Albion Park Rail Bypass

Biodiversity Offset Package

Transport for NSW

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Approval and authorisation

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Draft	29/05/2020	Mark Stables	Alex Cockerill Peter Hawkins Dave Ledlin Graham Roche
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Contents

1 Introduction

1.1 Project background

Transport for NSW (TfNSW) is constructing a 9.8-kilometre extension of the Princes Motorway between Yallah and Oak Flats to bypass the suburb of Albion Park Rail, NSW. The motorway would complete the 'missing link' for a motorway standard road between Sydney and Bomaderry. Key features of the project include:

- Two lanes in each direction divided by a median (with capacity to upgrade to three lanes in each direction in future)
- Three interchanges provided at Yallah, Albion Park and Oak Flats would connect the local road network with the motorway
- Bridges to carry the motorway over Duck Creek, Macquarie Rivulet and Frazers Creek
- Bridges to carry the motorway over the Princes Highway and Tongarra Road
- A bridge to carry the motorway over the South Coast Rail Line
- Improved pedestrian and cycle connections.

1.2 Project approval

The Albion Park Rail Bypass (APRB) received State Significant Infrastructure project approval under Section 115ZB of the *Environmental Planning & Assessment Act 1979* (EP&A Act) on 30 January 2018, subject to conditions.

As part of the project approval process an Environmental Impact Statement (EIS) was prepared in accordance with (former) Part 5.1 of the EP&A Act. The EIS addressed the Secretary Environmental Assessment Requirements (SEARs), which were issued for the project by the Department of Planning and Environment (DP&E) on 18 March 2015.

To address biodiversity matters in the EIS, a Biodiversity Assessment Report (NGH Environmental 2017a) and Biodiversity Offset Strategy (NGH Environmental 2017b) were prepared in accordance with the NSW Framework for Biodiversity Assessment (FBA) and the NSW Biodiversity Offsets Policy for Major Projects (Office of Environment and Heritage 2014).

At the time of project approval, all threatened terrestrial biodiversity entities within NSW were listed under the *Threatened Species Conservation Act 1995* (TSC Act). This act was repealed on 25 August 2017 and replaced by the *Biodiversity Conservation Act 2016* (BC Act).

Impacts on biodiversity values assessed under FBA for the project were calculated using the BioBanking credit calculator that underpinned both the FBA and Biobanking Assessment Method 2014 (BBAM).

The project was approved subject to specific biodiversity conditions of approval under Part E, condition E11 – E15 of the approval. An overview of relevant conditions of approval are outlined below.

1.3 Conditions of approval – biodiversity offsets

Project approval was granted under Section 115ZB of the EP&A Act on 30 January 2018 subject to conditions of approval. As part of the project conditions of approval, several key conditions relate to biodiversity offsets. These conditions are presented below in Table 1.1.

Table 1.1 Conditions of approval (SSI 6678)

Condition	Part E Key issue conditions - Biodiversity	Section addressed
E11	*The Proponent must offset impacts to the Plant Community Types and Endangered Population specified in the Albion Park Rail, Biodiversity Addendum, ngh environmental, December 2017, in accordance with the requirements of the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014), the Framework for Biodiversity Assessment 2014, or as otherwise agreed by the Secretary in consultation with OEH.*	*Section 4*
E12	*The Proponent must submit a progress report to the Secretary which identifies offsets required and evidence that they are achievable, or alternatively provide details on how the offset requirements will be met using the Biodiversity Conservation Fund. This report must be provided to the Secretary for information prior to any impacts on vegetation communities and the Eastern Flame Pea endangered population, except those within the Croom Regional Sporting Complex.*	*This has been previously addressed refer to Albion Park Rail Bypass - Biodiversity Offset Package progress report addressing CoA (E12) (WSP, 2018)*
E13	*Within 24 months of the submission of the progress report (as required under Condition E12), or as otherwise agreed by the Secretary, the Proponent must finalise and submit to the Secretary for approval, a Biodiversity Offset Package. The Package must be prepared in consultation with OEH and confirm how the impacts of the SSI will be offset. The Package must be consistent with the biodiversity offset strategy requirements of the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014), unless otherwise agreed by OEH. The Package must include, but not necessarily be limited to:* *(a) details on the biodiversity credits (including number and type) identified to offset the impacts of the SSI and evidence that they be attained and secured in accordance with the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014); and* *(b) for offsets not secured through the retirement of biodiversity credits, details on how offset requirements will be met.*	*a. Section 2* *b. Section 3.5*
E14	*Should supplementary measures be proposed, the Package must also provide details on:* *(a) the management and monitoring requirements for compensatory habitat works and other biodiversity offset measures proposed to ensure that outcomes of the package are achieved, including:* *i. the monitoring of condition of species and ecological communities at offset (including translocation) locations,* *ii. the methodology for the monitoring programs(s), including the number and location of offset monitoring sites, and the sampling frequency at these sites,*	*This condition is not applicable as supplementary measures are not required.*

Condition	Part E Key issue conditions - Biodiversity	Section addressed
	iii. provisions for the annual reporting of the monitoring results to the Department, OEH and the public for a set period of time, as determined in consultation with OEH, and *iv. timing and responsibilities for the implementation of the supplementary measures; and* *(b) processes and/or measures that would be implemented to ensure that any land offsets are protected and managed in perpetuity.* *The supplementary measures must be implemented by the Proponent according to the timeframes set out in the Biodiversity Offset Package.*	
E15	*All required offsets must be secured in consultation with the OEH, within 12 months of the approval of the Biodiversity Offset Package or within another timeframe agreed with the Secretary. The Proponent must submit to the Secretary a copy of the credit retirement report issued by the OEH once the offsets are retired, within one month of receiving the report.*	*Section 4.2; Section 5*

1.4 Biodiversity Offset Package objectives

This BOP details the final Biodiversity Offset Package for the whole project, which includes Stages 1, 2 and 3, as approved in the NSW Infrastructure Approval SSI 6878. This BOP builds on and importantly improves on the conservation outcomes of the proposed offset options by:

- Addressing the CoA relevant to biodiversity offsets (SSI 6678)
- Providing for the acquisition of substantial areas of land-based biodiversity offsets within proximity to the project (i.e. Shellharbour City Council LGA)
- Targeting the preservation of the specific endemic communities and populations of the area including:
    - Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion Endangered Ecological Community
    - *Chorizema parviflorum* (Eastern Flame Pea) Endangered population in the Wollongong and Shellharbour Local Government Areas.
- Targeting the preservation of threatened ecological communities:
    - Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions Endangered Ecological Community
    - Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions Endangered Ecological Community

The overall objective of this BOP is to detail the ecological values that will result from the project and how these impacts will be offset. Specifically, this BOP aims to:

- Prepare a BOP in accordance with the project's CoA (Condition E11, 13 & 14), the approved BOS (NGH Environmental, 2017) and in consideration of relevant NSW policies and guidelines

- Apply Biodiversity Assessment Methodology 2020 (BAM) to each proposed offset site to ensure the quantum of offset generated for each site is consistent with the project biodiversity offset equivalency requirements
- Compare the project and land-based offsets to demonstrate that the proposed Biodiversity Stewardship Sites are appropriate to offset impacts of the project, including reference to the NSW Biodiversity Offsets Policy for Major Projects (Office of Environment and Heritage, 2014)
- Provide a net gain in local conservation of important endangered ecological communities and populations in consultation with the local community, local councils and relevant government regulators
- Determine the management and monitoring requirements for biodiversity offset measures to ensure outcomes of the package are achieved
- Secure residual credits through trading of existing credits in accordance with the FBA trading rules and in accordance with the NSW Biodiversity Offsets Policy for Major Projects (Office of Environment and Heritage, 2014)
- Retire residual credits through payment into the Biodiversity Conservation Fund (BCF) administered by the BCT in accordance with the NSW Biodiversity Offsets Policy for Major Projects (Office of Environment and Heritage, 2014) and based on final reasonable equivalency.

2 Project offset requirement

2.1 Project approved offset requirement

The project approved biodiversity offset requirement was calculated using the FBA that was underpinned by the BioBanking credit calculator. All biodiversity credit requirements calculated for the project are presented as BBAM credits.

Biodiversity offsets were required for both plant community types (ecosystem credits) and threatened species impacts (species credits). A full breakdown of biodiversity offset requirements and calculations for the project are outlined in the Biodiversity Assessment Report – Biodiversity Addendum (NGH Environmental 2017a). It should be noted that impact areas are conservative and are based on predicted clearing. Final vegetation clearing calculations have been reassessed for all impact areas and credit requirements, this is discussed further in section 2.2.

An overview of the project approved BBAM biodiversity offset requirement for ecosystem and species credits is presented below.

2.1.1 Ecosystem credit requirement

A summary of the extent of each vegetation community to be impacted upon by the project and the subsequent BBAM ecosystem credit offsets required are provided in Table 2.1.

Table 2.1 Summary of vegetation to be impacted and BBAM ecosystem credits required to offset impacts

Ecosystem credit	Threatened ecological community	Area impacted	Credits required
PCT 781 (SR 536) Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*Freshwater Wetlands on Coastal Floodplains - Endangered*	*7.20 ha*	*293*
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*1.12 ha*	*35*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*Swamp Oak Floodplain Forest - Endangered*	*0.55 ha*	*19*
PCT 1245 (SR652) Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion	*Not listed*	*0.96 ha*	*19*
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*6.76 ha*	*338*
Total ecosystem credit			*704*

2.1.2 Species credit requirement

The project impact on species credits threatened species was limited to one threatened flora species being the endangered population of *Chorizema parviflorum* (Eastern Flame Pea). A summary of the extent of impact on this species by the project and the subsequent BBAM species credit offsets required are provided in Table 2.2.

Table 2.2 Summary of threatened species to be impacted and BBAM species credits required to offset impacts

Species credit	Threatened status	No. of individuals impacted	Credits required
Chorizema parviflorum (Eastern Flame Pea)	*Endangered population*	*110*	*1725*
Total species credits			*1725*

2.2 Updated offset requirement based on final vegetation clearing calculations

Current impact areas and therefore credit requirements are based on predicted clearing and are conservative. Given that vegetation clearing for the project is now finalised, the impacts on biodiversity has been reassessed to reflect actual area cleared. Reductions in approved clearing limits have been achievable particularly for the threatened ecological communities Freshwater Wetlands on Coastal Floodplains and Illawarra Lowlands Grassy Woodland - Endangered. This reduction in vegetation clearing is consistent with the Revised Environmental Management Measure (BD02) from the Submission and Preferred Infrastructure Report.

Updated area impacts were forwarded to the NSW Biodiversity Conservation Division (BCD) where revised BBAM credit calculations were undertaken. A summary of the updated biodiversity credit offset obligation for the project is presented in Table 2.3 with consultation documented in Appendix E.

Table 2.3 Summary of updated vegetation to be impacted and BBAM ecosystem credits required to offset impacts

Ecosystem credit	Threatened ecological community	Previous area impacted	Previous credits required	Updated area impact	Updated credit required
PCT 781 (SR 536) Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*Freshwater Wetlands on Coastal Floodplains - Endangered*	*7.20 ha*	*293*	*5.65 ha*	*230*
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*1.12 ha*	*35*	*1.12 ha*	*35*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest,	*Swamp Oak Floodplain*	*0.55 ha*	*19*	*0.07 ha*	*18*

Ecosystem credit	Threatened ecological community	Previous area impacted	Previous credits required	Updated area impact	Updated credit required
Sydney Basin Bioregion and South East Corner Bioregion	*Forest - Endangered*				
PCT 1245 (SR652) Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion	*Not listed*	*0.96 ha*	*19*	*0.96 ha*	*19*
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*6.76 ha*	*338*	*4.07 ha*	*204*
Total ecosystem credit			*704*		*506*

2.3 Application of reasonable equivalency

Application for reasonable equivalency has been issued for the project (Appendix F) to account for legislative changes that have resulted in different methods for calculating biodiversity offset credits. The requirement for existing approved projects to seek reasonable equivalency is outlined in the Biodiversity Conservation (Savings and Transitional) Regulation 2017. The outcome of reasonable equivalency as issued by the Department of Planning Industry and Environment (DPIE) dated 19 May 2021 for ecosystem credits is presented in Table 2.4 with species credits presented in Table 2.5.

Table 2.4 Reasonable equivalency comparison for ecosystem credits

Ecosystem credit	Area (ha)	BBAM credits	BAM credits if paying into fund[1]	BAM credits if using BSA sites[2]
PCT 781 Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*5.65*	*230*	*163*	*37*
PCT 838 Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*1.12*	*35*	*35*	*33*
PCT 1232 Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*0.07*	*18*	*9*	*15*
PCT 1245 (SR652) Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion	*0.96*	*19*	*19*	*10*
PCT 1326 Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*4.07*	*204*	*149*	*128*

Ecosystem credit	Area (ha)	BBAM credits	BAM credits if paying into fund[1]	BAM credits if using BSA sites[2]
Total ecosystem credits			*375*	*223*

[1]Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites established by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.

[2]BAM credit obligation if using retiring of credits from Biodiversity Stewardship sites established by the applicant.

Table 2.5 Reasonable equivalency comparison for species credits

Ecosystem credit	Impact	BBAM credits	BAM credits if paying into fund[1]	BAM credits if using BSA sites[2]
Chorizema parviflorum Benth. in the Wollongong and Shellharbour Local Government Areas	*110 individuals*	*1725*	*230*	*144*
Total species credits			*230*	*144*

[1]Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites established by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.

[2]BAM credit obligation if using retiring of credits from Biodiversity Stewardship sites established by the applicant.

3 Identification of biodiversity offsets

3.1 Biodiversity offset strategy

The project approved Biodiversity Offset Strategy (NGH Environmental 2017b) presented an offset options analysis on 23 potential offset sites in the project locality. These sites were investigated for their potential to provide like-for-like biodiversity offsets for the project.

In determining final site selection for the Biodiversity Offset Package, the preferred Biodiversity Offset Strategy sites were further assessed. These were:

- Site 1 – Shellharbour City Council (Croom Reserve)
- Site 3 – Shellharbour City Council (Light Rail)
- Site 8 – TransGrid
- Sites 12,13,14 – Private landholder
- Site 22 – Shellharbour City Council (Dunmore Wetland)
- Site 23 – Yallah TAFE

Extensive landholder consultation was undertaken for all preferred sites that resulted in identifying that landholders of Sites 3, 8, 12, 13, 14 and 23 were not interested in proceeding further with biodiversity offset establishment negotiations. It should be noted that site 23 was previously included as a potential biodiversity offset site and in-principle agreement was signed between Transport for NSW and TAFE NSW (dated 15 March 2018). Whilst an in-principle agreement was established for this site TAFE NSW has recently terminated any further commitment for this site and as such it has been removed from the Biodiversity Offset Package.

Landholder agreement to proceed with potential offset sites at Sites 1 and 22 have been established (refer Appendix C) and detailed field surveys in accordance with BAM were undertaken. A Biodiversity Stewardship Site Assessment Report (BSSAR), management action plan and detailed Total Fund Deposit (TFD) costing has been completed for each site.

The establishment of biodiversity credits through the creation of Biodiversity Stewardship Agreements will only partially meet the required project biodiversity offset obligation. To ensure this Biodiversity Offset Package meets the full quantum of required biodiversity offset credits, TfNSW will commit to payment into the Biodiversity Trust Fund for any credit shortfall outside the locally secured Biodiversity Stewardship Agreements.

3.2 Establishment of biodiversity stewardship agreements

Biodiversity Stewardship Site Assessment Reports have been prepared and will be lodged with the Biodiversity Conservation Trust for two selected sites that will partially deliver the required biodiversity offsets for the project. These sites are:

- Site 1 – Croom Reserve (Shellharbour City Council)
- Site 22 – Dunmore Wetland (Shellharbour City Council)

Each site has been selected based on the presence of PCT 781 (SR536), PCT 838 (SR545), PCT 1232 (649), PCT 1326 (SR669) and *Chorizema parviflorum* (Eastern Flame Pea) that form part of the biodiversity offset requirement for the project.

The proposed offset areas will be protected by a Biodiversity Stewardship Agreement in accordance with the BC Act that will place legal restrictions on the future use and management of the land that would exist within the land title in perpetuity. This will ensure

that the offsets are enduring and that they will offset the impact of the development in perpetuity.

A 20% reduction for ecosystem credits and species credits for a biodiversity stewardship site on Local Government land has been applied. This credit reduction has been applied to community and operation land classified under the *Local Government Act 1993* and will include Site 1 (Croom Reserve) and Site 22 (Dunmore Wetland).

An overview of each proposed biodiversity stewardship site is presented below. BAM credit calculations were carried out on the using the BAM Calculator Version 38.

3.2.1 Site 1 – Croom Reserve

Croom Reserve is located directly adjacent to the project and occurs to the south of Tongarra Road and south west of Croome Road, Croom (Figure 3.1). It covers an area of about 68 ha of which 27.8 ha is included in the proposed biodiversity offset site.

Croom Reserve was identified as Site 1 within the project approved Biodiversity Offset Strategy (NGH Environmental 2017b). The reserve includes areas of remnant native vegetation that form part of the Endangered Ecological Community Illawarra Lowlands Grassy Woodland as providing habitat for *Chorizema parviflorum* (Eastern Flame Pea) Endangered population.

A summary of native vegetation types, extent and credit yield within the site calculated using BAM is provided in Table 3.1.

Threatened species and associated credit yield within the site calculated using BAM is provided in Table 3.2. The BAM-C biodiversity credit report is provided in Appendix A.

Table 3.1 Ecosystem credits generated on Croom Reserve (Site 1) using BAM

Ecosystem credit	Threatened ecological community	Area (ha)	BAM credits
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*2.2*	*8*
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*25.6*	*59*
Total ecosystem credit			*67*

Table 3.2 Species credits generated on Croom Reserve (Site 1) using BAM

Species credit	Threatened status	Count	BAM credits
Chorizema parviflorum (Eastern Flame Pea)	*Endangered population*	*133 individuals*	*110*
Total species credits			*110*

Map: 2270588A_GIS_F030_A6	Author: Trent.Bowman		
Date: 23/01/2020	Approved by: -		

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Coordinate system: GDA 1994 MGA Zone 56

Scale ratio correct when printed at A3

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase,

Croom Reserve and Dunmore Wetland Biodiversity Stewardship Site Assessment Report

Figure 3.1

3.2.2 Site 22 – Dunmore Wetland

Dunmore Wetland is located within Minnamurra River catchment and is surrounded by Links Golf Course, approximately 5 km to the south east of the project (Figure 3.2).

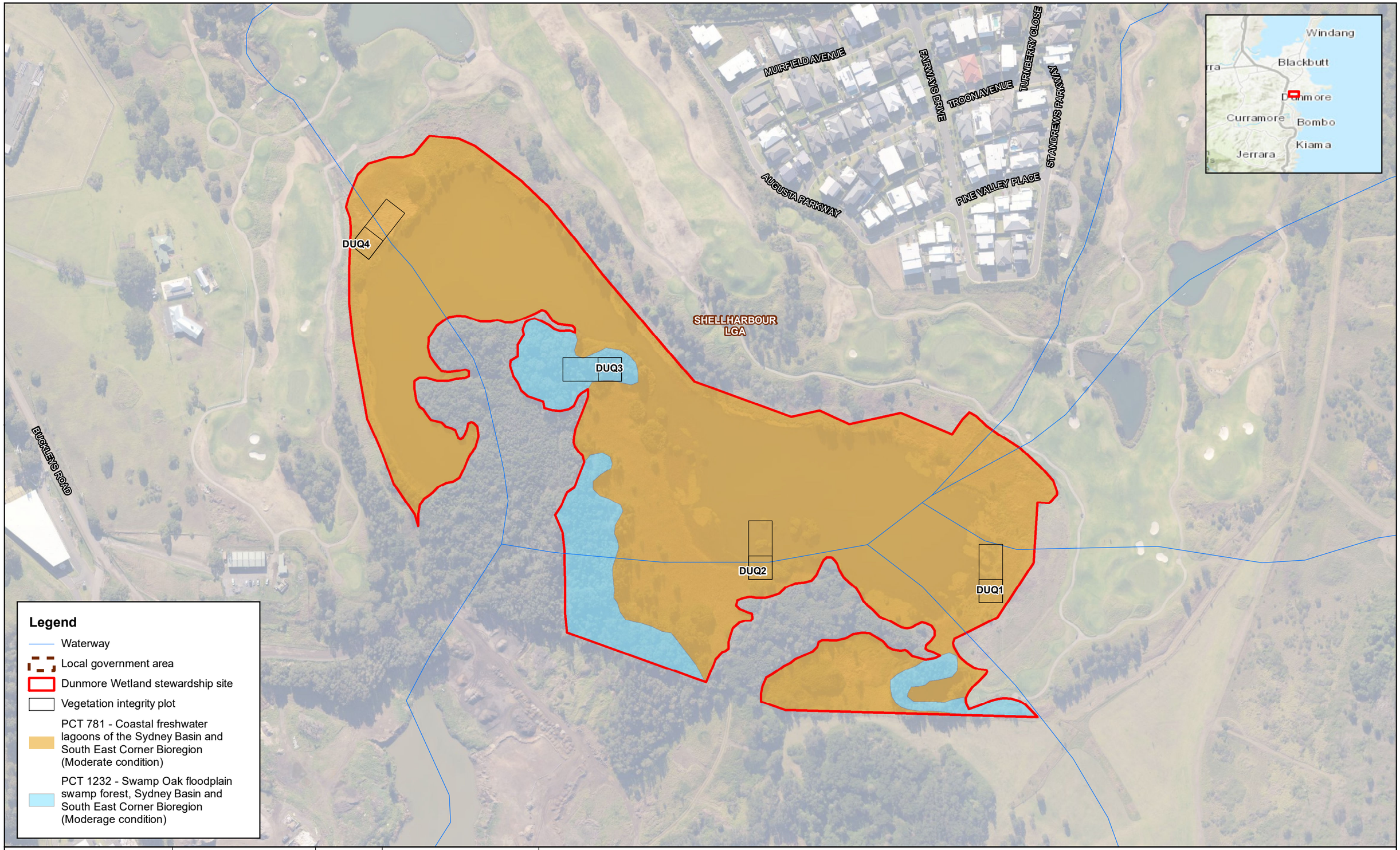
Dunmore Wetland was one of the wetland sites identified by NGH Environmental as Site 22 within the project approved Biodiversity Offset Strategy (NGH 2017). Dunmore Wetland is listed under State Environmental Planning Policy No. 14 Coastal Wetlands (SEPP 14). Vegetation consists of freshwater wetland and forested wetland which forms part of two Endangered ecological communities:

- Freshwater Wetlands on Coastal Floodplains
- Swamp Oak Floodplain Forest.

No threatened species were identified. A summary of native vegetation types, extent and credit yield within the site calculated using BAM is provided in Table 3.3. The BAM-C biodiversity credit report is provided in Appendix B.

Table 3.3 Ecosystem credits generated on Dunmore Wetlands (Site 22) using BAM

Ecosystem credit	Threatened ecological community	Area	BAM credits
PCT 781 (SR536) Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*Freshwater Wetlands on Coastal Floodplains – Endangered*	*11.22*	*52*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*Swamp Oak Floodplain Forest - Endangered*	*1.52*	*1*
Total ecosystem credit			*53*



Map: 2270588A_GIS_F030_A6	Author: Trent.Bowman		0 50 100 m 1:3,000 *Coordinate system: GDA 1994 MGA Zone 56* Scale ratio correct when printed at A3
Date: 23/01/2020	Approved by: -		

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase,

Croom Reserve and Dunmore Wetland Biodiversity Stewardship Site Assessment Report

Figure 3.2

3.3 Summary

A summary of the BAM credits generated for the Biodiversity Stewardship Sites is presented in Table 3.4. A summary of residual ecosystem and species credit obligation is presented in Table 3.5 and Table 3.6.

Table 3.4 Summary of BAM generated on proposed Biodiversity Stewardship Sites

Biodiversity credit	Threatened Entity	Site	Area (Ha) / Individuals	BAM credits
PCT 781 (SR536) Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*Freshwater Wetlands on Coastal Floodplains – Endangered ecological community*	*Dunmore Wetland*	*11.22*	*52*
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*Illawarra Lowlands Grassy Woodland – Endangered ecological community*	*Croom Reserve*	*2.2*	*8*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*Swamp Oak Floodplain Forest – Endangered ecological community*	*Dunmore Wetland*	*1.52*	*1*
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*Illawarra Lowlands Grassy Woodland – Endangered ecological community*	*Croom Reserve*	*25.6*	*59*
Total of all ecosystem credits generated on Biodiversity Stewardship Sites			*40.52*	*120*
Chorizema parviflorum (Eastern Flame Pea)	*Endangered population*	*Croom Reserve*	*133 individuals*	*110*
Total of all species credits generated on Biodiversity Stewardship Sites			*133 individuals*	*110*

Table 3.5 Summary of BAM ecosystem credits required against BAM ecosystem credits generated at BSA sites and residual credit obligation

Ecosystem credit	Threatened ecological community	BAM credits if paying into fund[1]	BAM credits if using BSA sites[2]	BAM credits generated from BSA sites	Proportion of the credit obligation from BSA sites	Proportion of residual credit obligation required	Residual credit obligation
PCT 781 (SR 536) Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*Freshwater Wetlands on Coastal Floodplains - Endangered*	*163*	*37*	*52*	*100%*	*0*	*0*
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*35*	*33*	*8*	*24%*	*76% of 35*	*27*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*Swamp Oak Floodplain Forest - Endangered*	*9*	*15*	*1*	*7%*	*93% of 9*	*8*
PCT 1245 (SR652) Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion	*Not listed*	*19*	*10*	*0*	*0%*	*0*	*19*
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*Illawarra Lowlands Grassy Woodland - Endangered*	*149*	*128*	*59*	*46%*	*54% of 149*	*80*
Total ecosystem credit		*375*	*223*	*120*	*n/a*	*n/a*	*134*

[1]Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites established by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For

example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.

[2]BAM credit obligation if using retiring of credits from Biodiversity Stewardship sites established by the applicant.

Table 3.6 Summary of BAM species credits required against BAM species credits generated at BSA sites and residual credit obligation

Species credit	Threatened status	BAM credits if paying into fund[1]	BAM credits if using BSA sites[2]	BAM credits generated from BSA sites	Proportion of the credit obligation from BSA sites	Proportion of residual credit obligation required	Residual credit obligation
Chorizema parviflorum (Eastern Flame Pea)	*Endangered population*	*230*	*144*	*110*	*76%*	*24% of 230 credits*	*55*
Total species credits		*230*	*144*	*110*	*n/a*		*55*

[1]Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites established by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.

[2]BAM credit obligation if using retiring of credits from Biodiversity Stewardship sites established by the applicant.

3.4 Use of existing biodiversity credits

3.4.1 Ecosystem credits

No existing ecosystem biodiversity credits are relied upon in preparing this BOP.

3.4.2 Species credits

The establishment of one Biodiversity Stewardship Agreement over an existing population of *Chorizema parviflorum* (Eastern Flame Pea) is the preferred method to offset species credit obligations. A total of 55 BAM *Chorizema parviflorum* (Eastern Flame Pea) species credits are residual.

A search of the Biodiversity Offset Credit Supply register on the 31/05/2021 revealed that there are currently no species credits available for *Chorizema parviflorum* (Eastern Flame Pea).

TfNSW currently own species credits for *Zieria granulata* (Illawarra Zieria) established on a BioBanking Site near Broughton Village, NSW as part of the Princess Highway - Foxground to Berry Bypass Project Biodiversity Offset Package (Table 3.7).

The proposed retirement of existing credits for *Zieria granulata* (Illawarra Zieria) is assessed through both FBA trading rules (in accordance with E13 of the CoA) and the NSW variation offset rules outlined in clause 6.4 of the *Biodiversity Conservation Regulation 2017* below and is considered appropriate under both sets of legislation.

Table 3.7 *Chorizema parviflorum* and *Zieria granulata* conservation status and BAM credits

Scientific name	Common name	BC Act	BAM equivalent credits
Zieria granulata	*Illawarra Zieria*	*Endangered*	*55*

FBA Trading rules

Section 10.5.7 of the FBA outlines the variations of the offset rules and supplementary measures for species credits. This section outlined that the consent authority may approve a variation of the offset rules by allowing a different species to that impacted to be used to meet offset requirements provided the following rules are met:

(a) the proponent can demonstrate that all reasonable steps have been taken to secure the number and types of species credits impacted on at the development site, and

The establishment of two Biodiversity Stewardship Agreements over existing populations of *Chorizema parviflorum* (Eastern Flame Pea) are proposed as the preferred method to offset species credit obligations. A total of 55 *Chorizema parviflorum* (Eastern Flame Pea) species credits are residual.

A search of the Biodiversity Offset Credit Supply register on the 31/05/2021 revealed that there are currently no species credits available for *Chorizema parviflorum* (Eastern Flame Pea).

As such, residual credits are subject to FBA trading rules. TfNSW currently own 3536 BBAM *Zieria granulata* (Illawarra Zieria) established on a Biobanking Site near Broughton Village, NSW. The use of existing *Zieria granulata* (Illawarra Zieria) species credits to meet residual offset requirements for *Chorizema parviflorum* (Eastern Flame Pea) is proposed. These

species credits will constitute BAM equivalent credits and be retired with a BAM equivalent statement.

(b) the species to which the species credit relates is not listed on the EPBC Act or listed as critically endangered on the BC Act.

Chorizema parviflorum (Eastern Flame Pea) is not listed under the EPBC Act or listed as Critically Endangered under the BC Act.

(c) the alternative species credits are created on land within the same IBRA region in which the proposed Major Project occurs

The *Chorizema parviflorum* (Eastern Flame Pea) impacted by the project and the *Zieria granulata* (Illawarra Zieria) individuals proposed for offsetting are both within the Sydney Basin IBRA region.

(d) the alternative species is, according to the Threatened Species Profile Database, from the same life-form as the flora species impacted at the development site. In addition, the PCT containing the flora species at the offset site should preferably be the same PCT within which this species was located at the development site, and

Chorizema parviflorum (Eastern Flame Pea) and *Zieria granulata* (Illawarra Zieria) are the same life-form, a shrub, and are associated with PCT 1326 and PCT 838.

(e) the alternative species credits are for a species or population listed in either Schedule 1 or 1A of the TSC Act, where the species credit required for the proposed development relates to a species or population listed in Schedule 1 of the TSC Act.

Chorizema parviflorum (Eastern Flame Pea) and *Zieria granulata* (Illawarra Zieria) are listed as Endangered under the BC Act.

3.5 Payment into the Biodiversity Conservation Fund

Residual ecosystem credit requirements are proposed to be retired through the payment into the Biodiversity Conservation Fund in accordance with the NSW Biodiversity Offsets Policy for Major Projects (Office of Environment and Heritage, 2014). The residual ecosystem credit obligation is based on the reasonable equivalency issued for the project that has determined a proportional ratio BAM credits based on use of BSA sites for the offsets. A summary of residual ecosystem credits is outlined in Table 3.8.

Table 3.8 Residual BAM ecosystem credits required by the project

Offset entity	Trading Group	Project residual ecosystem credit obligations
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*TEC - Illawarra Lowlands Grassy Woodland - Endangered*	*27*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*TEC - Swamp Oak Floodplain Forest - Endangered*	*8*
PCT 1245 (SR652) Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion	*Not TEC - North Coast wet sclerophyll forests with a percent cleared value <50%*	*19*

Offset entity	Trading Group	Project residual ecosystem credit obligations
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion (Illawarra Lowlands Grassy Woodland EEC)	*TEC - Illawarra Lowlands Grassy Woodland - Endangered*	*80*
Total residual ecosystem credit obligations		*134*

4 Consistency with Biodiversity Offset policy

The Albion Park Rail Bypass (APRB) conditions of approval state in E11 that the proponent must offset impacts to the Plant Community Types and Endangered Population specified in the Albion Park Rail, Biodiversity Addendum (NGH Environmental, 2017a), in accordance with the requirements of the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014), the Framework for Biodiversity Assessment 2014, or as otherwise agreed by the Secretary in consultation with OEH.

4.1 NSW Biodiversity Offsets Policy for Major Projects

The NSW Biodiversity Offsets Policy for Major Projects consistency with the revised Biodiversity Offset Package is addressed in this section. Each of the six principles which underpins the offset policy and how it is consistent with the Biodiversity Offset Package is addressed below.

4.1.1 Principle 1: Before offsets are considered, impacts must first be avoided and unavoidable impacts minimised through mitigation measures. Only then should offsets be considered for the remaining impacts.

As outlined in 9.3 of the EIS (RMS, 2015) the project has followed the avoidance of impacts through the detailed design where impact to two populations of *Chorizema parviflorum* (Eastern Flame Pea), Illawarra Lowland Grassy Woodland EEC and Macquarie Rivulet floodplain was avoided. Impacts to native vegetation was not able to be avoided entirely. Mitigation measures provided in section 9.5 of the EIS have resulted in a reduction of project impact area.

4.1.2 Principle 2: Offset requirements should be based on a reliable and transparent assessment of losses and gains

A key component of the Biodiversity Offset Package for the project is the establishment of a Biodiversity Stewardship Agreements over two sites owned and managed by Shellharbour City Council. Biodiversity across these offset sites has been quantified using the BAM. This method is considered reliable and transparent.

The proposed Biodiversity Offset Package uses BAM credits to quantify losses by the project and gains on the offset sites. This approach is considered appropriate to provide a reliable and transparent assessment of losses and gains.

The Biodiversity Offset Package involves the following:

- The establishment of a Biodiversity Stewardship Agreements on Croom Reserve, and Dunmore Wetland would provide:
    - like for like offsets for ecosystem credit obligations
    - like for like offsets for species credits obligations through *Chorizema parviflorum* (Eastern Flame Pea)
- Retirement of existing *Zieria granulata* (Illawarra Zieria) credits using trading rules for *Chorizema parviflorum* (Eastern Flame Pea) species credits consistent with both FBA and *Biodiversity Conservation Regulation 2017.*
- Retirement of ecosystem credits unable to be met through BSAs using the Biodiversity Conservation Trust (BCT)

The ecosystem credit offset obligations unable to be met through the establishment of BSAs include:

- 27 BAM credits for PCT 838 Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion
- 8 BAM credits for PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion
- 19 BAM credits for PCT 1245 Sydney Blue Gum x Bangalay - Lilly Pilly moist forest
- 80 BAM credits for PCT 1326 Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion

4.1.3 Principle 3: Offsets must be targeted to the biodiversity values being lost or to higher conservation priorities.

A key component of the Biodiversity Offset Package is the generation of like for like credits across two potential BSAs: Croom Reserve and Dunmore Wetland. The PCTs recorded across these sites correspond to those impacted by the project and have been detailed in Table 5.1.

The land-based biodiversity offsets required to compensate for the project's residual impacts were chosen based on the biodiversity values being equal or higher to those impacted. As such, the offsets are targeted to the biodiversity values being lost.

Land based offsets will account for 54% of all required ecosystem credits and 76% of species credits under BAM.

4.1.4 Principle 4: Offsets must be additional to other legal requirements.

The current planning controls for the project biodiversity offset sites have been investigated. The assessment of offsets and credits created by the offset sites will be subject to additionality for Council owned and managed land. This will apply to community and operation land classified under the *Local Government Act 1993* and will include a 20% credit reduction for Site 1 (Croom Reserve) and Site 22 (Dunmore Wetland). This credit reduction has been factored into all BAM-C calculations within the Biodiversity Offset Package.

4.1.5 Principle 5: Offsets must be enduring, enforceable and auditable

The proposed offset areas will be protected by a Biodiversity Stewardship Agreement that will place legal restrictions on the future use and management of the land that would exist within the title for the land in perpetuity. This will ensure that the offsets are enduring and that they will offset the impact of the development in perpetuity.

TfNSW is proposing to establish Biodiversity Stewardship Agreements over two sites as the preferred method of providing enduring, enforceable and auditable conservation areas administered under the BC Act.

4.1.6 Principle 6: Supplementary measures can be used in lieu of offsets.

Part of the proposed offset strategy involves a direct offset approach by combining the long-term protection of two sites and ongoing management of the sites for conservation including restoration, rehabilitation and re-establishment of the degraded habitats. This approach is a major component of the Biodiversity Offset Package.

TfNSW will make payment into the Biodiversity Conservation Fund for those ecosystem credits unable to be secured through land based offsets. Residual species credits will be

secured through the retirement of existing credits for *Zieria granulata* (Illawarra Zieria), this approach is consistent with both FBA and *Biodiversity Conservation Regulation 2017* trading rules.

4.2 Consultation with Environment Energy & Science Group (former OEH)

Consultation between Environment, Energy and Science (EES) Group, formerly known as Office of Environment and Heritage (OEH), WSP and TfNSW occurred several times during the development of the BOP via emails, phone calls and face to face meetings.

Meetings were held:

- 1 May 2017 1:00pm-2:00pm, 90 Crown Street Wollongong, NSW
- 13 May 2020 2pm-3.10pm, Microsoft Teams Meeting (online forum)
- 16 June 2020 10.30-11.30am, Microsoft Teams Meeting (online forum)

A summary of key issued raised during consultation with EES is provided in Table 4.1 with meeting minutes provided in Appendix D with ongoing email consultation presented in Appendix E.

Table 4.1 A summary of consultation with Environment Energy & Science Group (former OEH)

Date of consultation	Key issue raised	Comment
1 May 2017 1:00pm-2:00pm, 90 Crown Street Wollongong, NSW	*Information update on biodiversity offset credit obligation due to revisions.*	*Information noted.*
	Suitability of existing credits for Freshwater Wetland TEC in the Batemans IBRA sub-region.	*OEH confirmed the existing credits for Freshwater Wetland TEC in the Batemans IBRA sub-region are unsuitable for the project due to a difference threatened species profile associated with the credits (email dated 22 August 2017).* *Credits not further pursued.*
	Proposed BioBanking sites to include Shellharbour City Council reserves and Yallah TAFE	*OEH confirmed Shellharbour City Council and Yallah TAFE sites are suitable locally based offsets that would provide a positive like for like biodiversity outcome in the local area.* *TfNSW to purse establishment of BioBanking sites.*
	Possible PCT 1326 Woollybutt offsets on BlueScope Steel land.	*Discussions held with BlueScope Steel although credits not available for sale.* *Credits not further pursued.*
13 May 2020 Microsoft Teams Meeting, 2.00 – 3.30pm	*Background of offset process for the Project.* *• Commenced in 2014, biodiversity offset strategy developed and numerous sites investigated (22 sites, run many through*	*Information noted.*

Date of consultation	Key issue raised	Comment
	BBAM calculator, Croom Site 1, Dunmore Site 22) submit with EIS October 2015 *• Negotiation with many offset landholders 2016 – 17 including trying to secure TransGrid who rejected offer* *• Updated Biodiversity Offset Strategy (BOS), identified additional Yallah TAFE Site 23 submitted for approval September 2017* *• Project approved Jan 2018* *• Reasonable Equivalence application June 2018* *• Final equivalence (1:1 for all ecosystem credits) Dec 2019* *• SCC have gone through an extensive process to get agreement for offset sites at Croom and Dunmore including a vote from a Council meeting*	
	Approach to offset sites *• Project has biodiversity offset sites that are good conservation outcome (Croom and Dunmore) which would preserve some of the last remaining stands of CEEC vegetation in the local region which is the preference to any alternative offset methods* *• These offset sites were identified in Biodiversity Offset Strategy (BOS) that was part of the approval, and accounted for a substantial portion of the offset requirements.* *• Credit generation has been substantially reduced from BBAM methodology to BAM methodology, based on credit generation these sites are not viable offset sites when accounting for the Reasonable Equivalence of 1:1.* *• TfNSW believe that the offset liability should not be changed after the approval and should be consistent with the BOS and planning conditions.* *• TfNSW believe that the offset package meets the conditions in accordance with the Major Projects Offset Policy (listed in CoA E13).* *• EES stated that the Reasonable Equivalence could be reassessed based on current knowledge* *• EES stated that the BBAM calculator is not available for use* *• EES were unsure that the BBAM methodology could be used as a valid*	*Action – TfNSW to look at whether the BBAM calculator is still available for use.* *Outcome – BBAM calculator is available and all proposed offset sites have been subject to BBAM calculations dated 28 May 2020.* *Action – EES to review if an alternative approach can be utilised for offset other than BAM.* *Outcome – EES to provide further advice.* *EES supportive of Shellharbour City Council sites and Yallah TAFE and recognise that they are suitable locally based offsets that would provide a positive like for like biodiversity outcome in the local area.*

Date of consultation	Key issue raised	Comment
	approach as the Reasonable Equivalence is being applied for conversion of credits, but would review if an alternate approach is available.	
	Chorizema species credits using Zieria granulata *• TfNSW propose to use credits generated by the existing offset sites for Chorizema Species Credits* *• Remaining credits required would utilise alternative BBAM credits utilising the trading rules that were generated for Zieria granulata that were generated from another project.*	*EES supportive of this approach.*
	Remaining credit requirements *• Utilise the BCT fund for the remaining credit requirements using reasonable equivalence*	*EES supportive of this approach.*
	Actual impacts recalculated as clearing in accordance with Submission and Preferred Infrastructure Report (BD02) *• Impact will be reassessed based on the actual clearing impacts as some vegetation has been protected from impact during the detailed design and construction*	*EES supportive of vegetation clearing reduction particularly Freshwater Wetland TEC.*
16 June 2020	*Discussion was held around the final BOP and method for quantifying the offset sites accordance with conditions of approval and the NSW Biodiversity Offsets Policy for Major Projects.*	*TfNSW proposed to quantify offset sites using BBAM in accordance with conditions of approval and the NSW Biodiversity Offsets Policy for Major Projects.* *EES indicated that they would consider further the potential to use BBAM give the calculator is still available.*
22 June 2020	*Biodiversity and Conservation Division of ESS provided a letter with comment on the Biodiversity Offset Package, which included:* • *ESS are supportive that the BOP meets the general intent of the offset requirements set out in the relevant conditions of approval.* • *EES would like to review the reduction in credit obligation based on the reduced clearing that occurred as part of the project.* • *EES have sought to carry out field survey to confirm presence of Zieria granulata*	*TfNSW acknowledges the support from EES on the intent of the package.* *TfNSW will further consult with EES once the final clearing has been quantified in regards to the final credit obligation.* *Zieria granulata credits are currently held by TfNSW and would be utilised under the trading rules.* *EES have inspected the BioBank site with Zieria granulata (pers comm. Peter Hawkins TfNSW inspected the*

Date of consultation	Key issue raised	Comment
	• *ESS are assessing suitability of using BBAM credits as opposed to BAM credits*	*site with EES representative Vanessa Allen).* *TfNSW believe that the biodiversity offset package as described meets the conditions of approval for the project.*
2 February 2021	*Email correspondence: Updated BBAM credit obligation issued by Biodiversity and Conservation Division of EES issued for revised final vegetation clearing impact area.*	*BioBanking calculations rerun by John Seidel of Biodiversity and Conservation Division of EES*
19 May 2021	*Email correspondence: Updated statement of reasonable equivalence issued for the project.*	*Final updated statement of reasonable equivalence incorporated into the BOP*

5 Statement of commitments

The following statement of commitments by TfNSW is made to ensure full compliance with conditions of approval (SSI 6678) E11 to E15.

- TfNSW will establish two Biodiversity Stewardship Sites.
- TfNSW have a Council resolution to establish a Biodiversity Stewardship Site with Shellharbour City Council (see Appendix C).
- TfNSW will purchase and retire all ecosystem credits generated from the Biodiversity Stewardship Sites as outlined in Table 3.4 or as modified by the BCT.
- TfNSW will purchase and retire all species credits generated from the Biodiversity Stewardship Sites as outlined in Table 3.4 or as modified by the BCT.
- TfNSW will retire the remaining credit requirement for *Chorizema parviflorum* (Eastern Flame Pea) with *Zieria granulata* (Illawarra Zieria) species credits held by TfNSW.
- TfNSW will facilitate a payment into the NSW Biodiversity Conservation Fund to meet residual credit obligation for ecosystem credits utilising the reasonable equivalence obtained for the project.
- Should the Biodiversity Stewardship Sites not be established, TfNSW would facilitate a payment into the NSW Biodiversity Conservation Fund for the required biodiversity offset obligation utilising the reasonable equivalence obtained for the project.

It should be noted that in accordance with the conditions of approval (E15) all required offsets must be secured within 12 months of the approval of the Biodiversity Offset Package. The Biodiversity and Conservation Division has stated that the Biodiversity Offset Package meets the general intent of the offsetting requirements set out on the condition of approval (SSI 6678) (refer to Appendix E). A summary of the Biodiversity Offset Package commitments by TfNSW is outlined in Table 5.1.

Table 5.1 A summary of the Biodiversity Offset Package commitments

Vegetation type	Updated impact area (ha)	Trading Group	BAM credits if paying into fund[1]	BAM credits if using BSA sites[2]	BAM credits generated from BSA sites	Proportion of the credit obligation from BSA sites	Residual credit obligation from Biodiversity Conservation Fund
PCT 781 (SR536) Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	*5.65*	*Freshwater Wetlands on Coastal Floodplains (EEC)*	*163*	*37*	*52*	*100%*	*0*
PCT 838 (SR 545) Forest Red Gum – Thin-leaved Stringybark grassy woodland southern Sydney Basin Bioregion	*1.12*	*Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (Commonwealth CEEC)*	*35*	*33*	*8*	*24%*	*27*
PCT 1232 (SR649) Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	*0.07*	*River Flat Eucalypt Forest on Coastal Floodplains (EEC)*	*9*	*15*	*1*	*7%*	*8*
PCT 1245 (SR652) Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion	*0.96*	*North Coast wet sclerophyll forests with a percent cleared value <50%*	*19*	*10*	*0*	*0%*	*19*
PCT 1326 (SR 669) Woollybutt – White Stringybark – Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	*4.07*	*Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (Commonwealth CEEC)*	*149*	*128*	*59*	*46%*	*80*
Chorizema parviflorum (Eastern lame Pea) Endangered Population	*-*	*Endangered flora species*	*230*	*144*	*110*	*76% (+55 BAM)[1]*	*0*

[1] A residual credit obligation of 55 BAM species credits for *Chorizema parviflorum* (Eastern lame Pea) will be sourced using 55 BAM equivalent species credits of *Zieria granulata* (Illawarra Zieria) held by TfNSW. This trade meets FBA variation trading rules for species credit species.

6 Conclusion

This Biodiversity Offset Package demonstrates how TfNSW will deliver the biodiversity offset obligations for the approved Albion Park Rail Bypass project (SSI 6678).

The package adequately meets the requirements of conditions of approval E11 to E15 and has been prepared in accordance with the NSW Biodiversity Offsets Policy for Major Projects and in consultation with Environment, Energy and Science (EES) Group (formerly known as Office of Environment and Heritage).

Biodiversity offsets will be delivered through three primary sources being:

- Local land based offsets through the establishment of two Biodiversity Stewardship Agreements
- The retirement of existing biodiversity credits
- Payment into the NSW Biodiversity Conservation Fund

One of the key fundamentals underpinning this Biodiversity Offset Package is the in-perpetuity security of tenure and funded management actions for two Biodiversity Stewardship Sites; Croom Reserve and Dunmore Wetland.

Croom Reserve contains some of the largest remaining remnants of the Endangered ecological community listed as Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion. This site also provides security of tenure and in-perpetuity management for an Endangered population of Chorizema parviflorum (Eastern Flame Pea).

Dunmore Wetland contains two Endangered ecological communities listed as Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions and Swamp Oak Floodplain Forest and Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions.

The inclusion of significant local conservation outcomes for land based offsets within the package has been quantified using BAM. The Biodiversity and Conservation Division of the EES Group has stated that the Biodiversity Offset Package meets the general intent of the offsetting requirements set out on the condition of approval (SSI 6678).

To ensure compliance of conditions of approval are completely met, if the Biodiversity Stewardship Sites are unable to be established due to circumstances beyond TfNSW control, a commitment to facilitate a payment into the NSW Biodiversity Conservation Fund for the full biodiversity offset obligation is made.

7 References

Department of Planning, Industry and Environment (19 May 2021) Statement of assessment of reasonable equivalence, Albion Park Rail Bypass SSI 6878, authorised by Michelle Chung Watson

NGH Environmental (2015). Biodiversity Assessment Report (Technical Paper 4), Albion Park Rail Bypass Report prepared for RMS, on behalf of the Hyder and Cardno Joint Venture, September 2017.

NGH Environmental (2017a). Biodiversity Addendum, Albion Park Rail Bypass Report prepared for RMS, on behalf of the Hyder and Cardno Joint Venture, December 2017.

NGH Environmental (2017b). Biodiversity Offset Strategy, Albion Park Rail Bypass Report prepared for RMS, on behalf of the Hyder and Cardno Joint Venture, March 2017.

NSW Government Planning and Environment (2018) Infrastructure Approval. Application number SSI 6878 issued on the 20th January 2018

Office of Environment and Heritage (2014). Biobanking Assessment Methodology (BBAM) 2014. Office of Environment and Heritage (NSW Government), Sydney.

Office of Environment and Heritage (2014) NSW Biodiversity Offsets Policy for Major Projects, available: https://www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf

Office of Environment and Heritage (2020) Biodiversity Assessment Method, available: https://www.environment.nsw.gov.au/research-and-publications/publications-search/biodiversity-assessment-method

Roads and Maritime (2017) Preliminary Documentation Assessment, Albion Park Rail Bypass Report prepared for RMS, on behalf of the Hyder and Cardno Joint Venture, December 2017.

WSP (2020) Draft Biodiversity Stewardship Site Assessment Report: Croom Reserve and Dunmore Wetland, Revision C, prepared for Shellharbour City Council

WSP (2019) Albion Park Rail Bypass Project EPBC Act Biodiversity Offset Package, prepared for Roads and Maritime Services

WSP (2018) Albion Park Rail Bypass - Biodiversity Offset Package progress report addressing CoA (E12), prepared for Roads and Maritime Services

Appendix A

Biodiversity stewardship credit report – Site1 Croom Reserve

BAM Credit Summary Report - Stewardship Agreement

Proposal Details

Assessment Id
00009413/BAAS17020/17/00009414

Proposal Name
SCC Stewardship

BAM data last updated *
10/06/2021

Assessor Name
Vanessa Allen

Report Created
14/07/2021

BAM Data version *
45

Assessor Number
BAAS18073

BAM Case Status
Open

Date Finalised
To be finalised

Assessment Revision
0

Assessment Type
Stewardship (for offset sites)

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Percent Cleared Value	Area (ha)	Current Vegetation integrity score	Future Vegetation integrity score without management	Future Vegetation integrity score with management	Security benefit score	Total gain in Vegetation integrity	BC Act listing status	EPBC Act listing status	Total number of ecosystem credits
Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion												
2	838_Mod_ Croom	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion	85	2.2	71.4	66.1	80.1	0	14	Endangered Ecological Community		8
											Subtotal	**8**

BAM Credit Summary Report - Stewardship Agreement

Woollybutt - White Stringybark - Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion												
1	1326_Good_Croom	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion	95	24.5	76.3	72.4	81.5	0	9.1	Endangered Ecological Community		56
3	1326_Low_Croom	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion	95	0.77	0.3	0.3	6.4	0	6.1	Endangered Ecological Community		1
4	1326_Poor_Croom	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion	95	0.34	42.3	38.1	59.7	0	21.6	Endangered Ecological Community		2
											Subtotal	**59**
											Total	**67**

Species credits for threatened species

Vegetation zone name	Total gain in Habitat condition (HC)	Area (ha) / Count (no. individuals)	Constant	BC Act listing status	EPBC Act listing status	Total number of species credits
Chorizema parviflorum - endangered population / Chorizema parviflorum Benth. in the Wollongong and Shellharbour Local Government Areas (Flora)						
1326_Good_Croom	N/A	133	0.25	Endangered Population	Not Listed	110
					Subtotal	**110**

Appendix B

Biodiversity stewardship credit report – Site22 Dunmore Wetland

BAM Credit Summary Report - Stewardship Agreement

Proposal Details

Assessment Id
00009305/BAAS17020/17/00009306

Proposal Name
Shellharbour City Council BSA - Dunmore Wetland

BAM data last updated *
10/06/2021

Assessor Name
Alexander Cockerill

Report Created
14/07/2021

BAM Data version *
45

Assessor Number
BAAS17020

BAM Case Status
Open

Date Finalised
To be finalised

Assessment Revision
1

Assessment Type
Stewardship (for offset sites)

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Percent Cleared Value	Area (ha)	Current Vegetation integrity score	Future Vegetation integrity score without management	Future Vegetation integrity score with management	Security benefit score	Total gain in Vegetation integrity	BC Act listing status	EPBC Act listing status	Total number of ecosystem credits

BAM Credit Summary Report - Stewardship Agreement

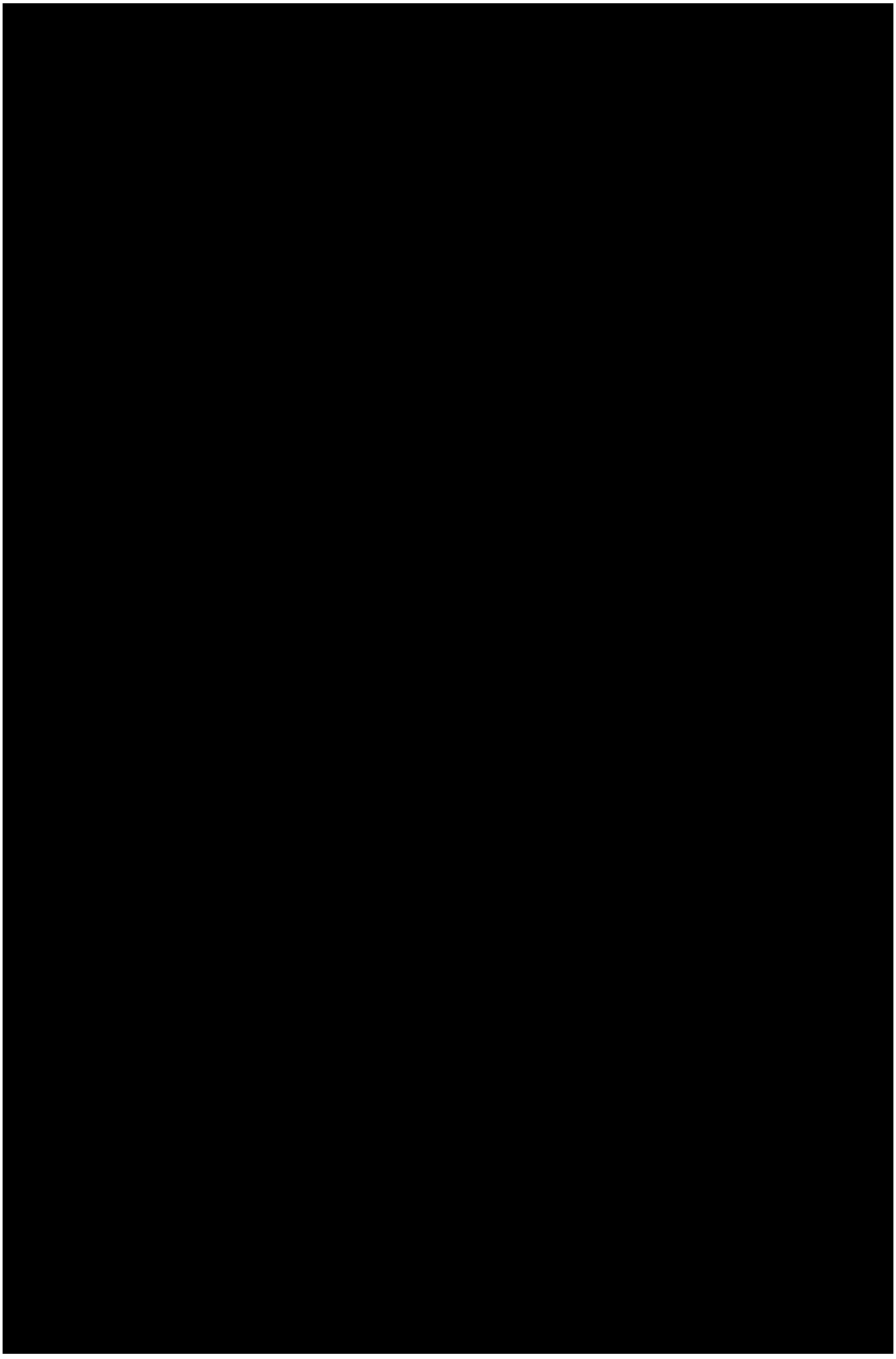
Coastal freshwater swamp forest											
2	1232_Moderate	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	95	1.5	35.6	34.2	35.8	0	1.6	Endangered Ecological Community	1
										Subtotal	**1**
Coastal freshwater wetland											
1	781_Moderate	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	74	11.2	46.9	43.8	62.2	0	18.4	Endangered Ecological Community	52
										Subtotal	**52**
										Total	**53**

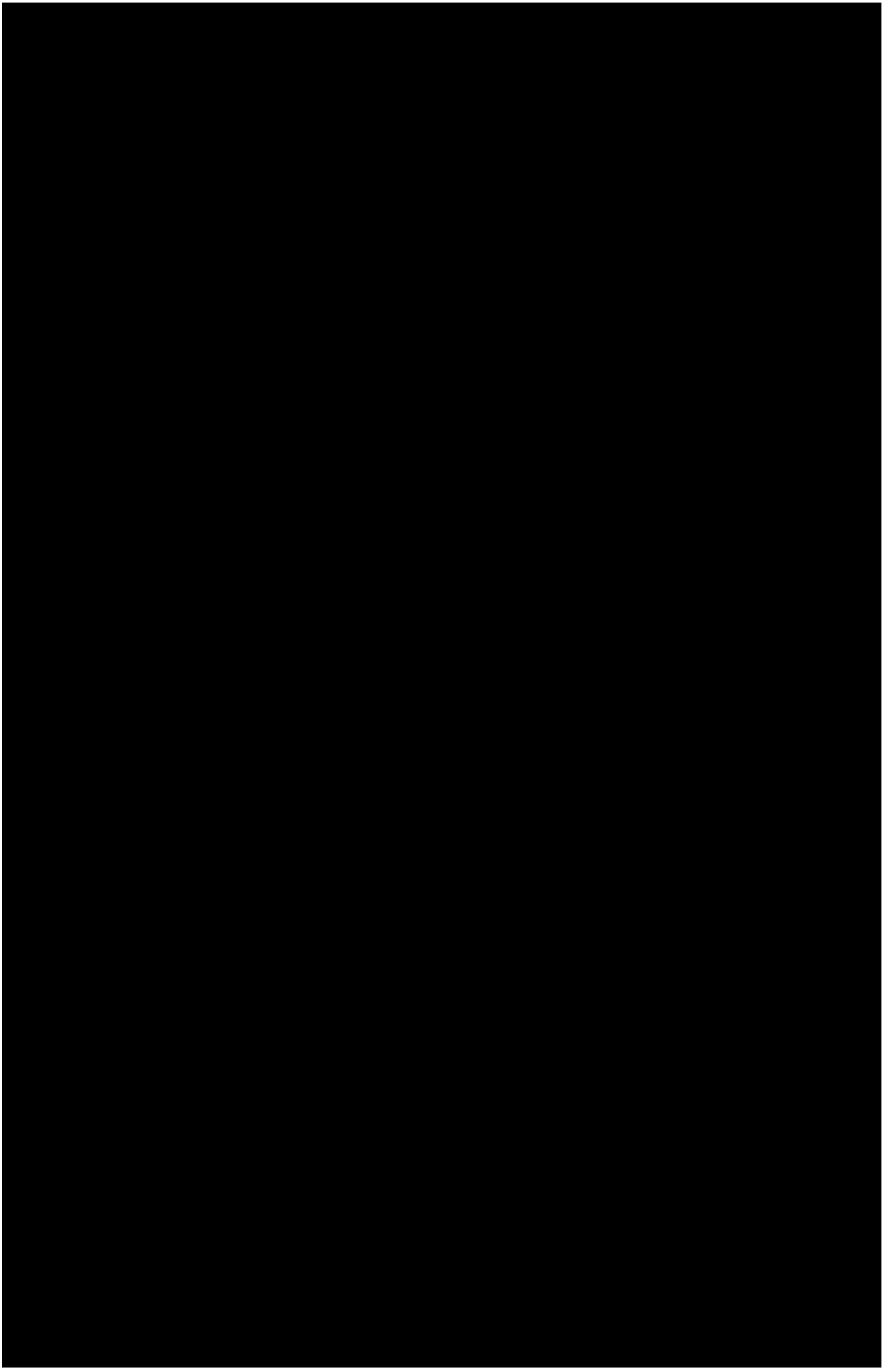
Species credits for threatened species

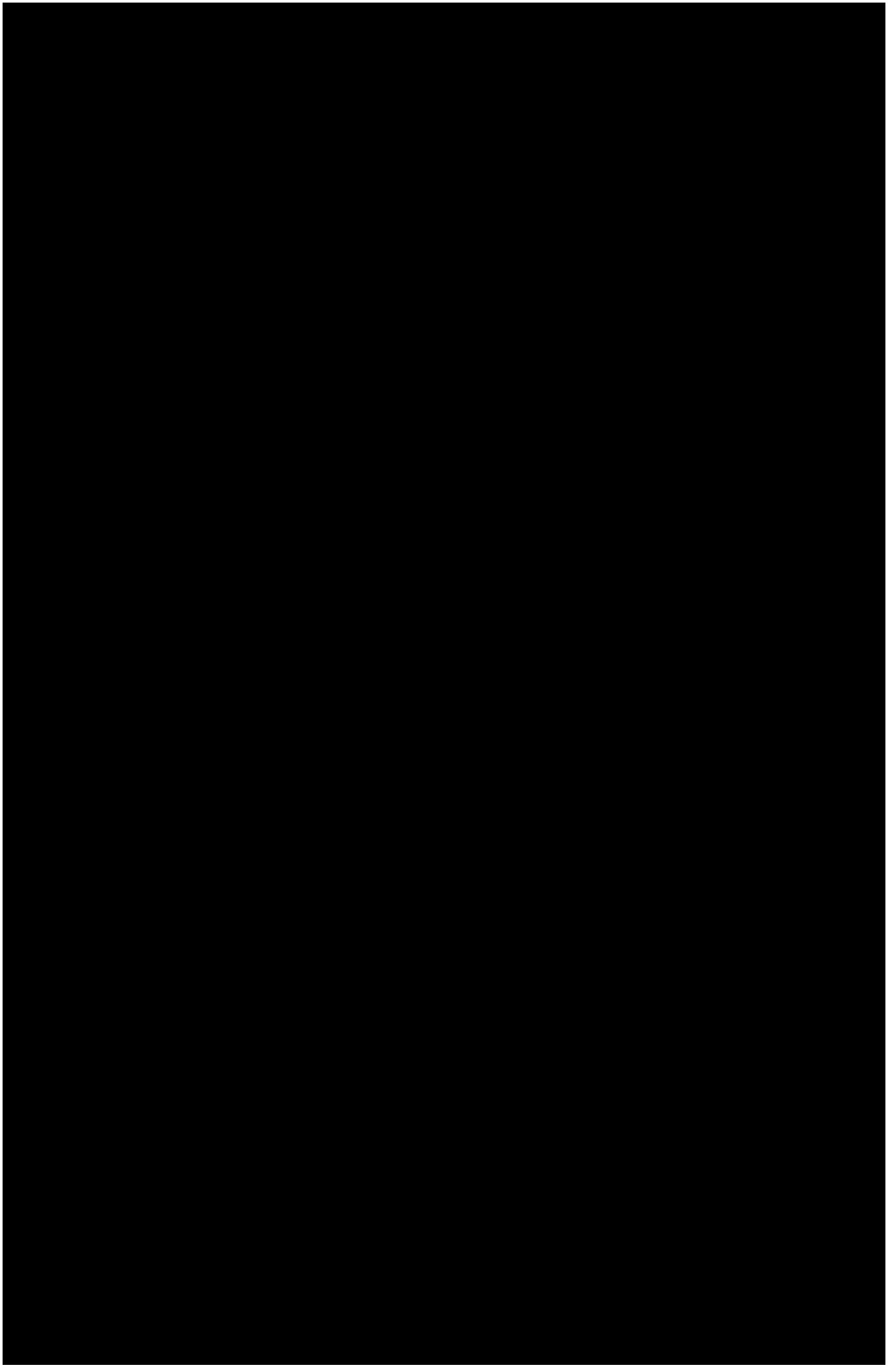
Vegetation zone name	Total gain in Habitat condition (HC)	Area (ha) / Count (no. individuals)	Constant	BC Act listing status	EPBC Act listing status	Total number of species credits

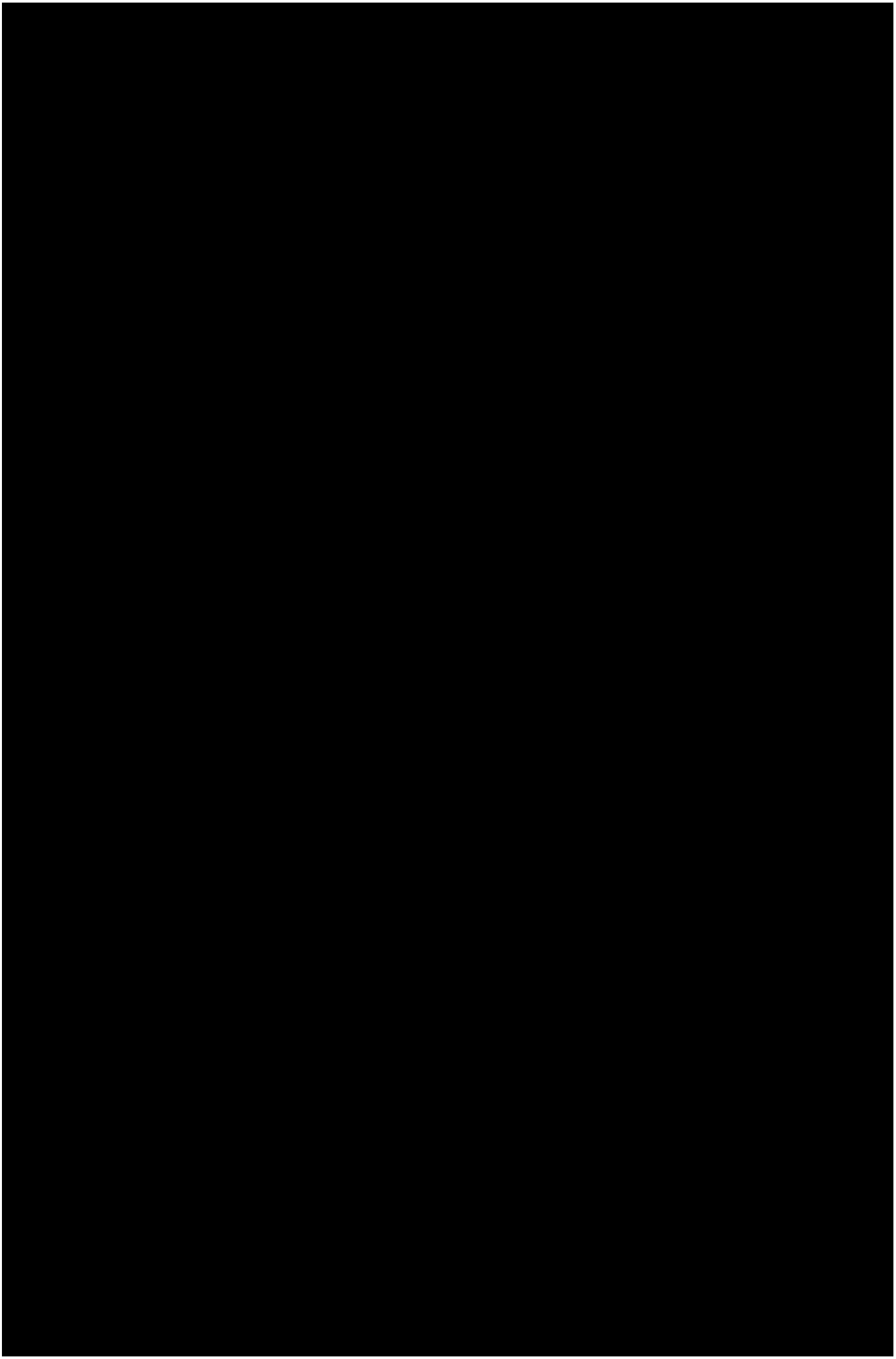
Appendix C

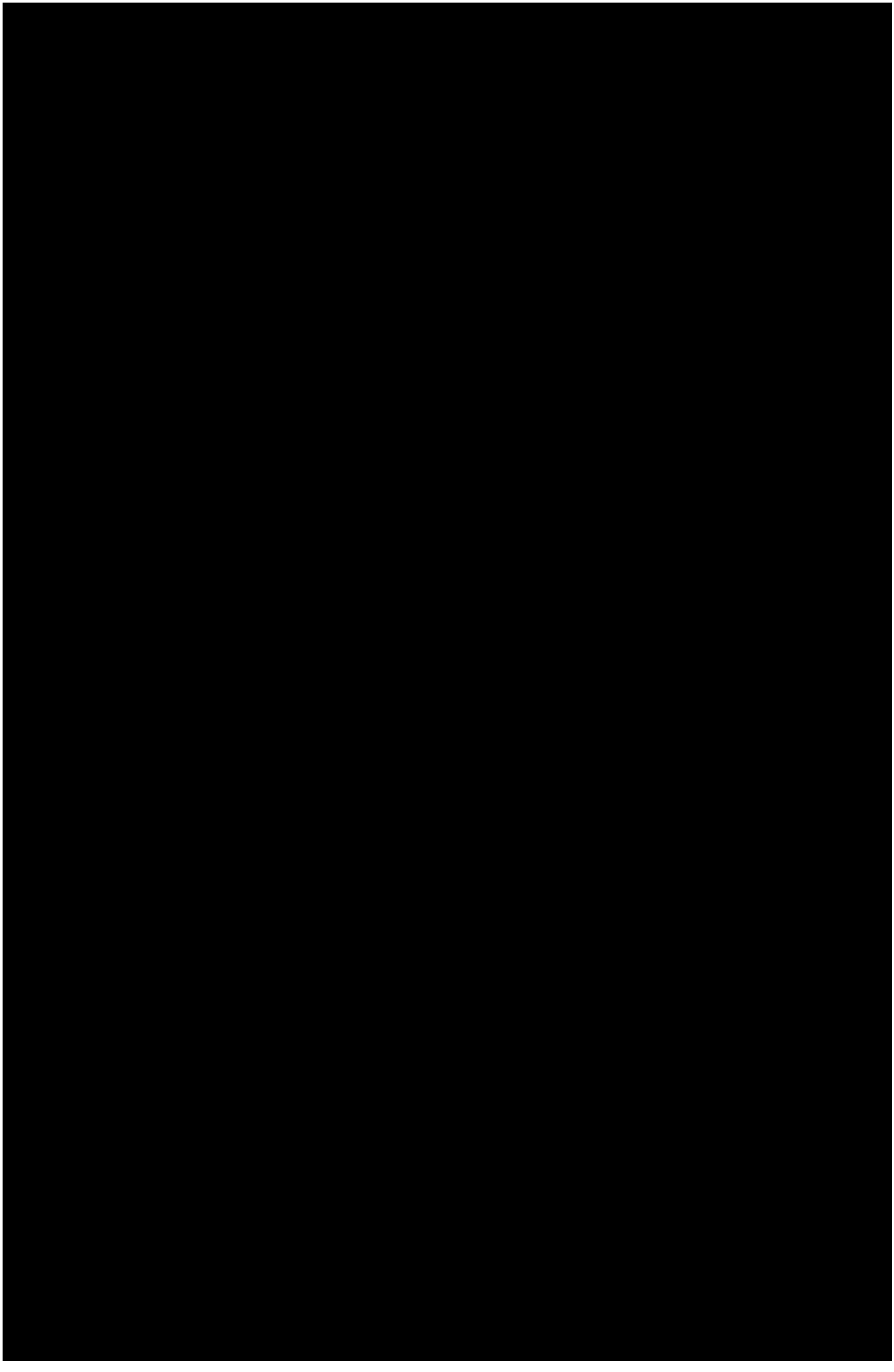
Shellharbour City Council – Ordinary Council Meeting – 22 May 2018

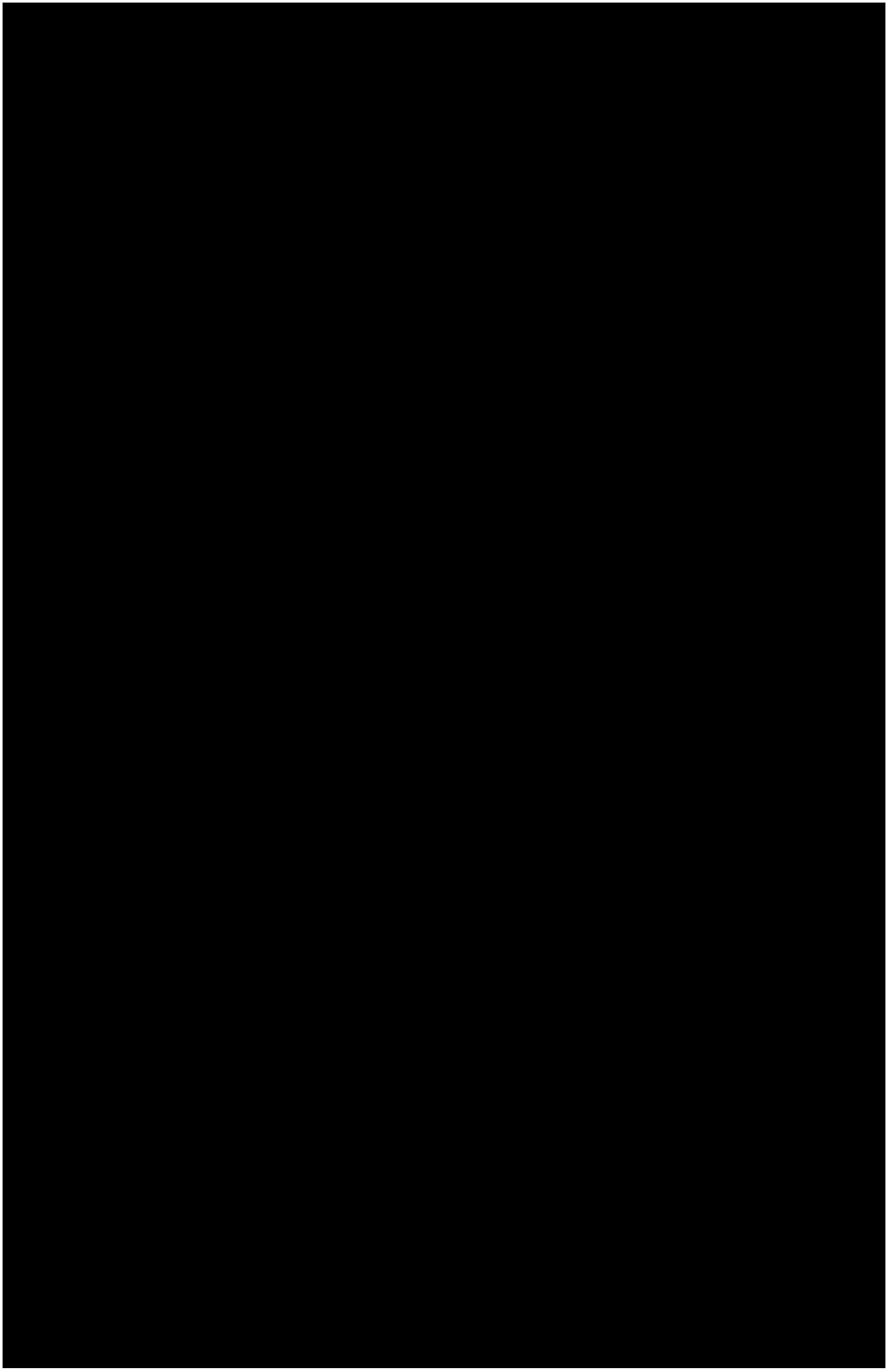


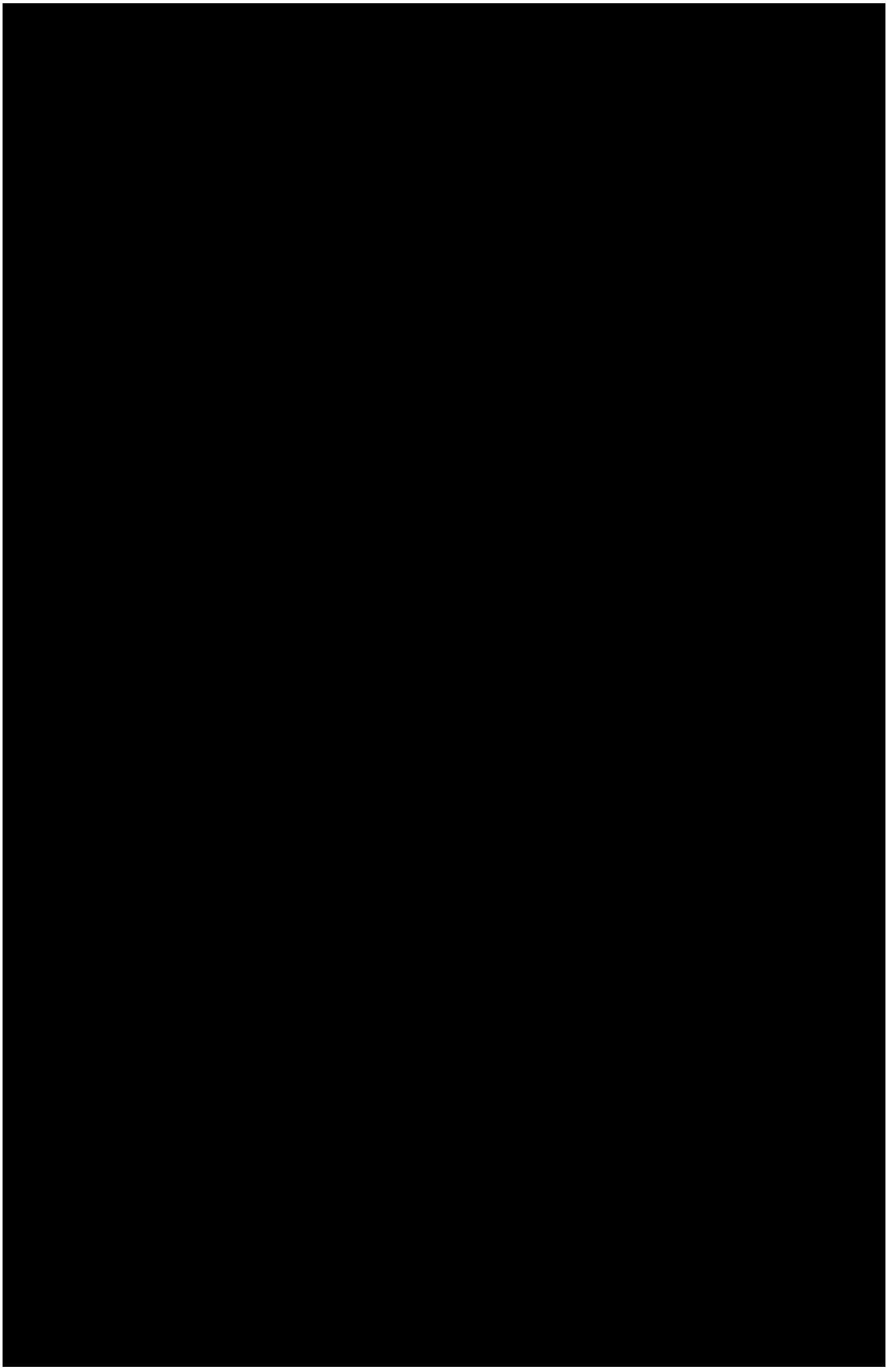


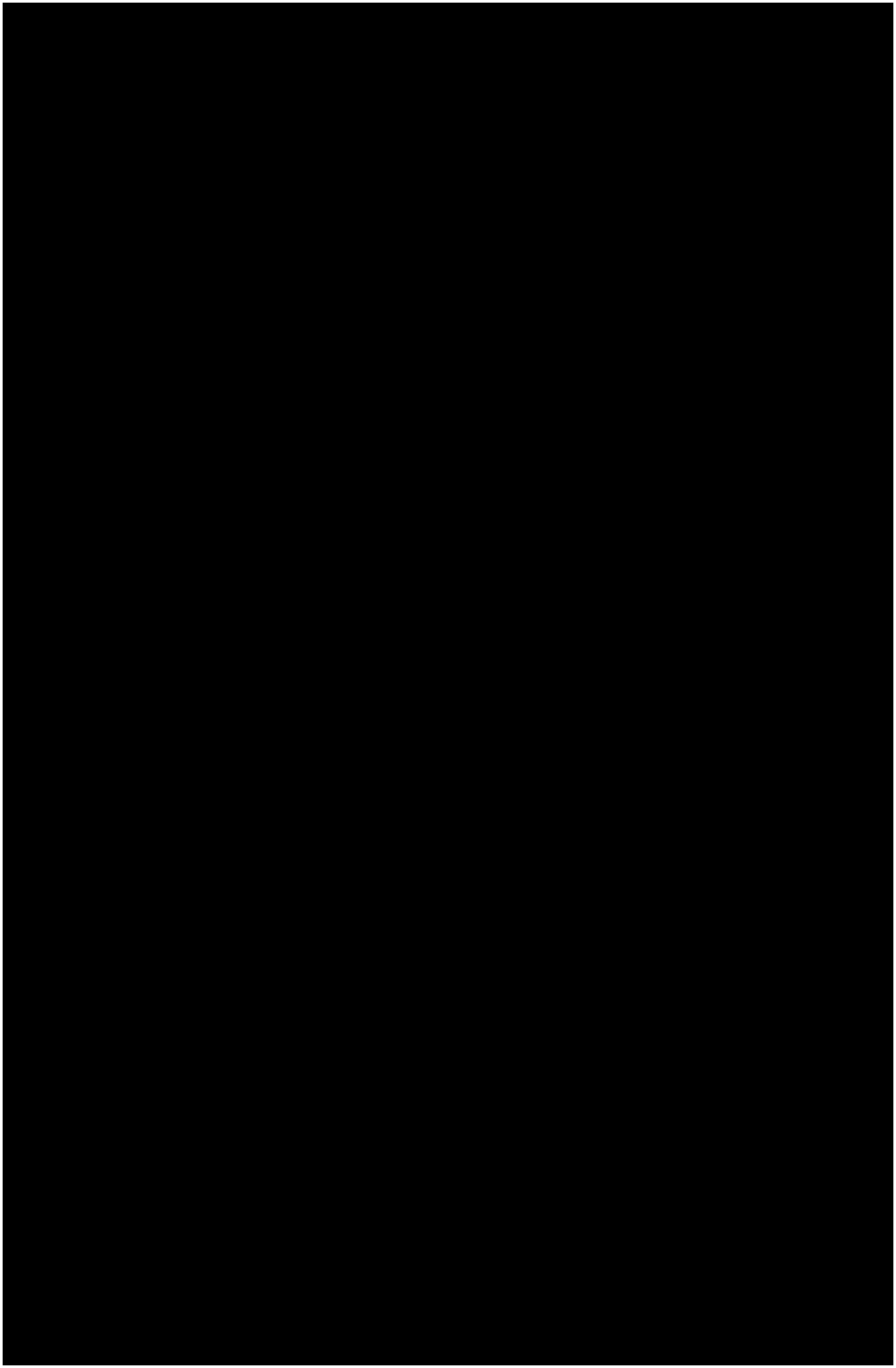


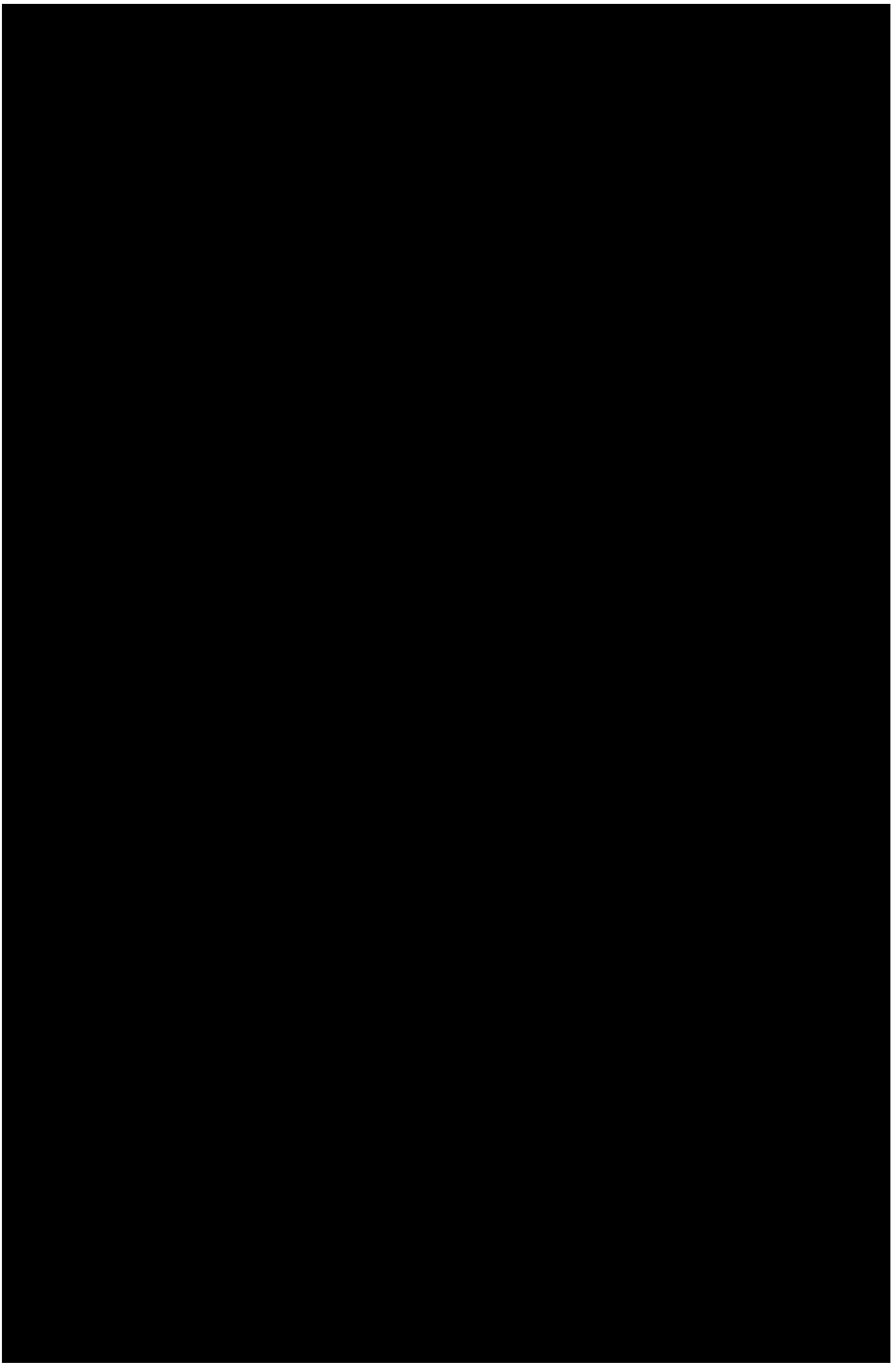


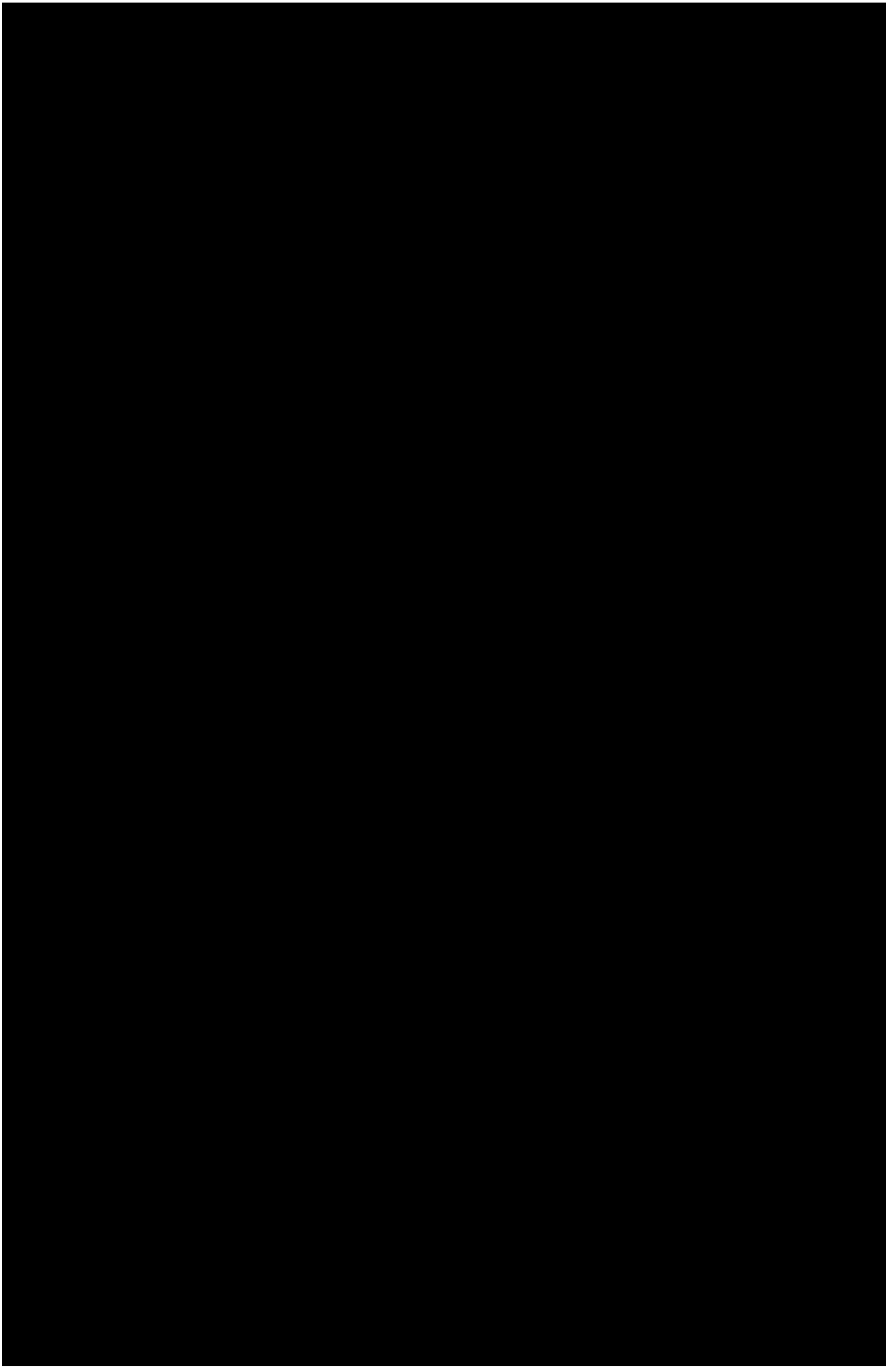


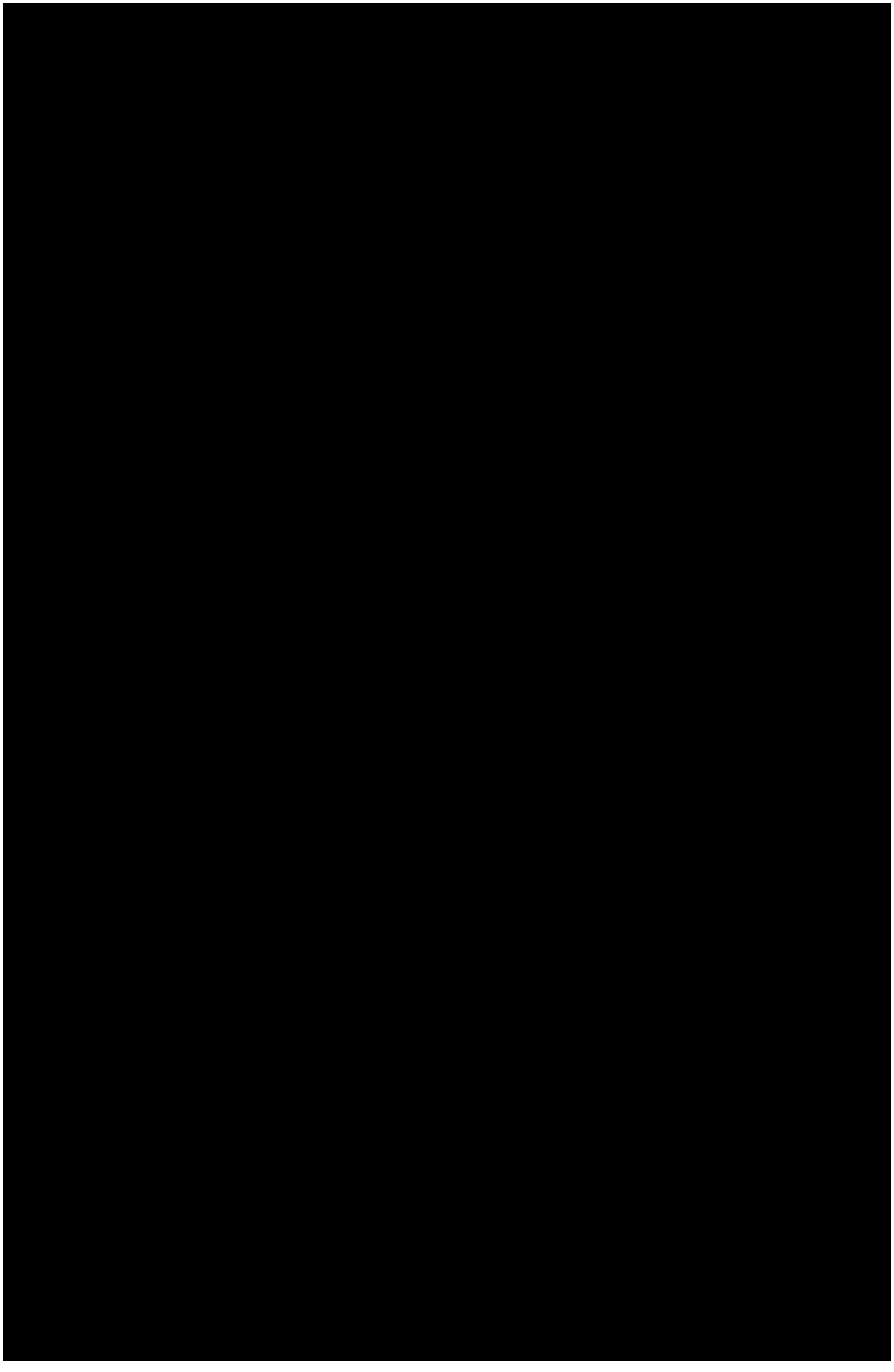


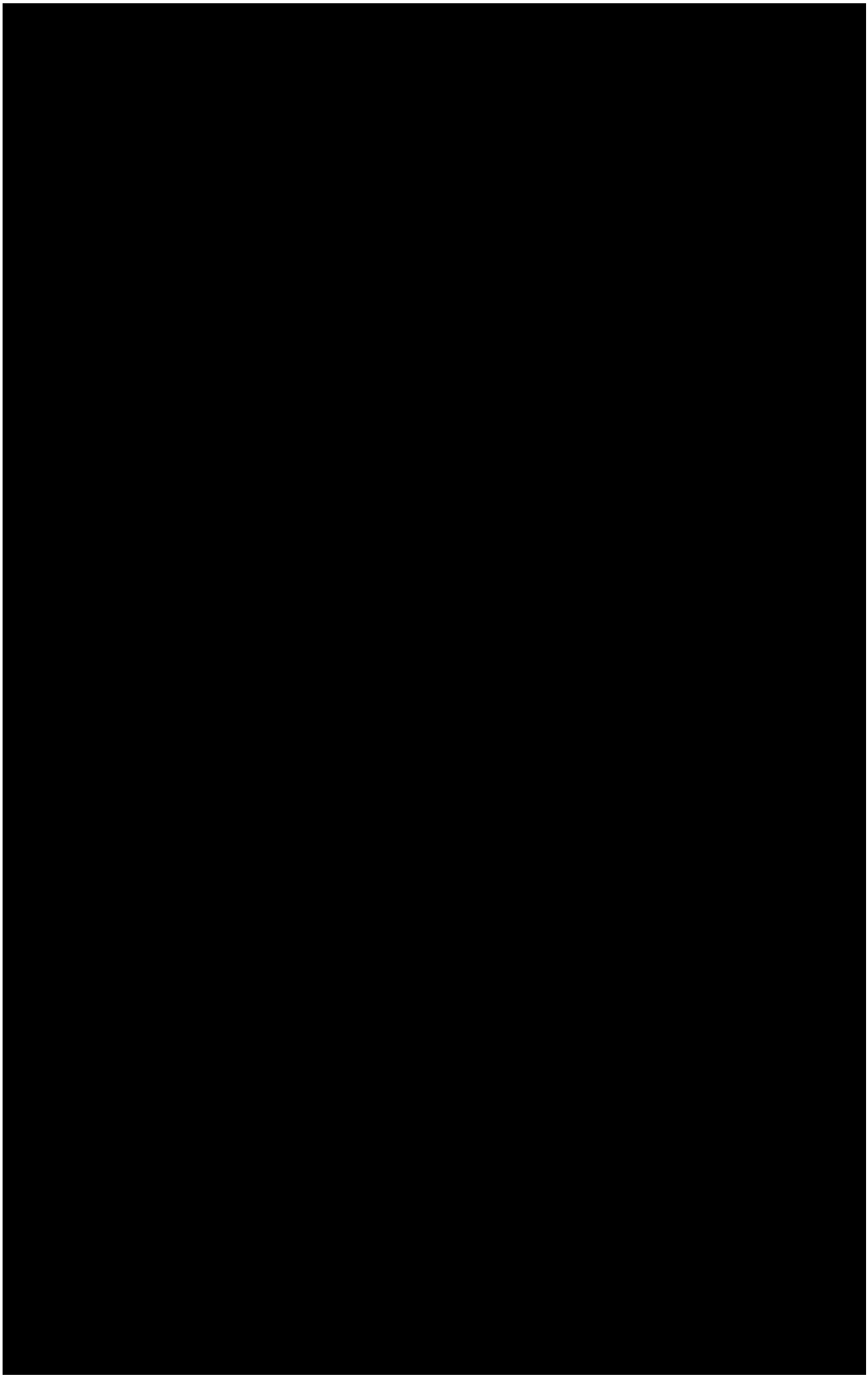


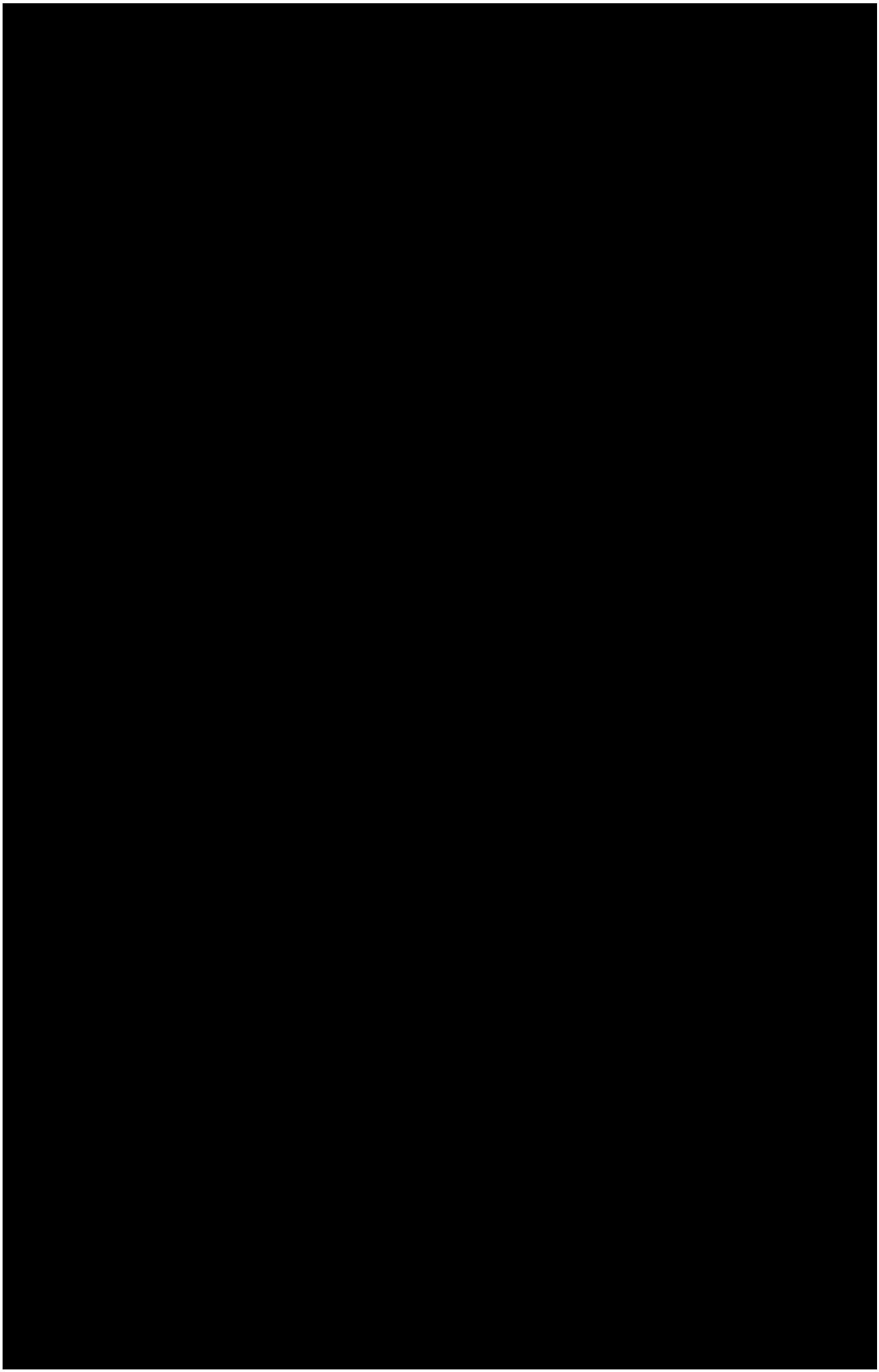


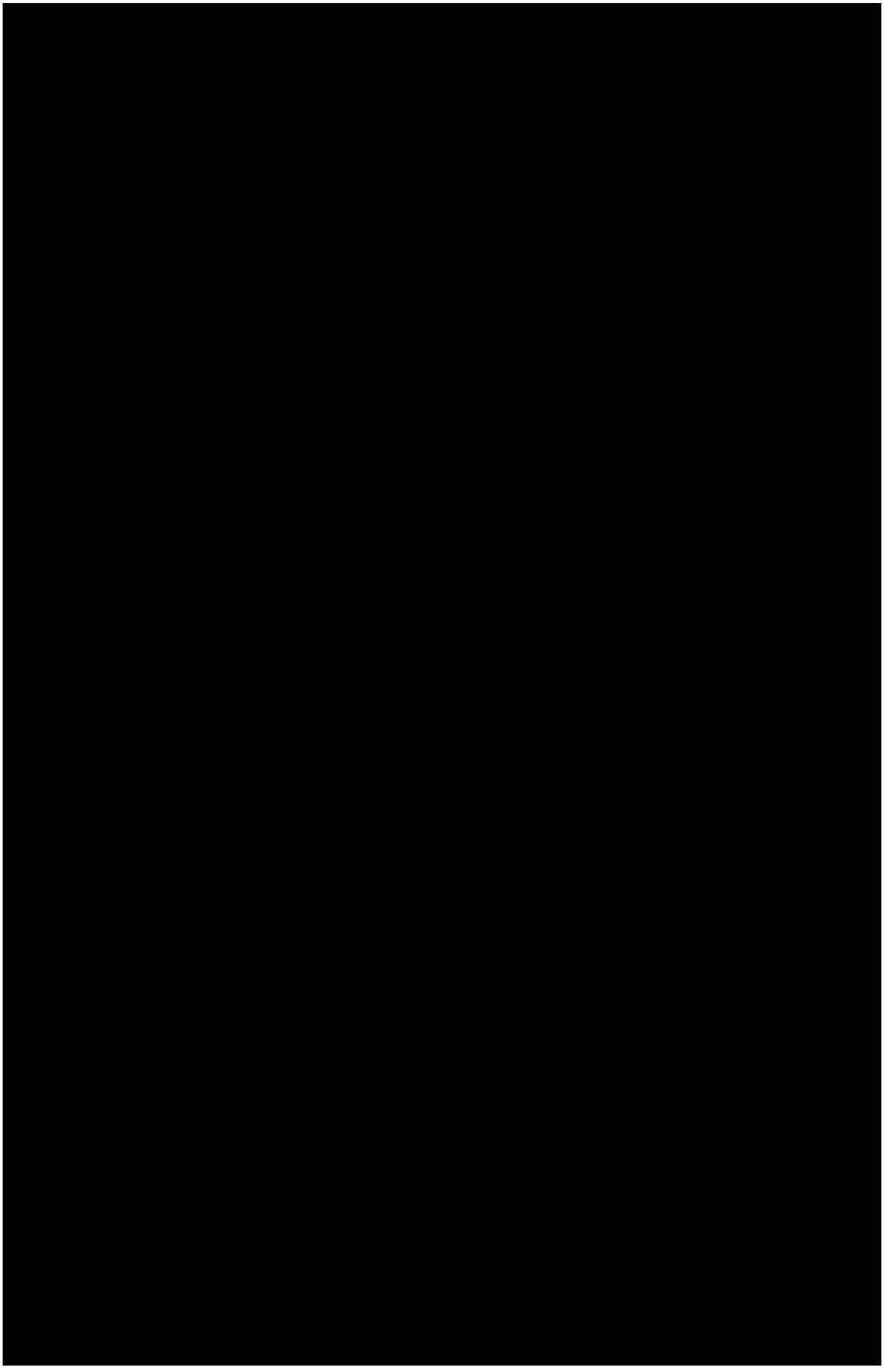






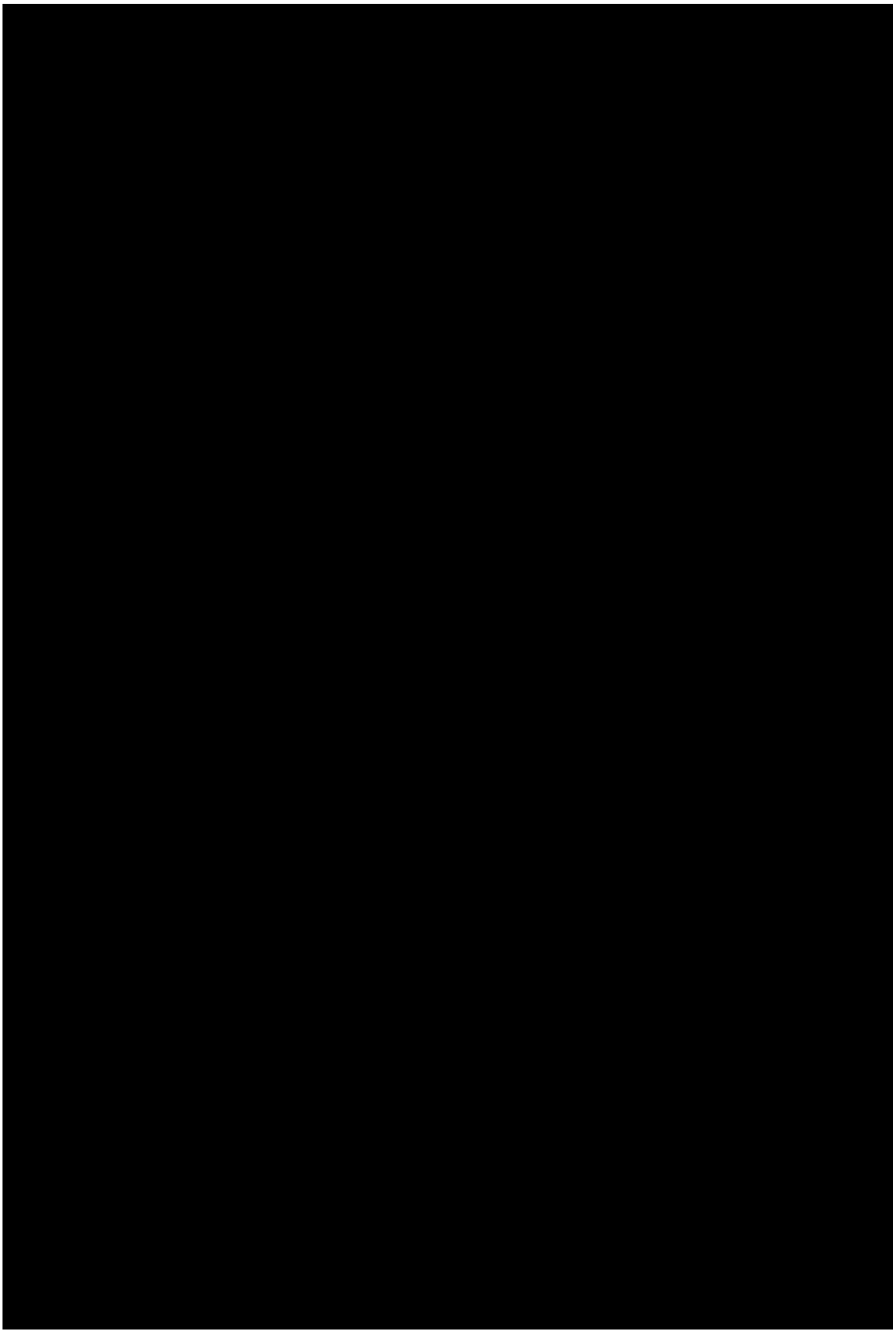






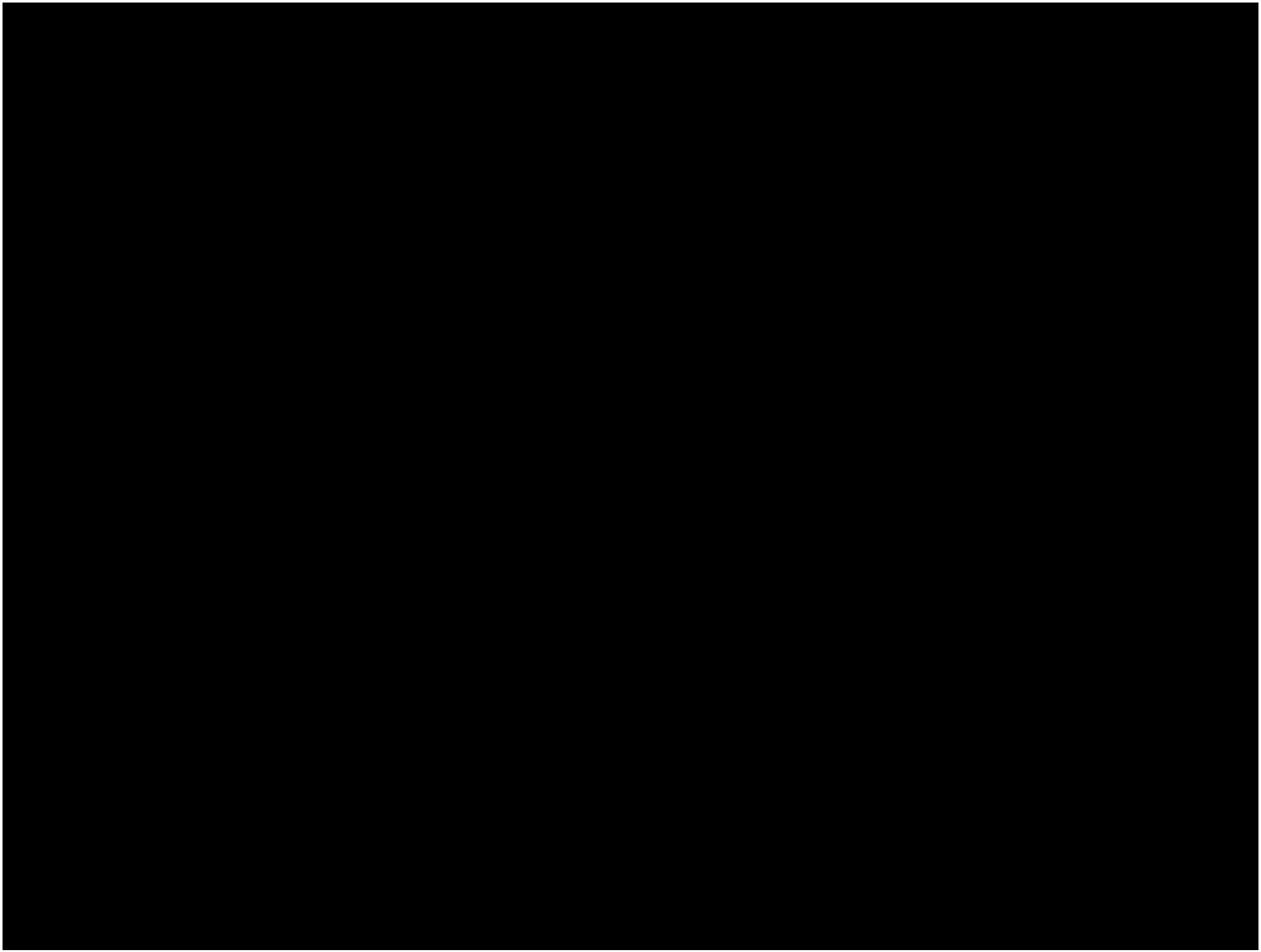
Appendix D

Consultation with Environment Energy & Science Group (former OEH)



Appendix E

Biodiversity and Conservation Division response and ongoing email consultation



Appendix F

Statement of assessment of reasonable equivalence of biodiversity credits

Planning, Industry & Environment

DOC20/891252-1

Statement of assessment of reasonable equivalence of biodiversity credits

A delegate of the Environment Agency Head of the Department of Planning Industry and Environment has determined that the number of biodiversity credits required to be retired under the *Threatened Species Conservation Act 1995* (**TSC Act**) as part of the development consent listed in Part 1, are reasonably equivalent to the number and class of biodiversity credits under the *Biodiversity Conservation Act 2016* (**BC Act**) set out in Part 2.

This document outlines that determination, made in accordance with clause 22(3) of the *Biodiversity Conservation (Savings and Transitional) Regulation* 2017.

Part 1 Existing statutory obligation to retire credits

Request made by:	Transport for NSW (ABN 18 804 239 602)
Date received	3rd September 2020[1]
Development Consent number	SSI 6878
Development name	Albion Park Rail Bypass

Existing statutory obligation reference	Biodiversity credit name (Plant Community Type name and ID, or threatened species name)	IBRA sub region	Number of credits in obligation[2]	Number of credits applied for
SSI 6878	Woollybutt - White Stringybark - Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion (SR669)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	~~338~~ 204	204

[1] A previous statement of reasonable equivalence was issued 9 October 2019 (DOC19/831307-1) which included a full recalculation of species and ecosystem credits. A further application to re-assess the statement of reasonable equivalence in relation to SR669, SR536 and SR649 was received on 3 September 2020.

[2] In March 2020, Transport for NSW negotiated with Planning and Assessment and Ecosystem Assessment Team a reduced credit obligation (DOC21/164174). The reduced credit obligation was the result of a smaller area of land being cleared than the area stated in the consent and was developed in consultation with Biodiversity and Conservation Division (DOC21/149890). For completeness and to minimise additional request, this credit equivalence considers both the original entire credit obligation and the reduced credit obligation. Strikethrough indicates original credit obligation.

Existing statutory obligation reference	Biodiversity credit name (Plant Community Type name and ID, or threatened species name)	IBRA sub region	Number of credits in obligation[2]	Number of credits applied for
SSI 6878	Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion (SR536)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	~~293~~ 230	230
1231	Swamp Mahogany swamp sclerophyll forest on coastal lowlands of the Sydney Basin Bioregion and South East Corner Bioregion (SR648)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	24	0[3]
SSI 6878	Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion (SR649)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	~~19~~ 18	18
SSI 6878	Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion (SR649)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	~~4~~ 3	0[4]

[3] Although there is a credit obligation associated with SR648 in the Biobanking calculator case 0035/2017/4688MP, the applicant has advised that consent conditions do not include a credit obligation for SR468. In consultation with the applicant this credit equivalence does not include SR468.
[4] Although there is a credit obligation associated with SR649 in the Biobanking calculator case 0035/2017/4688MP, the applicant has advised that consent conditions do not include a credit obligation for SR469. In consultation with the applicant this credit equivalence does not include SR469.

SSI 6878	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (SR545)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	1	35[5]
SSI 6878	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (SR545)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	825	
SSI 6878	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (SR545)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	17	
SSI 6878	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (SR545)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	17	0[6]
SSI 6878	River Oak open forest of major streams, Sydney Basin Bioregion and South East Corner Bioregion (SR606)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	3	0[7]

[5] Although there is a credit obligation of 843 associated with SR545 in the Biobanking calculator case 0035/2017/4688MP, the applicant has advised that consent conditions only require a credit obligation of 35 for SR545. In consultation with the applicant this credit equivalence is for 35 credits of SR545.

[6] Although there is a credit obligation of 843 associated with SR545 in the Biobanking calculator case 0035/2017/4688MP, the applicant has advised that consent conditions only require a credit obligation of 35 for SR545. In consultation with the applicant this credit equivalence is for 35 credits of SR545.

[7] Although there is a credit obligation associated with SR606 in the Biobanking calculator case 0035/2017/4688MP, the applicant has advised that consent conditions do not include a credit obligation for SR606. In consultation with the applicant this credit equivalence does not include SR606.

SSI 6878	Sydney Blue Gum x Bangalay-Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion (SR652)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	19[8]	19
SSI 6878	Sydney Blue Gum x Bangalay-Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion (SR652)	Illawarra and any subregion that adjoins the IBRA subregion in which the development occurs	3	
SSI 6878	*Chorizema parviflorum* (Eastern Flame Pea) Endangered Population	N/A	1725	1725

[8] Although there is a credit obligation of 22 associated with SR652 in the Biobanking calculator case 0035/2017/4688MP, the applicant has advised that consent conditions only require a credit obligation of 19 for SR652. In consultation with the applicant this credit equivalence is for 19 credits of SR652.

Part 2 Determination of reasonable equivalence

The number and class of biodiversity credits that are reasonably equivalent under the BC Act are:

Ecosystem Credits

1. **Name of Plant Community Type:** Woollybutt - White Stringybark - Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion (PCT 1326)

Number of ecosystem credits required if applicant pays into Biodiversity Conservation Fund[9]	~~249~~ [10]149[11]	
Total number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant	128	
Number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant- per site	**Croom Reserve (Site 1)**	87
	Dunmore Wetland	Not applicable - no credits generated at Dunmore Wetland
	Yallah TAFE (Site 23)	41
Offset trading group	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (Commonwealth CEEC)	
Vegetation class	Coastal valley grassy woodlands	
Vegetation formation	Grassy woodlands	
Hollow bearing trees	Vegetation containing hollow bearing trees	
IBRA[12] subregion	Illawarra subregion or an adjoining subregion as the impacted site or any such subregion that is within 100km of the outer edge of the impacted site	

[9] Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.
[10] Strikethrough indicates original credit obligation
[11] Matching credits are available on the BioBanking Credits Register from BioBanking Agreement ID BA 421 however the applicant has contacted the credit owners and the credits are already committed and not for sale. A full recalculation of the number of credits has therefore been undertaken.
[12] Interim Biogeographic Regionalisation for Australia

2. **Name of Plant Community Type:** Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion (PCT 781)

Number of ecosystem credits required if applicant pays into Biodiversity Conservation Fund[13]	~~209~~[14]163[15]	
Total number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant	37	
Number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant- per site	**Croom Reserve (Site 1)**	Not applicable- no credits generated at Croom Reserve (Site 1)
	Dunmore Wetland	37
	Yallah TAFE (Site 23)	Not applicable- no credits generated at Yallah TAFE (Site 23)
Offset trading group	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (EEC)	
Vegetation class	Coastal freshwater lagoons	
Vegetation formation	Freshwater wetlands	
Hollow bearing trees	Not applicable	
IBRA[16] subregion	Illawarra subregion or an adjoining subregion as the impacted site or any such subregion that is within 100km of the outer edge of the impacted site	

[13] Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.
[14] Strikethrough indicates original credit obligation.
[15] Matching credits are available on the BioBanking Credits Register from BioBanking Agreement ID BA 420; however the applicant has contacted the credit owners and has not received a reply for over four months. A full recalculation of the number of credits has therefore been undertaken.
[16] Interim Biogeographic Regionalisation for Australia

3. **Name of Plant Community Type:** Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion (PCT1232)

Number of ecosystem credits required if applicant pays into Biodiversity Conservation Fund[17]	~~10~~ [18]9[19]	
Total number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant	15	
Number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant - per site	**Croom Reserve (Site 1)**	Not applicable- no credits generated at Croom Reserve (Site 1)
	Dunmore Wetland	5
	Yallah TAFE (Site 23)	10
Offset trading group	River Flat Eucalypt Forest on Coastal Floodplains (EEC)	
Vegetation class	Coastal swamp forests	
Vegetation formation	Forested wetlands	
Hollow bearing trees	Not applicable	
IBRA[20] subregion	Illawarra subregion or an adjoining subregion as the impacted site or any such subregion that is within 100km of the outer edge of the impacted site	

[17] Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.
[18] Strikethrough indicates original credit obligation
[19] Matching credits are available on the BioBanking Credits Register from BioBanking Agreement ID BA 420 however the applicant has contacted the credit owners and has not received a reply for over four months. A full recalculation of the number of credits has therefore been undertaken.
[20] Interim Biogeographic Regionalisation for Australia

4. **Name of Plant Community Type:** Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT 838)

Number of ecosystem credits required if applicant pays into Biodiversity Conservation Fund[21]	35[22]	
Total number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant	33	
Number of ecosystem credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant - per site	**Croom Reserve (Site 1)**	10
	Dunmore Wetland	Not applicable- no credits generated at Dunmore Wetland
	Yallah TAFE (Site 23)	23
Offset trading group	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (Commonwealth CEEC)	
Vegetation class	Coastal valley grassy woodlands	
Vegetation formation	Grassy woodlands	
Hollow bearing trees	Not applicable	
IBRA[23] subregion	Illawarra subregion or an adjoining subregion as the impacted site or any such subregion that is within 100km of the outer edge of the impacted site	

[21] Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.

[22] Matching credits are available on the BioBanking Credits Register from BioBanking Agreement ID BA 221 and BA203. In accordance with the approved methodology there has been no recalculation of the number of credits.

[23] Interim Biogeographic Regionalisation for Australia

5. **Name of Plant Community Type:** Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes, southern Sydney Basin Bioregion (PCT 1245)

Number of ecosystem credits required if applicant pays into Biodiversity Conservation Fund[24]	19[25]
Number of ecosystem credits required if applicant retires credit from offset site BA445 (owned by applicant)	10
Offset trading group	North Coast wet sclerophyll forests with a percent cleared value <50%
Vegetation class	North Coast Wet Sclerophyll forests
Vegetation formation	Wet Sclerophyll forests
Hollow bearing trees	Not applicable
IBRA[26] subregion	Illawarra subregion or an adjoining subregion as the impacted site or any such subregion that is within 100km of the outer edge of the impacted site

[24] Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of remaining ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of ecosystem credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.

[25] Matching credits are available on the BioBanking Credits Register from BioBanking Agreement ID BA 221, BA 421, BA 445 (site owned by RMS), BA 369 (Credits but not site owned by RMS), BA 272. If payment is made into the Biodiversity Conservation Fund or if credits from BA 445 are not retired to meet the obligation, the number of credits to be retired is equivalent to the number of credits in the credit obligation.

[26] Interim Biogeographic Regionalisation for Australia

Species Credits

1. **Name of threatened species:** *Chorizema parviflorum* (Eastern Flame Pea) Endangered Population

Number of ecosystem credits required if applicant pays into Biodiversity Conservation Fund[27]	230	
Total number of species credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant	144	
Number of species credits required if applicant retires credits from Biodiversity Stewardship site owned by applicant - per site	**Croom Reserve (Site 1)**	133
	Dunmore Wetland	Not applicable- no credits generated at Dunmore Wetland
	Yallah TAFE (Site 23)	11

This statement was issued on 19/05/2021.

Authorised by:

MICHELLE CHUNG
Director Biodiversity Offsets Scheme
Department of Planning Industry and Environment
Delegate of the Environment Agency Head

[27] Should the credit obligation not be entirely discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of remaining species credits required if the applicant pays into the Biodiversity Conservation Fund shall be a proportion of the credit obligation. For example, if 90% of the credit obligation is discharged by retirement of credits from Biodiversity Stewardship sites owned by the applicant, then the number of species credits required if the applicant pays into the Biodiversity Conservation Fund for the remainder of the credit obligation is 10% of the credit obligation.