Figure S1. Vegetation maps used in the GRASS and FOREST simulations. NET = needleleaf evergreen trees; BDT = broadleaf deciduous trees.
Figure S2. 2-metre temperature (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
Figure S3. Daily maximum 2-metre temperature (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
MAM
**Figure S4.** Daily minimum 2-metre temperature (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
Figure S5. Skin temperature (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
JJA
SON
Figure S6. Total precipitation (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
Figure S7. Net shortwave radiation (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
MAM
JJA
CCLM-TERRA  CCLM-VEG3D  CCLM-CLM4.5
RCA  RegCM-CLM4.5  REMO-iMOVE
WRFa-NoahMP  WRFb-NoahMP  WRFb-CLM3.5
MMM

\[ \text{swnet (W/m}^2\text{)} \]

SON
Figure S8. Surface albedo (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
SON
Figure S9. Net longwave radiation (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
Figure S10. Sensible heat flux (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
MAM
**Figure S11.** Latent heat flux (FOREST minus GRASS). Here for DJF; next pages for MAM, JJA and SON.
MAM
SON
Figure S12. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over the Alps (AL) for DJF, MAM, JJA and SON.
Figure S13. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over the British Isles (BI) for DJF, MAM, JJA and SON.
Figure S14. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over Eastern Europe (EA) for DJF, MAM, JJA and SON.
Figure S15. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over France (FR) for DJF, MAM, JJA and SON.
Figure S16. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over the Iberian Peninsula (IP) for DJF, MAM, JJA and SON.
Figure S17. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over the Mediterranean (MD) for DJF, MAM, JJA and SON.
Figure S18. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over Mid-Europe (ME) for DJF, MAM, JJA and SON.
Figure S19. Changes in temperature and in surface energy balance components (FOREST minus GRASS) averaged over Scandinavia (SC) for DJF, MAM, JJA and SON.
Figure S20. Analysis of the inter-model variance in surface temperature difference as explained by albedo change, evaporative fraction change or both combined. Alb: inter-model correlation (R squared) between albedo change and temperature change. EF: inter-model correlation (R squared) between albedo change and evaporative fraction change. Alb+EF: Rsquared of a multi-linear regression with both albedo change and EF change as predictors. Unexplained variance: 1-R2.
Figure S21. Analysis of the inter-model variance in surface temperature difference as explained by albedo change, evaporative fraction change or both combined. Alb: inter-model correlation (Rsquared) between albedo change and temperature change. EF: inter-model correlation (Rsquared) between albedo change and temperature change. Alb+EF: Rsquared of a multi-linear regression with both albedo change and EF change as predictors. Unexplained variance: 1-R2.