Name of dataset or data source:	Native Vegetation Management Benefits - Series 2
Custodian of the dataset or data source:	ED Science (E&H)

Description:

Native Vegetation Management Benefits (NVMB) mapping

NVMB mapping is a way of identifying the relative benefits to NSW biodiversity of protecting or restoring native vegetation. NVMB mapping is used for cross-tenure, whole-of-landscape conservation planning, decision support, prioritisation and scenario planning.

The NVMB method employs well-developed ecological theory to combine vascular plant records, bioclimatic data, vegetation condition mapping and connectivity analysis.

NVMB Series 2

Series 2 is a fully complementary set of NVMB layers with consistent units (with a range from zero to one), such that for any location, the set of benefit values across the set of NVMB layers sum to a single maximum level of overall potential benefit for that location, referred to as the 'Maximum Biodiversity Benefit' (MBB). MBB reflects each location's capacity to support species and communities which have been depleted across NSW. The schema describing the nesting of the set of layers is provided in the attached resource: NVMB Series2 chart. Two 'delta' (change) layers are included to represent what additional benefits can be achieved in 15 years of fostering regeneration (delta improve benefits) and through full restoration action (delta restore benefits). A 'manage and improve' layer quantifies the combined benefits conserved by managing existing vegetation, and the additional benefits that can accrue through fostering regeneration (over a nominal 15-year period).

All layers are derived from a common set of inputs. The various NVMB layers become differentiated through the application of variants of the ecological condition layer, at the final stage of developing the layers (current condition is used for manage benefits, partially restored condition for improve benefits, and fully restored condition for the restoration benefits).

Series 2 represents a slight but significant departure from previous NVMB versions. Previous versions were provided in 4 separate SEED records: Manage benefits; Improve benefits; Restore benefits; and Landscape benefits. The landscape value benefits from the previous version are now integrated into Manage, Improve and Restoration benefits. A new layer of Maximum Biodiversity Benefit is added.

End users will notice significant differences between previous versions and these Series 2 layers. Stage 2 puts greater emphasis on cross-scale ecological connectivity across the benefit layers rather than treating landscape connectivity separately. For example, cleared areas of highly diminished communities such as box-woodlands in the wheat-sheep belt, are only given the highest restore benefit value in areas that are also well connected to areas of existing native vegetation.

Versioning

Series 2 is an update on the previous NVMB series (Series 1). Users may wish to employ Series 1 in cases where connectivity considerations are less (e.g., for large scale conservation actions - which produce their own 'critical mass'). In most cases Series 2 is the preferred source for conservation planning.

Due to the Series 2 layers forming an integrated set, they are provided together in a single SEED record. Because of the step change from previous version, Series 2 is reset as Series 2 v1.0.

Series 2 v1.0 is relevant to 2017. It does not consider the 2019-20

megafires or the degree of subsequent recovery. However, 2017 and 2020 NVMB surfaces have been produced in Series 1 (see below for more information).

More technical detail

The probabilistic method used for accumulating values draws on the 'equitable' approach (Drielsma and Love 2021) which applies 'diminishing returns' to connectivity, rather than the previous 'any additional unit of connectivity always provides proportionally more benefit'.

This series also incorporates the following advances:

- use of continuous values in GDM/environmental space (i.e., no loss of information by unnecessarily reducing to discrete classes)
- by incorporating an improved connectivity links approach (Drielsma et al. 2022), the new layers better consider how different locations can contribute to maintaining or restoring habitat linkages that allow species to move and migrate across landscapes
- incorporation of generic REMP approach (Drielsma and Love 2021) for spatial context component

More information

For more detail on the NVMB Series 2 method view this presentation.

Series 1

The previous series of LVMB mapping can be found at the following SEED records: Manage benefits; Improve benefits; Restore benefits; Landscape benefits.

Post-megafires

2017 and 2020 (post-megafire) NVMB surfaces have been produced in Series 1, for manage and restore. If comparing between 2017 and 2020 be sure to use outputs from the same series (i.e., series 1).

Climate-informed NVMB

Climate-informed versions of the manage benefits and restore benefits (Series 1 v.1) can be found here. These are being updated in 2024-24.

References

Drielsma MJ, Love J, & Thapa R 2023, Ecological models for reporting and conservation prioritisation - meeting the rising challenges, with examples from NSW, Australia. Presentation to the 6th International Ecosummit, Gold Coast 13-17 June 2023.

Drielsma MJ, Love J, Thapa R, Taylor S, & Williams KJ 2022, General Landscape Connectivity Model (GLCM): a new way to map whole of landscape biodiversity functional connectivity for operational planning and reporting. Ecological Modelling, Vol.465, pp.109858, doi: https://doi.org/10.1016/j.ecolmodel.2021.109858.

Drielsma M, & Love J 2021, An equitable method for evaluating habitat amount and potential occupancy. Ecological Modelling, 440:109388, doi: https://doi.org/10.1016/j.ecolmodel.2020.109388.

Drielsma MJ, Ferrier S, Howling G, Manion G, Taylor S, Love J (2014) The Biodiversity Forecasting Toolkit: Answering the 'how much', 'what' and 'where' of planning for biodiversity persistence, Ecological Modelling, 274:80-91. https://www.sciencedirect.com/science/article/pii/S0304380013005760?via%3Dihub.

Data quality rating:

★Institutional Environment - 4
★Accuracy - 4
★Coherence - 4
☆Interpretability - 3
★Accessibility - 4

INSTITUTIONAL ENVIRONMENT — Very Good ★

✔ Does the information have the potential to enhance services or service delivery?

✔ The following governance roles and responsibilities for this asset are clearly assigned:

- Information Asset Owner
- Information Asset Custodian
- Information Steward

✔ Data collection is authorised by law, regulation or agreement

✔ The Custodial agency has no commercial interest or conflict of interest in the data

✗ The data aligns with the Data Quality Framework, including:

- Legislation
- Policies
- Information Asset Governance
- Standards
- Data Management Plans

ACCURACY — Very Good ★

✔ Data is revised and the revision is published if errors are identified

✔ There are no known gaps in the data or if there are gaps (for example: non-responses, missing records, data not collected), they have been identified in caveats attached to the dataset.

✔ No changes have been made or other factors identified (for example: weighting, rounding, de-identification of data, changes or flaws in data collection or verification methods) that could affect the validity of the data; or any changes/factors have been identified in caveats attached to the asset.

✔ The data collection met the objectives of the primary user. The data correctly represents what it was designed to measure, monitor or report.

✗ Data has been subject to a data assurance process (for example: Checking for errors at each stage of data collection and processing, or verifying data entry and making corrections if necessary.)

COHERENCE — Very Good ★

✔ Standard definitions, common concepts, classifications and data recording practices have been used.

✔ Elements within the data can be meaningfully compared.

✔ This data is generally consistent with similar or related data sources from the same discipline

✔ The data can be analysed over time (for example, there have not been any significant changes in the way items are defined, classified or counted over time).

✗ The data does not form part of a collection or, if it is the latest in a series of data releases, there have not been any changes in methodology or external impacts since the last data release.

INTERPRETABILITY	Good ☆

✔ Information is available about the primary data sources and methods of data collection (e.g. instruments, forms, instructions).

✔ Information is available to help users evaluate the accuracy of the data and any level of error

✔ Information is available to explain concepts, help users correctly interpret the data and understand how it can be used

✗ A data dictionary is available to explain the meaning of data elements, their origin, format and relationships

✗ Information is available to explain ambiguous or technical terms used in the data

ℹ Find out more about the data dictionary from the Custodian (contact details below).

ℹ Find out more about the primary data sources and methods of data collection from the Custodian (contact details below).

ℹ Find out more about concepts used in this dataset and how to understand or interpret the data from the Custodian (contact details below).

ℹ Find out more about ambiguous or technical terms used in the data from the Custodian (contact details below).

ACCESSIBILITY	Very Good ★

✔ Data is available online with an open licence

✔ Data is available in machine-processable, structured form (e.g. CSV format instead of an image scan of a table)

✔ Data is available in a non-proprietary format (e.g. CSV, XML)

✔ Data is linked to other data, to provide context (e.g. employee ID is linked to employee name or species name is linked to genus)

✗ Data is described using open standards (e.g. RDF, SPARQL) and persistent identifiers (URIs or DOIs)

For more information about this dataset or data source, contact:	NSW Department of Climate Change, Energy, the Environment and Water
Data Broker email:	data.broker@environment.nsw.gov.au
Data Broker phone:	131555

Understanding the Data Quality Statement

The data quality statement aims to help you understand how a particular dataset could be used and whether it can be compared with other, similar datasets. It provides a description of the characteristics of the data to help you decide whether the data will be fit for your specific purpose.
The Data Quality statement is prepared by the data custodian (provider of the dataset), using a questionnaire that has been developed in accordance with the NSW Government Standard for Data Quality Reporting.
About the quality rating:
The reporting questionnaire asks five questions for each of these data quality dimensions:

- Institutional Environment
- Accuracy
- Coherence
- Interpretability
- Accessibility

For each question: “yes” = 1 point; “no” = 0 points
The number of points determines the Quality Level for each dimension (high, medium, low).
Only dimensions with four or five points receive a star.

Points	Quality Level	Star / No Star
0	Poor	No Star
1	Poor	No Star
2	Fair	No Star
3	Good	No Star
4	Very Good	Star
5	Excellent	Star

Evaluating data quality

Quality relates to the data's “fitness for purpose”. Users can make different assessments about the dataquality of the same data, depending on their “purpose” or the way they plan to use the data.
The following questions may help you evaluate data quality for your requirements. This list is not exhaustive.Generate your own questions to assess data quality according to your specific needs and environment.

- What was the primary purpose or aim for collecting the data?
- How well does the coverage (and exclusions) match your needs?
- How useful are these data at small levels of geography?
- Does the population presented by the data match your needs?
- To what extent does the method of data collection seem appropriate for the information being gathered?
- Have standard classifications (eg industry or occupation classifications) been used in the collection of the data?If not, why? Does this affect the ability to compare or bring together data from different sources?
- Have rates and percentages been calculated consistently throughout the data?
- Is there a time difference between your reference period, and the reference period of the data?
- What is the gap of time between the reference period (when the data were collected) and the release date of thedata?
- Will there be subsequent surveys or data collection exercises for this topic?
- Are there likely to be updates or revisions to the data after official release?