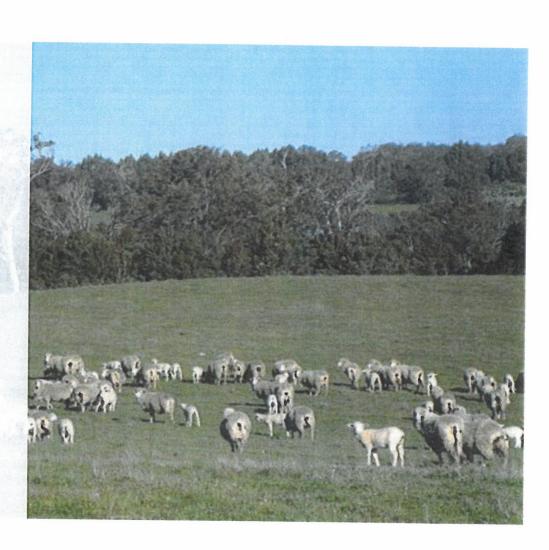


GILLAMII CENTRE

Sustainable Agriculture in Practice

CARING FOR OUR COUNTRY RGD14-C206



FINAL REPORT
Prepared by Gillamii Centre Inc
October 2015

Protecting EPBC species and improving soil health

Recovery, threat abatement and connectivity actions for EPBC listed Species; and best practice for sustainable soils in the South Coast of WA









Acknowledgments

Gillamii Centre Inc acknowledges the following organisations and individuals for their considerable contribution in the delivery of this project.

This project was supported by:

South Coast Natural Resource Management, Albany; Department of Agriculture and Food WA, Albany & Katanning; Shire of Cranbrook; and Caring for Our Country, Australian Government.

Gillamii Centre would also like to thank Living Farm consultancy and Wendy Bradshaw for their quality input in the non-wetting soil trials and revegetation program respectively.

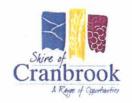
The Gillamii would also like acknowledge and congratulate all landholders who participated in the project, undertaking on-ground works on their properties.











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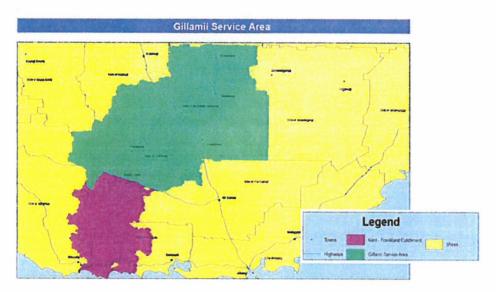
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Table of Contents

Acknowledgments	1
1. Introduction	4
2. Project Objectives	5
3. Project Outcomes	5
4. Project Extension	7
5. Project Evaluation	9
5.1 Efficiency / Appropriateness 1 5.2 Impact / Legacy 1	0
6. Project Learnings	3
7. Recommendations	4
8. Appendices 1	5
8.1 Workshop flyer: Brush Wallaby and Carnaby's Cockatoo Conservation	5
8.2 Workshop advertisement: Productive Saltland Pastures Forum	
8.3 Other media promotions: Newsletter and social media snippets	7

1. Introduction

The Gillamii Centre Inc. (further referred to as The Gillamii), located in Cranbrook, offers a range of services to a wide geographical area. This area is on the northern edge of the Stirling Ranges and broadly and historically encompassed the shires of Cranbrook and Tambellup/Broomehill. In recent times, the Gillamii services area has expanded to now include parts of the Kojonup and Plantagenet Shires.



The Gillamii service area has a varied rainfall ranging from 350mm through to 600mm in the west of the area. This combined with suitable soils and landscapes has led to a broad range of agricultural land uses including Broad-acre cropping; Mixed livestock and cropping; Viticulture; Perennial horticulture; and Farm forestry.

There are a number of land degradation issues prevalent throughout the area. These include wind erosion, subsoil acidity and water repellence that are affecting in excess of 60% of the area. The loss of biodiversity is also an issue and is a focus for The Gillamii.

The Gillamii Centre has been successful in delivering a wide range of projects and is committed to being a community based organisation that represents a wide range of landcare and agricultural views. The most recent Caring for Our Country project implemented by the Gillamii Centre, referred to as RGD154-C206 (EPBC Species & Soil Health) consisted of two main streams, relative to local nature conservation and agricultural production values respectively.

The aim of this report is to outline and evaluate the effectiveness of this project and provide future recommendations based on the project learnings.

2. Project Objectives

The Caring for Our Country project implemented by the Gillamii Centre, referred to as RGD154-C206 consisted of two focuses, pertaining to environmental and agricultural values respectively. The project description was:

Protecting South Coast Ecosystems: Recovery, threat abatement and connectivity actions for EPBC listed species.

Improving connectivity and condition of the corridor remnant vegetation will address fragmentation to allow improved prospects for animal movement. Fencing off high value vegetation, revegetating key areas and mitigating dieback will also improve habitat and prevent further fragmentation. This investment involves private landholders implementing strategic actions to protect the EPBC listed Carnabys Cockatoo and Tamar Wallaby.

Southern Soils – Best practice for sustainable soils in the South Coast of WA

The Gillamii Southern Soils component will establish two (2) demonstration field trails in targeted locations in the Cranbrook and Tambellup regions in key soil health area of water repellence. Associated workshops, field days, forums and communications activities will engage farming communities in innovative practices to increase skills and knowledge and adopt new behaviors. Specifically this project will utilise the two demonstration trials to identify the most effective approach of addressing non-wetting soils to enhance crop growth, carbon sequestration and reduce run-off. In subsequent years, paddock scale strip trials will demonstrate the most effective treatments to landholders.



3. Project Outcomes

More than 200ha of high-value remnant vegetation and habitat for the EPBC listed Carnaby's Black Cockatoo and/or Black Gloved Wallaby on private property is now protected. The fenced sites (located over six properties) are of high connectively value, including a significant portion of creek-lines. In addition, 13.8ha of native revegetation was implemented (over three properties) to help buffer and enhance biodiversity values in into remnant bushland areas. Weed control was coordinated by landholders in these sites.

Two non-wetting soils trials sites (2ha in total) were established to identify the most effective approach in enhancing crop growth and reducing run-off in areas subject to water repellence. Once completed, the results of the trial and previous soil health projects will be publicised as summarised case studies/ information sheets available online and accessible to landholders and other NRM groups. The trial will also be included as a demonstration site in one of the Gillamii Centre's popular Crop Walks. In subsequent years, paddock scale strip trials will demonstrate the most effective treatments to landholders. Further funding has been acquired to continue to build on this project.

Summary of Achievements

- Total of 21.6km of fencing, protecting more than 200ha of habitat on private land, over six private properties
- Total 13.8ha of revegetation was implemented (over three properties) to help buffer and enhance biodiversity values in into remnant bushland areas.
- Vegetation Survey of Black Gloved Wallaby Habitat [at Rock Hole Dam Nature Reserve,
 Tenterden Nature Reserve and adjacent remnant] Report compiled by E.M (Libby) Sandiford
- Community capacity building via two educational workshops; one linked to EPBC Species and one to Agriculture
- 1 fully attributed GIS dataset
- Successful non-wetting soils trials (2ha) established on two privately owned properties, engaging 2 landholders and two agricultural organisations
- Additional testing for [a separate] GIllamii Cropping Systems Soil Health Project, investigating biological treatments for non-wetting soils
- 3 Soil Moisture Probes purchased, currently installed in a EverCrop Trial (observing the
 potential for cropping into perennial pasture) that can be retained for use in future projects
- Consultant engaged to produce and publicise soil health trial case studies online

4. Project Extension

Community engagement largely was largely comprised of two workshops; one linked to EPBC Species, 'Brush Wallaby and Carnaby's Cockatoo Conservation' and one relative to Agriculture, 'Saltland Pastures Farmer Forum'. Marketing and promotion mostly consisted of a newsletter distributed by the Project Officer during the first year of the project and repeated in various local publications (attached as Appendix C) and signage at the trial sites.

Workshop: Brush Wallaby and Carnaby's Cockatoo Conservation

The Brush Wallaby and Carnaby's Cockatoo Conservation workshop (December 2013) was an awareness raising event consisting of a presentation and field activity, in collaboration with Oyster Harbour Catchment and Green Skills. Topics included current initiatives in the area pertaining to EPBC listed species and/or programs delivered to assist in their conservation; local citizen science opportunities; and a proposal for a Quenda enclosure.

The audience (attendance of 16) consisted of community members and industry professionals, and fostered a robust discussion on programs underway by different groups and the strengths and weaknesses of constructing a fauna enclosure.







Workshop participants observing Wallaby gates as part of the field activity.

Workshop: Saltland Pastures Farmer Forum



The Saltland Pastures Farmer Forum event predominantly targeted managing salt land areas, however a component relating to managing non-wetting soils was included. Participants received a large amount of information and take-home resources, much of which was taken back to the respective districts of attendees to be promoted amongst their landholder base. One of such resources include a 'Salt Bag' (soil and water salt testing kit), valued at \$300.

Attendance included other like-minded organisations such as Blackwood Basin Group, Esperance Regional Forum, Wagin Woodanilling Landcare Zone and DAFWA. The three farmers attending indicated that they were keen to apply the knowledge gained on their property. One of these three farmers was the new owner of the Wansbrough Site (an ongoing trial driven by The Gillamii). There was expressed interest in making the event available for other regions in a package format.

5. Project Evaluation

Project success was measured based on data collected to demonstrate achievement of project objectives; and photo-point monitoring pre and post on-grounds works. The latter will require a minimum of twelve months to be effective in determining whether the revegetation was successful. Technical reports from the Soil Health trials could possibly have been another data collection point; however, the trial site was established later than planned and the trial results are not yet available.

Summarily, the project completed all the on-grounds works that were required to succeed. The value for money has been reasonable; however, several minor challenges experienced over the course of the project, resulted in two of the project objectives only being partially met. The table below summarises the effectiveness in achieving key deliverables:

Key deliverables	Effectiveness (Extent to which outcome was delivered)
18km of fencing protecting 180ha habitat	Objective over achieved 21.6km of fencing was installed, protecting more than 200ha of habitat collectively, on six private properties.
10ha protecting or restoring vegetation	Objective over achieved 13.8ha of revegetation was implemented over three properties Site A: 4ha; Site B: 4.5ha; Site C: 5.3ha
1x Proteaceous vegetation condition survey assessing habitat for Carnaby's and/or black gloved wallaby; and 1x resulting vegetation survey report	Objective achieved 1 Proteaceous vegetation condition survey assessing habitat for the black gloved wallaby was conducted; and Vegetation Survey of Black Gloved Wallaby Habitat [at Rock Hole Dam Nature Reserve, Tenterden Nature Reserve and adjacent remnant] Report compiled by E.M (Libby) Sandiford
2x Workshops – EPBC Species (and participant surveys) 2x Workshops – Soil Health (and participant surveys), engaging 8 Farming entities and 30 land managers	Objective partially met Two workshops were delivered in total; one linked to EPBC Species, 'Brush Wallaby and Carnaby's Cockatoo Conservation' and one relative to Agriculture, 'Productive Saltland Pastures Farmers Forum' of which, only three landholders attended (higher representation of other organisations/ industry groups).
One fully attributed GIS dataset	Objective mostly met An attributed GIS dataset was submitted; however, one of the revegetation sites was not included in the PCDS as it was a late addition allowed by a more efficient use of funds.
2x farming entities conducting (soils) trials; 2x demonstration trials; 2ha of trials	Objective mostly met Two farming entities are conducting two non-wetting soils trials on their (privately owned) properties. Total of 2ha of trials instead of the originally proposed 3ha due to a delay in funding and resources early in the project.

5.1 Efficiency / Appropriateness

The fencing component in particular, has been of good value with fencing being of high quality and a greater area being fenced than was required. Two of the six fenced sites also constituted two of the revegetation sites (planting into these fenced areas) and three of the participating landholders expressed interest in additional fencing when available. There is frequent expressions of interest for work of this kind on local properties — a database of which was established and will mean reduced timeframes in ascertaining willing and appropriate landholder participation in the future.



Similarly, more than the required amount of revegetation was undertaken. Having an experienced Gillamii Committee member actively on board as a consultant, whom was also available in assisting landholders calibrate planting equipment hired from the Gillamii Centre, ensured ultimate value for money was achieved and that correct species were sown/planted in appropriate conditions. Revegetation included a combination of planting seedlings and direct seeding with the aim to maximise the biodiversity outcomes and potential success (establishment) rate.

Challenges in implementing the revegetation component included unforeseen late delivery by the nursery engaged (as a result, some of the planting was not completed until after project closure) and competing bookings of the hire machinery. In addition, one of the landholder's engaged a Green Army team to plant seedlings (which otherwise contributed to the efficiency of the project) who were unable to undertake the planting until later than was planned, due to changes within the logistical requirements of the program. This meant the seedlings were planted quite late in the season and therefore didn't benefit from as much rainfall during establishment; and the landholder had not undertaken sufficient weed control at the site.

A total of 2ha of soil health trials was established instead of the originally proposed 3ha due to a delay in funding and resources early in the project, which also meant the trial was not complete by project closure. However, the trial quality is of high professional standard, in collaboration with DAFWA and the result will be directly beneficial to local landholders.

The other partially met objective was the community participation. Two of the four [required] workshops were delivered in total; one linked to EPBC Species, 'Brush Wallaby and Carnaby's Cockatoo Conservation' and one relative to Agriculture, 'Productive Saltland Pastures Farmers Forum'. The latter was attended by three landholders (higher representation of other organisations/ industry groups), less than the targeted fifteen per workshop. While attendance was low, the quality of the events were of high standard, facilitated by knowledgeable and engaging presenters.

Early identification of a likely underspend in funding meant that a variation could be negotiated, which allowed additional successes in the final year of the project. One example is the purchase of soil moisture probes which will be valuable for current and future soil health trials. A reallocation of \$8500 to broaden the scope of soil testing for the Gillamii Cropping Systems Soil Health Project, produced interesting preliminary results, worth further investigation.

Funding was also accrued for the collaboration of case studies of previous soil health trials which will mean the information can be better shared and utilised, in addition to helping to raise the profile of The Gillamii and the range of projects and services it is engaged in, potentially assisting in attracting a broader participation.



installed into an EverCrop trial in Cranbrook.

5.2 Impact / Legacy

The preliminary impact of the project is difficult to quantify; however, the legacy of the ongrounds works will continue. Further funding was acquired via the SCNRM to continue to build on this project over the next three years. The second project will again, be delivered by the Gillamii Centre's Project Officer.

The objective of the 21.6km of protective fencing and 13.8ha of native revegetation implemented was to improve connectivity and enhance future habitat and foraging opportunities for native fauna, especially EPBC listed species. In addition, the objective of the *Vegetation Survey of Black Gloved Wallaby Habitat* was to determine the vegetation correlations at recorded wallaby habitat sites, which will aid in directing future revegetation strategies where appropriate.

The Non-Wettings Soils Trials will continue and be expanded to four trial sites and in subsequent years, paddock scale strip trials will demonstrate the most effective treatments to landholders. DAFWA and Living Farm (consultant) are engaged for the continuance of the trial. In addition, funding was accrued so that information resulting from the trial - and previous soil health projects - will be publicised as summarised case studies, available online and accessible to landholders and other NRM groups



6. Project Learnings

Protecting South Coast ecosystems: Recovery, threat abatement and connectivity actions for EPBC listed species.

Sandiford, E.M (2014). *Vegetation survey of Black Gloved Wallaby Habitat* [Rock Hole Dam Nature Reserve, Tenterden Nature Reserve and adjacent remnant]. Prepared for the Gillamii Centre:

77 Species have been identified as suitable for Black Gloved Wallaby restoration work in the Forest to Stirlings areas based on dominance, potential shelter species and known dietary species observed during this survey. It is likely further survey and observation of Black Gloved Wallaby habitat in the Forest to Stirlings area will provide additional species suitable for restoration work.

As Black Gloved Wallaby are known to feed in relatively open areas at night and shelter in denser vegetation during the day, it is likely a variety of restoration methods will be required to ensure a range of habitat and density of vegetation are established. These may include different seed composition and application rates along with hand planting.

It is recommended that herbs, grasses and monocots species be used in restoration work, along with more commonly used life forms, trees and shrubs, as studies indicate these smaller life forms form a large part of dietary intake of Black Gloved Wallabies and they represent 42% off species recorded during this survey.

Southern Soils - Best practice for sustainable soils in the South Coast of WA

While not a direct outcome of the project, part of the funding variation meant that additional testing could be undertaken for the Gillamii Cropping Systems Soil Health project. This meant a broadening of the scope of testing, allowing a more detailed study of carbon to nitrogen ratios and innovative testing of extractable organic carbon; and water extractable organic nitrogen levels. Water extractable organic carbon and/or nitrogen testing produces much more accurate results; and according to various scientific papers, is a more reliable indicator of the relationship between carbon to nitrogen ratio and phosphorus and nitrogen availability.

The testing provided some interesting preliminary results including microbial activity and their response to carbon and nitrogen ratio levels. An early hypothesis is that particular imbalances in soil microbial activity is due to something is being produced that is not being re-digested properly later, which is resulting in non-wetting soils. This would need to be proven with further biological testing.

7. Recommendations

Engaging an experienced consultant to assist with the revegetation program worked well and this is a recommendation for the continuance of this project through the NLP-GIL-03-04 project. As well, revegetation should be undertaken earlier in the project where possible to enable a brief monitoring period prior to reporting and to accommodate any unforeseen delays.

It is recommended that herbs, grasses and monocots species be used in restoration work in areas of favourable habitat for Black Gloved Wallabies, along with more commonly planted trees and shrubs, as these smaller life forms form a large part of dietary intake of the Wallabies. It is likely further survey and observation of Black Gloved Wallaby habitat in the Forest to Stirlings area will provide additional species suitable for restoration work.

It is also recommended that the non-wetting soils trials be continued and eventually, be applied to paddock scale. There may also be potential to cross reference the results of the trial with that of the Gillamii Cropping Systems Soil Health learnings, for which this project allocated additional funding (to broaden the scope of soil testing). This could potentially provide a multicombination approach incorporating biological management of non-wetting areas.

Trialing different means of surveying participants would be beneficial. Some examples include a joint response (so the group, or sub-groups decides the response to survey questions collectively); simpler, multiple-choice questions; electric options (for participants carrying smart phones, tablets or laptops), or; a returned survey being required before a meal/beverage or social activity as an incentive. There may be room for improvement in promoting the project as it progresses, particularly a more effective use of Social Media.



8.1 Workshop flyer: Brush Wallaby and Carnaby's Cockatoo Conservation







Green Skills, The Gillamii Centre, Oyster Harbour Catchment & South Coast NRM present the following field-day:

Brush Wallaby & Carnaby's Cockatoo practical Conservation

1 to 4pm Monday 9th December 2013

Venue to meet for bus trip; Agricultural Catchment Centre, Mt Barker, (old Railway Station off Albany Highway)

Transport available

This FREE field-day will:

- Inspect Wallaby Gates installed on the Saggers' property next to the Stirling Ranges National Park.
- Hear from Mark Waud, Oyster Harbour Catchment Group officer, and Tim Saggers, landholder and fencing contractor, on practical measures to conserve this vulnerable species
- Inspect breeding sites of the threatened Carnaby's White tailed Cockatoo and discuss practical measures to conserve this and other vulnerable fauna species.

Please RSVP for transport and catering purposes by Thursday 8th December 2013 to the Green Skills Denmark Office on 98483310 or to

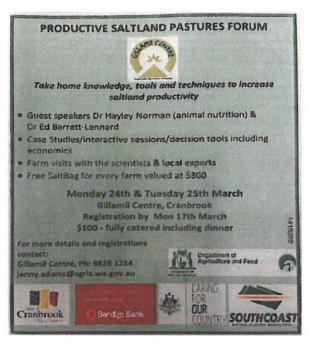
Basil Schur 98483310, 0429481019 Email bschur@greenskills.org.au

This Field day forms part of the Gillami Centre. Green Skills and Oyster Harbour Catoment Group's blookversty programs. The Restoring Condustria Revegetation and protecting the Forests to Entrywest mecro-coindor in supported through funding from the Australia Government. This program has also received support from Lobeywest. South Coast NRMs Wildlife Company project with funding through the Australia Government's Coring for our Country Program, Gondwana Link Ltd., and the Department of Fenks and Wildlife. This project is also supported by funding from the Western Australian Covernment's State NRM Program.





8.2 Workshop advertisement: Productive Saltland Pastures Forum



Workshop advertisement for the **Productive Saltland Pastures Forum** was printed in The Countryman on February 13 and March 13 2014; in addition to Elders' Farm Weekly on February 13 and March 13 2014.



Cranbrook salt forum

This year in March the fourth an-nual EverTrain Saltland Forum is being held at the Gillamii Centre in

being heid at the Ghiamit centre in Cranbrook.

The forum will focus on deliver-ing information and tools for land-holders to turn marginal, salt-ef-fected country back into productive

fected country back into productive land.

It has the backing of Department of Agriculture and Food WA, the South Coast Natural Resource Management Caring for Our Country program, Shire of Cranbrook and Bendigo Bank.

Information will be presented to participants on the first day, with guest speakers University of WA plant biology Professor Ed Barrett-Lennard and CSIRO livestock industries research scientist Hayley Norman to share knowledge on saline rehabilitation and animal nutrition.

Hydrology and economics are also expected to be discussed on the day, with participants to learn how to use the tools provided in a takehome Salt Bag.

Dinner and entertainment at night during day one has been organised to encourage networking between participants.



has on management strategies learned the previous day. This enercies is tipped to provide practical application for gained information. The event has proved popular in previous years and is a fantastic opportunity for people to

sess and manage saline areas.
If you would like to know more or register for this event, contact the centre on 9826 1234 or email je nyadams@agric.wa.gowau.

The Countryman – February 13 2014

8.3 Other media promotions: Newsletter and social media snippets

Non-wetting soils trial

We are getting our non wetting solls trial underway. A collaboration between Gillamli and DAFWA, we are investigating the effects of a number of different treatments including modified tillage points, wetting agents at different times, claying at different rates, banded treatments, mouldboarding at different depths and a couple of Australian Mineral Fertiliser treatments. We have two sites, one is a gravelly soil just west of Cranbrook and the other is deep sands east of Cranbrook just north the Stirlings. We are excited to see what results we can generate from this trial. To keep up to date with results from the trial, register your interest with us.

FUNDING AVAILABLE - Fencing & revegetation for **Vulnerable Species listing**

I still have some revegetation funding available accompanied by fencing which is targeting habitat/ roosting/forage areas for any of the three black cockatoo species, (Carnaby's, Baudin's or Red Tailed) the Muirs Corella or the Black Gloved (Brush Tailed) Wallaby. If you see any of these species passing through your property, or have them adjacent to your land, I would like to hear from you. We can offer fencing and revegetation through the current federal government's Caring for our Country program which is provided to us by South Coal Natural Resource Management. This is a great opportunity to get revegetation and fencing when funding from government sources has drastically reduced compared to several years ago.

Cranbrook Newsletter March 2014



Project Officer-Gen Harvey

Soils Health Innovation Fencing & revegetation for South Coast NRM has a Southern Soits

Valinarable Species listing

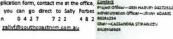
Auding gant evaluative witch will facilitate

Field have some revegetation funding

Field have some reversition for many funding field funding fu South Coast NRM has a Southern Soils

EUNDING AVAILABLE Country program which is \$ outhern Incentives provided to us by South Coast Natural South Coast NRM has released the new Resource Management. This is a round of southern incentives Funds of up frest opportunity to get receigetation to \$20,000 are available undertake and fencing when funding from govstrategic revegeration, fending of remnant emment sources has drastically re-bush, removal and control of weed and duced compared to several years ago. rabitic control. If you would like some assistance with one of these, this is a good oportunity to get some funding, you would like more detail, or an application form, contact me at the office, Freet offi

OUTHCOAST -



FUNDING AVAILABLE Vulnerable Species listing

eral government's Caring for our

Depaitment of Agriculture and Food Cranibratick

We are getting our non-wetting sold trial underway. A collaboration be-tween Gillamii and DARWA, we are



OUR





Gillamii Centre Inc. Sustainable Agriculture in Practice added 3 new photos

Photos of Perry Dolling (DAFWA Katanning) and Craig Nield (Contractor for Familink Rural Bunbury) Installing soil moisture probes at Mick Walsh's farm on Tuesday. The three soil moisture probes were purchased by the Gillamii for use on the EverCrop trial (looking at the potential for cropping into perennial pasture) and will be used at other trial sites in the future Each probe is 1 2m in length and logs soil moisture at 10cm increments down the soil profile.



144 people reached

Boost Post