

## Extending the utility of space-borne snow water equivalent observations over vegetated areas with data assimilation

Justin M. Pflug<sup>1,2</sup>, Melissa L. Wrzesien<sup>1,2</sup>, Sujay V. Kumar<sup>2</sup>, Eunsang Cho<sup>1,2</sup>, Kristi R. Arsenault<sup>3,2</sup>, Paul  
5 R. Houser<sup>4</sup>, Carrie M. Vuyovich<sup>2</sup>

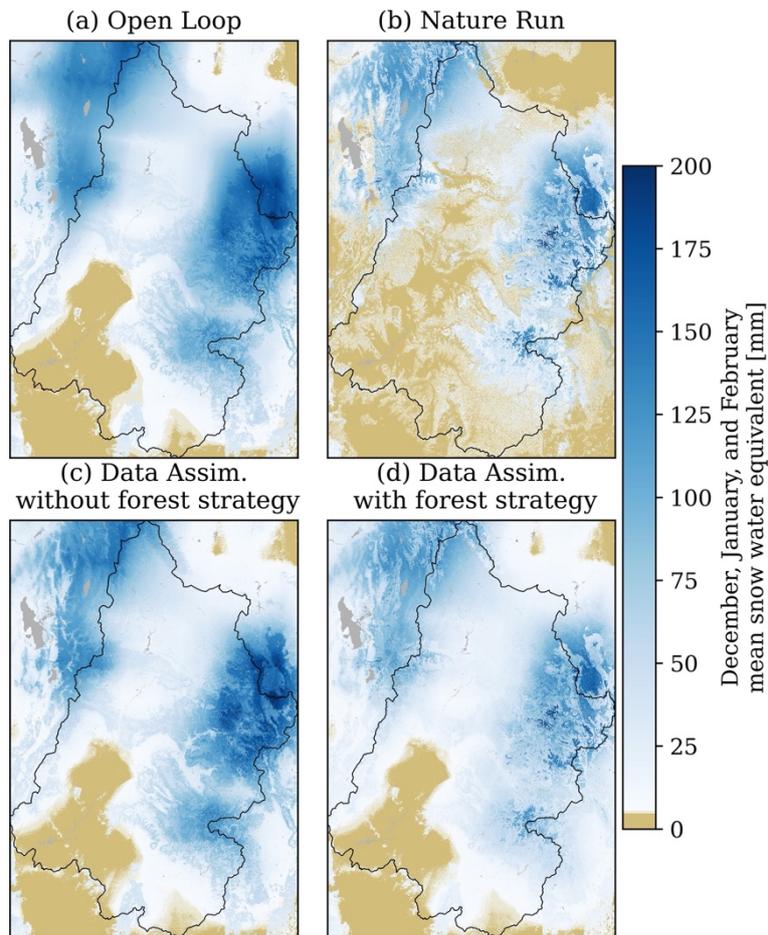
<sup>1</sup>Earth System Science Interdisciplinary Center, University of Maryland, College Park, MD, USA

<sup>2</sup>Hydrological Sciences Laboratory, NASA Goddard Space Flight Center, Greenbelt, MD, USA

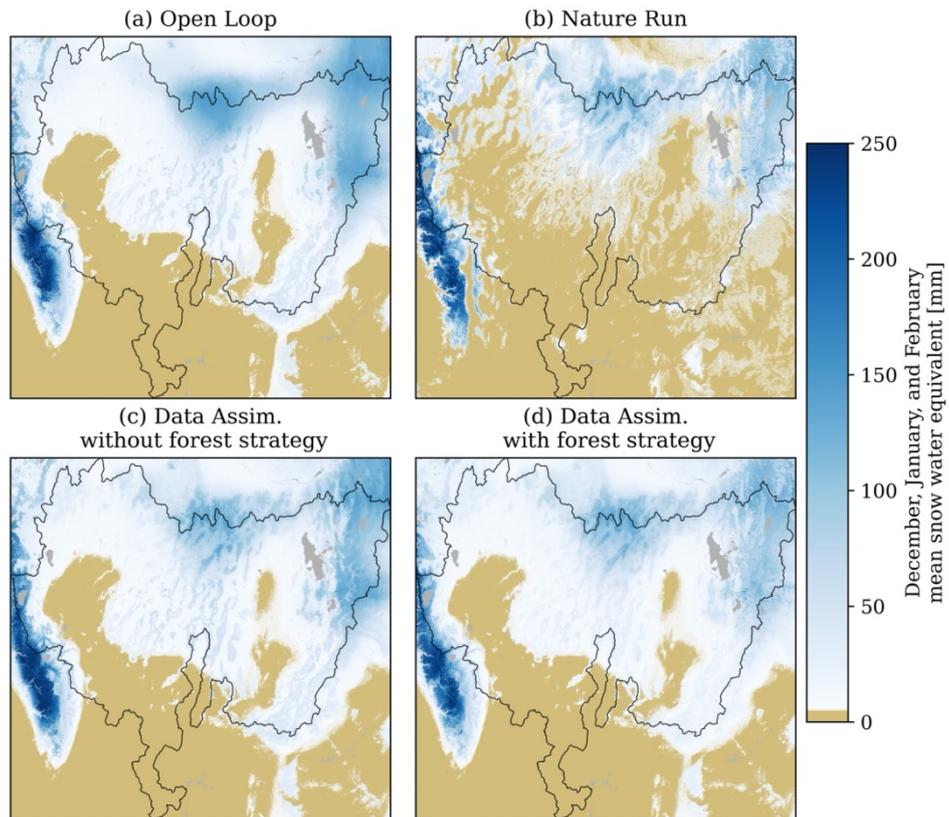
<sup>3</sup>Science Applications International Corporation, McLean, VA, USA

<sup>4</sup>Geography and Geoinformation Science Department, George Mason University, Fairfax, VA, USA

10

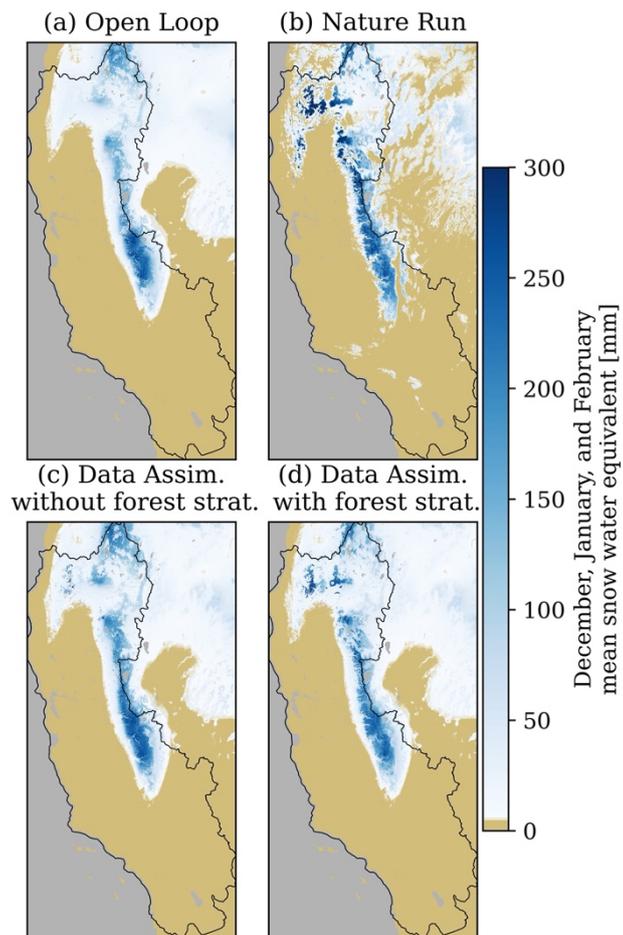


**Figure S1.** Winter (December, January, and February) mean SWE in the Upper Colorado region simulated at 250 m resolution from the open loop (a), nature run (b), and data assimilation simulations, both with (d) and without (c) the forest strategy. Note that the colorbar limits for this figure are different from those used in Fig. 3.



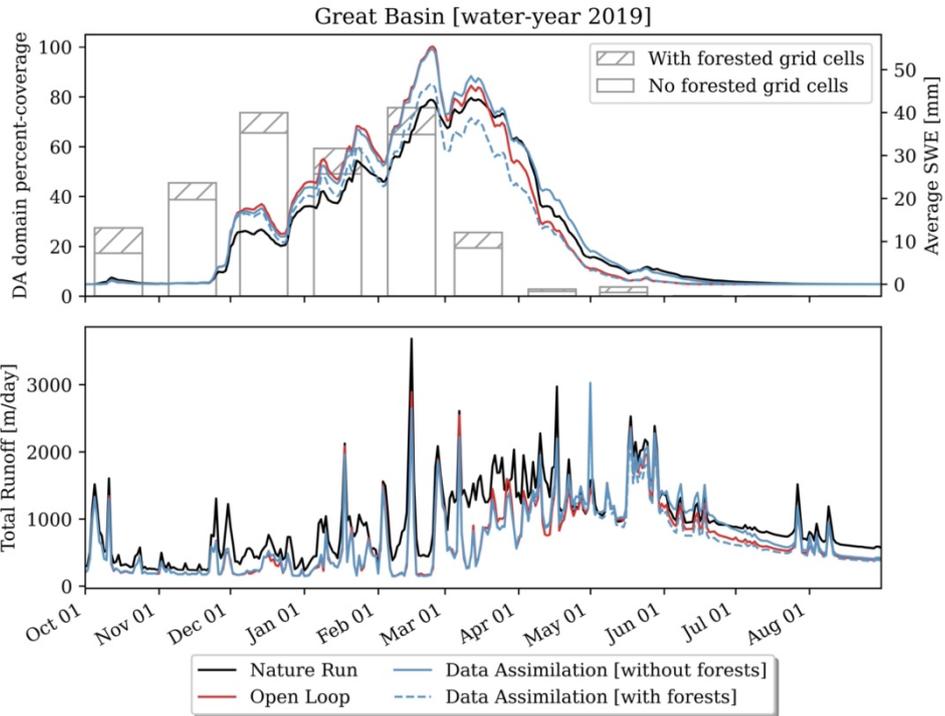
15

**Figure S2.** Winter (December, January, and February) mean SWE in the Great Basin region simulated at 250 m resolution from the open loop (a), nature run (b), and data assimilation simulations, both with (d) and without (c) the forest strategy. Note that the colorbar limits for this figure are different from those used in Fig. 3.



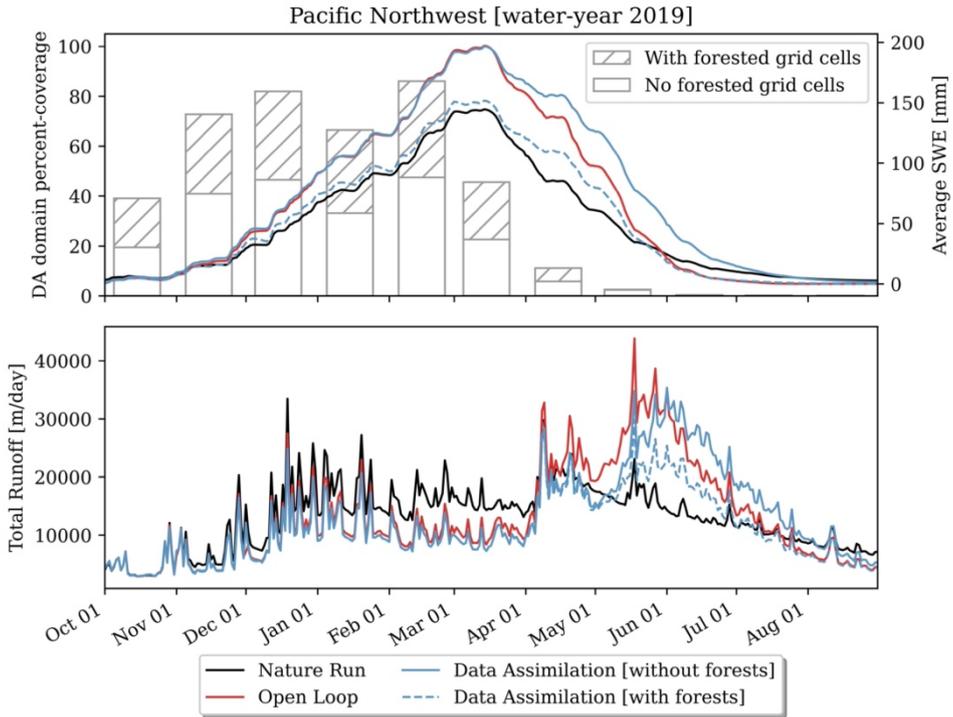
20

**Figure S3.** Winter (December, January, and February) mean SWE in the California region simulated at 250 m resolution from the open loop (a), nature run (b), and data assimilation simulations, both with (d) and without (c) the forest strategy. Note that the colorbar limits for this figure are different from those used in Fig. 3.

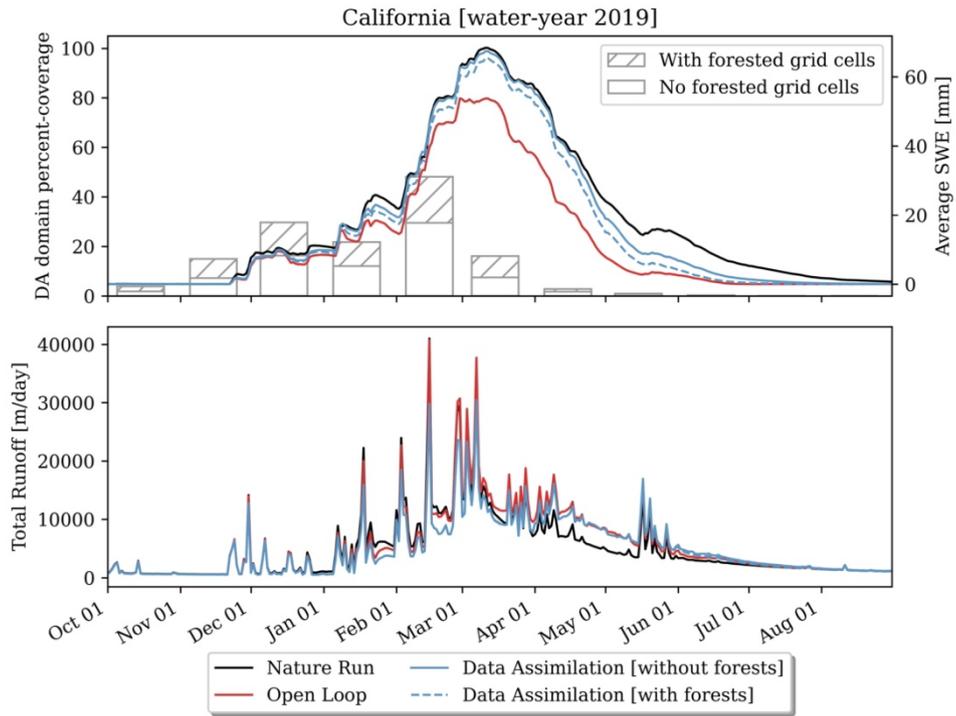


25

**Figure S4.** Plots are the same format as those shown in Fig. 7, but present domain average SWE and domain total runoff over the Great Basin.



30 **Figure S5.** Plots are the same format as those shown in Fig. 7, but present domain average SWE and domain total runoff over the Pacific Northwest basin.



35 **Figure S6.** Plots are the same format as those shown in Fig. 7, but present domain average SWE and domain total runoff over the California basin.