

RIAWA Awards – Melaleuca Park Offset

Damian Grose



Contributing Partners



Proponent



Environmental consultants



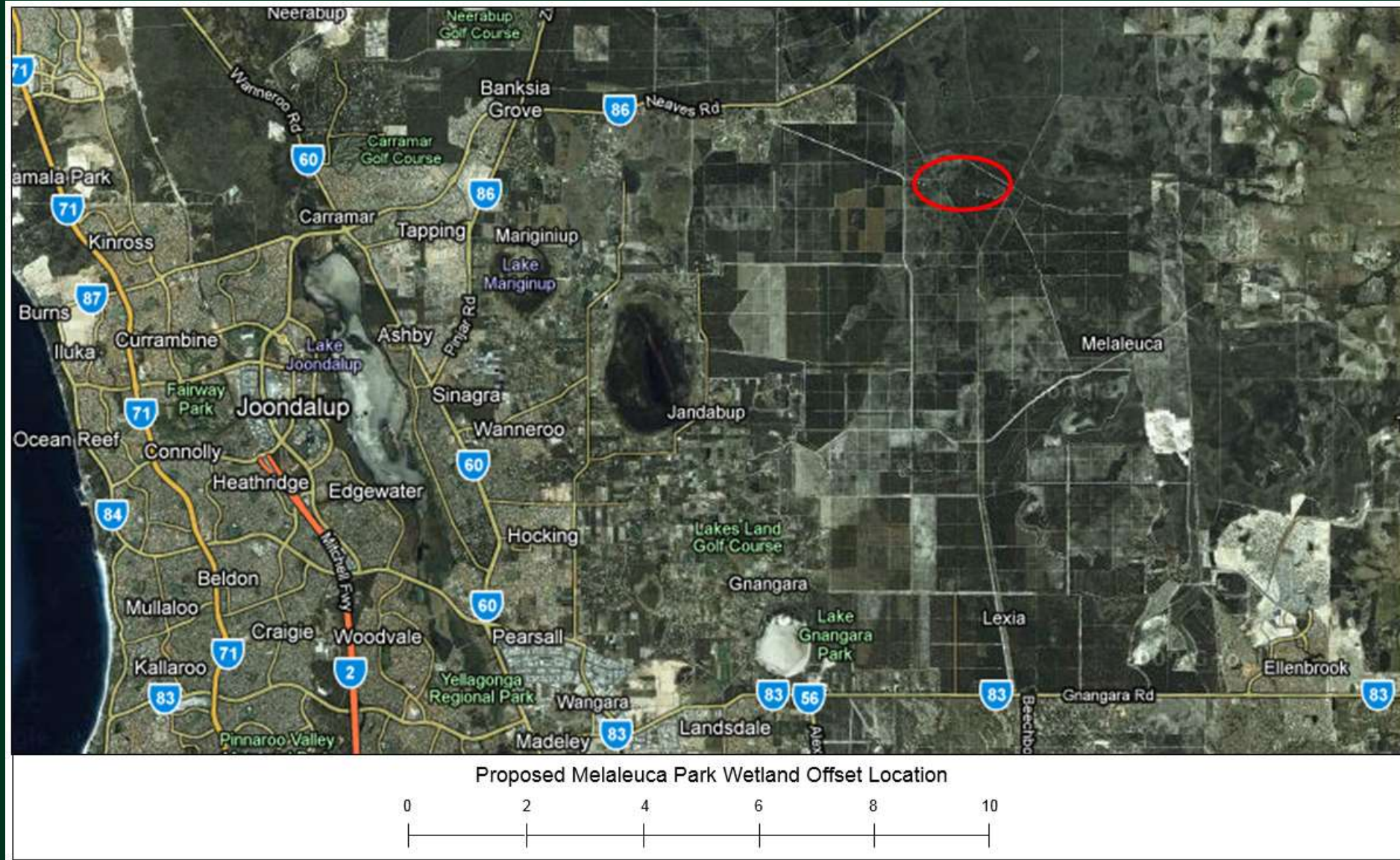
Revegetation design and implementation



Delivery committee



Project Location

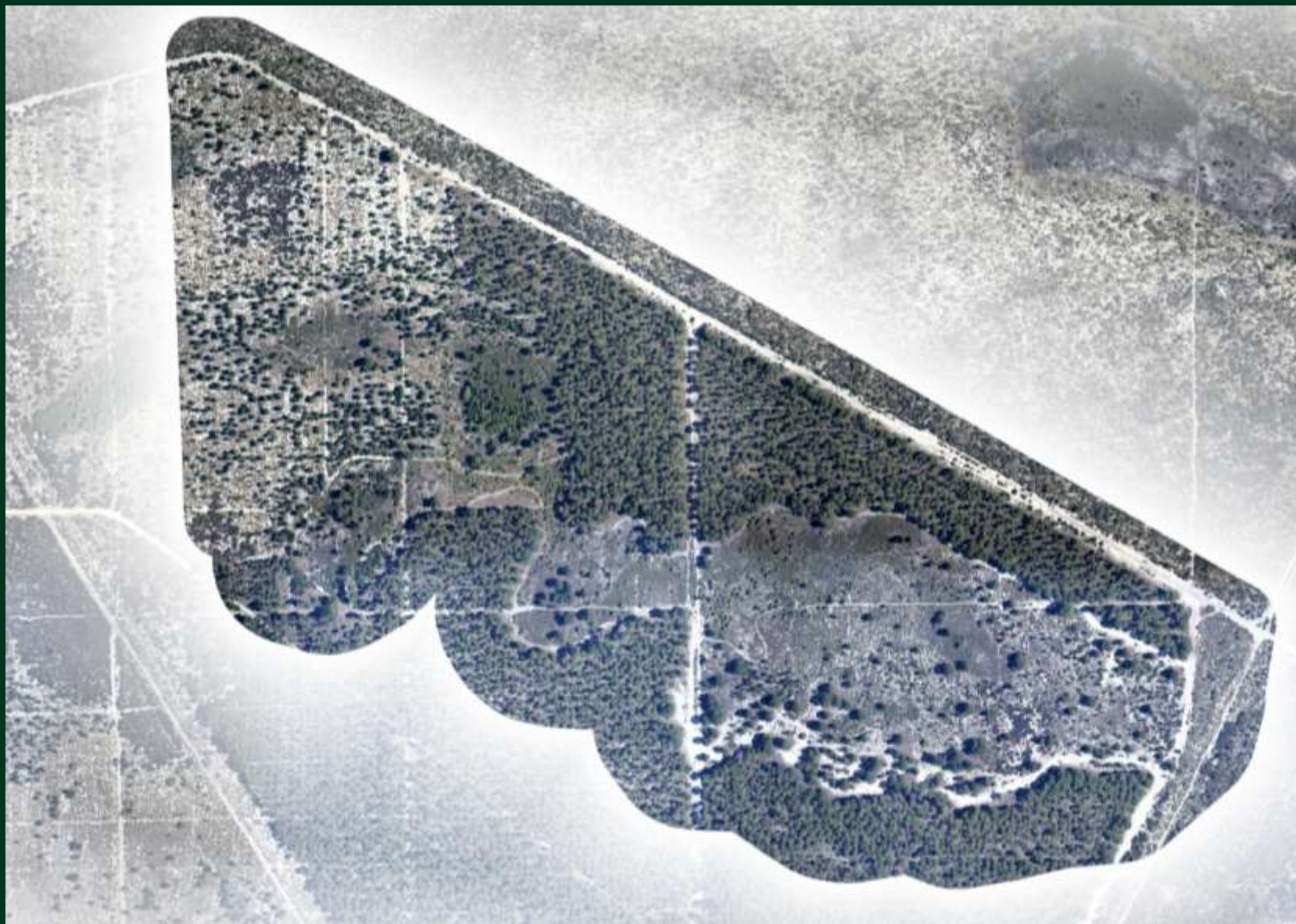


Project Purpose and Size

- Offset for clearing of a 4.6 ha CCW
- Rehabilitation of REW and surrounds (recently harvested pine plantation) including:
 - 21.4 ha REW;
 - 50 m wide buffer (16.2 ha); and
 - Dryland linkage to adjoining Banksia Woodland (19.8 ha)
- Monitored by DPaW as case study for large scale offset projects



2008



2013



2013



Completion Criteria

The following KPI's were set as the three year targets:

- Average native density 1.6 plants/m², including 500 trees/ha.
- Species richness 60% of controls in adjacent remnant vegetation communities (54 dryland, 38 dampland);
- Maximum 5% weed cover, 5 weeds/m², no rhizomatous grasses, no bulbous, woody or noxious weeds; and
- Evidence of species reaching reproductive maturity.



Challenges to Overcome

- Former pine plantation
- Herbivory
- Off-road vehicles
- Weeds
- Lack of suitable topsoil
- Project scale and location



Linkage West -10.33 ha
Pine wildings, not
plantation, felled late
2011, burnt 2012.

Linkage cleared – 9.5 ha
Pines harvested Nov 2009,
burnt 2010.

Buffer North – 6.05 ha
Pines harvested Nov 2009,
burnt 2010. Flat

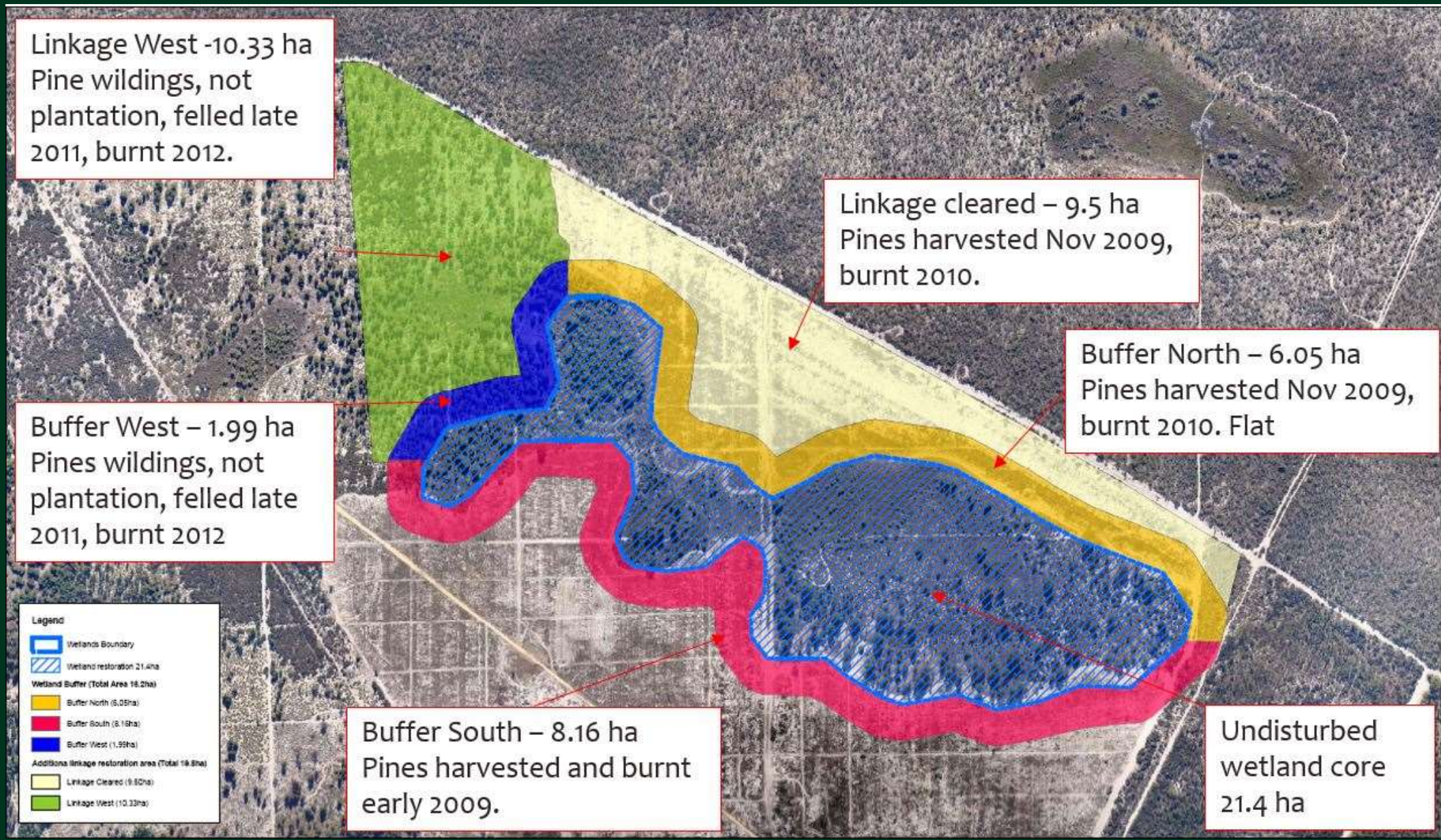
Buffer West – 1.99 ha
Pines wildings, not
plantation, felled late
2011, burnt 2012

Buffer South – 8.16 ha
Pines harvested and burnt
early 2009.

Undisturbed
wetland core
21.4 ha

Legend

- Wetlands Boundary
- Wetland restoration 21.4ha
- Wetland Buffer (Total Area 16.2ha)
 - Buffer North (5.05ha)
 - Buffer South (8.16ha)
 - Buffer West (1.99ha)
- Additional linkage restoration area (Total 18.8ha)
 - Linkage Cleared (9.5ha)
 - Linkage West (10.33ha)



Methodology

- Pine windings felled and burnt. Plantation stumps mostly retained.
- Existing fence retained N boundary, 1.8 m fence around remainder.
- Six management zones – separate species mixes and strategies.
- 107 species locally collected.

Location	Area (ha)	Reveg Area (ha)	Target Density (plants/m ²)	Planting Density (plants/m ²)	Total Plants	Seeding Rate (kg/ha)	Total Seed (kg)
Wetland Area	21.40	3.5	1.6	2	70,000	0	0
Buffer North	6.05	6.05	1.6	0	0	0.75	4.538
Buffer South	8.16	8.16	1.6	1	81,600	3	24.480
Buffer West	1.99	1.99	1.6	0.5	9,950	1.5	2.985
Linkage Cleared	9.50	9.50	1.6	0	0	3	28.500
Linkage West	10.33	10.33	1.6	0	0	6	61.980
Total	57.43	39.53			161,550		122.483



Implementation

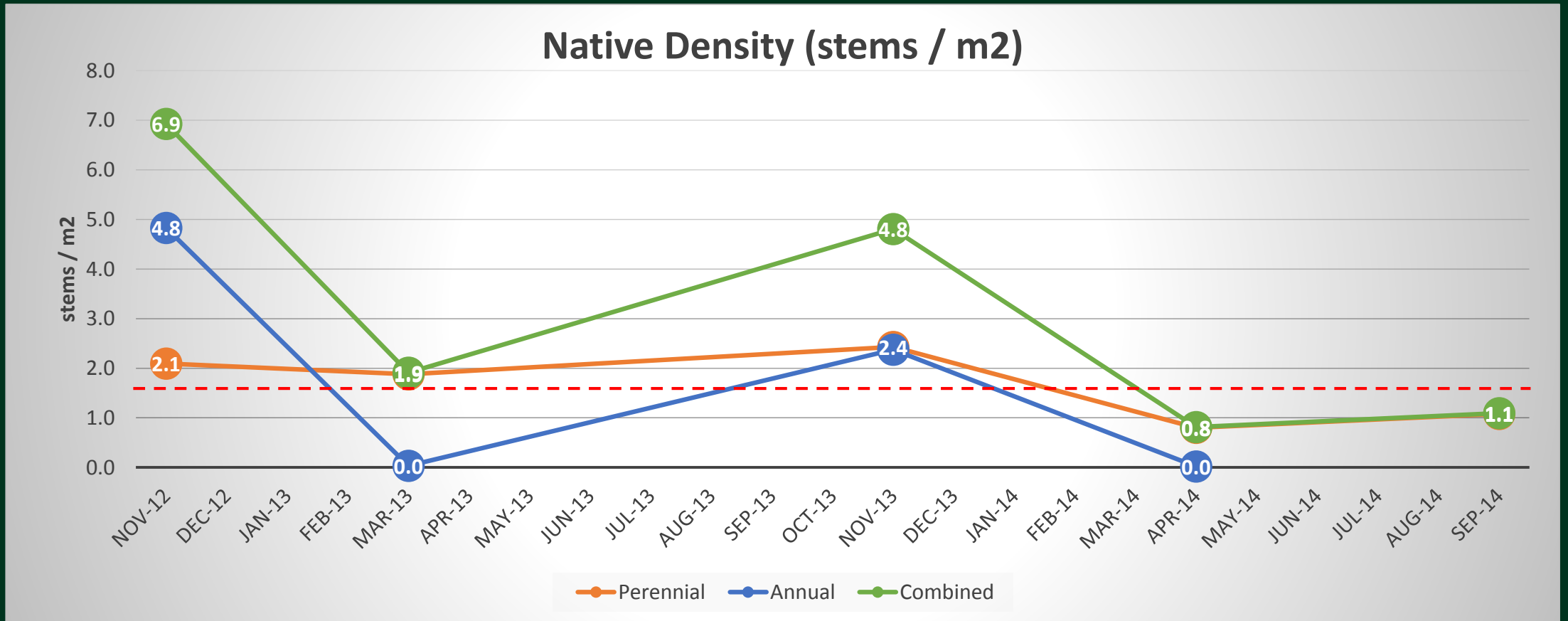
Initial planting 2012	134,000 tubestock
Direct seeding 2012	122.4 kg seed

38 monitoring quadrats established (1 per ha)
Assessed each spring and autumn for two years

Infill planting 2013	187,000 tubestock
Infill planting 2014	78,000 tubestock
Total tubestock planted	399,000



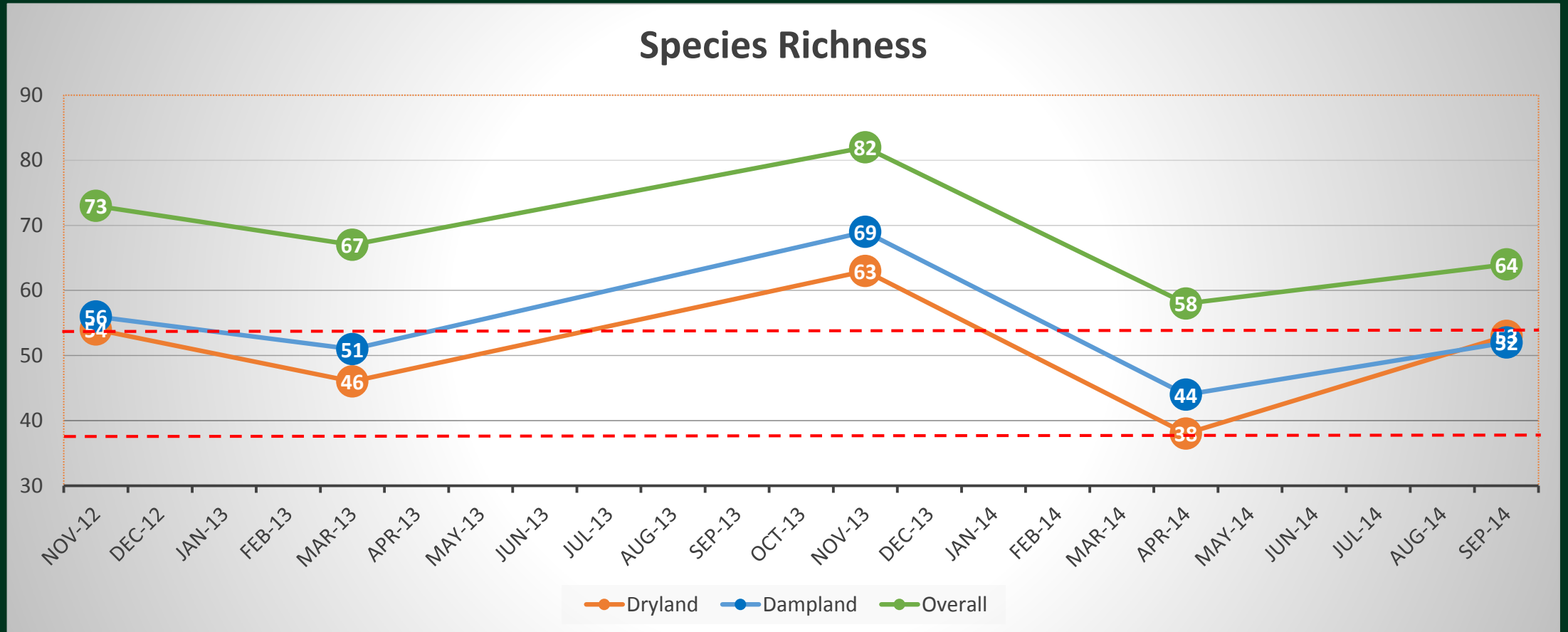
Outcome - Native Stem Density



- 69% of target 1.6 stems / m² – perennial species only, annuals omitted
- 340% of target 500 trees / ha



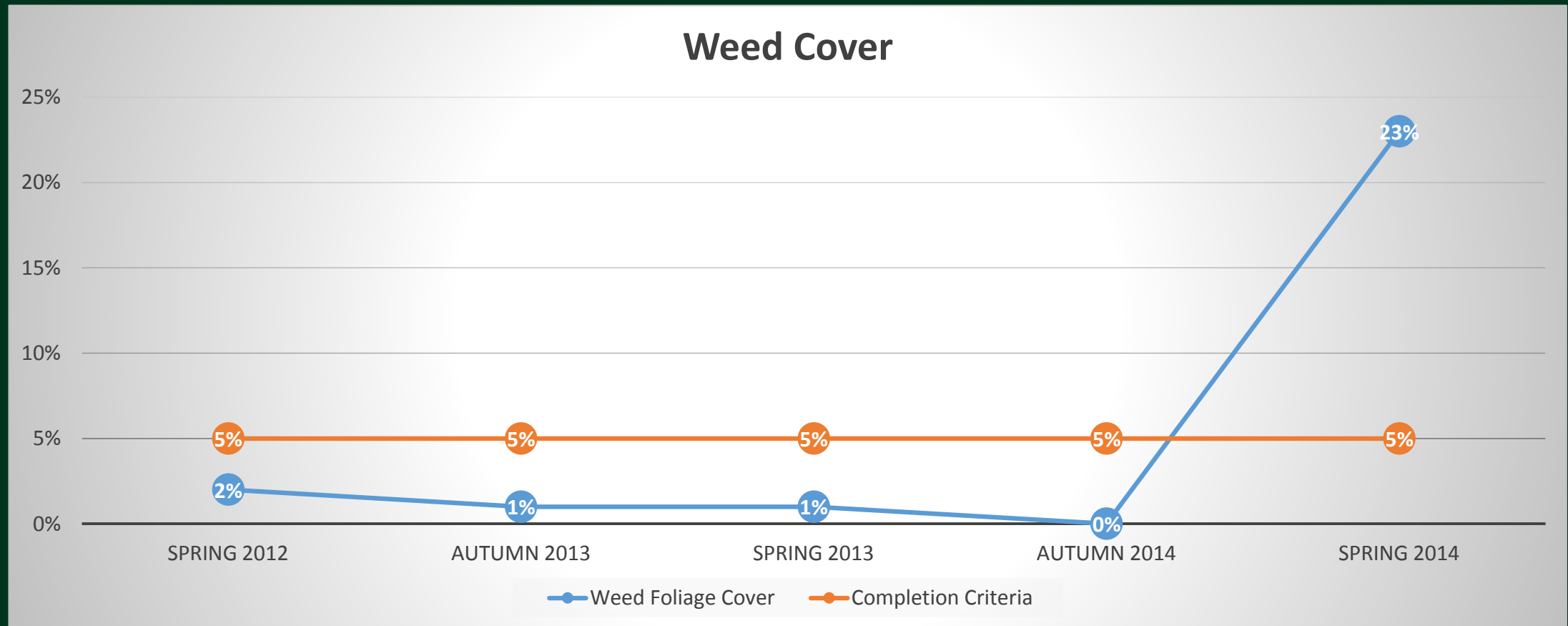
Outcome - Species Richness



- Dryland species - 98% of target 54 species
- Dampland species 143% of target 38 species



Outcome - Weed Cover



- Average weed cover below target every assessment except final





Critical Review and Key Learnings

- Site preparation
 - Stumps left – germination average 1.25 plants / m²
 - Stumps removed – 8.0 plants / m²
- Fencing
 - 1.8 m whole perimeter
- Contingency budget
 - A modest 10% contingency would have made a big difference
- Second summer survival key for long-term success



Thank you.

