

DEPARTMENT OF PLANNING, INDUSTRY & ENVIRONMENT

Woody and non woody landcover change on rural regulated land

Summary report 2019





Find out more about your environment at:

www.environment.nsw.gov.au

© 2021 State of NSW and Department of Planning, Industry and Environment

With the exception of photographs, the State of NSW and Department of Planning, Industry and Environment are pleased to allow this material to be reproduced in whole or in part for educational and non-commercial use, provided the meaning is unchanged and its source, publisher and authorship are acknowledged. Specific permission is required for the reproduction of photographs.

The Department of Planning, Industry and Environment (DPIE) has compiled this report in good faith, exercising all due care and attention. No representation is made about the accuracy, completeness or suitability of the information in this publication for any particular purpose. DPIE shall not be liable for any damage which may occur to any person or organisation taking action or not on the basis of this publication. Readers should seek appropriate advice when applying the information to their specific needs.

All content in this publication is owned by DPIE and is protected by Crown Copyright, unless credited otherwise. It is licensed under the [Creative Commons Attribution 4.0 International \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/), subject to the exemptions contained in the licence. The legal code for the licence is available at [Creative Commons](https://creativecommons.org/licenses/by/4.0/).

DPIE asserts the right to be attributed as author of the original material in the following manner: © State of New South Wales and Department of Planning, Industry and Environment 2021.

Photos: Cover, John Spencer/DPIE. Page ii, Rosie Nicolai/DPIE. Page iii, John Spencer/DPIE. Page iv-1, Simone Cottrell/DPIE. Page 2, Simone Cottrell/DPIE. Page 3, Peter Robey/DPIE. Page 7, Rosie Nicolai/DPIE. Page 10, Peter Robey/DPIE. Page 15, Simone Cottrell/RBG.

Published by:

Environment, Energy and Science

Department of Planning, Industry and Environment

Locked Bag 5022, Parramatta NSW 2124

Phone: +61 2 9995 5000 (switchboard)

Phone: 1300 361 967 (Environment, Energy and Science enquiries)

TTY users: phone 133 677, then ask for 1300 361 967

Speak and listen users: phone 1300 555 727, then ask for 1300 361 967

Email: info@environment.nsw.gov.au

Website: www.environment.nsw.gov.au

Report pollution and environmental incidents

Environment Line: 131 555 (NSW only) or info@environment.nsw.gov.au

See also www.environment.nsw.gov.au

ISBN 978 1 922558 75 6

EES 2021/0192

June 2021



Contents

Introduction	1
How landcover change is detected	2
Unexplained clearing	3
Vegetation loss on rural regulated land	4
Vegetation loss by Native Vegetation Regulatory Map	5
Vegetation loss by Native Vegetation Act 2003	6
Vegetation loss by Local Land Services Act 2013	7
Vegetation loss by Local Land Services region	8
Vegetation loss by landcover class	10
List of figures	
Figure 1 Vegetation loss on rural land by authorising Act	4
Figure 2 Area of vegetation loss on rural regulated land by Native vegetation Regulatory (NVR) Map category	5
Figure 3 Area of rural regulated land cleared under <i>Native vegetation Act 2003</i> authorisation	6
Figure 4 Vegetation loss on rural regulated land authorised by the Land Management (Native Vegetation) Code 2018 under the <i>Local Land Services Act 2013</i>	8
Figure 5 Vegetation loss on rural regulated land by authorising Act for three Local Land Services (LLS) regions: (a) North West region, (b) Central West region, and (c) Western region.	9
Figure 6 Vegetation loss on rural regulated land by landcover class.	11
Appendix A	12
Appendix B	13
More information	15





Introduction

This report provides a summary of detected woody and non woody native vegetation loss that has occurred on rural regulated land across New South Wales since 25 August 2017 under the *Local Land Services Act 2013* (LLS Act). Woody vegetation includes forests and woodlands, and non woody native vegetation includes grasses, small shrubs, herbs and ground cover.

Management of native vegetation is determined by land categorisation. Regulated land is classified as 'Category 2 - regulated land' under Part 5A of the LLS Act. Land categories set out the pathways available for landholders of regulated land to obtain authorisation to clear and manage native vegetation.

On Category 2 land, landholders can undertake allowable activities, such as routine land management activities.

Category 2 land is divided into:

- **Regulated land** – all parts of the Land Management (Native Vegetation) Code 2018 are available and all allowable activities are permitted.
- **Vulnerable regulated land** – some parts of the Land Management (Native Vegetation) Code 2018 are not permitted, some allowable activities are not permitted or have reduced limits. Clearing of dead and non-native plants is to be regulated in the same way as native vegetation.
- **Sensitive regulated land** – use of the Land Management (Native Vegetation) Code 2018 is not permitted; however, an application can be made to the Native Vegetation Panel to consider the social, economic and environmental aspects of the application. Allowable activities are reduced in the same way as vulnerable regulated land.

Appendix A details the different criteria set out in the LLS Act and Local Land Services Regulation 2014 that determine whether land is classified as Category 2 land.

Detailed information for detected loss of vegetation from 25 August 2017, 2018 and 2019 is available in [Results landcover change rural regulated land 2019 \(300KB XLSX\)](#).



How landcover change is detected

Woody vegetation loss is identified with a method used in the Statewide Landcover and Tree Study (SLATS). This method detects change through a combination of automated and manual interpretation of differences between Sentinel-2 satellite images captured during summer each year. Image interpreters validate the change and assign a replacement landcover class that identifies the intended purpose for the change. More detailed information is available on the [Statewide Landcover and Tree Study webpage](#).

Non woody vegetation loss, or removal of grasses, small shrubs and groundcover, is identified using satellite-derived products that are referenced against high-resolution imagery. Interpretative experts use supporting data to map change and assign landcover classes, as is done for woody vegetation change. More information about this method is available on request to: data.broker@environment.nsw.gov.au.

Interpreters detect non woody vegetation change by comparing two images. If the interpreter is not confident of the change, they will not report it until additional information can verify that a change; for example, from native grassland to cropping has occurred. This additional evidence may be higher-resolution imagery that clearly identifies cropping lines, or later imagery that shows an established crop. If verified, this results in an adjustment to the previous year's reporting to incorporate these confirmed non woody clearing figures.

When undertaking landcover change analysis, the best available cloud free Sentinel-2 scenes are selected for the whole of NSW closest to 1 January for each calendar year. Due to conditions, the image date can vary by up to 3 months. Amendments to the LLS Act were legislated on 25 August 2017. As a result, the first reporting period was about 4 months after 25 August 2017, on 1 January 2018. For 2017 reporting, images were selected as close as possible to 25 August 2017. For the 2018 report onwards, images closest to 1 January each year are compared to report landcover change in hectares for each calendar year.

This summary report identifies vegetation loss associated with an approval or exemption under a regulating Act.

Unexplained clearing

Unexplained clearing refers to areas of vegetation loss on rural regulated land defined by the LLS Act for which the Department of Planning, Industry and Environment (the Department) does not have access to information or records that explicitly authorises (explains) the clearing.

This can include vegetation loss for routine farm management (allowable activities), land management activities under the Land Management (Native Vegetation) Code 2018 (Land Management Code) that do not require certification or notification (e.g. regrowth), landholder self-assessment of the level of disturbance of grasslands or groundcover, or other legislative exemptions. In some instances, activities may be unlawful and will require determination by court actions.

To confirm authorisation, detected areas of vegetation loss are compared against all available spatial data for approvals (certificates and notifications) from the LLS Act or other relevant legislation including the former *Native Vegetation Act 2003*.

Data released may be updated in the future as more accurate or additional information becomes available.



Vegetation loss on rural regulated land

This section presents detected vegetation loss on rural regulated land by various categories under the authorising Acts.

In 2019 there was a total of 75,636 hectares of vegetation loss on rural regulated land. Non woody vegetation remains the largest component of vegetation loss at 61% or 46,344 hectares, with the remaining 39% or 29,292 hectares woody vegetation loss.

Figure 1 shows the proportion of unexplained clearing of woody and non woody vegetation on rural regulated land decreased in 2019. Authorised clearing remains legislated predominantly under the repealed *Native Vegetation Act 2003* (NV Act); however, there was a definite increase in uptake of authorisations under the *Local Land Services Act 2013* (LLS Act).

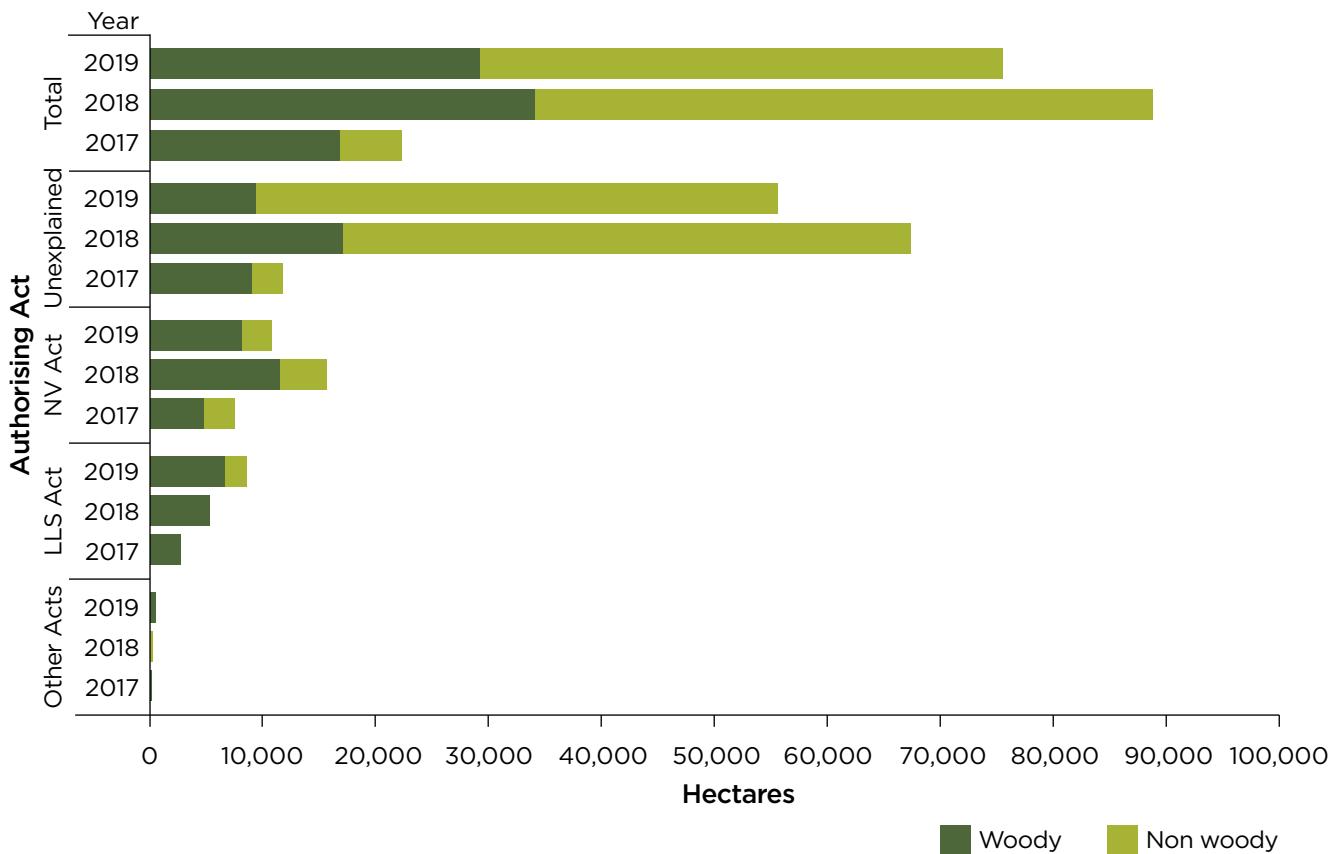


Figure 1 Vegetation loss on rural regulated land by authorising Act. LLS Act = *Local Land Services Act 2013*; NV Act = *Native Vegetation Act 2003*. Note that figures for 2017 are for 4 months, from August 2017

Vegetation loss by Native Vegetation Regulatory Map

The Native Vegetation Regulatory Map is an essential part of the LLS Act (Part 5A) and identifies land categorised under the Act.

Category 1 - exempt land showed an increase of 32% in woody clearing in 2019 compared to 2018. Regulated land showed an overall decrease in vegetation loss since 2018. Non woody clearing is not mapped on exempt land.

There were small increases in the amount of land cleared for vulnerable and sensitive categories, and minimal change for the combined sensitive and vulnerable categories in 2019 compared to 2018 (Figure 2).

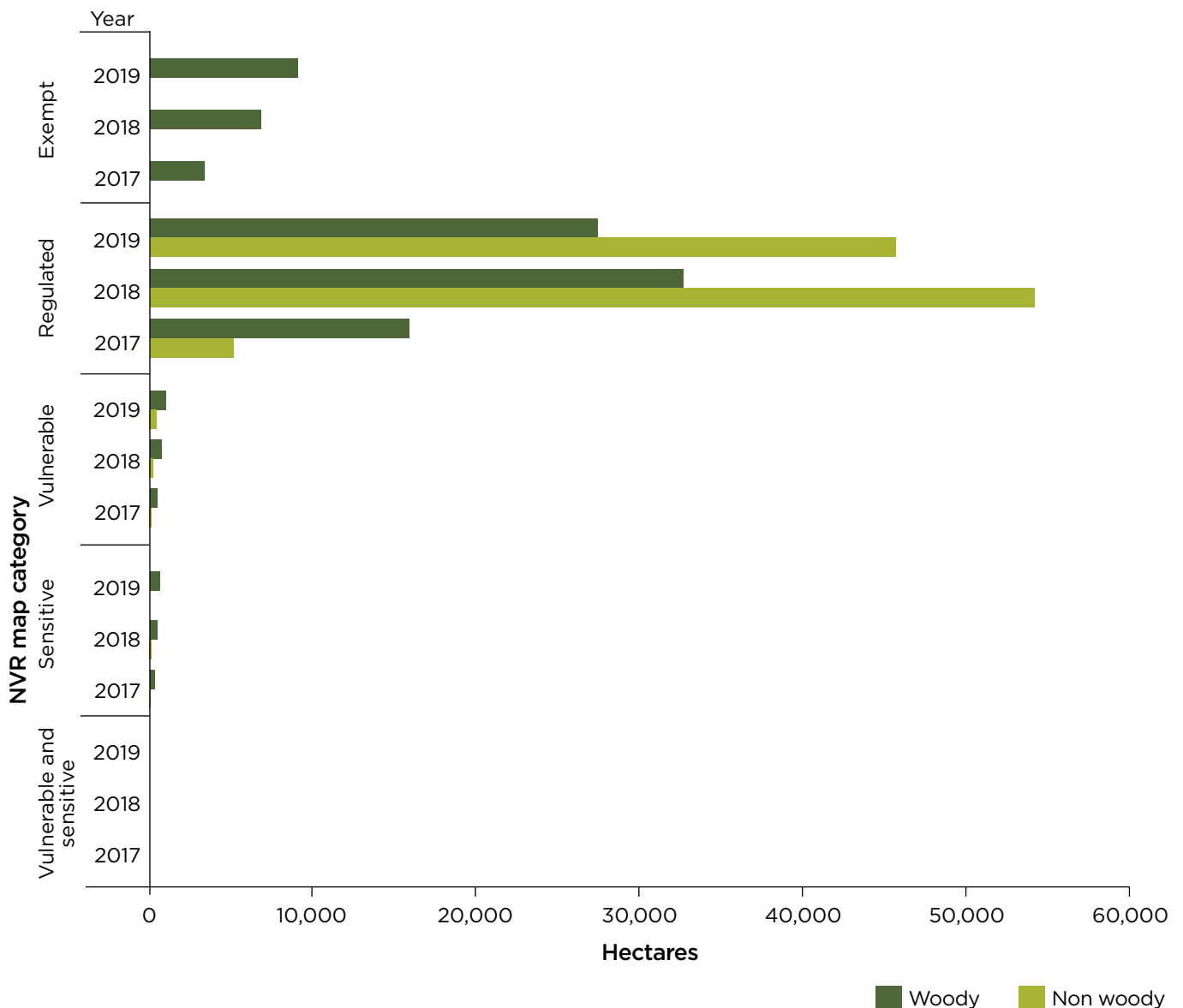


Figure 2 Area of vegetation loss on rural regulated land by Native Vegetation Regulatory (NVR) Map category. Note that figures for 2017 are for 4 months, from August 2017

Vegetation loss by Native Vegetation Act 2003

The majority of authorised clearing under the NV Act in 2019 was approved as:

- Routine agricultural management activities for the management invasive native species under ministerial order (INS MO) – 1452 hectares in 2019, a decrease of 67% from 2018 at 4378 hectares.
- Management of invasive native species that improves or maintains environmental outcomes under a property vegetation plan (PVP INS) – 8686 hectares in 2019, indicating a decrease of 16% from 2018 at 10,293 hectares.

NV Act approvals decreased or remained stable between the 2018 and 2019 reporting periods. See Appendix B for detailed descriptions under the NV Act.

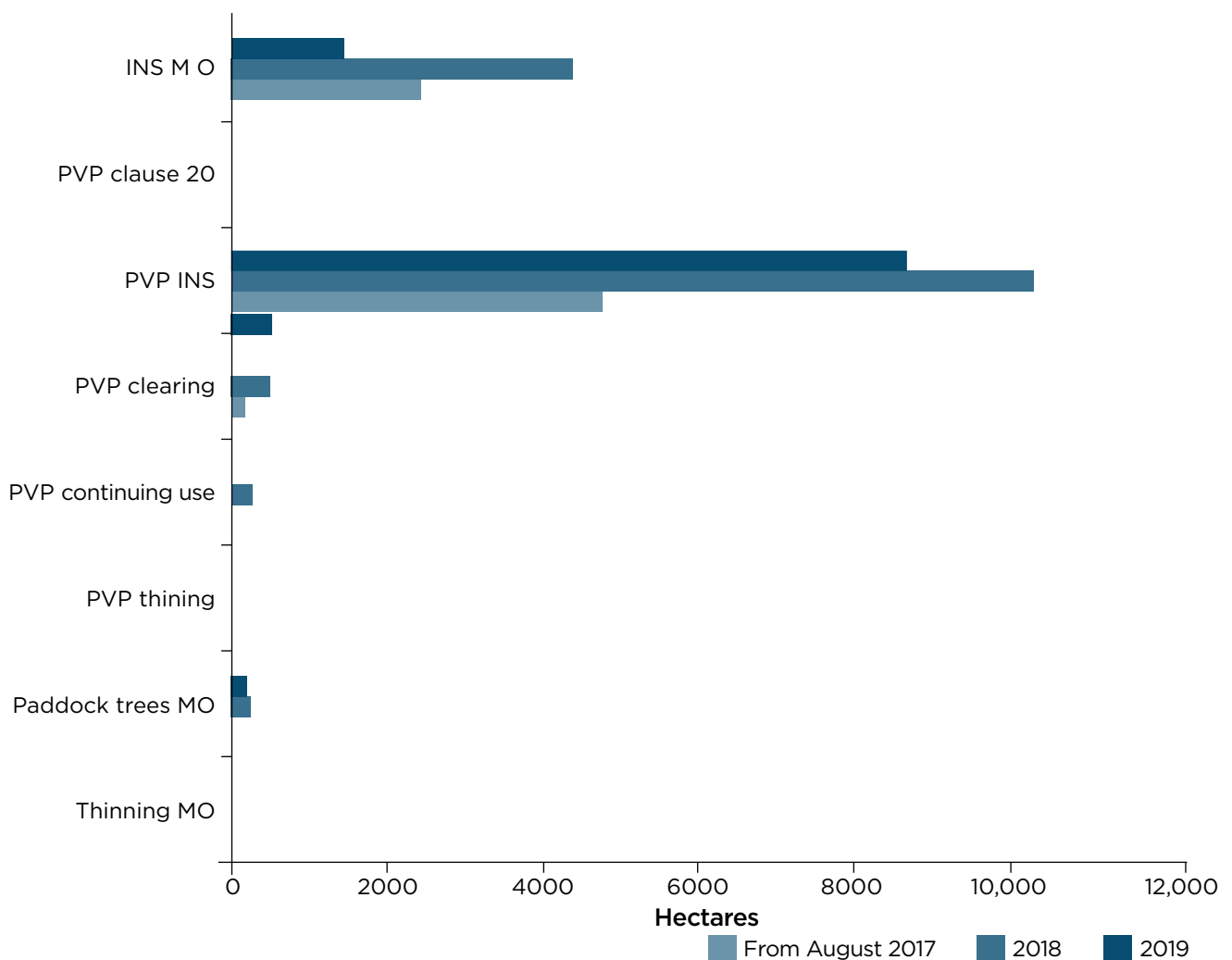


Figure 3 Area of rural regulated land cleared under *Native Vegetation Act 2003* authorisation. INS = invasive native species; MO = ministerial order; PVP = property vegetation plan



Vegetation loss by Local Land Services Act 2013

Under the LLS Act, the approval authorisations fall under Part 5A, Division 5 Clearing native vegetation under the Land Management (Native Vegetation) Code 2018 (Land Management Code) or Part 5B, Private Native Forestry (PNF).

The Land Management Code authorises clearing of native vegetation on Category 2 - regulated land, provides for establishment and management of set aside areas, and authorises reclassification of land.

The largest areas of authorised clearing in 2019 under the Land Management Code were:

- Part 2:1 Invasive native species, Division 1 - low impact clearing of invasive native species (477 hectares).
- Part 2:2 Invasive native species, Division 2 - moderate impact clearing of invasive native species (3152 hectares).
- Part 3:3 Pasture expansion, Division 3 - mosaic thinning of woody native vegetation (695 hectares)
- Part 5:2 Equity, Division 2 - clearing compromised native groundcover (851 hectares)
- Part 5:4 Equity, Division 4 - removing native vegetation from regulated rural areas (2260 hectares)
- PNF plans - PNF plans (926 hectares).

In 2019 increased application occurred over 13 of the 15 types of authorisation. The largest increase in area being cleared was for clearing compromised native groundcover (code 5:2) and removing native vegetation (code 5:4; Figure 4).

Low impact clearing of invasive native species (code 2:1) and PNF plans showed a decrease in application. However, even though they reflect a decreasing trend, application of PNF plans indicates high usage.

Invasive native species management is intended to improve the local environment by removing some native plants that have reached very high densities, dominating an area. These activities are designed to promote the regeneration and regrowth of a more natural, and diverse, range of native vegetation.

Figure 4 also shows smaller areas of authorised clearing that occurred in 2019 under the Land Management Code. See Appendix B for detailed descriptions under the LLS Act.

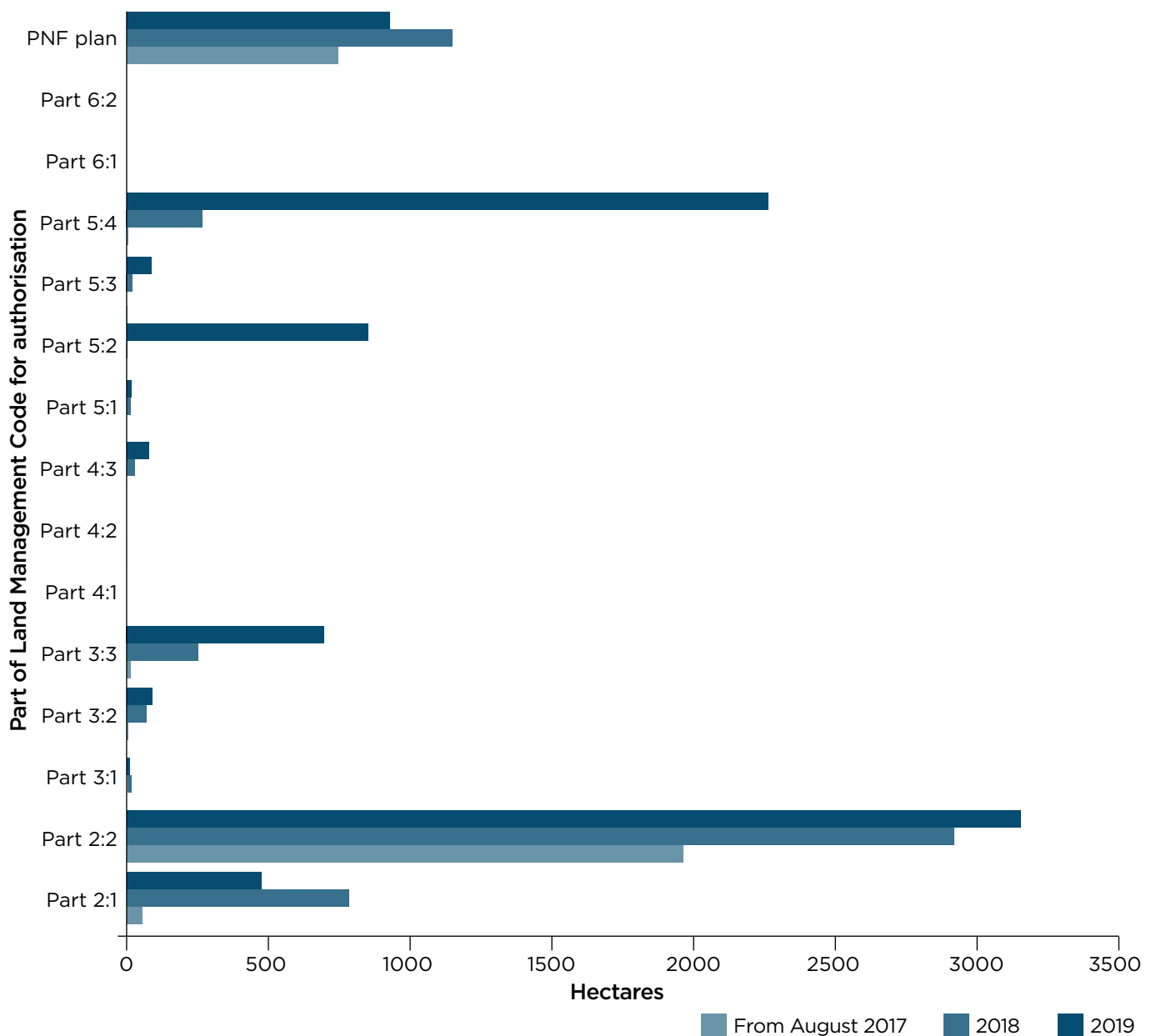


Figure 4 Vegetation loss on rural regulated land authorised by the Land Management (Native Vegetation) Code 2018 under the *Local Land Services Act 2013*; PNF = private native forestry

Vegetation loss by Local Land Services region

Authorised clearing for all Local Land Services (LLS) regions has been documented in the Results landcover change rural regulated land 2019 spreadsheet. The results for three LLS regions are shown in Figure 5.

In 2019, North West and Central West LLS regions remained the most active with a total of 24,430 hectares and 21,991 hectares cleared, respectively. When combined, these two regions accounted for 61% of the total vegetation loss on rural regulated land. Both regions had a high proportion of unexplained clearing, 91% and 73% of total area cleared respectively.

The North West LLS region showed an increase in number of authorisations under the LLS Act in 2019 compared to 2018. The Central West region showed a significant decrease in authorisations under the NV Act in 2019 compared to 2018.

Authorised clearing within the Western region remained the highest of all LLS regions under both the NV Act and LLS Act. Total authorised clearing in the Western region in 2019 was more than double unexplained clearing, which is consistent with 2018.

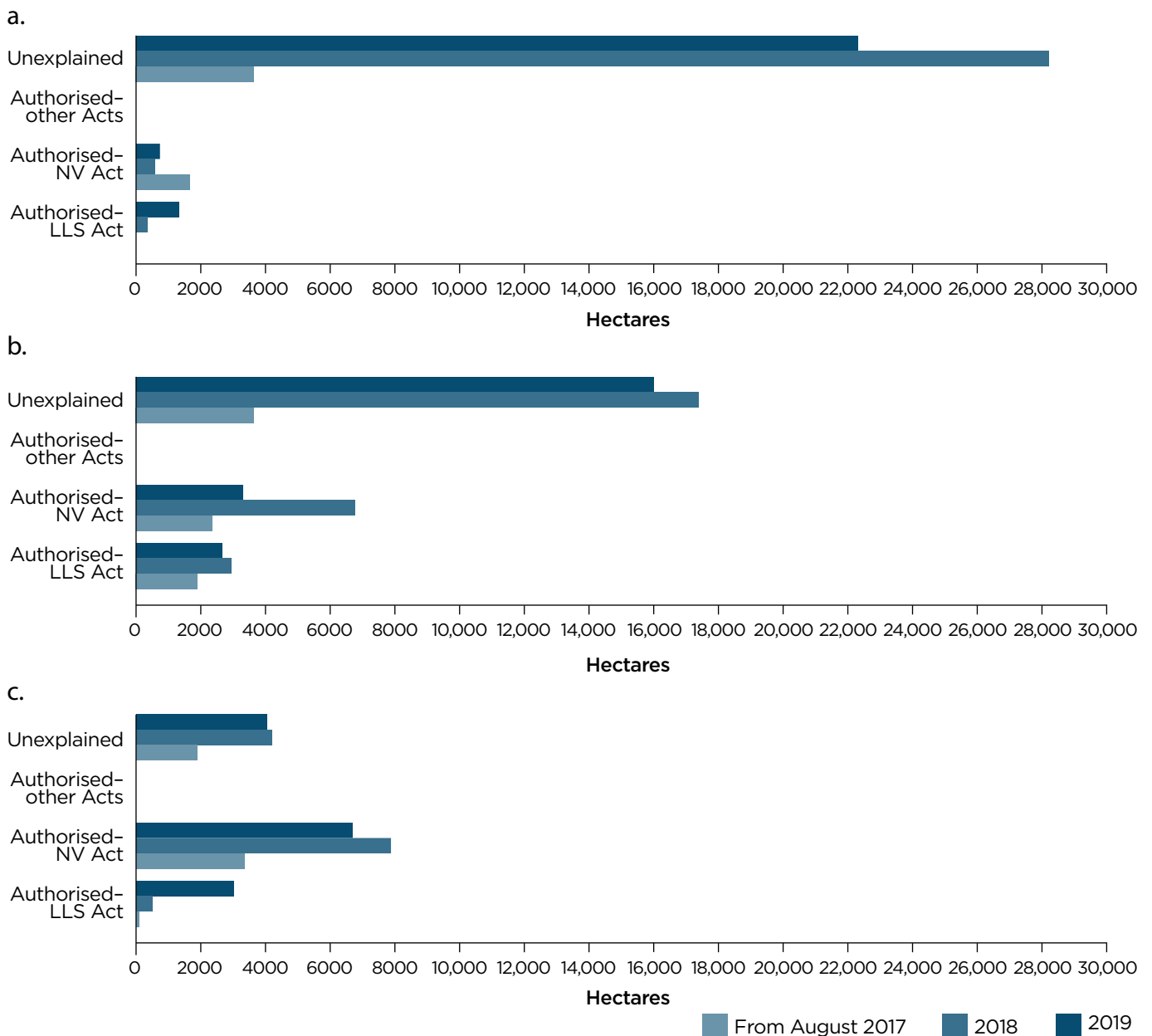


Figure 5 Vegetation loss on rural regulated land by authorising Act for three Local Land Services (LLS) regions: (a) North West region, (b) Central West region, and (c) Western region. LLS Act = Local Land Services Act 2013; NV Act = Native Vegetation Act 2003

Vegetation loss by landcover class

During the image interpretation of landcover change, vegetation loss is assigned a replacement landcover class that indicates the likely purpose for which the vegetation was cleared.

These classes are assigned using visual cues and a range of ancillary data. Woody and non woody vegetation clearing are identified in three classes defined as:

- agriculture
- forestry
- infrastructure activities.

A similar trend was seen in 2019 figures compared to 2018 figures.

Agriculture remained the largest landcover class attributed to vegetation loss. Non woody vegetation loss was approximately double that of woody vegetation loss in the agricultural class (Figure 6).

In 2019 there was an overall reduction in vegetation loss in the infrastructure and agricultural landcover classes and a 26% increase in the forestry class.



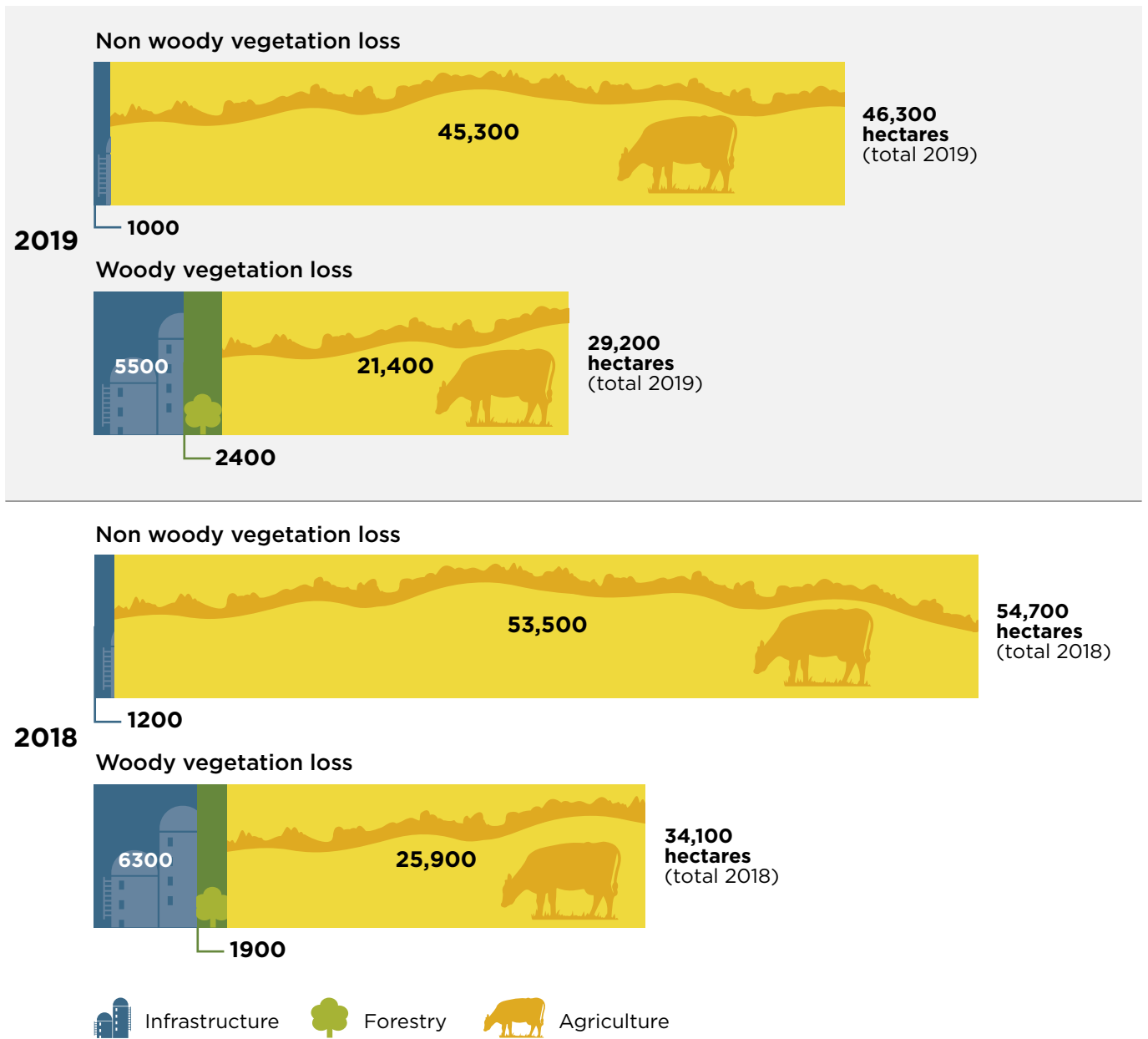


Figure 6 Vegetation loss on rural regulated land by landcover class. Figures have been rounded to the nearest 100 hectares

Appendix A

Further information on criteria for rural regulated land.

Table 1 Criteria that define rural regulated land

Type of land classified as Category 2 – regulated land
Not cleared of native vegetation on 1 January 1990 or proven unlawfully cleared since that date
Coastal SEPP (coastal wetlands and littoral rainforest) proximity zone
Publicly funded vegetation conservation and restoration, private land conservation agreements (<i>Biodiversity Conservation Act 2016</i> , <i>National Parks and Wildlife Act 1972</i> (NPW Act) or <i>Nature Conservation Trust Act 2001</i>)
Private native forestry approvals (if still active)
Remedial directions
Biocertification (conservation)
Field assessed as not low conservation value grasslands/groundcover
Travelling stock route (except Western Division)
Low conservation value grasslands within dripline of woody vegetation deemed as regulated
Type of land classified as Category 2 – sensitive regulated land
Coastal SEPP (coastal wetlands and littoral rainforest) except proximity zone
Publicly funded vegetation conservation and restoration, private land conservation agreements (<i>Biodiversity Conservation Act</i> , <i>NPW Act</i> or <i>Nature Conservation Trust Act</i>), while an obligation remains
Rainforest and old growth forest (from regional forest agreements – comprehensive regional assessment)
Core koala habitat (in an approved koala plan of management)
Ramsar wetland
Critically endangered ecological communities
Biocertification (conservation)
Field assessed as high conservation value grasslands/groundcover
Land containing critically endangered plants
Condition of Environmental Planning & Assessment Act consent
Plantation and Reafforestation Act – retained vegetation and drainage areas
<i>Native Vegetation Act 2003</i> , PVP offsets and Land Management Code – set aside areas

Notes: SEPP = state environmental planning policy; PVP = property vegetation plan. Source: Local Land Services Act 2013 (section 60I)

Type of land classified as Category 2 – vulnerable regulated land

These criteria have been carried over from definitions of previous legislation during the transitional period to minimise soil erosion and protect stream water quality. Transitional arrangements are in place until a comprehensive native vegetation regulatory map with land categories is published.

Under the LLS Act (section 60F 2c), vulnerable regulated land is classified as:

- steep land (slope 18 degrees and over) or highly erodible land
- protected riparian land (within 20 metres of bed or banks of a named watercourse)
- special category land – including land with salinity hazard, prone to mass movement or lands slip.

Appendix B

Further information on authorised clearing on rural regulated land under the various Acts.

Table 2 Descriptions of authorising Acts and authorisations by which land management is legislated under these Acts

Authorising Act	Description
<i>Local Land Services Act 2013</i> (LLS Act)	Under the LLS Act, the aim of the Land Management (Native Vegetation) Code 2018 (Land Management Code) is to authorise clearing of native vegetation on Category 2 – regulated land
<i>Native Vegetation Act 2003</i> (NV Act)	Clearing is associated with an authorisation under the NV Act
Other Acts	Clearing associated with other Acts, predominately the <i>Plantation and Reafforestation Act 1999</i>
Unexplained	Other clearing detected that has not been associated with an authorisation
Authorisations – NV Act	Description
Invasive native species, ministerial order (MO)	Routine agricultural management activity for the management of invasive native species under MO
Property vegetation plan (PVP) clause 20	Clearing for conservation or long-term environmental benefit under clause 20 in accordance with a PVP
PVP invasive native species	Management of invasive native species that improves or maintains environmental outcomes under a PVP
PVP clearing	Broadscale clearing that improves or maintains environmental outcomes under a PVP
PVP continuing use	Clearing of regrowth authorised under a PVP
PVP thinning	Ecological thinning of vegetation that improves or maintains environmental outcomes under a PVP
Paddock trees MO	Routine agricultural management activity for the clearing of paddock trees under MO
Thinning MO	Routine agricultural management activity for the ecological thinning of vegetation under MO
Part 2:1	Land Management Code Part 2 Invasive native species, Division 1 – low impact clearing of invasive native species
Part 2:2	Land Management Code Part 2 Invasive native species, Division 2 – moderate impact clearing of invasive native species
Part 3:1	Land Management Code Part 3 Pasture expansion, Division 1 – uniform thinning of woody native vegetation (notification)
Part 3:2	Land Management Code Part 3 Pasture expansion, Division 2 – uniform thinning of woody native vegetation (certification)

Authorisations – LLS Act	Description
Part 3:3	Land Management Code Part 3 Pasture expansion, Division 3 – mosaic thinning of woody native vegetation
Part 4:1	Land Management Code Part 4 Continuing use, Division 1 – managing woody native regrowth in managed native pastures
Part 4:2	Land Management Code Part 4 Continuing use, Division 2 – continuation of land management activities undertaken after 1990
Part 4:3	Land Management Code Part 4 Continuing use, Division 3 – continuation of rotational activity undertaken prior to 1990
Part 5:1	Land Management Code Part 5 Equity, Division 1 – removing native vegetation from paddock tree areas
Part 5:2	Land Management Code Part 5 Equity, Division 2 – clearing compromised native groundcover
Part 5:3	Land Management Code Part 5 Equity, Division 3 – removing native vegetation from small areas
Part 5:4	Land Management Code Part 5 Equity, Division 4 – removing native vegetation from regulated rural areas
Part 6:1	Land Management Code Part 6 Farm plan, Division 1 – removing native vegetation from paddock tree areas
Part 6:2	Land Management Code Part 6 Farm Plan, Division 2 – removing native vegetation from regulated rural areas
Private native forestry plan	Private native forestry plans under Part 5B of the LLS Act

More information

Land Management (Native Vegetation) Code 2018, www.legislation.nsw.gov.au/view/pdf/asmade/sl-2018-83.

Department of Planning, Industry and Environment
Landcover monitoring and reporting webpage, www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/landcover-monitoring-and-reporting.

Local Land Services Act 2013 legislation.nsw.gov.au/view/html/inforce/current/act-2013-051.

Local Land Services Regulation 2014 legislation.nsw.gov.au/view/pdf/asmade/sl-2014-1.

Native Vegetation Act 2003 legislation.nsw.gov.au/view/html/inforce/current/act-2003-103.

SLATS datasets available on the Sharing and Enabling Environmental Data portal datasets.seed.nsw.gov.au/dataset?q=SLATS.

