1000 800 600 400 200

1000 800 600

> 400 200

Bryobacter Hyphomicrobium Hyphomicrobium Candidatus Solibacter **Thermosporothrix** Aquisphaera Acidibacter Acidipila-Silvibacterium Candidatus Solibacter Rhodoplanes Psychróbacillus Rhodanobacter Candidatus Udaeobacter Conexibacter Occallatibacter Bryobacter Burkholderia-Caballeronia-Paraburkholderia

number of unique ASVs = 1329

Occallatibacter Occallatibacter

Sanguibacter-Flavimobilis Candidatus Ovatusbacter Herminiimonas Collimonas Chthoniobacter Acidipila-Silvibacterium Anaeromyxobacter Candidatus Endonucleariobacter JG30a–KF–32 Roseimicrobium Bdellovibrio Coxiella Nocardioides Candidatus Protochlamydia Pajaroellobacter Acidibacte

Bryobacter

Conexibacter

S100

Phenylobacterium Gemmatimonas Candidatus Nostocoida Clostridium sensu stricto 13

number of unique ASVs = 328

Afipia Hyphomicrobium Roseiarcus Methylocapsa Hyphomicrobiun Rhodoplane Bryobacte Bryobacte

Roseiarcus

Chthoniobacte Pajaroellobacte Paenibacillus Cephaloticoccus Conexibacte Acidibacte

Opitutus Occallatibacte

JG30a-KF-32 Candidatus Berkiella Granulicella

Estrell edosphaer

Aquisphaera Candidatus Solibacter Thermosporothri Thermosporothriy Acidibacte Candidatus Udaeobacte

ADurb.Bin063-1 JG30a-KF-32 Mucilaginibacter Acidibacte

Aquisphaera

Methylocapsa

Aquisphaera Acidothermus Pseudolabrys Paenisporosarcina Conexibacter Acidibacter Pajaroellobacter Acidothermus Rhodoplanes

Bryobacter Candidatus Udaeobacter Candidatus Solibacter Acidothermus

S100

number of unique ASVs = 328

0.030 0.025 0.020 0.015 0.010 0.005

> Acidibacter Acidothermus Aquisphaera Acidibacter

Acidothermus Acidibacter

Aquisphaera Roseiarcus

Acidibacter

Roseiarcus Aquisphaera-Caballeronia-Paraburkholderia Acidibacter

Aquisphaera Burkholderia-Caballeronia-Paraburkholderia

Candidatus Xiphinematobacter

Acidibacte

Thermosporothrix Bryobacte

Bryobacte

Candidatus Xiphinematobacter

Bryobacter Thermosporothrix Bryobacter

Hyphomicrobium Roseiarcus Methylocapsa Hyphomicrobium

Bryobacter Rhodoplanes Afipia Aquisphaera Candidatus Solibacter Bryobacter

Thermosporothrix Thermosporothrix Acidibacter Aquisphaera Candidatus Udaeobacter

ADurb.Bin063-1 JG30a-KF-32 Acidothermus Methylocapsa Aquisphaera Mucilaginibacter Acidibacter

Pseudolabrys Paenisporosarcina

Conexibacter Conexibacter Bryobacter Acidibacter Pajaroellobacter Rhodoplanes Bryobacter

Acidothermus

Candidatus Udaeobacter Candidatus Solibacter Acidothermus

Symbiobacterium Parabacteroides