**Supplemental Information:**

**Supplementary Table S1** Results of AIC model selection for *Hymenachne amplexicaulis* presence. K value indicates the number of parameters in the model. (\*) indicates the main effects and an interaction. R: region; P: pasture type; AWetland: wetland area; IHanski: log10(Hanski isolation); EDmin: Euclidean distance; DC: ditch connection presence

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model  | K | AICc | ΔAICc | AICc Weight |
| R + P + DC | 5 | 159.66 | 0.00 | 0.22 |
| R + P + EDmin\*DC | 7 | 160.31 | 0.64 | 0.16 |
| R + P + EDmin + DC | 6 | 160.79 | 1.12 | 0.13 |
| R + P | 4 | 160.92 | 1.26 | 0.12 |
| R + P +DC + IHanski | 6 | 161.82 | 2.16 | 0.08 |
| R + P + AWetland + EDmin\*DC | 8 | 162.52 | 2.86 | 0.05 |
| R + P + IHanski + EDmin\*DC | 8 | 162.52 | 2.86 | 0.05 |
| R + P + AWetland + DC + EDmin | 7 | 162.97 | 3.31 | 0.04 |
| R + P + IHanski | 5 | 163.06 | 3.39 | 0.04 |
| R + EDmin | 4 | 164.66 | 5.00 | 0.02 |
| R + P + AWetland + IHanski + EDmin\*DC | 9 | 164.76 | 5.10 | 0.02 |
| R | 3 | 165.17 | 5.51 | 0.01 |
| R + P + AWetland + IHanski + EDmin + DC | 8 | 165.19 | 5.53 | 0.01 |
| R + IHanski + EDmin | 5 | 165.99 | 6.33 | 0.01 |
| R + DC | 4 | 166.03 | 6.37 | 0.01 |
| R + IHanski | 4 | 166.29 | 6.62 | 0.01 |
| R + IHanski + DC | 5 | 166.87 | 7.20 | 0.01 |
| R + AWetland + DC | 5 | 167.94 | 8.27 | 0.00 |
| R + AWetland + IHanski + EDmin | 6 | 168.13 | 8.47 | 0.00 |
| R + AWetland + IHanski | 5 | 168.42 | 8.75 | 0.00 |
| R + AWetland + IHanski + DC | 6 | 168.88 | 9.21 | 0.00 |
| P + IHanski | 3 | 197.52 | 37.86 | 0.00 |
| IHanski | 2 | 202.22 | 42.55 | 0.00 |
| P + DC | 3 | 202.26 | 42.60 | 0.00 |
| IHanski + DC | 3 | 202.84 | 43.17 | 0.00 |
| P | 2 | 203.89 | 44.23 | 0.00 |
| 1 | 1 | 204.96 | 45.30 | 0.00 |
| DC | 2 | 205.24 | 45.57 | 0.00 |
| AWetland | 2 | 205.67 | 46.01 | 0.00 |
| EDmin | 2 | 206.27 | 46.61 | 0.00 |
| EDmin\*DC | 4 | 207.44 | 47.78 | 0.00 |



**Supplementary Figure S1** Map of Archbold Biological Station’s Buck Island Ranch (BIR), showing the presence (green) and the absence (red) of West Indian Marsh Grass (WIMG) in the 158 investigated wetlands. *Blue lines* represent the ditch network, the system of intersecting ditches and wetlands, with *thick dark blue lines* indicating assumed source ditches of *H. amplexicaulis*