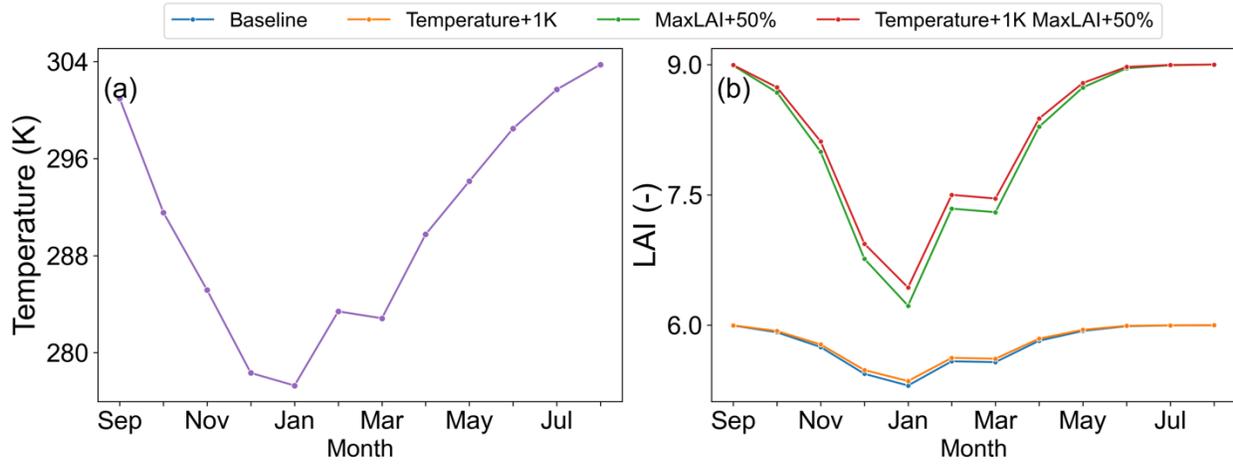


402 **Supplementary Information**

403 Figures S1–S10 correspond to the four forcing scenarios under the reference parameter
404 set, whereas Figures S11–S16 present results from the three modified parameter sets.

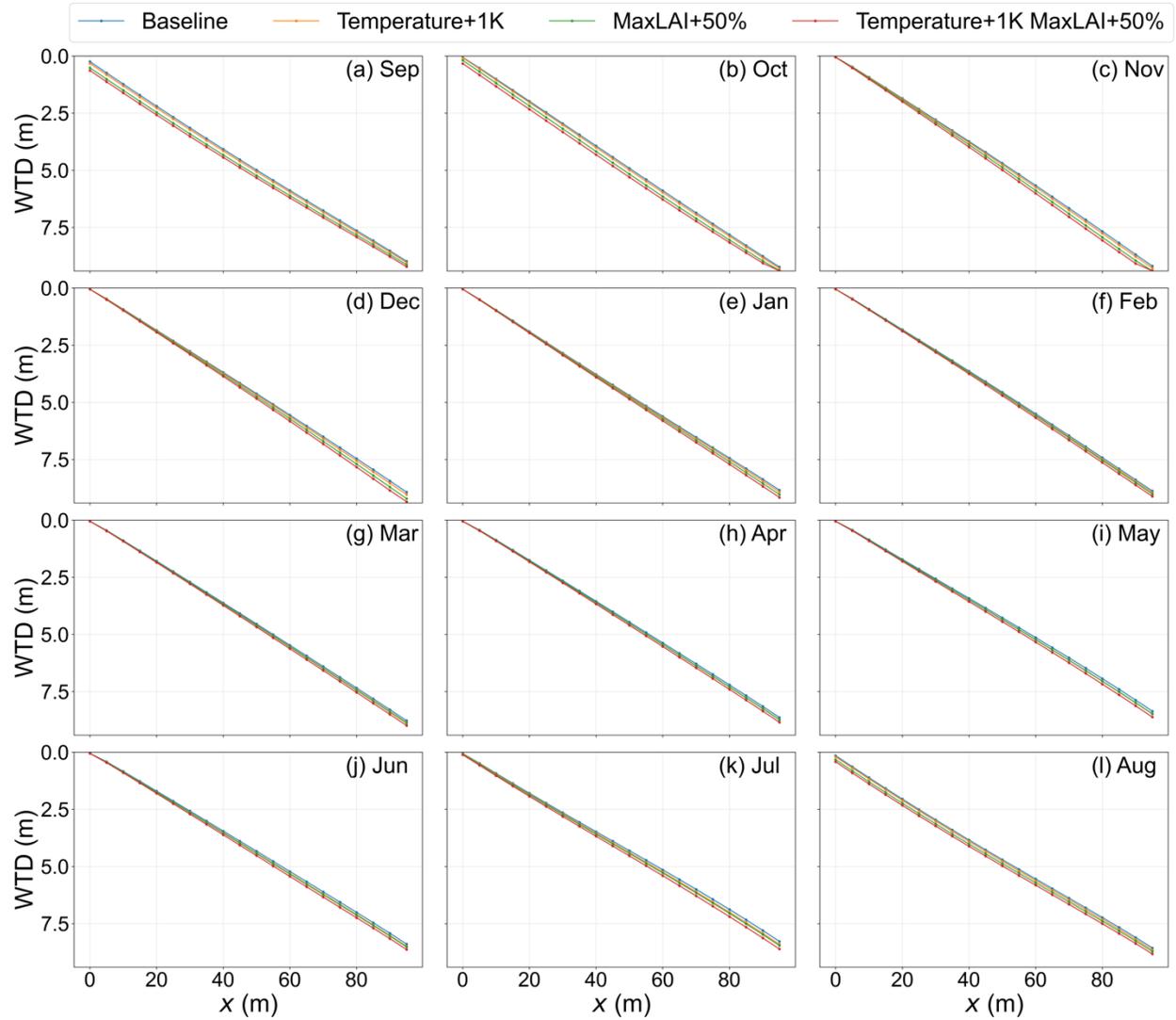
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406

407 **Figure S1. Seasonal temperature (a) and LAI forcing across baseline and warming-greening**
408 **scenarios (b)**

409

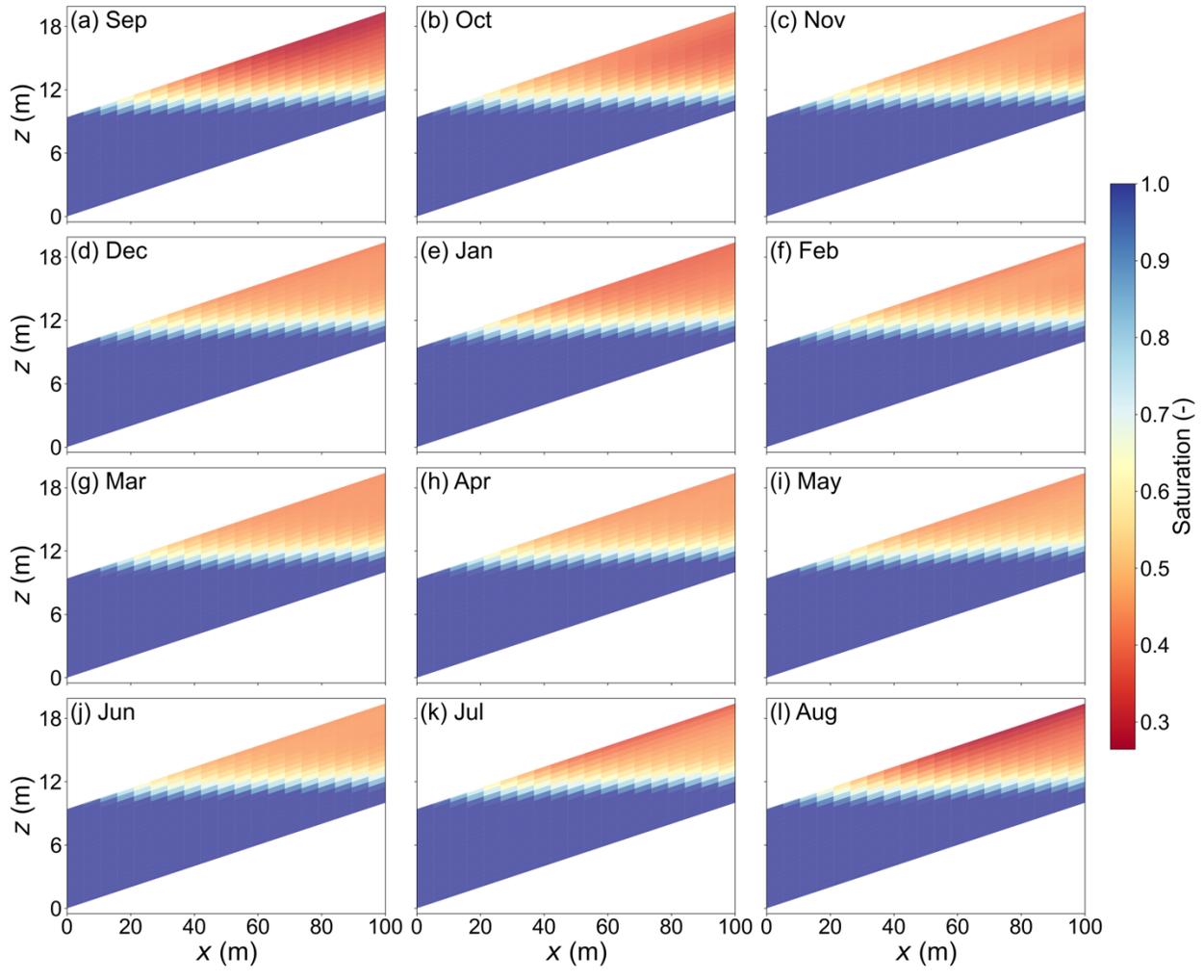


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411 **Figure S2. Seasonal evolution of water table depth along the hillslope under four forcing**
 412 **scenarios**

413

414



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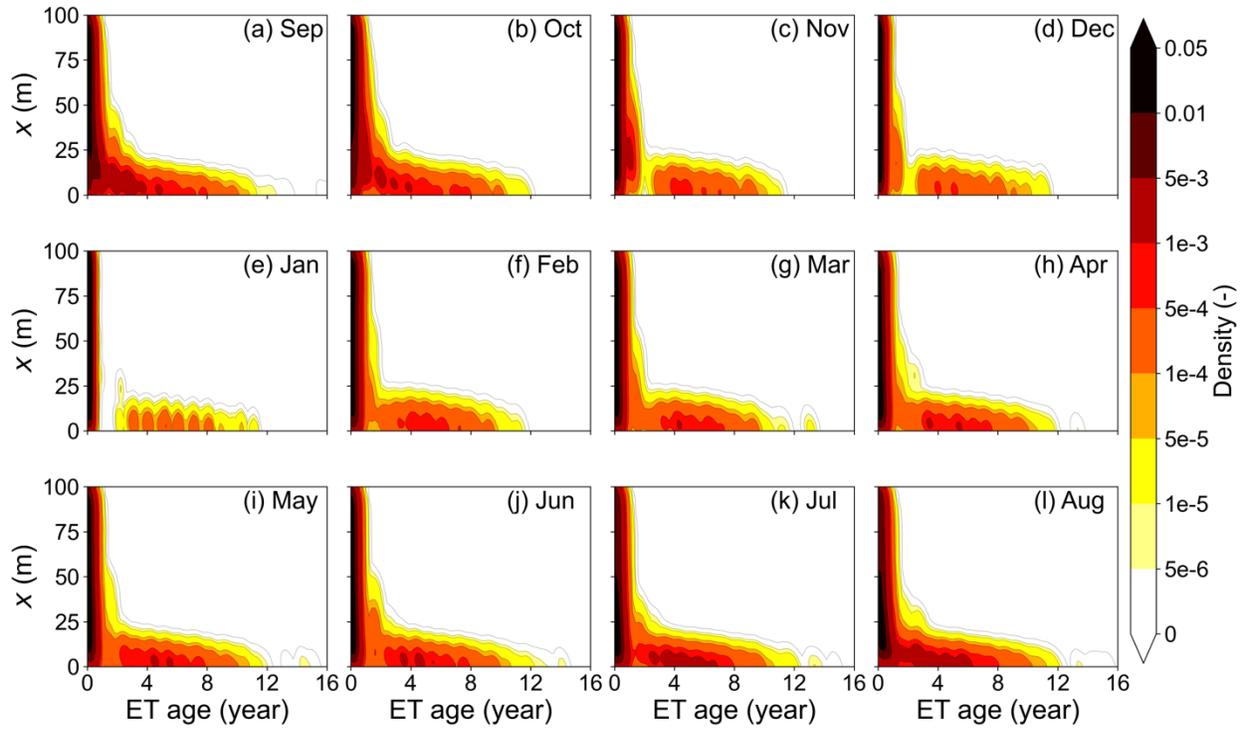
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Figure S3. Seasonal evolution of hillslope saturation profiles

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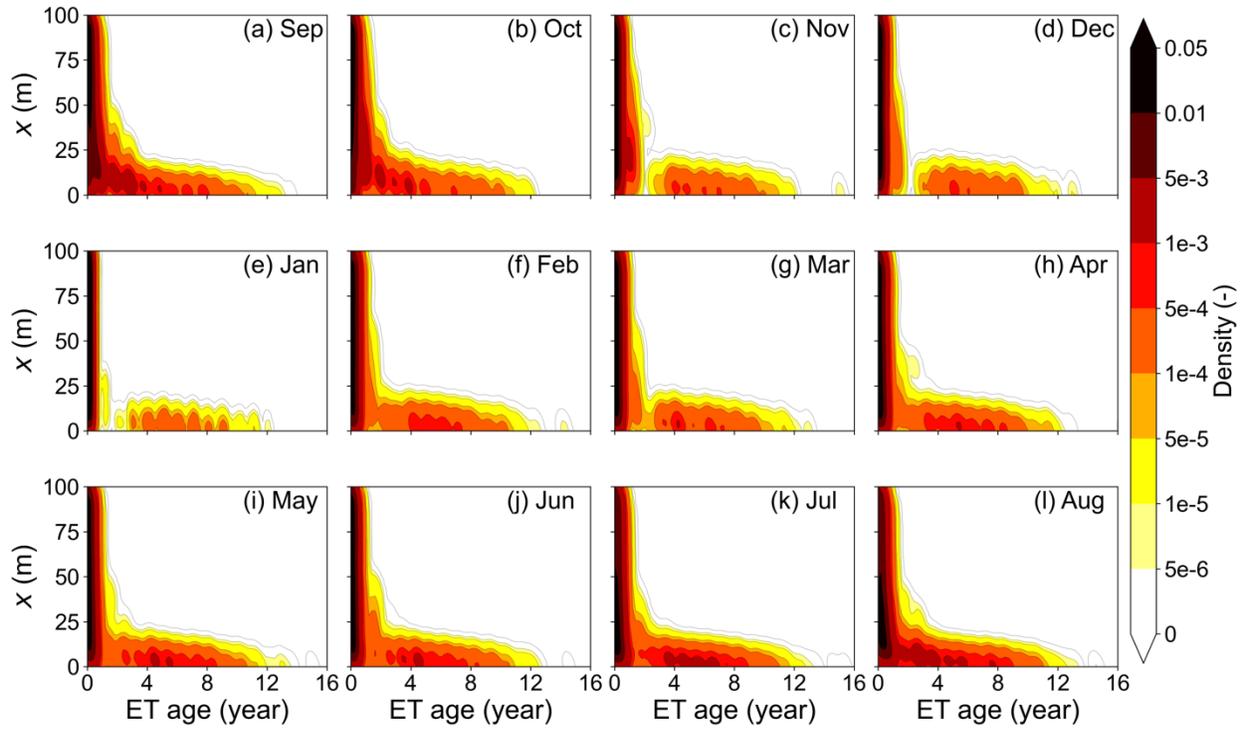


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Figure S4. Seasonal evolution of ET age distributions under warming

422

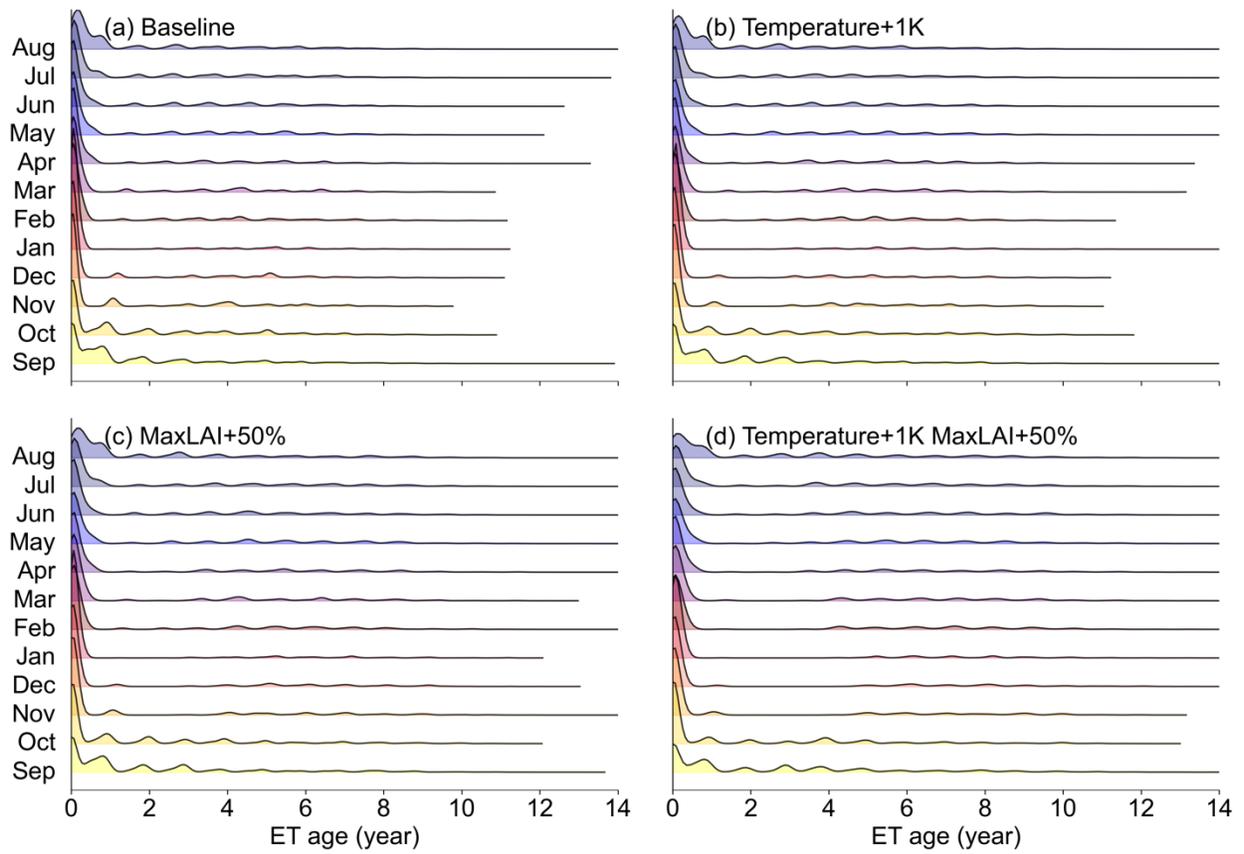


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Figure S5. Seasonal evolution of ET age distributions under greening

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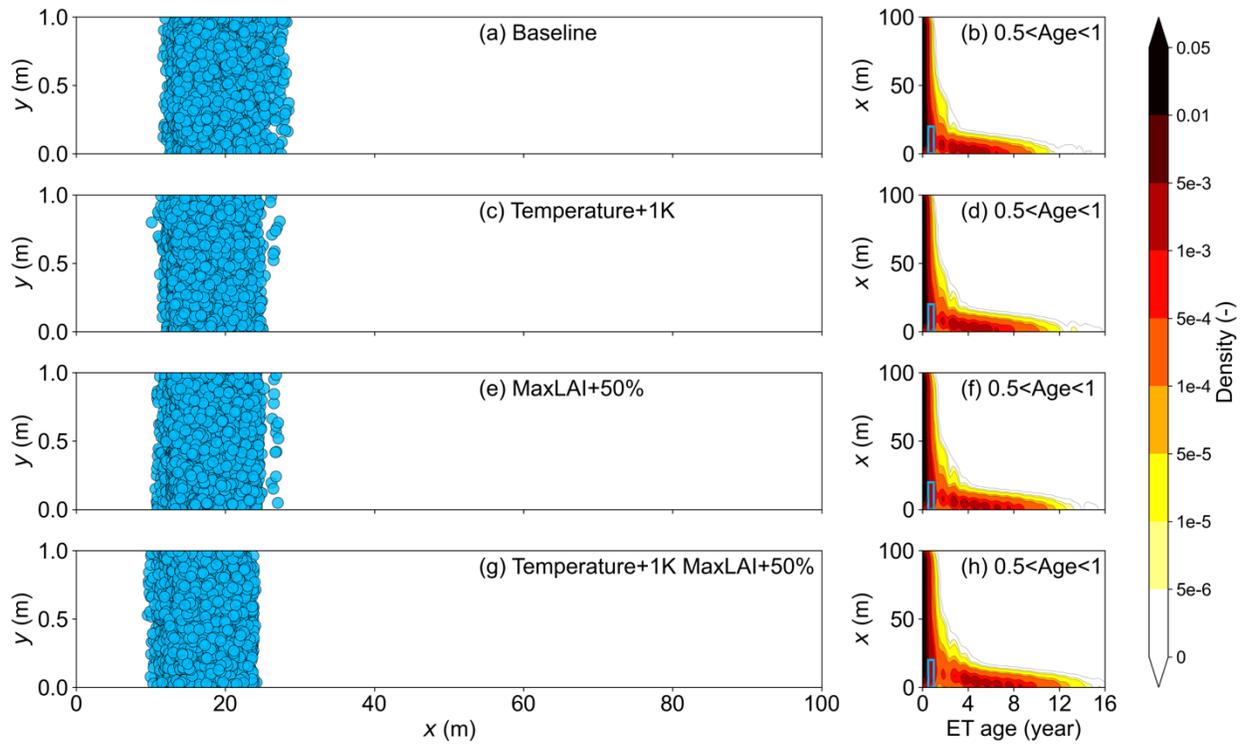
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Figure S6. Seasonal ET age distributions within the lower 20 m of the hillslope

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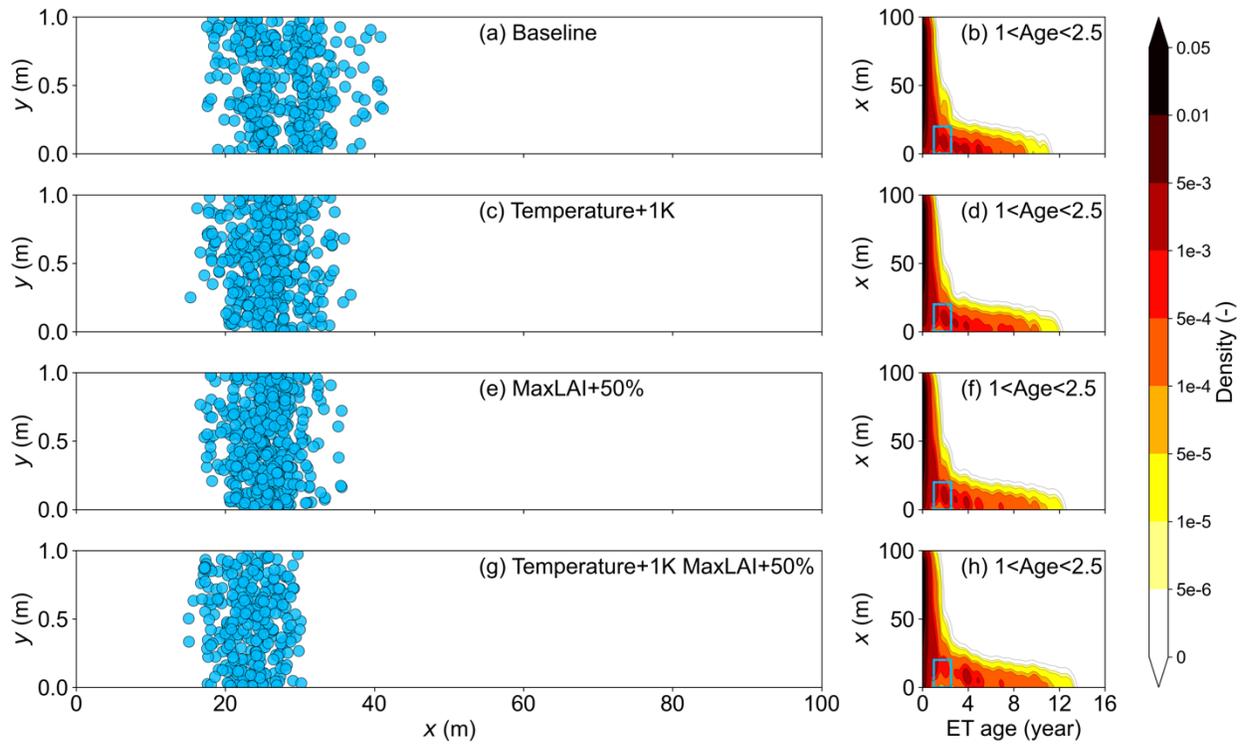
430

431 **Figure S7. Source locations of ET particles (0.5–1 year) at the downslope 20 m section**

432

433

434

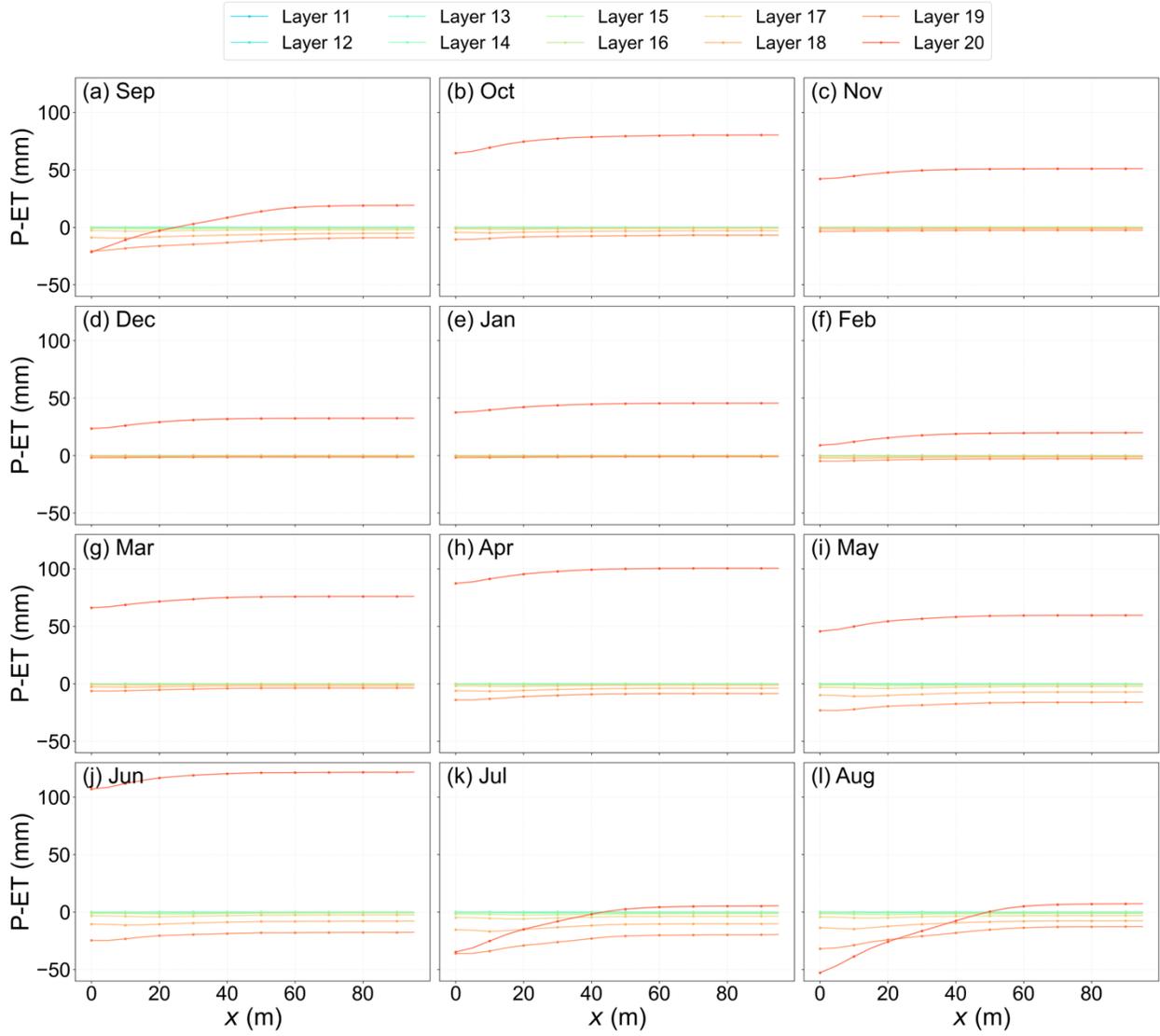


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Figure S8. Source locations of ET particles (1–2.5 years) at the downslope 20 m section

437

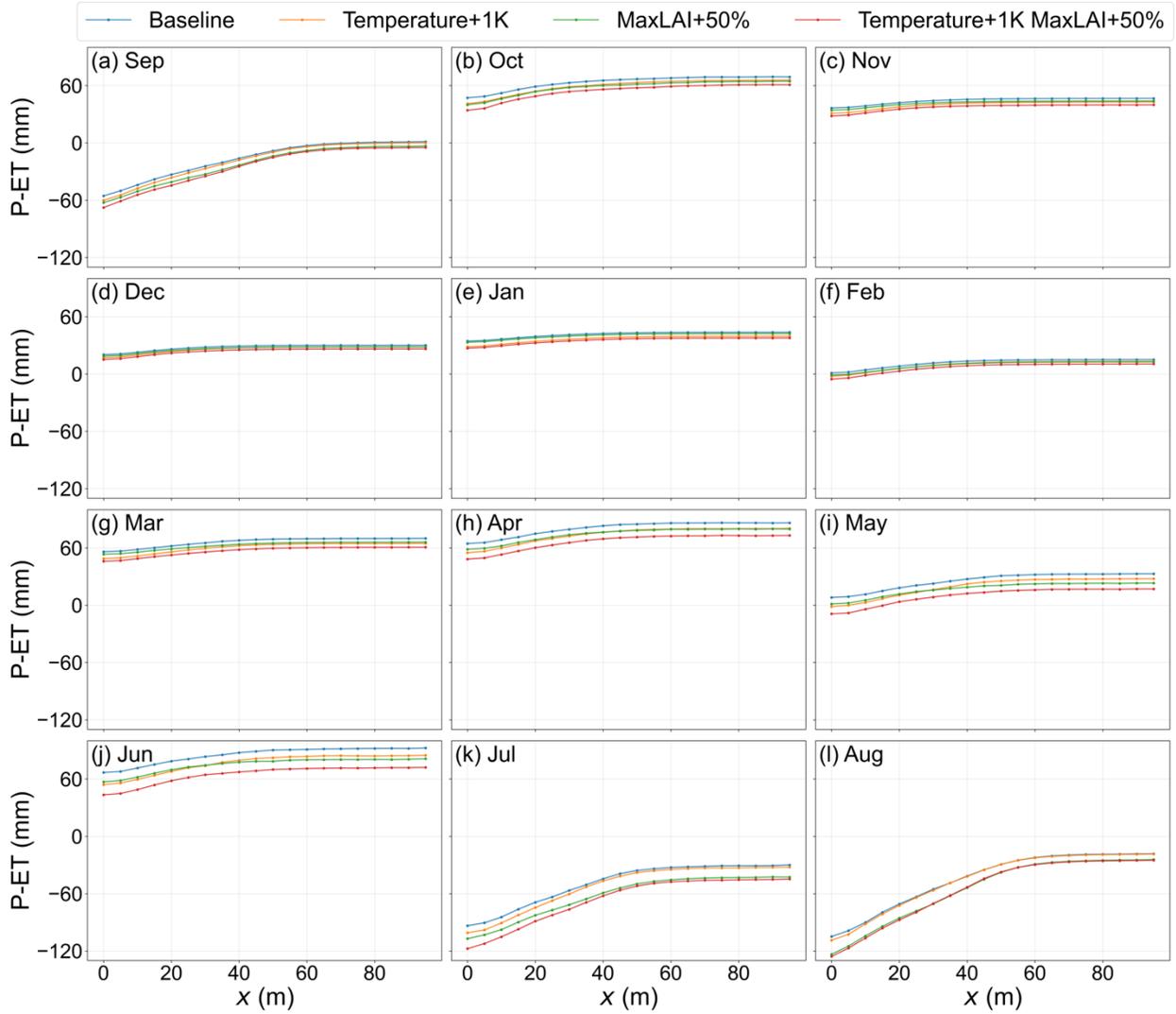


438

439 **Figure S9. Monthly along-slope distribution of P-ET across root-zone layers under baseline**
 440 **forcing**

441

442

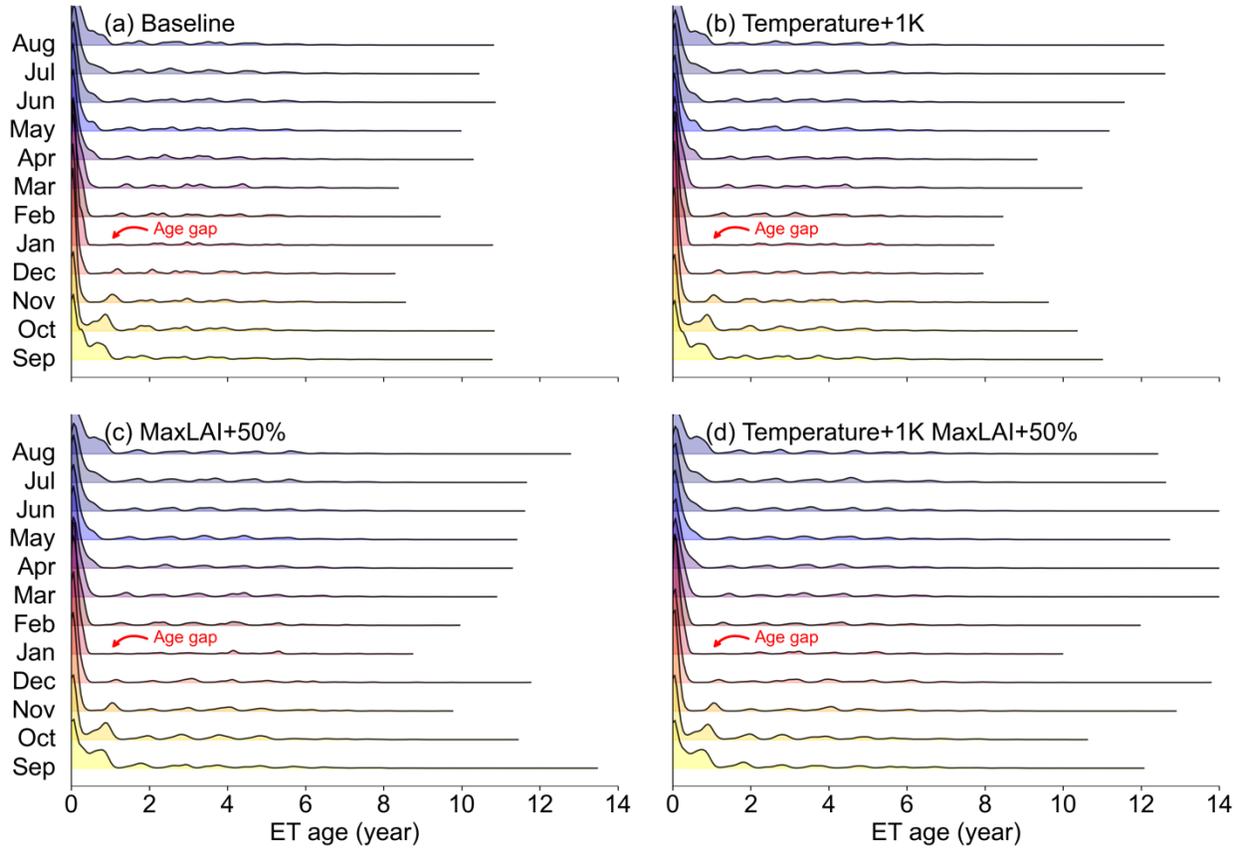


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Figure S10. Root-zone P-ET distribution along the hillslope under four scenarios

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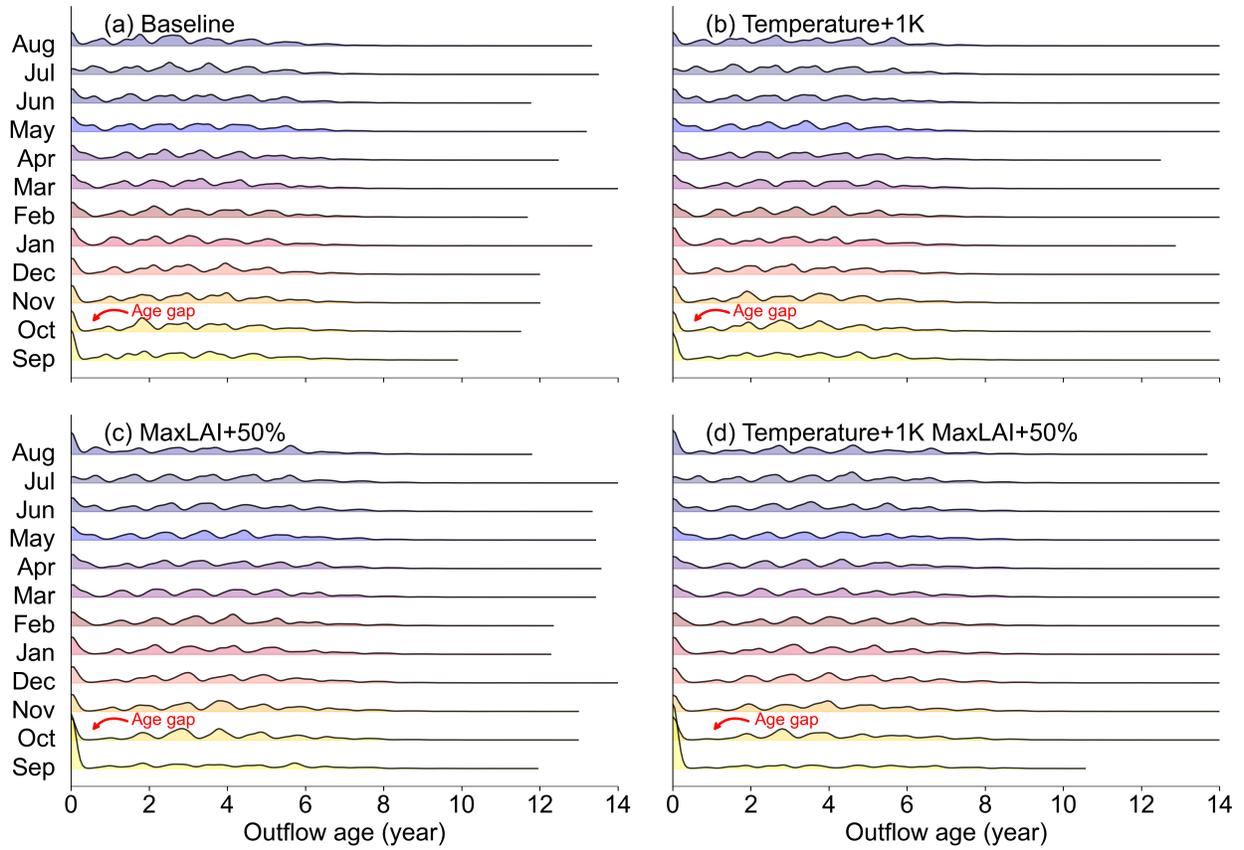
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447 **Figure S11. Seasonal ET age distributions within the lower 20 m of the hillslope under shrub**
 448 **vegetation**

449

450

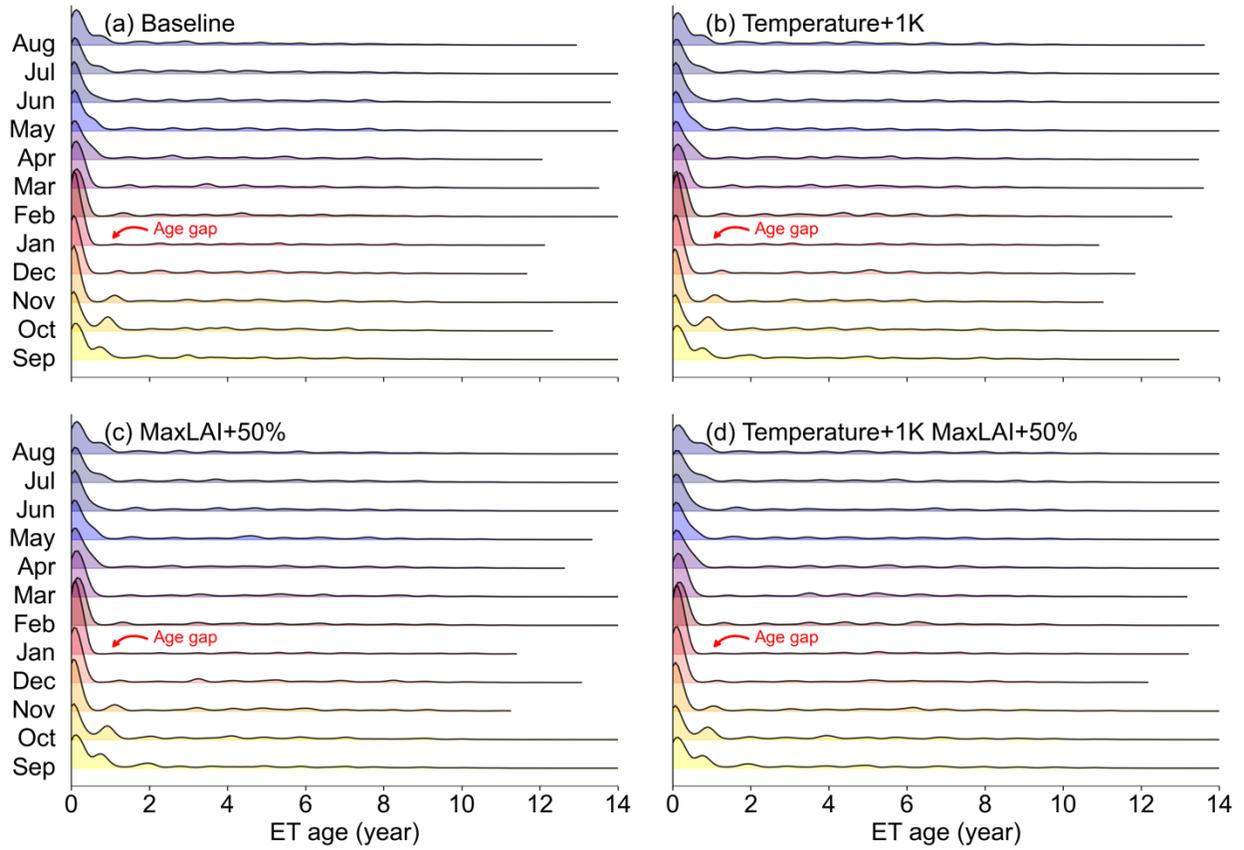
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452

453 **Figure S12. Seasonal outflow age distributions within the lower 20 m of the hillslope under**
 454 **shrubs vegetation**

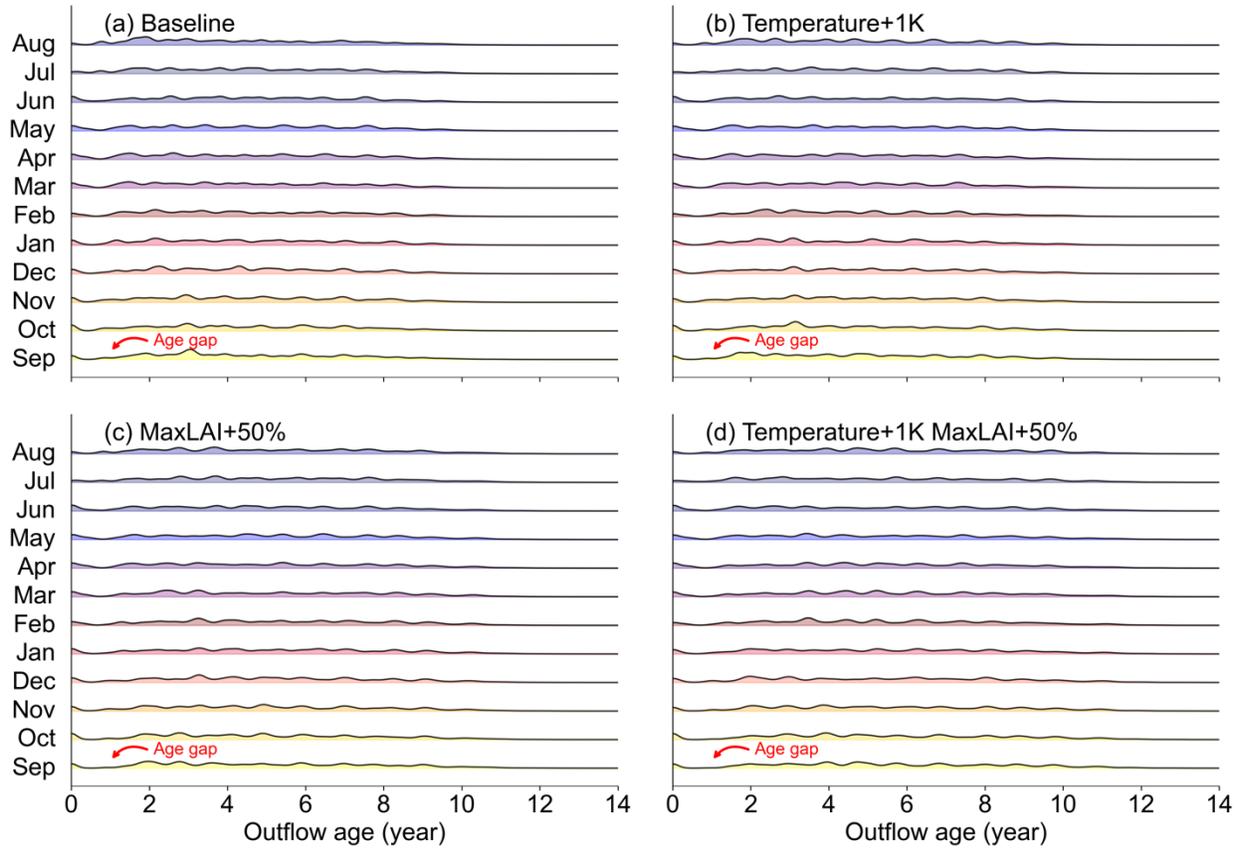
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456

457 **Figure S13. Seasonal ET age distributions within the lower 20 m of the hillslope under**
 458 **modified subsurface hydraulic properties**

459



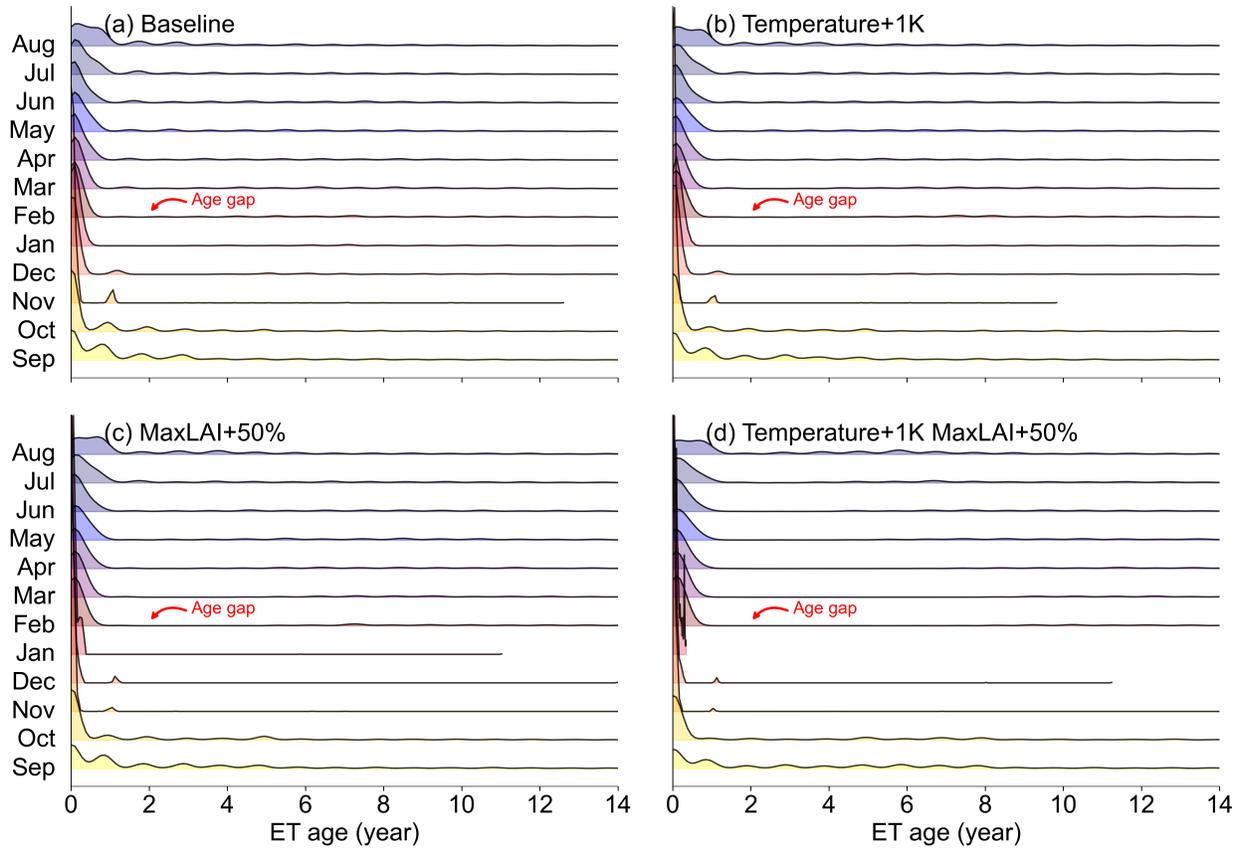
460

461 **Figure S14. Seasonal outflow age distributions within the lower 20 m of the hillslope under**
 462 **modified subsurface hydraulic properties**

463

464

465



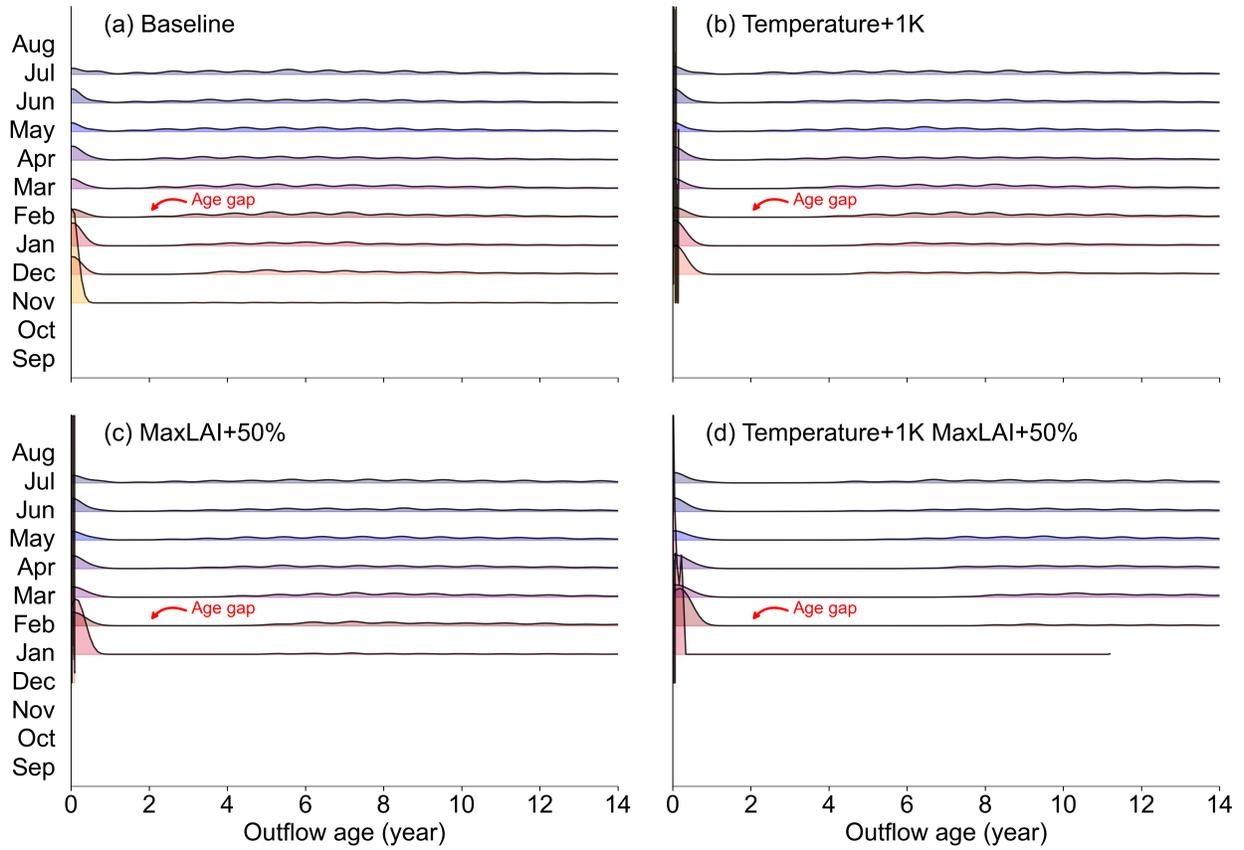
466

467 **Figure S15. Seasonal ET age distributions within the lower 20 m of the hillslope under**
 468 **reduced hillslope gradient**

469

470

471



472

473 **Figure S16. Seasonal outflow age distributions within the lower 20 m of the hillslope under**
 474 **reduced hillslope gradient**

475

476