

Indicator 4.1b: Management of the risk of soil erosion in forests (2025)



This indicator assesses the extent to which the risk of soil erosion has been explicitly identified and addressed in forest management. The avoidance of soil erosion reflects the extent to which associated values, including soil fertility and water quality, are protected.

Context and definitions

Minimising soil erosion, compaction, and redistribution is key to protecting soil, water and broader forest values. This indicator reports on measures required to minimise soil erosion on forested land, and compliance with implementation of these measures.

Soil erosion: The relocation of soil by environmental forces – that is, the loss of soil from one area and its deposition into another, sometimes accelerated by human activity.

Legally binding instrument: An instrument, law, regulation, act or process that has associated legal rights, duties and/or requirements.

Non-legally binding instrument: A policy, recommendation or guideline, or a system of policies, recommendations and/or guidelines, with a defined intention that they be abided by to achieve a desired outcome, but without legal penalties for non-compliance.

See [Australia's forests and forestry glossary](#) for definitions of other terms.

Key points

- All states and territories have a combination of legally binding and non-legally binding instruments, such as legislation, regulations, licences, codes of forest practice, guidelines and management plans, which provide for the avoidance, prevention or mitigation of soil erosion that might result from activities on forested land.
- All states and territories have processes to ensure compliance with measures to mitigate or prevent soil erosion.
- In some states, the forest practices system contains comprehensive soil assessment measures for managing soil erosion risk in multiple-use public forests.
- This indicator reports mainly on multiple-use public forest and nature conservation reserves because, in most jurisdictions, limited information is available for forested land under other tenures.

Minimising the impacts of forest management activities on soil erosion

Soil erosion is the relocation of soil by environmental forces – that is, the loss of soil from one area and its deposition into another. Minimisation of soil erosion through avoidance, prevention or mitigation is essential to protecting soil and water values in forested areas and is critical to maintaining many other forest values. Soil conservation measures are therefore an essential part of sustainable forest management.

The term 'minimise' is used in this indicator to cover each of the different steps of avoiding, preventing and mitigating erosion. In this context, 'avoidance' is the selection of management actions that do not lead to erosion,

‘prevention’ is incorporation of provisions into actions so that erosion does not occur, and ‘mitigation’ is reducing the negative impacts of any erosion that results from management actions.

Soil erosion on forested lands can be minimised through careful planning and implementation of forest management activities. Management actions taken to minimise soil erosion can vary greatly, depending on the nature of the forest soil and the activities being undertaken. Key forest management considerations include the use of appropriate machinery, avoiding disturbance in high-risk areas, timing of activities, and retaining vegetation.

Australian states and territories have guidelines and measures that are implemented to reduce soil erosion risk, particularly in vulnerable areas such as riparian zones and slopes, and during wet-weather operations. These measures also depend on soil type, seasonal conditions, and the nature of the forest management activity. Some common measures include:

- identifying vulnerable areas, such as karst terrain, wetlands, and high erosion or landslip risk zones, and avoiding disturbance in these areas
- minimising disturbance to streambeds and banks by applying riparian exclusion and buffer zones, limiting the number of stream crossings, and using well-designed crossing structures
- providing and maintaining adequate drainage for roads, log extraction tracks and firebreaks, using well-designed drainage structures such as culverts and table drains
- restricting activities on steep slopes
- implementing walk-over extraction, selecting suitable location for log dumps and landings, and arranging log extraction tracks appropriately, for example by contouring, during wood harvesting
- row based site preparation and/or planting trees along the contour of slopes
- undertaking prescribed burning during milder seasonal conditions to encourage a mosaic of burnt and unburnt areas, particularly in sensitive areas such as riparian zones
- rehabilitating disturbed areas upon completion of an activity
- stopping operations or closing forests for defined periods of wet weather
- conducting regular audits of forest management activities to ensure compliance with regulations, licences, codes of practice and operational procedures.

Instruments that address the risk of soil erosion

All Australian states and territories have both legally binding and non-legally binding instruments to minimise soil erosion across different land tenures, with mechanisms in place to ensure compliance. Legally binding and non-legally binding instruments provide guidance and measures to address soil erosion associated with activities in forests. For example, forestry operations and associated activities are often guided by codes of practice, which generally require wood harvesting to occur in ways that prevent and/or mitigate soil erosion, particularly for locations that are most susceptible. Soil erosion associated with other forest management activities and recreational activities are generally managed through appropriate design, construction, access to and use of relevant infrastructure.

A detailed list of regulatory instruments addressing risks of soil erosion in all states and territories is provided in [Table 4.1b-1 in Supporting Information for Indicator 4.1b](#).

Australian Capital Territory

In the Australian Capital Territory, soil conservation and maintenance is governed by the *Public Unleased Land Act 2013*, *Environment Protection Act 1997*, and the *Nature Conservation Act 2014*, supported by other policies.

Within the publicly owned forestry plantation estate, soil conservation is further guided by the *Strategic Plantation Management Plan 2017–2022* and the *ACT Code of Forest Practices 2005*. The Code categorises land into Soil Erodibility Classes and prescribes specific management actions for each class. Forest managers must conduct a soil erosion risk assessment before any disturbance activity takes place in plantation areas.

New South Wales

Legally binding instruments relating to soil erosion in forestry operations in New South Wales include the *Forestry Act 2012*, *Forestry Regulation 2022*, *Integrated Forestry Operations Approvals*, *Local Land Services Act 2013*, *Private Native Forestry Codes of Practice 2022*, *Plantations and Reafforestation Act 1999* and *Plantations and Reafforestation (Code) Regulation 2001*, and the *Protection of the Environment Operations Act 1997*.

These instruments contain requirements for assessing and managing risks of soil erosion and degradation from forestry activities and are supported by various operating procedures. Operating procedures and controls include guidance material relating to soil management developed independently by forest managers, such as the *Forest Practices Code Part 1: Timber harvesting and haulage in Forestry Corporation of NSW softwood plantations (2022)*.

Soil conservation in nature conservation reserves is regulated by the *National Parks and Wildlife Act 1974*, and the *National Parks and Wildlife Regulation 2019*. Environmental impact assessments are required for works such as trail construction, hazard reduction burns, and revegetation. New trail construction requires a formal assessment under Part 5 of the *Environmental Planning and Assessment Act 1979 No 203*. The Ecological Health Performance Scorecards Program measures ecological health across eight national parks in New South Wales, including those with forest ecosystems. The program includes measurement of the quality of habitat and ecological processes, including vegetation structure, water quality and soil chemistry.

The New South Wales *Bush Fire Environmental Assessment Code 2021* provides standards to prevent soil erosion and degradation during and after bushfire hazard reduction activities authorised under the *Rural Fires Act 1997* across all tenures.

Northern Territory

The *Soil Conservation and Land Utilisation Act 1969* is the main legislation that addresses risks to soil resources in the Northern Territory. Under this Act, land may be declared an Area of Erosion Hazard or a Restricted Use Area. Although forest management activities are not specifically mentioned, the Act allows Soil Conservation Orders to be made by the Soil Commissioner to prescribe planning and remediation practices to protect soil resources during any land preparation activities, including in plantation forests (Raison et al. 2012).

The *Sustainable Forestry Practices: Guidelines for the Northern Territory (2021)* is a non-legally binding instrument developed by the Territory Natural Resource Management working group to provide practical guidance for plantation operations, including the requirement for site-specific Erosion and Sediment Control Plans.

Queensland

Key legislation relating to soil management and forest management activities in public native forests in Queensland include the *Forestry Act 1959*, *Vegetation Management Act 1999*, *Environmental Protection Act 1994*, *Nature Conservation Act 1992* and the *Soil Conservation Act 1986*.

Forest management activities on state-owned land and timber reserves must conform to the requirements of the *Forestry Act 1959*. The *Code of practice for native forest timber production on Queensland's State forest estate 2020* prescribes measures to prevent soil erosion during road construction, wood harvesting and maintenance operations in state-owned native forests and timber reserves.

Forest management activities in private native forests are primarily regulated under the *Vegetation Management Act 1999*, under an accepted development vegetation clearing code, which, for native forestry is the *Managing native forest practice: A self-assessable vegetation clearing code (2014)*. This Code allows for certain low-risk

wood harvesting activities to be undertaken without requiring a full development approval and thus streamlining the process for native forestry on private tenure. The Code includes soil hazard assessments and erosion control standards.

Plantation activities are governed by several Acts, and associated subordinate legislation, policies and codes depending on the land tenure. Under the *Soil Conservation Act 1986*, plantation operators are required to conserve soil resources and take measures to prevent erosion and soil degradation. The *Timber Plantation Operations Code of Practice for Queensland (2015)* is a non-legally binding instrument that provides best practice guidelines for soil conservation during plantation activities.

South Australia

The *Landscape South Australia Act 2019* assigns responsibility for soil management to regional landscape boards. The Act also includes provisions for declaring forestry areas, issuing forest water licences, and managing water allocations specifically for these areas.

The *Forestry Regulations 2013* prohibits the intentional disturbance and removal of any soil from a forest reserve without lawful authority. Regional natural resource management plans that include a summary of threats to soil are prepared for nature conservation reserves, multiple-use public forest, and other Crown lands. Wood harvesting in native forests is prohibited in South Australia.

Plantation forest management activities are regulated by the *Forestry Act 1950*, *Forestry Regulations 2013*, *Forest Property Act 2000* and the *Native Vegetation Act 1991*. The *Guidelines for Plantation Forestry in South Australia 2009* summarises mandatory requirements for plantation management and promotes practices that minimise soil disturbance during all stages of plantation operations. Management activities are informed by Plantation Forestry Land Capability Classes, which refer to the ability for an area to support plantation forestry without damaging soils.

Tasmania

Forest management in Tasmania is regulated by the Forest Practices Authority in accordance with the *Forest Practices Act 1985* irrespective of land tenure or soil type. All activities carried out under the *Forest Practices Act 1985* require an assessment of soil erodibility and dominant slope class, from which an erosion risk matrix is produced which governs the types of machines that can be used in a coupe as well as numerous other prescriptions in the *Forest Practices Code* (for example, culvert spacing, streamside reserve width). High or very high soil erodibility is one of several criteria used to define vulnerable land in the *Forest Practices Regulations 2017*. The *Forest Practices Code* is legally enforceable under the Act and specifies that forest practices will be conducted in a manner that does not cause significant deviations from natural rates of erosion and landslides. In practice this principle is applied through the preparation of Forest Practices Plans which must identify risks associated with forestry operations and, where appropriate, include prescriptions to limit risks (for example, use spot-cultivation methods rather than mound ploughing; no side-cutting of tracks on steep slopes).

Additional guidance on erosion risks is provided through various resources, such as the handbook *Forest Soils of Tasmania* (Grant et al., 1995) and Forest Soil Fact Sheets, and direct advice to foresters via the Forest Practices Authority's notifications systems, through which foresters can consult with specialists on reducing soil erosion risks. Guidance is also provided through regular training courses. The Forest Practices Authority [Earth Sciences](#) website also offers public access to soil and water information, including operational guidelines.

Highly specific guidelines have been produced to minimise erosion for some high-risk situations, e.g. in karst terrain where forestry operations have the potential to damage subsurface streams and scientific values, and in dunes near Strahan on Tasmania's west coast.

Victoria

The *Forests Act 1958* and the *Conservation, Forests and Lands Act 1987* regulate forest management activities in public and private native forests and plantations. As of 1 July 2024, native timber harvesting on public land ended. In line with this change, the *Sustainable Forests (Timber) Act 2004* was repealed, and the associated regulatory functions were discontinued. The *Code of Practice for Timber Production 2014* (amended in 2022) was the statutory framework that provided guidance on soil erosion control during timber harvesting operations. While this Code remains applicable to private plantations, it is no longer required on public land as there are no timber harvesting operations.

The *Code of Practice for Bushfire Management on Public Land 2025* includes measures to minimise soil erosion resulting from bushfires and related activities in state forests, national parks and on protected public land. The Code is updated periodically to ensure alignment with current bushfire management policy and practice, including *Victoria's Bushfire Management Strategy (2024)*.

The *Catchment and Land Protection Act 1994* and the *Catchment and Land Protection Regulations 2002* support integrated land and water management. The Act also establishes Catchment Management Authorities which are responsible for developing and implementing catchment management plans. These plans include strategies for soil conservation, including measures to prevent soil erosion.

Western Australia

The *Forest Management Plan 2024–2033* guides soil protection and rehabilitation measures in all publicly owned native forests and plantations in south-west Western Australia. The Plan outlines management objectives and activities to address disturbance to soil and water values. It includes recommendations to undertake research into soil health and soil biodiversity, monitor the impacts of management activities that cause soil disturbance, and support the recovery and restoration of soil health following disturbance.

The *Code of Practice for Timber Plantations in Western Australia* (2006) provides guidelines for soil protection in plantations. A 2012 review of the code (Smethurst et al. 2012) recommended several improvements, including stronger provisions to adopt harvesting and slash and litter management practices to prevent soil erosion.

The *Code of Practice for Fire Management* (2008) applies to all state-managed land and prescribes measures to protect soils during fire management activities and rehabilitate soils following disturbance.

Various legislation applies to the clearing, and subsequent rehabilitation of native forests for mining. The *Mining Act 1978* directly addresses soil conservation and requires the implementation of rehabilitation and erosion control measures. The *Environmental Protection Act 1986* emphasises the importance of soil protection, primarily through the Environmental Impact Assessment process. Under the *Environmental Protection Act 1986*, a licence may be required for larger mining operations that have the potential to cause pollution or environmental harm ('prescribed premise'). Additionally, the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* set specific conditions for vegetation clearing in mining, including the exclusion of clearing riparian vegetation. These regulations also stipulate that activities must avoid causing soil erosion or other forms of land degradation and, to the extent practicable, must not affect the quality of surface and subterranean water.

Compliance systems

Compliance with legally binding and non-legally binding soil protection requirements is assessed in various ways across Australia's states and territories, including internal and external audits.

Internal Audits

State and territory government agencies responsible for managing public forests have internal compliance systems that assess the impact of forest management activities on soil and water resources. Larger private plantation owners and managers also have internal compliance systems that assess the impact of forest management activities on soil and water resources.

The forest management system of the Forestry Corporation of New South Wales requires internal audits to be conducted to ensure compliance with Integrated Forestry Operations Approvals in multiple-use public native forests.

In Queensland, the Department of Primary Industries (DPI) monitors the compliance of timber sales permit holders with the *Code of practice for native forest timber production on Queensland's State forest estate 2020*. DPI incorporates audit findings into its systems, informing permittees as part of a continuous improvement approach.

In Tasmania, the forester in charge of forestry operations conducts surveys after each discrete operational phase of a forestry operation and is empowered to issue corrective action notices if the Forest Practices Plan has not been followed.

The Compliance program within Tasmania's Forest Practices Authority also conducts random audits of selected coupes to ensure that Forest Practices Plans have been followed and that forestry operations have not caused significant erosion, above natural levels. Sanctions, such as fines, may be applied where a serious breach of the Forest Practices Plan has occurred.

External Audits

Forest management activities, and their impact on soils, are also monitored and audited by external government departments that are responsible for regulating the relevant legislation. Compliance is also assessed by independent auditors engaged by agencies and companies seeking certification under forest management certification schemes, such as those run by the Forest Stewardship Council and Responsible Wood (internationally endorsed by the Programme for the Endorsement of Forest Certification). Management of soil and water is an important component of each of these forest management certification schemes.

In the Australian Capital Territory, the conduct of plantation logging operations requires an Environmental Authorisation (EA) from the Environmental Protection Authority (EPA), and this EA stipulates conditions related to soil and water protection. The ACT EPA enforces these conditions by conducting compliance audits every two years, either through an inspection or a desktop assessment.

In New South Wales, the Environmental Protection Authority (EPA) regulates the conditions of Integrated Forestry Operations Approvals, including those relating to soil and water protection, and carries out regular on-site and desktop compliance assessments. The New South Wales EPA is also responsible for regulating wood harvesting and roading activities in private native forest as per the *Private Native Forestry Codes of Practice (2022)*. Softwood and hardwood plantation operations in New South Wales are regulated by the Plantations Regulation Unit of the Department of Primary Industries and Regional Development, which audits 30-40 sites annually, with priority given to large plantations in steep, high-rainfall areas.

In Queensland, the Queensland Parks and Wildlife Service is responsible for operational auditing and reporting on the level of compliance with the *Code of practice for native forest timber production on Queensland's State forest estate 2020*. The Department of Resources monitors compliance under the accepted development vegetation clearing code for native forest activities on private land, using satellite imagery, audits, and community reports.

In South Australia, soil cover and disturbance are monitored using remote sensing and predictive models. General compliance is the responsibility of the relevant landscape board authorised under the *Landscape South Australia Act 2019*.

In Tasmania, the *Forest Practices Act 1985* mandates compliance with certified Forest Practices Plans, which must be followed by wood harvesting and roading contractors. The Forest Practices Authority performs random independent assessments on selected sites in which all aspects of planning and operations are scrutinised.

In Western Australia, the Department of Biodiversity, Conservation and Attractions oversees the approvals, monitoring and compliance system for disturbance activities in state forests and timber reserves. The Department audits a range of forest management activities for compliance with requirements of the *Forest Management Plan 2024–2033*.

Soil monitoring

In addition to operational compliance monitoring, there are various long-term forest monitoring programs across Australia that incorporate assessments relating to soil conservation.

New South Wales

The New South Wales Forest Monitoring and Improvement Program tracks key soil indicators including soil erosion within Regional Forest Agreement regions (Moyce et al. 2021). The Forestry Corporation of New South Wales undertakes a range of long-term studies to better understand the impacts of forest harvesting on soil and water, including in Karuah River catchment (see Case study 4.1b-1).

Tasmania

Tasmania's River Health Monitoring Program, run by the Department of Natural Resources and Environment, covers 53 sites. This is in addition to 60 sites that have been monitored historically (1994–2016). The River Health Monitoring Program, through its periodic reviews, shifted some focus towards areas with intensive land use and disturbance, including forestry landscapes. For example, the 2018–23 monitoring cycle included sampling fine sediment levels and macroinvertebrate communities that are critical indicators of in-stream impacts from forest activities or burning.

Victoria

The Victorian Forest Monitoring Program has previously included ground plot data on soil characteristics, including erodibility assessment. This ground plot data tracked soil condition and uses those measurements to support sustainability reporting and management decisions. Where possible Victoria continues to identify risks to soil structure, and erosion vulnerability.

Western Australia

The Western Australia Forest Health Monitoring Program is managed by the Department of Biodiversity, Conservation and Attractions and includes assessment of forest activities on soil characteristics, including salinisation, acidification, fertility and microbiome.

Managing soil erosion post-bushfire

High-intensity bushfires can leave sites vulnerable to soil erosion due to the reduction in vegetation and ground cover, with recovery taking years to decades (Tulau 2016). Forest management activities can exacerbate soil erosion post-bushfire, particularly when the groundcover layer is lost (FCNSW 2020). Mechanisms to protect soil and water values during forest management activities include post-fire risk assessment before resuming forestry operations and limiting forestry operations in fire-affected areas until the soil stabilises. The following are examples of post-fire management prescriptions undertaken by states and territories.

The Forestry Corporation of New South Wales implemented a range of site-specific post-fire management prescriptions in addition to existing Coastal Integrated Forestry Operations Approvals requirements to evaluate and mitigate erosion risk following the 2019-20 bushfires. These included, increasing buffer zone widths along streams, restricting activities on slopes, and using tree debris to stabilise bare areas (FCNSW 2020). Since March 2020, the Forestry Corporation of New South Wales has focused on rehabilitating infrastructure in fire-affected areas, replacing burnt road crossings and adding drainage to reduce runoff (FCNSW 2020).

In about 10% of New South Wales plantations, severe soil erosion occurred due to the combined effects of the 2019–20 bushfires, harvesting operations, and subsequent heavy rainfall. Implemented remediation strategies included road repair, installing drainage structures and broadcasting grass seeds to restore groundcover.

In Tasmania, stream erosion following the 2019–20 Mangana fire, which was deliberately lit, was still evident in 2025. Here and elsewhere, revegetation of slopes and, in particular, streamside reserves with native vegetation, is the usual policy to follow to reduce present and future erosion. The Forest Practices Authority consults with foresters on revegetation policy and together with industry representatives develops site-specific advice on recommended planting rates and various aspects.

In Western Australia, the Forest Health Monitoring Program includes soil assessments post-fire including erosion, and the *Forest Management Plan 2024–2033* outlines the requirements to monitor and rehabilitate soil following disturbance.

Supporting information for Indicator 4.1b: Management of the risk of soil erosion in forests

Table 4.1b-1: Legally binding and non-legally binding instruments that address conservation and maintenance of soil resources (soil physical properties and risk to soil erosion). Note: This table is identical to Table 4.1c-1.

State/territory	Instrument (full title)	Legally binding (Yes/No)	Tenure categories to which it applies
Australian Capital Territory	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest and Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest and Private forest
	ACT Code of Forest Practice (updated 2022)	No	All tenures
	<i>Environment Protection Act 1997</i>	Yes	All tenures
	<i>Environment Protection Regulation 2005</i>	Yes	All tenures
	<i>Nature Conservation Act 2014</i>	Yes	All tenures
	<i>Public Unleased Land Act 2013</i>	Yes	All tenures
New South Wales	Strategic Plantation Management Plan (updated 2025)	No	All tenures
	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest and Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest and Private forest
	<i>Brigalow and Nandewar Community Conservation Area Act 2005</i>	Yes	Multiple-use public forest
	Bush Fire Environmental Assessment Code 2021	Yes	All tenures
	<i>Contaminated Land Management Act 1997</i>	Yes	All tenures
	<i>Environmentally Hazardous Chemicals Act 1985</i>	Yes	All tenures
	<i>Environmental Planning and Assessment Act 1979</i>	Yes	All tenures
	Forest Practices Code Part 1: Timber harvesting and haulage in Forestry Corporation of NSW softwood plantations 2022	No	Multiple-use public forest
	Forest Soil and Water Protection - A Manual for Forestry Operators 2000	No	Multiple-use public forest
	<i>Forestry Act 2012</i>	Yes	Multiple-use public forest and Other Crown land
	<i>Forestry and National Park Estate Act 1998</i>	Yes	All tenures
	<i>Forestry Regulation 2022</i>	Yes	Multiple-use public forest and Other Crown land
	Integrated Forestry Operations Approvals (made under the <i>Forestry Act 2012</i>)	Yes	Multiple-use public forest and Other Crown land
	<i>Local Land Services Act 2013</i>	Yes	Private forest
	<i>Mining Act 1992</i>	Yes	All tenures
	<i>Mining Regulation 2016</i>	Yes	All tenures
	<i>National Parks and Wildlife Act 1974</i>	Yes	Nature conservation reserve
	<i>National Parks and Wildlife Regulation 2019</i>	Yes	Nature conservation reserve
	<i>Pesticides Act 1999</i>	Yes	All tenures
	<i>Pesticides Regulation 2017</i>	Yes	All tenures
	<i>Plantations and Reafforestation Act 1999</i>	Yes	Multiple-use public forest and Private forest
	<i>Plantations and Reafforestation (Code) Regulation 2001</i>	Yes	Multiple-use public forest and Private forest
Private Native Forestry Codes of Practice 2022	Yes	Private forest	
<i>Protection of the Environment Operations Act 1997</i>	Yes	All tenures	
<i>Rural Fires Act 1997</i>	Yes	All tenures	
<i>Rural Fires Regulation 2008</i>	Yes	All tenures	

	<i>Soil Conservation Act 1938</i>	Yes	All tenures
	State Environmental Planning Policy (Coastal Management) 2018 (under the <i>Environmental Planning and Assessment Act 1979</i>)	Yes	All tenures
Northern Territory	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Private forest
	<i>Pastoral Land Act 1992</i>	Yes	All tenures
	<i>Planning Act 1999</i>	Yes	All tenures
	<i>Soil Conservation and Land Utilisation Act 1969</i>	Yes	All tenures
	Sustainable Forestry Practices: Guidelines for the Northern Territory 2021	No	Private forest
	<i>Waste Management and Pollution Control Act 1998</i>	Yes	All tenures
	<i>Water Act 1992</i>	Yes	All tenures
	<i>Water Regulations 1992</i>	Yes	All tenures
Queensland	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest and Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest
	Code of practice for native forest timber production on Queensland's State forest estate 2020	Yes	Multiple-use public forest, Leasehold forest, and Other Crown land
	<i>Environmental Protection Act 1994</i>	Yes	All tenures
	<i>Forestry Act 1959</i>	Yes	Multiple-use public forest, Leasehold forest, Other Crown land and Private forest
	Managing native forest practice: A self-assessable vegetation clearing code 2014	Yes	Leasehold forest and Private forest
	<i>Nature Conservation Act 1992</i>	Yes	All tenures
	<i>Soil Conservation Act 1986</i>	Yes	All tenures
	Timber Plantation Operations Code of Practice for Queensland 2015	No	Multiple-use public forest and Private forest
<i>Vegetation Management Act 1999</i>	Yes	All tenures	
South Australia	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest and Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest and Private forest
	Guidelines for plantation forestry in South Australia 2009	No	Multiple-use public forest and Private forest
	Guidelines for the Management of Roadside Native Vegetation and Regrowth Vegetation 2019 (amended 2020)	No	All tenures
	<i>Landscape South Australia Act 2019</i>	Yes	All tenures
	South Australian Firebreaks, Fire Access Track and Sign Standards Guidelines	No	All tenures
Tasmania	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest
	<i>Environmental Management and Pollution Control Act 1994</i>	Yes	All tenures
	<i>Tasmanian Forests Agreement Act 2013</i>	Yes	All tenures
	<i>Forest Practices Act 1985</i>	Yes	All tenures
	Forest Practices Code 2020	Yes	All tenures
	<i>Nature Conservation Act 2002</i>	Yes	All tenures
	<i>National Parks and Reserves Management Act 2002</i>	Yes	Reserves declared under the <i>Nature Conservation Act 2002</i>
<i>Natural Resource Management Act 2002</i>	Yes	All tenures	

	<i>Private Forests Act 1994</i>	Yes	Private forest
Victoria	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest and Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest and Private forest
	<i>Catchment and Land Protection Act 1994</i>	Yes	All tenures
	<i>Catchment and Land Protection Regulations 2022</i>	Yes	All tenures
	Code of Practice for Bushfire Management on Public Land 2025	No	All tenures
	Code of Practice for Timber Production 2014 (amended in 2022)	Yes	All tenures
	<i>Conservation, Forests and Lands Act 1987</i>	Yes	All tenures
	Management guidelines for private native forests and plantations: Code of Practice for Timber Production 2014	No	All tenures
State Emergency Management Plan Bushfire Sub-Plan 2023	No	All tenures	
Western Australia	The Australian and New Zealand Standard for Sustainable Forest Management (AS/NZS 4708:2021), Responsible Wood	No	Multiple-use public forest and Private forest
	The FSC National Forest Stewardship Standard of Australia, Forest Stewardship Council	No	Multiple-use public forest and Private forest
	Code of Practice for Fire Management 2008	No	Multiple-use public forest and Nature conservation reserve
	Code of Practice for Timber Plantations in Western Australia 2006	No	All tenures
	<i>Conservation and Land Management Act 1984</i>	Yes	All tenures
	<i>Environmental Protection Act 1986</i>	Yes	All tenures
	<i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>	Yes	All tenures
	Forest Management Plan 2024-2033	Yes	Multiple-use public forest and Nature conservation reserve
<i>Mining Act 1978</i>	Yes	All tenures	

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Case study 4.1b-1: Research designed to increase the knowledge base on soil erosion in New South Wales

'Paired catchment' studies detect the effects of wood harvesting and other disturbances by comparing stream flow and soil erosion in adjacent, similar, disturbed and undisturbed catchments. In one such study, the Forestry Corporation of New South Wales researchers have monitored eight headwater catchments of the Karuah River in the Chichester State Forest since 1974. The catchments, which range from 15 to 100 hectares, were originally predominantly undisturbed tall eucalypt forest from 100 to over 500 years since disturbance, and with little evidence of fire. Weirs were installed at the outlet to each catchment so that stream flow and sediment carried in the streams could be measured.



Stream flow and sediment monitoring weir, Karuah catchment research, NSW.

After an initial period of monitoring to establish a baseline of stream flow and water quality, in 1983 a total of six catchments were subjected to various levels of wood harvesting, plantation establishment, road construction and other disturbance, while two were left undisturbed as controls. Erosion rates ranged from 0.47 to 1.40 tonnes of sediment per hectare per year ($t\ ha\ yr^{-1}$). There was no difference in sediment loads from the harvested and control catchments. The researchers concluded that harvesting in native forests followed by regeneration using best management practices does not cause significant soil erosion or reduce water quality in the medium-term to long-term (Hancock et al. 2017). Another paired catchment study in the Kangaroo River State Forest, New South Wales conducted between 2001 and 2009 showed similar results (Webb et al. 2012).

In a study of the effects of selective timber harvesting within buffer strips along headwater channels using best management practices in intensively harvested catchments on the south coast of New South Wales, Walsh et al. (2020) reported erosion rates of $0.11 \pm 0.07\ t\ ha\ yr^{-1}$ in the harvested catchments. Whilst these erosion rates were greater than the erosion rate recorded in the control catchment ($0.034\ t\ ha\ yr^{-1}$), it was still less than the sustainable erosion rate of $0.2\ t\ ha\ yr^{-1}$ recommended by Bui et al. (2010) for Australia, and largely in balance with regional soil production rate estimates (Walsh et al., 2020). These researchers concluded that the implementation of best management practices in the selectively harvested buffer strips along the headwater channels, and in the adjacent general harvest areas were effective in maintaining the water quality status in an intensively harvested eucalypt forest. A 2020 report commissioned by the New South Wales Natural

Resources Commission also concluded that there is strong evidence that with best management practices, the effect of harvesting activities on sediment delivery to streams can be effectively managed (Alluvium 2020).

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More information

Learn more about the [Criterion 4 of Australia's State of the Forests Report](#).

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Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

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