

Appendices

Appendix 1a
Planted trees on the Emu Plains site as listed in the Arborist Report

Appendix 1a. Planted trees on the Emu Plains site as listed in the Arborist Report.

NLN = Non-local native, * = exotic

Exotic/ NLN	Species	Descriptions from PlantNet and other sources.	Arborist's tree numbers	DBH (cm) recorded	Height (m) recorded	Health assessed as
*	<i>Acer negundo</i>	Widely cultivated. Native of America. In NSW, It has become an invasive weed along watercourses (e.g. in riparian vegetation on riverbanks) and in wet forests and woodland, as well as along roadsides and other disturbed open sites with moist soil.	69, 85	25-40	5-10 m	Good
#	<i>Agonis flexuosa</i>	Native to south west of Western Australia.	33, 546, 548, 549	16-60	<5 to 5-10	3x Good, 1x Fair
#	<i>Angophora bakeri</i>	Occurs in low nutrient sandstone derived soils.	135	57	10-15	Good
#	<i>Callistemon citrinus</i>	Widespread and locally common in swamps near coast and along rocky watercourses. Emu Plain site is on river terraces.	684, 685, 686, 697, 689	8-11	8-14	Good
	<i>Callistemon salignus</i>	Mostly grows in low-lying river flats and damp creeks,	17, 18, 20, 36, 38, 520, 521 (x3), 706, 711	16-28	<5, 5-10	1x poor, 2x fair, 6x good
#	<i>Callistemon viminalis</i>	Mostly grows along watercourses; chiefly in sandstone or granite areas.	31, 32, 35, 40, 50, 51, 53, 54, 55, 66, 71, 81, 82, 83, 84, 87, 88, 89, 90, 91, 94, 95, 96, 97, 98, 621, 680, 681, 683, 688	10-58	<5, 5-10	Good
#	<i>Casuarina cunninghamiana</i>	along permanent freshwater streams.	160, 161, 211, 212, 243, 244, 245, 277, 279, 280, 282, 283, 284, 285, 286, 343, 348, 350, 353, 354, 365, 366, 367, 368, 378, 414, 449, 470, 486, 550, 551, 552, 553, 554, 555, 556, 557, 619, 630, 632, 682, 693, 717	15-63	<5, 20-30	1 poor, 8x fair, 31 good
	<i>Casuarina glauca</i>	In brackish situations along coastal streams, somewhat farther inland along major river valleys. Often forming pure stands.	205, 206, 207, 208, 209, 210, 213, 246, 251, 252, 253, 254, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 267, 268, 270, 271, 274, 290, 291, 292, 293(x3), 294, 295, 296, 297, 298, 299, 301, 302, 303(x3).	8-63	5-10, 10-15, 15-20, a few 20-30	1 dead, 10x fair, Mainly good

Exotic/ NLN	Species	Descriptions from PlantNet and other sources.	Arborist's tree numbers	DBH (cm) recorded	Height (m) recorded	Health assessed as
			304, 305, 306, 307(x2), 309, 310, 311, 313, 314(x3), 316, 317, 318, 320(x8), 322, 323, 326, 327(x2), 328, 329, 330, 331(x2), 332(x30), 333(x16), 335, 338, 339, 340, 344, 345, 346(x3), 347, 357, 358, 360, 361(x10), 362, 363, 364, 369, 370, 371, 375, 376, 377, 379, 380, 383, 384, 385, 387, 389, 392, 395, 396, 399(x4), 400, 402, 403, 405, 406, 407, 408(x2), 409(x2), 410, 412(x3), 413(x6), 416(x20), 420(x5), 421, 422, 423, 424(x8), 411, 425, 426, 427, 429, 430, 432, 434, 436, 437, 438, 439(x8), 445(x5), 460, 476, 477, 478, 479, 480, 481, 482, 485, 597, 598(x20), 599, 600, 601, 602(x5), 603, 604, 605, 606, 607, 608, 609(x50), 610, 611, 612, 613, 614, 615(x50), 616, 617, 618, 622, 623, 624, 625, 626, 627, 628, 631, 676, 679, 690, 691, 692, 694(x60), 695			
*	<i>Celtis sinensis</i>	Native of China, Korea and Japan. Widespread weed in coastal areas, especially around rainforest.	278, 341, 349, 466, 726	16-21	5-10	Good
*	<i>Cinnamomum camphora</i>	Widely planted as an ornamental or shade tree. It is extensively naturalized in coastal areas ... Native of China and Japan.	57, 70, 73, 101, 173, 180 (x3), 185 (x30), 197 (x2), 255, 266, 269, 272, 273, 276, 325, 388, 390, 393(x2), 492, 710, 712	14-87	5-10, 15-20	Good
#	<i>Corymbia citriodora</i>	A tall tree from temperate and tropical eastern Australia, distributed from the Cooktown area to south of Gladstone in Queensland. Sparingly naturalised in NSW.	3, 45, 46, 67, 128, 134, 136, 144, 507, 519, 525	22-95		1x fair, Good
#	<i>Corymbia ficifolia</i>	Western Australian red flowering gum.	72	19	<5	Poor

Exotic/ NLN	Species	Descriptions from PlantNet and other sources.	Arborist's tree numbers	DBH (cm) recorded	Height (m) recorded	Health assessed as
#	<i>Corymbia maculata</i>	Community dominant, in open forest on somewhat infertile and drier sites on shales and slates.	21, 27, 121, 506, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 578, 547	18-71	15-20, 1x 20- 30	2x fair, good
*	<i>Cupressus sp.</i>	evergreen conifers	47, 56, 65	35-45	5-10, 10-15	good
	<i>Dead tree</i>		102, 104, 105, 106, 112, 122, 336, 355, 575, 581, 591, 592, 661, 671			
#	<i>Eucalyptus camaldulensis</i>	Community dominant, in grassy woodland or forest on deep rich alluvial soils adjacent to large permanent water bodies. NSW subdivisions: NC, NWS, CWS, SWS, NWP, SWP, NFWP, SFWP. Not Emu Plains.	214, 215, 216, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 248, 382	19-73	5-10, 15-20, 20-130	2x dead, 1 poor, 16 fair, 6 good
#	<i>Eucalyptus cladocalyx</i>	South Australian. Found naturally in three distinct populations - in the Flinders Ranges, Eyre Peninsula and on Kangaroo Island.	19	53	10-15	1x poor, -
#	<i>Eucalyptus melliodora</i>	Widespread and locally frequent, in grassy woodland on moderately fertile often sandy or alluvial soils. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS, SWS, NWP, SWP	475	47	15-20	good
#	<i>Eucalyptus microcorys</i>	mainly grows in tall open forest on fertile soil on slopes and ridges and in valleys. It is found from Fraser Island in Queensland, south to Cooranbong in New South Wales and as far inland as Toowoomba	103, 107, 108, 110, 114, 116, 117, 118, 501, 502, 584, 585, 586, 587, 588, 590, 593, 594, 595, 596, 703, 704, 715	27-75	10-15, 15-20	Mostly good, 3 poor, 2 fair
#	<i>Eucalyptus nicholii</i>	Restricted and uncommon, in grassy or sclerophyll woodland on shallow relatively infertile soils on shales and slates; Niangala to Glen Innes.	6, 7, 34, 68, 179, 181, 182, 183, 184, 490, 494, 718, 720	15-58	5-10, 10-15	2x dead, 6 poor, 2 good
#	<i>Eucalyptus robusta</i>	Locally abundant in heath on low swampy sites on sandy soils; north from Moruya.	147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 162, 163, 164, 165, 166, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 198, 199, 200, 201, 202, 203, 204, 312, 315, 321, 324, 334, 337, 342, 352, 372, 373, 374, 391, 394,	17-72	10-15	Poor, fair, good

Exotic/ NLN	Species	Descriptions from PlantNet and other sources.	Arborist's tree numbers	DBH (cm) recorded	Height (m) recorded	Health assessed as
			397, 398, 404, 415, 417, 428, 431, 433, 435, 440, 441, 443, 444, 446, 447, 448, 450, 451, 452, 454, 455, 456, 457, 458, 459, 461, 462, 463, 464, 465, 467, 468, 469, 473, 545, 716, 721			
#	<i>Eucalyptus saligna</i>	Widespread and abundant, in wet forest on soils of moderate fertility, often on slopes; north from Port Jackson.	109, 111, 113, 115, 119, 120, 123, 124, 125, 126, 129, 130, 131, 132, 133, 137, 138, 139, 140, 141, 142, 143, 167, 168, 169, 170, 171, 172, 174, 175, 176, 177, 178, 558, 574, 576, 577, 582, 583, 674, 701, 702, 719	15-75	5-10, 20-30	6 fair, mainly good
#	<i>Eucalyptus scoparia</i>	Northern Tablelands. restricted to a few mountains near the border between New South Wales and Queensland, where it grows in clefts on large granite outcrops in open forest and woodland	145, 146	21	5-10	1 poor
#	<i>Eucalyptus sideroxylon</i>	Widespread and locally abundant, in sclerophyll woodland on lighter, poorer soils.	16, 100, 474, 491, 499, 500	5-90	10-15, 15-20	4 fair, 2 good
	<i>Eucalyptus sp.</i>		29, 39, 516, 517, 518, 535, 538	11-39	<5, 5-10, 15-20	4 fair, 4 good
	<i>Eucalyptus tereticornis</i>	Widespread in eastern Australia. North from Bega. Community dominant, widespread in grassy, wet or dry forest or woodland on soils of medium to high fertility.	127, 308, 319, 351, 356, 359, 401, 418, 472	15-35	5-10, 10-15, 15-20	2x poor, 4 fair, 1 good
*	<i>Fraxinus griffithii</i>	Native of China to Malayan Archipelago and Philippines.	41, 42, 43, 44	24, 31	<5	good
*	<i>Jacaranda mimosifolia</i>	native of Argentina and Bolivia. Widely cultivated.	496, 497, 498	28, 38	5-10	Good
*	<i>Ligustrum lucidum</i>	Widely naturalized in coastal districts north from Bega and inland to West Wyalong. Native of China & Japan.	52, 93, 488, 495, 522, 531	10-43	5-10, 1x10-15	Good

Exotic/ NLN	Species	Descriptions from PlantNet and other sources.	Arborist's tree numbers	DBH (cm) recorded	Height (m) recorded	Health assessed as
#	<i>Lophostemon confertus</i>	Occurs north from the Hunter Valley; sparingly naturalised around Sydney in some areas where the species is planted as a street tree.	9, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 28, 37, 74, 75, 76, 77, 78, 79, 80, 503, 504, 505, 510, 511, 512, 513, 514, 515, 696, 698, 699, 700	12-59	,5, 5-10, 10- 15	1x poor, 2x fair, mainly good
#	<i>Melaleuca armillaris</i>	Widespread in heath communities, often on headlands or coastal ranges.	8, 48, 49	36	<5	Fair
#	<i>Melaleuca bracteata</i>	Widespread, along watercourses or on heavier inland soils in depressions; north from the Macleay R.	4, 5, 86, 92, 99, 707	26-54	5-10	2x fair, 5x good
	<i>Melaleuca linariifolia</i>	Grows in heath and dry sclerophyll forest in moist or swampy ground; on the coast and adjacent ranges, north from Bawley Point.	620, 629	18, 25	< 5m	1xfair, 1x good
	<i>Melaleuca stypelioides</i>	Grows in moist situations, often along stream banks; mainly on the coast north from Nowra district.	589	17	<5	Good
#	<i>Melia azedarach</i>	rows in subtropical and dry rainforest, mostly on margins and in regrowth, north from Milton and west to and inland to the upper Hunter Valley; widely cultivated, especially in inland districts, occasionally naturalized.	30, 249, 250, 386, 442, 453, 483, 484, 523, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 659, 660, 662, 663, 664, 665, 666, 667, 668, 669, 670, 673, 675, 677, 678, 725	10-48	5-10, 10-15	Good
*	<i>Morus alba</i>	Cultivated for its fruit, the leaves fed to silkworms. Native of E Asia. Cultivated, sometimes naturalized.	487, 489, 493, 579, 713	18-75	5-10, 10-15	Good, 1 fair
*	<i>Platanus x hybrida</i>	Widely planted London Plain Tree	2, 509	38, 50	10-15	Poor, fair
*	<i>Populus nigra italica'</i>	Cultivar.	524, 526, 527, 528, 529, 530, 532, 533, 534, 536, 537, 539, 540, 541, 542, 543, 544	16-30	10-15	1x dead, fair
*	<i>Salix babylonica</i>	native to dry areas of northern China, but cultivated for millennia elsewhere in Asia, being traded along the Silk Road to	288, 289, 381, 419	44-58	10-15	1x poor, good

Exotic/ NLN	Species	Descriptions from PlantNet and other sources.	Arborist's tree numbers	DBH (cm) recorded	Height (m) recorded	Health assessed as
		southwest Asia and Europe				
*	<i>Sapium sebiferum</i> (now <i>Triadica sebifera</i>)	commonly cultivated, particularly as a street tree. Occasionally naturalised; recorded from near Casino, Grafton and western Sydney. Native to eastern Asia.	1, 708	11, 40	<5, 5-10	Poor, good
*	<i>Schinus areira</i> (now <i>Schinus molle</i> var. <i>areira</i>)	Frequently cultivated, especially as a shade tree in inland districts, widely naturalized. Native of South America.	217, 247, 471, 580, 672, 714	18-120	<5, 5-10	1x poor, 5 good
	<i>Stump</i>		709			
*	<i>Syagrus romanzoffiana</i>	a palm native to South America	58, 59, 60, 61, 62, 63, 64, 275, 281, 287, 300, 722, 723, 724	21-35	5-10	good
#	<i>Syzygium</i> sp.		705	19	5-10	Good
*	<i>Ulmus parvifolia</i>	native to eastern Asia, including China, India, Japan, North Korea, and Vietnam	508, 658	19, 27	5-10	good
*	<i>Washingtonia robusta</i>	a palm tree native to the Baja California peninsula and a small part of Sonora in northwestern Mexico.	676	40	5-10	good

Appendix 1b
Planted trees assessed using the *Which Plant Where* database

Appendix 1b. Planted trees assessed using the *Which Plant Where* database

Planted trees of Emu Plains – <i>Which Plant Where</i> search			
Species	2030	2050	2070
* <i>Acer negundo</i>	Suitable	Suitable	Marginal
# <i>Agonis flexuosa</i>	Marginal	Marginal	Unsuitable
# <i>Angophora bakeri</i>	Suitable	Suitable	Unsuitable
# <i>Callistemon citrinus</i>	Marginal	Marginal	Unsuitable
<i>Callistemon salignus</i>	Suitable	Marginal	Marginal
# <i>Callistemon viminalis</i>	Suitable	Suitable	Suitable
# <i>Casuarina cunninghamiana</i>	Suitable	Suitable	Marginal
<i>Casuarina glauca</i>	Suitable	Suitable	Suitable
* <i>Celtis sinensis</i>	No data		
* <i>Cinnamomum camphora</i>	No data		
# <i>Corymbia citriodora</i>	Suitable	Suitable	Suitable
# <i>Corymbia ficifolia</i>	Suitable	Suitable	Marginal
# <i>Corymbia maculata</i>	Suitable	Suitable	Suitable
* <i>Cupressus</i> sp.	No data		
# <i>Eucalyptus camaldulensis</i>	Suitable	Suitable	Suitable
# <i>Eucalyptus cladocalyx</i>	Marginal	Marginal	Marginal
# <i>Eucalyptus melliodora</i>	Suitable	Marginal	Marginal
# <i>Eucalyptus microcorys</i>	Marginal	Marginal	Marginal
# <i>Eucalyptus nicholii</i>	Unsuitable	Unsuitable	Unsuitable
# <i>Eucalyptus robusta</i>	Marginal	Marginal	Marginal
# <i>Eucalyptus saligna</i>	Marginal	Marginal	Unsuitable
# <i>Eucalyptus scoparia</i>	Marginal	Unsuitable	Unsuitable
# <i>Eucalyptus sideroxylon</i>	Suitable	Marginal	Unsuitable
<i>Eucalyptus</i> sp.	No data		
<i>Eucalyptus tereticornis</i>	No data		
* <i>Fraxinus griffithii</i>	Suitable	Suitable	Marginal
* <i>Jacaranda mimosifolia</i>	Suitable	Suitable	Suitable
* <i>Ligustrum lucidum</i>	No data		
# <i>Lophostemon confertus</i>	Suitable	Suitable	Suitable
# <i>Melaleuca armillaris</i>	Suitable	Suitable	Suitable
# <i>Melaleuca bracteata</i>	Suitable	Suitable	Suitable
<i>Melaleuca linariifolia</i>	Suitable	Suitable	Marginal
<i>Melaleuca styphelioides</i>	Suitable	Suitable	Suitable
# <i>Melia azedarach</i>	Suitable	Suitable	Suitable
* <i>Morus alba</i>	Suitable	Suitable	Suitable
* <i>Platanus x hybrida</i>	No data		
* <i>Populus nigra italica</i> '	Suitable	Suitable	Suitable
* <i>Salix babylonica</i>	No data		

* <i>Sapium sebiferum</i>	No data		
* <i>Schinus areira</i>	Suitable	Suitable	Suitable
* <i>Syagrus romanzoffiana</i>	No data		
* <i>Ulmus parvifolia</i> *	Suitable	Marginal	Marginal
# <i>Syzygium</i> sp.	No data		
* <i>Washingtonia robusta</i>	Suitable	Suitable	Suitable

* = exotic

#= non local native

Appendix 2
Photographic record on 30 March 2022

Appendix 2. Photographic record on 30 March 2022



Plot 1 – looking into floristic quadrat from start of tape.



Plot 1 – looking towards end of plot from floristic quadrat.



Plot 1 – edge of water body with *Typha domingensis*, *Juncus usitatus*.



Plot 1 – *Persicaria decipiens* in boggy ground at margin of swamp.



Plot 2 – from south looking into floristic quadrat.



Plot 2 – row of *E. camaldulensis* in floristic quadrat.



Plot 3 – looking north-west into floristic quadrat.



Plot 3 – 10 m into floristic quadrat.



Plot 3 – looking beyond end of plot.



Plot 3 – looking back from end of plot.



Patch A – from north-east. *E. grandis* (white bark), *Lophostemon confertus* (smaller trees behind)



Patch B – from west. *E. microcorys*.



Patch C – from north. *Corymbia maculata* at left, *E. sideroxylon* at rear.



Patch D – from east. *Eucalytus robusta* at left, *E. grandis* centre.



Patch E – *E. sideroxylon* (two middle trees), *E. microcorys* (tree at rear), *Jacaranda mimosifolia* (left foreground).



Patch E – 'island' in south-west corner of carpark. Trees in foreground are *Lophostemon confertus*, for trees at rear see next photo.



Patch E – trees at rear beside amenities block. *Corymbia maculata* (left), *Ulmus parvifolia* (centre), *Platanus x acerifolia* (right).

Patch F – missing photo

Appendix 3

**The input data, composition, structure, function and vegetation integrity scores
from the BAM Calculator**

Appendix 3.

Composition, structure and function scores from the recorded data

Location values

Note: GDA94 / MGA zone 56

Plot	Location							
	PCT	Area (ha)	Patch size (ha)	Condition class	Zone	Eastings	Northings	Bearing
Plot 1	835	0.93	4	Constructed dam	56	283514	6263770	335
Plot 2	835	2.47	4	Planted exotic	56	283526	6263620	305
Plot 3	835	2.47	4	Planted exotic	56	283802	6263857	300

Composition and structure values

Note: Growth form groups: Tree = TG, Shrub = SG, Groundcover and other (GG= Grass & grasslike, FG= Forb, EG= Fern, OG = Other)

Plot	Composition (number of trees, shrubs and groundcover species recorded in the plots)						Structure (summed percent cover for trees, shrubs and groundcover species recorded in the plots)					
	TG	SG	GG	FG	EG	OG	TG	SG	GG	FG	EG	OG
Plot 1	1	0	4	4	0	0	4	0	5.5	2.8	0	0
Plot 2	0	0	0	2	0	1	0	0	0	2.4	0	0.1
Plot 3	0	0	6	2	0	1	0	0	19	0.3	0	0.2

Function values

Plot	Function										
	Litter cover	Length of fallen logs	Hollow bearing trees	Stem class DBH (cm)							Percent cover of High Threat Weeds
				<5	5-9	10-19	20-29	30-49	50-79	80+	
Plot 1	0	0	0	x	x	x	x			0	27.5
Plot 2	40	11	0	x		x	x	x		0	23.2
Plot 3	43	44	0	x		x	x	x		0	79.3