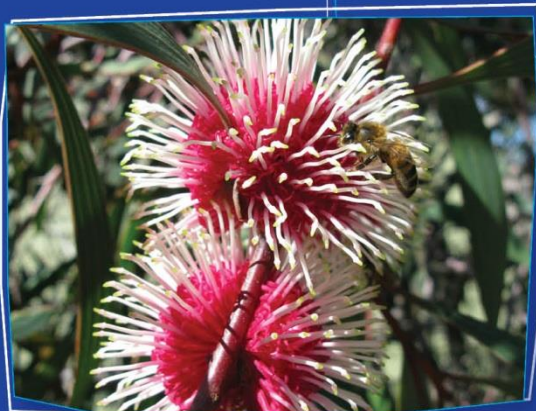
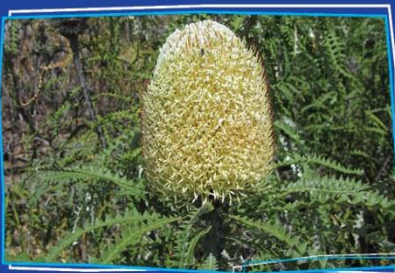


Updated Revegetation Management Plan

Shire of Esperance 2024-25 Strategic Purpose Permit
Site B - River Road Gravel Pits

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1 RECOMMENDATIONS

As Shire Environmental Coordinator signs off on project work packs the following recommendation will be included within the internal SOE approval process for the road project:

- a) All vehicles and construction equipment to be cleaned prior to start of the project to mitigate spread of weeds and introduction of *Phytophthora dieback*;
- b) Conduction of works during the drier months of summer and autumn to minimise risk of dieback spread;
- c) Complete rehabilitation of gravel pit areas post-extraction; and
- d) Implementation of an approved weed management plan.

Revegetation Plan

The proposed 'River Road Gravel Pits' site will be rehabilitated by standard Shire of Esperance protocols. including the floristic and vegetative assessment of a reference site, stockpiling of topsoil material prior to gravel extraction, reshaping of the exhausted gravel pit to natural contours, spreading of stockpiled topsoil across the site, and preparatory site ripping.

1.1.1 Rehabilitation Methodology

A dozer will be used to clear native vegetation, stockpile topsoil, and remove overburden (consisting of approximately 300 mm of overlying soil substrate). The topsoil contains large reservoirs of valuable native seed, subterranean fauna and live clonal tissue; therefore, it will be stockpiled separate from the overburden to be used in rehabilitation. Multispectral drone imagery will be conducted prior to clearing so that the original vegetation cover and density can be used as a reference site.

After the exhaustion and cessation of extractive activity in the proposed gravel pits, rehabilitation works will commence in the following autumn or winter (April – June) prior to the onset of the main winter rain. Rehabilitation works will involve spreading stockpiled overburden and subsequently topsoil across the cleared area, and ripping of the site to a depth of 200 – 350 mm. The stored seed in the soil bank will be relied on to facilitate the revegetation component of rehabilitation, with direct seeding or tubestock planting only occurring as a contingency measure. Weed control (refer to Section 7.2) will occur concurrently.

1.1.2 Rehabilitation Completion Criteria

The floristic and vegetation baseline data from the September 2023 reconnaissance survey will be used as the reference for rehabilitation success and completion criteria. Annual site inspections will be conducted to assess vegetation foliar cover, density, species richness and vegetative health. A drone may be flown over the site every alternate year to ascertain multispectral imagery to determine spatial distribution of vegetative health, cover, and density across the site. Refer to Table 8 below for a description of completion criteria and targets for the proposed 'River Road gravel pit' site.

Table 8: Completion criteria following the SMART (specific, measurable, achievable, relevant, time-bound) principles for the rehabilitation of the West Point Road gravel pit.

Criterion	Baseline Floristic data	Completion Target	Completion Criteria
1	131 native vascular plant taxa present prior to clearing across three vegetation types	Restoration of a majority (70%) of floristic species richness after five years	92 native vascular plant taxa present
2	Vegetation was classified as Carnaby's black-cockatoo	Returns of 80% foraging species after five years	35 proteaceous, myrtaceous and / or

Criterion	Baseline Floristic data	Completion Target	Completion Criteria
	foraging habitat prior to clearing, with 43 forage species present		Casuarinaceous species present providing Carnaby's black cockatoo foraging habitat.
3	Vegetation cover as presented in pre-clearing drone aerals	Return of > 60% of vegetation cover by five years	Drone aerial presenting adequate and increasing vegetative cover > 60%.
4	Weed cover < 5 %	Minimal weed cover across rehabilitated site after five years	Weed cover < 5% within the rehabilitation area
5	Vegetation predominantly in 'Excellent' condition	Restoration of vegetation condition to near pre-clearing state after five years	Assessment of vegetation condition to be 'Very Good' or better

1.1.3 Monitoring

Monitoring of the rehabilitated areas will enable determination of successful achievement of completion criteria, and early detection of issues that may necessitate the enactment of contingency measures. Monitoring will involve annual on-site inspections by qualified environmental specialists (minimum tertiary-level qualification in Environmental Science). On-site inspections will involve visual assessment of correct implementation of rehabilitation processes (i.e. complete spreading of topsoil), vegetative health and foliar cover, survey of establishing species in the revegetation area, signs of fauna return, and determination of any issues potentially impeding rehabilitation success. Monitoring will coincide with the Annual Compliance inspection period for the 2024 / 2024 financial year. Drone aerals will commence five years after the implementation of rehabilitation activities. Monitoring of the site will continue until achievement of successful rehabilitation.

1.1.4 Contingency Plan

Where the rehabilitation is deemed unsuccessful by comparison to the completion criteria (Section 5), contingency measures will be undertaken, until the completion criteria are met sufficiently. This is an adaptive process and dependent on what completion criteria have failed. A few standard techniques are outlined below:

- a) If the composition of species does not meet criteria, then specific species will be infill planted and/or seeded during the next revegetation season from April to June; and / or
- b) If listed environmental weeds exist in the site then herbicide and or manual control will be applied to affected areas; and / or
- c) If the substrate is determined to be unsuitable (i.e. compacted, too aerated), then amelioration practices such as ripping or re-spreading of material.

Keystone and dominant species will be selected as a contingency measure if resspreading topsoil and stockpiled vegetation has unsuccessful germination and does not meet the completion criteria. The incidental species list from the spring 2023 flora survey (Appendix 1) will be the basis for determining species selection for seed and tubestock seedlings, based on availability. Seed can also be collected from the surrounding road reserve.

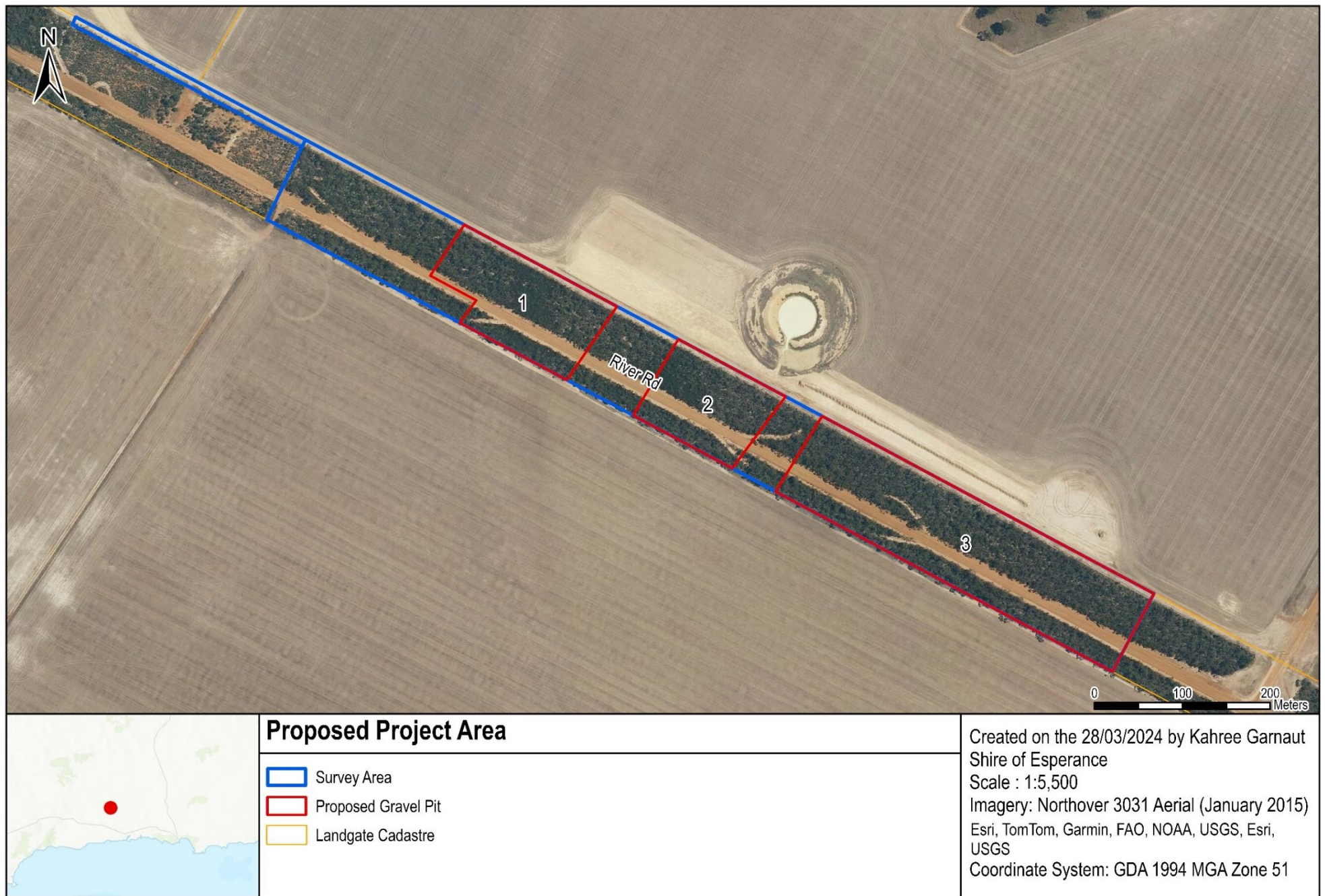


Figure 1: Proposed River Road Gravel Pit proposed project area within the Cascade district.