

CLARKE-CONNORS RANGE KOALA PROTECTION PROJECT

Koala Survey for Landholders 2021

Final project report

February 2022



Koala – sleeping in tree Clark-Connors Range (photo C. Geddes)

Note: this is a redacted version with landholder details and comments removed for privacy reasons.

This project is delivered by Fitzroy Basin Association, through funding from the Australian Government's Environment Restoration Fund.

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EXECUTIVE SUMMARY

A community-based postal koala survey of landholders in the Clarke-Connors Range was undertaken by Koala Research – CQ, CQUniversity. This survey was to assist the Fitzroy Basin Association (FBA) with an Australian Government funded program under the Environmental Restoration Fund which aims at engaging the community in the conservation of koalas and their habitat in the region.

The survey received a ~13% response rate (considered a representative sample size), highlighting the importance that the broader Clarke-Connors Range community place on koala conservation. In fact, there was a general indication that landholders are aware of koalas living in their properties and surrounding areas. Most perceived that today koala numbers are higher, or at least stable, than they had been in the past, which is an aspect that warrants further investigation as this appears to be contrary to most other areas across the koala range. According to the respondents, the main concern for koala survival was, the threat posed by cars, trucks and trains. Roaming dogs, pest animals and loss of habitat through land clearing and fire, were also reported as impacting on koalas.

The survey responses indicated support for habitat protection and restoration measures such as fencing-off and replanting as well as a willingness to engage in specific weed management. In particular, respondents were strongly in favour of fire management and weed control projects to help conserve their local koalas with many expressing their interest in attending fire management and koala conservation workshops and information sessions.

Koala surveys to establish the distribution of koalas and improved road designs to minimize negative impacts on the species were also considered to be of importance in maintaining a healthy population. Many respondents offered to assist in recording and reporting koala sightings and engaging in various wildlife friendly activities on their properties, including allowing access to researchers and sharing their local history and personal anecdotes of encounters with koalas. Some landholders were willing to explore the potential for their property to become an offset, Nature Refuge or conservation covenant to protect koala habitat.

Lists of property owners willing to engage in the various koala conservation and land-management activities as well as a priority list of where such activities may be most effective, were generated and supplied to FBA for further engagement work with the Clarke-Connors Range community.

INTRODUCTION

The koala is an important national symbol and one that attracts considerable public support as an icon for Australians and international visitors.

It is now widely accepted by all levels of government that koalas and their habitat, along the east and south east of Australia, have undergone dramatic declines over the past two centuries. Like many other native animals, koalas have suffered due to extensive habitat clearing and fragmentation, which continues in many regions today.

The National Koala Conservation Strategy (1998), supported by various federal, state and territory governments' legislation, clearly acknowledges that protecting and managing koalas is a complex task. Much of the remaining koala habitat occurs on private land where there are many competing land-uses.

The Fitzroy Basin Association (FBA) has received funding from the Australian Government under the Regional Land Partnership (RLP) program to engage in koala and koala habitat conservation in the Clarke-Connors range area between June 2021 and June 2023. The project 'Clarke-Connors Range Climate Refugia (Protection) Project' aims to:

- Connect with landholders within the Clarke-Connors Range area to secure involvement in koala conservation activities.
- Work with landholders to develop koala conservation plans on their properties.
- Coordinate management actions to improve koala habitat and reduce threats to koala.
- Conduct appropriate monitoring of both koala populations on private property and the outcomes of this program to determine the level of success.
- Consider whether there are other Matters of National Environmental Significance within and adjacent to the proposed project area to ensure secondary outcomes can be achieved where possible.

To facilitate this project, as an initial step, Koala Research – CQ was tasked with designing and implementing a landholder survey within the area of the Clarke-Connors Range (see Appendix 4 – sample survey - map). The survey aimed to assess landholders' attitudes toward koalas, obtain koala sightings on their properties (current and historic) and obtain information on current management actions and, particularly, willingness to engage in future management

activities for the protection of koalas and their habitat. This will assist the overall objective of enhancing the chances for koala survival in climate change refugia.

Koalas, to a large extent, share their habitat with humans and, therefore, are impacted greatly by anthropogenic influences. In order to protect this iconic, flagship species (Schlagloth et al., 2018), its habitat needs to be secured and the collaboration with landholders is vital in this endeavour. Local landholders need to be engaged and involved with the conservation of local koala populations if such efforts are to be successful; a survey of property owners is a proven tool for initiating such engagement and has been utilized in previous projects. In the early 1900s various stakeholder groups, including farmers, hunters and government officials were regularly surveyed for koala numbers and distribution to regulate the open koala hunting season (Gordon, Hrdina & Patterson, 2006). Today, koala surveys are no longer used to gauge opportunities to hunt the species, but rather to maximise conservation efforts. Crowther et al. (2009) used community survey data to compare species conservation strategies across regions and most recently, funding from the Australian Government's National Landcare Program was used by Healthy Land and Water (2021) for the 'Protecting Koalas at Flinders Peak' koala survey. It enabled the identification of suitable areas and willing landholders to facilitate various koala conservation actions in a particular area of SE Qld. Using map-based or map-supported, public surveys is a proven engagement tool for the purpose of introducing targeted management actions. Lunney et al. (2009) used this method to allow for local and state plans, including the 2008 New South Wales Koala Recovery Plan, to be more effectively implemented and Harris & Goldingay (2003) applied a community-based survey in Lismore, NSW. Their work was preceded by similar community-based surveys in the local government areas of Port Stephens (1992) and Coffs Harbour (1990) that identified community perceptions of changes in local koala populations, local threats to koalas, and potential koala management options that were likely to be supported by the community (Lunney, Coburn, Matthews and Moon, 2001). A similar approach was taken in Ballarat, Victoria, before the introduction of a koala plan of management with a community-based postal Koala survey receiving a very positive response, highlighting the importance that the Ballarat community placed on Koala conservation (Schlagloth et al. 2004).

In Queensland, the Clarke-Connors Range, to the northwest of Rockhampton, part of the Great Dividing Range hinterland west of Sarina and Mackay, is one of the largest wilderness areas in the state. It is an area that is likely to provide resilient refugia for koalas against the impacts of climate change.

In order to gain the support of the owners of the mostly very large agricultural and grazing properties, it is important to identify and map those properties whose landholders are willing to engage in on-ground works to be funded or partly funded by this project. In order to achieve this, data from the survey will assist in identifying where areas of high value habitat coincide with landholders willing to undertake works, and to identify areas of high value habitat where no landholders have indicated a willingness to participate, so that they can be approached separately. It is anticipated that working with these stakeholders will assist in reducing the known and identified threats to koalas in the Clarke-Connors Range. These actions will be enhanced by conducting targeted fire and biodiversity workshops and koala information events to strengthen the knowledge of, and commitment to, the conservation of local koalas by the community.

The main objective of the community-based koala survey was to raise awareness, engagement and collaboration, assess community perceptions of the main threats to koalas in the Clarke-Connors Range, and to gain a better understanding of attitudes towards a range of potential koala conservation measures. This engagement also extends to seeking the assistance of landowners with mapping local koala populations.

METHOD

With the input from the Mackay Regional Koala Working Group comprised of koala experts, local land managers, community groups, FBA, Department of Environment and Science and local government, Koala Research-CQ and FBA designed a mail-out koala survey to be sent to 160 landholders living within part of the Clarke-Connors Range, within the FBA management area (see map in Appendix 4 – sample survey).

The survey (Appendix 4) captured information regarding koala locations, landholder attitudes and knowledge of koalas as well as gauging preparedness of the community to engage in further koala conservation actions. Properties were selected using GIS processed data and owners were identified from a publicly available data base supplied by FBA. Paper surveys were mailed out at the end of October 2021 and return-surveys were accepted via reply-paid, email or on-line through scanning of a QR code until the beginning of January 2022.

Survey responses were transcribed into a Microsoft Excel spreadsheet and analysed.

Limited additional information via email was received from a few respondents. This information, where relevant, was added to the general comments section of the survey. Other parts of these responses may be used as part of a follow-on study on landholders' personal experiences and anecdotes involving koalas in their area and other historical koala-related events.

A detailed list of individual landholders willing to engage in selected conservation activities was generated and supplied to FBA. Also, a prioritized list, based on demonstrable benefits for koala conservation, of these landholders interested in on-groundworks was supplied. A list of contact details for all survey respondents was compiled and supplied to FBA as was a list of 20 properties where management actions may benefit koala conservation, but where the owners had not responded to the survey. All these properties were mapped over koala habitat quality and shown in a map supplied to FBA only.

A plain-English language summary of survey results from the Koala Survey of landholders in the Clarke-Connors Range (Appendix 2) was produced for distribution by FBA to survey participants.

Koala sightings reported as part of the survey, as well as other sightings for the area, were collated and their locations are depicted in Appendix 3.

RESULTS

A total of 160 surveys were mailed out to property owners; 12 of these were returned as undeliverable and 19 valid surveys were received, a total of 12.83%. This is considered a good rate of return for personalised postal surveys and it a representative sample (Sinclair et al., 2012).

Note: Not all respondents replied to all questions. Responses to each question can be found below; some questions have been grouped.

Main Question 1: What can you tell us about local koalas?

Most of the respondents were aware of koalas living in their area (89.5%) or on their own property (79%) (Table 1).

Table 1: Do koalas live on your property / in your area?

Question	Yes	No	Not answered	Total
<i>Do you know if koalas exist in your area?</i>	17	1	1	19
<i>Are you aware of koalas on your property?</i>	15	3	1	19

Many (34%) of the respondents had observed koalas within the last week and nearly 70% saw one within the past three months or in the time before that (Table 2).

Table 2: When was the last time you found a koala (or evidence of one) on your property / in your surrounding area?

Within the past...						Never	Unsure	Not answered	Total
Week	Month	2 Months	3 Months	Year	3 Years				
7	2	0	4	2	1	1	1	1	19

These observations are not isolated events as 52.6% of respondents report seeing koalas at least on a quarterly frequency (Table 3). Some locations of koala sightings are shown in Appendix 3.

Table 3: How often do you see koalas on your property / in the project area?

Daily	Weekly	Monthly	Quarterly	Yearly	Occasionally	Once only	Never	Not answered	Total
0	3	4	3	4	2	1	1	1	19

It is evident that respondents to the survey value having a healthy koala population in their area with 95% giving it some level of importance and 73.7% feeling it to be *very important* (Table 4).

Table 4: How important is to you to have healthy wild koalas in your local area?

Very important	Important	Moderately important	Slightly important	Not important at all	Not answered	Total
14	2	0	2	0	1	19

Around half of the respondents (52.6%) considered the local koala population to be stable or to have increased with the remaining respondents being not sure or not answering the question (Table 5).

Table 5: Since living in the project area, do you think the number of koalas has....

Increased	Stayed the same	Decreased	Don't know / not sure	Not answered	Total
6	4	0	7	2	19

Around 63% of respondents didn't answer, were not sure or had not seen any koala with back young or a sick, injured or dead koala in the project area (Table 6).

Table 6: Observations of koalas in the project area

Question: In the project area have you seen...	Yes	No	Not sure	Not answered	Total
A koala with joey on her back?	7	9	1	2	19
A sick, injured or dead koala?	8	9	1	1	19

Vehicle strike and dog attack were named as the most frequent reason for encountering koalas in compromised situations by those who had responded positively to the previous question (Table 7).

Table 7: Potential causes of sickness, injury or death of observed koalas (multiple answers possible).

Dog attack	Vehicle strike/collision	Bushfire	Disease	Don't know	Not answered
3	4	0	1	1	9

Fewer people answered the question on what actions they took when encountering a koala needing care; answers were closely split between *doing nothing* (3) and *contacting* some sort of assistance (1/2/4) (Table 8).

Table 8: What do you do when you see a sick or injured koala? (multiple answers possible).

Leave it alone / do nothing	Contact my local council	Phone wildlife rescue	Contact a vet	Contact a wildlife carer	Never noticed any	Don't know what to do	Not answered
3	0	1	2	4	8	0	4

Very few respondents report on their weeds (15.8%) and pest animals (5.3%), and none report on wildlife and in particular koalas (Tables 9 & 10). Most respondents either commented that they are not aware whom to report to, or that they weren't aware of any need to report. (Tables 9 & 10).

Table 9: Do you report koala sightings?

Yes	No	If 'Yes', who do you report them to?	Not answered	Total
0	17	Not answered	2	19

Table 10: Do you report or record other wildlife, weeds or pest animals (multiple answers possible)?

Type	Yes	No	Not answered	Total
Other wildlife		16	3	19
Weeds	3	13	3	19
Pest animals	1	15	3	19

It is clear that collisions with vehicles (*cars, trucks, trains*) (10) are perceived as having the biggest impact on the local koala population (Table 11), closely followed by *bushfires* (8) and predation (9) (by dogs (5) and feral animals (4)). Respondents also acknowledged that habitat loss is an issue (4), especially if one considers the comments made as part of the *Other* category.

Table 11: From your experience living in the project area, which (if any) is impacting on koalas (multiple answers possible)?

Impact	No.	Impact	No.
Cars / trucks / trains	10	Movement barriers (e.g., fences, roads, rail)	2
Housing developments	1	Swimming pools	
Roving dogs	5	Land clearing / habitat disturbance	4
Bushfires	8	Climate change	1
Pest animals (e.g., foxes, wild dogs)	4	None of the above	2
I don't know		Other	3
Not answered	3		

The most frequently suggested solutions to countering threats to koalas, relate to management of their habitat with *fire management* (11) and *weed control* (8) topping the list (Table 12).

Table 12: Do you think any of the following are needed in the project area to help conserve local koalas (multiple answers possible)?

Impact	No.	Impact	No.
Reduce speed limits (e.g., at night in areas with koalas)	2	Weed control to improve koala habitat	8
Koala survey	6	Fire management to reduce wildfire risk and/or improve koala habitat	11
Road design for safe wildlife passage (e.g., installing culverts, wildlife fencing)	4	Not answered	4
Tree-planting programs (e.g., to increase koala food and shelter)	5	Other suggestions:	2

Survey respondents had ample suggestions on how they would see those threats mentioned in Table 12 being addressed and mostly they involved tackling the issues head-on such as installing wildlife-exclusion fencing along the highway, more fire breaks on their own properties or tackling feral animals. It was also made clear that cattle operations don't threaten koala populations.

Main Question 2: How would you like to help koalas on your property?

Apart from suggesting a range of practical management activities, some respondents expressed interest in committing to further, more defined koala conservation measures such as attending information sessions or sharing their personal koala stories (Table 13). A full list of who is willing to perform what koala conservation action on their property was supplied to FBA.

Table 13: Are you interested in participating in any of the following (multiple answers possible)?

Activity	No.	Activity	No.
Sharing and elaborating on your / your family's historical encounters with koalas via a separate interview?	5	'Conserving koalas' - information sessions / koala field days.	7
Property fire management - information sessions.	7	Property fire management - planning sessions.	7
Other suggestions:	1	Not answered	7

Respondents also elaborated on current management actions that they are engaged in on their properties or that they are willing to perform in the future. Control of pest species and fire featured strongly for actions that are currently performed while keeping records of koalas and allowing access to researchers on their property featured strongly for future actions (Table 14).

Table 144: Are you doing (or would you be willing to do) any of the following on your property (multiple answers possible)?

Action	Already doing	Would like to do
Pest/feral animal control	15	1
Fire management	13	2
Koala surveys	1	7
Install nest boxes or other wildlife shelters	0	5
Plant native trees and shrubs	4	4
Provide water for wildlife	6	3
Weed control	12	3
Allow researchers access to koalas on my property to collect fresh koala scats	3	9
Keep a record of koala sightings	1	9
Anything else?	0	0
Not answered	3	

Preserving koala habitat by placing a covenant or off-set protection over it is a commitment to protecting the koala habitat on one's own property. One third of respondents were not in favour of this action or didn't answer the question, however nearly 16% indicated that they already had such arrangements and 42% were keen on the idea or willing to learn more about it (Table 15).

Table 155: Are you interested in providing offsets to protect koala habitat or establishing a Nature Refuge or other conservation covenant on your property?

Yes	Already have a covenant	Maybe, I'd like to learn more	No	Not answered	Total
1	3	7	6	2	19

Respondents were keen to tackle weed issues on their properties with Shrubby weeds being named the most popular group to be targeted followed by *Giant Rats Tail Grass* (Table 16). A detailed list of all the weeds each landholder is willing to tackle was supplied to FBA.

Table 166: Which weeds do you want to control on your property?

Weeds	No.
Tree weeds (e.g., Broadleaved pepper - <i>Schinus terebinthifolia</i> Syn. <i>Schinus terebinthifolius</i>)	3
Shrubby weeds (e.g., Lantana - <i>Lantana camara</i>)	16
Vine weeds (e.g., Cat's claw creeper - <i>Dolichandra unguis-cati</i> , Rubber vine - <i>Cryptostegia grandiflora</i>)	4
Groundcover weeds (e.g., Creeping lantana - <i>Lantana montevidensis</i> , Guinea grass - <i>Megathyrsus maximus</i> var. <i>maximus</i>)	4
Not answered	4
Anything else? Giant Rats Tail Grass (<i>Sporobolus pyramidalis</i> , <i>S. natalensis</i>) (7); Mexican Poppy (<i>Argemone ochroleuca</i>) (1); Devil's Fig (<i>Solanum torvum</i>) (1); Sida (<i>Sida rhombifolia</i>) (1); Sickle pod (<i>Senna obtusifolia</i>) (1)	7

More landholders were prepared to engage in weed control (68%) than were prepared to fence off areas to enhance koala habitat (31.6%) with the same percentage willing to plant koala habitat trees. Weed control was favoured to be conducted over a large area of respondents' properties i.e., >50 ha. Comments show that many respondents believe that there is no need to increase koala habitat as their properties contain sufficient koala habitat trees and fencing-off is of little need or use as they consider that grazing activities have no impact on koalas (Table 17).

Table 177: How much weed control, fencing-off or revegetation?

Question	Ha							Not answered	Total
	0.5	1 or <	1 > 5	5-10	11-20	21-50	> 50		
What size area of weed control would you like to undertake?		0	0	2	2	1	8	6	19
Would you be willing to enhance koala habitat by fencing to allow for grazing management?		0	0	1	1	1	3	13	19
Would you be willing to plant food trees for koalas?	1	5						13	19

Fire is an issue that is acknowledged by many respondents with around 52.6% having been affected by fire within the past 7 years. Many comments point to the importance of using fire wisely as a management tool in the Clarke-Connors Range area (Table 18).

Table 18: Has your property been affected by wildfire (multiple answers possible)?

Yes, within the last 3 years	Yes, within the last 7 years	Yes, more than 7 years ago	Not to my knowledge	I don't know	Not answered	Total
9	1	0	5	2	2	19

Half of all respondents have a property fire management plan and seven are possibly interested in developing such plan (Table 19).

Table 19: Fire management plan.

Question	Yes	No	Not sure	Maybe	Not answered	Total
Do you have a property fire management plan?	8	7	1		3	19
If no, are you interested in developing one?	4	2		3	1	

While some do not have a plan, the number of property owners who engage in, or consider preparing for, certain management actions is much greater with 14 respondents indicating a focus on *controlled burns* and 12 utilising *reducing fuel loads through grazing or slashing* as a measure to be employed (Table 20).

Table 18: What are the priority fire management actions for your property (multiple answers possible)?

Management actions	No.	Management actions	No.
Repair or maintenance of existing fire trails/breaks	10	Construction of new fire trails/breaks	4
Weed management	5	Reducing fuel loads through grazing or slashing	12
Controlled burns	14	Not answered	4

A number of respondents chose to leave constructive general and specific comments relevant to the koala conservation project. Some of these comments e.g., the one that seems to indicate an increase of the local koala population over the past few decades, and those alerting to the issue associated with the koala road-kills on the Peak Downs Highway, warrant further investigation.

While many respondents commented on their koala observations on their properties and in the general project area, few koala sightings were marked on the map supplied with the survey. Those sightings are shown in Appendix 3 together with those obtained from various data bases that contain koala records of the area. The Peak Downs Highway with its large number of koala roadkill records stands out as it also stood out in the answers and comments from the survey respondents.

DISCUSSION

This survey received a response rate of ~13% which fell within the expected range; other, similar postal koala surveys have achieved return rates between 10 – 15%. This is considered a good rate of return for personalised postal surveys and makes it a representative sample (Sinclair et al., 2012).

The need for protection of remaining koala habitat on private property, and the willingness by landholders to participate in this, was underlined by the responses from this survey, as were the identification of the various threats that local koala populations are facing.

The important findings are discussed under four main topics:

Koala sightings and knowledge

Survey respondents, and therefore by extension landholders in the Clarke-Connors Range, regularly observed koalas in the area and on their properties including many observations of female koalas with back young (Appendix 3). They mostly viewed the koala population as being stable or increasing but subjected to a number of threats with the largest one being collisions with vehicles such as cars, trucks and trains. While other threats such as loss of habitat, diseases and attacks from dogs were also mentioned, they appear to be not as prevalent as they are in other areas of the species' range, including in south-east Qld.

Other surveys for different states and other regions in Qld list evidence from wildlife carers and the general public that numbers (especially of female koalas with back young) are declining with diseases such as *Chlamydia* (which can cause severe ill-health including infertility) being the most likely reasons for these declines (Santamaria & Schlagloth, 2016). The fact that many survey respondents observed female koalas with back young may indicate a healthier and more stable koala population, however, studies have shown that signs of *Chlamydia* are not always visible and develop when the animals are stressed due to environmental or other causes – a fact that should be investigated further as part of a larger population and health status study for the area.

The perception of a local koala population being stable or having increased is of particular interest, as most koala populations, across the specie's natural range, are understood to have been decreasing and hence, the species is listed as threatened in much of its range. It would be beneficial to undertake a historical analysis of the population spread and density for the Clarke-Connors Range and supplement this with well-designed and replicated koala surveys (e.g., double count surveys /drone surveys), which should give an indication on current koala numbers in specific areas as a baseline for future surveys and to validate the effectiveness of the area functioning as a refuge for the species.

Koala sightings were mentioned regularly and throughout the survey, however, actual recording of these sightings was limited. A positive outcome of the survey is that interest was expressed by many people to participate in a formal process of recording future koala sightings, an opportunity that should be promoted through future koala conservation information sessions.

Attitudes toward koala conservation

Survey respondents did not generally report, and only few referred on, injured koalas, however, a willingness to engage in this conservation action was expressed and should be promoted as part of any koala conservation information sessions. It is evident, from the survey, that injury and death of koalas through vehicular strike are important issues; there is an opportunity to collate various reports of such incidences, analyse these and disseminate the findings to landholders and other stakeholders while promoting the existence of the threat, its impact and potential solutions including the opportunities available for people to report such sightings and assist affected individual koalas. Collaboration with wildlife carers, veterinarians and government agencies is vital for the analysis of such data. Landholders felt that it is important to have a healthy, local koala population and would be willing to engage in measures to protect the species for the future (a detailed list of individual landholders willing to engage in selected conservation activities was supplied to FBA).

Respondents acknowledged that weed and fire management are two of the main actions needed to preserve the koala in the Clarke-Connors Range. Comments received showed that fires are frequent in the area, whether being wildfires, fuel reduction burns or accidental fires, with weeds, of course, playing an important role in fire behaviour. Such fires do not only affect koalas and their habitat, and it is therefore no surprise that management actions relating to their control received significant attention.

On-property koala management currently undertaken

Respondents are already engaged in various management actions on their properties that benefit or may benefit koalas although the benefit to the species might not be the primary aim of their actions, or it might not have been deliberately expressed on the form. Fire management and pest control are two of these actions mentioned by many, while some stated actions that are probably more targeted at wildlife and koalas in particular such as tree planting and the provision of water during times of drought or high temperatures.

Willingness to help koalas on their properties

While there was one concerned respondent to the survey who expressed the believe that koalas are better served without any interference from outsiders, most respondents were very keen on helping koalas on their properties and to collaborate with a variety of potential management actions suggested. Pest species, fire and weed management were the most popular actions

selected by survey respondents. However, many were also very interested in allowing researchers onto their property, share their koala history and anecdotes, report and monitor koala sightings. There was considerable interest in larger-scale (>50 ha) weed management and, to a lesser degree, larger-scale exclusion fencing. Many respondents are willing to receive additional information on what they can do to preserve koalas on their property including attending fire and koala conservation sessions. A detailed list of which property owner is willing to engage in what action was supplied to FBA.

Conservation actions (suggested)

From this survey, it has emerged that there is significant support for various koala conservation actions within the community. It is important to nurture the momentum that has been generated through this survey and involve other community members in the project. This can be achieved through the facilitation and promotion of fire and koala conservation information sessions and /or through on-property conservation / management actions which will likely be noticed and valued by neighbouring property owners as well as through targeted research.

Some of these actions may involve:

Short-term (6 months)

- *Distribute plain-English summary report of the survey to participants and other stakeholders.*

Only 3 (~15.8%) of respondents indicated that they had no interest at all in following up this survey with attending any information sessions or on-ground management actions. It is, therefore, vitally important to keep the survey respondents informed on the outcomes of this work; it is likely that participants will further communicate the information to family, neighbours and their business connections.

- *Contact individual respondents who have indicated that they are willing to engage in specific actions.*

There were two clear respondent groups, those who were interested in committing to on-ground weed eradication and fencing-off of koala habitat and those who were interested in additionally attending information sessions and engaging in specific wildlife conservation actions. It is important to make contact with both groups while the interest is still there (especially with the current raised national interest in koala conservation) and commit landholders to specific actions. It might also be an opportunity to engage with individuals and promote the uptake of additional measures.

- *Analyse wildlife carer and BioCollect data for the Clarke-Connors Range and publication of results in scientific literature and community news.*

While the respondents only supplied few exact locations of koala sightings, many reported on multiple koala sightings in their properties. Unfortunately, respondents also identified the Peak Downs Highway as a serious issue for koalas. These reports of koala roadkills and the call for melioration is mirrored by a study initiated by Transport and Main Roads and reported on by Schlagloth (2018), where the link between high quality koala habitat and its degree of fragmentation was shown to have an effect on the likelihood of koala roadkills to occur in so called blackspots. Hence, it would be important to investigate if other koala roadkill blackspots exist in the Clark-Connors Range and how koalas, that are subject to collisions with vehicles, when rescued, fare in the care of wildlife carers. Such wildlife carer data would also inform on other threats that may affect koalas in the Clark-Connors Range such as diseases, fires and climate change. While such studies exist for other areas of the koala range e.g., New South Wales (Charalambous & Narayan, 2020), Victoria (Schlagloth et al. 2021), south-east Queensland (Gonzalez-Astudillo et al., 2017), they do not exist for the important koala populations of Central Queensland / Clark-Connors Range.

Medium-term (up to 2 years)

- *Contact property owners whose land contains high quality koala habitat but have not yet indicated a willingness to engage in koala conservation actions.*

Although 160 property owners were contacted directly by mail for this survey. It is possible that not all of these have received the survey, fully understood the intent of it or had the time to respond to it. Our maps identify 20 additional properties that contain important koala habitat, but where from no survey responses were received. These properties represent an opportunity to conserve koala habitat and koalas by facilitating habitat connectivity through various management actions proposed by this project. Contacting individual landowners, explaining the importance of their land in the context of local koala conservation, encouraging participation in information sessions and explaining management incentives on offer, is needed to increase habitat connectivity and to potentially reduce the extent of some of the threats that local koalas are exposed to.

- *Facilitate fire management and koala conservation information sessions across the Clarke-Connors Range.*

The survey revealed a considerable concern of the risk that fire poses to properties and

koalas in the Clark-Connors Range. There was interest expressed by seven respondents to attend future koala conservation and/or fire information/planning sessions. It is likely that, with appropriate promotion within the community, many more stakeholders and community members can be reached through such events and positive outcomes for koala conservation may be achieved.

- *Engage with community to achieve broader reporting of koala sightings of all types.*

Few koala sightings were received, and few respondents reported sightings to any data base or similar. However, eight respondents expressed interest to record and report koala sightings in the future. This interest by the community should be nurtured by promoting the need and the ability to monitor koala sightings across the Clark-Connors Range.

Contributions by the public to data bases like BioCollect should be promoted via different means such as road-side signage, community newsletters and koala information sessions.

- *Record shared koala history by interviewing landholders and community members on their personal anecdotes and family stories.*

Koala management needs to be informed by historical recollections and past management practices. Five respondents (~26%) indicated their willingness to participate in follow-up interviews to share past experiences and family anecdotes relating to local koala populations. Several additional comments were received via separate emails, and we are aware of other residents being keen on sharing their recollections. Recording these stories is of interest especially considering that some landholders expressed their believe that koalas have increased in the area over the past decades when the species was hunted to near-extinction during the early 1900s.

- *Publish the survey results in a peer reviewed journal.*

Sharing the results of this survey in a peer-reviewed journal is important to inform current management of the species Australia-wide. It is especially important as local koala populations maybe living in, and their habitat functioning as, refugia in contrast to most other populations across the specie's range.

Long-term (up to 10 years - minimum)

- *Initiate a koala health study that monitors changes of impact of diseases and stress over time.*

Diseases are one of the main threats to the survival of koala populations. Stress can make individual koalas susceptible to diseases and likewise, diseases can cause or enhance

stress. It is difficult to treat diseases in wild populations and it is therefore important to understand the prevalence of any particular disease within a population and assess their general health status. Koalas are difficult to capture, and the process in itself causes stress to the animals; however, recent advances in koala health assessment methodologies (Santamaria et al. 2021) enable determination of cortisol levels (indicator of stress) from koala scats (faecal pellets) which is a non-invasive technique negating the need to capture / handle animals. Koala Research – CQ has a partially industry-funded PhD starting early 2022 which will investigate several health-related parameters extracted from koala scats. Around 63% of survey respondents were willing to allow, or were already allowing, researchers access to their properties. With a recent announcement by the Federal Government for additional funding to investigate koala health, local landholders willing to allow access to researchers and Koala Research – CQ exploring further concepts to assess other aspects of health for the Clark-Connors Range koalas, there are great opportunities for community and stakeholder engagement and for exploring the refugia concept for koalas in this area.

- *Conduct regular (2–4-year intervals) koala monitoring / populations studies to ascertain changes over time.*

Respondents (~37%) stated that they had seen koalas with back young in the area; this, coupled with the general feedback that koala numbers are perceived to have increased over the past decade, is a very positive sign for the koala population in the Clark-Connors Range as it indicates a population that is breeding. However, these perceptions need to be confirmed (ground-truthed) and monitored. As koalas in the Clark-Connors Range often have large home-ranges, there is an opportunity here to compare various survey methods to cover large areas of habitat. For example, traditional walked-transects could be compared to drone surveys or the efficacy of koala detection dogs. Smaller control sites e.g., individual properties, could be surveyed more frequently e.g., every 2 years with a whole-of-range survey every 4-5 years. Koala numbers or population size are important components in the process of determining the status of a koala population to qualify for various categories on different threatened species lists.

- *Address koala roadkill issue along Peak Downs Hwy and other roads yet to be identified.*

Respondents identified the Peak Downs Highway as a great threat to koalas with one person having observed “Sadly, have seen 100s of dead koalas on Peak Downs Hwy”. The issue that the highway poses to the survival of koalas in that area has been acknowledged

by the Department of Transport and Main Roads who initiated a study into the movement of koalas in a section along the highway and the identification of koala roadkill blackspots along the road (Schlagloth, 2018). While koala exclusion fencing and fauna underpasses have been installed along some parts of the highway, koalas are still being killed or badly injured by vehicles when they attempt to cross unprotected sections of the road. Koala records in general, and koala roadkills in particular, occur most frequently near high quality koala habitats where there are likely more koalas at higher densities which is reflected in the maps (Appendix 3). Koala roadkills are also reported from the Bruce Highway around St Lawrence. There is an obvious need and scope for more research into the issue in conjunction with the managing authority, adjoining property owners / managers and community stakeholders.

- *Monitor koala habitat – changes in extent, quality and health of koala habitat across the Clarke-Connors Range.*

The biggest threat to the long-term survival of the koala as a species is the loss and fragmentation of its habitat. Many survey respondents identified that their properties contained large tracts of koala habitat and that they were willing to fence parts of it off and/or replant areas with koala tree species. Some respondents also pointed out that habitat was lost through fires. It is important to monitor the extent and quality of the koala habitat in the Clark-Connors Range especially in light of its assumed status as a koala habitat refuge and potential future pressures exerted by climatic changes. Koala Research – CQ has developed remote sensing tools to assess and monitor changes in koala habitat as well as aspects of the health of the vegetation (Hewson, Meltzer & Santamaria, 2019). Such monitoring allows for targeted strategies to protect existing koala habitat and incentives for landholders to continue with proactive management to enhance koala habitat on their properties.

CONCLUSION

This survey was not intended for use in estimating koala numbers in the Clarke-Connors Range, but rather sought to obtain information on the current and past distribution of koalas in the area, the perceived status of koala populations, and to ascertain the level of interest in various possible koala conservation measures.

The survey was able to capture vital information on koala locations and their habitat, landholder attitudes toward, and knowledge of, koalas and the respondents' willingness to undertake funded and voluntary koala conservation, and other biodiversity work, on their properties. Details of those stakeholders interested in attending fire, biodiversity and koala workshops were ascertained and the type of information, knowledge and advice that landholders are seeking was established.

The main outcome of this survey was the deep interest shown by respondents on environmental, wildlife and in particular koala issues in the Clarke-Connors Range and the readiness of landholders to continue their vital contribution to preserving the koala in the area

There are positive signs that the community is ready to embrace various funding and engagement opportunities to benefit long-term koala conservation in the Clarke-Connors Range.

There are opportunities for future research into various aspects of koala ecology such as the health and distribution of the local koala population, historical aspects and landholders' personal anecdotes on encounters with koalas and the management of their habitat as well as the threats that koalas in some locations face such as near the Peak Downs highway.

ACKNOWLEDGEMENT

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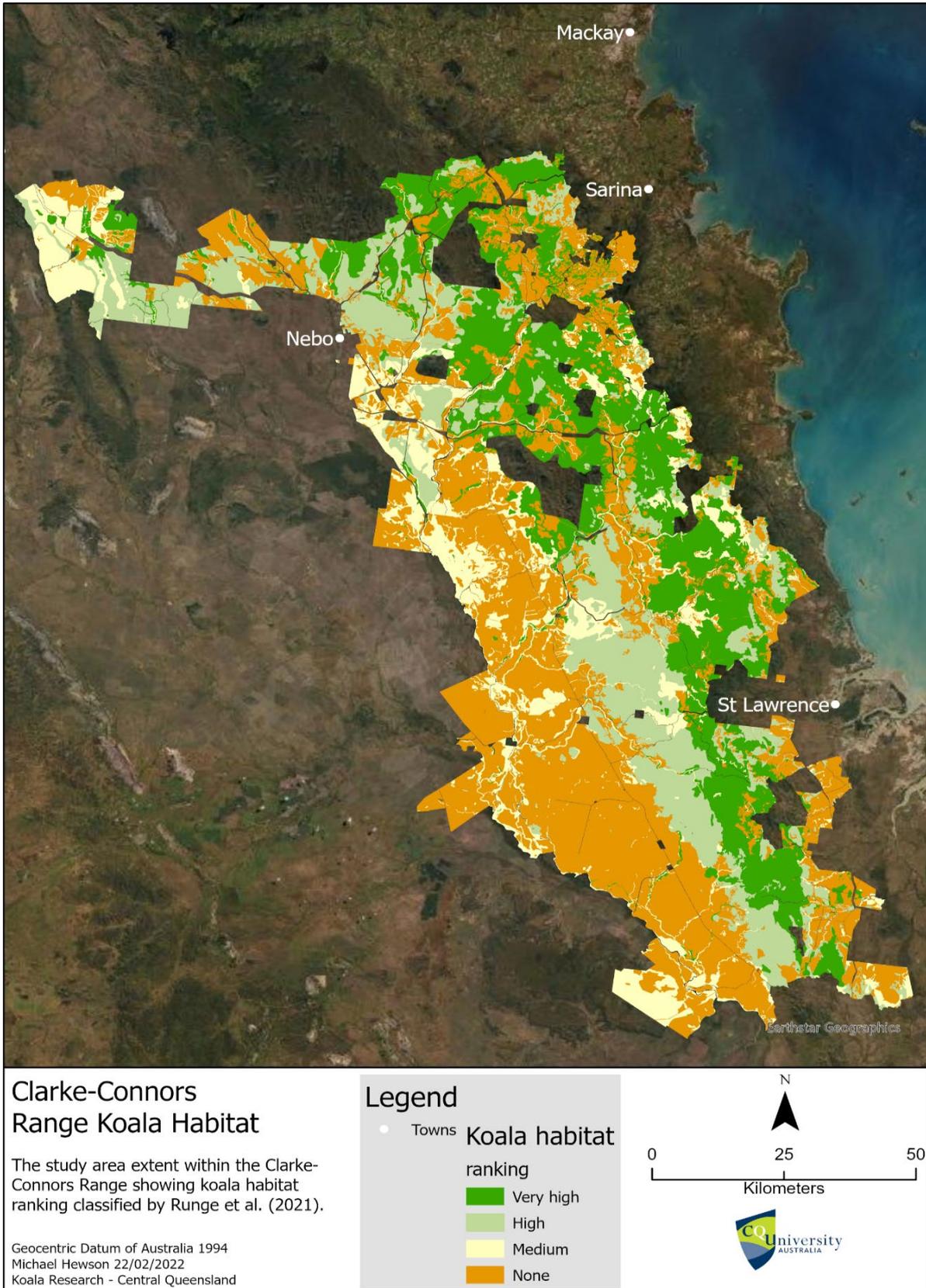
REFERENCES

- Australian and New Zealand Environment and Conservation Council (ANZECC)(1998).
National Koala Conservation Strategy.
<http://www.deh.gov.au/biodiversity/publications/koala-strategy/>
- Charalambous, R., & Narayan, E. (2020). A 29-year retrospective analysis of koala rescues in New South Wales, Australia. *Plos one*, 15(10), e0239182.
- Crowther, M. S., McAlpine, C. A., Lunney, D., Shannon, I., & Bryant, J. V. (2009). Using broad-scale, community survey data to compare species conservation strategies across regions: A case study of the koala in a set of adjacent ‘catchments’. *Ecological Management & Restoration*, 10, S88-S96.
- Gonzalez-Astudillo, V., Allavena, R., McKinnon, A., Larkin, R., & Henning, J. (2017). Decline causes of Koalas in South East Queensland, Australia: a 17-year retrospective study of mortality and morbidity. *Scientific reports*, 7(1), 1-11.
- Gordon, G., Hrdina, F., & Patterson, R. (2006). Decline in the distribution of the koala *Phascolarctos cinereus* in Queensland. *Australian Zoologist*, 33(3), 345-358.
- Harris, J. M., & Goldingay, R. L. (2003). A community-based survey of the koala *Phascolarctos cinereus* in the Lismore region of north-eastern New South Wales. *Australian Mammalogy*, 25(2), 155-167.
- Healthy Land & Water, Flinders Peak Koala Project (2021). *Protecting Koalas at Flinders Peak – can you help? Koala Survey*. Ann St, Brisbane.
- Hewson, M, Melzer, A & Santamaria, F 2019, Project Report: Koala Habitat Health – Remote Sensing Based, Landscape Scale Habitat Management Toolbox, Queensland Government, Department of Science and Environment, Rockhampton.
- Lunney, D., Coburn, D., Matthews, A. and Moon, C. (2001). “*Community perceptions of koala populations and their management in Port Stephens and Coffs Harbour local government areas, New South Wales*”. Pp 48-70 in *The Research and Management of Non-urban Koala Populations* (K. Lions, A. Melzer, F. Carrick & D. Lamb eds). Koala Research Centre of Central Queensland. Rockhampton.
- Lunney, D., Crowther, M. S., Shannon, I., & Bryant, J. V. (2009). Combining a map-based public survey with an estimation of site occupancy to determine the recent and changing distribution of the koala in New South Wales. *Wildlife Research*, 36(3), 262-273.

- Santamaria, F., Palme, R., Schlagloth, R., Klobetz-Rassam, E., & Henning, J. (2021). Seasonal Variations of Faecal Cortisol Metabolites in Koalas in South East Queensland. *Animals*, 11(6), 1622.
- Santamaria, F., & Schlagloth, R. (2016). The effect of *Chlamydia* on translocated *Chlamydia*-naïve koalas: A case study. *Australian Zoologist*, 38(2), 192-202.
- Schlagloth, R. (2018) *Managing Central Queensland's Clarke-Connors Range koala population: Predicting future koala-road-kill hotspots*. A report to the Department of Transport and Main Roads, Qld. Koala Research-CQ, School of Medical and Applied Sciences, CQUniversity, Rockhampton.
- Schlagloth, R., Santamaria, F., Golding, B., & Thomson, H. (2018). Why is it important to use flagship species in community education? The Koala as a case study. *Animal Studies Journal*, 7(1), 127-148.
- Schlagloth, R., Callaghan J. and Santamaria, F. (2004). *Ballarat Residents / Koala Survey 2002*. City of Ballarat, Victoria, Australia.

APPENDICES

Appendix 1: Map showing koala habitat across the study area.



Appendix 2: Plain-English language summary of survey results

Dissemination

Recipients were invited to complete a paper-based version of the survey and either return it pre-paid to CQU, or scan and email it back or use the supplied QR code.

Of the 160 surveys that were mailed out, ~12.83% were successfully completed. This is a good rate of return for personalised postal surveys and makes it a representative sample.

Summary

Of the 19 surveys returned 7 respondents did not express an interest in engaging in on-ground activities to improve conditions for the conservation of the koala or believed that they were already doing enough for the species and flora & fauna in general. However, 14 respondents were very interested in contributing further to koala conservation on their properties and their proposed actions ranged from fencing-off part of their property, weed management, replanting with preferred koala habitat tree species to considering applying some sort of protective status over their koala habitat. It was very encouraging to see that most respondents were very interested in attending events focussed on koala conservation and/or fire management. There was also a clear commitment from many to facilitating koala research on their land or engage directly in activities such as keeping a record of sightings or supplying water to wildlife in times of drought. It was encouraging to witness a willingness by property owners to continue to care for their local koala populations and improve their long-term survival. The far-reaching effect of the survey has already been seen as neighbours of surveyed landholders and other parties have expressed interest in learning more about the project and about koala conservation in the area.

Weeds

An overwhelming number of respondents have issues with weeds and need assistance to tackle them. While only 2 expressed concern with Tree Weeds, nearly all expressed a concern with Shrubby Weeds and half identified Giant Rats Tail as an issue. Only 3 respondents expressed an interest in tackling Groundcover and Vine Weeds. Most landholders would like to treat weeds at a scale of 50 ha. Only a few properties, mostly below 500 ha, selected slightly smaller areas for weed control.

Fencing

Half of all respondents expressed interest in fencing-off part of their property to protect koala habitat with half of these selecting an area of up to 50 ha (especially the larger properties) and an acknowledgement that this would be good near creeks.

Planting koala trees

Many properties hold large areas of good koala habitat; therefore, it was understandable that only few landholders expressed interest in replanting koala habitat trees. In all 6/18 still expressed interest to plant native trees suitable for local koala populations.

Information / planning sessions and assistance

Koala conservation information sessions were popular with 8 of the respondents expressing interest in attending.

Fire information and Fire planning sessions were also well received with 7 respondents interested in attending the former and 6 the latter sessions.

Refugia / off-sets

Respondents showed some interest in potentially applying some sort of protective overlay to koala habitat on their land as 11 respondents expressed that they either already had some sort of overlay / off-set arrangement for parts or all their property, or they were interested in obtaining it. Committing to some sort of refugia or off-set arrangement can be very positive, not only for the long-term survival of the koalas, but also financially for the landholder.

Other koala / wildlife protection

It was positive to see how keen survey participants were in supporting the conservation of koalas and other wildlife on their property and in their local area. It is important for researchers to have access to data and properties to study local populations. Nine property owners have committed to allowing CQU koala researchers access to their property, 8 are willing to record koala sightings and 7 to participate in koala surveys. Five respondents were also willing to install nesting boxes or supply water to assist wildlife in need.

Most of the respondents had koalas on their own properties or lived near them; unfortunately, many also reported seeing dead koalas on the road. Koalas seem to be abundant in the area as there are recent reports as well as many from across the past few years. Several comments were made that numbers may have increased over the last decade. While this is good news, there were also many reports of koalas being threatened by collisions with vehicles (e.g., trucks, trains), attacks from pest animals (e.g., roaming dogs), fires and movement barriers (e.g., fences, roads).

Overall, there are promising signs for the long-term future for the koalas in the Clarke-Connors Range as this survey showed that there is great interest from property owners in the area for a variety of koala and wildlife conservation actions.

We are looking forward to working together with individual property owners and the community to furthering koala conservation in the Clarke-Connors Range. We would like to thank all the survey respondents for their attention to detail when they provided the responses.

Appendix 4: Blank Koala survey

How would you like to help koalas on your property?

Optional – completing this section is optional, but your answers will help us to understand your needs and your knowledge of land management issues in your local area.

Are you interested in participating in any of the following? (tick all that apply)

- Sharing and elaborating on your/your family's historical encounters with koalas via a separate interview
- 'Conserving koalas' information sessions/Koala Field Days
- Property fire management – information sessions
- Property fire management – planning sessions
- Other, please describe _____

Are you doing (or would you be willing to do) any of the following on your property? (please complete the options below)

Action	Already doing this	Would like to do this	Comment
Pest/feral animal control			
Fire management			
Koala surveys			
Install nest boxes or other wildlife shelters			
Plant native trees and shrubs			
Provide water for wildlife			
Weed control			
Allow researchers access to koalas on my property to collect fresh koala scats			
Keep a record of koala sightings			
Anything else?			

Are you interested in providing offsets to protect koala habitat or establishing a Nature Refuge or other conservation covenant on your property? (tick all that apply)

- Yes, I'm interested
- I already have a Nature Refuge/conservation covenant
- Maybe, I'd like to learn more
- No, I'm not interested



Which weeds do you want to control on your property? (tick all that apply)

- Tree weeds (e.g. broad-leaved pepper) Shrubby weeds (e.g. lantana)
- Vine weeds (e.g. cats' claw creeper, rubber vine)
- Groundcover weeds (e.g. creeping lantana, Guinea grass)
- Anything else? _____

What size area of weed control would you like to undertake? (1 hectare = 10,000 sq m = 2.5 acres) (please tick one only)

- 1 hectare or less = 2.5 acres More than 1 ha but less than 5 hectares (i.e. less than 12.5 acres)
- 5-10 ha 11-20 ha 21-50 ha More than 50 hectares

Would you be willing to enhance koala habitat by fencing to allow for grazing management? (please tick one only)

- 1 hectare or less = 2.5 acres More than 1 ha but less than 5 hectares (i.e. less than 12.5 acres)
- 5-10 ha 11-20 ha 21-50 ha More than 50 hectares

Would you be willing to plant food trees for koalas? (please tick one only)

- 0.5 hectares 1 hectare

Has your property been affected by wildfire? (tick all that apply)

- Yes, within the last 3 years Yes, within the last 7 years Yes, more than 7 years ago
- Not to my knowledge I don't know

If yes, how severe was it (area burnt)? Did it kill large trees? Has it recovered?

Do you have a property fire management plan? Yes No Not Sure

If no, are you interested in developing a property fire management plan? Yes No Maybe

What are the priority fire management actions for your property? (tick all that apply)

- Repair or maintenance of existing fire trails Construction of new fire trails
- Weed management Reducing fuel loads through grazing or slashing
- Controlled burns
- Other (please describe) _____

Do you have any additional comments or anything else you'd like to tell us?

THANK YOU! Your feedback is valuable.



CLARKE-CONNORS RANGE KOALA PROTECTION PROJECT

Fitzroy Basin Association (FBA) and CQUniversity (CQU) are inviting landholders in the Clarke-Connors Range to participate in a Koala Protection Project. Populations of koalas have thrived in this area while experiencing declines in other regions. The project aims to partner with landholders to ensure the ongoing health of the koala population into the future.

FBA is inviting landholders in the project area to participate in the project, potentially receiving funding to assist with habitat management and to contribute their knowledge of local koalas.

Completing the attached questionnaire will help FBA and CQU to understand your knowledge of issues affecting koalas, land management in your local area and your interest in the project.

The information you provide will be very helpful in making a meaningful koala management plan for the Clarke-Connors Range and to track the results of on-ground action.

Completed questionnaires need to be returned by 29 October 2021 and can be submitted three ways:

Post to: Dr Rolf Schlagloth, Koala Research-CQ, CQUniversity, Bldg. 31, G42, Rockhampton North, QLD 4702

Email to: r.schlagloth@cqu.edu.au

Or complete the survey by scanning via the QR code or visit fba.org.au...

If you have any questions, please contact:

Mark Schultz
Fitzroy Basin Association
07 4999 2814
mark.schultz@fba.org.au

Dr Rolf Schlagloth
CQUniversity
07 4930 6964
r.schlagloth@cqu.edu.au

Fill in this paper survey or scan the code to complete online!



This project is supported by Fitzroy Basin Association through funding from the Australian Government's National Landcare Program



Privacy Collection Notice

CQU (University of Queensland) on behalf of the Fitzroy Basin Association (FBA), is collecting your contact details and knowledge on koalas to identify project opportunities in the local area and to help measure project outcomes.

As this project is supported through funding from the Australian Government through the Regional Land Partnership (RLP) program, de-identified findings from the project will be provided to the Australian Government as part of FBA's reporting obligations. FBA and CQU are committed to taking all reasonable steps under the Privacy Act 1988 (Commonwealth) to protect your personal information that we hold from misuse, interference, loss and from unauthorised access, modification or disclosure. This survey has also been approved by CQU Human Ethics Research Committee (HREC-ID 23200) and as such, all data will be handled and stored under strict, secure and controlled conditions.

If you experience discomfort completing this survey

There is no anticipated risk to you greater than that of inconvenience for the time taken to complete the paper-based or online survey.

You may experience discomfort in going up your time to complete this survey. We do not anticipate that participation in this research will cause you any undue discomfort beyond that experienced in normal day to day living. However, if you are concerned, please consider viewing the support available at www.lifebase.org.au or contacting your General Practitioner or Lifeline on 131144.

About you and your property

Please answer all questions

Full Name/s _____
 Organisation (if relevant) _____
 Phone _____ Email _____
 Property Address _____
 Postal Address (if different) _____
 Property Lot Number and Plan _____
 You can find this on your Council rates notice. There may be multiple lots – feel free to mark your property on the map overleaf.
 Approximate property area _____ hectares / acres (please circle measurement used)
 How many years have you lived on the property? _____
 What do you use your property for? _____
 Property owner and contact details (if not you) _____

What can you tell us about local koalas?

Optional – we appreciate your input to help improve our knowledge of the issues affecting koalas

Do you know if koalas exist in your area? Yes No
 Are you aware of koalas on your property? Yes No
 How or when have you noticed koalas in the project area (see map)? (tick all that apply)
 Sighted while working on/walking around my property Finding koala scats
 Sighted while actively looking for them in my free time Hearing them grunt at night
 Finding koala scratch marks on trees

When was the last time you found a koala (or evidence of one) on your property or in the surrounding area? (tick one only – if selecting Other provide more information)

Within the last week Within the past month Within the past 2 months Never
 Within the past 3 months Within the last year Within the last 3 years I'm not sure
 Other _____

How often do you see koalas on your property or in the project area (see map)? (tick one only)

Daily Weekly Monthly Quarterly Yearly
 Occasionally Once only Never

How important is it to you to have healthy wild koalas in your local area? (tick one only)

Very important Important Moderately important Slightly important Not important at all
 Please explain your answer _____

Since living in the project area, do you think the number of koalas has ... (tick one only)

Increased Stayed the same Decreased Don't know / not sure

Have you seen a koala with a joey on her back in the project area? (tick one only)

Yes No Not sure

If 'Yes', and you can remember where, please mark the location on the project area map.

Have you ever seen any sick, injured or dead koalas in the project area? (tick one only)

Yes No Not sure

If 'Yes', and you can remember where, please mark the location on the project area map.

If yes, do you think this was caused by... (tick all that apply – if selecting Other provide more information)

Dog attack Vehicle strike/collision Bushfire
 Disease (e.g. Chlamydia or "wet/yellow bottom") I don't know
 Other (please specify) _____

What do you do when you see a sick or injured koala? (tick all that apply)

Leave it alone / do nothing Contact my local council Phone wildlife rescue Contact a vet
 Contact a wildlife carer I've never noticed a sick or injured koala I don't know what to do

Do you report koala sightings? Yes No

If 'Yes', who do you report them to? _____
 If 'No', why not? _____

Do you report or record other wildlife, weeds or pest animals?

Report of:	Yes	No	How do you report? Why don't you report?
Other wildlife			
Weeds			
Pest animals			

From your experience living in the project area, which (if any) of the following do you think is impacting on koalas? (tick all that apply – if selecting Other provide more information)

Cars/trucks/trains Housing development Movement barriers (e.g. fences, roads, rail)
 Roving dogs Swimming pools Land clearing / habitat disturbance Bushfires
 Climate change Pest animals (e.g. foxes, wild dogs) None of the above I don't know
 Other (please describe) _____

Do you think any of the following are needed in the project area to help conserve local koalas? (tick all that apply – if selecting Other provide more information)

Reduced speed limits (e.g. at night in areas with koalas)
 Koala survey
 Road design for safe wildlife passage, e.g. installing culverts, wildlife fencing
 Tree-planting programs (e.g. to increase koala food and shelter)
 Weed control to improve koala habitat
 Fire management to reduce wildfire risk and/or improve koala habitat
 Other suggestions (please specify) _____

How can the landholders role in looking after the koalas and their habitat be maintained, assisted or enhanced? (Please make suggestions)

