Supplementary material

Table S1. Spearman rank correlation coefficients showing no significant correlations between environmental data and bacterial alpha diversity

| Environmental parameter | Alpha diversity metric | Spearman correlation coefficient | p-value |
|-------------------------|------------------------|---------------------------------|---------|
| Total length of nearby roads | Faith's PD (DNA) | 0.338961199 | 0.077647925 |
| Total length of nearby major roads | Faith's PD (DNA) | 0.084217168 | 0.670052308 |
| Total nearby field area | Faith's PD (DNA) | -0.26972674 | 0.165115085 |
| Total nearby marsh area | Faith's PD (DNA) | 0.062944718 | 0.750331453 |
| Distance to nearest marsh | Faith's PD (DNA) | 0.207198579 | 0.290082935 |
| Total length of nearby ditches | Faith's PD (DNA) | 0.150519978 | 0.444548376 |
| Distance to nearest surface water | Faith's PD (DNA) | 0.050410989 | 0.798916228 |
| Total nearby surface area (excluding ditches) | Faith's PD (DNA) | 0.137968798 | 0.483841972 |
| Number of nearby buildings | Faith's PD (DNA) | 0.097079563 | 0.623115481 |
| Total length of nearby roads | Faith's PD (cDNA) | 0.177086784 | 0.367329493 |
| Total length of nearby major roads | Faith's PD (cDNA) | -0.221738547 | 0.256784845 |
| Total nearby field area | Faith's PD (cDNA) | -0.08096644 | 0.682118124 |
| Total nearby marsh area | Faith's PD (cDNA) | 0.05801861 | 0.769326798 |
| Distance to nearest marsh | Faith's PD (cDNA) | 0.035308609 | 0.858430326 |
| Total length of nearby ditches | Faith's PD (cDNA) | 0.10180624 | 0.606210787 |
| Distance to nearest surface water | Faith's PD (cDNA) | 0.009315074 | 0.962477873 |
| Total nearby surface area (excluding ditches) | Faith's PD (cDNA) | 0.199014516 | 0.30997461 |
| Number of nearby buildings | Faith's PD (cDNA) | -0.092666856 | 0.639067996 |
| Total length of nearby roads | Pielou's evenness (DNA) | 0.251682121 | 0.196366364 |
| Total length of nearby major roads | Pielou's evenness (DNA) | 0.221502687 | 0.257304169 |
| Total nearby field area | Pielou's evenness (DNA) | -0.317163345 | 0.10006697 |
| Total nearby marsh area | Pielou's evenness (DNA) | 0.150519978 | 0.444548376 |
| Distance to nearest marsh | Pielou's evenness (DNA) | 0.07691255 | 0.69727259 |
| Total length of nearby ditches | Pielou's evenness (DNA) | 0.195402299 | 0.319017265 |
| Distance to nearest surface water | Pielou's evenness (DNA) | 0.128219255 | 0.515542471 |
| Total nearby surface area (excluding ditches) | Pielou's evenness (DNA) | 0.318094729 | 0.099019491 |
| Number of nearby buildings | Pielou's evenness (DNA) | 0.003861119 | 0.984442524 |
| Total length of nearby roads | Pielou's evenness (cDNA) | 0.251682121 | 0.196366364 |
| Total length of nearby major roads | Pielou's evenness (cDNA) | 0.221502687 | 0.257304169 |
| Total nearby field area | Pielou's evenness (cDNA) | -0.317163345 | 0.10006697 |
| Total nearby marsh area | Pielou's evenness (cDNA) | 0.150519978 | 0.444548376 |
| Distance to nearest marsh | Pielou's evenness (cDNA) | 0.07691255 | 0.69727259 |
| Total length of nearby ditches | Pielou's evenness (cDNA) | 0.195402299 | 0.319017265 |
| Distance to nearest surface water | Pielou's evenness (cDNA) | 0.128219255 | 0.515542471 |
| Total nearby surface area (excluding ditches) | Pielou's evenness (cDNA) | 0.318094729 | 0.099019491 |
| Number of nearby buildings | Pielou's evenness (cDNA) | 0.003861119 | 0.984442524 |
| Total length of nearby roads | Observed ASVs (DNA) | 0.333471949 | 0.082891537 |
| Total length of nearby major roads | Observed ASVs (DNA) | 0.163819696 | 0.404856147 |
| Environmental Feature                          | Observed ASVs (DNA) | Observed ASVs (cDNA) |
|-----------------------------------------------|---------------------|----------------------|
| Total nearby field area                       | 0.285722805         | 0.140508783          |
| Total nearby marsh area                       | 0.103448276         | 0.600383683          |
| Distance to nearest marsh                     | 0.123169565         | 0.532350412          |
| Total length of nearby ditches                | 0.144499179         | 0.463179871          |
| Distance to nearest surface water             | 0.084931558         | 0.667411262          |
| Distance to nearest surface water (excluding ditches) | 0.19162333     | 0.328649318          |
| Total nearby surface water area (excluding ditches) | 0.099285917     | 0.615200622          |
| Number of nearby buildings                    | 0.129581977         | 0.511051506          |
| Total length of nearby roads                  | -0.076026115        | 0.700601747          |
| Total length of nearby major roads            | 0.180547763         | 0.357887037          |
| Total nearby field area                       | -0.241044142        | 0.216587883          |
| Total nearby marsh area                       | 0.05801861          | 0.769326798          |
| Distance to nearest marsh                     | 0.030655536         | 0.876936226          |
| Total length of nearby ditches                | 0.106185003         | 0.590725235          |
| Distance to nearest surface water             | 0.031780841         | 0.872454554          |
| Distance to nearest surface water (excluding ditches) | 0.221188073     | 0.257997963          |
| Total nearby surface water area (excluding ditches) | -0.127416926    | 0.518195596          |
| Number of nearby buildings                    | -0.185038671        | 0.345851284          |
| Total length of nearby roads                  | 0.293949347         | 0.128941819          |
| Total length of nearby major roads            | 0.230731966         | 0.237492882          |
| Total nearby field area                       | -0.312750637        | 0.105142986          |
| Total nearby marsh area                       | 0.140120416         | 0.476982788          |
| Distance to nearest marsh                     | 0.087313536         | 0.658633394          |
| Total length of nearby ditches                | 0.195949644         | 0.317636729          |
| Distance to nearest surface water             | 0.114520617         | 0.561730919          |
| Distance to nearest surface water (excluding ditches) | 0.298932396     | 0.122282958          |
| Total nearby surface water area (excluding ditches) | 0.041369132     | 0.834437543          |
| Number of nearby buildings                    | 0.065340065         | 0.741145331          |
| Total length of nearby roads                  | -0.055990352        | 0.777186586          |
| Total length of nearby major roads            | 0.179970933         | 0.359450713          |
| Total nearby field area                       | -0.124107396        | 0.529209216          |
| Total nearby marsh area                       | 0.04378763          | 0.824902153          |
| Distance to nearest marsh                     | 0.003831942         | 0.984560072          |
| Total length of nearby ditches                | 0.054734537         | 0.782063878          |
| Distance to nearest surface water             | 0.048767153         | 0.805347221          |
| Distance to nearest surface water (excluding ditches) | 0.237886677     | 0.222851606          |
| Total nearby surface water area (excluding ditches) | -0.118039923    | 0.549687252          |
| Number of nearby buildings                    | -0.143857958        | 0.465187961          |