

Ashton Coal: NEOC/woodland/grassland reference sites/SVCA01,02,03/Ravensworth Woodland20 x 20m Quadrat monitoring including full BAM (ex diversity/m<sup>2</sup>)Date: 13.15.125Site reference code: RUMEX03Surveyors Name: RM, AJ

Vegetation community:

NB: TEC PCT 1603 Narrow-leaved Ironbark - Bull Oak - Grey Box shrub - grass open forest of the central and lower Hunter

General Site Description: regen E. crebra forest with <sup>some</sup> bare over mixed grassy/leaf litter groundcover

Structural characteristics: 1m length every 2m situated along 20m transect

At ten, 1m lengths along 20m transect. Note: the ground components (litter, cryptogram, rock, bare ground and lower perennial foliage) should add to 100%. Calculate projected foliage cover of perennial vegetation to minimise seasonal variations.

| Habitat Structure                                    |                                                                                   | Starting distance |    |    |    |    |     |     |     |     |          |
|------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------|----|----|----|----|-----|-----|-----|-----|----------|
|                                                      |                                                                                   | 0m                | 2m | 4m | 6m | 8m | 10m | 12m | 14m | 16m | 18m      |
| % Dead litter < 5cm diameter                         |                                                                                   | 70                | 69 | 85 | 90 | 70 | 70  | 80  | 75  | 70  | 70       |
| % Annual plants (live litter)                        |                                                                                   |                   |    |    |    |    |     |     |     |     |          |
| % Cryptogram (exclude on rocks or logs ≥ 5cm across) |                                                                                   |                   |    |    |    |    |     |     |     |     |          |
| % Rock ≥ 5cm across                                  |                                                                                   |                   |    |    |    |    |     |     |     |     |          |
| % Log ≥ 5cm across                                   |                                                                                   |                   |    |    |    |    |     |     |     |     |          |
| % Sand                                               |                                                                                   |                   |    |    |    |    |     |     |     |     | 15       |
| % Gravel/small rocks (< 5cm)                         |                                                                                   |                   |    |    |    |    |     |     |     |     |          |
| % Bare ground                                        |                                                                                   |                   |    |    |    |    |     |     |     |     |          |
| Foliage cover<br>(native & introduced)               | Perennial plants 0 - 0.5m                                                         | 30                | 40 | 15 | 10 | 30 | 30  | 20  | 25  | 30  | 15       |
|                                                      | <u>Ground cover</u>                                                               |                   |    |    |    |    |     |     |     |     |          |
|                                                      | = 100%                                                                            |                   |    |    |    |    |     |     |     |     |          |
|                                                      | (total % of litter, crypt., rock, bare gr., log and foliage 0-0.5m should = 100%) |                   |    |    |    |    |     |     |     |     |          |
|                                                      | 0.5 - 2m                                                                          |                   |    |    |    |    |     |     |     |     |          |
|                                                      | 2 - 4m                                                                            |                   |    |    |    |    |     |     |     |     |          |
|                                                      | 4 - 6m                                                                            |                   |    |    |    |    |     |     |     |     |          |
|                                                      | > 6m                                                                              | 20                | 30 |    |    | 40 | 20  | 30  | 30  | 40  | 10<br>20 |

large  
E. crebra with  
Sparse canopy.

**Site Details:** .....

Date: 13/5/25

Site reference code: RUMEX03

Surveyors Name: A + Ray

|                                                                                  |                                                                                                                         |                                                                                                                                                                   |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waypoint No:<br>E: <u>56 316873</u><br>N: <u>6405991</u>                         | Waypoint No:<br>E: <u>56 316864</u><br>N: <u>6405985</u><br>Marker peg: <u>Y</u>                                        | Waypoint No:<br>E: <u>56 316856</u><br>N: <u>6405987</u>                                                                                                          |
|                                                                                  |                                                                                                                         |                                                                                                                                                                   |
| Waypoint No:<br>E: <u>56 316871</u><br>N: <u>6406005</u><br>Marker peg: <u>Y</u> | Waypoint No:<br>E: <u>56 316864</u><br>N: <u>6406004</u><br>Aspect: <u>7</u><br>Photo: <u>Y</u><br>Marker peg: <u>Y</u> | Waypoint No: <u>LABEL</u><br>E: <u>56 316856</u><br>N: <u>6406004</u><br>LFA Slope: <u>30° 85°</u><br>Aspect: <u>Y</u><br>Photo: <u>Y</u><br>Marker peg: <u>Y</u> |

Take photo of  
general site from  
LFA start point ☒

Take close up  
photos ☒

**Soil analyses checklist**

Soil samples taken ☒

Photo #'s

1107

to

1118

**Pasture height**

1             
2             
3

Site Name: KUMOD 03

[illegible]

## Rill Assessment Data Sheet

[illegible]

**LFA Soil Surface Assessment (SSA) Data Sheet**Date: 13/5/25Site Name: Burney 03

Each mini-transect needs to have its location on the LFO transect (in metres from 0) and its patch or interpatch type identified in this row of cells.

| SSA Indicators                              | Woodland Patch |     |       |       |       |  |  |  |  |  | Class Values of Surface Features |  |  |  |  |  |  |  |  |  |
|---------------------------------------------|----------------|-----|-------|-------|-------|--|--|--|--|--|----------------------------------|--|--|--|--|--|--|--|--|--|
| Rainsplash Protection (1-5)                 | 0-1            | 5-6 | 10-11 | 15-16 | 15-15 |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Perennial vegetation cover (1-4)            | 2              | 2   | 2     | 2     | 2     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Litter cover, origin & incorporation (1-10) | 6/m            | 6/m | 6/m   | 6/s   | 6/m   |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Cryptogam cover (1-4)                       | 1              | 1   | 1     | 2     | 1     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Crust broken-ness (1-4)                     | 4              | 4   | 4     | 4     | 4     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Erosion type & Severity (1-4)               | 4              | 4   | 4     | 4     | 4     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Deposited materials (1-4)                   | 3              | 2   | 2     | 3     | 3     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Soil Surface Roughness (1-5)                | 3              | 3   | 3     | 3     | 3     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Surface resistance to disturbance (5-1)     | 3              | 3   | 3     | 4     | 4     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Slake test (1-4)                            | 4              | 4   | 4     | 4     | 4     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |
| Surface Texture (1-4)                       | 2              | 2   | 2     | 2     | 2     |  |  |  |  |  |                                  |  |  |  |  |  |  |  |  |  |

## Overstorey density (&gt;5 cm dbh) - 20m x 20m PLOT

Site Code: RUMEX07

Date: 13.5.25

| DBH<br>Limb 1 | Limb 2 | Limb 3 | Species ID                 | Decortic<br>ating<br>bark | Fire scar | Dieback | Mistletoe | Hollows | Dead<br>/Alive | Flowers<br>/fruit |
|---------------|--------|--------|----------------------------|---------------------------|-----------|---------|-----------|---------|----------------|-------------------|
| 9             |        |        | Eucalypt                   |                           |           |         |           |         |                |                   |
| 22            | 22     | 17     | Bulloak                    |                           |           | 2       |           |         |                |                   |
| 9             |        |        | Eucalypt                   |                           |           | 2       |           |         |                |                   |
| 6             |        |        | Bulloak                    |                           |           | 3       |           |         |                |                   |
| 7             |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 8             |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 10            |        |        | Sty                        |                           |           | 1       |           |         |                |                   |
| 22            |        |        | Eucalypt                   |                           |           | 2       |           |         | 0              |                   |
| 12            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 16            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 8             |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 2             |        |        | Sty                        |                           |           | 1       |           |         |                |                   |
| 50            |        |        | Sty                        |                           |           | 1       |           |         | 0              |                   |
| 13            |        |        | Eucalypt                   |                           |           | 2       |           |         | 0              |                   |
| 15            |        |        | "                          |                           |           | 1       |           |         |                | bud               |
| 12            |        |        | Bulloak                    |                           |           | 1       |           |         |                |                   |
| 6             |        |        | Eucalypt                   |                           |           | 2       |           |         |                |                   |
| 5             |        |        | "                          |                           |           | 3       |           |         |                |                   |
| 8             |        |        | "                          |                           |           | 3       |           |         |                |                   |
| 13            |        |        | "                          |                           |           | 3       |           |         |                |                   |
| 15            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 17            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 10            |        |        | Sty                        |                           |           | 1       |           |         |                | leaves            |
| 14            |        |        | Bulloak                    |                           |           | 1       |           |         | 0              |                   |
| 11            |        |        | Eucalypt                   |                           |           | 2       |           |         |                |                   |
| 16            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 13            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 15            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 15            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 14            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 14            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 16            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 7             |        |        | Sty                        |                           |           | 2       |           |         |                |                   |
| 10            |        |        | Sty                        |                           |           | 1       |           |         | 0              |                   |
| 5             |        |        | Sty                        |                           |           | 1       |           |         | 0              |                   |
| 7             |        |        | Bulloak                    |                           |           | 2       |           |         |                |                   |
| 11            |        |        | Eucalypt                   |                           |           | 2       |           |         |                | leaves            |
| 14            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 19            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 17            |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 8             |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 5             |        |        | "                          |                           |           | 3       |           |         |                |                   |
| 9             |        |        | Sty                        |                           |           | 3       |           |         |                |                   |
| 11            |        |        | Eucalypt                   |                           |           | 2       |           |         | 0              |                   |
| 17            |        |        | "                          |                           |           | 1       |           |         |                |                   |
| 14            |        |        | Eucalypt                   |                           |           | 2       |           |         |                |                   |
| 7             |        |        | "                          |                           |           | 2       |           |         |                |                   |
| 8             |        |        | Sty                        |                           |           | 1       |           |         | 0              |                   |
| 12            |        |        | Eucalypt                   |                           |           | 1       |           |         | 0              | bud               |
| 10            |        |        | Sty                        |                           |           | 1       |           |         | 0              |                   |
| 10            |        |        | Bulloak - fallen on ground | 2                         |           |         |           |         |                |                   |

Understorey density - 20m x 20m plot

Site Code:

RUMEX 03

Date:

13, 15, 25

Understorey shrubs &lt;5 cm dbh (including tubestock, direct seeding and tree regeneration)

| Species (dead and alive) | 0 - 0.5m | 0.5 - 1.0 m | 1.0 - 1.5 m | 1.5 - 2.0 m | >2.0 m | Total |
|--------------------------|----------|-------------|-------------|-------------|--------|-------|
| Bullouk                  |          |             |             | /           |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
| E. crebra                | /        |             | /           |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
| A. salicina              | /        |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
| Boxthorn                 |          |             |             |             |        |       |
| LANTANA                  | /        |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |
|                          |          |             |             |             |        |       |

**No. large trees (>50cm dbh) in 50 x 20m plot:**

Tally...../.....

**Total length of fallen logs**

>10cm dbh and >0.5m long; 50 x 20m (within plot area only)

|         | Walking up plot (right hand side) |         | Walking down plot (left hand side) |
|---------|-----------------------------------|---------|------------------------------------|
| 10 x 50 |                                   | 20 x 50 |                                    |
| 10 x 40 |                                   | 20 x 40 |                                    |
| 10 x 30 |                                   | 20 x 30 |                                    |
| 10 x 20 |                                   | 20 x 20 |                                    |
| 10 x 10 |                                   | 20 x 10 |                                    |
|         | <b>Total</b>                      |         | <b>Total</b>                       |
|         | <b>Total 20 x 50 (m)</b>          | 0       |                                    |

**% Litter cover**

**5 x (1x1m) plots:** Include all dead and detached < 10cm.

Site reference code: RUMEX03

Date: 13, 5, 25

Litter includes leaves, seeds, twigs, branchlets and branches (<10 cm in diameter). The assessor must include all plant material that is detached from a plant and forms part of the litter layer on the ground surface. Litter cover is the two-dimensional litter layer in contact with the ground surface, including litter under the canopies of erect plants. Plant material that is not detached should be assessed as growth form foliage cover, regardless of whether it appears alive or dead.

|        | 5m | 15m | 25m | 35m | 45m | Average |
|--------|----|-----|-----|-----|-----|---------|
| Litter | 80 | 60  | 80  | 70  | 90  |         |

**BAM Full Floristics: 20 x 20m plot**Site reference code: RUMEX 03Date: 13.5.25

**Percent foliage cover:** Foliage cover is the percentage of the plot covered by a vertical projection of all attached plant material, regardless of whether it appears alive or dead, of all individuals of a species. This includes leaves, stems, twigs, branchlets and branches, from forb, grass and grass-like species, and any canopy overhanging the plot, even if the stem is outside the plot.

For species with cover >5% abundance estimates are not required

% Cover: 0.1, 0.2, 0.3, ...1, 2, 3..., 10, 15, 20, 25, ...100% foliage cover

Abundance: 1, 2, 3, ...10, 20, 30, ...100, 200, ...1000

$$0.63 \times 0.63 = 0.1\%$$

$$1 \times 1 = 0.25\%$$

$$1.4 \times 1.4 = 0.5\%$$

$$2 \times 2 = 1\%$$

$$2 \times 4 = 2\%$$

$$3 \times 3 = 2.25\%$$

$$3 \times 4 = 3\%$$

$$4 \times 4 = 4\%$$

$$4 \times 5 = 5\%$$

$$4 \times 6 = 6\%$$

$$5 \times 5 = 6.25\%$$

$$5 \times 10 = 12.5\%$$

$$8 \times 10 = 17.5\%$$

$$10 \times 10 = 25\%$$

|     | Species                                                                                 | N, E, HTW | % Cover | Abundance                 | Specimen taken |
|-----|-----------------------------------------------------------------------------------------|-----------|---------|---------------------------|----------------|
| 1x1 | <i>Eriophorum debile</i>                                                                |           | 1       | ~100                      |                |
|     | <i>Dithyridium repens</i>                                                               |           | 0.5     | ~100                      |                |
|     | <i>Senecio madagascariensis</i>                                                         | HTW       | 0.1     | ~20                       | 12 8           |
|     | <i>Cyperus gracilis</i>                                                                 |           | 0.01    | 5                         | 12 1           |
|     | <i>Brunoniella australis</i>                                                            |           | 0.25    | ~100                      |                |
|     | <i>Lemnanea filiformis</i>                                                              |           | 0.1     | ~50                       |                |
|     | <i>Microlaena stipoides</i>                                                             |           | 0.25    | ~500                      |                |
|     | <i>Grass varians</i>                                                                    |           | 0.25    | ~100                      |                |
|     | <i>Aristida vagans?</i> (Very like)                                                     |           | 2       | ~200                      | 1              |
| 1x2 | <i>Brachycome</i> <sup><i>Brachycome spiculata</i></sup> <del><i>Laysanophora</i></del> |           | 0.01    | ~10                       | 1              |
|     | <i>Erinace nutans</i>                                                                   |           | 0.02    | 3 small mats              | 12 11          |
|     | <i>Sporobolus ciliaris</i>                                                              |           | 0.01    | ~10                       | 12 1           |
| 2x2 | <i>Anastrostipa verticillata</i>                                                        |           | 1       | ~100                      |                |
|     | <i>Aristida</i> sp. 2 (thicker) - ramesa                                                |           | 2       | ~200                      | 12 14          |
|     | <i>Anastrostipa scabra</i>                                                              |           | 0.15    | ~30                       | 12 1           |
| 5x5 | <i>Mecynanthus leucomeris</i> (Seedlings)                                               |           | 0.15    | 2 saplings, ~50 seedlings |                |
|     | <i>Eucalyptus ciliaris</i>                                                              |           | 20      | lots.                     |                |
|     | <i>Rytidosperma</i> sp. - richardsonii                                                  |           | 10      | ~500                      | 12 22          |
|     | <i>Chenanthus sieberi</i>                                                               |           | 0.1     | ~50                       | 12 5           |
|     | <i>Glycine tabacina?</i>                                                                |           | 0.01    | 5                         | 1              |

|       | Species                                                                                                | N, E,<br>HTW | % Cover | Abundance  | Specimen<br>taken  |
|-------|--------------------------------------------------------------------------------------------------------|--------------|---------|------------|--------------------|
| 5x5   | <i>Opuntia stricta</i>                                                                                 | HTW          | 0.25    | ~10        |                    |
|       | <i>Lycium ferocissimum</i> (seedling)                                                                  | HTW          | 0.25    | ~10        |                    |
|       | <i>Wahlenbergia</i> sp. <sup>W. luteola</sup> (Xin alt. leaves)                                        |              | 0.01    | 3          | (✓)                |
|       | <i>Acacia salicina</i>                                                                                 |              | 0.01    | 1 seedling |                    |
|       | <i>Megathyrsus maximus</i>                                                                             | E            | 0.1     | ~10        |                    |
|       | <i>Richardia stellaris</i>                                                                             | E            | 0.02    | ~50        |                    |
|       | <i>Bothriochloa decipiens</i>                                                                          |              | 0.1     | ~20        |                    |
| 5x10  | <i>Taraxacum officinale</i>                                                                            | E            | 0.01    | 1          | n= 23<br>c= 6      |
|       | <i>Enchylaena tomentosa</i>                                                                            |              | 0.01    | 1          |                    |
| 10x10 | <i>Cymbopogon octactylus</i>                                                                           |              | 0.05    | ~10        |                    |
|       | <i>Plantago lanceolata</i>                                                                             | E            | 0.01    | 5          |                    |
|       | <i>Hypochaeris albiflora</i>                                                                           | E            | 0.01    | 2          |                    |
|       | <i>Plantago hispida</i> ? <sup>humifera</sup> native                                                   |              | 0.1     | ~100       | (✓) n= 25<br>c= 11 |
|       | <i>Conyza bonariensis</i>                                                                              | E            | 0.01    | 1          |                    |
|       | <i>Gomphocarpus fruticosus</i>                                                                         | E            | 0.01    | 1          |                    |
|       | <i>Cirsium vulgare</i>                                                                                 | E            | 0.01    | 1          |                    |
| 10x20 | <i>Lomandra multiflora</i>                                                                             |              | 0.01    | 2          |                    |
|       | <i>Asperula conferta</i>                                                                               |              | 0.02    | ~50        |                    |
|       | <i>Brachycome</i> <sup><i>solenophora bellidifolia</i></sup> / <i>Lagenophora</i> (smaller w. flowers) |              | 0.02    | ~50        | (✓) n= 31<br>c= 12 |
|       | <i>Oxalis penicillata</i>                                                                              |              | 0.01    | 2          |                    |
|       | <i>Glossocardia bidens</i>                                                                             |              | 0.01    | 1          |                    |
|       | <i>Entropogon acicularis</i>                                                                           |              | 0.01    | 1          | (✓)                |
|       | <i>Verbena litoralis</i>                                                                               | F            | 0.01    | 1          |                    |
| 20x20 | <i>Chenopodium gayana</i>                                                                              | E            | 0.02    | 2 clumps   |                    |
|       | <i>Setaria sphacelata</i>                                                                              | E            | 0.05    | 1 clump    |                    |
|       | <i>Lantana</i> sp. - <i>camara</i>                                                                     | HTW          | 0.02    | 1          | (✓)                |
|       | <i>Maireana microphylla</i> ?                                                                          |              | 0.02    | 1          | (✓) n= 36<br>c= 16 |
|       | <i>Sida rhombifolia</i>                                                                                | F            | 0.01    | 1          |                    |
|       | <i>Vitadenia cuneata</i>                                                                               |              | 0.01    | 1          |                    |
|       | <i>Zornia</i> ? 2-leaf <sup><i>Z. dyctiocarpa</i></sup> herb. <sup><i>W. gracilis</i></sup>            |              | 0.01    | 5          | (✓)                |
|       | <i>Wahlenbergia</i> sp. rosettes with callus                                                           |              | 0.01    | 3          | (✓)                |
|       | <i>Chryscephalum apiculatum</i>                                                                        |              | 0.01    | 5          |                    |