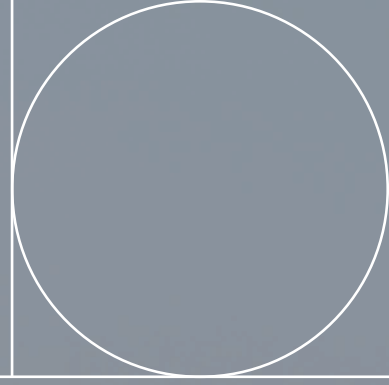




**Biodiversity
Council**



Identifying and assessing subsidies harmful to biodiversity in Australia

Biodiversity Council

Oct 2024



Image: CUHRIG

Acknowledgement

The Biodiversity Council acknowledges the First Peoples of the lands and waters of Australia, and pays respect to their Elders, past, present and future and expresses gratitude for long and ongoing custodianship of Country.

Further information

For more information

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In brief

What is a biodiversity harmful subsidy?

Well-intended government subsidies can have unintended negative and costly impacts on the environment, including by incentivising activities that drive the loss of biodiversity.

Harmful subsidies typically impact biodiversity in one of two ways: subsidies aimed at underpricing the use of natural resources lead to overconsumption, while subsidies aimed at increasing production can lead to an increased usage of polluting inputs, damaging production methods, or an unsustainable transformation of ecosystems.

The Australian Government is obligated to eliminate biodiversity harmful subsidies

Australia is one of 196 countries that have signed the Kunming–Montreal Global Biodiversity Framework (GBF). The GBF was established in recognition of the threat that biodiversity loss poses to the liveability of the Earth, to human health, food production and economic systems.

The global pact, which was signed in December 2022 at the UN Biodiversity Conference (COP15) sets out a roadmap for a world living in harmony with nature.

One of the targets of the GBF is to identify by 2025 and eliminate, phase out or reform subsidies that are harmful to biodiversity. Despite the importance of this activity and that the deadline is rapidly approaching, the Australian Government appears not yet to have advanced this work.

Research key findings

The Biodiversity Council has undertaken a project to identify and assess subsidies from Australian government programs that are likely to be harmful to biodiversity.

The project estimated that the total monetary value of Australia's direct and indirect subsidies in 2023–23 that are potentially likely to have a medium to high adverse impact on biodiversity was \$26.3 billion. This is 50 times larger than the approximately \$475 million per annum, which is the average that the Australian Government has invested in biodiversity over the past year.

Australia's largest government funded subsidies that are likely to have significant adverse impacts on biodiversity are the \$7.5 billion per annum fuel tax credit scheme and \$7.7 billion per annum spending on road transport projects. Among the largest non-recurrent subsidies are the \$1.9 billion Middle Arm Sustainable Development Precinct, and \$600 million gas fired Kurri Kurri Hunter Power Project.

Recommendations

The Biodiversity Council recommends that the Australian Government:

Commission a detailed independent assessment of biodiversity harmful subsidies to enable an official estimate of the monetary value and biodiversity impact of these subsidies.

Reform biodiversity harmful subsidies so that they become Nature Positive or eliminate them entirely and use the savings to fund biodiversity conservation.

Government subsidies can have unintended negative impacts on biodiversity

Every year, countries transfer billions in government support to different economic sectors.¹ Increasing evidence demonstrates that well-intended subsidies and government support that target socio-economic goals (food security, energy security, etc.) may have unintended negative and costly effects on the environment, including biodiversity.²

Recent research shows that \$2.6 trillion (2.5% of global GDP)³ was spent yearly on environmentally harmful subsidies, an increase of \$800 billion since estimates were last made in 2022.⁴ The authors of these studies note that these are likely to be underestimates due to poor quality data.⁵ The International Monetary Fund⁶ estimates the total cost of fossil fuel subsidies alone (including unpriced supply and environmental costs) at \$7 trillion (7.1 per cent of global GDP) in 2022.

International experts on environmentally harmful subsidies state that a significant proportion of the \$2.6 trillion spent globally could be repurposed for policies that benefit people and nature.⁷

This report summarises findings from a project undertaken by the Biodiversity Council to do a first pass assessment to identify and assess subsidies from Australian Government programs that are potentially harmful to biodiversity.

What is a subsidy?

There are different definitions of subsidy. This project applied the definition adopted by the OECD:⁸

A subsidy is the result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs (pg. 16)

This definition encompasses direct subsidies, indirect subsidies and implicit subsidies.

- Direct subsidies include programs, grants and income support payments that advantage consumers or producers.

- Indirect subsidies operate less transparently than direct subsidies, conferring advantages to consumers or producers through tax exemptions and rebates.
- Implicit subsidies arise from uncorrected market failures. Many implicit subsidies are challenging to identify and difficult to quantify. Implicit subsidies can take many forms, including income or price support, preferential market access, exemptions, lack of full cost or resource pricing, and non-internalisation of environmental externalities (Matthews & Karousakis 2022).

How do subsidies harm biodiversity?

Subsidies alter patterns of production and consumption in an economy.⁹ Harmful subsidies typically impact biodiversity in one of two ways: subsidies aimed at underpricing the use of natural resources lead to overconsumption, while subsidies aimed at increasing production can lead to an increased usage of polluting inputs, damaging production methods, or an unsustainable transformation of ecosystems.¹⁰

Subsidies do not always impact biodiversity directly. Many subsidies support infrastructure development, such as roads. It is clear that the construction of new roads may destroy habitat, however, larger impacts can occur through providing access to intact areas or untapped resources for further development.¹¹ These potential impacts may be overlooked or disregarded during decision-making even though they may lead to significant, transformative changes to the environment.¹² This is not limited to construction of new roads into intact tropical rainforests. The Australian Government is investing in industrial development in Darwin that may lead to biodiversity loss hundreds of kilometres away (See Box 1).

The monetary size of a subsidy does not necessarily correspond to the extent of its harmful effect; even relatively small subsidies can have major negative impacts.¹³



Box 1: Middle Arm Sustainable Development Precinct as enabling project

The Australian Government has budgeted \$1.9B for the Middle Arm Sustainable Development Precinct in Darwin, Northern Territory. The precinct is intended to be a hub for manufacturing, export, and energy industries.¹⁴ The precinct is a key enabler for expanding production of shale gas from fracking in the Beetaloo Basin.¹⁵ The Basin is located 500km south east of Darwin and covers 28,000 square kilometres. Nurrdalinji Native Title Aboriginal Corporation represents members with native title interests across the Beetaloo Basin who wish to

protect their country, water and sacred sites. The Nurrdalinji Aboriginal Corporation are concerned about the impact of fracking on their Country, particularly poisoning water supplies and aquifers.¹⁶ Initial surveys found two threatened bird species, Gouldian Finch and Northern Crested Shrike-tits, and two threatened mammal species, Greater Bilby and Ghost Bat in the Basin. It also identified 23 species that are new to Western science.¹⁷

*Photo: The Vulnerable Northern crested shrike-tit.
Image: JJ Harrison CC BY-SA 4.0 /Wikimedia Commons*

What action is being taken to address biodiversity harmful subsidies?

The UN Convention on Biological Diversity (CBD) has long recognized the need to address subsidies harmful to biodiversity.

In 2010, at the tenth Conference of the Parties (COP) to the CBD, all parties, including Australia, adopted the Aichi Biodiversity Targets. Target 3 was focused on eliminating or reforming harmful subsidies to biodiversity:

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.

Harmful subsidies are also a focus of the Kunming-Montreal Global Biodiversity Framework (GBF) that was adopted by all parties to the Convention on Biological Diversity in 2022. Target 18 outlines a similar ambition to Aichi Target 3:

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 United States dollars per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity.

Studies have been undertaken for twelve European countries (Austria, Denmark, Finland, France, Germany, Ireland, Italy, Lithuania, the Netherlands, Norway, Sweden and Switzerland) to identify and assess subsidies and other incentives that are harmful to biodiversity or to the environment.¹⁸

In contrast, Australia has made little progress towards identifying, assessing and reforming biodiversity harmful subsidies. In its two national biodiversity strategy and action plans (NBSAPs) made in 2010 and 2019, Australia did not make any commitment to reform or repurpose biodiversity harmful subsidies.

In 2020, Australia made its sixth report under the CBD, also its final report against the Strategic Plan for Biodiversity 2011–2020 and the Aichi targets. In relation to Aichi Target 3, Australia's report cites a few case studies of programs providing positive incentives for biodiversity conservation but, like the NBSAPs, it is silent on the issue of reforming or repurposing biodiversity harmful subsidies.

In 2024, Australia's Environment Ministers agreed to national targets to support the GBF. None of these include action on reforming biodiversity harmful subsidies.

In the absence of action from the Australian Government, the Biodiversity Council has undertaken a project to identify and assess subsidies from Australian government programs that are harmful to biodiversity.



Box 2: Future made in Australia and critical minerals

Critical minerals are often defined as minerals that are key to modern industry and technology, particularly renewable energy, and that have vulnerable supply chains.¹⁹

Australia is rich in critical minerals. Currently more than 50% of the world's lithium and much of its copper, cobalt, nickel and rare earths come from Australian mines.²⁰ As of December 2022, it was estimated that Australia had 81 major critical mineral projects under development.²¹ This is expected to grow. The International Energy Agency estimates a sixfold increase in demand for these minerals by 2040 to meet climate targets.²²

The Australian Government has committed billions of dollars in the 2024/25 budget to support critical minerals. This includes a tax credit totalling \$7 billion over the decade to drive critical minerals processing in Australia and \$1 billion to support exploration.²³ This is in addition to the \$6.6 billion committed to State and Commonwealth governments since 2019 for critical minerals.²⁴

Mining impacts biodiversity. At a site scale, habitat loss and degradation, which may lead declines in species and ecosystems, are the most immediate and direct impacts.²⁵ Beyond the site, impacts often arise from waste and sediment discharge and pollution. Indirect impacts may arise from infrastructure development facilitating access to remote and undisturbed areas.²⁶ There are also long-standing concerns around mine closure and inadequate rehabilitation.²⁷

Biodiversity loss is expected to increase as more mines are developed to meet demand, but also because the quality of mineral deposits is expected to decrease. This will require more rock to be mined to extract the same quantity of refined ore.²⁸ Federal environmental laws must be reformed to address key failings.²⁹

Critical minerals projects may have significant social and cultural impacts. Australia's most disadvantaged areas have the highest number of critical minerals mines and mineral deposits.³⁰ The majority (at least 58%) of critical minerals projects are in areas where Indigenous peoples have a legally recognised right to negotiate.³¹ There are significant concerns that local communities cannot equitably participate in decision-making and will not sufficiently benefit from mines.³²

Despite recognised shortcomings in environmental laws³³ and Aboriginal and Torres Strait Islander involvement in decision-making,³⁴ Commonwealth and State government critical minerals strategies focus on facilitation and investment and do very little to address social and environmental risks.³⁵

Unless there are strong regulatory frameworks that ensure Nature Positive outcomes (which Australia currently lacks), subsidies for critical minerals are likely to be at high risk of being harmful to biodiversity and run counter to the intent and direction of Target 18 of the UN Convention on Biological Diversity.

Above: A Super pit gold mine in Western Australia. Image: Alexey V Kurochkin. CC-BY-SA 4.0 / Wikimedia Commons

Approach to assessing harmful subsidies

The project focussed on direct and indirect harmful subsidies from the 2022–23 financial year.

The project used the methodology outlined in the OECD working paper Identifying and assessing subsidies and other incentives harmful to biodiversity. The working paper recommends a best practice approach for national assessments

through a four-step framework: scoping, screening, data gathering, and assessment (Fig. 1).

This research involved:

1. Identifying both direct and indirect subsidies through the screening step.
2. Assessing the extent of harm to biodiversity from these subsidies.

See Appendix 1 for more information about information sources and methodology.

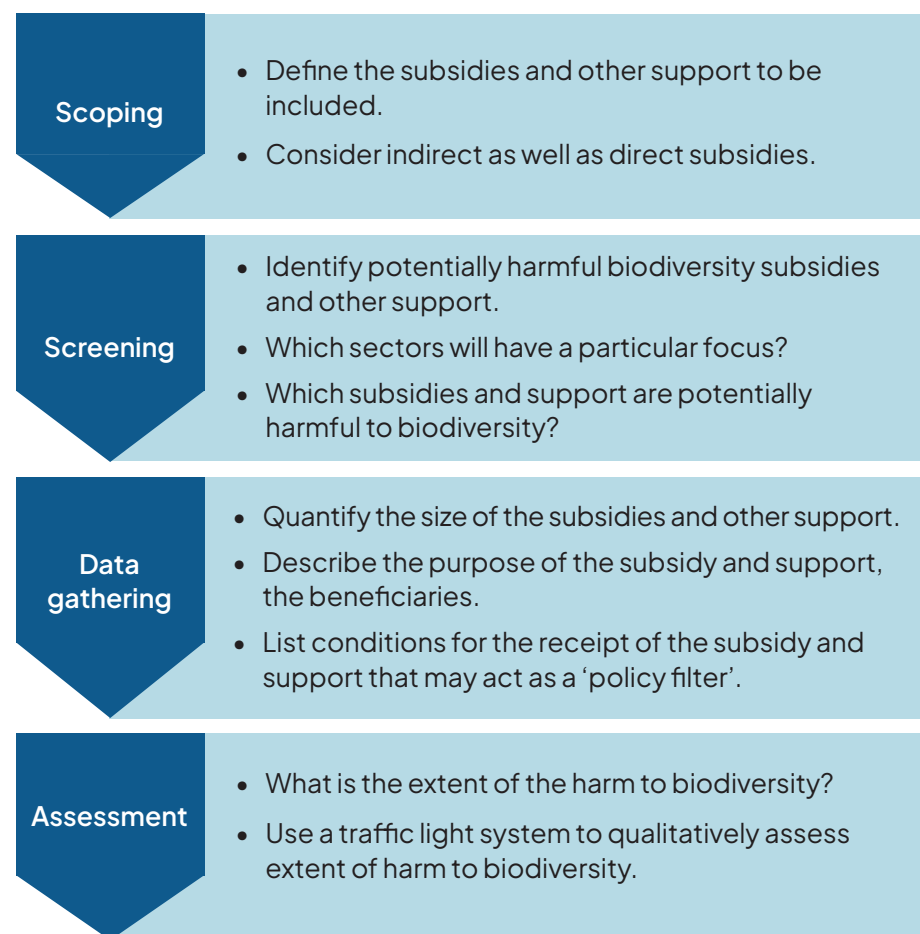


Figure 1 – OECD framework to identify and assess biodiversity harmful subsidies Source: Matthews & Karousakis 2022

Cattle grazing alters and degrades habitat negatively impacting a wide variety of native species including grain-eating birds, like the Endangered Gouldian finch. subsidies which enable higher rates of cattle stocking or expansion of grazing areas may have a harmful impact on biodiversity.
Image: Swimpanzee. CC-BY 4.0 /Wikimedia Commons



Results

Direct subsidies

The screening process identified 13 non-recurrent and 17 recurrent direct subsidies (government expenditures) in 2022–23 that are likely to be harmful to biodiversity. These were qualitatively assessed to give a rating of the extent of potential harm to biodiversity.

Non-recurrent subsidies

The research identified 10 nonrecurrent government expenditures that were likely to have a medium to high adverse impact on biodiversity. These subsidies had a combined quantified or estimated monetary value of \$3.9 billion in 2022–23 (see Table A).

Table A: Monetary value of direct non-recurrent biodiversity harmful subsidies rated as medium to high adverse impact on biodiversity

Subsidy	Potential impact on biodiversity	Risk rating	Value (2022–23) (\$millions)
Pilbara Ports upgrades	Building of port infrastructure and supported mining projects may lead to further habitat loss.	High	\$440
Gas-fired Kurri Kurri Hunter Power Project	May result in increased emissions from non-renewable resources, with consequent indirect impacts on biodiversity.	High	\$600
Hunter Valley coal railways	May result in increased emissions from non-renewable resources, with consequent indirect impacts on biodiversity.	High	\$129
Northern Midlands Irrigation Scheme; and Sassafras-Wesley Vale Irrigation Scheme	May result in increased agricultural impacts on biodiversity.	High	\$171
Roads for onshore gas industry in the NT	May result in increased emissions from non-renewable resources, with consequent direct and indirect impacts on biodiversity.	Medium	\$174
Middle Arm Sustainable Development Precinct in the Northern Territory	May result in increased emissions from non-renewable resources, with consequent indirect impacts on biodiversity.	Medium	\$1,900
Improving cattle supply chains in northern Australia	In the absence of Nature Positive requirements, this program may see additional or suboptimal investment in road transport, with consequent adverse impacts on biodiversity.	Medium	\$9
North Bowen pipeline feasibility study	May increase supply and use of gas, increasing emissions with indirect adverse impacts on biodiversity.	Medium	\$5
Northern Australia roads	In the absence of Nature Positive requirements, this program may see additional or suboptimal investment in road transport, with consequent adverse impacts on biodiversity.	Medium	\$433

Table A Continued: Monetary value of direct non-recurrent biodiversity harmful subsidies rated as medium to high adverse impact on biodiversity.

Subsidy	Potential impact on biodiversity	Risk rating	Value (2022–23) (\$millions)
Supplementary funding to SA for local roads	In the absence of Nature Positive requirements, this program may see additional or suboptimal investment in road transport, with consequent adverse impacts on biodiversity.	Medium	\$80
TOTAL VALUE			\$3,941

Recurrent subsidies

The research identified 13 recurrent government expenditures that were likely to have a medium to high adverse impact on biodiversity. These subsidies had a combined quantified or estimated monetary value of \$18.6 billion in 2022–23 (see Table B).

Table B: Monetary value of direct recurrent biodiversity harmful subsidies rated as medium to high adverse impact on biodiversity

Subsidy	Potential impact on biodiversity	Risk rating	Value recurrent (2022–23) (\$millions)
DAFF program expenditure supporting the forestry industry	May encourage additional forestry impacts harmful to biodiversity.	High	\$35
DISR grants supporting industry and mining	Grants likely to increase activity in the industry and resources/mining sectors resulting in direct impacts on biodiversity.	High	\$723
DISR program expenditure supporting the mining sector	Program expenditure likely to support increased activity in the resources/mining sector.	High	\$575
Government spending on road transport projects	In the absence of efficient road construction and usage pricing, this program may see additional or suboptimal investment in road transport, with consequent adverse impacts on biodiversity.	High	\$7,663
Fuel Tax Credit Scheme	Likely to encourage increased carbon emissions with indirect impacts on biodiversity; may increase habitat destruction due to additional investment in mining and other projects.	Medium - High	\$7,466

Table B Continued: Monetary value of direct recurrent biodiversity harmful subsidies rated as medium to high adverse impact on biodiversity.

Subsidy	Potential impact on biodiversity	Risk rating	Value recurrent (2022–23) (\$millions)
DAFF grants supporting the agriculture, fishing and forestry sectors	Grants likely to increase activity in the agriculture, fisheries and forestry sectors that may have impacts on biodiversity.	Medium	\$188
DAFF program expenditures supporting the agriculture sector	May encourage unsustainable agriculture industry in the absence of nature positive requirements.	Medium	\$877
Government expenditure on water infrastructure	May support increased irrigated agriculture and reduced overland flows.	Medium	\$262
DAFF program expenditure supporting international market access for agriculture	May encourage unsustainable agriculture industry in the absence of nature positive requirements.	Medium	\$28
DAFF program expenditure supporting the fisheries sector	May encourage fishing and habitat destruction in the absence of effective regulation.	Medium	\$48
DAFF income support payments for farmers	May encourage unsustainable agriculture industry in the absence of nature positive requirements.	Medium	\$125
DITRDCA grants supporting infrastructure and transport	Grants likely to increase activity in the infrastructure and transport sectors.	Medium	\$327
DAFF drought programs	May support some uneconomic and unsustainable agricultural industry in the absence of nature positive requirements.	Medium	\$248
TOTAL VALUE			\$18,565

Indirect subsidies

The screening process identified 25 recurrent indirect subsidies (tax expenditures) likely to be harmful to biodiversity to some degree.

The research identified 13 recurrent indirect subsidies that were likely to have a medium to high adverse impact on biodiversity. These subsidies had a combined quantified or estimated monetary value of \$3.8 billion in 2022–23 (see Table C).

Table C: Monetary value of indirect biodiversity harmful subsidies rated as medium to high adverse impact on biodiversity

Subsidy	Potential impact on biodiversity	Risk rating	Value (2022–23) (\$millions)
Petroleum Resources Rent Tax - asset base carry forward concessions	May encourage increased or additional non-renewable resource extraction, leading to habitat destruction, degradation, and increased emissions with indirect impacts on biodiversity.	High	\$55
Petroleum Resources Rent Tax - loss carry forward concessions	May encourage increased or additional non-renewable resource extraction, leading to habitat destruction, degradation, and increased emissions with indirect impacts on biodiversity.	High	\$55
Petroleum Resources Rent Tax - gas transfer price concessions	May encourage increased or additional non-renewable resource extraction, leading to habitat destruction, degradation, and increased emissions with indirect impacts on biodiversity.	High	\$55
Tax concessions for petroleum projects under the Timor Sea Maritime Boundaries Treaty	May increase risks of environmental pollution, impacts on marine biodiversity, and increased emissions with indirect impacts on biodiversity.	High	\$55
Concessional excise on aviation gasoline and fuel	May promote additional air travel with resulting emissions, pollution, and climate impacts on biodiversity.	Medium	\$1,190
Fringe benefits tax exemption for transport for oil rig and remote area employees	May encourage increased or additional natural resource extraction, leading to habitat destruction, degradation, and increased emissions with indirect impacts on biodiversity.	Medium	\$55
Accelerated depreciation for aircraft, trucks, truck trailers, buses, tractors and harvesters	May encourage additional investment in industries having unsustainable impacts on biodiversity, such as agriculture, mining, etc.	Medium	\$1,000
Goods and services tax exemption for farming land	May encourage additional or unsustainable agriculture in the absence of nature positive requirements.	Medium	\$550
Valuation of livestock from natural increase	May enable intensification or expansion of unsustainable agriculture.	Medium	\$55
Shipping investment incentives	May enable increased maritime activity with consequent impacts on marine biodiversity; and increased emissions leading to indirect impacts on biodiversity.	Medium	\$55

Table C Continued: Monetary value of indirect biodiversity harmful subsidies rated as medium to high adverse impact on biodiversity

Subsidy	Potential impact on biodiversity	Risk rating	Value (2022–23) (\$millions)
Deductions for car expenses using cents per kilometre method	May encourage additional road vehicle use and increased emissions leading to indirect impacts on biodiversity.	Medium	\$550
Excise concessions for alternative fuels	May cause habitat destruction to produce biofuels; may lead to increased emissions with indirect impacts on biodiversity.	Medium	\$80
Spreading of insurance income for loss of timber or livestock	May enable intensification or expansion of unsustainable agriculture.	Medium	\$55
TOTAL VALUE			\$3,810



Limitations

The project used publicly available information, such as departmental annual reports and grants databases to identify direct subsidies. These sources often lack detail which means that many subsidies that are harmful to biodiversity are likely to be missed, and that the monetary value of some subsidies may be inaccurate.

The project should be seen as a ‘first pass’ assessment in identifying potentially harmful federal subsidies, with more detailed assessment to be done.

The project did not assess the value and impact of harmful subsidies from State and Territory governments. These are likely to be significant. For instance, the New South Wales government is paying millions of dollars per year to the logging industry³⁶ despite the fact it impacts 244 forest-dependent threatened species.³⁷

Left: The Australian Government gives \$220 million in subsidies related to the Petroleum Resources Rent Tax each year. This may encourage increased or additional non-renewable resource extraction, leading to habitat destruction, degradation, and increased emissions with indirect impacts on biodiversity. Image: Grant Durr

Recommendations

The Biodiversity Council recommends that the Australian Government commission an independent assessment of biodiversity harmful subsidies consistent with the OECD method. This would enable an official estimate of the monetary value and biodiversity impact of these subsidies.

This information should then be used to identify options for reform consistent with Target 18 of the Global Biodiversity Framework. This could include modifying subsidies so that they become positive for nature or eliminating some subsidies entirely and using these savings to fund biodiversity conservation.

This report calculated that the total monetary value of Australia's direct and indirect subsidies in 2023–23 with a medium to high adverse impact on biodiversity was \$26.3 billion. This is over 50 times larger than the average of \$475 million per annum that the Australian Federal Government has invested in biodiversity over the last decade.³⁸

The Biodiversity Council has estimated that \$7 billion per year (1% of the Federal Budget) is needed to significantly improve the outlook for biodiversity in Australia. This funding could recover the majority of Australia's threatened species populations,³⁹ meet Australia's international commitment to protecting 30% of Australia's ecosystems by 2030,⁴⁰ and restore 13 million hectares of degraded land to ensure that all of Australia's degraded terrestrial ecosystems have 30% vegetation coverage.⁴¹ This funding could be found from redirecting even a third of subsidies that are having an adverse impact on Australia's biodiversity, thereby delivering a double dividend.

While having unique biodiversity and high endemism, Australia has a poor track record of extinctions and nature loss. Australia is also one of only two wealthy and megadiverse nations. Australia should therefore be world leading in making a material contribution to the goal to reduce subsidies globally by at least US\$500 billion per annum by 2030. Subsidy reform should be pursued consistent with the principles embedded in Target 18 of the Global Biodiversity Framework: reforms should start with the most harmful subsidies, and achieve proportionate, just, fair, effective, and equitable outcomes.

Right: The Endangered greater glider is one of many forest dependent native species that would benefit from the cessation of native forest logging subsidies. Image: Sam Horton CC-BY 4.0 /Wikimedia Commons



Appendix 1: Methodology

Screening and Data Gathering

This research drew on primary source documents to screen for and identify biodiversity harmful subsidies.

This research drew on primary source documents to screen for and identify biodiversity harmful subsidies.

The primary Australian Government sources for identifying direct subsidies (government expenditures) were the most recently available government department annual reports⁴² the GrantsConnect website,⁴³ and the 2023–24 Budget papers.⁴⁴ Some additional data were derived from secondary sources.⁴⁵

For indirect subsidies (tax expenditures) made by the Australian Government, the primary source was the 2023 annual Tax Expenditures and Insights Statement.⁴⁶ This provides data and information on 301 tax expenditures. The screening process excluded a large majority of these tax expenditures because they are not expected, a priori, to have a harmful impact on biodiversity. The screening process also excluded a small number of tax expenditures that have a quantified or estimated monetary value of less than \$10 million per annum with a likely less than moderate impact on biodiversity. The TEIS and other sources⁴⁷ were used to identify, understand, and quantify materially significant tax expenditures that are likely to be harmful to some extent to biodiversity.

Data and information captured for each identified subsidy included: the type of subsidy (direct, indirect, or implicit); the monetary value of the subsidy; the responsible entity; a description of the subsidy; and any available data about the distributional effects.

Assessment

Section 4.4 of the OECD working paper finds that 'establishing quantitative estimates of the adverse impact of a particular subsidy or support measure is usually not possible' and recommends a qualitative approach to the assessment step using 'experts in ecology, in conservation and in the biological sciences in order to ascertain the likely magnitude of the effects on biodiversity'.⁴⁸

The Biodiversity Council is an ideal group within Australia to conduct the impact assessment step consistent with the OECD recommended method.

The research drew on the collective expertise of the Councillors to establish a qualitative consensus view on the degree of harmfulness of each identified biodiversity harmful subsidy. This was achieved in two steps: (1) by circulating the data pack of information about the identified biodiversity harmful subsidies, and asking each Biodiversity Councillor, through a structured survey tool, to independently rank each subsidy in terms of their view on its likely degree of harmfulness to biodiversity on a five-point rating scale of very Low or Insignificant, Low, Medium, High, or Very High; and (2) subsequently convening a roundtable discussion of Biodiversity Councillors to consider the survey results and settle on a consensus rating where necessary. The survey was conducted in April–May 2024; and a roundtable was conducted in June 2024 which confirmed the survey results.

Endnotes

- 1 Matthews, A. and K. Karousakis (2022) *Identifying and assessing subsidies and other incentives harmful to biodiversity: A comparative review of existing national-level assessments and insights for good practice* OECD Environment Working Papers, No. 206, OECD Publishing, Paris, <https://doi.org/10.1787/3e9118d3-en>
- 2 BIOFIN (2024). *The Nature of Subsidies: A Step-by-step Guide to Repurpose Subsidies Harmful to Biodiversity and Improve their Impacts on People and Nature* UNDP: New York https://www.biofin.org/sites/default/files/content/knowledge_products/The%20Nature%20of%20Subsidies%20%28Web%29.pdf
- 3 Koplow, D. & Steenblik, R. (2024) *Protecting Nature by Reforming Environmentally Harmful Subsidies: An Update* Earth Track: Cambridge, MA https://www.earthtrack.net/sites/default/files/documents/ehs_report_september-2024-update_final.pdf
- 4 Koplow, D. & Steenblik, R. (2022) *Protecting Nature by Reforming Environmentally Harmful Subsidies: The Role of Business*. Earth Track: Cambridge, MA https://www.earthtrack.net/sites/default/files/documents/EHS_Reform_Background_Report_fin.pdf
- 5 Koplow and Steenblik 2024.
- 6 International Monetary Fund (2024) *Climate Change: Fossil Fuel Subsidies*, viewed 8 June 2024, <https://www.imf.org/en/Topics/climate-change/energy-subsidies>
- 7 Greenfield, P. (2024) Global spending on subsidies that harm environment rises to \$2.6tn, report says *The Guardian* 18 September 2024 <https://www.theguardian.com/environment/2024/sep/18/spending-subsidies-environment-deforestation-pollution-fossil-fuels-aoe>
- 8 OECD (2005) *Environmentally Harmful Subsidies: Challenges for Reform*, OECD Publishing, Paris https://www.oecd-ilibrary.org/agriculture-and-food/environmentally-harmful-subsidies_9789264012059-en
- 9 Matthews and Karousakis 2022
- 10 BIOFIN 2024.
- 11 Johnson, C. J., Venter, O., Ray, J. C. and Watson, J. E. M. (2020) Growth-inducing infrastructure represents transformative yet ignored keystone environmental decisions *Conservation Letters* 13(2): e12696 <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12696>
- 12 *ibid.*
- 13 BIOFIN 2024.
- 14 DCCEEW (2024) *Middle Arm Sustainable Development Precinct Strategic Assessment* <https://www.dcceew.gov.au/environment/epbc/strategic-assessments/middle-arm>
- 15 Cox, L. (2023) Darwin's 'sustainable' Middle Arm development is key to huge fossil fuel projects, documents show *The Guardian* 18 May 2023
- 16 NurrDALinji Aboriginal Corporation The Beetaloo Basin https://www.nurrDALinji.org.au/beetaloo_basin SBS (2024) Beetaloo Basin Traditional Owners gather to fight fracking on their Country, <https://www.sbs.com.au/nitv/article/beetaloo-basin-traditional-owners-gather-to-fight-fracking-on-their-country/0t9a9g6ms>
- 17 Davis, J, Gillespie, G, Cuff, N, Garcia, E, Andersen, A, Young, L, Leiper, I, Ribot, R, Kennard, M, Pintor, A, Bonney, S, and Wedd, D (2021) *Beetaloo GBA Region Baseline Survey Program*. Research Institute for Environment & Livelihoods, Charles Darwin University, Darwin, Australia https://www.bioregionalassessments.gov.au/sites/default/files/beetaloo_gba_final_report_final_v2.pdf
- 18 Matthews and Karousakis 2022
- 19 Sinclair, L. and Coe N. M. (2024) Critical mineral strategies in Australia: Industrial upgrading without environmental of social upgrading *Resources Policy* 91:104860. <https://www.sciencedirect.com/science/article/pii/S0301420724002277>
- 20 Langdon, R. and Dominish, E. (2023) We could need 6 times more of the minerals used for renewables and batteries. How can we avoid a huge increase in mining impacts? *The Conversation* 29 June 2023 <https://theconversation.com/we-could-need-6-times-more-of-the-minerals-used-for-renewables-and-batteries-how-can-we-avoid-a-huge-increase-in-mining-impacts-206864>
- 21 *Critical Minerals Strategy 2023–2030*, Australian Government Department of Industry, Science and Resources. <https://www.industry.gov.au/sites/default/files/2023-06/critical-minerals-strategy-2023-2030.pdf>
- 22 Langdon and Dominish 2023.
- 23 King, M. (2024) *Securing Australia's critical minerals*,

- exploration and processing industries <https://www.minister.industry.gov.au/ministers/king/media-releases/securing-australias-critical-minerals-exploration-and-processing-industries>
- 24 Sinclair and Coe 2024.
- 25 Murphy, H. and van Leeuwen, S. (2021). *Australia state of the environment 2021: biodiversity*, independent report to the Australian Government Minister for the Environment, Commonwealth of Australia, Canberra <https://soe.dcceew.gov.au/biodiversity/pressures/industry#:~:text=Approximately%202.5%20million%20hectares%20of,species%20distributions%20and%20ecosystem%20condition>
- 26 Murphy and van Leeuwen 2021.
- 27 Sinclair and Coe 2024.
- 28 Sonter, L. J., Maron, M., Bull, J. W., Giljum, S., Luckeneder, S., Maus, V., McDonald-Madden, E., Northey, S. A., Sánchez, L. E., Valenta, R., Visconti, P., Werner, T. T. and Watson, J. E. M. (2023) How to fuel an energy transition with ecologically responsible mining *Proc Natl Acad Sci USA* 120(35): e2307006120. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10466501/>
- 29 Biodiversity Council (2023) *Delivering on nature positive: 10 essential elements of national environmental law reform*. [Report] Biodiversity Council, Melbourne. <https://biodiversitycouncil.org.au/resources/delivering-on-nature-positive-10-essential-elements-of-national-environmental-law-reform>
- 30 Burton, J., Kemp, D., Barnes, R. and Parmenter, J. (2024) A socio-spatial analysis of Australia's critical minerals endowment and policy implications *Resources Policy* 88: 104448 <https://www.sciencedirect.com/science/article/pii/S0301420723011595>
- 31 Burton et al. 2024
- 32 Burton et al. 2024
- 33 Biodiversity Council (2023) *Delivering on nature positive: 10 essential elements of national environmental law reform*. [Report] Biodiversity Council, Melbourne. <https://biodiversitycouncil.org.au/resources/delivering-on-nature-positive-10-essential-elements-of-national-environmental-law-reform>
- 34 Leyton-Flor, S. A., & Sangha, K. (2024). The socio-ecological impacts of mining on the well-being of Indigenous Australians: A systematic review. *Extractive Industries and Society* 17: 1–14. <https://doi.org/10.1016/j.exis.2024.101429>; Burton et al. 2024
- 35 Sinclair and Coe 2024.
- 36 Frontier Economics (2023) *Public native forest logging: a large and growing taxpayer burden*. A report for the Nature Conservation Council of NSW. November 2023. https://assets.nationbuilder.com/natureorg/pages/2713/attachments/original/1699421741/23-11-02_Public_native_forestry_a_growing_taxpayer_burden_Final_report_STC_%281%29.pdf?1699421741
- 37 Ward, M. Ashman, K., Lindenmayer, D., Legge, S., Kindler, G., Cadman, T., Fletcher, R., Whiterod, N., Lintermans, M., Zylstra, P., Stewart, R., Thomas, H., Blanch, S. and Watson, J. E. M. (2023) *The impacts of contemporary logging after 250 years of deforestation and degradation on forest-dependent threatened species* [preprint] <https://www.biorxiv.org/content/10.1101/2023.02.22.529603v1.full.pdf>
- 38 The Australian Federal Government biodiversity annual expenditure has averaged A\$475m over the last decade, with a recent increase in 2023/4. See: Cyan Ventures (2024) *The Price of Nature: Analysis of government spending on biodiversity*. Prepared for 30 by 30. <https://30by30.org.au/blog/2024/05/27/the-price-of-nature/>
- 39 Estimated at \$2 billion per annum ongoing. See: https://biodiversitycouncil.org.au/admin/uploads/2024_25_Pre_budget_submission_fc3f4f2ad2.pdf
- 40 Estimated at \$1 billion per annum over 5 years. See: https://biodiversitycouncil.org.au/admin/uploads/2024_25_Pre_budget_submission_fc3f4f2ad2.pdf
- 41 Estimated at \$1.7 billion per annum over 30 years. See: *Wentworth Group of Concerned Scientists (2024) Blueprint to Repair Australia's landscapes: Actions & investment for a healthy, productive and resilient Australia in the next 30 years*. Part II: Technical Review. Sydney. <https://wentworthgroup.org/wp-content/uploads/2024/07/Blueprint-to-Repair-Australias-Landscapes-Part-II-Technical-Report-Accessible.pdf>
- 42 Commonwealth of Australia (2023). *Budget Paper No. 1: Budget Strategy and Outlook*, <https://>

- archive.budget.gov.au/2022-23/bp1/download/bp1_2022-23.pdf
- Commonwealth of Australia (2023). *Budget Paper No. 2: Budget Measures*, https://archive.budget.gov.au/2023-24/bp2/download/bp2_2023-24.pdf.
- Commonwealth of Australia (2023). *Budget Paper No. 3: Federal Financial Relations*, https://budget.gov.au/content/bp3/download/bp3_2024-25.pdf.
- Commonwealth of Australia (2023). *Budget Paper No. 4: Agency Resourcing*, https://archive.budget.gov.au/2023-24/bp4/download/bp4_2023-24.pdf.
- 43 Australian Government (2023). *GrantsConnect*, viewed 25 November 2023, <https://www.grants.gov.au/>
- 44 Commonwealth of Australia (2023). *Budget Paper No. 1: Budget Strategy and Outlook*, https://archive.budget.gov.au/2022-23/bp1/download/bp1_2022-23.pdf
- Commonwealth of Australia (2023). *Budget Paper No. 2: Budget Measures*, https://archive.budget.gov.au/2023-24/bp2/download/bp2_2023-24.pdf.
- Commonwealth of Australia (2023). *Budget Paper No. 3: Federal Financial Relations*, https://budget.gov.au/content/bp3/download/bp3_2024-25.pdf.
- Commonwealth of Australia (2023). *Budget Paper No. 4: Agency Resourcing*, https://archive.budget.gov.au/2023-24/bp4/download/bp4_2023-24.pdf.
- 45 Australian Government (2023). *Fuel Schemes*, viewed 28 November 2023, <https://www.ato.gov.au/businesses-and-organisations/income-deductions-and-concessions/incentives-and-concessions/fuel-schemes>.
- Australian National Audit Office (2011). *Fuel Tax Credits Scheme*, viewed 28 November 2023, <https://www.anao.gov.au/work/performance-audit/fuel-tax-credits-scheme>.
- Campbell, R., Morison, L., Verstegen, P., Harrington, M., Adhikari, A., Scicluna, K., Simpson, E. and Anderson, L. (2023). *Fossil fuel subsidies in Australia 2023: federal and state government assistance to fossil fuel producers and major users in 2022-23*. The Australia Institute <https://australiainstitute.org.au/wp-content/uploads/2023/05/P1378-Fossil-fuel-subsidies-2023-Web.pdf>
- 46 Commonwealth of Australia (2023). *Tax Expenditures and Insights Statement*, <https://treasury.gov.au/sites/default/files/2023-02/p2023-370286-teis.pdf>
- 47 Australian National Audit Office 2011. Australian Government (2023). *Fuel Schemes*. Australian Government (2023) *Historical Farm Management Deposits Statistics*, viewed 28 November 2023, <https://www.agriculture.gov.au/agriculture-land/farm-food-drought/drought/assistance/fmd/historical-fmd-statistics>.
- Commonwealth of Australia (2010). *Australia's future tax system, Australia's Future Tax System Review Panel*. <https://treasury.gov.au/review/the-australias-future-tax-system-review/final-report>
- Minas, J., Minas, J. & Youngdeok, L. (2023). A cluster analysis of individual taxpayers - what are the characteristics of taxpayers who realise capital gains? *Australian Tax Forum* 38(2): 245-265.
- 48 Matthews and Karousakis 2022, pp 52-54.



Biodiversity Council

The Biodiversity Council brings together leading experts including Indigenous Knowledge holders to promote evidence-based solutions to Australia's biodiversity crisis. It was founded by 11 universities: The University of Melbourne, The University of Western Australia, The Australian National University, The University of Adelaide, The University of Sydney, The University of Queensland, Deakin University, The University of Canberra, Monash University, Macquarie University, and The University of New South Wales. It is host by The University of Melbourne. It receives support from The Ian Potter Foundation, The Ross Trust, Trawalla Foundation, The Rendere Trust, Isaacson Davis Foundation, Coniston Charitable Trust and Angela Whitbread.

Image: Scientists assessing coral bleaching severity on the Great Barrier Reef. Image: Tory Chase, ARC CoE for Coral Reef Studies CC BYND 2.0