Supplement of

Assessing the glacier projection uncertainties in the Patagonian Andes (40-56°S) from a catchment perspective

Aguayo et al.

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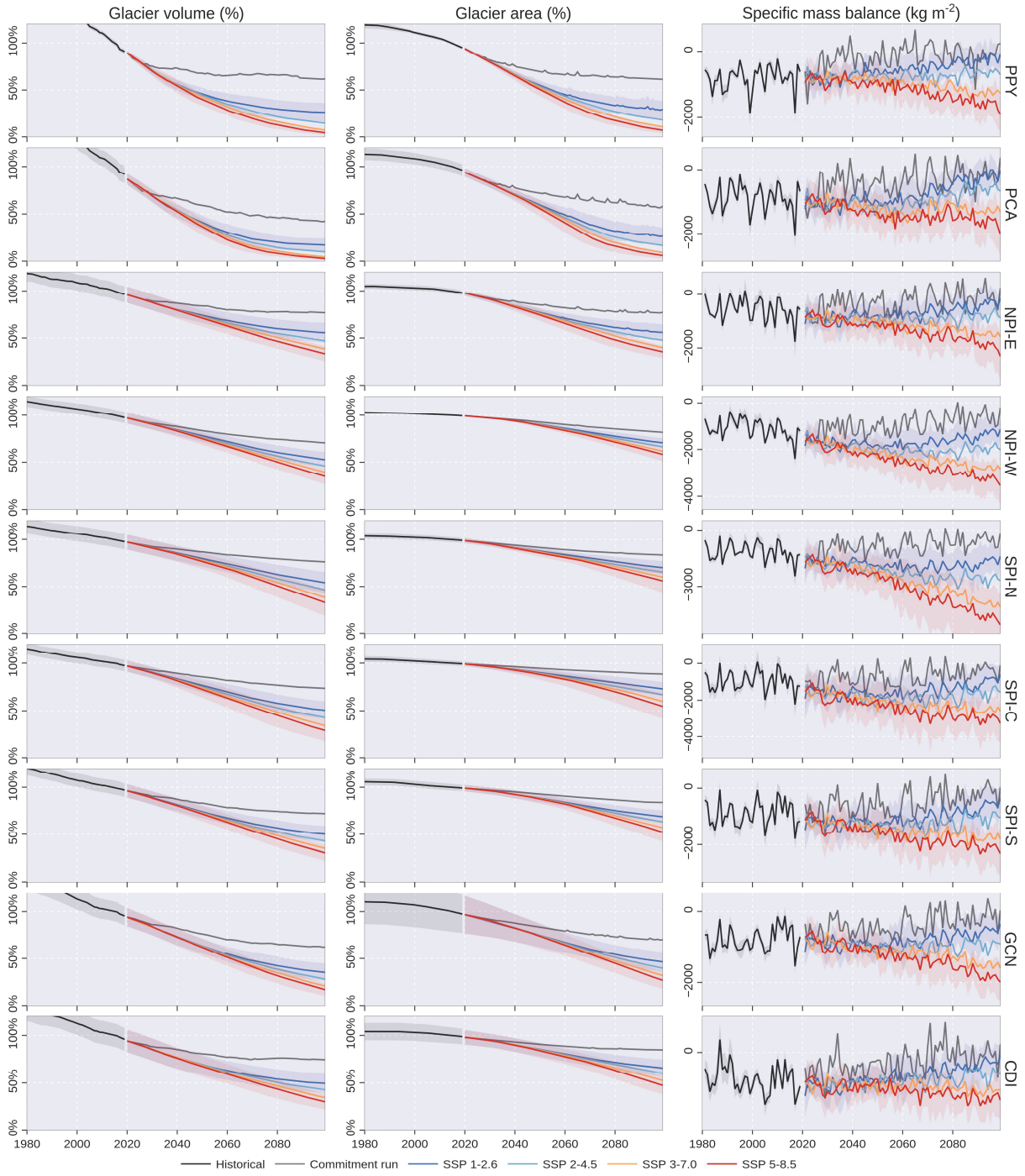
Table S1: Selected General Circulation Models (GCMs) of the CMIP6 projects. All GCMs only consider one output (r1i1p1f1). The equilibrium climate sensitivity (ECS) and the transient climate response (TCR) were obtained from Hausfather et al. (2022).

Model	Longitude	Latitude	ECS	TCR
ACCESS-CM2	1.2	1.8	4.66	1.96
BCC-CSM2-MR	1.1	1.1	3.02	1.55
CMCC-ESM2	1.4	1.4	3.58	1.92
CMCC-CM2-SR5	0.9	0.9	3.56	2.14
FGOALS-f3-L	2.3	2.0	3.00	1.94
GFDL-ESM4	1.0	1.3	2.65	1.63
KACE-1-0-G	2.2	2.2	4.75	2.04
MIROC6	1.4	1.4	2.60	1.55
MPI-ESM1-2-HR	0.9	0.9	2.98	1.64
MRI-ESM2-0	1.1	1.1	3.13	1.67



15 **Figure S1. Glacier volume, area, and specific mass balance for each hydrological zone. The solid line represents the mean for each scenario, while the uncertainty bands are calculated using one standard deviation (shown only for historical, SSP 1-2.6 and SSP 5-8.5 for visualization purposes). Note that each panel of specific mass balance has a different scale.**

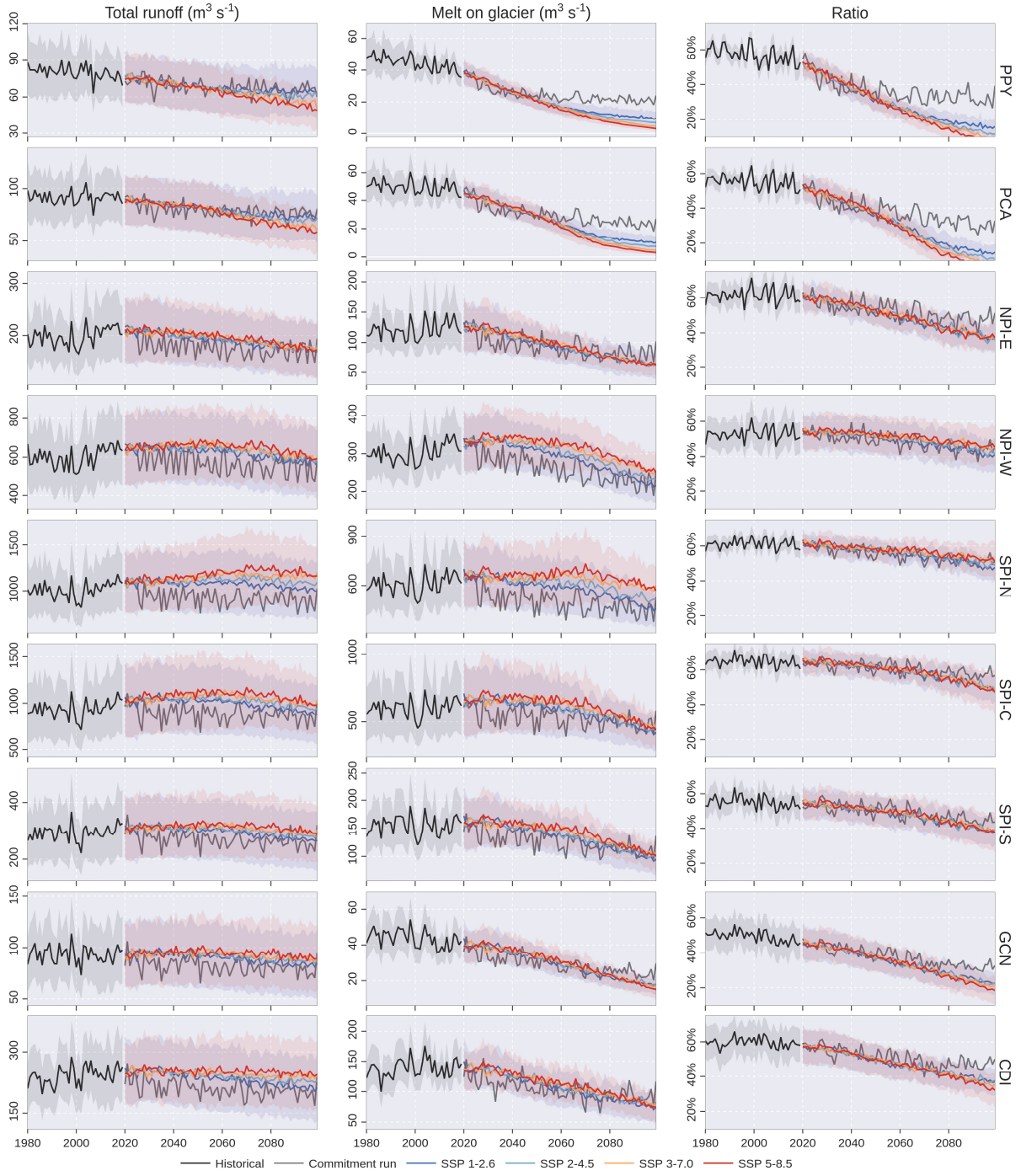


Figure S2. Total runoff, melt on glacier, and the ratio of both variables. The solid line represents the mean for each scenario, while the uncertainty bands are calculated using one standard deviation (shown only for historical, SSP 1-2.6 and SSP 5-8.5 for visualization purposes). Note that each panel has a different scale.

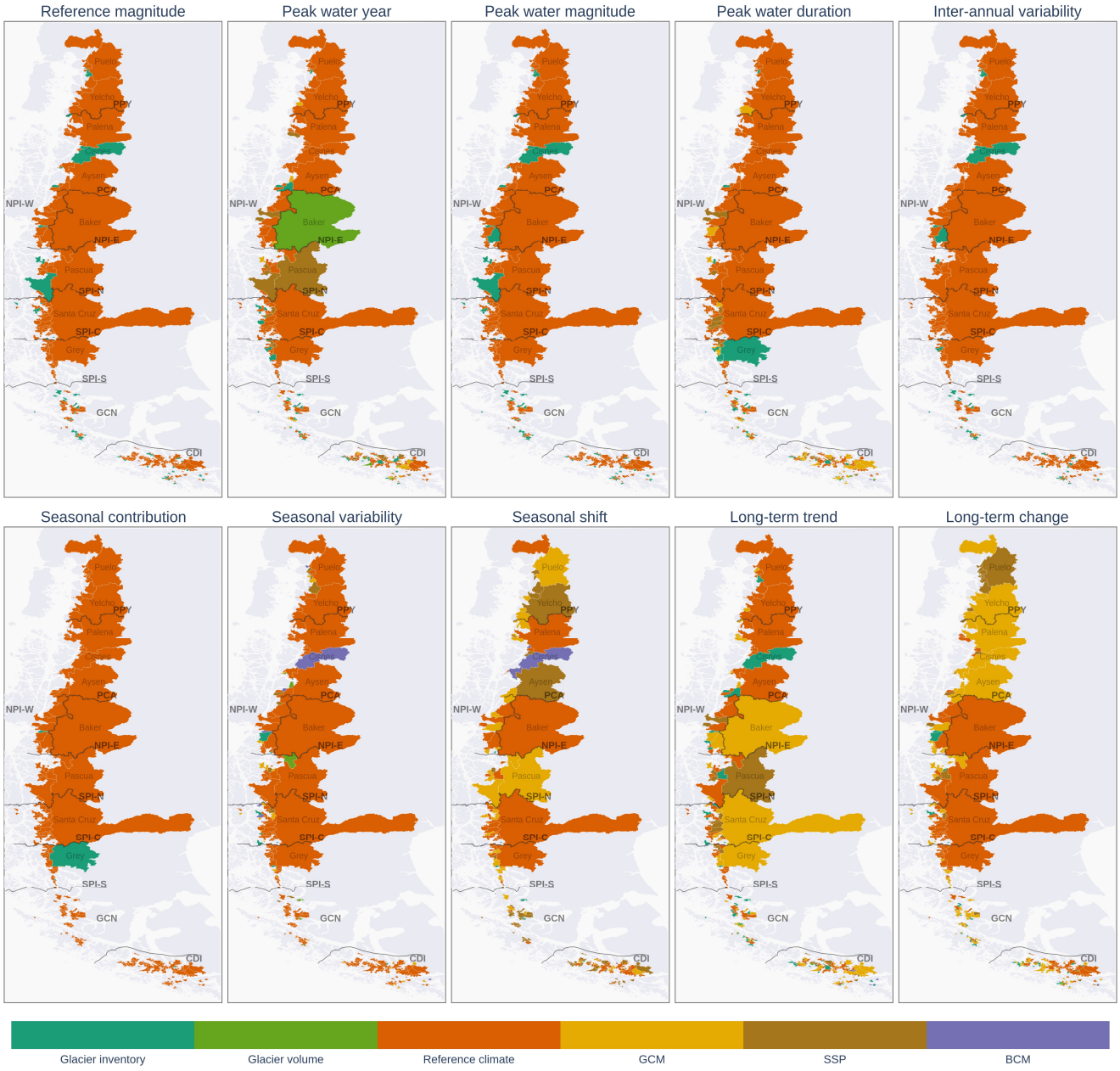


Figure S3. Largest source of uncertainty for each catchment and hydrological signature (Table 2). The metrics were calculated from the variable melt on glacier.

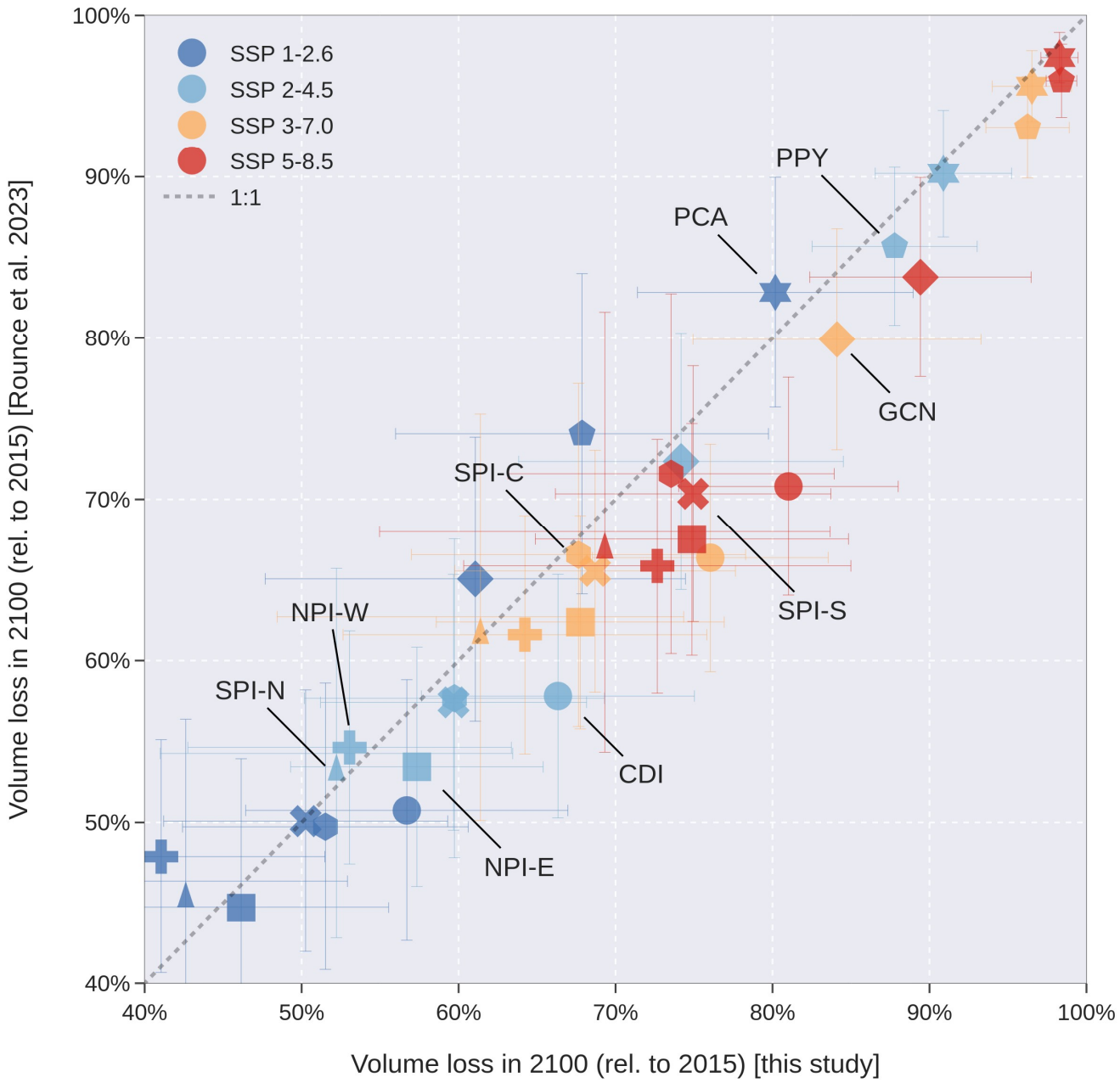


Figure S4. Projected mean mass loss in 2100 (rel. to 2015) compared to Rounce et al. (2023). Each symbol represents a different hydrological zone, and each colour indicates a different emission scenario. The errors bars are calculated using one standard deviation.