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Assessing the performance of global hydrological models for capturing peak river flows in the Amazon basin

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Table S1: Characteristics of the 75 hydrological gauging stations used in the analysis. Station numbers correspond to those in Fig. 1a. Mean observed discharge is taken from observed values.

Station name (number)	Country	River	Drainage area (Km^2)	Lat	Lon	Start	End	Mean Q (m^3s^{-1})
Borja (1)	Peru	Marañón	114232	-4.45	-77.55	01/01/1997	10/01/2015	5122.614
San Regis (2)	Peru	Marañón	356274	-4.45	-73.95	01/01/1997	29/09/2015	17418.04
Requena (3)	Peru	Ucayali	346049	-4.75	-73.65	01/07/1996	29/09/2015	11895.5
Tamshiyacu (4)	Peru	Solimões	721521	-4.05	-73.15	01/01/1997	31/12/2015	30205.58
Bellavista (5)	Peru	Napo	100136	-3.45	-73.05	01/01/1997	29/09/2015	6734.2
Palmeiras Do Javari (6)	Brazil	Javari	16256	-5.15	-72.85	01/01/1997	31/12/2015	611.3425
Foz Do Breu (7)	Brazil	Jurua	10446	-9.45	-72.75	01/01/1997	31/12/2015	178.0443
Santa Maria (8)	Brazil	Curuca	24351	-4.65	-71.45	02/04/1999	22/12/2015	1009.045
Estirao Do Repouso (9)	Brazil	Javari	62105	-4.35	-70.95	02/11/1980	31/12/2015	2563.211
Tabatinga (10)	Brazil	Peru	874000	-4.25	-69.95	01/01/1997	31/12/2015	36514.11
Colocacao Caxias (11)	Brazil	Jutai	10257	-5.55	-69.15	01/01/1997	14/07/2011	476.0549
Envira (12)	Brazil	Tarauaca	48317	-7.45	-70.05	01/01/1997	16/09/2015	1261.317
Manouel Urbano (13)	Brazil	Purus	33693	-8.75	-69.15	01/01/1997	30/12/2009	788.6026
Seringal Sao Jose (14)	Brazil	Iaco	10471	-9.75	-68.85	01/01/1997	06/12/2012	232.0125
Rurrenabaque (15)	Bolivia	Beni	70000	-14.55	-67.55	01/01/1997	31/12/2015	2189.476

Station name (number)	Country	River	Drainage area (Km^2)	Lat	Lon	Start	End	Mean Q (m^3s^{-1})
Pedras Negras (16)	Bolivia	Guapore	110000	-12.85	-62.95	01/01/1997	31/07/2014	852.545
Guajara-Mirim (17)	Brazil	Mamore	609000	-10.75	-65.35	01/01/1997	29/06/2014	7810.131
Abuna (18)	Brazil	Madeira	921000	-9.75	-65.35	01/01/1997	29/06/2014	18152.22
Floriano Peixoto (19)	Brazil	Acre	33469	-9.05	-67.35	01/01/1997	31/12/2015	692.1766
Valparaiso (20)	Brazil	Purus	103285	-8.65	-67.35	01/01/1997	31/12/2015	13832.18
Seringal Fortaleza (21)	Brazil	Purus	153016	-7.75	-66.95	01/01/1997	31/12/2015	4003.07
Fazenda Borangaba (22)	Brazil	Pauini	23365	-7.55	-67.55	04/01/1997	31/12/2015	799.6944
Santos Dumont (23)	Brazil	Jurua	142646	-6.55	-68.35	01/01/1997	31/12/2015	4304.748
Barreira Alta (24)	Brazil	Jutai	35880	-4.25	-67.95	01/01/1997	14/04/2009	1641.192
Sao Paulo De Olivenca (25)	Brazil	Amazon	990781	-3.45	-68.75	01/01/1997	30/12/2011	47554.85
Santo Antonio Do Ica (26)	Brazil	Amazon	1134540	-3.15	-67.95	01/01/1997	26/02/2014	56355.19
Porto Seguro (27)	Brazil	Jutai	64400	-3.35	-67.55	01/01/2008	31/12/2015	2548.144
Estirao Da Santa Cruz (28)	Brazil	Tefe	13708	-4.35	-65.25	01/01/1997	31/12/2015	571.2913
Bacaba (29)	Brazil	Tapaua	38270	-6.35	-64.95	01/01/1997	31/12/2015	1668.033
Canutama (30)	Brazil	Purus	230012	-6.55	-64.45	01/01/1997	31/12/2015	6478.216
Labrea (31)	Brazil	Purus	226351	-7.25	-64.75	01/01/1997	31/12/2015	5639.943
Porto Velho (32)	Brazil	Madeira	976000	-8.75	-63.95	01/01/1997	31/12/2015	18485.47

Station name (number)	Country	River	Drainage area (Km^2)	Lat	Lon	Start	End	Mean Q (m^3s^{-1})
Santa Isabel (33)	Brazil	Candeias	12600	-8.75	-63.75	01/01/1997	29/06/2014	330.8341
Sitio Bela Vista (34)	Brazil	Ji-Parana	16100	-11.65	-61.15	01/01/1997	30/07/2014	381.4905
Fontanilhas (35)	Brazil	Juruena	55900	-11.45	-58.35	01/01/1997	29/06/2014	1359.172
Porto Dos Gauchos (36)	Brazil	Arinos	37100	-11.55	-57.45	01/01/1997	30/05/2014	688.1856
Porto Roncador (37)	Brazil	Teles Pires	10800	-13.55	-55.35	01/01/1997	30/05/2014	249.8181
Cachoeirao (38)	Brazil	Teles Pires/Sao Manuel	34600	-11.55	-55.65	01/01/1997	30/07/2014	858.4991
Humboldt (39)	Brazil	Aripuana	15200	-10.25	-59.45	01/01/1997	29/06/2014	319.7378
Leontino (40)	Brazil	Guariba	16300	-7.85	-60.55	01/01/1997	30/12/2011	375.8513
Boca Do Guariba (41)	Brazil	Aripuana	70100	-7.75	-60.55	01/01/1997	30/12/2011	1403.749
Fazenda Boa Lembranca (42)	Brazil	Roosevelt	59400	-7.65	-60.75	01/01/1997	30/08/2011	1527.78
Nova Esperanca (43)	Brazil	Marmelos	26200	-6.55	-61.75	01/01/2009	27/02/2014	973.4268
Manacapuru (44)	Brazil	Amazon	2147736	-3.35	-60.65	01/01/1997	31/12/2015	105720
Jatuarana (45)	Brazil	Amazon	2854286	-3.05	-59.65	01/01/1997	30/01/2015	126994.8
Barra Do Sao Manuel (46)	Brazil	Tapajos	333000	-7.35	-58.15	01/01/1997	30/03/2014	7736.416
Tres Marias (47)	Brazil	Teles Pires	138000	-7.65	-57.95	01/01/1997	30/03/2014	3663.747
Santa Rosa (48)	Brazil	Teles Pires	131000	-8.85	-57.45	03/06/2005	30/03/2013	3646.457
Indeco (49)	Brazil	Teles Pires	52200	-10.15	-55.55	01/01/1997	09/12/2013	1193.669

Station name (number)	Country	River	Drainage area (Km^2)	Lat	Lon	Start	End	Mean Q (m^3s^{-1})
Cajueiro (50)	Brazil	Curua	35213	-5.85	-54.55	01/01/1997	08/05/2011	784.37
Itaituba (51)	Brazil	Tapajos	458000	-4.25	-55.95	01/01/1997	31/12/2015	11376.96
Pedra Do O (52)	Brazil	Iriri	123827	-4.45	-53.95	01/01/1997	30/07/2012	2413.806
Altamira (53)	Brazil	Xingu	446203	-3.35	-52.15	01/01/1997	29/04/2014	7736.717
Sao Francisco (54)	Brazil	Jari	51343	-0.55	-52.55	01/01/1997	21/03/2014	1218.271
Arapari (55)	Brazil	Maicuru	17072	-1.85	-54.45	01/01/1997	27/02/2014	127.2518
Boca Do Inferno (56)	Brazil	Curua	20803	-1.45	-54.95	01/01/1997	29/09/2013	192.2409
Óbidos (57)	Brazil	Amazon	4680000	-1.95	-55.55	01/01/1997	31/12/2015	178193.9
Garganta (58)	Brazil	Trombetas	37910	-0.75	-56.85	01/01/1997	29/04/2014	1493.961
Aldeia Wai-Wai (59)	Brazil	Mapuera/Urucurina	21400	-0.65	-58.05	01/01/1997	27/02/2013	664.3051
Cachoeira Morena (60)	Brazil	Uatuma	20394	-2.15	-59.35	02/01/2005	30/05/2014	673.3568
Base Alalau (61)	Brazil	Alalau	7080	-0.65	-61.35	01/01/1997	30/05/2014	245.8977
Caracarai (62)	Brazil	Branco	124980	1.85	-61.05	01/01/1997	31/12/2015	3170.343
Fe E Esperanca (63)	Brazil	Mucajai	13658	2.85	-61.45	01/01/1997	29/04/2014	348.695
Fazenda Cajupiranga (64)	Brazil	Uraricoera	35727	3.45	-61.15	01/01/1997	30/03/2014	635.5902
Uaicas (65)	Brazil	Uraricoera	16065	3.45	-63.15	01/01/1997	27/02/2014	602.7468

Station name (number)	Country	River	Drainage area (Km^2)	Lat	Lon	Start	End	Mean Q (m^3s^{-1})
Posto Ajuricaba (66)	Brazil	Demeni	14756	0.95	-62.65	01/01/1997	29/04/2014	550.2058
Serrinha (67)	Brazil	Negro	279945	-0.45	-64.95	01/01/1997	31/12/2015	16845.52
Acanaui (68)	Brazil	Caqueta/Japura	242259	-1.85	-66.65	01/01/1997	31/12/2015	14399.93
Jusante Da Cachoeira Do Caju (69)	Brazil	Curicuriari	10228	-0.25	-67.05	01/01/1997	30/03/2014	937.4047
Sao Felipe (70)	Brazil	Negro	110862	0.45	-67.35	01/01/1997	29/04/2014	8314.548
Cucui (71)	Brazil	Negro	61781	1.35	-66.85	01/01/1997	29/04/2014	5113.101
Missao Icana (72)	Brazil	Icana	22282	1.15	-67.65	01/01/1997	30/03/2014	1902.729
Taraqua (73)	Brazil	Vaupes	44732	0.15	-68.55	01/01/1997	29/04/2014	2665.905
Uaracu (74)	Brazil	Vaupes	40506	0.45	-69.15	01/01/1997	29/11/2011	2415.104
Vila Bittencourt (75)	Colombia	Caqueta/Japura	197136	-1.35	-69.45	01/01/1997	31/12/2015	2188.119

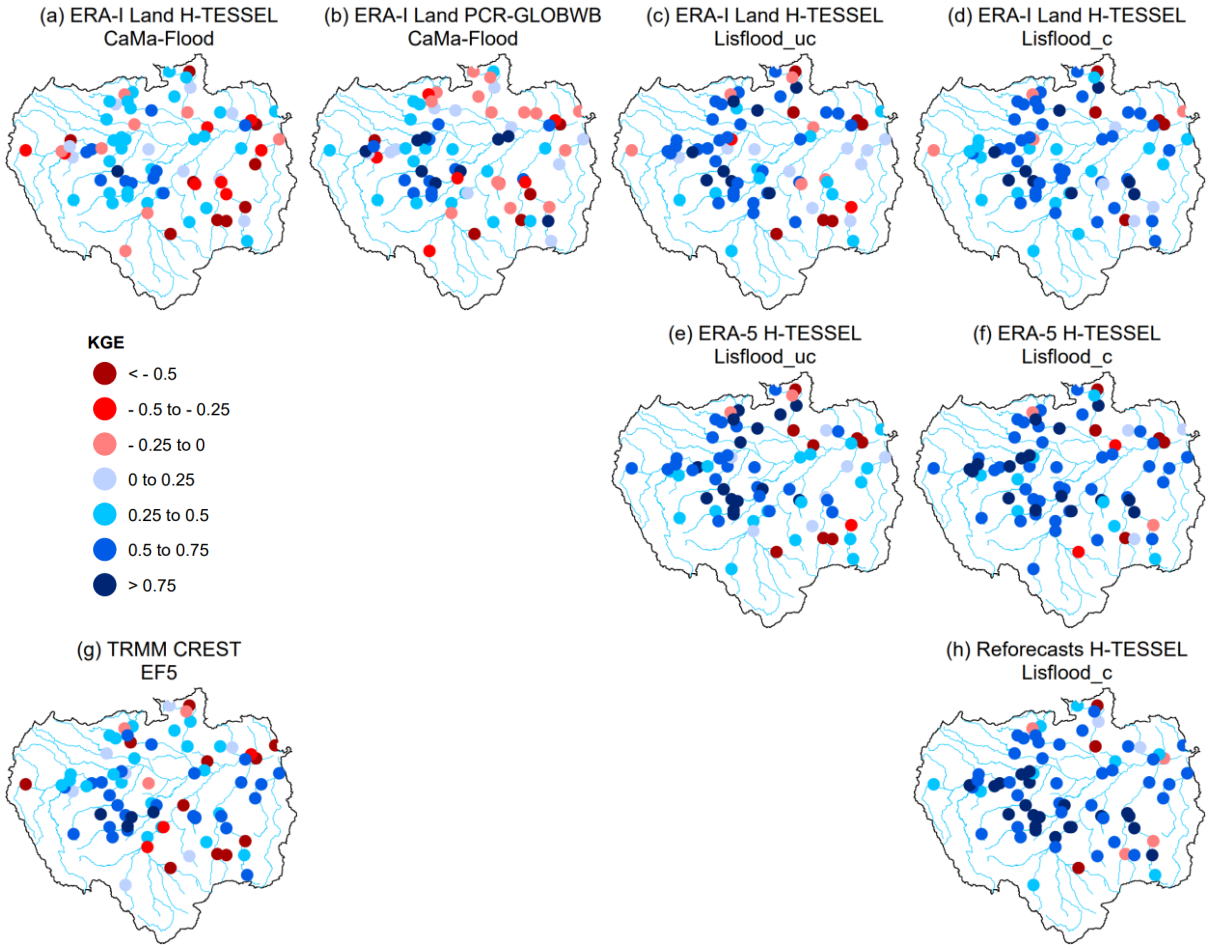

Figure S1: Full KGE scores at 75 hydrological gauging stations for all simulations (2004-2015). Values greater than 0.75 are considered to indicate good performance (i.e. dark blue circles).

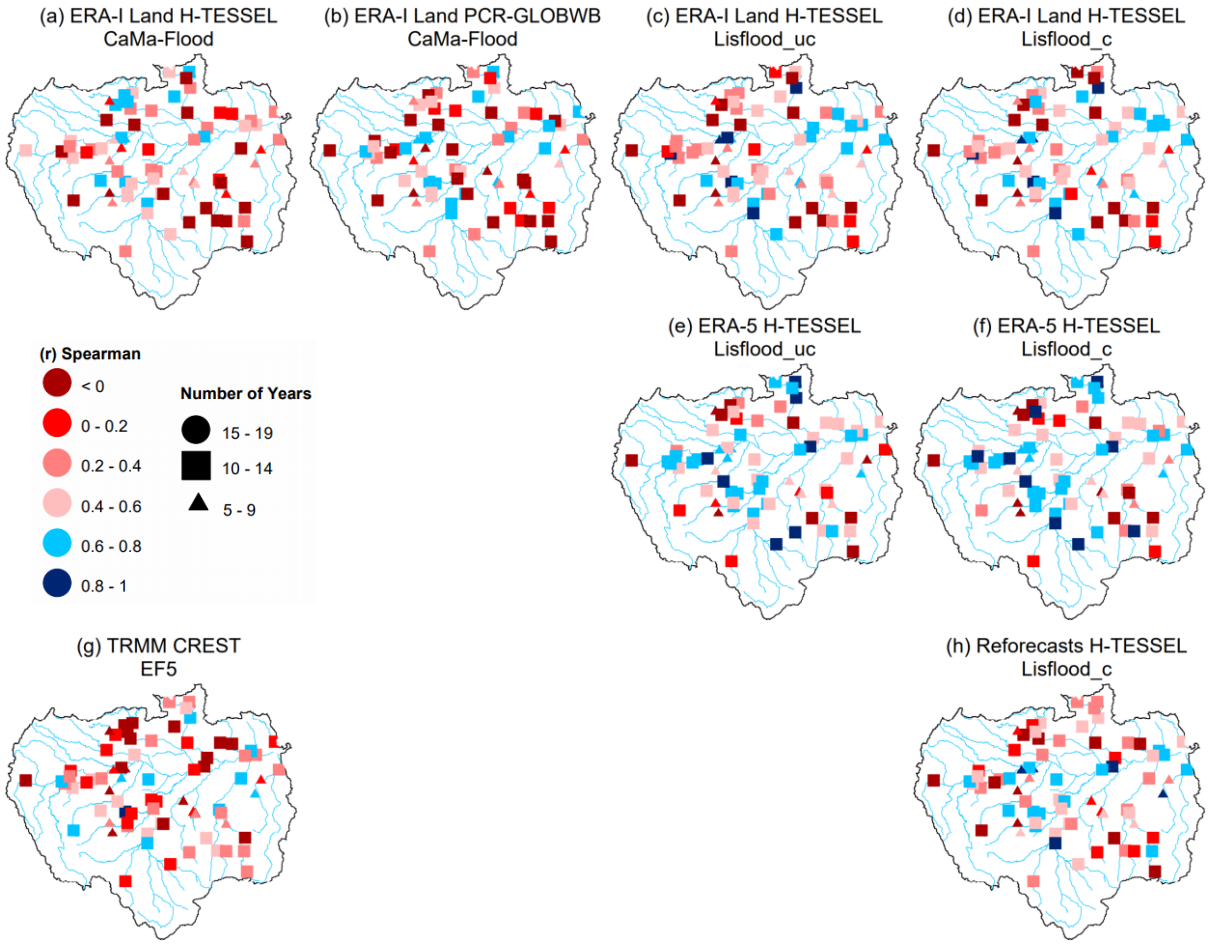

Figure S2: Spearman ranked correlation coefficients for observed against simulated annual maximum discharge at 75 hydrological gauging stations for all simulations (2004-2015). Values exceeding 0.6 are considered skilful (i.e. blue shapes). Number of overlapping years of data between observations and simulations are denoted by different shapes. A triangle represents 5-9 years, a square 10-14 years and a circle 15-19 years of overlapping data.