



Supplement of

Evaluation and interpretation of convolutional long short-term memory networks for regional hydrological modelling

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Table S1. Key information of stream gauge stations used in the study. The station name, station number, latitude, longitude, and whether it is a part of the Reference Hydrometric Basin Network (RHBN).

Station Number	Station Name	Latitude [°N]	Longitude [°W]	RHBN
07EC002	OMINECA RIVER ABOVE OSILINKA RIVER	55.92	124.57	True
07EE007	PARSNIP RIVER ABOVE MISINCHINKA RIVER	55.08	122.91	True
07EE009	CHUCHINKA CREEK NEAR THE MOUTH	54.53	122.61	True
07FB001	PINE RIVER AT EAST PINE	55.72	121.21	True
07FB002	MURRAY RIVER NEAR THE MOUTH	55.55	121.2	True
07FB003	SUKUNKA RIVER NEAR THE MOUTH	55.54	121.63	True
07FB004	DICKEBUSCH CREEK NEAR THE MOUTH	55.54	121.6	True
07FB006	MURRAY RIVER ABOVE WOLVERINE RIVER	55.06	121.01	True
07FD001	KISKATINAW RIVER NEAR FARMINGTON	55.96	120.56	True
08DB001	NASS RIVER ABOVE SHUMAL CREEK	55.22	129.14	True
08EB004	KISPIOX RIVER NEAR HAZELTON	55.43	127.72	True
08EC013	BABINE RIVER AT OUTLET OF NILKITKWA LAKE	55.43	126.7	False
08ED001	NANIKA RIVER AT OUTLET OF KIDPRICE LAKE	53.93	127.45	True
08ED002	MORICE RIVER NEAR HOUSTON	54.12	127.43	True
08EE004	BULKLEY RIVER AT QUICK	54.62	126.9	True
08EE008	GOATHORN CREEK NEAR TELKWA	54.65	127.12	True
08EE012	SIMPSON CREEK AT THE MOUTH	54.81	127.2	True
08EE013	BUCK CREEK AT THE MOUTH	54.4	126.65	True
08EE020	TELKWA RIVER BELOW TSAI CREEK	54.61	127.5	True
08EF001	SKEENA RIVER AT USK	54.63	128.43	True
08EF005	ZYMOETZ RIVER ABOVE O.K. CREEK	54.49	128.32	True
08EG012	EXCHAMSIKS RIVER NEAR TERRACE	54.36	129.31	True
08FA002	WANNOCK RIVER AT OUTLET OF OWIKENO LAKE	51.68	127.18	True
08FB004	SALLOOMT RIVER NEAR HAGENSBORG	52.42	126.52	True
08FC003	DEAN RIVER BELOW TANSWANKET CREEK	52.89	125.77	True
08FE003	KEMANO RIVER ABOVE POWERHOUSE TAILRACE	53.56	127.95	True
08FF001	KITIMAT RIVER BELOW HIRSCH CREEK	54.05	128.69	True
08FF002	HIRSCH CREEK NEAR THE MOUTH	54.06	128.6	True
08FF003	LITTLE WEDEENE RIVER BELOW BOWBYES CREEK	54.14	128.69	True
08GD004	HOMATHKO RIVER AT THE MOUTH	50.99	124.92	True
08GE002	KLINAKLINI RIVER EAST CHANNEL (MAIN) NEAR THE MOUTH	51.14	125.59	True
08HA001	CHEMAINUS RIVER NEAR WESTHOLME	48.88	123.7	True

08HA003	KOKSILAH RIVER AT COWICHAN STATION	48.73	123.67	True
08HA016	BINGS CREEK NEAR THE MOUTH	48.79	123.73	True
08HB002	ENGLISHMAN RIVER NEAR PARKSVILLE	49.32	124.29	False
08HB014	SARITA RIVER NEAR BAMFIELD	48.89	124.97	True
08HB048	CARNATION CREEK AT THE MOUTH	48.92	125	True
08HD011	OYSTER RIVER BELOW WOODHUS CREEK	49.89	125.24	True
08HE006	ZEBALLOS RIVER NEAR ZEBALLOS	50.01	126.84	False
08HF004	TSITIKA RIVER BELOW CATHERINE CREEK	50.44	126.58	True
08JA015	LAVENTIE CREEK NEAR THE MOUTH	53.65	127.54	True
08JB002	STELLAKO RIVER AT GLENANNAN	54.01	125.01	True
08JB003	NAUTLEY RIVER NEAR FORT FRASER	54.09	124.6	True
08JE001	STUART RIVER NEAR FORT ST. JAMES	54.42	124.27	True
08JE004	TSILCOH RIVER NEAR THE MOUTH	54.61	124.25	True
08KA004	FRASER RIVER AT HANSARD	54.08	121.85	True
08KA009	MCKALE RIVER NEAR 940 M CONTOUR	53.44	120.22	True
08KB001	FRASER RIVER AT SHELLEY	54	122.62	True
08KB003	MCGREGOR RIVER AT LOWER CANYON	54.23	121.67	True
08KD007	BOWRON RIVER BELOW BOX CANYON	54.02	122.1	True
08KE024	LITTLE SWIFT RIVER AT THE MOUTH	52.91	121.77	True
08KG001	WEST ROAD RIVER NEAR CINEMA	53.31	122.89	True
08KH001	QUESNEL RIVER AT LIKELY	52.62	121.57	True
08KH006	QUESNEL RIVER NEAR QUESNEL	52.84	122.23	True
08KH010	HORSEFLY RIVER ABOVE MCKINLEY CREEK	52.29	121.07	True
08KH019	MOFFAT CREEK NEAR HORSEFLY	52.32	121.41	True
08LA001	CLEARWATER RIVER NEAR CLEARWATER STATION	51.65	120.07	True
08LB020	BARRIERE RIVER AT THE MOUTH	51.19	120.13	True
08LB047	NORTH THOMPSON RIVER AT BIRCH ISLAND	51.6	119.91	False
08LB064	NORTH THOMPSON RIVER AT MCLURE	51.04	120.24	True
08LB069	BARRIERE RIVER BELOW SPRAGUE CREEK	51.25	119.94	True
08LB076	HARPER CREEK NEAR THE MOUTH	51.35	119.88	True
08LE024	EAGLE RIVER NEAR MALAKWA	50.94	118.8	True
08LE027	SEYMOUR RIVER NEAR SEYMOUR ARM	51.26	118.95	True
08LE031	SOUTH THOMPSON RIVER AT CHASE	50.76	119.74	True
08LF051	THOMPSON RIVER NEAR SPENCES BRIDGE	50.35	121.39	False
08LG016	PENNASK CREEK NEAR QUILCHENA	49.96	120.13	True
08LG048	COLDWATER RIVER NEAR BROOKMERE	49.85	120.91	True

08MA001	CHILKO RIVER NEAR REDSTONE	52.07	123.54	True
08MA006	LINGFIELD CREEK NEAR THE MOUTH	51.67	124.15	True
08MB006	BIG CREEK ABOVE GROUNDHOG CREEK	51.52	123.12	True
08ME023	BRIDGE RIVER (SOUTH BRANCH) BELOW BRIDGE GLACIER	50.86	123.45	True
08MG005	LILLOOET RIVER NEAR PEMBERTON	50.34	122.8	True
08MG013	HARRISON RIVER NEAR HARRISON HOT SPRINGS	49.3	121.83	True
08MH001	CHILLIWACK RIVER AT VEDDER CROSSING	49.1	121.97	True
08MH006	NORTH ALOUETTE RIVER AT 232ND STREET MAPLE RIDGE	49.24	122.58	True
08MH016	CHILLIWACK RIVER AT OUTLET OF CHILLIWACK LAKE	49.08	121.46	True
08MH056	SLESSE CREEK NEAR VEDDER CROSSING	49.07	121.7	True
08MH076	KANAKA CREEK NEAR WEBSTER CORNERS	49.21	122.54	True
08MH103	CHILLIWACK RIVER ABOVE SLESSE CREEK	49.1	121.66	True
08NA002	COLUMBIA RIVER AT NICHOLSON	51.24	116.91	True
08NA006	KICKING HORSE RIVER AT GOLDEN	51.3	116.97	True
08NB005	COLUMBIA RIVER AT DONALD	51.48	117.18	True
08NB014	GOLD RIVER ABOVE PALMER CREEK	51.68	117.72	True
08NB016	SPLIT CREEK AT THE MOUTH	51.53	116.9	True
08ND012	GOLDSTREAM RIVER BELOW OLD CAMP CREEK	51.67	118.6	True
08ND013	ILLECILLEWAET RIVER AT GREELEY	51.01	118.09	True
08NE006	KUSKANAX CREEK NEAR NAKUSP	50.28	117.73	True
08NE039	BIG SHEEP CREEK NEAR ROSSLAND	49.01	117.95	True
08NE074	SALMO RIVER NEAR SALMO	49.05	117.29	True
08NE077	BARNES CREEK NEAR NEEDLES	49.91	118.13	True
08NE087	DEER CREEK AT DEER PARK	49.45	118.04	True
08NE114	HIDDEN CREEK NEAR THE MOUTH	49.23	117.24	True
08NF001	KOOTENAY RIVER AT KOOTENAY CROSSING	50.89	116.05	True
08NG065	KOOTENAY RIVER AT FORT STEELE	49.61	115.64	True
08NG076	MATHER CREEK BELOW HOULE CREEK	49.71	115.9	True
08NG077	ST. MARY RIVER BELOW MORRIS CREEK	49.74	116.44	True
08NH005	KASLO RIVER BELOW KEMP CREEK	49.91	116.95	True
08NH016	DUCK CREEK NEAR WYNNDEL	49.2	116.53	True
08NH084	ARROW CREEK NEAR ERICKSON	49.16	116.45	True
08NH115	SULLIVAN CREEK NEAR CANYON	49.1	116.44	True
08NH119	DUNCAN RIVER BELOW B.B. CREEK	50.64	117.05	True
08NH120	MOYIE RIVER ABOVE NEGRO CREEK	49.42	115.94	True
08NH130	FRY CREEK BELOW CARNEY CREEK	50.08	116.78	True

08NH132	KEEN CREEK BELOW KYAWATS CREEK	49.87	117.12	True
08NJ013	SLOCAN RIVER NEAR CRESCENT VALLEY	49.46	117.56	True
08NJ130	ANDERSON CREEK NEAR NELSON	49.5	117.26	True
08NJ160	LEMON CREEK ABOVE SOUTH LEMON CREEK	49.7	117.45	True
08NK002	ELK RIVER AT FERNIE	49.5	115.07	False
08NK016	ELK RIVER NEAR NATAL	49.87	114.87	False
08NK018	FORDING RIVER AT THE MOUTH	49.89	114.87	False
08NK022	LINE CREEK AT THE MOUTH	49.89	114.83	False
08NL004	ASHNOLA RIVER NEAR KEREMEOS	49.21	119.99	True
08NL007	SIMILKAMEEN RIVER AT PRINCETON	49.46	120.5	True
08NL024	TULAMEEN RIVER AT PRINCETON	49.46	120.52	True
08NL038	SIMILKAMEEN RIVER NEAR HEDLEY	49.38	120.15	True
08NL050	HEDLEY CREEK NEAR THE MOUTH	49.36	120.07	True
08NL069	PASAYTEN RIVER ABOVE CALCITE CREEK	49.1	120.58	True
08NL070	SIMILKAMEEN RIVER ABOVE GOODFELLOW CREEK	49.09	120.67	True
08NL071	TULAMEEN RIVER BELOW VUICH CREEK	49.47	120.98	True
08NM134	CAMP CREEK AT MOUTH NEAR THIRSK	49.71	120.01	True
08NM171	VASEUX CREEK ABOVE SOLCO CREEK	49.25	119.32	True
08NM173	GREATA CREEK NEAR THE MOUTH	49.79	119.85	True
08NN002	GRANBY RIVER AT GRAND FORKS	49.04	118.44	True
08NN015	WEST KETTLE RIVER NEAR MCCULLOCH	49.7	119.09	True
08NN019	TRAPPING CREEK NEAR THE MOUTH	49.57	119.05	True
08NN023	BURRELL CREEK ABOVE GLOUCESTER CREEK	49.59	118.31	True
08NP004	CABIN CREEK NEAR THE MOUTH	49.09	114.55	True
08OA002	YAKOUN RIVER NEAR PORT CLEMENTS	53.61	132.21	True
05AA004	PINCHER CREEK AT PINCHER CREEK	49.49	113.95	True
05AA008	CROWSNEST RIVER AT FRANK	49.6	114.41	True
05AA022	CASTLE RIVER NEAR BEAVER MINES	49.49	114.14	True
05AA028	CASTLE RIVER AT RANGER STATION	49.4	114.34	True
05AB005	TROUT CREEK NEAR GRANUM	49.98	113.69	True
05AB013	BEAVER CREEK NEAR BROCKET	49.64	113.8	True
05AB029	MEADOW CREEK NEAR THE MOUTH	49.95	113.66	True
05AD003	WATERTON RIVER NEAR WATERTON PARK	49.11	113.84	True
05AD035	PRAIRIE BLOOD COULEE NEAR LETHBRIDGE	49.57	112.95	True
05AE005	ROLPH CREEK NEAR KIMBALL	49.13	113.14	True
05AH037	GROS VENTRE CREEK NEAR DUNMORE	49.89	110.51	True

05AH041	PEIGAN CREEK NEAR PAKOWKI ROAD	49.58	110.94	True
05BB001	BOW RIVER AT BANFF	51.17	115.57	True
05BG006	WAIPAROUS CREEK NEAR THE MOUTH	51.28	114.84	True
05BJ004	ELBOW RIVER AT BRAGG CREEK	50.95	114.57	True
05BK001	FISH CREEK NEAR PRIDDIS	50.89	114.33	True
05BL013	THREEPOINT CREEK NEAR MILLARVILLE	50.77	114.28	True
05BL014	SHEEP RIVER AT BLACK DIAMOND	50.69	114.24	True
05BL019	HIGHWOOD RIVER AT DIEBEL'S RANCH	50.41	114.5	True
05BL022	CATARACT CREEK NEAR FORESTRY ROAD	50.29	114.59	True
05BL023	PEKISKO CREEK NEAR LONGVIEW	50.47	114.21	True
05BM014	WEST ARROWWOOD CREEK NEAR ARROWWOOD	50.76	113.24	True
05CA002	JAMES RIVER NEAR SUNDRE	51.93	114.69	True
05CA009	RED DEER RIVER BELOW BURNT TIMBER CREEK	51.65	115.02	True
05CB001	LITTLE RED DEER RIVER NEAR THE MOUTH	52.03	114.14	True
05CB002	LITTLE RED DEER RIVER NEAR WATER VALLEY	51.51	114.67	True
05CB004	RAVEN RIVER NEAR RAVEN	52.09	114.48	True
05CC001	BLINDMAN RIVER NEAR BLACKFALDS	52.35	113.79	True
05CC007	MEDICINE RIVER NEAR ECKVILLE	52.32	114.34	True
05CC009	LLOYD CREEK NEAR BLUFFTON	52.74	114.15	True
05CC010	BLOCK CREEK NEAR LEEDALE	52.57	114.58	True
05CD006	HAYNES CREEK NEAR HAYNES	52.33	113.36	True
05CE006	ROSEBUD RIVER BELOW CARSTAIRS CREEK	51.42	113.73	True
05CE010	RAY CREEK NEAR INNISFAIL	52	113.6	True
05CE011	RENWICK CREEK NEAR THREE HILLS	51.72	113.36	True
05CE018	THREEHILLS CREEK BELOW RAY CREEK	52	113.57	True
05CK001	BLOOD INDIAN CREEK NEAR THE MOUTH	50.96	111.06	True
05CK005	ALKALI CREEK NEAR THE MOUTH	50.9	110.51	True
05DA007	MISTAYA RIVER NEAR SASKATCHEWAN CROSSING	51.88	116.69	True
05DA009	NORTH SASKATCHEWAN RIVER AT WHIRLPOOL POINT	52	116.47	True
05DA010	SILVERHORN CREEK NEAR THE MOUTH	51.8	116.58	True
05DB002	PRAIRIE CREEK NEAR ROCKY MOUNTAIN HOUSE	52.27	114.93	True
05DB005	PRAIRIE CREEK BELOW LICK CREEK	52.25	115.29	True
05DB006	CLEARWATER RIVER NEAR DOVERCOURT	52.25	114.86	True
05DC006	RAM RIVER NEAR THE MOUTH	52.37	115.42	True
05DD009	NORDEGG RIVER AT SUNCHILD ROAD	52.82	115.52	True
05DE007	ROSE CREEK NEAR ALDER FLATS	52.93	115.01	True

05DF006	WHITEMUD CREEK NEAR ELLERSLIE	53.41	113.59	True
05DF007	WEST WHITEMUD CREEK NEAR IRETON	53.22	113.69	True
05EA005	STURGEON RIVER NEAR VILLENEUVE	53.66	113.76	True
05EC002	WASKATENAU CREEK NEAR WASKATENAU	54.12	112.78	True
05EC005	REDWATER RIVER NEAR THE MOUTH	53.9	113	True
05ED002	ATIMOSWE CREEK NEAR ELK POINT	53.89	110.92	True
05EE005	STRETTON CREEK NEAR MARWAYNE	53.44	110.33	True
05EE006	VERMILION RIVER TRIBUTARY NEAR BRUCE	53.29	112.05	True
05FA001	BATTLE RIVER NEAR PONOKA	52.66	113.58	True
05FB002	IRON CREEK NEAR HARDISTY	52.71	111.31	True
05FC002	BIGKNIFE CREEK NEAR GADSBY	52.52	112.36	True
05FE002	BUFFALO CREEK AT HIGHWAY NO. 41	53.01	110.87	True
05GA008	SOUNDING CREEK NEAR OYEN	51.57	110.47	True
06AA001	BEAVER RIVER NEAR GOODRIDGE	54.44	111.37	True
06AA002	AMISK RIVER AT HIGHWAY NO. 36	54.47	112.01	False
06AB001	SAND RIVER NEAR THE MOUTH	54.47	111.19	True
06AB002	WOLF RIVER AT OUTLET OF WOLF LAKE	54.71	111	True
06AD006	BEAVER RIVER AT COLD LAKE RESERVE	54.36	110.22	True
07AA001	MIETTE RIVER NEAR JASPER	52.86	118.11	True
07AA002	ATHABASCA RIVER NEAR JASPER	52.91	118.06	True
07AD002	ATHABASCA RIVER AT HINTON	53.42	117.57	True
07AE001	ATHABASCA RIVER NEAR WINDFALL	54.21	116.06	False
07AF002	MCLEOD RIVER ABOVE EMBARRAS RIVER	53.47	116.63	True
07AF010	SUNDANCE CREEK NEAR BICKERDIKE	53.57	116.7	True
07AG004	MCLEOD RIVER NEAR WHITECOURT	54.01	115.84	True
07AH001	FREEMAN RIVER NEAR FORT ASSINIBOINE	54.36	114.9	True
07AH002	CHRISTMAS CREEK NEAR BLUE RIDGE	54.23	115.33	True
07BA002	RAT CREEK NEAR CYNTHIA	53.14	115.49	True
07BB002	PEMBINA RIVER NEAR ENTWISTLE	53.6	115	True
07BB005	LITTLE PADDLE RIVER NEAR MAYERTHORPE	53.95	115.02	True
07BC002	PEMBINA RIVER AT JARVIE	54.45	113.99	False
07BC006	DAPP CREEK AT HIGHWAY NO. 44	54.31	113.85	True
07BE001	ATHABASCA RIVER AT ATHABASCA	54.72	113.29	False
07BF001	EAST PRAIRIE RIVER NEAR ENILDA	55.42	116.34	True
07BF002	WEST PRAIRIE RIVER NEAR HIGH PRAIRIE	55.45	116.49	True
07BJ001	SWAN RIVER NEAR KINUSO	55.32	115.42	True

07BJ003	SWAN RIVER NEAR SWAN HILLS	54.8	115.47	True
07BK007	DRIFTWOOD RIVER NEAR THE MOUTH	55.26	114.23	True
07BK009	SAWRIDGE CREEK NEAR SLAVE LAKE	55.27	114.78	True
07FD006	SADDLE RIVER NEAR WOKING	55.64	118.7	True
07GA001	SMOKY RIVER ABOVE HELLS CREEK	53.95	119.16	True
07GD001	BEAVERLODGE RIVER NEAR BEAVERLODGE	55.19	119.44	True
07GE001	WAPITI RIVER NEAR GRANDE PRAIRIE	55.07	118.8	True
07GE003	GRANDE PRAIRIE CREEK NEAR SEXSMITH	55.37	118.92	True
07GF001	SIMONETTE RIVER NEAR GOODWIN	55.14	118.18	True
07GG001	WASKAHIGAN RIVER NEAR THE MOUTH	54.75	117.21	True
07GG002	LITTLE SMOKY RIVER AT LITTLE SMOKY	54.74	117.18	True
07GG003	IOSEGUN RIVER NEAR LITTLE SMOKY	54.75	117.15	True
07GJ001	SMOKY RIVER AT WATINO	55.71	117.62	True
11AA026	SAGE CREEK AT Q RANCH NEAR WILDHORSE	49.11	110.22	True