

Whole-genome sequencing of *Burkholderia pseudomallei* from an urban melioidosis hot-spot reveals a fine-scale population structure and localised spatial clustering in the environment

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Supplementary Data

Supplementary Table S1- MLST genotypes identified amongst the 135 *B. pseudomallei*

isolates and numbers detected based on sample type. Asterisks denote novel STs identified as part of the survey.

ST	n (soil)	n (water)	Total
36	40	2	42
109	15	7	22
131	0	2	2
132	2	0	2
144	3	1	4
279	3	0	3
320	3	1	4
326	3	0	3
327	9	2	11
335	1	0	1
362	1	0	1
456	0	2	2
462	2	0	2
464	1	0	1
466	2	0	2

472	0	1	1
553	7	1	8
561	1	0	1
562	2	0	2
566	2	0	2
616	1	1	2
639	1	0	1
801	2	0	2
809	1	0	1
813	2	0	2
982	2	0	2
984	1	0	1
1654*	0	1	1
1655*	1	0	1
1656*	1	0	1
1658*	1	0	1
1659*	1	0	1
1660*	1	0	1
1704*	1	0	1
1705*	1	0	1

Supplementary Table S2- Summary of 137 *Burkholderia pseudomallei* genomes used to

construct the MP and ML phylogenetic trees.

Sample ID	Species	Year	Site type	Sample source	ST	BAPS cluster	GenBank/SRA accession no.	Reference
MSHR0668	<i>Burkholderia pseudomallei</i>	1998	N/A	Human	129	1	NC_009074, NC_009075	Johnson et al., Genome Announc 2015 3(2):e00159-15
MSHR1153	<i>Burkholderia pseudomallei</i>	2001	N/A	Human	117	1	CP009271, CP009272	Johnson et al., Genome Announc 2015 3(2):e00159-15
MSHR9671	<i>Burkholderia pseudomallei</i>	2016	Drain	Water	456	1	SAMN12824487	This study
MSHR9675	<i>Burkholderia pseudomallei</i>	2016	Drain	Water	109	4	SAMN12824488	This study
MSHR9683	<i>Burkholderia pseudomallei</i>	2016	Drain	Water	109	4	SAMN12824489	This study
MSHR10100	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	472	1	SAMN12824490	This study
MSHR10105	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	616	1	SAMN12824491	This study
MSHR10107	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	456	1	SAMN12824492	This study
MSHR10117	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	327	2	SAMN12824493	This study
MSHR10120	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	36	3	SAMN12824494	This study
MSHR10156	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	109	4	SAMN12824495	This study
MSHR10166	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	320	1	SAMN12824496	This study
MSHR10167	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	131	1	SAMN12824497	This study
MSHR10173	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	131	1	SAMN12824498	This study
MSHR10203	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	109	4	SAMN12824499	This study
MSHR10208	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	109	4	SAMN12824500	This study
MSHR10210	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	109	4	SAMN12824501	This study
MSHR10218	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	327	2	SAMN12824502	This study
MSHR10231	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	36	3	SAMN12824503	This study
MSHR10246	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	144	2	SAMN12824504	This study
MSHR10250	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	109	4	SAMN12824505	This study
MSHR10259	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	1654	1	SAMN12824506	This study
MSHR10269	<i>Burkholderia pseudomallei</i>	2017	Drain	Water	553	5	SAMN12824507	This study

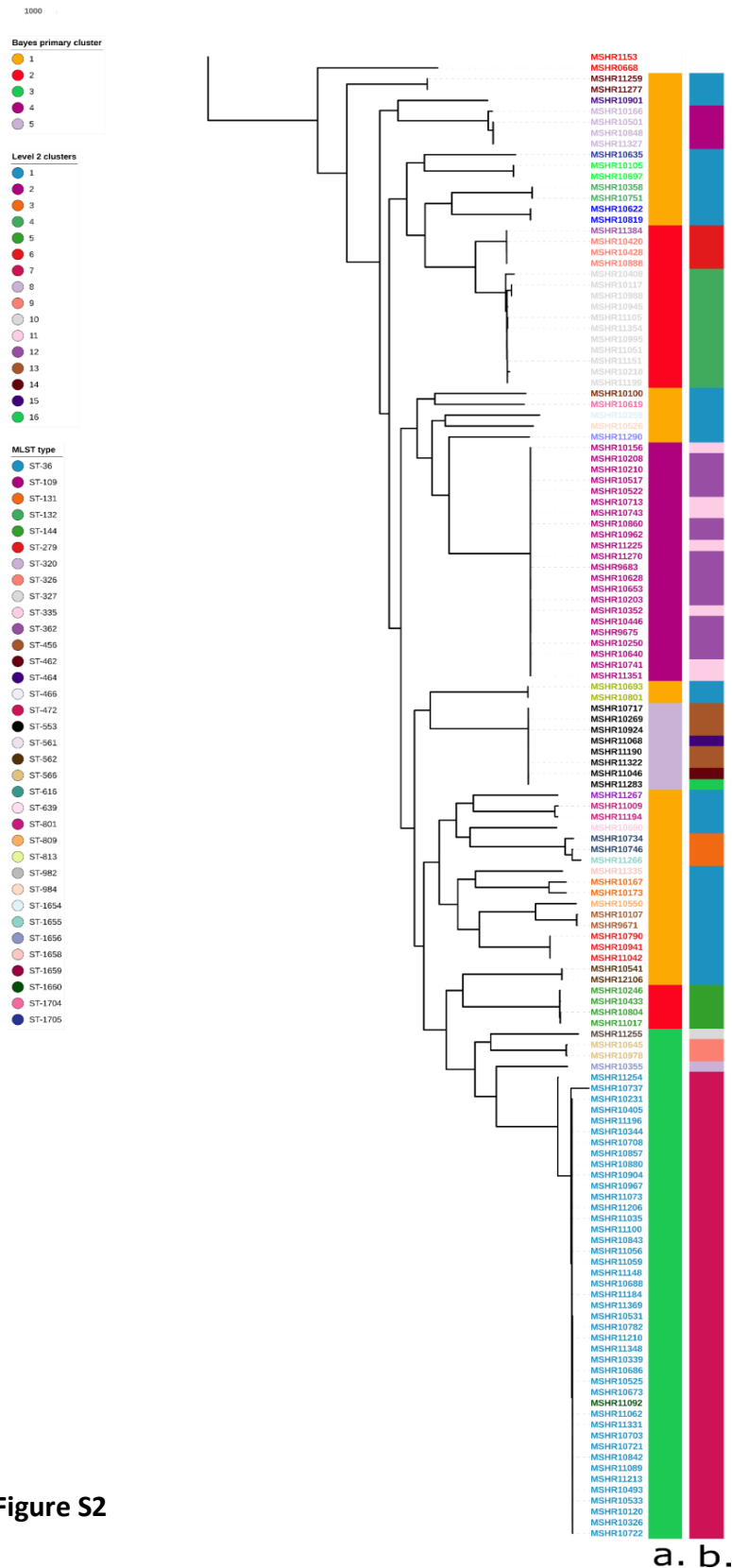
MSHR10326	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824508	This study
MSHR10339	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824509	This study
MSHR10344	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824510	This study
MSHR10352	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824511	This study
MSHR10355	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	1656	3	SAMN12824512	This study
MSHR10358	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	132	1	SAMN12824513	This study
MSHR10405	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824514	This study
MSHR10408	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	327	2	SAMN12824515	This study
MSHR10420	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	326	2	SAMN12824516	This study
MSHR10428	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	326	2	SAMN12824517	This study
MSHR10433	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	144	2	SAMN12824518	This study
MSHR10446	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824519	This study
MSHR10493	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824520	This study
MSHR10501	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	320	1	SAMN12824521	This study
MSHR10517	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824522	This study
MSHR10522	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824523	This study
MSHR10525	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824524	This study
MSHR10526	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	984	1	SAMN12824525	This study
MSHR10531	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824526	This study
MSHR10533	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824527	This study
MSHR10541	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	562	1	SAMN12824528	This study
MSHR10550	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	809	1	SAMN12824529	This study
MSHR10619	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	1704	1	SAMN12824530	This study
MSHR10622	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	466	1	SAMN12824531	This study
MSHR10628	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	109	4	SAMN12824532	This study
MSHR10635	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	1705	1	SAMN12824533	This study
MSHR10640	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824534	This study
MSHR10645	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	566	3	SAMN12824535	This study

MSHR10653	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	109	4	SAMN12824536	This study
MSHR10673	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824537	This study
MSHR10686	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824538	This study
MSHR10688	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824539	This study
MSHR10690	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	335	1	SAMN12824540	This study
MSHR10693	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	813	1	SAMN12824541	This study
MSHR10697	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	616	1	SAMN12824542	This study
MSHR10703	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824543	This study
MSHR10708	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824544	This study
MSHR10713	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824545	This study
MSHR10717	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	553	5	SAMN12824546	This study
MSHR10721	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824547	This study
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MSHR10741	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	109	4	SAMN12824551	This study
MSHR10743	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	109	4	SAMN12824552	This study
MSHR10746	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	982	1	SAMN12824553	This study
MSHR10751	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	132	1	SAMN12824554	This study
MSHR10782	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824555	This study
MSHR10790	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	279	1	SAMN12824556	This study
MSHR10801	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	813	1	SAMN12824557	This study
MSHR10804	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	144	2	SAMN12824558	This study
MSHR10819	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	466	1	SAMN12824559	This study
MSHR10842	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824560	This study
MSHR10843	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824561	This study
MSHR10848	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	320	1	SAMN12824562	This study
MSHR10857	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824563	This study

MSHR10860	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	109	4	SAMN12824564	This study
MSHR10880	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824565	This study
MSHR10888	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	326	2	SAMN12824566	This study
MSHR10901	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	464	1	SAMN12824567	This study
MSHR10904	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824568	This study
MSHR10924	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	553	5	SAMN12824569	This study
MSHR10941	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	279	1	SAMN12824570	This study
MSHR10945	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	327	2	SAMN12824571	This study
MSHR10962	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824572	This study
MSHR10967	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824573	This study
MSHR10978	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	566	3	SAMN12824574	This study
MSHR10988	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	327	2	SAMN12824575	This study
MSHR10995	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	327	2	SAMN12824576	This study
MSHR11009	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	801	1	SAMN12824577	This study
MSHR11017	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	144	2	SAMN12824578	This study
MSHR11035	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824579	This study
MSHR11042	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	279	1	SAMN12824580	This study
MSHR11046	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	553	5	SAMN12824581	This study
MSHR11051	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	327	2	SAMN12824582	This study
MSHR11056	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824583	This study
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MSHR11062	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824585	This study
MSHR11068	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	553	5	SAMN12824586	This study
MSHR11073	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824587	This study
MSHR11089	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824588	This study
MSHR11092	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	1660	3	SAMN12824589	This study
MSHR11100	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824590	This study
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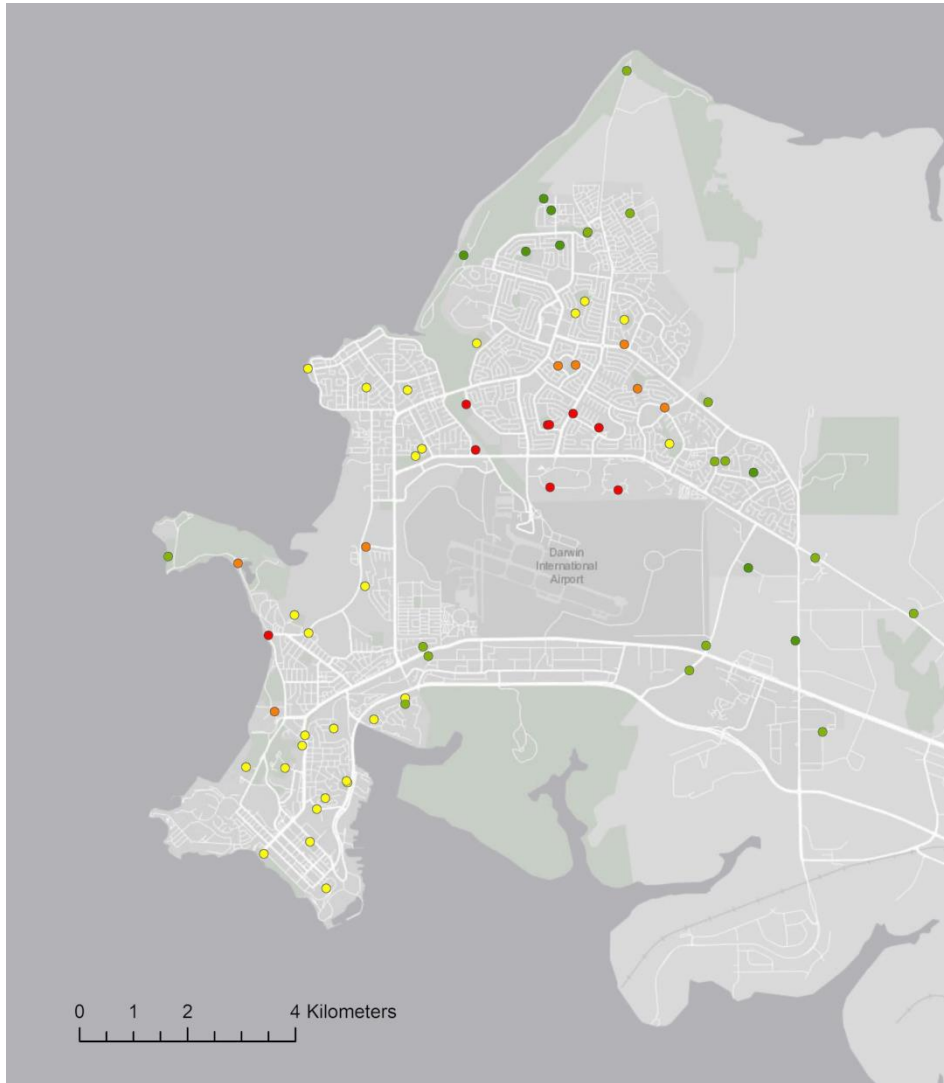
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MSHR11196	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824597	This study
MSHR11199	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	327	2	SAMN12824598	This study
MSHR11206	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824599	This study
MSHR11210	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824600	This study
MSHR11213	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824601	This study
MSHR11225	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824602	This study
MSHR11254	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824603	This study
MSHR11255	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	1659	3	SAMN12824604	This study
MSHR11259	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	462	1	SAMN12824605	This study
MSHR11266	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	1655	1	SAMN12824606	This study
MSHR11267	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	639	1	SAMN12824607	This study
MSHR11270	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824608	This study
MSHR11277	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	462	1	SAMN12824609	This study
MSHR11283	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	553	5	SAMN12824610	This study
MSHR11290	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	561	1	SAMN12824611	This study
MSHR11322	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	553	5	SAMN12824612	This study
MSHR11327	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	320	1	SAMN12824613	This study
MSHR11331	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	36	3	SAMN12824614	This study
MSHR11335	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	1658	1	SAMN12824615	This study
MSHR11348	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824616	This study
MSHR11351	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	109	4	SAMN12824617	This study
MSHR11354	<i>Burkholderia pseudomallei</i>	2017	Drain	Soil	327	2	SAMN12824618	This study
MSHR11369	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	36	3	SAMN12824619	This study

MSHR11384	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	362	2	SAMN12824620	This study
MSHR12106	<i>Burkholderia pseudomallei</i>	2017	Park	Soil	562	1	SAMN12824621	This study



Supplementary Figure S2

Maximum parsimony phylogeny of 137 *B. pseudomallei* genomes constructed using 134,032 core-genome orthologous SNPs and InDels. BAPS level 1 primary clusters (a.) and level 2 clusters (b.) were inferred using RhierBAPS and are colour-coded next to respective strains.



Supplementary Figure S3- Getis-Ord G_i^* Hot Spot Analysis of Bayes cluster 3. Areas with significant “hot” spots are indicated by dark red circles while “cold” spots are shown in green (ArcGIS v.10.4.1 (ESRI)).