



**Relative abundance**

1.4  
1.2  
1  
0.8  
0.6  
0.4  
0.2  
0

**Sampling site**

I  
II  
III  
IV  
V

**Sampling site**

Lake Chaohu  
Lake Dahuchi  
Lake Wuchang

**Sampling season**

autumn  
spring  
summer  
winter

OTU 9-o\_43F-1404R  
 OTU 15-g\_Enterobacter  
 OTU 4-s\_Carnobacterium\_maltaromaticum  
 OTU 38-g\_Candidatus\_Solibacter  
 OTU 23-c\_Acidobacteria(Subgroup\_2)  
 OTU 8-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 3053-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 7-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 5510-c\_Acidobacteria(Subgroup\_2)  
 OTU 16894-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 11-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 5-f\_Nitrospiraceae  
 OTU 2-f\_Nitrospiraceae  
 OTU 29-f\_FW13  
 OTU 20240-g\_Geobacter  
 OTU 51-f\_Desulfurellaceae:g\_H16  
 OTU 46-o\_Sva0485  
 OTU 12926-o\_Sva0485  
 OTU 12891-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 18592-g\_Candidatus\_Solibacter  
 OTU 164-g\_Candidatus\_Solibacter  
 OTU 111-g\_Haliangium  
 OTU 244-g\_Rhodanobacter  
 OTU 197-f\_Nitrosomonadaceae  
 OTU 93-o\_Holophagae(Subgroup\_7)  
 OTU 42-g\_Bryobacter  
 OTU 11807-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 20829-f\_FW13  
 OTU 417-f\_Nitrospiraceae  
 OTU 636-p\_Latescibacteria  
 OTU 7312-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 692-f\_Sh765B-TZT-35  
 OTU 5792-f\_Nitrospiraceae  
 OTU 27-f\_DA111  
 OTU 65-f\_Nitrospiraceae  
 OTU 10-f\_Gemmatimonadaceae  
 OTU 156-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 139-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 44-g\_Sideroxydans  
 OTU 217-g\_Sideroxydans  
 OTU 2-c\_Betaproteobacteria  
 OTU 9000-g\_Candidatus\_Methanoperedens  
 OTU 80-g\_Candidatus\_Methanoperedens  
 OTU 6-g\_Candidatus\_Arthromitus  
 OTU 16-g\_Candidatus\_Nitrosoarchaeum  
 OTU 59-s\_Thaumarchaeote\_enrichment\_culture  
 OTU 28-f\_Nitrospiraceae  
 OTU 70-f\_Gallionellaceae  
 OTU 123-g\_Sideroxydans  
 OTU 48-c\_ML635J-21  
 OTU 510-c\_SAGMCG-1  
 OTU 132-f\_MLZ17  
 OTU 307-c\_Acidobacteria(Subgroup\_2)  
 OTU 170-c\_Acidobacteria(Subgroup\_2)  
 OTU 191-c\_Acidobacteria(Subgroup\_2)  
 OTU 3214-c\_Acidobacteria(Subgroup\_2)  
 OTU 108-c\_Acidobacteria(Subgroup\_2)  
 OTU 128-c\_Acidobacteria(Subgroup\_2)  
 OTU 26-c\_AK31  
 OTU 104-f\_0319-6A21  
 OTU 9423-s\_Telluria\_mixta  
 OTU 173-o\_Holophagae(Subgroup\_7)  
 OTU 190-g\_Gaella  
 OTU 272-g\_Methylotenera  
 OTU 91-f\_Methylococcaceae  
 OTU 25-f\_Gemmatimonadaceae  
 OTU 209-f\_Gemmatimonadaceae  
 OTU 118-o\_NB1-i  
 OTU 16193-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 7584-p\_Latescibacteria  
 OTU 522-p\_Latescibacteria  
 OTU 474-o\_Holophagae(Subgroup\_7)  
 OTU 9001-f\_DA111  
 OTU 163-c\_JG37-AG-4  
 OTU 58-g\_Acidibacter  
 OTU 5139-c\_Acidobacteria(Subgroup\_2)  
 OTU 41-c\_SAGMCG-1  
 OTU 89-g\_Terracidiphilus  
 OTU 31-c\_Acidobacteria(Subgroup\_2)  
 OTU 87-g\_Sulfurifustis  
 OTU 119-f\_0319-6A21  
 OTU 794-f\_Sh765B-TZT-35  
 OTU 337-c\_Acidobacteria(Subgroup\_2)  
 OTU 877-p\_GAL-15  
 OTU 113-p\_Aminicenant  
 OTU 540-o\_MSBL5  
 OTU 6849-p\_Aminicenant  
 OTU 4632-p\_Omnitrophica  
 OTU 1143-g\_Geobacter  
 OTU 12049-o\_Sva0485  
 OTU 9320-o\_Sva0485  
 OTU 293-p\_Bathyarchaeota  
 OTU 161-g\_unidentified\_Bathyarchaeota  
 OTU 129-f\_ASC21  
 OTU 169-p\_Bathyarchaeota  
 OTU 220-g\_Methanolinea  
 OTU 195-s\_bacterium\_enrichment\_culture\_clone\_auto49\_4W  
 OTU 296-s\_Anaerostipes\_hadrus  
 OTU 174-s\_Acetobacter\_pasteurianus  
 OTU 187-g\_[Ruminococcus]\_torques\_group  
 OTU 262-f\_Acetobacteraceae  
 OTU 189-o\_SC-1-84  
 OTU 753-p\_Bathyarchaeota  
 OTU 35-g\_unidentified\_Chloroplast  
 OTU 234-g\_Methanosaeata  
 OTU 467-g\_Methanosaeata  
 OTU 22-s\_Clostridium\_sp.\_ND2  
 OTU 40-g\_Geobacter  
 OTU 82-f\_Nitrosomonadaceae  
 OTU 12751-f\_Gallionellaceae  
 OTU 122-g\_Sulfuricurvum  
 OTU 57-g\_Gallionella  
 OTU 207-g\_Sideroxydans  
 OTU 502-g\_Sulfuricurvum  
 OTU 54-g\_Candidatus\_Tenderia  
 OTU 219-g\_Candidatus\_Nitrotoga  
 OTU 411-g\_Candidatus\_Methylomirabilis  
 OTU 124-g\_PAUC26f  
 OTU 142-g\_Candidatus\_Koribacter  
 OTU 10909-s\_Deltaproteobacteria\_bacterium\_CSP1-8  
 OTU 105-o\_MSBL5  
 OTU 840-s\_Clostridium\_beijerinckii  
 OTU 235-f\_Gemmatimonadaceae  
 OTU 7445-f\_Gemmatimonadaceae  
 OTU 68-f\_Nitrospiraceae  
 OTU 203-s\_Ruminococcus\_bicirculans  
 OTU 159-g\_Geobacter  
 OTU 55-f\_Nitrospiraceae  
 OTU 213-o\_Sva0485  
 OTU 17-o\_TRA3-20  
 OTU 62-s\_Deltaproteobacteria\_bacterium\_CSP1-8  
 OTU 148-c\_Acidobacteria(Subgroup\_2)  
 OTU 716-o\_43F-1404R  
 OTU 50-g\_Candidatus\_Methanoperedens  
 OTU 6846-g\_Candidatus\_Methanoperedens  
 OTU 17948-g\_Thiobacillus  
 OTU 444-p\_Aminicenant  
 OTU 295-p\_RB41  
 OTU 396-g\_Steroidobacter  
 OTU 755-c\_Subgroup\_6  
 OTU 115-g\_Sphingomonas  
 OTU 18-f\_Rhodospirillales  
 OTU 17173-s\_Rhodospirillales\_bacterium\_WX36  
 OTU 107-o\_Xanthomonadales  
 OTU 463-c\_OPB35\_soil\_group  
 OTU 204-o\_Xanthomonadales  
 OTU 151-s\_Steroidobacter\_sp.\_WWH78  
 OTU 257-s\_Nitrospira\_cf.\_moscoviensis\_SBR1015  
 OTU 1845-c\_Acidobacteria(Subgroup\_6)  
 OTU 13-c\_SAGMCG-1  
 OTU 20058-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 152-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 5738-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 45-g\_Candidatus\_Solibacter  
 OTU 138-f\_Gallionellaceae  
 OTU 78-g\_Desulfurellaceae\_H16  
 OTU 14-g\_Ruminococcus\_2  
 OTU 20-g\_Eubacterium\_coprostanoligenes\_group  
 OTU 34-g\_Subdoligranulum  
 OTU 66-s\_Lactobacillus\_vini  
 OTU 134-g\_Lactobacillus  
 OTU 281-s\_Serratia\_marcescens  
 OTU 537-f\_ASC21  
 OTU 864-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 63-c\_Acidobacteria(Subgroup\_2)  
 OTU 555-g\_Candidatus\_Methanoperedens  
 OTU 33-g\_Candidatus\_Methanoperedens  
 OTU 77-f\_FW13  
 OTU 350-f\_Nitrospiraceae  
 OTU 30-g\_Subdoligranulum  
 OTU 52-g\_Faecalibacterium  
 OTU 71-g\_[Eubacterium]\_rectale\_group  
 OTU 10926-g\_Candidatus\_Koribacter  
 OTU 72-f\_FW13  
 OTU 47-s\_Roseburia\_inulinivorans  
 OTU 154-f\_Nitrospiraceae  
 OTU 160-p\_Parcubacteria  
 OTU 1-g\_Candidatus\_Nitrosotalea  
 OTU 3-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 32-f\_Acidobacteriaceae\_(Subgroup\_1)  
 OTU 12-g\_Candidatus\_Koribacter  
 OTU 19-c\_Acidobacteria(Subgroup\_2)