussion Papers in 2024, one for the built environment, and one for the supply chain sector. synthesising global frameworks, First Nations perspectives, and initial industry insights. Through workshops, government briefings, and private industry sessions, GBCA tested foundational principles and explored challenges such as circularity, supply chain impacts, data gaps, and biodiversity value assessment. Overall, more than 100 individuals participated and provided input in some form for the discussion paper.

The feedback indicated that the overall trajectory was appropriate. The discussion paper introduced the evolution of the building with nature principles, and there was a high degree of acceptance from industry, but additional feedback indicated more granular work was required to turn them into actionable proposals.

To assist, GBCA put together a Nature Review Panel, including government, regenerative nature experts, and development managers (see acknowledgements page). The Nature Review Panel helped guide the complete development of the roadmap, first in its draft iteration, then in its final form. To help for this first draft, GBCA engaged the help of **Roger Swinbourne from Positive Futures Advisory.**

The draft roadmap was released in June 2025. The consultation process involved both an online survey and another set of six consultation workshops. In total the process involved 450 individuals from over 185 entities. The results were clear, there was a strong degree of agreement with the revised principles and targets, with minor changes proposed for the final version.

Key themes included:

- Strong endorsement of GBCA's leadership and clarity of the roadmap vision
- Support for alignment with global definitions of nature positive outcomes
- The need for clearer targets, interim milestones, and guidance on offsets
- A desire to strengthen circularity, First Nations leadership, and investment in restoration

The Nature Review Panel helped sharpen the roadmap's definitions (e.g., from "important biodiversity" to "biodiversity value"), targets (including 2030 and 2050 ambitions), and investment mechanisms.

Through early 2026, GBCA finalised the Nature Positive Roadmap for New Developments, incorporating thousands of pieces of feedback, updated analysis, and refined design. The final deck and document consolidate three years of research, engagement, and testing into a practical, credible, and world aligned roadmap for nature positive places.

The Nature Positive Roadmap represents a major collaborative effort across the built environment sector. From the conceptual foundations in Building with Nature to extensive industry engagement and rigorous refinement through 2023–2025, the roadmap aligns global ambition with Australian leadership. It provides a practical pathway for developments to regenerate nature, strengthen cultural connections, and build resilient, thriving places for people and biodiversity alike.

First Nations engagement

Culture to Country Consulting engaged with First Nations communities on behalf of GBCA, conducting interviews aligned with the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) Code of Ethics.

Interviewees expressed a desire to develop a shared vision for preserving natural areas, a return to traditional practices and integrating these values in the built environment. They also noted challenges with implementing the Connecting with Country framework and suggested tailored approaches to help in its implementation. Other key insights included:

- The need for genuine cultural collaboration and co-design during the planning and design and decision-making processes. This includes considerations from traditional owners on land use and cultural practices.
- Projects must consider impacts on the natural environment by integrating sustainable and culturally sensitive practices.
- There is an opportunity to create economic development opportunities for First Nations people. This can be facilitated through engagement and working with First Nations businesses to develop a comprehensive approach.

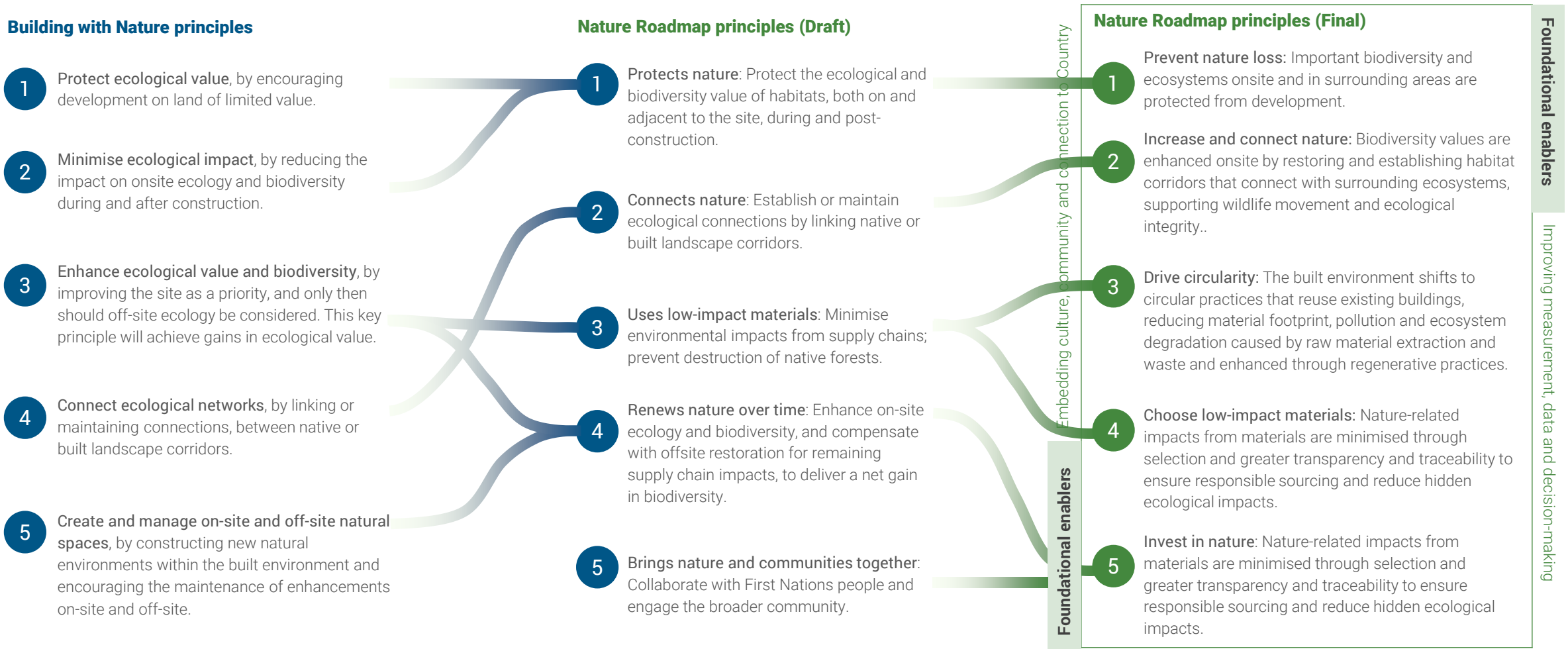
Interviewees recommended integrating First Nations perspectives into the roadmap by:

- Involving First Nations people in decision-making processes, recognising their unique knowledge and custodianship of the land.
- Prioritising the preservation and restoration of natural areas within the built environment.
- Developing additional guidelines to aid industry in integrating First Nations perspectives.
- Advocating for land use planning that honors traditional land use and cultural heritage.
- Supporting the implementation of the Connecting with Country framework through stakeholder collaboration.
- Continuing industry education on First Nations engagement and co-design.
- Facilitating education, training, and employment opportunities for First Nations people within the built environment.

As a result of this engagement, GBCA made the decision to revise its approach to including First Nations involvement in the final roadmap principles. Rather than highlighting them as their own principle, independent of the rest, their knowledge and culture became embedded through all aspects as a key enabler for the roadmap's success.

The evolution of the roadmap principles

In 2018, GBCA developed the Building with Nature principles. These principles helped drive the changes to Green Star and have been instrumental in driving our advocacy efforts. This principles evolved in the first Roadmap discussion paper and then refined for the final version. This diagram shows their evolution.



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Appendix 8. Resources used in the development of this roadmap

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