

Linda Gray
Chief Executive Officer
Shire of Cranbrook
PO Box 21, Cranbrook
Western Australia

Dear Linda,

Re: Variation to Shire of Cranbrook Draft Local Planning Policy No 1 – Plantations

Thank you once again for the opportunity to provide detailed information in regard to our application for planning approval for an ecological restoration project to return native vegetation with an indigenous understorey at 809 Duck Lake Road.

Please receive this additional information to assist you and members of the Shire in consideration of our development application, specifically in the context of the Shire's Draft Policy 1 – Plantations.

809 Duck Lake Road (Lot 3395 on DP 79903)

Lot 3395 on DP 79903 (809 Duck Lake Road, Cranbrook) does not have the land extent or quality required to support a modern profitable agricultural enterprise on its own. The extent of cleared land, quality of soil, saline hydrology, and degraded housing and infrastructure are all factors which contribute to its poor capacity to support a commercially viable agricultural enterprise.

809 Duck Lake Road was advertised on the market by Elders Real Estate for a period of 12 months. For an entire year, the property failed to attract a buyer from any neighbouring landholder or local farmers undertaking traditional agricultural activities. The lack of interest in this property by the local farming community, and relatives of the previous landholder, reflect the poor quality of the land and poor condition of the property, and represents a market-based demonstration that the property was not considered valuable or suitable for traditional agricultural expansion or farm build up.

While the property does not support broad hectare farming, it's location on the Gordon River and the Boorokup Lakes System make it a highly suitable location in the landscape for bringing environmental benefits to the Shire and State. Following repairs to the single dwelling and sheds, the property will serve as an occupied location with ongoing tenancy.

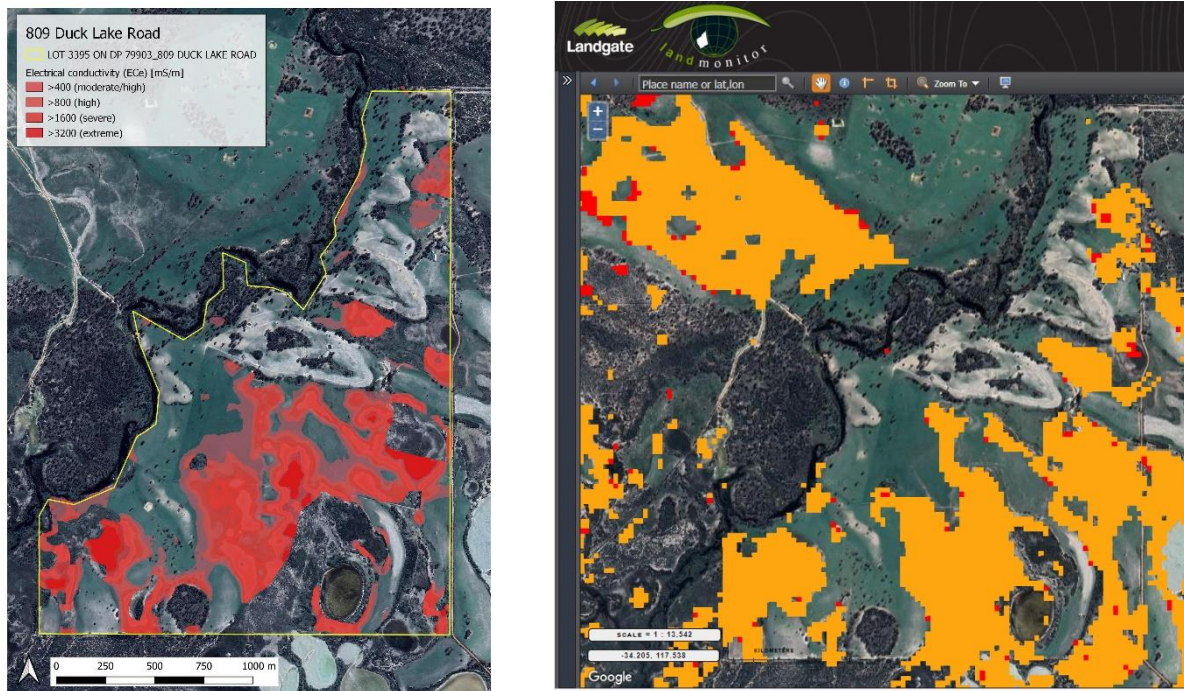
Property analysis

Following the purchase of 809 Duck Lake Road, agricultural consultants VRT Solutions were engaged to undertake a detailed electromagnetic induction (EM) and gamma-ray spectrometric (gamma-radiometric) survey of the cleared land areas to evaluate the soil types and delineate management zones across the property. VRT Solutions collected **120,714 data points** across 266.3 hectares of land accessible with a 4WD vehicle. In addition, 15 soil cores were collected and analysed by CSBP (Wesfarmers Chemicals, Energy & Fertilisers) across the site. The findings of those land assessments confirmed that marginal and poor-quality land occupy the majority of the property.

Salt affected land

Data collected from VRT Solutions and analysed by CSBP showed 137.5 hectares (**52%**) of the surveyed land (Figure 1) is classified as highly saline ($EC_e > 800$ mS/m) as per the WA Government Department of Primary Industries and Regional Development Agriculture and Food soil salinity measuring

methods¹. These measurements provide locally collected data which closely mirror the WA Government’s LandMonitor analysis (Figure 2) of statewide salinity (Furby et al 2010).



Figures 1 & 2. Image 1 (left side) EM38 salinity mapping results from VRT Solutions agricultural soil survey showing extent of salinity. Image 2 (right side) LandMonitor WA State Monitoring Data mapping showing surface salinity at 809 Duck Lake Road; salinity 1988-1991 (orange), salinity 1991-1998 (red). Accessed June 2022 <https://landmonitor.landgate.wa.gov.au/>



Figure 3. Deep sandy soils and dunes.

Low CEC Soils

In addition to the 140 hectares of saline land, data and soil samples collected from VRT Solutions and analysed by CSBP showed an additional 62.9 hectares (**24%**) of cleared land at 809 Duck Lake Road have very low cation exchange capacity (CEC) across all profile depths. VRT Solution’s gamma-radiometric field data and mapping provided a direct spatial correlation with the large deep gutless sandy ridges observed on the property (see white patches in Fig.3). [Those observations are also clearly viewed as distinct landforms with little vegetative cover when viewing 809 Duck Lake Road in satellite imagery on Google Maps.] Low CEC soils have very low levels of organic matter, clay and fertility, and very low water or nutrient holding capacity. Next to saline soils, these are the most marginal soils for traditional agriculture practices.

Cleared Land Area

The total area for 809 Duck Lake Road (Lot 3395 on DP 79903) is 358.6 hectares, with 67.5 hectares (**19%**) of remnant vegetation, 7.0 hectares (**2%**) of lakes/waterbodies, and 1.6 hectares (**0.4%**) of property infrastructure. Considering the total extent of cleared land areas with extremely poor-quality soils

¹ Table 3 - <https://www.agric.wa.gov.au/soil-salinity/measuring-soil-salinity>

and/or salinity, and the non-contiguous distribution of the remaining arable land (65.9 ha) with its location as frontage to the Gordon River, a strong case is presented to support the replanting of native vegetation with an indigenous understorey across the property.

My colleagues and I ask the Shire’s Councillors, and the community more broadly, to consider the long-term financial viability of this lot in the context of the Draft Policy 1 – Plantations, and the information presented in this letter, as a genuine and worthy justification for variation to any Cranbrook Shire Policy which would oppose its full restoration to native vegetation².

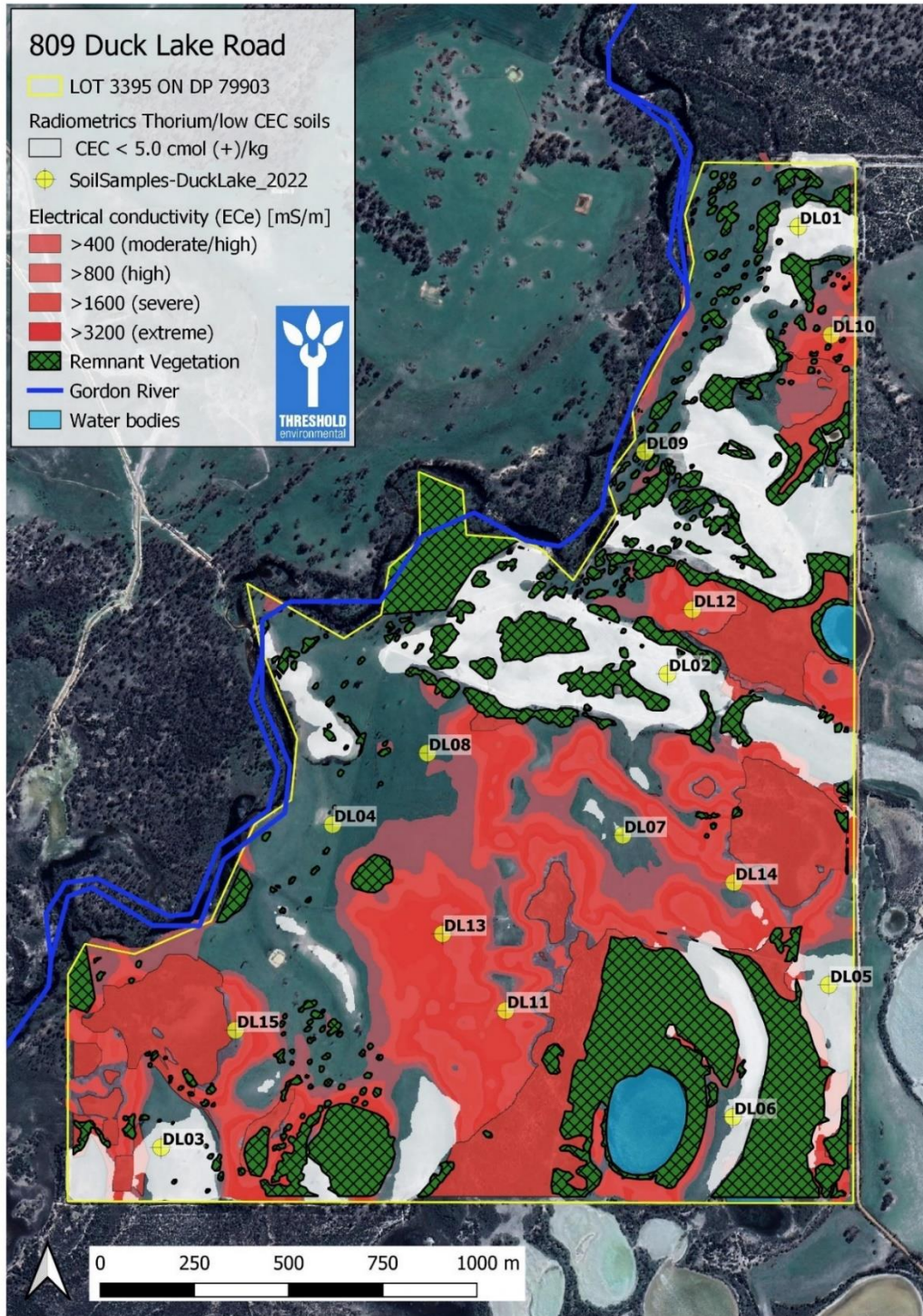


Figure 4. Map of land area constraints that do not support profitable agricultural enterprises at 809 Duck Lake Road.

² *Note, a ‘house block’ of 3.2 hectares of cleared land will remain unplanted adjacent to the house and sheds.

Table 1. Land area constraints and condition of soils at 809 Duck Lake Road.

	AREA (Ha)	% Property Area
Total area	358.6	
Remnant vegetation	67.5	18.8%
Lakes/ water bodies	7.0	2.0%
Infrastructure	1.6	0.4%
Cleared land	266.3	
cleared saline land	137.5	38.3%
cleared low CEC soils land	62.9	17.5%
remaining arable land	65.9	18.4%

Environmental benefits

In contrast to its low agricultural value, 809 Duck Lake Road is located in a highly strategic landscape position for environmental gains and the conservation of nature and biodiversity. The property includes a significant extent of the Gordon River (Figure 5) with 4.7 kilometers of the property boundary being river frontage. Once restored, these areas will significantly increase the landscape connectivity along the Frankland-Gordon River system. In the *Survey of Foreshores of the Franklin and Gordon Rivers* (1998) the property was noted to be unfenced and ranked at Level “C-grade” with a recommendation for revegetation of the foreshores. To the south of the property, areas are mapped to be in good condition and categorized as “A-grade” and to the north “B-Grade”. The return of native vegetation with an indigenous understorey on cleared land at 809 Duck Lake Road, and along the 4.5 km of river frontage will greatly improve the ecological condition of this river corridor. 809 Duck Lake Road is also located directly on the Boorokup Lake System and the western edge of the regionally significant Balicup Group of Wetlands



Figure 5. 809 Duck Lake Road has 4.5 km of Gordon River frontage with a) poor ‘C-grade’ surveyed foreshore conditions, b) and c) water pools providing refugia to waterfowl, and d) landscape connectivity to the Stirling Range National Park via the Balicup Group of Wetlands.

Wetlands (Figure 5d), a major ancient paleo drainage system that connects with the northern boundary of the Stirling Range N.P..

Landscape connectivity and conservation corridor

With approval to proceed with an ecological restoration project at 809 Duck Lake Road, local native and endemic vegetation can be planted in the cleared areas of the property to provide a major reconnection between two large areas of intact remnant vegetation found to the north and south of the property. Once restored, this newly connected remnant will have a contiguous area of native vegetation of 1,548.7 hectares, providing a strong contribution to landscape scale conservation.

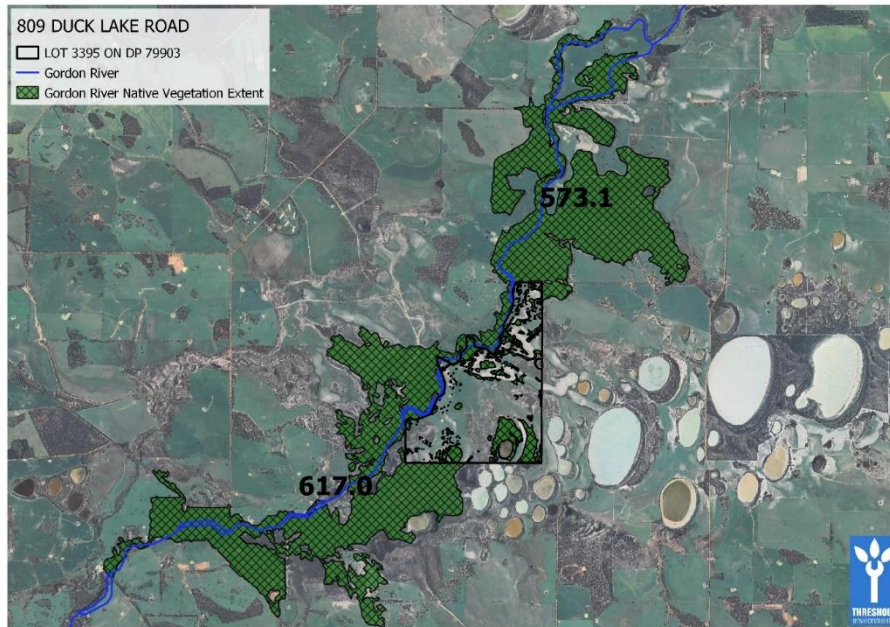


Figure 6. Location of 809 Duck Lake Road and two large, fragmented remnants along the Gordon River. The northern remnant is 573.1 hectares in extent, while the southern remnant is 617.0 hectares.

In 2006, former Department of Conservation and Land Management (CALM) coordinated a South Coast bioregional Macro Corridor Network analysis which identified the 'Gordon River Corridor', to be a 'Strategic Zone A' pathway forming the most strategic link of highest importance for maintaining and improving regional landscape connectivity (Wilkins et al 2006). 809 Duck Lake Road is situated directly on the 'Gordon River Corridor' (see Fig.6).

Threatened Ecological Communities

Further to the major gains in connectivity and return of native vegetation along the Gordon River, the restoration of at 809 Duck Lake Road will also include native plant species mixes to increase areas of two Threatened Ecological Communities (TECs) listed under the federal government:

- 'Eucalypt woodlands of the Western Australian Wheatbelt' occurring onsite, and
- 'Proteaceae Dominated Kwongan Shrublands of the southeast coastal floristic province of Western Australia' also onsite.

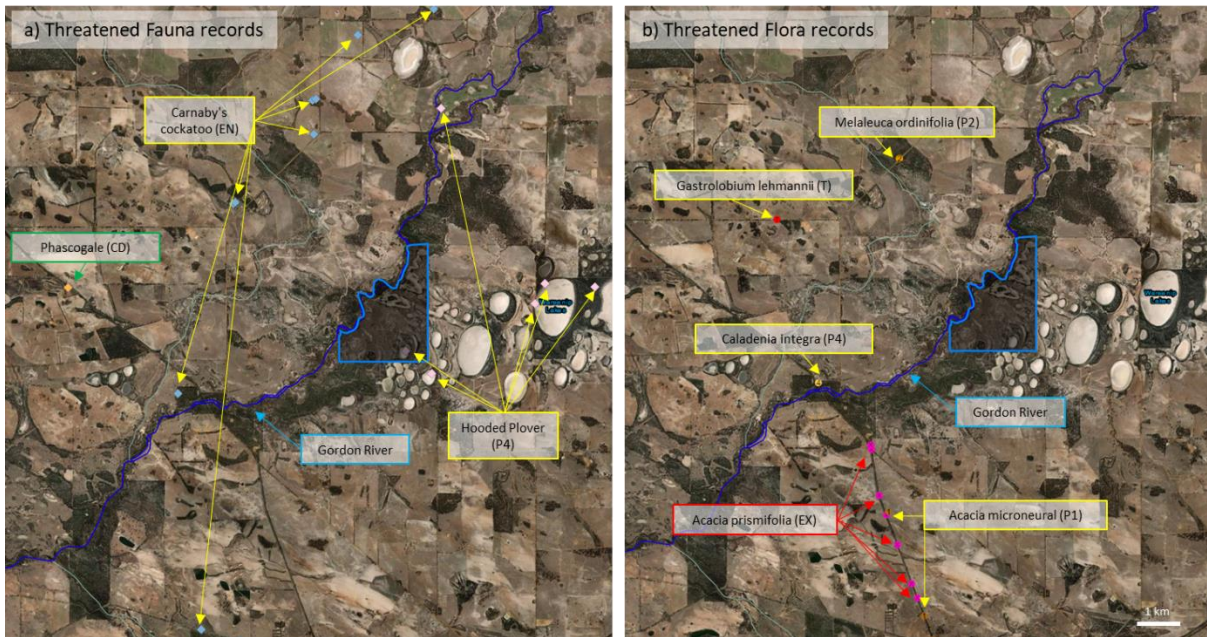


Figure 7. Conservation significant records in and in proximity to the Duck Lake Road Banks site, a) fauna and b) flora

Threatened Fauna

Conservation fauna in the area include birds (Carnaby Black Cockatoo – EN, Red-Tailed Black Cockatoo (VU), Hooded Plover - P4 and, Malleefowl -VU) and mammals (Red-tailed Phascogale – CD, South-western brush-tailed phascogale Quenda – P3, and Western brush wallaby -P4) (Figure 7).

The 60 ha of sand dune (Figure 3) will be planted with a suite of local endemic Kwongan species (TEC – ‘Proteaceae Dominated Kwongan Shrublands of the southeast coastal floristic province of Western Australia’) that provide food sources for Carnaby Black Cockatoo, Baudin’s cockatoo, and Western Pygmy Possum. There are large remnant trees on site that will served as locations to mount artificial tree hollows for Carnaby Black Cockatoos. Grant applications to support this work have already been submitted by Birdlife Australia, and discussions are ongoing about long-term monitoring at 809 Duck Lake Road (see Appendix 1).

The large lake at southern end of the property is part of the Boorokup Lake system, with records of use by the Priority 4 Threatened Hooded Plover (*Thinornis rubricollis*) which uses the sandy banks as nesting habitat. These salt lakes also support other migrating species, as evidenced by records of Sharp-tailed sandpiper, Red-necked stint, and Common greenshank.

Economic benefits

As outlined in our *Ecological Restoration Management Plan* for 809 Duck Lake Road the restoration and return of native vegetation with an indigenous understorey at 809 Duck Lake Road will be administered following the best knowledge, practice and Standards available.

Low to Nil economic benefit under agriculture

809 Duck Lake Road is not considered priority agricultural land. It is a small land holding of 358.6 hectares with 267 hectares (74.6%) of marginal land quality. Within the property, detailed soil survey’s by VRT Solutions identified:

- 67.5 Ha remnant vegetation,

- 137.5 Ha high salinity land ($EC_e > 800$ mS/m)
- 40.16 Ha compacted clay flats with moderate salinity ($EC_e > 400$ mS/m)
- 62.7 Ha sand-dunes/ridges with low cation exchange capacity (CEC)

Considering this extent of agriculturally poor and degraded land, this leaves only 65 ha of suitable production land. However these areas are not contiguous and are spread as patches throughout the site. The risk of salinity extension as mapped by the Department of Primary Industries and Rural Development (DPIRD) shows much of these areas are low-lying and defined as ‘valley hazards’ (Furby et al 2010) subject to a rising saline water tables and frosts. Those areas which are non-saline are dissected by large northeast-southwest aligned sand dunes/ridges, comprised of low CEC soils. The Department of Primary Industry and Rural Development also map this property as having marginal agricultural value (Fig. 8).

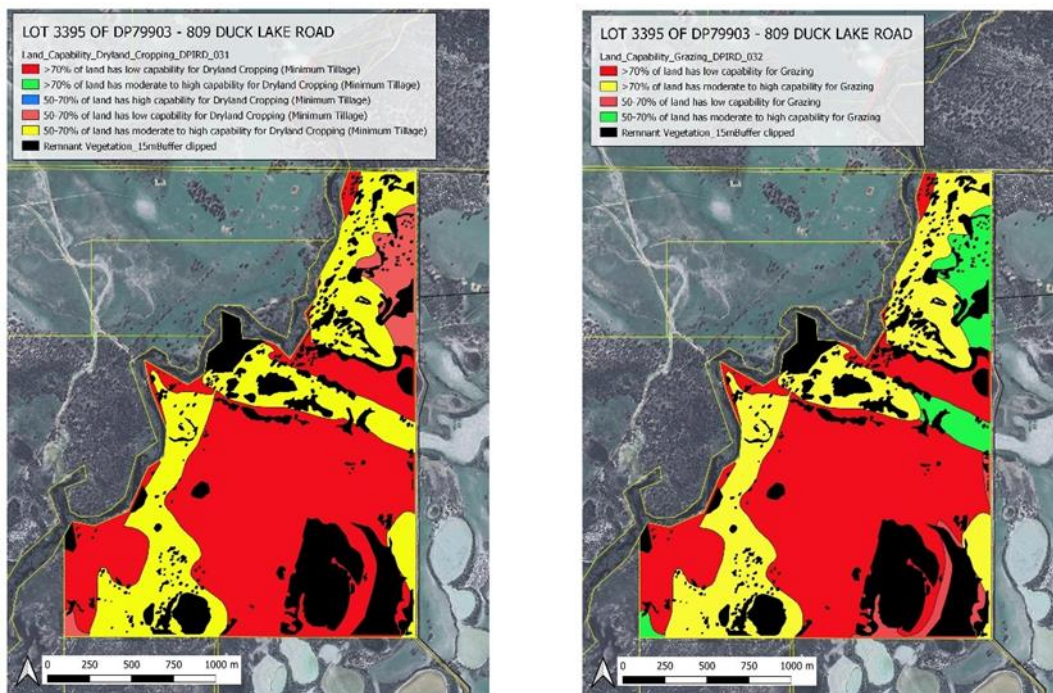


Figure 8. DPIRD Land capability assessments for a) dryland cropping and b) grazing (DPIRD 2016).

Infrastructure on the property is in poor condition with the majority of fencing across the property damaged and/or in very poor condition and sheds and single dwelling in disrepair with termite damage to stumps and structural timber.

Economic benefit following restoration

This site has significant potential to generate ongoing revenue from carbon credits, biodiversity credits, seed collection, restoration works depot, and research. The works proposed here have already been approved by the Australian Federal Government's Clean Energy Regulator as an Emissions Reduction Fund project able to generate 40,000 tonnes of CO2 equivalents under the Carbon Credits (Carbon Farming Initiative) Act 2011. As a recipient of the West Australian Rural Business Development Corporation Carbon Farming and Land Restoration Program inaugural funding program, an agreement has been made with WA State Government to sell the first 20,000 tonnes. This sale does not preclude additional sale of biodiversity credits, which will be measured and mapped in great detail as part of the Natural Capital Laboratory (NCL) Australia international research program planned for the property. In this way, lessons learned and techniques perfected at 809 Duck Lake Road may be of benefit to the farming community, by demonstrating additional incomes that can be generated by environmental plantings in production landscapes.

Direct employment with the local community and Traditional Owners

I have lived in the region for the past 15 years and have operated as a restoration ecologist doing environmental plantings on many different farms. In the course of undertaking this profession, I have worked with many workers, contractors and businesses throughout the region. In this regard, it is my sincere intention to engage with the local community in as many ways as possible. As an example of this intent, since purchasing 809 Duck Lake Road, I have engaged with:

- two local Noongar Ranger Groups, the Nowanup Rangers and the Binalup Aboriginal Corporation (see Appendix 2) and contracted them for 15 FTE days of management works on site to date (as advised by Cranbrook Noonger Elder Maud Bonshaw, and Elder Eugene Eades),
- a local Fire Management Consultant for development of a site BMP,
- a local botanist to undertake a site vegetation survey,
- a local fencing contractor to advise on property fencing needs
- a kangaroo, fox and cat shooter to manage those populations
- the Gillamii Centre through provision of the Ecological Restoration Management Plan for their input and review.

Attracting world class researchers and further investment to Cranbrook

The property at 809 Duck Lake Road has been identified as a location to host a Natural Capital Laboratory – Australia (NCL-Australia). NCL-Australia will become a sister site to NCL-Scotland, a highly successful, multi-award winning³ 'rewilding' site in the Scottish Highlands. Partnering with The Western Australian Biodiversity Science Institute (WABSI), AECOM, The LifeScape Project and the University of Cumbria, NCL-Australia will bring international attention and a world-leading showcase of nature conservation valuation to the region (see Appendix 3).

The project will directly engage environmental consultants, scientists, students and volunteers researching and surveying environmental changes to the property following restoration over time. Researchers and consultants engaged would be expected to reside on site for extended periods and utilise Cranbrook for accommodation, fuel, food, and supplies during these periods bringing direct economic revenue to the Shire. As an estimate, we would predict at least 100 person days utilising

³ 2021 Innovation Award at Association of Noise Consultants Awards; 2021 Best ESG Campaign or Case Study to Improve Conservation, Restoration and Sustainable Use of the Terrestrial Ecosystems at The PRmoment.com ESG Awards; Natural Environment Champion Award 2121 at TechFest;

Cranbrook within the first 12-months of restoration plantings. The number of people on site is expected to grow over time as we work closely with research partners, to target major grant investments and attract further investment to the site and region.

Ecological restoration of native vegetation

The Shire has classified the proposed land use change as a plantation and as such, would be subject to control measures as outlined in the Draft Local Planning Policy - Plantations. With the emergence of the Carbon Industry, we appreciate and support the Shire's role in managing the broader landscape to ensure food supply and productivity is maintained.

However, in this case we believe the activities proposed should best be recognized as ecological restoration of native vegetation with an indigenous understorey. The activities employ a range of techniques to return local endemic **Native Vegetation** with an indigenous understorey to the site, and are substantially more complex than those typically presented for a monoculture or mixed species native environmental plantation for carbon. As outlined in the *Ecological Restoration Management Plan* for 809 Duck Lake Road the site will be replanted to 8 different local native vegetation communities as identified by a vegetation survey conducted by a local Botanist. Each of these native vegetation communities correspond to the soil type and landscape position where they are found, and reflect the natural ecological mosaic found around the property. We will target the salt affected areas with the most salt tolerant local native endemic species available. In this way, the native vegetation planted on the site will have a positive effect on using excess water and improving the quality of groundwater located under and around the site, thus protecting the Gordon River and the surrounding land areas maintained in agricultural production. Through the return of native vegetation with an indigenous understorey in a natural mosaic of Woodland, Shrubland and Mallee type ecosystems, the proposed works will further conserve and expand the natural ecological processes and conserve local biodiversity.

The land under consideration at 809 Duck Lake Road is clearly of poor agricultural value and would benefit from ecological restoration to mitigate and reverse the salinity and low quality land. With the return of native vegetation to the site in the form of an advanced ecological restoration project, the property can generate carbon credits, generate biodiversity credits, serve as an operation base for restoration activities including seed collection, and also serve to engage environmental consultants, scientists, students and volunteers researching and surveying environmental changes to the property. I sincerely believe these activities will bring short, medium and long-term value that will be of net gain to the Cranbrook Shire and community. Your support to permit these works we seek to implement on these lands would be greatly appreciated.

Kind regards,



Justin Jonson
Restoration Ecologist
Managing Director – Threshold Environmental
Property Owner – 809 Duck Lake Road

REFERENCES:

Australian Bureau of Statistics (2016) Cranbrook (WA) accessed 8.6.2022

<https://www.abs.gov.au/census/find-census-data/quickstats/2016/SSC50351>

Cunningham T., and Northover P. (2017) Shire of Cranbrook Strategic Community Plan 2017 – 2027

Accessed 8.6.2022: <https://www.cranbrook.wa.gov.au/wp-content/uploads/2021/02/Cranbrook-SCP-2017-2027-Adopted-17-May-2017.pdf>

Department of Water and Environmental Regulation (DWER) (2022) Native vegetation policy for Western Australia, Government of Western Australia. Accessed 11/07/2022

<https://www.wa.gov.au/government/publications/native-vegetation-policy-western-australia>

Department of Environment (2004) Gordon-Frankland catchment, Department of Environment, Water Resource Management Series, No WRM 44.

Department of Primary Industries and Regional Development (DPIRD) (2017) Land Capability - Grazing (DPIRD-032); Land Capability - Dryland Cropping (DPIRD-031),

<https://catalogue.data.wa.gov.au/dataset/land-capability-grazing>

FIFWA (2006) Code of Practice for Timber Plantations in Western Australia. Accessed 8.6.2022

<https://www.wa.gov.au/system/files/2020-09/Code-of-practice-for-timber-plantations-in-Western-Australia.pdf>

Furby, SL, Caccetta, PA & Wallace, JF (2010), 'Salinity monitoring in Western Australia using remotely sensed and other spatial data', Journal Environmental Quality, vol. 39, pp. 16–25.

LandMonitor. Online mapping portal. Accessed 8.6.2022 at:

<https://landmonitor.landgate.wa.gov.au/home.php>

Pen, L.J. and Scott, M. (1998) Survey of Foreshores of the Frankland and Gordon Rivers. Coordinated by the Frankland Gordon Management Group. Western Australia.

SPP 2.5 (2016) State Planning Policy 2.5: Rural Planning, Prepared under Part Three of the Planning and Development Act 2005, Western Australian Planning Commission, Perth, Western Australia.

Schofield, N., and Scott, P. (1991) "Planting trees to control salinity," Journal of the Department of Agriculture, Western Australia, Series 4: Vol. 32 : No. 1 , Article 2.

Accessed 8.6.2022 at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol32/iss1/2

Western Australian Planning Commission (WAPC) (2016) *Lower Great Southern Strategy*, Perth, Western Australia.

Wilkins, P., Gilfillan, S., Watson, J. and Sanders, A. (ed). (2006). *The Western Australian South Coast Macro Corridor Network – a bioregional strategy for nature conservation*, Department of Conservation and Land Management (CALM) and South Coast Regional Initiative Planning Team (SCRIPT), Albany, Western Australia.