



Heathcote 'Local to Landscape' Plan

Local to Landscape Action Plan and Prospectus: A Plan for community-lead landscape-scale ecological restoration

April 2020

Draft



Key Partners and Acknowledgements

Biolinks Alliance is proud to acknowledge the Traditional Owners of the places where we live and work. We recognise and respect the enduring relationship they have with their lands and water, and we pay our respects to Elders, past, present and future.

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Summary

Members of the Heathcote community, with Biolinks Alliance (Biolinks) and with the support of the City of Greater Bendigo (CoGB), embarked on a Local2Landscape (L2L) Action Plan process to develop a community vision for restoring the ecological health of the Heathcote environment. The L2L process is Biolinks' novel formula for modernising our approach to biodiversity conservation with bettered structured collaboration between communities and other organisations and articulating the aspirations of local communities in the terms of Landscape (21st century) Science – with the ultimate aim of ensuring more ecologically effective outcomes. Better preparing our degraded landscapes to withstand Climate Change, to avoid extinctions and to allow communities to thrive were the issues foremost on the minds of the locals involved.

The Heathcote L2L process kicked off with a scoping meeting (Feb. 2018) initiated by key community members and landholders; then a field-based 'walkshop' (April 2019) to explore the area's biodiversity and the processes supporting and threatening these natural values; followed by a planning workshop (Nov. 2019) to agree on key ecological targets, key threats and actions, plus priority pilot projects. The community identified six key ecological targets that they believed best represented their environment and should be a priority for local protection and/or restoration projects. These are: Habitat trees, Wild Duck and Mclvor Creeklines and watersheds; Habitat corridors ('Biolinks'); Gliders/Phascogales; Threatened Woodland Birds; and Soil Health. Issues of governance; project management; community engagement and communications; data and knowledge; tools, processes and implementation; community capacity, resources; and funding were all considered in exploring the sorts of projects that could advance these objectives.

However, unless adequate funding can be secured, the best plans in the world will never get implemented, so a further key aspect of the Biolinks L2L process is the need to develop an investment prospectus and to attract involvement from potential investors (from a diversity of sources including: govt, private sector and philanthropic) right from the very beginning. The investment package proposed comprises three pilot projects (#1 Protecting Large Old 'hero' Trees; #2 Spring Plains Watershed Repair [to improve habitat for Swift Parrots]; #3 Improving Soil Health) and an Community Capacity Building program which would (amongst other things) formalise Traditional Owner engagement and participation in all aspects of the process and oversee plan review incorporating the development of further pilot projects around the balance of the ecological targets, namely: riparian habitat, biolinks and Gliders/Phascogales.

The budget is structured around two steps – Phase 1 (the development of a detailed Operational Plans; \$80k in 2020) and Phase 2 – implementation of Operational Plans (~\$913k from 2020/21 to 22/23). Currently, Phase 1 – outlining project/program aims, and why and how this will be done and what the cost will be – has been partially funded, while implementation (Phase 2) will depend on securing the necessary funds from government, private and/or private philanthropic sources.

Table 1: Summary table of proposed strategic actions

An integrated package of initial strategic actions is suggested – all of which emerged from the planning workshop in Heathcote (Table 1) – showing the link between Ecological Targets and Strategic Actions, Pilot Projects, Budget and Timelines.

Targets	Heathcote L2L Action Plan Component	Phase 1 funding (Ops Plan; 2020)	Phase 2 funds (2020/21 to 22/23)	Description
1. Habitat Trees	Pilot Project 1: Protecting Large Old 'hero' Trees;	\$ 20,000	\$ 124,000	Mapping location and condition of LOTs; Conservation options; Education/awareness program program; Stewardship support; Arborist program
2. Wild Duck Creek and McIvor Creek riparian corridors and watersheds	Community capacity building;	\$ 5,000*	\$ 375,000	Action Plan Facilitator- Project Manager, Traditional Owner Project Officer. Biolinks: (1) Governance and partnerships; (2) Community engagement and communications; (3) Investment and philanthropy; (4) Science and knowledge. A second tranche of pilot projects around riparian habitat, biolinks and Gliders/Phascogales will be progressed as the Community Capacity Building is implemented. *Incl. likely funding for formalising Traditional Owner engagement and participation in all aspects of the Heathcote L2L Action Plan
3. Habitat corridors links ('biolinks')				
4. Gliders/Phascogales				
5. Threatened woodland birds	Pilot Project 2: Spring Plains watershed repair (to improve Swift Parrot habitat);	\$ 25,000	\$ 250,000	Ecological repair of White's gully in Spring Plains NCR; Ecological thinning of BIF regrowth; Instream leaky weirs; Understorey regeneration and hydrological/soil repair
6. Heathy Soils	Pilot Project 3: Improving Soil health;	\$ 30,000	\$ 157,000	Raise landholder awareness of soil health/"ecological literacy" via events, resources and demo. sites; build capacity and partnerships to facilitate change via: habitat restoration, rotational grazing and evidence-based monitoring
	Sub Total	\$ 80,000	\$ 906,000	
	Grand Total	\$	986,000	

“It’s a bottom up process of groups working with neighbours across the landscape. This is the future of conservation. We can only do it by working together”

Dr Gary Tabor, Co-founder Yellowstone 2 Yukon, Director Centre for Large Landscape Conservation

“I have probably only taken the area at face value previously, it seemed like a pretty uninviting environment. After gaining more knowledge, I am aware of more aspects and can appreciate what the area has been through and where it needs to go. ”

Heathcote Biolinks Walkshop Participant

“All I have seen and heard has opened my mind to see the area differently”

Heathcote Biolinks Walkshop Participant



Taungurung Traditional Owner Shane Monk performing Welcome to Country at the Heathcote Local to Landscape Walkshop

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Background

About Biolinks Alliance

Biolinks Alliance is the only organisation in Victoria dedicated to inclusive, large-scale conservation – designed to foster coalitions, to align and coordinate efforts, and to bring in the planning and know-how, to ensure we work smartly and succeed. Biolinks Alliance has identified a unique role for itself as a partnership and capacity-building organisation that will ensure the momentum for community-driven conservation on public and private land in central Victoria is supported, coordinated and amplified at a landscape scale. Instigated in October 2010, by 30 concerned central Victorian individuals, the organisation is now, in 2020, a growing network of 18 Landcare and Conservation Management Networks (CMN) member groups with far-reaching networks, a solid bank of scientific knowledge, a sustainable model for long-term planning and a unique tool called “Local to Landscape” for planning landscape-scale species protection.

Local 2 Landscape Heathcote

Members of the Heathcote community, with Biolinks Alliance, embarked on a **Local to Landscape (L2L)** planning process to develop a plan for ecological restoration in the region, funded by a two-year community grant from the City of Greater Bendigo (CoGB).

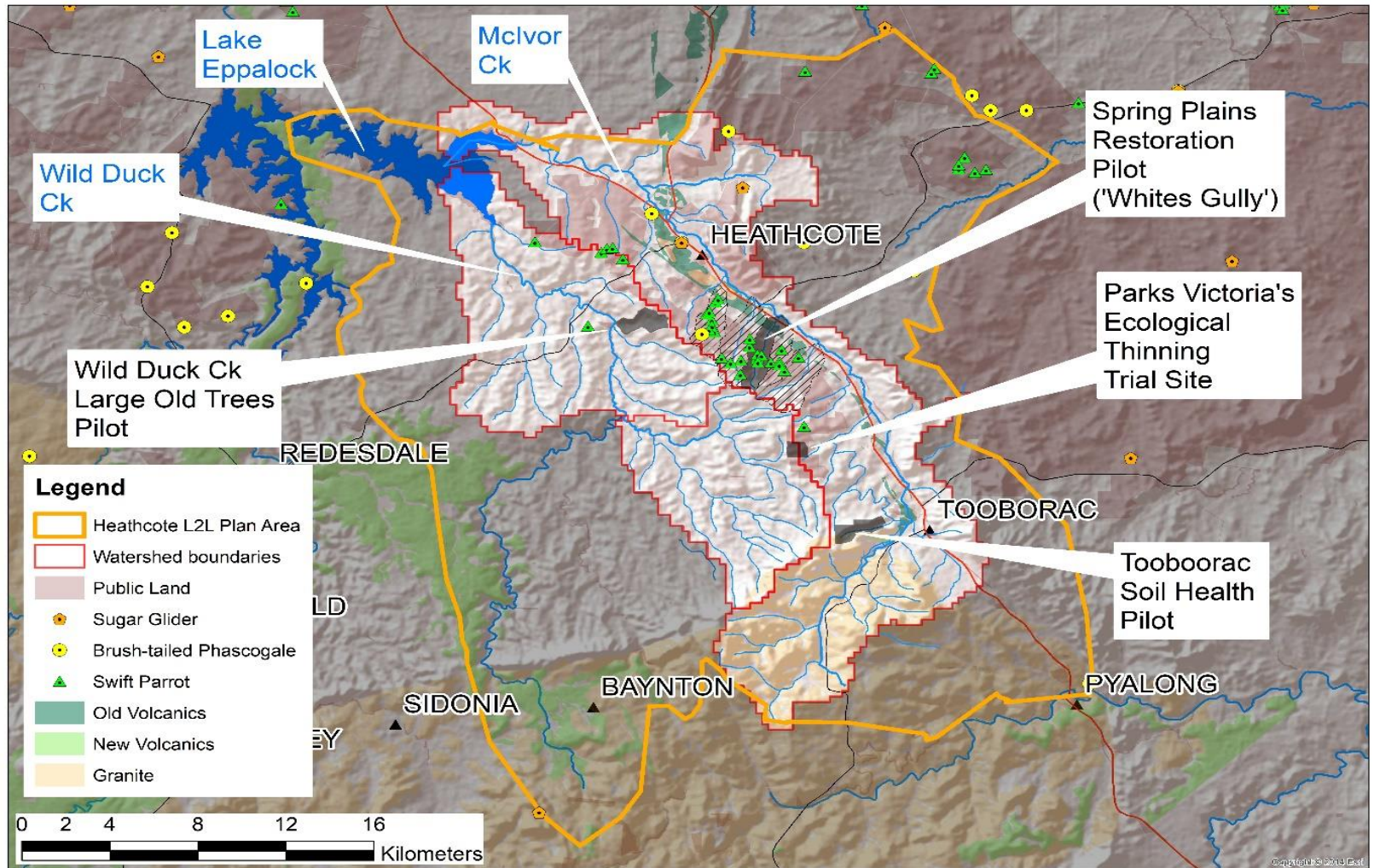
L2L is a new collaborative and community-building process designed to support the development of a collective and ecologically-informed understanding of the landscape, and the uptake of best practices for transformational ecological repair. The process produces a prospectus list of high priority projects, as well as strategies for their implementation and funding, enabling more targeted and effective ecological restoration to halt species extinctions, ecological breakdown and to build climate resilience.

The L2L process balances the appetite in the community to get on with undertaking conservation works with bringing together a collaborative and ecologically-informed and long-term plan of action. It aims to proceed with on-ground ‘pilot’ projects that are important and have community support, while developing a more comprehensive restoration plan for the broader landscape/region. This document represents that plan for the Heathcote region (Figure 1).

The April 2019 ‘walkshop’ exploring the area’s biodiversity and threatening processes



Figure 1: Overview of Heathcote L2L plan area centred around the Wild Duck and McIvor Creek watersheds.



Strategic Context

An important aspect of the L2L planning process is to combine the elements of Landscape Science with collaboration clustered around local communities. Central to the notion of community capacity building is ensuring communities are doing the 'right things at sufficient scale' in order to be effective, and this necessarily requires everybody working together – be it the landholders, research bodies and innovators, or the agencies, NGOs and Traditional Owners.

It is clear that government is increasingly striving to strengthen collaboration and connection through initiatives such as Biodiversity Response Planning – a program designed to deliver on-ground biodiversity action under 'Biodiversity 2037' (the State Government's Biodiversity Strategy). The L2L process has been expressly designed to help modernise Victoria's approach to biodiversity conservation – a need highlighted in the 'Biodiversity 2037' strategy. In particular L2L helps build more structured collaboration between communities and other organisations by articulating the aspirations of local communities in the terms of Landscape (21st century) Science – with the ultimate aim to ensure ecologically effective outcomes: an environment that is more healthy and productive, more prepared to withstand Climate Change, as well as one that truly sustains our unique and diverse flora and fauna. Thus, if all the signs are that we are not achieving this result – as we have been seeing in all current environmental audits (Victorian State of Environment Report, 2018) – then we need to be prepared to change course, and the L2L process highlights what this might look like in the Heathcote region, both in terms of what we do and, just as importantly, how we do it (together).

The L2L process works in a similar fashion with the Goulburn Broken CMA and North Central CMA's Regional Conservation Strategies and as well as the City of Greater Bendigo's Community Plan (Goal 5: Environmental Sustainability – 'Demonstrate leadership in sustaining the rich biological diversity of the Greater Bendigo region that sustains healthy ecosystems') and its Greater Bendigo Environment Strategy (Goals to 'increase connectivity' and 'increase knowledge understanding and appreciation of natural environment and ecosystem function'). Both of these documents represent (nested) regional and local strategies for implementing 'Biodiversity 2037' and the L2L process helps link these to community action and ecologically effective outcomes across the Heathcote region/community.

The L2L process also supports Victoria's Climate Change Adaptation Plan 2017-2020 and specifically the Adaptation Plan for the Loddon Mallee Region's objectives to build the adaptive capacity of communities (including strengthening climate change and adaptation knowledge, building community networks for to share knowledge and lessons learned, supporting actions that deliver mitigation projects, such as more resilient agricultural techniques and managing climate impacts on the natural environment).

At a local scale the L2L process aligns with a key goal of the Heathcote region's Local Community Plan for 'Making Heathcote & region attractive, environmentally responsible and liveable'.

The L2L process also strongly aligns with BirdLife Australia's 2019 Southeastern Australian Threatened Woodland Bird Conservation Action Plan and provides a model/mechanism for the delivery of the local scale-objectives of that plan.

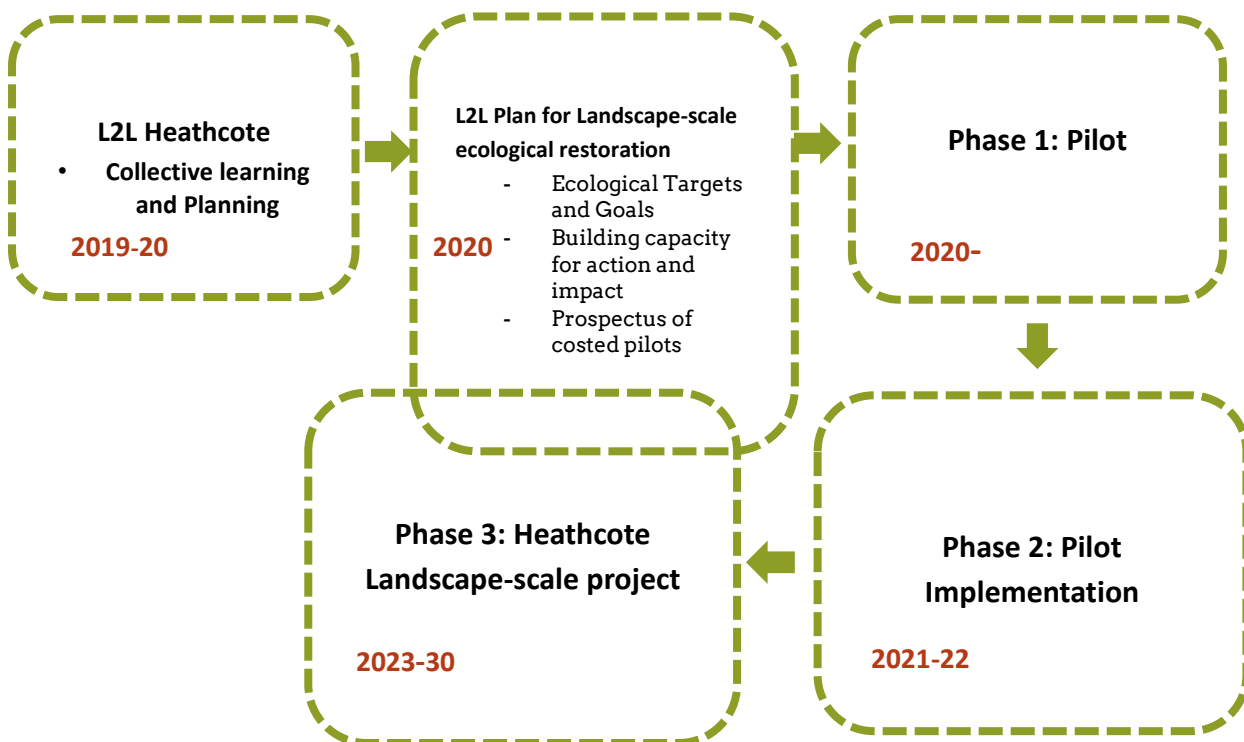
Local to Landscape process

This Plan brings together the outcomes of the L2L process to date and proposes an implementation model for the implementation of the plan for community-lead landscape scale ecological restoration in the Heathcote region. Primarily on the basis of the planning workshop in Heathcote, the community – through the representative’s present – agreed to develop a project plan for community-led ecological restoration in the Heathcote region.

This involved identifying six key ecological targets that the community believed were a high priority to protect and/or restore, a discussion of key threats the ecological targets faced and then exploring the sorts of projects that could advance these objectives – i.e. what interventions are most apt, where, when and how. This second step was done in smaller groups whereby the participants were paired with an ‘expert’ and covered areas key to implementation of the projects vision and goals: governance, project management; community engagement and communications; data and knowledge; tools, processes and implementation; and community capacity, resources and funding.

A further key aspect of the Biolinks L2L process is the need to develop an investment prospectus. Unless adequate funding can be secured, the best plans in the world will never get implemented. The plan concludes with a more detailed Prospectus, in essence a more detailed plan, for funding and implementing a series of pilot projects or programs, identified as key to furthering the Heathcote Landscape Project. The Plan outlines:

1. Ecological Targets and Goals
2. Strategic activities to reach the Vision
3. Prospectus of Pilot Projects



Vision

Commitment to work together, in collaboration to achieve impacts at a landscape-scale for a vibrant, healthy and climate resilient future for the Heathcote region, to halt species extinctions, ecological breakdown and to build climate resilience.

Ecological Targets and Goals

The six key ecological targets and goals are:

1. Protect, sustain and regenerate **Habitat Trees** – Large Old ‘hero’ Trees (LOTs) via ‘citizen science’ targeting both paddock trees and LOTs in forest areas (such as those seen in White’s Gully during the ‘walkshop’);
2. Protect and enhance **Wild Duck Creek and McIvor Creeklines and watersheds** with particular emphasis on water retention;
3. Identify existing and potential **habitat corridors** links (‘biolinks’) to be protected, expanded and enhanced through encouraging natural regeneration and specially targeted revegetation filling in ‘gaps’ along roadsides and elsewhere;
4. Protect and increase **Gliders/Phascogales** populations locally via a ‘citizen science’ project targeting habitat protection and enhancement with measures including nest boxes, understorey planting, ecological thinning and biolinks;
5. Protect and increase **threatened woodland birds** populations via projects like the ‘Spring Plains Watershed Repair’ pilot whereby Swift Parrot habitat in Box Ironbark Forest on public land (including reserves) is improved with measures like ecological thinning, water retention, understorey planting etc; and
6. Promote **healthy soils** (more productive, drought resilient, biodiverse, carbon capturing, moisture retaining) via rotational grazing practices and widespread active protection and enhancement of remnant habitats including native pasture, grassy woodland, springs/wetlands and other types in the context of farms/businesses.

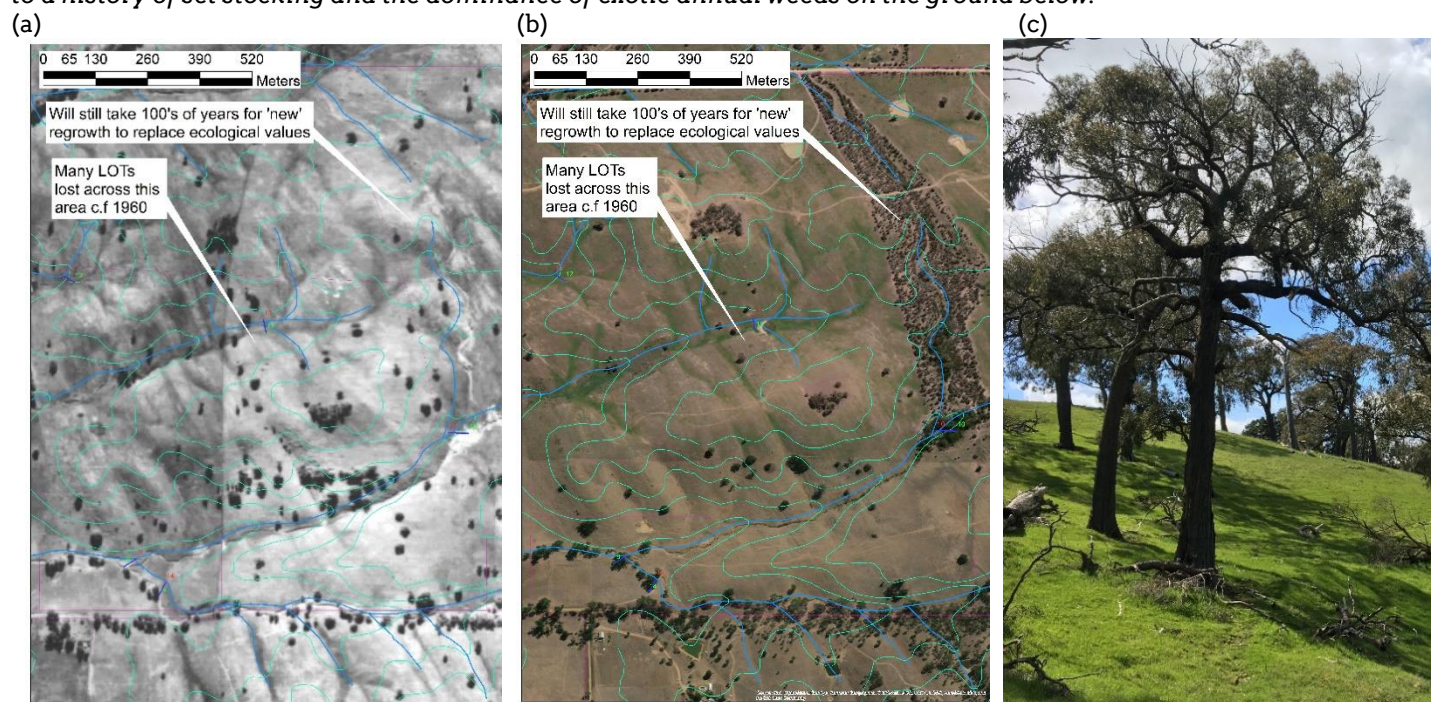
Rationale for the selection of the six targets, threats to them in the Heathcote region and important activities for the protection and restoration, identified at the Workshop are detailed in the following section.

Target 1. Habitat Trees (LOTs)

Habitat trees or Large Old 'hero' Trees (LOTs) – be they in largely cleared and farmed landscapes or within forested public lands and reserves and along roadsides – are vitally important landscape connectors, habitat and food sources for threatened birds (such as Swift Parrot) and arboreal mammals (such as Gliders and Brush-tailed Phascogale) in the Heathcote region. They occur throughout the landscape on grazing lands, along creek lines and roadsides, and mostly comprise a range of eucalypts such as: Grey Box (*Eucalyptus microcarpa*), Yellow Box (*E. melliodora*), White Box (*E. albens*), Red Ironbark (*E. tricarpa*) and Red Stringybark (*E. macrorhyncha*).

Many of these LOTs predate European arrival and could be up to many hundreds of years old and provide food and habitat resources vastly superior to widespread younger regrowth. Unfortunately most have already been wiped out, but those that remain are often surviving under enormous stress and gradually dying back and only rarely allowed to regenerate. However, because it takes hundreds of years to replace these trees in terms of ecological values, landscapes continue to decline and become less hospitable for once widespread and common birds, mammals, reptiles and even amphibians. A quick glance of any old images or aerial photos across this region shows that the trend of decline continues unabated, even though most trees are no longer deliberately cut down and indeed most landholders acknowledge their value for landscape, amenity and stock shelter etc. and many are actively replanting as best they can (Figure 2).

Figure 2: (a) and (b) Area in upper slopes of Wild Duck Creek showing gradual decline of LOTs over the last 60 years; (c) LOT (Red Stringybark) near Tooborac showing signs of crown dieback and a complete lack of natural regeneration due to a history of set stocking and the dominance of exotic annual weeds on the ground below.



As the example above illustrates, this loss of ecological values is usually no longer the result of active cutting and clearing as per the past, but rather a passive and gradual decline due to old age

and/or stress of persisting in modified landscapes and the lack of natural regeneration. Factors identified at the planning workshop include: lack of understorey, weeds, drought, fragmentation and exposure, isolation, poor soil health, lack of recruitment, and wildfires. To a large degree this process of decline is driven by the lack of awareness from many land managers and land uses that exacerbate the problem including: 'cleaning up' dead and fallen timber, cropping, set-stocking, removal of understorey, fertilizer application and the sowing of exotic pastures.

The proposed actions for the target are:

- Mapping the location and condition of LOTs using satellite imagery plus developing lists of management actions that would help improve tree health and longevity;
- Raise awareness amongst landholders around the importance of LOTs through fields days and communications campaigns that include the use of local print and social media;
- Active improvement of environmental conditions locally around key remnant LOTs via measures such as: moisture retention, improved grazing practices, more conservation zones, increased organic matter and reduced weed competition etc;
- Increase of incentive funding for landholders to look after trees (i.e. stewardship agreements);
- Increased landholder access to key expertise and information around improving management of LOTs (e.g. GBCMA pamphlets – fallen timber booklet, tree-guard project, Grey Box GWL, direct seeding vs tube stock guides etc.). Also use of arborists and ecologists to provide specific technical advice.

Target 2. Wild Duck and McIvor Creeklines and watersheds

The Wild Duck and McIvor Creeklines are important and defining landscape components and ecological features and support distinctive aquatic ecosystems with a biota found nowhere else in the region. These creeks and their tributaries form part of the headwaters of the Campaspe River and consist of a complex array of near permanent streams, semi-permanent 'chains of ponds', and aquatic and terrestrial groundwater springs and soaks (especially in the granitic and metamorphic landscapes associated with the Tooborac and Pyalong granites; Figure 3). These environments can provide habitat for platypus, rakali (water rats), turtles, frogs and some fish, as well as many wetland plants and invertebrates. They also provide natural landscape linkages that facilitate dispersal, migration and regeneration for much of the biota; and they are also the wetter, more productive parts of the landscape supplying vital water resources for landholders and often act as drought refugia for a range of woodland birds and other terrestrial fauna.

However, these values have been impacted by diminished flows and habitat degradation across the region due to land clearing and intensive farming practices. Stream regulation due to reservoir and widespread farm dam construction (plus other water diversions, including groundwater pumping) combined with a drying climate and poor land use practices that make landscapes less able to retain moisture, have all contributed to the diminished flows and general landscape desertification. Riparian vegetation is often absent or in poor condition with low diversity, increased erosion and lacking LOTs due to set-stocking, weed invasion, feral animals (incl. kangaroos), less frequent flooding and nutrification. Some vegetation communities – such as the Groundwater Dependent Ecosystems (GDEs) of the uplands in the south – are very poorly understood and the little that remains (mostly on private land), is unprotected and vulnerable to further threats and urgently needs protection. Despite the importance of these systems for local land use and amenity values, there remains a lack of knowledge around how to conserve and restore instream habitats and there is a general lack of respect for their important values. Town growth and an influx of 'tree-change' development of former broad-acre farmland is also contributing to this decline.

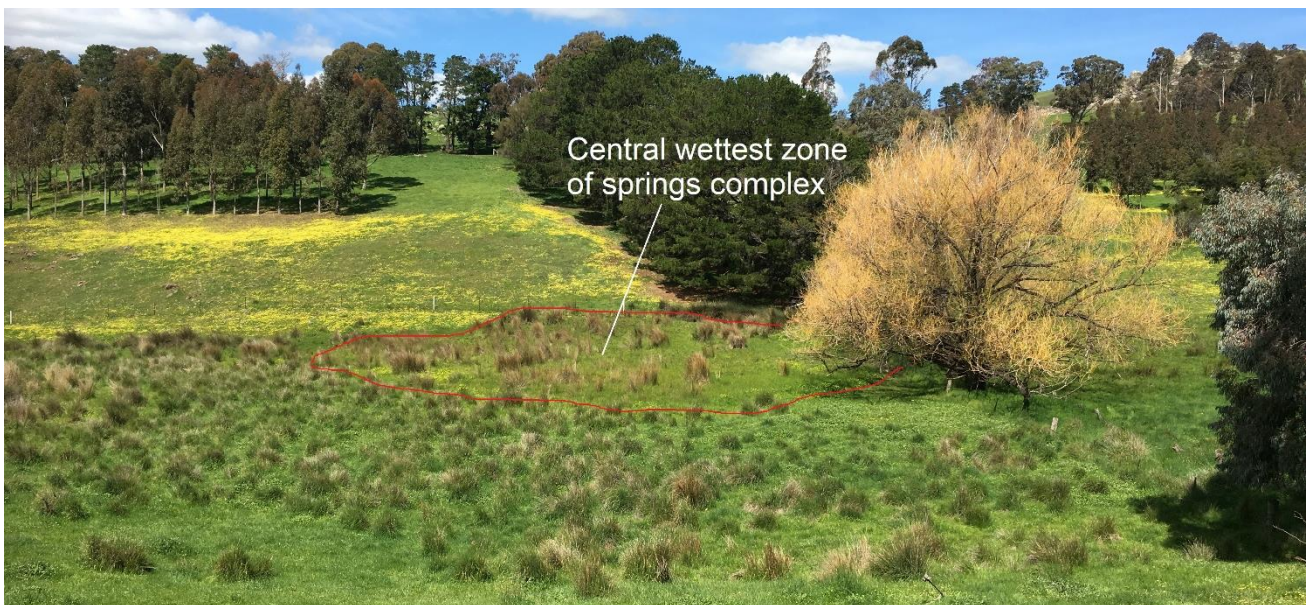
The proposed actions for this target are:

- Improve awareness of the benefits of riparian vegetation and the ecological impacts of stream regulation and water harvesting; Information to promote the benefits of healthy waterways – for walking, birds, human health and amenity etc.;
- Encourage and incentivize landholders who don't need the water to reduce the number of dams – i.e. 1 instead of 2 and manage them as wildlife refuges by excluding stock, suitable plantings, strategic hydrology management (e.g. early season inflow technology solutions from SA <https://www.naturalresources.sa.gov.au/samurraydarlingbasin/home>).
- Establish accessible demonstration sites to show best practice for protecting and restoring riparian vegetation with stock exclusion fencing, off-stream watering, revegetation guides (incl. climate ready species – species and local populations with large, genetically diverse populations likely to have greater Climate Change resilience), and weed control etc.; Revegetation should be targeted at filling in gaps, establishing biolinks throughout the broader catchment with guidance provided around what species/vegetation should be

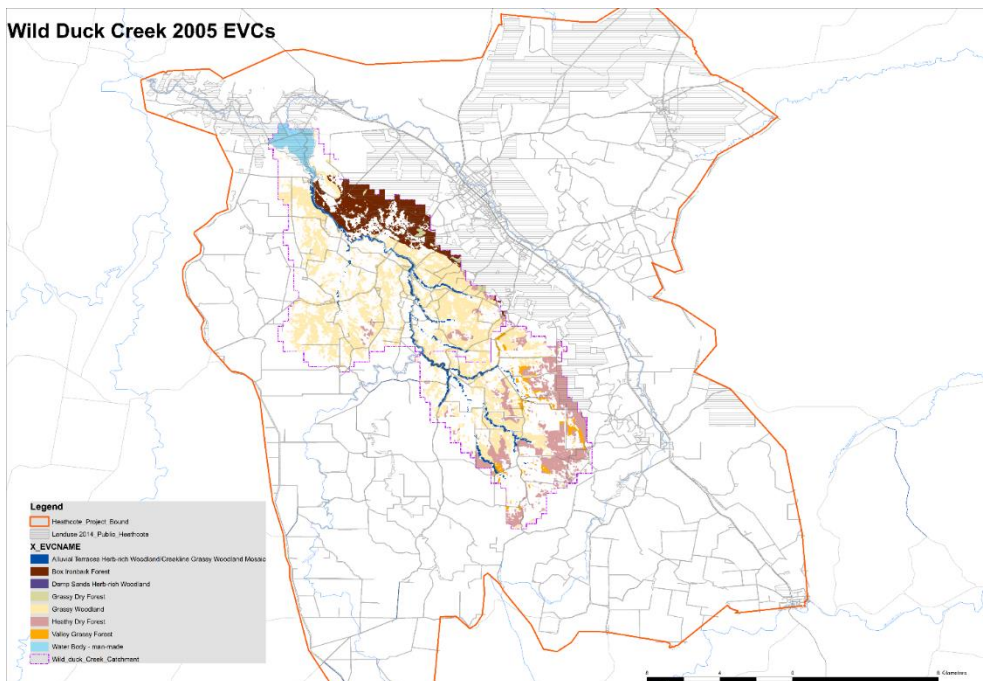
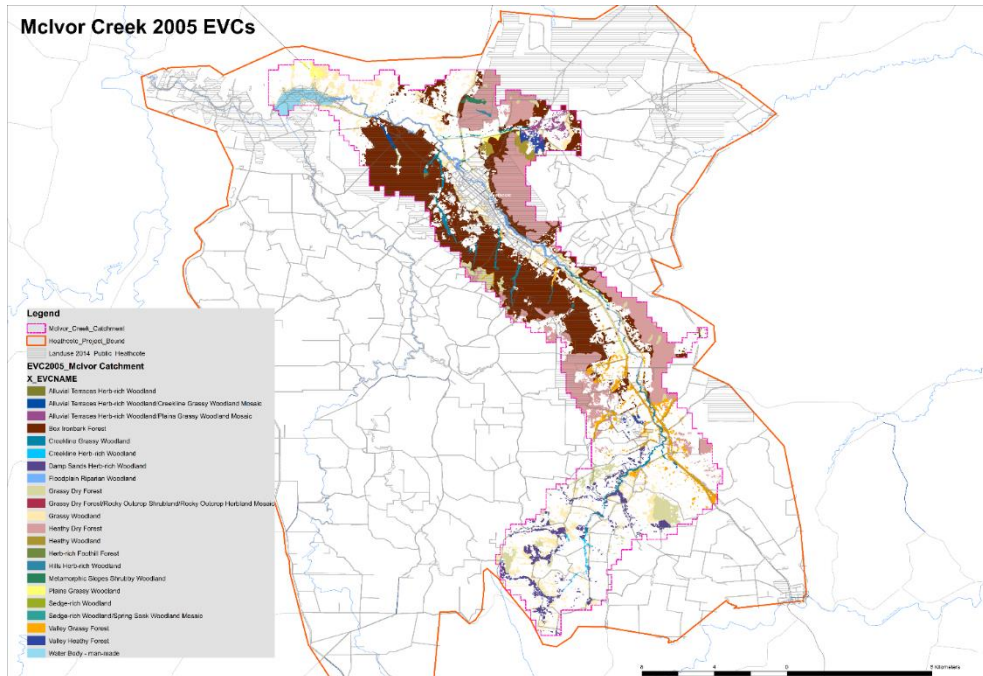
planted (i.e. endemic and/or 'climate ready' species) and how to look after them; Also converting farm dams to Wetland/Swamps;

- Engage local Traditional Owners (Taungurung) in the protection and management of waterways and watersheds;

Figure 3: Natural spring in drainage line amongst elevated hills in the headwaters of the McIvor Creek, modified due to a long history of unconstrained stock access; Note wettest zone immediately to the LHS of the willow.



Vegetation (Ecological Vegetation Classes) of the McIvor Creek and Wildduck Creek Catchments



3. Target 3 Habitat Corridors ('biolinks')

The role of remnant riparian corridors as natural biolinks in the landscape – providing pathways for migration, dispersal and resource movement – has already been mentioned. Similarly, remnant corridors also exist elsewhere in the landscape along roadside easements, fence lines and even as pathways between remnant paddocks trees scattered or clustered across many farms (Figure 4). The regional landscape is highly fragmented, and there is on-going gradual decline in paddock trees and other remnant habitat – undermining this residual connectivity. Factors already covered such as timber/firewood cutting, regulated waterways, fuel reduction burning (too frequent esp. in Box Ironbark Forest), set stocking, soil degradation, herbicides and fertilizer use all contribute to this continued loss, as driven by a lack of landholder understanding, land ownership turn-over, land subdivision and township sprawl.

Such biolinks are crucial to increasing available habitat area, allowing for migration and dispersal, as well as responding to disturbance and Climate Change. To a degree, this on-going loss is being off-set by strategic shelterbelt and wildlife corridor plantings, but there are risks here around time until these areas obtain many of the most important habitat values (i.e. hollows), and survival of the trees/shrubs in both the short and long term (i.e. will they regenerate and create long term habitat?).

The proposed actions for this target are:

- Awareness raising around the benefits of biolinks and the ecological impacts of land uses that contribute to on-going fragmentation and loss of connectivity;
- Need to change 'hearts and minds' and find local leaders/champions to reach out to landholders and offer support to change in meaningful ways including via schools; Will need to develop different messages for different audiences, and resources and support to link to existing programs;
- Identify existing key biolinks and pathways of connectivity and how these can be improved by encouraging natural regeneration and strategic regeneration of trees and/or understorey species as appropriate;
- Provide landholder incentives or stewardship resources for local changes in land management (e.g. set back fencing in paddocks adjoining vegetated roadsides to manage grazing pressure and facilitate natural expansion of remnant corridors; Figure 5);

Figure 4: Complex pattern of remnant habitat corridors associated with roadsides and some drainage lines in the Heathcote South region near Spring Plains NCR; Many of these need active management to ensure they persist and there are also opportunities to strengthen and build with the right interventions.



Figure 5: (a) Passive natural regeneration close to remnant roadside vegetation; and (b) Tree planting (causing soil disturbance) in areas where natural regeneration would be a much more cost effective and ecologically sensible option by control grazing pressure and weed competition.

(a)



(b)



4. Target 4 Gliders/Phascogales

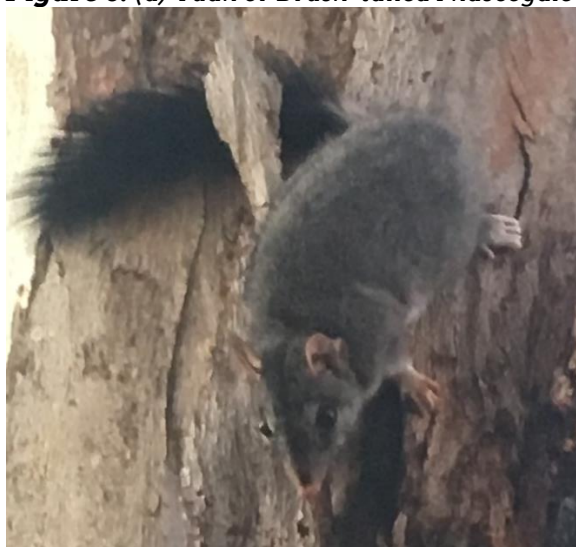
Arboreal mammals such as Sugar Gliders and Tuans (Brush-tailed Phascogales) are icon species for the widespread Box Ironbark Forest and Grassy Woodland habitats of central Victoria. Once very common, these species are considered threatened or in decline with only scattered recent records due to on-going fragmentation and habitat loss. Nevertheless, these species remain relatively widespread and are known to respond positively to restoration and small-scale connectivity projects in highly fragmented landscapes. There remain significant local populations of Tuans, Sugar Gliders in the Heathcote region (Figure 6). A closely related glider, the Victorian endangered Squirrel Glider, has been recorded recently in nearby regions such as the Puckapunyal ranges and could well turn up in the Heathcote region.

Conservation management actions for these mammals will closely overlap with those for Habitat Trees and biolinks as the food, shelter and other resources provided by LOTs and remnant corridor habitat are critical for arboreal mammals. While there would be merit in integrating the conservation planning for these two ecological targets, it will be very important to develop campaigns and messaging focused on these icon species because of their great community appeal.

The proposed actions for this target are:

- Protect and increase Gliders/Phascogales populations locally via a 'citizen science' project targeting habitat protection and enhancement with measures including nest boxes, LOT protection, understorey planting, ecological thinning and biolinks. While there will be no specific pilot project established for this target initially, it will be addressed in the short term indirectly via existing projects (Rhoo Goldfields Glidernest-box project) and in the medium to long term via subsequent projects that emerge from the on-going Community capacity building program (Biolinks Alliance *Glideways in the Melbourne Ark* Landscape-Project is establishing Phascogale citizen science program in the nearby Nullavale-Pyalong region and there is potential for expansion of this project through the Heathcote region).

Figure 6: (a) Tuan or Brush-tailed Phascogale (Image: P Foreman); (b) Sugar Gilder (source: online)



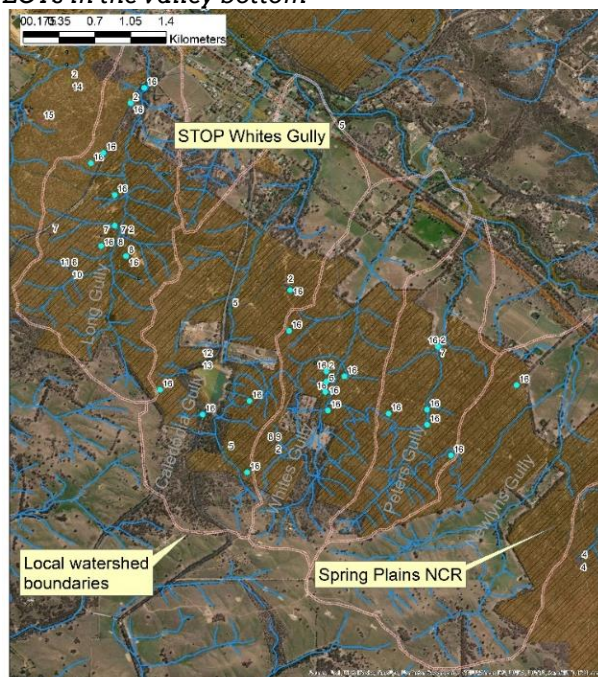
5. Target 5 Threatened Woodland birds

The nationally endangered Swift Parrot is a flagship species for a larger guild of over-wintering nectivores visiting the project area every year as they migrate between Tasmania, right up the eastern inland slopes and tablelands, to SE Queensland. Swift Parrot is a representative of a highly mobile group of species, requiring a wide variety of food sources of which the nectar flows of eucalypts such as Grey Box are particularly important (Figure 7). They preferentially forage in large, mature trees that provide more reliable nectar resources than younger trees. In Victoria preference has been shown for woodlands dominated by Red Ironbark, White Box, Grey Box and Yellow Box – vegetation types that have been greatly cleared and are themselves highly threatened especially examples with LOTs and in high quality condition.

Other formerly common birds of these drier woodlands and forests, that continue to decline and are considered threatened or near threatened, such as: Brown Treecreeper, Speckled Warbler and Hooded Robin, still manage to hang on in some refugia in the local landscape. While others such as Regent Honeyeater and Crested Bell-bird have not been recorded for many decades and are now more-or-less extinct in central Victoria.

Urgent action is needed to halt the decline of regional avifauna and a recent strategy developed by Birdlife Australia identified: drought, fragmentation, land clearing and logging, egg/nest predation and exclusion by aggressive native birds, and cropping and grazing as the major threats. According to this planning process, the priority conservation actions are: land clearing regulation, protection of key remnant habitat (Travelling Stock Routes in NSW – or wider vegetated roadsides in Victoria), protection of priority feed areas for nomadic nectar feeders, and sustainable grazing and fire management. While national in its focus, this analysis is broadly applicable to the Heathcote region.

Figure 7: Swift Parrot (source: online); The Spring Plains NCR is a local hotspot for Swift Parrots due to extent of reasonable habitat including quite a few LOTs in the valley bottom



The proposed actions for this target are:

- Identification and protection of stopping sites for nectar feeders such as Swift Parrot; The proposed Spring Plains Watershed Repair pilot project aims to do exactly this regarding a local 'hotspot' south of Heathcote (Figure 7);
- The protection and enhancement of existing key roadside remnant corridors;
- Landholder education around land use change. While land clearing still occurs, it is relatively rare and generally frowned upon and greater emphasis needs to be directed at educating landholders about why and how to reverse the more passive process of on-going tree and habitat dieback/loss;
- Provide incentives to landholders to change grazing practices from set stocking to exclusion of grazing or rotational systems (with longer rest periods), that allow vegetation and soil health to improve and boost habitat for birds and other fauna.

6. Target 6 Soil Health

The emergence of the Regenerative Agriculture movement (e.g. Massey “Call of the Reed-warbler”; 2017), which aims to truly integrate human production systems with landscape and environmental (especially soil) health, has challenged us to fundamentally change land use practices in the context of Climate Change. Massey’s approach is based on the concept of ‘ecological literacy’ – “*the ability to read a landscape: to appraise the state of its health and how it is functioning, and thus to know how to address any issues.*”

In many respects this approach parallels the principles and concepts of Landscape Ecology. Although farms and rural business are literally restricted to individual farms, paddocks and parcels of land, Regenerative Agriculture, just like Landscape Ecology, consciously takes a step back to acknowledge that (fundamentally) any farm is imbedded in landscapes or ecosystems with complex interacting processes, cycles and interactions, namely: – (1) solar/energy function, (2) the water cycle, (3) the soil/mineral cycle, (4) biodiversity, and (5) human/social systems. Although these are all interrelated, soil health is particularly prominent in the age of Climate Change, as it is here that carbon can be captured and stored on a massive scale, where productivity is derived, and where resilience is built against increasingly frequent and intense droughts.

Building and maintaining soil health is fundamental to agricultural productivity and sustainability, as well as for biodiversity conservation, and today more than ever before, it is critically important to demonstrate how these two can be successfully integrated in the context of farms and small business.

Figure 8: A pastoral paddock near Tooborac showing an area of diverse remnant grassy vegetation in the foreground to the right (darker colour with scattered rocks) contrasted with slopes dominated by exotic annual grasses and ‘broad-leaves’ in the background to the left; Paddock stratification and shift to rotational grazing will help improve the condition of the remnant grassland and promote the dominance of native perennial pastures elsewhere in a landscape that currently has poor soil health and drought resilience;



While most local farmers and landholders are acutely aware of these challenges, they are perhaps less aware of what the potential solutions might be – at least the local contribution to the solutions.

The proposed actions for this target are:

- Firstly, raising awareness of the role of soils in farms and ecosystems and why land use change is needed to help build and maintain soil health for the benefit of both humans and nature;
- Secondly, build capacity of landholders to improve “ecological literacy” including reading residual patterns of biodiversity in areas they might have only seen as paddocks and stock feed, and how pastures and soils can be improved and managed more sustainably and profitably (esp. in the context of Climate Change) with shifts in management system e.g. rotational grazing and evidence-based monitoring (see Figure 8);
- Thirdly, build collaborations and partnerships with neighbours, experts, conservationists, researchers and the broader community to ensure the practice of improving soil health (though changed land use) is adopted throughout the landscape and region;

Strategic activities

The section is an outline how the community vision for a more healthy & climate resilient local natural environment (via the focus on the six key ecological targets) could be implemented and achieved.

At the Workshop the following key elements for the implementation of a Landscape Project formed the basis of group discussions.

1. Governance – how do we organise ourselves to support landscape-scale collaborative project? Who is the backbone organisation?
2. Partnerships – Who are the core stakeholders needed? What is required to bring them in on a genuine partnership and to maintain effective partnerships?
3. Community capacity – what support does this community need to make this project a reality and sustainable?
4. Pilot projects – criteria, objectives, examples?
5. Community engagement and communications – With whom, and how?
6. Science and knowledge – knowledge gaps and how do we fill them?
7. Investment and philanthropy – will be required to support the projects capacity building, science and on-ground restoration projects. What potential sources are available and what is needed to secure it?
8. Process, budget and operations.

The following sections summarises the issues, potential solutions and key activities identified by participants.

Governance and partnerships

The workshop determined that some sort of formal governance arrangements are needed to meet requirements from funding bodies and to plan effectively. Community models include: Landcare, creating a new incorporated body (say a 'Friends of' group) or Conservation Management Network (CMN). Landcare is perhaps the easiest in administrative terms, but currently there are few groups operating in the Heathcote region. The Whroo Goldfields CMN, which focuses on biodiversity conservation within the Box-Ironbark Goldfields region (with particular emphasis on community education and engagement activities such as nest box monitoring, planting field days, fox baiting and practical bird watching events with Birdlife Australia), is established, but is spread thinly and doesn't cover areas further south in the Central Victorian Uplands (CVU).

It appears that an existing suitable governance model for community organisation and participation in landscape conservation is currently missing for the Heathcote region, although important

foundational elements exist such as community interest, enthusiasm and momentum. There are also plenty of agencies and organisations keen to collaborate and make something happen – e.g. Parks Victoria, Biolinks, the Catchment Management Authorities, City of Greater Bendigo, Taungurung Land and Waters Council, and the Threatened Species Conservancy. Other organisations, currently not actively involved, such as Trust For Nature and Birdlife Australia for instance, could be brought to the table as the planning and projects develop. To date Biolinks has played a central role in facilitating collaboration and continuing to build and develop this aspect which will be critical to the plan's success. There are also a range of reasons to help build the capacity of the local Traditional Owners to participate in and even lead projects such as using cultural burning to help improve landscape health.

It was determined that the participants of the workshops led by Biolinks can act as a project Reference Group until a more formal governance arrangement is established possibly during 2020 (see Appendix 1). In practice, the project will only be advanced by dedicated personnel (supported by experts from partner organisations) and associated operational resources to facilitate the strategic actions proposed here with funding most likely to be secured via Biolinks.

Once funds are raised, the best governance options are either: (1) Biolinks then gives the funds to Landcare or CMNs to deliver projects under a suitable agreement, or (2) Biolinks recruits a suitable person who then works actively with the CMN and Landcare groups to implement projects/actions. In either case, given Biolink's explicit aim to help build community conservation capacity, at some point the on-going boosted capacity would need to be transferred to or vested with the community. Biolinks however would retain its on-going strategic leadership and partnership role helping both guide the science and technology, helping raise the funds needed to maintain, further build this local conservation capacity and providing networking services between this project and other member-groups and projects under the Biolinks Alliance.

Community engagement and communications

Although currently there is community interest around this project, it will be important to develop effective strategies that maintain and build on this momentum. Harnessing active 'citizen scientists' to gather and report information and data organised by a facilitator or moderator under Biolinks or a particular community group will be an important component of community engagement.

Meeting, events and workshops at local venues and especially at field sites; social media campaigns (Zoom, Slack, Whatsapp, facebook, Twitter etc.), newsletter and existing Landcare communication networks will all be important. In order to get the best results in this regard, an understanding of the strengths and weaknesses of how the local community is structured and operates will be critical.

Partner groups and organisations such as City of Greater Bendigo and Parks Victoria and the Goulburn Broken CMA (i.e. Whroo Goldfields CMN) can play a key role in communication and engaging with the community. Parks Victoria can potentially play a significant partnership role regarding regional communications via locally based information, interpretation and education officers (i.e. in Heathcote and Bendigo).

Pilot Projects

A centrepiece of this Action Plan is a series of spatially targeted or thematic 'pilot projects' designed as practical and achievable projects that demonstrate landscape-scale principles and technological responses to the need for wholesale landscape restoration. Realistically the challenges we face across the region are so enormous and urgent that no one organisation or community could possibly do all that is needed to repair the damage and prepare for Climate Change. While the pilots themselves are important and will have a local impact, they represent practical demonstrations of the kind of interventions required everywhere to ultimately have the long term, large scale impact we desire around balancing the needs of humans and nature. Carefully crafted communications strategies are needed to catalyse their take up across all properties, communities, agencies and organisations in the region.

All three pilots proposed were endorsed by the community at the Heathcote workshop and have been designed to align with the interests of as many local people as possible to ensure maximum on-going participation. Further work is needed to ensure the strategies, principles and technologies involved are more broadly embraced and applied by the community and on properties throughout the region. These include:

#1 Protecting Large Old 'hero' Tree project (Target – Habitat or 'hero' trees)

This project will raise the profile of, and empower the community to protect, Large Old native habitat or 'hero' trees (LOTs including Grey Box – *Eucalyptus microcarpa*, Yellow Gum – *E. melliodora*, Red Iron Bark – *E. tricarpa*) that are important landscape connectors, habitat and food sources for threatened birds (Swift Parrot) and arboreal mammals (Tuan) in the Heathcote region. Smart phone 'apps' have been developed and usefully deployed elsewhere for similar programs. The data collected could include tree-specific information on dieback, general tree health, vegetation and habitat condition (i.e. hollow and 'coarse woody debris' assessment). Other outputs could include 'heat' maps for targeting actions once sufficient raw data has been collated and quantitative assessment of net LOT loss across the study area. Phase 1 will implement an initiating 'citizen science' mapping and monitoring program, hold educational field days, conservation interventions (on at least three significant LOTs as a 'demonstration') and develop a plan for on-going LOT protection works. Implementation of this on-going program (Phase 2) will depend on securing adequate funding.

Practical LOT protection works could be planned and implemented by trained arborists normally employed to focus on exotic street trees in built-up areas. Professionals from organisations like the CoGB could potentially be used on a part time, on-going basis over the duration of the project, as an in-kind contribution.

A complementary education campaign would be targeted at landholders as well as the broader community including schools (perhaps as an indirect means of reaching more landholders), using social media, photo's, exhibitions, quizzes and competitions, field events and resource kits etc. Messages would be directed at the importance of LOT's and the benefits of protecting them to both humans and nature, how they are threatened, the techniques for looking after them, and best practice firewood collection (i.e. thinning regrowth rather than felling large dead standing tree or 'cleaning up' those that have already fallen).

Close collaboration with both State and Local Government will be critical to make sure inappropriate and time consuming bureaucracy and 'green/red tape' does not reasonably stand in the way of making progress with the protection of LOTs scattered across the landscape.

#2 Spring Plains watershed repair (phase 1 and 2) (Target – Swift Parrot habitat)

The '**Spring Plains watershed repair**' project is a landscape-scale restoration pilot project that targets a local hotspot for Threatened Woodland Birds (esp. Swift Parrot) and aims to repair landscape health and build resilience to Climate Change by scaling-up measures like ecological thinning that help make watersheds more absorbent and productive again. Phase 1 of the pilot will develop a detailed project plan or prospectus including technologies, costs and time frames for one watershed within Spring Plains Nature Conservation Reserve NCR ('Whites Gully'). And subject to funding – Phase 2 will be implementation across all public land within White's Gully (supported by Parks Victoria) and likely also some adjoining private land, demonstrating how landscape repair can be done and why it is urgently needed throughout the region as a foundation for community conservation stewardship in the 21st century.

Recent trials conducted nearby by Parks Victoria has demonstrated the efficacy of ecological thinning (felling 50% of the canopy basal area and retaining *in situ* as 'coarse woody debris') for promoting tree and understorey growth, as well as boosting fauna habitat. Landscape Ecology research elsewhere has show how ecological thinning can also greatly improve landscape hydrological function when rolled out at sufficient scale along with other measures. For example, if the felled trees are carefully placed along contours, the branches and logs can act as natural traps for nutrients, seeds and moisture. Other measures include: targeted contour ripping and revegetation of native grasses and other understorey plants (via direct seeding) to allow greater soil water infiltration, begin the process of rebuilding soil health; and in stream 'leaky weirs' to promote cascades of semi-permanent ponds to encourage wetland flora and fauna. The planning phase for this pilot will also explore the viability of introducing nest boxes (or even artificial hollow creation) plus the potential for introducing fauna species impacted by habitat loss, but not greatly vulnerable to feral predation (i.e. Tuans, Gliders or even Spot-tailed Quoll *Dasyurus maculatus*).

The project will develop parallel community engagement and communication campaigns using local champions to leverage funding, boost awareness and promote take up elsewhere. Ideally, the campaign would draw on the resources of those not already 'in the tent' – i.e. Arts, Business, Sports, Industry, Educators. This would also link to the other pilots (Soil Health and Large Old 'hero' Trees), as well as learnings from 'Regenerative Agriculture' and 'Farming for Sustainable Soils' programs. Fundraising could occur through community donations to broaden the engagement – i.e. people that don't own land but wish to see local community landscape restoration projects.

#3 Improving Soil Health 'Soil is cool' (Target – improving soil health)

The Spring Plains watershed repair project is, in part, about improving the health of soils in bushland areas to benefit Swift Parrots (amongst other things). Arguably the improvement of soils across mostly cleared farmland in the region is as great a priority for environmental conservation as anything else. These farmland soils are the basis of primary production and their repair can not just boost agriculture and the local economy, but also aid with biodiversity conservation and contribute to solving the climate crisis.

While there are some programs based around Regenerative Agriculture in the region (e.g. some CMA's have been funded to facilitate local chapters in the NC CMA for instance), few farmers are significantly changing land use practices despite deep concerns around lack of drought resilience, water scarcity and soil degradation, and perhaps also on-going loss of bushland and species.

This pilot aims to establish a program that fills this gap by targeting local landholders, farmers and relevant small businesses to raise awareness of these issues and to build capacity and partnerships/alliances to begin to facilitate the necessary on-ground changes throughout the region. In particular the program would develop events, resources and demonstration sites to promote the concept of "ecological literacy" (*a la* Regenerative Agriculture) and how pastures and soils can be improved and managed more sustainably and profitably in the context of Climate Change with a shift to measures like: habitat restoration, rotational grazing and evidence-based monitoring. There is great potential for instance in adapting the rapidly advancing drone, GPS and GIS technologies to assist local landholder to make better land use decisions and track progress around the key ecological targets. As per the Large Old 'hero' Tree pilot, Phase 1 would be an initiating project including the development of future plan, and Phase 2 would be the roll out of an on-going program subject to securing adequate funding.

Science and knowledge

A further tenant of the Biolinks L2L process is acknowledging that no one has all the answers and that fundamentally we must seek wisdom from other experts as well as work actively in the local context to learn the answers to key questions together. Furthermore, it is essential to seek this knowledge (rather than do things in ignorance, just for the sake of doing something) in order to do the *right* things in the sense of achieving our desired outcomes, be they human centred (business, amenity) or nature-centred (biodiversity). Thus the evidence-based notion that underpins adaptive management is critical to the Biolinks approach.

Some of the specific issues raised as priority by the community in this space include:

- Past and present species and habitat distribution data as well as models predicting change under climate change (e.g. Victorian Biodiversity Atlas, Atlas of Living Australia, Australia's Virtual Herbarium, Flora of Victoria online etc.);
- Species/community identification and verification techniques and resources (e.g. for flora, mammals, reptiles, amphibians, birds and invertebrates – field days and workshops, books and apps and other online resources);
- Specialist workshops on soil assessment and management (e.g. Helen Waite, Bendigo);
- Restoration and local regeneration plant guidance, including dams for wildlife, ripping and keyline ploughing, and direct seeding vs seedlings;
- plus navigating the government and statutory landscape such as regulations and permits for land, waterway and vegetation management (e.g. off-setting and biodiversity gain calculations).

A further tenant of the L2L process is bringing larger-scale ecological processes and relevant aspects of other conservation planning processes into local plans/objectives, through providing science/regional planning context. Examples already mentioned here include local Swift Parrot habitat restoration and Birdlife Australia's Conservation Action Plan (CAP) for South East Australia focused on halting the decline of regional avifauna.

In addition to this content and resource need, it will be important for the community to identify key knowledge gaps that only local survey can address. Examples include: assessment for the presence of threatened species and communities across privately held landscapes that have never been sampled before, or measuring the impact of 'spring' restoration and other land use change on groundwater dynamics. A further consideration will be data and information curation and management so that it is easy for the community to contribute to and to access results, and that there is adequate quality assurance and confidence around accuracy and integrity. Any spatial data collected locally using drone technologies for instance will need to be well managed to be useful to the individual landholders and the community.

Investment and Philanthropy

Investment and philanthropy was discussed as being a necessary enabler to support projects and collaboration with Biolinks likely playing a particularly important role leading campaigns and acting as a conduit of necessary funds from local sources (and from further afield).

Key potential financial supporters or sponsors include: Local government (especially community grants programs); State Government programs, especially those focused around protection and recovery of threatened species, communities and key areas of remnant habitat (i.e. DELWP's Biodiversity Response Planning, aiming to connect communities with nature projects); local philanthropists and foundations such as the Parks Foundation.

Engaging early with a wide range of potential financial backers is a key element of Biolink's L2L planning process as success and diversification is fundamental to build community conservation capacity and for ensuring sustained success.

Prospectus

A further key aspect of the Biolinks L2L process is the need to develop an investment prospectus. Unless adequate funding can be secured, the best plans in the world will never get implemented. A prospectus, in this regard, is in effect a plan for a more detailed plan for implementing a series of projects or programs. It may seem like a step back, but today when government funding is more scarce and scatter-gun than ever before, ambitious and ecologically meaningful environmental projects will require major investment that is otherwise not possible via conventional channels.

The prospectus has been specifically developed to encourage potential major financial supporters and sponsors (donors) to partner with the local community via a calibrated two-step process: firstly to attract enough interest in the community's analysis (of the problems) and restoration ideas (how to fix them) to fund the development of more detailed implementation plans around each part of the bigger landscape package (this document) and secondly, to use these more detailed and costed 'shovel-ready' projects to persuade individual donors or consortia of donors to invest in 'rolling out' the pilot ecological restoration projects.

If successful, the advantage to the community is obvious, but to the donors, be they philanthropists, governments, foundations or corporate sponsors, there would be enormous pay off in terms of demonstrable ecological outcomes from pilot ecological restoration projects as well as, and importantly having invested in also establishing the foundations for extending those pilot activities to a larger-landscape-scale for real impact.

Pilot project and program package

The package in this prospectus proposes to address the six ecological targets identified in this Plan through developing three Pilot Projects in combination with an essential ongoing Landscape-Project Community Capacity Building and Partnership building Program of activities.

Key activities

1. Pilot Project 1: Protecting Large Old 'hero' Trees;
2. Pilot Project 2: Spring Plains Watershed Repair (Swift Parrots);
3. Pilot Project 3: Improving Soil Health;
4. Community Capacity & Partnership Building Program: (1) Governance and partnerships; (2) Community engagement and communications; (3) Investment and Philanthropy; (4) Science and knowledge (Action Plan Facilitator/Manager, Biolinks).

The prospectus proposes implementation be structured around two stages. Phase 1, a phase of project initiation and detailed Pilot project planning and continued community capacity and partnership building. Phase 1 in each case would entail the following elements – define scope of works, identify key partners and permissions, resource and governance requirements, major tasks/outputs; budget and timelines, leveraging potential and final project (operational) plan/prospectus, and in cases some initial implementation activities. Following Phase 1 and pending

securing funding, Phase 2 would see the implementation of Pilot Projects and the Community Capacity and Partnership Building Program.

Phase 1 Outputs

- Operational Plan for 'roll out' of Spring Plains Watershed Repair (Pilot Project 1); Site survey and mapping; Consultation; Project plan preparation and finalisation; Mileage, and misc. materials and equipment
- Initiating project and Operational Plan for on-going Large Old 'hero' Trees program (Pilot Project 2); citizen science mapping/monitoring initiation project – hold educational field day, conservation interventions at 3+ LOTs; and develop a plan for on-going LOT program.
- Initiating project and Operational Plan for on-going Soil Health program (Pilot Project 3); and soil health initiation project – hold educational field day, soil restorations as 2+ properties; and develop a plan for on-going Soil health program.
- Heathcote L2L Action Plan Manager/Facilitator position scoped and funded. Phase 2 capacity building & partnership program (Biolinks) further detailed.
- Fundraising and communications strategy to fund the implementation of pilot ecological restoration projects

Phase 1 Outcomes

- Shovel ready, costed pilot projects that will demonstrate innovative and best practice-ecological restoration practice to present to investors
- Increased community awareness of, and engagement with, the Heathcote L2L Project.
- Pilot project delivery partnerships formed and improved collaboration between stakeholder organisations and the community.
- Traditional owner partnerships advanced and options for ongoing Heathcote Local to Landscape involvement scoped.
- Identification of a second tranche of pilot projects around riparian habitat, biolinks and Gliders/Phascogales will be progressed as the Community Capacity Building is implemented.

Phase 2 Outcomes

- Increased awareness of the value of, and the protection of, Large Old Trees in Heathcote Region

- Improved health and productivity of box iron bark forest habitat for Swift Parrot and other species
- Alternative farming practices that manage for ecological as well as economic outcomes are better understood in the community and being trialed
- Community has the knowledge and capacity on how to pursue more effective landscape level ecological health
- Community has increased and ongoing funding and adaptive capacity to bring about landscape-level change
- Stakeholder collaborative processes developed, new partnerships established, pilot restoration projects expanded and projects addressing other L2L Targets begun.

Budget

Table 2: Phase 1 and 2 Budget breakdown

Heathcote L2L Action Plan Component	Phase 1 funding	Notes (Phase 1)	Phase 2 funding (indicative)		
			Yr 1 (20/21)	Yr 2	Yr 3
Pilot Project 1: Spring Plains watershed repair	\$ 25,000	Funding pending	\$ 170,000	\$ 80,000	\$ -
Pilot Project 2: Protecting Large Old 'hero' Trees;	\$ 20,000	Funded (Communities Environment Program)	\$ 40,000	\$ 41,000	\$ 43,000
Pilot Project 3: Improving Soil health;	\$ 30,000	Funding sought	\$ 50,000	\$ 52,000	\$ 55,000
Community capacity building & Partnerships;	\$ 5,000*	*Funding pending	\$ 120,000	\$ 125,000	\$ 130,000
Total (Phase 1)	\$ 80,000		\$ 380,000	\$ 295,000	\$ 238,000
			Total (Phase 2)		\$ 906,000

Phase 1 (initiating and planning) will cost \$80k in 2020 and has been either funded already or funding is pending with the exception of Pilot Project 3: Improving Soil health.

Phase 1 planning costing notes:

- Salaries for scientific expertise/project officers, plus operational costs for mileage, materials and equipment and some in kind contributions from partners;
- Field assessment to survey and stratify the study area (and adjoining 'control' areas) based on condition and suitability for proposed interventions for Pilot Project 1 (Spring Plains Watershed Repair) will be included with Phase 1;
- Obtain opinions and quotes from various expert practitioners and contractors as appropriate.
- General consultation with surrounding land holders, Local Government; research bodies, Parks Victoria, DELWP, broader community and Traditional Owners as appropriate;
- Obtain any satellite or drone-derived high-resolution imagery as appropriate.

Phase 2, effectively the implementation of operational plans, is estimated to cost ~\$906k from 2020/21 to 2022/23. This figure will be clarified once Phase 1 is completed late in 2020.

Phase2 planning costing notes for Community capacity building & Partnerships:

- Salaries for scientific expertise, Project manager/facilitator, Traditional Owner Project Officer. These positions could be managed by Biolinks in the first instance but funding for them could also go directly to the community as their organisational capacity develops
- Cost for Biolinks to act as coordinating backbone organisation – establishing Partnerships and collaborative processes.
- Cost for Biolinks to seek new and diverse investment from philanthropic and more traditional government sources (fundraising and communications)
- Mileage and consumables

Progress to date

The three operational plans for the Pilot Project will clearly outline what they aim to achieve, and why and how this will be done and what the cost will be. However, implementation (Phase 2) will depend on securing the necessary funds from government and/or private philanthropic sources.

Currently Phase 1 has been funded for the Large Old 'hero' Tree pilot project (Commonwealth Community Environment Grant) and is pending for Spring Plains Watershed Repair.

Biolinks is currently looking for Phase 1 support for the Soil Health pilot project as well as Community Capacity and Partnership Building, with the latter representing the key aspects of a proposed Action Plan Facilitator role at least initially sitting under Biolinks (supported by other staff and Biolinks programs, esp. Fundraising).

Timelines and Personnel

Aspects of the Operation Plan for Pilot Project 1 (Spring Plains Watershed Repair) are already underway and could be completed by the middle of 2020 if the Project Planning budget outlined above is funded (Phase 1). Assuming implementation funds are sourced around the time of plan completion, the implementation of Pilot Project 1 would likely happen over 2020/21 to 2021/22 (Phase 2).

Pilot Project 2 (Protecting Large Old 'hero' Trees) has already been funded (Phase 1) and the initiating project has commenced with the expectation that this, along with the Operational Plan for the on-going program, will be complete by the end of 2020.

Pilot Project 3 (Improving Soil Health) is not expected to commence until sometime during 2020/21 depending on funding for both Phase 1 and Phase 2.

The Community Capacity Building and Partnership Program is also not expected to commence until sometime later in 2020/21 depending on securing the necessary Phase 2 funds for a project Manager/Facilitator.

The key Biolinks Personnel will be Paul Foreman – Ecologist and Botanist overseeing Biolinks Conservation Strategy and former Chair of the Board; and Sophie Bickford – former research Ecologist and Biolinks Executive Director since 2013. Other staff/personnel would be recruited to the project especially as Phase 2 funding becomes available.

The Spring Plains Watershed Repair project plan will be developed and written by Paul Foreman in consultation with other Biolinks staff, relevant locals and various other experts.

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Appendix

No. 1: Record of the L2L process and outputs

Process

The L2L process is Biolinks Alliance's novel approach to catalysing community action for ecologically-informed environmental restoration. It is based on a range of elements:

- **Smart planning:** combining bottom-up (community consultation and engagement) and top-down (ecological understanding and established planning frameworks) thinking in the planning phase;
- **Land stewardship:** building community capacity to do conservation in smarter and more effective and inclusive ways;
- **Collaborative:** drawing together knowhow, ecological expertise and capital through shared learning and opportunity;
- **Ecological literacy:** fostering a whole-of-landscape view of land as a functional system rather than constrained by non-ecological boundaries;
- **Evidence-based:** developing ambitious but practical projects that make a real difference for the environment;
- **Prospectus:** seeking funds to invest in the environment from a diversity of sources including, govt, private sector and philanthropic by involving potential investors right from the beginning of the process.

Summary of Heathcote L2L actions, outputs

The Heathcote L2L project is currently in its second year, kicking off with an initial scoping meeting (Feb. 2018) with key community members and landholders, a field-based 'walkshop' (April 2019) to explore the area's biodiversity and the processes supporting and threatening these natural values; and a planning workshop (Nov. 2019) to agree on focal ecological targets, key threats and actions, plus 2-3 pilot projects. The scoping step discussed previous actions in the region, its impacts and what more is required.

This initial meeting with about 20 landowners provided Biolinks with the chance to tailor the L2L project process, including picking up on key issues and potential sites for a proposed 'walkshop' to learn about reading and re-vision the landscape. The 'Walkshop' – involving some 70 farmers, Landcarers, viticulturalists, bush block owners and hobby farmers – explored three contrasting sites to help build 'ecological literacy' under the guidance of a Traditional Owner, Ecologist and Hydrogeologist. Many 'walkshop' participants noted that they learned about an aspect of the Heathcote landscape they had not considered before, examples being the importance of groundwater hydrology and natural spring systems, 'what the native landscape should look like',

'importance of understorey and how drastic land change has been'. Many said they heard about practices during the day that could be applied with effect on their own properties: including 'slowing water run-off – chain of ponds idea'; 'thinning trees and restoring understorey', cool burning, 'revegetation', 'improving understorey in Box Ironbark Forest. All participants who filled in the evaluation form indicated they wanted to be part of the further development of the L2L Heathcote Biolinks plan.

The planning workshop was held in Heathcote and involved 20 key community members, representatives from agencies, Parks Victoria, City of Greater Bendigo, and Goulburn Broken and North Central CMAs, and used a Conservation Action Planning framework to develop the core elements of an action plan (targets, threats, actions and pilots). Existing and required governance models for taking on projects such as this, plus next steps were also discussed at this gathering.

Regarding the funding side of things, Biolinks has been keen to draw in philanthropists and other potential financial supporters right from the beginning and to date there has been progress around two proposed pilots ('Spring Plains Watershed Repair' and 'Healthy Soils'), and Community Environment Grant funding (\$20k) has been secured for the Large old 'hero' Tree (LOT) mapping, monitoring and protection pilot project. Funding is also pending for integrating the active involvement and engagement of local TO's with all aspects of the Heathcote L2L Action Plan.

Further effort is going into securing on-going funds both to develop and implement these and other pilot projects at an appropriate scale, as well as to maintain leadership and project oversight as a partnership between Biolinks and the Heathcote community, plus other collaborators.