**Supplementary Figure 1:** Change in thirty year seasonal mean albedo in HadCM3C simulations scenario (2080s-1860s) showing difference between 2C20 simulations with interactive and fixed vegetation, for a) winter (December-February), b) spring (March-May), c) Summer (June-August) and d) autumn (September-November). Changes smaller than two standard deviations from the control simulation are masked out (white areas).

**Supplementary Figure 2:** Change in thirty year seasonal mean temperature in HadCM3C simulations scenario (2080s-1860s) showing difference between 2C20 simulations with interactive and fixed vegetation, for a) winter (December-February), b) spring (March-May), c) Summer (June-August) and d) autumn (September-November). Changes smaller than two standard deviations from the control simulation are masked out (white areas).

**Supplementary Figure 3:** Change in thirty year seasonal mean precipitation in HadCM3C simulations scenario (2080s-1860s) showing difference between A1B simulations with interactive and fixed vegetation, for a) winter (December-February), b) spring (March-May), c) Summer (June-August) and d) autumn (September-November). Changes smaller than two standard deviations from the control simulation are masked out (white areas).

**Supplementary Figure 4:** Change in thirty year seasonal mean precipitation in HadCM3C simulations scenario (2080s-1860s) showing difference between 2C20 simulations with interactive and fixed vegetation, for a) winter (December-February), b) spring (March-May), c) Summer (June-August) and d) autumn (September-November). Changes smaller than two standard deviations from the control simulation are masked out (white areas).

**Supplementary Figure 5:** Change in thirty year seasonal mean evaporation in HadCM3C simulations scenario (2080s-1860s) showing difference between A1B simulations with interactive and fixed vegetation, for a) winter (December-February), b) spring (March-May), c) Summer (June-August) and d) autumn (September-November). Changes smaller than two standard deviations from the control simulation are masked out (white areas).

**Supplementary Figure 6:** Change in thirty year seasonal mean evaporation in HadCM3C simulations scenario (2080s-1860s) showing difference between 2C20 simulations with interactive and fixed vegetation, for a) winter (December-February), b) spring (March-May), c) Summer (June-August) and d) autumn (September-November). Changes smaller than two standard deviations from the control simulation are masked out (white areas).







**N06** 

a) 2C20 IV-FV, 2080s-1870s: DJF

90N

b) 2C20 IV-FV, 2080s-1870s: MAM





45N

**N06** 

2





