
Supplementary information

Pandanus nutshell generates a palaeoprecipitation record for human occupation at Madjedbebe, northern Australia

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Supplementary Information

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SI Section 1: *Pandanus spiralis*

There are over 600 species of *Pandanus* (Family: Pandanaceae) found across the tropics, from West Africa eastwards to the Pacific Islands¹. They form a diverse genus of palm-like plants with a thickened wood-like stem, a crown of strap-shaped leaves, and, in most cases, prop roots. They are variable in form, with some species only reaching 2m in height (e.g. *P. herbaceous*, *P. toei*), and others, such as the tall arboreal *P. antarensis* of the New Guinea Highlands, reaching up to 30m in height. In the Northern Territory of Australia, there are three species of *Pandanus*, two lowland species, *P. spiralis* and *P. aquaticus*, and one species only found on sandstone escarpment, *P. basedowii*². All of these species are used by Aboriginal groups in this region for a range of activities, including for food, fibre/craft and medicine, and as fire-carriers (MN, DjDj)³.

P. spiralis, the species recovered archaeologically at Madjedbebe, are omnipresent in the Alligator Rivers region, growing in poorly drained areas. This includes along the margins of floodplains (Fig. 1), the banks of swamps, billabongs and seasonal floodways (Fig. 2), and in seasonally inundated areas of open forest and woodland (Fig. 3). *P. spiralis* grow from 2m to >10m in height. Their woody stems are covered in tight, spirally arranged, leaves, armed with small spines^{4,5}. Dead leaves may remain on the tree, creating a tough skirt. However, they are more often burnt off leaving a spiral pattern on the trunk, which the species is named after. Unlike *P. aquaticus* and *P. basedowii*, *P. spiralis* trees only sometimes grow prop roots². Prop roots are hypothesised to be adventitious in pandanus, and other plants, for their structural integrity; ready supply of water and nutrients to above-ground stems; and ready supply of oxygen to below-ground roots, especially in inundated, anoxic soil environments⁶.

P. spiralis are highly-prized for their leaves, which are dried, stripped and, often, dried for basketry and other fibre/craft, and for their kernels, which are rich in fat (44-50%) and protein (20-34%; MN, DjDj)⁷⁻⁹. The basic fruiting unit in the *Pandanus* genera is a drupe, namely a fruit with a fleshy/soft outer layer (including the exocarp and mesocarp) and hard inner layer (the endocarp or 'nutshell') surrounding the seed(s) or kernel(s) (see Extended Data 1). Species in which the drupes are predominantly single-seeded or unilocular are referred to as monodrupes, and species in which the drupes consist of several fused seed locules are referred to as polydrupes. *P. spiralis* is a polydrupe species.



Supplementary Figure 1: *P. spiralis* tree and S.A.F. on the edges of the Magela Creek floodplain near Madjedbebe, October 2017. Note the band of *Melaleuca* species trees in the distance.

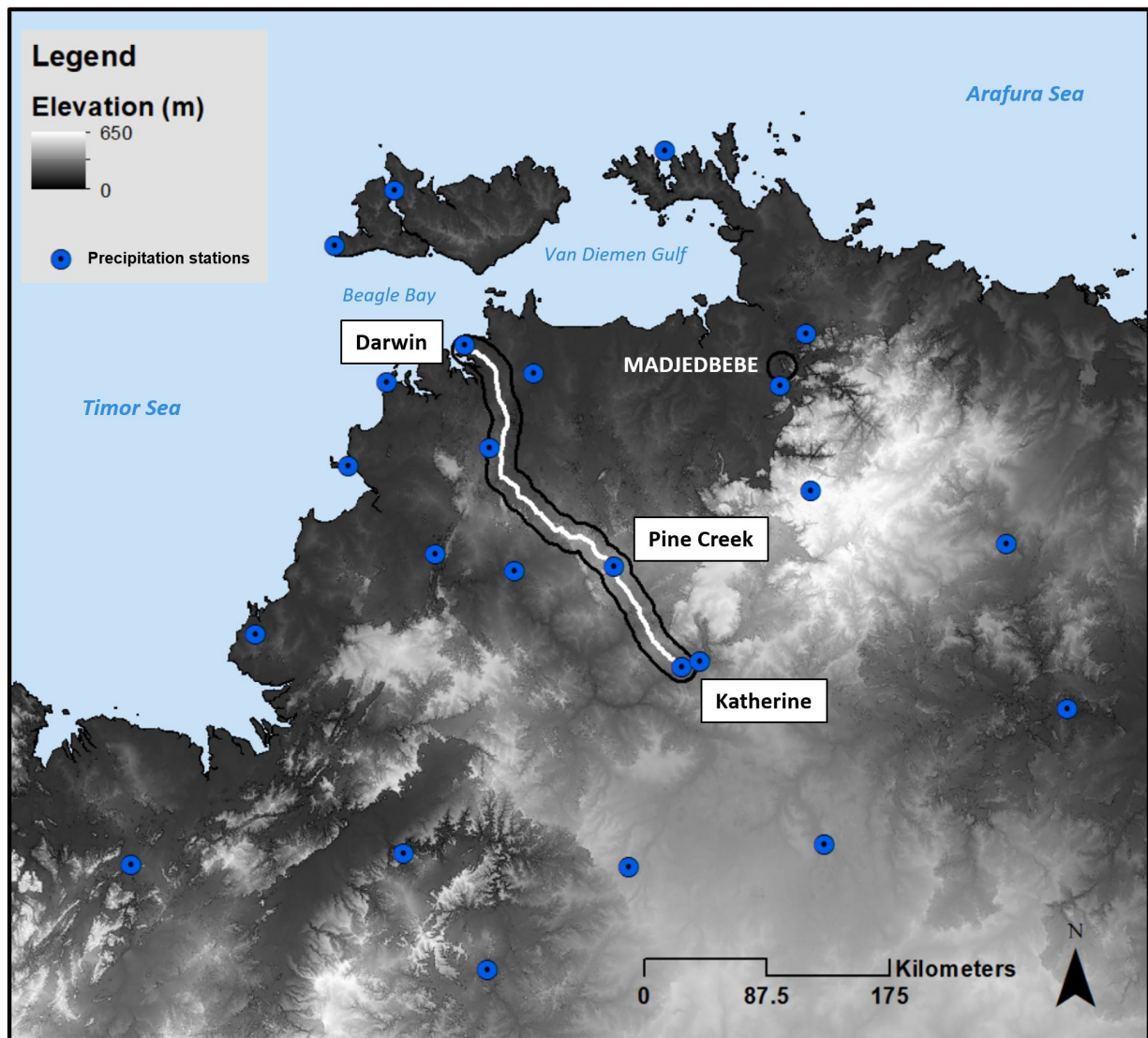


Supplementary Figure 2: *P. spiralis* trees on a seasonal floodway near Madjedbebe, following early rainfall in October 2016.



Supplementary Figure 3: *P. spiralis* tree and S.A.F. in an open woodland environment near Madjedbebe, October 2017.

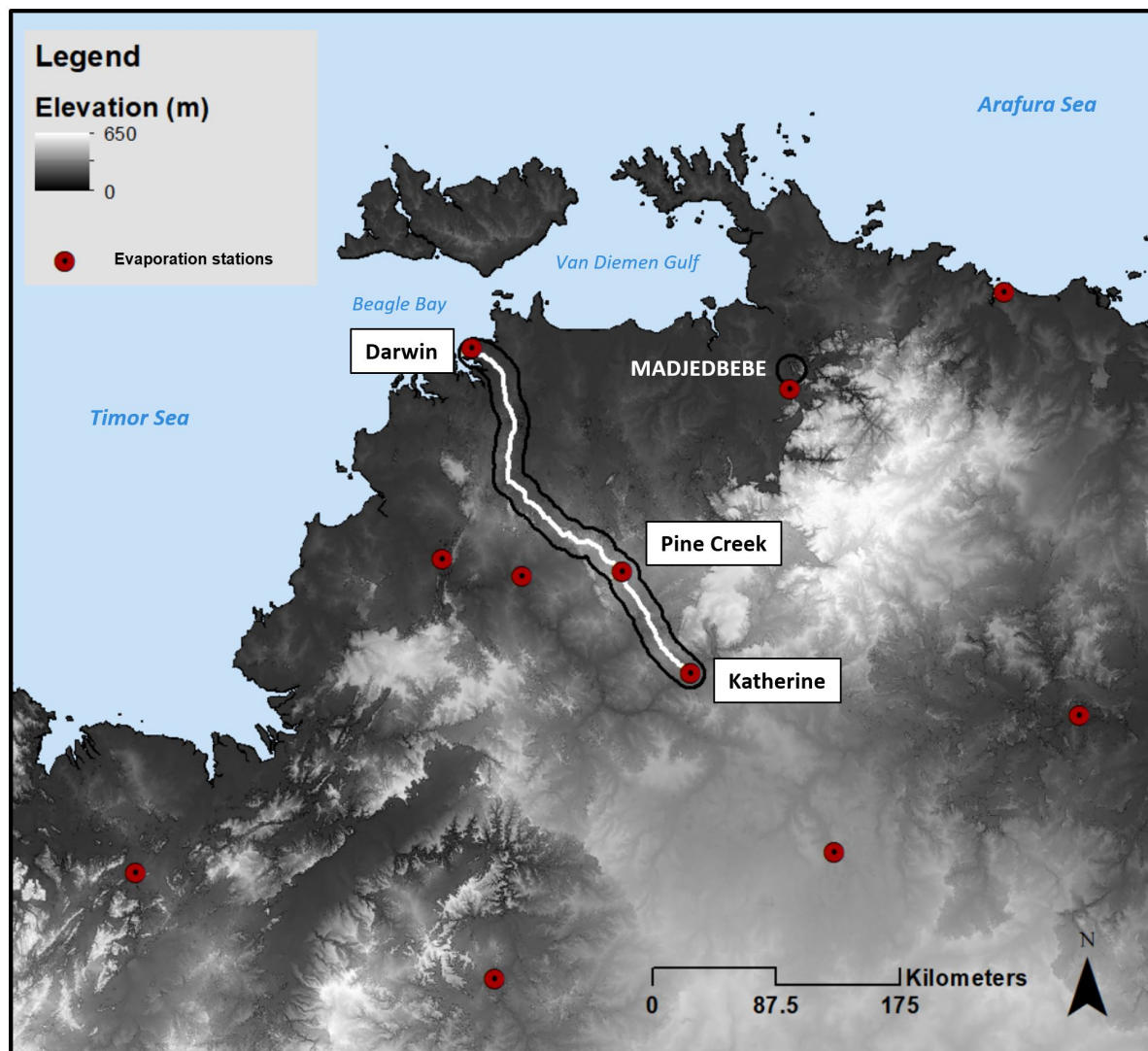
SI Section 2: Environmental data



Supplementary Figure 4: Location of the data collection stations used to compile modern precipitation for this study, showing proximity to the Stuart Highway transect and Madjedbebe, elevation data from Hutchinson et al.¹⁰ © Commonwealth of Australia (Geoscience Australia) 2008.

Supplementary Table 1: Meteorological stations used to determine modern mean annual precipitation for this study, and proximity to the Stuart Highway transect and Madjedbebe.

<i>Weather Station</i>	<i>Station Number</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Observation Time</i>	<i>Mean Annual Precipitation (mm)</i>
<i>Batchelor Airport</i>	014272	13.05 °S	131.03 °E	1994-2020	1535.0
<i>Black Point</i>	014153	11.15 °S	132.14 °E	1965-2020	1263.9
<i>Bulman</i>	014627	13.67 °S	134.34 °E	2002-2020	1043.7
<i>Central Arnhem Plateau</i>	014909	13.33 °S	133.09 °E	2003-2020	1131.7
<i>Channel Point</i>	014253	13.17 °S	130.12 °E	1990-2020	1822.5
<i>Darwin Airport</i>	014015	12.42 °S	130.89 °E	1941-2020	1721.1
<i>Delamere Weapons Range</i>	014949	15.74 °S	131.92 °E	1997-2020	854.4
<i>Douglas River Research Farm</i>	014901	13.83 °S	131.19 °E	1968-2020	1245.8
<i>Dum In Mirrie Airstrip</i>	014277	12.64 °S	130.37 °E	1994-2020	1760.6
<i>Jabiru Airport</i>	014198	12.66 °S	132.89 °E	1971-2020	1553.7
<i>Katherine Council</i>	014903	14.46 °S	132.26 °E	1873-2020	967.8
<i>Kimberly Res Station</i>	002014	15.65 °S	128.71 °E	1944-2010	824.9
<i>Larrimah</i>	014612	15.57 °S	133.21 °E	1952-2020	851.4
<i>Mango Farm</i>	014938	13.74 °S	130.68 °E	1980-2015	1434.6
<i>Middle Point</i>	014090	12.58 °S	131.31 °E	1957-2019	1433.5
<i>Ngukurr</i>	014609	14.73 °S	134.73 °E	1910-2012	774.3
<i>Oenpelli</i>	014042	12.32 °S	133.06 °E	1910-2013	1406.2
<i>Pine Creek Council</i>	014960	13.82 °S	131.83 °E	2000-2016	1423.1
<i>Pirlangimpi Airport</i>	014142	11.40 °S	130.42 °E	1963-2020	1989.3
<i>Point Fawcett</i>	200731	11.76 °S	130.03 °E	1995-2020	1572.9
<i>Port Keats Airports</i>	014948	14.25 °S	129.53 °E	1997-2020	1289.0
<i>Timber Creek</i>	014850	15.66 °S	130.48 °E	1981-2020	959.0
<i>Tindal RAAF</i>	014272	14.52 °S	132.38 °E	1969-2020	1074.1
<i>Victoria River Downs</i>	014825	16.40 °S	131.01 °E	1885-2020	648.9



Supplementary Figure 5: Location of the data collection stations used to compile modern evaporation data for this study, showing proximity to the Stuart Highway transect and Madjedbebe, elevation data from Hutchinson et al.¹⁰ © Commonwealth of Australia (Geoscience Australia) 2008.

Supplementary Table 2: Meteorological stations used to determine modern mean daily evaporation for this study, and proximity to the Stuart Highway transect and Madjedbebe.

<i>Weather Station</i>	<i>Station Number</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Observation Time</i>	<i>Mean Daily Evaporation for June (mm)</i>
<i>Darwin Airport</i>	014015	12.42 °S	130.89 °E	1957-2020	6.8
<i>Douglas River Research Farm</i>	014901	13.83 °S	131.19 °E	1968-2016	6
<i>Grove Airport</i>	014508	12.27° S	136.82° E	1966-2017	5.2
<i>Jabiru Airport</i>	014198	12.66 °S	132.89 °E	1973-1990	6.7
<i>Katherine Aviation Museum</i>	014903	14.44 °S	132.27 °E	1999-2011	4.9
<i>Kimberly Res Station</i>	002014	15.65 °S	128.71 °E	1965-2010	6.1
<i>Larrimah</i>	014612	15.57 °S	133.21 °E	2001-2012	5.4
<i>Mango Farm</i>	014938	13.74 °S	130.68 °E	1980-2015	5.8
<i>Maningrida</i>	014400	12.05 °S	134.23 °E	1967-2007	4.3
<i>Ngukurr</i>	014609	14.73 °S	134.73 °E	1964-2012	5.3
<i>Pine Creek Council</i>	014960	13.82 °S	131.83 °E	2000-2011	6.1
<i>Victoria River Downs</i>	014825	16.40 °S	131.01 °E	1993-2020	5.3

SI Section 3: Modern *Pandanus spiralis* samples

Supplementary Table 3: Modern *P. spiralis* isotope samples; MAP: Mean annual precipitation, MDE: Mean daily evaporation.

ANSTO Code	Specimen Number	Date collected	Locality	Longitude	Latitude	Vegetation	MAP (mm)	MDE (mm)	Physical pre-treatment	Chemical pre-treatment	$\delta^{13}\text{C}$ V-PDB (‰)
SI3790	5a	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'51.23"S	132°54'02.57"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-29.0
SI3791	6a	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°53'58.51"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-28.9
SI3792	7a	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.86"S	132°53'49.45"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-28.5
SI3793	8a	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.76"S	132°54'00.99"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-28.4
SI3794	9a	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°54'03.24"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-25.4
SI3795	10a	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.94"S	132°53'55.09"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-30.0
SI3796	11a	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.00"S	132°53'53.78"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-29.0
SI3797	12a	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.37"S	132°53'50.47"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-29.8
SI3799	14a	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'02.88"S	132°53'51.55"E	Open forest and woodland	1479.67	6.63538	Charred in a multi-temperature fire	ABA	-29.9

SI3810	27a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.05"S	132°53'55.13"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-28.6
SI3811	28a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.64"S	132°53'53.07"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-29.9
SI3812	29a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'24.55"S	132°53'54.49"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-29.2
SI3813	30a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.09"S	132°53'53.22"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-27.6
SI3814	31a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.25"S	132°54'00.27"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-27.8
SI3815	32a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'20.13"S	132°54'01.65"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-28.0
SI3816	33a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.37"S	132°54'03.21"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-28.7
SI3817	34a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.60"S	132°54'03.28"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-28.4
SI3818	35a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'22.37"S	132°54'03.20"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-28.0
SI3819	36a	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'23.31"S	132°54'04.54"E	Floodplain fringe	1523.42	6.67575	Charred in a multi-temperature fire	ABA	-27.2
SI3820	42a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.63"S	132°54'11.77"E	Open forest and woodland	1517.72	6.67106	Charred in a multi-	ABA	-28.1

									temperature fire		
SI3821	43a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.20"S	132°54'12.76"E	Open forest and woodland	1517.72	6.67106	Charred in a multi-temperature fire	ABA	-28.4
SI3823	45a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.37"S	132°54'09.40"E	Seasonal floodway	1517.71	6.66599	Charred in a multi-temperature fire	ABA	-27.9
SI3824	46a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.65"S	132°54'11.30"E	Seasonal floodway	1517.71	6.66599	Charred in a multi-temperature fire	ABA	-29.4
SI3825	47a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.39"S	132°54'13.33"E	Seasonal floodway	1517.71	6.66599	Charred in a multi-temperature fire	ABA	-28.9
SI3826	48a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.52"S	132°54'15.54"E	Seasonal floodway	1517.71	6.66599	Charred in a multi-temperature fire	ABA	-29.1
SI3827	49a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'03.71"S	132°54'15.65"E	Seasonal floodway	1517.71	6.66599	Charred in a multi-temperature fire	ABA	-28.3
SI3828	50a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'19.51"E	Seasonal floodway	1517.71	6.66599	Charred in a multi-temperature fire	ABA	-27.7
SI3829	51a	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'20.43"E	Seasonal floodway	1517.72	6.66599	Charred in a multi-temperature fire	ABA	-27.7
SI3830	5b	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'51.23"S	132°54'02.57"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-28.8
SI3831	6b	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°53'58.51"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.3

SI3832	7b	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.86"S	132°53'49.45"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-28.3
SI3833	8b	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.76"S	132°54'00.99"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.1
SI3834	9b	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°54'03.24"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-26.1
SI3835	10b	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.94"S	132°53'55.09"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-30.0
SI3836	11b	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.00"S	132°53'53.78"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-28.7
SI3837	12b	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.37"S	132°53'50.47"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.2
SI3839	14b	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'02.88"S	132°53'51.55"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-30.1
SI3850	27b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.05"S	132°53'55.13"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.4
SI3851	28b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.64"S	132°53'53.07"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-29.4
SI3852	29b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'24.55"S	132°53'54.49"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-29.2
SI3853	30b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.09"S	132°53'53.22"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-27.4
SI3854	31b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.25"S	132°54'00.27"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.1
SI3855	32b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'20.13"S	132°54'01.65"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.2
SI3856	33b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.37"S	132°54'03.21"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.7

SI3857	34b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.60"S	132°54'03.28"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.3
SI3858	35b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'22.37"S	132°54'03.20"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-27.9
SI3859	36b	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'23.31"S	132°54'04.54"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-27.4
SI3860	42b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.63"S	132°54'11.77"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.1
SI3861	43b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.20"S	132°54'12.76"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.2
SI3863	45b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.37"S	132°54'09.40"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.0
SI3864	46b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.65"S	132°54'11.30"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.6
SI3865	47b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.39"S	132°54'13.33"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.0
SI3866	48b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.52"S	132°54'15.54"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.3
SI3867	49b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'03.71"S	132°54'15.65"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.8
SI3868	50b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'19.51"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.2
SI3869	51b	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'20.43"E	Seasonal floodway	1517.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.2
SI3830	5c	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'51.23"S	132°54'02.57"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-28.8
SI3831	6c	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°53'58.51"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-29.1

SI3832	7c	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.86"S	132°53'49.45"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-28.3
SI3833	8c	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.76"S	132°54'00.99"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-29.0
SI3834	9c	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°54'03.24"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-25.9
SI3835	10c	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.94"S	132°53'55.09"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-29.6
SI3836	11c	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.00"S	132°53'53.78"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-28.9
SI3837	12c	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.37"S	132°53'50.47"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-29.2
SI3839	14c	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'02.88"S	132°53'51.55"E	Open forest and woodland	1479.67	6.63538	Charred at 400°C for 4 hours	ABA	-29.8
SI3850	27c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.05"S	132°53'55.13"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-28.6
SI3851	28c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.64"S	132°53'53.07"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-29.2
SI3852	29c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'24.55"S	132°53'54.49"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-29.0
SI3853	30c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.09"S	132°53'53.22"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-27.3
SI3854	31c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.25"S	132°54'00.27"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-27.7
SI3855	32c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'20.13"S	132°54'01.65"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-28.4
SI3856	33c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.37"S	132°54'03.21"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-28.7

SI3857	34c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.60"S	132°54'03.28"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-28.1
SI3858	35c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'22.37"S	132°54'03.20"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-28.0
SI3859	36c	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'23.31"S	132°54'04.54"E	Floodplain fringe	1523.42	6.67575	Charred at 400°C for 4 hours	ABA	-27.3
SI3860	42c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.63"S	132°54'11.77"E	Open forest and woodland	1517.72	6.67106	Charred at 400°C for 4 hours	ABA	-28.1
SI3861	43c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.20"S	132°54'12.76"E	Open forest and woodland	1517.72	6.67106	Charred at 400°C for 4 hours	ABA	-28.2
SI3863	45c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.37"S	132°54'09.40"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-27.9
SI3864	46c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.65"S	132°54'11.30"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-28.9
SI3865	47c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.39"S	132°54'13.33"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-28.9
SI3866	48c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.52"S	132°54'15.54"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-29.1
SI3867	49c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'03.71"S	132°54'15.65"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-28.6
SI3868	50c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'19.51"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-28.1
SI3869	51c	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'20.43"E	Seasonal floodway	1517.71	6.66599	Charred at 400°C for 4 hours	ABA	-28.1
SI3830	5d	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'51.23"S	132°54'02.57"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.3
SI3831	6d	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°53'58.51"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.7

SI3832	7d	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.86"S	132°53'49.45"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.1
SI3833	8d	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'00.76"S	132°54'00.99"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.8
SI3834	9d	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.28"S	132°54'03.24"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-25.5
SI3835	10d	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.94"S	132°53'55.09"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.9
SI3836	11d	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'01.00"S	132°53'53.78"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.3
SI3837	12d	8/10/15	Arnhem Highway, ERA Mining Lease	12°28'59.37"S	132°53'50.47"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-28.6
SI3839	14d	8/10/15	Arnhem Highway, ERA Mining Lease	12°29'02.88"S	132°53'51.55"E	Open forest and woodland	1479.67	6.63538	Dried	Alpha-cellulose	-29.5
SI3850	27d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.05"S	132°53'55.13"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-28.0
SI3851	28d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'29.64"S	132°53'53.07"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-28.9
SI3852	29d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'24.55"S	132°53'54.49"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-28.1
SI3853	30d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.09"S	132°53'53.22"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-26.4
SI3854	31d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.25"S	132°54'00.27"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-27.4
SI3855	32d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'20.13"S	132°54'01.65"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-27.4
SI3856	33d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'19.37"S	132°54'03.21"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-27.8

SI3857	34d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'21.60"S	132°54'03.28"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-28.1
SI3858	35d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'22.37"S	132°54'03.20"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-27.4
SI3859	36d	9/10/15	Arnhem Highway, ERA Mining Lease	12°33'23.31"S	132°54'04.54"E	Floodplain fringe	1523.42	6.67575	Dried	Alpha-cellulose	-26.8
SI3860	42d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.63"S	132°54'11.77"E	Open forest and woodland	1517.72	6.67106	Dried	Alpha-cellulose	-27.7
SI3861	43d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'27.20"S	132°54'12.76"E	Open forest and woodland	1517.72	6.67106	Dried	Alpha-cellulose	-27.8
SI3863	45d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.37"S	132°54'09.40"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-27.3
SI3864	46d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.65"S	132°54'11.30"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-29.0
SI3865	47d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.39"S	132°54'13.33"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-28.5
SI3866	48d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'04.52"S	132°54'15.54"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-28.7
SI3867	49d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'03.71"S	132°54'15.65"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-27.9
SI3868	50d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'19.51"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-27.4
SI3869	51d	10/10/15	Arnhem Highway, ERA Mining Lease	12°32'05.66"S	132°54'20.43"E	Seasonal floodway	1517.71	6.66599	Dried	Alpha-cellulose	-27.7
SI4396	72	18/10/16	Arnhem Highway, ERA Mining Lease	12°28'51.20"S	132°54'02.60"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.5
SI4397	73	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'01.16"S	132°54'03.26"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-27.7

SI4398	74	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'00.77"S	132°54'00.99"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.1
SI4399	75	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'00.90"S	132°53'59.22"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-28.8
SI4400	76	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'01.29"S	132°53'58.58"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.5
SI4401	77	18/10/16	Arnhem Highway, ERA Mining Lease	12°28'60.00"S	132°53'54.87"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-30.2
SI4402	78	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'00.97"S	132°53'53.65"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-28.5
SI4403	79	18/10/16	Arnhem Highway, ERA Mining Lease	12°28'59.12"S	132°53'50.41"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.0
SI4404	80	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'04.24"S	132°53'48.91"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.2
SI4405	81	18/10/16	Arnhem Highway, ERA Mining Lease	12°29'02.90"S	132°53'51.55"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-30.0
SI4406	82	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'24.28"S	132°53'54.51"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.7
SI4407	83	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'20.91"S	132°53'53.10"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-27.5
SI4408	84	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'19.10"S	132°54'00.34"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.3
SI4409	85	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'18.04"S	132°54'00.17"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.7
SI4410	86	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'19.99"S	132°54'01.55"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.8
SI4411	87	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'19.20"S	132°54'03.11"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.6

SI4412	88	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'21.30"S	132°54'03.11"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-29.0
SI4413	89	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'22.49"S	132°54'03.62"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-30.0
SI4414	90	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'23.10"S	132°54'04.72"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.4
SI4415	91	18/10/16	Arnhem Highway, ERA Mining Lease	12°33'19.02"S	132°54'07.24"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-29.3
SI4416	92	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'27.53"S	132°54'11.70"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-29.2
SI4417	93	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'27.15"S	132°54'12.46"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.5
SI4418	94	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'25.30"S	132°54'09.64"E	Seasonal causeway	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.1
SI4419	95	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'04.35"S	132°54'09.37"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.3
SI4420	96	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'04.54"S	132°54'11.11"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.9
SI4421	97	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'04.41"S	132°54'13.21"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.3
SI4422	98	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'04.45"S	132°54'15.47"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.2
SI4423	99	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'03.51"S	132°54'15.32"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.9
SI4424	100	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'05.51"S	132°54'19.41"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.8
SI4425	101	19/10/16	Arnhem Highway, ERA Mining Lease	12°32'05.51"S	132°54'19.41"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.1

SI5263	163	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'23.01"S	132°54'04.71"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.4
SI5264	164	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'22.42"S	132°54'03.48"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-29.0
SI5265	165	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'21.20"S	132°54'02.88"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.2
SI5266	166	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'19.14"S	132°54'03.17"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-27.6
SI5267	167	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'20.97"S	132°54'01.48"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.6
SI5268	168	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'19.03"S	132°54'00.29"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.9
SI5269	169	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'20.78"S	132°53'53.08"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-27.6
SI5270	170	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'24.33"S	132°53'54.48"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-29.2
SI5271	171	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'18.94"S	132°54'07.04"E	Floodplain fringe	1523.42	6.67575	Charred at 500°C for 2 hours	ABA	-28.8
SI5272	172	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'27.57"S	132°54'11.64"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.4
SI5273	173	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'27.05"S	132°54'12.56"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.7
SI5274	174	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'25.34"S	132°54'09.66"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-28.7
SI5275	175	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'04.29"S	132°54'09.41"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.7
SI5276	176	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'04.54"S	132°54'11.13"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.6

SI5277	177	26/9/17	Arnhem Highway, ERA Mining Lease	12°33'04.35"S	132°54'13.31"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-30.0
SI5278	178	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'04.43"S	132°54'15.52"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-29.2
SI5279	179	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'03.48"S	132°54'15.39"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-30.0
SI5280	180	26/9/17	Arnhem Highway, ERA Mining Lease	12°32'05.60"S	132°54'19.51"E	Seasonal causeway	1511.71	6.66599	Charred at 500°C for 2 hours	ABA	-28.5
SI5282	182	26/9/17	Arnhem Highway, ERA Mining Lease	12°29'01.27"S	132°54'03.16"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-27.9
SI5283	183	26/9/17	Arnhem Highway, ERA Mining Lease	12°29'00.72"S	132°54'01.98"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-30.2
SI5284	184	26/9/17	Arnhem Highway, ERA Mining Lease	12°29'00.86"S	132°53'59.37"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-27.9
SI5285	185	26/9/17	Arnhem Highway, ERA Mining Lease	12°28'59.94"S	132°53'55.96"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-27.8
SI5286	186	26/9/17	Arnhem Highway, ERA Mining Lease	12°29'02.78"S	132°53'51.61"E	Open forest and woodland	1479.67	6.63538	Charred at 500°C for 2 hours	ABA	-29.5
SI5287	187	29/9/17	Arnhem Highway, ERA Mining Lease	12°32'37.92"S	132°54'16.52"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-29.1
SI5288	188	29/9/17	Arnhem Highway, ERA Mining Lease	12°32'37.52"S	132°54'17.14"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-29.1
SI5289	189	29/9/17	Arnhem Highway, ERA Mining Lease	12°32'37.67"S	132°54'18.24"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-30.5
SI5290	190	29/9/17	Arnhem Highway, ERA Mining Lease	12°32'40.76"S	132°54'20.28"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-27.9
SI5291	191	29/9/17	Arnhem Highway, ERA Mining Lease	12°32'41.92"S	132°54'22.80"E	Open forest and woodland	1517.72	6.67106	Charred at 500°C for 2 hours	ABA	-29.7

SI5292	192	29/9/17	Arnhem Highway, ERA Mining Lease	12°31'39.99"S	132°53'57.26"E	Open forest and woodland	1505.45	6.66055	Charred at 500°C for 2 hours	ABA	-30.1
SI5293	193	29/9/17	Arnhem Highway, ERA Mining Lease	12°31'39.97"S	132°53'59.89"E	Open forest and woodland	1505.45	6.66055	Charred at 500°C for 2 hours	ABA	-30.4
SI5294	194	29/9/17	Arnhem Highway, ERA Mining Lease	12°31'38.14"S	132°54'03.33"E	Open forest and woodland	1505.45	6.66055	Charred at 500°C for 2 hours	ABA	-28.6
SI5295	195	29/9/17	Arnhem Highway, ERA Mining Lease	12°31'36.03"S	132°54'04.66"E	Open forest and woodland	1505.45	6.66055	Charred at 500°C for 2 hours	ABA	-29.7
SI5296	196	29/9/17	Arnhem Highway, ERA Mining Lease	12°31'35.16"S	132°54'08.79"E	Seasonal causeway	1505.45	6.66055	Charred at 500°C for 2 hours	ABA	-29.5
SI5616	229a	11/7/18	Stuart Highway, Darwin	12°25'29.46"S	130°52'58.42"E	Open forest and woodland	1719.7	6.79898	Charred at 500°C for 2 hours	ABA	-28.5
SI5617	229b	11/7/18	Stuart Highway, Darwin	12°25'29.46"S	130°52'58.42"E	Open forest and woodland	1719.7	6.79898	Charred at 500°C for 2 hours	ABA	-28.2
SI5618	229c	11/7/18	Stuart Highway, Darwin	12°25'29.46"S	130°52'58.42"E	Open forest and woodland	1719.7	6.79898	Charred at 500°C for 2 hours	ABA	-28.2
SI5619	230a	11/7/18	Stuart Highway, Darwin	12°25'29.51"S	130°53'06.23"E	Open forest and woodland	1719.7	6.79898	Charred at 500°C for 2 hours	ABA	-27.3
SI5620	230b	11/7/18	Stuart Highway, Darwin	12°25'29.51"S	130°53'06.23"E	Open forest and woodland	1719.7	6.79898	Charred at 500°C for 2 hours	ABA	-27.2
SI5621	230c	11/7/18	Stuart Highway, Darwin	12°25'29.51"S	130°53'06.23"E	Open forest and woodland	1719.7	6.79898	Charred at 500°C for 2 hours	ABA	-26.9
SI5622	231a	11/7/18	Stuart Highway, Palmerston	12°29'01.39"S	131°00'30.40"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-26.8
SI5623	231b	11/7/18	Stuart Highway, Palmerston	12°29'01.39"S	131°00'30.40"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-26.8
SI5624	231c	11/7/18	Stuart Highway, Palmerston	12°29'01.39"S	131°00'30.40"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-26.8

SI5625	232a	11/7/18	Stuart Highway, Palmerston	12°29'00.32"S	131°00'29.63"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-28.1
SI5626	232b	11/7/18	Stuart Highway, Palmerston	12°29'00.32"S	131°00'29.63"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-27.7
SI5627	232c	11/7/18	Stuart Highway, Palmerston	12°29'00.32"S	131°00'29.63"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-28.0
SI5628	233a	11/7/18	Stuart Highway, Palmerston	12°28'59.89"S	131°00'28.91"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-27.9
SI5629	233b	11/7/18	Stuart Highway, Palmerston	12°28'59.89"S	131°00'28.91"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-28.4
SI5630	233c	11/7/18	Stuart Highway, Palmerston	12°28'59.89"S	131°00'28.91"E	Seasonal causeway	1652.36	6.75764	Charred at 500°C for 2 hours	ABA	-28.1
SI5631	235a	11/7/18	Stuart Highway, Hughes	12°42'24.29"S	131°05'11.30"E	Open forest and woodland	1545	6.5737	Charred at 500°C for 2 hours	ABA	-27.8
SI5632	235b	11/7/18	Stuart Highway, Hughes	12°42'24.29"S	131°05'11.30"E	Open forest and woodland	1545	6.5737	Charred at 500°C for 2 hours	ABA	-27.9
SI5633	235c	11/7/18	Stuart Highway, Hughes	12°42'24.28"S	131°05'11.01"E	Open forest and woodland	1545	6.5737	Charred at 500°C for 2 hours	ABA	-27.7
SI5634	236a	11/7/18	Stuart Highway, Hughes	12°43'46.47"S	131°05'19.52"E	Open forest and woodland	1540.55	6.53838	Charred at 500°C for 2 hours	ABA	-28.5
SI5635	236b	11/7/18	Stuart Highway, Hughes	12°43'46.47"S	131°05'19.52"E	Open forest and woodland	1540.55	6.53838	Charred at 500°C for 2 hours	ABA	-28.7
SI5636	236c	11/7/18	Stuart Highway, Hughes	12°43'46.47"S	131°05'19.52"E	Open forest and woodland	1540.55	6.53838	Charred at 500°C for 2 hours	ABA	-28.6
SI5637	237a	11/7/18	Stuart Highway, Hughes	12°43'46.10"S	131°05'19.65"E	Open forest and woodland	1540.55	6.53838	Charred at 500°C for 2 hours	ABA	-29.0
SI5638	237b	11/7/18	Stuart Highway, Hughes	12°43'46.10"S	131°05'19.65"E	Open forest and woodland	1540.55	6.53838	Charred at 500°C for 2 hours	ABA	-28.2

SI5639	237c	11/7/18	Stuart Highway, Hughes	12°43'46.10"S	131°05'19.65"E	Open forest and woodland	1540.55	6.53838	Charred at 500°C for 2 hours	ABA	-28.6
SI5640	238a	11/7/18	Stuart Highway, Lake Bennett	12°56'32.63"S	131°07'30.26"E	Seasonal causeway	1534.83	6.30063	Charred at 500°C for 2 hours	ABA	-30.7
SI5641	238b	11/7/18	Stuart Highway, Lake Bennett	12°56'32.63"S	131°07'30.26"E	Seasonal causeway	1534.83	6.30063	Charred at 500°C for 2 hours	ABA	-30.1
SI5642	238c	11/7/18	Stuart Highway, Lake Bennett	12°56'32.63"S	131°07'30.26"E	Seasonal causeway	1534.83	6.30063	Charred at 500°C for 2 hours	ABA	-30.6
SI5643	239a	11/7/18	Stuart Highway, Lake Bennett	12°56'46.50"S	131°07'24.67"E	Seasonal causeway	1534.83	6.30063	Charred at 500°C for 2 hours	ABA	-28.1
SI5644	239b	11/7/18	Stuart Highway, Lake Bennett	12°56'46.50"S	131°07'24.67"E	Seasonal causeway	1534.83	6.30063	Charred at 500°C for 2 hours	ABA	-28.1
SI5645	239c	11/7/18	Stuart Highway, Lake Bennett	12°56'46.50"S	131°07'24.67"E	Seasonal causeway	1534.83	6.30063	Charred at 500°C for 2 hours	ABA	-28.3
SI5646	240a	11/7/18	Stuart Highway, Stapleton	13°11'03.61"S	131°06'03.29"E	Seasonal causeway	1523.55	6.09692	Charred at 500°C for 2 hours	ABA	-29.1
SI5647	240b	11/7/18	Stuart Highway, Stapleton	13°11'03.61"S	131°06'03.29"E	Seasonal causeway	1523.55	6.09692	Charred at 500°C for 2 hours	ABA	-29.3
SI5648	240c	11/7/18	Stuart Highway, Stapleton	13°11'03.61"S	131°06'03.29"E	Seasonal causeway	1523.55	6.09692	Charred at 500°C for 2 hours	ABA	-29.1
SI5649	243a	11/7/18	Stuart Highway, Adelaide River	13°13'34.70"S	131°06'01.68"E	Seasonal causeway	1514.27	6.07213	Charred at 500°C for 2 hours	ABA	-28.4
SI5650	243b	11/7/18	Stuart Highway, Adelaide River	13°13'34.70"S	131°06'01.68"E	Seasonal causeway	1514.27	6.07213	Charred at 500°C for 2 hours	ABA	-28.3
SI5651	243c	11/7/18	Stuart Highway, Adelaide River	13°13'34.70"S	131°06'01.68"E	Seasonal causeway	1514.27	6.07213	Charred at 500°C for 2 hours	ABA	-28.1
SI5652	244a	11/7/18	Stuart Highway, Adelaide River	13°13'43.20"S	131°06'03.08"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-29.1

SI5653	244b	11/7/18	Stuart Highway, Adelaide River	13°13'43.20"S	131°06'03.08"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-29.3
SI5654	244c	11/7/18	Stuart Highway, Adelaide River	13°13'43.20"S	131°06'03.08"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-29.3
SI5655	245a	11/7/18	Stuart Highway, Adelaide River	13°13'43.86"S	131°06'02.98"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-28.3
SI5656	245b	11/7/18	Stuart Highway, Adelaide River	13°13'43.86"S	131°06'02.98"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-28.1
SI5657	245c	11/7/18	Stuart Highway, Adelaide River	13°13'43.86"S	131°06'02.98"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-28.1
SI5658	246a	11/7/18	Stuart Highway, Adelaide River	13°13'45.14"S	131°06'03.24"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-29.8
SI5659	246b	11/7/18	Stuart Highway, Adelaide River	13°13'45.14"S	131°06'03.24"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-29.4
SI5660	246c	11/7/18	Stuart Highway, Adelaide River	13°13'45.14"S	131°06'03.24"E	Seasonal causeway	1511.9	6.06639	Charred at 500°C for 2 hours	ABA	-29.3
SI5661	247a	11/7/18	Stuart Highway, Grove Hill	13°24'47.89"S	131°17'43.32"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-29.5
SI5662	247b	11/7/18	Stuart Highway, Grove Hill	13°24'47.89"S	131°17'43.32"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-29.5
SI5663	247c	11/7/18	Stuart Highway, Grove Hill	13°24'47.89"S	131°17'43.32"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-29.3
SI5664	248a	11/7/18	Stuart Highway, Grove Hill	13°24'47.98"S	131°17'43.38"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-28.3
SI5665	248b	11/7/18	Stuart Highway, Grove Hill	13°24'47.98"S	131°17'43.38"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-28.4
SI5666	248c	11/7/18	Stuart Highway, Grove Hill	13°24'47.98"S	131°17'43.38"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-28.2

SI5667	249a	11/7/18	Stuart Highway, Grove Hill	13°24'48.32"S	131°17'46.67"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-29.7
SI5668	249b	11/7/18	Stuart Highway, Grove Hill	13°24'48.32"S	131°17'46.67"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-29.6
SI5669	249c	11/7/18	Stuart Highway, Grove Hill	13°24'48.32"S	131°17'46.67"E	Floodplain fringe	1425.7	6.00714	Charred at 500°C for 2 hours	ABA	-29.3
SI5670	250a	11/7/18	Stuart Highway, Hayes Creek	13°34'13.00"S	131°26'26.68"E	Open forest and woodland	1373.36	5.99549	Charred at 500°C for 2 hours	ABA	-30.0
SI5671	250b	11/7/18	Stuart Highway, Hayes Creek	13°34'13.00"S	131°26'26.68"E	Open forest and woodland	1373.36	5.99549	Charred at 500°C for 2 hours	ABA	-29.7
SI5672	250c	11/7/18	Stuart Highway, Hayes Creek	13°34'13.00"S	131°26'26.68"E	Open forest and woodland	1373.36	5.99549	Charred at 500°C for 2 hours	ABA	-29.8
SI5673	251a	11/7/18	Stuart Highway, Hayes Creek	13°34'11.60"S	131°28'23.29"E	Monsoon vine forest	1376.22	5.99877	Charred at 500°C for 2 hours	ABA	-30.0
SI5674	251b	11/7/18	Stuart Highway, Hayes Creek	13°34'11.60"S	131°28'23.29"E	Monsoon vine forest	1376.22	5.99877	Charred at 500°C for 2 hours	ABA	-30.0
SI5675	251c	11/7/18	Stuart Highway, Hayes Creek	13°34'11.60"S	131°28'23.29"E	Monsoon vine forest	1376.22	5.99877	Charred at 500°C for 2 hours	ABA	-30.0
SI5676	252a	12/7/18	Stuart Highway, Hayes Creek	13°34'11.46"S	131°28'22.76"E	Monsoon vine forest	1376.22	5.99877	Charred at 500°C for 2 hours	ABA	-29.5
SI5677	253a	12/7/18	Stuart Highway, Emerald Springs	13°39'04.27"S	131°40'01.77"E	Open forest and woodland	1391.78	6.04095	Charred at 500°C for 2 hours	ABA	-29.6
SI5678	253b	12/7/18	Stuart Highway, Emerald Springs	13°39'04.27"S	131°40'01.77"E	Open forest and woodland	1391.78	6.04095	Charred at 500°C for 2 hours	ABA	-29.3
SI5679	253c	12/7/18	Stuart Highway, Emerald Springs	13°39'04.27"S	131°40'01.77"E	Open forest and woodland	1391.78	6.04095	Charred at 500°C for 2 hours	ABA	-29.7

SI5680	254a	12/7/18	Stuart Highway, Emerald Springs	13°41'14.25"S	131°41'38.73"E	Floodplain fringe	1396.15	6.05148	Charred at 500°C for 2 hours	ABA	-30.6
SI5681	254b	12/7/18	Stuart Highway, Emerald Springs	13°41'14.25"S	131°41'38.73"E	Floodplain fringe	1396.15	6.05148	Charred at 500°C for 2 hours	ABA	-30.4
SI5682	254c	12/7/18	Stuart Highway, Emerald Springs	13°41'14.25"S	131°41'38.73"E	Floodplain fringe	1396.15	6.05148	Charred at 500°C for 2 hours	ABA	-30.6
SI5683	255a	12/7/18	Stuart Highway, Emerald Springs	13°41'12.07"S	131°41'41.04"E	Floodplain fringe	1396.15	6.05148	Charred at 500°C for 2 hours	ABA	-30.9
SI5684	255b	12/7/18	Stuart Highway, Emerald Springs	13°41'12.07"S	131°41'41.04"E	Floodplain fringe	1396.15	6.05148	Charred at 500°C for 2 hours	ABA	-31.2
SI5685	255c	12/7/18	Stuart Highway, Emerald Springs	13°41'12.07"S	131°41'41.04"E	Floodplain fringe	1396.15	6.05148	Charred at 500°C for 2 hours	ABA	-30.8
SI5686	256a	12/7/18	Stuart Highway, Pine Creek	13°48'51.68"S	131°50'06.74"E	Seasonal causeway	1423.02	6.09988	Charred at 500°C for 2 hours	ABA	-29.0
SI5687	256b	12/7/18	Stuart Highway, Pine Creek	13°48'51.68"S	131°50'06.74"E	Seasonal causeway	1423.02	6.09988	Charred at 500°C for 2 hours	ABA	-28.9
SI5688	256c	12/7/18	Stuart Highway, Pine Creek	13°48'51.68"S	131°50'06.74"E	Seasonal causeway	1423.02	6.09988	Charred at 500°C for 2 hours	ABA	-28.8
SI5689	257a	12/7/18	Stuart Highway, Katherine	14°21'42.47"S	132°08'25.65"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-25.9
SI5690	257b	12/7/18	Stuart Highway, Katherine	14°21'42.47"S	132°08'25.65"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-26.3
SI5691	257c	12/7/18	Stuart Highway, Katherine	14°21'42.47"S	132°08'25.65"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-26.8

SI5692	258a	12/7/18	Stuart Highway, Katherine	14°21'41.75"S	132°08'24.41"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-29.0
SI5693	258b	12/7/18	Stuart Highway, Katherine	14°21'41.75"S	132°08'24.41"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-28.9
SI5694	259a	12/7/18	Stuart Highway, Katherine	14°21'40.54"S	132°08'20.83"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-27.3
SI5695	259b	12/7/18	Stuart Highway, Katherine	14°21'40.54"S	132°08'20.83"E	Open forest and woodland	1029.25	5.02488	Charred at 500°C for 2 hours	ABA	-27.2
SI5696	260a	12/7/18	Stuart Highway, Edith	14°17'46.17"S	132°04'57.14"E	Open forest and woodland	1077.33	5.2134	Charred at 500°C for 2 hours	ABA	-28.2
SI5697	260b	12/7/18	Stuart Highway, Edith	14°17'46.17"S	132°04'57.14"E	Open forest and woodland	1077.33	5.2134	Charred at 500°C for 2 hours	ABA	-28.1
SI5698	260c	12/7/18	Stuart Highway, Edith	14°17'46.17"S	132°04'57.14"E	Open forest and woodland	1077.33	5.2134	Charred at 500°C for 2 hours	ABA	-28.5
SI5699	261a	12/7/18	Stuart Highway, Edith	14°17'46.51"S	132°04'58.13"E	Open forest and woodland	1077.33	5.2134	Charred at 500°C for 2 hours	ABA	-29.0
SI5700	261b	12/7/18	Stuart Highway, Edith	14°17'46.51"S	132°04'58.13"E	Open forest and woodland	1077.33	5.2134	Charred at 500°C for 2 hours	ABA	-29.0
SI5701	261c	12/7/18	Stuart Highway, Edith	14°17'46.51"S	132°04'58.13"E	Open forest and woodland	1077.33	5.2134	Charred at 500°C for 2 hours	ABA	-29.2
SI5702	262a	12/7/18	Stuart Highway, Edith	14°12'51.99"S	132°02'20.28"E	Open forest and woodland	1135.29	5.43953	Charred at 500°C for 2 hours	ABA	-28.5
SI5703	263a	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°01'38.74"S	131°56'21.69"E	Open forest and woodland	1319.32	5.92887	Charred at 500°C for 2 hours	ABA	-28.7
SI5704	263b	12/7/18	Stuart Highway, Between Edith	14°01'38.74"S	131°56'21.69"E	Open forest and woodland	1319.32	5.92887	Charred at 500°C for 2 hours	ABA	-28.8

			and Pine Creek								
SI5705	263c	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°01'38.74"S	131°56'21.69"E	Open forest and woodland	1319.32	5.92887	Charred at 500°C for 2 hours	ABA	-28.8
SI5706	264a	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'45.18"S	131°55'58.13"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-29.0
SI5707	264b	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'45.18"S	131°55'58.13"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-29.0
SI5708	265a	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'45.51"S	131°55'58.91"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-29.1
SI5709	265b	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'45.51"S	131°55'58.91"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-29.3
SI5710	265c	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'45.51"S	131°55'58.91"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-29.3
SI5711	266a	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'47.37"S	131°56'00.19"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-30.3
SI5712	266b	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'47.37"S	131°56'00.19"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-30.1

SI5713	266c	12/7/18	Stuart Highway, Between Edith and Pine Creek	14°00'47.37"S	131°56'00.19"E	Open forest and woodland	1337.62	5.95009	Charred at 500°C for 2 hours	ABA	-30.1
SI5714	267a	12/7/18	Stuart Highway, Pine Creek	13°50'51.83"S	131°50'23.94"E	Open forest and woodland	1422.16	6.09845	Charred at 500°C for 2 hours	ABA	-30.5
SI5715	267b	12/7/18	Stuart Highway, Pine Creek	13°50'51.83"S	131°50'23.94"E	Open forest and woodland	1422.16	6.09845	Charred at 500°C for 2 hours	ABA	-30.4
SI5716	267c	12/7/18	Stuart Highway, Pine Creek	13°50'51.83"S	131°50'23.94"E	Open forest and woodland	1422.16	6.09845	Charred at 500°C for 2 hours	ABA	-29.8
SI5717	268a	12/7/18	Stuart Highway, Pine Creek	13°47'01.14"S	131°47'27.17"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-28.3
SI5718	268b	12/7/18	Stuart Highway, Pine Creek	13°47'01.14"S	131°47'27.17"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-28.3
SI5719	268c	12/7/18	Stuart Highway, Pine Creek	13°47'01.14"S	131°47'27.17"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-28.2
SI5720	269a	12/7/18	Stuart Highway, Pine Creek	13°47'02.40"S	131°47'27.60"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-29.7
SI5721	269b	12/7/18	Stuart Highway, Pine Creek	13°47'02.40"S	131°47'27.60"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-29.8
SI5722	269c	12/7/18	Stuart Highway, Pine Creek	13°47'02.40"S	131°47'27.60"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-29.5
SI5723	270a	12/7/18	Stuart Highway, Pine Creek	13°46'49.60"S	131°47'22.94"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-29.0
SI5724	270b	12/7/18	Stuart Highway, Pine Creek	13°46'49.60"S	131°47'22.94"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-29.4
SI5725	270c	12/7/18	Stuart Highway, Pine Creek	13°46'49.60"S	131°47'22.94"E	Open forest and woodland	1419.62	6.09440	Charred at 500°C for 2 hours	ABA	-29.3

SI Section 4: Archaeological *Pandanus spiralis* samples

Supplementary Table 4: Archaeological *P. spiralis* isotope samples. DNS:

Sample did not survive pretreatment; IS: Insufficient sample survived for analysis following pre-treatment. *Due to small sample size the $\delta^{13}\text{C}$ value is the result of one analysis only.

ANSTO ID	Sample ID	Phase	Context	$\delta^{13}\text{CV}$ -PDB (‰)	Number of replicates analysed	Adjusted $\delta^{13}\text{CV}$ -PDB (‰)
SI5327	MJB1	7b	C3/4	-27.9	2	-29.5
SI5328	MJB2	7b	C3/4	-26.6	2	-28.2
SI5329	MJB3	7b	C3/4	-26.5	2	-28.1
SI5330	MJB4	7b	C3/4	-25.8	2	-27.4
SI5331	MJB5	7b	C3/4	-24.5	2	-26.1
SI5332	MJB6	7b	C3/4	-25.2	2	-26.8
SI5333	MJB7	7b	C3/4B	-25.4	2	-27.0
SI5334	MJB8	7b	C3/4B	-28.5	2	-30.1
SI5335	MJB9	7b	C3/4B	-26.6	2	-28.2
SI5336	MJB10	7b	C3/4B	-26.5	2	-28.1
SI5337	MJB11	7b	C3/4B	-25.1	2	-26.7
SI5338	MJB12	7b	C3/4B	-26.8	2	-28.4
SI5339	MJB13	7b	C3/4B	-25.1	2	-26.7
SI5340	MJB14	7b	C3/4B	-27.2	2	-28.8
SI5341	MJB15	7b	C3/4B	-27.5	2	-29.1
SI5342	MJB16	7a	C3/7	-24.1	2	-26.4
SI5343	MJB17	5	C3/20	-23.0	2	-25.4
SI5344	MJB18	5	C3/20	-22.9	2	-25.3
SI5345	MJB19	5	C3/22	-25.0	2	-27.4
SI5346	MJB20	4	C2/27B	-24.7	6	-27.5
SI5347	MJB21	4	C2/27B	-25.7	2	-28.5
SI5348	MJB22	4	C2/27B	DNS	NA	NA
SI5349	MJB23	4	C2/27B	-25.2	2	-28.0
SI5350	MJB24	4	C2/27B	IS	NA	NA
SI5351	MJB25	4	C2/27B	DNS	NA	NA
SI5352	MJB26	4	C2/27B	DNS	NA	NA
SI5353	MJB27	4	C2/27B	IS	NA	NA
SI5354	MJB28	4	C2/27B	DNS	NA	NA
SI5355	MJB29	4	C2/28	DNS	NA	NA
SI5356	MJB30	4	C2/28	DNS	NA	NA
SI5357	MJB31	4	C2/28	IS	NA	NA
SI5358	MJB32	4	C2/28	DNS	NA	NA
SI5359	MJB33	4	C2/28A	-25.5	2	-28.3
SI5360	MJB34	4	C2/28A	-25.7	2	-28.5
SI5361	MJB35	4	C2/28A	-25.6	2	-28.4

SI5362	MJB36	4	C2/28A	DNS	NA	NA
SI5363	MJB37	4	C2/28A	IS	NA	NA
SI5364	MJB38	4	C2/29	DNS	NA	NA
SI5365	MJB39	4	C2/29	DNS	NA	NA
SI5366	MJB40	4	C2/29	DNS	NA	NA
SI5367	MJB41	4	C2/29	DNS	NA	NA
SI5368	MJB42	4	C2/29	DNS	NA	NA
SI5369	MJB43	4	C2/29	DNS	NA	NA
SI5370	MJB44	4	C2/29A	DNS	NA	NA
SI5371	MJB45	4	C2/29A	-25.4	2	-28.2
SI5372	MJB46	3b	C2/30	IS	NA	NA
SI5373	MJB47	3b	C2/32A	-23.0	6	-25.8
SI5374	MJB48	3b	C2/32A	-24.1	2	-26.9
SI5375	MJB49	3b	C2/32A	IS	NA	NA
SI5376	MJB50	3b	C2/32A	DNS	NA	NA
SI5377	MJB51	3b	C2/32A	-24.3	2	-27.1
SI5378	MJB52	3b	C2/32A	-25.7	2	-28.5
SI5379	MJB53	3b	C2/32A	DNS	NA	NA
SI5380	MJB54	3b	C2/32A	-25.1	2	-27.9
SI5381	MJB55	3a	C2/33	DNS	NA	NA
SI5382	MJB56	3a	C2/33	DNS	NA	NA
SI5383	MJB57	3a	C2/34	DNS	NA	NA
SI5384	MJB58	3a	C2/34	DNS	NA	NA
SI5385	MJB59	3a	C2/34	IS	NA	NA
SI5386	MJB60	3a	C2/34	DNS	NA	NA
SI5387	MJB61	3a	C2/34	IS	NA	NA
SI5388	MJB62	3a	C2/34	DNS	NA	NA
SI5389	MJB63	3a	C2/34	DNS	NA	NA
SI5390	MJB64	3a	C2/34	DNS	NA	NA
SI5391	MJB65	3a	C2/34	DNS	NA	NA
SI5392	MJB66	3a	C2/34	DNS	NA	NA
SI5393	MJB67	3a	C2/34A	-24.0	2	-26.8
SI5394	MJB68	3a	C2/34A	-24.8	2	-27.6
SI5395	MJB69	3a	C2/34A	DNS	NA	NA
SI5396	MJB70	3a	C2/34A	-26.2	2	-29.0
SI5397	MJB71	3a	C2/34A	-25.7	2	-28.5
SI5398	MJB72	3a	C2/34A	DNS	NA	NA
SI5399	MJB73	3a	C2/34A	-24.7	1*	-27.5
SI5400	MJB74	3a	C2/35	IS	NA	NA
SI5401	MJB75	3a	C2/35	-23.1	2	-25.9
SI5402	MJB76	3a	C2/35	-24.9	2	-27.7
SI5403	MJB77	3a	C2/35	DNS	NA	NA

SI5404	MJB78	3a	C2/35B	DNS	NA	NA
SI5405	MJB79	3a	C2/35B	DNS	NA	NA
SI5406	MJB80	3a	C2/36A	-23.9	2	-26.7
SI5407	MJB81	3a	C2/36A	-24.6	1*	-27.4
SI5408	MJB82	3a	C2/36A	DNS	NA	NA
SI5726	MJB83	2	C2/41	DNS	NA	NA
SI5727	MJB84	2	C2/40	DNS	NA	NA
SI5728	MJB85	2	C2/39A	-26.9	2	-29.3
SI5729	MJB86	2	C2/39A	DNS	NA	NA
SI5730	MJB87	2	C2/39A	DNS	NA	NA
SI5731	MJB88	2	C2/39A	DNS	NA	NA
SI5732	MJB89	2	C2/39A	IS	NA	NA
SI5734	MJB91	2	C2/38	-25.9	2	-28.3
SI5735	MJB92	2	C2/38	DNS	NA	NA
SI5736	MJB93	2	C2/38	DNS	NA	NA
SI5737	MJB94	2	C2/37	DNS	NA	NA
SI5738	MJB95	2	C2/37	-24.2	2	-26.6
SI5739	MJB96	3a	C2/36A	-24.0	3	-26.8
SI5740	MJB97	3a	C2/36A	-24.8	3	-27.6
SI5741	MJB98	3a	C2/36	-25.9	3	-28.7
SI5742	MJB99	3a	C2/36	DNS	NA	NA
SI5745	MJB102	3a	C2/35B	-25.9	3	-28.7
SI5761	MJB118	3a	C2/35A	-24.0	2	-26.8
SI5762	MJB119	3a	C2/35A	-24.3	2	-27.1
SI5763	MJB120	3a	C2/35A	-24.3	2	-27.1
SI5764	MJB121	3a	C2/35A	IS	NA	NA
SI5765	MJB122	3a	C2/35A	-25.2	2	-28.0
SI5768	MJB125	3a	C2/35	-24.3	2	-27.1
SI5769	MJB126	3a	C2/35	IS	NA	NA
SI5771	MJB128	3a	C2/34A	IS	NA	NA
SI5799	MJB156	3a	C2/34A	-24.9	3	-27.7
SI5800	MJB157	3a	C2/34A	-24.7	2	-27.5
SI5801	MJB158	3a	C2/34A	-24.1	2	-26.9
SI5802	MJB159	3a	C2/34A	-24.9	2	-27.7
SI5803	MJB160	3a	C2/34A	-25.4	1*	-28.2
SI5804	MJB161	3a	C2/34A	DNS	NA	NA
SI5805	MJB162	3a	C2/34A	-24.5	1*	-27.3
SI5806	MJB163	3a	C2/34A	DNS	NA	NA
SI5807	MJB164	3a	C2/34A	IS	NA	NA
SI5808	MJB165	3a	C2/34A	IS	NA	NA
SI5809	MJB166	3a	C2/34A	-26.1	1*	-28.9
SI5810	MJB167	3a	C2/34A	IS	NA	NA

SI5811	MJB168	3a	C2/34A	IS	NA	NA
SI5812	MJB169	3a	C2/34A	-25.5	4	-28.3
SI5813	MJB170	3a	C2/34A	IS	NA	NA
SI5814	MJB171	3a	C2/34A	-24.9	4	-27.7
SI5815	MJB172	3a	C2/34A	DNS	NA	NA
SI5856	MJB179	3a	C2/48	IS	NA	NA
SI5870	MJB193	3a	C2/34	IS	NA	NA
SI5871	MJB194	3a	C2/34	DNS	NA	NA
SI5872	MJB195	3a	C2/34	DNS	NA	NA
SI5873	MJB196	3a	C2/34	DNS	NA	NA
SI5874	MJB197	3a	C2/34	IS	NA	NA
SI5875	MJB198	3a	C2/34	IS	NA	NA
SI5876	MJB199	3a	C2/33A	IS	NA	NA
SI5877	MJB200	3a	C2/33A	-24.8	2	-27.6
SI5878	MJB201	3a	C2/33A	IS	NA	NA
SI5879	MJB202	3a	C2/33A	-24.6	2	-27.4
SI5880	MJB203	3a	C2/33A	-24.8	2	-27.6
SI5881	MJB204	3a	C2/33A	-24.5	2	-27.3
SI5882	MJB205	3a	C2/33A	-24.9	2	-27.7
SI5883	MJB206	3a	C2/33A	IS	NA	NA
SI5884	MJB207	3a	C2/33A	-24.6	2	-27.4
SI5885	MJB208	3a	C2/33A	-24.2	6	-27.0
SI5886	MJB209	3a	C2/33A	-26.3	2	-29.1
SI5887	MJB210	3a	C2/33A	-26.4	2	-29.2
SI5907	MJB230	3a	C2/33	IS	NA	NA
SI5908	MJB231	3a	C2/33	-25.0	2	-27.8
SI5909	MJB232	3a	C2/33	DNS	NA	NA
SI5915	MJB238	3b	C2/32A	-25.2	2	-28.0
SI5916	MJB239	3b	C2/32A	IS	NA	NA
SI5917	MJB240	3b	C2/32A	IS	NA	NA
SI5939	MJB262	3b	C2/32A	-24.7	2	-27.5
SI5940	MJB263	3b	C2/32A	-24.4	2	-27.2
SI5941	MJB264	3b	C2/32A	IS	NA	NA
SI5942	MJB265	3b	C2/32A	-24.6	2	-27.4
SI5943	MJB266	3b	C2/32A	IS	NA	NA
SI5944	MJB267	3b	C2/32A	-24.4	2	-27.2
SI5945	MJB268	3b	C2/32A	-24.2	2	-27.0
SI5946	MJB269	3b	C2/31A	-24.3	2	-27.1
SI5971	MJB294	3b	C2/31	-26.0	2	-28.8
SI5972	MJB295	3b	C2/31	DNS	NA	NA
SI5995	MJB318	3b	C2/30B	DNS	NA	NA
SI6011	MJB334	4	C2/29A	IS	NNA	NA

SI6036	MJB359	4	C2/29	DNS	NA	NA
SI6038	MJB361	4	C2/29	DNS	NA	NA
SI6039	MJB362	4	C2/29	DNS	NA	NA
SI6040	MJB363	4	C2/28A	-25.6	2	-28.4
SI6041	MJB364	4	C2/28A	-25.4	2	-28.2
SI6042	MJB365	4	C2/28A	-25.4	2	-28.2
SI6043	MJB366	4	C2/28A	-25.6	2	-28.4
SI6044	MJB367	4	C2/28A	-24.1	2	-26.9
SI6045	MJB368	4	C2/28A	-25.1	2	-27.9
SI6046	MJB369	4	C2/28A	-25.6	2	-28.4
SI6047	MJB370	4	C2/28A	-25.1	2	-27.9
SI6048	MJB371	4	C2/28A	IS	NA	NA
SI6049	MJB372	4	C2/28A	-24.9	1*	-27.7
SI6050	MJB373	4	C2/28A	-25.6	2	-28.4
SI6051	MJB374	4	C2/28A	DNS	NA	NA
SI6052	MJB375	4	C2/28A	-26.4	2	-29.2
SI6053	MJB376	4	C2/28A	DNS	NA	NA
SI6054	MJB377	4	C2/28A	-25.2	2	-28.0
SI6055	MJB378	4	C2/28A	IS	NA	NA
SI6060	MJB383	4	C2/28	DNS	NA	NA
SI6061	MJB384	4	C2/28	DNS	NA	NA
SI6062	MJB385	4	C2/28	DNS	NA	NA
SI6063	MJB386	4	C2/28	DNS	NA	NA
SI6064	MJB387	4	C2/28	-25.9	1*	-28.7
SI6065	MJB388	4	C2/28	DNS	NA	NA
SI6066	MJB389	4	C2/27A	-26.4	2	-29.2
SI6067	MJB390	4	C2/27A	DNS	NA	NA
SI6068	MJB391	4	C2/27A	DNS	NA	NA
SI6069	MJB392	4	C2/27A	DNS	NA	NA
SI6070	MJB393	4	C2/27	DNS	NA	NA
SI6071	MJB394	4	C2/25	IS	NA	NA
SI6072	MJB395	4	E4/22A	DNS	NA	NA
SI6073	MJB396	7a	C3/6	-27.2	2	-29.5
SI6074	MJB397	7a	C3/6	-27.5	4	-29.8
SI6075	MJB398	7a	C3/6	-26.6	2	-28.9
SI6076	MJB399	7a	C3/6	-26.0	2	-28.3
SI6077	MJB400	7a	C3/6	-27.5	2	-29.8
SI6078	MJB401	7a	C3/6	-25.4	2	-27.7
SI6079	MJB402	7b	C3/4	-25.6	2	-27.2
SI6080	MJB403	7b	C3/4	-24.6	2	-26.2
SI6081	MJB404	7b	C3/4	-25.6	2	-27.2
SI6082	MJB405	7b	C3/4	-25.0	6	-26.6

SI6084	MJB407	7b	C3/4	-25.6	2	-27.2
SI6085	MJB408	7b	C3/4	-25.4	2	-27.0
SI6086	MJB409	7b	C3/4	-26.9	2	-28.5
SI6087	MJB410	7b	C3/4	-27.2	2	-28.8
SI6088	MJB411	7b	C3/4	-25.6	2	-27.2
SI6089	MJB412	7b	C3/4	-27.0	2	-28.6
SI6090	MJB413	7b	C3/4	-25.8	2	-27.4
SI6091	MJB414	7b	C3/4	-24.9	2	-26.5
SI6092	MJB415	7b	C3/4	-26.6	2	-28.2
SI6093	MJB416	7b	C3/4	-26.1	8	-27.7
SI6094	MJB417	7b	C3/2	-27.9	2	-29.5
SI6095	MJB418	7b	C3/2	-26.4	2	-28.0
SI6096	MJB419	7b	C3/2	-25.7	2	-27.3
SI6097	MJB420	7b	C3/2	-26.8	3	-28.4
SI6098	MJB421	7b	C3/2	-27.0	2	-28.6
SI6099	MJB422	7b	C3/2	-25.7	2	-27.3
SI6100	MJB423	7b	C3/2	-26.5	2	-28.1
SI6101	MJB424	7b	C3/2	-25.4	2	-27.0
SI6102	MJB425	7b	C3/2	-27.8	2	-29.4
SI6103	MJB426	7b	C3/2	-25.6	2	-27.2
SI6104	MJB427	7a	B3/5A	-26.2	2	-28.5
SI6105	MJB428	7b	E4/6A	DNS	NA	NA
SI6106	MJB429	7b	C3/4A	-25.3	2	-26.9
SI6107	MJB430	7b	C3/4A	-26.1	2	-27.7
SI6108	MJB431	7b	C3/4A	-26.1	3	-27.7
SI6109	MJB432	7b	C3/4A	-24.5	2	-26.1
SI6110	MJB433	7b	C3/4A	-25.9	2	-27.5
SI6111	MJB434	7b	C3/4A	NS	NA	NA
SI6112	MJB435	7b	C3/4A	-25.0	2	-26.6
SI6113	MJB436	7b	C3/4A	DNS	NA	NA
SI6114	MJB437	7b	C3/4A	-26.6	3	-28.2
SI6115	MJB438	7b	C3/4A	-27.9	2	-29.5
SI6116	MJB439	7b	C3/4A	-25.3	4	-26.9
SI6117	MJB440	7b	C3/4A	-25.2	2	-26.8
SI6118	MJB441	7b	C3/4A	-25.9	2	-27.5
SI6119	MJB442	7b	C3/4A	IS	NA	NA
SI6120	MJB443	7b	C3/4A	-26.1	2	-27.7
SI6121	MJB444	7b	C3/4A	-26.1	2	-27.7
SI6122	MJB445	7b	C3/4A	-26.8	2	-28.4
SI6123	MJB446	7b	C3/4A	-24.2	2	-25.8
SI6124	MJB447	7b	C3/4A	-26.2	2	-27.8

SI Section 5: Isotope standards

The isotope samples reported on in this paper were analysed in 5 separate batches and 37 runs. The below tables provide the Isotope standards for each of these batches.

Supplementary Table 5: Isotope standards for SI3790-SI3949. Samples were analysed across 15 runs on an Elementar VarioMICRO Elemental Analyser (EA) and an IsoPrime Continuous-Flow Isotope Ratio Mass Spectrometer (CF-IRMS).

Standard	Mean $\delta^{13}\text{CV-PDB}$ (‰)	Standard Deviation	Certified $\delta^{13}\text{CV-PDB}$ (‰)	Difference	No. of Replicates
EM B2155	-26.92	0.23	-26.98	0.06	21
EM B2151	-25.86	0.23	-26.07	0.21	21

Supplementary Table 6: Isotope standards for SI4396-SI4443. Samples were analysed across 6 runs on an Elementar VarioMICRO EA and an IsoPrime CF-IRMS.

Standard	Mean $\delta^{13}\text{CV-PDB}$ (‰)	Standard Deviation	Certified $\delta^{13}\text{CV-PDB}$ (‰)	Difference	No. of Replicates
EM B2155	-26.92	0.14	-26.98	0.06	11
EM B2151	-26.07	0.12	-26.27	0.2	9

Supplementary Table 7: Isotope standards for SI5263-SI5408. Samples were analysed across 4 runs on an Elementar VarioMICRO EA and an IsoPrime CF-IRMS.

Standard	Mean $\delta^{13}\text{CV-PDB}$ (‰)	Standard Deviation	Certified $\delta^{13}\text{CV-PDB}$ (‰)	Difference	No. of Replicates
EM B2155	-27.02	0.18	-26.98	-0.04	10
EM B2151	-26.12	0.17	-26.27	0.15	10

Supplementary Table 8: Isotope standards for SI 5616-SI5821. Samples were analysed across 5 runs on an Elementar VarioMICRO EA and an IsoPrime CF-IRMS.

Standard	Mean $\delta^{13}\text{CV-PDB}$ (‰)	Standard Deviation	Certified $\delta^{13}\text{CV-PDB}$ (‰)	Difference	No. of Replicates
EM B2155	-27	0.21	-26.98	-0.02	22

EM B2151	-26.17	0.16	-26.27	0.1	22
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Supplementary Table 9: Isotope standards for SI5856-SI6124. Samples were analysed across 7 runs on an Elementar VarioMICRO EA and an IsoPrime CF-IRMS.

Standard	Mean $\delta^{13}\text{CV}$- PDB (‰)	Standard Deviation	Certified $\delta^{13}\text{CV}$-PDB (‰)	Difference	No. of Replicates
EM B2155	-26.99	0.17	-26.98	-0.01	32
EM B2151	-26.07	0.13	-26.27	0.2	33

SI Section 6: AMS Radiocarbon dates

Supplementary Table 10: AMS radiocarbon dates. Note: Age calibration was performed using the SHCal13 data¹¹ and OxCal program¹².

Lab ID	Sample Type	Sample ID	¹⁴ C Age (BP)	Calibrated ¹⁴ C Age (cal. BP)	
				95% confidence level	Median
OZQ464	Charcoal	C14X2-C3/4	145 ± 20	259 - 0	94
OZX661	Charcoal	C3/5(HR1)	690 ± 20	660 - 559	599
OZX662	Charcoal	C3/7(HR1)	710 ± 20	665 - 564	602

SI Section 7: Soil samples

Soil isotope samples were taken approximately every 5cm below surface from the south wall of Square B2 from 0.07m to 3.2 m depth. Soil sample depths were estimated from a tape measure fixed to the wall and tied into the site datum at each metre mark using a total station. Correction for slope in the wall and tape measure, calculated from the total station data, means the sample depths used in this study differ slightly from those reported in Clarkson et al.¹³. This data is online at at <https://osf.io/9tn4f/>.

SI Section 8: Comparison of the Madjedbebe pandanus palaeoprecipitation proxy to other Australian environmental records

Modern moisture in northern Australia is closely related to the strength of the summer monsoon. This pattern is maintained through the whole of the last glacial cycle, with the monsoon waxing and waning in tandem with precessional forcing¹⁴.

Phase 2: 65–52.7 kya. The highest lake levels in Lake Eyre in the last glacial cycle occurred between 65 and 60 kya¹⁵. Since Lake Eyre is mostly fed by flows from tropical northern Australia this suggests an effective northern Australian monsoon at this time. However, this does not correspond to a period of strong summer insolation in northern Australia and more recent work on mega-lake Frome¹⁶ now indicates that westerly derived (temperate) moisture may have reached Lake Eyre at this time. There is little direct evidence for rainfall in northern Australia at this time, but the suggestion is that the period is relatively dry.

Phase 3: 51.6–28.1 kya. The period between 50–40 kya (Phase 3a) is represented by strong river flows from the north into the Lake Eyre Basin¹⁷ and along the tropical Queensland coast¹⁸. Both these records suggest that the tropical monsoon is strong at this time. 40 kya also represents a high stand at Lake Eyre¹⁵ and in this case there is no suggestion of temperate waters from Lake Frome reaching Lake Eyre. Phase 3a appears to be relatively moist in the north. An interstadial moderately high sea-level occurred at c. 50 kya and then sea-levels declined. This would have favoured higher effective moisture during the 50–40 kya period with a declining trend thereafter. The evidence relating to moisture availability between 40 and 30kya is limited but at least some records indicate that the monsoon was active¹⁹.

Phase 4: 26.7–13.2 kya. Orbital conditions favour a strong monsoon at this time but sea-levels at -125 m mean that the coastline is far removed across the northern Australia region, with a brackish lake occupying part of the Gulf of Carpentaria and the shoreline extended hundreds of kilometres to the NW in the Arafura Sea region. Long assumed to be a period of great aridity, recent climate modelling results²⁰ and speleothem data^{21,22} suggest that the northern Australian monsoon was active during the Last Glacial Maximum, 24–20 kya. Recent work from Girraween Lagoon near Darwin indicates that vegetation transitioned to a more open grassy savannah during the Last Glacial Maximum and this was interpreted as reflecting 700–1000 mm of precipitation²³. These authors interpret the monsoon as active at this time and attribute the changes to increased distance to the coast and reduced CO₂. River flows in the Australian tropics increased after 30 kya and declined after the LGM between 17 and 10 kya²⁴. Waterfall plunge pools may have been active during the Last Glacial Maximum²⁵, although some of this data has been reinterpreted to be younger based on newer OSL ages²⁶. Despite all this evidence for an active monsoon, because of the expanded Australian landmass, precipitation gradients were based on a coastline hundreds of kilometres seaward of the present position. This means that at many sites, precipitation was lower than during the Holocene during the Last Glacial Maximum period.

Phase 5: 9.7–8 kya. The modern Northern Australian monsoon is inferred to have restarted at about 14 kya^{27,28}. Across most of Australia the early to mid-Holocene had higher effective precipitation than the present day with several records indicating

a maximum between c. 10 kya and 6 kya^{29,30}. This pattern is confirmed from the Kimberley²⁷.

Phase 7: 602 cal BP to present. Overall, the late Holocene in northern Australia is a period of less reliable rainfall and a weaker monsoon than the preceding mid- to early Holocene²⁹. The direct phase in the Kimberley precedes Phase 7 at between 2.6 and 1.3 kya²⁷. The last few thousand years are not monotonically dry, however. For example, increased fluvial activity in arid central Australia has been recognised to co-eval with the early part of the medieval climatic anomaly in Europe about 900 ya³¹. Records are quite confusing. Yan et al.²⁰ reviewed monsoon paleo-records from northern Australia and suggested that conditions were arid during the 'Little Ice Age' (defined by them as 1400-1850 AD) and related this to a withdrawal of the Inter-tropical Convergence northward at this time. This is roughly co-eval with a dry phase interpreted from the Kimberley in NW Australia²⁷. In contrast, Rouillard et al.³² recorded evidence for extreme floods in NW Australia during the same period. These records are not incompatible with modern rainfall at high levels in NW Australia due to favourable Indian Ocean Dipole conditions, while NE Australia has suffered repeated poor rainfall years in the last few decades due to ENSO and Pacific Decadal Oscillation Effects. One record appears to align well with our findings, Hendy et al.³³ noted a sharp decrease in salinity at the end of the Little Ice Age in waters off the barrier reef. This is consistent with an uptick in the monsoon roughly coincident with our Phase 7b.

Our overall conclusion is that, given the relatively poor understanding of long-term moisture balances in tropical Australia, the $\delta^{13}\text{C}$ record presented here is consistent with the current observations and provides a powerful new tool for palaeoprecipitation reconstruction.

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