**Table S7.** Summary of Monte-Carlo tests of RLQ models of streams

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Functional  traits selected | Predictors selected | Standard observed | P-value |
| Local environmental descriptors –  global model | All traits | All predictors | 3.008 | 0.003 |
| Local environmental descriptors –fitted model | BH; BL; BW; TMW; DFH; VFH; NTR; ODP; MS; ES; SL; SW; ND; IED; Fl; EP; SP; NP | Area; water transp.; water pH; water temperature; water  conductivity; diss. ox.; DQO; NO2; Total alk.; alk HCO3; stream  vegetation; stream substrate | 3.543 | 0.001 |
| Landscape descriptors –  global model | All traits | All predictors | 1.208 | 0.11 |
| Landscape descriptors – fitted model | BH; BL; BW; TMW; DFH; VFH; NTR; ODP; MS; ES; SL; SW; ND; IED; Fl; EP; SP; NP | Canopy open;  types of land use | 0.341 | 0.35 |