WAGGAMBA SHIRE STOCK ROUTE AND CAMP AND WATER RESERVE ASSESSMENT

A report prepared by Evan Cleland on behalf of Birds Australia Southern Queensland in consultation with Waggamba Shire Officers.

VIEWPOINT

Comment in this report is made from the viewpoints of value to 1. travelling livestock and 2. biodiversity within the landscape.

1. **INTRODUCTION**

In accordance with its responsibilities for the Stock Route Network (SRN), Waggamba Shire is conducting an assessment and review of the stock routes (SR) and associated Camp and Water Reserves (CWR) within the shire. There are 51 reserves containing a total of 8963 ha and 985 km of stock route. We were requested to make an assessment of 17 reserves and stock routes P5 (part), P7 (part), P9, M891, S086, U811 (part) from the point of view of vegetation value and bird life and to report our findings.

2. **BACKGROUND**

The SRN was mostly established during the 1860's – 1870's to facilitate the need to move livestock between holdings, pasturage and market and Government legislation provided legitimacy and operational responsibility and standards. The establishment of the SRN occurred simultaneously with the occupation and boundary surveys of the pioneering properties so that the stock routes were excluded from private custody and formally included on survey maps – all this at a time when the landscape was essentially unchanged by altered fire regime and commercial activity.

Aboriginal pathways had for necessity linked natural water bodies across the landscape and for the same reason, stock routes linked those same sources of water often replicating the traditional network.

From the time of establishment until the present, stock routes and their reserves have experienced a periodic, intermittent style of grazing regime in contrast to the more permanent and intense stocking regime of the private holdings alongside. That fortunate circumstance has served to preserve grassiness and to avoid woody weeds.

In the modern context, that history has delivered a network which contains the best available sample of original vegetation in a relatively natural state which conserves an Aboriginal heritage, conserves an Australian heritage, provides and supports biodiversity and continues to be a livestock resource.

The maintenance of the SRN has been and remains financed by rate payers, income from pasturage (both travelling and static) and Government

Improved road transport has substantially reduced the travelling stock requirement for the SRN and is only partly replaced by its optional use as a more static pasture resource. As landholders no longer have an imperative need for the SRN and pasturage provides a reducing commercial income available for SRN maintenance there is need for review.

3. **METHOD**

The stock routes were travelled by motor vehicle. Surveys of vegetation and bird counts at the survey site were conducted at appropriate intervals selected to include a sample of major vegetation communities.

CWR's were inspected where tracks are available. Depending on area and relevance, up to three vegetation and bird surveys were conducted.

Vegetation surveys were recorded and scored on Qld Murray Darling Committee Inc Biodiversity Values Assessment Sheet 2 (version last modified 16/10/2005). Bird counts

were conducted (on 2 ha plots for 20 minutes) to the Birds Australia Atlas standards, recording bird species identified and numbers observed. (Incidental to the shire requirement, the bird survey results were reported for inclusion in Birds Australia's Ongoing Bird Atlas.) All survey results were entered into a data base to facilitate study.

4. RESERVE ASSESSMENT

With several exceptions, the reserves have adequate pasturage and are an important component of the vegetation within the landscape; they are essential to the SRN. The exceptions are Daymar (not part of the SRN), War War, Kilbronae, McKechnie's (degraded vegetation) and Iminbah (not suitable for livestock). Uranilla probably needs further examination.

Name	Area Ha	Pasture Value	Vegetation Value	Comment
Wolonga CWR	215.799	Moderate	High	Timbered areas have scrappy appearance because of thickening and over stocking but four distinct vegetation types occur. Reserve size is important in the landscape context. A quarry exists.
Newinga CWR	275.187	High	High	A gem! Excellent examples of sparse, grassy coolabah glades. Reserve is in good condition throughout. Is an important source of beneficial insects for intensive agriculture on east and west. Provides a broad vegetated corridor linking the riverine vegetation to drier woodlands otherwise separated by an unbroken belt of agriculture.
Merriot CWR	29.138	Low	High	The CWR itself is relatively unimportant so long as the riverine vegetation around the good quality waterhole is protected. The main vegetation value is derived from the broad stock route corridor linking the reserve to SR M808 about which the comments for Newinga CWR apply.
Daymar Reserve	139.212	Not relevant	Moderate	A quarry exists. Daymar is not on or near a SR and has no SR relevance. It is a significant patch of Poplar Box and Belah vegetation communities within a pasture landscape otherwise broken only by narrow wooded road easements.
Bungunya CWR	523.664	Low	Variable	The northern most portion contains natural condition riverine corridor of Weir River = High vegetation value. Between there and a Weir R. flood runner.(=low SR & veg. value) has been cleared and is now regrowing. If it is to be retained as CWR it needs careful treatment to reduce woody weed intrusion (Eremophila longifolia etc) and to thin out Brigalow suckering both with the objective of developing a grassy woodland of Coolabah, Brigalow and Myall. The section south of the flood-runner (= low SR & Veg. value) seems to have a history of overstocking. It needs closure and woody weed treatment sufficient to restore its pasture value.
War War CWR	212.46	Low	Low	A generally degraded site. The riverine strip is impenetrable. A large part of the remainder has been cleared and sown to Buffel Grass. Woody weeds now a problem. From a biodiversity point of view, Buffel is seriously degrading.

Name	Area Ha	Pasture Value	Vegetation Value	Comment
Uranilla CWR	242.761	Low	Low	A 242 ha reserve was not found. The area assessed is normal stock route with thickening of Bull Oak and Cypress.
McGregors CWR	202.343	Moderate	Riverine= high: Cleared= low	The riverine section along the creek is degraded by thickening which can be readily controlled while preserving the canopy trees. The cleared pasture section will improve if the brigalow-belah groves with under-story are encouraged to mature.
Iminbah CWR	1149.308	Low	Moderate	The entire reserve is heavily affected by vegetation thickening and unusable for livestock (very difficult to extract them) Originally, the reserve was probably a mature woodland with a shrubby, grassy under-story. An early phase of ringbarking of the mature trees led to cypress and bull oak infestation which was unmanageable. Presently, the first generation of regrowth is sufficiently mature to suggest a modified commercial forestry operation could be used to finance the restoration of grassy woodland conditions suitable for livestock.
Morecourt CWR	26.71	Moderate	Moderate	An attractive waterhole degraded by a road materials stockpile. The western section is young regrowth that requires management.
Kilbronae CWR	53	Not relevant	None	The site is mostly white rock and sand-pit quarry.
Munda CWR	10.93	Moderate	Moderate	The site contains an attractive lagoon but little pasture.
McKechnies Reserve	246	High	None	The entire site has been cleared to create a pasture. There is little remaining remnant vegetation value.
Rainmore Reserve Goondibilla Reserve Danes Reserve Keetah Reserve	306 36.422 2.859 11.332	Not assessed	Not assessed	These reserves have not been inspected.

5. **STOCK ROUTE ASSESSMENT:**

All SR's include a road easement but not all roads are SR's. Generally, SR's were established with adequate width for their purpose of livestock grazing while walking about 16 km per day. For the most part therefore SR's are greater than 100m wide. Road easements not associated with SR's are generally narrower and can be less than 40m. Generally, the value of vegetation on an easement is greater the wider the easement and that is confirmed as a fact for the road and stock route easements examined for this project.

In any reappraisal of the SRN care needs to be taken that width is not compromised.

Name	Section	Pasture Value	Vegetation Value	Comment
P5	Western boundary – Gradna Reserve	Low/Moderate	High	Most is a closed woodland with thickening. Utility for livestock is reduced by the density of timber in some parts. The SR is wide (>= 400m) for most of this section which gives the corridor high value in the landscape context.
P5	Gradna – Goondiwindi	Variable/High	High	The SR is of variable width. It contains a full cross section of floodplain vegetation communities in good condition. Many stretches are well grassed and are rare examples of original grassland converted to cultivation elsewhere.
	Boogera Reserve to Westmar	None	Low	Although this is not a SR we were requested to make an assessment. It is a relatively narrow road easement which has been impacted by adjacent activity and is degraded.
M891	Gore Highway – Moonie	Moderate	Variable/High	Of variable width, the wider sections are important vegetation remnants but where heavily wooded are of low pasture value. The density of highway traffic is a factor to be considered.
	Cunningham Hwy at East boundary - Yelarbon – Wondalli CWR	None	Low	Not a SR. Is mostly the Cunningham Highway easement nearly all occupied by road works.
U811	Yelarbon – Keetah	Not assessed	Not assessed	
S086	Wondali CWR – Wyaga	Not assessed	Not assessed	

6. **BIRD LIFE:**

Eighty species were recorded during these surveys (Appendix 1 for list) which is considered to be about 40% of those that would be found by repeated surveys at the same sites over a period of time and is a good result. Without the SRN, most of these birds would not be found on public land and would probably disappear from Waggamba Shire. Six of those recorded are listed as “Near Threatened” in the Action Plan for Australian Birds 2000.

7. OTHER MATTERS:

7.1. Vegetation Thickening

Vegetation thickening is an issue at some sites and the pasture value of the whole will decline unless it is corrected. In the case of the SRN, appropriate treatment would be to achieve the long term conservation of a grassy, open woodland which (except for some Brigalow stands) most would once have been. Such treatment would be neither easy nor cheap but is essential if the woodlands within the SRN are to retain or be restored to grazing value. The same can be said for the vegetation values of the SRN, thickened woodland is degraded woodland.

7.2. **A forestry solution**

Iminbah Reserve and probably Rainmore Reserve (not visited) are in more advanced stages of thickening and it may be possible to apply forestry thinning techniques for profit and return the reserves to some utility at the same time. If this were to be considered, it would be important to understand that the operation would be one to develop and maintain a mature, open woodland whereas a forestry objective is to develop a mature forest for ultimate destruction.

7.3. **Waggamba Shire – river reach and billabong, River Red Gum and Coolabah.**

Waggamba Shire covers three rivers, innumerable tributary creeks and a greater number of billabongs and waterholes which are great natural assets yet virtually unknown. This reporter does not know of any other region which can compare with this aspect of Waggamba but he is aware of other regions which make great advantage of much lesser assets.

A particular aspect that became apparent during this work was the unattractive appearance of some of the signposted highway rest stops yet almost always within close proximity of a beautiful and peaceful waterhole, lagoon or billabong. The rest stops should utilise the natural assets close by and be set up so as to maximise the natural beauty.

As an aside to the issues covered by this report we suggest that Waggamba can usefully promote the riverine aspects of its geography with substantial benefit to its ratepayers.

APPENDICES:

1.Waggamba Stock Route Bird Species

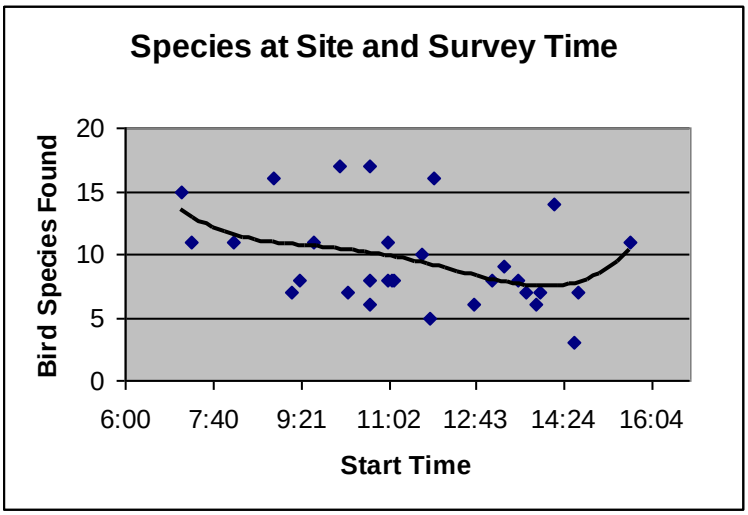
= Listed as “Near Threatened”.

Common_name

Peaceful Dove
Diamond Dove
Crested Pigeon
Australasian Grebe
Darter
Masked Lapwing
Royal Spoonbill
Great Egret
White-necked Heron
Australian Wood Duck
Wandering Whistling-Duck
Plumed Whistling-Duck
Pacific Black Duck
Grey Teal
Little Eagle
Black Kite
Brown Falcon
Sulphur-crested Cockatoo
Major Mitchell's Cockatoo #
Galah
Cockatiel
Pale-headed Rosella
Australian Ringneck
Red-rumped Parrot
Laughing Kookaburra
Sacred Kingfisher
Welcome Swallow
Tree Martin
Fairy Martin
Grey Fantail
Willie Wagtail
Restless Flycatcher
Jacky Winter
Hooded Robin #
Eastern Yellow Robin
Rufous Whistler
Grey Shrike-thrush
Magpie-Lark
Crested Bellbird #
Black-faced Cuckoo-Shrike
White-winged Triller
Grey-crowned Babbler #
White-throated Gerygone
Western Gerygone
Weebill
Yellow Thornbill
Inland Thornbill
Chestnut-rumped Thornbill
Yellow-rumped Thornbill
Rufous Songlark
Superb Fairy-wren
Splendid Fairy-wren
White-breasted Woodswallow
Black-faced Woodswallow
Brown Treecreeper #
Mistletoebird
Brown-headed Honeyeater
Striped Honeyeater
Brown Honeyeater
Painted Honeyeater #
Singing Honeyeater
Yellow-faced Honeyeater
White-plumed Honeyeater
Noisy Miner
Yellow-throated Miner
Spiny-cheeked Honeyeater
Blue-faced Honeyeater
Noisy Friarbird
Little Friarbird
Double-barred Finch
Olive-backed Oriole
Apostlebird
Torresian Crow
White-winged Chough
Pied Butcherbird
Grey Butcherbird
Australian Magpie
Crow and Raven spp.
Australian Raven
Striated Pardalote

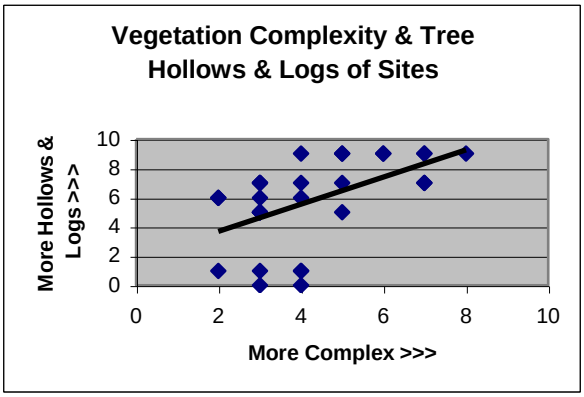
2. STATISTICAL ANALYSIS:

For logistical reasons surveys of birds were conducted throughout the day even though birds are less active and more difficult to observe in the late morning and early afternoon.



The chart shows that surveys were fairly evenly spread through the working day but the number of bird species identified was much less between 11 AM and 3 PM. For this reason comparison between one site and another is not attempted here. The following analysis uses the whole set of 30 Waggamba sites where hopefully the time of day of survey is less important.

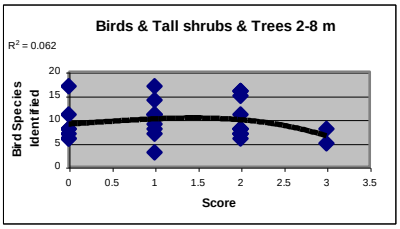
Surveys were conducted on reserves and stock routes listed by Waggamba and the individual survey sites were selected by the author as being representative of the vegetation found at those places.

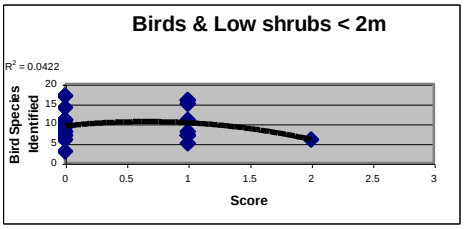


The graph of Vegetation Complexity and Tree Hollows above illustrates that the surveyed sites were reasonably spread between low (grassland) and higher (tall trees, small trees, shrubs and grass) complexity of the vegetation and with a reasonable spread of the number of trees with hollows and the amount of tree litter on the ground. Tree hollows are a good proxy for tree age. The Tree Age and Grassiness graph illustrates that the sites were fairly evenly representative of sites with older and younger trees and more or less grassy ground cover. Consequently, it is demonstrated that the selected sites represent a broad range of vegetation condition without undue representation of one type or another.

The Waggamba sample of thirty sites therefore can usefully be used to draw some conclusions about the relationship between the birds and vegetation on the stock routes of Waggamba.

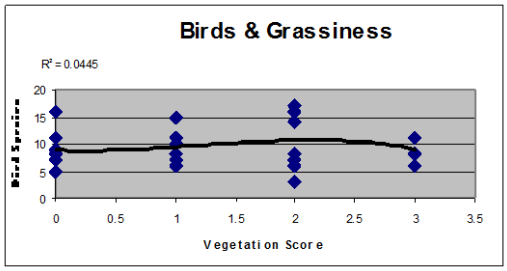
We have commented that vegetation thickening is a degrading process. The four following graphs illustrate the relationship that the Waggamba set of birds have with four elements of vegetation.





Left to right across these three graphs represent vegetation with greater cover (denser). In each case of tall trees, smaller trees and shrubs and low shrubs, the bird species number is reduced with greater cover (complexity) after peaking at a lower level of cover. The sites where vegetation thickening has occurred have a high score for Trees and Tall shrubs. A high cover score for low shrubs nearly always indicates woody weediness and it too depresses the number of bird species.

Grassiness requires an open vegetation canopy or few trees. There is poor grass cover under a dense canopy; conversely, high grass density goes with no or few trees. The graph shows fewer bird species with little grass cover (and therefore dense vegetation above) and again fewer bird species with high grass cover (and therefore few or no trees above) but most species in the middle range of grassiness where there is likely to be a moderate amount of tree and shrubs above the grass.



From the surveys and the above graphs it is possible to prescribe an “ideal” vegetation for the birds of the shire:

Trees > 8m	*26 – 50% cover*	*Clearly separated crowns*
Tall shrubs & trees 2m – 8m	*10 – 25% cover*	*Well separated crowns*
Low shrubs < 2m	*10 – 25% cover*	*Well separated crowns*
Grass & forbs	*31 – 70% cover*	*Touching to slight separation of plant foliage.*

With a good number of trees old enough to have many hollows.

Obviously, the above prescription is a composite of the particular requirements of each species of bird and each species of plant and in reality there will be a broad range of vegetation conditions and the birds best suited. Never-the-less the prescription underlines the fact that the natural Waggamba vegetation was a range of grassy woodland conditions with occasional brigalow and belah scrubs and it is that natural condition which is still represented on the stock routes and reserves of the shire.