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## Appendix

Table A1 Different cases of describing negligibility effects of the variables

| $\geqslant 95 \%$ |  |  |
| :--- | :--- | :--- |
| richness | abundance |  |
| $>\exp (0.2)$ | $>\exp (0.5)$ | strongly positive |
| $>\exp (0.1)$ | $>\exp (0.25)$ | positive |
| $\in[\exp (-0.2) ; \exp (0.2)]$ | $\in[\exp (-0.5) ; \exp (0.5)]$ | weak |
| $\in[\exp (-0.1) ; \exp (0.1)]$ | $\in[\exp (-0.25) ; \exp (0.25)]$ | very weak |
| $<\exp (0.2)$ | $<\exp (0.5)$ | strongly negative |
| $<\exp (0.1)$ | $<\exp (0.25)$ | negative |
| - | - | uncertain |

Table A2-1 Multiplicative effect of a substantial variation in ecological variables on individual species abundance

| Models | Variables | Cabe | Capi | Defl | Fehe | Hehe | Homo | Нури |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Subplot* <br> STP | $\begin{aligned} & \text { COtoBO, } \\ & \text { STP30 } \end{aligned}$ | $\begin{aligned} & \hline 0.16 \\ & {[0 ; 10.53]} \end{aligned}$ |  | 0.03 [0;38.51] | 0.89 [0.2;10.4] |  | 2.14 [1.00;5.08] | 0 [0;3453499.66] |
|  | $\begin{aligned} & \text { COtoTR, } \\ & \text { STP30 } \end{aligned}$ | $\begin{aligned} & 0.15 \\ & {[0 ; 101.2]} \end{aligned}$ |  | $\begin{aligned} & 0.52 \\ & {[0.08 ; 14.63]} \end{aligned}$ | 0.75 [0.13;13.81] |  | $2.11{ }^{+}$[1.15;4.93] | 0.51 [0;39875478.2] |
|  | $\begin{aligned} & \text { COtoBE, } \\ & \text { STP30 } \end{aligned}$ | $\begin{aligned} & 0.44 \\ & {[0 ; 32.53]} \end{aligned}$ |  | $\begin{aligned} & 1.09 \\ & {[0.08 ; 12.02]} \end{aligned}$ | 0.66 [0.19;12.62] |  | 1.67 [0.81;4.51] | 0.13 [0;4205720.54] |
|  | $\begin{aligned} & \text { COtoBO, } \\ & \text { STP50 } \end{aligned}$ | $\begin{aligned} & 8.16 \\ & {[0.39 ; 73.98]} \end{aligned}$ |  | $\begin{aligned} & 0.03 \\ & {[0 ; 314329.43]} \end{aligned}$ | 1.48 [0.02;10.44] |  | $\begin{aligned} & 3.99 \\ & {[0 ; 3698603.72]} \end{aligned}$ | 0.00 [0.00;1.00] |
|  | COtoTR, STP50 | $\begin{aligned} & 0.82 \\ & {[0.01 ; 32.46]} \end{aligned}$ |  | $\begin{aligned} & 0.00 \\ & {[0 ; 2360506.51]} \end{aligned}$ | 0.4 [0.01;4.89] |  | $\begin{aligned} & 210.28 \\ & {[0.00 ; 1577505.31]} \end{aligned}$ | 119.12 [0;2277796.68] |
|  | $\begin{aligned} & \text { COtoBE, } \\ & \text { STP50 } \end{aligned}$ | $\begin{aligned} & 5.91 \\ & {[0.01 ; 50.47]} \end{aligned}$ |  | 0.34 [0;3.25] | 1.8 [0.12;16.79] |  | $\begin{aligned} & 558.7 \\ & {[0.00 ; 2374051.28]} \end{aligned}$ | 896.06 [0;23581180.29] |
|  | $\begin{aligned} & \text { COtoBO, } \\ & \text { STP63 } \end{aligned}$ | $\begin{aligned} & 1.14 \\ & {[0.01 ; 11.6]} \end{aligned}$ |  | $\begin{aligned} & 509.36 \\ & {[0 ; 1433733.67]} \end{aligned}$ | $\begin{aligned} & 103.55 \\ & {[0.45 ; 4997944.41]} \end{aligned}$ |  | $\begin{aligned} & 0.27 \\ & {[0.02 ; 2084011.1]} \end{aligned}$ | $\begin{aligned} & 3761829.49^{++} \\ & {[1500931.63 ; 204875274.5} \end{aligned}$ 7] |
|  | $\begin{aligned} & \text { COtoTR, } \\ & \text { STP63 } \end{aligned}$ | $\begin{aligned} & 0.10 \\ & {[0.01 ; 2.34]} \end{aligned}$ |  | $\begin{aligned} & 143.18 \\ & {[0 ; 1615470.41]} \end{aligned}$ | $\begin{aligned} & 29.82 \\ & {[0 ; 1550266.29]} \end{aligned}$ |  | $\begin{aligned} & 0.02 \\ & {[0.00 ; 1361095.47]} \end{aligned}$ | $\begin{aligned} & 41402185.49^{++} \\ & \text {[7499550.71;235998507.7 } \\ & 5] \end{aligned}$ |
|  | COtoBE, STP63 | $\begin{aligned} & 0.72 \\ & {[0.05 ; 9.43]} \end{aligned}$ |  | $\begin{aligned} & 1522.26 \\ & {[0 ; 3221966.57]} \end{aligned}$ | $\begin{aligned} & 257.10^{++} \\ & {[2.83 ; 5118021.62]} \end{aligned}$ |  | 1.08 [0.03;49.07] | $\begin{aligned} & \text { 25781073.34++ } \\ & {[3399414.88 ; 181376487.0} \end{aligned}$ 7] |
| $\begin{aligned} & \text { Subplot * } \\ & \text { G } \end{aligned}$ | COtoBO |  | $\begin{aligned} & 3.63 \\ & \text { [0.13; 3.11E+29] } \end{aligned}$ |  |  |  |  |  |
|  | COtoTR |  | $\begin{aligned} & 21.00 \\ & {[0.16 ; 479781.16]} \end{aligned}$ |  |  |  |  |  |
|  | COtoBE |  | $\begin{aligned} & 44.82 \\ & {[0.42 ; 1513645.01]} \end{aligned}$ |  |  |  |  |  |
|  | G (CO) |  | 0.03 [0.00;36.51] |  |  |  |  |  |
|  | G (BO) |  | 1.49 [0.00;4.11] |  |  |  |  |  |


|  | G (BE) |
| :--- | :--- |
|  | G (TR) |
| PR | PR |
|  |  |
|  | PR |
| PR + STP | STP30to5 <br> 0 <br>  <br>  <br>  <br>  <br> STP50to6 <br> 3 |

2.64 [0.37;638.91]

| G (BE) | $2.64[0.37 ; 638.91]$ |
| :--- | :--- |
| G (TR) | $1.61[0.17 ; 205.87]$ |

$0.67[0.53 ;$
$0.85]$
$0.67[0.53 ;$
$0.85]$
$5.99^{++}$
$[2.92 ; 9.37]$
$1.42[0.87 ; 1.94]$

Variations were: 0.5 MPa for PR increment, 1 for Nsam, 10.5 cm for MaxD, $0.25 \mathrm{~g} . \mathrm{cm}^{-3}$ for BD, $6.5 \%$ for moisture, $6 \mathrm{~m}^{3} . \mathrm{cm}^{-3}$ for WCS and $5 \mathrm{~m}^{2}$. ha ${ }^{-1}$ for basal area. For stand type (STP), we calculated the associated multiplicative coefficient by supposing the stand changed from one type to the successive type: STP30 to STP50 stands $\left(\mathrm{STP}_{30+050}\right)$, and STP50 to STP63 stands $\left(\mathrm{STP}_{50 \text { to } 63}\right)$. The multiplicative coefficient for subplot location was obtained by calculating the difference between the subplot locations and the paired control (COtoBE, COtoTR and COtoBO). For quadratic models, we obtained the multiplicative coefficient for the same variation as above but calculated at first, second and third quartiles of the explanatory variable. The multiplicative coefficient for subplot location was obtained by calculating the difference between the subplot locations and the paired control (COtoBE, COtoTR and COtoBO). " 0 " and " 00 " indicate that the effect has a $p$-value of at least 0.95 of being negligible at two different levels (see text). """ and "-"" indicate that the effect has a $p$-value of at least 0.95 of being negative and non-negligible at two different levels. " "", and " ${ }^{++, "}$ indicate that the effect has a $p$-value of at least 0.95 of being positive and non-negligible at two different levels. Values in brackets are the $95 \%$ confidence intervals of the coefficients. Cabe: Carpinus betulus, Capi:Carex pilulifera, Defl: Deschampsia flexuosa, Fehe: Festuca heterophylla,Hehe:Hedera helix,Homo:Holcus mollis Hypu:Hypericum pulchrum Lope:Lonicera periclymenum,Meun:Melica uniflora,Pone: Poa nemoralis,Post: Potentilla sterilis, Qusp: Quercus sp, Rufr: Rubus fruticosus, Tesc: Teucrium scorodonia, Vire: Viola riviniana \& reichenbachiana. Some species aggregates were defined (Viola riviniana \& reichenbachiana) due to identification problems. Oak was determined only at the genus level due to lack of information to identify the species at seedling stage (Quercus sp).
vol 338, p. 20-31, doi:10.1016/j.foreco.2014.11.018 • Wei, L. ; Villemey, A. ; Hulin, F. ;Bilger,I
Dumas, Y. ; Chevalier, R. ; Archaux, F. ; Gosselin, F.- Plant diversity on skid trails in oak high forests: a matter of disturbance, micro-environmental conditions or forest age?

Table A2-2 Multiplicative effect of a substantial variation in ecological variables on individual species abundance

| Models | Variables | Lope | Meun | Pone | Post | Qusp | Rufr | Tesc | Vire |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Subplot.locati on | COtoBO |  | $\begin{aligned} & 0.65 \\ & {[0.24 ; 3.46]} \end{aligned}$ |  |  |  | $\begin{aligned} & \hline 9.23^{++} \\ & {[6.29 ; 19.19]} \end{aligned}$ |  | $\begin{aligned} & \hline 3.40^{++} \\ & \text {[1.52; 27.24] } \end{aligned}$ |
|  | COtoTR |  | $\begin{aligned} & 2.42 \\ & {[0.84 ; 5.16]} \end{aligned}$ |  |  |  | $\begin{aligned} & 1.33 \\ & {[0.94 ; 1.91]} \end{aligned}$ |  | $\begin{aligned} & 27.17^{++} \\ & {[11.13 ; 62.8]} \end{aligned}$ |
|  | COtoBE |  | $\begin{aligned} & 2.28 \\ & {[0.85 ; 4.61]} \end{aligned}$ |  |  |  | $\begin{aligned} & 1.70 \\ & {[1.18 ; 2.46]} \end{aligned}$ |  | $\begin{aligned} & 26.48^{++} \\ & \text {[10.53; 62.36] } \end{aligned}$ |
| Subplot* STP | COtoBO, STP30 |  |  |  |  |  |  | $\begin{aligned} & 1.28 \\ & {[0 ; 57426880.53]} \end{aligned}$ |  |
|  | $\begin{aligned} & \text { TRtoCO, } \\ & \text { STP30 } \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & 47.29^{++} \\ & {[0.2 ; 300.9]} \end{aligned}$ |  |
|  | COtoBE, |  |  |  |  |  |  | 27.69 |  |
|  | STP30 |  |  |  |  |  |  | [0.19;327.09] |  |
|  | COtoBO, STP50 |  |  |  |  |  |  | $\begin{aligned} & 0.29 \\ & {[0 ; 2199965.86]} \end{aligned}$ |  |
|  | COtoTR, STP50 |  |  |  |  |  |  | 0 [0;616579.51] |  |
|  | $\begin{aligned} & \text { COtoBE, } \\ & \text { STP50 } \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & 0.63 \\ & {[0 ; 518042.58]} \end{aligned}$ |  |
|  | $\begin{aligned} & \text { COtoBO, } \\ & \text { STP63 } \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & 27.62 \\ & {[0 ; 1408914.58]} \end{aligned}$ |  |
|  | COtoTR, STP63 |  |  |  |  |  |  | $\begin{aligned} & 466.59 \\ & {[0 ; 13590209.3]} \end{aligned}$ |  |
|  | COtoBE, STP63 |  |  |  |  |  |  | $\begin{aligned} & 349.99 \\ & {[0 ; 13083888.5]} \end{aligned}$ |  |
| Subplot * G | COtoBO |  |  | $\begin{aligned} & 17.96 \\ & {[0.06 ; 88.03]} \end{aligned}$ | $\begin{aligned} & 204.45 \\ & {[0 ; 764525.14]} \end{aligned}$ |  |  |  |  |
|  | COtoTR |  |  | $\begin{aligned} & 26.15 \\ & {[0.24 ; 180.04]} \end{aligned}$ | $\begin{aligned} & 2402.33 \\ & {[0 ; 4215.23]} \end{aligned}$ |  |  |  |  |
|  | COtoBE |  |  | $\begin{aligned} & 45.36 \\ & {[0.64 ; 63.05]} \end{aligned}$ | $\begin{aligned} & 869.5 \\ & {[0.25 ; 1650596.65]} \end{aligned}$ |  |  |  |  |

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|  | G (CO) |  | 0.02 [0.01;7.55] | $\begin{aligned} & 0.18 \\ & \text { [9.03;2507.85] } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | G (BO) |  | 1.52 [0.06;4.00] | 1.51 [0.10;5.52] |  |
|  | G (BE) |  | 0.51 [0.12;9.69] | 1.56 [0.38;85.99] |  |
|  | G (TR) |  | 0.70 [0.08;7.48] | 1.71 [0.17;14.28] |  |
| PR | PR | $\begin{aligned} & 0.76^{0} \\ & {[0.66 ; 0.92]} \end{aligned}$ |  |  |  |
|  | Nsam |  |  |  | $\begin{aligned} & 0.60 \\ & {[0.36 ; 0.96]} \end{aligned}$ |
| Nsam + STP | STP30to50 |  |  |  | $\begin{aligned} & 8.76^{++} \\ & {[4.39 ; 12.02]} \end{aligned}$ |
|  | STP50to63 |  |  |  | $\begin{aligned} & 1.01^{0} \\ & {[0.72 ; 1.39]} \\ & \hline \end{aligned}$ |

The legend is the same as for Table A4-1.

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Fig. A1 Differences in skid trail width (a) and rut depth (b) among the three stand types (STP30, STP50 and STP63).

