



Indicator M14: Vegetation consents compliance



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Overview

In 2010, the Technical Group of the Regional Council Biodiversity Forum worked with Landcare Research to develop the Regional Council Terrestrial Biodiversity Monitoring Framework.¹

This framework is designed as part of ‘a national, standardised, biodiversity monitoring programme, focusing on the assessment of biodiversity outcomes, to meet regional council statutory, planning and operational requirements for sustaining terrestrial indigenous biodiversity’

The terrestrial biodiversity monitoring framework adopts the same approach as the ecological integrity framework designed by Landcare Research for the Department of Conservation (DOC) and consists of three components: (i) indigenous dominance, (ii) species occupancy, and (iii) environmental representation.² To inform the framework, there are four broad areas: (i) state and condition, (ii) threats and pressures, (iii) effectiveness of policy and management, and (iv) community engagement.

A standardised monitoring framework ensures that data for each measure are consistent among regional councils, which allows for reliable State of Environment reporting. Furthermore, to enable national reporting across public and private land, it is also desirable that where possible, measures can be integrated with those from DOC’s Biodiversity Monitoring and Reporting System (DOC BMRS).³ The monitoring framework covers most categories of essential biodiversity variables⁴ recommended for reporting internationally, addressing species populations, species traits, community composition, and ecosystem structure adequately, but does not address genetic composition and only in part ecosystem function.

This report contains descriptions of 18 terrestrial biodiversity indicators developed within this framework by scientists who worked with regional council counterparts and representatives from individual regional councils. Each indicator is described in terms of its rationale, current efforts to evaluate the indicator, data requirements, a standardised method for implementation as a minimum requirement for each council, and a reporting template. Recommendations are made for data management for each indicator and, for some, research and development needed before the indicator can be implemented.

The terrestrial biodiversity indicators in this report are designed to enable reporting at a whole-region scale. Some of the indicators are also suitable for use at individual sites of interest within regions. Each indicator is described in terms of a minimum standard for all

¹ Lee and Allen 2011. Recommended monitoring framework for regional councils assessing biodiversity outcomes in terrestrial ecosystems. Lincoln, Landcare Research.

² Lee et al. 2005. Biodiversity inventory and monitoring: a review of national and international systems and a proposed framework for future biodiversity monitoring by the Department of Conservation. Lincoln, Landcare Research.

³ Allen et al. 2013. Designing an inventory and monitoring programme for the Department of Conservation’s Natural Heritage Management System. Lincoln, Landcare Research.

⁴ Pereira et al. 2013. Essential biodiversity variables. *Science* 339, 277–278.

councils. If implemented by all councils, each measure can then be aggregated to allow national-scale reporting (e.g., for State of Environment reports, or for international obligations such as reporting on achievement of Aichi Targets for the Convention on Biodiversity). Individual councils could add additional measurements to supplement the minimum standards recommended.

Three of the 18 terrestrial biodiversity indicators – Measures 1 ‘Land under indigenous vegetation’, 11 ‘Change in temperature and precipitation’, and 18 ‘Area and type of legal biodiversity protection’ – were implemented and reported on for all regional councils in June 2014. An attempt to implement and report two others at that time – Measures 19 ‘Contribution of initiatives to (i) species translocations and (ii) habitat restoration’ and 20 ‘Community contribution to weed and animal pest control and reductions’ – was unsuccessful because the data needed for these indicators was either not readily available or not collected in a consistent way, and investment will be needed to remedy these issues before they can be reported successfully.

11 Indicator M14: Vegetation consents compliance

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11.1 Overview

Indicator M14 (Vegetation consents compliance) reports on the number of resource consents issued by each council over a reporting period that allow vegetation clearance, the total area that this affects, and the number of resource consents for vegetation clearance that concern scheduled sites, along with their total area.

11.2 Scoping and analysis report

Background information

The Regional Council Biodiversity Working Group (BDWG) agreed that the ‘ecological integrity’ framework used by the Department of Conservation (DOC, Allen et al. 2013) was appropriate for regional councils (Lee & Allen 2011). The working group identified a suite of 10 biodiversity indicators, and related measures, relevant for biodiversity monitoring requirements in terrestrial ecosystems (Lee & Allen 2011). This report concerns *M14 Vegetation consents compliance* which is part of the Biodiversity Protection indicator. Measure 14 was included to directly assess for the influence of compliance with vegetation consents and plan rules more generally on extent of vegetation (Lee & Allen 2011).

Indicator definition

For reporting at a national scale the definition of M14 (‘Compliance with vegetation-related resource consents and any planning rules restricting vegetation clearance consent (most particularly on scheduled sites’)) needs to be consistent between regional councils and unitary authorities.

Consent definition

The word *consent* refers to a resource consent. Resource consent is permission (usually with conditions) from a council for an activity that is not allowed as of right in the district or regional plan. The Resource Management Act (RMA), specifically Sections 6 (c), 30 (Box 1), gives regional and local councils biodiversity responsibilities.

RMA Section 6

Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- c. the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

RMA Section 30

Functions of regional councils under this Act

(1) Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:

(a) the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region:

(b) the preparation of objectives and policies in relation to any actual or potential effects of the use, development, or protection of land which are of regional significance:

(c) the control of the use of land for the purpose of—

(iia) the maintenance and enhancement of ecosystems in water bodies and coastal water:

RMA Section 31

Functions of regional councils under this Act

(1) Every territorial authority shall have the following functions for the purpose of giving effect to this Act in its district:

(a) the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the district:

(b) the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of—

(iii) the maintenance of indigenous biological diversity:

Box 1 <http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231907.html> accessed 24 January 2013.

Reporting compliance

Vegetation clearance rules are not nationally consistent because the statutory roles concerning these rules are devolved to district and city councils (Ministry for the Environment 2004). Section 35 of the RMA requires that councils monitor the effectiveness of their policies and plans (Box 2) and councils are required to report on certain aspects of that to the Ministry for the Environment as part of the National Monitoring System. Relevant measures for this indicator include the number of compliance FTEs employed and the number of infringement fines issued, among others.

RMA Section 35

Duty to gather information, monitor, and keep records

(1) Every local authority shall gather such information, and undertake or commission such research, as is necessary to carry out effectively its functions under this Act or regulations under this Act.

(2) Every local authority shall monitor—

(a) the state of the whole or any part of the environment of its region or district—

(i) to the extent that is appropriate to enable the local authority to effectively carry out its functions under this Act; and

(ii) in addition, by reference to any indicators or other matters prescribed by regulations made under this Act, and in accordance with the regulations; and

(b) the efficiency and effectiveness of policies, rules, or other methods in its policy statement or its plan; and

(c) the exercise of any functions, powers, or duties delegated or transferred by it; and

(d) the exercise of the resource consents that have effect in its region or district, as the case may be

(2A) Every local authority must, at intervals of not more than 5 years, compile and make available to the public a review of the results of its monitoring under subsection (2)(b).

Box 2 <http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231907.html> accessed 24 January 2013.

Indigenous vegetation definition

Measure 14 does not specify that the vegetation to be cleared must be indigenous to be included in the measure. Regional councils may already have an agreed definition for indigenous vegetation within their existing policy and planning framework. In the absence of an existing definition, councils may adopt the suggested definition below (proposed by the Ministry for the Environment in the *Proposed National Policy Statement on Indigenous Biodiversity: Evaluation under section 32 of the Resource Management Act 1991*(2011) (Box 3).

Indigenous vegetation: indigenous vegetation means any local indigenous plant community through the course of its growth or succession consisting primarily of native species and habitats normally associated with that vegetation type, soil or ecosystem or having the potential to develop these characteristics. It includes vegetation with these characteristics that has been regenerated with human assistance following disturbance or as mitigation for another activity, but excludes plantations and vegetation that have been established for commercial harvesting.

Box 3 Definition of indigenous vegetation (Ministry for the Environment 2011)

Scheduled sites definition

Consistent reporting across regional councils requires standardised criteria for assessing whether sites are ‘scheduled sites’ for the purposes of monitoring. Currently the names for and definitions of ‘scheduled sites’ differ throughout local government agencies. A clear definition is suggested that should capture what a ‘scheduled site’ is, despite the variation and considering the purpose of the measure:

‘A scheduled site is defined as any area that is identified in the relevant plan or proposed plan (inc for the purposes of protection under section 6 of the Resource Management Act’

11.3 Indicator Statistic

Measure 14 should report:

The rules controlling vegetation removal

Whether there are rules in the plan or plans that control the removal of vegetation from any areas (include a checkbox) for reporting at a national scale (Yes/No)

Consents requesting removal of indigenous vegetation

- a. The number of resource consents applied for, that request permission to remove indigenous vegetation
- b. The number of resource consents applied for that request permission to remove indigenous vegetation from a scheduled site
- c. Total area of indigenous vegetation (ha) for which resource consents have been submitted for clearance.
- d. The proportion of the area in ‘c’ that is within scheduled sites

Consents approving removal of indigenous vegetation

- a. Number of resource consents approved that allowed removal of indigenous vegetation
- b. Total area of land (ha) where resource consents were approved to remove indigenous vegetation.

Compliance with consent requirements

1. Number of resource consents where compliance was met, with compliance defined as not more than the allowed area and extent of vegetation was removed at the time of assessment
2. .Number of resource consents where compliance was not met, where compliance not being met is defined as the vegetation cleared exceeded what was allowed in the consent and was not otherwise lawful
3. .Total area of land (ha) where resource consents have been given and compliance has been met (i.e. vegetation clearance occurred according to the terms of the consent).

Compliance with plan requirements (i.e. activities outside of consents)

- a. Number of complaints relate to the alleged removal of unlawful indigenous vegetation received by council
- b. Number of complaints substantiated as involving removal of indigenous vegetation without permission
- c. The proportion of substantiated complaints that took place all or in part within a scheduled site
- d. The total area of vegetation clearance that occurred which should have had consent but did not.

These statistics should be reported for the region. Consistent reporting of the statistics among regions will enable aggregation to a national level of reporting. Caveats related to compliance reporting will require multiple fields to assess compliance more than once, sometimes over a period of many years.

11.4 Reporting frequencies

Regional councils should report the statistics annually. Five-yearly summaries could be reported incorporating more detailed statistics and looking at land-use clearance over time, e.g. vegetation type of land cleared over time. Reporting frequencies should be integrated with those proposed for Measure 9 and other reporting frameworks such as the National Monitoring System.

11.4.1 Reporting hierarchies

Regional councils can report on resource consent compliance with vegetation clearance rules regionally, allowing aggregation of reports at a national scale. This would require cooperation of district councils that undertake the majority of land use regulation. Statistics could also be reported within each region of removal of indigenous vegetation within vegetation classes dominated by indigenous cover, e.g. forests, shrubland, grasslands, and wetlands, using LCDB definitions.

11.5 Spatial and temporal analysis

Summary maps of area of vegetation cleared over time could be created for long-term monitoring of changes in extent of indigenous vegetation. Loss and gain in extent of indigenous vegetation should – where possible – be divided into LCDB classes and expressed as both a whole figure and a proportion of vegetation cover at a regional level. Regional councils may also wish to use this data to inform their assessments of the effectiveness of regional and district level policies and programmes over time.

11.6 Relationships between indicators and present patterns

Linkages to other measures

Indicator M14 has links to M8, M9 and M18 (Table 11-1). Data collected for M8, M9 and M18 could be used to inform land-use types, help with monitoring vegetation clearance and defining *scheduled sites*. Measure 9 will provide data on vegetation and habitat loss that can be compared with the amount of vegetation cleared through the resource consent process.

Table 11-1 Regional council terrestrial biodiversity monitoring framework indicators related to M14: Compliance with vegetation clearance rules, especially on scheduled sites

Indicator	Measures	Element	Ecological Integrity	Driving forces – Pressure-State-Impact-Response	Data required and potential sources
Habitat loss (M8)	Change in area under intensive land use	LCDB cover classes within an agreed definition of 'intensive land use', e.g. areas actively managed to the general exclusion of terrestrial native biodiversity (i.e. crops, roads, etc.)	Environmental representation	Pressure	Data: LCDB and re-runs, while maintaining historical compatibility of cover classes.
Habitat loss (M9)	Habitat and vegetation loss	Based on changes in area of land cover classes and naturally rare ecosystems	Environmental representation	Impact	Data: LCDB and reruns, augmented by regional aerial mapping for habitat loss.
Protection and restoration (M18)	Area and type of biodiversity protection achieved on private land	New areas (ha) protected through initiatives on private land.	N/A	Response	Data: Permanent Forest Sink Initiative, QEII covenants and regional council and DOC reserves/covenant data.

11.7 Assessment of existing methodologies

Overall summary

Four regional councils responded with current methods for monitoring vegetation consents compliance, making it difficult to get a national-scale picture. Currently, both the consent process and the monitoring of consents is very variable among regional councils. Data are currently not shared between councils.

Summary of existing methods from response to questions and requests for methods

- What data do you currently collect for monitoring vegetation consents compliance? Please place in order of importance.

'No compliance data collected. SOE monitoring has involved identifying wetlands on orthophotos and recording shape files. Some wetlands have been recorded on oblique aerial photos.'

'Don't issue consents for vegetation clearance, only have one rule regarding the exposure of more than 10% of the sub soil when clearing more than 5 ha of vegetation on slopes over 28 degrees (permitted activity). If the sub soil can't be revegetated then a site erosion and sediment control management plan must be submitted and the activity becomes controlled. Consent monitored if a controlled activity. See Regional Soil plan rule on website.'

'Visual comparison of the area authorised for consent with the actual area cleared – an aerial map is attached to the consent showing the area and boundaries subject to the consent.'

- What data (that you currently don't collect) would be useful to collect for monitoring vegetation consents compliance?

'Photopoints would provide a useful record. Standard methods for measuring wetland and swamp forest health would be useful for key sites but are resource hungry.'

'Area'

'Not sure what SOE monitoring we do'

- What is the minimum data that should be collected for monitoring vegetation consents compliance? I.e. what should be compulsory for all Regional councils.

'Area, vegetation type, dominant vegetation cover'

'Vegetation description, habitat, fauna, area, LENZ, slope, LUC unit'

'Visual comparison of the area authorised for consent with the actual area cleared.'

Data storage and reporting

- Summary: data storage varied between regional councils. Information may be held in reports as photos or data with hard and electronic copies or in a database. Data storage for monitoring vegetation clearance is currently not shared between regional councils.

11.8 Development of a sampling scheme

Summary

Consistent collection of data when consents are submitted, when they are approved and during post-consent monitoring is critical to the successful implementation of M14. In parallel, general monitoring of unlawful vegetation removal is required.

For many councils, database development will be required to store consent information in a way that is accessible for this type of data analysis (and should include data on consents declined). Links to GIS layers to define areas of vegetation and storage for photographs of the areas would also be helpful. To accurately assess compliance, provision for ongoing recording and records management will be necessary.

Database information

The data to be collected is summarised in Table 11-2. **There is a need to agree consistent data standards and definitions, and consistent data curation among councils** as a prerequisite to implementing M14.

Table 11-2 Description of data to be recorded for monitoring vegetation consents compliance

Category	Measure	Definition
Data ID	Unique Identifier	Initials of regional council and then a unique number e.g. Environment Southland would start at 'ES_1'
Consent Process	Consent ID	Identifier that councils use for monitoring consents
	Submission	Yes (this will be used to count the number of submissions)
	Type of Consent ¹	
	Approved	Yes or No
	Date of Approval	DD/MM/YYYY
	Approving Officer	Name of officer. Last name, first name.
	Compliance met	Yes or No
	Compliance Officer	Name of officer. Last name, first name
	Enforcement action	If compliance was not met list the enforcement action taken.
Reports	Report Identifier	If a report was written the correct citation for the report is entered here
Photos	Photos taken	Number of photos taken and stored with the database. 0 if no photographs taken. Photographs should be labelled with the unique identifier number and then the photo number, e.g. ES1_1
Location	GPS location	Northings and Eastings at centre of clearance area
	Submitted clearance area (ha)	Defined area which was submitted in the consent to clear, hectares calculated off GIS layer
	Approved clearance area (m ²)	Defined area where approval was given to clear vegetation, hectares calculated off GIS layer
	Area cleared (ha)	Defined area where vegetation was actually cleared, hectares calculated off GIS layer
Scheduled Sites	Submitted scheduled site clearance area (ha)	Defined scheduled site area which was submitted in the consent to clear, hectares calculated off GIS layer
	Approved scheduled site clearance area (ha)	Defined scheduled site area where approval was given to clear vegetation, hectares calculated off GIS layer

Category	Measure	Definition
	Area of scheduled site cleared (ha)	Defined scheduled site area where vegetation was actually cleared, hectares calculated off GIS layer
	Type of scheduled site	Description of scheduled sites
Property details	Property address	Flat number, street number, street, suburb, postcode
	Property owner phone	033526169 (do not put in any brackets/spaces or + symbols)
	Property owner name	Last name, first name, title
	Property owner email	Email address of property owner
Notes	Notes	Any additional information to be included here

¹Many consents for vegetation removal also apply to a range of other activities/breaches, which means this may be hard to collect info on. Possible option is to have a categorical spread of activity types under ‘purpose of clearance’ (i.e. subdivision, infrastructure, mining etc)

Compliance (must allow for continuous assessment)

Date of compliance visit		
Compliance met	Yes or No	
Area removed (compliant) ha	Non-scheduled site	Scheduled site
Area removed (non-compliant) ha		
Compliance Officer	Name of officer. Last name, first name	
Enforcement action	If compliance was not met list the enforcement action taken.	

Costs

The costs associated with this measure will be dependent on the extent to which vegetation removal is controlled through the relevant plan, the development pressure in the area and the number of consents applied for (and monitoring required of compliance). The quality and scope of any given council’s present recording system – and the availability of suitably

qualified staff - will also determine the capital investment required to track this data. For some councils, much of the above will already be collected in some form – while for others much more change to process and expenditure will be required.

11.9 Data management and protocols

Data protocols and formats

A national-scale, web-based database for data management of M14 is recommended. Currently there is no consistent database structure used by regional councils to store data on vegetation clearance or consents. Land Resources Support System (LRSS) is a database system being built by the Bay of Plenty and Greater Wellington regional councils, with the aim that it will be a central repository that all regional councils can access. This would be the best place for data from M14 to be stored because it is managed by regional councils. For more information including standardised data protocols, contact Bay of Plenty Regional Council.

In the short term, regional councils should create individual datasets that can be incorporated later into the LRSS. Data formats must be kept standardised across regional councils, so that separate datasets can be easily merged for future analyses. Column headers must remain the same and in the same order as presented in Table 11-2. If a new entry (row) is created then no blank spaces should be left (i.e. enter 'none' when the data are unknown or not relevant). Addition of any new columns in the future should be decided upon by all regional councils to maintain consistency across regional councils. Data sheets created should be in excel or equivalent, with data exportable in a .csv file format.

GIS layers should be stored in a shape file format with polygons named using the unique identifier in the database. Data storage of GIS data should follow the same protocols for Measure 9. Any photos taken should also be named using the unique identifier and saved as a .jpeg file. Certain data cannot be shared between regional councils due to privacy issues and these columns should be removed from the database if files are sent to other regional councils or the data suitably aggregated to avoid identification.

Data to be excluded:

- ***Property address*** Flat number, street number, street, suburb, postcode
- ***Property owner phone*** [9 or 10 digits]
- ***Property owner name*** Last name, first name, title
- ***Property owner email*** Email address of property owner

11.10 Reporting indices and formats

At a regional scale, using the database developed above, regional councils should sum individual entries to calculate the total areas and total numbers required for the indicator statistics (Table 11-3). A map of the region can be developed showing the total area of land where resource consents have been submitted, approved and where the vegetation has been

cleared. Descriptions of the vegetation types cleared (e.g. LCDB cover classes) will aid interpretation. National-scale reporting should compare between regions, and also sum totals across regions. Comparison of data from M14 with data from M9 (total loss of vegetation over the region) would allow regional councils to assess how much unconsented vegetation loss has occurred.

Table 11-3 Example reporting format for M14

	Number of resource consents	Total area (hectares)	Number of resource consents concerning scheduled sites	Total area concerning scheduled sites (hectares)
Submitted	12	15	1	0.05
Vegetation clearance approved	10	8	1	0.05
Vegetation clearance taken place	9	7.5	1	0.05
Compliance has been met	9	7.5	1	0.05
Compliance has not been met	0	0	0	0

11.11 References

Allen RB, Wright EF, MacLeod CJ, Bellingham PJ, Forsyth DM, Mason NWH, Gormley AM, Marburg AE, MacKenzie DI, McKay M 2013. Designing an Inventory and Monitoring Programme for the Department of Conservation's Natural Heritage Management System. Landcare Research Contract Report: LC1730 for Department of Conservation, Wellington, New Zealand.

Land Resources Support System Scope. Bay of Plenty Regional Council and Greater Wellington Regional Council. <http://dataversity.org.nz/r/file/32117-2012-06-05T000141Z>. Accessed 11 July 2012.

Lee WG, Allen RB 2011. Recommended monitoring framework for regional councils assessing biodiversity outcomes in terrestrial ecosystems. Landcare Research Contract Report LC144 for the Regional Council Biodiversity Forum Technical Group. 29 p.

Ministry for the Environment 2004. A snapshot of council effort to address indigenous biodiversity on private land: a report back to councils. Wellington, New Zealand. ME Number 523.

Ministry for the Environment 2011. Proposed National Policy Statement on Indigenous Biodiversity: Evaluation under section 32 of the Resource Management Act 1991. Wellington, New Zealand. ME Number 1032.92. 33 p

Appendix 11 – Feedback from regional councils

Feedback from regional councils for each report. YES indicates that a council gave feedback regarding the report. Regional councils that were contacted were those whose contact details were provided on the key contacts list. Reports 3, 4 and 5 were sent as a group for the final report

	Report 1	Report 2	Report 3	Report 4	Report 5
Waikato Regional Council	YES	YES			
Marlborough District Council	YES	YES			
Greater Wellington Regional Council					
Horizons Regional Council				YES	
Otago Regional Council					
Northland Regional Council					
Taranaki Regional Council					
Auckland Council					
Bay of Plenty Regional Council	YES	YES		YES	
Tasman District Council	YES	YES			