

TSR CONSERVATION VALUE – Metadata

DATASET

Shapefile Title

TSR_Cons_Val

Version

1

Production Date

30/June/2009

Scheduled Updates

None

Extent

New South Wales, Australia

X min: -28.291802
X max: -37.274673
Y min: 143.346971
Y max: 152.498451



DESCRIPTION

Keywords

Travelling Stock Reserve, Travelling Stock Route, TSR, Conservation Value, Biodiversity Value, Endangered Ecological Community, EEC, New South Wales, Australia

Abstract

This shapefile was constructed by combining crown TSR spatial data, information gathered from Rural Lands Protection Board (RLPB) rangers, and surveyed Conservation and Biodiversity data to compile a layer within 30 RLPB districts in NSW. The layer attempts to spatially reflect current TSRs as accurately as possible with conservation attributes for each one.

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DATA

Sources

Numerous data sources were used for production of this GIS layer. The basis being the NSW Department of Lands Crown Spatial Layer, from which a TSR extract was used as a base map for production. The following table contains a number of the major data sources used in production and verification.

DATA	DESCRIPTION	USE
Crown TSR extract 07	An extract of crown reserves with purpose of 'Travelling Stock Route or Reserve' produced 2007	Used as the base for creating this TSR layer
Crown TSR extract 08	An extract of crown reserves with purpose of 'Travelling Stock Route or Reserve' produced June 2008	Used for error checking and verification, comparison with 07 extract
Crown reserve layer	Used for error checking and adding in additional polygons where required.	Verification of TSR
Unidentified land layer	Unidentified land in NSW	Verification
TSR LP point layer	Point layer of TSR in NSW with RLPB names and ID's.	Assigning attributes to reserves
TSR Waterpoint layer	Point layer of TSR in NSW with RLPB names and ID's.	Assigning attributes to reserves
Cadastral GIS layer	NSW DCDB	Lot/DP search and verification, addition of lots to TSR layer
Parish Maps	NSW Regional, Status Branch and LTO parish maps	Crown reserve searches and verification of extent
Title search	Land titling information	Ownership and verification of Lot/DP info
Crown plan	Original portion plans	Crown reserve extent and verification
Deposited plan	Current Deposited plans, title diagrams	Determination of ownership, current lot extents and verification
LGA layer	NSW Local Government Areas	Allocation of LGA
CMA layer	NSW Catchment Management Authorities	Allocation of CMA
RLPB layer	NSW Rural Lands Protection Boards	Allocation of RLPB, error checking, verification
LHPA layer	NSW Livestock Health and Pest Authority	Allocation of LHPA
IBRA v6 layer	Interim Biogeographic Regionalisation of Australia Bioregions	Allocation of Bioregion
Locality layer	NSW Localities	Allocation of Location

Attributes

Field Name	Description	Type
OBJECTID	Polygon unique identifier	Long
AREAHA	Polygon area in Hectares	Double
PERIMETER	Polygon perimeter in Metres	Double
X	Polygon centroid X coordinate in Decimal Degrees	Double
Y	Polygon centroid Y coordinate in Decimal Degrees	Double
CADID	Crown unique identifier	Long
CRNRESNUM	Crown Reserve Number	Text
CRNRESNUM2	Second Crown Reserve Number	Text
LOTNUMBER	Lot Number	Text
SECTIONNUM	Section Number	Text
PLANNUM	Plan Number	Text
RESERVETY	Reserve Type	Text
PURPOSE	Reserve Purpose	Text
LOCATION	Locality of Reserve	Text
STATUS	Status of Reserve	Text
MANAGEMENT	Current Reserve Manager	Text
LGANAME	Local Government Area	Text
CMANAME	Catchment Management Authority	Text
RLPBNAME	Rural Lands Protection Board	Text
LHPANAME	Livestock Health and Pest Authority	Text
BIOREGION	IBRA Bioregion	Text
RESCODE	Reserve unique identifier	Double
LPNAME	Long Paddock Reserve Name	Text
LPID	Long Paddock Reserve ID	Text
CURRNAME	Current RLPB Reserve Name	Text
CURRID	Current RLPB Reserve ID	Text
RESAREA	Total Area of Reserve by Name	Double
CONFINDEX	Confidence Index	Short Integer
BIOCV(1-4)	Biodiversity Conservation Value Source 1-4	Text
SOURCE(1-4)	Source of BIOCV	Text
EEC	Endangered Ecological Community	Text
VEGFORM	Vegetation Formation	Text

Lineage

The initial process in production involved using the most up to date extract of TSR from the crown spatial layer as a base map, as this layer should reasonably accurately spatially reflect the location, size, and attributes of TSR in NSW. This crown spatial layer from which the TSR were extracted is maintained by the NSW Department of Lands. The TSR extract is comprised of approximately 25,000 polygons in the study area. These polygons were then attributed with names, IDs and other attributes from the Long Paddock (LP) points layer produced by the RLPB State Council, which contains approximately 4000 named reserves throughout the study area. This layer reflects the names and ID number by which the reserves were or are currently managed by the RLPB's. This layer was spatially joined with the TSR polygon layer by proximity to produce a polygon layer attributed with RLPB reserve names and ID numbers. This process was repeated for other small datasets in order to link data with the polygon layer and LP reserve names.

The next and by far the most time consuming and laborious process in the project was transferring the data gathered from surveys undertaken with RLPB rangers about each reserve (location, spatial extent, name, currency conservation value and biodiversity). This spatial information was annotated on hard copy maps and referenced against the spatial join making manual edits where necessary. Edits were conducted manually as the reference information was only on hard copy paper maps. Any corrections were made to the merged layer to produce an accurate spatial reflection of the RLPB reserves by name and ID. This manual editing process composed the bulk of the time for layer production as all reserves in each RLPB district in the study area had to be checked manually. Any necessary changes had to then be made to correct the spatial location of the reserve and ensure the correct ID was assigned for attributing the conservation data. In approximately 80% of cases the spatial join was correct, although this figure would be less where long chains of TSR polygons exist. The majority of time was devoted to making the numerous additions that needed to be incorporated.

A spreadsheet based on the LP point layer was attributed with the LP point [OBJECTID] in order to produce a unique reference for each reserve so that conservation and biodiversity value data could be attributed against each reserve in the spatial layer being produced. Any new reserves were allocated [OBJECTID] number both in the GIS and the spreadsheet in order to create this link.

All relevant data was entered into the spreadsheet and then edited to a suitable level to be attached as an attribute table. Field names were chosen and appropriate an interpretable data formats each field. The completed spreadsheet was then linked to the shapefile to produce a polygon TSR spatial layer containing all available conservation and biodiversity information. Any additional attribute were either entered manually or obtained by merging with other layers.

Attributes for the final layer were selected for usability by those wishing to query valuable Conservation Value (CV) data for each reserve, along with a number of administrative attributes for locating and querying certain aspects of each parcel.

Constant error checking was conducted throughout the process to ensure minimal error being transferred to the production. This was done manually, and also by running numerous spatial and attribute based queries to identify potential errors in the spatial layer being produced.

Follow up phone calls were made to the rangers to identify exact localities of reserves where polygons could not be allocated due to missing or ambiguous information. If precise location data was provided, polygons could be added in, either from other crown spatial layers or from cadastre. These polygons were also attributed with the lowest confindex rating, as their status as crown land is unknown or doubtful.

In some cases existing GIS layers had been created for certain areas. Murray RLPB has data where 400+ polygons do not exist in the current crown TSR extract. According to the rangers interviewed it was determined the majority of these TSR exist. This data was incorporated in the TSR polygon by merging the two layers and then assigning attributes in the normal way, ie by being given a LP

Name and ID and then updated from the marked up hard copy maps. In the confidence index these are given a rating of 1 (see confindex matrix) due to the unknown source of the data and no match with any other crown spatial data.

A confidence index matrix (confindex) was produced in order to give the end user of the GIS product an idea as to how the data for each reserve was obtained, its purpose, and an indication to whether it is likely to be a current TSR. The higher the confindex, the more secure the user can be in the data. (See Confidence Index Matrix)

This was necessary due to conflicting information from a number of datasets, usually the RLPB ranger (mark up on hard copy map) conflicting with the crown spatial data. If these conflicting reserves were to be deleted, this would lead to a large amount of information loss during the project. If additions were made without sufficient data to determine its crown status, currency, location, etc (which was not available in all cases) the end user may rely on data that has a low level of accuracy.

The confindex was produced by determining the value of information and scoring it accordingly, compounding its value if data sources showed a correlation.

Where an RLPB LP Name and ID point was not assigned to a polygon due to other points being in closer proximity these names and ID are effectively deleted from the polygon layer. In a number of cases this was correct due to land being revoked, relinquished and/or now freehold. In a number of cases where the TSR is thought to exist and a polygon could not be assigned due to no info available (Lot/DP, close proximity to a crown reserve, further ranger interview provided no info, etc etc). For these cases to ensure no information loss a points layer was compiled from the LP points layer with further info from the marked up hard copy maps to place the point in the most accurate approximate location to where the reserve is thought to exist and then all CV data attached to the point. In many of these cases some further investigation could provide an exact location and inclusion in the TSR poly layer. The accuracy of the point is mentioned in the metadata, so that the location is not taken as an absolute location and is only to be used as a guide for the approximate location of the reserve.

Topology checks were conducted to eliminate slivers in the layer and to remove duplicate polygons. Where two crown reserves existed on the same land parcel, the duplicate polygon was deleted and unique attributes (Crown Reserve Number, Type, and Purpose) were transferred.

Once the polygon layer was satisfactorily completed, a list of the LP points not allocated to polygons was compiled. Any points (reserves) that were said to have been revoked or relinquished were then removed from this list to provide a list of those that are said to be current. An extract of the LP points layer was then produced with only the aforementioned points. These points were then attributed with the same conservation and biodiversity data as the polygon layer, in an attempt to minimise the amount of information loss.

Positional Accuracy

All external linework was captured from crown cadastral datasets, the positional accuracy is dependant on the source data. Internal linework was manually captured from reserve boundaries drawn on hard copy maps, this linework is dependant on the accuracy of the boundaries drawn or described on these maps.

Whilst the new TSR polygon layer is considered accurate or representative for most TSRs within the project study area it, nevertheless, is likely to contain a number of inherent errors which have not been able to be detected and corrected within the time and resource constraints allocated to this part of the project. Error sources are likely to include: incorrectly marked up maps; incomplete map mark up; errors (typographic, duplicates) in compiled TSR listing; inconsistencies between recorded TSR names and IDs and the corresponding map mark up; errors of omission and commission in transfer of Long Paddock and current TSR identifier details from the marked up maps to the polygon layer; and boundary issues.

Although considerable effort has been made to minimise the occurrence of such errors the accuracy the spatial layer attribution is likely to be more variable for the Coonamble, Nyngan, Coonabarabran, Hay and Northern New England RLPB districts. Therefore additional care should be taken in utilising any attached biodiversity data until these errors are corrected. In the case of Coonamble and Nyngan RLPBs no TSR ranger interviews and map mark up were undertaken to be able to verify current TSR listings and the component polygons to which they apply. The spatial layer attribution process for the three latter RLPB districts was carried out toward the end of this part of the project when time constraints prevented quality control from being applied as consistently as it had been for the majority of other RLPB districts in the project study area. Also in the case of NNE RLPB mark up of the maps for the northern half of the district was carried out independently by the TSR rangers without appropriate reference and corrections to a TSR inventory listing obtained during an earlier TSR ranger interview. In the case of Hay RLPB district rather than using the current Long Paddock naming convention the TSR ranger has preferred to group adjoining chains of TSRs (and their associated biodiversity values) into just over 20 stock routes – attribution of the TSR polygon layer was undertaken before differences in reconciliation of Long Paddock and current TSR name and ID listing was adequately resolved.

Attribute Accuracy

The accuracy of crown and administrative data are reliant on the source datasets. Conservation and biodiversity data was checked randomly for the layer and is reliant upon the manual entry and accuracy of numerous surveyors and data entry personnel.

Confidence Index Matrix(CONFINDEX)

[RESERVE_TY]	EXP	[PRIMARY_PU]	EXP	[STATUS]	SOURCE	[CONFINDEX]
All	OR	All	AND	NON RESERVE	Ranger	0
All	OR	All	AND	REVOKED	Any	0
Unknown	AND	Unknown	AND/OR	UNKNOWN	Any	0
All	OR	All	AND	PENDING REVOCATION	Any	1
Other Reservation	AND	Unknown	AND	CURRENT	Any	1
Travelling Stock Route	AND	None	AND	CURRENT	Murray GIS Layer	1
Travelling Stock Reserve	AND	None	AND	CURRENT	Murray GIS Layer	1
Future Public requirements	OR	Future Public requirements	AND	CURRENT	Crown Spatial Layers	2
Public or Community	AND	Public or Community Building or Facility	AND	CURRENT	Crown Spatial Layers	2
Infrastructure or Government	OR	Infrastructure or Government Services	AND	CURRENT	Crown Spatial Layers	3
Common	OR	Common	AND	CURRENT	Crown Spatial Layers	4
Travelling stock reserve - RLPB	OR	Travelling Stock Route or Facility	AND	CURRENT	Crown Spatial Layers	5
Travelling Stock Route or Facility	OR	Travelling Stock Route or Facility	AND	CURRENT	Parish Maps, Crown Plans	5
Travelling Stock Route or Facility	AND	Travelling Stock Route or Facility	AND	CURRENT	Latest Crown Spatial – June 2008	6

CONFINDEX explanation

0 = Unknown reserve type or purpose, may be revoked. Data was entered from Cadastre with Lot/DP details obtained from rangers, or other data source. Reserves with CONFINDEX of 0 should be reinvestigated and use of data should be treated with great caution. May not be crown land. **Very low confidence.**

1 = Reserve type is listed as other reservation, purpose is probably not for travelling stock. Reserves with CONFINDEX of 1 should be reinvestigated and use of data should be treated with caution. May not be crown land, could be pending revocation. **Low confidence.**

2 = Land is determined to be crown land from more than one source, purpose is not for travelling stock. Purpose may be incorrect due to inaccuracies in crown spatial data. **Low confidence.**

3 = Land is determined to be crown land from more than one source, purpose is not for travelling stock. Purpose may be incorrect due to inaccuracies in crown spatial data. **Medium confidence.**

4 = Land is determined to be crown land from more than one source, purpose is for common or public recreation or conservation. These are often stock reserves or for water or access to water. **High confidence.**

5 = Land is determined to be crown land from more than one source, purpose is for travelling stock. **High confidence.**

6 = Land is determined to be crown land from more than one source, purpose is for travelling stock, this is represented on the June 2008 crown spatial layer. **Highest confidence.**

Biodiversity Conservation Values (BIOCV) and Sources

Simple high to low codes are used to describe the BIOCV of each reserve. The surveyors name and year of the survey are supplied in the following field (Source with the a number corresponding to the BIOCV field)

BIOCV Value	Definition
H	High
M-H	Medium to High
M	Medium
L-M	Low to Medium
L	Low
U	Unknown/Unsurveyed

BIOCV1 is the TSR ranger biodiversity conservation value rating.
Source is ranger surname(s) and year.

METATDATA DATE

08/July/2009

METADATA AUTHOR

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COMPLIMENTARY DATASETS AND INFORMATION

- Unallocated_TSR_Conservation_Value.shp

- DECCW (2009) *Identification of priority conservation Travelling Stock Reserves in NSW*, Department of Environment, Climate Change and Water NSW, Queanbeyan.