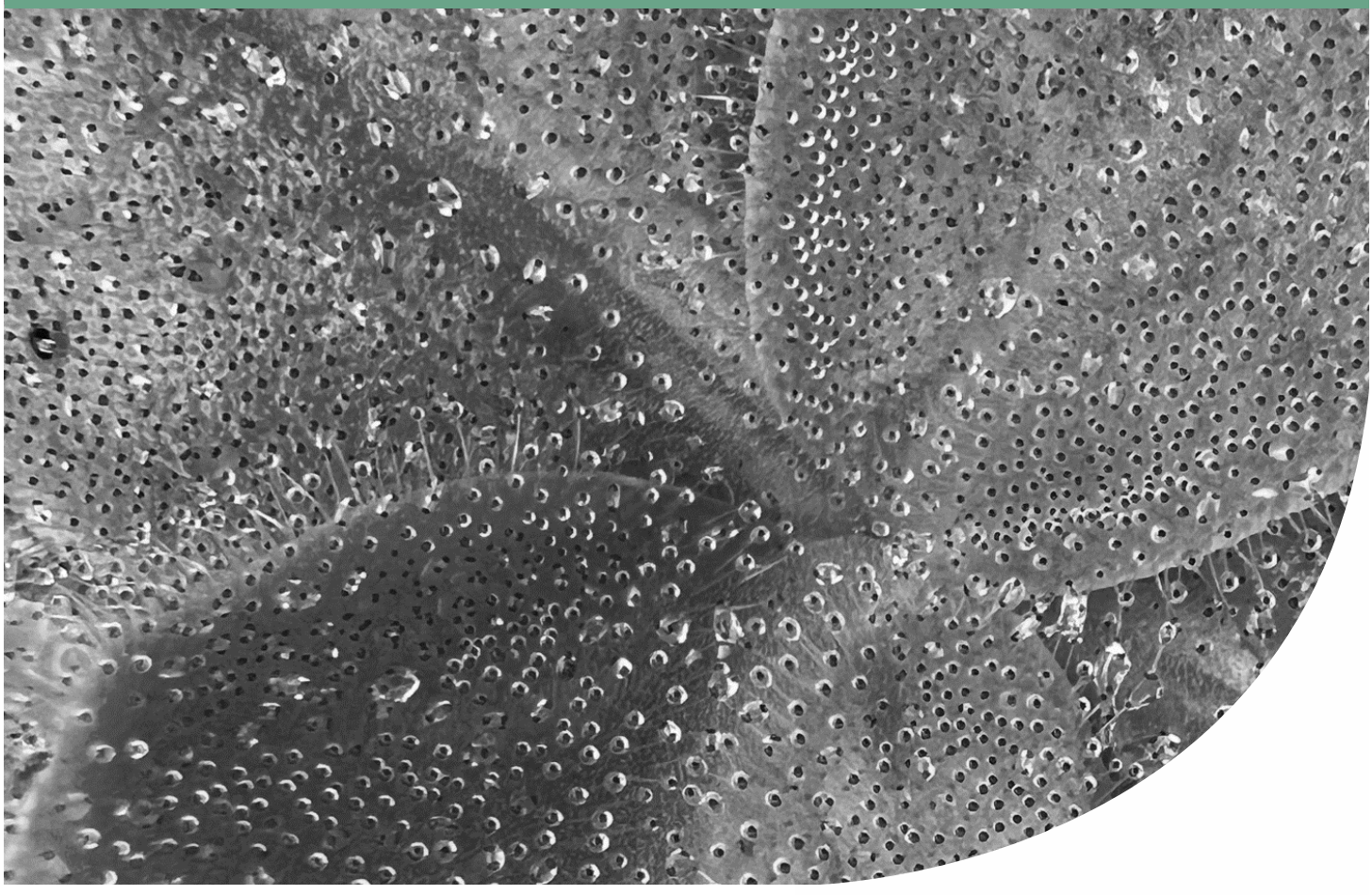
Detailed Flora and Vegetation Assessment

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Project No: EP24-129(02)

Prepared for BAI Communications
October 2025



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Executive Summary

BAI Communications engaged Emerge Associates to conduct a flora and vegetation assessment within Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley (the 'site').

The assessment included a desktop study of the environmental context of the site and the likelihood of occurrence of threatened and priority flora and ecological communities. Field survey(s) were conducted on six dates in September, October and November 2024 during which the composition and condition of vegetation was recorded. Post survey visits were also undertaken on 19 February and 17 April 2025 to confirm boundaries. Flora and vegetation values were characterised to the standard required of a detailed survey with reference to EPA (2016b).

Outcomes of the assessment include the following:

- A total of 168 native and 62 non-native flora species were recorded.
- Two priority flora species were recorded: *Acacia benthamii* (P2) (245 individuals) and *Jacksonia sericea* (P4) (4,327 individuals).
- Two 'declared pest' species were recorded: **Moraea flaccida* (one leaf cape tulip) and *Opuntia stricta* (common prickly pear).
- A total of ten vegetation units were recorded, ranging from 'completely degraded' to 'excellent' condition.
- The site contains 1.87 ha of the '*Banksia attenuata* woodlands over species rich dense shrublands' (SCP20a) 'threatened ecological community' (TEC). This TEC is listed as 'endangered' under the *Biodiversity Conservation Act 2016* (BC Act).
- The site contains 30.3 ha of the 'banksia woodlands of the Swan Coastal Plain' TEC listed as a 'endangered' under the *Environmental Protection and Biodiversity Conservation Act 1999* and also as a 'priority ecological community'(PEC) (priority 3) in Western Australia.
- The site contains 3.62 ha of the 'tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC listed as a 'critically endangered' under the EPBC Act and also 'priority 3' PEC in Western Australia.
- The site contains 0.89 ha of the SCP 21c 'Low lying *Banksia attenuata* woodlands of shrublands' PEC (priority 3) in Western Australia.

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Abbreviation Tables

Table A1: Abbreviations – Organisations

Organisations	
DBCA	Department of Biodiversity, Conservation and Attractions
DoW	Department of Water (now DWER)
DPaW	Department of Parks and Wildlife (now DBCA)
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
WALGA	Western Australia Local Government Association

Table A2: Abbreviations – General terms

General terms	
A	Annual
CCW	Conservation category wetland
CR	Critically endangered
EN	Endangered
FCT	Floristic community type
IBRA	Interim Biogeographic Regionalisation for Australia
MUW	Multiple use wetland
NVIS	National Vegetation Information System (ESCAVI 2003)
P1	Priority 1
P2	Priority 2
P3	Priority 3
P4	Priority 4
P5	Priority 5
PEC	Priority ecological community
P	Perennial
PG	Perennial geophyte
REW	Resource enhancement wetland
T	Threatened
TEC	Threatened ecological communities
UFI	Unique feature identifier
VU	Vulnerable

Table A3: Abbreviations –Legislation

Legislation	
BAM Act	*Biosecurity and Agriculture Management Act 2007*
BC Act	*Biodiversity Conservation Act 2016*
CALM Act	*Conservation and Land Management Act 1984*
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*

Table A4: Abbreviations – units of measurement

Units of measurement	
Cm	Centimetre
Ha	Hectare
Km	Kilometre
M	Metre
m AHD	m in relation to the Australian height datum
Mm	Millimetre

1 Introduction

1.1 Purpose

Emerge Associates (Emerge) were engaged by BAI Communications to conduct a flora and vegetation assessment within Lot 802 Erindale Road and Lot 1 and Lot 803 Wanneroo Road in Hamersley as shown in **Figure 1** (referred to herein as the 'site').

Flora and vegetation assessments are required to characterise vegetation values and, in particular, confirm the presence or absence of values relevant to environmental approvals process, such as, 'native vegetation', 'threatened' flora, 'priority' flora, 'threatened ecological communities' (TECs), 'priority ecological communities' (PECs) and weeds.

1.2 Legislation and policy

'Native vegetation' is defined by the *Environmental Protection Act 1986* (EP Act) as indigenous aquatic or terrestrial flora. In the *Environmental Factor Guideline – Flora and Vegetation* the EPA further defines it as native vascular flora and defines vegetation as groupings of flora (EPA 2016a). Native vegetation is protected in Western Australia and can't be cleared without a permit or valid exemption. Biological diversity, habitat function, scarcity, association with wetlands and other ecosystem services influence the value placed on native vegetation (DWER 2018a). Planted flora and vegetation are generally not regarded as native vegetation unless required to be established under the EP Act or other written law or regulation.

Flora and ecological communities may be listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (DCCEEW 2021) and the State *Biodiversity Conservation Act 2016* (BC Act) (DBCA 2022b, 2023c). Threatened flora and TECs are classified as either 'critically endangered'(CR), 'endangered' (EN) and 'vulnerable' (VU) (DCCEEW 2021). Commonwealth and/or State ministerial approval is required to impact threatened flora or TECs.

Native flora and ecological communities that are not listed as threatened, but are otherwise considered rare or under threat, may be added to a Department of Biodiversity, Conservation and Attractions (DBCA) priority list (DBCA 2022a, b). 'Priority flora' and PECs are classified as either 'priority 1' (P1), 'priority 2' (P2), 'priority 3' (P3) or 'priority 4' (P4). They do not have direct statutory protection. However, their priority classification is taken into account during State and Local government approval processes.

Flora that are regarded as having negative environmental or economic impacts are often referred to as weeds (DBCA 2023e). Particularly detrimental weed species may be listed as a 'declared pest' pursuant to the State *Biosecurity and Agriculture Management Act 2007* (BAM Act) or as a 'weed of national significance' (WoNS) (DAFF 2021). Management of weeds, declared pests and WoNS may be required during government approval processes.

Further information on legislation and policy relevant to flora and vegetation assessments is provided in **Appendix A**.

1.3 Scope of work

The Environmental Protection Authority (EPA) *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* establishes standards for the assessment of flora and vegetation in Western Australia (EPA 2016b). The scope of work was to undertake a detailed survey with reference to EPA (2016b).

As part of this scope of work, the following tasks were undertaken:

- Desktop study to provide contextual information and determine the likelihood of occurrence of threatened and priority flora or ecological communities.
- Field surveys to record flora, vegetation units and vegetation condition.
- Analysis and mapping of contextual information, vegetation units, vegetation condition and threatened and priority flora or ecological communities (if present).
- Documentation of the desktop study, methods, results, discussion and conclusions.

2 Desktop Study

2.1 Site context

2.1.1 Location and extent

The site is located in the City of Stirling in the Perth Metropolitan area of Western Australia and extends over 41.87 hectares (ha) as shown in **Figure 1**. The site is bounded by Wanneroo Road to the east, Lennox Place and Blissett Way to the north, Erindale Road to the west and residential properties and a small patch of bushland to the south.

2.1.2 Climate

The Perth metropolitan region of Western Australia experiences a Mediterranean climate of hot dry summers and cool wet winters (BoM 2024). Recent rainfall at the closest weather station to the site has been generally consistent with long term averages (see **Plate 1**) (BoM 2024). Flora and vegetation surveys should be undertaken during the season that is most suitable for detection and identification of the range of flora likely to occur in the area (EPA 2016b). For the 'south-west and interzone' botanical province in which the site lies, the primary survey time is spring (September to November) (EPA 2016b).

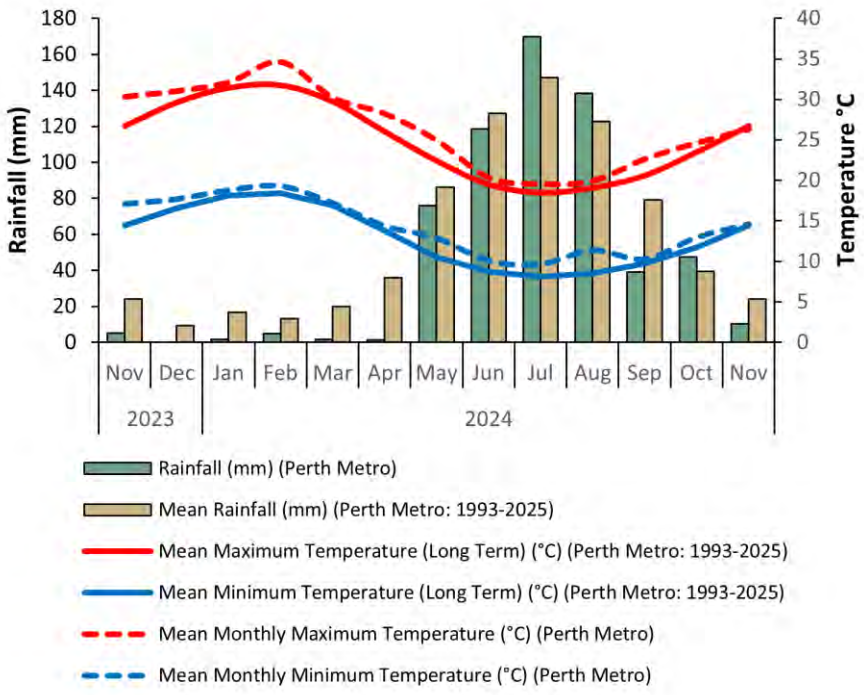

Plate 1: Rainfall and temperature 12 months prior to survey compared to long-term means

2.1.3 Geomorphology and soils

The site occurs on the Swan Coastal Plain, which is the geomorphic unit that characterises much of the Perth metropolitan area. The Swan Coastal Plain is approximately 500 km long and 20 to 30 km wide and is roughly bounded by the Indian Ocean to the west and the Darling Scarp to the east.

Broadly, the Swan Coastal Plain consists of two sedimentary belts of different origin: its eastern side comprises the Pinjarra Plain which formed from the deposition of alluvial material washed down from the Darling Scarp and its western side comprises three dune systems that run roughly parallel to the Indian Ocean coastline. These dune systems, referred to as Quindalup, Spearwood and Bassendean associations, represent a succession of coastal deposition and, as a result, they contain soils at different stages of leaching and formation (Kendrick *et al.* 1991).

The site occurs in the Spearwood dune system and broad scale soil mapping places the site within the Karrakatta association (Churchward and McArthur 1980). The Karrakatta association comprises an undulating landscape with deep yellow sands over limestone. The soil type mapped within the site is shown in **Figure 2**.

2.1.4 Topography

The elevation of the site ranges from 19 metres in relation to the Australian height datum (mAHD) in the southern portion to 41 mAHD in the north. Portions in the western and eastern extents drop to 23 mAHD (DoW 2008) (**Figure 2**).

2.1.5 Hydrology and wetlands

Wetlands are areas of seasonally, intermittently or permanently waterlogged land such as poorly drained soils, ponds, billabongs, lakes, swamps, tidal flats, estuaries, rivers and their tributaries (Wetlands Advisory Committee 1977). Wetlands can be recognised by the presence of vegetation associated with waterlogging or the presence of hydric soils such as peat, peaty sand or carbonate mud (Hill *et al.* 1996).

Wetlands of national or international significance may be afforded special protection under Commonwealth or international agreements. Review of the *Ramsar List of Wetlands of International Importance* (DBCA 2017) and *A Directory of Important Wetlands in Australia – Western Australia* (DBCA 2018) indicates that no Ramsar or listed 'important wetlands' are located within or near the site.

The Department of Water and Environmental Regulation (DWER) hydrography linear dataset (DWER 2018b) and *Geomorphic Wetlands of the Swan Coastal Plain* dataset (DBCA 2023a) show no wetland or water related features within or in close proximity to the site.

2.1.6 Regional vegetation

Native vegetation is described and mapped at different scales to illustrate patterns in its distribution. At a continental scale the *Interim Biogeographic Regionalisation for Australia* (IBRA) divides Australia into floristic subregions (Environment Australia 2000).

The site is contained within the Swan Coastal Plain IBRA region and within the 'SWA02' or Perth subregion. The Perth subregion is characterised by mainly banksia low woodland on leached sands with melaleuca swamps where ill-drained; and woodland of *Eucalyptus gomphocephala* (tuart), *E. marginata* (jarrah) and *Corymbia calophylla* (marri) on less leached soils (Beard 1990). This subregion is recognised as a biodiversity hotspot and contains a wide variety of endemic flora and vegetation types.

Variations in native vegetation can be further classified based on regional vegetation mapping.

DBCA (2021) mapping shows the site as comprising the 'Karrakatta complex - central and south', which is described as comprising an open forest of *Eucalyptus gomphocephala*, *Eucalyptus marginata* and *Corymbia calophylla* which reflects the cooler and wetter conditions in the southern portions of the Spearwood dunes compared to the northern portion (Heddle *et al.* 1980).

Statewide vegetation statistics indicate that 23.5% of the pre-European extent of the Karrakatta complex - central and south remained on the Swan Coastal Plain in 2018, with 4.6% protected for conservation purposes[1] (Government of Western Australia 2019).

2.1.7 Threatened and priority flora

The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) has compiled various datasets relating to 'matters of national environmental significance' (MNES) (DCCEEW 2024). The *Protected Matters Search Tool* provides general guidance on threatened flora listed under the EPBC Act that may occur within a location based on validated records and less reliable unvalidated habitat distribution modelling (DCCEEW 2024).

DBCA's *Threatened and Priority Flora Database* and *WA Herbarium Database* contain records of threatened and priority flora in Western Australia (DBCA 2023d). Searches of these databases provide point data for threatened and priority flora within a location, comprising validated and historical unvalidated records.

The *Protected Matters Search Tool* (DCCEEW 2024) and DBCA's threatened and priority flora databases (reference no. 11-1024FL (DBCA 2024)) identified nine threatened and 24 priority flora occurring or potentially occurring within a 10 km radius of the site (refer **Appendix B**).

2.1.8 Threatened and priority ecological communities

The *Protected Matters Search Tool* provides general guidance on TECs listed as CR and EN under the EPBC Act that may occur within a location based on reliable records and less reliable habitat distribution modelling (DCCEEW 2024).

DBCA's *Threatened and Priority Ecological Community buffers and boundaries in WA* dataset contains validated records of TECs and PECs. Searches of this dataset provides buffered polygons of TEC and PEC records.

The *Protected Matters Search Tool* (DCCEEW 2024) and DBCA's TEC and PEC database (reference no. 50-0924EC (DBCA 2024)) identified eight TECs and eight PECs occurring or potentially occurring within a 10 km radius of the site (refer **Appendix C**).

2.1.9 Historical land use

Review of historical images available from 1953 onwards shows that over half of the site was cleared of native vegetation prior to this time, particular in the central and eastern portions (**Plate 2**). A

[1]Defined as being listed in the DBCA-legislated lands and waters dataset as either Crown reserves or lands managed under Section 8A of the CALM Act that have an IUCN category of I – IV (Government of Western Australia 2019).

central circle of clearing and tower is visible at this time, suggesting the site was already in use for broadcasting purposes. By 1965 additional clearing is visible, such that the majority of the site contains minimal native vegetation (WALIA 2024). Since this time other clearing events and disturbances are evident (**Plate 3**) but overall, the vegetation across most of the site has been allowed to regenerate (**Plate 4**). Other than the eastern boundary, no evidence of planting is visible and it is assumed that vegetation is natural regeneration. Bushfire scars are visible in 2012 in the south-eastern portion of Lot 803 (**Plate 5**) and February 2023 over the majority of Lot 802 (**Plate 6**). However, no fire events over the site are included within the DBCA fire history dataset (DBCA 2025a).

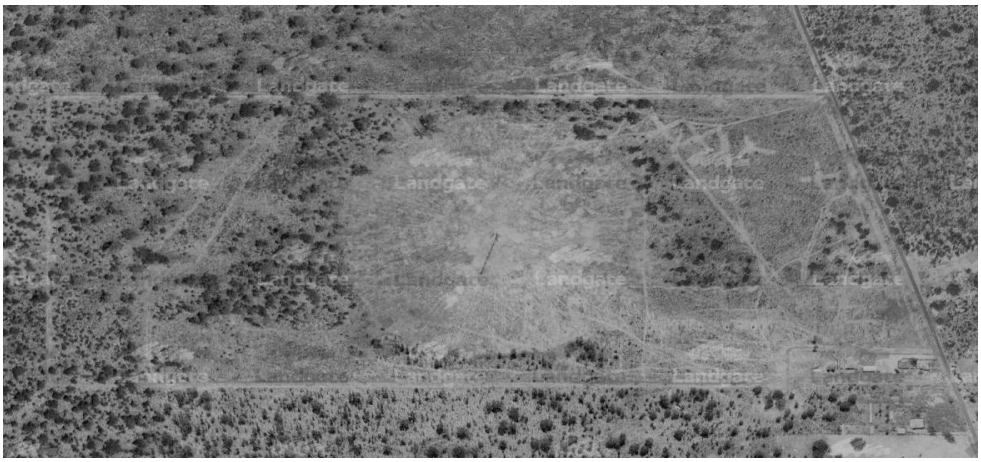

Plate 2: Aerial photography from 1953 showing extent of clearing.

Plate 3: Aerial photography from 1974 showing areas of regeneration as well as additional clearing and construction of dwellings.

Plate 4: Aerial photography from 2005 showing regeneration of much of the vegetation.

Plate 5: Aerial photography from early 2012 showing fire scars in southern central portion of the site.

Plate 6: Aerial photography from February 2023 showing fire scars over western portion of the site.

2.1.10 Bush Forever

The Government of Western Australia's *Bush Forever* policy is a strategic plan for conserving regionally significant bushland within the Swan Coastal Plain portion of the Perth Metropolitan Region. The objective of *Bush Forever* is to protect representations of all original ecological communities by targeting a minimum of 10% of each vegetation complex for protection (Government of WA 2000). *Bush Forever* sites are representative of regional ecosystems and habitat and have a key role in the conservation of Perth's biodiversity.

No *Bush Forever* sites occur within the site. However, Bush Forever Site No. 202 (Warwick Open Space Conservation Area) is located approximately one kilometre north of the site and is shown on **Figure 2**.

2.1.11 Ecological linkages

Ecological linkages are linear landscape elements that allow the movement of fauna, flora and genetic material between areas of habitat. This exchange of genetic material between vegetation improves the viability of this vegetation by allowing greater access to breeding partners and food sources, refuge from disturbances such as fire and maintenance of genetic diversity of Vegetation units and populations. Ecological linkages are ideally continuous or near-continuous as the more fractured a linkage is, the less ease flora and fauna have in moving within the corridor (Alan Tingay and Associates 1998).

The Perth Biodiversity Project, supported by the Western Australian Local Government Association (WALGA), identified and mapped regional ecological linkages within the Perth Metropolitan Region (WALGA and PBP 2004).

The site occurs at the intersection of two ecological linkages as shown on **Figure 2**. Ecological linkage (No. 6) runs north to south through the site and ecological linkage (No. 22) runs east to west. These ecological linkages connect a number of bushland areas in the wider local area including Warwick Bushland to the north, Star Swamp Bushland and Carine Regional Open Space to the west and Bush Forever Site No. 385 in Mirrabooka and Malaga.

2.1.12 Previous surveys

A number of assessments have been undertaken over the site, a summary of the area covered by each and the results are provided in **Table 1**.

Table 1: Summary of previous flora and vegetation surveys

Survey author	Survey year	Portion of the site	Results
Weston on behalf of BBG (results reported in Cardno 2008, report not obtained) (Weston 2001)	2001	Unknown	• 163 flora species recorded • *Jacksonia sericea* (P2) recorded.
Cardno (2008)	2008	Lots 802 (previously Lot 101 and including area to the south-west of the site) and 803 (previously Lot 102)	• 182 flora species recorded • Two priority flora species; *Acacia benthamii* (P2) (two individuals) and *Jacksonia sericea* (P4) (329 individuals) • '*Banksia attenuata* woodlands over species rich dense shrublands' (SCP20a) TEC present as small portion in south-west
Strategen (2019)	2017	Lot 802	• 81 flora species recorded (72 native and nine non-native) • Two priority flora species: *Acacia benthamii* (P2) (10 individuals) and *Jacksonia sericea* (P4) (58 locations with multiple individuals) • 'Banksia woodlands of the Swan Coastal Plain' TEC/PEC present and covering all native vegetation within the site. • Tuart woodland TEC/PEC not recorded. • SCP20a TEC not recorded.
Strategen-JBS&G (2021)	2017	Lot 803 and 1 Erindale Road	• 142 flora species recorded (122 native and 20 weed species) • Two priority flora species: *Acacia benthamii* (P2) (10 individuals) and *Jacksonia sericea* (P4) (616 individuals) • 'Banksia woodlands of the Swan Coastal Plain' TEC/PEC present and covering all native vegetation within the site. • Potential area of unconfirmed SCP20a TEC present in the centre of the site. • *Cyathochaeta teretifolia* (P3) stated as recorded within referral area in Appendix E but is not discussed in the report.
JBS&G (2023)	2022	Lot 802	• 197 flora species recorded (137 native and 60 weed species) • Two priority flora species: *Acacia benthamii* (P2) (71 individuals) and *Jacksonia sericea* (P4) (1,418 individuals) • Banksia woodlands of the Swan Coastal Plain TEC/PEC present over the majority of Lot 802. • Tuart woodlands of the SCP TEC/PEC present in four patches. • 'Northern Spearwood shrublands and woodlands' PEC (SCP24) present in the south-western portion of Lot 802. • SCP20a TEC not recorded. • Survey undertaken prior to February 2023 fire which covered the majority of Lot 802. Vegetation subject to the subsequent fire was mapped as being in 'excellent - very good', 'very good – good' and 'degraded' condition.

Anders Environmental Consulting (2024)	November 2023	Lot 803	• 115 flora species recorded (102 native and 13 weed species) • Two priority flora species: *Acacia benthamii* (P2) (three individuals) and *Jacksonia sericea* (P4) (412 individuals) • SCP21c PEC present in the north-western portion of Lot 803. • SCP20a TEC present in eastern half of the site.

2.2 Likelihood of occurrence

The distribution and habitat preferences of the threatened and priority flora species and ecological communities listed in **Appendix B** and **Appendix C** was reviewed against site context information described in **Section 2.1**. Likelihood of occurrence of threatened and priority flora species and ecological communities within the site was classified as 'high', 'moderate', 'low' or 'negligible' as outlined in **Table 2**.

Table 2: Decision matrix for likelihood of occurrence of threatened and priority flora and ecological communities

		Distribution[1]	
		Reliable record within search area	No reliable record within search area
Habitat	Suitable	High	Negligible
	Potentially suitable	Moderate	
	Unsuitable	Low	

[1] Reliable record defined as validated, recent (within the last ~40 years) and spatially accurate (refer DBCA search meta data) in order to exclude unverified range or habitat projections.

2.2.1 Threatened and priority flora

One threatened and nine priority flora were classified as having a 'high' or 'moderate' likelihood of occurrence within the site, as outlined in **Table 3**. The remaining species were classified as having a 'low' or 'negligible' likelihood of occurrence. The complete likelihood of occurrence assessment is provided as **Appendix B**.

Table 3: Threatened or priority flora species with a high or moderate likelihood of occurrence in the site

Species	Status		Life strategy	Flowering period	Likelihood of occurrence
	WA	EPBC Act			
Caladenia huegelii	CR	EN	PG	Sep-early Nov	Moderate
Baeckea sp. Limestone (N. Gibson & M.N. Lyons 1425)	P1	-	P	Sep-Dec	Moderate
Acacia benthamii	P2	-	P	Aug-Sept	High
Beyeria cinerea subsp. *cinerea*	P3	-	P	May-Oct	Moderate
Conostylis bracteata	P3	-	P	Aug-Sep	Moderate
Hibbertia leptotheca	P3	-	P	Aug-Oct	Moderate
Sarcozona bicarinata	P3	-	P	Aug	Moderate

Anigozanthos humilis subsp. *chrysanthus*	P4	-	P	Jul-Oct	Moderate
Eucalyptus foecunda subsp. *foecunda*	P4	-	P	Jan-Mar	Moderate
Jacksonia sericea	P4	-	P	Dec-Feb	High

CR=critically endangered, EN=endangered, VU=vulnerable, P1-P4=Priority 1-Priority 4, P=perennial, PG=perennial geophyte

2.2.2 Threatened and priority ecological communities

Six TECs and six PECs were classified as having a 'high' or 'moderate' likelihood of occurrence within the site, as detailed in **Table 4**. The remaining communities were classified as having a 'low' or 'negligible' likelihood of occurrence. The complete likelihood of occurrence assessment is provided as **Appendix C**.

Table 4: Threatened or priority ecological communities with a high or moderate likelihood of occurrence in the site

Code	Species	Status		Likelihood of occurrence
		WA	EPBC Act	
SCP20a	*Banksia attenuata* woodlands over species rich dense shrublands	CR	EN	High
Tuart woodlands SCP	Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	P3	CR	High
Banksia WL SCP	Banksia woodlands of the Swan Coastal Plain	P3	EN	High
SCP21c	Low lying *Banksia attenuata* woodlands or shrublands	P3	EN	Moderate
SCP22	*Banksia ilicifolia* woodlands	P3	EN	Moderate
SCP23b	Swan Coastal Plain *Banksia attenuata - Banksia menziesii* woodlands	P3	EN	Moderate
SCP24	Northern Spearwood shrublands and woodlands	P3	-	Moderate

3 Methods

3.1 Field survey

Experienced botanists visited the site on 26 and 30 September, 7, 8 and 10 October and 7 November 2024 to conduct the field survey. The site was traversed on foot and the composition and condition of vegetation was recorded. Plant specimens were collected where the identity of flora required further confirmation. Photographic images and notes were recorded as required. Additional surveys was undertaken on 19 February and 17 April 2025 to confirm boundaries of vegetation units and vegetation condition.

3.1.1 Targeted searches

Targeted searches were conducted for threatened and priority flora and ecological communities, with a particular focus on those with a high or moderate likelihood of occurrence (refer **Section 2.2**). Transects for flora were traversed approximately 10 m apart through areas of potentially suitable habitat. Transects and individual records were marked using a hand-held GPS receiver (±5 m accuracy). Tracks are shown on **Figure 3**.

3.1.2 Sampling

Detailed sampling of the vegetation was undertaken using a combination of non-permanent 10 x 10 m quadrats. The quadrats were established using fence droppers bounded by measuring tape. The position[2] of each sample was recorded with a hand-held GPS receiver (±5 m accuracy).

The data recorded within each sample included:

- site details (site name, site number, observers, date, location)
- environmental information (slope, aspect, bare-ground, rock outcropping, soil type and colour, litter layer, topographical position, time since last fire event)
- biological information (species, plant specimens, vegetation structure, vegetation condition, 'foliage projective cover', and disturbance).

3.1.3 Vegetation condition

The condition of the vegetation was assessed using the EPA (2016b) scale as adapted from Keighery (1994) (**Table 5**). For vegetation in the site containing *Banksia* spp., the condition scale provided in the DoEE (2016a) conservation advice for the 'banksia woodlands of the Swan Coastal Plain TEC' was applied in addition to the Keighery scale, as shown in **Table 5**.

[2] For quadrats the north-west corner was recorded.

Table 5: Vegetation condition scale applied during the field survey

Category	Definition (EPA 2016b)	Indicator (DoEE 2016a)	
		Typical native vegetation composition^	Typical weed cover
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	Native plant species diversity fully retained or almost so	Zero or close to
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.	High native plant species diversity	Less than 10%
Very good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.	Moderate native plant species diversity	5-20%
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.	Low native plant species diversity	5-50%
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.	Very low native plant species diversity	20-70%
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.	Very low to no native species diversity	Greater than 70%

^relative to the expected natural diversity for that vegetation.

3.2 Analysis and data preparation

3.2.1 Flora identification

Flora were identified through comparison with named material and through the use of taxonomic keys. Plant specimens collected during the field survey were dried, pressed and named in accordance with requirements of the Western Australian Herbarium (2024).

Flora was classified as native if indigenous to the IBRA region in which the site occurs. Non-native flora is denoted by '*' in text and raw data. The legal or policy status of flora was denoted using codes outlined in **Appendix A**.

3.2.2 Sampling adequacy

A species accumulation curve was plotted from sample data by generating a trendline (log) in Microsoft Excel. The trendline was forecast to locate the asymptote of the curve (the point at which the curve flattens), which provides an indication of amount of sampling that would be required before it can be assumed few species remain undetected.

Species richness was estimated in PRIMER v6 (Clarke and Gorley 2006). Jacknife1 and Chao2 non-parametric estimators are reported as these are known to perform well in comparison to simulated and real data sets and are also recommended for small sample sizes (Gotelli and Colwell 2011). Differences between recorded and estimated species richness was used to evaluate the adequacy of sampling effort.

3.2.3 Threatened and priority flora confirmation

Threatened and priority flora were confirmed as absent from the site where no significant limitation was identified that could have affected their detection (refer **Section 3.3**).

3.2.4 Vegetation unit identification and description

Vegetation units were identified from sample data and the information collected during the field survey. Sample data (presence absence) was imported into the statistical analysis package PRIMER v6 (Clarke and Gorley 2006). A resemblance matrix was generated using the Bray-Curtis distance measure which provided the percentage similarity between all pairs of samples. Using the resemblance matrix, classification (hierarchical agglomerative clustering) was performed, grouping samples in a dendrogram. Vegetation units were classified through interpretation of the dendrogram and associated SimProf test, whilst considering landform, soils and disturbance characteristics.

The vegetation units were then described according to the dominant species present using the structural formation descriptions of the *National Vegetation Inventory System* (NVIS) (NVIS Technical Working Group 2017).

3.2.5 Floristic community type assignment

The identified vegetation units were compared to the regional 'floristic community type' (FCT) dataset *A floristic survey of the southern Swan Coastal Plain* (Gibson *et al.* 1994) and the more recent *Weed and Native Flora Data for the Swan Coastal Plain* (Keighery *et al.* 2012). Each sample was compared to Gibson *et al.* (1994) and Keighery *et al.* (2012) separately to limit the influence of spatial correlation when assigning an FCT. FCT analysis was not undertaken for samples located within disturbed vegetation with low native species diversity as the vegetation was considered unlikely to currently represent an FCT.

Sample data (presence/absence) was first reconciled with Gibson *et al.* (1994) and Keighery *et al.* (2012) by standardising the names of taxa with those used in the earlier study. This was necessary due to changes in nomenclature in the intervening period. Taxa that were only identified to genus level were excluded, while some infra-species that have been identified since the previous surveys were reduced to species level. The combined datasets were then imported into the statistical analysis package PRIMER v6 (Clarke and Gorley 2006).

A resemblance matrix was generated using the Bray-Curtis distance measure which provided the percentage similarity between all pairs of samples. A cluster analysis was then performed using the resemblance matrix and hierarchical agglomerative clustering, to produce a dendrogram.

Where a sample tended to cluster with a grouping of different FCTs, the resemblance matrix was examined. Ultimately a combination of cluster analysis, resemblance matrix, FCT indicator species and contextual information relating to the soils, landforms and known FCTs within the region was considered in the final determination of an FCT for vegetation within the site.

3.2.6 TEC and PEC confirmation

Vegetation units were assessed against TEC and PEC diagnostic characteristics and, if available, size and/or vegetation condition thresholds (DBCA 2023b). TECs and PECs were confirmed as absent from the site where no significant limitation was identified that could have affected their detection (refer **Section 3.3**).

3.2.7 Mapping

Environmental features, vegetation units, vegetation condition, threatened or priority flora or ecological communities were mapped on aerial photography using notes and data collected in the field.

3.3 Limitations

It is important to note constraints imposed on assessments and the degree to which these may have limited outcomes. An evaluation of the desktop study and methods applied in the current assessment against standard constraints outlined in the EPA document *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016b) is provided in **Table 6**.

Table 6: Evaluation of assessment against standard constraints outlined in EPA (2016b)

Constraint	Degree of limitation	Details
Availability of contextual information	No limitation	The broad scale contextual information described in **Section 2.1** is adequate to place the site and vegetation in context.
	No limitation	Regarding assignment of FCTs, the authoritative Gibson *et al.* (1994) and Keighery *et al.* (2012) datasets were derived from a necessarily limited sample of vegetation from largely publicly owned land which is now more than 20 years out of date. Consequently, it is unknown to what degree official FCTs are an appropriate reference for the biodiverse vegetation across the Swan Coastal Plain. Furthermore, Gibson *et al.* (1994) collected data in the main flowering period (spring) and in many cases sampled plots multiple times to provide a complete species list. This detailed survey sampled the site twice within the main flowering period, and FCT analysis produced sufficient similarity to assign FCT with confidence and thus FCTs assignment are considered final. The vegetation structure has been altered within the recently burnt portions of the site but it is not considered likely that the FCT assignment would change over time.

Table 6: Evaluation of assessment against standard constraints outlined in EPA (2016b) (cont.)

Constraint	Degree of limitation	Details
Experience level of personnel	No limitation	This flora and vegetation assessment was undertaken by qualified botanists with 14 and 20 years of botanical experience in Western Australia and over ten years of experience on the Swan Coastal Plain region. Technical review was undertaken by a senior environmental consultant with 14 years' experience in environmental science in Western Australia.
Suitability of timing	No limitation	In Mediterranean climates some flora spend part of their lifecycle as underground storage organs or seed to avoid excessive heat and drought over the summer period. These species, known as 'geophytes' or 'annuals', tend to re-emerge during winter and are often most visible during spring, which is the flowering period for the majority of plant species. Therefore, spring is the optimal time to complete flora and vegetation surveys in the south-west of WA. The survey was conducted in September - November and thus within the main flowering season. Moderate to high rainfall was recorded from May to August 2024 in the months preceding the site visit. Therefore, it is likely that many plant species would have been in flower and/or visible at the time of survey. The survey timing was considered adequate to allow the detection of species for which seasonal timing is critical.
Temporal coverage	No limitation	Detailed flora and vegetation assessments can require multiple visits, at different times of year, and over a period of a number of years, to enable observation of all species present. The site was visited six times between September and November 2024 and once in February and April 2025. The February and April site visits provided an insight into the vegetation condition and composition out of the main flowering period. Therefore, according to the EPA guidelines this survey is considered to meet the requirements of a 'detailed' survey.
Spatial coverage and access	No limitation	Site coverage was comprehensive (track logged).
	No limitation	All parts of the site could be accessed as required.
Sampling intensity	No limitation	The site was surveyed extensively over a total of 13 person days (5 days with two botanists each and 3 days with 1 botanist each) and approximately 98 hours between September 2024 and April 2025. A total of 230 species were recorded, of which 189 were recorded from 27 sample locations and 41 were recorded opportunistically. Minimum species richness within site is estimated at between 238 (Chao2) and 240 (Jacknife1)) species (refer species accumulation curve and estimates shown in **Plate 7**). The number of species recorded in the site is 96% of the Chao2 estimate and demonstrates that survey effort was adequate to prepare a comprehensive species inventory for the site.
Influence of disturbance	Limitation	Time since fire is less than two years for the western portion of the site. Therefore, short-lived species more common after fire should have been visible. Some changes to vegetation condition assignment may be expected in the short to medium term as the burnt vegetation reestablishes.
	No limitation	Historical ground disturbance was evident in parts of the site. The disturbance history of the site was considered when undertaking field sampling.
Adequacy of resources	No limitation	All resources required to perform the survey were available.

4 Results

4.1 Flora

4.1.1 Species inventory

A total of 230 species were recorded during the field survey. A summary of legal and policy status of flora records is provided in **Table 7**. A complete species list is provided in **Appendix D**.

Table 7: Summary of legal and policy status of taxa recorded in the site

Status	Unlisted	Threatened	Priority	Declared Pest	Planted	Total
Native	166	0	2	-	0	**168**
Non-native	43	-	-	2	17	**62**
Total	209	0	2	2	17	**230**

Sampling recorded 189 species from 27 samples. A further 41 species were recorded opportunistically across the site. A species accumulation curve derived from sample data is presented in **Plate 7**. Species richness was estimated to be between 238 (Chao2) and 240 (Jacknife1).

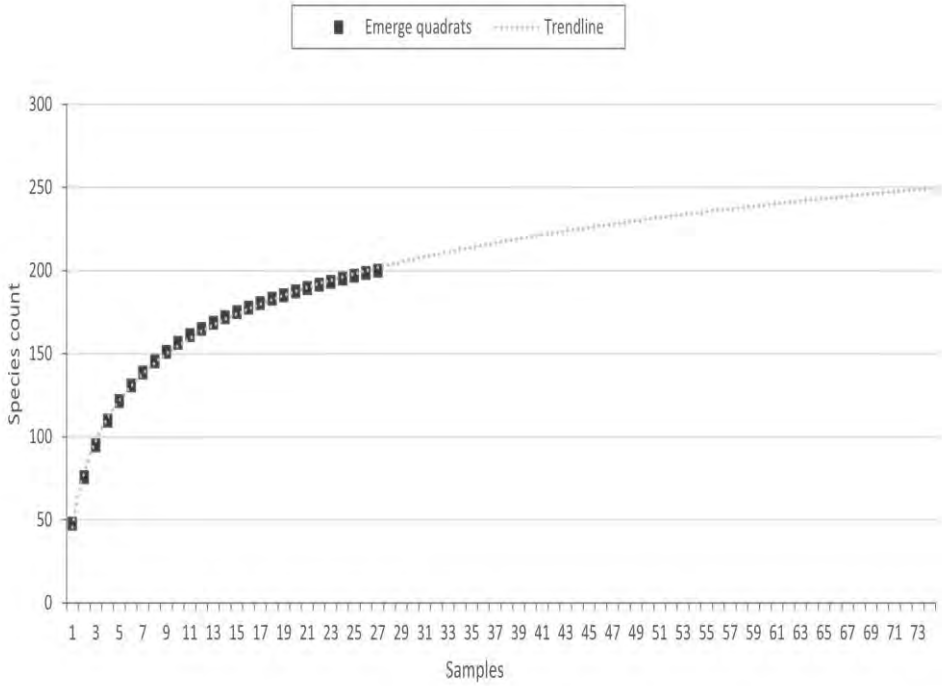

Plate 7: Species accumulation curve derived from sample data (y = 47.322ln(x) + 45.818, R^2 = 0.9988)

4.1.2 Threatened and priority flora

Two priority flora species were recorded within the site, *Acacia benthamii* (P2) and *Jacksonia sericea* (P4). *A. benthamii* (P2) occurs as scattered plants predominantly throughout the eastern portion of the site and with isolated clumps in the western portion. A total of 245 individuals of *A. benthamii* (P2) were recorded (**Plate 8**). *J. sericea* (P4) was common within the site and often occurred at high cover, generally in disturbed areas such as cleared tracks and the periphery of the vegetation, as well as being present and readily visible in the burnt portion of the site. A total of 4,327 individuals of *J. sericea* (P4) were recorded (**Plate 9**).

The locations of the priority flora occurrences are shown on **Figure 4**.

The remaining threatened and priority flora species identified in **Section 2.2** are not considered to occur in the site as no significant limitation affecting their detection was identified (refer **Section 3.3**).

Plate 8: Acacia benthamii (P2) record within the site

Plate 9: Jacksonia sericea (P4) record within the site.

4.1.3 Declared pests

Two declared pests (C3) pursuant to the BAM Act were recorded: **Moraea flaccida* (one-leaf Cape tulip) and *Opuntia stricta* (common prickly pear). *O. stricta* is also listed as a WoNS.

Occasional individuals of *M. flaccida* were recorded predominantly in the western portion of the site with low cover. Multiple small *O. stricta* plants occur along the southern boundary of the site, adjacent to a residential garden that contains a mature specimen of the species.

4.2 Vegetation

4.2.1 Vegetation units

Ten vegetation units were identified within the site, as mapped from 27 sample locations. A description and the area of each vegetation unit is provided in **Table 8**. The location of each vegetation unit and sample location is shown in **Figure 5**. A matrix of species recorded within each vegetation unit is provided in **Appendix E** and raw sample data in **Appendix F**.

Table 8: Description and extent of vegetation units identified within the site

Code	Description	Sample/s	Total area (ha)	Proportion of site (%)	Representative photograph
BmCfSl	Low open woodland of *Banksia menziesii* over shrubland of *Calytrix fraseri, Stirlingia latifolia, Eremaea pauciflora* var. *pauciflora* and *Xanthorrhoea preissii* over forbland of *Alexgeorgea nitens, *Ehrharta calycina* and **Pentameris airoides* subsp. *airoides*	Q27	0.33	0.79	
BMpXp	Low open woodland of *Banksia menziesii, Banksia ilicifolia* and scattered *Melaleuca preissiana* and *Eucalyptus marginata* over shrubland of *Calytrix fraseri, Bossiaea eriocarpa, Eremaea pauciflora* var. *pauciflora* and *Xanthorrhoea preissii* over forbland of *Alexgeorgea nitens, Conostylis aculeata, Drosera drummondii, *Ursinia anthemoides* and **Pentameris airoides* subsp. *airoides* and sedgeland of *Schoenus subfascicularis*	Q9, Q11	1.81	4.30	

Table 8: Description and extent of vegetation units identified within the site (continued)

Code	Description	Sample/s	Total area (ha)	Proportion of site (%)	Representative photograph
BpGvJsXp	Low woodland of *Banksia prionotes* over open shrubland to shrubland of *Grevillea vestita, Jacksonia sericea* (P4), *Xanthorrhoea preissii* over forbland of *Conostylis aculeata*, *Desmocladus flexuosus, Lomandra hermaphrodita, Trachymene pilosa, Ammothryon grandiflorum, *Pelargonium capitatum* and **Ursinia anthemoides* with grassland of *Austrostipa compressa* and **Ehrharta calycina*	Q19, Q22, Q23, Q24, Q25	9.40	22.45	
BpAnCf	Low woodland of *Banksia prionotes over low shrubland of Calytrix fraseri, Daviesia nudiflora, Gastrolobium capitatum, Gompholobium tomentosum, Stirlingia latifolia* and *Xanthorrhoea preissii over forbland of Austrostipa hemipogon, Trachymene pilosa, Thysanotus manglesianus, *Ursinia anthemoides*	Q13, Q14, Q16, Q7	1.72	4.10	

Table 8: Description and extent of vegetation units identified within the site (continued)

Code	Description	Sample/s	Total area (ha)	Proportion of site (%)	Representative photograph
EmBaXp	Woodland of *Eucalyptus marginata* and *Banksia attenuata* over shrubland of *Hibbertia huegelii, Hibbertia hypericoides, Stirlingia latifolia* and *Xanthorrhoea preissii* over forbland of *Austrostipa compressa*, *Kennedia prostrata, Patersonia occidentalis, Trachymene pilosa, *Ehrharta calycina* and **Ursinia anthemoides* and open sedgeland of *Mesomelaena pseudostygia* and *Morelotia octandra*	Q20, Q21	2.94	7.02	
EmBDtXp	Open woodland of *Eucalyptus marginata, Banksia attenuata and B. menziesii* over shrubland of *Daviesia triflora, Gompholobium tomentosum, Stirlingia latifolia, Xanthorrhoea preissii* over forbland of *Alexgeorgea nitens, Burchardia congesta, Desmocladus flexuosus, Drosera erythrorhiza, Haemodorum laxum, Phyllangium paradoxum* and *Wahlenbergia preissii* and open sedgeland of *Mesomelaena pseudostygia* and *Morelotia octandra*	Q1, Q2, Q5, Q8, Q10	8.80	21.02	

Table 8: Description and extent of vegetation units identified within the site (continued)

Code	Description	Sample/s	Total area (ha)	Proportion of site (%)	Representative photograph
EmBmPoAn	Low open woodland of *Banksia menziesii* and *Eucalyptus marginata* over open shrubland of *Xanthorrhoea preissii* and over low shrubland of *Daviesia triflora*, *Daviesia nudiflora*, *Eremaea pauciflora*, *Monotaxis grandiflora, Stirlingia latifolia*, *Gastrolobium capitatum* and *Hibbertia huegelii* over forbland of *Alexgeorgea nitens*, *Patersonia occidentalis, Scaevola repens, Stylidium androsaceum, Ptilotus manglesii* and *Lomandra* spp. and open sedgeland of *Mesomelaena pseudostygia and Morelotia octandra*	Q4, Q6, Q18	1.87	4.47	
EmBHh	Low woodland of *Eucalyptus marginata, Banksia attenuata, Banksia menziesii* and *Banksia prionotes* over shrubland of *Daviesia triflora, Hibbertia hypericoides, Stirlingia latifolia* and *Xanthorrhoea preissii* over forbland of *Alexgeorgea nitens, Burchardia congesta, Caesia micrantha, Conostylis setigera, Corynotheca micrantha, Drosera erythrorhiza, Scaevola canescens* and *Microlaena stipoides* and open sedgeland of *Mesomelaena pseudostygia and Morelotia octandra*	Q12, Q15, Q17	3.44	8.22	

Table 8: Description and extent of vegetation units identified within the site (continued)

Code	Description	Sample/s	Total area (ha)	Proportion of site (%)	Representative photograph
JfAsXp	Tall shrubland of *Jacksonia furcellata* and *Acacia saligna* over shrubland *Xanthorrhoea preissii* and *Macrozamia fraseri* over grassland of **Ehrharta calycina*	-	0.29	0.72	
Cleared	Disturbed areas and cleared tracks with limited native species	-	11.27	26.91	

4.2.2 Vegetation condition

The extent of vegetation by condition category is detailed in **Table 9** and shown in **Figure 6**.

Table 9: Extent of vegetation condition categories within the site

Condition category (EPA 2016b)	Total area (ha)	Proportion of site (%)
Pristine	0	0
Excellent	2.60	6.21
Very good	13.51	32.27
Good	8.19	19.56
Degraded	6.30	15.05
Completely degraded	11.27	26.91

4.2.3 Floristic community type

Vegetation unit **EmBmPoAn** was determined to represent FCT 20a '*Banksia attenuata* woodland over species rich dense shrublands' whilst vegetation units **BpAnCf**, **BpGvJsXp**, **BmCfSl**, **EmBDtXp**, **EmBaXp** and **EmBHh** represent FCT 28 'Spearwood *Banksia attenuata* or *Banksia attenuata* – *Eucalyptus* woodlands', as shown in **Table 10**. Vegetation unit **BMpXp** represents FCT 21c 'low lying *Banksia attenuata* woodlands of shrublands'. The relevant portions of the cluster dendrograms are provided in **Appendix G**.

Vegetation unit **JfAsXp** and cleared areas were too degraded to assign to an FCT.

Table 10: Vegetation unit FCT classification sample

Vegetation unit	Sample unit	Most similar Gibson *et al.* (1994) sites	Similarity (%)	Floristic community type (FCT)
EmBmPoAn	Q4	KOON-1 (FCT 20a)	45	FCT 20a '*Banksia attenuata* woodland over species rich dense shrublands'
	Q6	KOON-1 (FCT 20a)	45	
	Q18	M52 (FCT 20a)	40	
EmBDtXp	Q1	WARI-2 (FCT 28)	57	FCT 28 'Spearwood *Banksia attenuata* or *Banksia attenuata* – *Eucalyptus* woodlands'
	Q5	KING-2 (FCT 28)	49	
	Q10	KING-2 (FCT 28)	44	
	Q2	WARI-2 (FCT 28)	54	
	Q2^	WARI-2 (FCT 28)	54	
		KOON-2 (FCT 20a)	49	
	Q3	WARI-2 (FCT 28)	55	
	Q8^	WARI-2 (FCT 28)	43	
		KOON-2 (FCT 20a)	37	

Table 10: Vegetation unit FCT classification sample (cont.)

Vegetation unit	Sample unit	Most similar Gibson *et al.* (1994) sites	Similarity (%)	Floristic community type (FCT)
BmCfSl	Q27^	KING-2 (FCT 28)	39	FCT 28 'Spearwood *Banksia attenuata* or *Banksia attenuata – Eucalyptus* woodlands'
		WARI-2 (FCT 28)	38	
BpCfAn	Q7^	KING-2 (FCT 28)	41	
		SHENT-1 (FCT 28)	39	
	Q13^	WARI-2 (FCT 28)	38	
		GOLF-1 (FCT 20a)	38	
	Q14^	WARI-2 (FCT 28)	40	
		KING-2 (FCT 28)	38	
	Q16^	KING-2 (FCT 28)	38	
		SHENT-1 (FCT 28)	35	
EmBHh	Q12	KING-2 (FCT 28)	47	
	Q15^	WARI-2 (FCT 28)	45	
		KING-2 (FCT 28)	39	
	Q17	YAN-25 (FCT 28)	35	
EmBaXp	Q20	WARI-1 (FCT 28)	47	
	Q21	WARI-2 (FCT 28)	45	
BpGvJsXp	Q19^	NEER-6 (FCT 28)	40	
		WARI-1 (FCT 28)	33	
	Q22^	WARI-1 (FCT 28)	36	
		KING-2 (FCT 28)	36	
	Q23^	cool 08 (FCT 24)	30	
		SHENT-1 (FCT 28)	28	
		WARI-1 (FCT 28)	27	
	Q24	KING-2 (FCT 28)	52	
	Q25^	WARI-1 (FCT 28)	47	
		SHENT-1 (FCT 28)	41	
	Q26	KING-2 (FCT 28)	44	
BMpXp	Q9	FCT 21c	37	FCT 21c 'low lying *Banksia attenuata* woodlands of shrublands'
	Q11^	hurst03 (FCT 23a)	46	
		WHITE-1 (FCT 23a)	44	
		LAND-1 (FCT 20a)	43	

Note: ^ shows highest percent similarity to individual Gibson et al. (1994) samples rather than similarity to a cluster of samples.

4.2.4 Threatened and priority ecological communities

The following TECs and PECs were identified within the site:

- 'Banksia woodlands of the Swan Coastal Plain' TEC
- 'Banksia woodlands of the Swan Coastal Plain' PEC
- SCP20a '*Banksia attenuata* woodland over species rich dense shrublands' TEC
- SCP 21c 'low lying *Banksia attenuata* woodlands of shrublands' PEC
- 'Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC
- 'Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' PEC.

The locations of the TECs and PECs within the site are shown in **Figure 7**.

The structure, composition and patch size of vegetation units **BMpXp**, **BmCfSl**, **EmBDtXp**, **EmBaXp**, **EmBmPoAn**, **EmBHh**, **BpAnCf** and **BpGvJsXp** indicates that they represent the Commonwealth listed 'banksia woodlands of the Swan Coastal Plain' TEC, as outlined in **Table 11**.

Table 11: Criteria for determining presence of banksia woodlands of the Swan Coastal Plain TEC adapted from DoEE (2016a)

Criteria	Requirements for meeting criteria	Site implications
1. Must meet key diagnostic characteristics	A variety of factors relating to: • Location • Soils • Structure • Composition	• The site meets location and soils criteria. • **BMpXp**, **BmCfSl**, **EmBDtXp**, **EmBaXp**, **EmBmPoAn** and **EmBHh** vegetation include the key diagnostic feature of a tree layer of *Banksia attenuata*, *Banksia menziesii* and/or *Banksia ilicifolia*. • The advice states that *Banksia prionotes* can also dominate in some examples of the ecological community so vegetation units **BpGvJsXp** and **BpAnCf** also meet the criteria. • The **BMpXp**, **BmCfSl**, **EmBDtXp**, **EmBaXp**, **EmBmPoAn**, **EmBHh**, **BpAnCf** and **BpGvJsXp** vegetation within the site also meets structure and composition criterion. FCT 20a, FCT 21c and FCT 28 are identified as comprising the banksia woodland TEC.
2. Must meet condition thresholds	A patch should at least meet the 'good' condition category (see **Table 5**)	• The **BMpXp**, **BmCfSl**, **EmBDtXp**, **EmBaXp**, **EmBmPoAn**, **EmBHh**, **BpAnCf** and **BpGvJsXp** vegetation is present in 'excellent', 'very good' and 'good' condition, which meets this criterion. • The conservation advice indicates that a single patch may include areas of variable condition, meaning parts of the **BMpXp**, **EmBDtXp**, **EmBaXp**, **EmBHh** and **BpGvJsXp** vegetation in 'degraded' condition may still be considered the TEC.

Table 11: Criteria for determining presence of banksia woodlands of the Swan Coastal Plain TEC adapted from DoEE (2016a) (cont.)

Criteria	Requirements for meeting criteria	Site implications
3. Must meet minimum patch size	Minimum size of patch: • Pristine = no minimum size • Excellent = 0.5 ha • Very good = 1 ha • Good = 2 ha	• The **EmBmPoAn** and **EmBHh** vegetation in 'excellent' condition comprises 2.6 ha and independently meets this criterion. • The **BMpXp**, **EmBDtXp**, **EmBmPoAn**, **EmBHh**, **BpAnCf** and **BpGvJsXp** vegetation in 'very good' condition comprises 13.51 ha and independently meets this criterion. • The **BmCfSl**, **EmBDtXp**, **EmBaXp**, **EmBmPoAn**, **EmBHh** and **BpGvJsXp** vegetation in 'good' condition comprises 8.19 ha and independently meets this criterion. • The adjoining **BMpXp**, **EmBDtXp**, **EmBaXp, EmBHh** and **BpGvJsXp** vegetation in 'degraded' condition would be viewed as contiguous and part of the same patch.
4. Must incorporate surrounding context	• Breaks (e.g. tracks) <30 m do not separate vegetation into separate patches • Buffer zones may apply (20-50 m recommended from patch edge) • The site should be thoroughly sampled (2 surveys in same spring) • Survey timing should be appropriate • Surrounding environment should be considered (e.g. connectivity, conservation values, fauna habitat)	• Small scale tracks (<30 m wide) exist within the patch. • Land surrounding the patch is a combination of residential, native vegetation and planted vegetation on the road verges. • This survey was conducted in September to November which is inside of the main flowering season and meets this criteria.
Result	The site supports 30.3 ha of the banksia woodlands of the Swan Coastal Plain TEC	

The FCT, structure, composition and patch size of five areas within the western portion of the site indicate that they represents the Commonwealth listed 'tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC, as outlined in **Table 12**.

Table 12: Assessment of site conditions against the tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain TEC criteria (adopted from DoEE (2019))

Criteria	Requirements for meeting criteria	Site implications				
		Patch 1	Patch 2	Patch 3	Patch 4	Patch 5
1. Must meet key diagnostic characteristics	• Located in appropriate bioregion and landform. • At least 2 living established *E. gomphocephala* trees with DBH ≥15 cm present in canopy layer and with <60 m between the outer edges of canopies^. • Vegetation structure is a woodland, forest, open forest, open woodland, or mallee (various forms).	• The site is located in an appropriate bioregion and landform. • Each patch contains more than two living established *E. gomphocephala* trees with DBH ≥15 cm present in canopy layer and with <60 m between the outer edges of canopies. • Vegetation within each patch comprises a woodland to open woodland structure.				
2. Must meet size threshold	A patch must be larger than 0.5 ha#.	Each patch is >0.5 ha.				
3. Must meet condition thresholds	• Patches >5 ha = no condition threshold. • Patches ≥0.5 - <2 ha = 'very high' or 'high' condition†. • Patches ≥2 ha - <5 ha = 'very high', 'high' or 'moderate' condition†.	• The patch is 1.29 ha and is subject to condition thresholds. • The patch includes vegetation with approximately 50% native understorey cover and over 12 native understorey species and classified as 'very high' condition	• The patch is 0.87 ha and is subject to condition thresholds. • The patch includes vegetation with approximately 50% native understorey cover and over 12 native understorey species and classified as 'very high' condition	• The patch is 0.69 ha and is subject to condition thresholds. • The patch includes vegetation with approximately 50% native understorey cover and over 12 native understorey species and classified as 'very high' condition	• The patch is 0.54 ha and is subject to condition thresholds • The patch includes vegetation with approximately 50% native understorey cover and over 12 native understorey species and classified as 'very high' condition.	• The patch is 0.83 ha and is subject to condition thresholds. • The patch includes vegetation with approximately 25% native understorey cover and over 12 native understorey species and classified as 'high' condition

Table 12: Assessment of site conditions against the tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain TEC criteria (adopted from DoEE (2019)) (cont.)

Criteria	Requirements for meeting criteria	Site implications				
		Patch 1	Patch 2	Patch 3	Patch 4	Patch 5
4. Must incorporate surrounding context	• Breaks (e.g. tracks) < 30 m do not separate vegetation into separate patches. • The site should be thoroughly sampled in the appropriate season. • Survey timing should be appropriate. • Surrounding environment should be considered (e.g. connectivity, conservation values, fauna habitat).	• Breaks such as tracks exist within the patch but do not separate the patch. • The survey timing was sufficient to determine that the patch represents the TEC. • 0.06 ha of the patch lies outside of the site and includes native vegetation present to the south-west of the site.	• Breaks such as tracks exist within the patch but do not separate the patch. • The survey timing was sufficient to determine that the patch represents the TEC.	• Breaks such as tracks exist within the patch but do not separate the patch. • The survey timing was sufficient to determine that the patch represents the TEC.	• Breaks such as tracks exist within the patch but do not separate the patch. • The survey timing was sufficient to determine that the patch represents the TEC. • 0.04 ha of the patch lies outside of the site and comprises roads and road reserves.	• Breaks such as tracks exist within the patch but do not separate the patch. • The survey timing was sufficient to determine that the patch represents the TEC. • 0.50 ha of the patch lies outside of the site, and comprises parkland cleared vegetation and roads.
Result	The site supports 3.62 ha of the tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC.					

^Includes dead trees. Where species of dead tree is unclear it is assumed to be *E. gomphocephala* if its canopy is within 60 m of an identified *E. gomphocephala tree*. #Note that a patch comprises a 30 m buffer around the canopy of each *E. gomphocephala* tree, may extend beyond a lot boundary and may include areas of bare ground, waterbodies and hardscape. †Using the condition scale provided in (DoEE 2019)

FCT 20a is synonymous with the State-listed SCP20a '*Banksia attenuata* woodland over species rich dense shrublands' TEC. No conservation advice exists for the SCP20a TEC and therefore all patches of vegetation that represent FCT 20a are considered to also represent the TEC. A total of 1.87 ha of SCP20a TEC occurs within the site as shown in **Figure 7**.

DBCA's *Priority Ecological Community* list indicates that the description, area and condition thresholds that apply to the Commonwealth-listed TEC of the same name also apply to the 'banksia woodlands of the Swan Coastal Plain' PEC (DBCA 2022a) . Therefore, a total of 30.3 ha of this PEC occurs within the site as shown in **Figure 7**.

DBCA's *Priority Ecological Community* list indicates that the description, area and condition thresholds that apply to the Commonwealth-listed TEC of the same name also apply to the 'tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' PEC (DBCA 2022a) . Therefore, total of 3.62 ha of this PEC occurs within the site as shown in **Figure 7**.

FCT 21c is synonymous with the State-listed SCP21c 'low lying *Banksia attenuata* woodlands or shrublands' PEC. No conservation advice exists for the SCP21c PEC and therefore all patches of vegetation that represent FCT 21c in 'good' or better condition are considered to also represent the PEC. Therefore, a total of 0.89 ha of this PEC occurs within the site as shown in **Figure 7**.

No other TECs or PECs occur within the site.

5 Discussion

Covering 41 ha Lot 802 and 803 represents the largest, most intact, and contiguous example of remnant native vegetation with the City of Stirling that is in private ownership. Native vegetation is representative of the 'Karrakatta Complex - Central and South' complex of which 23.5% of its pre-European extent remains and 4.6% is in secure conservation reserves. Despite historic disturbance and fire approximately 60% of the native vegetation is in good or better condition, with higher quality vegetation occurring with Lot 803. With an average of 44 species collected per quadrat, species richness is high. Ecology surveys also recorded four threatened/priority ecological communities, and two priority flora species. While the native vegetation on Lot 802 and 803 did not meet the regionally significant criteria under Bush Forever (2000), these findings indicate it is nevertheless an important example of locally significant remnant bushland.

The overall diversity of native flora recorded was relatively high at 168 species. Species richness ranged from 24 to 71 species per sample, with an average species richness of 44. Seven of the samples contained over 50 species.

5.1 Flora

From the desktop study, one threatened and nine priority flora species were considered to have a moderate or high likelihood of occurrence (**Section 2.2**). *Acacia benthamii* (P2) and *Jacksonia sericea* (P4), which had previously been recorded in the site (Cardno 2008; Strategen-JBS&G 2021; Anders Environmental Consulting 2024), were recorded in 2024.

A total of 245 individuals of *Acacia benthamii* were recorded scattered throughout the site in relatively small groupings of 1-20. Given only two individuals were recorded in 2007 (Cardno 2008) and ten in 2017 (Strategen-JBS&G 2021) the population of *A. benthamii* within the site appears to be increasing in size.

Jacksonia sericea was common in the northern portion of the site, where it often formed a dense low shrub layer, particularly within vegetation unit **BpGvJsXp**. It also occurred in high densities in historically cleared areas, such as along tracks and peripheral to areas of more intact vegetation. Where *J. sericea* formed a dense shrubland, individual plants were recorded along transects spaced 10 m apart. Accurate numbers were often difficult to ascertain due to the spreading nature of the species. The actual number of individuals in the site is therefore probably higher than the 4,327 recorded. Like *A. benthamii* the population of *J. sericea* in the site appears to be increasing, with only 329 individuals recorded in 2007 (Cardno 2008), 616 individuals recorded in Lot 803 in 2017 (Strategen-JBS&G 2021), 1,418 individuals in Lot 802 in 2023 (JBS&G 2023) and 412 individuals recorded in Lot 803 in 2023 (Anders Environmental Consulting 2024). *J. sericea* is more frequently recorded in disturbed vegetation (Western Australian Herbarium 2024) and so historic clearing and fire in the site may have in particular helped to promote its establishment.

The field surveys in September, October and November 2024 are considered sufficient to determine that the remaining threatened and priority species identified in the likelihood of occurrence assessment (refer **Table 3**) are absent. None of those species were detected during the current or previous surveys (Weston 2001; Cardno 2008; Strategen 2019; Strategen-JBS&G 2021; JBS&G 2023;

Anders Environmental Consulting 2024). The surveys spanned the main flowering period of most and being perennial, they should have been visible, and detected along survey transects, if present.

The priority 3 flora species *Cyathochaeta teretifolia* was listed as occurring within Lot 802, the in the Strategen-JBS&G (2021) species list, however it was not assigned to a specific quadrat or opportunistic record or discussed elsewhere in the report. Additionally, *C. teretifolia* was not recorded in the subsequent JBS&G (2023) assessment.

Notwithstanding, the species was considered during this assessment as database searches showed it occurs within 10 km of the site. *Cyathochaeta teretifolia* occurs in swamps and along creek edges (Western Australian Herbarium 2025), neither of which are present within the site as determined during the vegetation unit mapping. As such, the species was assigned a low likelihood of occurrence (**Section 2.2.1**). Targeted surveys across the site also did not record this species, which is a perennial that is distinguishable at any time of year and so would have been visible, if present. It is most likely that the record reported by Strategen-JBS&G (2021) is an error, possibly due to a misidentification or typographical error.

5.2 Vegetation

It was known prior to the current survey that a range of TECs and PECs had potential to occur within the site, including the endangered '*Banksia attenuata* woodlands over species rich dense shrublands' (SCP20a), 'tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC/PEC and 'banksia woodlands of the Swan Coastal Plain' TEC/PEC (refer **Section 2.2.2**). Previous surveys had recorded these and other communities, but not consistently, nor to a degree that their occurrence or extents might be considered confirmed (Cardno 2008; Strategen 2019; Strategen-JBS&G 2021; JBS&G 2023; Anders Environmental Consulting 2024). Accordingly, a relatively large number of samples were surveyed in 2024 to enable floristic analysis, FCT detection and fine scale mapping.

5.2.1 Condition

The best condition vegetation occurs across the eastern portion of the site (Lot 803), where species richness is highest and disturbance is generally lower and limited to localised areas. In the west of the site (Lot 802) historic ground disturbance, clearing and successive (including recent) fires have impacted vegetation structure, and facilitated the invasion of a variety of weedy non-native grasses and herbs.

The current survey was the first undertaken within Lot 802 following the 2023 fire, occurring approximately 19 months post-fire and following two primary growing (winter) and flowering (spring) periods. Recruitment and regrowth of vegetation was prolific within the burnt area.

Banksia woodlands are well-adapted to fire, with many species capable of resprouting or regenerating via seed. Regeneration typically occurs rapidly, with studies indicating many native species are detectable during the first winter post-fire, and that species richness largely plateaus by 19-20 months (Brundrett and Longman 2016). Given that the survey was conducted 19 months post-fire, it is likely that the post-fire native species assemblage has stabilised and few additional native

species would be recorded in future surveys. However, the vegetation structure will take longer to establish due to the loss of mature trees and the gradual recruitment of new individuals from seed.

Banksia woodlands are susceptible to weed invasion, and frequent fires can increase existing weed cover and facilitate the spread of weeds, particularly high-threatgrass *Ehrharta calycina* (perennial veldt grass) (Mickle *et al.* 2010; Brundrett and Longman 2016; Cowan *et al.* 2023). Higher cover of grassy weeds such as *Ehrharta calycina* (perennial veldt grass) was recorded in the burnt area during the current survey compared to the pre-fire survey by JBS&G (2023).

Vegetation within the burnt area within Lot 802 was classified as being in better condition during the JBS&G (2023) survey, with 48% previously classified as 'excellent – very good' and 43% in 'very good – good'. In comparison, the current survey recorded 2% in 'very good' and 60% in 'good' condition. The change in condition is primarily attributed to expected alterations in vegetation structure and increased weed cover following the fire.

It is anticipated that once vegetation further regenerates post-fire, vegetation currently classified as 'good' and 'degraded' condition within the 2023 burn footprint is likely to improve by one condition category as the vegetation continues to mature (i.e. 'good' improving to 'very good' and 'degraded' improving to 'good'), provided further disturbance is minimised. The improvement in condition category would be due to improved vegetation structure due to maturation of native resprouting plants and those germinated from seed.

5.2.2 FCT assignment

A large proportion of the vegetation was ultimately assigned to FCT 28 'Spearwood *Banksia attenuata* or *Banksia attenuata - Eucalyptus* woodlands'. FCT 28 predominately occurs on the western side of the Swan Coastal Plain on the Spearwood dunes (Gibson *et al.* 1994) and is often associated with the Cottesloe and Karrakatta soil associations (DoEE 2016c). Common species include *Banksia attenuata, Hibbertia hypericoides, Mesomelaena pseudostygia*, *Conostylis aculeata*, *Desmocladus flexuosa* and *Xanthorrhoea preissii* (Gibson *et al.* 1994). Most samples showed a high similarity to FCT 28 and vegetation units **EmBDtXp**, **EmBaXp**, **EmBHh**, **BmCfSl**, **BpAnCf** and **BpGvJsXp** are all considered representative. As outlined in **Section 5.2.3** below FCT 28 can also be associated with both the 'tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC/PEC and 'banksia woodlands of the Swan Coastal Plain' TEC/PEC.

FCT 20a '*Banksia attenuata* woodlands over species rich dense shrublands' was also identified in two areas in the north and centre of the site. FCT 20a occurs on the eastern side of the Swan Coastal Plain circa the Southern River landform unit at the base of the Darling Scarp. However, outlying occurrences also occur on Karrakatta soils, with a number located approximately 3 to 5 km east of the site (Gibson *et al.* 1994; DBCA 2024). Common species include *Banksia attenuata*, *Banksia menziesii*, *Eucalyptus marginata*, *Mesomelaena pseudostygia*, *Alexgeorgea nitens*, *Daviesia nudiflora*, *Scaevola repens, Hibbertia huegelii* and *Stirlingia latifolia* (Gibson *et al.* 1994). Three samples (Q4, Q6 and Q18) clustered with Gibson *et al.* (1994) sites for FCT 20a with high similarity (40-45%). Vegetation unit **EmBmPoAn** was assigned to FCT 20a, as well as the associated State-listed TEC (refer **Section 5.2.3** below).

FCT 28 and FCT 20a have broadly similar structures and as they co-occur they can sometimes be challenging to differentiate. Gibson *et al.* (1994) notes these communities share many common

species, but placed them in different 'super groups'. FCT 20a typically has a higher species diversity with an average species richness of 67.2 per quadrat (Gibson *et al.* 1994). Comparatively, FCT 28 has an average species richness of 55.2 per quadrat. FCT 28 also tends to have higher frequencies of species 'group A' as listed in Table 12 of Gibson *et al.* (1994), including *Dianella revoluta*, *Austrostipa flavescens, Leucopogon parviflorus*, *Ammothryon grandiflorum* (previously *Schoenus grandiflorus*) and *Daucus glochidiatus* which do not tend to occur in FCT 20a. The vegetation unit cluster dendrogram included within **Appendix G** shows that samples Q1, Q2, Q3, Q4, Q5, Q6, Q8 and Q10 grouped together, whereas single site insertion into the Gibson *et al.* (1994) and Keighery *et al.* (2012) datasets pull these samples to different FCTs (20a and 28) and thus these were split into separate vegetation units, **EmBmPoAn** (FCT 20a) and **EmBDtXp** (FCT 28). This provides an example of the difficulties of separating FCT 28 and FCT 20a when they are closely collocated and grade into each other.

Emerge has previously completed probability occurrence modelling for FCT 20a. As shown in **Plate 10**, review of the outputs of that modelling suggested a higher likelihood of occurrence for FCT 20a in the south-central portion of the site (designated by lighter coloured pixels). The predicted high probability area coincides closely with the locations that FCT 20a was ultimately recorded (Q4 and Q18).

Plate 10: Output of Emerge MaxEnt probability of FCT 20a occurrence modelling

Three samples (Q7, Q8 and Q13) clustered in groups of multiple FCTs, but typically both FCT 20a and FCT 28. Samples Q7 and Q13 are both dominated by *Banksia prionotes* in the overstorey. This species has not been recorded in any Gibson *et al.* (1994) or Keighery *et al.* (2012) sites representing FCT 20a. Sample Q8 contains an open forest of *Eucalyptus marginata* over a relatively sparse shrubland dominated by *Stirlingia latifolia* over a forbland dominated by *Alexgeorgea nitens*. Thus, while samples Q7, Q8 and Q13 appear to have some affinity to FCT 20a and contain some understorey species typically found in FCT 20a they are considered to show vegetation structure and species characteristics more aligned with FCT 28. These samples also tended to show highest individual site similarity to sites comprising FCT 28 (**Table 10**).

Similarly, a number of the samples within vegetation unit **EmBDtXp** clustered with and assigned to FCT 28 also showed high individual site similarity to FCT 20a (see **Table 10**). This includes samples Q1, Q2 and Q5 within the eastern portion of the site which tended to contain some species characteristic of FCT 20a, such as *Stirlingia latifolia, Daviesia nudiflora* and *Scaevola repens*. Ultimately these were assigned to FCT 28 as they clustered with FCT 28 and showed slight differences in vegetation structure than expected for FCT 20a, such as a shrub layer highly dominated by *Xanthorrhoea preissii* rather than having a species rich shrub layer.

Vegetation unit **BMpXp** present in the southern portion of the site contained samples Q9 and Q11, which clustered to FCT 21c (Q9) and to a group including FCT 23a and FCT 23b (Q11). Vegetation in this area contained *Melaleuca preissiana* and *Banksia ilicifolia* trees over *Xanthorrhoea preissii* dominated shrublands and some areas of dense sedges such as *Schoenus subfascicularis* indicative of a relatively low-lying, groundwater dependent vegetation type. *Melaleuca preissiana* and *Banksia ilicifolia* are recorded in both FCT 21c and FCT 23a (Gibson *et al.* 1994). However, FCT 23a is centred on the Bassendean dunes to the east of the site, is not particularly low lying and thus is not considered likely represent to the vegetation within the site. The nearest record of FCT 21c is located 11 km north-east of the site and tends to occur lower in topography. One previous survey had assigned vegetation in this part of the site to FCT 21c (Cardno 2008). Vegetation unit **BMpXp** was accordingly considered most appropriately assigned to FCT 21c.

5.2.3 Threatened and priority ecological communities

To be considered the banksia woodland TEC a patch of banksia vegetation must also meet thresholds for condition and minimum patch size (refer to **Table 11**). The conservation advice states that a patch may include areas of variable condition and that the condition that is most representative should be used to assign overall condition of a patch (DoEE 2016b). As much of the banksia woodland within the site is contiguous, all vegetation units potentially representing the TEC were considered collectively. As such the **BMpXp**, **BmCfSl**, **EmBDtXp**, **EmBaXp**, **EmBmPoAn**, **EmBHh, BpAnCf** and **BpGvJsXp** vegetation within the site collectively comprises 30.6 ha with over half of this in ‘very good’ condition and easily meets the condition and size threshold for the TEC and PEC.

With regard to the Commonwealth tuart woodland TEC and State listed PEC, 13 tuart trees were recorded within the site (particularly associated with the **BpGvJsXp** vegetation in the western portion). As per conservation advice the tuart trees were buffered by 30 m and adjacent tuart vegetation was considered where present, forming five discrete patches that had the potential to represent the TEC. Small portions of three of the patches exists outside the site. All five patches ranged in size from 0.5 ha to 2 ha and are thus subject to condition thresholds. All five patches were in ‘high’ to ‘very high’ condition due to intact native understorey cover and moderate species richness and were thus considered to meet the criteria of the tuart woodlands TEC. All areas that are considered to represent the tuart woodland TEC also represent the State listed PEC.

Detailed conservation advice is not available for State listed TECs and PECs. However, DBCA advise that analysis of quadrat data against the Gibson *et al.* (1994) and Keighery *et al.* (2012) datasets should be the primary method for identifying TECs and PECs (DBCA 2023b). Historically, DBCA has also applied a minimum threshold of ‘good’ condition for mapping of TECs and PECs where other specific advice does not apply.

All areas of vegetation unit **EmBmPoAn,** assigned to FCT 20a, were present in good or better condition and so were further classified as representing the State listed '*Banksia attenuata* woodlands over species rich dense shrublands' TEC (SCP20a). In contrast to the findings of Cardno (2008), no SCP20a was recorded in the Lot 802 portion of the site (south west corner). And the extent of SCP20a in the Lot 803 portion of the site (centre) is smaller than recorded by Anders Environmental Consulting (2024).

With regard to the 'low lying *Banksia attenuata* woodlands of shrublands' PEC (SCP21c) only portions of vegetation unit **BMpXp** in good or better were recorded as PEC.

The 'Northern Spearwood shrublands and woodlands' PEC (SCP24) that was previously recorded by JBS&G (2023) was not reconfirmed and is not considered to occur in the site.

6 Conclusions

Outcomes of the assessment include the following:

- A total of 168 native and 62 non-native flora species were recorded.
- Two priority flora species were recorded: *Acacia benthamii* (P2) (245 individuals) and *Jacksonia sericea* (P4) (4,327 individuals).
- Two 'declared pest' species were recorded: * *Moraea flaccida* (one leaf cape tulip) and *Opuntia stricta* (common prickly pear).
- A total of ten vegetation units were recorded, ranging from 'completely degraded' to 'excellent' condition.
- The site contains 1.87 ha of the '*Banksia attenuata* woodlands over species rich dense shrublands' (SCP20a) 'threatened ecological community' (TEC). This TEC is listed as 'endangered' under the *Biodiversity Conservation Act 2016* (BC Act).
- The site contains 30.3 ha of the 'banksia woodlands of the Swan Coastal Plain' TEC listed as a 'endangered' under the *Environmental Protection and Biodiversity Conservation Act 1999* and also as a 'priority ecological community'(PEC) (priority 3) in Western Australia.
- The site contains 3.62 ha of the 'tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' TEC listed as a 'critically endangered' under the EPBC Act and also 'priority 3' PEC in Western Australia.
- The site contains 0.89 ha of the SCP 21c 'Low lying *Banksia attenuata* woodlands of shrublands' PEC (priority 3) in Western Australia.

7 References

7.1 General references

The references listed below have been considered as part of preparing this document.

Alan Tingay and Associates 1998, *A Strategic Plan for Perth's Greenways - Final Report*. December 1998.

Anders Environmental Consulting 2024, *Flora and Vegetation Survey - Lot 803 Erindale Road 2024*, Version 1.1.

Bureau of Meterology (BoM) 2024, *Climate Data Online*, <http://www.bom.gov.au/climate/data/>.

Bureau of Meteorology (BoM) 2025, *Climate Data Online*, <http://www.bom.gov.au/climate/data/>.

Brundrett, M. and Longman, V. 2016, *Recovery of banksia woodland after fire*, Western Wildlife.

Cardno 2008, *Lot 101 and 102 Erindale Road Hamersley - Spring Flora and Vegetation Assessment*, Version 1.

Churchward, H. M. and McArthur, W. M. 1980, *'Landforms and Soils of the Darling System, Western Australia'*, in Department of Conservation and Environment (ed.), *Atlas of Natural Resources Darling System Western Australia*, Department of Conservation and Environment.

Clarke, K. R. and Gorley, R. N. 2006, *PRIMER v6: User Manual/Tutorial*, PRIMER-E, Plymouth.

Cowan, E. L., Fontaine, J. B., Standish, R. J. and Miller, B. P. 2023, *Drivers of post-fire resprouting success in restored Banksia woodlands*, Austral Ecology, 48(8): 2088-2107.

Department of Agriculture, Fisheries and Forestry (DAFF) 2021, *Profiles for Weeds of National Significance*, Centre for Invasive Species Solutions, <https://weeds.org.au/weeds-profiles/>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2017, *Ramsar Sites (DBCA-010)*.

Department of Biodiversity, Conservation and Attractions (DBCA) 2018, *Directory of Important Wetlands in Australia - Western Australia (DBCA-045)*.

Department of Biodiversity, Conservation and Attractions (DBCA) 2021, *Vegetation Complexes - Swan Coastal Plain (DBCA-046)*, Perth, Western Australia, <https://catalogue.data.wa.gov.au/dataset/vegetation-complexes-swan-coastal-plain>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2022a, *Priority Ecological Communities for Western Australian Version 34*.

Department of Biodiversity, Conservation and Attractions (DBCA) 2022b, *Threatened and Priority Flora List 6 October 2022*, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023a, *Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)*, Perth, WA.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023b, *Methods for survey and identification of Western Australian threatened ecological communities (draft)*, Perth, Western Australia.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023c, *Threatened Ecological Community List 26 May 2023*, Perth, WA, <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023d, *Threatened Species and Communities - Data Searches*, Perth, WA, <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023e, *Weeds*, Perth, WA, <https://www.dbca.wa.gov.au/parks-and-wildlife-service/threat-management/plant-diseases/weeds#:~:text=Weeds%20are%20plants%20(not%20necessarily,detectable%20environmental%20or%20economic%20impacts>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2024, *Threatened and Priority Database Search for Hamersley accessed on 7 October 2024. Prepared by the Species and Communities program for BAI for environmental impact assessment*, Kensington, WA., <X:\5 Projects\2024 Projects\EP24-129 BAI Erindale Road Development Support\2 Background\4 State\DBCA>.

Department of Biodiversity, Conservation and Attractions (DBCA) 2025a, *DBCA Fire History (DBCA-060)*, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) 2025b, *Western Australian Herbarium*, <https://florabase.dbca.wa.gov.au/>.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2021, *Threatened Ecological Communities*, <https://www.dcceew.gov.au/environment/biodiversity/threatened/communities>.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2024, *Protected Matters Search Tool*, <https://pmst.awe.gov.au/>.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2025, *Protected Matters Search Tool*, <https://pmst.awe.gov.au/>.

Department of Environment and Energy (DoEE) 2016a, *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*, Canberra.

Department of the Environment and Energy (DoEE) 2016b, *Banksia Woodlands of the Swan Coastal Plain in Community and Species Profile and Threats Database*, Canberra.

Department of Environment and Energy (DoEE) 2016c, *Environmental Protection and Biodiversity Conservation Act 1999 Approved Conservation Advice for the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community*.

Department of Environment and Energy (DoEE) 2019, *Approved Conservation Advice (incorporating listing advice) for the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community*, Canberra.

Department of Water (DoW) 2008, *LiDAR Elevation Dataset, Swan Coastal Plain*, Perth.

Department of Primary Industries and Regional Development (DPIRD) 2025, *Western Australia Organism List*, <https://www.agric.wa.gov.au/organisms>.

Department of Water and Environmental Regulation (DWER) 2018a, *A Guide to Preparing Revegetation Plans for Clearing Permits*

Department of Water and Environmental Regulation (DWER) 2018b, *Hydrography Linear (Heirarchy) (DWER-031)*, Perth.

Environment Australia 2000, *Revision of the Interim Biogeographic Regionalisation for Australia (IBRA) and Development of Version 5.1 - Summary Report*, Department of Environment and Heritage.

Environmental Protection Authority (EPA) 2016a, *Environmental Factor Guideline: Flora and Vegetation*, Perth.

Environmental Protection Authority (EPA) 2016b, *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*, Perth.

Gibson, N., Keighery, B., Keighery, G., Burbidge, A. and Lyons, M. 1994, *A Floristic survey of the southern Swan Coastal Plain*, Department of Conservation and Land Management and the Conservation Council of Western Australia, Perth.

Gotelli, N. J. and Colwell, R. K. 2011, *Estimating species richness*, Oxford University Press, Oxford.

Government of WA 2000, *Bush Forever - Volume 1: Policies, principles and processes*, Perth.

Government of Western Australia 2019, *2018 South West Vegetation Complex Statistics. Current as of March 2019*, WA Department of Biodiversity, Conservation and Attractions, Perth.

Heddle, E. M., Loneragan, O. W. and Havel, J. J. 1980, *'Vegetation Complexes of the Darling System Western Australia'*, in Department of Conservation and Environment (ed.), *Atlas of Natural Resources Darling System Western Australia*, Perth.

Hill, A. L., Semeniuk, C. A., Semeniuk, V. and Del Marco, A. 1996, *Wetlands of the Swan Coastal Plain: Volume 2A - Wetland Mapping, Classification and Evaluation*, Water and Rivers Commission and the Department of Environmental Protection, Perth.

JBS&G 2023, *Flora & Vegetation Survey Spring 2022 - Lot 802 Erindale Road Hamersley WA 6022*, 63725/149,173, Version 0.

Keighery, B. 1994, *Bushland Plant Survey: A guide to plant community survey for the community*, Wildflower Society of WA (Inc), Nedlands.

Keighery, B. J., Keighery, G. J., Longman, V. M. and Clarke, K. A. 2012, *Weed and Native Flora Data for the Swan Coastal Plain*, Departments of Environmental Protection and Conservation and Land Management, Western Australia.

Kendrick, G. W., Wyrwoll, K. H. and Szabo, B. J. 1991, *Pliocene-Pleistocene coastal events and history along the western margin of Australia*, Quaternary Science Reviews, 10: 419-439.

Mickle, D. A., Valentine, L. E., Kuehs, J. M. and Swinburn, M. L. 2010, *Post-fire Juveniule Period of Plants in Banksia Woodland on the Northern Swan Coastal Plain*, Government of Western Australia.

NVIS Technical Working Group 2017, *Australian Vegetation Attribute Manual: National Vegetation Information System*, Department of the Environment and Energy, Canberra.

Strategen-JBS&G 2021, *Part Lot 803 Erindale Road, Hamersley - Flora, vegetation and black cockatoo habitat assessment*, 57707-132388, Revision 1.

Strategen 2019, *Flora, Vegetation and Fauna Survey - Lot 802 Erindale Road, Hamersley*.

Western Australian Local Government Association and Perth Biodiversity Project (WALGA and PBP) 2004, *Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region*, Perth.

Western Australian Land Information Authority (WALIA) 2024, *Landgate Map Viewer Plus*, <https://map-viewer-plus.app.landgate.wa.gov.au/index.html>.

Western Australian Land Information Authority (WALIA) 2025, *Landgate Map Viewer Plus*, <https://map-viewer-plus.app.landgate.wa.gov.au/index.html>.

Western Australian Herbarium 2024, *Florabase*, Department of Biodiveristy, Conservation and Attractions (DBCA), <https://florabase.dbca.wa.gov.au/>.

Western Australian Herbarium 2025, *Florabase*, Department of Biodiversity, Conservation and Attractions (DBCA), <https://florabase.dbca.wa.gov.au/>.

Weston, A. S. 2001, *Rare Flora and Threatened Ecologicaol Community Search*, Bowman Bishaw Gorham.

Wetlands Advisory Committee 1977, *The status of reserves in System Six*, Environmental Protection Authority, Perth.

7.2 Online references

The online resources that have been utilised in the preparation of this report are referenced in **Section 7.1**, with access date information provided in **Table R1**.

Table R1 Access dates for online references

Reference	Date accessed	Website or dataset name
BoM (2025)	29 January 2025	Climate Data Online

DAFF (2021)	17 February 2025	Weeds of National Significance (WoNS)
DBCA (2023c)	17 December 2024	Threatened Ecological Communities
DCCEEW (2025)	5 February 2025	Protected Matters Search Tool
DPIRD (2025)	5 February 2025	Western Australian Organism List
WALIA (2025)	5 February 2025	Landgate Map Viewer
DBCA (2025b)	6 February 2025	Florabase

Figures

Figure 1: Site Location

Project:	Detailed Flora and Vegetation Assessment Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley
Client:	BAI Communications

Plan Number:
EP24-129(02)--F01a

Drawn:	CTH
Date:	29/01/2025
Checked:	SKP
Approved:	RAW
Date:	24/04/2025

N

0 100 200 300
Metres

Scale: 1:8,000@A4

GDA2020 MGA Zone 50

emerge ASSOCIATES

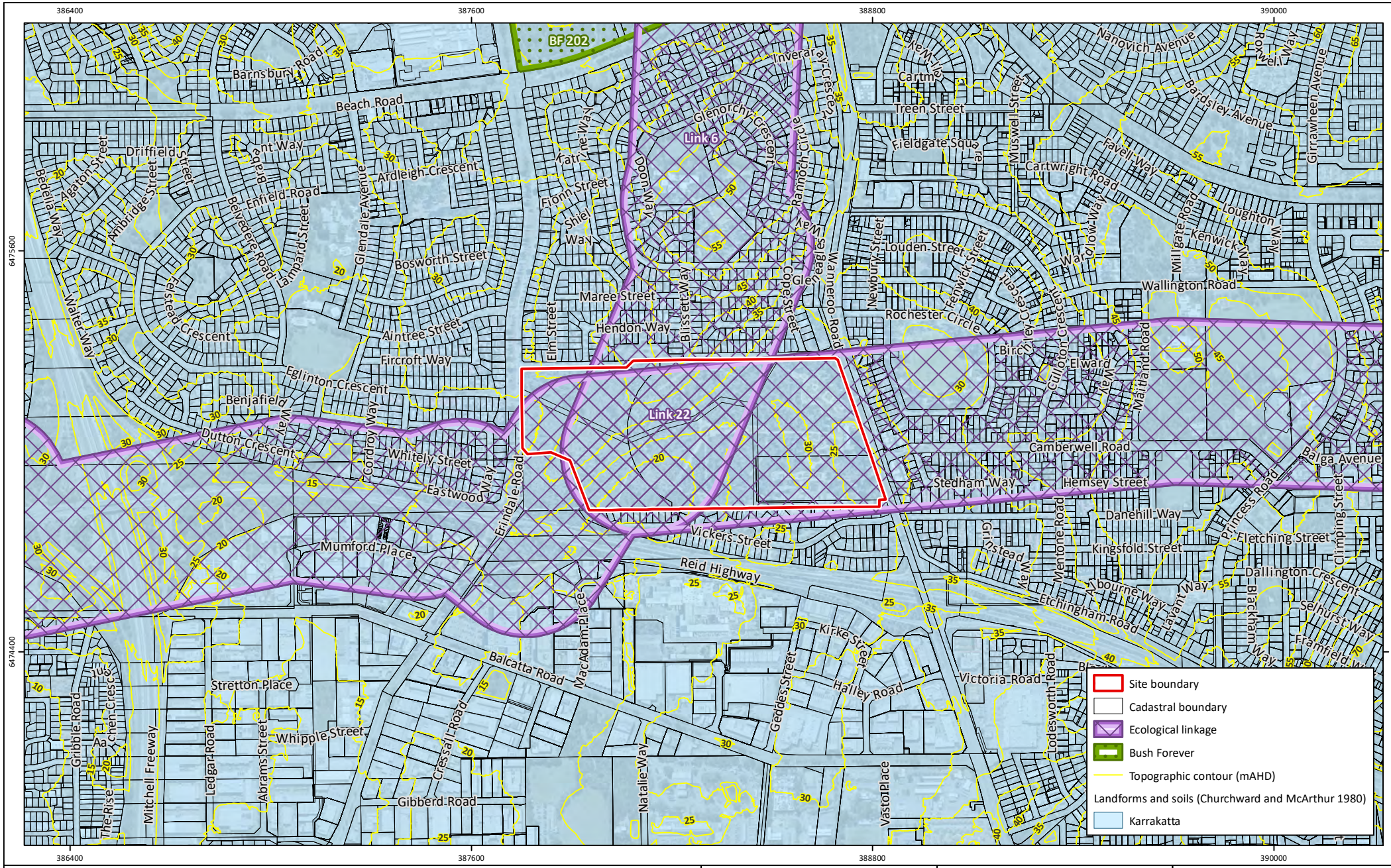

Figure 2: Environmental Features

Project:	Detailed Flora and Vegetation Assessment Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley
Client:	BAI Communications

Plan Number:
EP24-129(02)--F02a

Drawn:	CTH
Date:	29/01/2025
Checked:	SKP
Approved:	RAW
Date:	24/04/2025

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GDA2020 MGA Zone 50

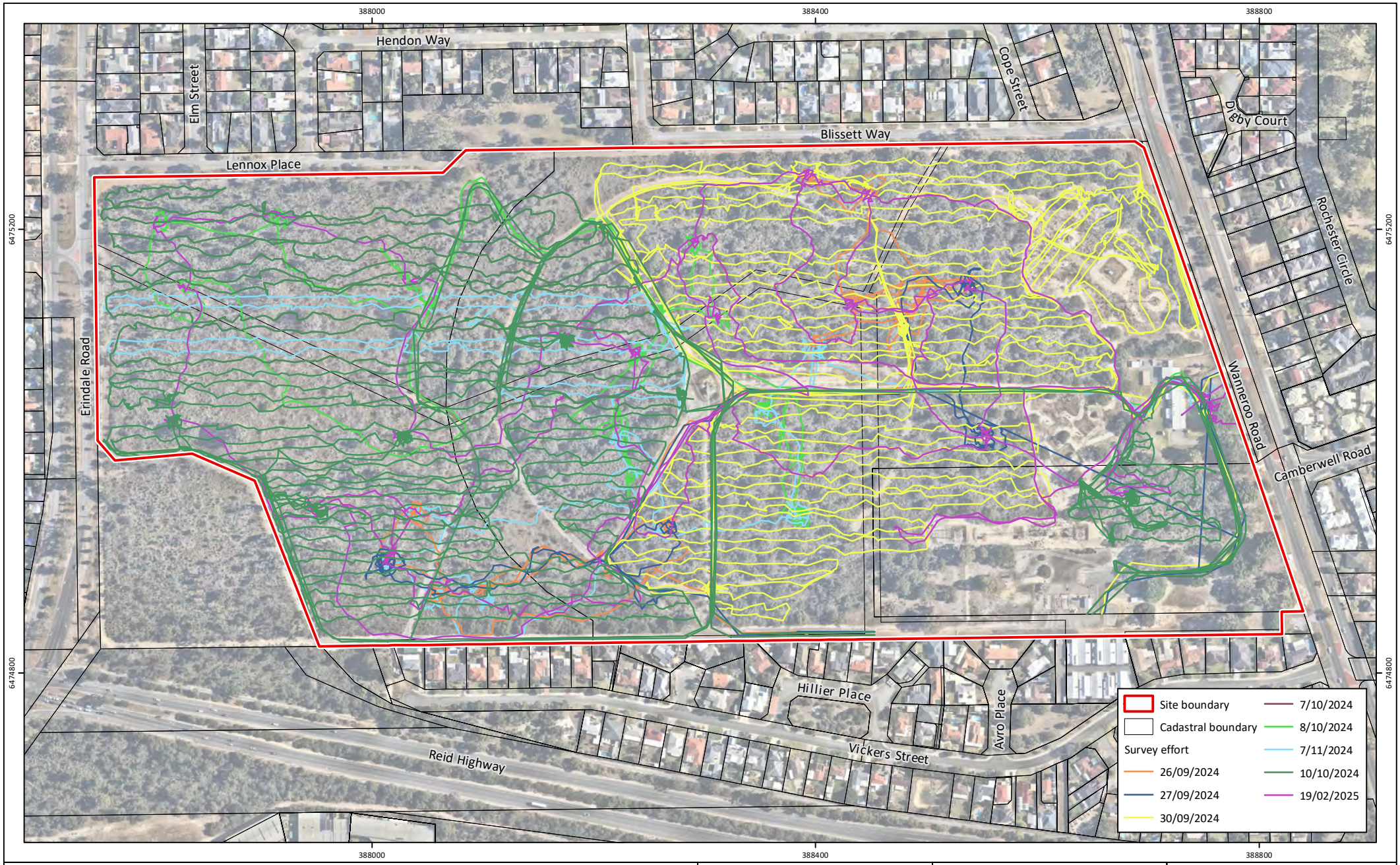

Figure 3: Tracklog

Project:	Detailed Flora and Vegetation Assessment Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley
Client:	BAI Communications

Plan Number:
EP24-129(02)--F18a

Drawn:	CTH
Date:	29/01/2025
Checked:	SKP
Approved:	RAW
Date:	24/04/2025

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Metres

Scale: 1:4,500@A4

GDA2020 MGA Zone 50

emerge ASSOCIATES

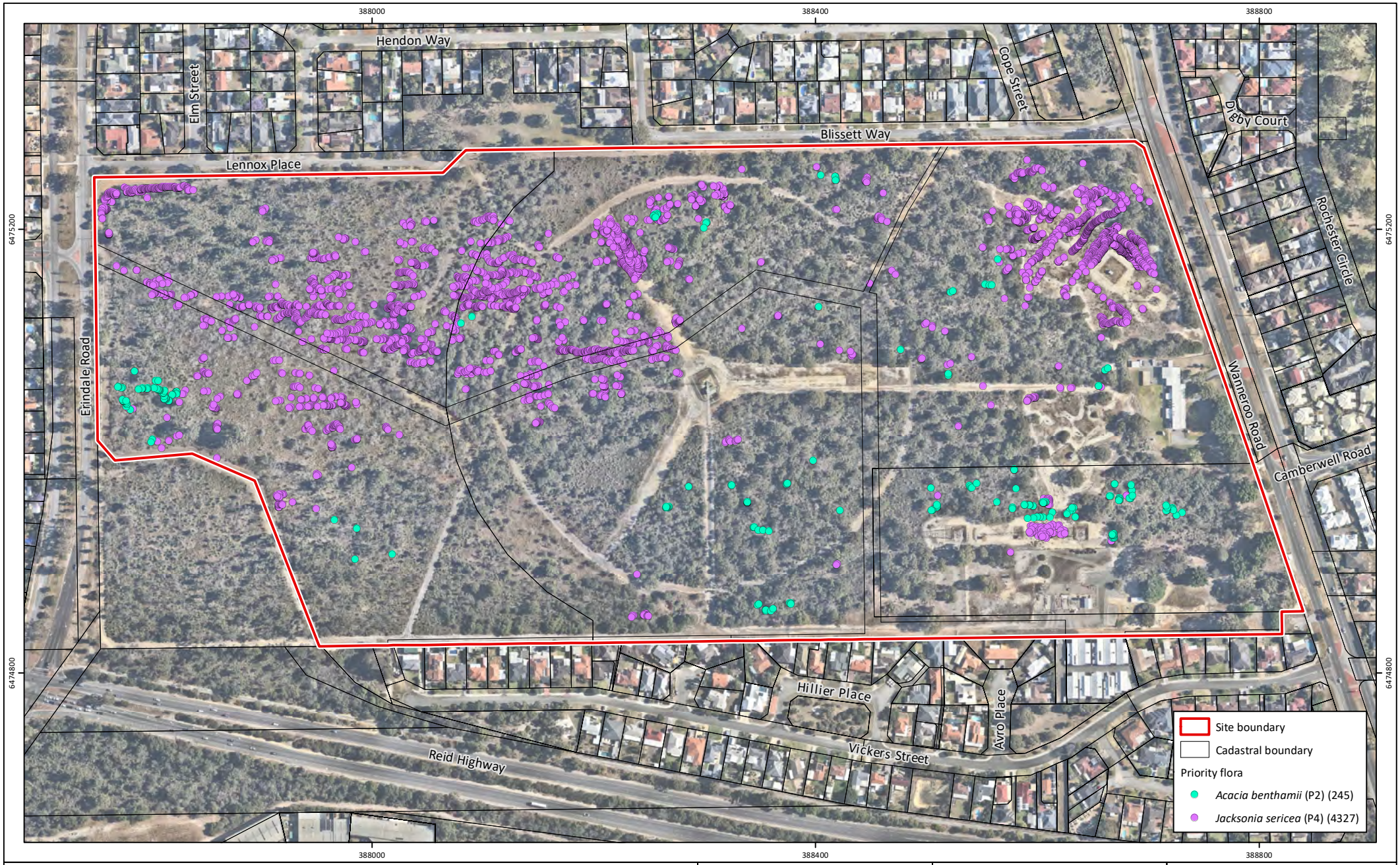

Figure 4: Priority Flora

Project:	Detailed Flora and Vegetation Assessment Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley
Client:	BAI Communications

Plan Number:
EP24-129(02)--F04b

Drawn:	GAR
Date:	11/07/2025
Checked:	SKP
Approved:	RAW
Date:	11/07/2025

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Metres

Scale: 1:4,500@A4

GDA2020 MGA Zone 50

emerge ASSOCIATES

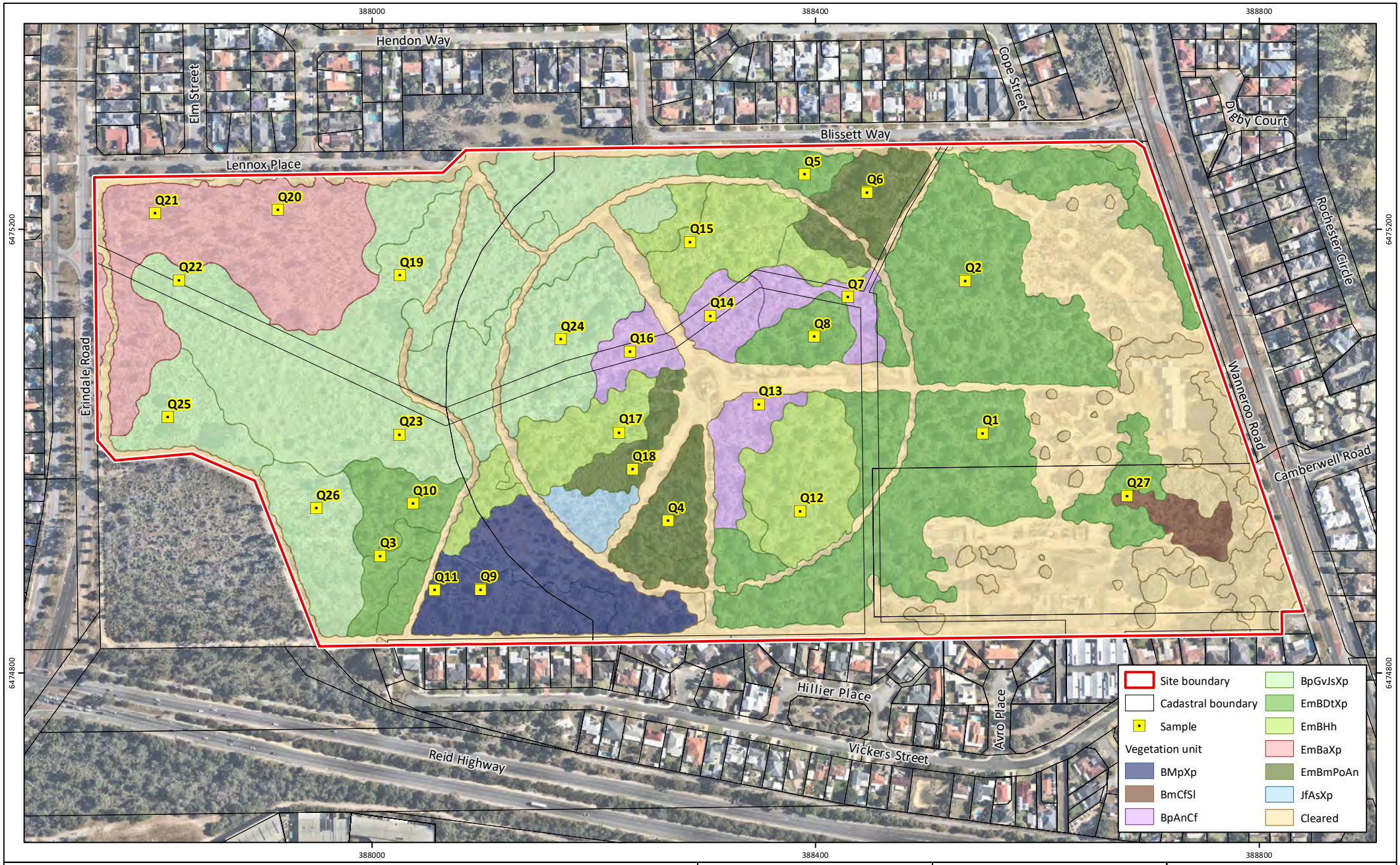

Figure 5: Vegetation Units

Project: Detailed Flora and Vegetation Assessment
Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Client: BAI Communications

Plan Number:
EP24-129(02)--F03a

Drawn:	CTH
Date:	29/01/2025
Checked:	SKP
Approved:	RAW
Date:	24/04/2025

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Metres

Scale: 1:4,500@A4

GDA2020 MGA Zone 50

emerge ASSOCIATES

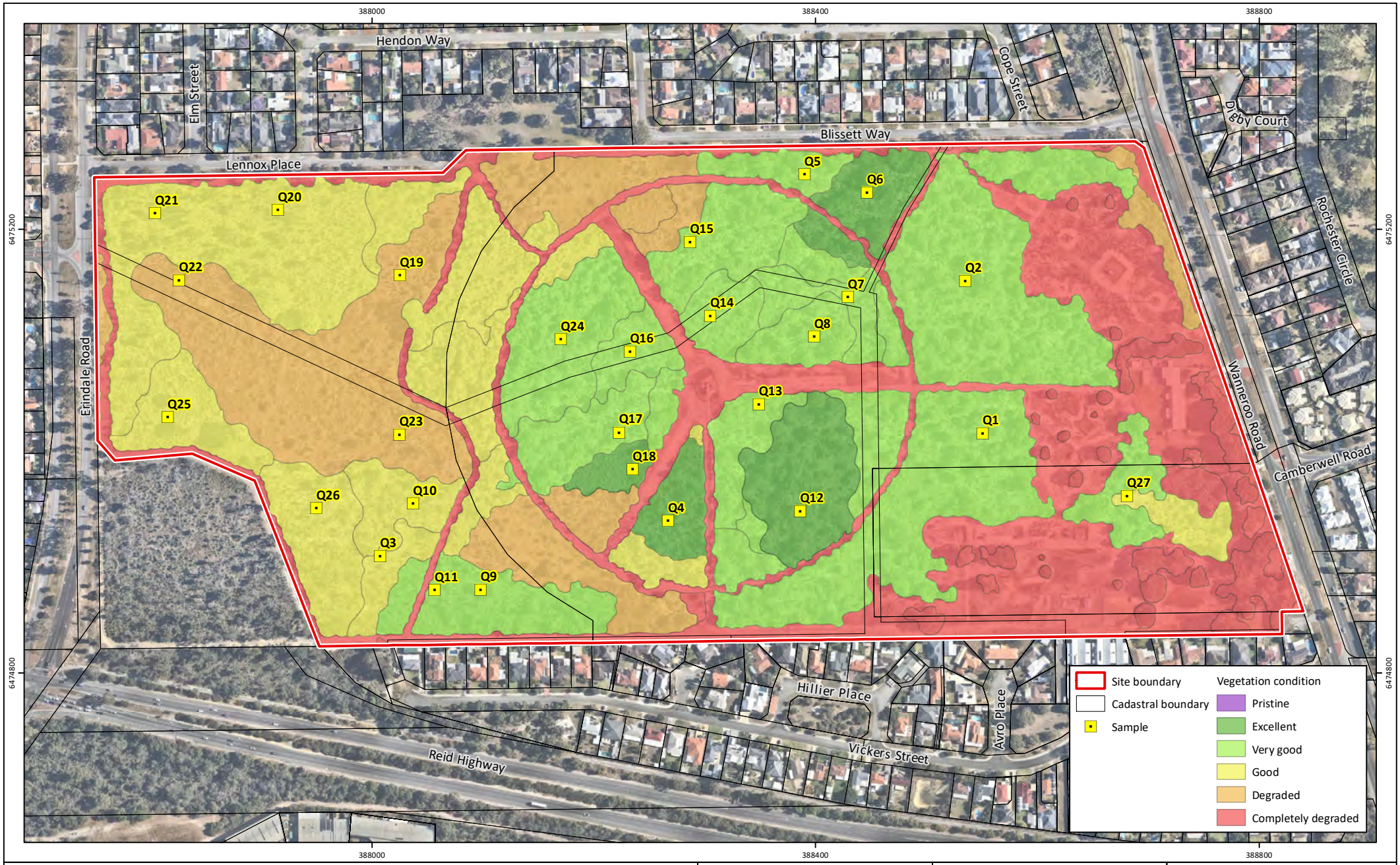

Figure 6: Vegetation Condition

Project:	Detailed Flora and Vegetation Assessment Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley
Client:	BAI Communications

Plan Number:
EP24-129(02)--F05a

Drawn:	CTH
Date:	29/01/2025
Checked:	SKP
Approved:	RAW
Date:	24/04/2025

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Metres

Scale: 1:4,500@A4

GDA2020 MGA Zone 50

emerge ASSOCIATES

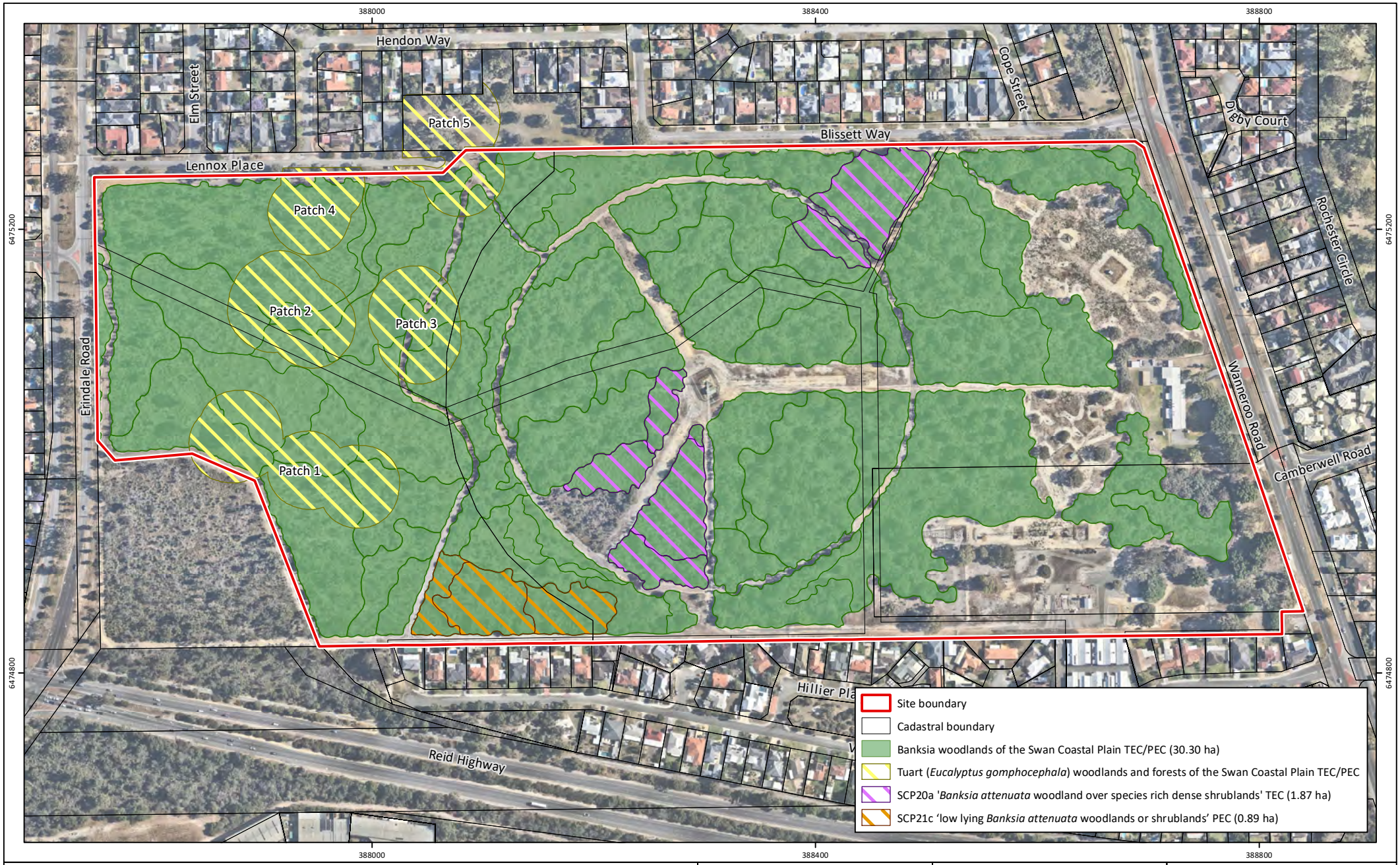


Figure 7: Threatened and Priority Ecological Communities

Project:	Detailed Flora and Vegetation Assessment Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley
Client:	BAI Communications

Plan Number:
EP24-129(02)--F06a

Drawn:	CTH
Date:	29/01/2025
Checked:	SKP
Approved:	RAW
Date:	24/04/2025

N

0 50 100 150
Metres

Scale: 1:4,500@A4

GDA2020 MGA Zone 50

emerge ASSOCIATES

Appendix A

Additional Information

Conservation Significant Flora and Vegetation

Threatened and priority flora

Flora species considered rare or under threat warrant special protection under Commonwealth and/or State legislation. At the Commonwealth level, flora species can be listed as 'threatened' pursuant to Schedule 1 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In Western Australia, plant taxa may be classed as 'threatened' under the *Biodiversity Conservation Act 2016* (BC Act) which is enforced by Department of Biodiversity Conservation and Attractions (DBCA). Threatened flora species are listed under sections 19(1) and 26(2) of the BC Act and published in the Biodiversity Conservation (Species) Order 2022. It is an offence to 'take' or disturb threatened flora without Ministerial approval. Section 5(1)1 of the Act defines to take as including "… to gather, pluck, cut, pull up, destroy, dig up, remove, harvest or damage flora by any means" or to cause or permit the same to be done.

Threatened flora are assigned categories under the EPBC Act and BC Act according to their conservation status, as outlined in **Table 1**.

Flora species that may be threatened or near threatened but lack sufficient information to be listed under the BC Act may be added to the DBCA's *Priority Flora List* (DBCA 2018b). Priority flora species are considered during State approval processes. Priority flora are assigned categories as listed in **Table 1**.

Table 1: Definitions of threatened and priority flora species pursuant to the EPBC Act and BC Act and on DBCA's Priority Flora List (DBCA 2023b)

Conservation code	Description
EX†	Threatened Flora – Presumed Extinct Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such.
T^†	Threatened Flora – Extant Taxa which are declared to be likely to become extinct or is rare, or otherwise in need of special protection.
CR^	Threatened Flora – Critically Endangered Taxa which are considered to be facing an extremely high risk of extinction in the wild.
EN^	Threatened Flora – Endangered Taxa which are considered to be facing a very high risk of extinction in the wild.
VU^	Threatened Flora – Vulnerable Taxa which are considered to be facing a high risk of extinction in the wild.
P1	Priority One – Poorly Known Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat e.g. road verges, urban areas, farmland, active mineral leases etc., or the plants are under threat, e.g. from disease, grazing by feral animals etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	Priority Two – Poorly Known Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but urgently need further survey.
P3	Priority Three – Poorly Known Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but needs further survey.
P4	Priority Four – Rare Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

^pursuant to the EPBC Act, †pursuant to the BC Act, on DBCA's *Priority Flora List*

Threatened and priority ecological communities

'Threatened ecological communities' (TECs) are ecological communities that are rare or under threat and therefore warrant special protection. Selected TECs are afforded statutory protection at a Commonwealth level under section 181 of the EPBC Act. TECs nominated for listing under the EPBC Act are considered by the Threatened Species Scientific Committee and a final decision is made by the Commonwealth Minister for the Environment. Once listed under the EPBC Act, communities are categorised as either 'critically endangered', 'endangered' or 'vulnerable' as defined in **Table 2**. Any action likely to have a significant impact on a community listed under the EPBC Act requires approval from the Minister for the Environment.

In Western Australia TECs are listed under sections 27(1), 31 and 33 of the BC Act. TECs are determined by the Western Australian Threatened Ecological Communities Scientific Advisory Committee (WATECSAC) and endorsed by the State Minister for the Environment. The WATECSAC is an independent group comprised of representatives from organisations including tertiary institutions, the Western Australian Museum and DBCA. The TECs listed under the BC Act are defined in Schedule 1 of the Biodiversity Conservation (Threatened Ecological Communities) Order 2023. State TECs are also acknowledged through other environmental approval processes such as 'environmental impact assessment' pursuant to Part IV of the *Environmental Protection Act 1986* (EP Act) and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

TECs are assigned to one of the categories outlined in **Table 2** according to their level of threat.

Table 2: Categories of threatened ecological communities (English and Blyth 1997; DEC 2009)

Conservation code	Description
PD	Presumably Totally Destroyed An ecological community that has been adequately searched for but for which no representative occurrences have been located.
CE	Critically Endangered An ecological community that has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future.
E	Endangered An ecological community that has been adequately surveyed and is not critically endangered but is facing a very high risk of total destruction in the near future.
V	Vulnerable An ecological community that has been adequately surveyed and is not critically endangered or endangered but is facing a high risk of total destruction or significant modification in the medium to long-term future.

An ecological community with insufficient information available to be considered a TEC or which are rare but not currently threatened may be listed as a 'priority ecological community' (PEC). PECs are categorised based on a variety of criteria, as described in **Table 3**. Listed PECs are published by DBCA (DBCA 2023a).

Table 3: Categories of priority ecological communities (DEC 2013)

Priority code	Description
P1	Priority One: Poorly known ecological communities Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
P2	Priority Two: Poorly known ecological communities Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
P3	Priority Three: Poorly known ecological communities (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or; (iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change etc. Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.
P4	Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring. (i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands. (ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for a higher threat category. (iii) Ecological communities that have been removed from the list of threatened communities during the past five years.
P5	Priority Five: Conservation Dependent ecological communities Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Reporting

Section 43 of the BC Act requires that an occurrence of a threatened species or threatened ecological community is reported to DBCA where the occurrence has been identified as part of field work completed:

- as part of an assessment under Part IV of the *Environmental Protection Act 1986*; or
- in relation to an application for a clearing permit under the *Environmental Protection Act 1986* section 51E(1)(d).

Penalties apply to individuals and organisations that fail to provide accurate reports of threatened species or communities.

The *Biodiversity Conservation Regulations 2018* (BC Regulations 2018) came into effect on January 1 2019. The BC Regulations include provisions for licencing, charges, penalties and other provisions associated with the BC Act.

Weeds

A number of legislative and policy documents exist in relation to weed management at state and national levels. The *Biosecurity and Agriculture Management Act 2007* (BAM Act) is the principle legislation guiding weed management in Western Australia and lists declared pest species. At a national level, the Australian government has compiled a list of 32 Weeds of National Significance (WoNS) (DoEE 2018), of which many are also listed under the BAM Act.

Declared Pests

Part 2.3.23 of the BAM Act requires a person must not; "*a) keep, breed or cultivate the declared pest; b) keep, breed or cultivate an animal, plant or other thing that is infected or infested with the declared pest; c) release into the environment the declared pest, or an animal, plant or other thing that is infected or infested with the declared pest; or d) intentionally infect or infest, or expose to infection or infestation, a plant, animal or other thing with a declared pest*".

Under the BAM Act, all declared pests are assigned a legal status, as described in **Table 7**. Species assigned to the 'declared pest, prohibited - s12' category are placed in one of three control categories, as described in **Table 8**.

The *Biosecurity and Agriculture Management Regulations 2013* specify keeping categories for species assigned to the 'declared pest - s22(2)' category, which relate to the purposes of which species can be kept, as well as the entities that can keep them. The categories are described in **Table 9**.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act (DPIRD 2020).

Table 4: Legal status of declared pest species listed under the BAM Act (DPIRD 2020)

Category	Description
Declared Pest Prohibited - s12	May only be imported and kept subject to permits. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.
Declared Pest s22(2)	Must satisfy any applicable import requirements when imported, and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia

Table 5: Control categories of declared pest species listed under the BAM Act (DPIRD 2020)

Category	Description
C1	Exclusion Not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2	Eradication Present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.
C3	Management Established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

Table 6: Keeping categories of declared pest species listed under the BAM Act (DPIRD 2020)

Category	Description
Prohibited	Can only be kept under a permit for public display and education purposes, and/or genuine scientific research, by entities approved by the state authority.
Exempt	No permit or conditions are required for keeping.
Restricted	Organisms which, relative to other species, have a low risk of becoming a problem for the environment, primary industry or public safety and can be kept under a permit by private individuals.

Wetland Habitat

Geomorphic wetland types

On the Swan Coastal Plain DBCA (2017) have used the geomorphic wetland classification system developed by Semeniuk (1987) and Semeniuk and Semeniuk (1995) to classify wetlands based on the landform shape and water permanence (hydro-period) as outlined in **Table 10**.

Table 7: Geomorphic Wetlands of the Swan Coastal Plain classification categories (DBCA 2017)

Level of inundation	Geomorphology			
	Basin	Flat	Channel	Slope
Permanently inundated	Lake	-	River	-
Seasonally inundated	Sumpland	Floodplain	Creek	-
Seasonally waterlogged	Dampland	Palusplain	-	Paluslope

Wetland management categories

DBCA maintains the *Geomorphic Wetland of the Swan Coastal Plain* dataset (DBCA 2018a), which also categorises individual wetlands into specific management categories as described in **Table 11**.

Table 8: Geomorphic Wetlands of the Swan Coastal Plain classification categories (DBCA 2017)

Management category	Description of wetland	Management objectives
Conservation (CCW)	Support high levels of attributes	Preserve wetland attributes and functions through reservation in national parks, crown reserves and state owned land. Protection provided under environmental protection policies.
Resource enhancement (REW)	Partly modified but still supporting substantial functions and attributes	Restore wetland through maintenance and enhancement of wetland functions and attributes. Protection via crown reserves, state or local government owned land, environmental protection policies and sustainable management on private properties.
Multiple use (MUW)	Few wetland attributes but still provide important hydrological functions	Use, development and management considered in the context of water, town and environmental planning through land care.

The management categories of wetland features are determined based on hydrological, biological and human use features. The DBCA document *A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia* (DBCA 2017) details the methodology by which wetlands on the Swan Coastal Plain are assigned management categories based on a two tiered evaluation system, with preliminary and secondary evaluation stages. The preliminary evaluation aims to identify any features of conservation significance that would immediately place the wetland within the CCW management category. Examples of these significant features include presence on significant wetland lists, presence of TECs or PECs (Priority 1 and 2), presence of threatened flora and

over 90% of vegetation in good or better condition based on the Keighery (1994) scale. If such environmental values are identified the wetland would be categorised as CCW without further evaluation.

Should the preliminary evaluation indicate that no such features occur, the secondary evaluation and site assessment are then applied. In the secondary evaluation, an appropriate management category is determined through the assessment of a range of environmental attributes, functions and values.

Wetland reclassification

DBCA have a protocol for proposing changes to the wetland boundaries and management categories of the existing geomorphic wetland dataset (DEC 2007). The procedure involves a wetland desktop evaluation and site assessment which culminates in a recommended management category. Relevant information should be obtained in the optimal season for vegetation condition and water levels, which is usually spring (DEC 2007). In the case of larger wetlands that have undergone a degree of disturbance, a separate management category may be assigned to parts of the wetland in order to reflect the current values.

References

General references

Department of Biodiversity, Conservation and Attractions (DBCA) 2017, *A methodology for the evaluation of wetlands on the Swan Coastal Plain*, draft prepared by the Wetlands Section of the Department of Biodiversity, Conservation and Attractions and the Urban Water Branch of the Department of Water and Environmental Regulation, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) 2018a, *Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)*.

Department of Biodiversity, Conservation and Attractions (DBCA) 2018b, *Threatened and Priority Flora List 16 January 2018*, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023a, *Priority Ecological Communities for Western Australia Version 35*, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA) 2023b, *Threatened and Priority Flora List July 2023* Perth.

Department of Environment and Conservation (DEC) 2007, *Protocol for proposing modifications to the Geomorphic Wetlands Swan Coastal Plain dataset*, Perth.

Department of Environment and Conservation (DEC) 2009, *Definitions, Categories and Criteria for Threatened and Priority Ecological Communities*, Perth.

Department of Conservation (DEC) 2013, *Definitions, Categories and Criteria for Threatened and Priority Ecological Communities*, Perth.

English, V. and Blyth, J. 1997, *Identifying and Conserving Threatened Ecological Communities in the South West Botanical Province*, ANCA National Reserves System Cooperative Program, Project Number N702, Perth.

Keighery, B. 1994, *Bushland Plant Survey: A guide to plant community survey for the community*, Wildflower Society of WA (Inc), Nedlands.

Semeniuk, C. A. 1987, *Wetlands of the Darling System - a geomorphic approach to habitat classification*, Journal of the Royal Society of Western Australia, 69: 95-112.

Semeniuk, C. A. and Semeniuk, V. 1995, *A Geomorphic Approach to Global Classification for Inland Wetlands*, Vegetatio, 118(1/2): 103-124.

Online references

Department of Environment and Energy (DoEE) 2018, Weeds of National Significance, <http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html>.

Department of Primary Industries and Regional Development (DPIRD) 2020, The Western Australian Organism List (WAOL), < https://www.agric.wa.gov.au/bam/western-australian-organism-list-waol>.

Appendix B

Conservation Significant Flora Species and Likelihood of Occurrence Assessment

Species name	Level of significance		Life strategy	Habitat	Flowering period	Likelihood of occurrence
	WA	EPBC Act				
Caladenia huegelii	CR	EN	PG	Well-drained, deep sandy soils in lush undergrowth in a variety of moisture levels.	Sep-early Nov	Moderate
Drakaea elastica	CR	EN	PG	Bare patches of sand within otherwise dense vegetation in low-lying areas alongside winter-wet swamps. Typically in banksia woodland or thickets of *Kunzea glabrescens.*	late Sep-Oct/Nov, survey Jul-Aug	Low
Diuris purdiei	EN	EN	PG	Sand to sandy clay soils in areas subject to winter inundation.	late September to mid-October	Low
Drakaea micrantha	EN	VU	PG	Open sandy patches often adjacent to winter-wet swamps.	Sept- early Oct	Low
Macarthuria keigheryi	EN	EN	P	Low-lying winter-wet damp grey/white sands in open patches.	Sep-Dec or Feb-Mar	Low
Andersonia gracilis	VU	EN	P	Seasonally damp, black sandy clay flats near or on the margins of swamps.	Sep-Nov	Low
Banksia mimica	VU	EN	P	Flat to gentle slopes in grey and white sand in open woodlands.	Dec-Jan	Negligible
Diuris micrantha	VU	VU	PG	Dark grey-black sandy clay-loam in winter wet depressions or swamps. Often in shallow standing water.	Aug/Sep-early Oct	Low
Baeckea sp. Limestone (N. Gibson & M.N. Lyons 1425)	P1	-	P	Grey yellow sand over limestone.	Sep-Dec	Moderate
Drosera micra	P1	-	A/P	Sandy peat	Dec	Low
Drosera patens	P1	-	P	Sandy soils on margins of winter-wet depressions, swamps and lakes.	Aug-Dec	Low
Drosera x sidjamesii	P1	-	P	Along lake margins, close to winter high-water line	Nov-Dec or Jan-Mar	Low
Lepidium pseudohyssopifolium	P1	-	A/P	Swampy ground.	Jun-Sep	Low
Levenhookia preissii	P1	-	A	Grey or black, peaty sand. Swamps	Sep-Dec/Jan	Low
Acacia benthamii	P2	-	P	Sand, typically on limestone breakaways	Aug-Sept	High
Drosera x badgerupii	P2	-	P	Black sandy soil, winter wet	Dec	Low

Species name	Level of significance		Life strategy	Habitat	Flowering period	Likelihood of occurrence
	WA	EPBC Act				
Millotia tenuifolia var. laevis	P2	-	A	Granite or lateritic soils.	Sep-Oct	Low
Thryptomene velutina	P2	-	P	Sandplain, yellow or red sands and loams. Granite, sandstone.	Jun - Sep	Low
Beyeria cinerea subsp. cinerea	P3	-	P	Sand, limestone.	May-Oct	Moderate
Conostylis bracteata	P3	-	P	Sand, limestone. Consolidated sand dunes	Aug-Sep	Moderate
Cyathochaeta teretifolia	P3	-	P	Grey sand, sandy clay in swamps and creek edges.	Oct-Jan	Low
Dampiera triloba	P3	-	P	Damp peat/loam soil.	Aug-Dec	Low
Hibbertia leptotheca	P3	-	P	Brown to white sand with limestone.	Aug-Oct	Moderate
Isopogon autumnalis	P3	-	P	Yellow-grey sand.	Feb-June	Negligible
Pimelea calcicola	P3	-	P	Sand, limestone on coastal ridges.	Sep-Nov	Low
Sarcozona bicarinata	P3	-	P	White sand.	Aug	Moderate
Stylidium paludicola	P3	-	P	Peaty sand over clay. Winter wet habitats. Marri and Melaleuca woodland, Melaleuca shrubland	Oct-Dec	Low
Styphelia filifolia	P3	-	P	Brown over pale yellow sand.	Feb-Apr	Negligible
Anigozanthos humilis subsp. chrysanthus	P4	-	P	Grey or yellow sand	Jul-Oct	Moderate
Dodonaea hackettiana	P4	-	P	Sand, outcropping limestone.	Jul-Oct	Negligible
Drosera occidentalis	P4	-	P	Flat, brown/white/yellow moist sand/clay/peat, often near swamps.	Oct-Dec/Jan	Low
Eucalyptus foecunda subsp. foecunda	P4	-	P	Sand over limestone. Outcropping limestone.	Jan-Mar	Moderate
Jacksonia sericea	P4	-	P	Calcareous and sandy soils on Swan Coastal Plain	Dec-Feb	High

Note: CR=critically endangered, EN=endangered, VU=vulnerable, P1=Priority 1, P2=Priority 2, P3=Priority 3, P4=Priority 4, P=perennial, PG=perennial geophyte, A=annual. Species considered to potentially occur within the site are shaded green.

Appendix C

Conservation Significant Communities and Likelihood of Occurrence Assessment

Code	Community name	TEC/ PEC	Level of significance		Likelihood of occurrence
			State	EPBC Act	
SCP29b	Acacia shrublands on taller dunes	PEC	P3	-	Low
SCP20a	*Banksia attenuata* woodlands over species rich dense shrublands	TEC	CR	EN	High
SCP22	*Banksia ilicifolia* woodlands	PEC	P3	EN	Moderate
Banksia WL SCP	Banksia Woodlands of the Swan Coastal Plain ecological community	TEC/ PEC	P3	EN	High
SCP30a	*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands of the Swan Coastal Plain	TEC	CR	-	Low
SCP29a	Coastal shrublands on shallow sands	PEC	P3	-	Low
SCP21c	Low lying *Banksia attenuata* woodlands or shrublands	TEC/ PEC	P3	EN	Moderate
SCP24	Northern Spearwood shrublands and woodlands	PEC	P3	-	Moderate
SCP02	Southern wet shrublands, Swan Coastal Plain	TEC	CR	-	Low
SCP23b	Swan Coastal Plain *Banksia attenuata - Banksia menziesii* woodlands	TEC/ PEC	P3	EN	Moderate
Tuart woodlands	Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	TEC/ PEC	P3	CR	High
	Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion/*Melaleuca huegelii – M. systena* shrublands of limestone ridges	TEC	CR	CR	Low

Note: TEC=threatened ecological community, PEC=priority ecological community, CR=critically endangered, EN=endangered, VU=vulnerable, P3=priority 3

Appendix D

Species List

Family	Status	Species
Aizoaceae		
	*	*Carpobrotus edulis*
Amaranthaceae		
		Ptilotus manglesii
		Ptilotus polystachyus
Anacardiaceae		
	*, Pl	*Schinus terebinthifolia*
Anarthriaceae		
		Lyginia barbata
		Lyginia imberbis
Apiaceae		
		Eryngium pinnatifidum
		Homalosciadium homalocarpum
		Xanthosia ciliata
Apocynaceae		
	*, Pl	*Nerium oleander*
Araliaceae		
		Trachymene pilosa
Asparagaceae		
		Laxmannia squarrosa
		Lomandra caespitosa
		Lomandra hermaphrodita
		Lomandra nigricans
		Lomandra preissii
		Lomandra sericea
		Lomandra suaveolens
		Sowerbaea laxiflora
		Thysanotus arenarius
		Thysanotus manglesianus
		Thysanotus sparteus
Asteraceae		
	*	*Arctotheca calendula*
	*	*Dittrichia graveolens*
	*	*Erigeron bonariensis*
		Hyalosperma cotula
	*	*Hypochaeris glabra*
	*	*Hypochaeris radicata*
	*	*Gazania linearis*
	*	*Lactuca serriola* forma *serriola*
		Lagenophora ?platysperma
	*	*Leontodon rhagadioloides*
		Pithocarpa cordata
		Podotheca angustifolia
		Podotheca chrysantha
		Siloxerus humifusus
	*	*Sonchus oleraceus*
	*	*Ursinia anthemoides*
		Waitzia suaveolens

Family	Status	Species
Bignoniaceae		
	*, Pl	*Jacaranda mimosifolia*
Brassicaceae		
	*	*Heliophila pusilla*
Cactaceae		
	*, DP, WoNS	*Opuntia stricta*
Campanulaceae		
	*	*Wahlenbergia capensis*
		Wahlenbergia preissii
Caryophyllaceae		
	*	*Petrorhagia dubia*
	*	*Polycarpon tetraphyllum*
	*	*Silene gallica*
Casuarinaceae		
		Allocasuarina fraseriana
		Allocasuarina humilis
Centrolepidaceae		
		Centrolepis drummondiana
Chenopodiaceae		
	*	*Chenopodium murale*
Colchicaceae		
		Burchardia congesta
Crassulaceae		
		Crassula colorata
Cucurbitaceae		
	*	*Citrullus amarus*
Cupressaceae		
		Callitris preissii
Cyperaceae		
		Ammothryon grandiflorum
	*	*Ficinia marginata*
		Lepidosperma leptostachyum
		Lepidosperma ?pubisquameum
		Lepidosperma ?squamatum
		Lepidosperma sp.
		Mesomelaena pseudostygia
		Morelotia octandra
		Schoenus curvifolius
		Schoenus subfascicularis
Dasypogonaceae		
		Calectasia narragara
		Dasypogon bromeliifolius
Dilleniaceae		
		Hibbertia huegelii
		Hibbertia hypericoides
		Hibbertia racemosa

Family	Status	Species
Droseraceae		
		Drosera drummondii
		Drosera erythrorhiza
		Drosera macrantha
		Drosera micrantha
Elaeocarpaceae		
		Tetratheca hirsuta subsp. *viminea*
Ericaceae		
		Conostephium pendulum
		Styphelia pallida
		Styphelia propinqua
		Styphelia sp.
Euphorbiaceae		
	*	*Euphorbia terracina*
		Monotaxis grandiflora var. *grandiflora*
		Ricinocarpos undulatus
Fabaceae		
		Acacia applanata
	P2	*Acacia benthamii*
		Acacia cyclops
	*	*Acacia iteaphylla*
	*	*Acacia podalyriifolia*
		Acacia rostellifera
		Acacia saligna
		Acacia stenoptera
		Bossiaea eriocarpa
		Daviesia divaricata subsp. *divaricata*
		Daviesia nudiflora
		Daviesia triflora
		Gastrolobium capitatum
		Gompholobium tomentosum
		Hardenbergia comptoniana
		Hovea trisperma var. *trisperma*
		Isotropis cuneifolia subsp. *cuneifolia*
		Jacksonia furcellata
	P4	*Jacksonia sericea*
		Jacksonia sternbergiana
		Kennedia prostrata
	*	*Lupinus cosentinii*
Geraniaceae		
	*	*Pelargonium capitatum*
Goodeniaceae		
		Dampiera linearis
		Scaevola canescens
		Scaevola repens

Family	Status	Species
Haemodoraceae		
		Anigozanthos humilis subsp. *humilis*
		Anigozanthos manglesii subsp. *manglesii*
		Conostylis aculeata subsp. *cygnorum*
		Conostylis aurea
		Conostylis setigera
		Haemodorum laxum
		Haemodorum paniculatum
		Haemodorum spicatum
		Phlebocarya ciliata
Hemerocallidaceae		
		Caesia micrantha
		Chamaescilla corymbosa var. *corymbosa*
		Corynotheca micrantha
		Dianella revoluta var. *divaricata*
		Tricoryne elatior
Iridaceae		
	*	*Ferraria crispa*
	*	*Freesia leichtlinii* subsp. *alba* × *leichtlinii* subsp. *leichtlinii*
	*	*Gladiolus caryophyllaceus*
	*	*Hesperantha falcata*
	*, DP	*Moraea flaccida*
		Orthrosanthus laxus var. *laxus*
		Patersonia occidentalis
	*	*Romulea rosea*
Loganiaceae		
		Phyllangium paradoxum
Loranthaceae		
		Nuytsia floribunda
Malvaceae		
	*, Pl	*Hibiscus sp.*
Meliaceae		
	*, Pl	*Melia azedarach*
Montiaceae		
		Calandrinia corrigioloides
Moraceae		
	*, Pl	*Ficus ?benjamina*
	*, Pl	*Ficus ?rubiginosa*
Myrtaceae		
	*, Pl	*Callistemon sp.*
		Calytrix angulata
		Calytrix fraseri
	*	*Chamelaucium uncinatum*
	*, Pl	*Corymbia citreodora*
	*, Pl	*Corymbia maculata*
		Eremaea pauciflora var. pauciflora
	*, Pl	*Eucalyptus camaldulensis*
		Eucalyptus gomphocephala

Family	Status	Species
Myrtaceae (cont.)		
		Eucalyptus marginata
	*, Pl	*Eucalyptus utilis*
	*, Pl	*Eucalyptus sp.*
	*	*Gaudium laevigatum*
		Hypocalymma robustum
		Kunzea glabrescens
		Melaleuca preissiana
		Scholtzia involucrata
		Verticordia densiflora
Oleaceae		
	*, Pl	*Olea europaea*
Orchidaceae		
		Caladenia arenicola
		Caladenia flava
		Caladenia marginata
	*	*Disa bracteata*
		Diuris corymbosa
		Elythranthera brunonis
		Leporella fimbriata
		Lyperanthus serratus
		Microtis media
		Pterostylis sanguinea
		Pterostylis vittata
		Pterostylis sp.
		Pyrorchis nigricans
		Thelymitra benthamiana
		Thelymitra macrophylla
		Thelymitra ?vulgaris
Orobanchaceae		
	*	*Orobanche minor*
Oxalidaceae		
		Oxalis glabra
Phyllanthaceae		
		Poranthera microphylla
Pittosporaceae		
		Billardiera fraseri
Poaceae		
	*	*Aira cupaniana*
		Amphipogon turbinatus
	*	*Anthoxanthum odoratum*
	*	*Arundo donax*
		Austrostipa compressa
		Austrostipa flavescens
		Austrostipa hemipogon
	*	*Avena barbata*
	*	*Briza maxima*
	*	*Briza minor*

Family	Status	Species
Poaceae (cont.)		
	*	*Ehrharta calycina*
	*	*Ehrharta longiflora*
		Microlaena stipoides
		Neurachne alopecuroidea
	*	*Pentameris airoides subsp. airoides*
		Rytidosperma occidentale
Polygalaceae		
		Comesperma calymega
Primulaceae		
	*	*Lysimachia arvensis*
Proteaceae		
		Banksia attenuata
		Banksia grandis
		Banksia ilicifolia
		Banksia menziesii
		Banksia prionotes
	*, Pl	*Grevillea leucopteris*
		Grevillea preissii
		Grevillea vestita
		Hakea prostrata
		Persoonia saccata
		Petrophile brevifolia subsp. brevifolia
		Petrophile linearis
		Petrophile macrostachya
		Stirlingia latifolia
		Synaphea spinulosa subsp. *spinulosa*
Restionaceae		
		Alexgeorgea nitens
		Chordifex sinuosus
		Desmocladus flexuosus
		Hypolaena exsulca
		Lepidobolus preissianus
Rhamnaceae		
		Stenanthemum notiale subsp. *chamelum*
Rosaceae		
	*, Pl	*Eriobotrya japonica*
Rubiaceae		
		Opercularia vaginata
Rutaceae		
		Philotheca spicata
Stylidiaceae		
		Levenhookia stipitata
		Stylidium androsaceum
		Stylidium brunonianum
		Stylidium piliferum
		Stylidium repens

Family	Status	Species
Thymelaeaceae		
		Pimelea leucantha
		Pimelea sulphurea
Violaceae		
		Pigea calycina
Vitaceae		
	*	*Vitis vinifera*
Xanthorrhoeaceae		
		Xanthorrhoea brunonis subsp. brunonis
		Xanthorrhoea preissii
Zamiaceae		
		Macrozamia fraseri

*=non-native, Pl=planted

Appendix E

Species x Vegetation Unit Matrix

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Acacia applanata		X				X	X	X		
Acacia benthamii (P2)	X	X		X		X	X	X		X
Acacia cyclops		X	X	X						
Acacia iteaphylla	X									
Acacia podalyriifolia										
Acacia rostellifera		X								
Acacia saligna			X	X					X	X
Acacia stenoptera			X			X	X			
Aira cupaniana		X		X		X	X			
Alexgeorgea nitens	X	X	X	X	X	X	X	X		
Allocasuarina fraseriana					X		X	X		
Allocasuarina humilis						X				
Ammothryon grandiflorum				X						
Amphipogon turbinatus		X				X	X	X		
Anigozanthos humilis subsp. humilis		X			X	X	X			
Anigozanthos manglesii subsp. manglesii					X	X		X		
Anthoxanthum odoratum				X						
Arctotheca calendula				X		X				X
Arundo donax										X
Austrostipa compressa		X	X	X	X	X	X			
Austrostipa flavescens			X			X	X			
Austrostipa hemipogon			X			X	X			
Avena barbata				X					X	X
Banksia attenuata				X	X	X	X	X		
Banksia grandis										
Banksia ilicifolia		X								
Banksia menziesii	X	X		X		X	X	X		
Banksia prionotes			X	X			X	X		
Billardiera fraseri							X	X		
Bossiaea eriocarpa		X				X	X	X		

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Briza maxima	X	X	X	X	X	X	X	X		
Briza minor					X					
Burchardia congesta	X	X		X	X	X	X	X		
Caesia micrantha		X			X	X	X	X		
Caladenia arenicola		X		X						
Caladenia flava		X	X	X		X	X	X		
Caladenia marginata		X	X							
Calandrinia corrigioloides					X	X	X			
Calectasia narragara							X			
Callistemon sp.										X
Callitris preissii		X								
Calytrix angulata						X	X			
Calytrix fraseri	X	X	X			X	X	X		
Carpobrotus edulis		X								
Centrolepis drummondiana			X	X		X	X			
Chamaescilla corymbosa var. corymbosa							X			
Chamelaucium uncinatum										
Chenopodium murale				X						
Chordifex sinuosus							X			
Citrullus amarus										X
Comesperma calymega							X			
Conostephium pendulum		X				X	X	X		
Conostylis aculeata subsp. cygnorum	X	X		X	X	X	X	X		
Conostylis aurea						X		X		
Conostylis setigera		X			X	X	X	X		
Corymbia citreodora										X
Corymbia maculata										X
Corynotheca micrantha			X	X	X	X	X	X		
Crassula colorata				X	X	X	X			
Dampiera linearis	X			X						

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Dasypogon bromeliifolius		X					X			
Daviesia divaricata subsp. divaricata				X	X	X	X	X		
Daviesia nudiflora	X		X	X	X	X	X	X		
Daviesia triflora	X		X	X	X	X	X	X		
Desmocladus flexuosus		X		X	X	X	X	X		
Dianella revoluta var. divaricata		X	X	X	X	X	X	X		
Disa bracteata							X	X		
Dittrichia graveolens										X
Diuris corymbosa			X				X			
Drosera drummondii	X	X	X			X	X	X		
Drosera erythrorhiza		X	X	X	X	X	X	X		
Drosera macrantha	X									
Drosera micrantha		X								
Ehrharta calycina	X	X	X	X	X	X	X	X	X	X
Ehrharta longiflora		X						X	X	X
Elythranthera brunonis							X			
Eremaea pauciflora var. pauciflora	X	X				X	X			
Erigeron bonariensis							X		X	
Eriobotrya japonica										X
Eryngium pinnatifidum					X	X		X		
Eucalyptus camaldulensis										X
Eucalyptus gomphocephala				X	X					
Eucalyptus marginata		X		X	X	X	X	X		X
Eucalyptus sp.						X				X
Eucalyptus utilis										X
Euphorbia terracina				X						
Ferraria crispa						X				
Ficus ?benjamina										X
Ficus ?rubiginosa										X
Freesia leichtlinii subsp. alba × leichtlinii subsp. leichtlinii								X		

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Gastrolobium capitatum	X	X	X	X	X	X	X	X		
Gaudium laevigatum			X				X			
Gazania linearis										X
Gladiolus caryophyllaceus	X	X	X	X	X	X	X	X		
Gompholobium tomentosum	X	X	X	X	X	X	X	X		
Grevillea vestita				X	X					
Grevillea leucopteris						X				
Grevillea preissii				X						
Haemodorum laxum			X	X		X	X	X		
Haemodorum paniculatum					X					
Haemodorum spicatum	X	X		X	X	X	X	X		
Hakea prostrata				X		X				
Hardenbergia comptoniana				X	X	X	X	X		
Heliophila pusilla		X				X				
Hesperantha falcata	X									
Hibbertia huegelii					X	X	X	X		
Hibbertia hypericoides			X	X	X	X	X	X		
Hibbertia racemosa					X	X				
Hibiscus sp.										X
Homalosciadium homalocarpum		X			X	X	X			
Hovea trisperma var. trisperma					X		X			
Hyalosperma cotula						X	X			
Hypocalymma robustum			X	X	X	X	X	X		
Hypochaeris glabra			X	X	X	X	X			
Hypochaeris radicata										X
Hypolaena exsulca		X								
Ficinia marginata				X	X	X	X			X
Isotropis cuneifolia subsp. cuneifolia				X	X	X	X	X		
Jacaranda mimosifolia										X
Jacksonia furcellata		X		X		X	X		X	X

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Jacksonia sericea (P4)			X	X	X		X	X		X
Jacksonia sternbergiana						X	X			
Kennedia prostrata				X	X	X				
Kunzea glabrescens										
Lactuca serriola forma serriola				X	X	X				
Lagenophora ?platysperma								X		
Laxmannia squarrosa			X			X	X			
Leontodon rhagadioloides				X						
Lepidobolus preissianus							X			
Lepidosperma ?pubisquameum								X		
Lepidosperma ?squamatum				X		X	X			
Lepidosperma sp.		X								
Lepidosperma leptostachyum				X		X	X	X		
Leporella fimbriata							X			
Levenhookia stipitata	X	X	X				X			
Lomandra caespitosa	X									
Lomandra hermaphrodita		X	X	X		X	X	X		
Lomandra nigricans							X	X		
Lomandra preissii	X				X	X	X	X		
Lomandra sericea		X				X	X	X		
Lomandra suaveolens		X			X	X	X	X		
Lupinus cosentinii				X						
Lyginia barbata		X	X			X	X	X		
Lyginia imberbis		X					X			
Lyperanthus serratus						X				
Lysimachia arvensis				X						X
Macrozamia fraseri		X		X	X	X		X	X	
Melaleuca preissiana		X								
Melia azedarach										X
Mesomelaena pseudostygia			X	X	X	X	X	X		

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Microlaena stipoides		X				X	X	X		
Microtis media		X	X				X	X		
Monotaxis grandiflora var. grandiflora						X	X	X		
Moraea flaccida		X		X	X		X			
Morelotia octandra					X	X	X	X		
Nerium oleander										
Neurachne alopecuroidea							X			
Nuytsia floribunda			X							
Olea europaea						X				
Opercularia vaginata		X	X				X	X		
Opuntia stricta										X
Orobanche minor										X
Orthrosanthus laxus var. laxus						X		X		
Oxalis glabra				X						
Patersonia occidentalis	X	X		X	X	X	X	X		
Pelagonium capitatum			X	X		X	X			
Pentameris airoides subsp. airoides	X	X		X	X	X				
Persoonia saccata				X	X		X			
Petrophile brevifolia subsp. brevifolia		X		X			X			
Petrophile linearis		X		X		X	X			
Petrophile macrostachya						X	X	X		
Petrorhagia dubia				X						
Philotheca spicata		X		X		X	X	X		
Phlebocarya ciliata		X				X	X			
Phyllangium paradoxum		X	X	X		X	X			
Pigea calycina				X		X	X			
Pimelea leucantha						X	X			
Pimelea sulphurea					X		X			
Pithocarpa cordata						X				
Podotheca angustifolia	X	X		X	X					X

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Podotheca chrysantha			X	X		X				
Polycarpon tetraphyllum				X						X
Poranthera microphylla		X				X	X	X		
Pterostylis sanguinea						X	X			
Pterostylis sp.						X	X	X		
Pterostylis vittata			X				X	X		
Ptilotus manglesii			X	X	X	X	X	X		
Ptilotus polystachyus			X	X						X
Pyrorchis nigricans		X				X	X	X		
Ricinocarpus undulatus						X		X		
Romulea rosea	X	X	X	X		X	X	X		X
Rytidosperma occidentale						X	X			
Scaevola canescens				X	X		X	X		
Scaevola repens			X	X	X	X	X	X		
Schinus terebinthefolius										X
Schoenus curvifolius		X				X	X			
Schoenus subfascicularis		X				X	X	X		
Scholtzia involucrata				X						
Silene gallica				X						
Siloxerus humifusus		X				X	X			
Sonchus oleraceus				X	X	X				
Sowerbaea laxifolia				X	X	X		X		
Stenanthemum notiale subsp. chamelum							X			
Stirlingia latifolia	X	X	X	X	X	X	X	X		
Stylidium androsaceum		X	X		X	X	X	X		
Stylidium brunonianum					X		X			
Stylidium piliferum		X				X	X			
Stylidium repens		X								
Styphelia pallida					X	X				
Styphelia propinqua				X						

Species	Vegetation Unit									
	BmCfSl	BmMpXp	BpAnCf	BpGvJsXp	EmBaXp	EmBDtXp	EmBmPoAn	EmBHh	JfAXp	Cleared
Styphelia sp.						X				
Synaphea spinulosa subsp. spinulosa				X						
Tetratheca hirsuta subsp. viminea								X		
Thelymitra ?vulgaris								X		
Thelymitra benthamiana			X			X		X		
Thelymitra macrophylla			X			X	X	X		
Thysanotus arenarius				X			X	X		
Thysanotus manglesianus		X	X			X	X			
Thysanotus sparteus	X	X	X		X	X	X	X		
Trachymene pilosa	X	X	X	X	X	X	X	X		
Tricoryne elatior		X	X	X		X	X	X		
Ursinia anthemoides	X	X	X	X	X	X	X	X	X	X
Verticordia densiflora							X			
Vitis vinifera										X
Wahlenbergia capensis				X	X	X			X	
Wahlenbergia preissii					X	X	X			
Waitzia suaveolens			X			X	X	X		
Xanthorrhoea brunonis subsp. brunonis		X	X	X	X			X		
Xanthorrhoea preissii	X	X	X	X	X	X	X	X	X	
Xanthosia ciliata		X					X	X		

Appendix F

Sample Data

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q1

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,SKP Q1: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388550.6778	NW corner northing:	6475016.025
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	upper slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q1

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Alexgeorgea nitens	5
	Amphipogon turbinatus	Opp
	Anigozanthos humilis subsp. humilis	Opp
	Austrostipa compressa	0.1
	Banksia attenuata	10
	Banksia menziesii	Opp
	Bossiaea eriocarpa	Opp
*	*Briza maxima*	0.1
	Burchardia congesta	0.1
	Caladenia flava	0.1
	Calandrinia corrigioloides	0.1
	Calytrix angulata	Opp
	Calytrix fraseri	0.1
	Conostephium pendulum	0.1
	Conostylis aurea	0.1
	Corynotheca micrantha	0.1
	Daviesia divaricata subsp. divaricata	0.1
	Daviesia nudiflora	Opp
	Daviesia triflora	0.1
	Desmocladus flexuosus	5
	Dianella revoluta var. divaricata	0.5
	Drosera drummondii	0.1
	Drosera erythrorhiza	1
*	*Ehrharta calycina*	0.5
	Eremaea pauciflora var. pauciflora	1
	Eucalyptus marginata	10
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.5
	Haemodorum laxum	0.1
	Haemodorum spicatum	0.1
	Hakea prostrata	Opp
	Hardenbergia comptoniana	0.1
	Hibbertia hypericoides	0.1
	Hyalosperma cotula	0.1
	Hypocalymma robustum	0.1
*	*Hypochaeris glabra*	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q1

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: TAA,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Jacksonia furcellata	0.1
	Laxmannia squarrosa	Opp
	Lepidosperma ?squamatum	Opp
	Lomandra hermaphrodita	0.1
	Lomandra suaveolens	0.1
	Lyginia barbata	0.1
	Mesomelaena pseudostygia	2
	Microlaena stipoides	0.1
	Monotaxis grandiflora var. grandiflora	0.1
	Morelotia octandra	2
	Patersonia occidentalis	1
	Petrophile linearis	Opp
	Petrophile macrostachya	Opp
	Philotheca spicata	0.1
	Phlebocarya ciliata	Opp
	Phyllangium paradoxum	0.1
	Phyllangium paradoxum	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	0.1
*	*Romulea rosea*	Opp
	Scaevola repens	0.1
	Sowerbaea laxifolia	0.1
	Stirlingia latifolia	12
	Stylidium androsaceum	0.1
	Stylidium piliferum	Opp
	Thelymitra benthamiana	0.1
	Thelymitra macrophylla	0.1
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
*	*Wahlenbergia capensis*	0.1
	Wahlenbergia preissii	0.1
	Waitzia suaveolens	0.1
	Xanthorrhoea preissii	10

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q2

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,SKP Q2: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388535.085	NW corner northing:	6475153.659
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q2

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,SKP Q2: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
P2	*Acacia benthamii*	0.1
	Alexgeorgea nitens	0.1
	Amphipogon turbinatus	20
	Banksia attenuata	2
	Banksia menziesii	Opp
	Bossiaea eriocarpa	Opp
*	*Briza maxima*	0.1
	Burchardia congesta	0.1
	Caladenia flava	0.1
	Calectasia narragara	Opp
	Calytrix fraseri	Opp
	Chordifex sinuosus	3
	Comesperma calymega	opp
	Conostylis aculeata subsp. cygnorum	Opp
	Conostylis setigera	0.1
	Corynotheca micrantha	0.1
	Daviesia divaricata subsp. divaricata	Opp
	Daviesia nudiflora	0.1
	Daviesia triflora	0.1
	Desmocladus flexuosus	Opp
	Drosera drummondii	0.1
	Drosera erythrorhiza	Opp
*	*Ehrharta calycina*	Opp
	Eremaea pauciflora var. pauciflora	0.1
	Eucalyptus marginata	20
	Gastrolobium capitatum	Opp
*	*Gaudium laevigatum*	Opp
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum laxum	0.1
	Hardenbergia comptoniana	Opp
	Hibbertia huegelii	Opp
	Hibbertia hypericoides	Opp
	Hypocalymma robustum	Opp
	Jacksonia sternbergiana	0.1
	Lepidobolus preissianus	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q2

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: TAA,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Lepidosperma leptostachyum	0.1
	Leporella fimbriata	0.1
	Levenhookia stipitata	0.1
	Lomandra hermaphrodita	0.1
	Lomandra preissii	0.1
	Mesomelaena pseudostygia	2
	Monotaxis grandiflora var. grandiflora	Opp
	Morelotia octandra	10
	Neurachne alopecuroidea	1
	Patersonia occidentalis	15
	Petrophile macrostachya	Opp
	Phyllangium paradoxum	0.1
	Pimelea sulphurea	0.1
	Pterostylis sp.	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	0.1
	Scaevola canescens	0.1
	Scaevola repens	0.1
	Stirlingia latifolia	5
	Stylidium androsaceum	0.1
	Stylidium brunonianum	Opp
	Stylidium piliferum	0.1
	Thelymitra macrophylla	0.1
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	0.1
	Waitzia suaveolens	Opp
	Xanthorrhoea preissii	10

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q3

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,TAA Q3: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388007.2294	NW corner northing:	6474905.457
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	lower slope
Time since fire:	1-2 yrs	Disturbance:	moderate - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q3

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,TAA Q3: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia stenoptera	0.1
*	*Aira cupaniana*	0.1
	Alexgeorgea nitens	1
	Amphipogon turbinatus	0.1
	Anigozanthos humilis subsp. humilis	Opp
	Austrostipa compressa	1
	Banksia menziesii	20
	Bossiaea eriocarpa	0.1
*	*Briza maxima*	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Caladenia flava	Opp
	Calandrinia corrigioloides	0.1
	Centrolepis drummondiana	Opp
	Conostephium pendulum	Opp
	Conostylis aculeata subsp. cygnorum	0.1
	Conostylis setigera	0.1
	Corynotheca micrantha	Opp
	Crassula colorata	0.1
	Daviesia nudiflora	0.1
	Daviesia triflora	1
	Desmocladus flexuosus	0.1
	Dianella revoluta var. divaricata	0.1
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	1
	Eremaea pauciflora var. pauciflora	1
	Eucalyptus marginata	1
	Gastrolobium capitatum	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum laxum	0.1
	Haemodorum spicatum	0.1
	Hibbertia racemosa	0.1
	Hibbertia huegelii	1
	Hibbertia hypericoides	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q3

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: TAA,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Homalosciadium homalocarpum	0.1
	Hypocalymma robustum	0.1
*	*Hypochaeris glabra*	0.1
*	*Isolepis marginata*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Lepidosperma leptostachyum	0.1
	Lomandra hermaphrodita	0.1
	Lomandra suaveolens	0.1
	Mesomelaena pseudostygia	0.1
	Morelotia octandra	1
	Orthrosanthus laxus var. laxus	0.1
*	*Pentameris airoides subsp. airoides*	0.1
	Petrophile linearis	0.1
	Petrophile macrostachya	0.1
	Philotheca spicata	0.1
	Phyllangium paradoxum	0.1
	Podotheca chrysantha	0.1
	Pterostylis sp.	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	0.1
	Ricinocarpus undulatus	0.1
*	*Romulea rosea*	0.1
	Rytidosperma occidentale	0.1
	Scaevola repens	0.1
	Schoenus curvifolius	0.1
*	*Sonchus oleraceus*	0.1
	Sowerbaea laxifolia	0.1
	Stirlingia latifolia	1
	Stylidium androsaceum	0.1
	Stylidium piliferum	0.1
	Styphelia pallida	0.1
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	1
	Wahlenbergia preissii	0.1
	Waitzia suaveolens	0.1
	Xanthorrhoea preissii	5

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q4

Project no.: EP24-129
Date: 26/09/2024, 7/11/24
Author: TAA,TAA

Status Permanent
Q4: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388267.0977	NW corner northing:	6474937.112
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	excellent

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q4

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: TAA,TAA Q4: Page 2 of 3

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia applanata	0.1
	Acacia stenoptera	Opp
	Alexgeorgea nitens	0.1
	Amphipogon turbinatus	5
	Austrostipa compressa	0.1
	Austrostipa flavescens	0.1
	Banksia menziesii	20
	Billardiera fraseri	0.1
	Bossiaea eriocarpa	0.1
*	*Briza maxima*	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Calytrix angulata	0.1
	Conostephium pendulum	0.1
	Conostylis setigera	0.1
	Dasypogon bromeliifolius	0.1
	Daviesia nudiflora	0.1
	Daviesia triflora	0.1
	Desmocladus flexuosus	0.1
	Dianella revoluta var. divaricata	0.1
	Disa bracteata	Opp
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
*	*Erigeron bonariensis*	0.1
	Eucalyptus marginata	1
	Gastrolobium capitatum	0.1
*	*Gaudium laevigatum*	Opp
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Hibbertia huegelii	0.1
	Hibbertia hypericoides	0.1
	Hyalosperma cotula	0.1
	Hypocalymma robustum	0.1
	Jacksonia furcellata	Opp
	Lepidosperma ?squamatum	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q4

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: TAA,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Levenhookia stipitata	Opp
	Lomandra hermaphrodita	0.1
	Lomandra suaveolens	Opp
	Lyginia barbata	0.1
	Mesomelaena pseudostygia	0.1
	Microlaena stipoides	0.1
*, DP	*Moraea flaccida*	0.1
	Patersonia occidentalis	0.1
*	*Pelagonium capitatum*	0.1
	Persoonia saccata	Opp
	Petrophile linearis	0.1
	Philotheca spicata	0.1
	Phlebocarya ciliata	Opp
	Phyllangium paradoxum	0.1
	Pterostylis ?vittata	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	0.1
	Scaevola repens	Opp
	Schoenus curvifolius	0.1
	Schoenus subfascicularis	10
	Siloxerus humifusus	0.1
	Stirlingia latifolia	0.1
	Stylidium androsaceum	0.1
	Stylidium piliferum	0.1
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
	Xanthorrhoea preissii	5
	Xanthosia ciliata	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q5

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q5: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388389.9306	NW corner northing:	6475249.42
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q5

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia applanata	0.1
	Alexgeorgea nitens	0.1
	Anigozanthos manglesii subsp. manglesii	0.1
	Banksia attenuata	2
	Banksia menziesii	opp
	Bossiaea eriocarpa	0.1
*	*Briza maxima*	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Caladenia flava	0.1
	Centrolepis drummondiana	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Conostylis setigera	0.1
	Daviesia triflora	1
	Desmocladus flexuosus	5
	Dianella revoluta var. divaricata	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	1
	Eucalyptus marginata	30
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	1
	Haemodorum laxum	0.1
	Hardenbergia comptoniana	0.1
*	*Heliophila pusilla*	0.1
	Hibbertia hypericoides	1
	Hibbertia huegelii	0.1
	Hypocalymma robustum	1
*	*Hypochaeris glabra*	0.1
	Jacksonia furcellata	opp
	Jacksonia sternbergiana	0.1
	Lomandra preissii	0.1
	Lomandra suaveolens	0.1
	Lyginia barbata	opp
	Macrozamia fraseri	opp
	Mesomelaena pseudostygia	1
	Morelotia octandra	2

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q5

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Patersonia occidentalis	0.1
*	*Pelagonium capitatum*	opp
	Phlebocarya ciliata	opp
	Phyllangium paradoxum	0.1
	Pigea calycina	0.1
	Pigea calycina	0.1
	Pithocarpa cordata	0.1
	Poranthera microphylla	0.1
	Pterostylis sanguinea	0.1
*	*Romulea rosea*	0.1
	Scaevola repens	1
	Sowerbaea laxifolia	1
	Stirlingia latifolia	1
	Stylidium androsaceum	0.1
	Styphelia sp.	0.1
	Thelymitra macrophylla	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	1
	Wahlenbergia preissii	0.1
	Waitzia suaveolens	0.1
	Xanthorrhoea preissii	30

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q6

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q6: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388446.2213	NW corner northing:	6475233.07
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	excellent

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q6

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q6: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
P2	*Acacia benthamii*	opp
	Alexgeorgea nitens	2
	Amphipogon turbinatus	opp
	Anigozanthos humilis subsp. humilis	0.1
	Banksia menziesii	10
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Caladenia flava	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Conostylis setigera	0.1
	Daviesia nudiflora	0.1
	Daviesia triflora	0.1
	Desmocladus flexuosus	5
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
	Elythranthera brunonis	opp
	Eucalyptus marginata	30
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum laxum	0.1
	Hibbertia huegelii	opp
	Hibbertia hypericoides	2
	Hovea trisperma var. trisperma	0.1
	Hypocalymma robustum	0.1
*	*Isolepis marginata*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Laxmannia squarrosa	opp
	Lepidosperma leptostachyum	0.1
	Levenhookia stipitata	opp
	Lomandra hermaphrodita	0.1
	Lyginia barbata	0.1
	Mesomelaena pseudostygia	0.1
	Morelotia octandra	1
	Neurachne alopecuroidea	0.1
	Patersonia occidentalis	20

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q6

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Petrophile brevifolia subsp. brevifolia	0.1
	Petrophile macrostachya	opp
	Philotheca spicata	0.1
	Phyllangium paradoxum	0.1
	Pimelea leucantha	0.1
	Ptilotus manglesii	0.1
*	*Romulea rosea*	0.1
	Rytidosperma occidentale	0.1
	Scaevola repens	0.1
	Stenanthemum notiale subsp. chamelum	0.1
	Stirlingia latifolia	2
	Stylidium androsaceum	0.1
	Stylidium piliferum	0.1
	Thelymitra macrophylla	opp
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	0.1
	Waitzia suaveolens	opp
	Xanthorrhoea preissii	25
	Xanthosia ciliata	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q7

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q7: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388428.9807	NW corner northing:	6475138.981
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	moderate - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q7

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q7: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia stenoptera	opp
	Alexgeorgea nitens	5
	Amphipogon turbinatus	0.1
	Austrostipa hemipogon	0.1
	Banksia attenuata	opp
	Banksia prionotes	15
	Caladenia flava	0.1
	Calytrix angulata	1
	Conostylis setigera	0.1
	Daviesia nudiflora	0.1
	Daviesia triflora	2
	Drosera drummondii	opp
	Eremaea pauciflora var. pauciflora	opp
	Eucalyptus marginata	opp
	Gastrolobium capitatum	2
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum spicatum	0.1
	Hibbertia huegelii	1
	Hibbertia hypericoides	2
	Hypocalymma robustum	1
P4	*Jacksonia sericea*	1
	Levenhookia stipitata	0.1
	Lyginia barbata	1
	Mesomelaena pseudostygia	1
	Patersonia occidentalis	0.1
	Pigea calycina	1
*	*Romulea rosea*	0.1
	Stirlingia latifolia	15
	Stylidium androsaceum	0.1
	Thysanotus manglesianus	opp
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
*	*Verticordia densiflora*	1
	Wahlenbergia preissii	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q7

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Waitzia suaveolens	0.1
	Xanthorrhoea preissii	2
	Xanthosia ciliata	opp

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q8

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q8: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388398.806	NW corner northing:	6475103.177
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	excellent

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q8

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
P2	*Acacia benthamii*	0.1
	Acacia stenoptera	Opp
	Alexgeorgea nitens	70
	Allocasuarina fraseriana	opo
	Austrostipa compressa	Opp
	Austrostipa hemipogon	0.1
	Banksia prionotes	Opp
	Billardiera fraseri	0.1
*	*Briza maxima*	Opp
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Calytrix angulata	Opp
	Calytrix fraseri	Opp
	Chamaescilla corymbosa var. corymbosa	Opp
	Conostephium pendulum	Opp
	Daviesia divaricata subsp. divaricata	Opp
	Daviesia nudiflora	Opp
	Daviesia triflora	0.1
	Dianella revoluta var. divaricata	0.1
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
	Eucalyptus marginata	25
	Gastrolobium capitatum	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum laxum	Opp
	Haemodorum spicatum	Opp
	Hibbertia hypericoides	0.1
	Laxmannia squarrosa	Opp
	Lomandra nigricans	0.1
	Lomandra sericea	Opp
	Lomandra suaveolens	Opp
	Mesomelaena pseudostygia	1
	Morelotia octandra	opp
	Patersonia occidentalis	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q8

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Petrophile macrostachya	opp
	Philotheca spicata	Opp
	Phyllangium paradoxum	0.1
	Pterostylis ?sanguinea	0.1
	Ptilotus manglesii	0.1
	Ptilotus manglesii	Opp
	Pyrorchis nigricans	0.1
*	*Romulea rosea*	0.1
	Rytidosperma occidentale	Opp
	Stirlingia latifolia	8
	Stylidium androsaceum	0.1
	Thelymitra macrophylla	0.1
	Thysanotus sparteus	Opp
	Trachymene pilosa	0.1
	Waitzia suaveolens	0.1
	Waitzia suaveolens	Opp
	Xanthorrhoea preissii	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q9

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q9: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388097.7349	NW corner northing:	6474875.18
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	depression
Time since fire:	> 5 yrs	Disturbance:	moderate - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	brown/
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q9

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia cyclops	Opp
	Alexgeorgea nitens	0.1
	Anigozanthos humilis subsp. humilis	Opp
	Austrostipa compressa	0.1
	Banksia ilicifolia	opp
	Banksia menziesii	15
	Bossiaea eriocarpa	Opp
*	*Briza maxima*	Opp
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Caladenia flava	0.1
	Calytrix fraseri	Opp
	Conostephium pendulum	Opp
	Conostylis aculeata subsp. cygnorum	0.1
	Dasypogon bromeliifolius	Opp
	Dianella revoluta var. divaricata	0.1
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
*	*Ehrharta longiflora*	0.1
	Eremaea pauciflora var. pauciflora	Opp
	Eucalyptus marginata	2
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum spicatum	Opp
	Homalosciadium homalocarpum	0.1
	Jacksonia furcellata	1
	Lepidosperma sp.	0.1
	Lomandra hermaphrodita	0.1
	Lomandra sericea	Opp
	Lyginia barbata	Opp
	Macrozamia fraseri	0.1
	Melaleuca preissiana	10
	Microlaena stipoides	0.1
	Microtis media	0.1
*, DP	*Moraea flaccida*	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q9

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Opercularia vaginata	Opp
	Patersonia occidentalis	0.1
*	*Pentameris airoides subsp. airoides*	Opp
	Petrophile linearis	Opp
	Poranthera microphylla	0.1
	Pyrorchis nigricans	0.1
*	*Romulea rosea*	0.1
	Schoenus subfascicularis	70
	Stylidium repens	Opp
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	Opp
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	0.1
	Xanthorrhoea preissii	30
	Xanthosia ciliata	Opp

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q10

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q10: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388036.9927	NW corner northing:	6474952.788
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	1-2 yrs	Disturbance:	moderate - weeds, fire
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (branches,leaves,)	Vegetation condition:	good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q10

Project no.: EP24-129
Date: 26/09/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q10: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia stenoptera	opp
*	*Aira cupaniana*	0.1
	Alexgeorgea nitens	0.1
*	*Arctotheca calendula*	0.1
	Austrostipa compressa	0.1
	Austrostipa flavescens	0.1
	Austrostipa hemipogon	2
	Banksia attenuata	10
	Bossiaea eriocarpa	opp
*	*Briza maxima*	1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Caladenia flava	0.1
	Centrolepis drummondiana	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Conostylis setigera	opp
	Corynotheca micrantha	opp
	Daviesia nudiflora	0.1
	Daviesia triflora	2
	Desmocladus flexuosus	2
	Dianella revoluta var. divaricata	0.1
*	*Ehrharta calycina*	5
	Eremaea pauciflora var. pauciflora	0.1
	Eryngium pinnatifidum	0.1
	Eucalyptus marginata	5
	Gastrolobium capitatum	Opp
*	*Gladiolus caryophyllaceus*	0.1
	Haemodorum laxum	0.1
	Haemodorum spicatum	0.1
	Hardenbergia comptoniana	1
	Hibbertia huegelii	opp
	Hibbertia hypericoides	1
	Homalosciadium homalocarpum	0.1
*	*Hypochaeris glabra*	0.1
*	*Isolepis marginata*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q10

Project no.: EP24-129

Date: 26/09/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Kennedia prostrata	opp
*	*Lactuca serriola forma serriola*	0.1
	Lepidosperma ?squamatum	0.1
	Lepidosperma leptostachyum	0.1
	Lomandra hermaphrodita	0.1
	Lomandra sericea	0.1
	Lyperanthus serratus	0.1
	Mesomelaena pseudostygia	0.1
	Microlaena stipoides	0.1
	Morelotia octandra	1
	Orthrosanthus laxus var. laxus	0.1
	Patersonia occidentalis	0.1
*	*Pentameris airoides subsp. airoides*	Opp
	Pimelea leucantha	0.1
	Podotheca chrysantha	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	0.1
*	*Romulea rosea*	0.1
	Schoenus subfascicularis	0.1
*	*Sonchus oleraceus*	0.1
	Sowerbaea laxifolia	0.1
	Stirlingia latifolia	10
	Stylidium androsaceum	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	5
*	*Wahlenbergia capensis*	0.1
	Wahlenbergia preissii	0.1
	Waitzia suaveolens	0.1
	Xanthorrhoea preissii	40

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q11

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q11: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388056.2006	NW corner northing:	6474874.727
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	lower slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	brown/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q11

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA

Species Data

* denotes non-native species

Status		Confirmed name	Cover (%)
	P2	*Acacia benthamii*	Opp
		Acacia rostellifera	Opp
	*	*Aira cupaniana*	0.1
		Alexgeorgea nitens	2
		Amphipogon turbinatus	1
		Anigozanthos humilis subsp. humilis	opp
		Austrostipa compressa	0.1
		Banksia menziesii	5
		Bossiaea eriocarpa	5
		Burchardia congesta	0.1
		Caesia micrantha	opp
		Caladenia arenicola	0.1
		Callitris preissii	opp
		Calytrix fraseri	Opp
	*	*Carpobrotus edulis*	opp
		Conostephium pendulum	1
		Conostylis aculeata subsp. cygnorum	0.1
		Conostylis setigera	0.1
		Dasypogon bromeliifolius	Opp
		Desmocladus flexuosus	0.1
		Dianella revoluta var. divaricata	0.1
		Drosera drummondii	0.1
		Drosera micrantha	0.1
	*	*Ehrharta calycina*	0.1
		Eremaea pauciflora var. pauciflora	40
		Gastrolobium capitatum	0.1
	*	*Gladiolus caryophyllaceus*	0.1
		Gompholobium tomentosum	0.1
	*	*Heliophila pusilla*	0.1
		Homalosciadium homalocarpum	0.1
		Hypolaena exsulca	opp
		Lepidosperma sp.	1
		Levenhookia stipitata	0.1
		Lomandra hermaphrodita	1
		Lomandra sericea	0.1
		Lomandra suaveolens	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q11

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Lyginia imberbis	10
	Microtis media	0.1
*, DP	*Moraea flaccida*	0.1
	Patersonia occidentalis	0.1
*	*Pentameris airoides subsp. airoides*	0.1
	Petrophile brevifolia subsp. brevifolia	0.1
	Philotheca spicata	1
	Phlebocarya ciliata	0.1
	Phyllangium paradoxum	0.1
	Podotheca angustifolia	Opp
	Schoenus curvifolius	1
	Siloxerus humifusus	0.1
	Stirlingia latifolia	Opp
	Stylidium androsaceum	0.1
	Stylidium piliferum	Opp
	Stylidium repens	0.1
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
	Xanthorrhoea brunonis subsp. brunonis	0.1
	Xanthorrhoea preissii	30

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q12

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q12: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388386.2278	NW corner northing:	6474945.836
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	lower slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	brown/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	excellent

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q12

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia applanata	Opp
P2	*Acacia benthamii*	Opp
	Alexgeorgea nitens	2
	Amphipogon turbinatus	Opp
	Banksia menziesii	15
	Bossiaea eriocarpa	0.1
*	*Briza maxima*	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Calytrix fraseri	Opp
	Conostephium pendulum	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Conostylis setigera	Opp
	Daviesia divaricata subsp. divaricata	Opp
	Daviesia triflora	0.1
	Desmocladus flexuosus	2
	Dianella revoluta var. divaricata	Opp
*	*Disa bracteata*	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
	Eucalyptus marginata	30
	Gastrolobium capitatum	Opp
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	opp
	Haemodorum laxum	0.1
	Haemodorum spicatum	Opp
	Hardenbergia comptoniana	Opp
	Hibbertia huegelii	0.1
	Hibbertia hypericoides	1
	Hypocalymma robustum	1
	Lepidosperma leptostachyum	0.1
	Lomandra hermaphrodita	0.1
	Lomandra preissii	0.1
	Lomandra suaveolens	Opp
	Lyginia barbata	1
	Mesomelaena pseudostygia	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q12

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Microlaena stipoides	0.1
	Microtis media	0.1
	Monotaxis grandiflora var. grandiflora	0.1
	Morelotia octandra	2
	Patersonia occidentalis	15
	Petrophile macrostachya	Opp
	Philotheca spicata	Opp
	Pterostylis vittata	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	2
	Scaevola repens	Opp
	Stirlingia latifolia	1
	Stylidium androsaceum	Opp
	Tetratheca hirsuta subsp. viminea	0.1
	Thelymitra ?vulgaris	0.1
	Thelymitra macrophylla	0.1
	Thysanotus arenarius	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	Opp
	Waitzia suaveolens	Opp
	Xanthorrhoea brunonis subsp. brunonis	0.1
	Xanthorrhoea preissii	25
	Xanthosia ciliata	Opp

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q13

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q13: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388348.6543	NW corner northing:	6475042.322
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q13

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia stenoptera	0.1
	Alexgeorgea nitens	1
	Anigozanthos humilis subsp. humilis	0.1
	Banksia menziesii	10
	Banksia prionotes	20
	Bossiaea eriocarpa	0.1
*	*Briza maxima*	0.1
	Calytrix angulata	Opp
	Calytrix fraseri	15
	Conostephium pendulum	1
	Conostylis setigera	0.1
	Crassula colorata	0.1
	Daviesia triflora	0.1
	Drosera drummondii	0.1
*	*Ehrharta calycina*	0.1
	Eucalyptus marginata	15
*	*Gladiolus caryophyllaceus*	0.1
	Haemodorum laxum	0.1
	Hypocalymma robustum	Opp
*	*Hypochaeris glabra*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Lepidosperma leptostachyum	0.1
	Levenhookia stipitata	0.1
	Lomandra hermaphrodita	0.1
	Lomandra nigricans	0.1
	Lomandra suaveolens	0.1
	Lomandra suaveolens	Opp
	Mesomelaena pseudostygia	1
	Microtis media	0.1
	Morelotia octandra	0.1
	Neurachne alopecuroidea	0.1
	Opercularia vaginata	0.1
	Patersonia occidentalis	0.1
	Persoonia saccata	Opp
	Phyllangium paradoxum	0.1
	Pigea calycina	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q13

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Pyrorchis nigricans	0.1
*	*Romulea rosea*	0.1
	Scaevola repens	1
	Stirlingia latifolia	2
	Stylidium androsaceum	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
	Waitzia suaveolens	Opp
	Xanthorrhoea preissii	30

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q14

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388305.117	NW corner northing:	6475121.559
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q14

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia stenoptera	0.1
	Alexgeorgea nitens	0.1
	Austrostipa compressa	0.1
	Austrostipa flavescens	0.1
	Banksia prionotes	20
*	*Briza maxima*	0.1
	Calytrix fraseri	30
	Centrolepis drummondiana	0.1
	Corynotheca micrantha	0.1
	Daviesia nudiflora	3
	Daviesia triflora	2
	Dianella revoluta var. divaricata	opp
	Diuris corymbosa	0.1
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
	Gastrolobium capitatum	1
*	*Gaudium laevigatum*	0.1
*	*Gladiolus caryophyllaceus*	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	1
	Haemodorum laxum	0.1
	Hibbertia hypericoides	opp
	Hypocalymma robustum	0.1
*	*Hypochaeris glabra*	0.1
	Laxmannia squarrosa	0.1
	Levenhookia stipitata	0.1
	Lomandra hermaphrodita	0.1
	Lyginia barbata	1
	Microtis media	0.1
	Opercularia vaginata	0.1
	Phyllangium paradoxum	0.1
	Podotheca chrysantha	opp
	Ptilotus manglesii	opp
*	*Romulea rosea*	0.1
	Scaevola repens	opp

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q14

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Stirlingia latifolia	5
	Stylidium androsaceum	0.1
	Thysanotus manglesianus	opp
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	0.1
	Waitzia suaveolens	0.1
	Xanthorrhoea brunonis subsp. brunonis	1
	Xanthorrhoea preissii	2

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q15

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388286.787	NW corner northing:	6475188.654
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	upper slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	20% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q15

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Alexgeorgea nitens	3
	Anigozanthos manglesii subsp. manglesii	0.1
	Banksia menziesii	1
	Banksia prionotes	opp
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Conostylis setigera	0.1
	Corynotheca micrantha	0.1
	Daviesia divaricata subsp. divaricata	0.1
	Daviesia triflora	1
	Desmocladus flexuosus	0.1
	Drosera erythrorhiza	0.1
	Eryngium pinnatifidum	0.1
	Eucalyptus marginata	40
*	*Freesia leichtlinii subsp. alba × leichtlinii subsp. leichtlinii*	3
	Gastrolobium capitatum	0.1
	Hardenbergia comptoniana	0.1
	Hibbertia hypericoides	1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Lepidosperma leptostachyum	1
	Lomandra hermaphrodita	1
	Lomandra hermaphrodita	0.1
	Lomandra nigricans	0.1
	Mesomelaena pseudostygia	1
	Microlaena stipoides	0.1
	Monotaxis grandiflora var. grandiflora	0.1
	Morelotia octandra	2
	Orthrosanthus laxus var. laxus	3
	Patersonia occidentalis	2
	Pterostylis vittata	0.1
	Ptilotus manglesii	0.1
	Ricinocarpus undulatus	0.1
*	*Romulea rosea*	0.1
	Scaevola canescens	0.1
	Scaevola repens	opp
	Sowerbaea laxifolia	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q15

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Stirlingia latifolia	0.1
	Thelymitra macrophylla	0.1
	Thysanotus sparteus	0.1
	Xanthorrhoea brunonis subsp. brunonis	0.1
	Xanthorrhoea preissii	30

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q16

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388232.5066	NW corner northing:	6475089.838
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q16

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia cyclops	**opp**
	Austrostipa hemipogon	0.1
	Banksia prionotes	20
	Caladenia flava	0.1
	Calytrix fraseri	2
	Corynotheca micrantha	0.1
	Daviesia nudiflora	0.1
	Dianella revoluta var. divaricata	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	1
	Gastrolobium capitatum	15
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
*	*Hypochaeris glabra*	0.1
P4	*Jacksonia sericea*	2
	Mesomelaena pseudostygia	2
	Nuytsia floribunda	0.1
*	*Pelagonium capitatum*	0.1
	Pterostylis vittata	0.1
	Ptilotus polystachyus	2
*	*Romulea rosea*	0.1
	Stirlingia latifolia	5
	Thelymitra benthamiana	opp
	Thelymitra macrophylla	0.1
	Thysanotus manglesianus	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
	Xanthorrhoea preissii	10

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q16

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q17

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q17: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388222.8919	NW corner northing:	6475016.896
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	1
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	10% (leaves,branches,twigs)	Vegetation condition:	excellent

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q17

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia applanata	0.1
	Alexgeorgea nitens	15
	Allocasuarina fraseriana	opp
	Banksia attenuata	10
	Banksia menziesii	2
	Billardiera fraseri	0.1
	Bossiaea eriocarpa	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Caladenia flava	0.1
	Conostephium pendulum	0.1
	Conostylis aurea	0.1
	Conostylis setigera	opp
	Corynotheca micrantha	opp
	Daviesia nudiflora	opp
	Daviesia triflora	0.1
	Desmocladus flexuosus	Opp
	Drosera drummondii	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	0.1
*	*Ehrharta longiflora*	0.1
	Eucalyptus marginata	30
	Gastrolobium capitatum	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum laxum	2
	Hibbertia hypericoides	5
	Hypocalymma robustum	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Lagenophora ?platysperma	Opp
	Lepidosperma ?pubisquameum	0.1
	Lomandra hermaphrodita	0.1
	Lomandra sericea	0.1
	Lomandra suaveolens	0.1
	Macrozamia fraseri	1
	Mesomelaena pseudostygia	Opp

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q17

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Microlaena stipoides	0.1
	Monotaxis grandiflora var. grandiflora	1
	Morelotia octandra	10
	Opercularia vaginata	0.1
	Orthrosanthus laxus var. laxus	0.1
	Patersonia occidentalis	10
	Philotheca spicata	0.1
	Poranthera microphylla	0.1
	Pterostylis sp.	0.1
	Pterostylis vittata	0.1
	Ptilotus manglesii	0.1
	Pyrorchis nigricans	0.1
	Ricinocarpus undulatus	1
	Schoenus subfascicularis	2
	Stirlingia latifolia	0.1
	Tetratheca hirsuta subsp. viminea	0.1
	Tricoryne elatior	0.1
	Xanthorrhoea brunonis subsp. brunonis	2
	Xanthorrhoea preissii	15

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q18

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,TAA Q18: Page 1 of 3

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388234.799	NW corner northing:	6474983.545
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	low - weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	degraded

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q18

Project no.: EP10-017(30)

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia applanata	0.1
	Acacia stenoptera	0.1
*	*Aira cupaniana*	0.1
	Austrostipa compressa	0.1
	Banksia menziesii	opp
	Bossiaea eriocarpa	0.1
	Burchardia congesta	0.1
	Calandrinia corrigioloides	0.1
	Centrolepis drummondiana	0.1
	Conostephium pendulum	opp
	Conostylis setigera	0.1
	Daviesia nudiflora	2
	Daviesia triflora	1
	Desmocladus flexuosus	0.1
	Dianella revoluta var. divaricata	opp
	Diuris corymbosa	0.1
*	*Ehrharta calycina*	0.1
	Eremaea pauciflora var. pauciflora	60
	Gastrolobium capitatum	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum laxum	0.1
	Haemodorum spicatum	Opp
	Hibbertia hypericoides	2
	Hibbertia huegelii	1
	Homalosciadium homalocarpum	0.1
	Hovea trisperma var. trisperma	0.1
*	*Hypochaeris glabra*	0.1
	Lepidosperma leptostachyum	0.1
	Lomandra hermaphrodita	0.1
	Lyginia imberbis	2
	Mesomelaena pseudostygia	1
	Monotaxis grandiflora var. grandiflora	0.1
	Patersonia occidentalis	10
	Philotheca spicata	1
	Phyllangium paradoxum	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q18

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,TAA

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Poranthera microphylla	0.1
	Ptilotus manglesii	0.1
	Ptilotus manglesii	0.1
	Rytidosperma occidentale	0.1
	Siloxerus humifusus	0.1
	Stylidium androsaceum	0.1
	Stylidium piliferum	0.1
	Thysanotus arenarius	Opp
	Thysanotus manglesianus	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	0.1
	Xanthorrhoea preissii	20
	Xanthosia ciliata	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q19

Project no.: EP24-129
Date: 8/10/2024, 7/11/24
Status Permanent
Author: RAW,SKP

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388024.9097	NW corner northing:	6475158.419
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	1-2 yrs	Disturbance:	high - fire, weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	15
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q19

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Ammothryon grandiflorum	5
	Austrostipa compressa	0.1
	Banksia prionotes	1
	Conostylis aculeata subsp. cygnorum	0.1
	Corynotheca micrantha	0.1
	Crassula colorata	0.1
	Desmocladus flexuosus	0.1
	Dianella revoluta var. divaricata	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	15
	Eucalyptus gomphocephala	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Grevillea vestita	5
	Haemodorum spicatum	1
*	*Hypochaeris glabra*	0.1
*	*Isolepis marginata*	0.1
P4	*Jacksonia sericea*	20
	Lepidosperma leptostachyum	0.1
	Lomandra hermaphrodita	0.1
*	*Lupinus cosentinii*	0.1
*	*Oxalis glabra*	0.1
*	*Petrorhagia dubia*	0.1
	Ptilotus manglesii	0.1
	Ptilotus polystachyus	0.1
	Styphelia propinqua	0.1
	Synaphea spinulosa subsp. spinulosa	0.1
	Thysanotus arenarius	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	10
*	*Wahlenbergia capensis*	0.1
	Xanthorrhoea brunonis subsp. brunonis	1
	Xanthorrhoea preissii	30

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q19

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q20

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q20: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	387915.1629	NW corner northing:	6475217.421
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	upper slope
Time since fire:	1-2 yrs	Disturbance:	moderate - fire, weeds
Soil type/texture	sand/	Bare ground (%):	7
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q20

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia applanata	0.1
	Alexgeorgea nitens	0.1
	Anigozanthos manglesii subsp. manglesii	1
	Austrostipa compressa	0.1
	Banksia attenuata	15
*	*Briza maxima*	0.1
*	*Briza minor*	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Calandrinia corrigioloides	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Conostylis setigera	0.1
	Crassula colorata	0.1
	Daviesia divaricata subsp. divaricata	5
	Daviesia nudiflora	2
	Desmocladus flexuosus	opp
	Dianella revoluta var. divaricata	0.1
	Drosera erythrorhiza	0.1
*	*Ehrharta calycina*	10
	Eryngium pinnatifidum	0.1
	Eucalyptus gomphocephala	opp
	Eucalyptus marginata	5
	Gastrolobium capitatum	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Grevillea vestita	0.1
	Haemodorum paniculatum	0.1
	Haemodorum spicatum	0.1
	Hardenbergia comptoniana	0.1
	Hibbertia huegelii	1
	Hibbertia hypericoides	1
	Homalosciadium homalocarpum	1
*	*Hypochaeris glabra*	0.1
*	*Isolepis marginata*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Kennedia prostrata	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q20

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
*	*Lactuca serriola forma serriola*	0.1
	Lomandra suaveolens	1
	Lomandra suaveolens	0.1
	Macrozamia fraseri	5
	Mesomelaena pseudostygia	1
*, DP	*Moraea flaccida*	0.1
	Morelotia octandra	5
	Patersonia occidentalis	0.1
	Pentameris airoides subsp. airoides	0.1
	Scaevola canescens	2
*	*Sonchus oleraceus*	0.1
	Sowerbaea laxifolia	0.1
	Stirlingia latifolia	1
	Stylidium androsaceum	0.1
	Styphelia pallida	0.1
	Thysanotus sparteus	0.1
	Trachymene pilosa	0.1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	0.1
*	*Wahlenbergia capensis*	0.1
	Xanthorrhoea preissii	40

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q21

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q21: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	387804.2953	NW corner northing:	6475214.325
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	upper slope
Time since fire:	1-2 yrs	Disturbance:	moderate - fire, weeds
Soil type/texture	sand/	Bare ground (%):	7
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q21

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Allocasuarina fraseriana	opp
	Anigozanthos humilis subsp. humilis	1
	Austrostipa compressa	0.1
	Banksia attenuata	opp
*	*Briza minor*	0.1
	Burchardia congesta	0.1
	Caesia micrantha	0.1
	Conostylis aculeata subsp. cygnorum	1
	Corynotheca micrantha	0.1
	Daviesia triflora	2
	Desmocladus flexuosus	0.1
*	*Ehrharta calycina*	20
	Eryngium pinnatifidum	0.1
	Eucalyptus gomphocephala	opp
	Eucalyptus marginata	5
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Haemodorum paniculatum	5
	Haemodorum spicatum	0.1
	Hibbertia huegelii	1
	Hibbertia hypericoides	2
	Hibbertia racemosa	0.1
	Homalosciadium homalocarpum	0.1
	Hovea trisperma var. trisperma	0.1
	Hypocalymma robustum	opp
*	*Hypochaeris glabra*	0.1
*	*Isolepis marginata*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Kennedia prostrata	1
*	*Lactuca serriola forma serriola*	0.1
	Lomandra preissii	0.1
	Mesomelaena pseudostygia	1
	Morelotia octandra	5
	Patersonia occidentalis	2
	Pentameris airoides subsp. airoides	0.1
	Persoonia saccata	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q21

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Pimelea sulphurea	0.1
	Podotheca angustifolia	0.1
	Ptilotus manglesii	0.1
	Scaevola canescens	1
	Scaevola repens	1
	Sowerbaea laxifolia	0.1
	Stirlingia latifolia	10
	Stylidium androsaceum	0.1
	Stylidium brunonianum	0.1
	Styphelia pallida	1
	Trachymene pilosa	0.1
*	*Ursinia anthemoides*	3
	Wahlenbergia preissii	0.1
	Xanthorrhoea brunonis subsp. brunonis	2
	Xanthorrhoea preissii	40

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q22

Project no.: EP24-129
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q22: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	387825.8674	NW corner northing:	6475153.919
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	1-2 yrs	Disturbance:	high - fire, weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	10
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	2% (leaves,branches,twigs)	Vegetation condition:	degraded

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q22

Project no.: EP10-017(30)
Date: 8/10/2024, 7/11/24 **Status** Permanent
Author: RAW,SKP Q22: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Austrostipa compressa	0.1
*	*Avena barbata*	2
	Banksia prionotes	1
	Caladenia arenicola	0.1
	Conostylis aculeata subsp. cygnorum	1
	Daviesia divaricata subsp. divaricata	3
	Daviesia triflora	1
*	*Ehrharta calycina*	10
	Gastrolobium capitatum	1
*	*Gladiolus caryophyllaceus*	0.1
	Hardenbergia comptoniana	opp
*	*Hypochaeris glabra*	1
P4	*Jacksonia sericea*	2
*	*Lactuca serriola forma serriola*	0.1
*	*Leontodon rhagadioloides*	0.1
	Lepidosperma leptostachyum	0.1
	Lomandra hermaphrodita	0.1
*	*Lupinus cosentinii*	1
*	*Lysimachia arvensis*	0.1
*, DP	*Moraea flaccida*	0.1
*	*Pelagonium capitatum*	20
	Podotheca chrysantha	0.1
	Ptilotus polystachyus	1
*	*Romulea rosea*	0.1
	Stirlingia latifolia	3
	Styphelia propinqua	2
	Trachymene pilosa	0.1
	Tricoryne elatior	1
*	*Ursinia anthemoides*	3
	Xanthorrhoea preissii	5

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q22

Project no.: EP24-129

Date: 8/10/2024, 7/11/24 **Status** Permanent

Author: RAW,SKP

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q23

Project no.: EP24-129
Date: 10/10/2024, 7/11/24 **Status** Permanent
Author: SKP,SKP Q23: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388024.5815	NW corner northing:	6475014.958
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	1-2 yrs	Disturbance:	high - fire, weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	10
Rocks (%) and type:	No rocks	Soil colour:	brown/orange
Litter:	2% (branches,twigs,)	Vegetation condition:	degraded

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q23

Project no.: EP10-017(30)

Date: 10/10/2024, 7/11/24 **Status** Permanent

Author: SKP,SKP Q23: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Acacia cyclops	0.1
*	*Anthoxanthum odoratum*	0.1
	Austrostipa compressa	0.1
*	*Avena barbata*	5
	Banksia prionotes	10
	Conostylis aculeata subsp. cygnorum	0.1
	Corynotheca micrantha	0.1
	Eucalyptus gomphocephala	opp
*	*Euphorbia terracina*	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Grevillea vestita	10
	Haemodorum spicatum	0.1
	Hakea prostrata	1
	Hardenbergia comptoniana	0.1
	Jacksonia furcellata	3
P4	*Jacksonia sericea*	0.1
	Kennedia prostrata	1
	Macrozamia fraseri	2
*	*Pelagonium capitatum*	5
*	*Petrorhagia dubia*	2
	Ptilotus polystachyus	0.1
*	*Silene gallica*	0.1
	Thysanotus arenarius	0.1
*	*Ursinia anthemoides*	0.1
	Xanthorrhoea preissii	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q23

Project no.: EP24-129

Date: 10/10/2024, 7/11/24 **Status** Permanent

Author: SKP,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q24

Project no.: EP24-129
Date: 10/10/2024,7/11/2024 **Status** Permanent
Author: TDP,SKP Q24: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388170.2714	NW corner northing:	6475100.855
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	> 5 yrs	Disturbance:	- weeds, historical clearing
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/
Litter:	5% (leaves,branches,twigs)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q24

Project no.: EP10-017(30)

Date: 10/10/2024,7/11/2024 **Status** Permanent

Author: TDP,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
	Ammothryon grandiflorum	5
	Banksia prionotes	25
	Burchardia congesta	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Dampiera linearis	0.1
	Desmocladus flexuosus	2
	Dianella revoluta var. divaricata	0.1
*	*Ehrharta calycina*	0.1
	Eucalyptus marginata	5
	Gastrolobium capitatum	0.1
*	*Gladiolus caryophyllaceus*	0.1
	Gompholobium tomentosum	0.1
	Grevillea vestita	1
	Haemodorum spicatum	0.1
	Hardenbergia comptoniana	1
	Hibbertia hypericoides	0.1
	Hypocalymma robustum	0.1
*	*Hypochaeris glabra*	0.1
P4	*Jacksonia sericea*	2
	Lomandra hermaphrodita	0.1
	Patersonia occidentalis	3
*	*Pelagonium capitatum*	0.1
	Persoonia saccata	0.1
	Petrophile linearis	0.1
	Philotheca spicata	0.1
	Phyllangium paradoxum	0.1
	Pigea calycina	0.1
*	*Romulea rosea*	0.1
	Scaevola canescens	0.1
	Scaevola repens	0.1
	Scholtzia involucrata	0.1
	Sowerbaea laxifolia	0.1
	Stirlingia latifolia	0.1
	Trachymene pilosa	0.1
	Xanthorrhoea preissii	10

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q24

Project no.: EP24-129

Date: 10/10/2024,7/11/2024 **Status** Permanent

Author: TDP,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q25

Project no.: EP24-129
Date: 10/10/2024, 7/11/2024 **Status** Permanent
Author: SKP,SKP

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	387815.4956	NW corner northing:	6475030.431
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	1-2 yrs	Disturbance:	high - fire, weeds
Soil type/texture	sand/	Bare ground (%):	7
Rocks (%) and type:	No rocks	Soil colour:	grey/orange
Litter:	1% (twigs,leaves,)	Vegetation condition:	good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q25

Project no.: EP10-017(30)
Date: 10/10/2024, 7/11/2024 **Status** Permanent
Author: SKP,SKP Q25: Page 2 of 2

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
P2	*Acacia benthamii*	opp
	Acacia cyclops	0.1
	Alexgeorgea nitens	0.1
	Ammothryon grandiflorum	0.1
	Austrostipa compressa	0.1
*	*Avena barbata*	0.1
	Banksia menziesii	2
	Banksia prionotes	0.1
*	*Briza maxima*	1
	Burchardia congesta	0.1
	Caladenia flava	0.1
	Conostylis aculeata subsp. cygnorum	0.1
	Corynotheca micrantha	2
	Daviesia divaricata subsp. divaricata	0.1
	Daviesia nudiflora	1
	Desmocladus flexuosus	0.1
*	*Ehrharta calycina*	10
*	*Euphorbia terracina*	0.1
	Gompholobium tomentosum	0.1
	Grevillea vestita	5
	Haemodorum laxum	0.1
	Haemodorum spicatum	0.1
	Hibbertia hypericoides	0.1
*	*Hypochaeris glabra*	0.1
	Isotropis cuneifolia subsp. cuneifolia	0.1
	Lepidosperma ?squamatum	0.1
	Lepidosperma leptostachyum	0.1
	Mesomelaena pseudostygia	5
*	*Pentameris airoides subsp. airoides*	8
*	*Pentameris airoides subsp. airoides*	0.1
*	*Petrorhagia dubia*	0.1
	Pigea calycina	0.1
	Podotheca angustifolia	0.1
*	*Polycarpon tetraphyllum*	0.1
	Ptilotus polystachyus	5
	Scaevola canescens	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q25

Project no.: EP24-129

Date: 10/10/2024, 7/11/2024 **Status** Permanent

Author: SKP,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
*	*Silene gallica*	0.1
	Thysanotus arenarius	0.1
	Trachymene pilosa	0.1
	Tricoryne elatior	0.1
*	*Ursinia anthemoides*	1
*	*Wahlenbergia capensis*	0.1
	Xanthorrhoea preissii	5

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q26

Project no.: EP24-129
Date: 10/10/2024, 7/11/2024 **Status** Permanent
Author: SKP,SKP Q26: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	387949.6754	NW corner northing:	6474948.504
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	dry	Landform:	mid-slope
Time since fire:	1-2 yrs	Disturbance:	high - fire, weeds
Soil type/texture	sand/	Bare ground (%):	2
Rocks (%) and type:	No rocks	Soil colour:	grey/
Litter:	2% (twigs,leaves,)	Vegetation condition:	degraded

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q26

Project no.: EP10-017(30)
Date: 10/10/2024, 7/11/2024 **Status** Permanent
Author: SKP,SKP Q26: Page 2 of 2

Species Data

* denotes non-native species

Status		Confirmed name	Cover (%)
	*	*Aira cupaniana*	2
		Alexgeorgea nitens	0.1
		Ammothryon grandiflorum	0.1
	*	*Arctotheca calendula*	0.1
		Banksia attenuata	0.1
		Burchardia congesta	0.1
		Centrolepis drummondiana	0.1
	*	*Chenopodium murale*	2
		Conostylis aculeata subsp. cygnorum	1
		Corynotheca micrantha	0.1
		Daviesia divaricata subsp. divaricata	1
		Daviesia nudiflora	0.1
		Desmocladus flexuosus	0.1
		Dianella revoluta var. divaricata	0.1
	*	*Ehrharta calycina*	10
		Eucalyptus marginata	20
	*	*Euphorbia terracina*	0.1
	*	*Gladiolus caryophyllaceus*	0.1
		Gompholobium tomentosum	0.1
		Haemodorum laxum	0.1
		Haemodorum spicatum	1
	*	*Hypochaeris glabra*	2
	*	*Isolepis marginata*	0.1
		Kennedia prostrata	0.1
	*	*Lactuca serriola forma serriola*	1
		Lomandra hermaphrodita	0.1
	*	*Petrorhagia dubia*	0.1
		Phyllangium paradoxum	0.1
		Podotheca angustifolia	10
	*	*Romulea rosea*	0.1
		Scaevola canescens	1
	*	*Silene gallica*	0.1
	*	*Sonchus oleraceus*	0.1
		Thysanotus arenarius	0.1
		Thysanotus arenarius	0.1
		Trachymene pilosa	0.1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q26

Project no.: EP24-129

Date: 10/10/2024, 7/11/2024 **Status** Permanent

Author: SKP,SKP

Species Data

* denotes non-native species

Status	Confirmed name	Cover (%)
*	*Ursinia anthemoides*	2
	Xanthorrhoea preissii	20

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q27

Project no.: EP24-129
Date: 10/10/2024, 7/11/2024 **Status** Permanent
Author: SKP,SKP Q27: Page 1 of 2

Quadrat and landform details

Sample type:	quadrat	Size:	10 m x 10 m
NW corner easting:	388680.8203	NW corner northing:	6474959.863
Altitude (m):	0	Geographic datum/zone:	GDA94/Zone 50
Soil water content:	slightly damp	Landform:	lower slope
Time since fire:	> 5 yrs	Disturbance:	moderate - weeds
Soil type/texture	sand/	Bare ground (%):	5
Rocks (%) and type:	No rocks	Soil colour:	grey/
Litter:	2% (twigs,leaves,)	Vegetation condition:	very good

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q27

Project no.: EP10-017(30)
Date: 10/10/2024, 7/11/2024 **Status** Permanent
Author: SKP,SKP Q27: Page 2 of 2

Species Data

* denotes non-native species

Status		Confirmed name	Cover (%)
	p2	*Acacia benthamii*	1
	*	*Acacia iteaphylla*	opp
		Alexgeorgea nitens	1
		Banksia menziesii	10
	*	*Briza maxima*	0.1
		Burchardia congesta	0.1
		Calytrix fraseri	30
		Conostylis aculeata subsp. cygnorum	0.1
		Dampiera linearis	0.1
		Daviesia nudiflora	1
		Daviesia triflora	0.1
		Drosera drummondii	0.1
		Drosera macrantha	0.1
	*	*Ehrharta calycina*	3
		Eremaea pauciflora var. pauciflora	2
		Gastrolobium capitatum	0.1
	*	*Gladiolus caryophyllaceus*	0.1
		Gompholobium tomentosum	0.1
		Haemodorum spicatum	0.1
	*	*Hesperantha falcata*	0.1
		Levenhookia stipitata	0.1
		Lomandra caespitosa	0.1
		Lomandra preissii	0.1
		Patersonia occidentalis	0.1
	*	*Pentameris airoides subsp. airoides*	1
		Podotheca angustifolia	0.1
	*	*Romulea rosea*	0.1
		Stirlingia latifolia	5
		Thysanotus sparteus	0.1
		Trachymene pilosa	0.1
	*	*Ursinia anthemoides*	0.1
		Xanthorrhoea preissii	1

Vegetation Sample Data

Lot 802 Erindale Road, Lot 1 and Lot 803 Wanneroo Road, Hamersley

Sample Name: Q27

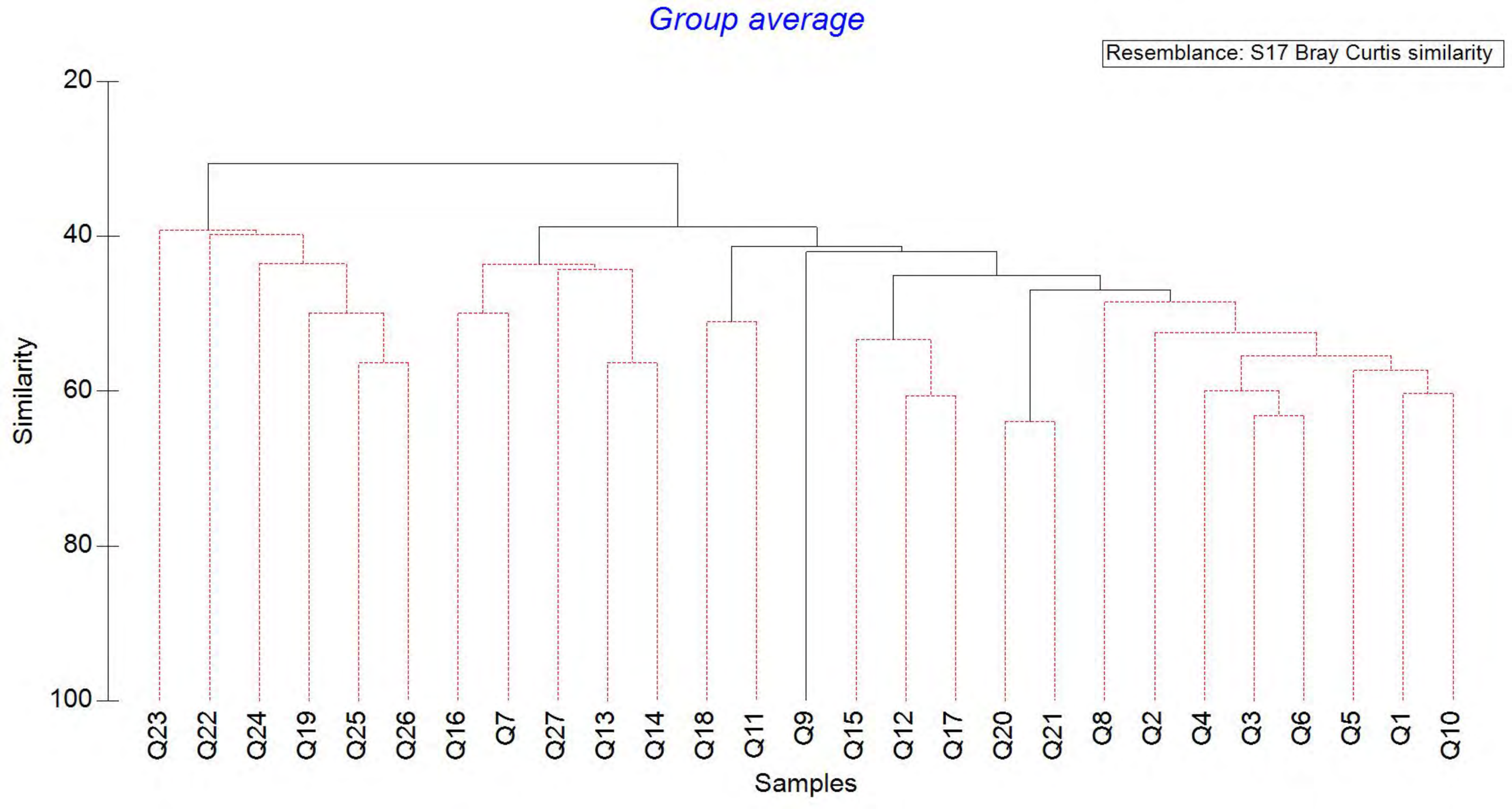
Project no.: EP24-129

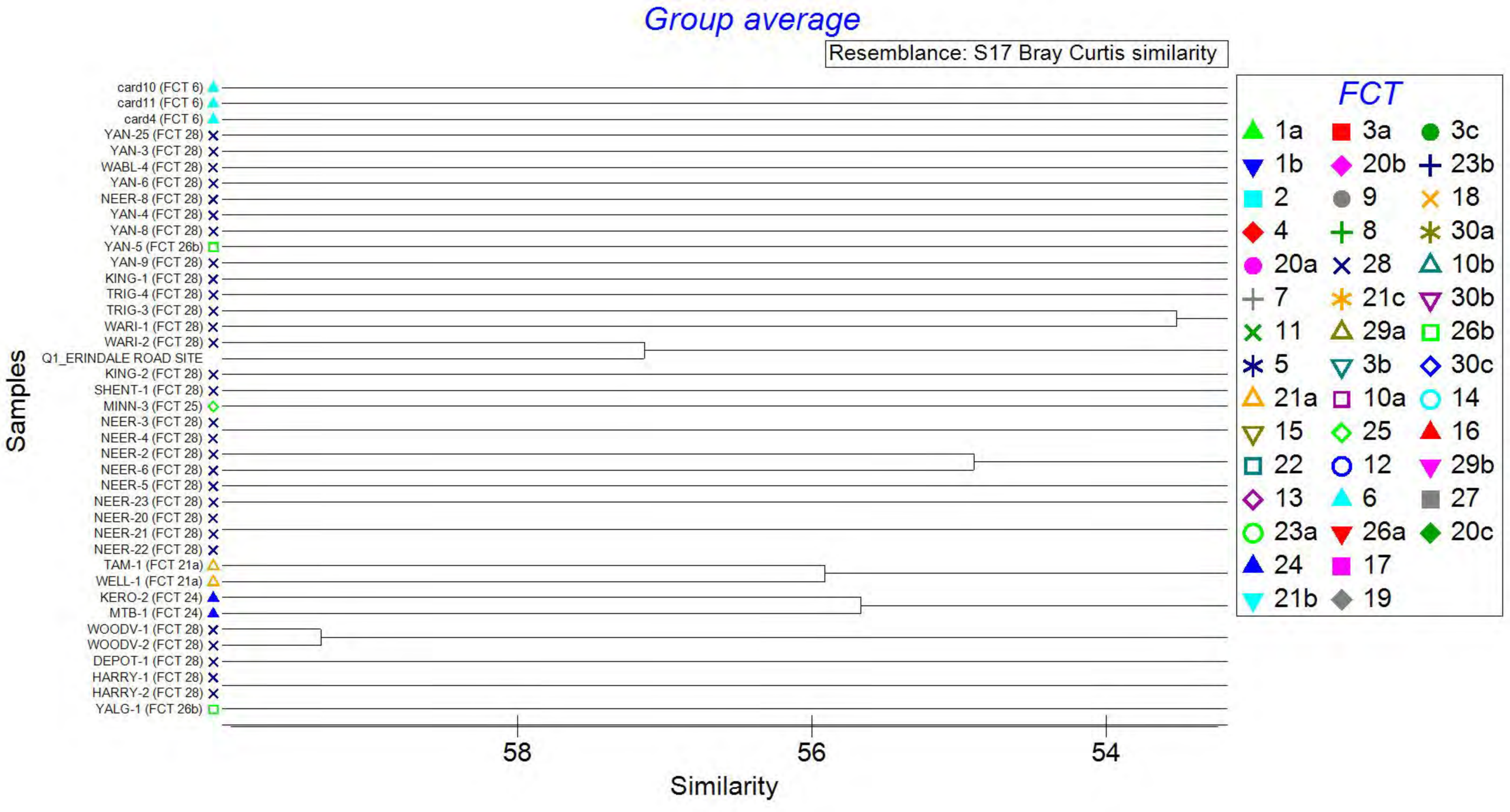
Date: 10/10/2024, 7/11/2024 **Status** Permanent

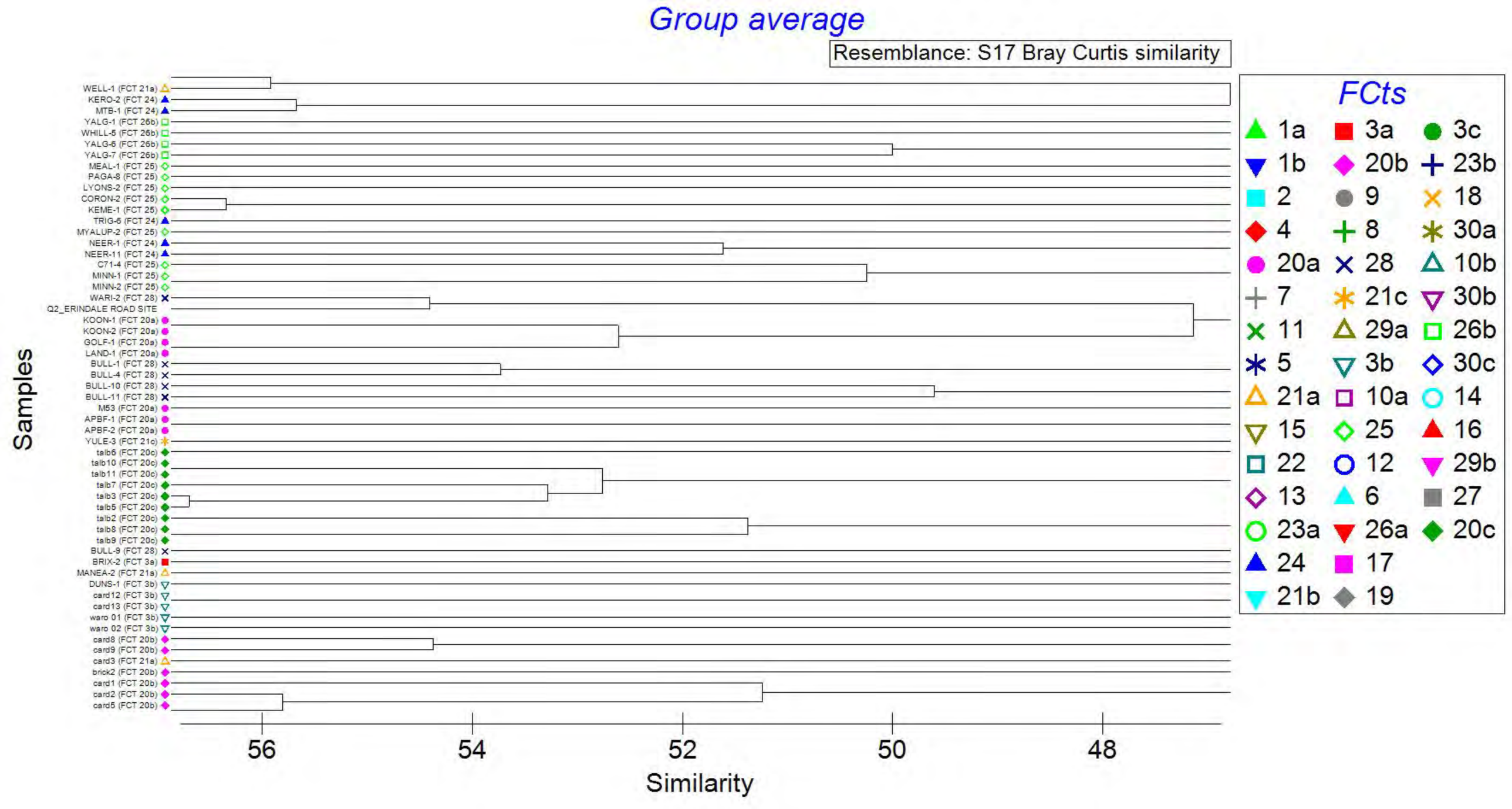
Author: SKP,SKP

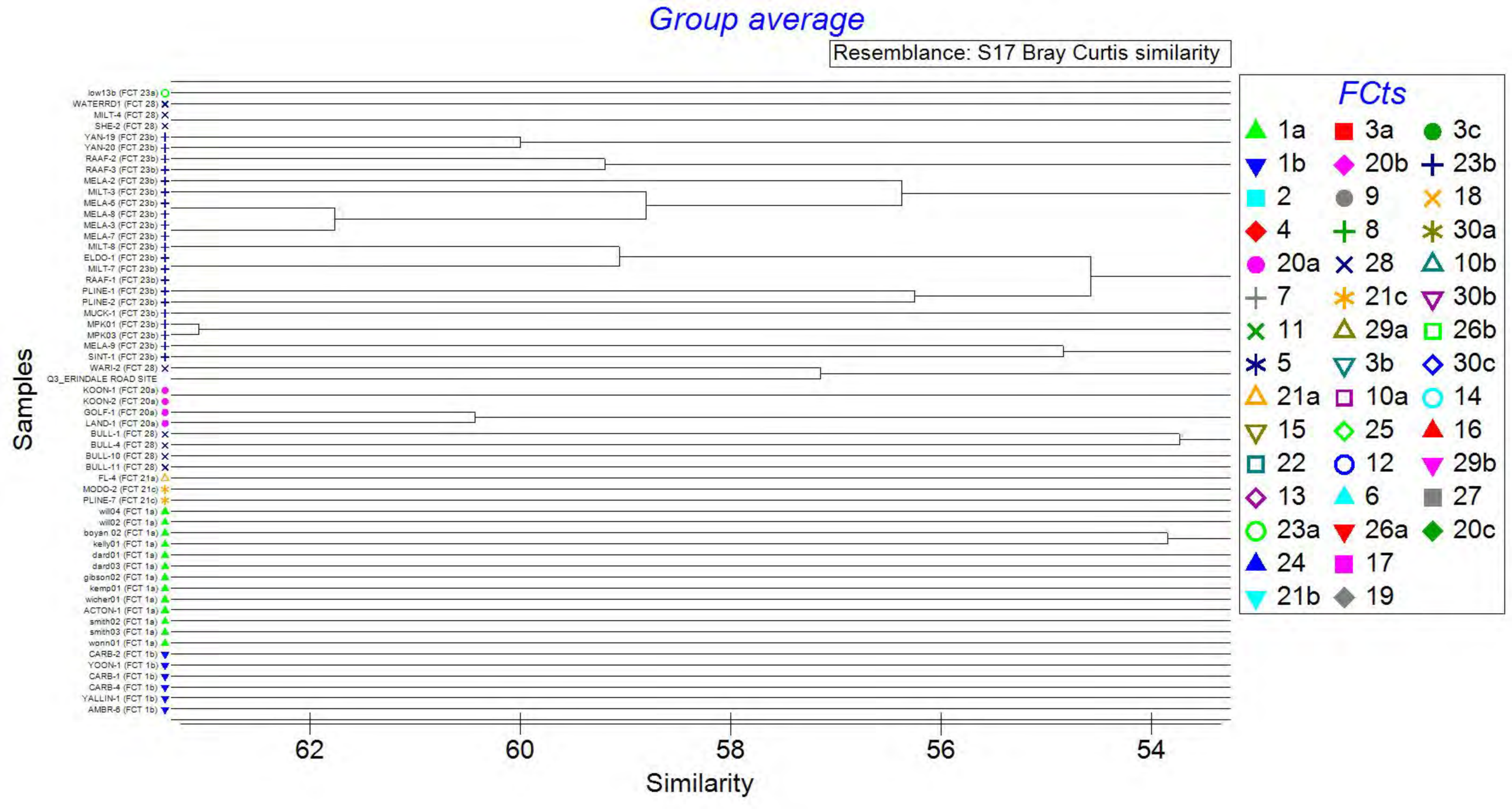
Appendix G

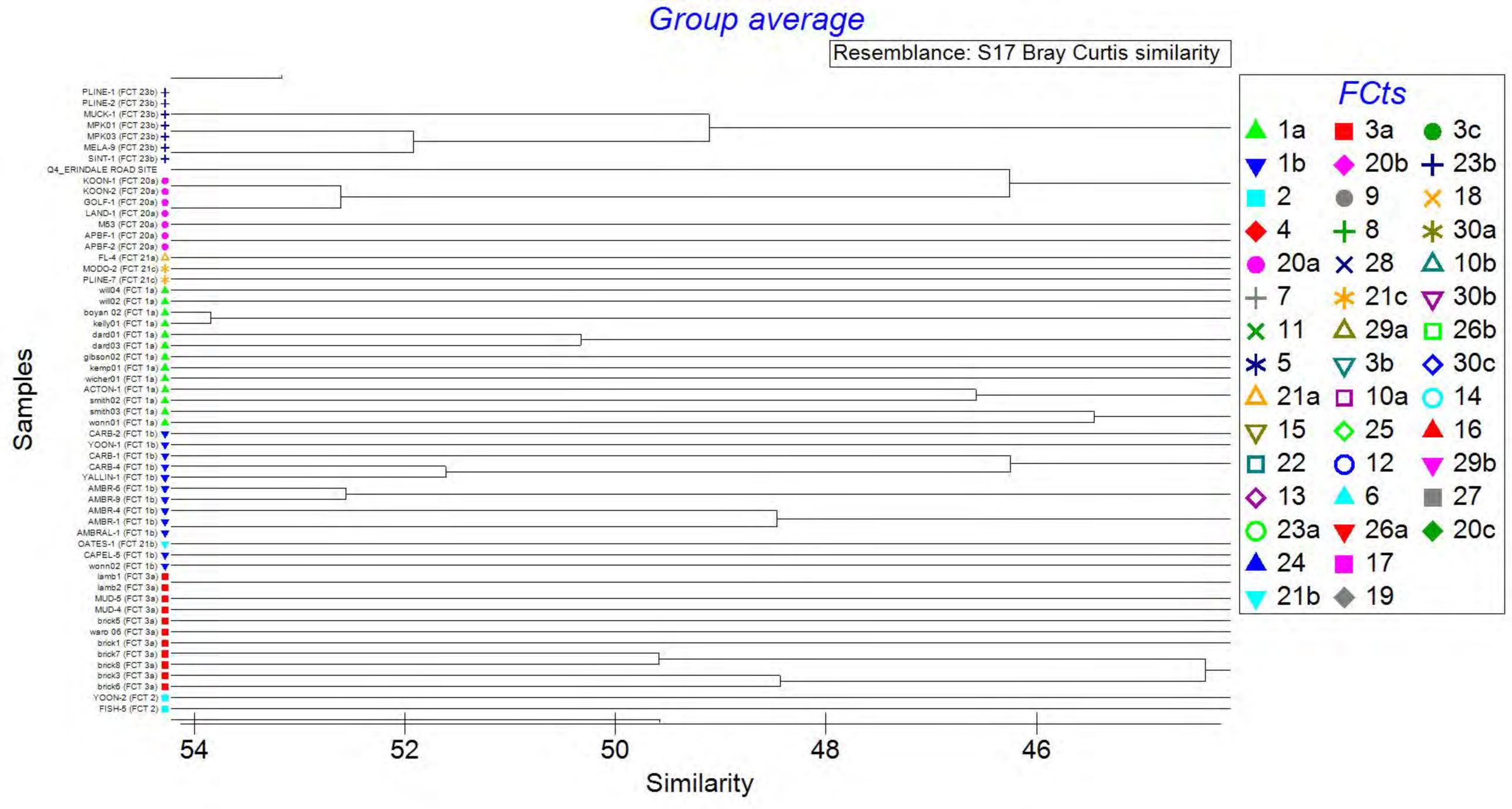
Cluster Dendrograms

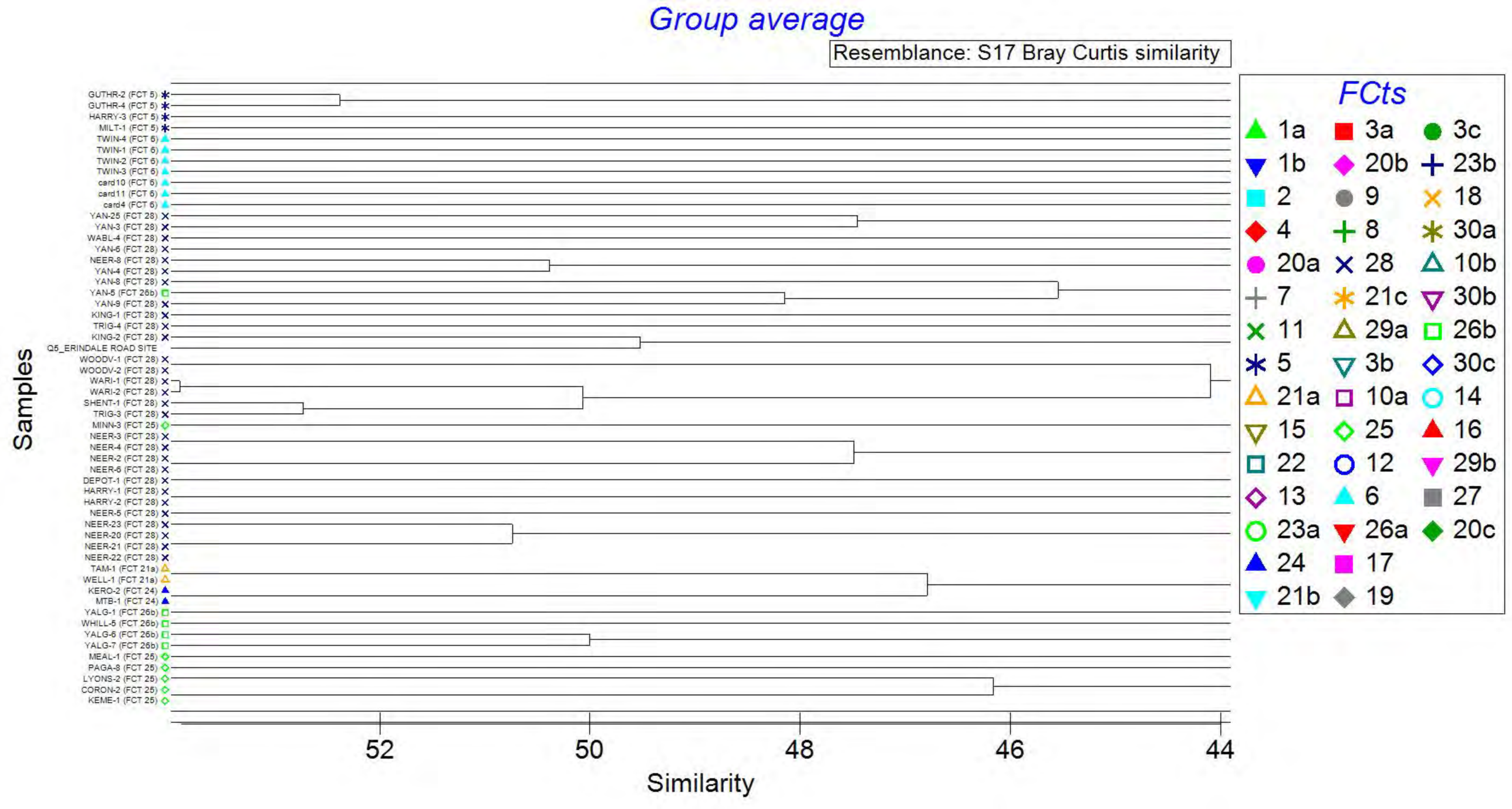

Group average
Resemblance: S17 Bray Curtis similarity
Similarity
20
40
60
80
100
Q23
Q22
Q24
Q19
Q25
Q26
Q16
Q7
Q27
Q13
Q14
Q18
Q11
Q9
Q15
Q12
Q17
Q20
Q21
Q8
Q2
Q4
Q3
Q6
Q5
Q1
Q10
Samples

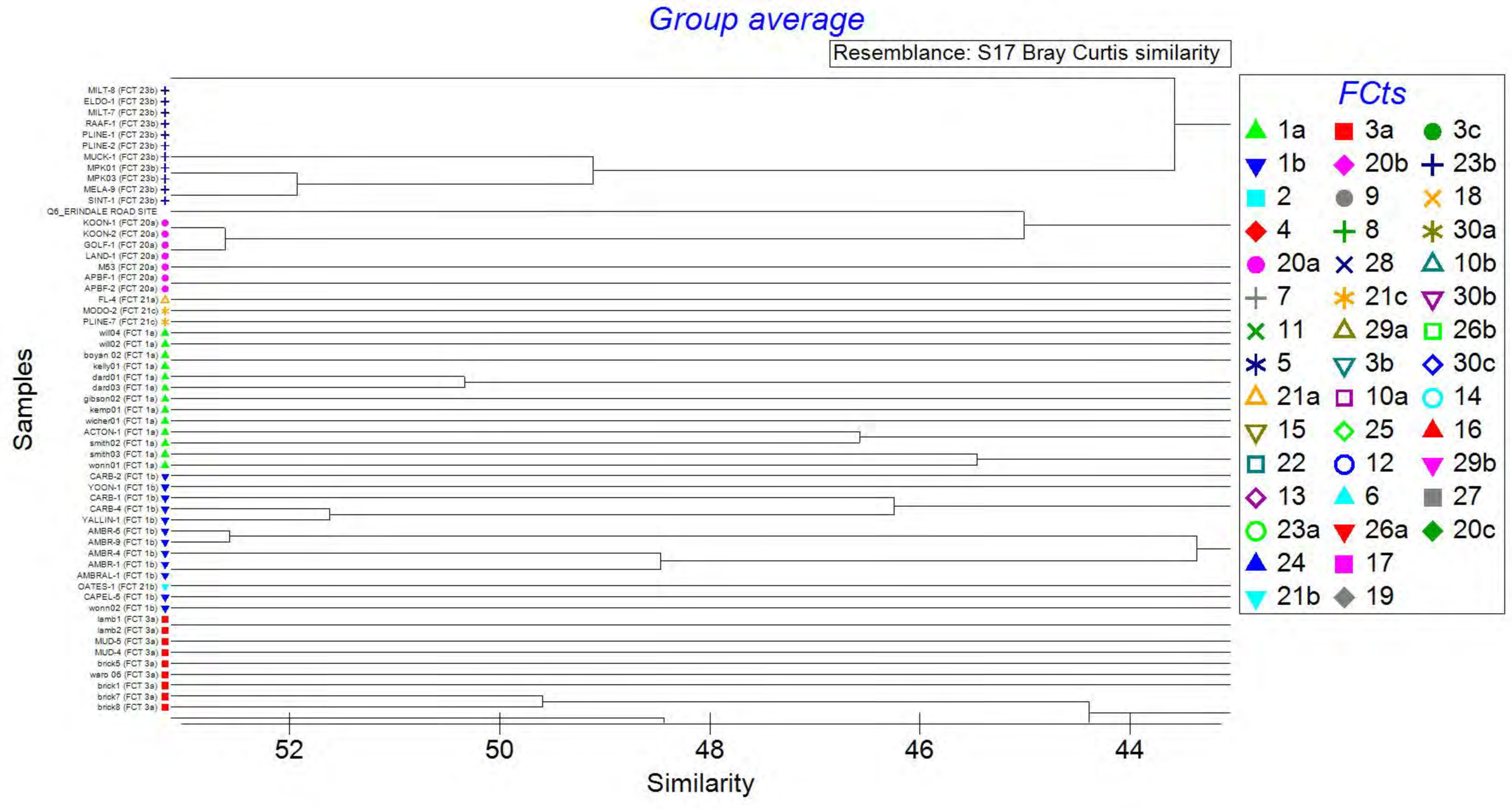

Group average
Resemblance: S17 Bray Curtis similarity
card10 (FCT 6)
card11 (FCT 6)
card4 (FCT 6)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
TRIG-4 (FCT 28)
TRIG-3 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
Q1_ERINDALE ROAD SITE
KING-2 (FCT 28)
SHENT-1 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
YALG-1 (FCT 26b)
Samples
58
56
54
Similarity
FCT
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

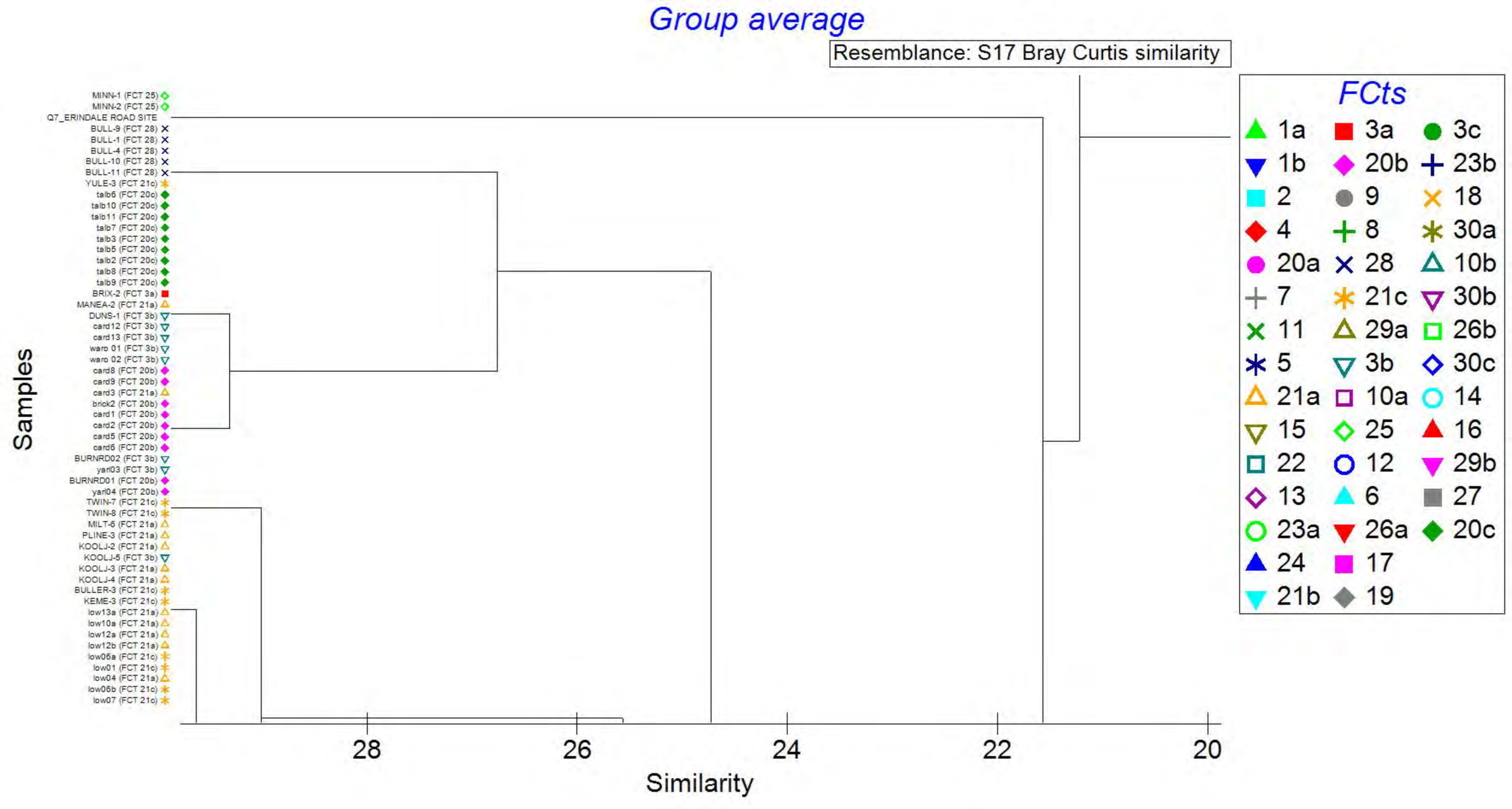

Group average
Resemblance: S17 Bray Curtis similarity
Samples
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
TRIG-6 (FCT 24)
MYALUP-2 (FCT 25)
NEER-1 (FCT 24)
NEER-11 (FCT 24)
C71-4 (FCT 25)
MINN-1 (FCT 25)
MINN-2 (FCT 25)
WARI-2 (FCT 28)
Q2_ERINDALE ROAD SITE
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
M53 (FCT 20a)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
YULE-3 (FCT 21c)
talb6 (FCT 20c)
talb10 (FCT 20c)
talb11 (FCT 20c)
talb7 (FCT 20c)
talb3 (FCT 20c)
talb5 (FCT 20c)
talb2 (FCT 20c)
talb8 (FCT 20c)
talb9 (FCT 20c)
BULL-9 (FCT 28)
BRIX-2 (FCT 3a)
MANEA-2 (FCT 21a)
DUNS-1 (FCT 3b)
card12 (FCT 3b)
card13 (FCT 3b)
waro 01 (FCT 3b)
waro 02 (FCT 3b)
card8 (FCT 20b)
card9 (FCT 20b)
card3 (FCT 21a)
brick2 (FCT 20b)
card1 (FCT 20b)
card2 (FCT 20b)
card5 (FCT 20b)
56
54
52
50
48
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

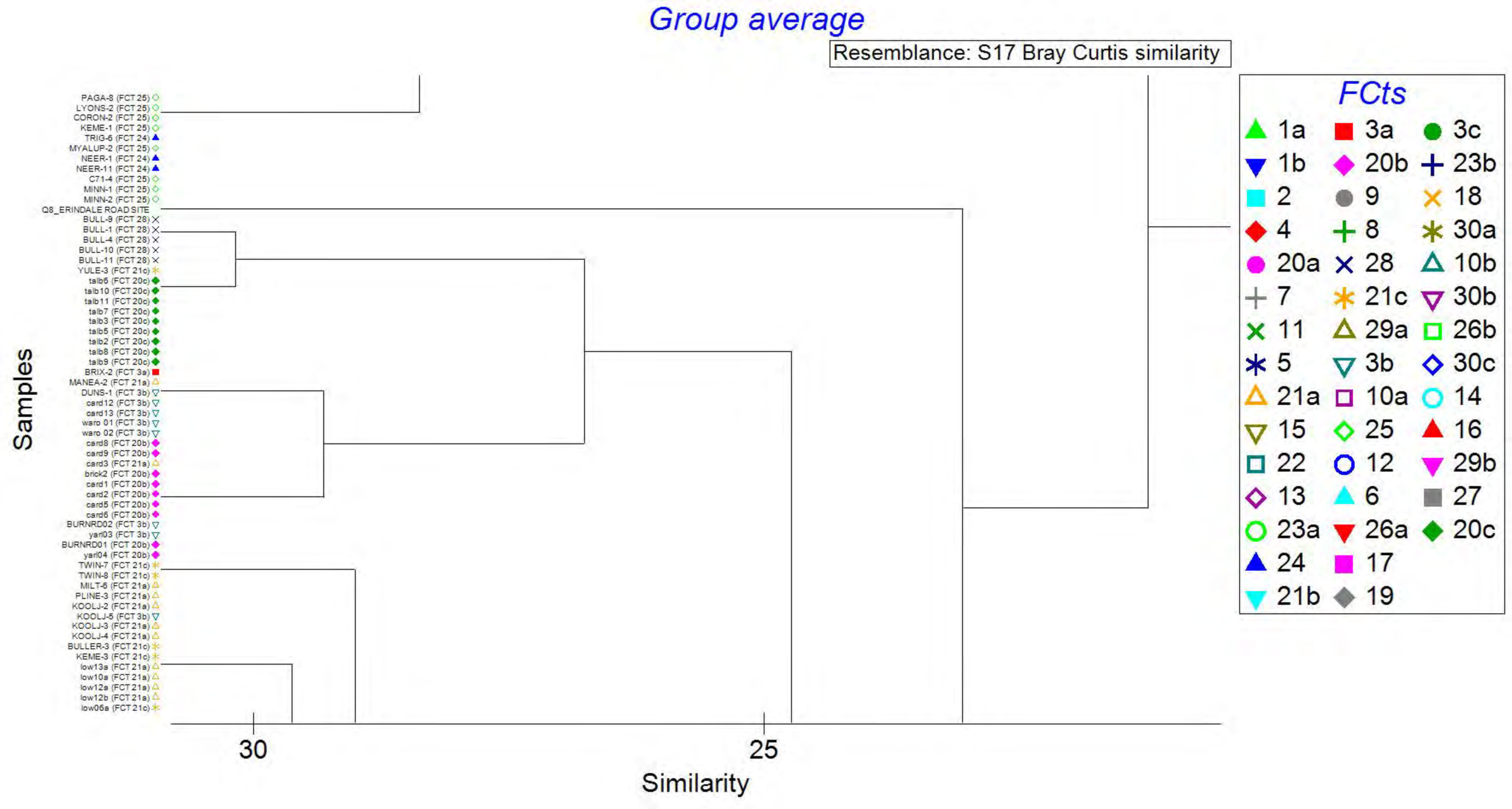

Group average
Resemblance: S17 Bray Curtis similarity
low13b (FCT 23a)
WATERRD1 (FCT 28)
MILT-4 (FCT 28)
SHE-2 (FCT 28)
YAN-19 (FCT 23b)
YAN-20 (FCT 23b)
RAAF-2 (FCT 23b)
RAAF-3 (FCT 23b)
MELA-2 (FCT 23b)
MILT-3 (FCT 23b)
MELA-6 (FCT 23b)
MELA-8 (FCT 23b)
MELA-3 (FCT 23b)
MELA-7 (FCT 23b)
MILT-8 (FCT 23b)
ELDO-1 (FCT 23b)
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
WARI-2 (FCT 28)
Q3_ERINDALE ROAD SITE
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
will04 (FCT 1a)
will02 (FCT 1a)
boyan 02 (FCT 1a)
kelly01 (FCT 1a)
dard01 (FCT 1a)
dard03 (FCT 1a)
gibson02 (FCT 1a)
kemp01 (FCT 1a)
wicher01 (FCT 1a)
ACTON-1 (FCT 1a)
smith02 (FCT 1a)
smith03 (FCT 1a)
wonn01 (FCT 1a)
CARB-2 (FCT 1b)
YOON-1 (FCT 1b)
CARB-1 (FCT 1b)
CARB-4 (FCT 1b)
YALLIN-1 (FCT 1b)
AMBR-6 (FCT 1b)
Samples
62
60
58
56
54
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

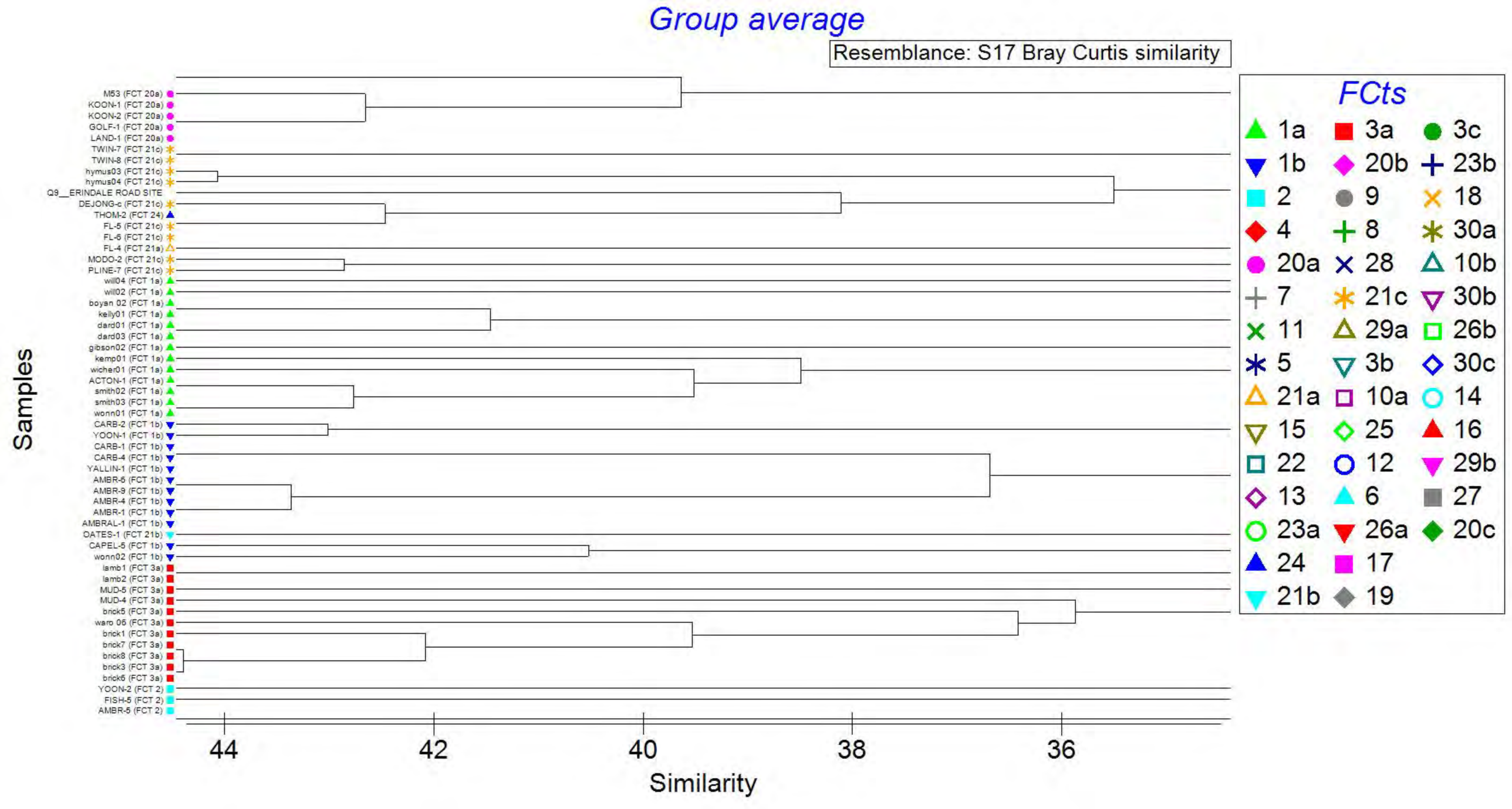

Group average
Resemblance: S17 Bray Curtis similarity
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
Q4_ERINDALE ROAD SITE
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
M53 (FCT 20a)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
will04 (FCT 1a)
will02 (FCT 1a)
boyan 02 (FCT 1a)
kelly01 (FCT 1a)
dard01 (FCT 1a)
dard03 (FCT 1a)
gibson02 (FCT 1a)
kemp01 (FCT 1a)
wicher01 (FCT 1a)
ACTON-1 (FCT 1a)
smith02 (FCT 1a)
smith03 (FCT 1a)
wonn01 (FCT 1a)
CARB-2 (FCT 1b)
YOON-1 (FCT 1b)
CARB-1 (FCT 1b)
CARB-4 (FCT 1b)
YALLIN-1 (FCT 1b)
AMBR-6 (FCT 1b)
AMBR-9 (FCT 1b)
AMBR-4 (FCT 1b)
AMBR-1 (FCT 1b)
AMBRAL-1 (FCT 1b)
OATES-1 (FCT 21b)
CAPEL-5 (FCT 1b)
wonn02 (FCT 1b)
lamb1 (FCT 3a)
lamb2 (FCT 3a)
MUD-5 (FCT 3a)
MUD-4 (FCT 3a)
brick5 (FCT 3a)
waro 06 (FCT 3a)
brick1 (FCT 3a)
brick7 (FCT 3a)
brick8 (FCT 3a)
brick3 (FCT 3a)
brick6 (FCT 3a)
YOON-2 (FCT 2)
FISH-5 (FCT 2)
Samples
54
52
50
48
46
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
GUTHR-2 (FCT 5)
GUTHR-4 (FCT 5)
HARRY-3 (FCT 5)
MILT-1 (FCT 5)
TWIN-4 (FCT 6)
TWIN-1 (FCT 6)
TWIN-2 (FCT 6)
TWIN-3 (FCT 6)
card10 (FCT 6)
card11 (FCT 6)
card4 (FCT 6)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
TRIG-4 (FCT 28)
KING-2 (FCT 28)
Q5_ERINDALE ROAD SITE
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
Samples
52
50
48
46
44
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
Samples
MILT-8 (FCT 23b)
ELDO-1 (FCT 23b)
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
Q6_ERINDALE ROAD SITE
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
M53 (FCT 20a)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
will04 (FCT 1a)
will02 (FCT 1a)
boyan 02 (FCT 1a)
kelly01 (FCT 1a)
dard01 (FCT 1a)
dard03 (FCT 1a)
gibson02 (FCT 1a)
kemp01 (FCT 1a)
wicher01 (FCT 1a)
ACTON-1 (FCT 1a)
smith02 (FCT 1a)
smith03 (FCT 1a)
wonn01 (FCT 1a)
CARB-2 (FCT 1b)
YOON-1 (FCT 1b)
CARB-1 (FCT 1b)
CARB-4 (FCT 1b)
YALLIN-1 (FCT 1b)
AMBR-6 (FCT 1b)
AMBR-9 (FCT 1b)
AMBR-4 (FCT 1b)
AMBR-1 (FCT 1b)
AMBRAL-1 (FCT 1b)
OATES-1 (FCT 21b)
CAPEL-5 (FCT 1b)
wonn02 (FCT 1b)
lamb1 (FCT 3a)
lamb2 (FCT 3a)
MUD-5 (FCT 3a)
MUD-4 (FCT 3a)
brick5 (FCT 3a)
waro 06 (FCT 3a)
brick1 (FCT 3a)
brick7 (FCT 3a)
brick8 (FCT 3a)
52
50
48
46
44
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
MINN-1 (FCT 25)
MINN-2 (FCT 25)
Q7_ERINDALE ROAD SITE
BULL-9 (FCT 28)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
YULE-3 (FCT 21c)
talb6 (FCT 20c)
talb10 (FCT 20c)
talb11 (FCT 20c)
talb7 (FCT 20c)
talb3 (FCT 20c)
talb5 (FCT 20c)
talb2 (FCT 20c)
talb8 (FCT 20c)
talb9 (FCT 20c)
BRIX-2 (FCT 3a)
MANEA-2 (FCT 21a)
DUNS-1 (FCT 3b)
card12 (FCT 3b)
card13 (FCT 3b)
waro 01 (FCT 3b)
waro 02 (FCT 3b)
card8 (FCT 20b)
card9 (FCT 20b)
card3 (FCT 21a)
brick2 (FCT 20b)
card1 (FCT 20b)
card2 (FCT 20b)
card5 (FCT 20b)
card6 (FCT 20b)
BURNRD02 (FCT 3b)
yarl03 (FCT 3b)
BURNRD01 (FCT 20b)
yarl04 (FCT 20b)
TWIN-7 (FCT 21c)
TWIN-8 (FCT 21c)
MILT-6 (FCT 21a)
PLINE-3 (FCT 21a)
KOOLJ-2 (FCT 21a)
KOOLJ-5 (FCT 3b)
KOOLJ-3 (FCT 21a)
KOOLJ-4 (FCT 21a)
BULLER-3 (FCT 21c)
KEME-3 (FCT 21c)
low13a (FCT 21a)
low10a (FCT 21a)
low12a (FCT 21a)
low12b (FCT 21a)
low06a (FCT 21c)
low01 (FCT 21c)
low04 (FCT 21a)
low06b (FCT 21c)
low07 (FCT 21c)
Samples
28
26
24
22
20
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
Samples
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
TRIG-6 (FCT 24)
MYALUP-2 (FCT 25)
NEER-1 (FCT 24)
NEER-11 (FCT 24)
C71-4 (FCT 25)
MINN-1 (FCT 25)
MINN-2 (FCT 25)
Q8_ERINDALE ROAD SITE
BULL-9 (FCT 28)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
YULE-3 (FCT 21c)
talb6 (FCT 20c)
talb10 (FCT 20c)
talb11 (FCT 20c)
talb7 (FCT 20c)
talb3 (FCT 20c)
talb5 (FCT 20c)
talb2 (FCT 20c)
talb8 (FCT 20c)
talb9 (FCT 20c)
BRIX-2 (FCT 3a)
MANEA-2 (FCT 21a)
DUNS-1 (FCT 3b)
card12 (FCT 3b)
card13 (FCT 3b)
waro 01 (FCT 3b)
waro 02 (FCT 3b)
card8 (FCT 20b)
card9 (FCT 20b)
card3 (FCT 21a)
brick2 (FCT 20b)
card1 (FCT 20b)
card2 (FCT 20b)
card5 (FCT 20b)
card6 (FCT 20b)
BURNRD02 (FCT 3b)
yarl03 (FCT 3b)
BURNRD01 (FCT 20b)
yarl04 (FCT 20b)
TWIN-7 (FCT 21c)
TWIN-8 (FCT 21c)
MILT-6 (FCT 21a)
PLINE-3 (FCT 21a)
KOOLJ-2 (FCT 21a)
KOOLJ-5 (FCT 3b)
KOOLJ-3 (FCT 21a)
KOOLJ-4 (FCT 21a)
BULLER-3 (FCT 21c)
KEME-3 (FCT 21c)
low13a (FCT 21a)
low10a (FCT 21a)
low12a (FCT 21a)
low12b (FCT 21a)
low06a (FCT 21c)
30
25
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
Samples
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
TWIN-7 (FCT 21c)
TWIN-8 (FCT 21c)
hymus03 (FCT 21c)
hymus04 (FCT 21c)
Q9__ERINDALE ROAD SITE
DEJONG-c (FCT 21c)
THOM-2 (FCT 24)
FL-5 (FCT 21c)
FL-6 (FCT 21c)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
will04 (FCT 1a)
will02 (FCT 1a)
boyan 02 (FCT 1a)
kelly01 (FCT 1a)
dard01 (FCT 1a)
dard03 (FCT 1a)
gibson02 (FCT 1a)
kemp01 (FCT 1a)
wicher01 (FCT 1a)
ACTON-1 (FCT 1a)
smith02 (FCT 1a)
smith03 (FCT 1a)
wonn01 (FCT 1a)
CARB-2 (FCT 1b)
YOON-1 (FCT 1b)
CARB-1 (FCT 1b)
CARB-4 (FCT 1b)
YALLIN-1 (FCT 1b)
AMBR-6 (FCT 1b)
AMBR-9 (FCT 1b)
AMBR-4 (FCT 1b)
AMBR-1 (FCT 1b)
AMBRAL-1 (FCT 1b)
OATES-1 (FCT 21b)
CAPEL-5 (FCT 1b)
wonn02 (FCT 1b)
lamb1 (FCT 3a)
lamb2 (FCT 3a)
MUD-5 (FCT 3a)
MUD-4 (FCT 3a)
brick5 (FCT 3a)
waro 06 (FCT 3a)
brick1 (FCT 3a)
brick7 (FCT 3a)
brick8 (FCT 3a)
brick3 (FCT 3a)
brick6 (FCT 3a)
YOON-2 (FCT 2)
FISH-5 (FCT 2)
AMBR-5 (FCT 2)
44
42
40
38
36
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
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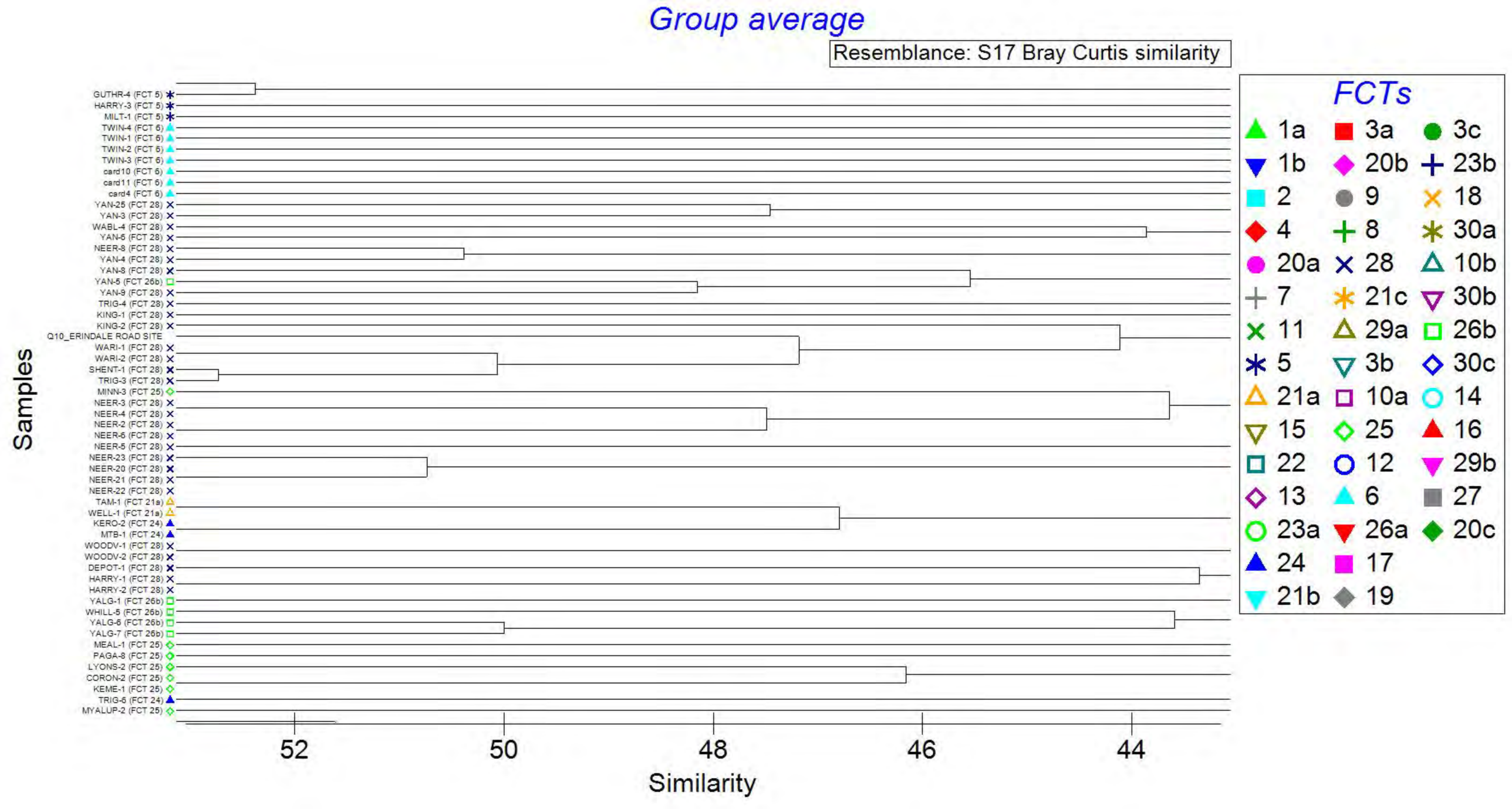
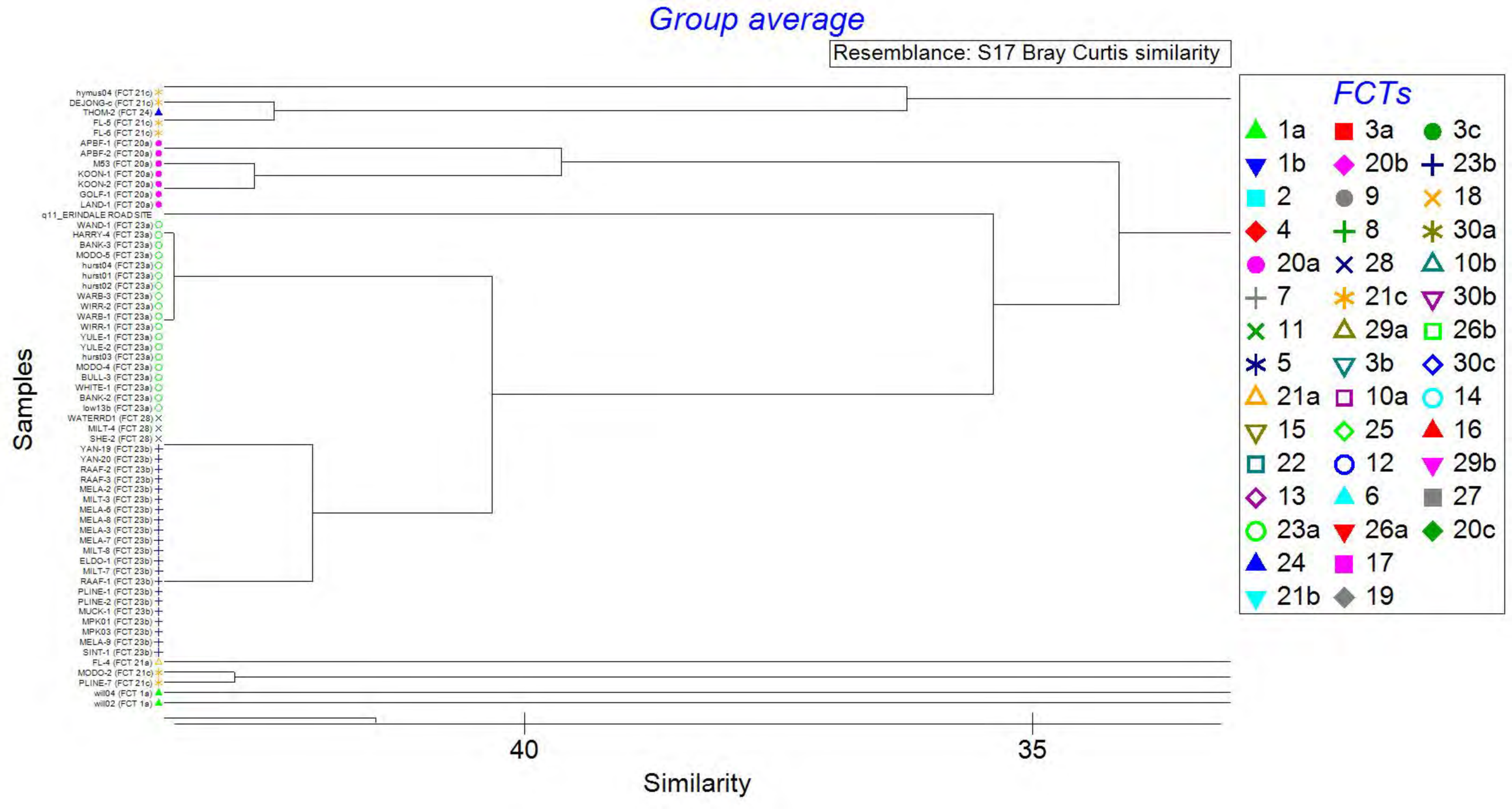
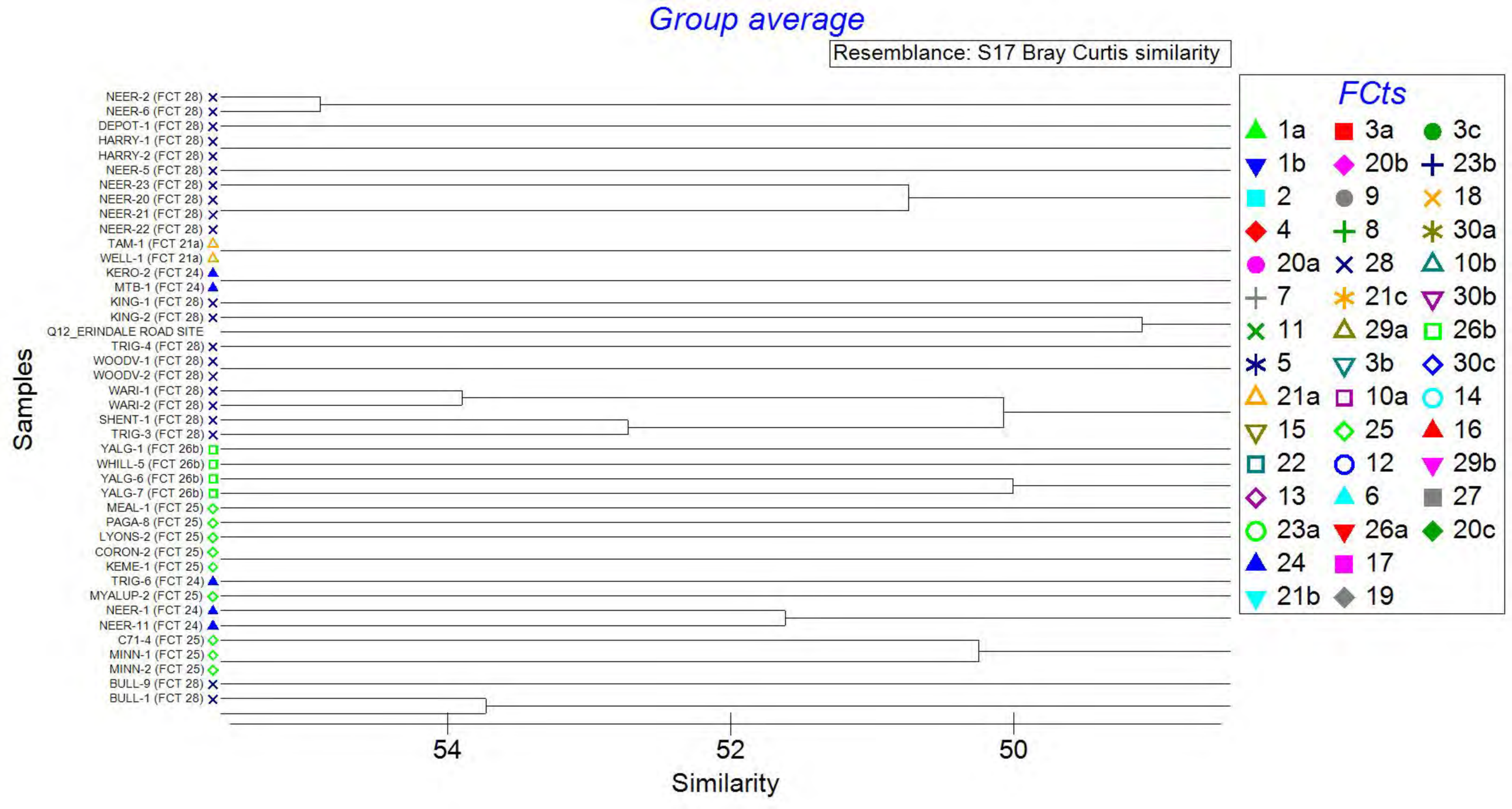
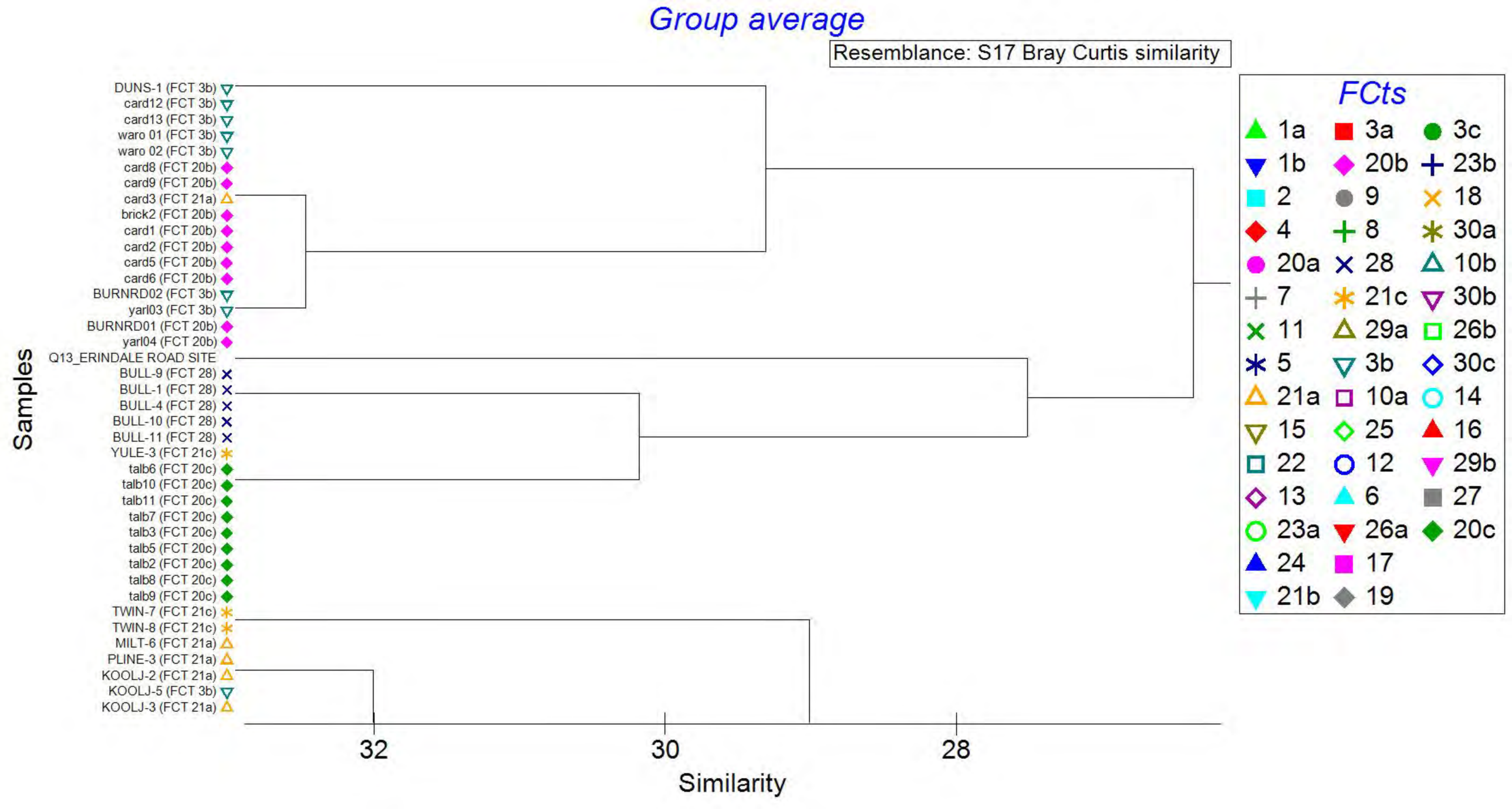
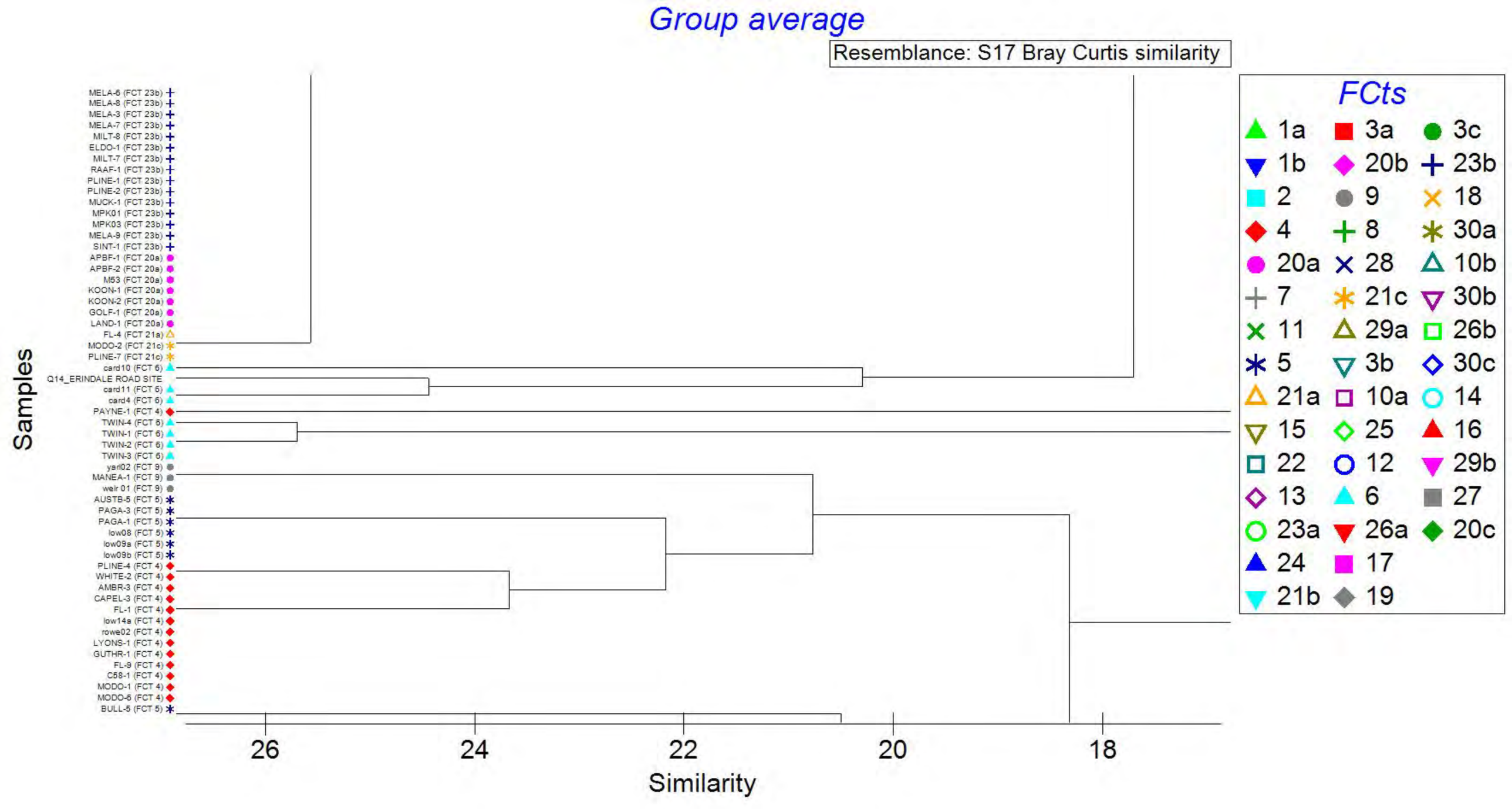
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

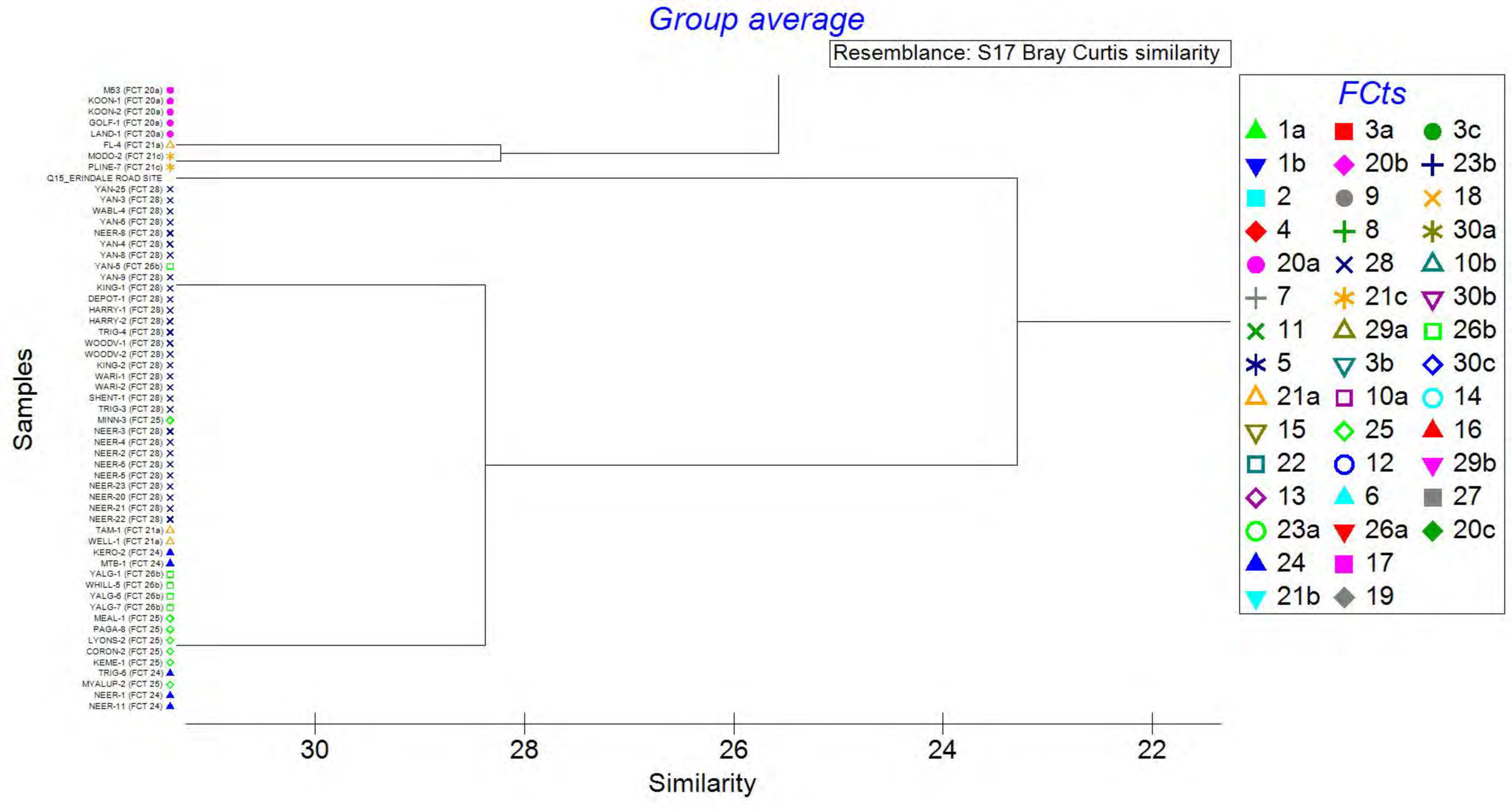

Group average
Resemblance: S17 Bray Curtis similarity
GUTHR-4 (FCT 5)
HARRY-3 (FCT 5)
MILT-1 (FCT 5)
TWIN-4 (FCT 6)
TWIN-1 (FCT 6)
TWIN-2 (FCT 6)
TWIN-3 (FCT 6)
card10 (FCT 6)
card11 (FCT 6)
card4 (FCT 6)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
TRIG-4 (FCT 28)
KING-1 (FCT 28)
KING-2 (FCT 28)
Q10_ERINDALE ROAD SITE
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
TRIG-6 (FCT 24)
MYALUP-2 (FCT 25)
Samples
52
50
48
46
44
Similarity
FCTs
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

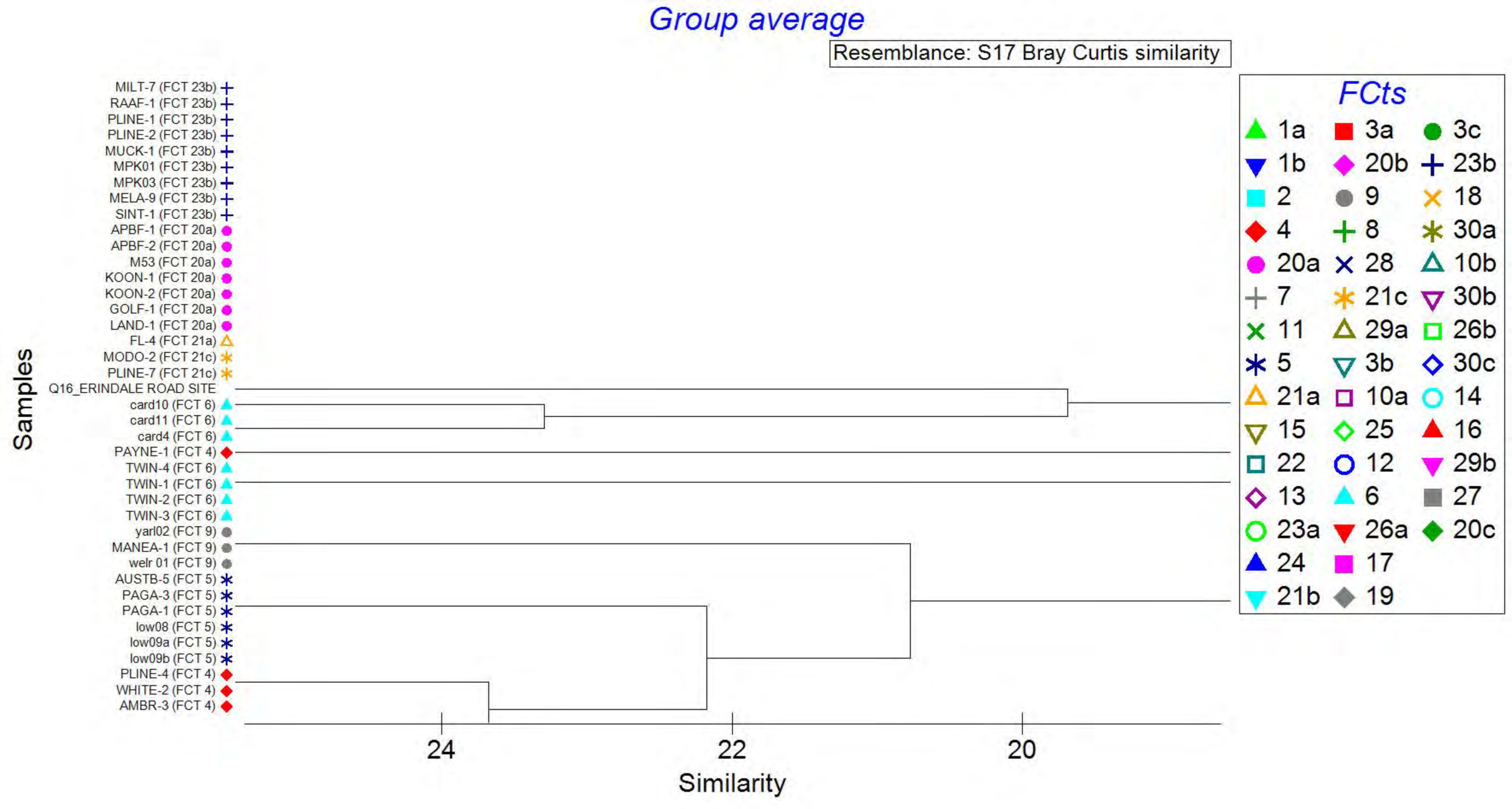

Group average
Resemblance: S17 Bray Curtis similarity
Samples
hymus04 (FCT 21c)
DEJONG-c (FCT 21c)
THOM-2 (FCT 24)
FL-5 (FCT 21c)
FL-6 (FCT 21c)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
q11_ERINDALE ROAD SITE
WAND-1 (FCT 23a)
HARRY-4 (FCT 23a)
BANK-3 (FCT 23a)
MODO-5 (FCT 23a)
hurst04 (FCT 23a)
hurst01 (FCT 23a)
hurst02 (FCT 23a)
WARB-3 (FCT 23a)
WIRR-2 (FCT 23a)
WARB-1 (FCT 23a)
WIRR-1 (FCT 23a)
YULE-1 (FCT 23a)
YULE-2 (FCT 23a)
hurst03 (FCT 23a)
MODO-4 (FCT 23a)
BULL-3 (FCT 23a)
WHITE-1 (FCT 23a)
BANK-2 (FCT 23a)
low13b (FCT 23a)
WATERRD1 (FCT 28)
MILT-4 (FCT 28)
SHE-2 (FCT 28)
YAN-19 (FCT 23b)
YAN-20 (FCT 23b)
RAAF-2 (FCT 23b)
RAAF-3 (FCT 23b)
MELA-2 (FCT 23b)
MILT-3 (FCT 23b)
MELA-6 (FCT 23b)
MELA-8 (FCT 23b)
MELA-3 (FCT 23b)
MELA-7 (FCT 23b)
MILT-8 (FCT 23b)
ELDO-1 (FCT 23b)
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
will04 (FCT 1a)
will02 (FCT 1a)
40
35
Similarity
FCTs
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

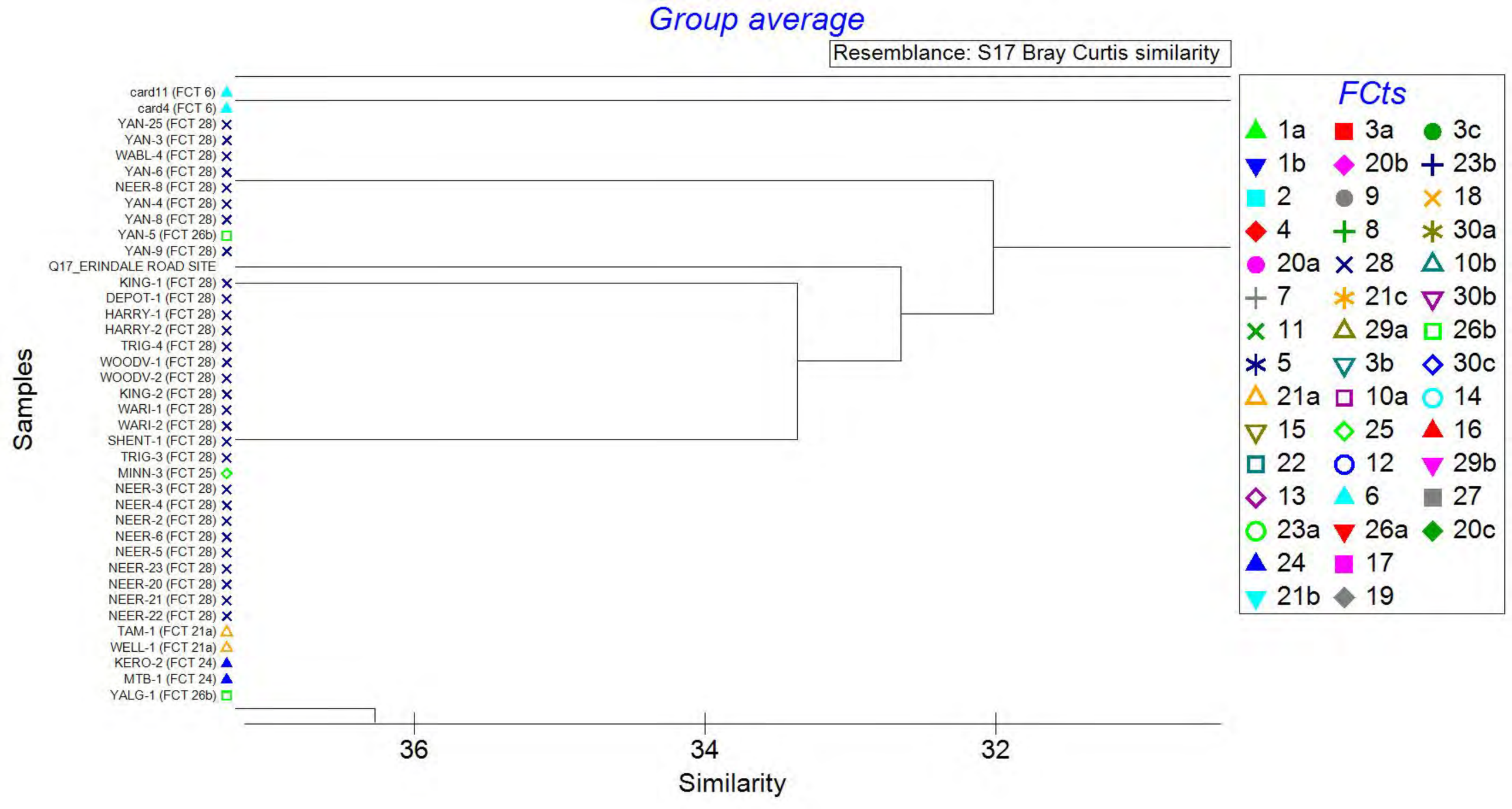

Group average
Resemblance: S17 Bray Curtis similarity
Samples
NEER-2 (FCT 28)
NEER-6 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
KING-1 (FCT 28)
KING-2 (FCT 28)
Q12_ERINDALE ROAD SITE
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
TRIG-6 (FCT 24)
MYALUP-2 (FCT 25)
NEER-1 (FCT 24)
NEER-11 (FCT 24)
C71-4 (FCT 25)
MINN-1 (FCT 25)
MINN-2 (FCT 25)
BULL-9 (FCT 28)
BULL-1 (FCT 28)
54
52
50
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

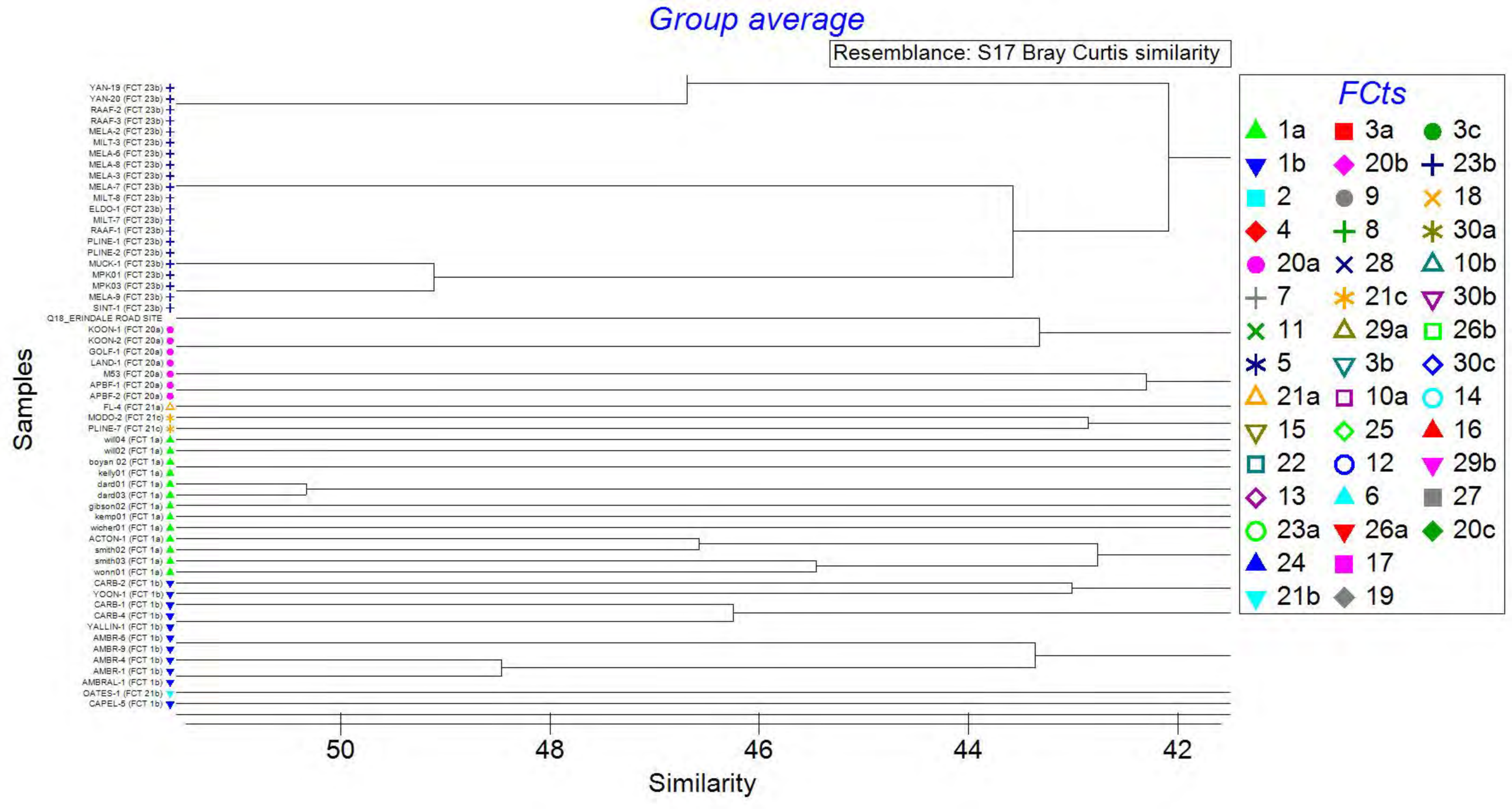

Group average
Resemblance: S17 Bray Curtis similarity
DUNS-1 (FCT 3b)
card12 (FCT 3b)
card13 (FCT 3b)
waro 01 (FCT 3b)
waro 02 (FCT 3b)
card8 (FCT 20b)
card9 (FCT 20b)
card3 (FCT 21a)
brick2 (FCT 20b)
card1 (FCT 20b)
card2 (FCT 20b)
card5 (FCT 20b)
card6 (FCT 20b)
BURNRD02 (FCT 3b)
yarl03 (FCT 3b)
BURNRD01 (FCT 20b)
yarl04 (FCT 20b)
Q13_ERINDALE ROAD SITE
BULL-9 (FCT 28)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
YULE-3 (FCT 21c)
talb6 (FCT 20c)
talb10 (FCT 20c)
talb11 (FCT 20c)
talb7 (FCT 20c)
talb3 (FCT 20c)
talb5 (FCT 20c)
talb2 (FCT 20c)
talb8 (FCT 20c)
talb9 (FCT 20c)
TWIN-7 (FCT 21c)
TWIN-8 (FCT 21c)
MILT-6 (FCT 21a)
PLINE-3 (FCT 21a)
KOOLJ-2 (FCT 21a)
KOOLJ-5 (FCT 3b)
KOOLJ-3 (FCT 21a)
Samples
32
30
28
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

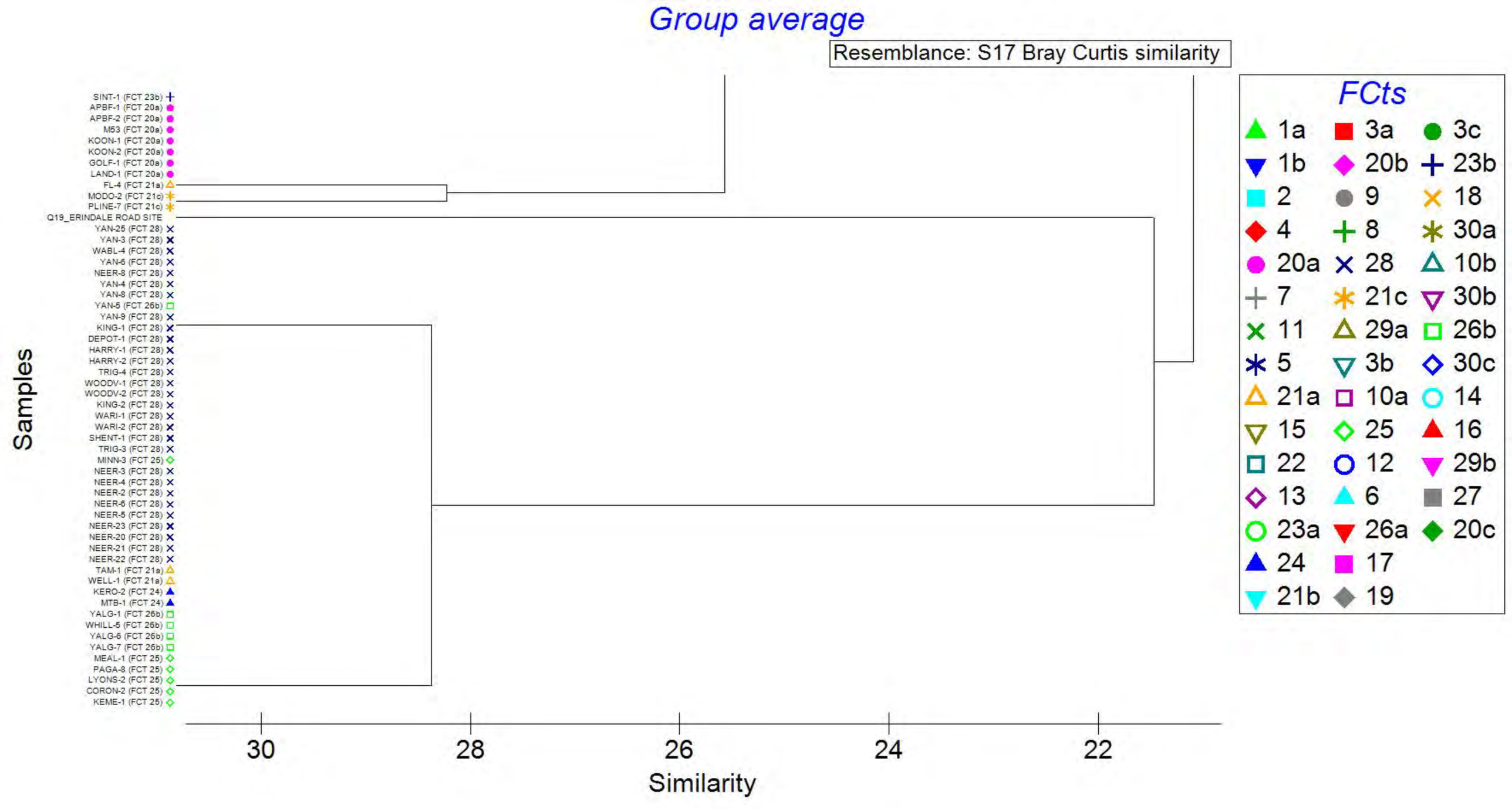

Group average
Resemblance: S17 Bray Curtis similarity
Samples
MELA-6 (FCT 23b)
MELA-8 (FCT 23b)
MELA-3 (FCT 23b)
MELA-7 (FCT 23b)
MILT-8 (FCT 23b)
ELDO-1 (FCT 23b)
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
card10 (FCT 6)
Q14_ERINDALE ROAD SITE
card11 (FCT 6)
card4 (FCT 6)
PAYNE-1 (FCT 4)
TWIN-4 (FCT 6)
TWIN-1 (FCT 6)
TWIN-2 (FCT 6)
TWIN-3 (FCT 6)
yarl02 (FCT 9)
MANEA-1 (FCT 9)
weir 01 (FCT 9)
AUSTB-5 (FCT 5)
PAGA-3 (FCT 5)
PAGA-1 (FCT 5)
low08 (FCT 5)
low09a (FCT 5)
low09b (FCT 5)
PLINE-4 (FCT 4)
WHITE-2 (FCT 4)
AMBR-3 (FCT 4)
CAPEL-3 (FCT 4)
FL-1 (FCT 4)
low14a (FCT 4)
rowe02 (FCT 4)
LYONS-1 (FCT 4)
GUTHR-1 (FCT 4)
FL-9 (FCT 4)
C58-1 (FCT 4)
MODO-1 (FCT 4)
MODO-6 (FCT 4)
BULL-5 (FCT 5)
26
24
22
20
18
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

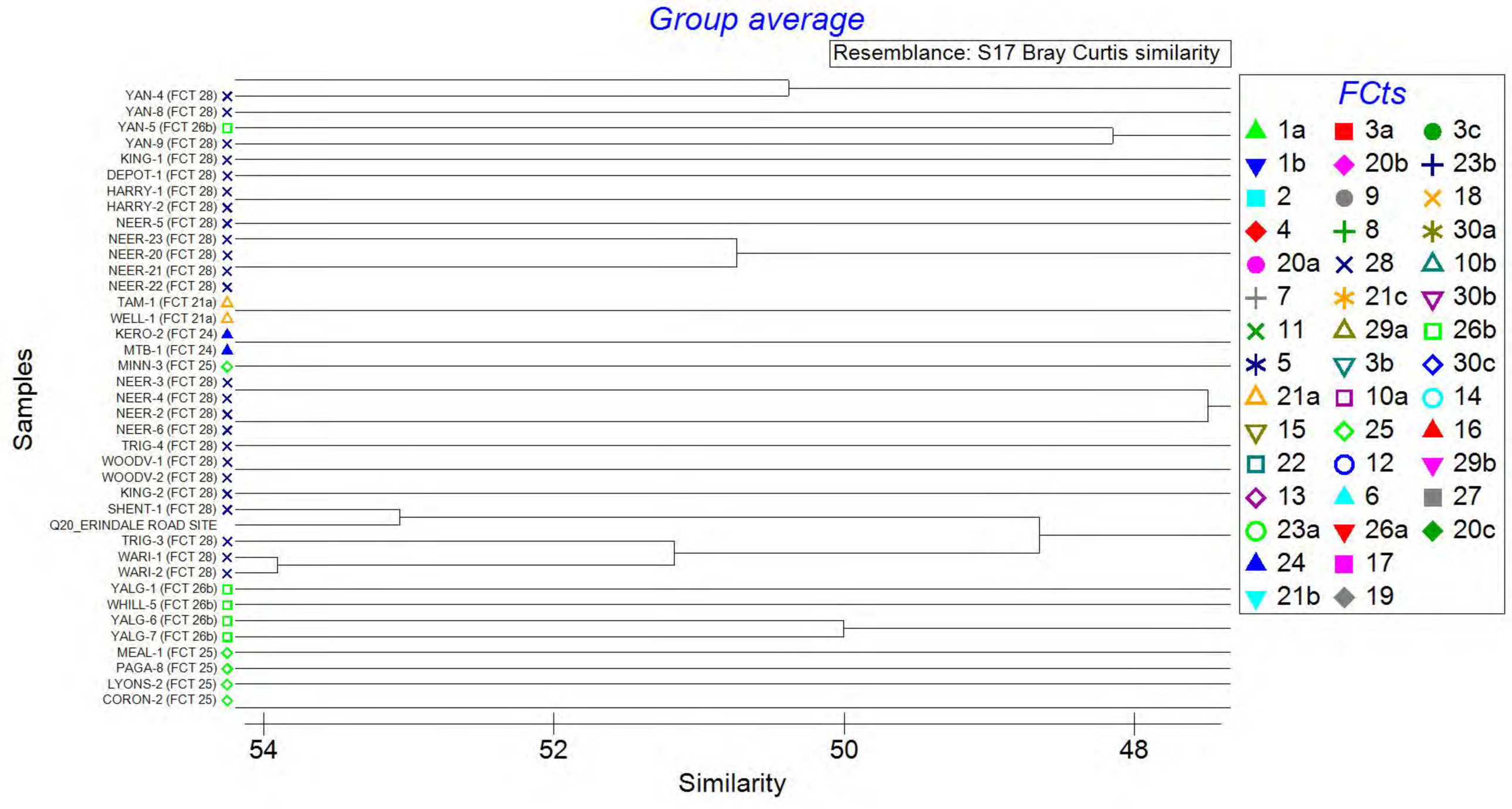

Group average
Resemblance: S17 Bray Curtis similarity
Samples
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
Q15_ERINDALE ROAD SITE
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
KING-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
TRIG-6 (FCT 24)
MYALUP-2 (FCT 25)
NEER-1 (FCT 24)
NEER-11 (FCT 24)
30
28
26
24
22
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

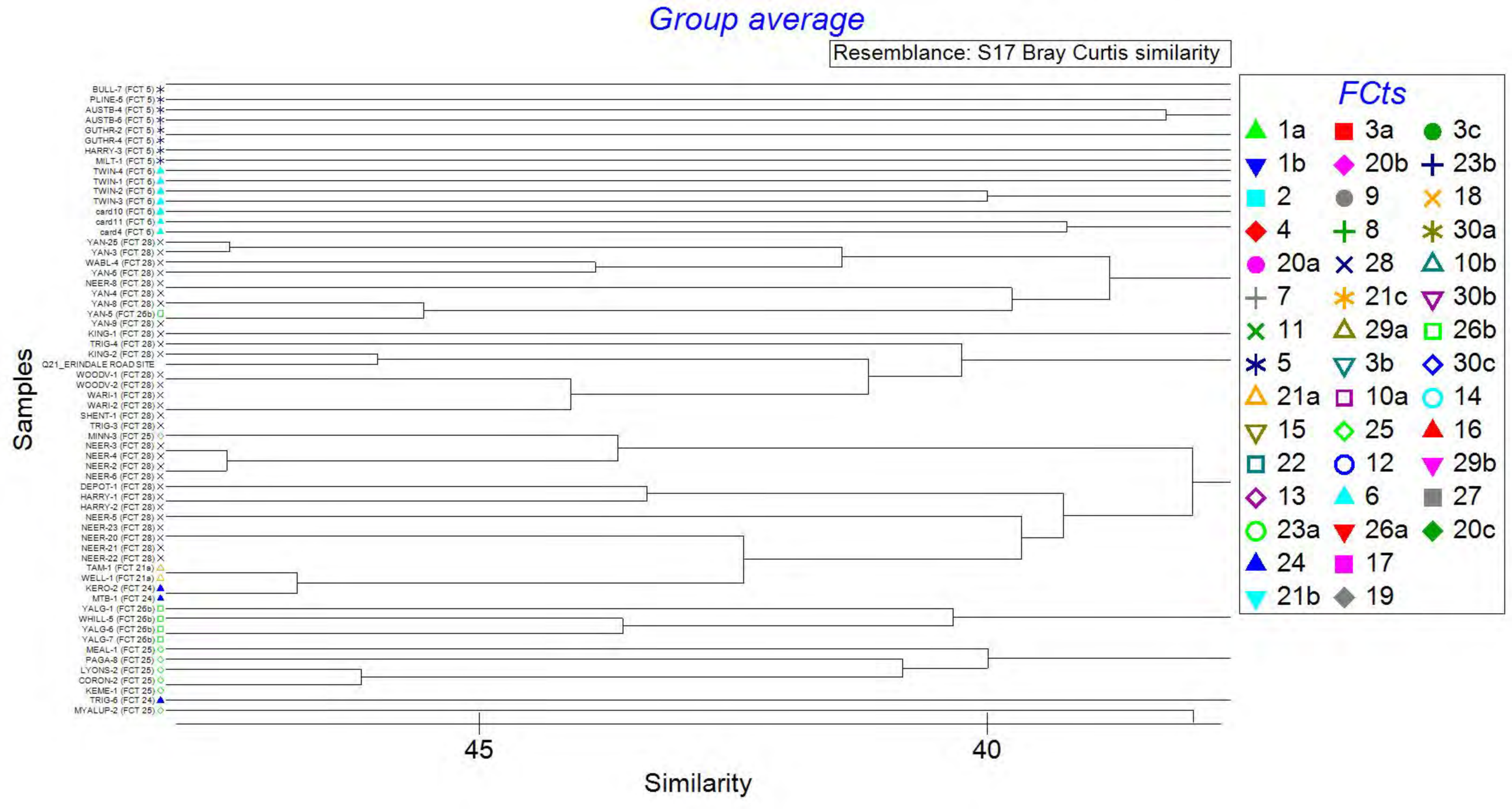

Group average
Resemblance: S17 Bray Curtis similarity
Samples
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
Q16_ERINDALE ROAD SITE
card10 (FCT 6)
card11 (FCT 6)
card4 (FCT 6)
PAYNE-1 (FCT 4)
TWIN-4 (FCT 6)
TWIN-1 (FCT 6)
TWIN-2 (FCT 6)
TWIN-3 (FCT 6)
yarl02 (FCT 9)
MANEA-1 (FCT 9)
welr 01 (FCT 9)
AUSTB-5 (FCT 5)
PAGA-3 (FCT 5)
PAGA-1 (FCT 5)
low08 (FCT 5)
low09a (FCT 5)
low09b (FCT 5)
PLINE-4 (FCT 4)
WHITE-2 (FCT 4)
AMBR-3 (FCT 4)
24
22
20
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

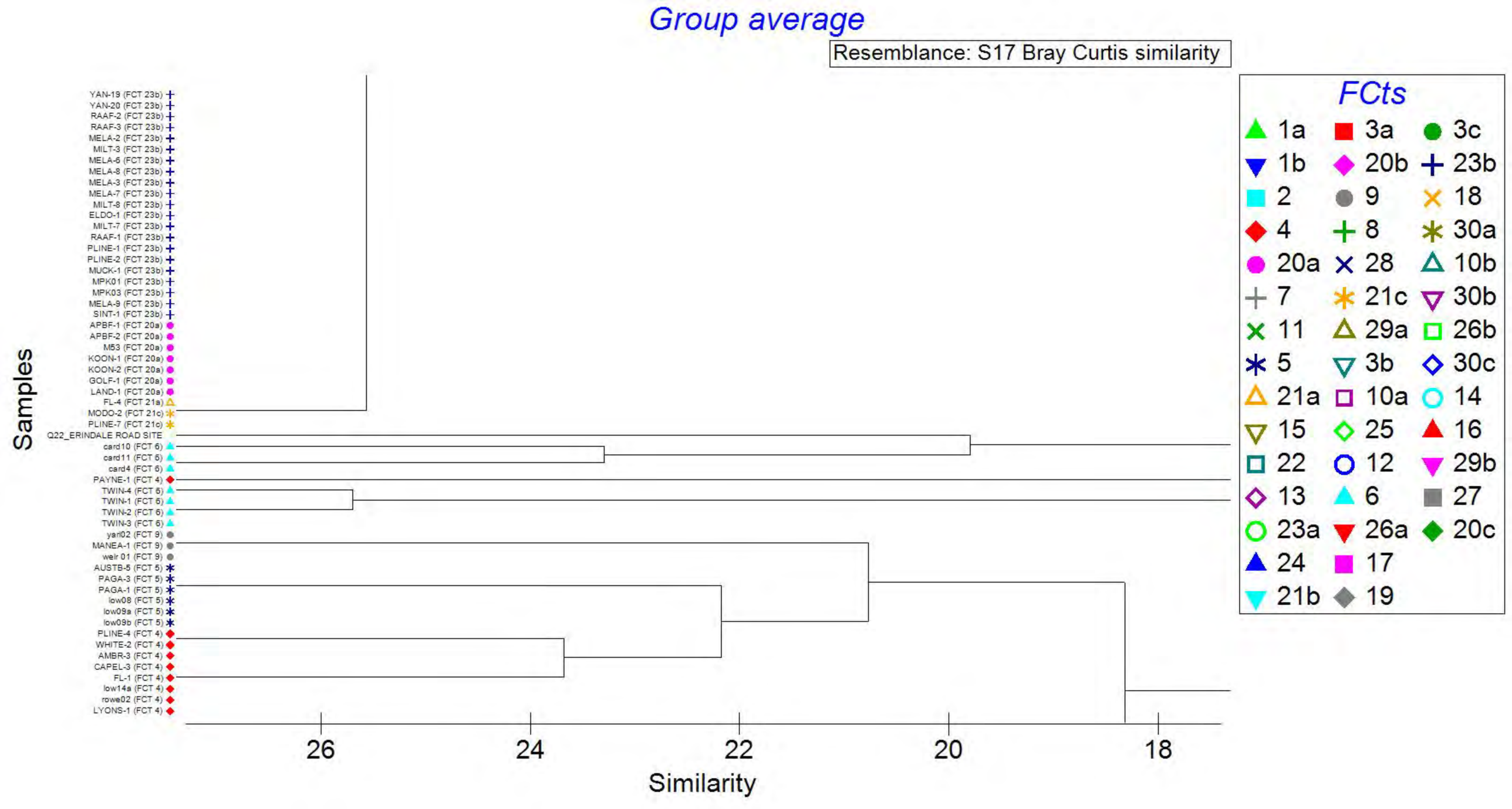

Group average
Resemblance: S17 Bray Curtis similarity
card11 (FCT 6)
card4 (FCT 6)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
Q17_ERINDALE ROAD SITE
KING-1 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
KING-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
Samples
36
34
32
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

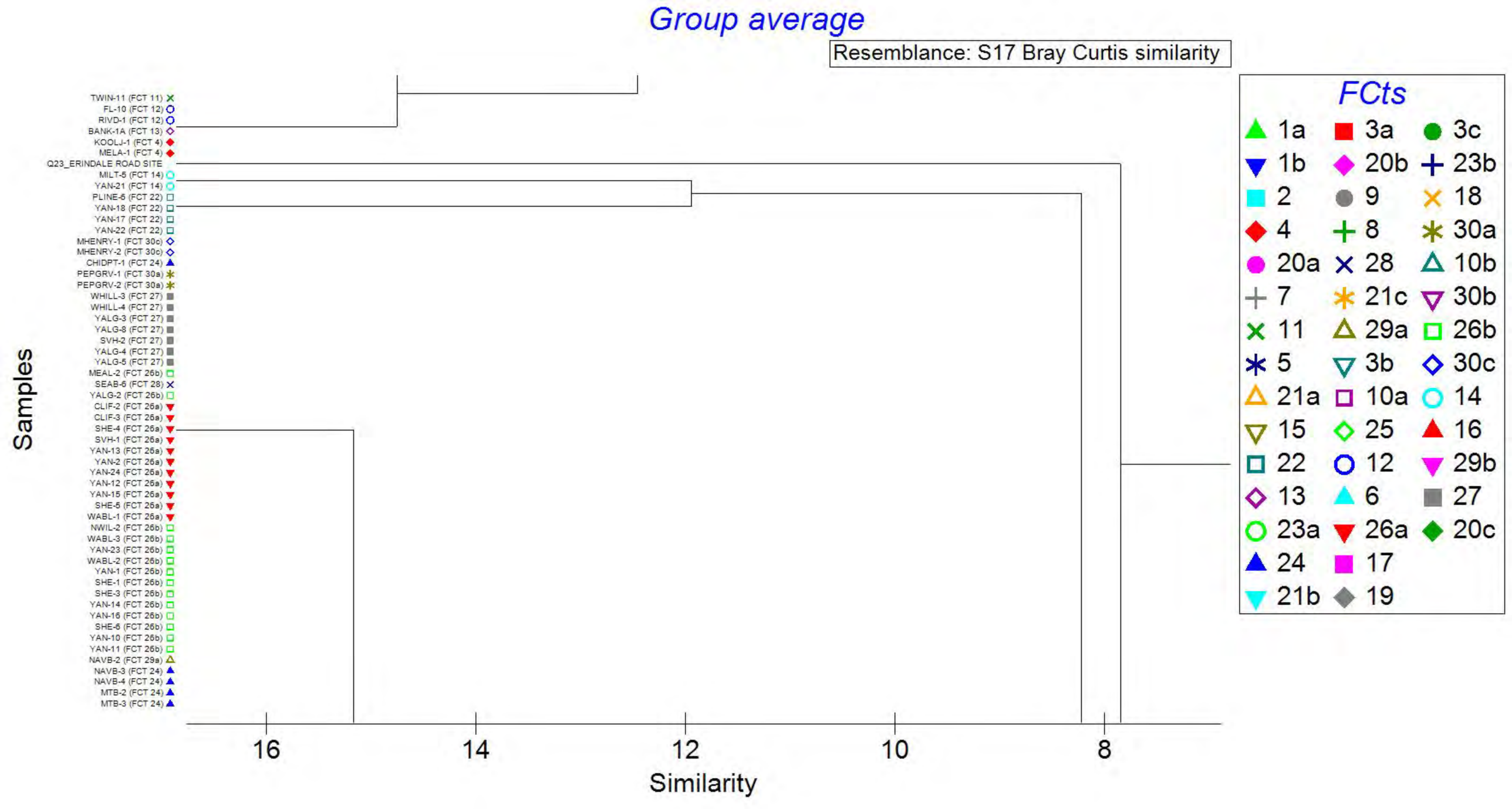

Group average
Resemblance: S17 Bray Curtis similarity
YAN-19 (FCT 23b)
YAN-20 (FCT 23b)
RAAF-2 (FCT 23b)
RAAF-3 (FCT 23b)
MELA-2 (FCT 23b)
MILT-3 (FCT 23b)
MELA-6 (FCT 23b)
MELA-8 (FCT 23b)
MELA-3 (FCT 23b)
MELA-7 (FCT 23b)
MILT-8 (FCT 23b)
ELDO-1 (FCT 23b)
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
Q18_ERINDALE ROAD SITE
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
M53 (FCT 20a)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
will04 (FCT 1a)
will02 (FCT 1a)
boysn 02 (FCT 1a)
kelly01 (FCT 1a)
dard01 (FCT 1a)
dard03 (FCT 1a)
gibson02 (FCT 1a)
kemp01 (FCT 1a)
wicher01 (FCT 1a)
ACTON-1 (FCT 1a)
smith02 (FCT 1a)
smith03 (FCT 1a)
wonn01 (FCT 1a)
CARB-2 (FCT 1b)
YOON-1 (FCT 1b)
CARB-1 (FCT 1b)
CARB-4 (FCT 1b)
YALLIN-1 (FCT 1b)
AMBR-6 (FCT 1b)
AMBR-9 (FCT 1b)
AMBR-4 (FCT 1b)
AMBR-1 (FCT 1b)
AMBRAL-1 (FCT 1b)
OATES-1 (FCT 21b)
CAPEL-5 (FCT 1b)
Samples
50
48
46
44
42
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

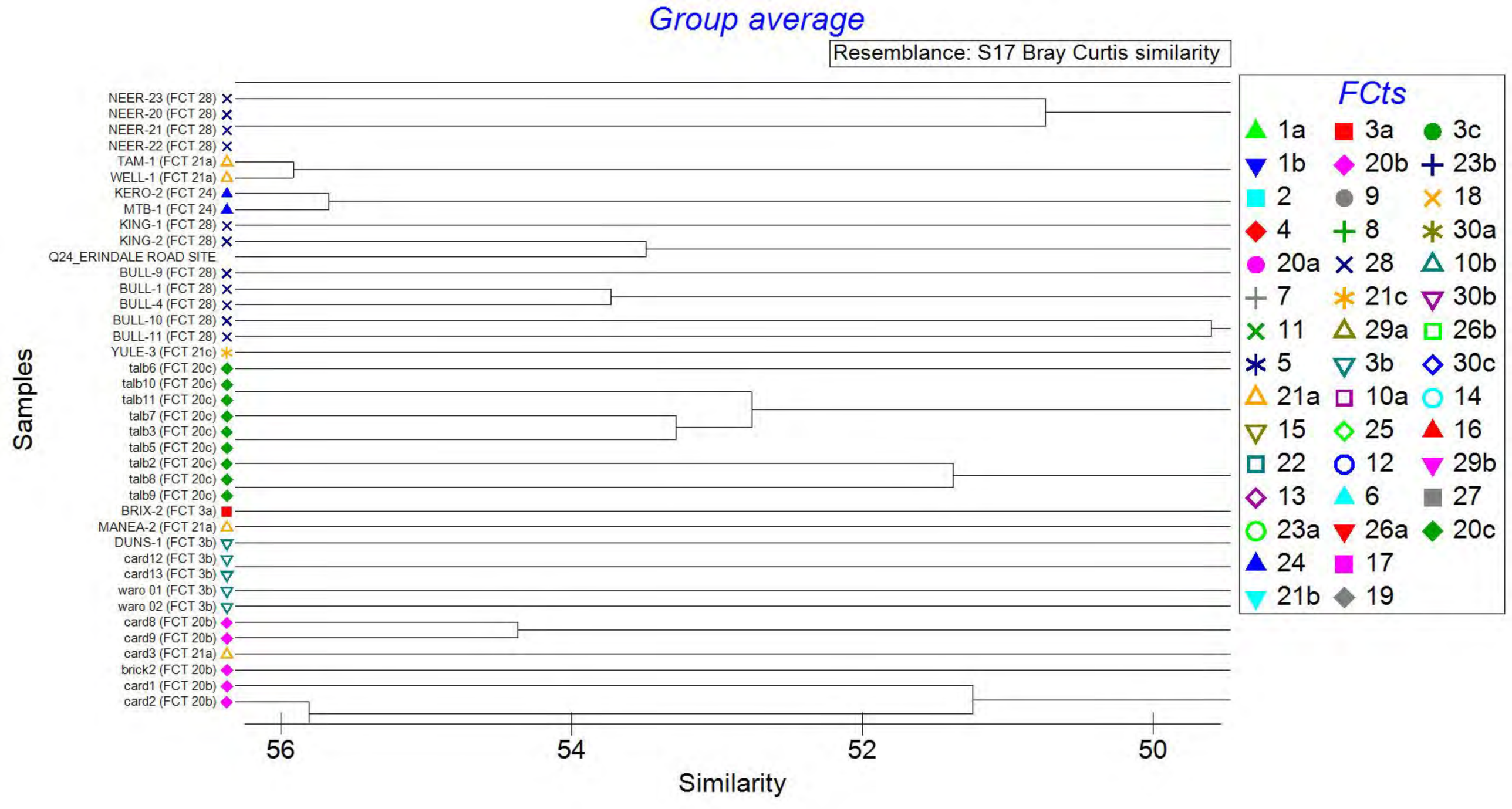

Group average
Resemblance: S17 Bray Curtis similarity
SINT-1 (FCT 23b)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
Q19_ERINDALE ROAD SITE
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
KING-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
Samples
30
28
26
24
22
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

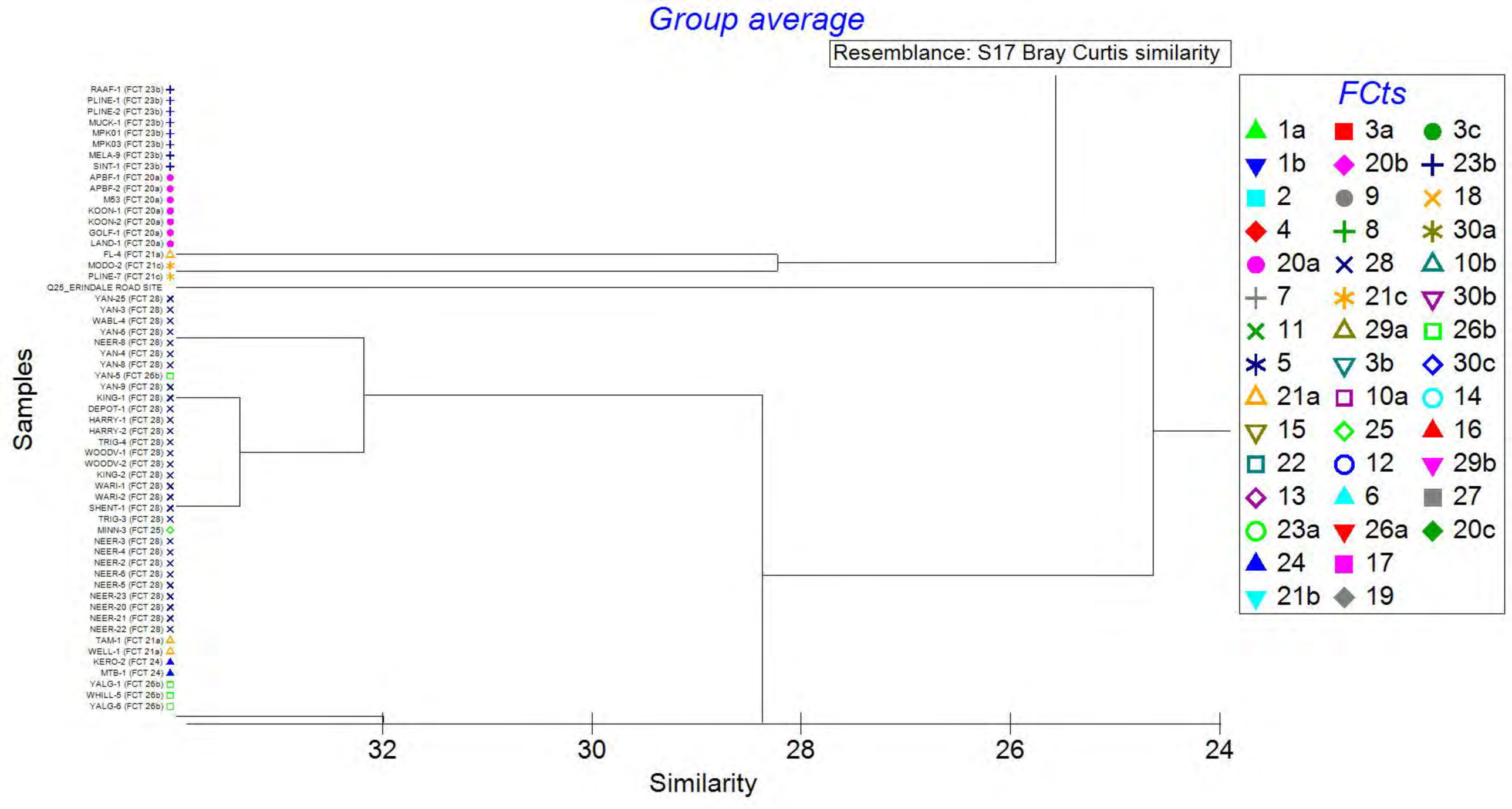

Group average
Resemblance: S17 Bray Curtis similarity
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
KING-2 (FCT 28)
SHENT-1 (FCT 28)
Q20_ERINDALE ROAD SITE
TRIG-3 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
Samples
54
52
50
48
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

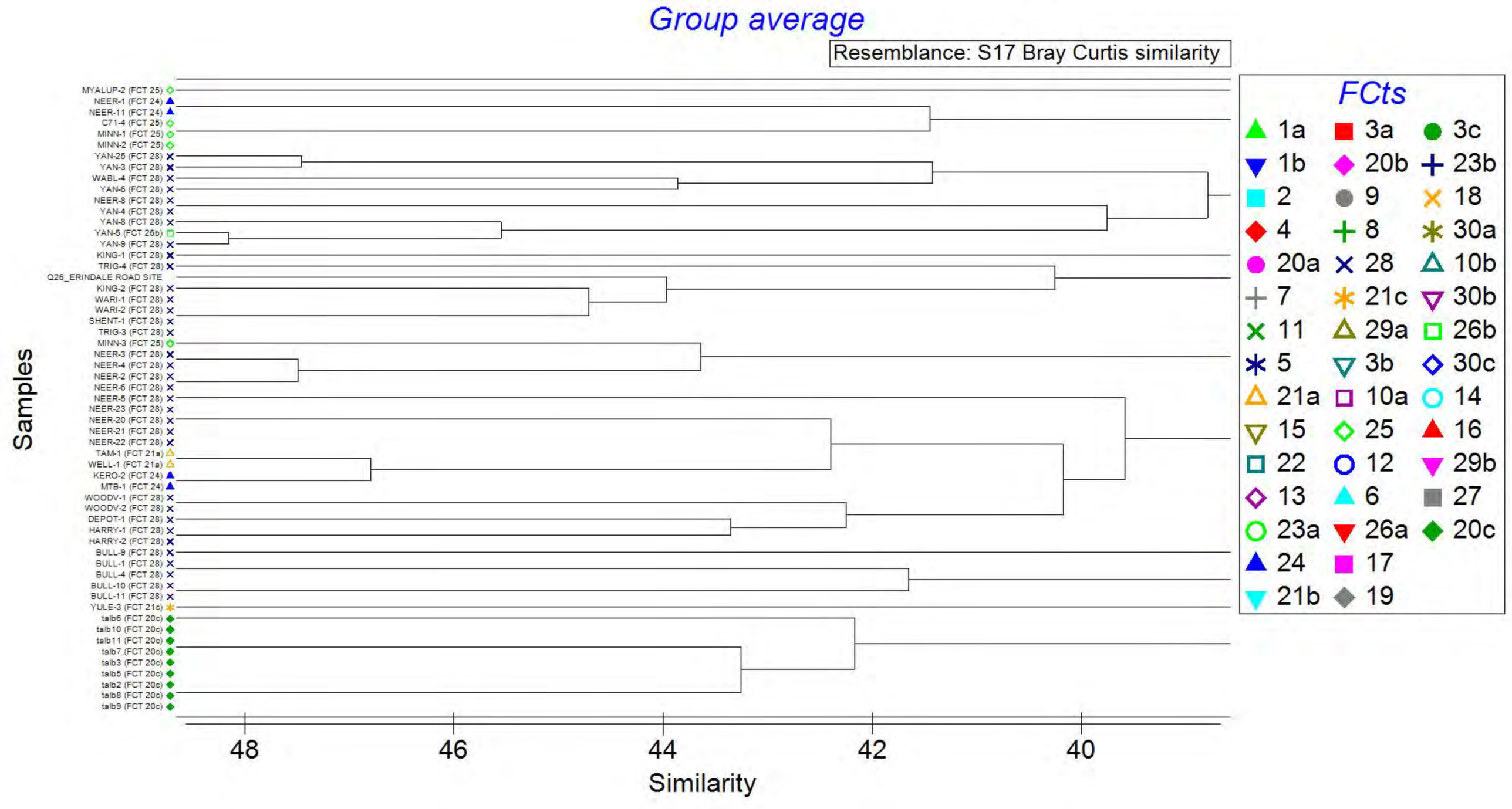

Group average
Resemblance: S17 Bray Curtis similarity
Samples
BULL-7 (FCT 5)
PLINE-5 (FCT 5)
AUSTB-4 (FCT 5)
AUSTB-6 (FCT 5)
GUTHR-2 (FCT 5)
GUTHR-4 (FCT 5)
HARRY-3 (FCT 5)
MILT-1 (FCT 5)
TWIN-4 (FCT 6)
TWIN-1 (FCT 6)
TWIN-2 (FCT 6)
TWIN-3 (FCT 6)
card10 (FCT 6)
card11 (FCT 6)
card4 (FCT 6)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
TRIG-4 (FCT 28)
KING-2 (FCT 28)
Q21_ERINDALE ROAD SITE
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
YALG-7 (FCT 26b)
MEAL-1 (FCT 25)
PAGA-8 (FCT 25)
LYONS-2 (FCT 25)
CORON-2 (FCT 25)
KEME-1 (FCT 25)
TRIG-6 (FCT 24)
MYALUP-2 (FCT 25)
45
40
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19

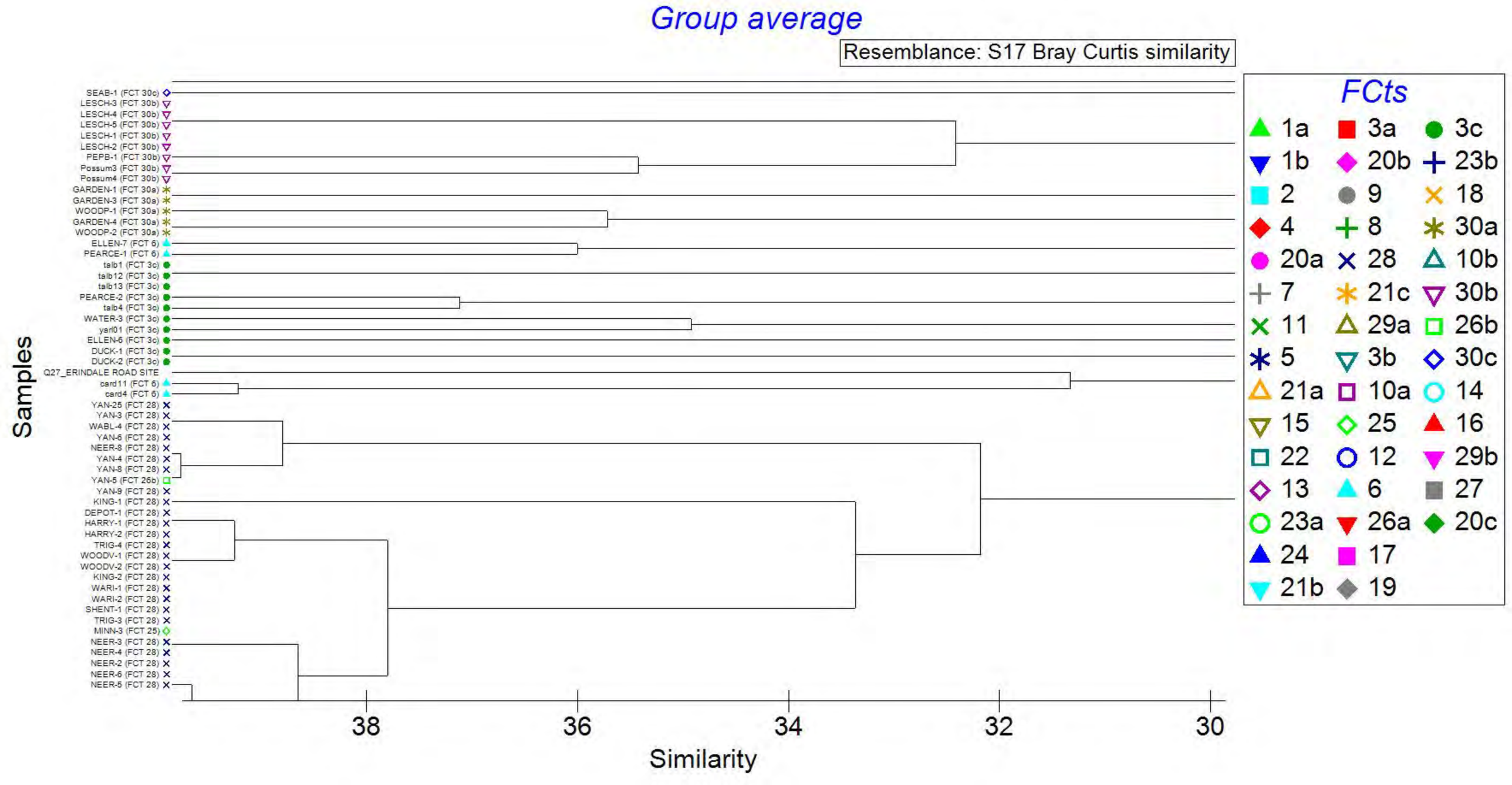

Group average
Resemblance: S17 Bray Curtis similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19
Samples
YAN-19 (FCT 23b)
YAN-20 (FCT 23b)
RAAF-2 (FCT 23b)
RAAF-3 (FCT 23b)
MELA-2 (FCT 23b)
MILT-3 (FCT 23b)
MELA-6 (FCT 23b)
MELA-8 (FCT 23b)
MELA-3 (FCT 23b)
MELA-7 (FCT 23b)
MILT-8 (FCT 23b)
ELDO-1 (FCT 23b)
MILT-7 (FCT 23b)
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
Q22_ERINDALE ROAD SITE
card10 (FCT 6)
card11 (FCT 6)
card4 (FCT 6)
PAYNE-1 (FCT 4)
TWIN-4 (FCT 6)
TWIN-1 (FCT 6)
TWIN-2 (FCT 6)
TWIN-3 (FCT 6)
yarl02 (FCT 9)
MANEA-1 (FCT 9)
weir 01 (FCT 9)
AUSTB-5 (FCT 5)
PAGA-3 (FCT 5)
PAGA-1 (FCT 5)
low08 (FCT 5)
low09a (FCT 5)
low09b (FCT 5)
PLINE-4 (FCT 4)
WHITE-2 (FCT 4)
AMBR-3 (FCT 4)
CAPEL-3 (FCT 4)
FL-1 (FCT 4)
low14a (FCT 4)
rowe02 (FCT 4)
LYONS-1 (FCT 4)
26
24
22
20
18
Similarity


Group average
Resemblance: S17 Bray Curtis similarity
TWIN-11 (FCT 11)
FL-10 (FCT 12)
RIVD-1 (FCT 12)
BANK-1A (FCT 13)
KOOLJ-1 (FCT 4)
MELA-1 (FCT 4)
Q23_ERINDALE ROAD SITE
MILT-5 (FCT 14)
YAN-21 (FCT 14)
PLINE-5 (FCT 22)
YAN-18 (FCT 22)
YAN-17 (FCT 22)
YAN-22 (FCT 22)
MHENRY-1 (FCT 30c)
MHENRY-2 (FCT 30c)
CHIDPT-1 (FCT 24)
PEPGRV-1 (FCT 30a)
PEPGRV-2 (FCT 30a)
WHILL-3 (FCT 27)
WHILL-4 (FCT 27)
YALG-3 (FCT 27)
YALG-8 (FCT 27)
SVH-2 (FCT 27)
YALG-4 (FCT 27)
YALG-5 (FCT 27)
MEAL-2 (FCT 26b)
SEAB-6 (FCT 28)
YALG-2 (FCT 26b)
CLIF-2 (FCT 26a)
CLIF-3 (FCT 26a)
SHE-4 (FCT 26a)
SVH-1 (FCT 26a)
YAN-13 (FCT 26a)
YAN-2 (FCT 26a)
YAN-24 (FCT 26a)
YAN-12 (FCT 26a)
YAN-15 (FCT 26a)
SHE-5 (FCT 26a)
WABL-1 (FCT 26a)
NWIL-2 (FCT 26b)
WABL-3 (FCT 26b)
YAN-23 (FCT 26b)
WABL-2 (FCT 26b)
YAN-1 (FCT 26b)
SHE-1 (FCT 26b)
SHE-3 (FCT 26b)
YAN-14 (FCT 26b)
YAN-16 (FCT 26b)
SHE-6 (FCT 26b)
YAN-10 (FCT 26b)
YAN-11 (FCT 26b)
NAVB-2 (FCT 29a)
NAVB-3 (FCT 24)
NAVB-4 (FCT 24)
MTB-2 (FCT 24)
MTB-3 (FCT 24)
Samples
16
14
12
10
8
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
KING-1 (FCT 28)
KING-2 (FCT 28)
Q24_ERINDALE ROAD SITE
BULL-9 (FCT 28)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
YULE-3 (FCT 21c)
talb6 (FCT 20c)
talb10 (FCT 20c)
talb11 (FCT 20c)
talb7 (FCT 20c)
talb3 (FCT 20c)
talb5 (FCT 20c)
talb2 (FCT 20c)
talb8 (FCT 20c)
talb9 (FCT 20c)
BRIX-2 (FCT 3a)
MANEA-2 (FCT 21a)
DUNS-1 (FCT 3b)
card12 (FCT 3b)
card13 (FCT 3b)
waro 01 (FCT 3b)
waro 02 (FCT 3b)
card8 (FCT 20b)
card9 (FCT 20b)
card3 (FCT 21a)
brick2 (FCT 20b)
card1 (FCT 20b)
card2 (FCT 20b)
Samples
56
54
52
50
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
RAAF-1 (FCT 23b)
PLINE-1 (FCT 23b)
PLINE-2 (FCT 23b)
MUCK-1 (FCT 23b)
MPK01 (FCT 23b)
MPK03 (FCT 23b)
MELA-9 (FCT 23b)
SINT-1 (FCT 23b)
APBF-1 (FCT 20a)
APBF-2 (FCT 20a)
M53 (FCT 20a)
KOON-1 (FCT 20a)
KOON-2 (FCT 20a)
GOLF-1 (FCT 20a)
LAND-1 (FCT 20a)
FL-4 (FCT 21a)
MODO-2 (FCT 21c)
PLINE-7 (FCT 21c)
Q25_ERINDALE ROAD SITE
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
KING-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
YALG-1 (FCT 26b)
WHILL-5 (FCT 26b)
YALG-6 (FCT 26b)
Samples
32
30
28
26
24
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
MYALUP-2 (FCT 25)
NEER-1 (FCT 24)
NEER-11 (FCT 24)
C71-4 (FCT 25)
MINN-1 (FCT 25)
MINN-2 (FCT 25)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
TRIG-4 (FCT 28)
Q26_ERINDALE ROAD SITE
KING-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
NEER-23 (FCT 28)
NEER-20 (FCT 28)
NEER-21 (FCT 28)
NEER-22 (FCT 28)
TAM-1 (FCT 21a)
WELL-1 (FCT 21a)
KERO-2 (FCT 24)
MTB-1 (FCT 24)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
BULL-9 (FCT 28)
BULL-1 (FCT 28)
BULL-4 (FCT 28)
BULL-10 (FCT 28)
BULL-11 (FCT 28)
YULE-3 (FCT 21c)
talb6 (FCT 20c)
talb10 (FCT 20c)
talb11 (FCT 20c)
talb7 (FCT 20c)
talb3 (FCT 20c)
talb5 (FCT 20c)
talb2 (FCT 20c)
talb8 (FCT 20c)
talb9 (FCT 20c)
Samples
48
46
44
42
40
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19


Group average
Resemblance: S17 Bray Curtis similarity
Samples
SEAB-1 (FCT 30c)
LESCH-3 (FCT 30b)
LESCH-4 (FCT 30b)
LESCH-5 (FCT 30b)
LESCH-1 (FCT 30b)
LESCH-2 (FCT 30b)
PEPB-1 (FCT 30b)
Possum3 (FCT 30b)
Possum4 (FCT 30b)
GARDEN-1 (FCT 30a)
GARDEN-3 (FCT 30a)
WOODP-1 (FCT 30a)
GARDEN-4 (FCT 30a)
WOODP-2 (FCT 30a)
ELLEN-7 (FCT 6)
PEARCE-1 (FCT 6)
talb1 (FCT 3c)
talb12 (FCT 3c)
talb13 (FCT 3c)
PEARCE-2 (FCT 3c)
talb4 (FCT 3c)
WATER-3 (FCT 3c)
yarl01 (FCT 3c)
ELLEN-6 (FCT 3c)
DUCK-1 (FCT 3c)
DUCK-2 (FCT 3c)
Q27_ERINDALE ROAD SITE
card11 (FCT 6)
card4 (FCT 6)
YAN-25 (FCT 28)
YAN-3 (FCT 28)
WABL-4 (FCT 28)
YAN-6 (FCT 28)
NEER-8 (FCT 28)
YAN-4 (FCT 28)
YAN-8 (FCT 28)
YAN-5 (FCT 26b)
YAN-9 (FCT 28)
KING-1 (FCT 28)
DEPOT-1 (FCT 28)
HARRY-1 (FCT 28)
HARRY-2 (FCT 28)
TRIG-4 (FCT 28)
WOODV-1 (FCT 28)
WOODV-2 (FCT 28)
KING-2 (FCT 28)
WARI-1 (FCT 28)
WARI-2 (FCT 28)
SHENT-1 (FCT 28)
TRIG-3 (FCT 28)
MINN-3 (FCT 25)
NEER-3 (FCT 28)
NEER-4 (FCT 28)
NEER-2 (FCT 28)
NEER-6 (FCT 28)
NEER-5 (FCT 28)
38
36
34
32
30
Similarity
FCts
1a
3a
3c
1b
20b
23b
2
9
18
4
8
30a
20a
28
10b
7
21c
30b
11
29a
26b
5
3b
30c
21a
10a
14
15
25
16
22
12
29b
13
6
27
23a
26a
20c
24
17
21b
19