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**Supplementary Figure 1 –** Seasonal variation in (A) total soil carbon stock (Mg C ha-1) and in (B) total soil nitrogen stock (Mg N ha-1) during 2016, according to the three soil depths analysed (05-10, 20-25, and 50-55 cm), on Achill Island, Co. Mayo, Ireland (n = 5; mean ± 1SE). Legend: GRASS = uninvaded grasslands; GUN = areas invaded by *G. tinctoria*.

**Supplementary Table 1 –** Results of the PERMANOVA analysis of soil bacterial community structure comparing uninvaded semi-natural grasslands (GRASS) and areas invaded by *G. tinctoria* (GUN), across the three soil depths analysed (05-10, 20-25, and 50-55 cm) during the summer period.

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| --- | --- | --- | --- |
| **Interactions** | **DF** | **F-value** | **P-value** |
| **Treatment** | 1 | 15.01 | 0.0001 |
| **Soil Depth** | 2 | 4.57 | 0.032 |
| **Treatment x Soil Depth** | 2 | 0.66 | 0.73 |

**Supplementary Table 2 –** Seasonal variation in soil bulk density (g cm-3) according to the three soil depths analysed (05-10, 20-25, and 50-55 cm), on Achill Island, Co. Mayo, Ireland (n = 5; mean ± 1SE). Legend: GRASS = uninvaded semi-natural grasslands; GUN = areas invaded by *G. tinctoria*. Note: Uppercase letters indicate differences among soil depths between same treatments and seasons, and lowercase letters indicate differences among seasons between same treatments and soil depths (*P* < 0.05).

|  |  |  |
| --- | --- | --- |
| **Soil Depth (cm)** | **Winter (January)** | **Summer (July)** |
| **GRASS** | **GUN** | **GRASS** | **GUN** |
| **05-10** | 0.41 ± 0.05 Aa | 0.42 ± 0.03 Aa | 0.51 ± 0.02 Aa | 0.53 ± 0.01 Aa |
| **20-25** | 0.63 ± 0.06 Ba | 0.56 ± 0.06 Ba | 0.71 ± 0.03 Ba | 0.66 ± 0.03 Ba |
| **50-55** | 0.76 ± 0.15 Ba | 0.68 ± 0.11 Ba | 0.80 ± 0.07 Ba | 0.76 ± 0.03 Ba |