Supplementary Table 1. Alpha diversity indices

| Sample                        | Observed Species\(^\d\) | Good’s coverage (%)\(^\d\) | Shannon Index\(^\d\) | Simpson’s Index\(^\d\) | Chao1\(^\d\) | ACE\(^\d\) |
|-------------------------------|--------------------------|----------------------------|-----------------------|--------------------------|---------------|-------------|
| Polygraphus poligraphus (PP)  | 176.50±6.84              | 99.90                      | 2.64±0.21             | 0.67±0.05                | 210.72±11.63  | 218.96±13.20 |
| Ips acuminatus (IAC)          | 100.50±12.30             | 99.92                      | 2.84±0.13             | 0.77±0.02                | 136.38±16.99  | 139.74±17.68 |
| Ips sexdentatus (SX)          | 102.67±3.64              | 99.90                      | 1.46±0.23             | 0.42±0.08                | 134.34±6.15   | 140.90±5.45  |
| Ips cembrae (IC)              | 105.17±9.74              | 99.95                      | 1.66±0.38             | 0.44±0.11                | 125.63±14.57  | 132.30±16.86 |
| Ips duplicatus (ID)           | 86.00±6.23               | 99.97                      | 1.81±0.28             | 0.51±0.08                | 106.19±6.16   | 109.76±6.76  |
| Ips typographus (IT)          | 106.67±8.20              | 99.93                      | 2.67±0.20             | 0.69±0.05                | 128.19±9.24   | 128.75±9.24  |

\(^\d\) Data representing the mean value ±SEM of six biological replicates for each bark beetle species. SEM denotes the standard error of the mean.
Supplementary Table 2. ANOSIM and MRPP Analysis

| Group† | ANOSIM | | MRPP | |
|--------|--------|--------|--------|--------|
|        | R-value | P-value | A       | observed-delta | expected-delta | Significance |
| PP-ID  | 0.95    | 0.002   | 0.2523  | 0.5873       | 0.7855        | 0.001        |
| IT-ID  | 0.3926  | 0.003   | 0.07495 | 0.6074       | 0.6566        | 0.024        |
| IT-PP  | 1       | 0.001   | 0.2816  | 0.5644       | 0.7856        | 0.003        |
| IC-ID  | 0.9815  | 0.001   | 0.3309  | 0.4848       | 0.7245        | 0.004        |
| IC-PP  | 0.9852  | 0.005   | 0.3926  | 0.4418       | 0.7273        | 0.001        |
| IC-IT  | 0.9111  | 0.001   | 0.3274  | 0.4619       | 0.6868        | 0.005        |
| IAC-ID | 0.6667  | 0.005   | 0.2866  | 0.5565       | 0.7802        | 0.002        |
| IAC-PP | 0.6778  | 0.018   | 0.339   | 0.5135       | 0.7769        | 0.003        |
| IAC-IT | 0.6593  | 0.001   | 0.2842  | 0.5336       | 0.7455        | 0.004        |
| IAC-IC | 0.6667  | 0.005   | 0.4315  | 0.4111       | 0.7231        | 0.003        |
| SX-ID  | 0.9981  | 0.005   | 0.3388  | 0.4905       | 0.7418        | 0.003        |
| SX-PP  | 1       | 0.004   | 0.3988  | 0.4474       | 0.7443        | 0.001        |
| SX-IT  | 0.9722  | 0.003   | 0.3329  | 0.4676       | 0.7009        | 0.002        |
| SX-IC  | 1       | 0.002   | 0.4959  | 0.345        | 0.6843        | 0.002        |
| SX-IAC | 0.6667  | 0.005   | 0.4205  | 0.4167       | 0.7191        | 0.003        |

† *Ips duplicatus* (ID), *Ips typographus* (IT), *Ips sexdentatus* (SX), *Ips cembrae* (IC), *Ips acuminatus* (IAC) and *Polygraphus poligraphus* (PP).
Supplementary Table 3. ADONIS Analysis

| Group† | Df  | SS             | MS             | F.Model | R2             | Pr(>F) |
|--------|-----|----------------|----------------|---------|----------------|--------|
| IC-PP  | 1(10) | 2.2284(1.1548) | 2.22837(0.11548) | 19.297  | 0.65866(0.34134) | 0.001  |
| IC-IAC | 1(10) | 2.2696(1.2615) | 2.26958(0.12615) | 17.991  | 0.64275(0.35725) | 0.001  |
| IC-SX  | 1(10) | 2.45632(0.69905) | 2.45632(0.06991) | 35.138  | 0.77846(0.22154) | 0.001  |
| IC-ID  | 1(10) | 1.8762(1.3983) | 1.87619(0.13983) | 13.418  | 0.57298(0.42702) | 0.001  |
| IC-IT  | 1(10) | 1.7242(1.2493) | 1.72421(0.12493) | 13.801  | 0.57986(0.42014) | 0.001  |
| PP-IAC | 1(10) | 2.1044(1.7475) | 2.10440(0.17475) | 12.042  | 0.54633(0.45367) | 0.001  |
| PP-SX  | 1(10) | 2.3578(1.1851) | 2.35776(0.11851) | 19.896  | 0.6655(0.3345) | 0.004  |
| PP-ID  | 1(10) | 1.8060(1.8843) | 1.80601(0.18843) | 9.5846  | 0.48939(0.51061) | 0.001  |
| PP-IT  | 1(10) | 1.9562(1.7353) | 1.95624(0.17353) | 11.273  | 0.52992(0.47008) | 0.001  |
| IAC-SX | 1(10) | 2.1851(1.2918) | 2.18510(0.12918) | 16.916  | 0.62847(0.37153) | 0.003  |
| IAC-ID | 1(10) | 1.8093(1.9910) | 1.8093(0.1991) | 9.0873  | 0.47609(0.52391) | 0.004  |
| IAC-IT | 1(10) | 1.6379(1.8420) | 1.6379(0.1842) | 8.8918  | 0.47067(0.52933) | 0.001  |
| SX-ID  | 1(10) | 2.0034(1.4285) | 2.00344(0.14285) | 14.024  | 0.58376(0.41624) | 0.004  |
| SX-IT  | 1(10) | 1.7805(1.2796) | 1.78054(0.12796) | 13.915  | 0.58185(0.41815) | 0.001  |
| ID-IT  | 1(10) | 0.56813(1.97880) | 0.56813(0.19788) | 2.8711  | 0.22306(0.77694) | 0.006  |

† *Ips duplicatus* (ID), *Ips typographus* (IT), *Ips sexdentatus* (SX), *Ips cembrae* (IC), *Ips acuminatus* (IAC) and *Polygraphus poligraphus* (PP).