| mod\_name | mod\_formula | AICc | delta | model\_df | deviance | d2 | residual\_df | lr\_chisq | chisq\_df | p\_value\_chisq | lr\_signif | best\_model\_candidate | best\_model |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| null | n\_species ~ 1 | 444.41 | 144.09 | 2 | 440.26 | 1.00 | 77 | 0.00 | 0 | 1.00 |  | FALSE | FALSE |
| elevation | n\_species ~ poly(elevation\_mean, 1) | 347.23 | 46.90 | 3 | 340.91 | 0.23 | 76 | 99.35 | 1 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly | n\_species ~ poly(elevation\_mean, 2) | 317.96 | 17.63 | 4 | 309.42 | 0.30 | 75 | 130.84 | 2 | 0.00 | \*\*\* | FALSE | FALSE |
| region | n\_species ~ regions | 446.39 | 146.06 | 4 | 437.85 | 0.00 | 75 | 2.41 | 2 | 0.30 |  | FALSE | FALSE |
| season | n\_species ~ seasons | 446.52 | 146.19 | 3 | 440.20 | 0.00 | 76 | 0.06 | 1 | 0.81 |  | FALSE | FALSE |
| elevation + region | n\_species ~ poly(elevation\_mean, 1) + regions | 329.51 | 29.19 | 5 | 318.69 | 0.28 | 74 | 121.56 | 3 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* region | n\_species ~ poly(elevation\_mean, 1) + regions + poly(elevation\_mean, 1):regions | 328.48 | 28.15 | 7 | 312.90 | 0.29 | 72 | 127.36 | 5 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation + season | n\_species ~ poly(elevation\_mean, 1) + seasons | 349.31 | 48.98 | 4 | 340.77 | 0.23 | 75 | 99.49 | 2 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* season | n\_species ~ poly(elevation\_mean, 1) + seasons + poly(elevation\_mean, 1):seasons | 350.96 | 50.63 | 5 | 340.13 | 0.23 | 74 | 100.12 | 3 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + region | n\_species ~ poly(elevation\_mean, 2) + regions | 300.32 | 0.00 | 6 | 287.16 | 0.35 | 73 | 153.10 | 4 | 0.00 | \*\*\* | TRUE | FALSE |
| elevation-poly \* region | n\_species ~ poly(elevation\_mean, 2) + regions + poly(elevation\_mean, 2):regions | 304.94 | 4.61 | 10 | 281.70 | 0.36 | 69 | 158.55 | 8 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + season | n\_species ~ poly(elevation\_mean, 2) + seasons | 320.15 | 19.83 | 5 | 309.33 | 0.30 | 74 | 130.92 | 3 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly \* season | n\_species ~ poly(elevation\_mean, 2) + seasons + poly(elevation\_mean, 2):seasons | 320.06 | 19.73 | 7 | 304.48 | 0.31 | 72 | 135.77 | 5 | 0.00 | \*\*\* | FALSE | FALSE |
| region + season | n\_species ~ regions + seasons | 448.46 | 148.13 | 5 | 437.63 | 0.01 | 74 | 2.62 | 3 | 0.45 |  | FALSE | FALSE |
| region \* season | n\_species ~ regions + seasons + regions:seasons | 451.57 | 151.25 | 7 | 436.00 | 0.01 | 72 | 4.26 | 5 | 0.51 |  | FALSE | FALSE |
| elevation + region + season | n\_species ~ poly(elevation\_mean, 1) + regions + seasons | 331.72 | 31.40 | 6 | 318.56 | 0.28 | 73 | 121.70 | 4 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation + region \* season | n\_species ~ poly(elevation\_mean, 1) + regions + seasons + poly(elevation\_mean, 1):seasons + regions:seasons | 331.61 | 31.28 | 9 | 311.00 | 0.29 | 70 | 129.25 | 7 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* region + season | n\_species ~ poly(elevation\_mean, 1) + regions + seasons + poly(elevation\_mean, 1):regions | 330.76 | 30.43 | 8 | 312.70 | 0.29 | 71 | 127.55 | 6 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* region \* season | n\_species ~ poly(elevation\_mean, 1) + regions + seasons + poly(elevation\_mean, 1):regions + poly(elevation\_mean, 1):seasons + regions:seasons + poly(elevation\_mean, 1):regions:seasons | 329.51 | 29.18 | 13 | 297.91 | 0.32 | 66 | 142.35 | 11 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + region + season | n\_species ~ poly(elevation\_mean, 2) + regions + seasons | 302.53 | 2.20 | 7 | 286.95 | 0.35 | 72 | 153.30 | 5 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + region \* season | n\_species ~ poly(elevation\_mean, 2) + regions + seasons + poly(elevation\_mean, 2):seasons + regions:seasons | 301.18 | 0.86 | 11 | 275.24 | 0.38 | 68 | 165.01 | 9 | 0.00 | \*\*\* | TRUE | TRUE |
| elevation-poly \* region + season | n\_species ~ poly(elevation\_mean, 2) + regions + seasons + poly(elevation\_mean, 2):regions | 307.40 | 7.08 | 11 | 281.46 | 0.36 | 68 | 158.79 | 9 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly \* region \* season | n\_species ~ poly(elevation\_mean, 2) + regions + seasons + poly(elevation\_mean, 2):regions + poly(elevation\_mean, 2):seasons + regions:seasons + poly(elevation\_mean, 2):regions:seasons | 310.62 | 10.30 | 19 | 259.74 | 0.41 | 60 | 180.51 | 17 | 0.00 | \*\*\* | FALSE | FALSE |

| mod\_name | mod\_formula | AICc | delta | model\_df | deviance | d2 | residual\_df | lr\_chisq | chisq\_df | p\_value\_chisq | lr\_signif | best\_model\_candidate | best\_model |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| null | n\_occurecnes ~ 1 | 541.86 | 121.13 | 2 | 537.70 | 1.00 | 77 | 0.00 | 0 | 1.00 |  | FALSE | FALSE |
| elevation | n\_occurecnes ~ poly(elevation\_mean, 1) | 458.20 | 37.48 | 3 | 451.88 | 0.16 | 76 | 85.82 | 1 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly | n\_occurecnes ~ poly(elevation\_mean, 2) | 429.63 | 8.91 | 4 | 421.09 | 0.22 | 75 | 116.61 | 2 | 0.00 | \*\*\* | FALSE | FALSE |
| region | n\_occurecnes ~ regions | 546.10 | 125.38 | 4 | 537.56 | 0.00 | 75 | 0.14 | 2 | 0.93 |  | FALSE | FALSE |
| season | n\_occurecnes ~ seasons | 543.98 | 123.25 | 3 | 537.66 | 0.00 | 76 | 0.04 | 1 | 0.84 |  | FALSE | FALSE |
| elevation + region | n\_occurecnes ~ poly(elevation\_mean, 1) + regions | 455.70 | 34.97 | 5 | 444.88 | 0.17 | 74 | 92.82 | 3 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* region | n\_occurecnes ~ poly(elevation\_mean, 1) + regions + poly(elevation\_mean, 1):regions | 457.80 | 37.08 | 7 | 442.23 | 0.18 | 72 | 95.47 | 5 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation + season | n\_occurecnes ~ poly(elevation\_mean, 1) + seasons | 460.03 | 39.30 | 4 | 451.49 | 0.16 | 75 | 86.21 | 2 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* season | n\_occurecnes ~ poly(elevation\_mean, 1) + seasons + poly(elevation\_mean, 1):seasons | 462.28 | 41.55 | 5 | 451.46 | 0.16 | 74 | 86.24 | 3 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + region | n\_occurecnes ~ poly(elevation\_mean, 2) + regions | 429.50 | 8.77 | 6 | 416.34 | 0.23 | 73 | 121.37 | 4 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly \* region | n\_occurecnes ~ poly(elevation\_mean, 2) + regions + poly(elevation\_mean, 2):regions | 429.95 | 9.22 | 10 | 406.71 | 0.24 | 69 | 130.99 | 8 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + season | n\_occurecnes ~ poly(elevation\_mean, 2) + seasons | 431.60 | 10.87 | 5 | 420.78 | 0.22 | 74 | 116.92 | 3 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly \* season | n\_occurecnes ~ poly(elevation\_mean, 2) + seasons + poly(elevation\_mean, 2):seasons | 432.26 | 11.53 | 7 | 416.68 | 0.22 | 72 | 121.02 | 5 | 0.00 | \*\*\* | FALSE | FALSE |
| region + season | n\_occurecnes ~ regions + seasons | 548.34 | 127.61 | 5 | 537.52 | 0.00 | 74 | 0.18 | 3 | 0.98 |  | FALSE | FALSE |
| region \* season | n\_occurecnes ~ regions + seasons + regions:seasons | 550.73 | 130.00 | 7 | 535.15 | 0.00 | 72 | 2.55 | 5 | 0.77 |  | FALSE | FALSE |
| elevation + region + season | n\_occurecnes ~ poly(elevation\_mean, 1) + regions + seasons | 457.95 | 37.22 | 6 | 444.78 | 0.17 | 73 | 92.92 | 4 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation + region \* season | n\_occurecnes ~ poly(elevation\_mean, 1) + regions + seasons + poly(elevation\_mean, 1):seasons + regions:seasons | 457.79 | 37.06 | 9 | 437.18 | 0.19 | 70 | 100.52 | 7 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* region + season | n\_occurecnes ~ poly(elevation\_mean, 1) + regions + seasons + poly(elevation\_mean, 1):regions | 460.12 | 39.39 | 8 | 442.06 | 0.18 | 71 | 95.64 | 6 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation \* region \* season | n\_occurecnes ~ poly(elevation\_mean, 1) + regions + seasons + poly(elevation\_mean, 1):regions + poly(elevation\_mean, 1):seasons + regions:seasons + poly(elevation\_mean, 1):regions:seasons | 457.37 | 36.65 | 13 | 425.77 | 0.21 | 66 | 111.93 | 11 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + region + season | n\_occurecnes ~ poly(elevation\_mean, 2) + regions + seasons | 431.78 | 11.05 | 7 | 416.20 | 0.23 | 72 | 121.50 | 5 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly + region \* season | n\_occurecnes ~ poly(elevation\_mean, 2) + regions + seasons + poly(elevation\_mean, 2):seasons + regions:seasons | 429.91 | 9.18 | 11 | 403.97 | 0.25 | 68 | 133.73 | 9 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly \* region + season | n\_occurecnes ~ poly(elevation\_mean, 2) + regions + seasons + poly(elevation\_mean, 2):regions | 432.18 | 11.46 | 11 | 406.24 | 0.24 | 68 | 131.46 | 9 | 0.00 | \*\*\* | FALSE | FALSE |
| elevation-poly \* region \* season | n\_occurecnes ~ poly(elevation\_mean, 2) + regions + seasons + poly(elevation\_mean, 2):regions + poly(elevation\_mean, 2):seasons + regions:seasons + poly(elevation\_mean, 2):regions:seasons | 420.73 | 0.00 | 19 | 369.85 | 0.31 | 60 | 167.86 | 17 | 0.00 | \*\*\* | TRUE | TRUE |