

Deep learning shows declining groundwater levels in Germany until 2100 due to climate change (Supplementary Material)

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Content Overview:

- Table S1 lists all hydrographs including additional information such as identifiers and coordinates
- Table S1 lists the accuracy of the models in the past as well as the optimized hyperparameters
- Figures S1 to S118 show the evaluation graph for the test period (2012-2016), the performance under extreme climatic conditions and the SHAP summary plot for each site
- Figures S119 to 236 show the long term groundwater simulation results for each individual climate projection consolidated in one plot.

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Table S1: List of all wells included in the dataset. ID refers to the respective data web service.

ID	Name	X_Coord (UTM 32N)	Y_Coord (UTM 32N)	Aquifer Type ¹	Ground Surf. [m asl]	Depth to GW [m]
BB_27381010	Lockstaedt OP	701838	5900152	p	49.7	1.32
BB_28390113	Beveringen OP	716212	5893813	p	69.7	0.45
BB_29519030	Schw.,Krzg.Teichm.-Seelenb.str	853218	5892330	p	6	2.63
BB_30400591	Stolpe, Birkenallee	731260	5874653	p	43.7	3.39
BB_31400780	Wusterhausen, Bahnlinie	732280	5863903	p	33.2	1.11
BB_31491979	Amalienhof-Falkenberg, KSP Nr. 6 GeDO	833480	5863149	p	1.7	0.48
BB_32455305	Hohenbruch, Weg n.Teerofen	781331	5857671	p	37.2	1.87
BB_33437070	Bredow, Siedlung Glien	768609	5836914	p	31.6	1.97
BB_33437090	Perwenitz, Luchstraße, OP	769303	5838525	p	32.35	1.67
BB_33437106	Nauen, gegenue.G.-Arco-Str. 148	764414	5838901	p	31.2	1.97
BB_33452451	Hennigsdorf,1,3km v.Trappen-A.	782655	5838050	p	32.15	0.93
BB_33470960	Lindow, Bernau	809679	5844936	p	66	1.39
BB_34426110	Bagow, Bollmannsruh	749731	5823802	p	31	2.31
BB_34522461	Sachsendorf, KSP Nr. 71	872109	5832083	p	12	2.64
BB_37451908	Juetchendorf,Str.Groeben-Gr.Be.	785736	5800205	p	35.98	1.58
BB_39441476	Felgentreu, ca. 2 km oestl.	777374	5779401	p	51.35	1.74
BB_39496056	Kuschkow	839963	5779849	p	46.23	1.83
BB_40500136	Byhlen	853890	5762850	p	54.5	2.36
BB_42458092	Mahdel	788491	5735916	p	79.97	1.65
BW_100-813-7	GIENGEN TAUBENTAL	590920	5388935	k	497.28	35.32
BW_103-763-0	Sontheimer Wirtshäusle,STEINHEIM	578522	5391582	k	520.7	15.69
BW_107-666-2	GWM KB 3 A Weiler, Blaubeuren	557027	5360033	p	527.43	6.27
BW_110-619-8	GWM 7N SATTENBEUREN	546728	5320090	p	586.98	4.42
BW_112-211-1	3342 RASTATT STW-KA	443158	5414341	p	112.51	1.32
BW_124-068-9	3492 A KENZINGEN 2	405812	5338896	p	173.46	3.42
BW_131-115-0	GWM 3709, Ohlsbach	424415	5364473	p	162.06	1.82
BW_145-772-0	GWM 13-79 ALLMISHOFEN	578383	5294371	p	670.87	5.43
BW_15-568-2	GWM 129 ALTHEIM	532967	5331483	p	535.79	4.47
BW_16-706-8	GWM B2 Stäffelen, Niederstetten-Neuweiler	566991	5471838	f	325.56	12.78
BW_177-770-1	SBR 13, Aitrach	581180	5309055	p	612.57	18.51
BW_194-069-9	GWM B 4 Merdingen	401903	5319041	p	194.26	3.76
BY_11119	BADANHAUSEN 8B	679209	5432380	p	366.43	1.62
BY_13126	EBENHOFEN 758	620742	5296428	p	714.92	11.49
BY_15120	IHRRLERSTEIN TIEF K1	707357	5426437	k	480.03	94.03
BY_22008	PAFFENHAUSEN 82A	563680	5550758	p	179.7	2.91
BY_24153	SPEINSHART Q3	705931	5516765	k	416.22	1.42
BY_25155	IGLING 957	635606	5326788	p	592.7	12.73
BY_3108	MEINHEIM 429	634866	5432872	p	413.05	2.33
BY_5158	NEUSES	657993	5557607	p	273.22	0.59
BY_5162	Leitenbach 2	634999	5533371	p	240.54	4.73
BY_7126	ARBING 336A	799009	5401742	p	308.75	3.78
BY_8252	THIERHAUPTEN-S. D 36	640590	5371410	p	445.61	2.91
BY_83614	NBS-H_W KB 11_1	544375	5561463	f	233.42	37.16
BY_9275	GERLENHOFEN B3	576324	5355565	p	479.96	1.69
HE_10319	LETTGENBRUNN	532272	5555656	f	380.83	11.58
HE_11781	NAUHEIM	463126	5534254	p	89.03	1.12
HE_12117	DIEBURG	487910	5528018	p	142.12	2.76
HE_14293	KAILBACH	508261	5485664	p	354.5	8.56
HE_14297	SCHOELLENBACH	505323	5490972	p	294.52	5.26
HE_6253	NETRA	576396	5661004	f	312.7	8.86
HE_6645	KOMBACH	468878	5636195	p	259.71	8.23
HE_7824	LEIHGESTERN	476165	5597300	f	188.66	2.49
MV_16450200	Güttin	778860	6034537	p	11.34	4.22
MV_17390002	Klein Müritz	715409	6016858	p	3.8	1.97
NI_100000728	Ehra-Lessien I	622547	5824077	p	63.42	2.07
NI_100000842	Ehmen II	614668	5805451	f	76.5	1.62
NI_100000926	Sehlde	586584	5767546	f	117	1.82
NI_129300060	Rühen_RA 14 09	630065	5818918	p	57.68	0.94

¹ p: porous, f: fractured, k:karstic

ID	Name	X_Coord (UTM 32N)	Y_Coord (UTM 32N)	Aquifer Type ¹	Ground Surf. [m asl]	Depth to GW [m]
NI_200000620	Walsen	463773	5840294	p	37.22	2.18
NI_200000788	Wietzen	504336	5839574	p	64.54	1.97
NI_200001068	Rodewald MB I	534027	5835353	p	26.3	1.67
NI_200001722	Martfeld	503025	5858185	p	13.41	1.97
NI_200002153	Donstorf	470640	5835536	p	36.43	1.62
NI_40000175	Suttorf 261_7R	534210	5819061	p	40.92	3.14
NI_40000233	Fuhrberg-Ahrenssteghege I	559587	5822985	p	41.75	2.25
NI_400080190	Wiepenkathen UE 19 FI	528647	5937096	p	4.3	0.80
NI_400081660	Huvenhoopsmoor UE 166	508134	5915473	p	8.1	2.66
NI_40501911	Wieste I	409615	5851908	p	31.63	4.20
NI_405160331	Klein Wohnste UE 33 FI	536583	5913023	p	36.7	2.17
NI_500000592	UWO 113_1 Uphusen	496767	5875283	p	6.83	2.10
NI_600041871	Wrestedt F1	606074	5862647	p	47.39	1.59
NI_9700020	Beverbruch 3_6	440656	5870819	p	15.59	0.31
NI_9700080	Feldkamp	449994	5801631	p	46.72	1.88
NI_9700159	Langwege	440052	5830351	p	29.01	1.59
NI_9840391	Tjücher Wilde I	388288	5932921	p	3.01	2.34
NI_9840901	Neermoor I	397042	5907998	p	0.83	1.41
NI_9853172	Südgeorgsfehrer Moor	419063	5902646	p	6.39	2.42
NW_100140142	WG 22 LEVKENSTAD	484414	5800070	p	53.34	2.25
NW_100140762	WG 70 TAPPENAU	492808	5802796	f	56.03	3.85
NW_110040028	IV-2 - LIENEN-	430293	5774838	p	73.43	1.24
NW_110040041	IV-4 -SCHWEGE-	425943	5768989	p	55.55	1.07
NW_110060143	VI-14 - HANDORF -	412382	5760509	p	52.12	1.64
NW_110240017	AH-1 WELBERGEN	381429	5784337	p	48.58	2.17
NW_129660176	Silbecke	428864	5666613	k	320.32	53.38
NW_129660206	Schönholthausen I	432093	5671301	k	324.93	47.89
NW_60090169	HS 67	383993	5725893	p	58.17	5.38
NW_60240258	AH-25 VREDEN GRMAST	350479	5764657	p	40.61	1.65
NW_80000186	OEDT Nr020	317961	5688134	p	37.64	5.64
NW_80300376	MÜLHAUSEN Nr00-91	316792	5692404	p	32.21	2.03
NW_91163705	Pöppelsche Eikeloh	458197	5718515	k	109.91	11.26
NW_91174909	Brilon LederkeOL748	467638	5692896	k	446.53	15.72
RP_2373131200	1341 I Woerth am Rhein	432791	5431646	p	137.460007	2.00
RP_2378140100	1057 Boebingen	445538	5460551	p	113.989998	1.08
RP_2587150500	6024 Westerbürg, Wengenroth	428344	5600050	f	313.140015	4.62
SH_10L53126001	4384 TRAMM_NORD_F1	606775	5937188	p	50.78	4.07
SH_10L54010004	1386 WESTERBARGUM_II	496464	6061837	p	4.78	4.39
SH_10L55005005	4522 OSTERMARKELSDORF	640373	6037388	p	9.8	1.27
SH_10L55038005	4565 LANGENHAGEN_HELMSTEICH	615529	6009571	p	105.59	0.90
SH_10L56048003	3587 TORNESCH_LIETHER_DAMM_F1	546919	5951632	p	13.34	3.68
SH_10L57066002	6067 RASTORFER_BAHNHOF	584911	6013922	p	29.32	9.08
SH_10L62060004	4712 REINBEK_SILKERFELD_F1	584999	5931988	p	22.78	9.03
SN_46440927	Bucha	781034	5700917	p	142.43	1.66
SN_46460564	Walda	813164	5695042	p	109.22	1.90
SN_47500596	Bischheim	851569	5688389	p	222.98	5.14
SN_48390509	Gatzen	727700	5668631	p	142.74	2.36
SN_49430964	Arras	773575	5663318	p	264.37	2.46
SN_49484004	Dresden, Königstraße	832311	5667461	p	112.25	7.13
SN_49531740	Schönbach	890527	5670891	p	386.83	7.12
SN_52410759	Muelzen-St-Niclas	752926	5625203	f	328.46	5.34
ST_31340028	Arendsee Süd	668011	5860747	p	32.5	2.13
ST_33340002	Altmerleben-Butterhorst	665806	5839436	p	29.66	1.20
ST_34376608	Charlottenhof	698014	5830461	p	32.42	1.43
ST_36340007	Satuelle	661910	5800899	p	55.5	1.14
ST_39320023	Hornhausen - Güte OP	647351	5767443	p	79.76	0.80
ST_40415442	Möllensdorf	743052	5757819	p	103.14	2.63
ST_41300015	Ilseburg	616332	5749114	f	221.55	6.00
ST_43435116	Axien	767008	5734326	p	74.63	2.54
ST_44339213	Lengefeld	657980	5708535	f	258.48	6.15

¹ p: porous, f: fractured, k:karstic

Table S2: Model Errors in the past (2012-2016) and optimized Hyperparameters

ID	NSE	R ²	RMSE	rRMSE	Bias	rBias	filters	dense size	seqlength	batchsize
BB_27381010	0.91	0.91	0.09	5.53	0	0.09	192	19	29	41
BB_28390113	0.81	0.88	0.12	9.86	0.08	6.34	114	224	28	36
BB_29519030	0.7	0.81	0.1	7.26	0.07	4.75	190	47	36	16
BB_30400591	0.91	0.91	0.09	4.17	0.02	0.71	149	29	51	40
BB_31400780	0.7	0.75	0.1	8.18	-0.04	-3.32	254	72	51	41
BB_31491979	0.88	0.89	0.08	7.75	0.03	3.02	145	3	52	16
BB_32455305	0.91	0.93	0.1	5.37	-0.01	-0.54	176	81	39	182
BB_33437070	0.85	0.92	0.08	5.78	-0.05	-3.91	222	34	50	157
BB_33437090	0.8	0.85	0.15	7.84	-0.06	-3.46	201	54	37	46
BB_33437106	0.79	0.89	0.15	8.76	-0.1	-5.71	243	24	51	154
BB_33452451	0.86	0.86	0.13	8.88	0.01	0.75	110	55	51	16
BB_33470960	0.75	0.78	0.13	7.69	-0.04	-2.02	192	256	34	16
BB_34426110	0.85	0.9	0.09	5.16	-0.05	-2.97	248	29	50	201
BB_34522461	0.86	0.84	0.11	6.76	-0.01	-0.81	185	20	51	50
BB_37451908	0.75	0.8	0.12	9.5	-0.03	-2.08	199	21	52	205
BB_39441476	0.72	0.75	0.14	8.7	-0.07	-4.46	226	100	51	55
BB_39496056	0.86	0.89	0.1	6.04	0.02	1.06	220	63	43	22
BB_40500136	0.82	0.82	0.08	5.4	0.01	0.38	29	81	51	16
BB_42458092	0.79	0.88	0.14	8.05	-0.05	-3.1	226	17	51	143
BW_100-813-7	0.82	0.85	1.32	6.55	-0.59	-2.95	104	153	29	18
BW_103-763-0	0.86	0.84	2.54	8.78	0.65	2.25	164	32	28	16
BW_107-666-2	0.78	0.82	0.92	8.48	-0.41	-3.79	251	45	33	21
BW_110-619-8	0.8	0.87	0.22	7.65	-0.12	-4.06	198	94	37	18
BW_112-211-1	0.84	0.8	0.12	7.66	0.01	0.9	101	13	50	39
BW_124-068-9	0.78	0.79	0.18	6.43	-0.04	-1.55	201	53	36	16
BW_131-115-0	0.77	0.77	0.27	8.92	-0.01	-0.23	138	64	29	26
BW_145-772-0	0.86	0.87	0.37	6.46	-0.1	-1.69	179	76	52	34
BW_15-568-2	0.77	0.83	0.1	7.39	-0.01	-0.78	199	56	26	24
BW_16-706-8	0.86	0.86	0.3	7.63	0.07	1.8	90	154	28	25
BW_177-770-1	0.88	0.87	0.14	5.78	0.05	2.22	180	23	37	16
BW_194-069-9	0.85	0.85	0.09	5.43	-0.02	-1.19	225	27	51	18
BY_11119	0.77	0.75	0.2	8.67	-0.04	-1.57	225	85	34	47
BY_13126	0.85	0.87	0.31	6.14	-0.05	-1.05	255	25	51	16
BY_15120	0.78	0.77	1.41	7.34	0.72	3.78	156	58	52	16
BY_22008	0.81	0.8	0.23	6.4	-0.06	-1.71	51	7	30	36
BY_24153	0.81	0.82	0.11	9.69	0.03	2.2	178	242	9	17
BY_25155	0.79	0.82	0.19	7.95	-0.04	-1.47	202	45	45	24
BY_3108	0.81	0.82	0.26	8.96	-0.09	-3.12	237	43	38	111
BY_5158	0.76	0.76	0.2	9.78	-0.02	-1.14	178	198	20	16
BY_5162	0.87	0.87	0.14	6.92	0.02	0.82	239	31	29	22
BY_7126	0.85	0.89	0.15	6.4	-0.04	-1.6	83	130	52	16
BY_8252	0.78	0.81	0.19	9.06	0.11	5.3	236	169	52	16
BY_83614	0.8	0.78	0.62	8.36	0.05	0.73	132	40	51	16
BY_9275	0.87	0.87	0.06	6.5	0.02	1.95	187	256	42	16
HE_10319	0.82	0.83	2.03	9.71	-0.62	-2.98	254	80	17	24
HE_11781	0.84	0.86	0.18	9.8	0.02	0.91	85	107	28	37
HE_12117	0.86	0.93	0.11	5.64	-0.08	-3.92	180	54	52	96
HE_14293	0.78	0.75	0.25	7.98	0.07	2.05	248	103	30	29
HE_14297	0.77	0.75	0.24	5.58	-0.06	-1.48	144	255	46	16
HE_6253	0.79	0.75	0.48	6.78	0.13	1.86	225	59	43	40
HE_6645	0.93	0.91	0.12	3.64	-0.02	-0.7	220	63	43	22
HE_7824	0.8	0.83	0.24	6.45	-0.12	-3.06	41	12	51	52
MV_16450200	0.84	0.81	0.19	9.88	-0.02	-0.82	104	16	46	19
MV_17390002	0.8	0.79	0.24	10.67	-0.02	-0.71	249	217	51	18
NI_100000728	0.82	0.84	0.21	9.3	0.06	2.52	125	10	51	56
NI_100000842	0.77	0.76	0.17	10.14	0.04	2.44	255	4	42	52
NI_100000926	0.7	0.74	0.17	7.3	0.05	1.98	84	158	19	16
NI_129300060	0.87	0.88	0.19	8.22	0.05	2.28	169	122	51	80

ID	NSE	R ²	RMSE	rRMSE	Bias	rBias	filters	dense size	seqlength	batchsize
NI_200000620	0.82	0.87	0.22	8.24	0.14	5.39	197	93	52	46
NI_200000788	0.9	0.88	0.16	6.99	0.04	1.7	231	16	52	78
NI_200001068	0.83	0.83	0.13	8.19	0.04	2.63	218	70	50	76
NI_200001722	0.9	0.91	0.06	4.78	0	0.06	254	87	47	20
NI_200002153	0.76	0.85	0.19	9.86	0.13	6.41	144	248	12	156
NI_40000175	0.7	0.77	0.19	9.75	0.11	5.49	79	89	26	20
NI_40000233	0.88	0.88	0.09	4.99	0.05	2.53	238	100	39	19
NI_400080190	0.72	0.77	0.15	8.62	0.1	5.53	241	53	52	36
NI_400081660	0.75	0.76	0.15	9.63	0.06	4.24	138	224	11	157
NI_40501911	0.91	0.83	0.12	4.89	0.01	0.45	216	48	51	20
NI_405160331	0.8	0.83	0.21	7.75	0.12	4.59	197	27	50	26
NI_500000592	0.88	0.9	0.06	6.51	0.04	4.11	44	10	22	36
NI_600041871	0.79	0.8	0.12	7.59	-0.02	-1.5	217	97	42	18
NI_9700020	0.87	0.84	0.11	6.87	0.02	1.35	231	76	40	60
NI_9700080	0.84	0.84	0.21	8.03	0.11	4.07	195	31	23	29
NI_9700159	0.86	0.86	0.12	6.14	-0.01	-0.75	44	10	22	36
NI_9840391	0.9	0.89	0.08	6.58	0	0.38	217	246	19	21
NI_9840901	0.83	0.83	0.07	6.06	-0.01	-0.86	242	87	28	16
NI_9853172	0.87	0.89	0.1	7.73	0.02	1.53	203	52	13	63
NW_100140142	0.79	0.79	0.19	9.31	0.13	6.3	256	13	52	127
NW_100140762	0.83	0.81	0.16	7.1	0.02	1.05	205	51	36	49
NW_110040028	0.83	0.89	0.12	7.97	0.06	4.44	254	65	28	37
NW_110040041	0.86	0.87	0.12	7.08	0.03	1.95	149	98	25	16
NW_110060143	0.86	0.86	0.22	7.8	-0.01	-0.31	173	255	39	17
NW_110240017	0.84	0.83	0.11	5.47	0.03	1.33	223	58	42	27
NW_129660176	0.87	0.88	4	7.41	-0.29	-0.53	84	158	19	16
NW_129660206	0.81	0.8	1.45	6.95	0.28	1.34	34	132	52	16
NW_60090169	0.89	0.9	0.21	5.1	-0.03	-0.75	202	61	51	195
NW_60240258	0.77	0.81	0.15	7.85	0.07	3.46	205	51	36	49
NW_80000186	0.84	0.84	0.09	4.84	-0.01	-0.74	76	256	52	16
NW_80300376	0.83	0.83	0.1	5.47	0	-0.23	241	204	16	16
NW_91163705	0.82	0.77	1.18	8.57	0.11	0.82	237	43	38	111
NW_91174909	0.82	0.81	0.44	5.29	0.12	1.46	189	195	12	57
RP_2373131200	0.76	0.84	0.23	13.08	-0.13	-7.56	256	68	52	16
RP_2378140100	0.81	0.79	0.25	9.14	-0.04	-1.53	74	168	49	41
RP_2587150500	0.78	0.78	0.3	8.22	0.03	0.78	96	154	18	17
SH_10L53126001	0.84	0.66	0.18	6.34	0	0.13	82	107	52	65
SH_10L54010004	0.77	0.82	0.16	11.45	-0.06	-4.28	115	221	22	68
SH_10L55005005	0.85	0.88	0.21	11.46	0.04	2.05	243	2	44	27
SH_10L55038005	0.76	0.76	0.14	10.14	0.06	4.29	210	60	29	16
SH_10L56048003	0.78	0.75	0.13	7.28	0	0.12	236	10	26	21
SH_10L57066002	0.81	0.79	0.11	6.87	0.04	2.78	96	7	45	16
SH_10L62060004	0.88	0.89	0.1	7.1	0	0.17	163	248	23	16
SN_46440927	0.85	0.85	0.25	6.74	0.03	0.78	227	24	52	16
SN_46460564	0.71	0.79	0.15	8.31	-0.08	-4.32	244	154	50	78
SN_47500596	0.74	0.77	0.19	7.91	-0.07	-2.71	187	30	52	48
SN_48390509	0.8	0.71	0.22	7.1	0.03	0.82	252	75	51	37
SN_49430964	0.75	0.74	0.49	9.07	-0.04	-0.68	238	16	40	93
SN_49484004	0.73	0.76	0.32	8.19	0.09	2.37	135	34	31	16
SN_49531740	0.71	0.71	0.28	8.16	0.01	0.15	220	31	52	96
SN_52410759	0.82	0.84	0.28	6.16	0.05	1.14	217	70	43	35
ST_31340028	0.85	0.86	0.12	6.63	0.08	4.22	243	115	51	22
ST_33340002	0.79	0.86	0.12	7.37	-0.06	-3.7	41	34	29	39
ST_34376608	0.84	0.85	0.09	7.32	0.02	1.84	106	174	16	17
ST_36340007	0.73	0.73	0.14	6.6	-0.03	-1.57	245	56	42	20
ST_39320023	0.78	0.81	0.11	6.29	-0.03	-1.7	245	27	26	51
ST_40415442	0.83	0.84	0.14	6.38	0.06	2.85	182	17	50	33
ST_41300015	0.81	0.87	0.47	8.35	-0.25	-4.43	180	32	23	20
ST_43435116	0.72	0.75	0.23	7.69	-0.06	-2.04	232	41	48	16
ST_44339213	0.8	0.83	0.18	6.11	0.02	0.62	47	45	30	21

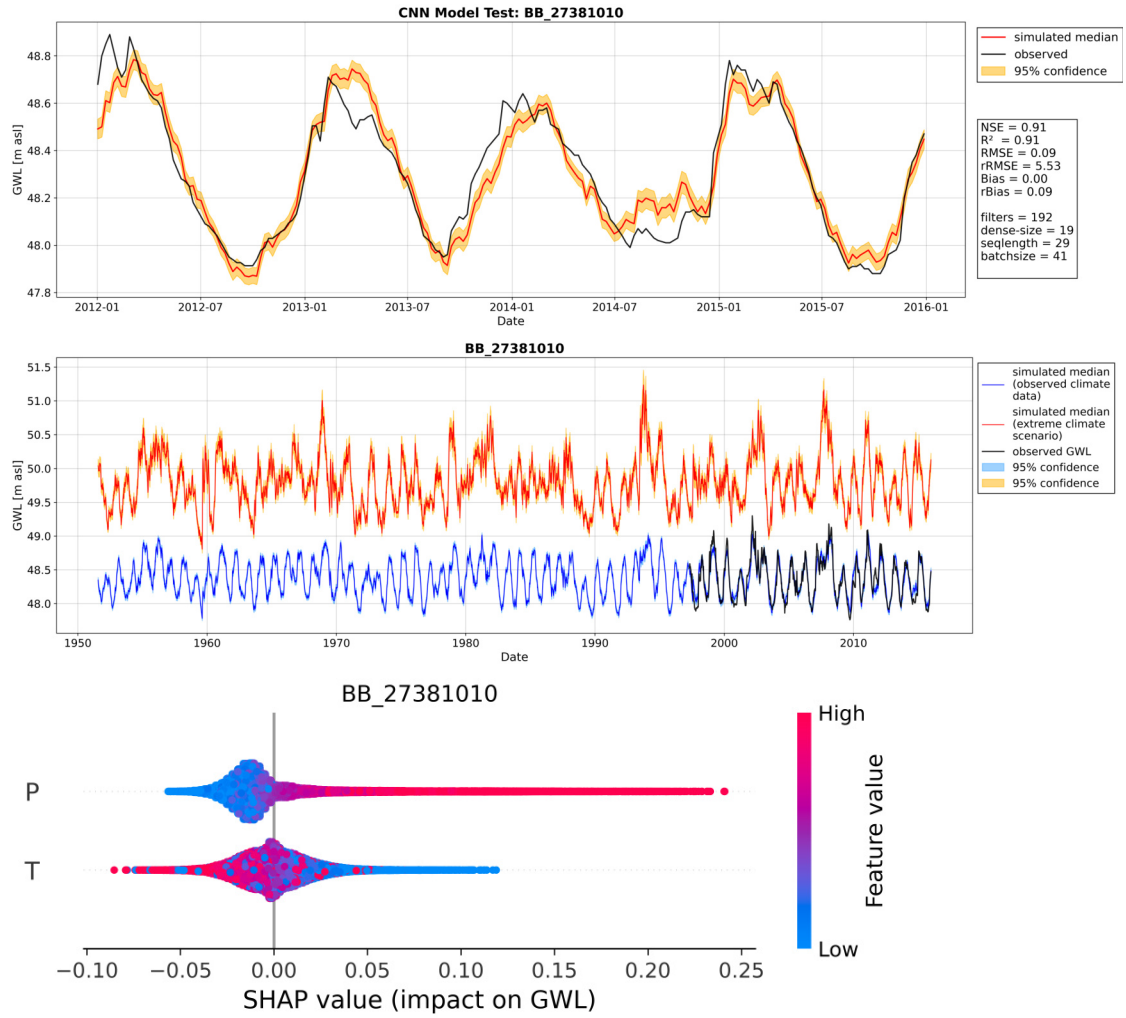


Figure S1: Evaluation of BB_27381010 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

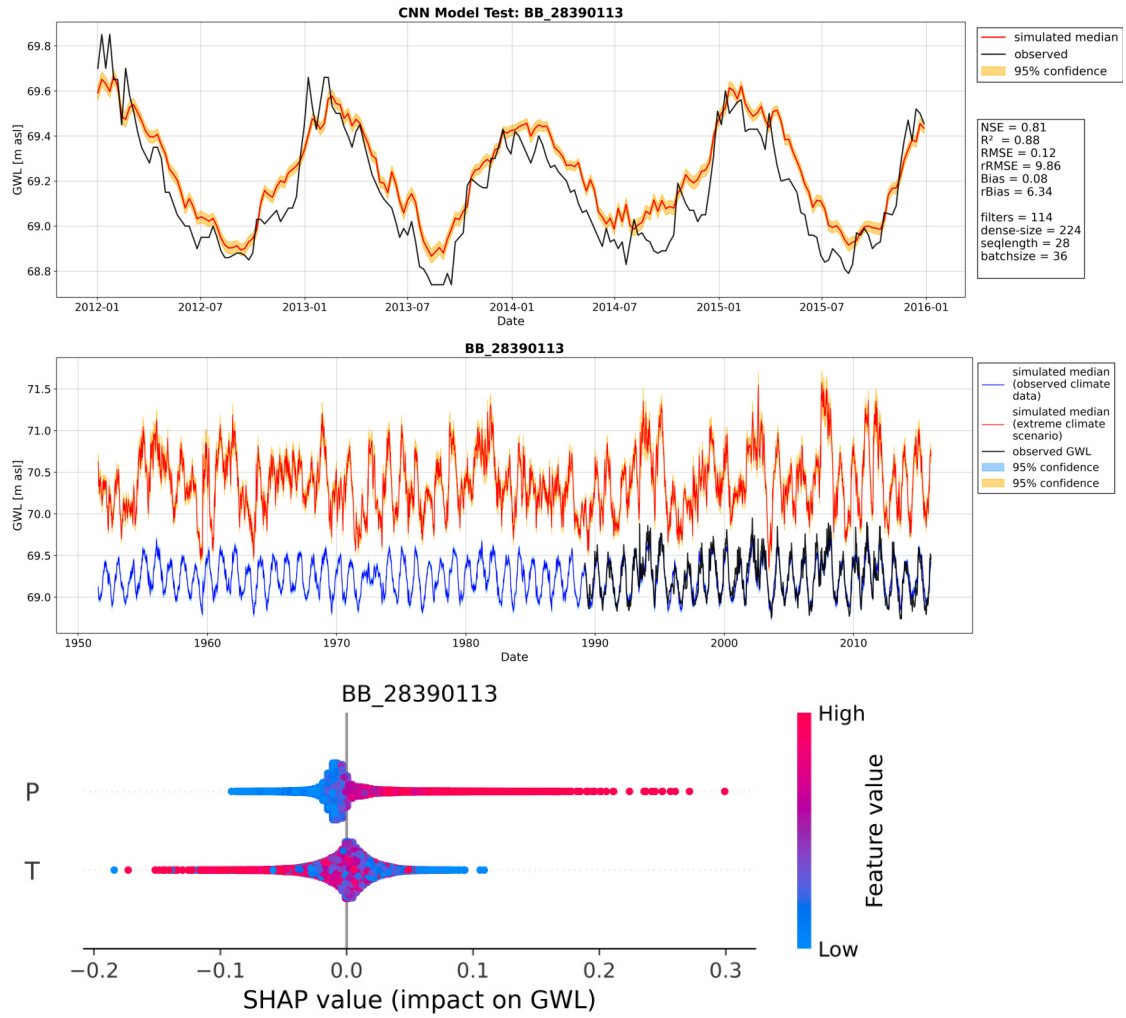


Figure S2: Evaluation of BB_28390113 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

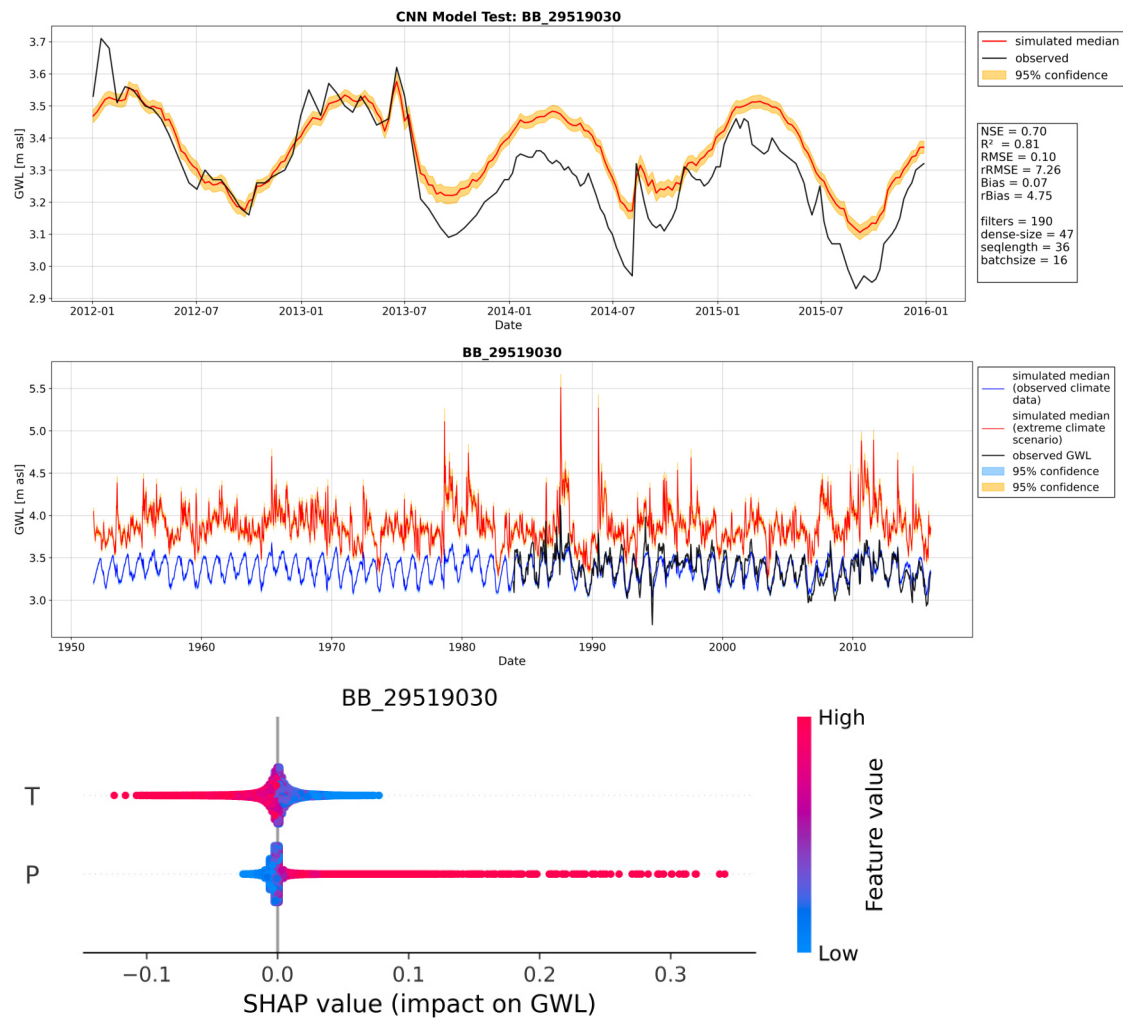


Figure S3: Evaluation of BB_29519030 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

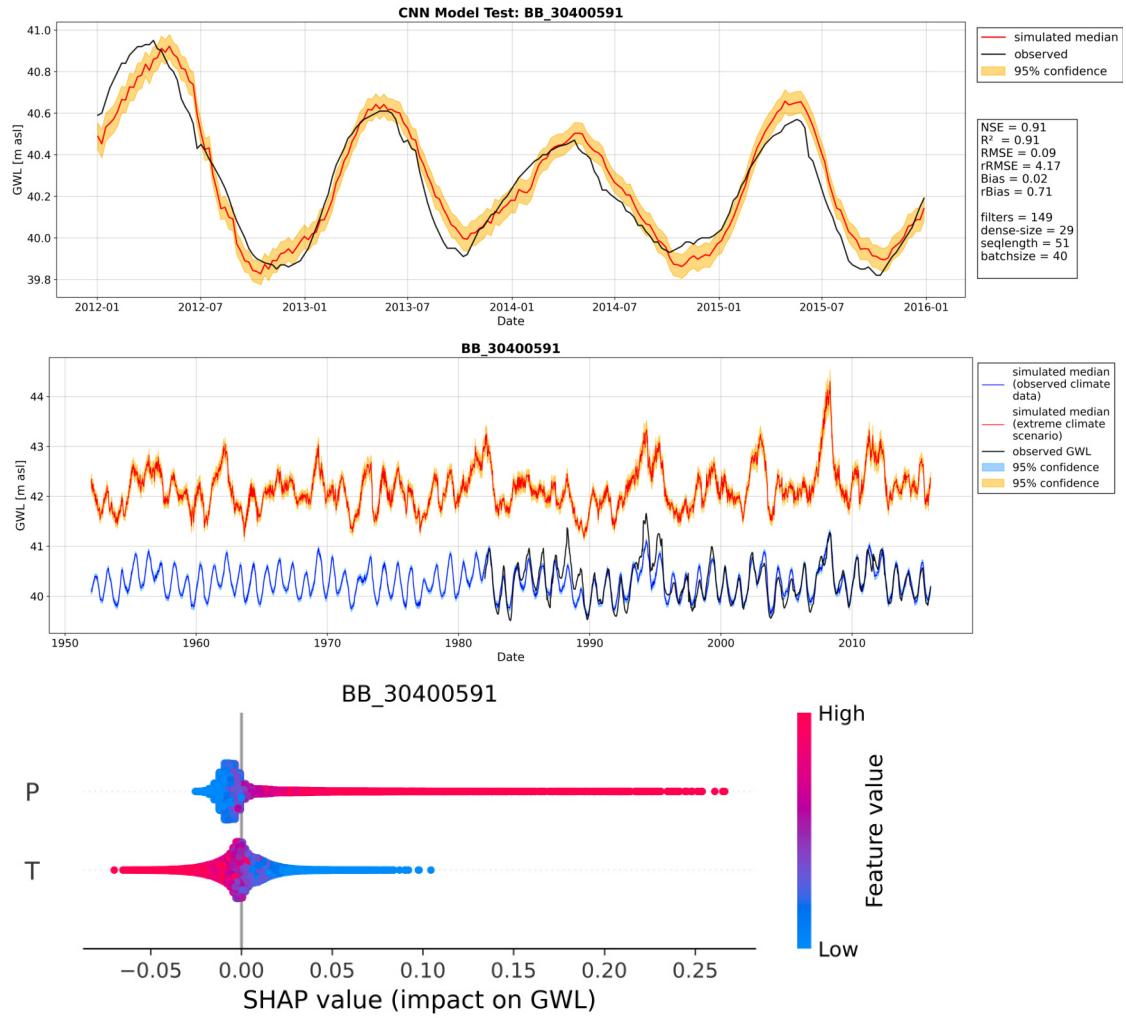


Figure S4: Evaluation of BB_30400591 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

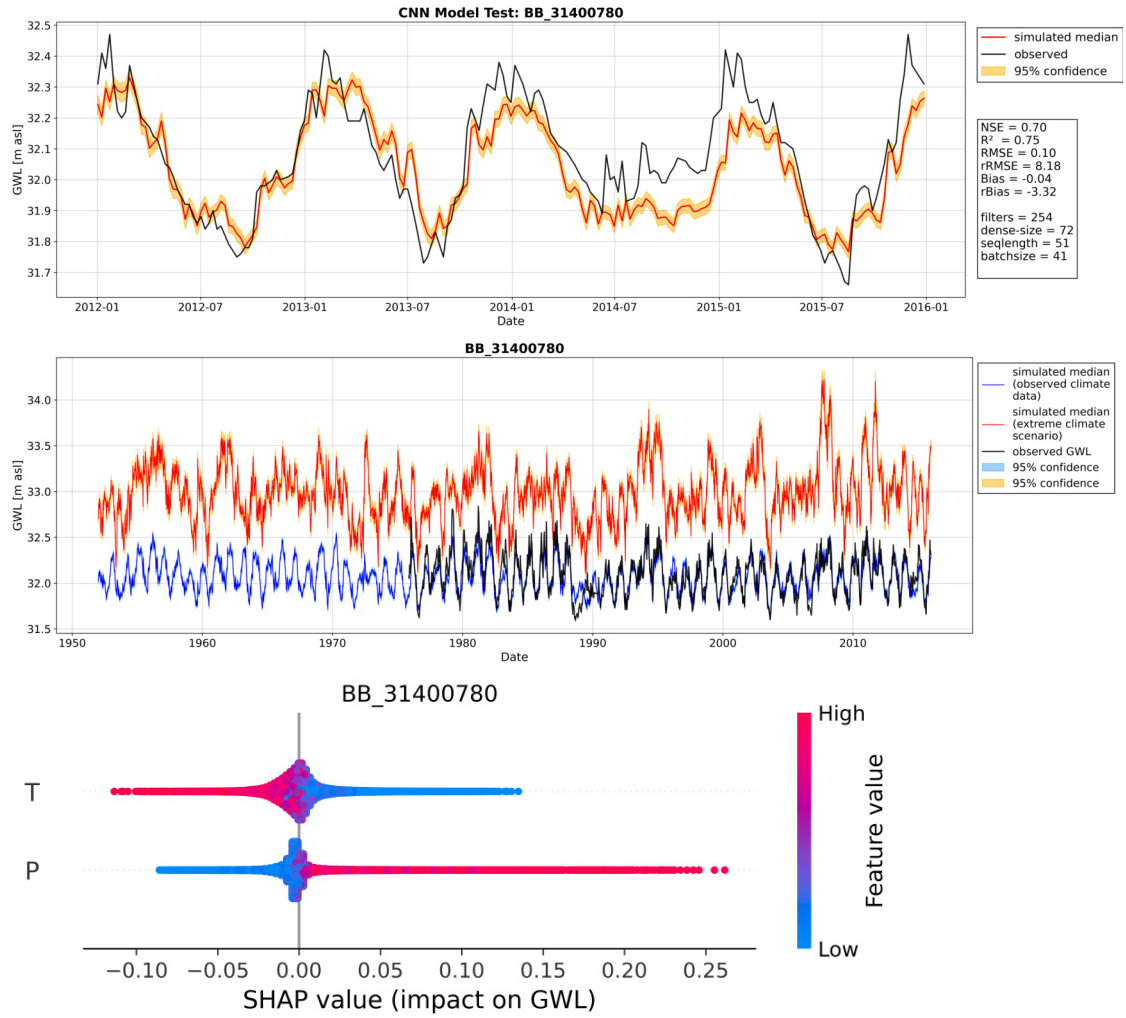


Figure S5: Evaluation of BB_31400780 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

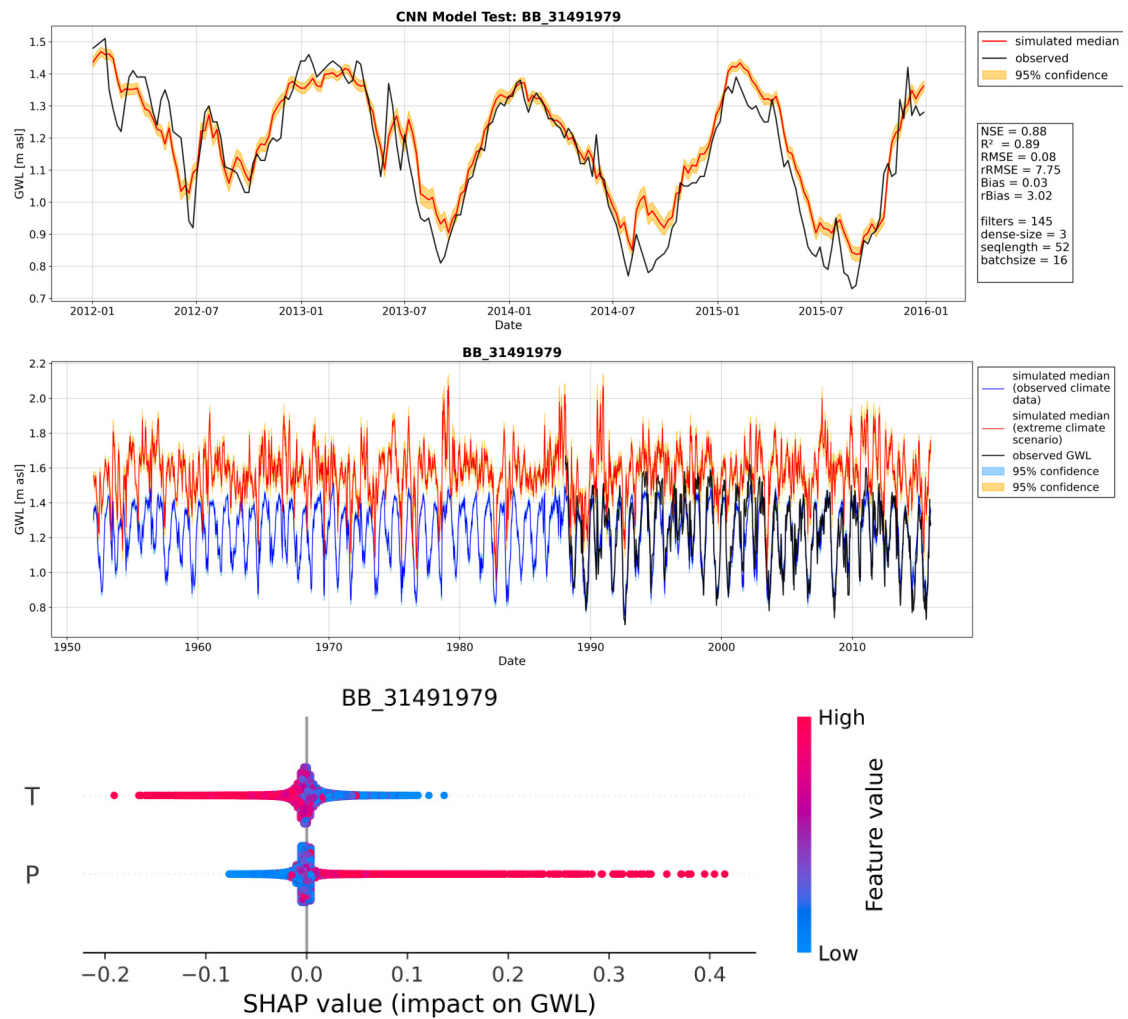


Figure S6: Evaluation of BB_31491979 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

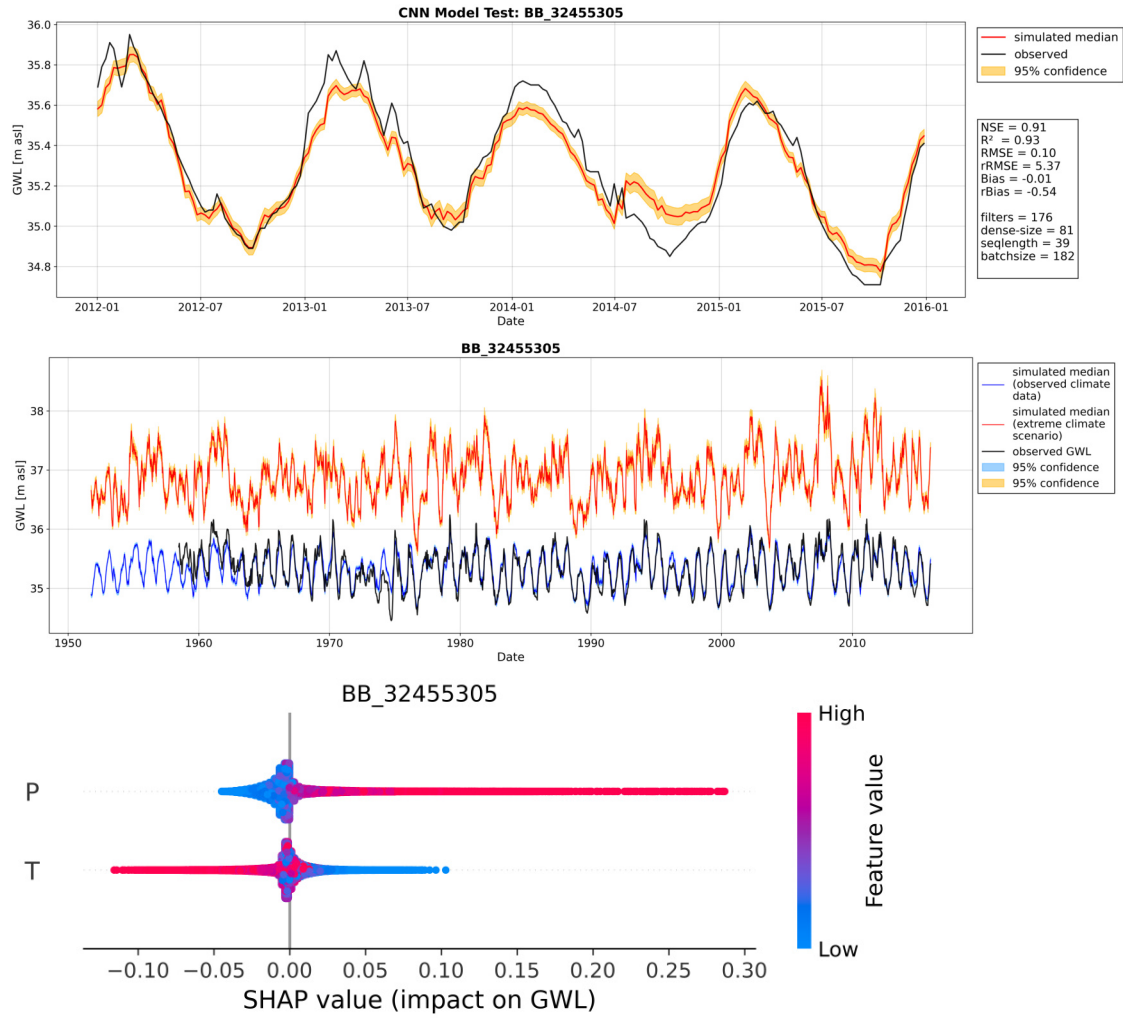


Figure S7: Evaluation of BB_32455305 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

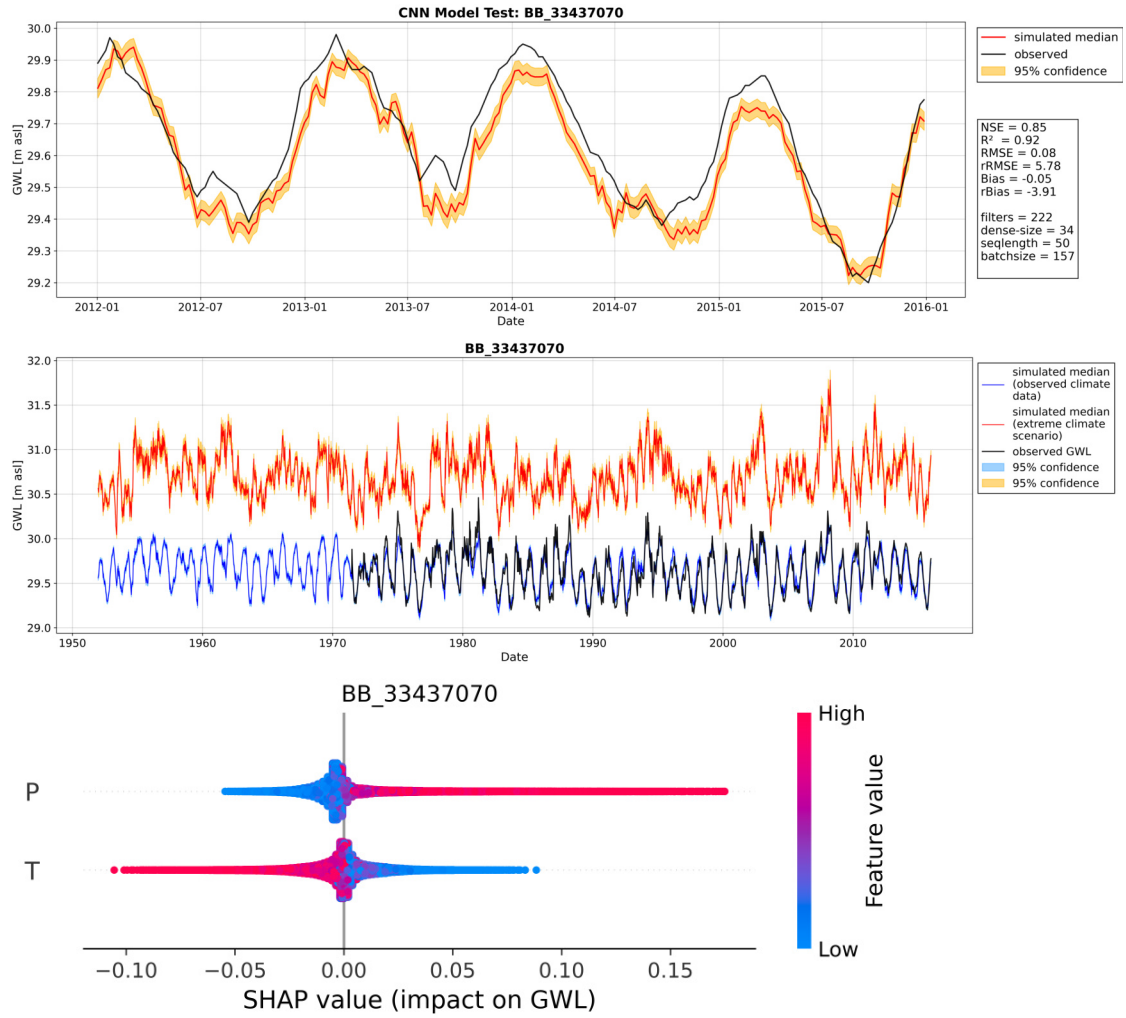


Figure S8: Evaluation of BB_33437070 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

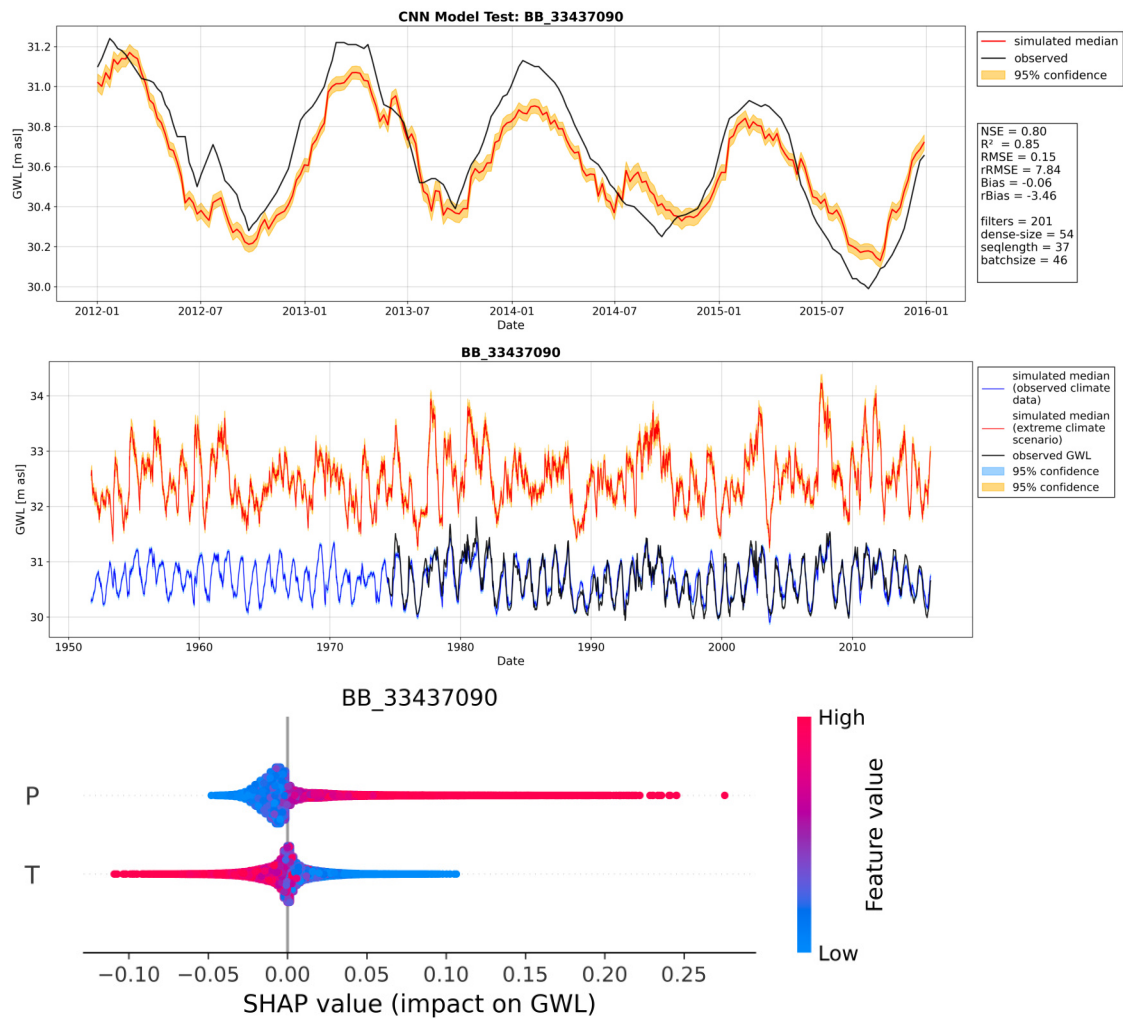


Figure S9: Evaluation of BB_33437090 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

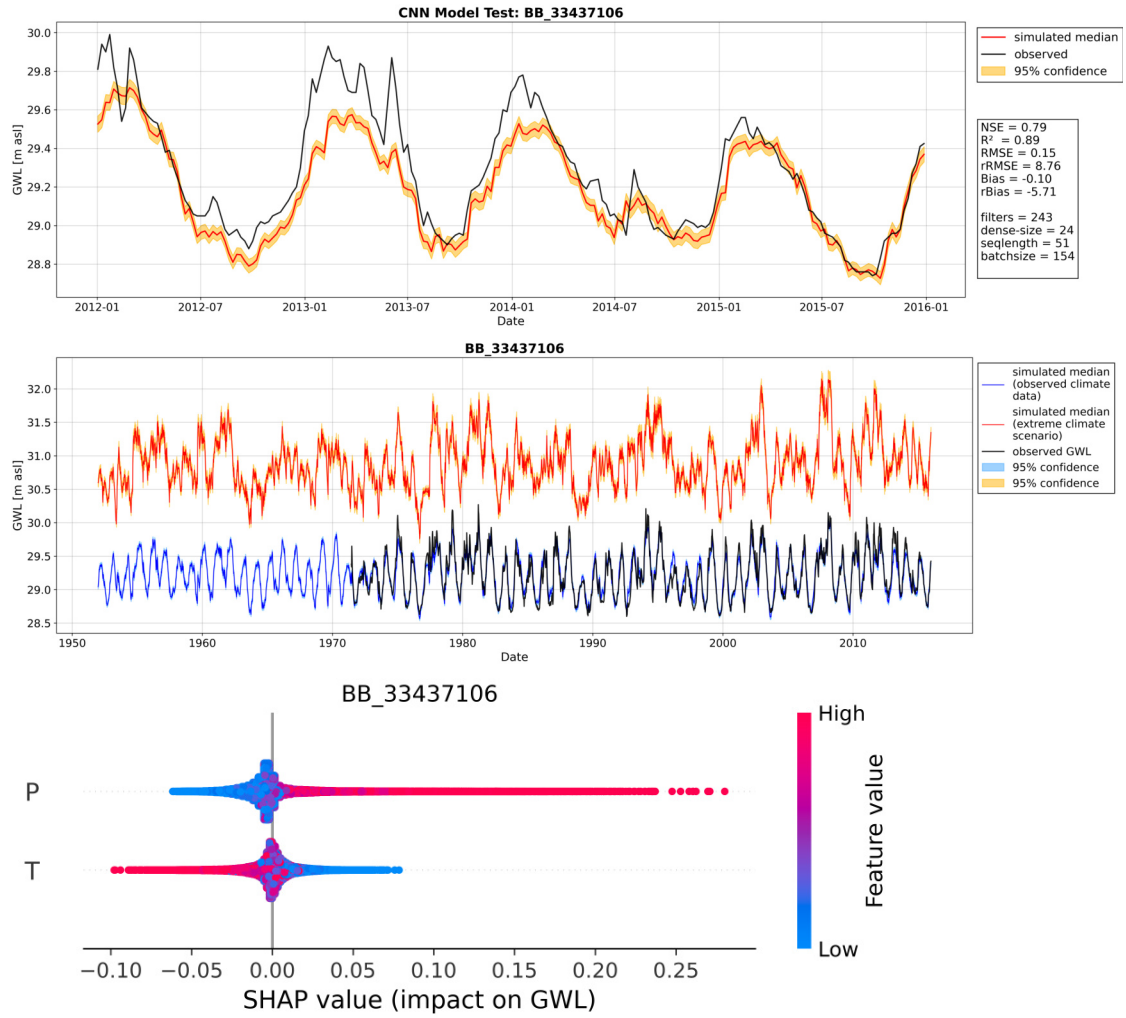


Figure S10: Evaluation of BB.33437106 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

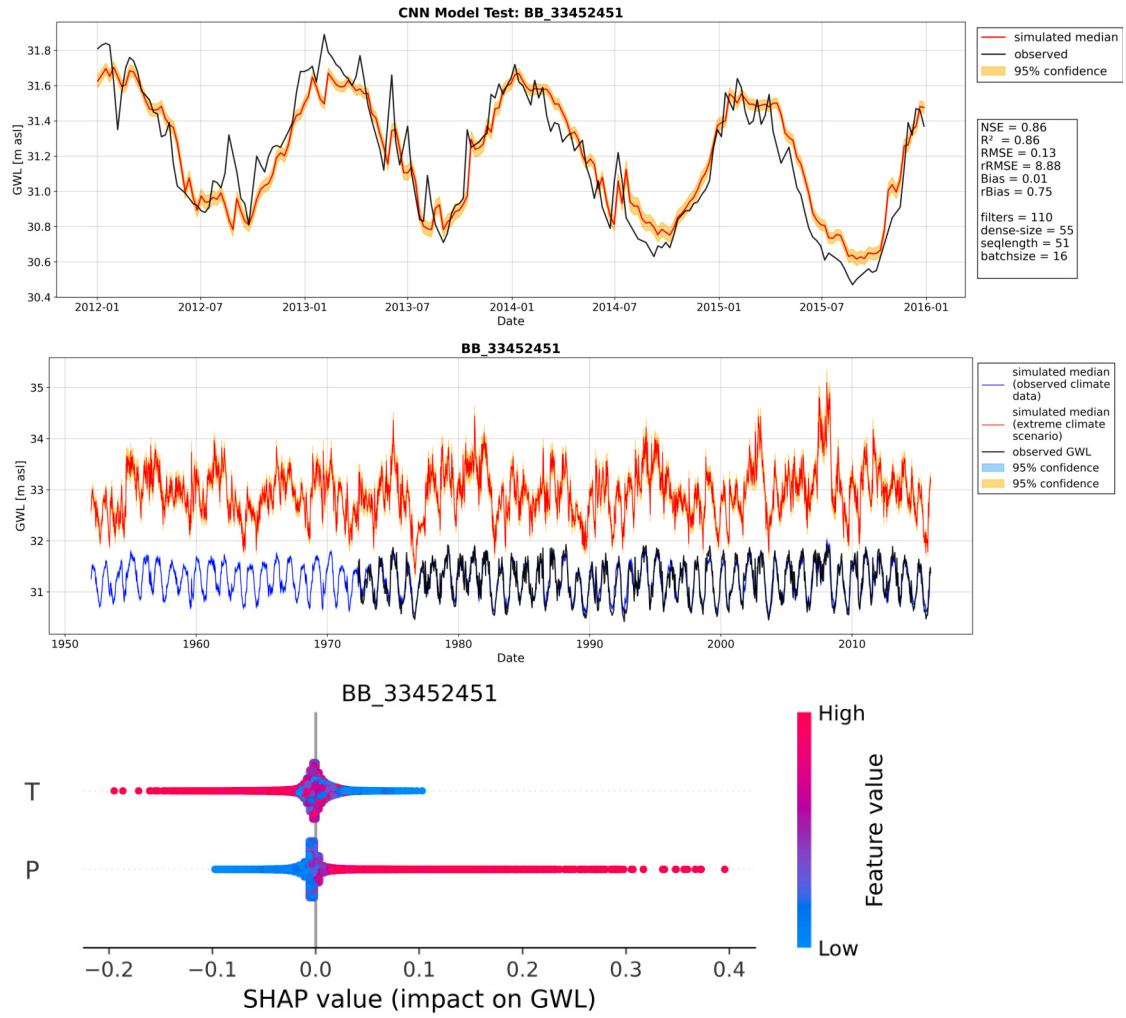


Figure S11: Evaluation of BB.33452451 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

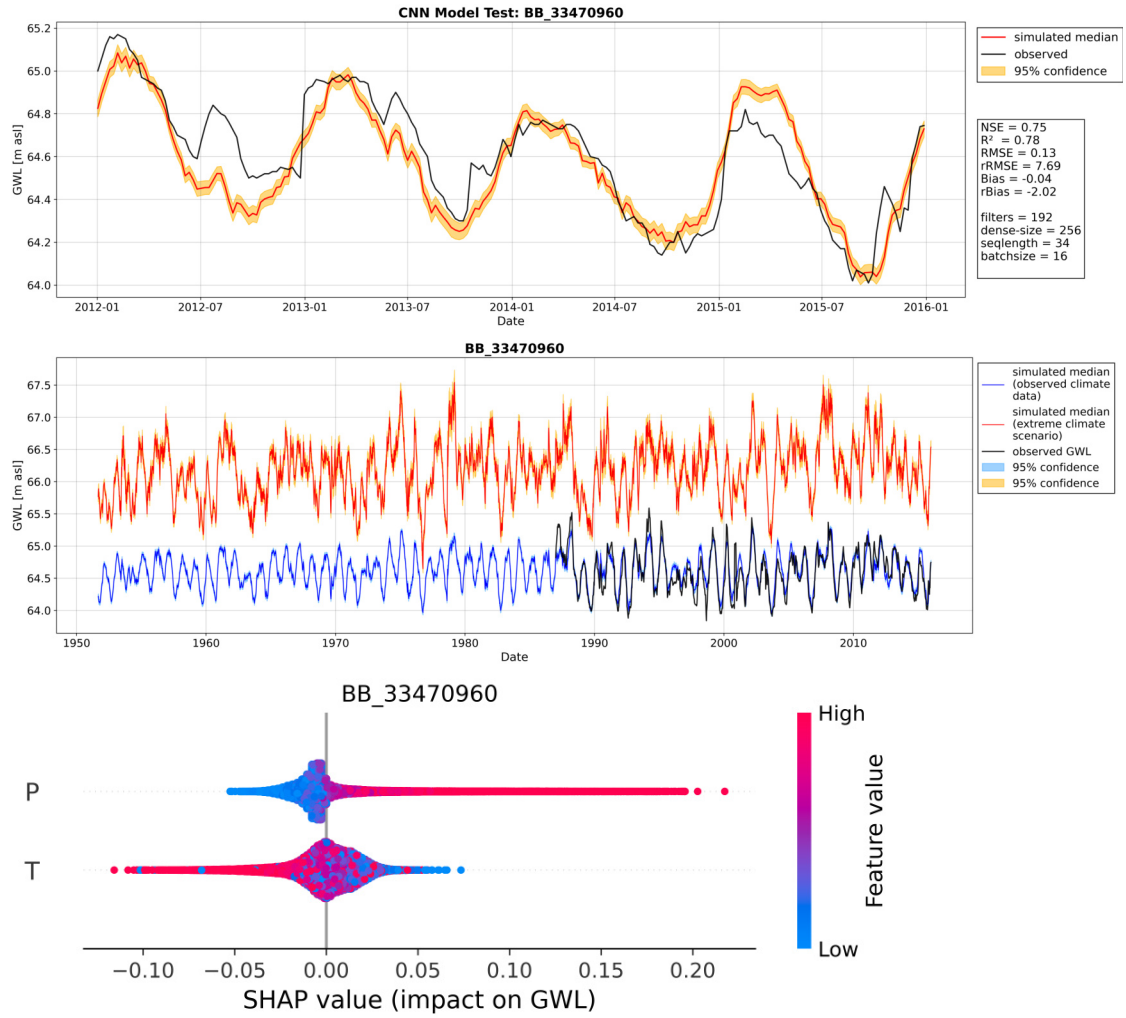


Figure S12: Evaluation of BB_33470960 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

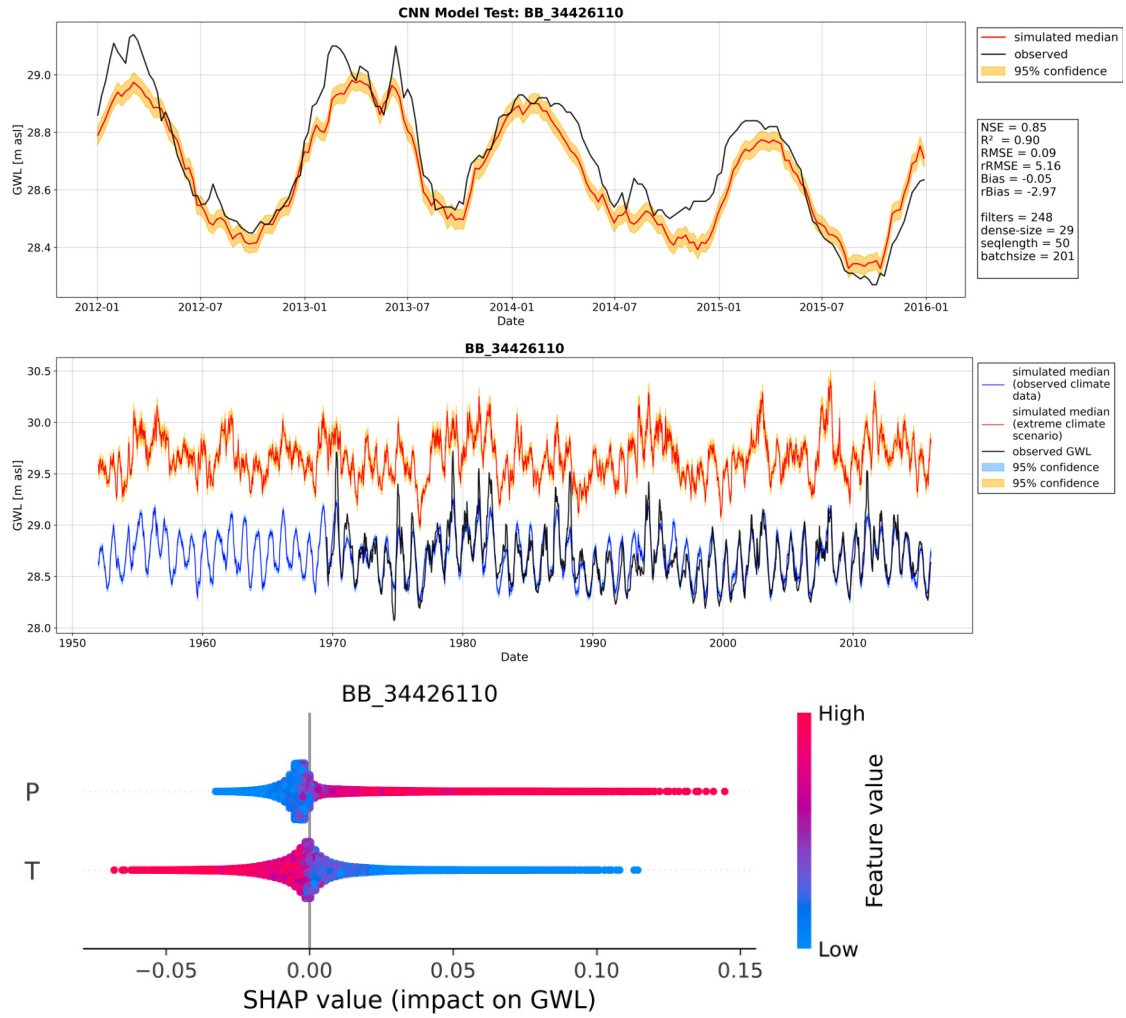


Figure S13: Evaluation of BB.34426110 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

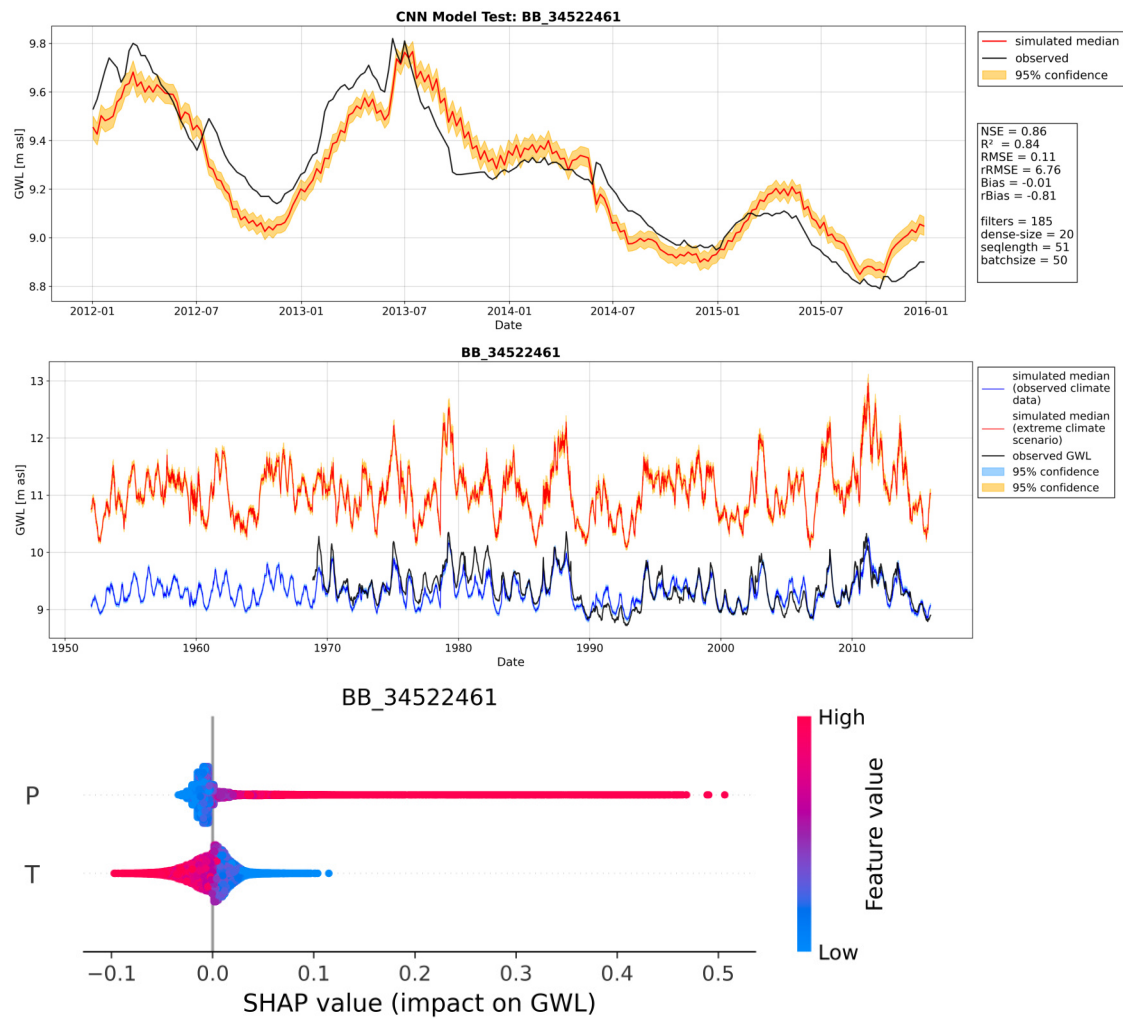


Figure S14: Evaluation of BB.34522461 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

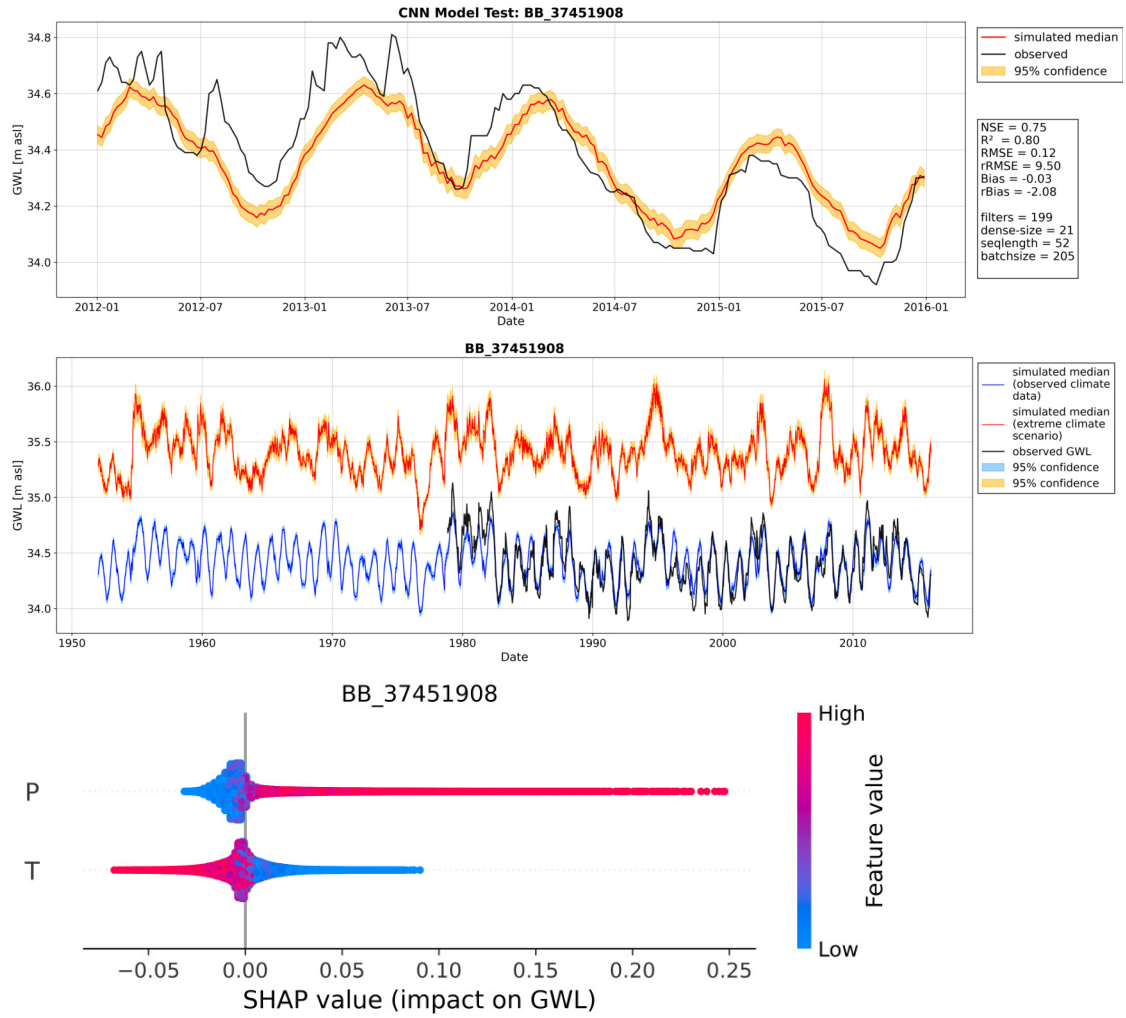


Figure S15: Evaluation of BB.37451908 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

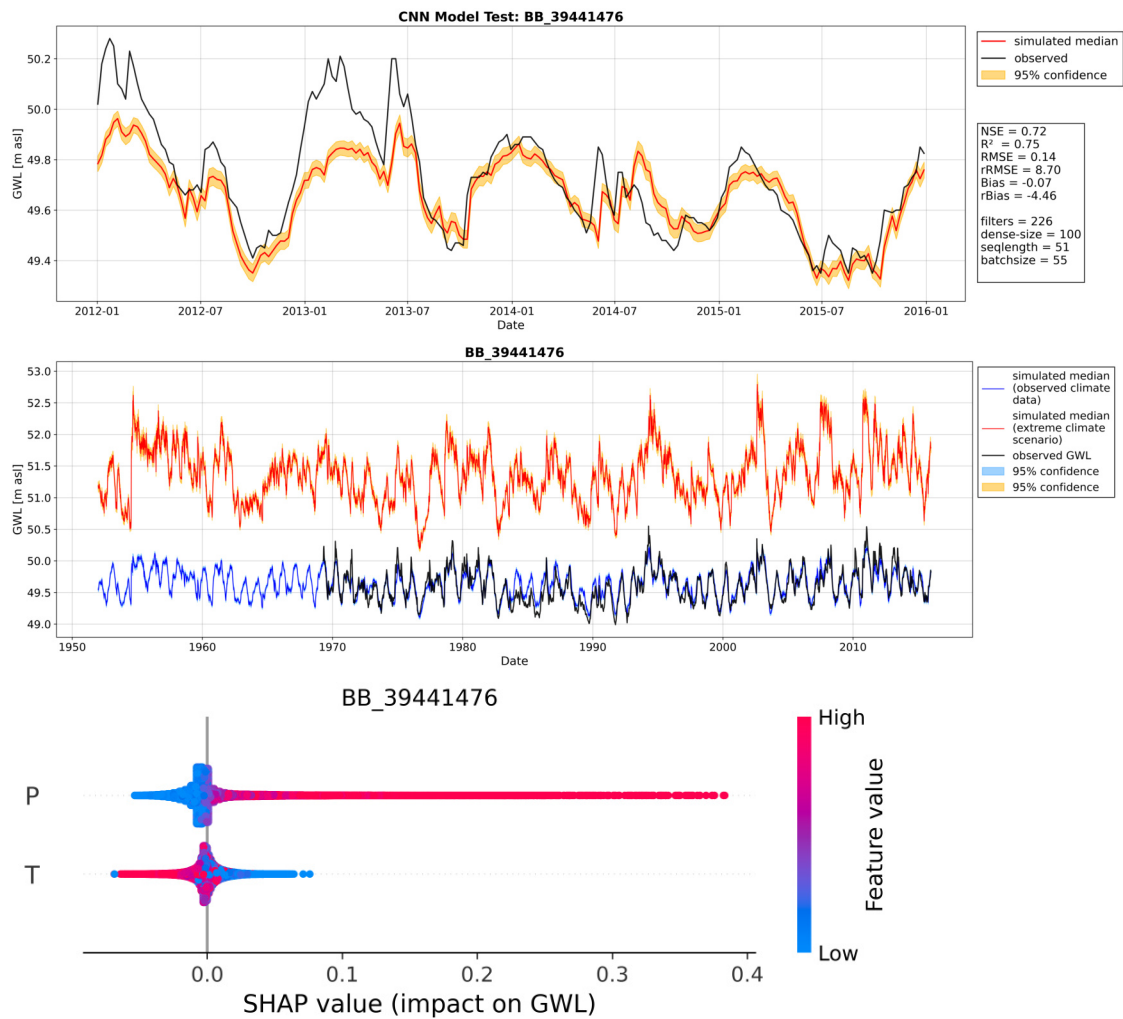


Figure S16: Evaluation of BB.39441476 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

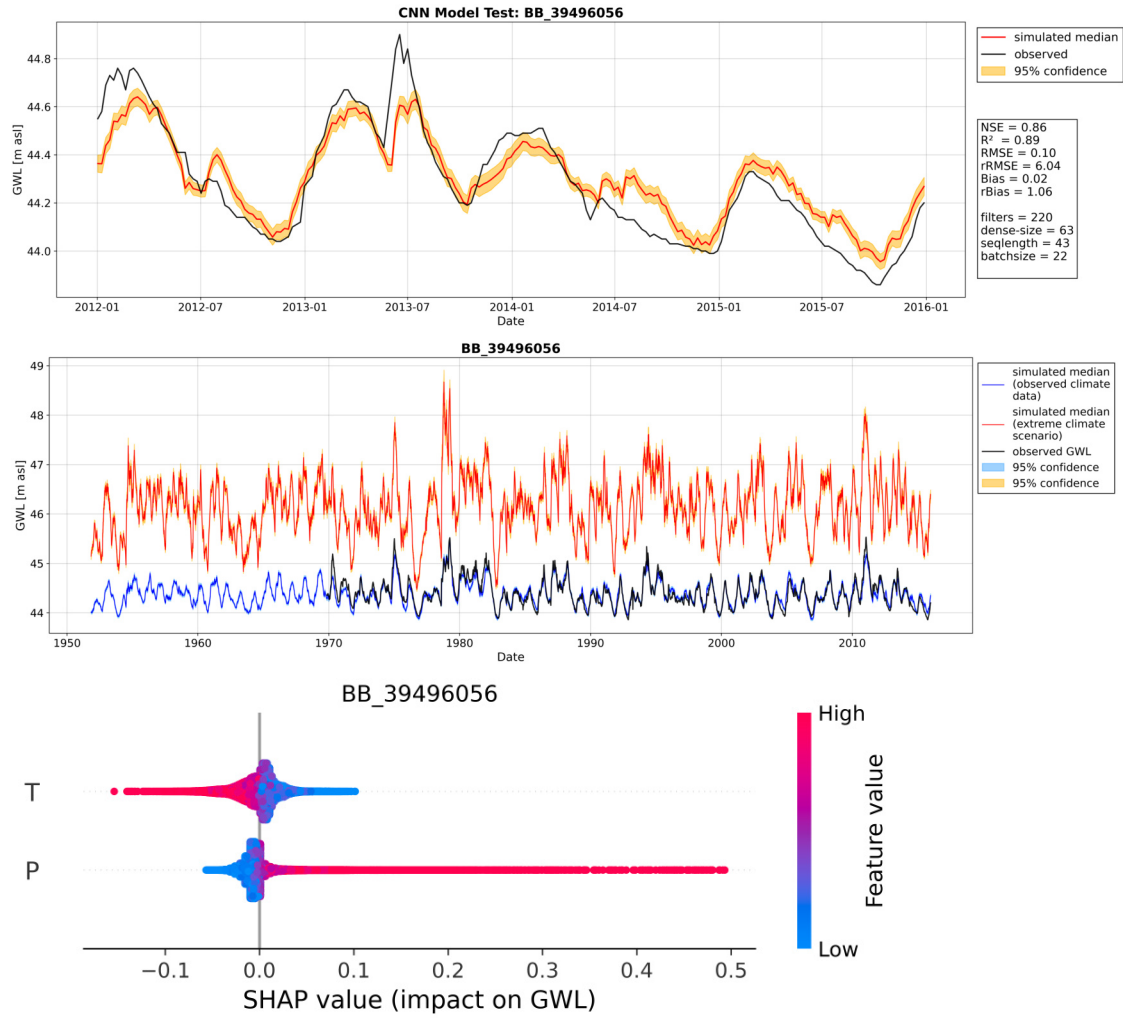


Figure S17: Evaluation of BB_39496056 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

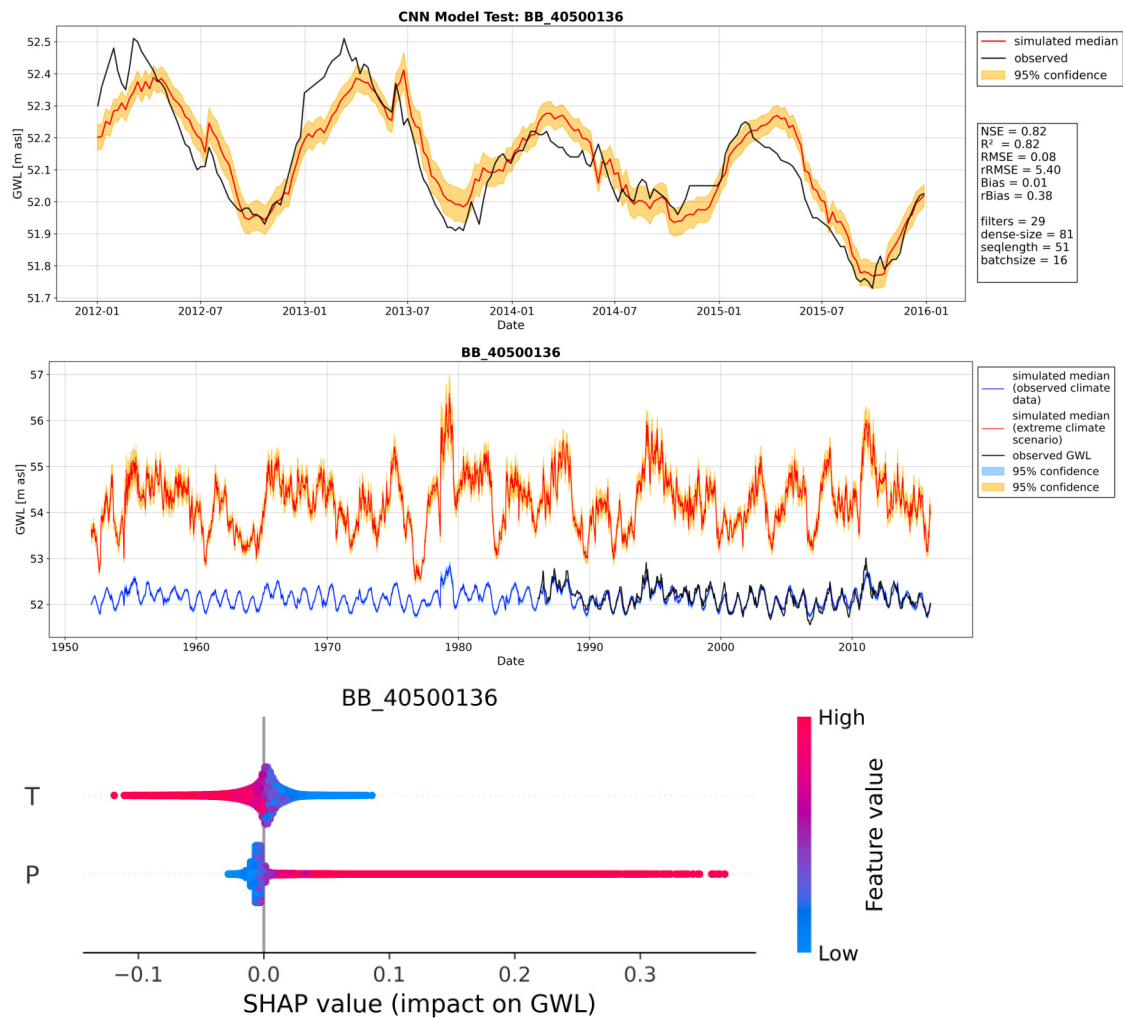


Figure S18: Evaluation of BB_40500136 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

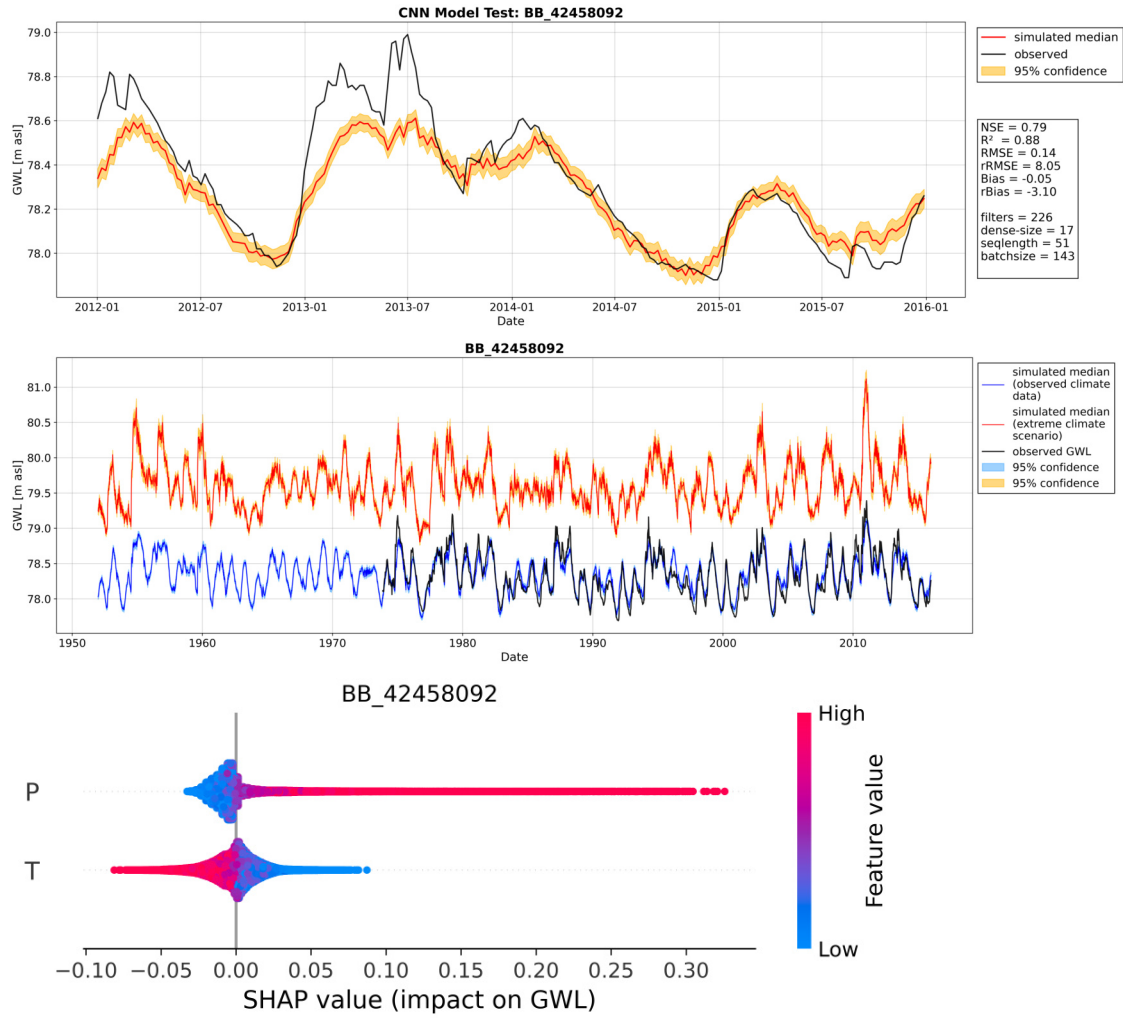


Figure S19: Evaluation of BB_42458092 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

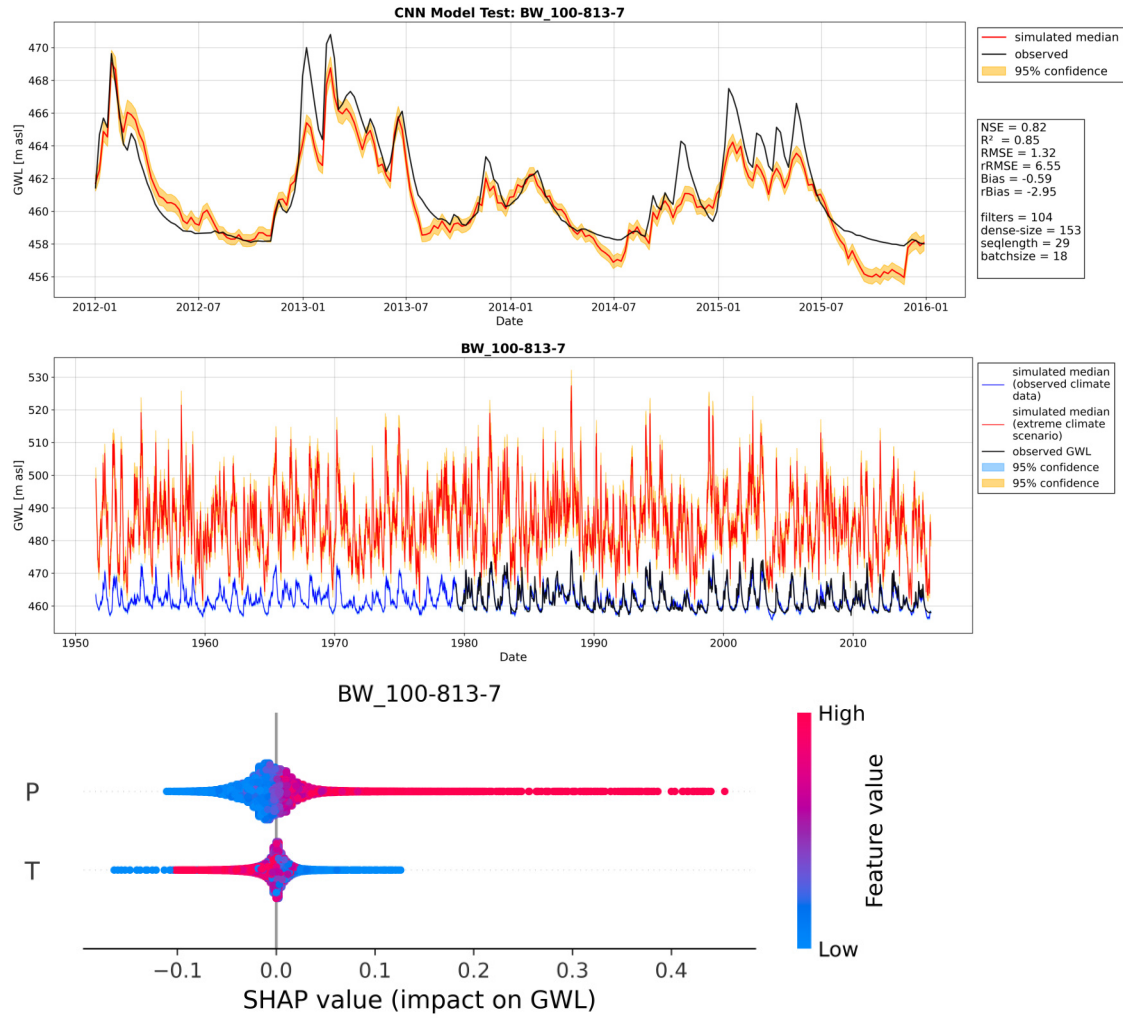


Figure S20: Evaluation of BW_100-813-7 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

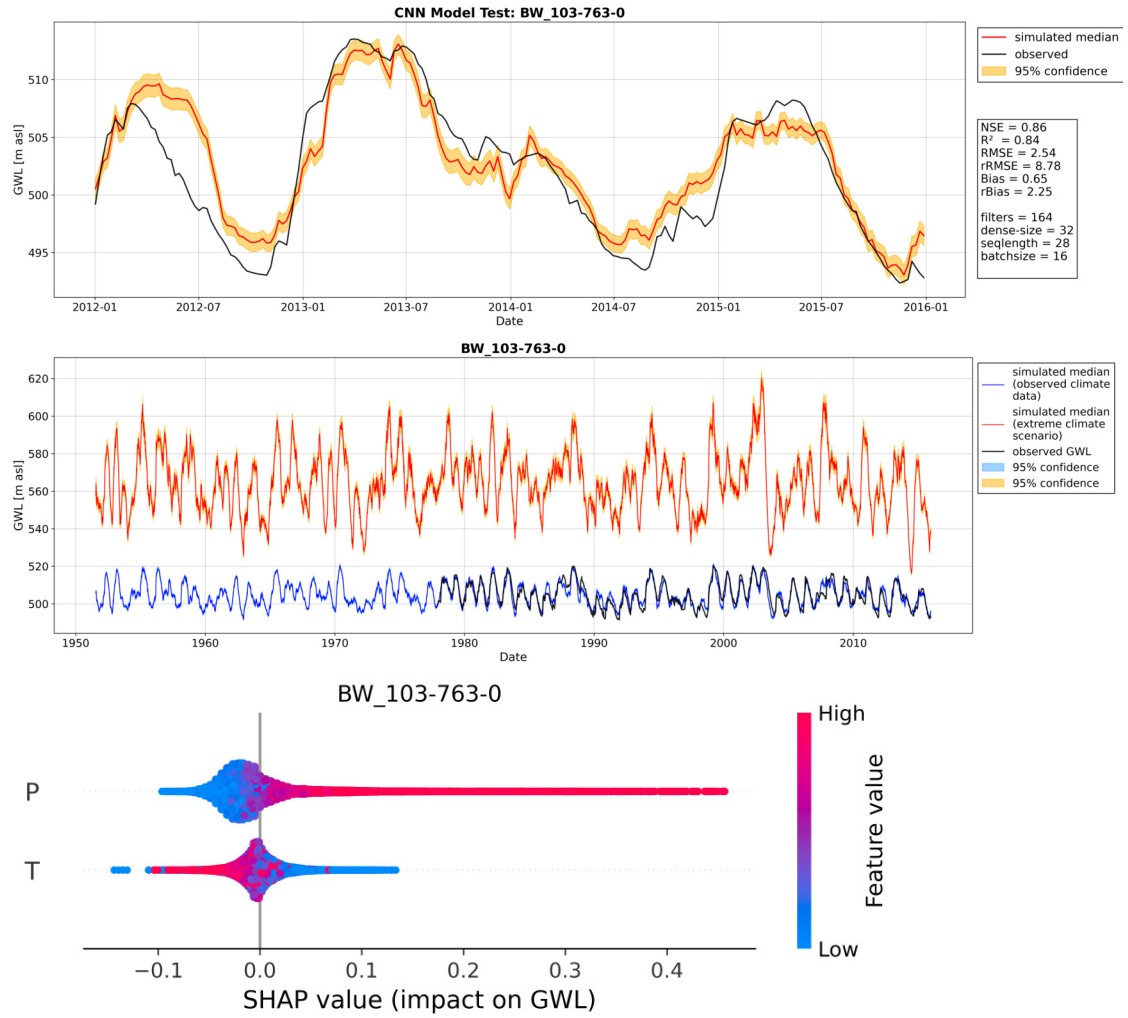


Figure S21: Evaluation of BW_103-763-0 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

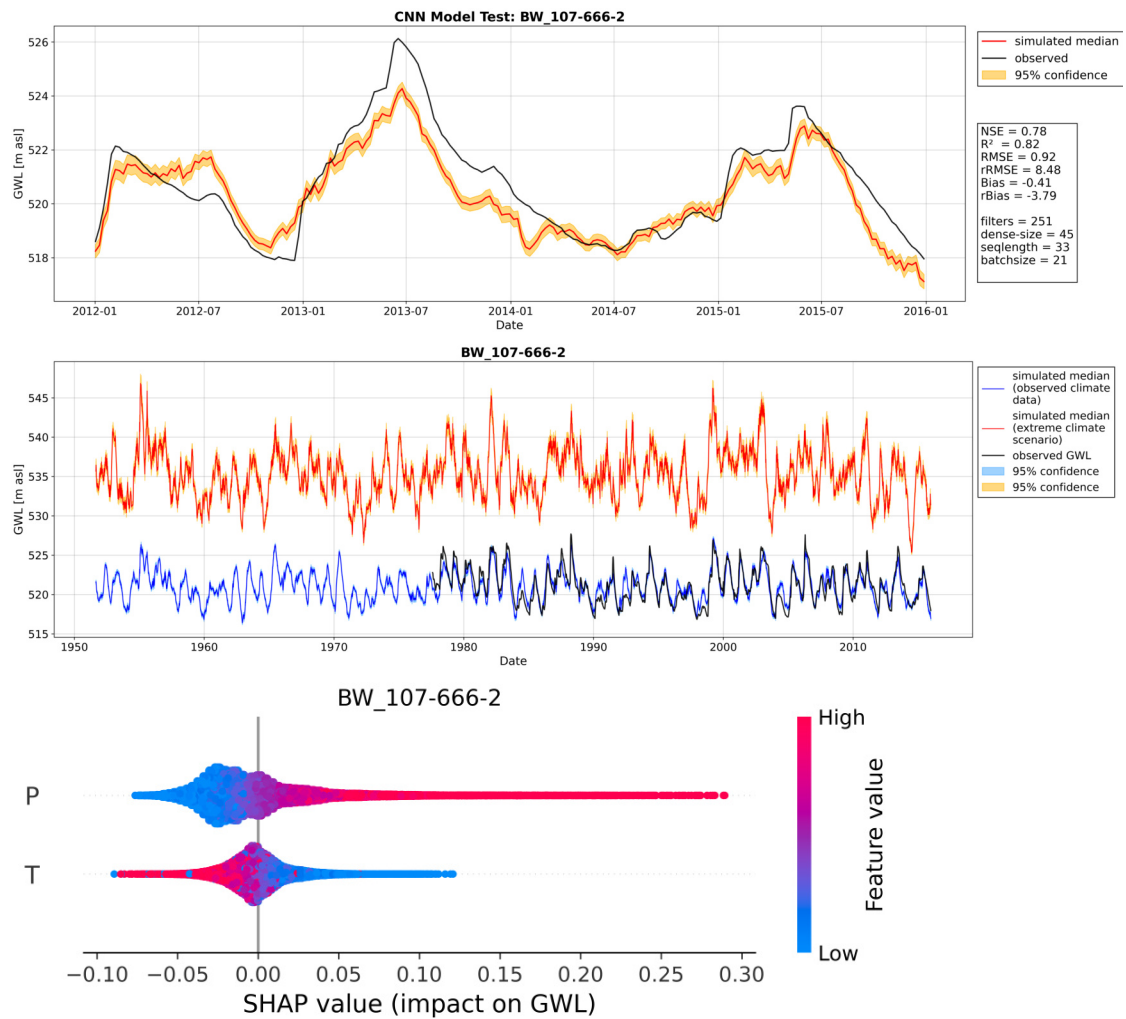


Figure S22: Evaluation of BW_107-666-2 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

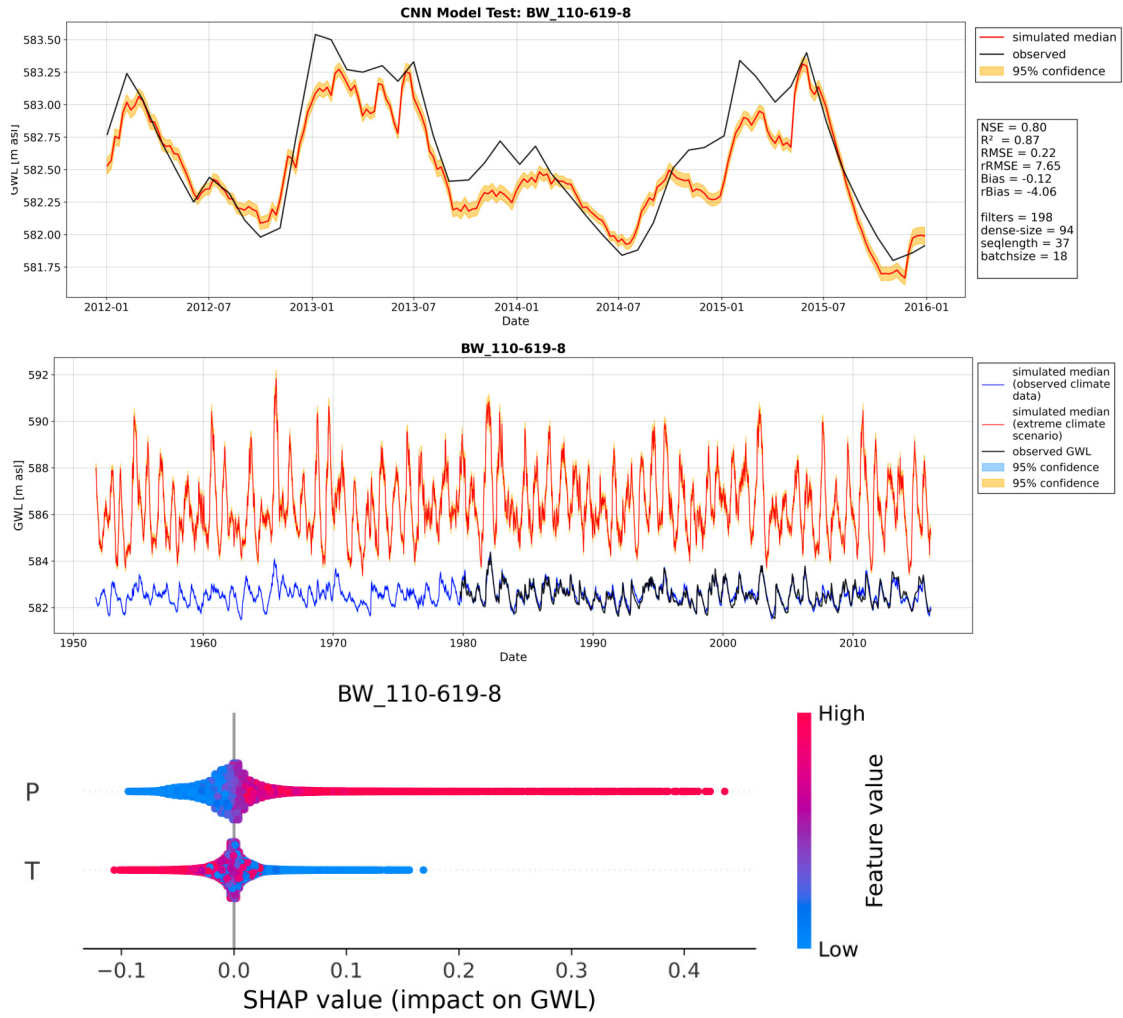


Figure S23: Evaluation of BW_110-619-8 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

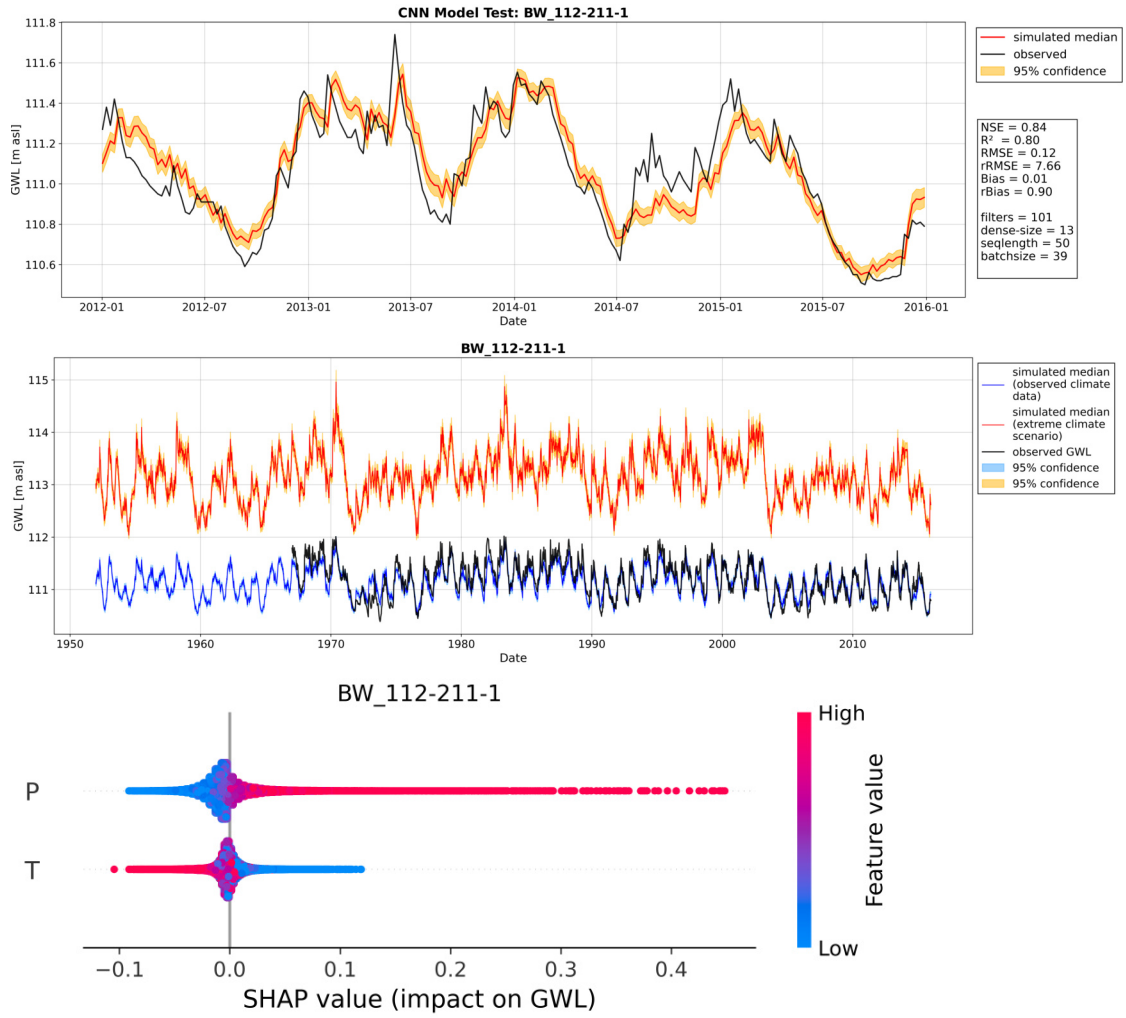


Figure S24: Evaluation of BW_112-211-1 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

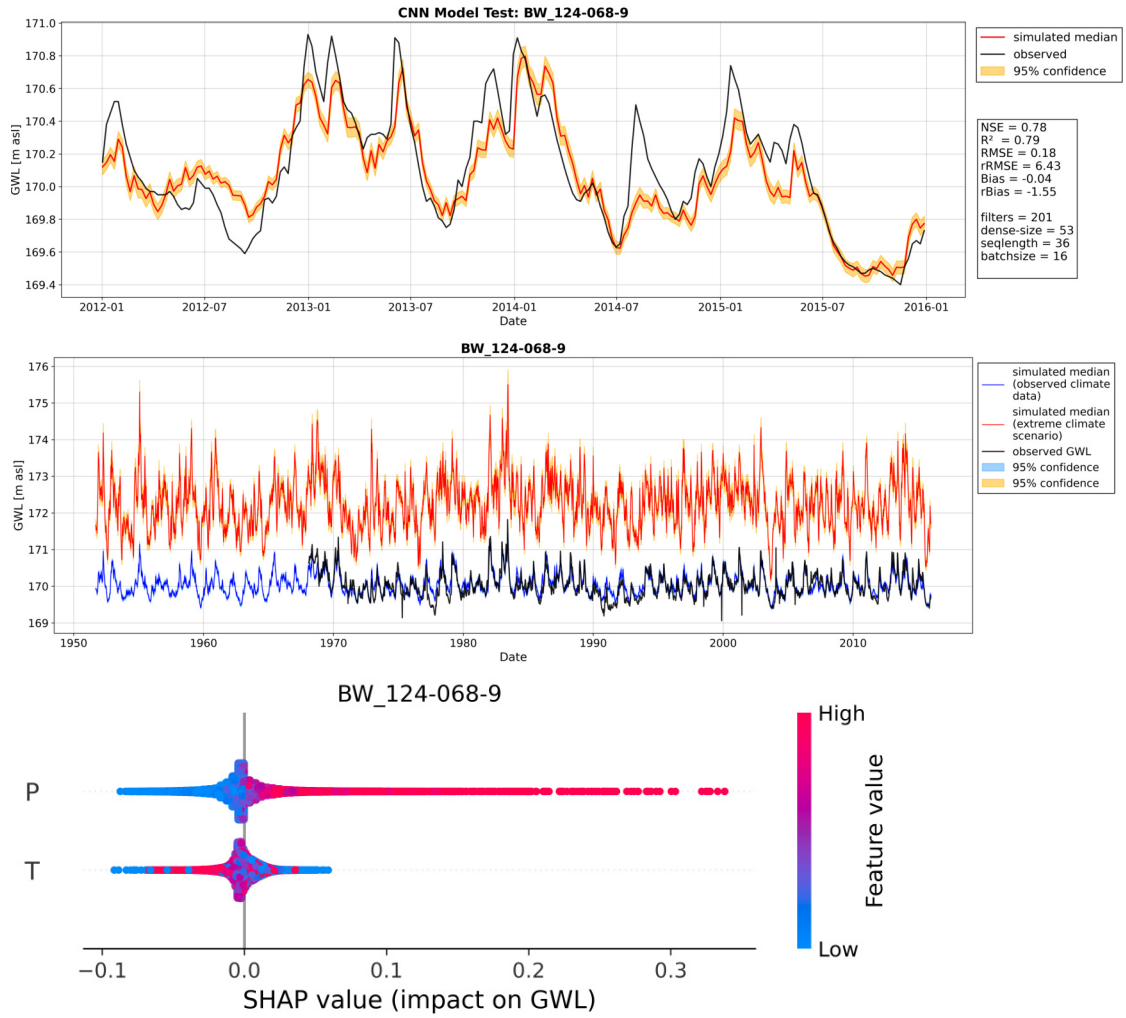


Figure S25: Evaluation of BW_124-068-9 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

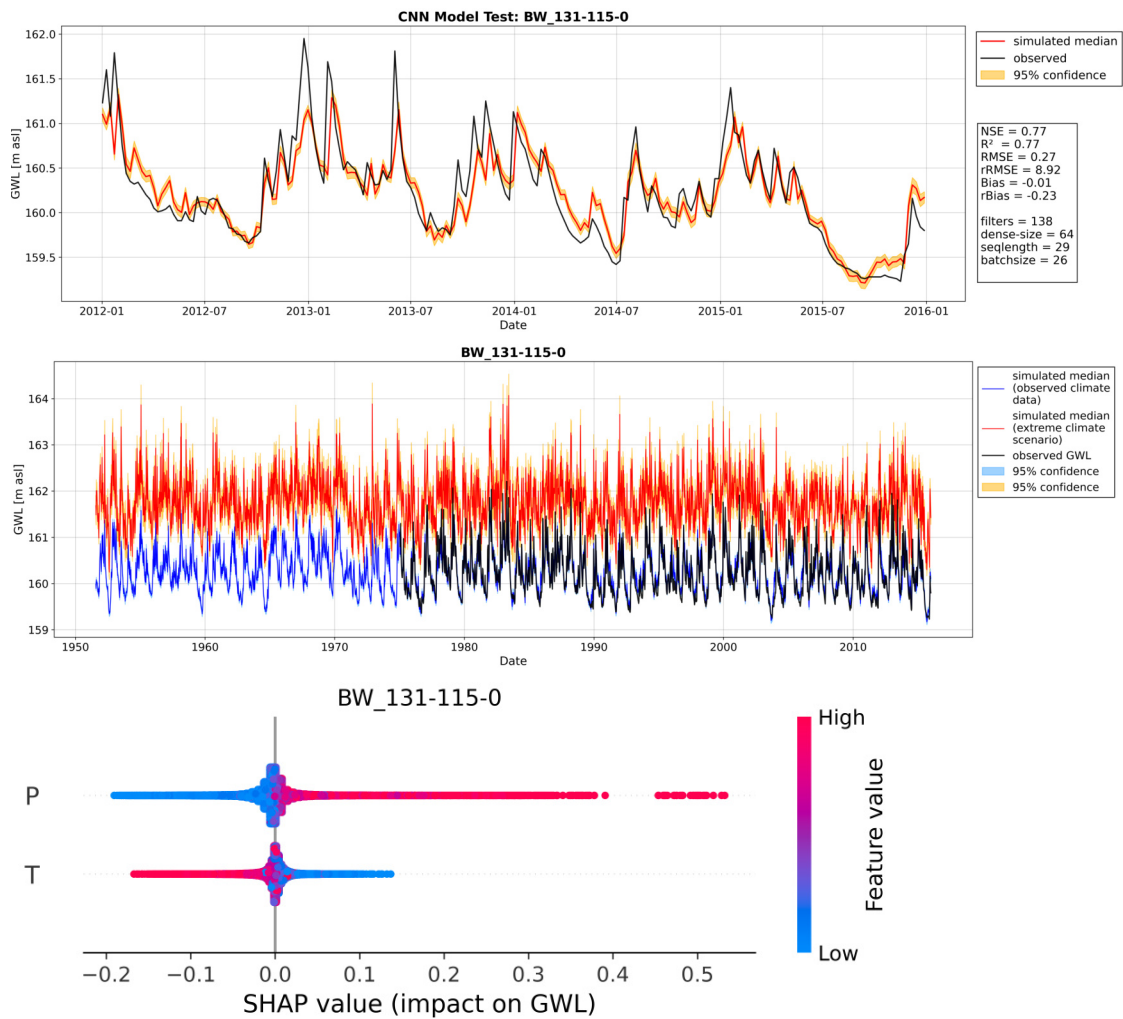


Figure S26: Evaluation of BW_131-115-0 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

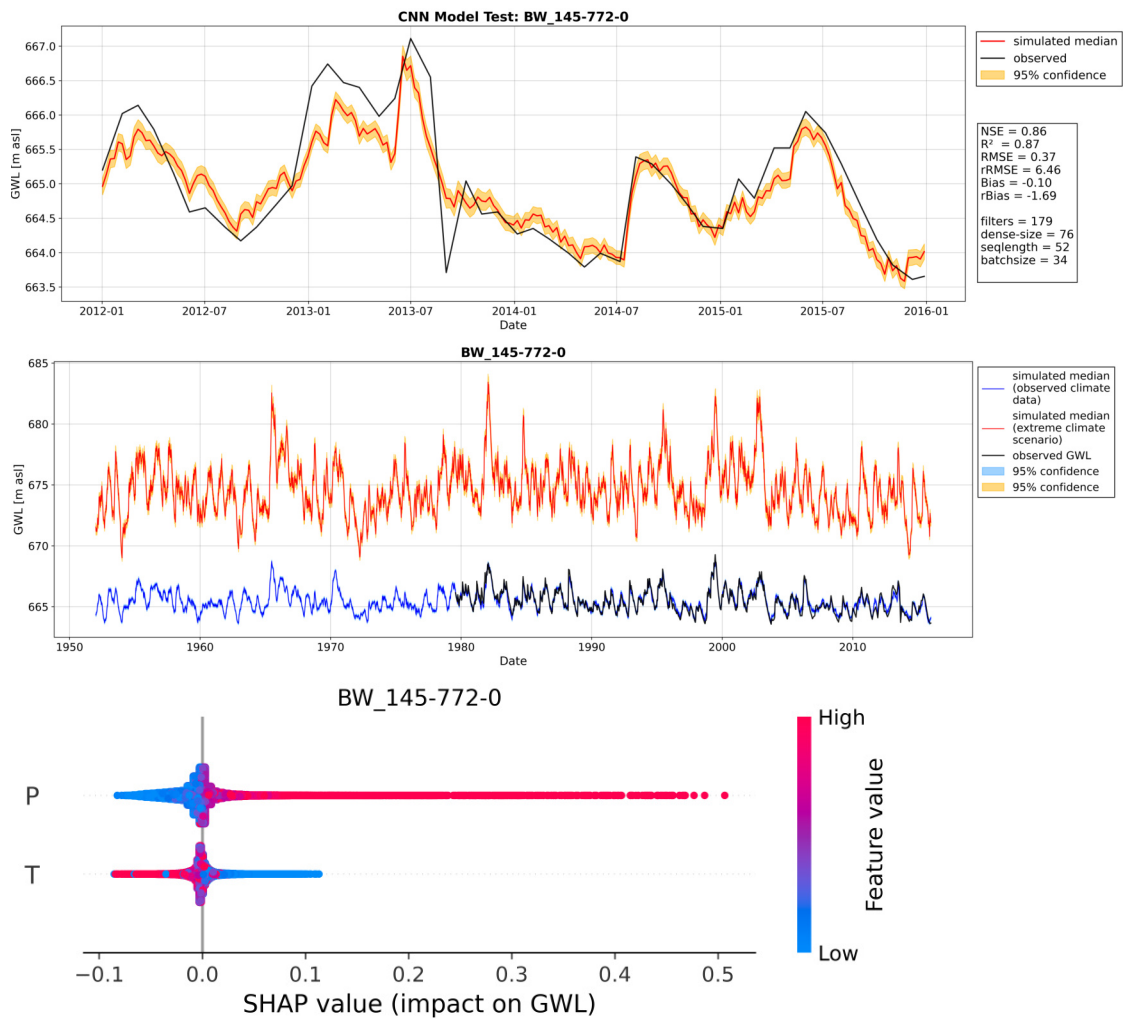


Figure S27: Evaluation of BW_145-772-0 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

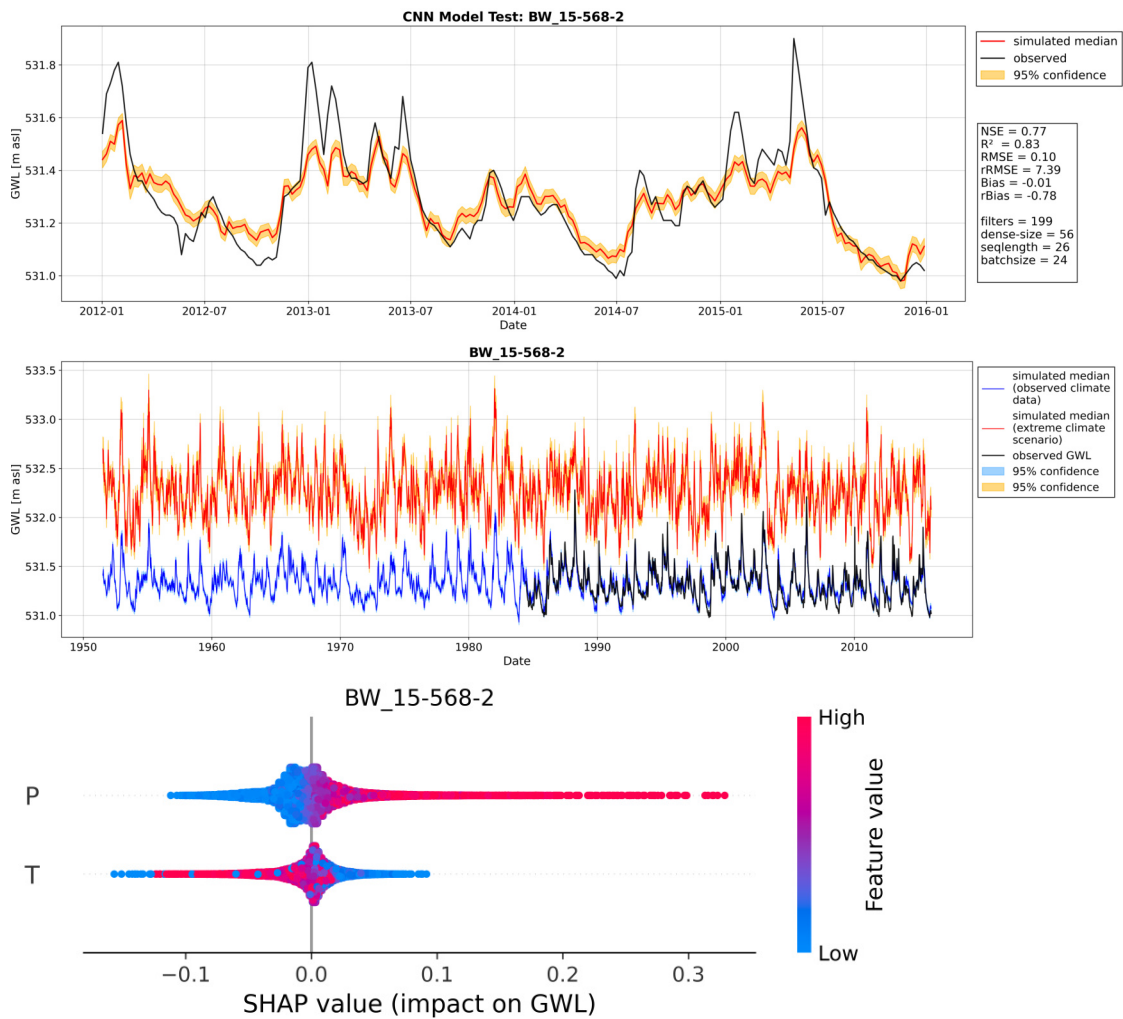


Figure S28: Evaluation of BW_15-568-2 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

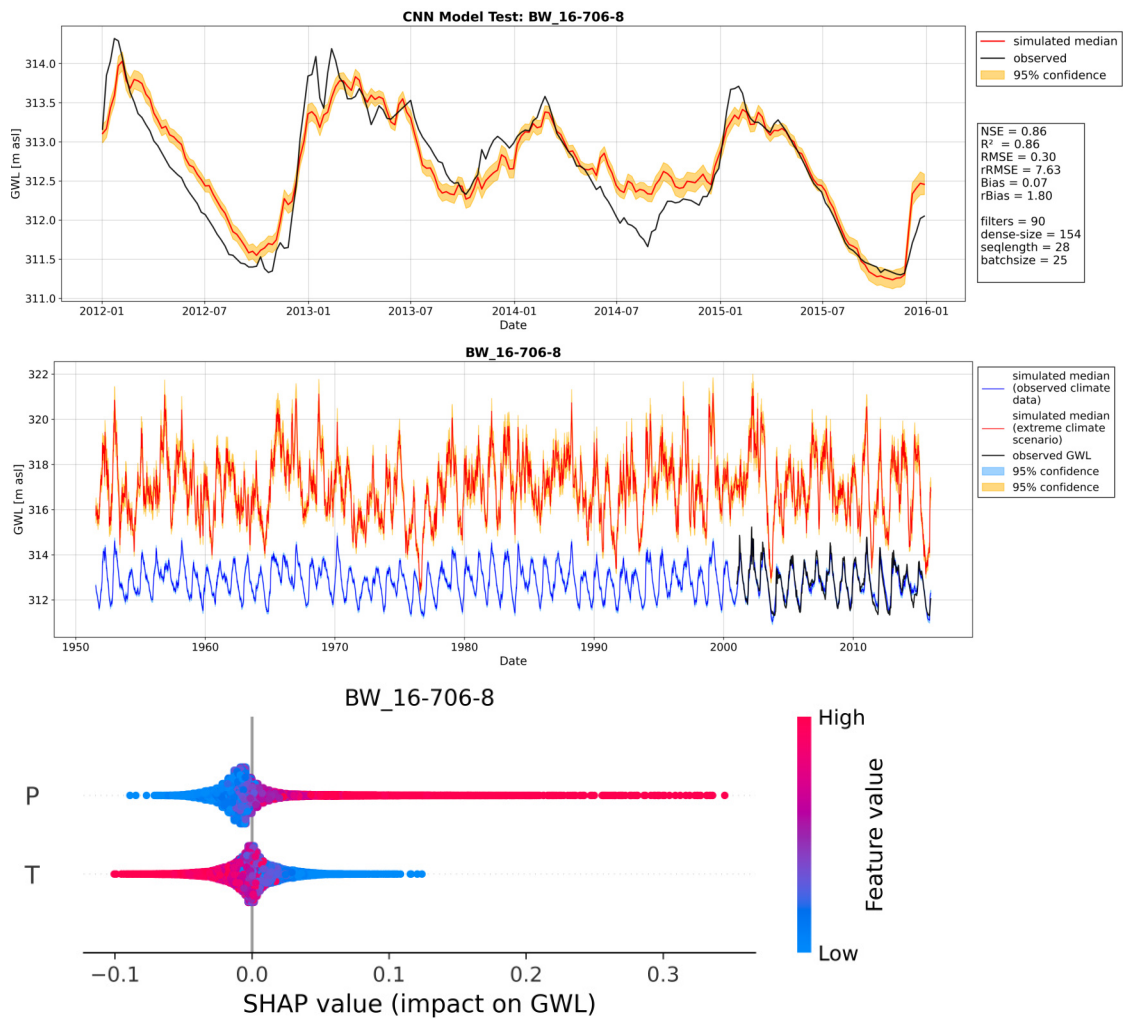


Figure S29: Evaluation of BW_16-706-8 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

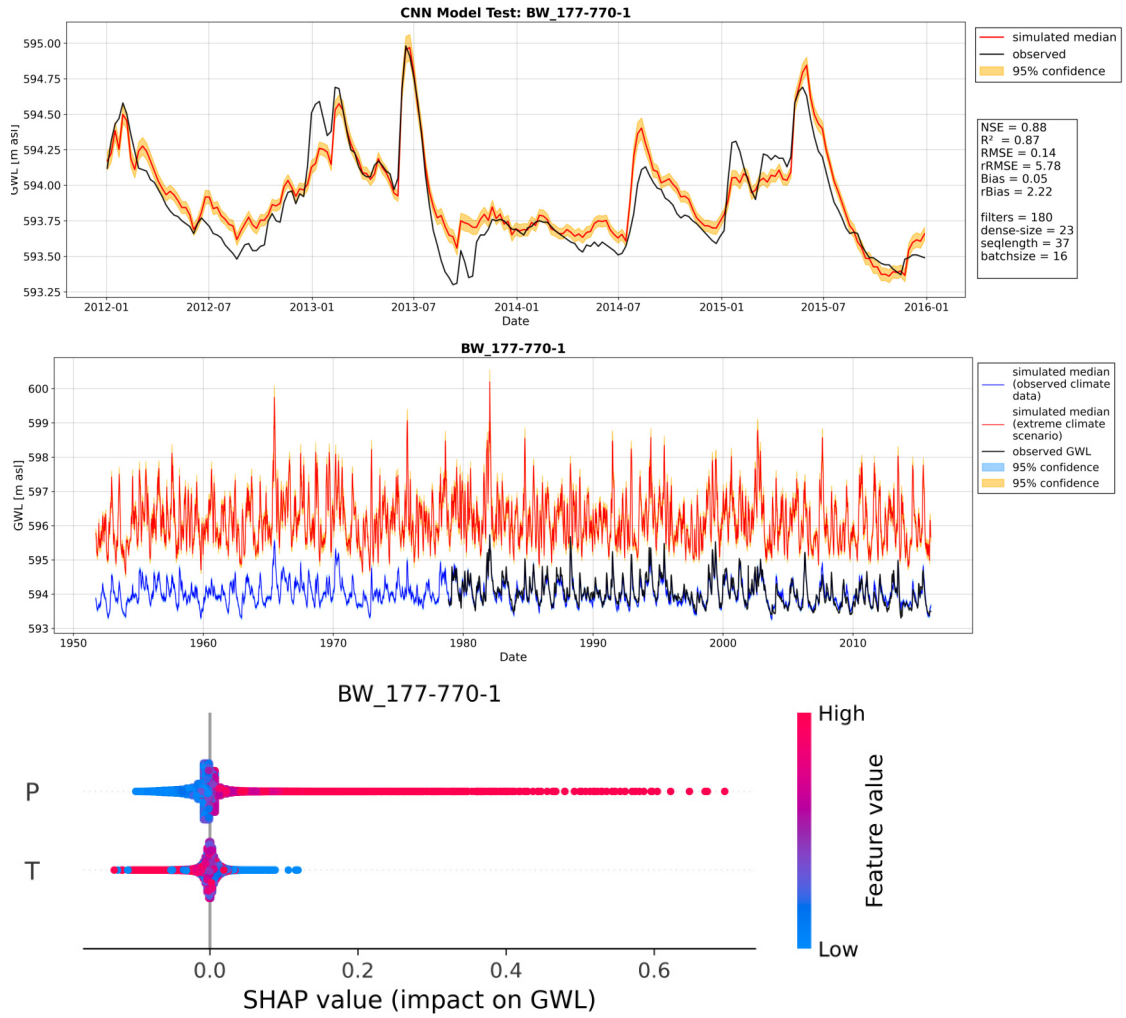


Figure S30: Evaluation of BW_177-770-1 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

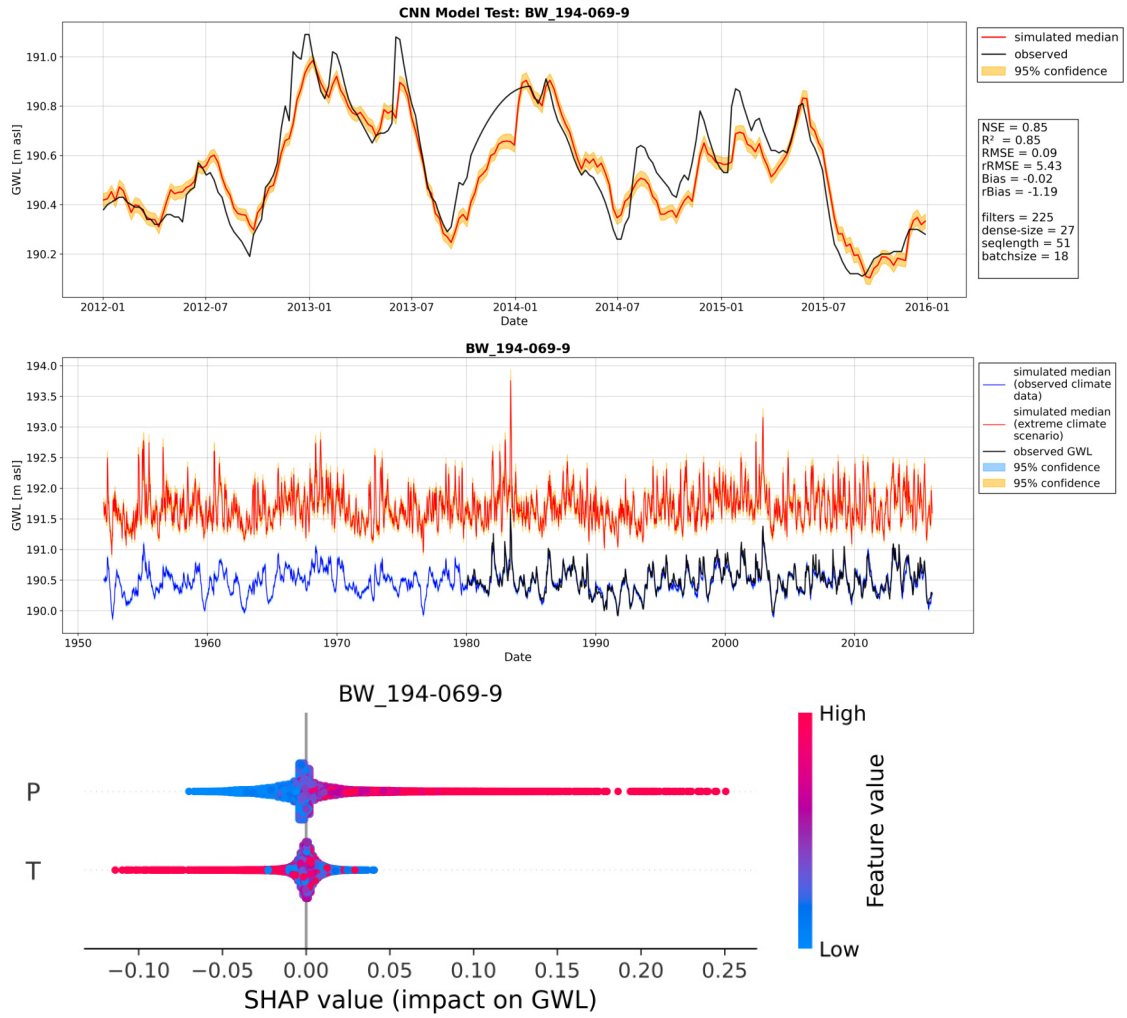


Figure S31: Evaluation of BW_194-069-9 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

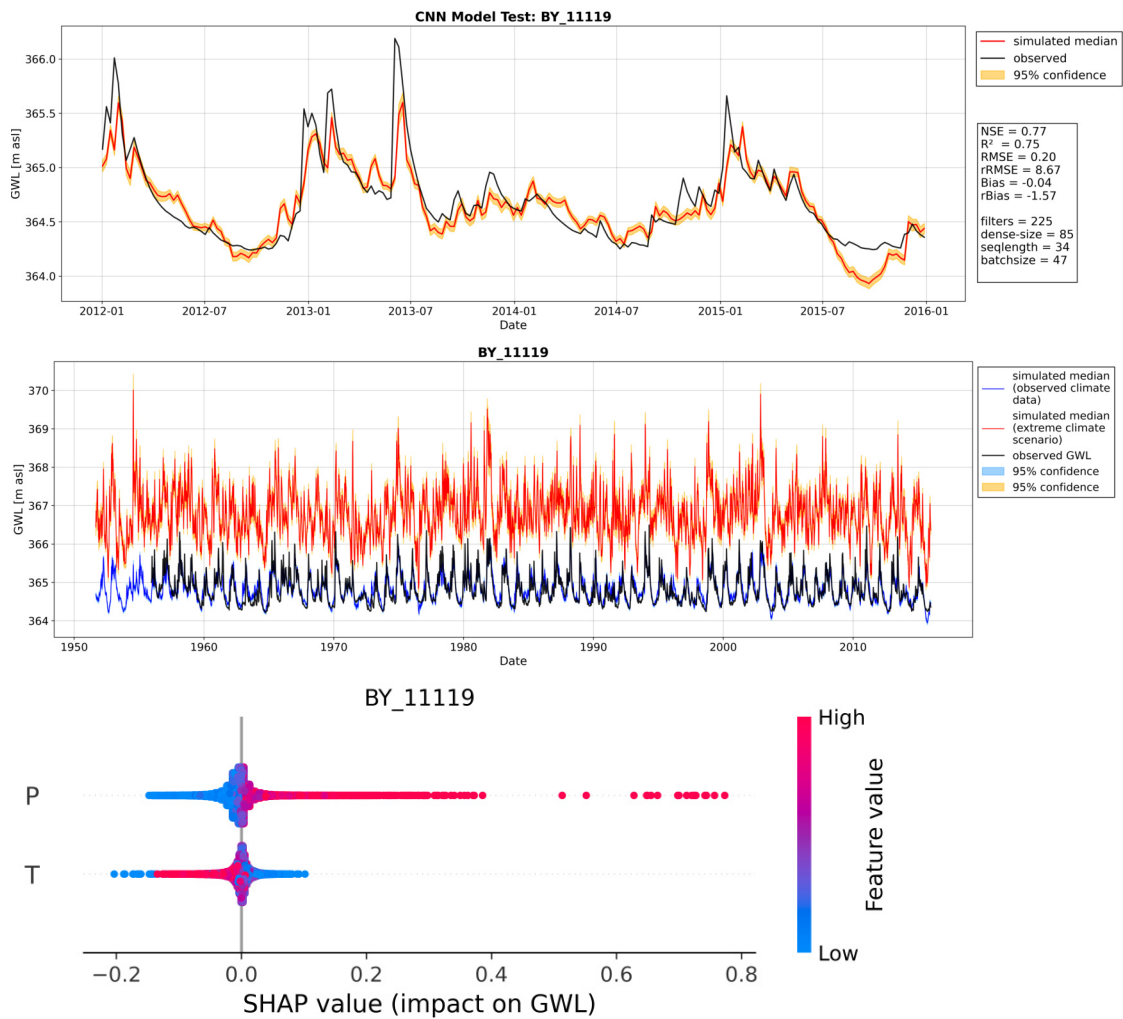


Figure S32: Evaluation of BY_11119 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

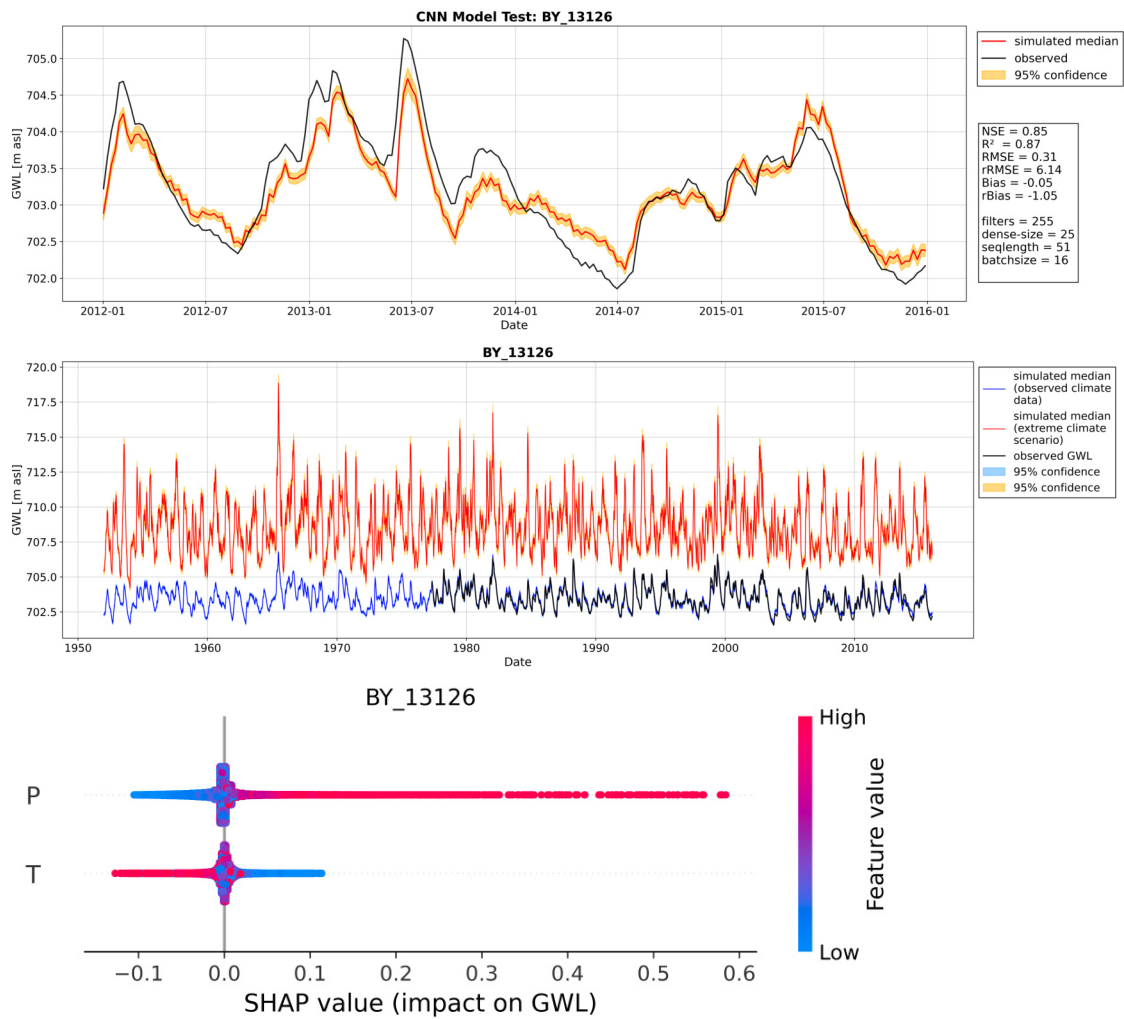


Figure S33: Evaluation of BY_13126 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

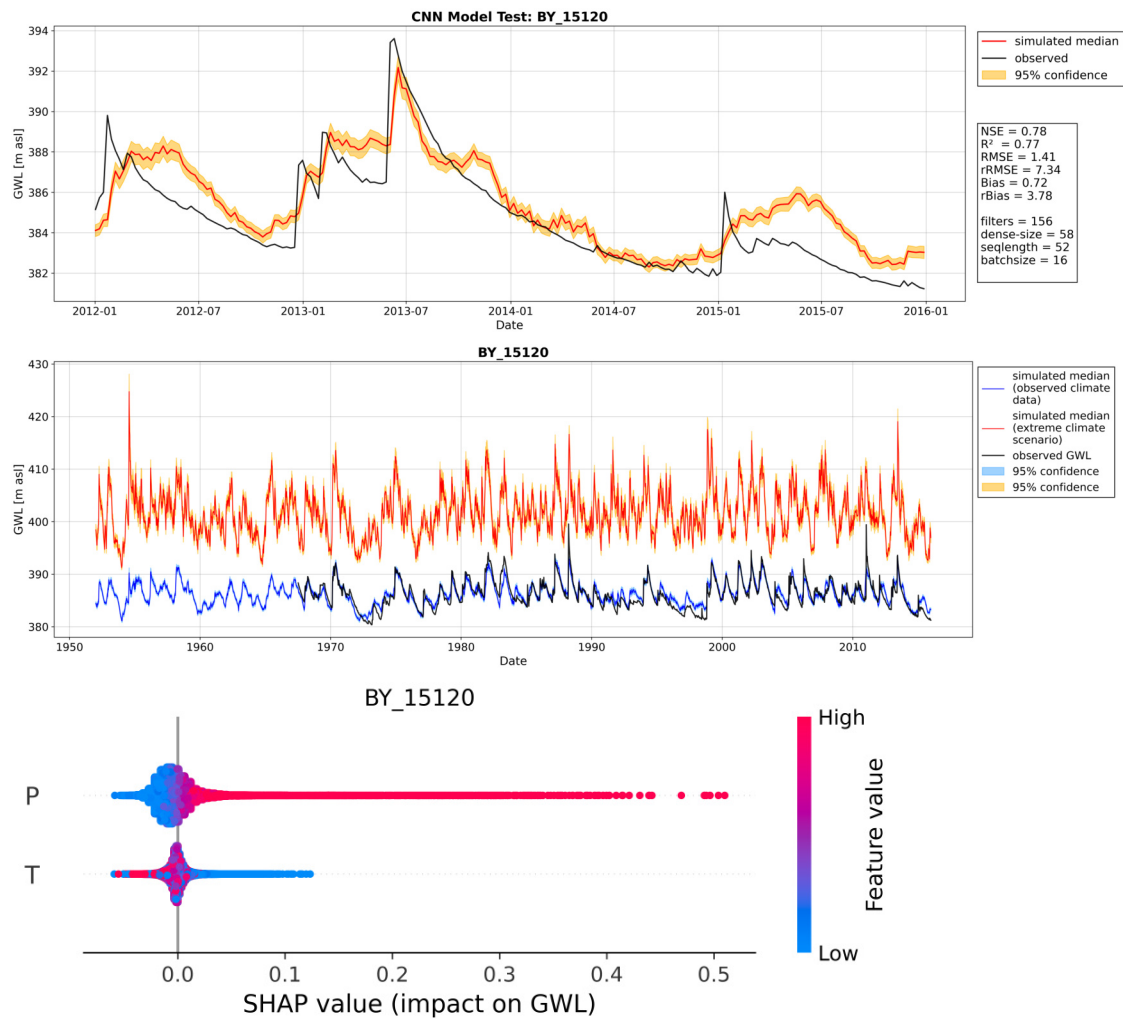


Figure S34: Evaluation of BY_15120 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

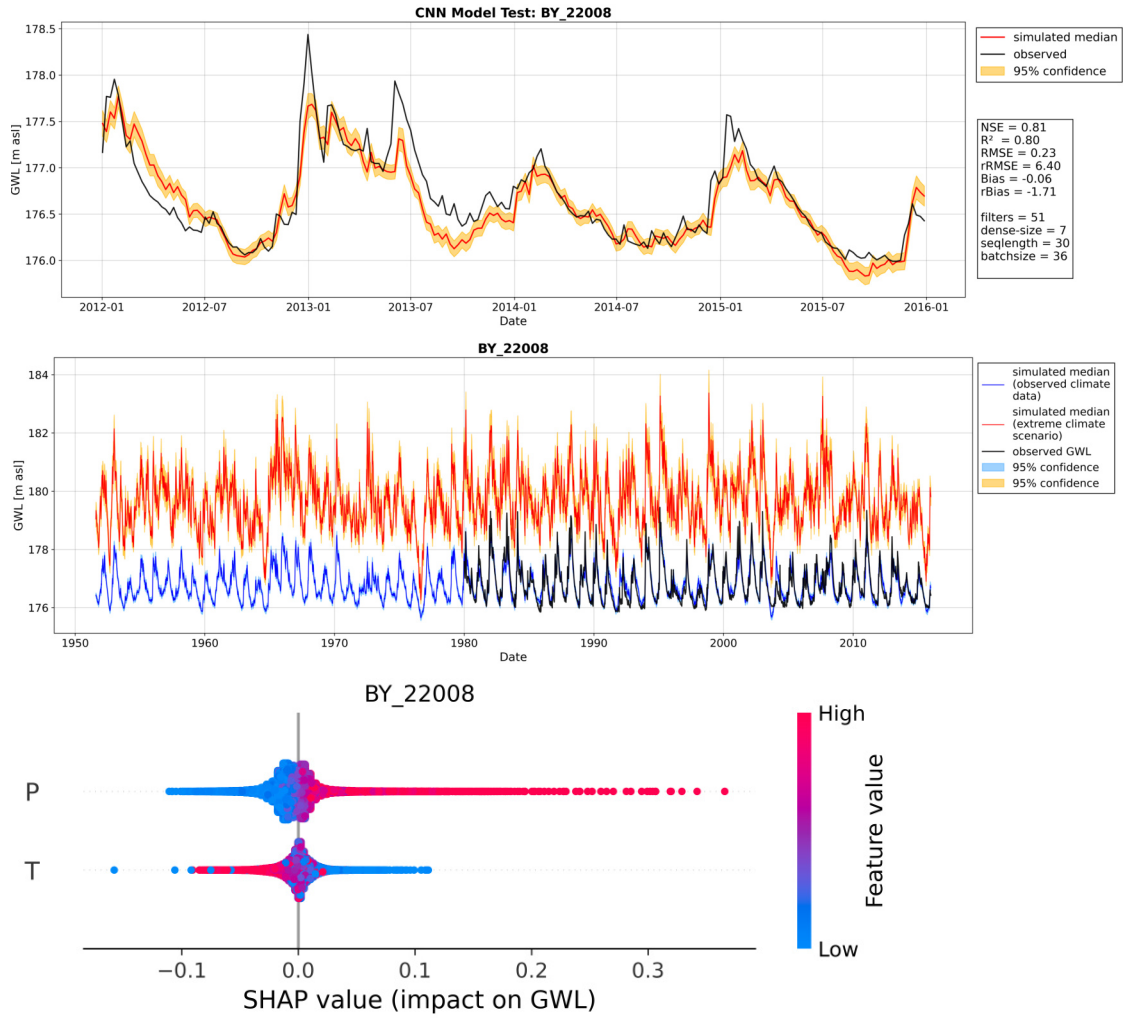


Figure S35: Evaluation of BY_22008 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

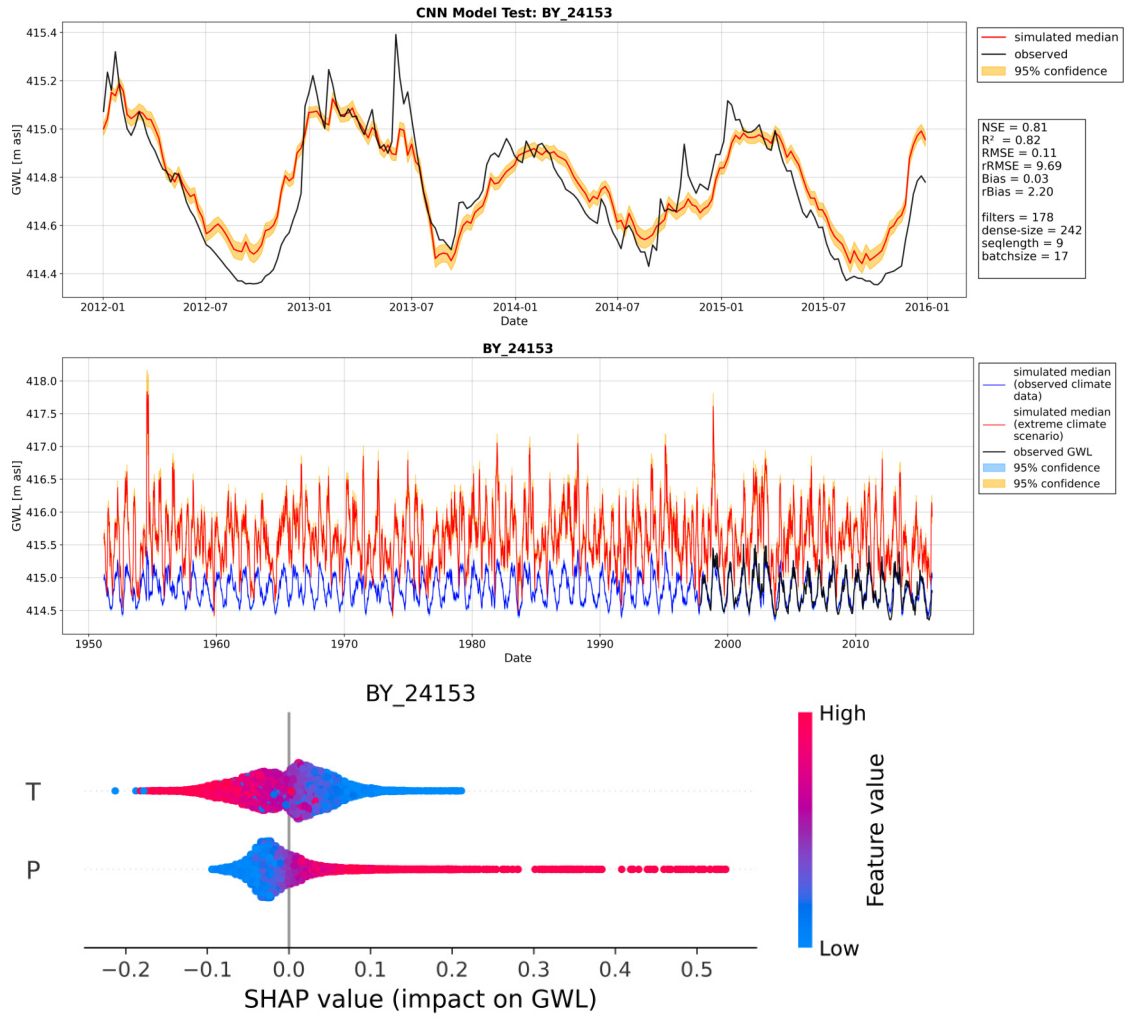


Figure S36: Evaluation of BY_24153 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

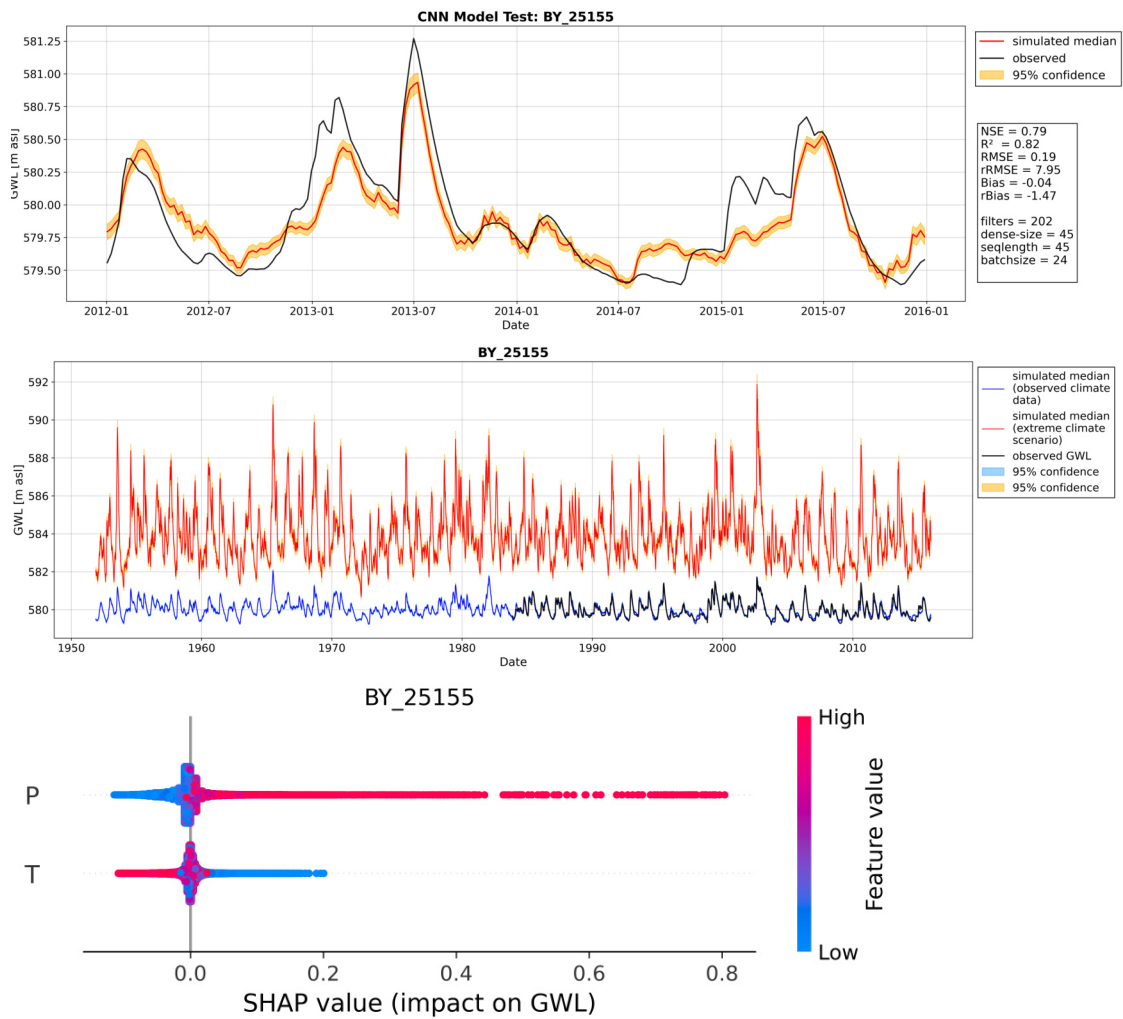


Figure S37: Evaluation of BY_25155 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

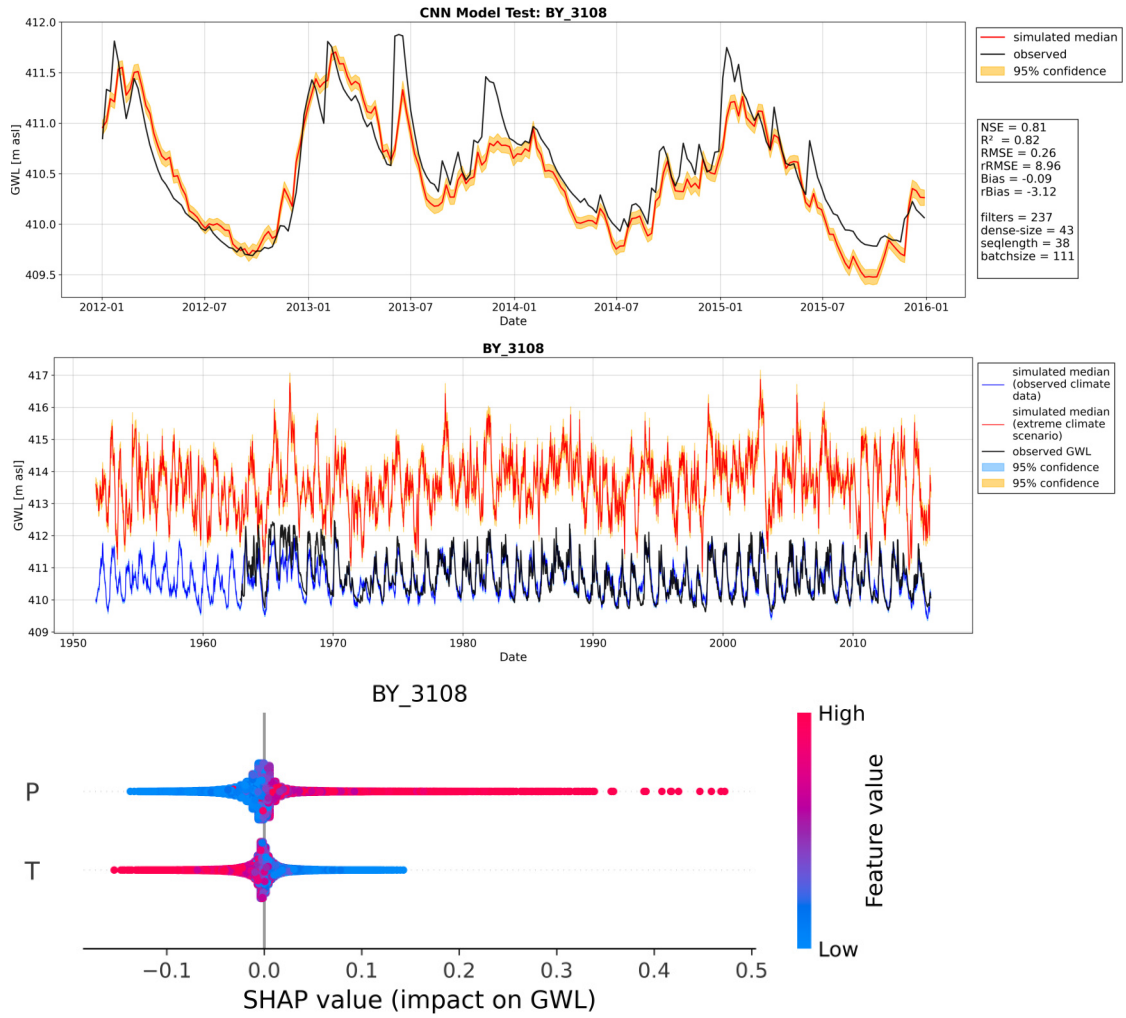


Figure S38: Evaluation of BY_3108 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

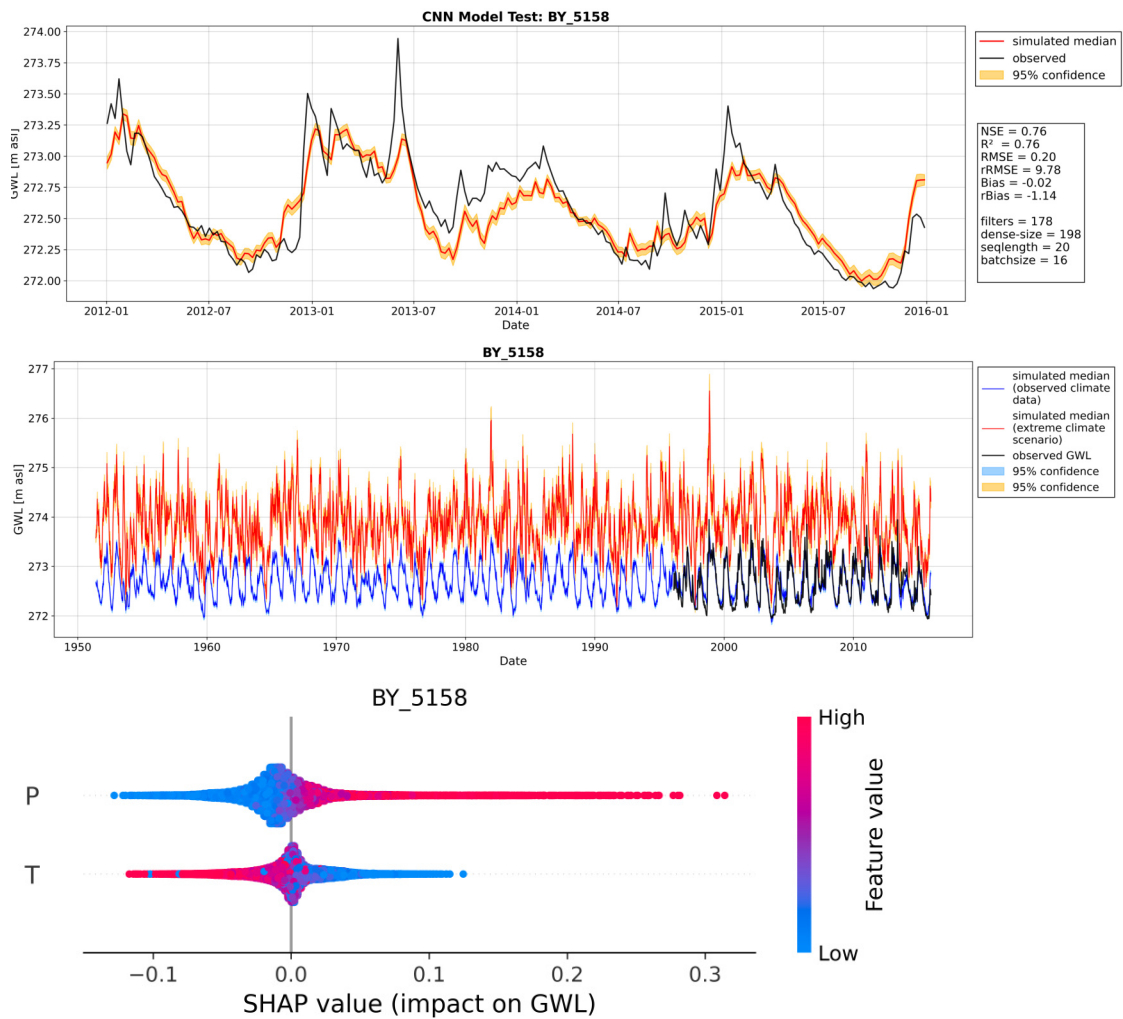


Figure S39: Evaluation of BY_5158 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

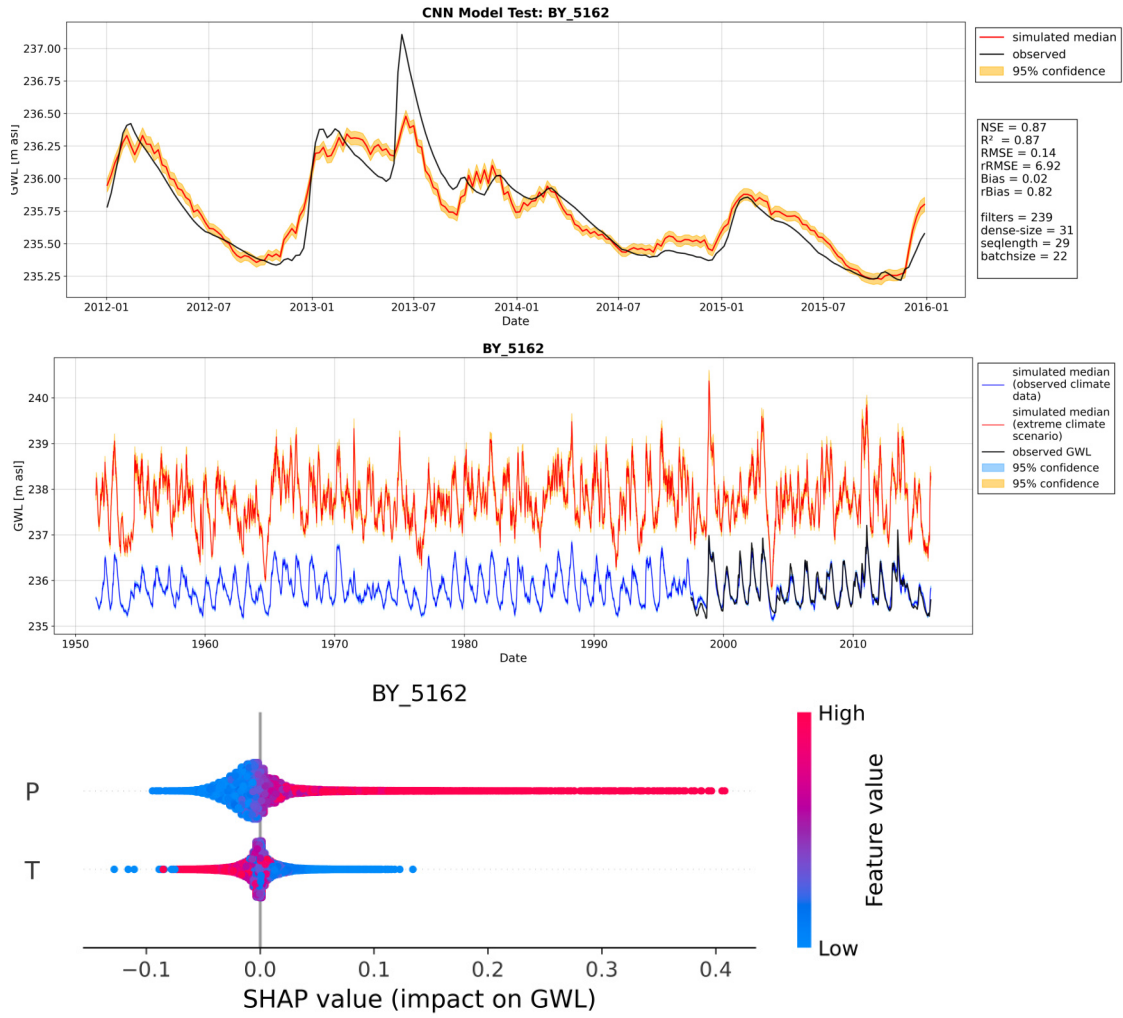


Figure S40: Evaluation of BY_5162 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

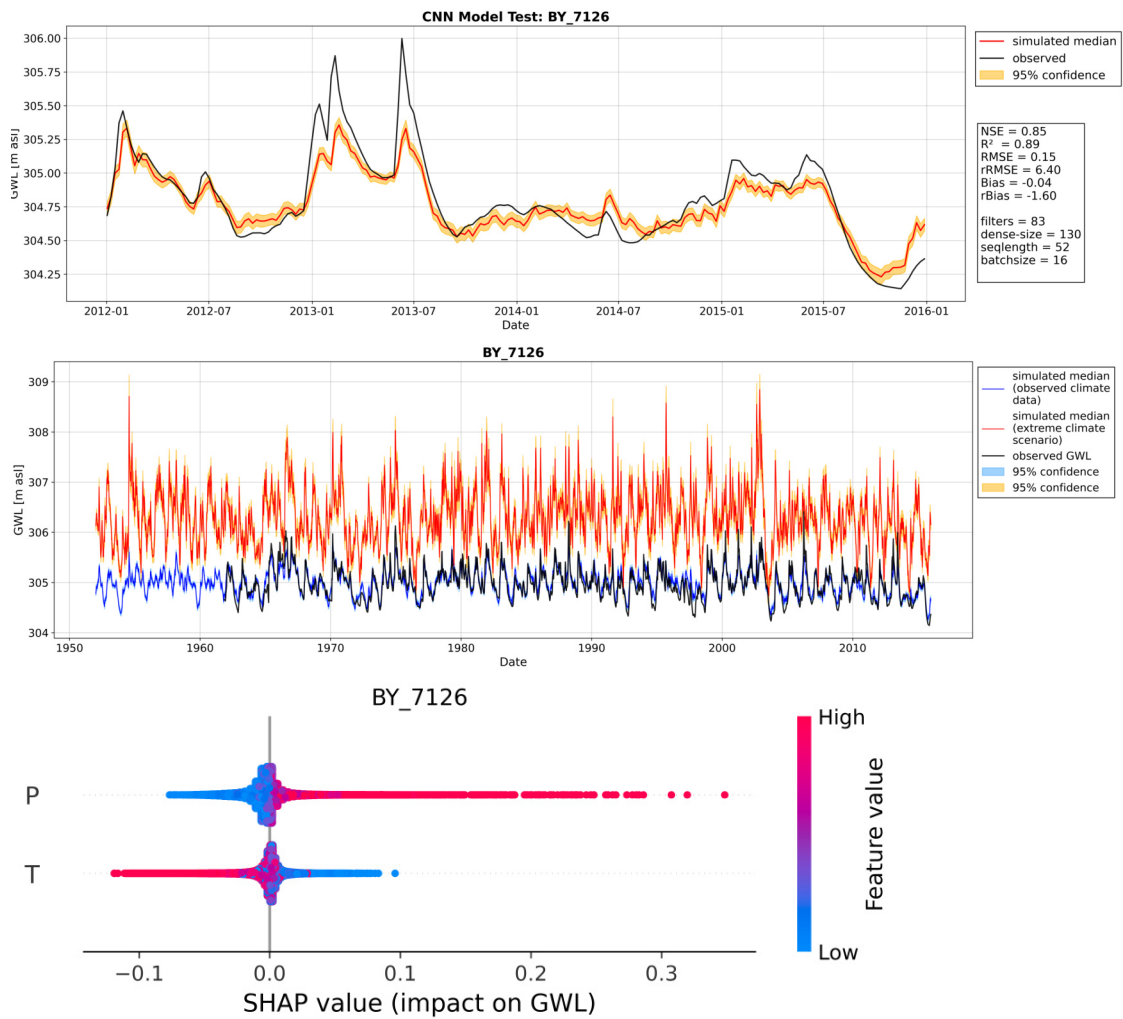


Figure S41: Evaluation of BY_7126 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

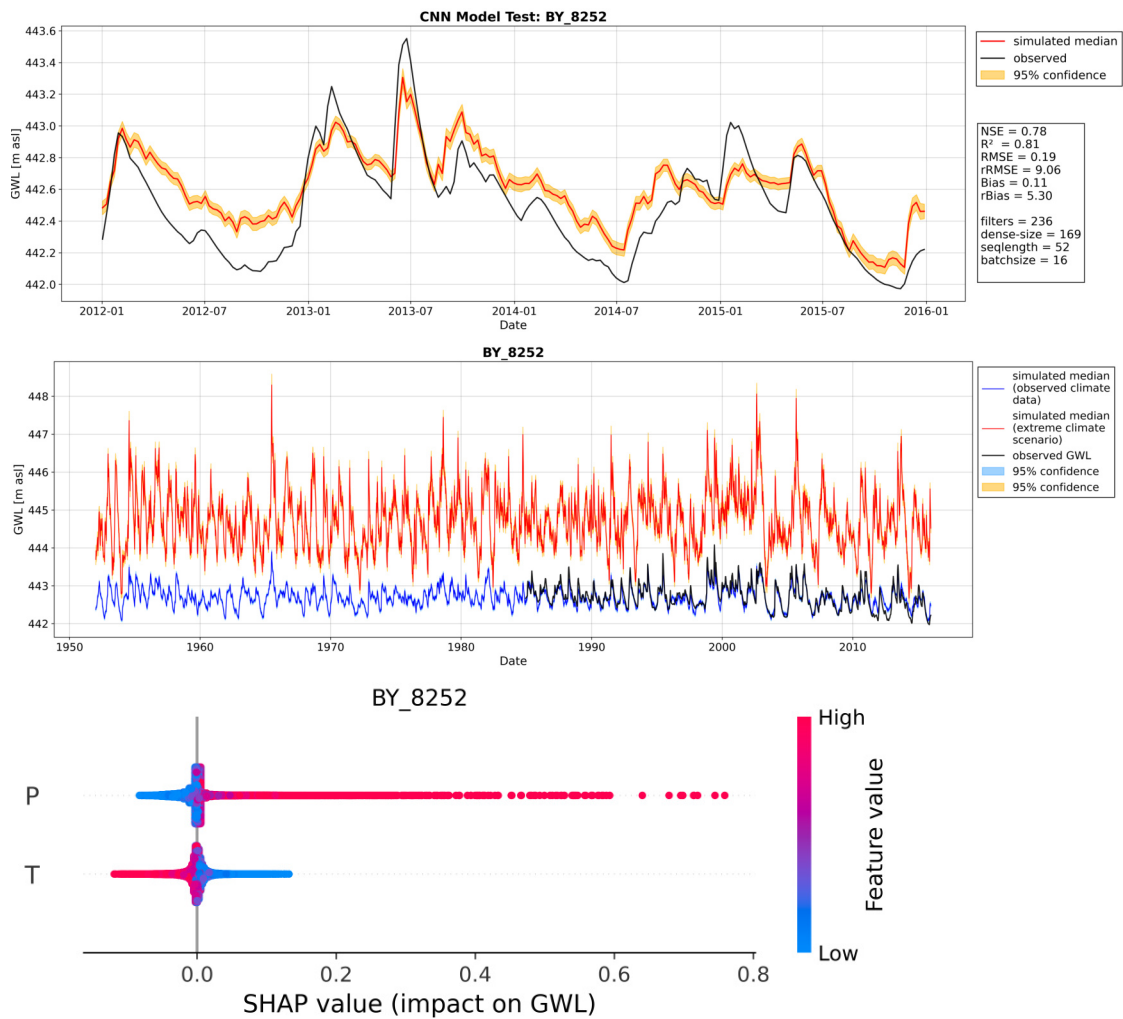


Figure S42: Evaluation of BY_8252 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

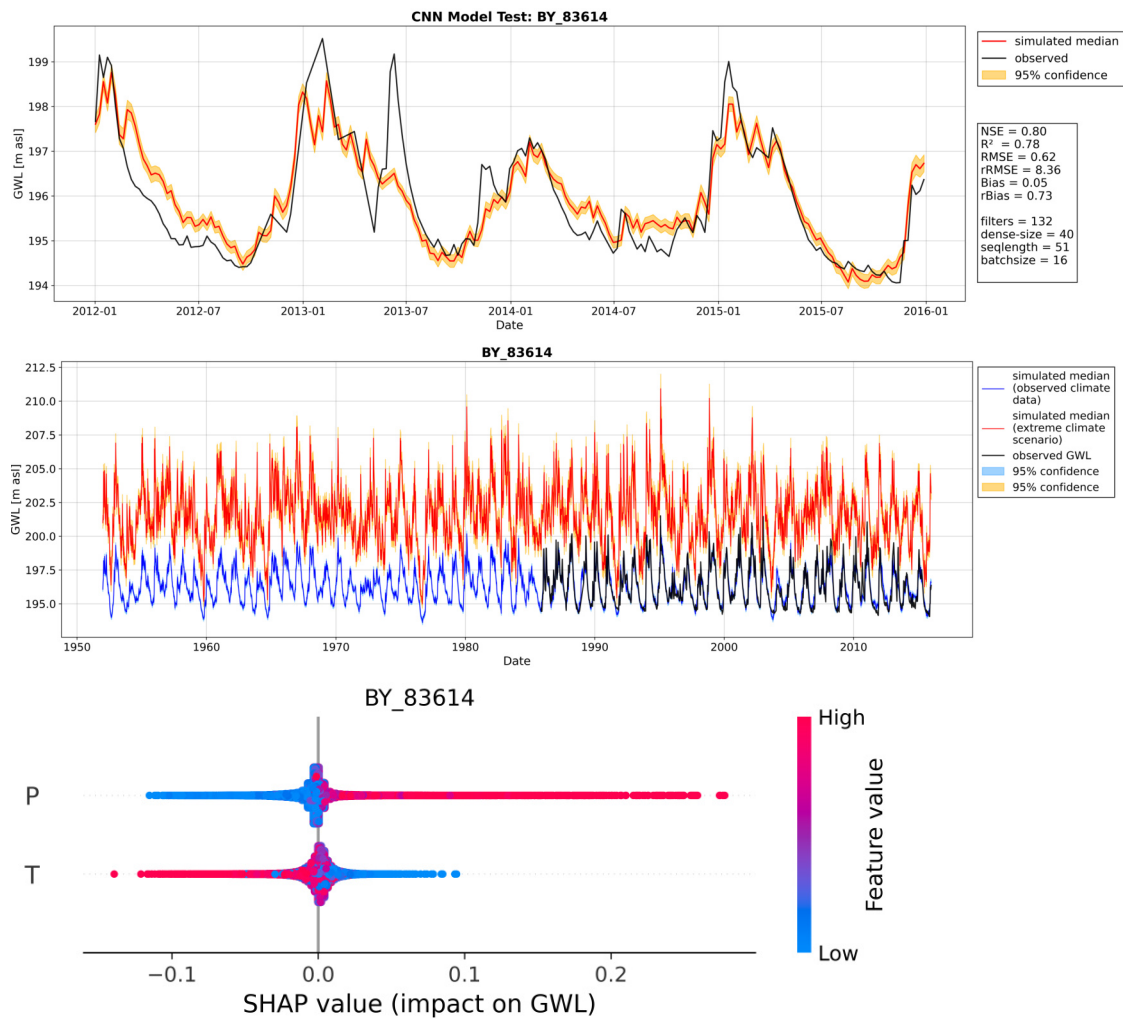


Figure S43: Evaluation of BY_83614 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

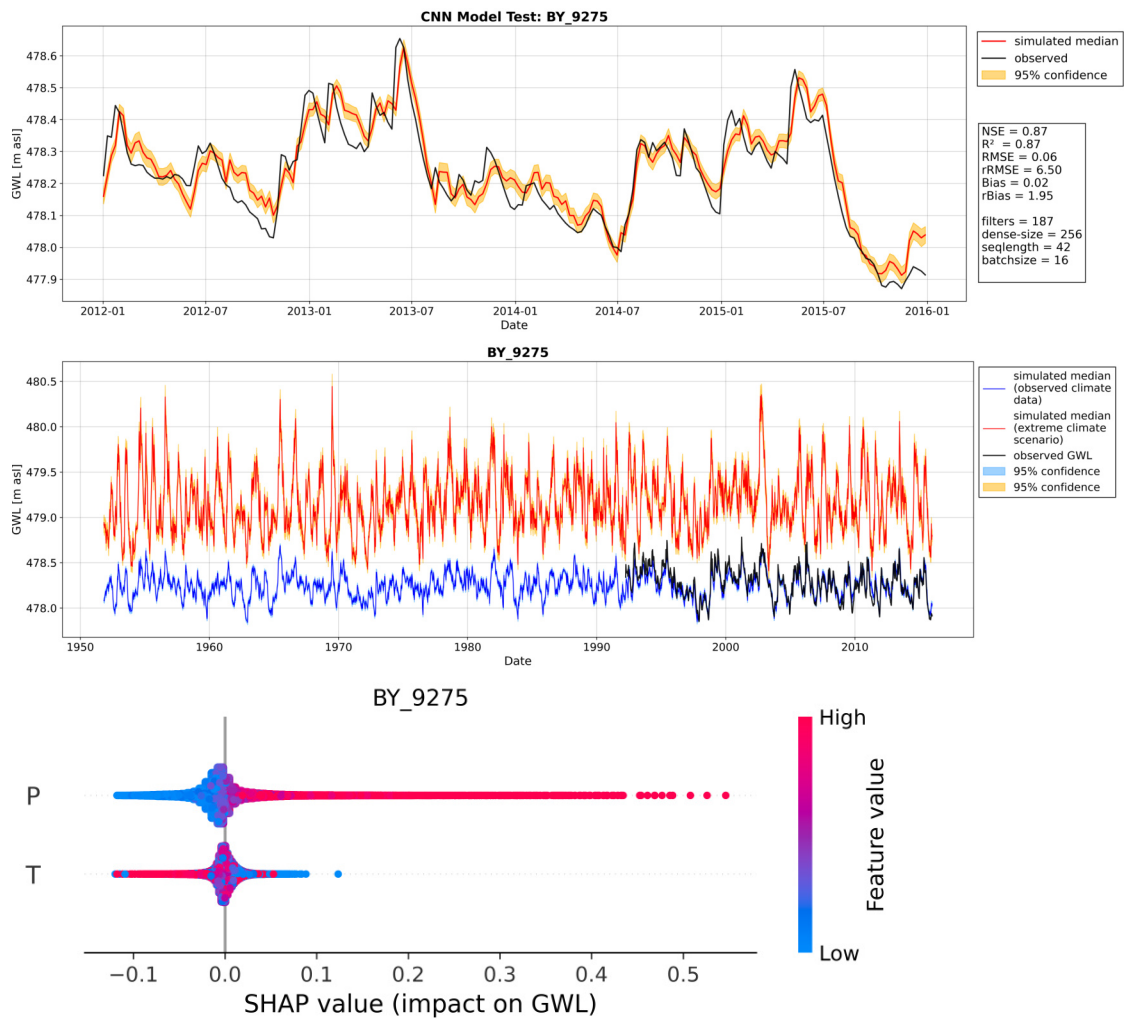


Figure S44: Evaluation of BY_9275 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

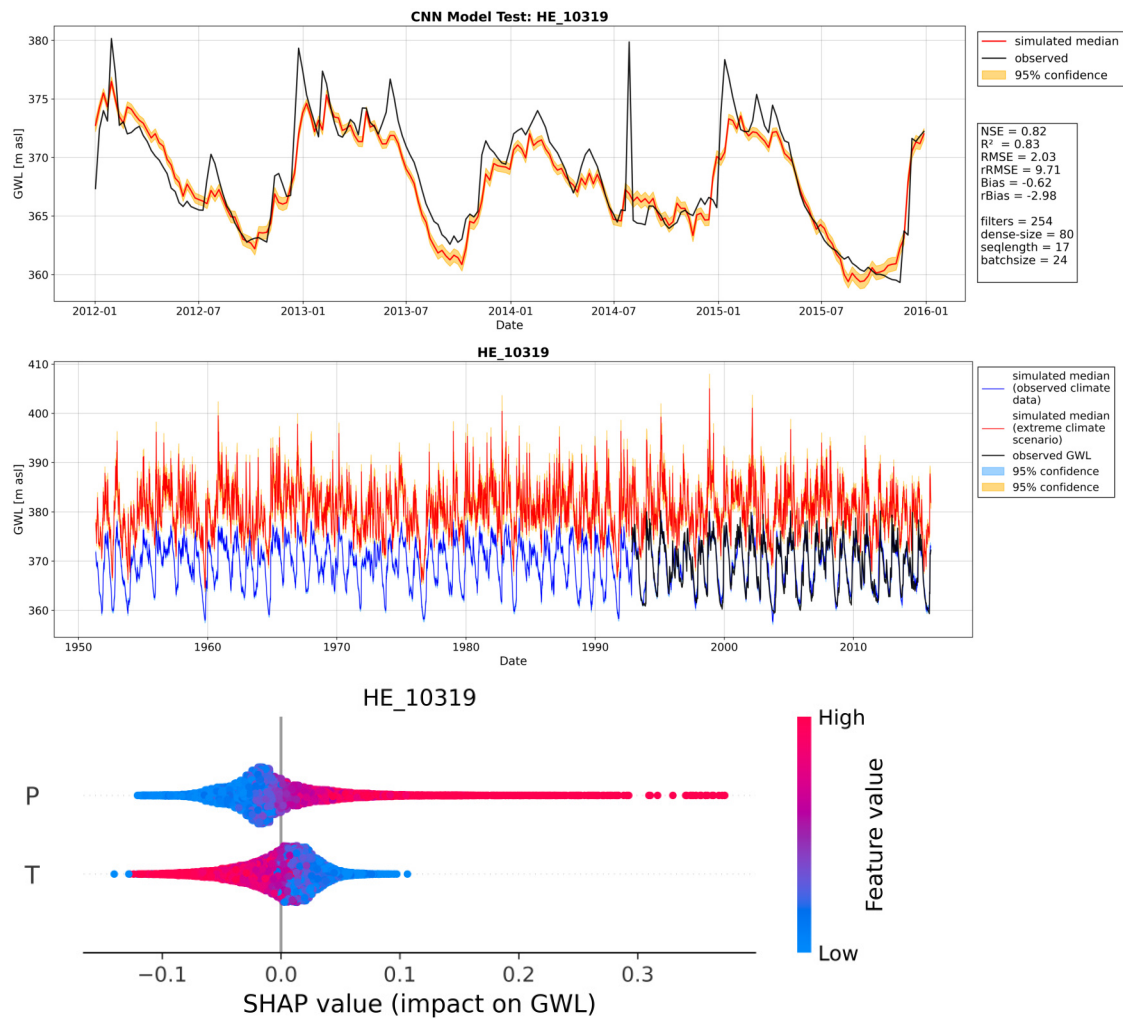


Figure S45: Evaluation of HE_10319 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

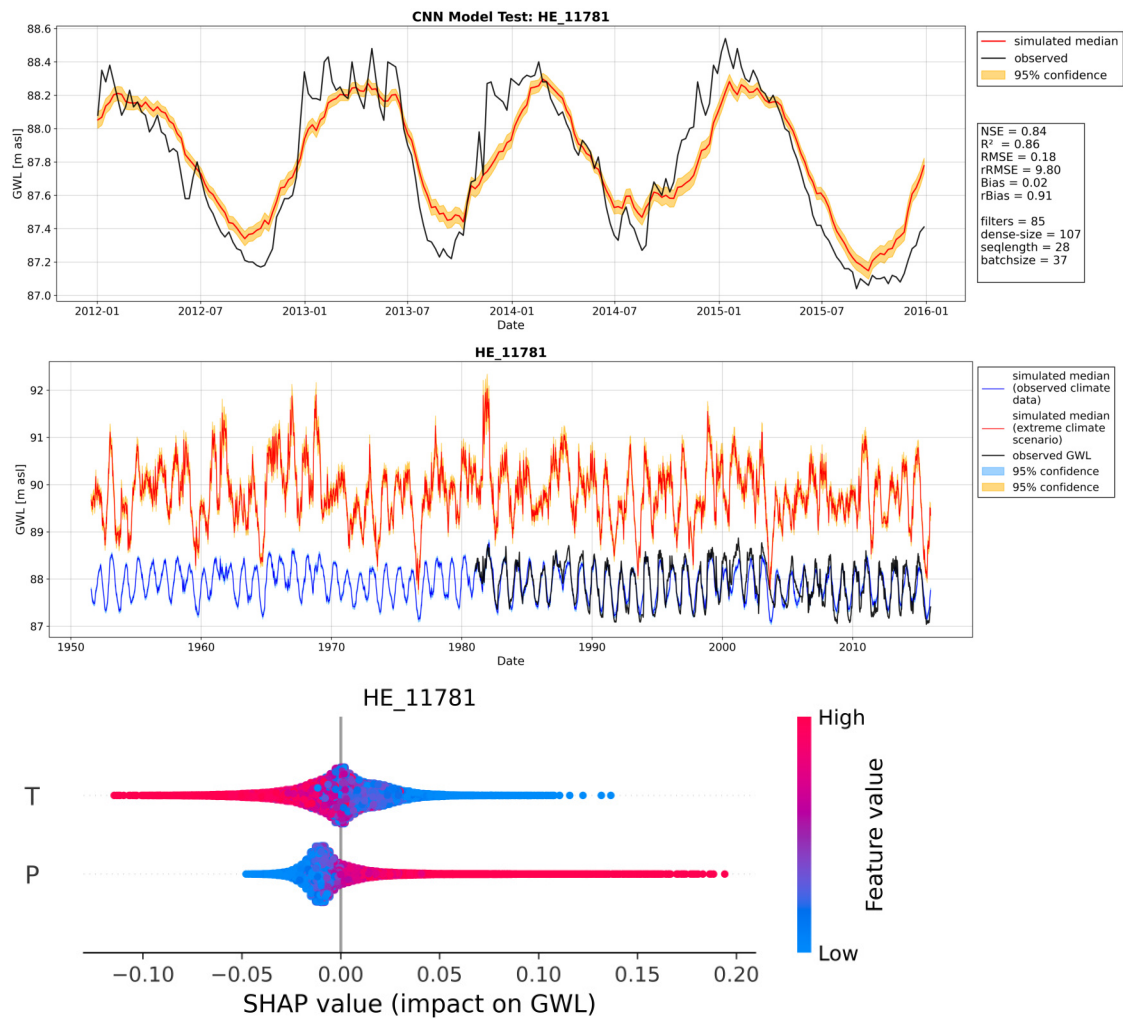


Figure S46: Evaluation of HE_11781 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

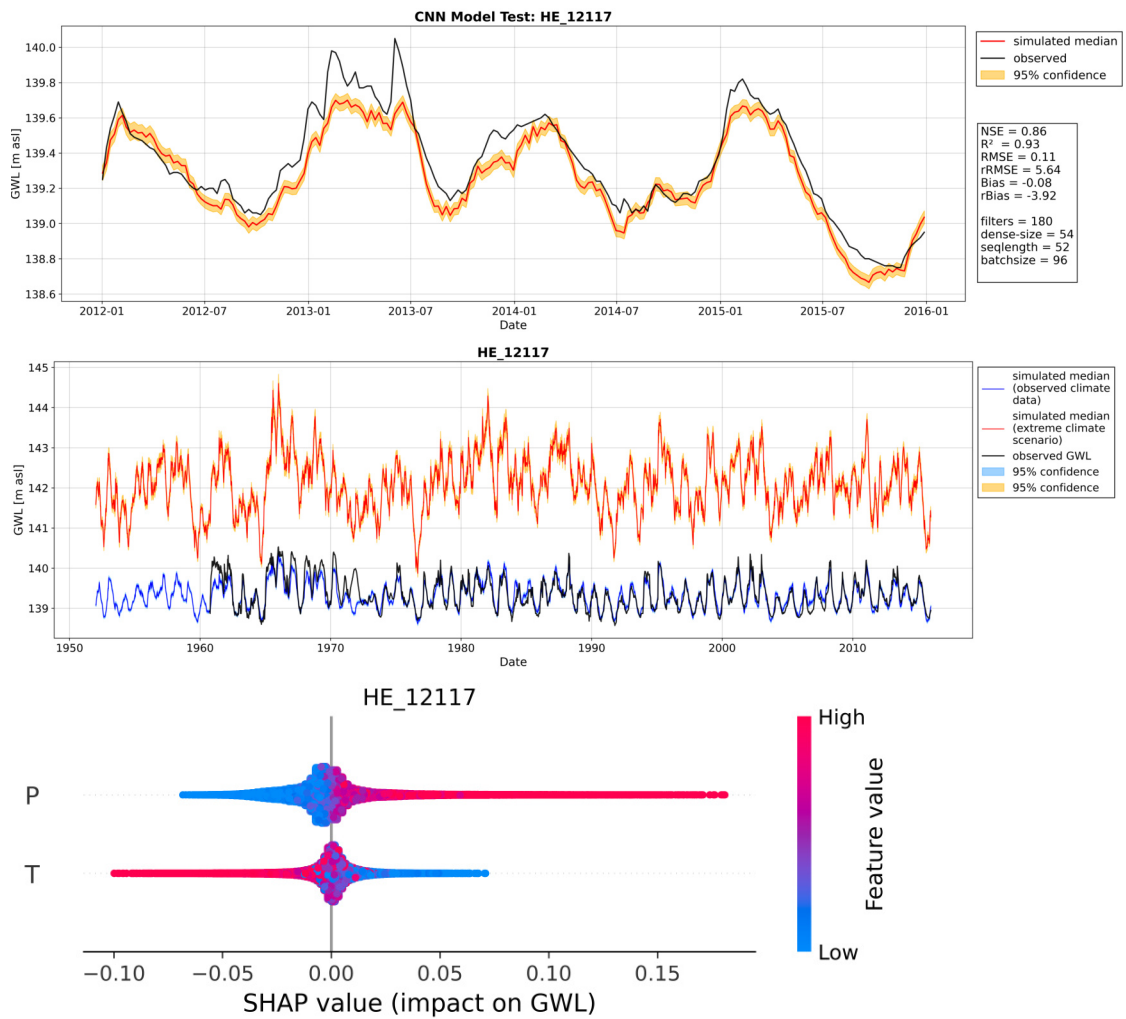


Figure S47: Evaluation of HE_12117 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

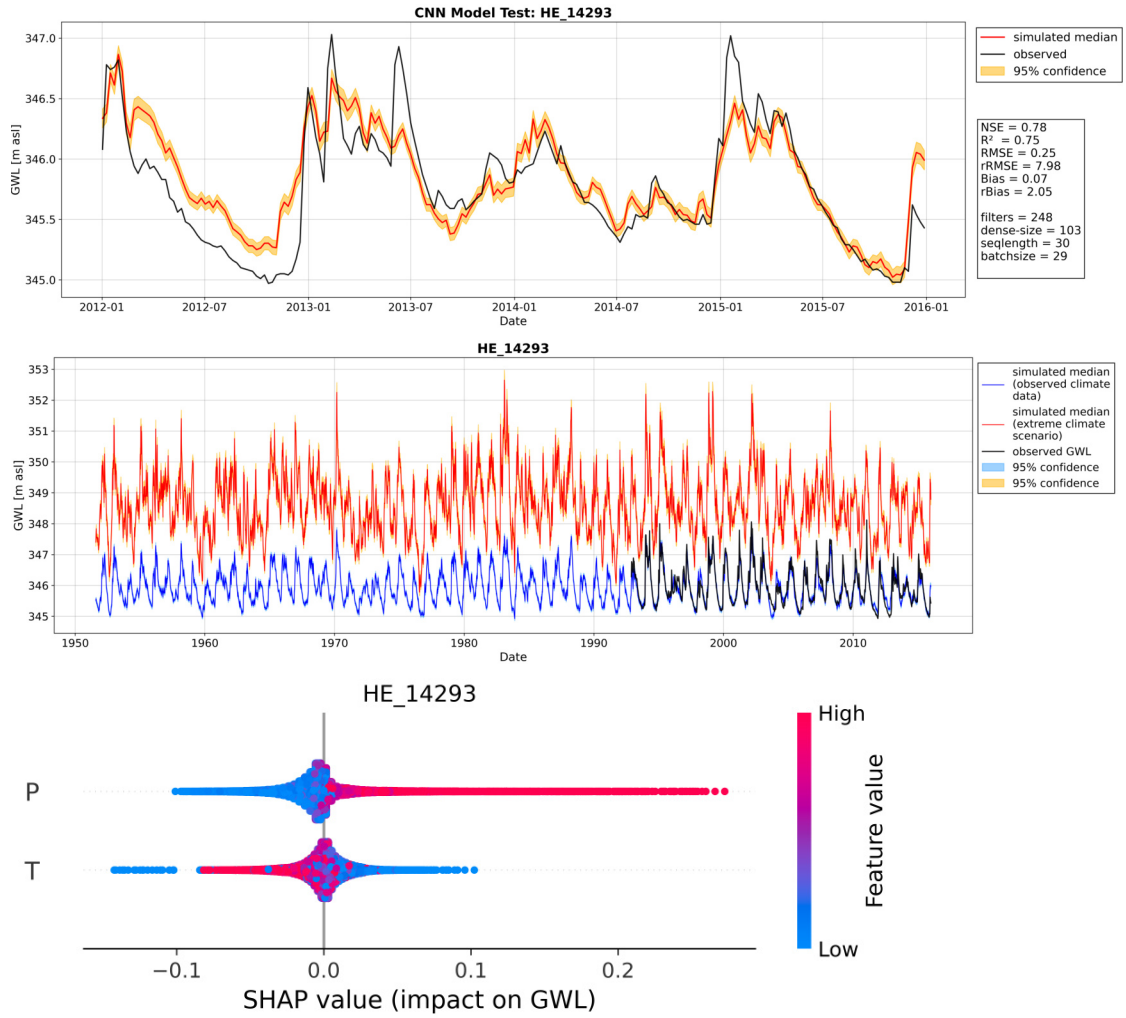


Figure S48: Evaluation of HE_14293 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

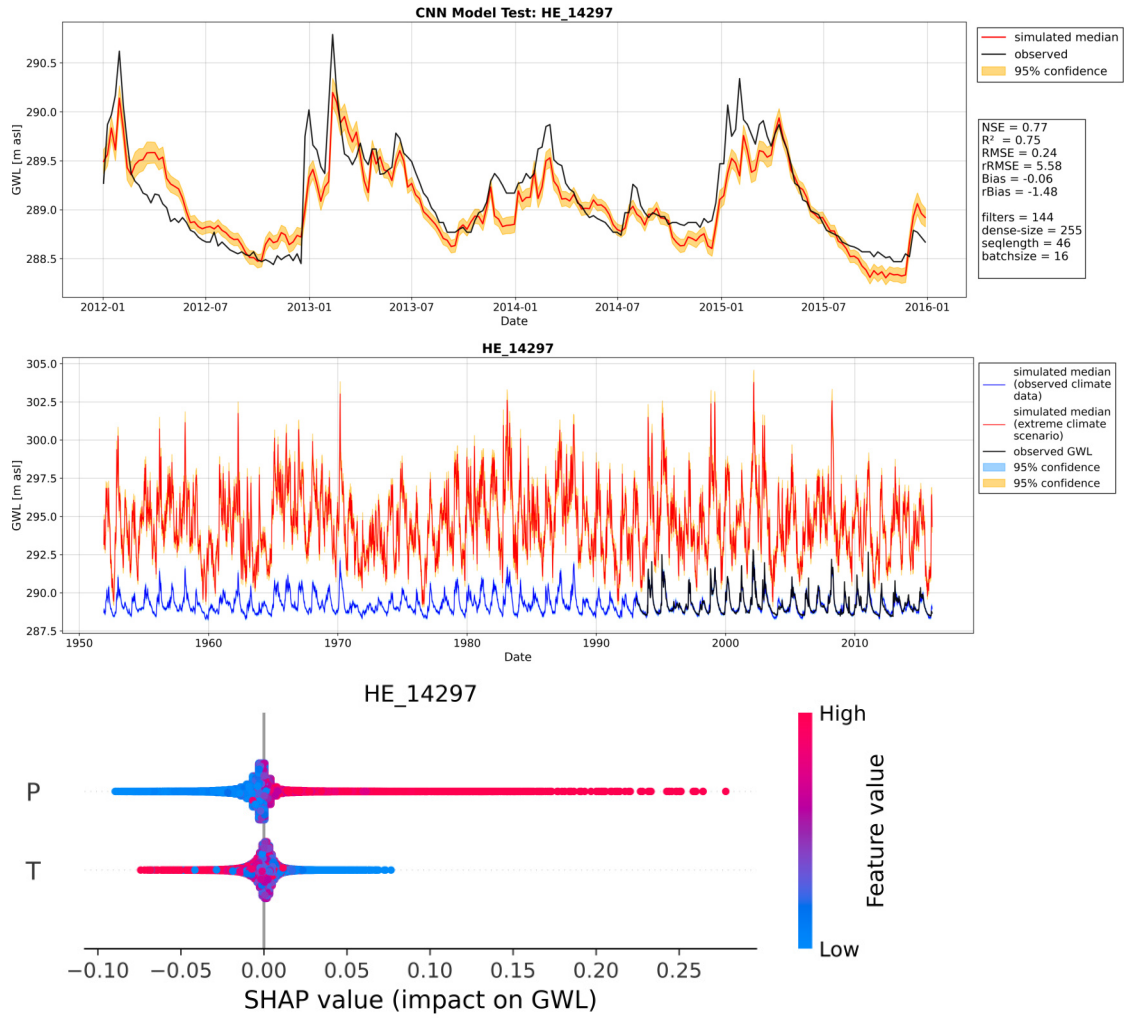


Figure S49: Evaluation of HE_14297 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

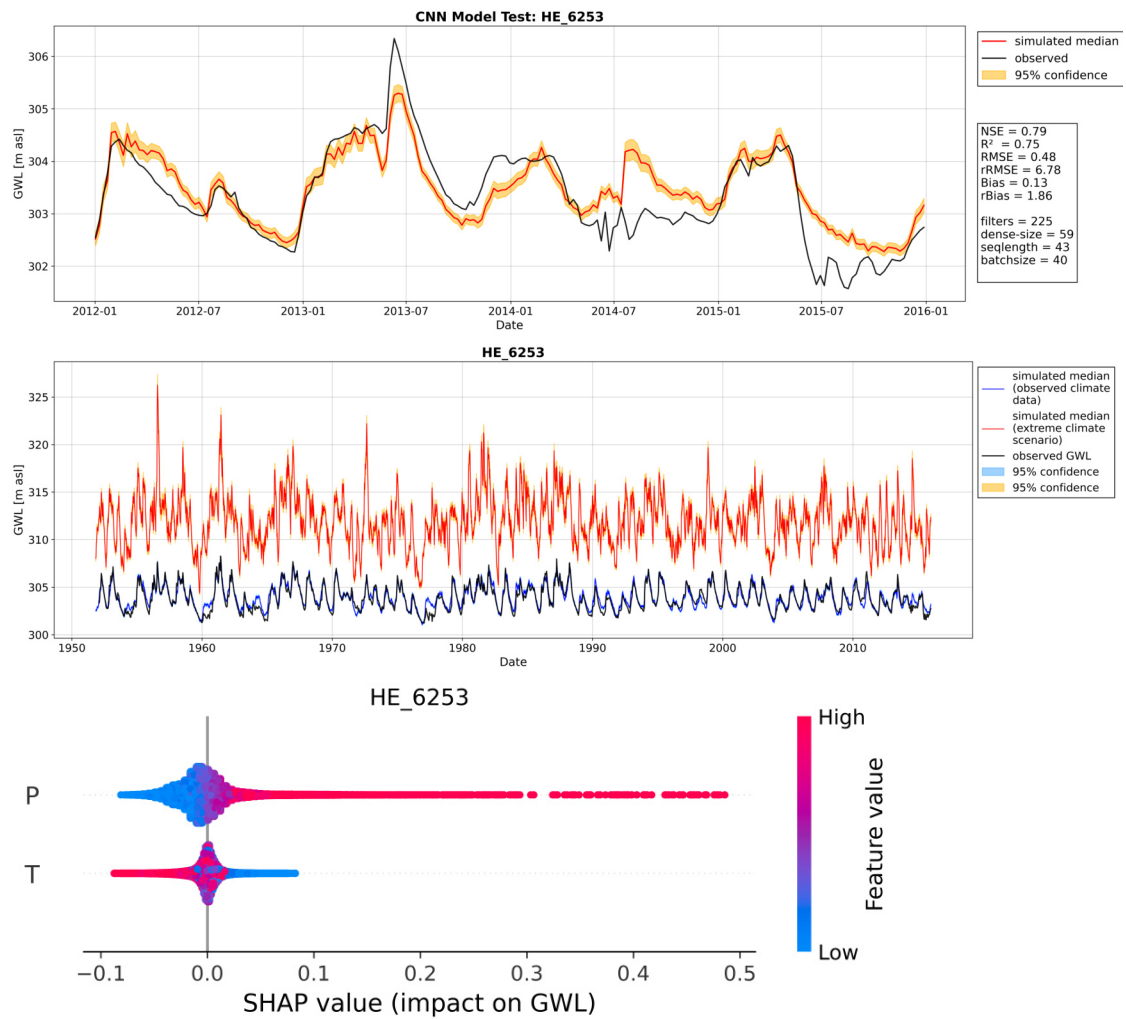


Figure S50: Evaluation of HE_6253 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

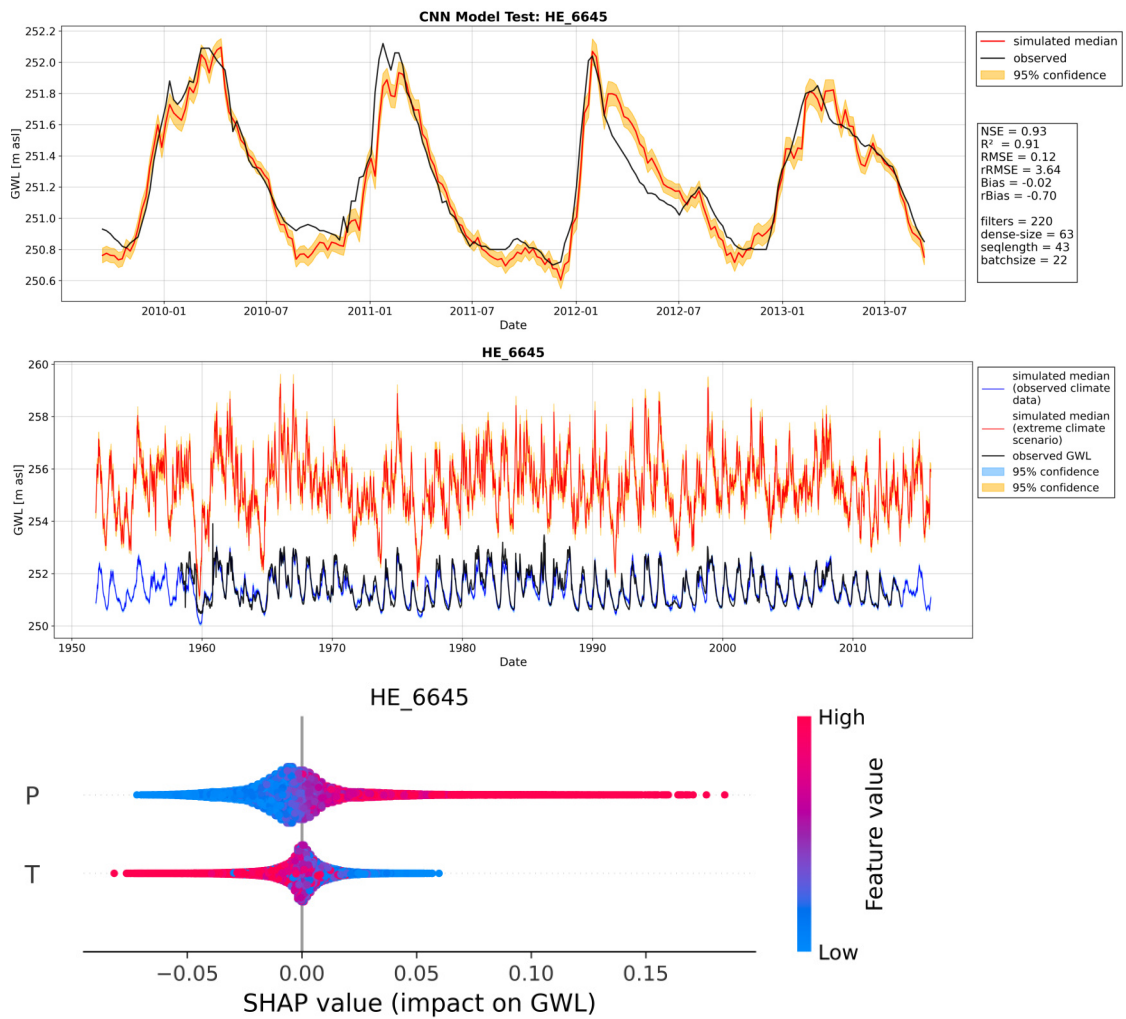


Figure S51: Evaluation of HE_6645 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

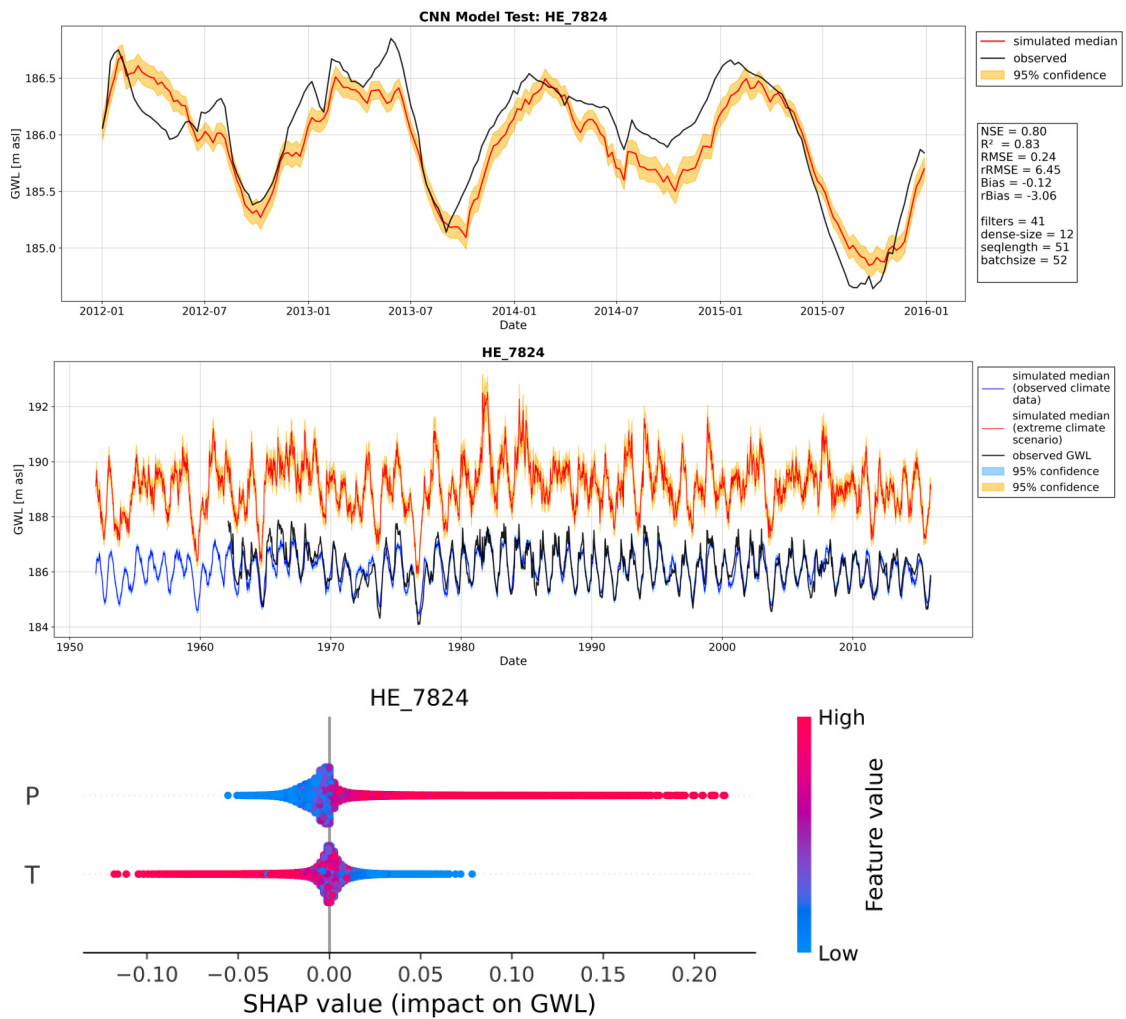


Figure S52: Evaluation of HE_7824 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

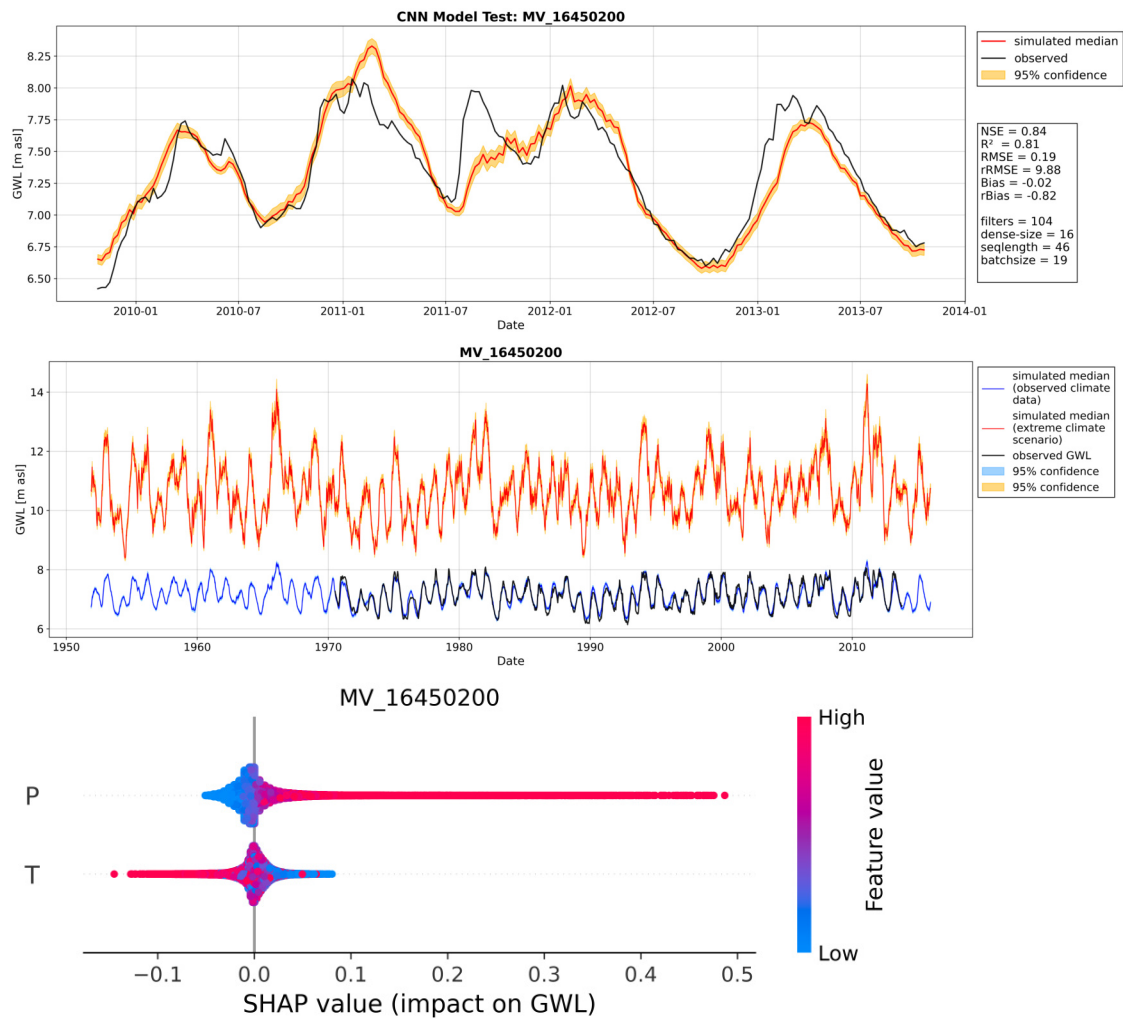


Figure S53: Evaluation of MV_16450200 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

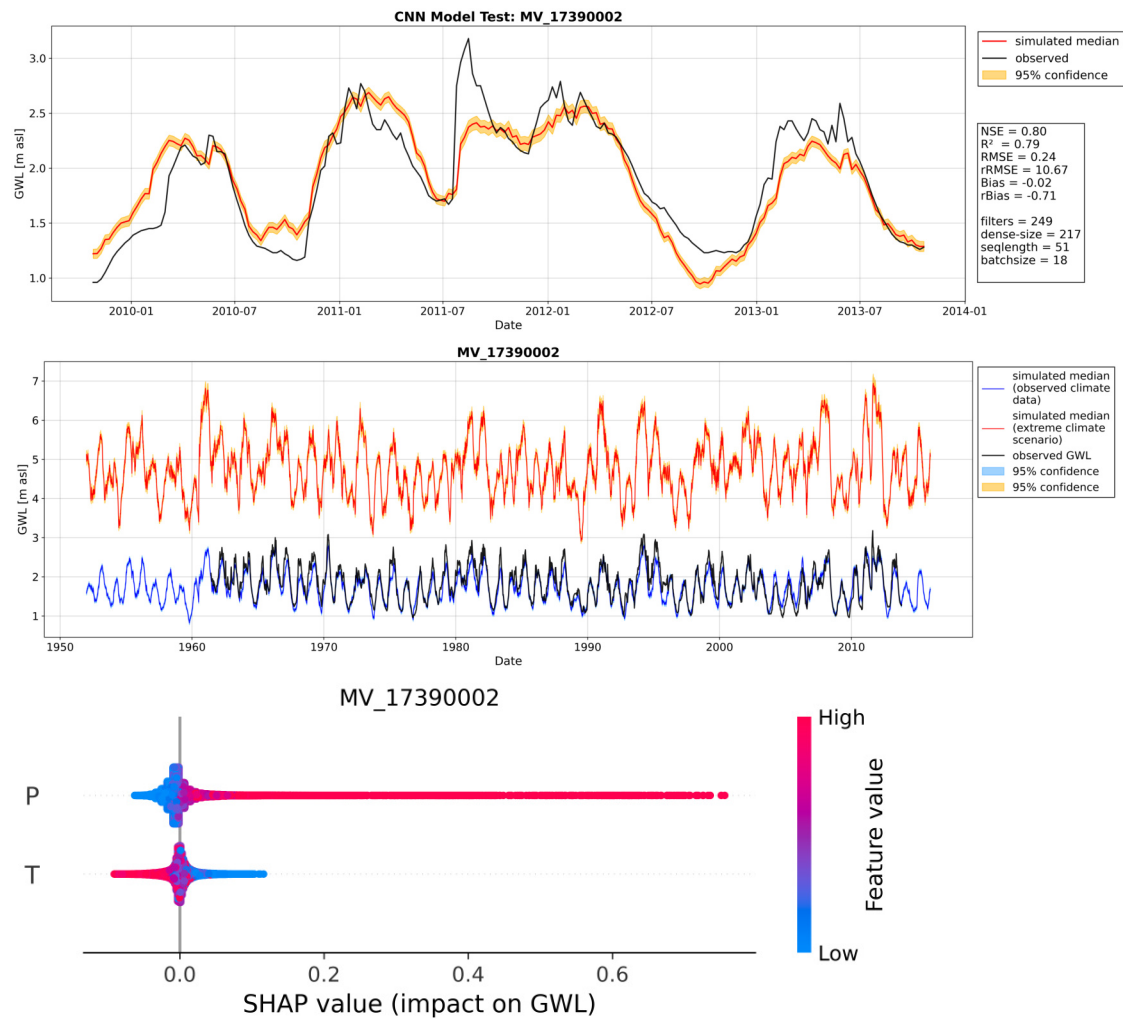


Figure S54: Evaluation of MV_17390002 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

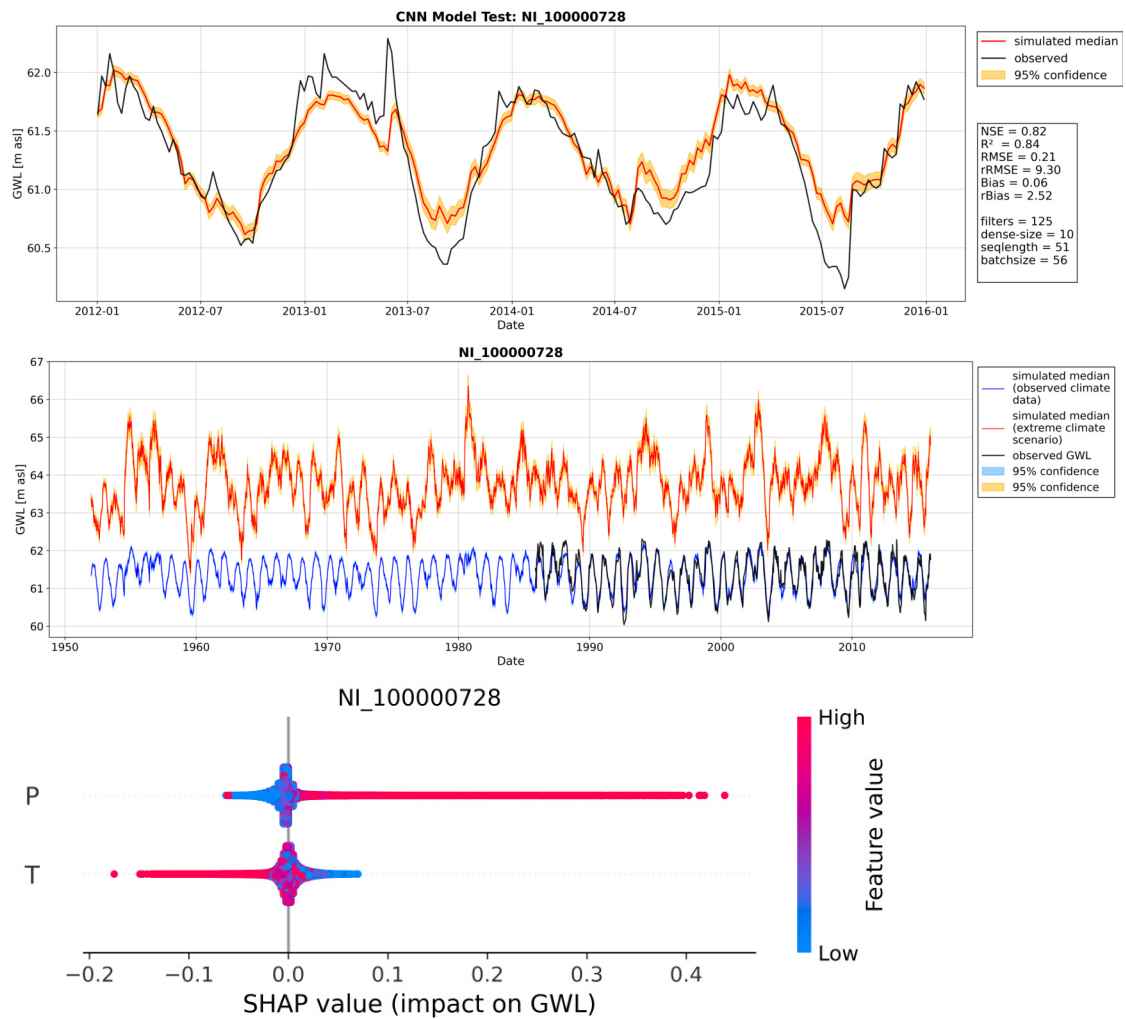


Figure S55: Evaluation of NI_100000728 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

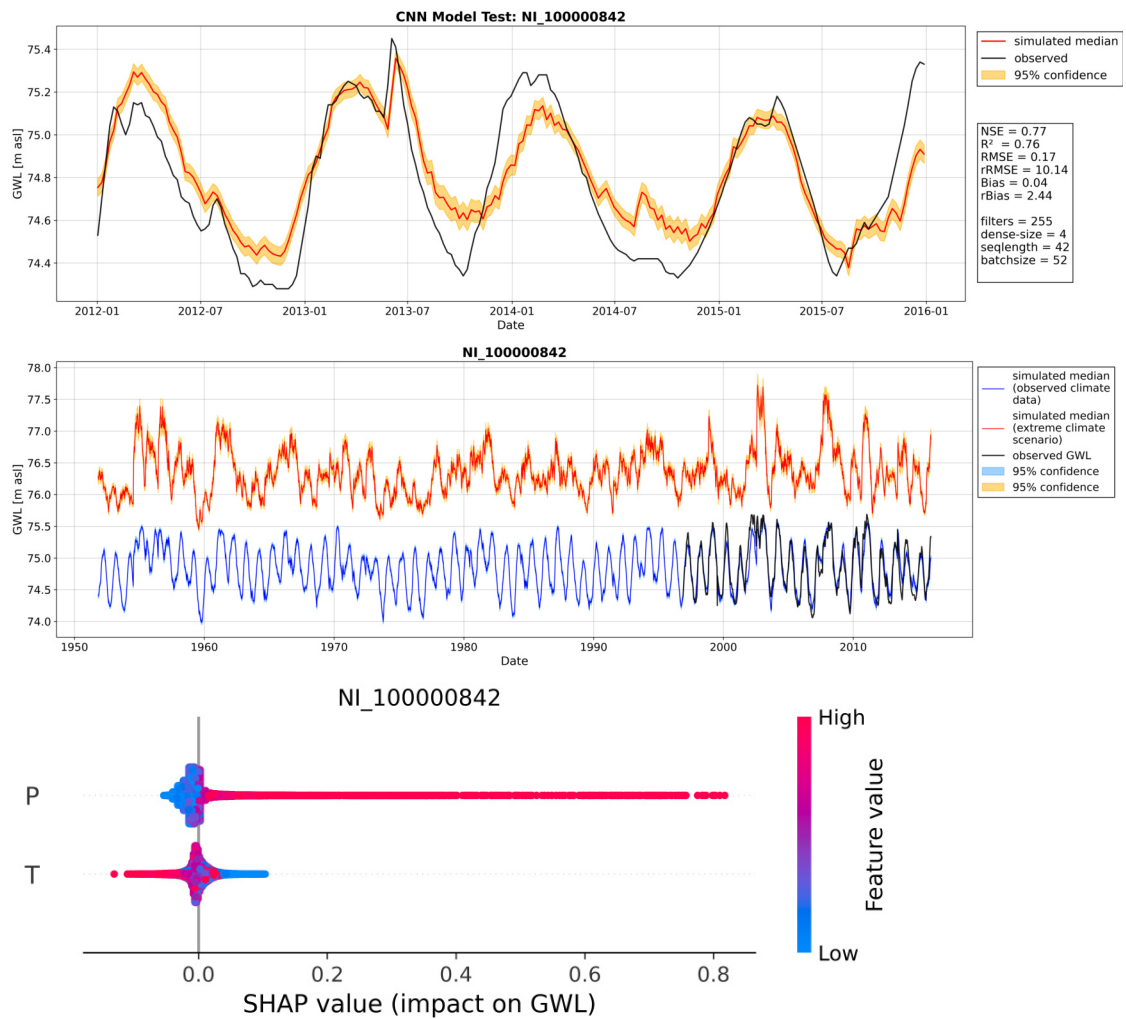


Figure S56: Evaluation of NI_100000842 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

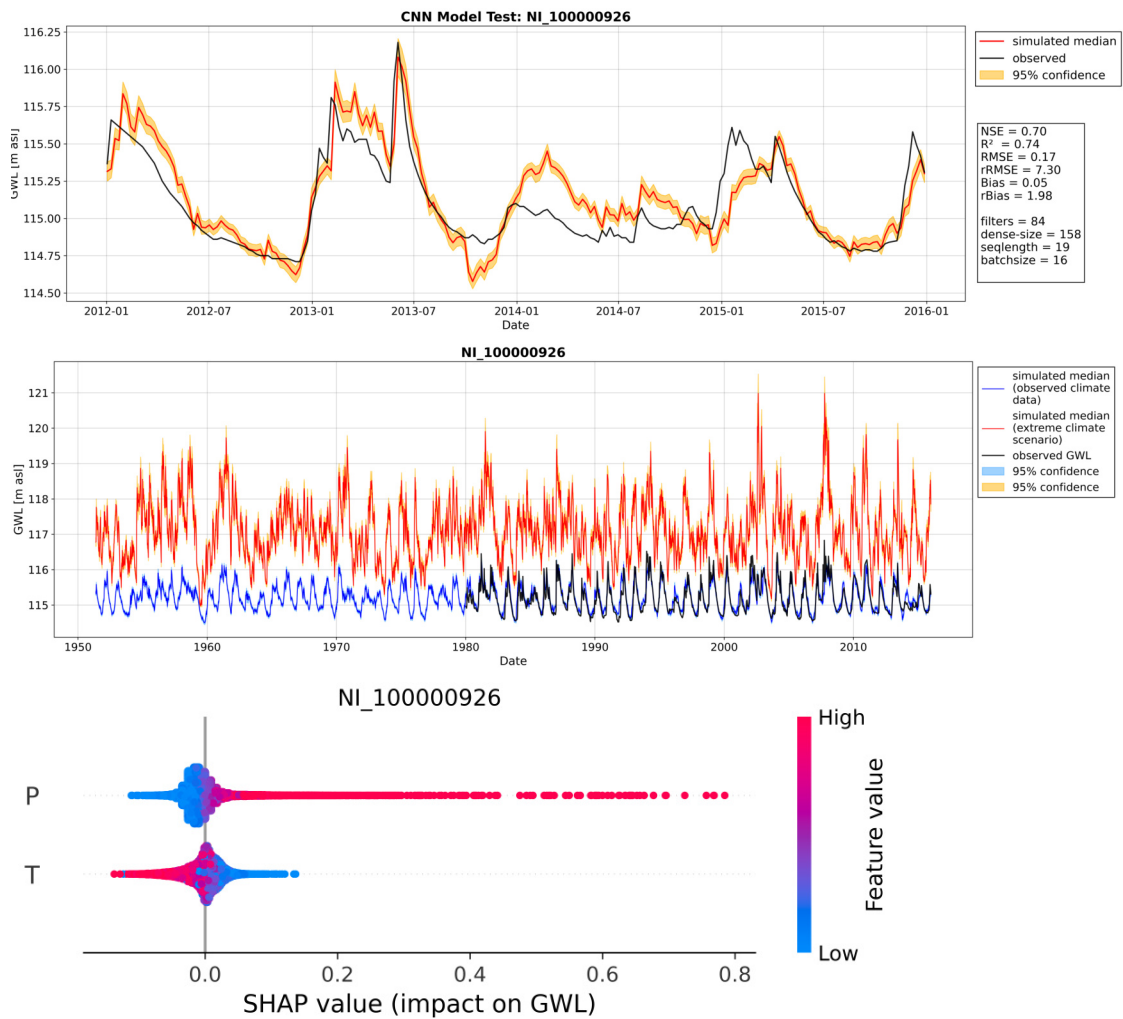


Figure S57: Evaluation of NI_100000926 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

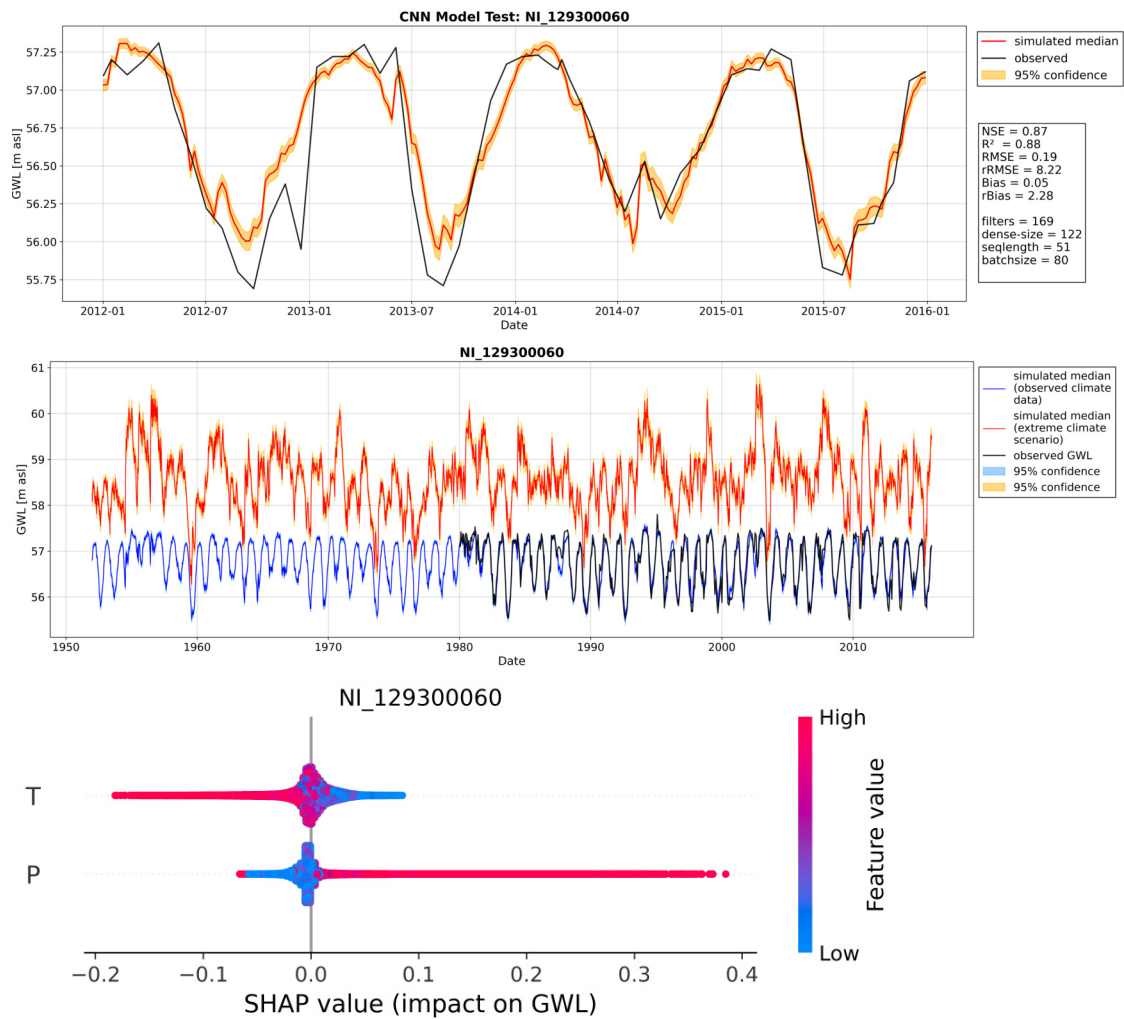


Figure S58: Evaluation of NI_129300060 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

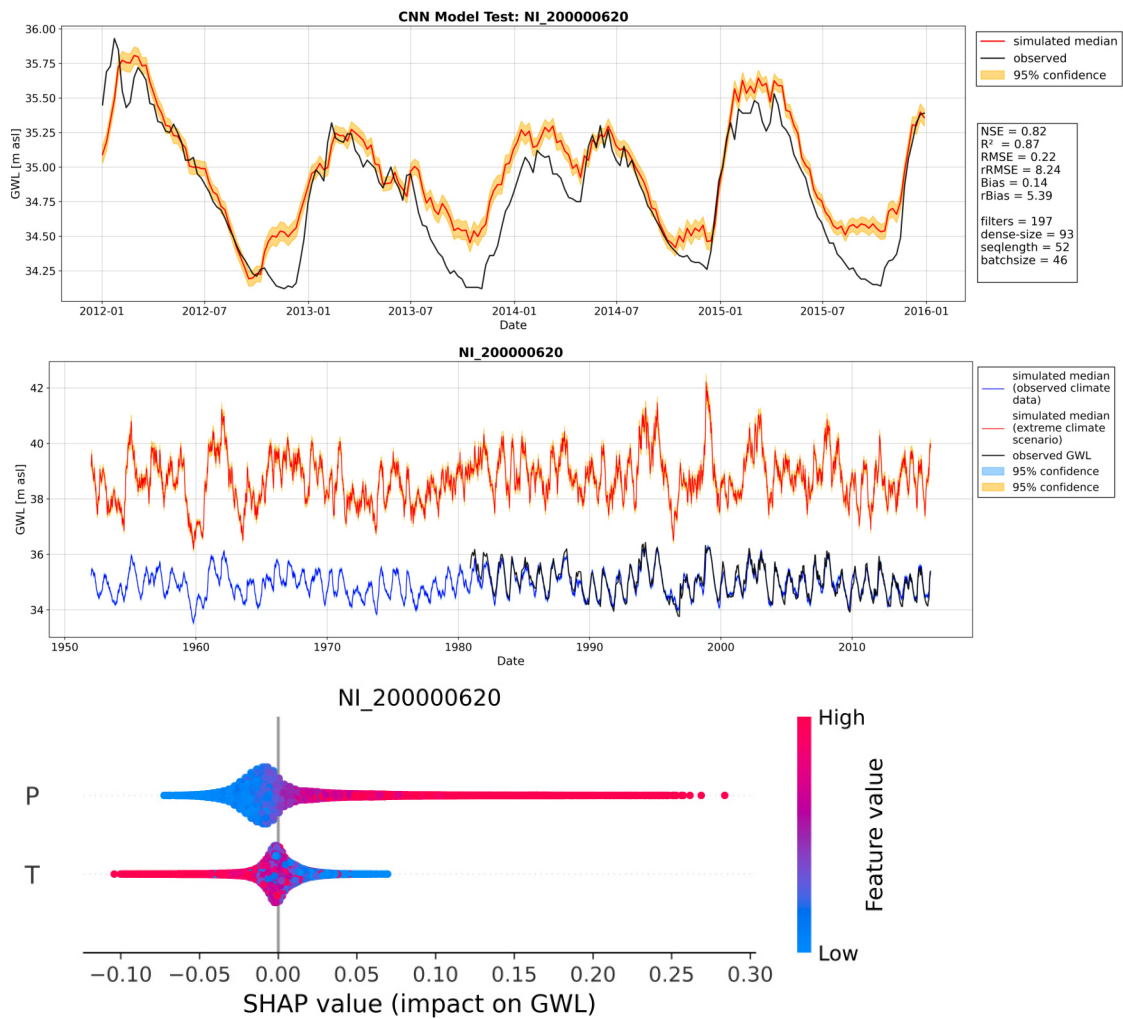


Figure S59: Evaluation of NI_200000620 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

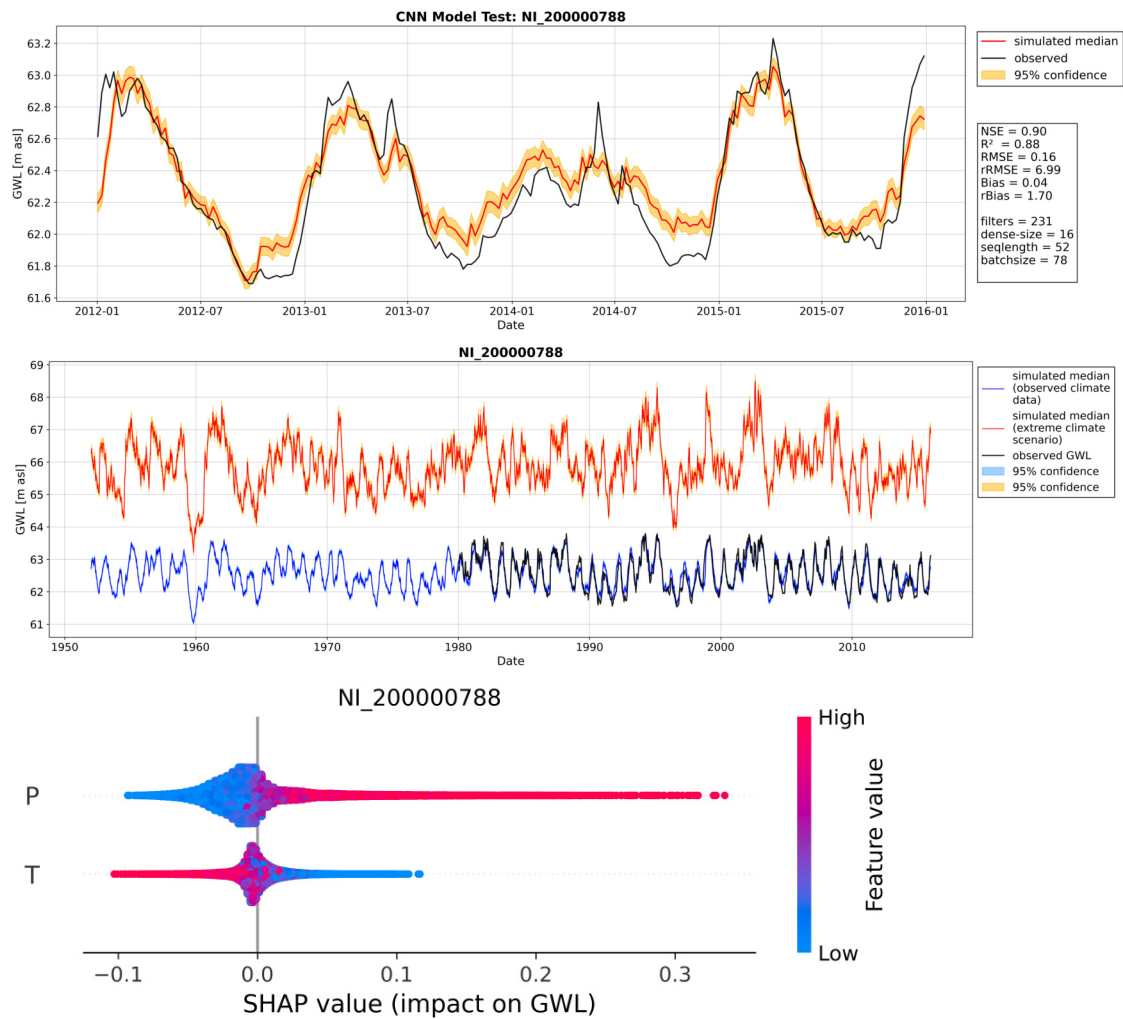


Figure S60: Evaluation of NI_200000788 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

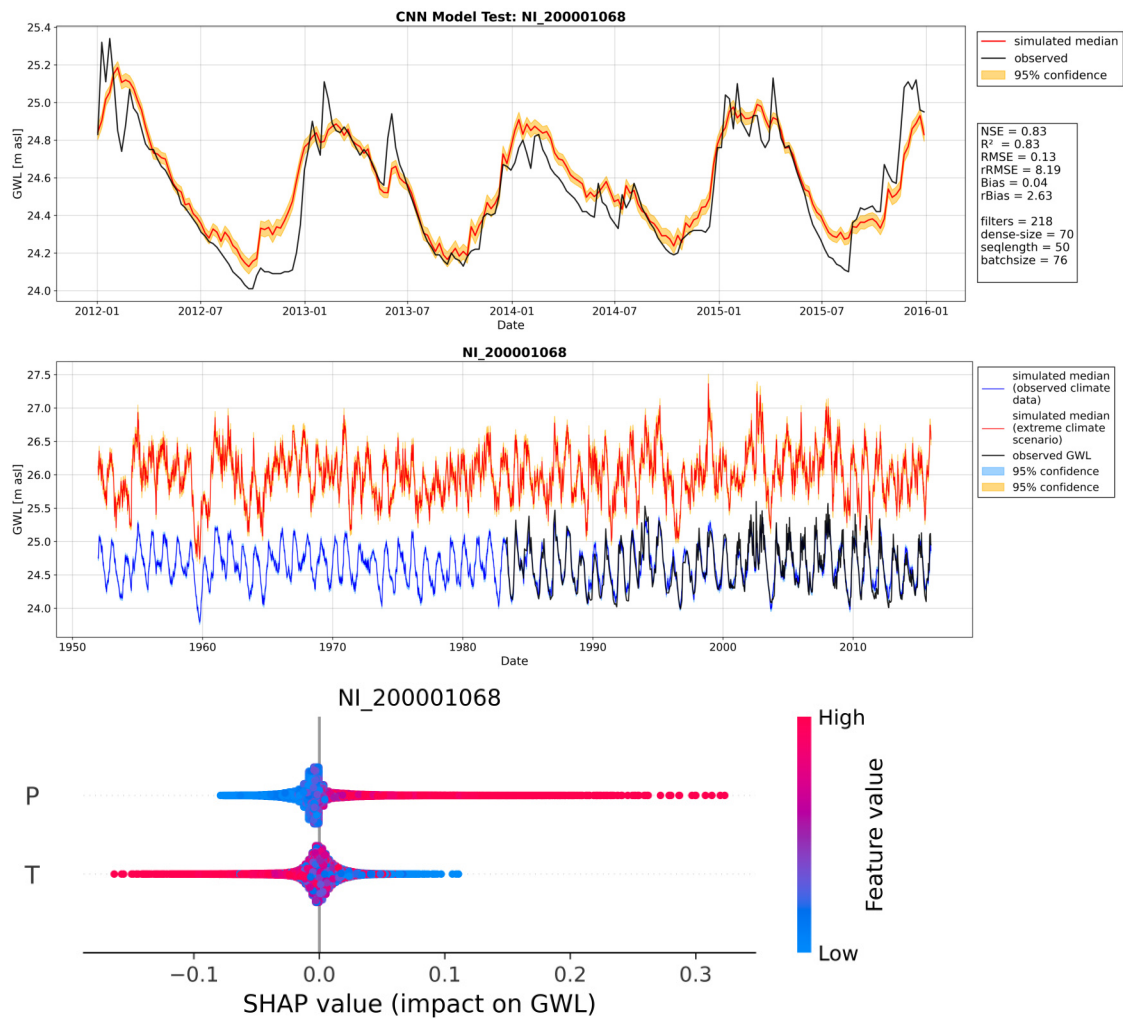


Figure S61: Evaluation of NI_200001068 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

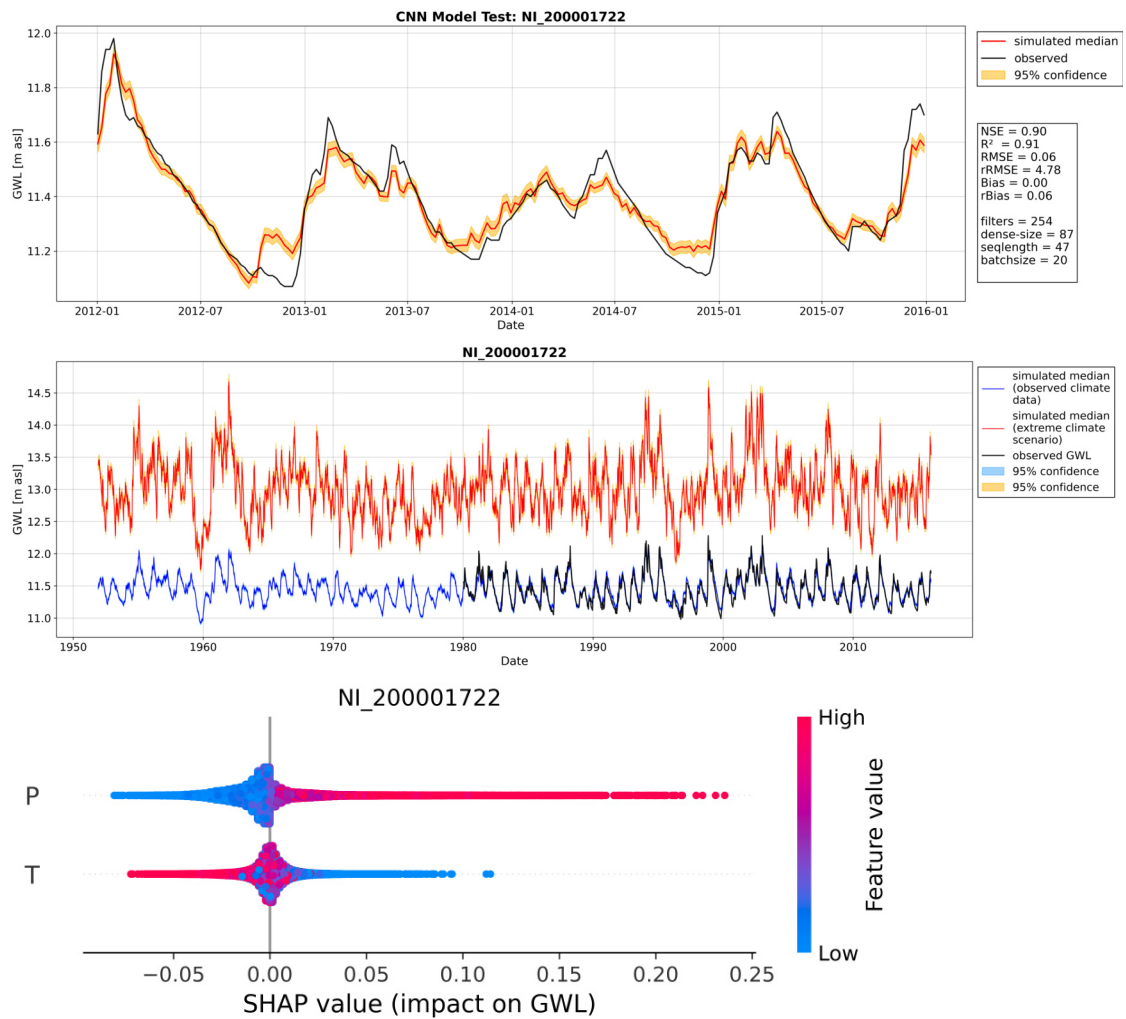


Figure S62: Evaluation of NI_200001722 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

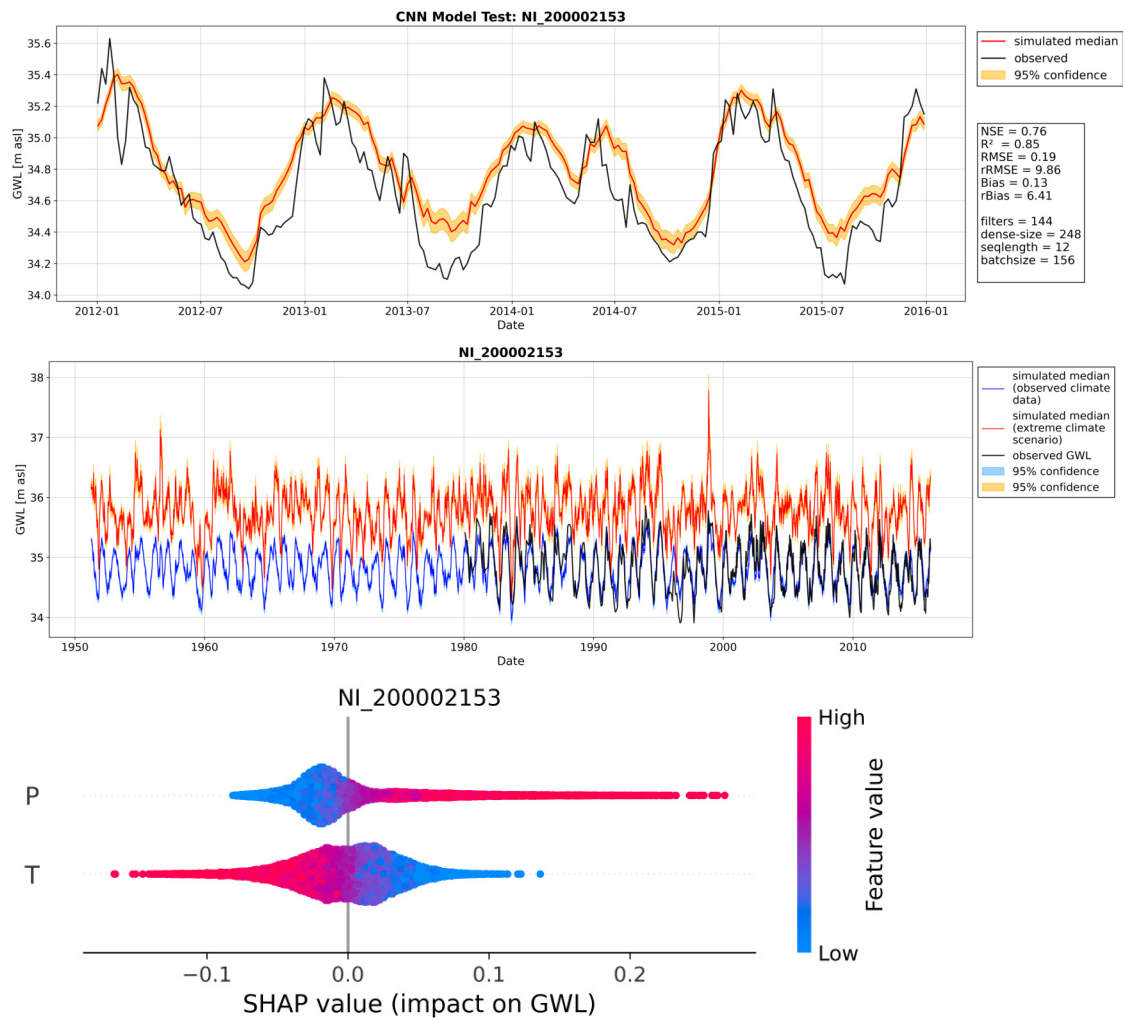


Figure S63: Evaluation of NI_200002153 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

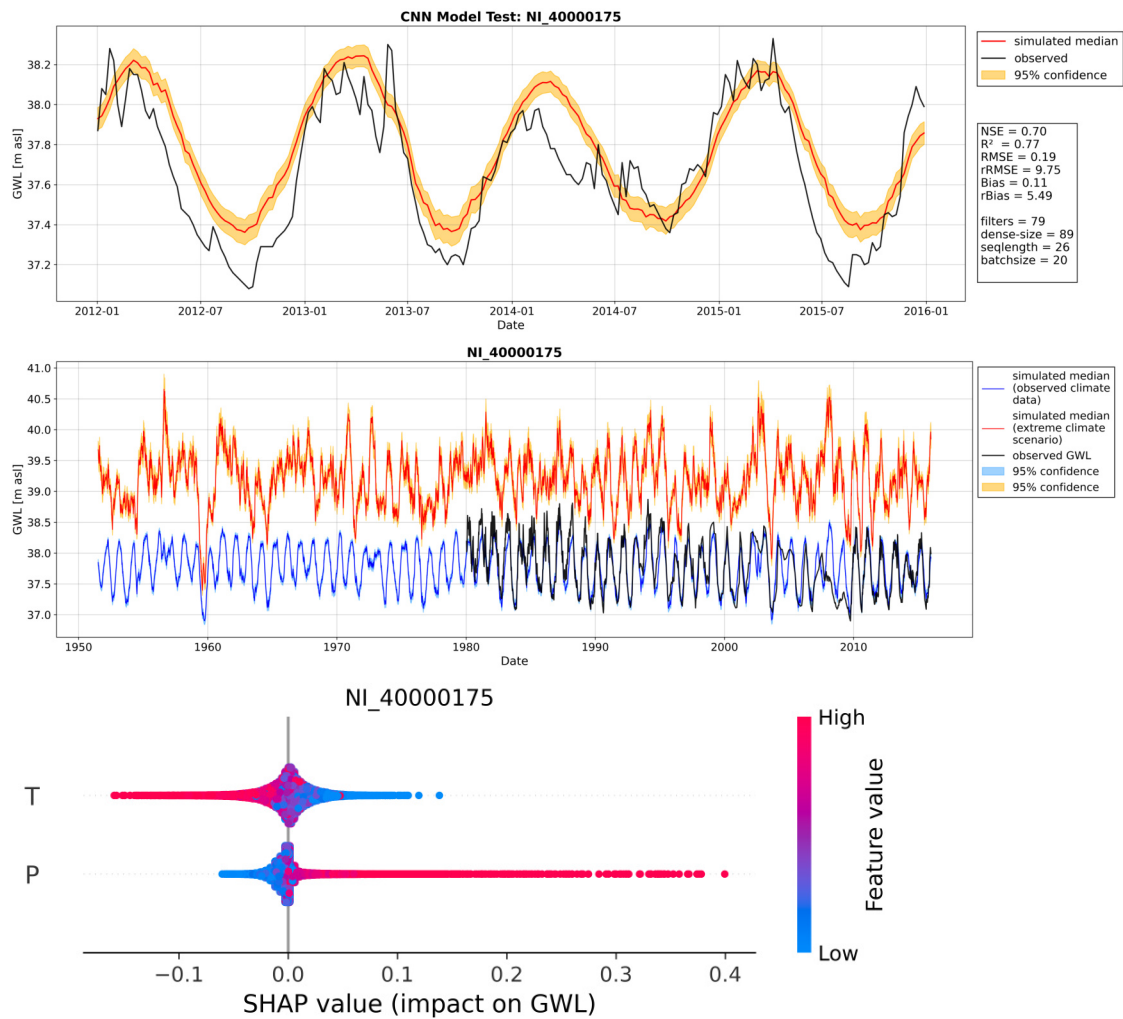


Figure S64: Evaluation of NI_40000175 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

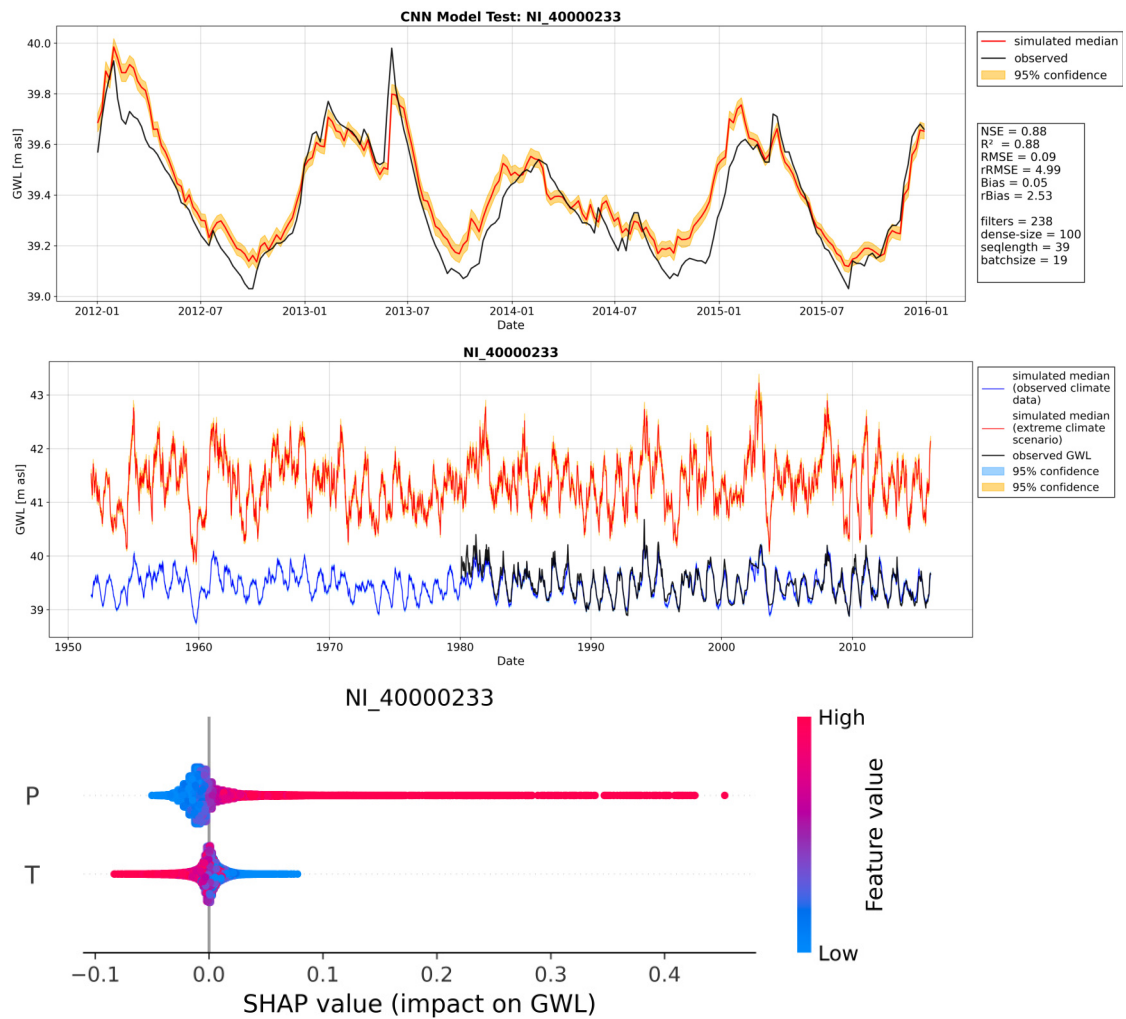


Figure S65: Evaluation of NI_40000233 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

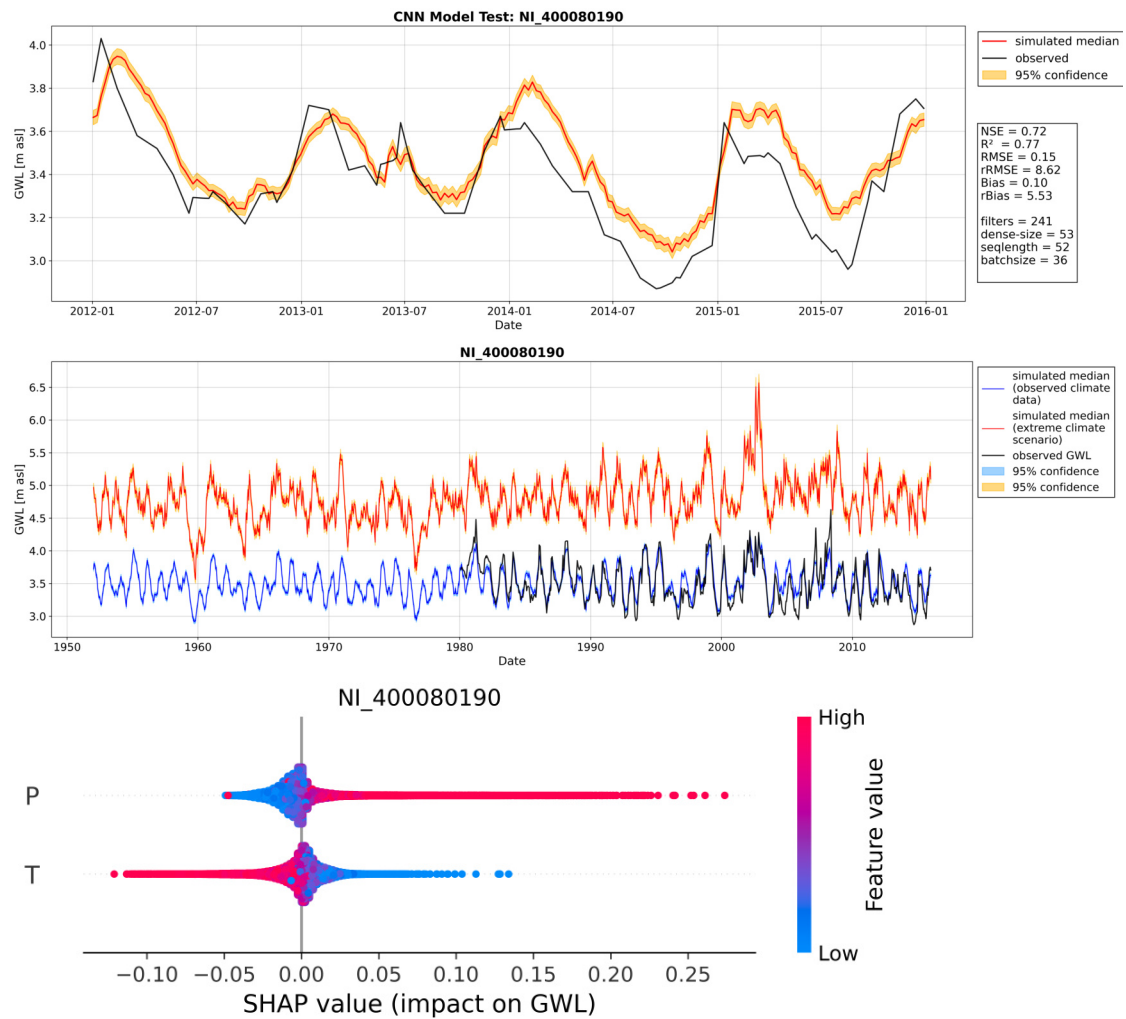


Figure S66: Evaluation of NI_400080190 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

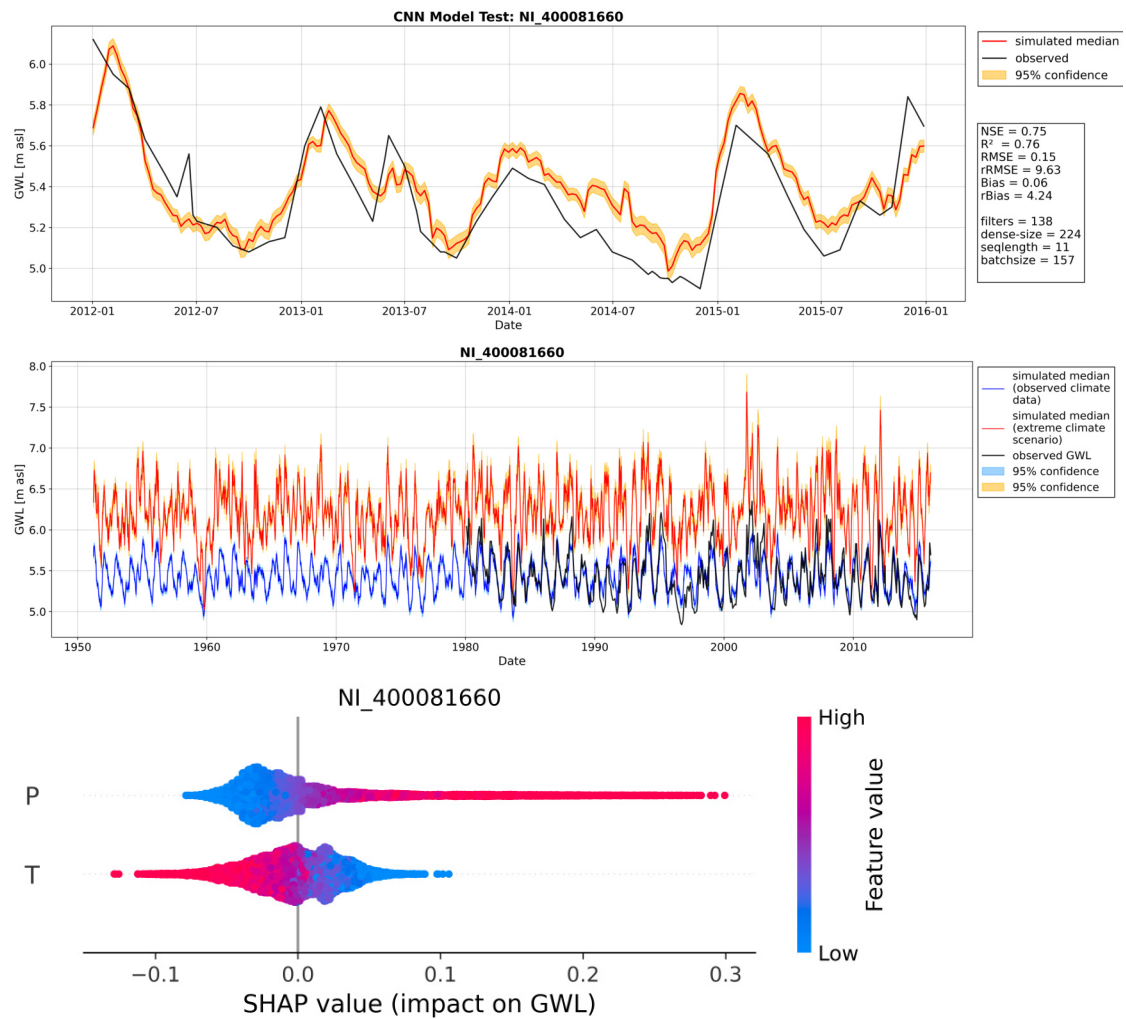


Figure S67: Evaluation of NI_400081660 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

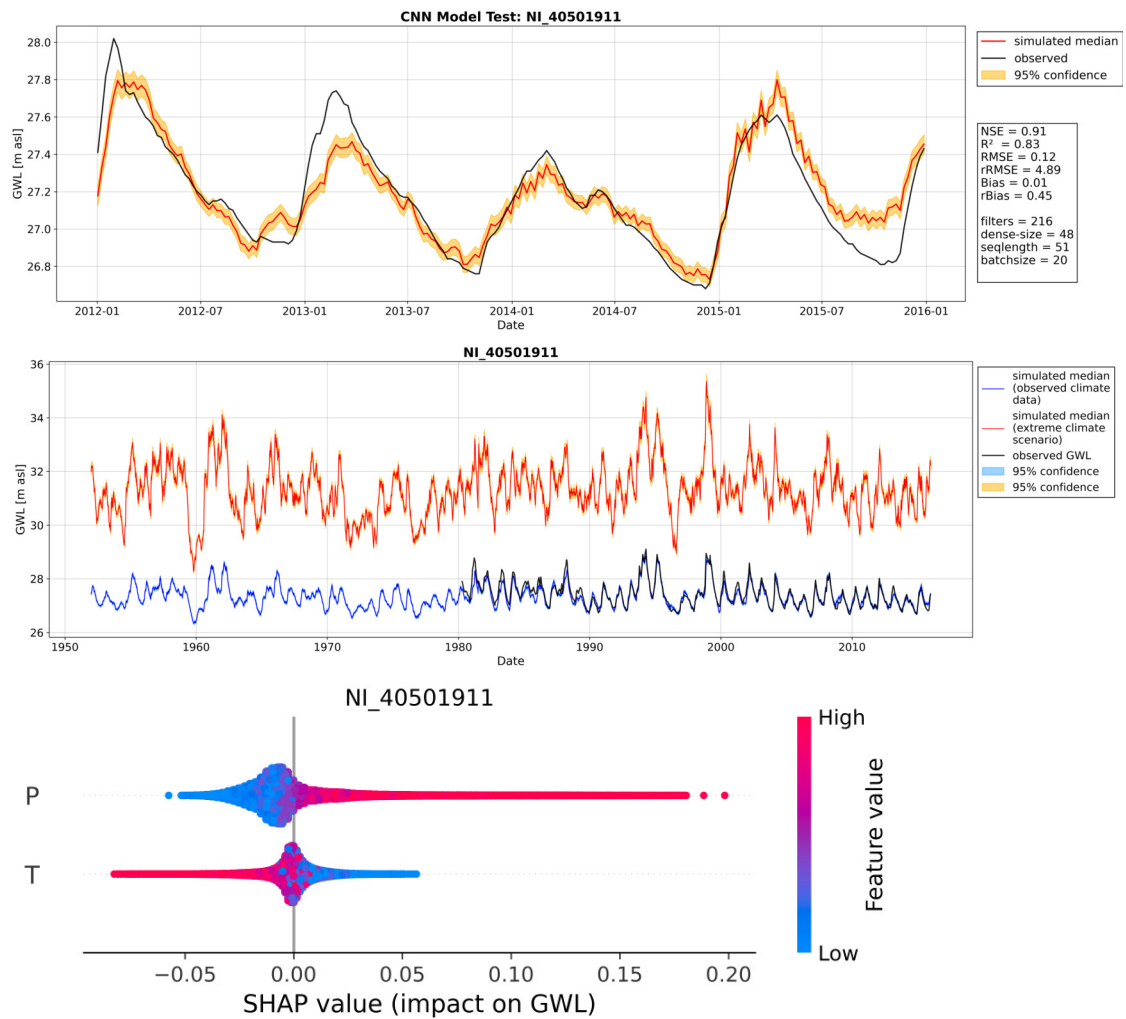


Figure S68: Evaluation of NI_40501911 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

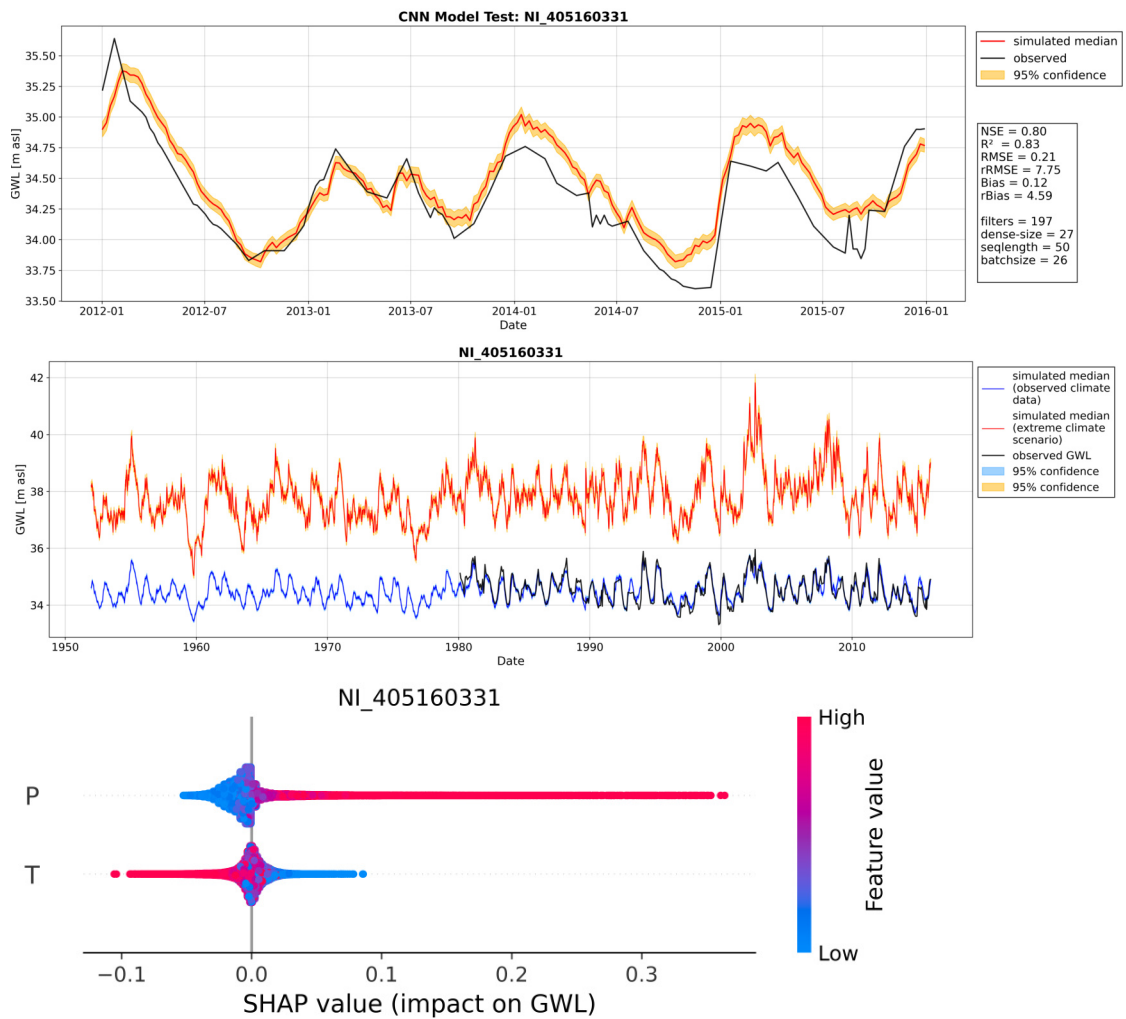


Figure S69: Evaluation of NI_405160331 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

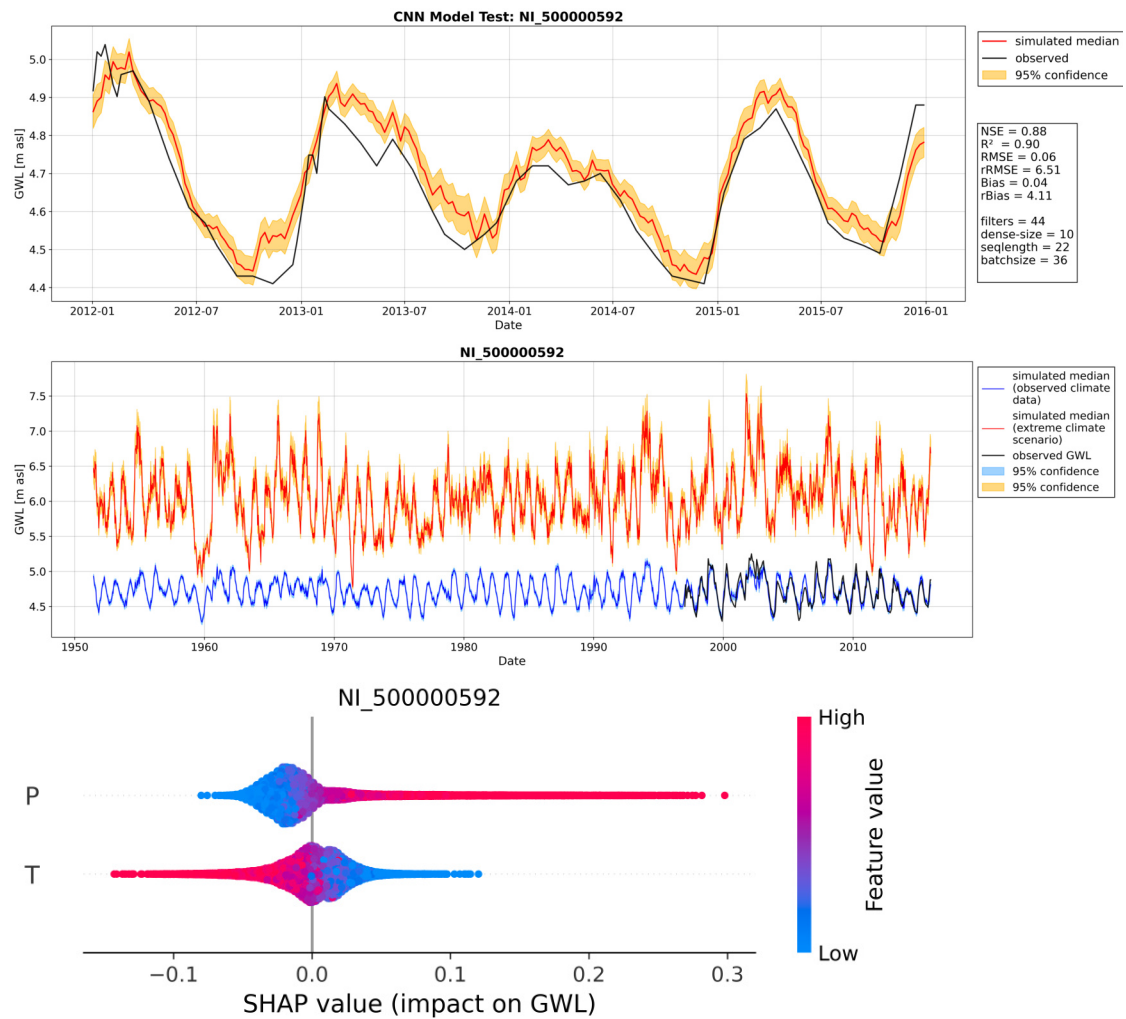


Figure S70: Evaluation of NI_500000592 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

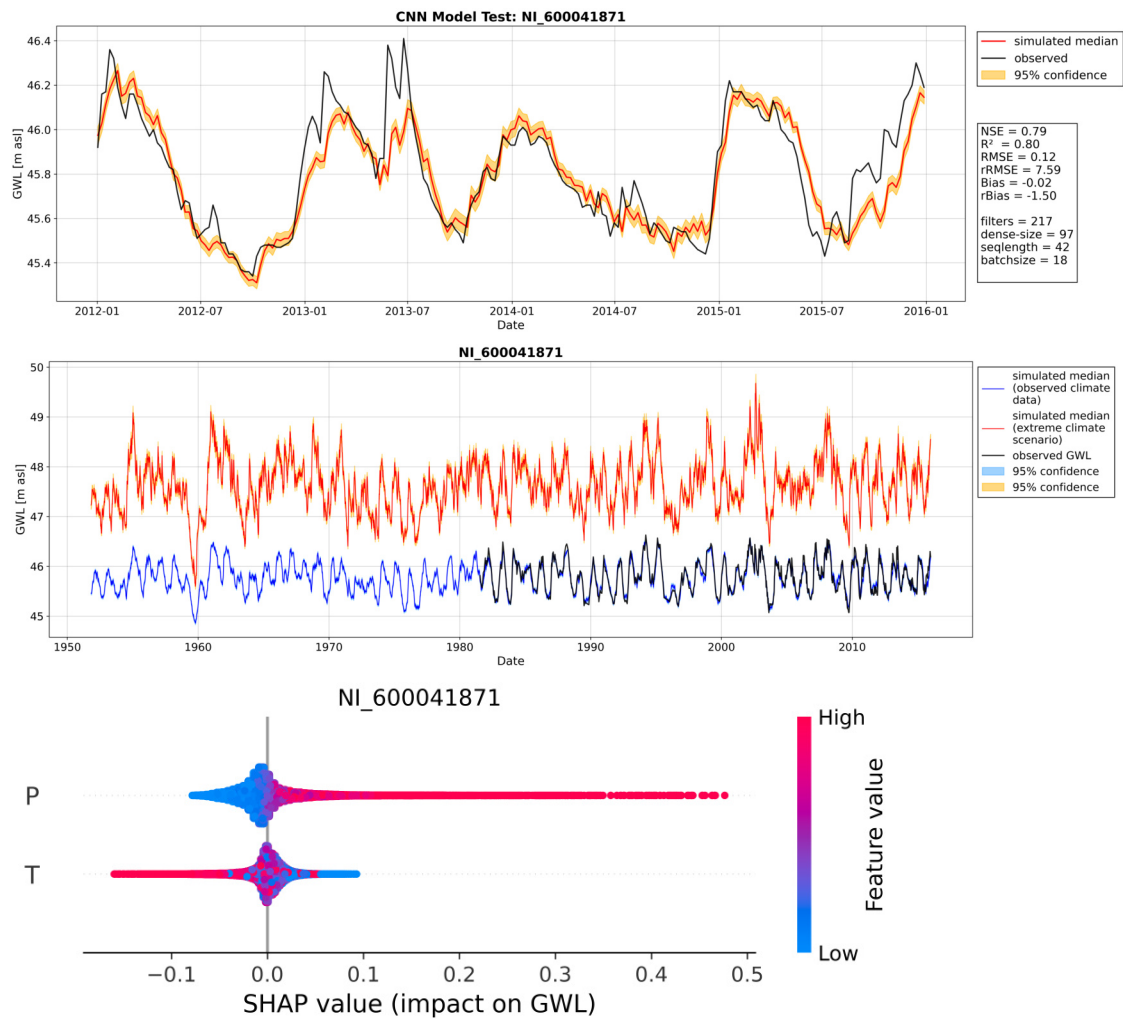


Figure S71: Evaluation of NI_600041871 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

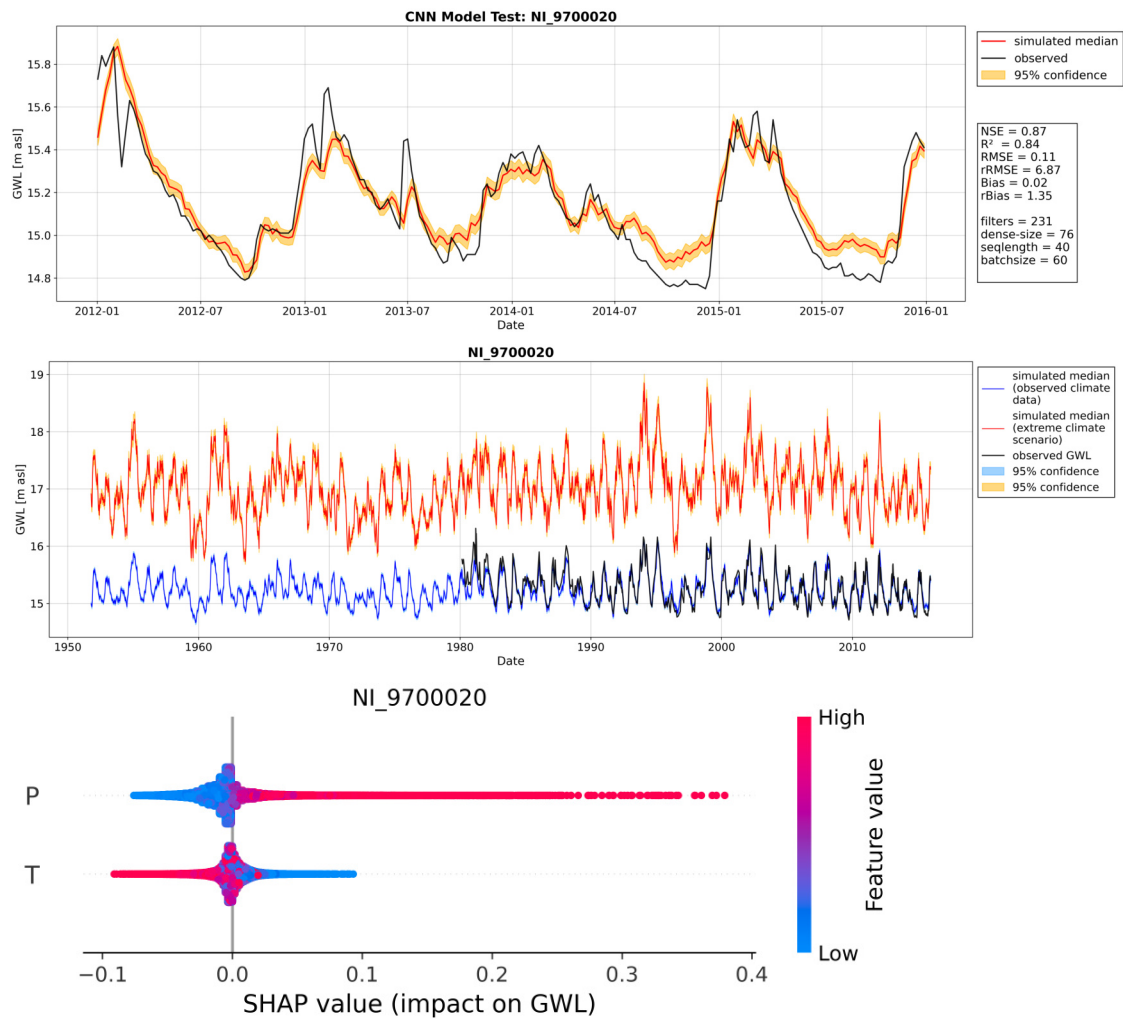


Figure S72: Evaluation of NI_9700020 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

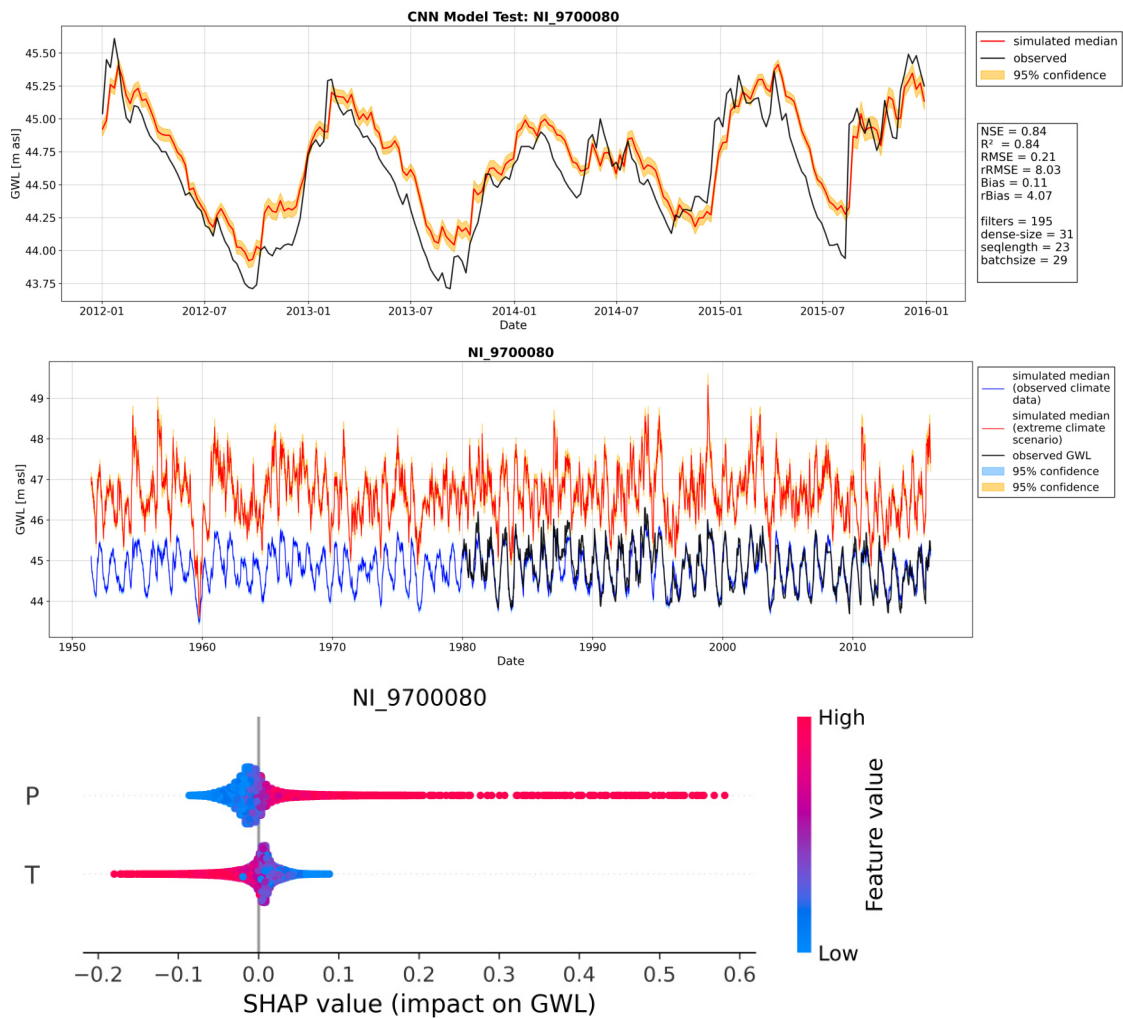


Figure S73: Evaluation of NI_9700080 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

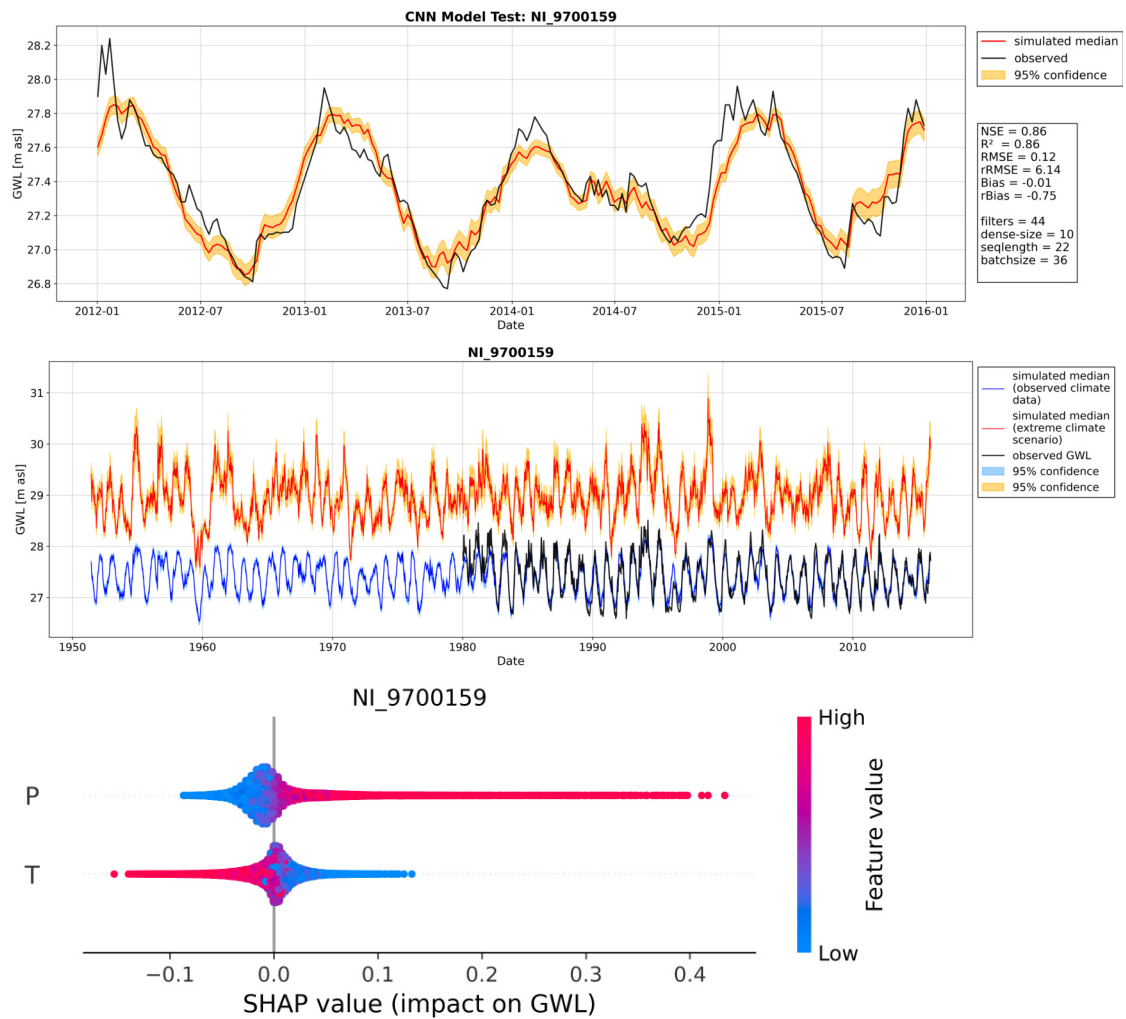


Figure S74: Evaluation of NI_9700159 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

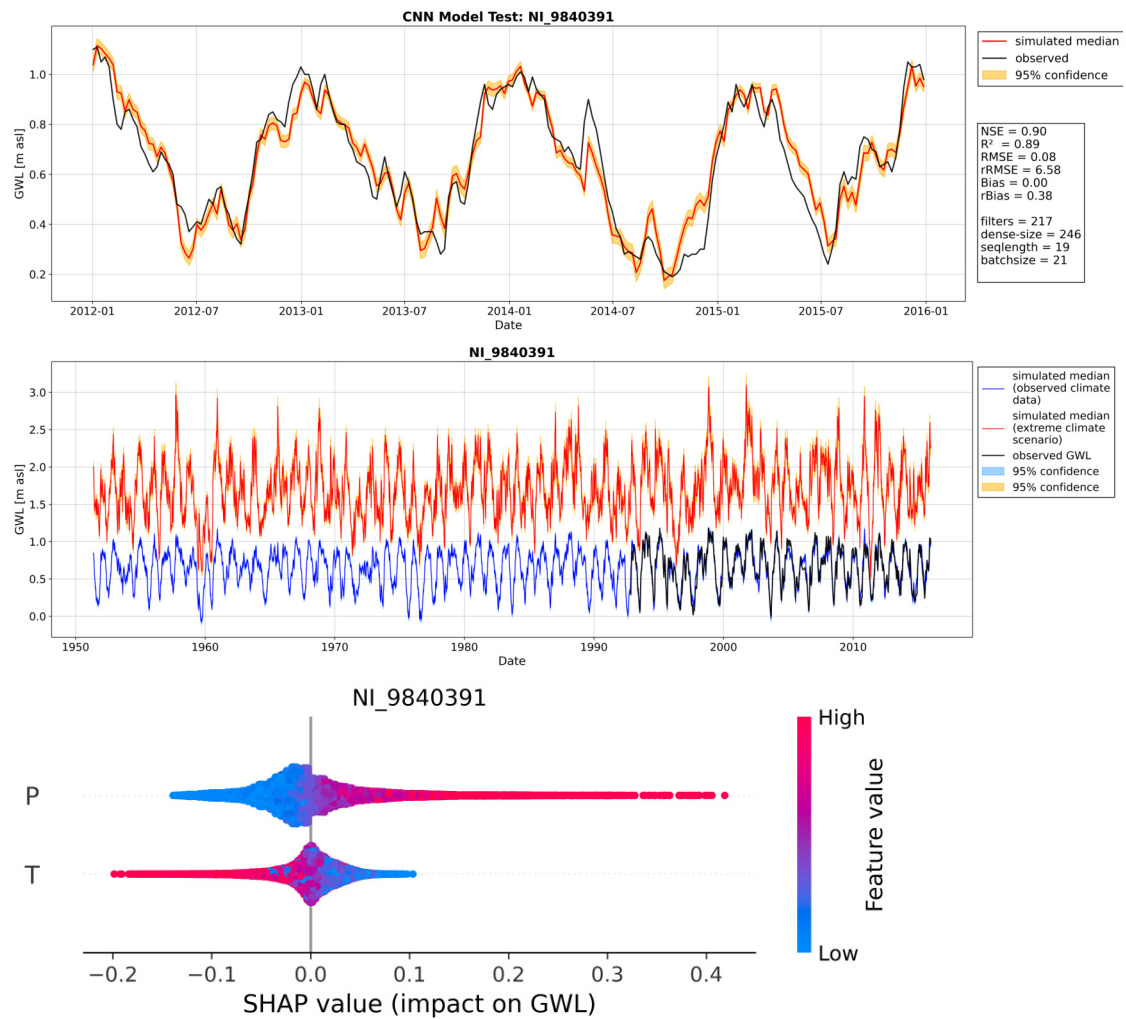


Figure S75: Evaluation of NI_9840391 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

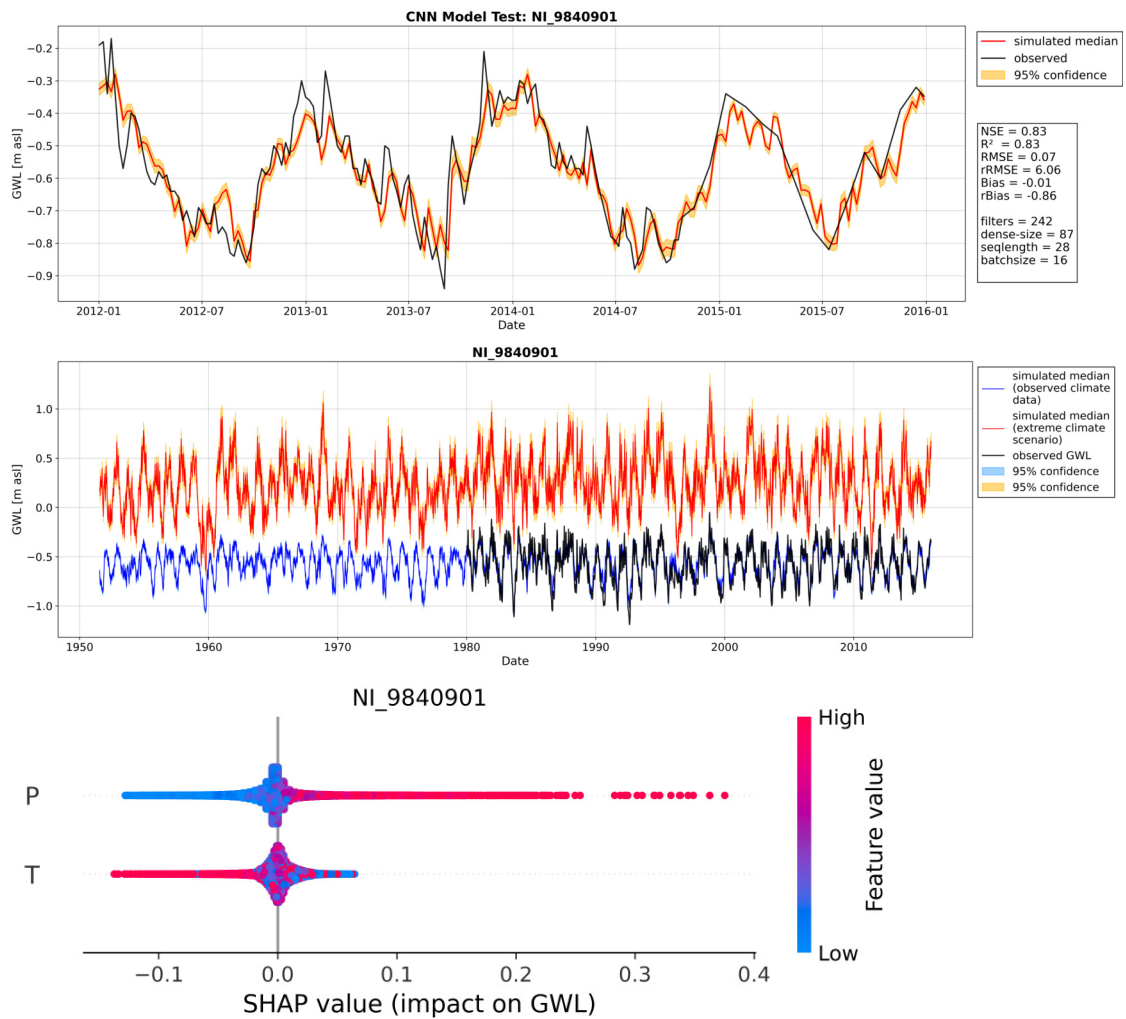


Figure S76: Evaluation of NI_9840901 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

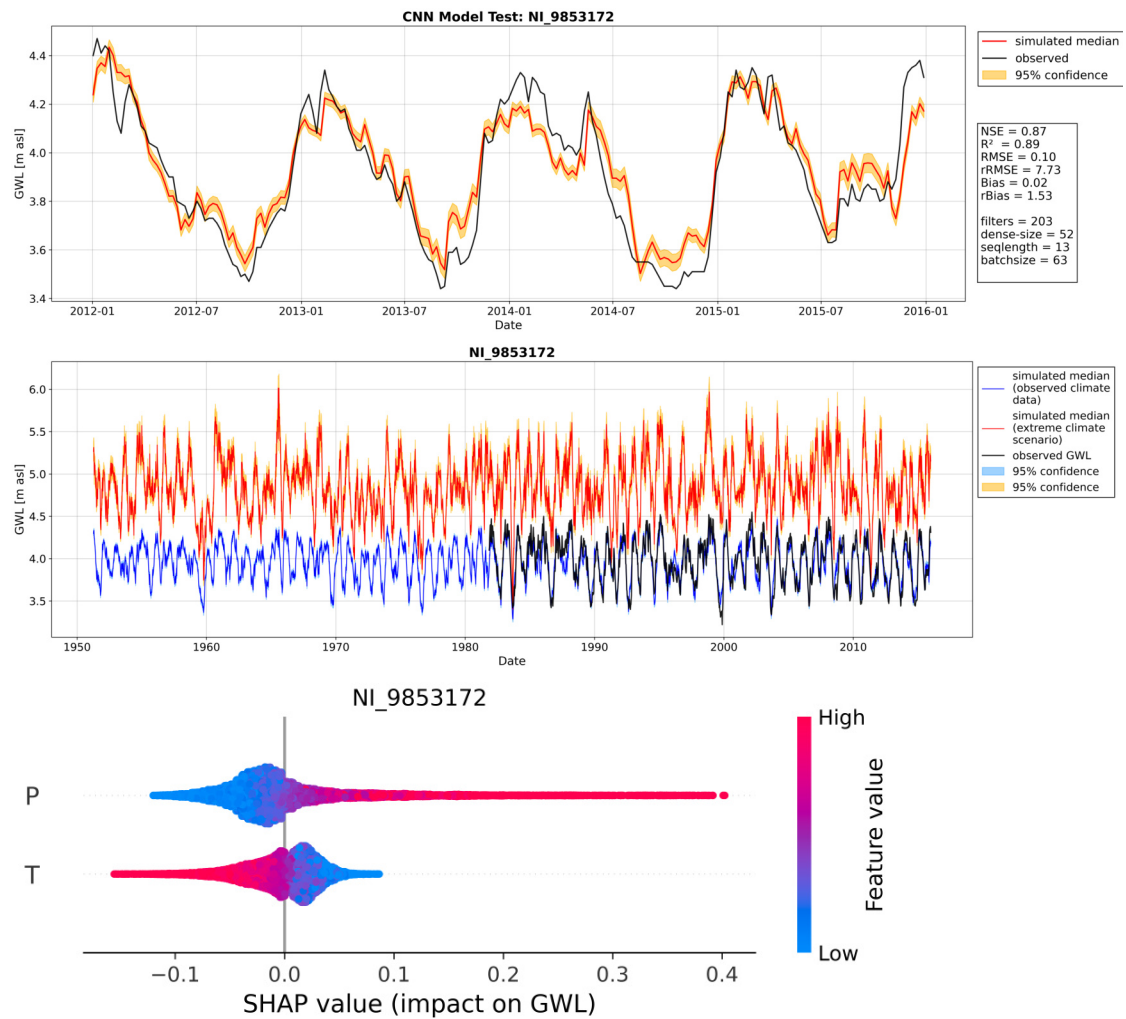


Figure S77: Evaluation of NI_9853172 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

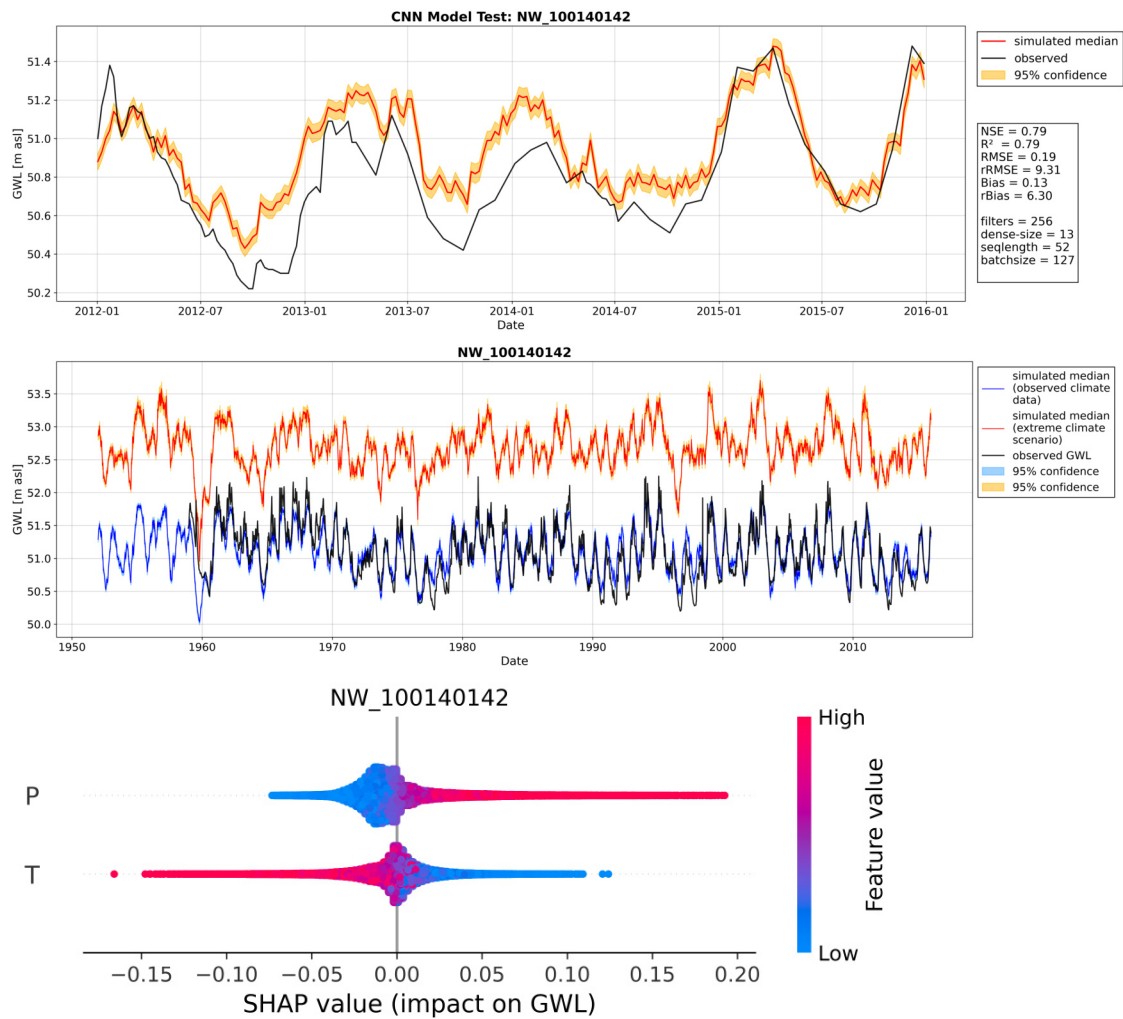


Figure S78: Evaluation of NW_100140142 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

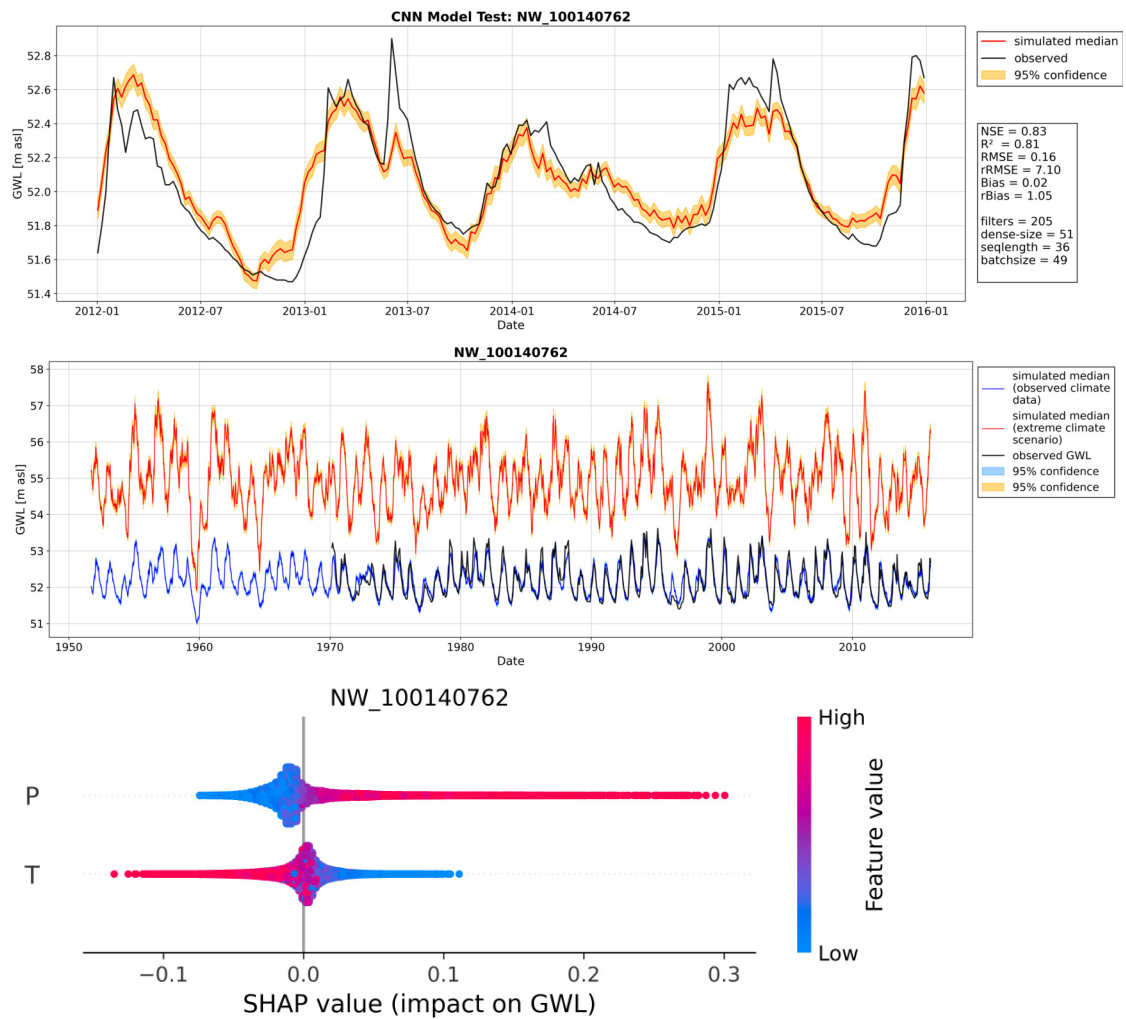


Figure S79: Evaluation of NW_100140762 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

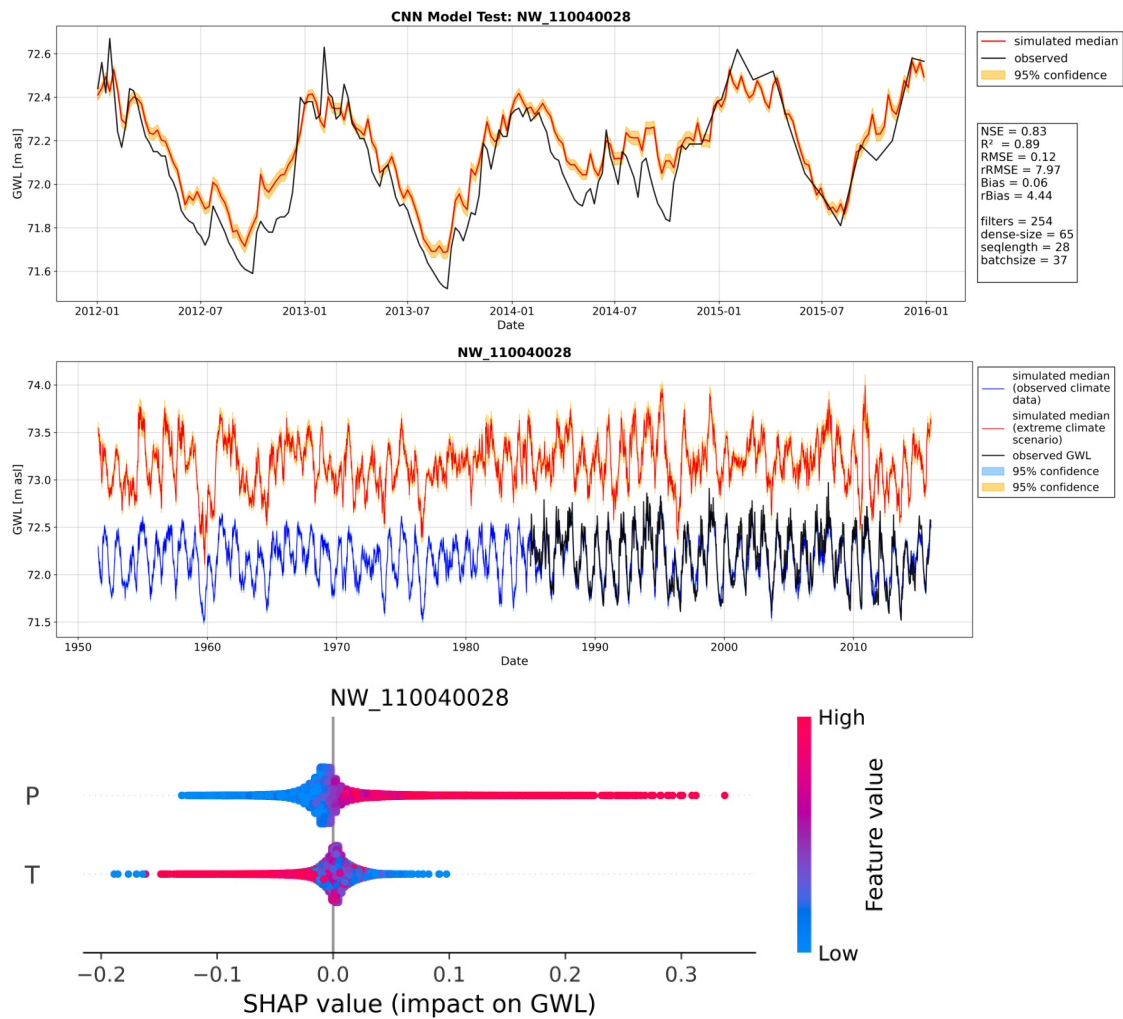


Figure S80: Evaluation of NW_110040028 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

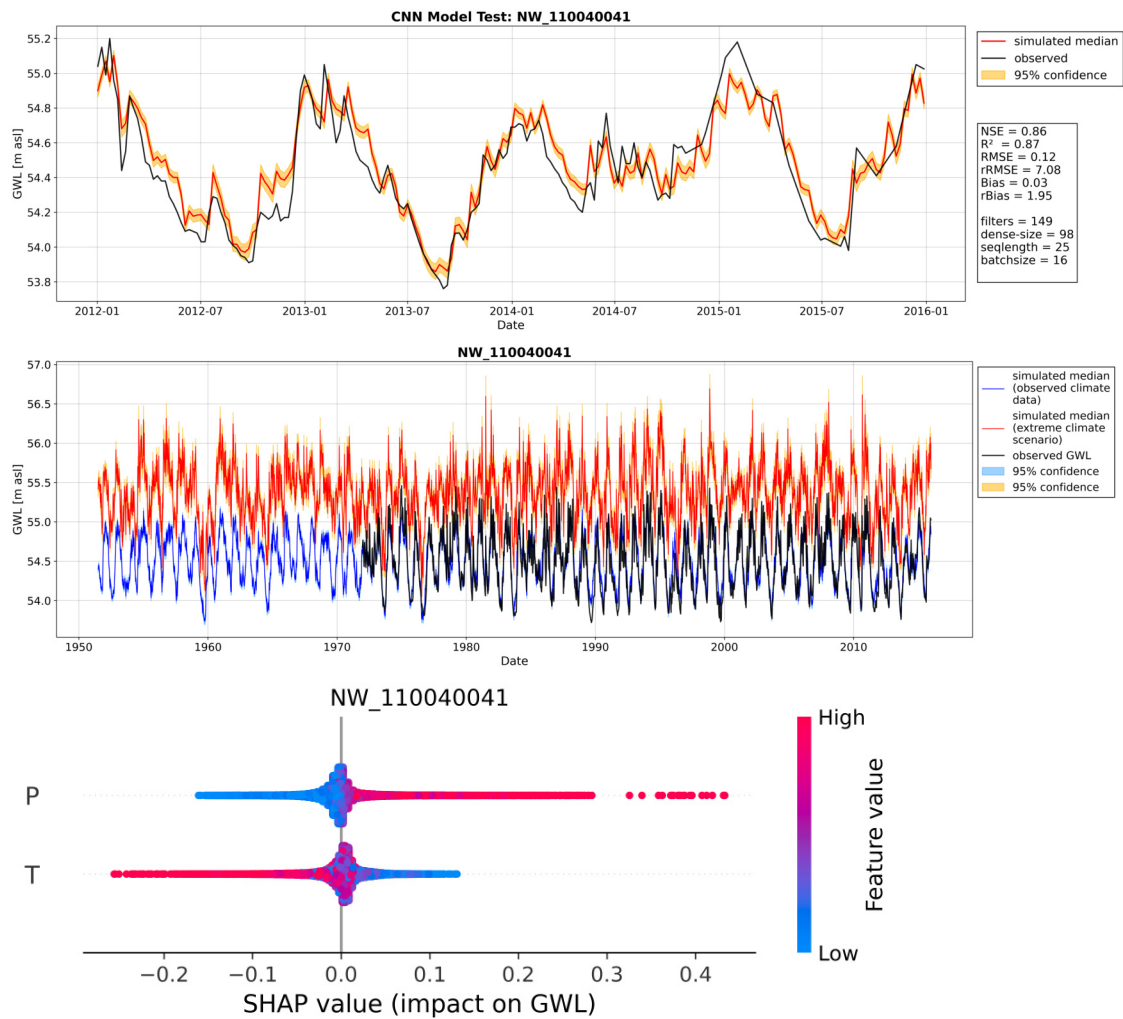


Figure S81: Evaluation of NW_110040041 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

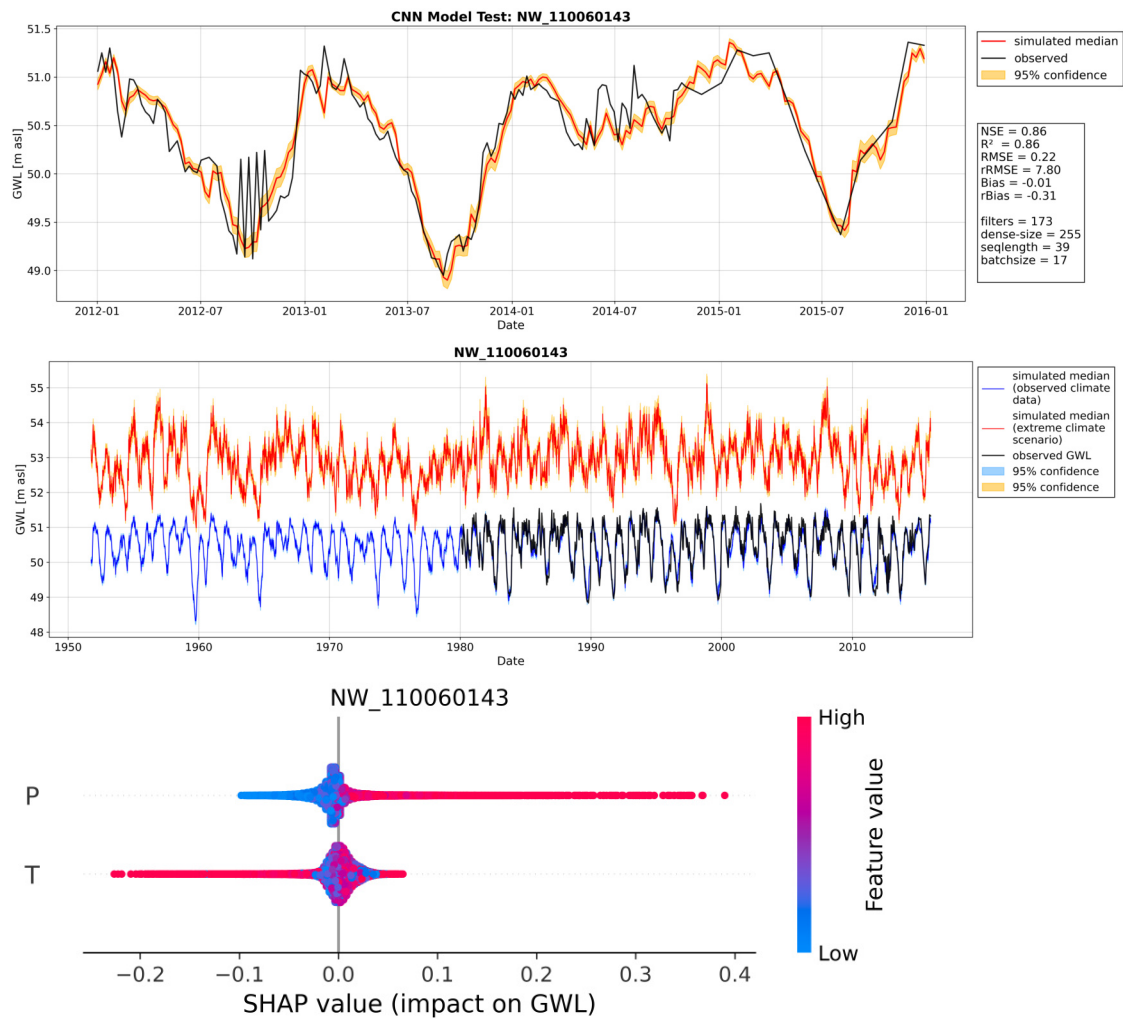


Figure S82: Evaluation of NW_110060143 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

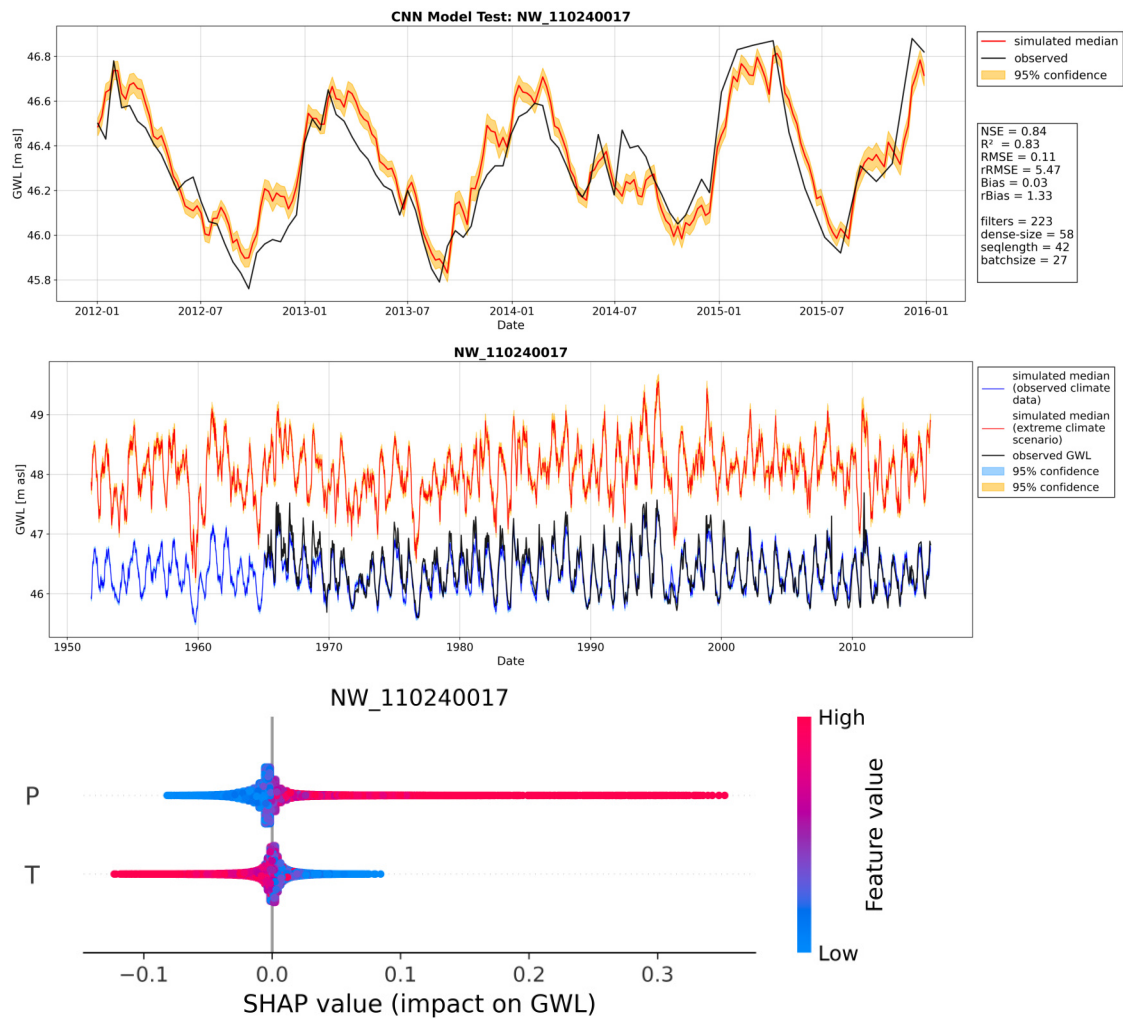


Figure S83: Evaluation of NW_110240017 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

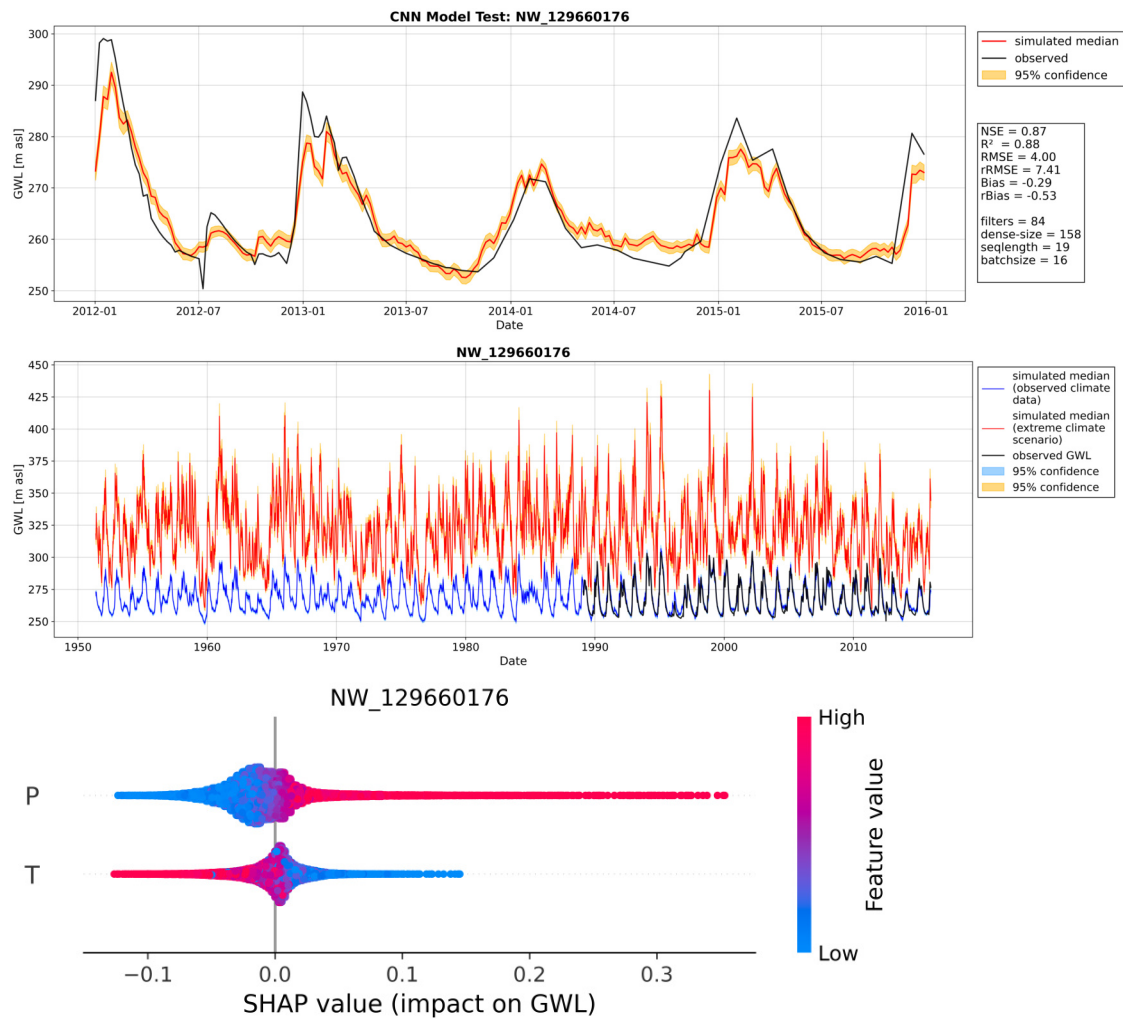


Figure S84: Evaluation of NW_129660176 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

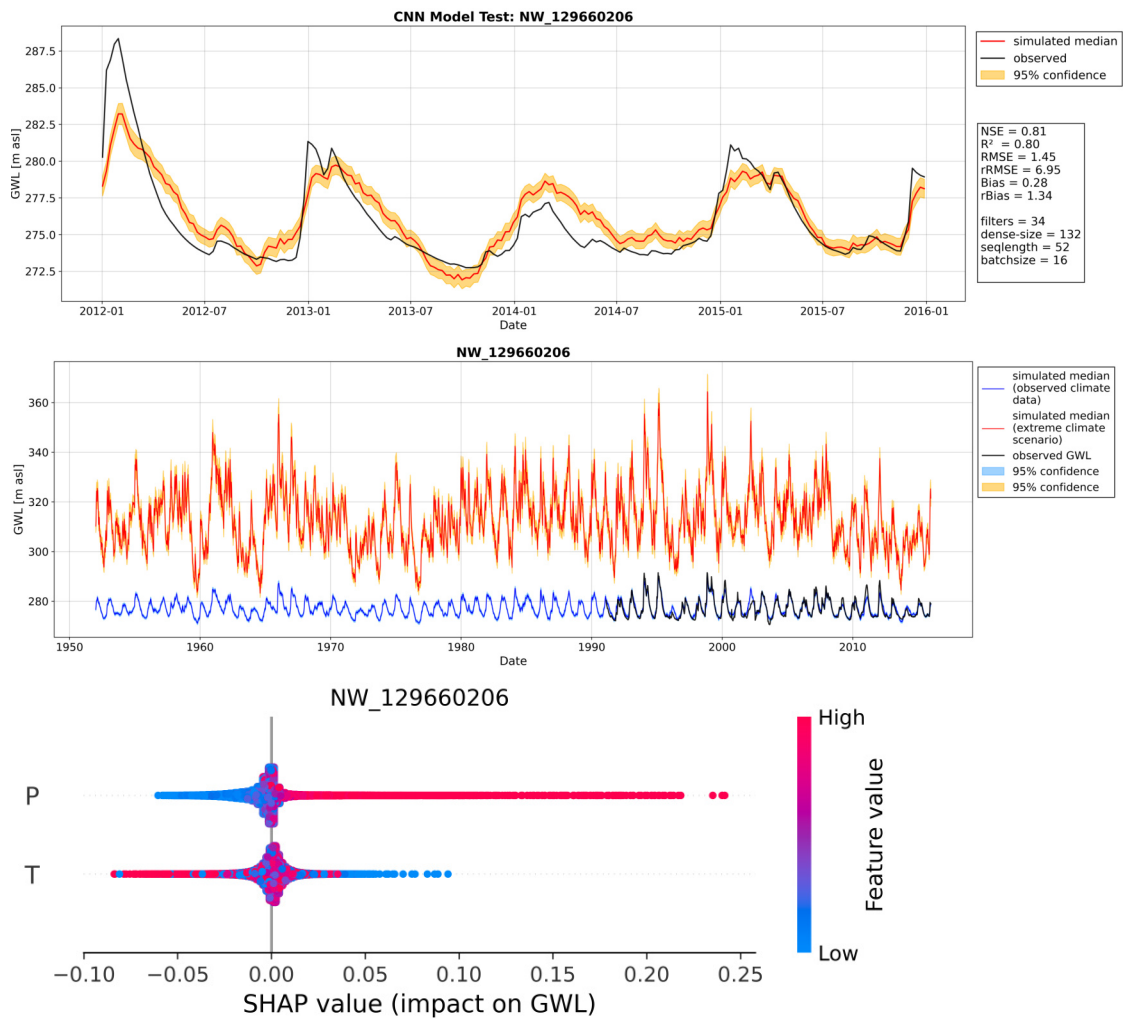


Figure S85: Evaluation of NW_129660206 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

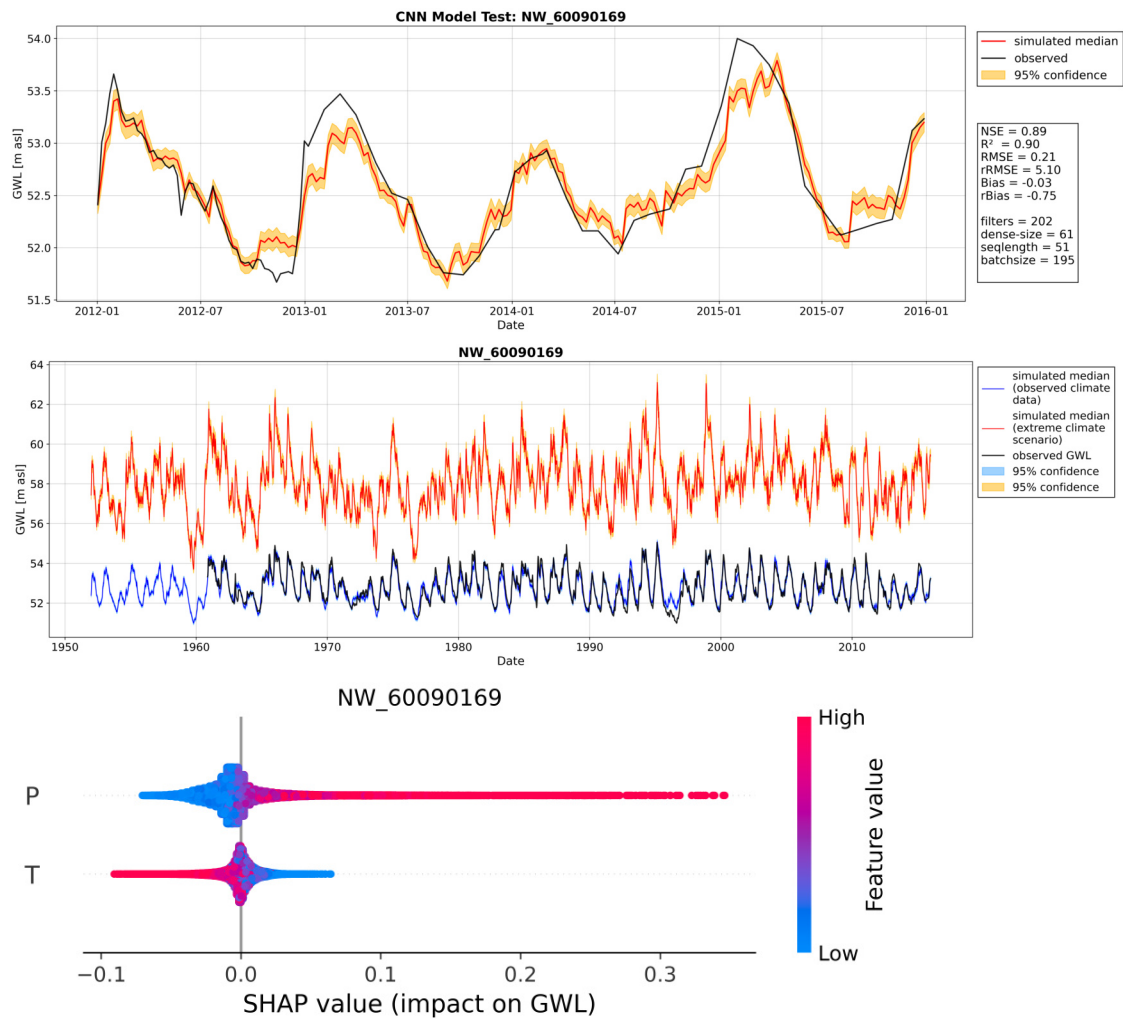


Figure S86: Evaluation of NW_60090169 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

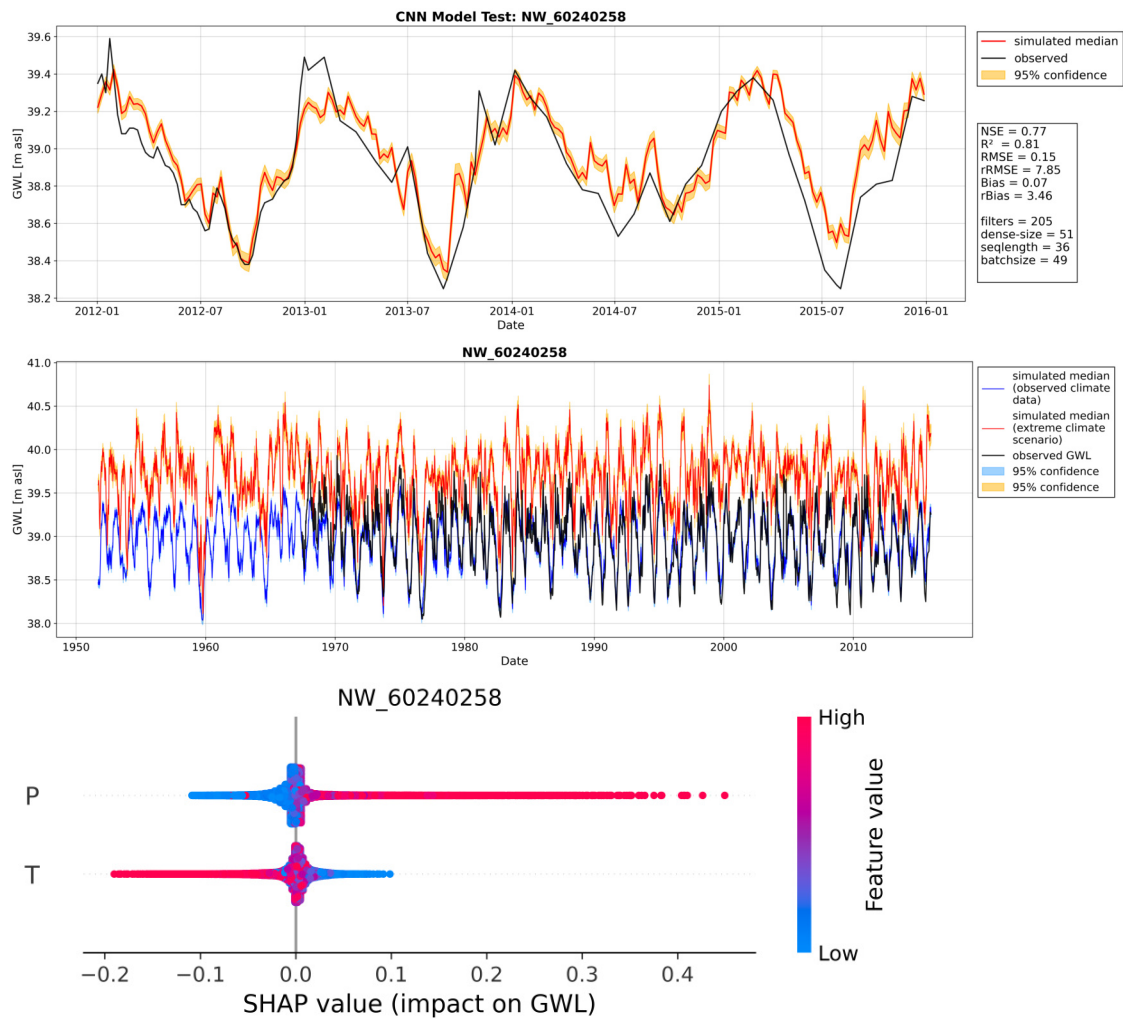


Figure S87: Evaluation of NW_60240258 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

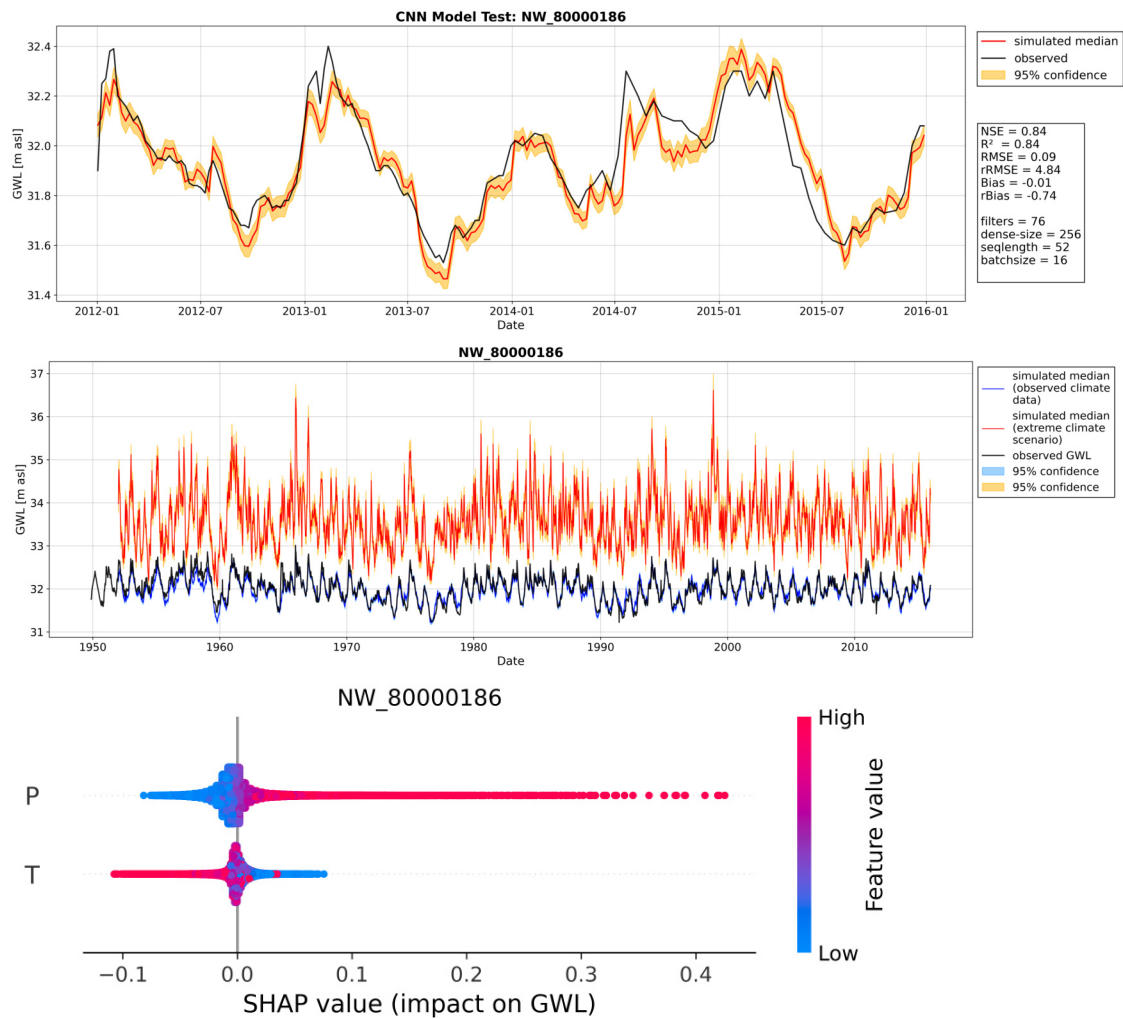


Figure S88: Evaluation of NW_80000186 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

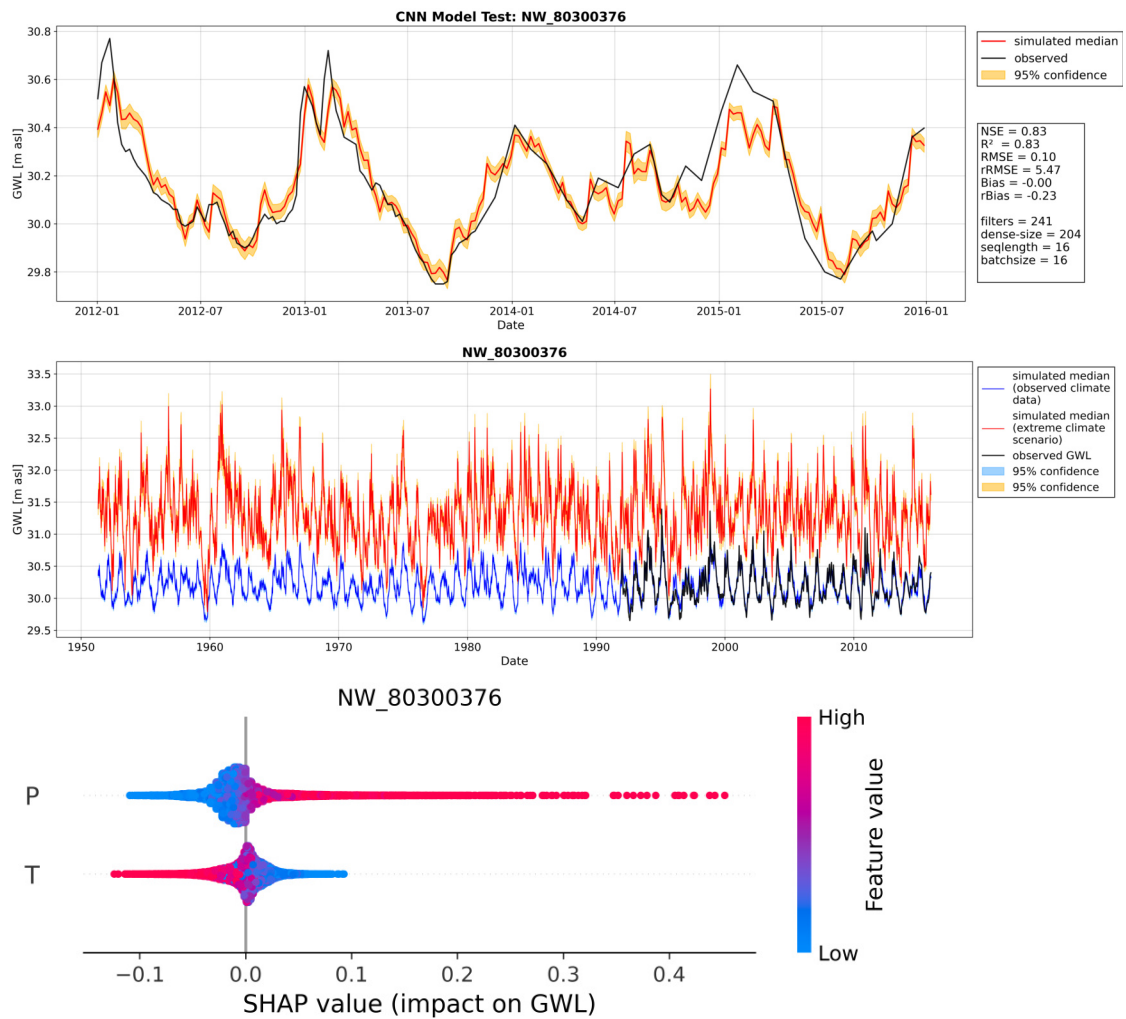


Figure S89: Evaluation of NW_80300376 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

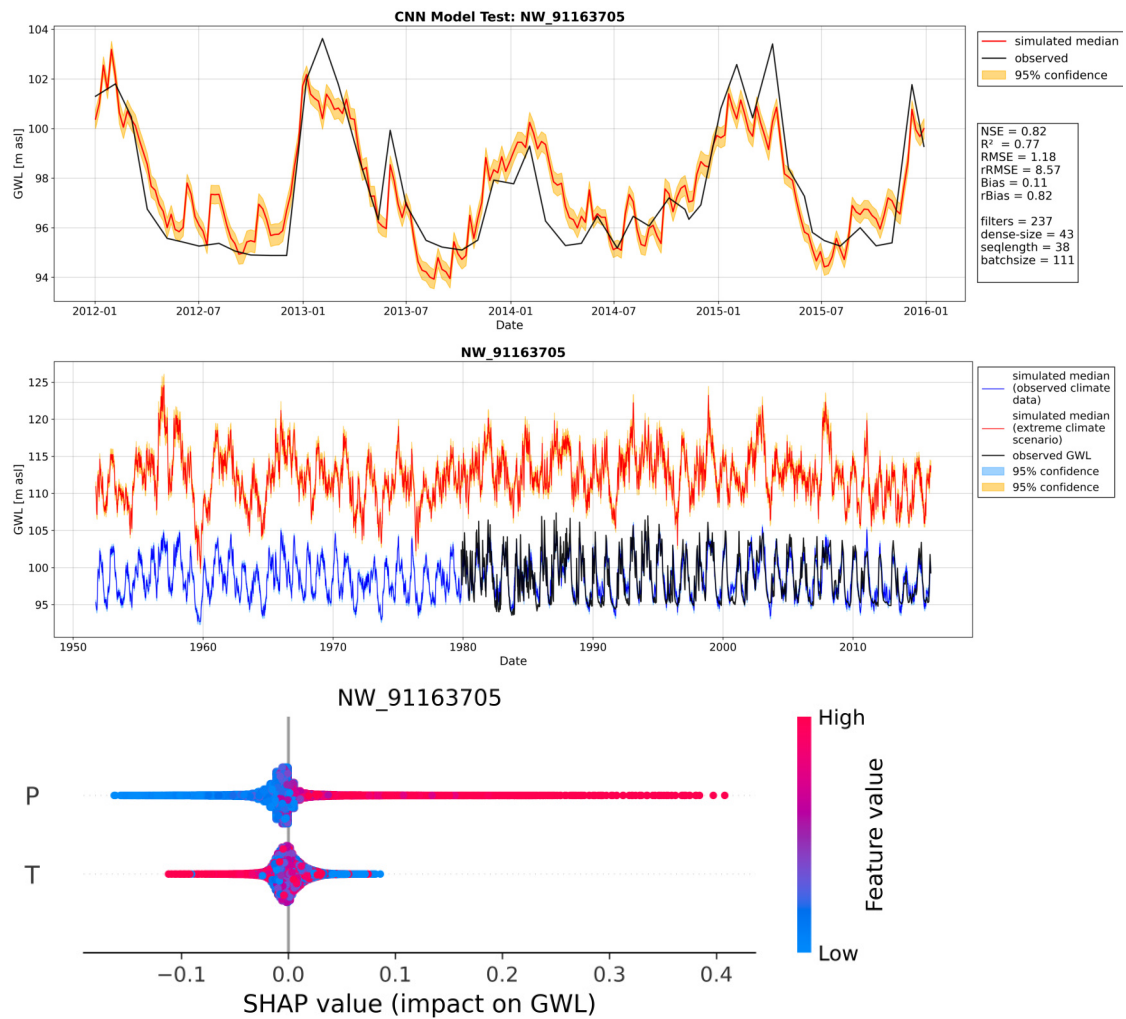


Figure S90: Evaluation of NW_91163705 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

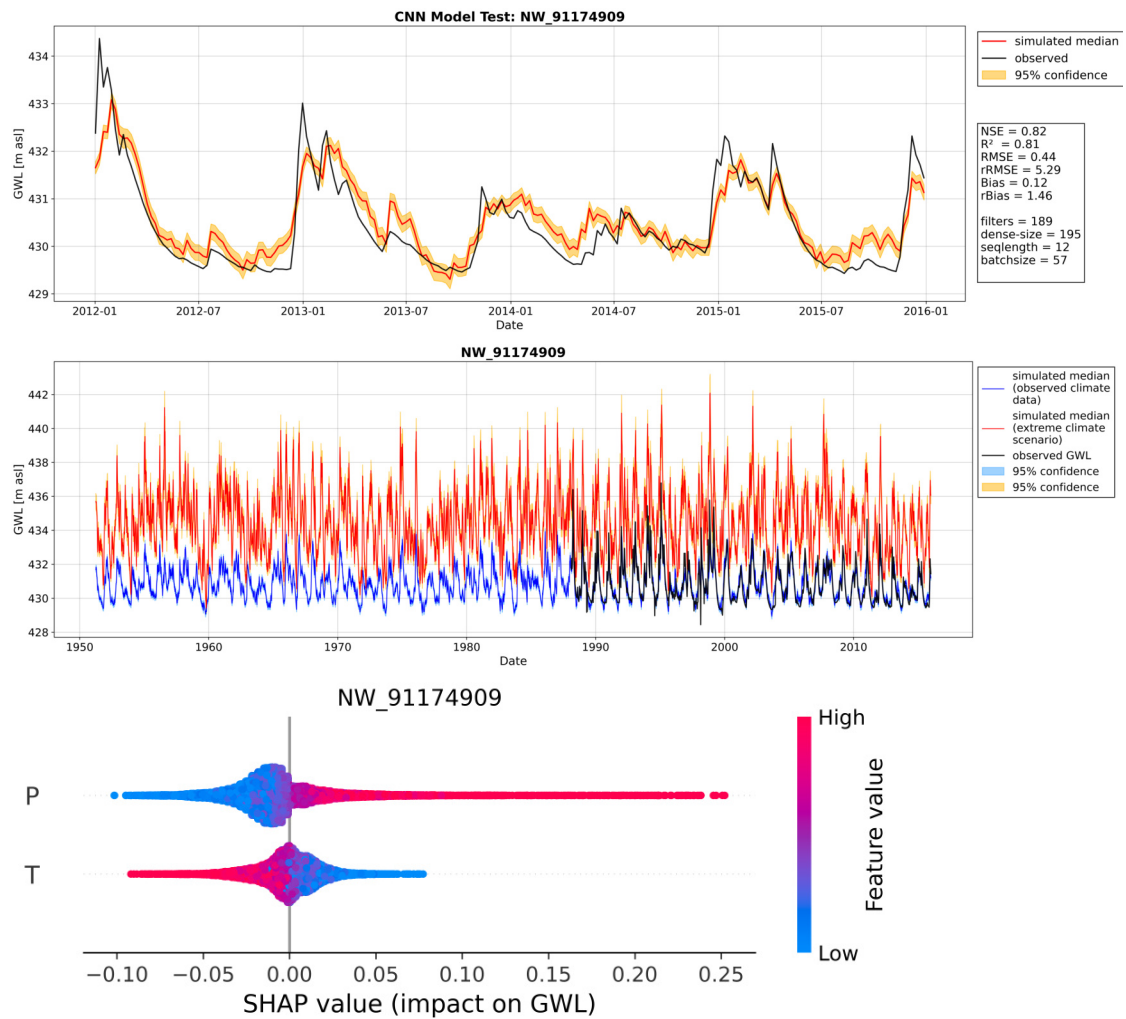


Figure S91: Evaluation of NW_91174909 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

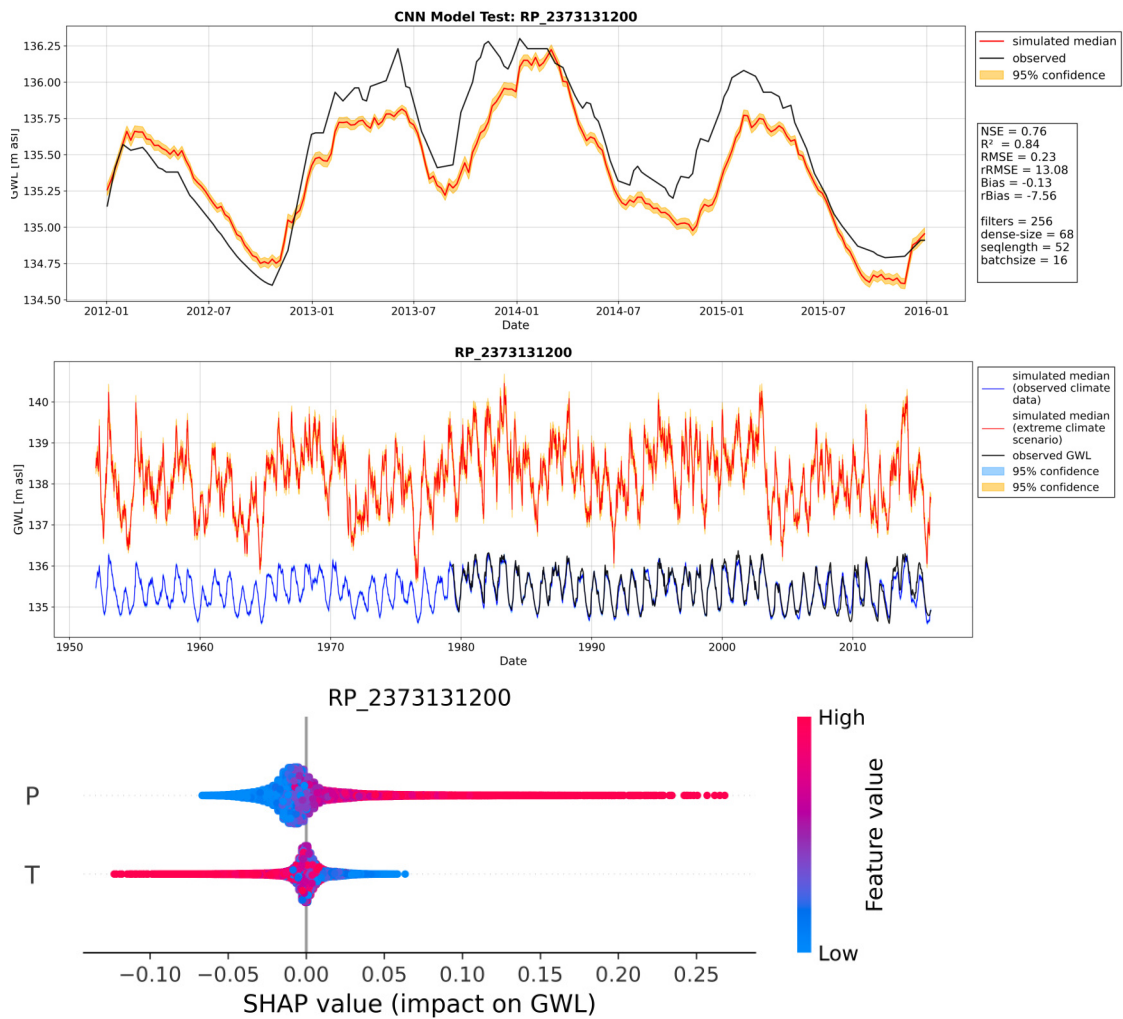


Figure S92: Evaluation of RP_2373131200 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

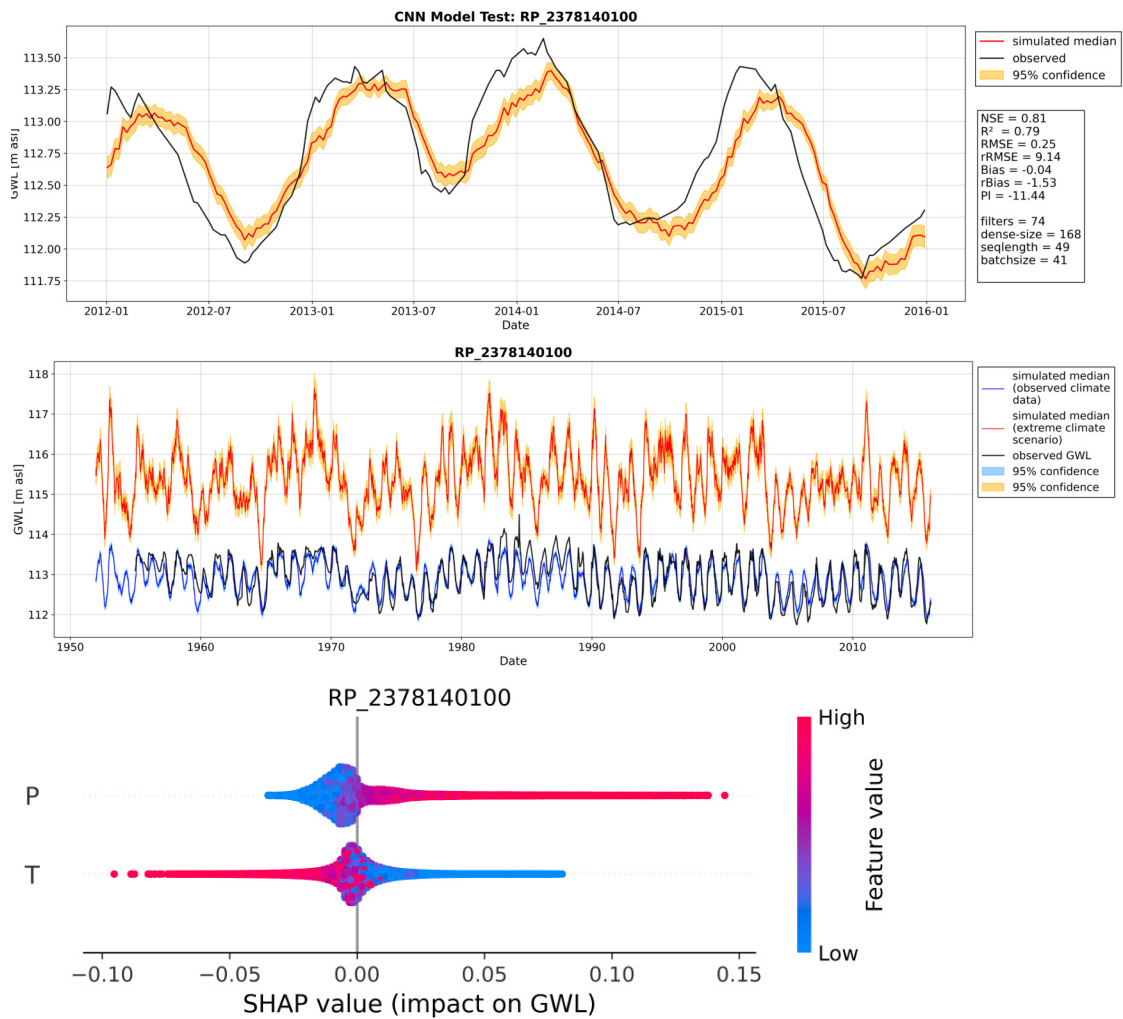


Figure S93: Evaluation of RP_2378140100 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

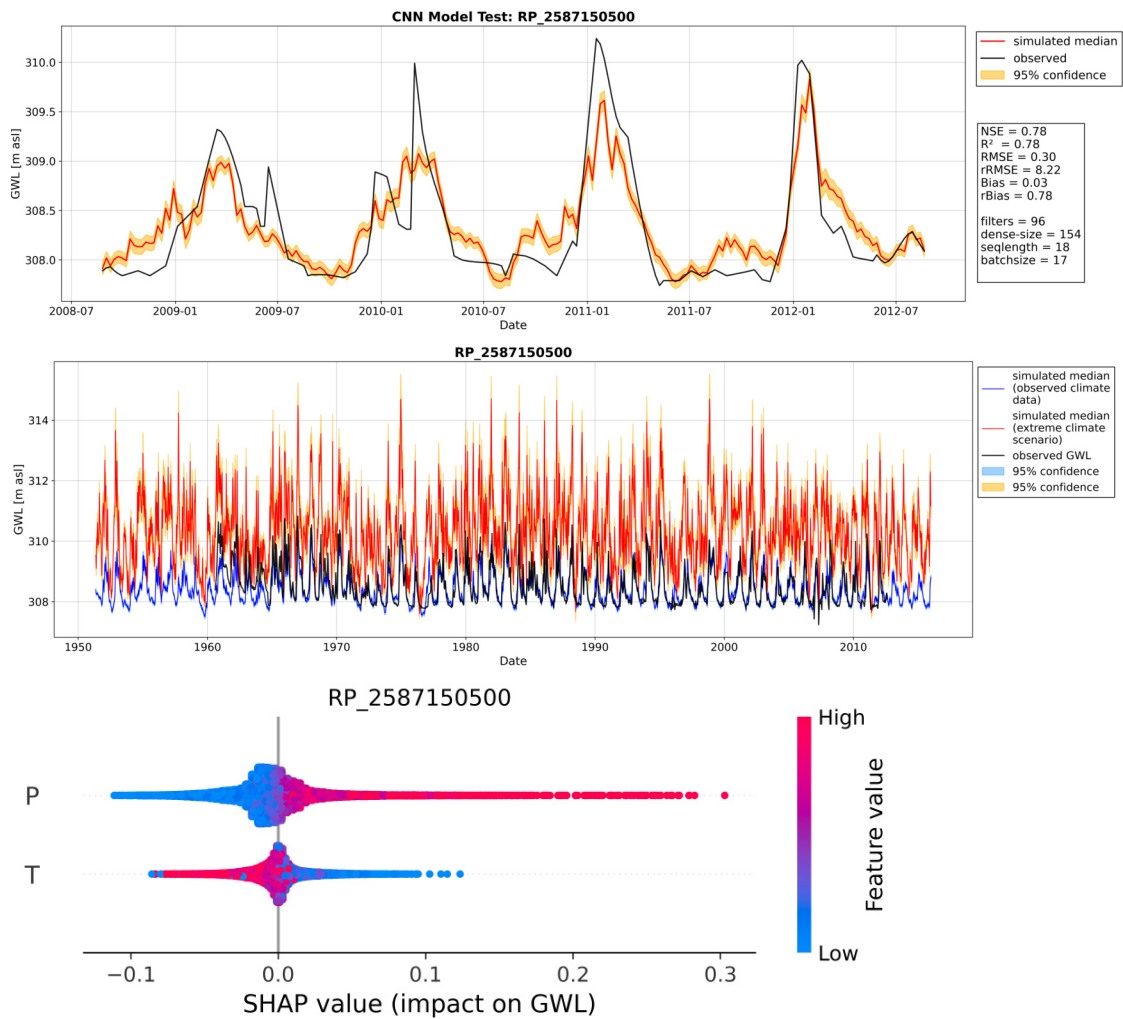


Figure S94: Evaluation of RP_2587150500 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

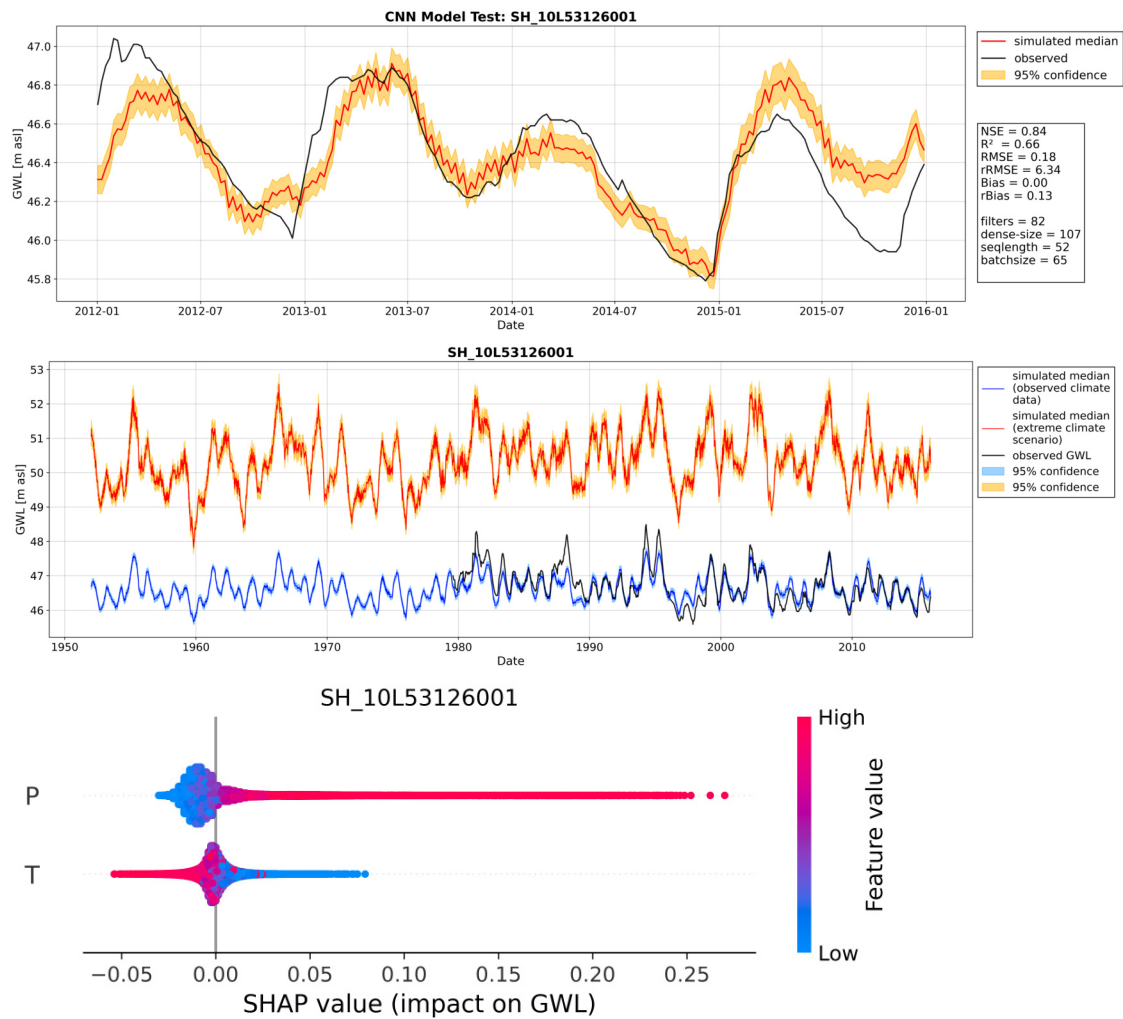


Figure S95: Evaluation of SH_10L53126001 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

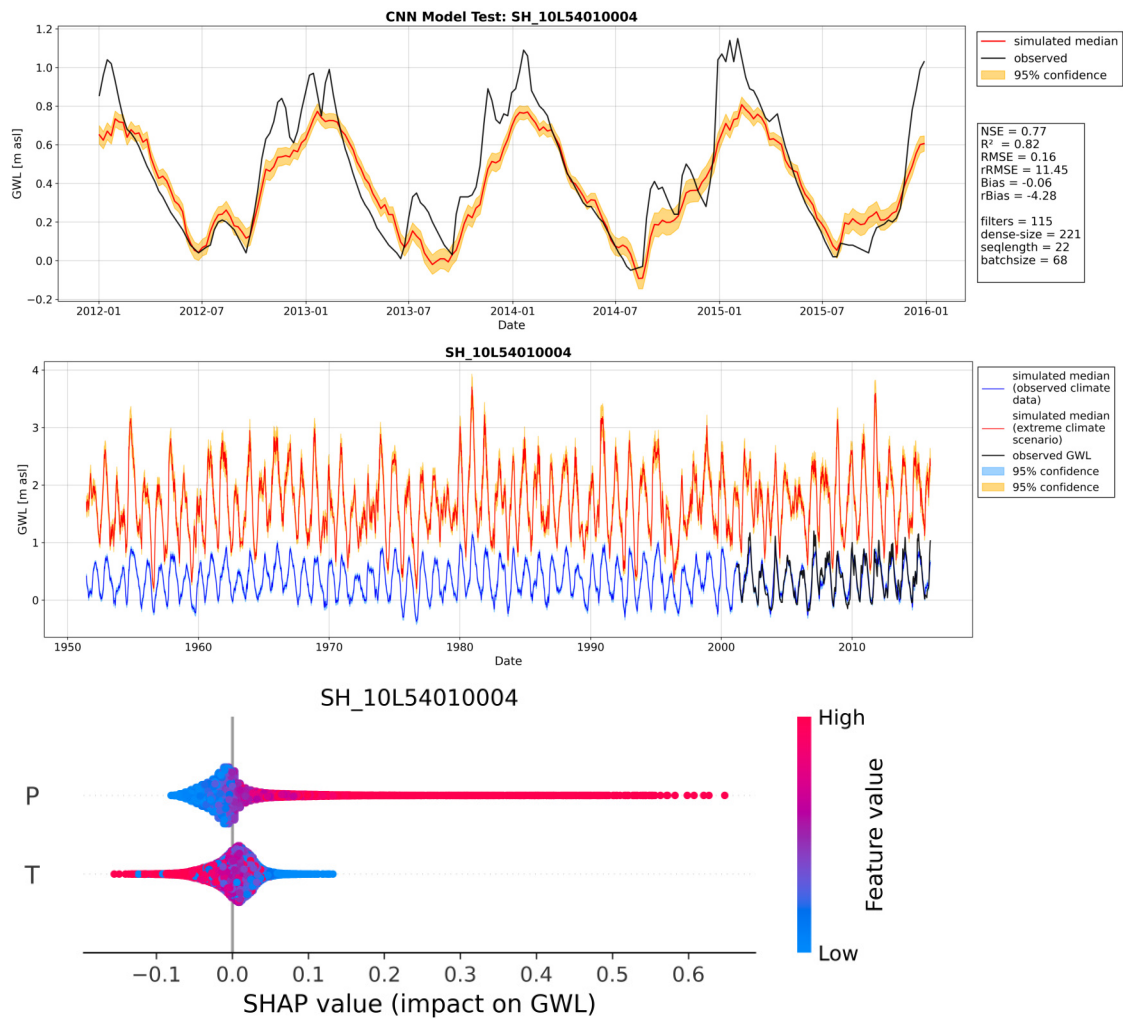


Figure S96: Evaluation of SH_10L54010004 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

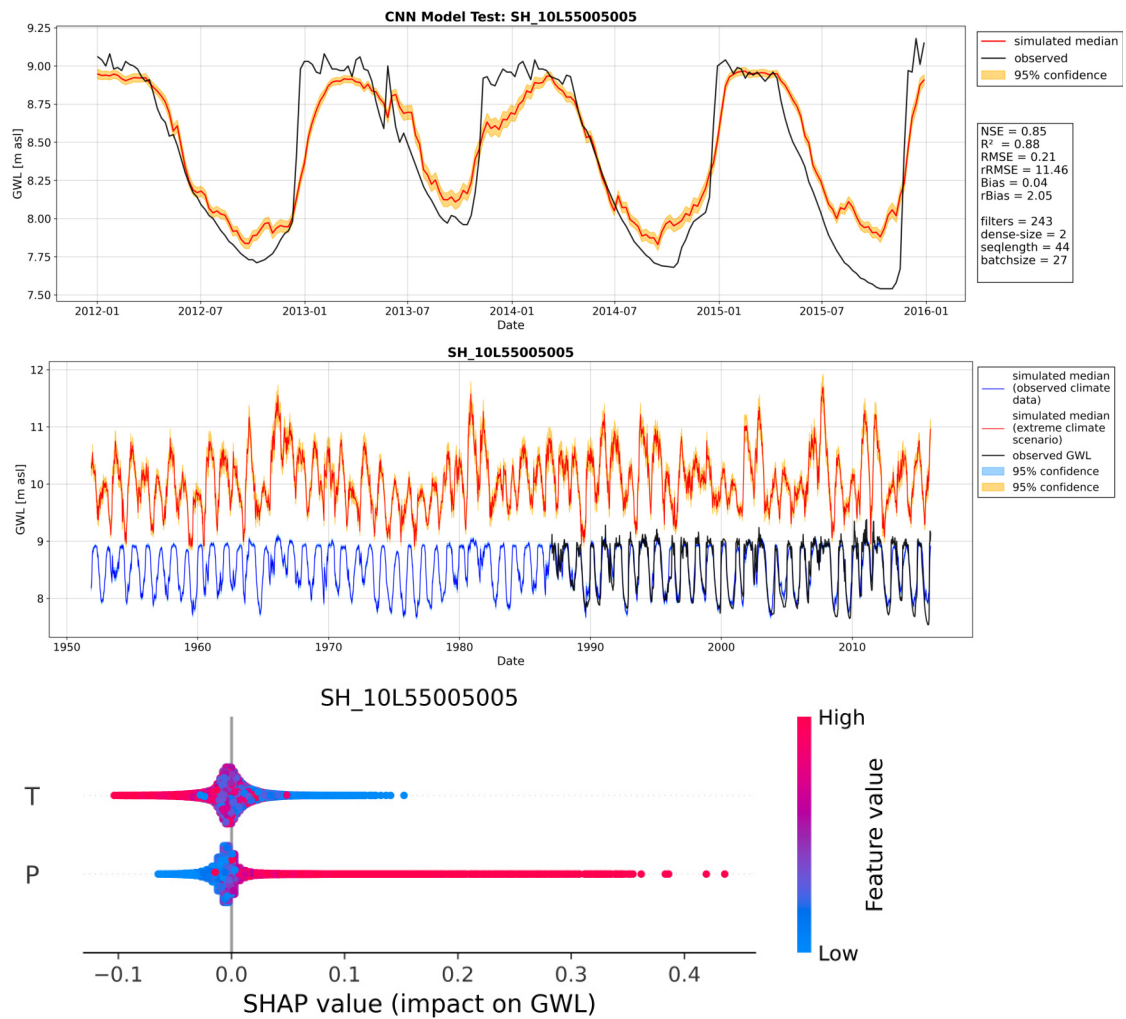


Figure S97: Evaluation of SH_10L55005005 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

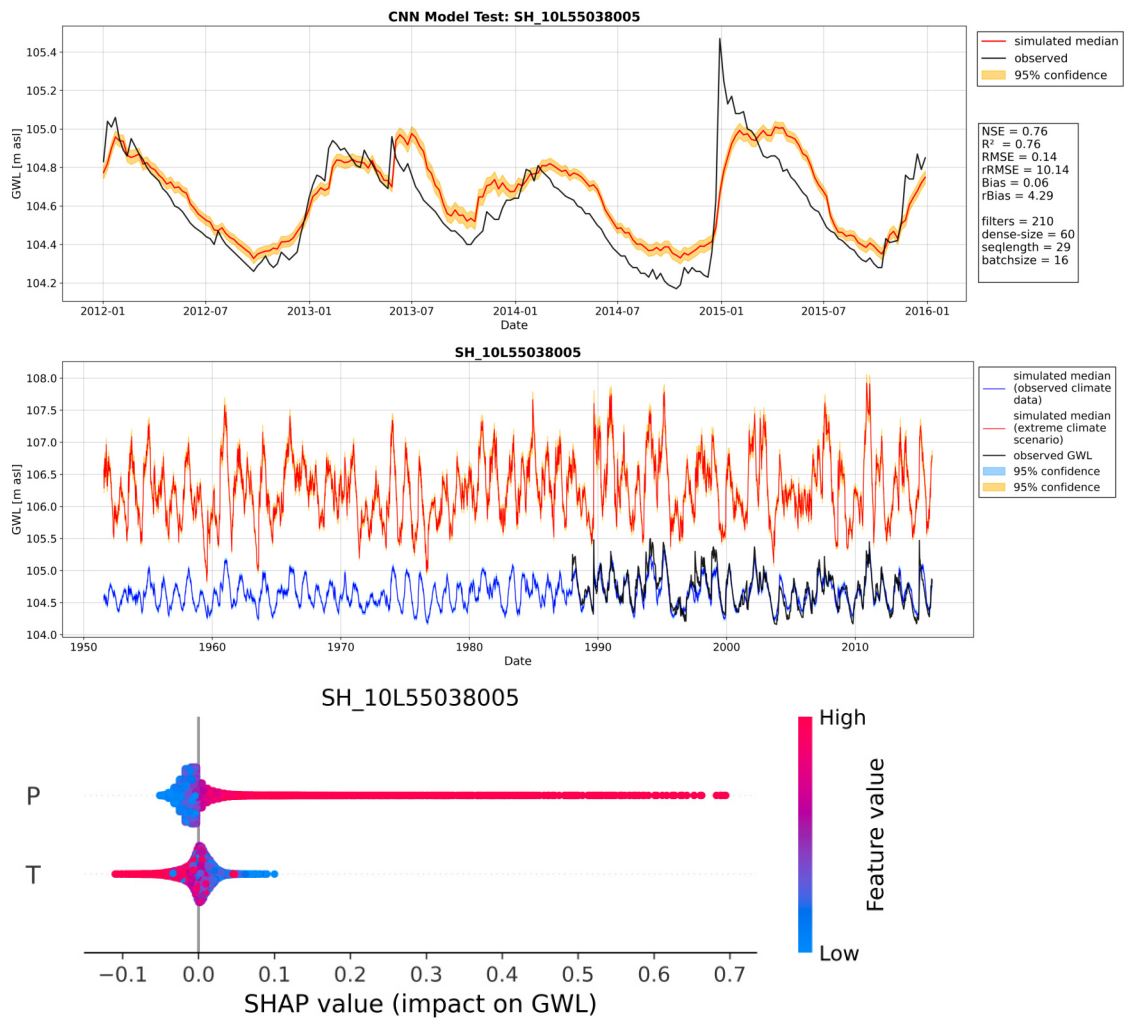


Figure S98: Evaluation of SH_10L55038005 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

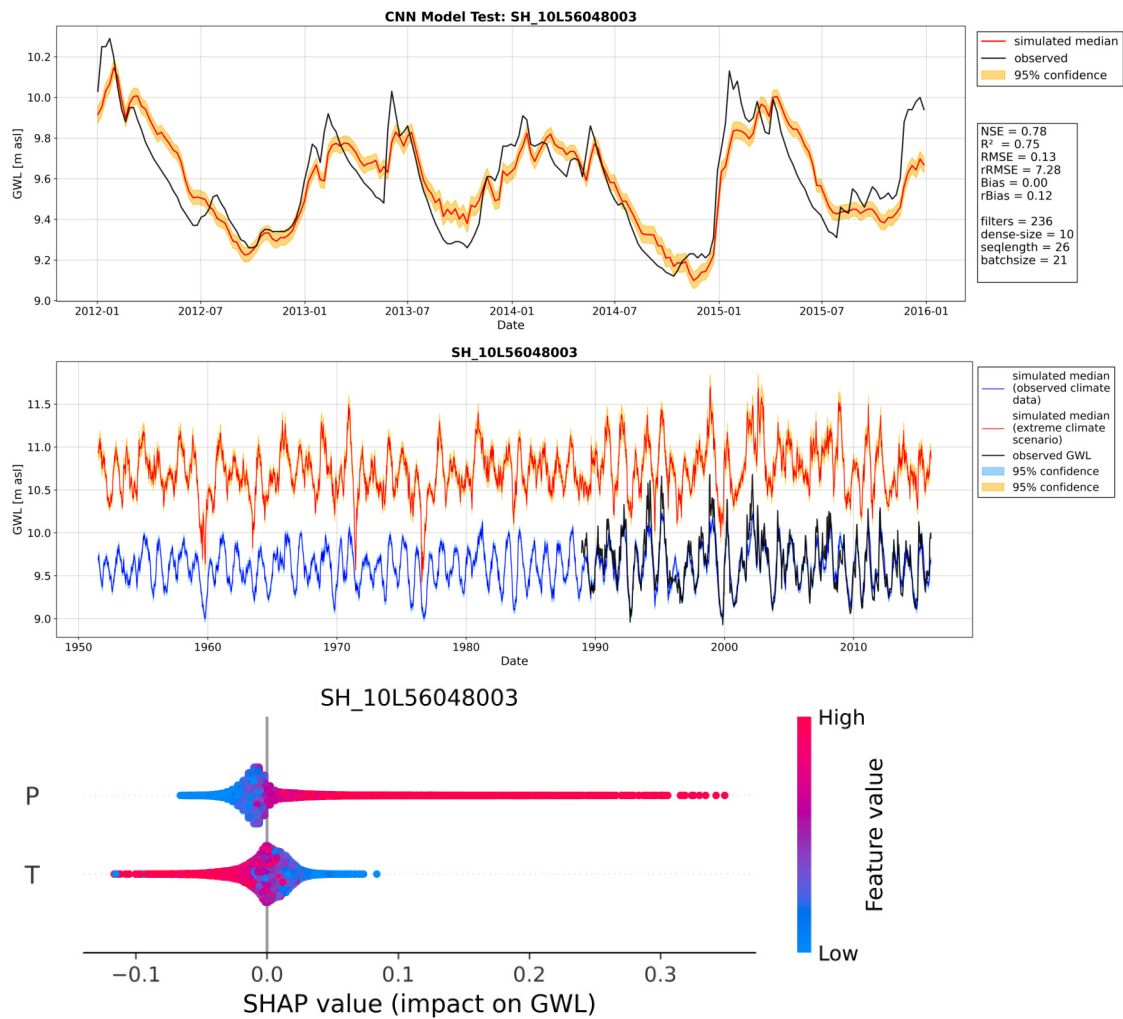


Figure S99: Evaluation of SH_10L56048003 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

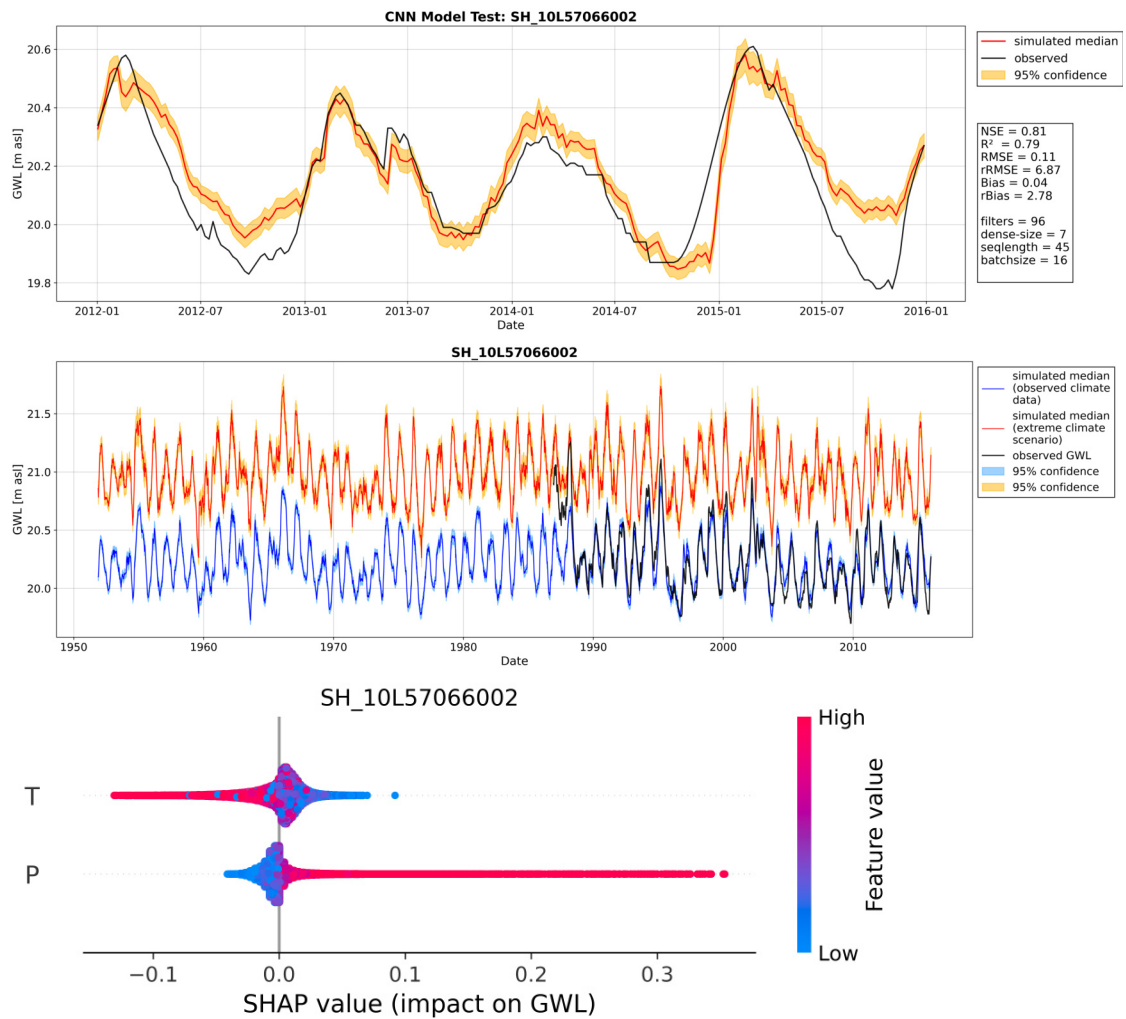


Figure S100: Evaluation of SH_10L57066002 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

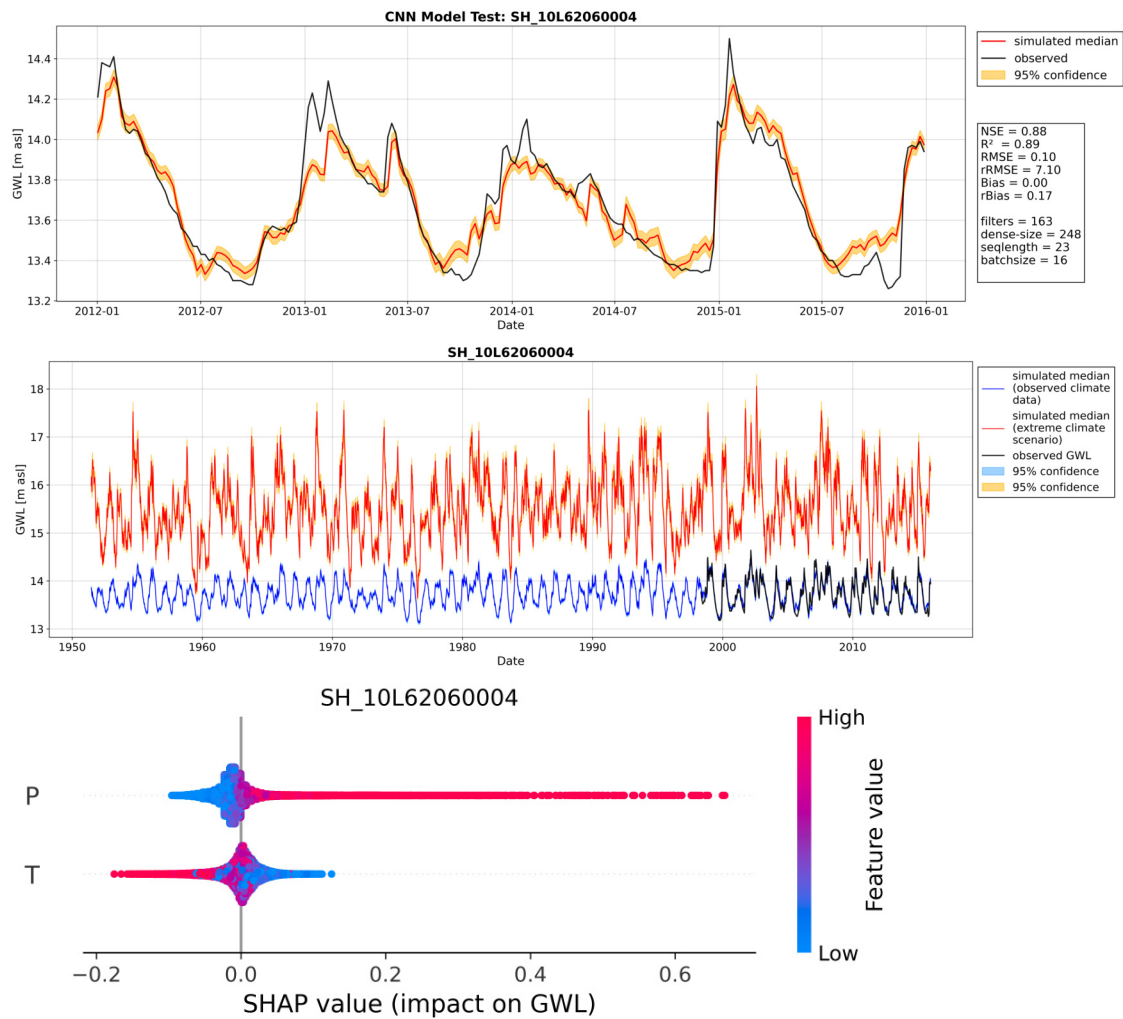


Figure S101: Evaluation of SH_10L62060004 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

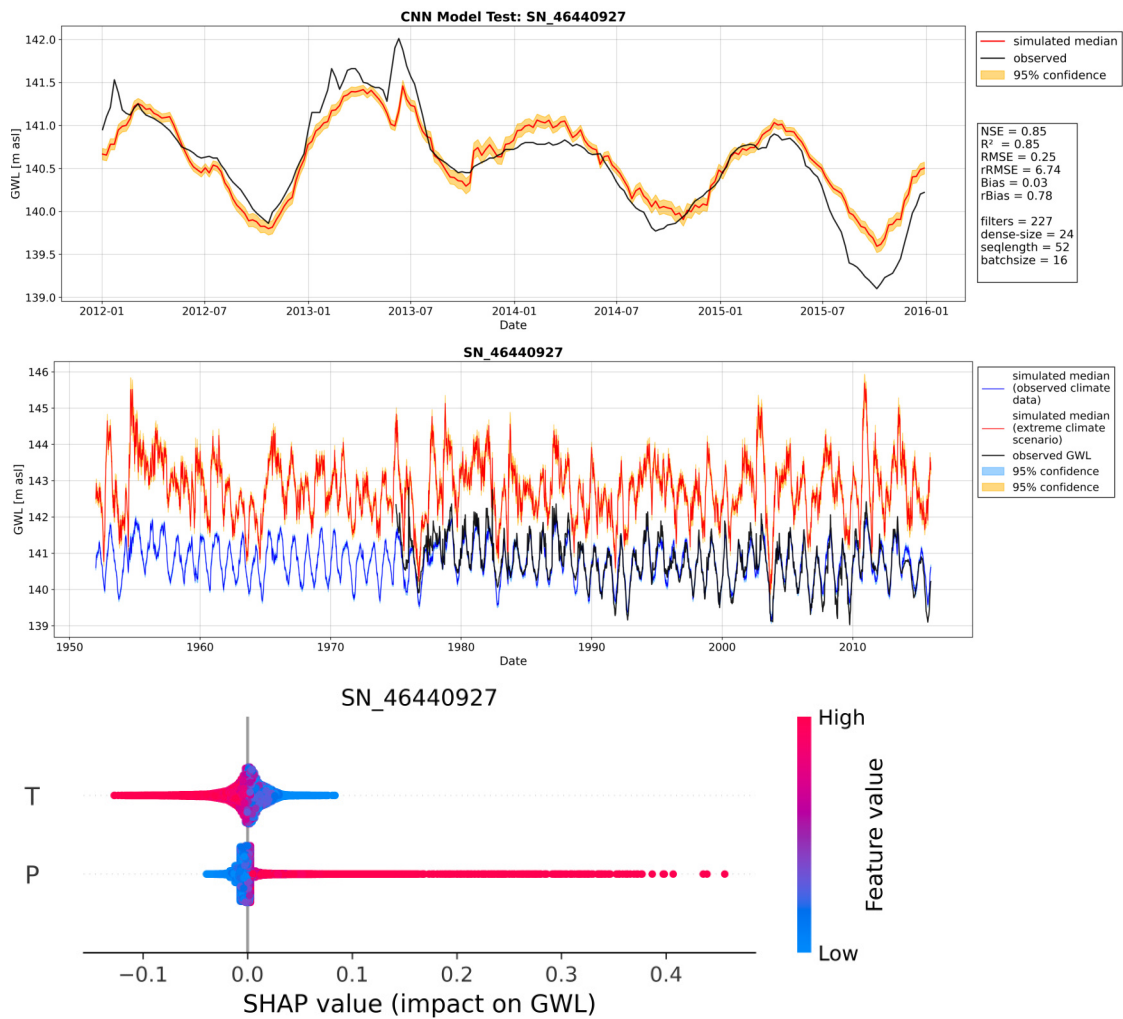


Figure S102: Evaluation of SN_46440927 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

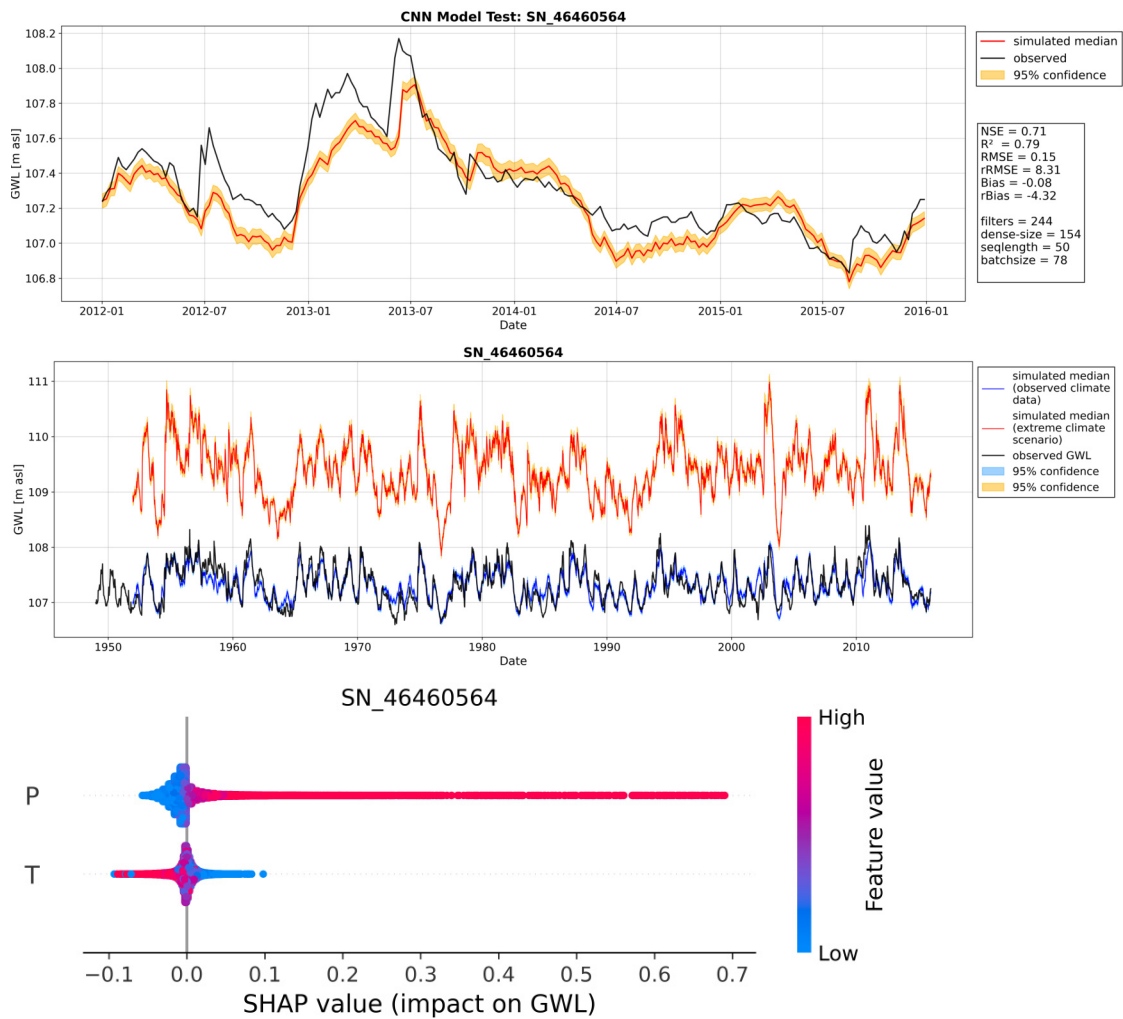


Figure S103: Evaluation of SN_46460564 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

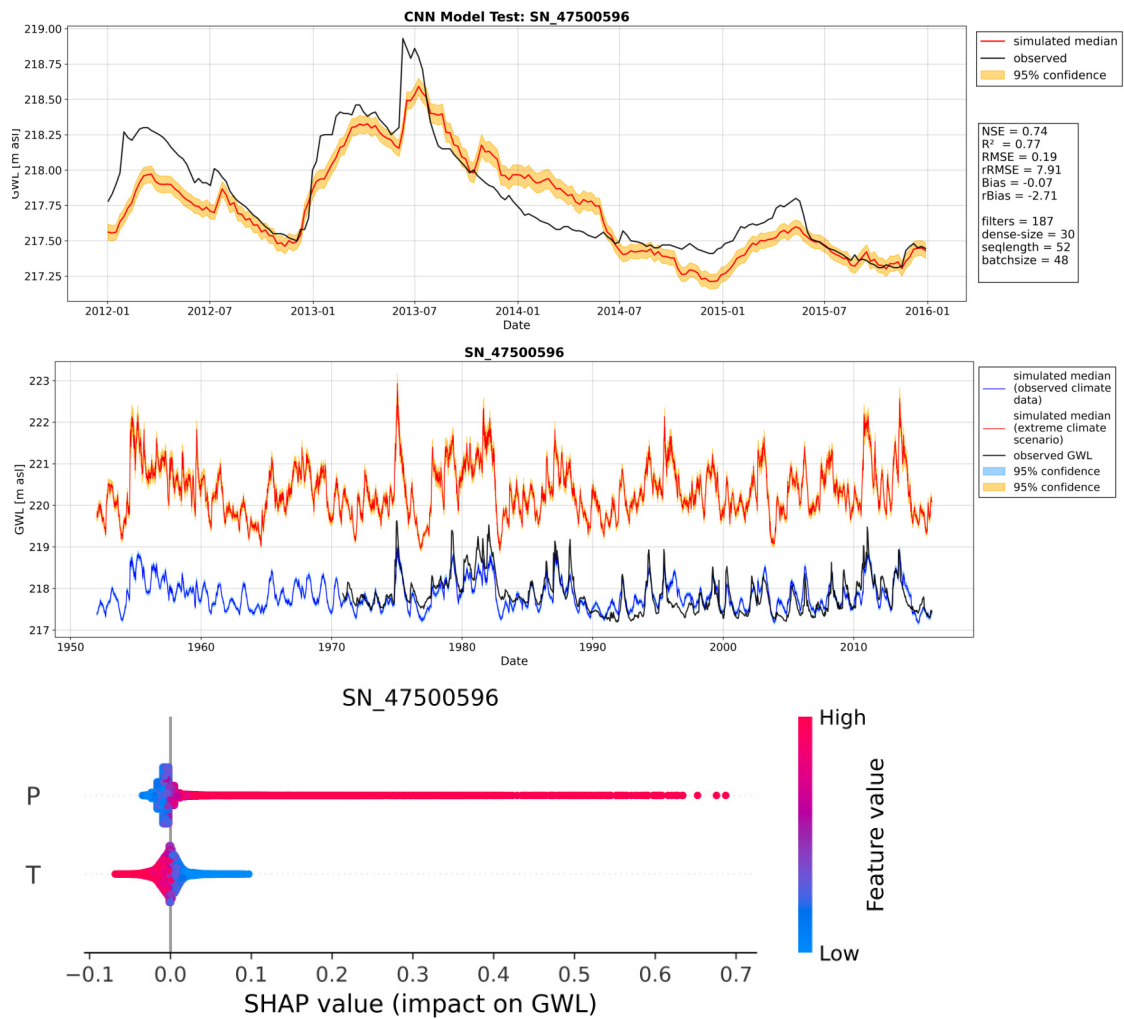


Figure S104: Evaluation of SN_47500596 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

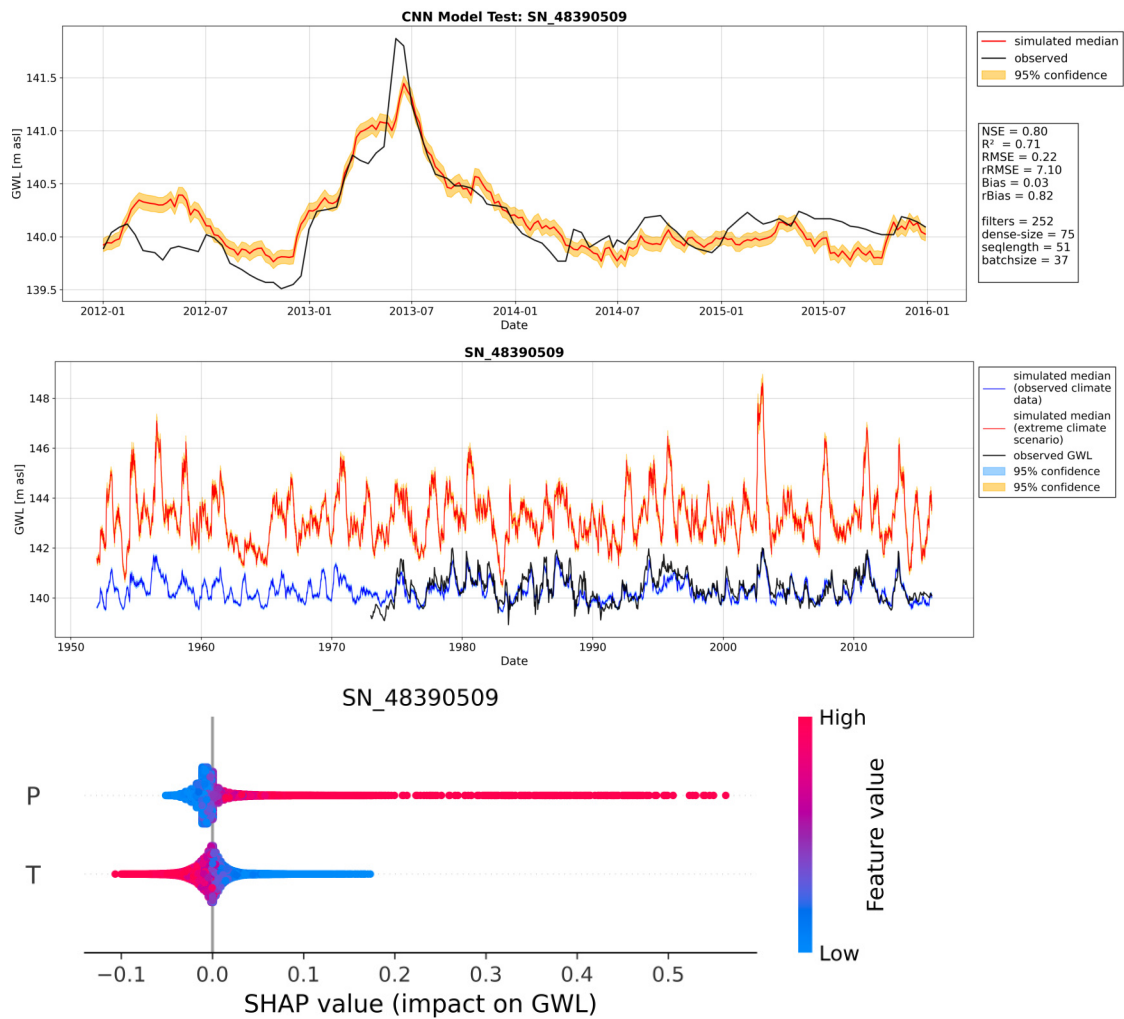


Figure S105: Evaluation of SN_48390509 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

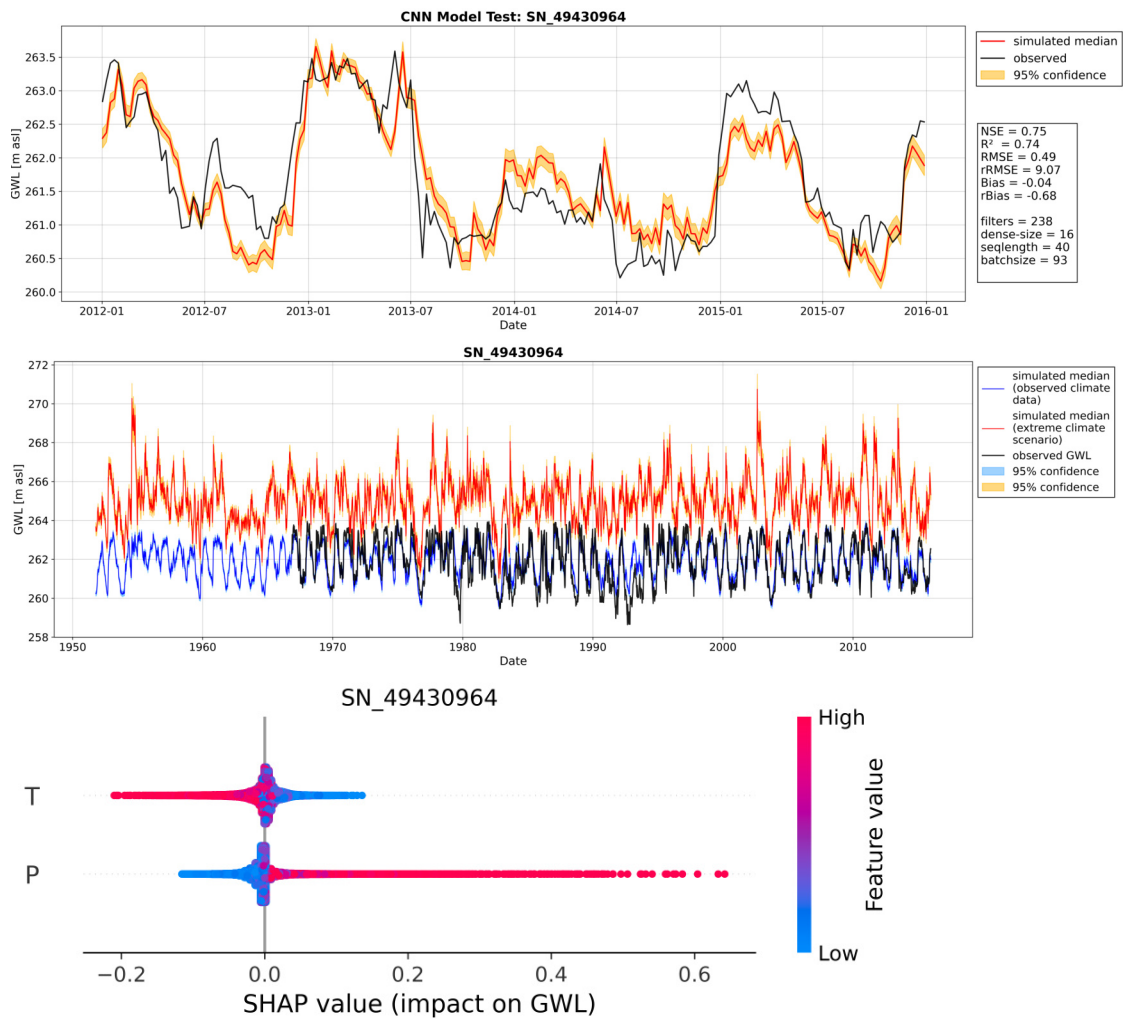


Figure S106: Evaluation of SN_49430964 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

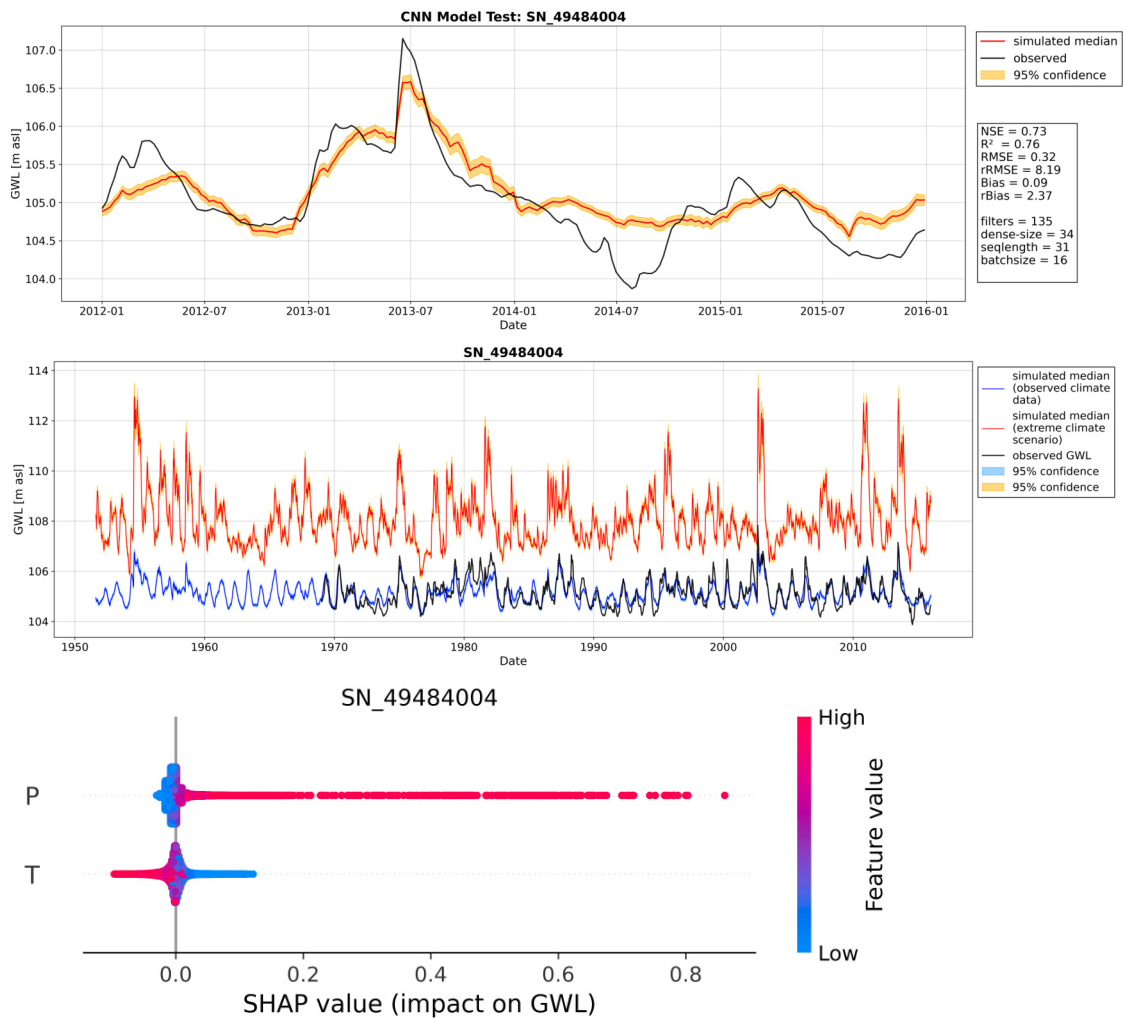


Figure S107: Evaluation of SN_49484004 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

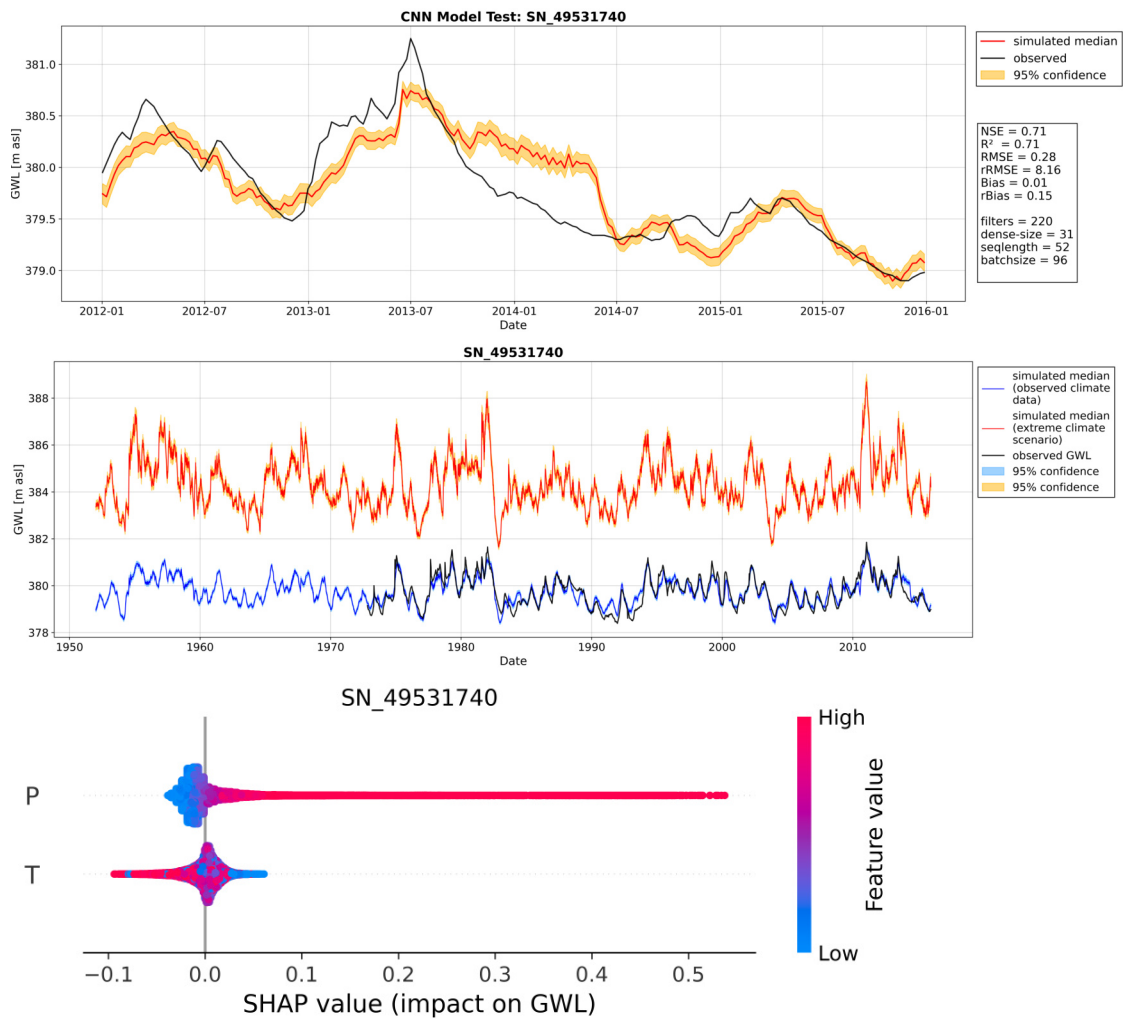


Figure S108: Evaluation of SN_49531740 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

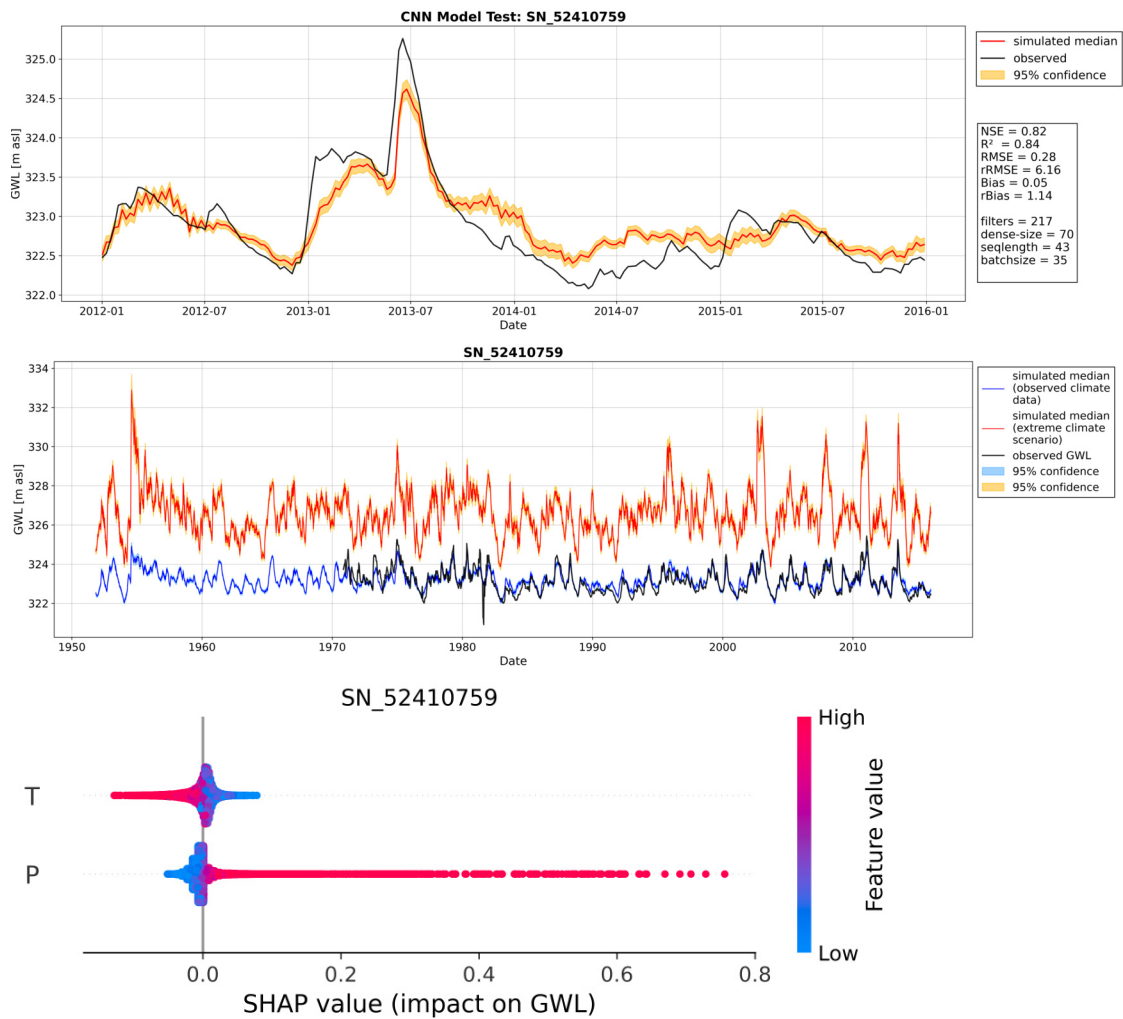


Figure S109: Evaluation of SN_52410759 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

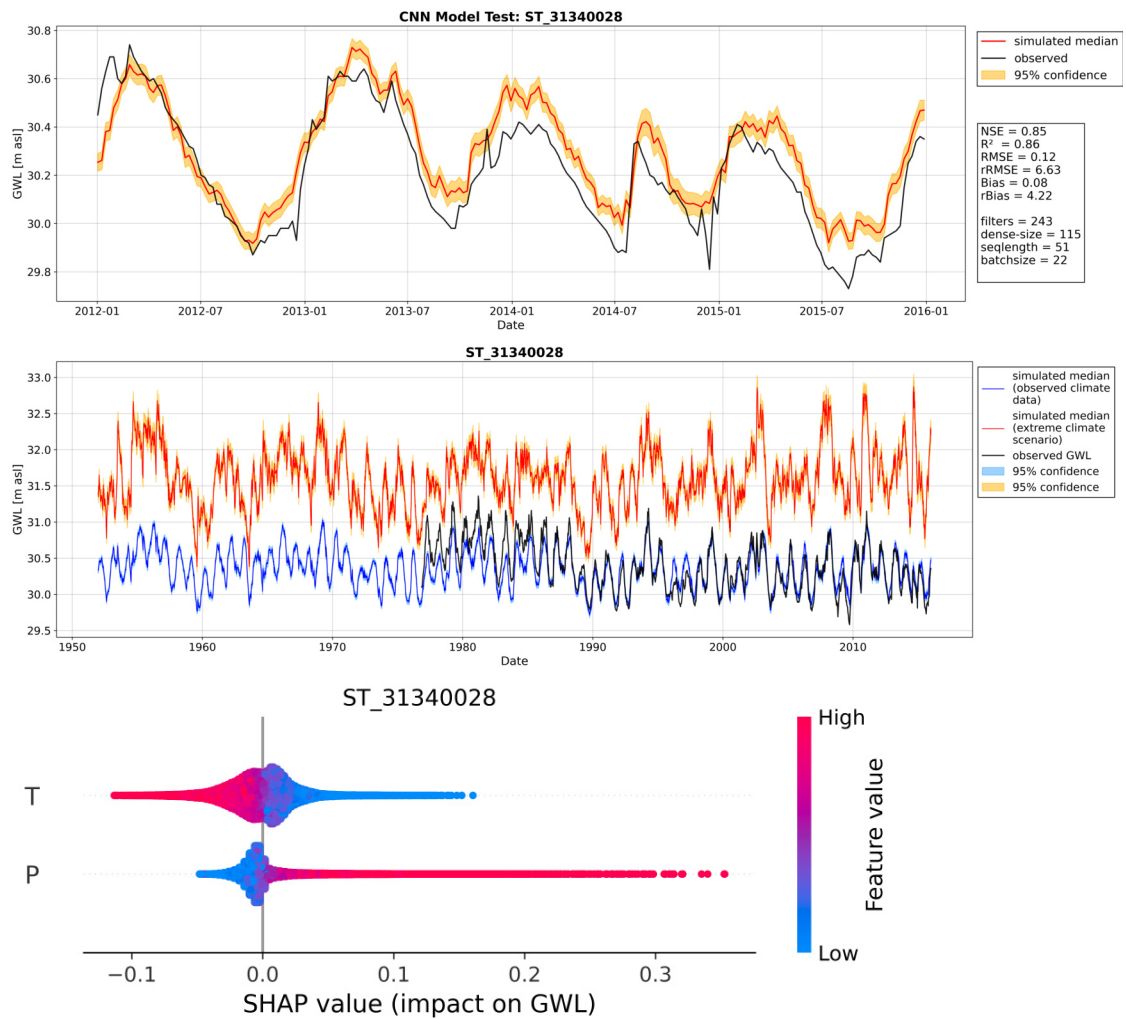


Figure S110: Evaluation of ST_31340028 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

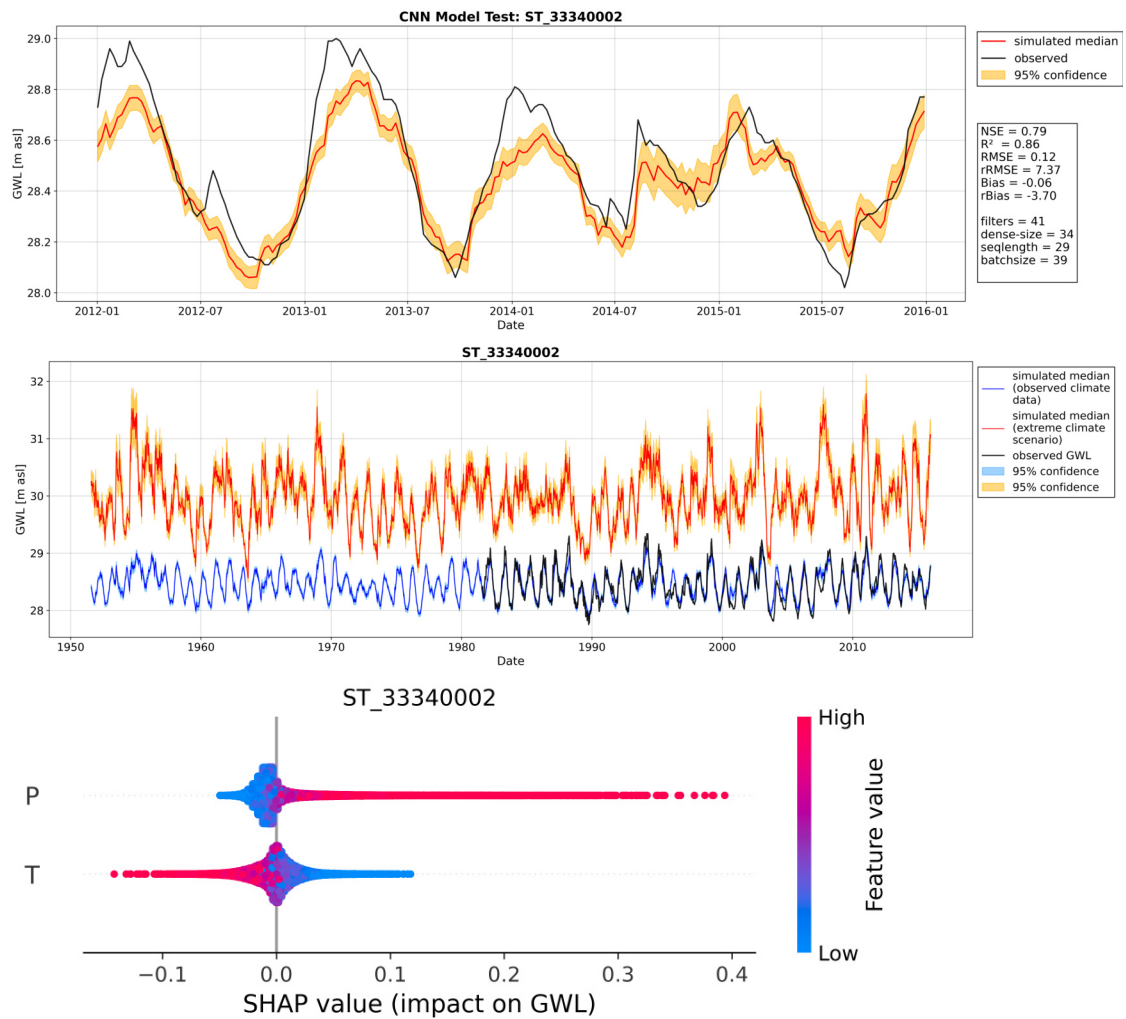


Figure S111: Evaluation of ST_33340002 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

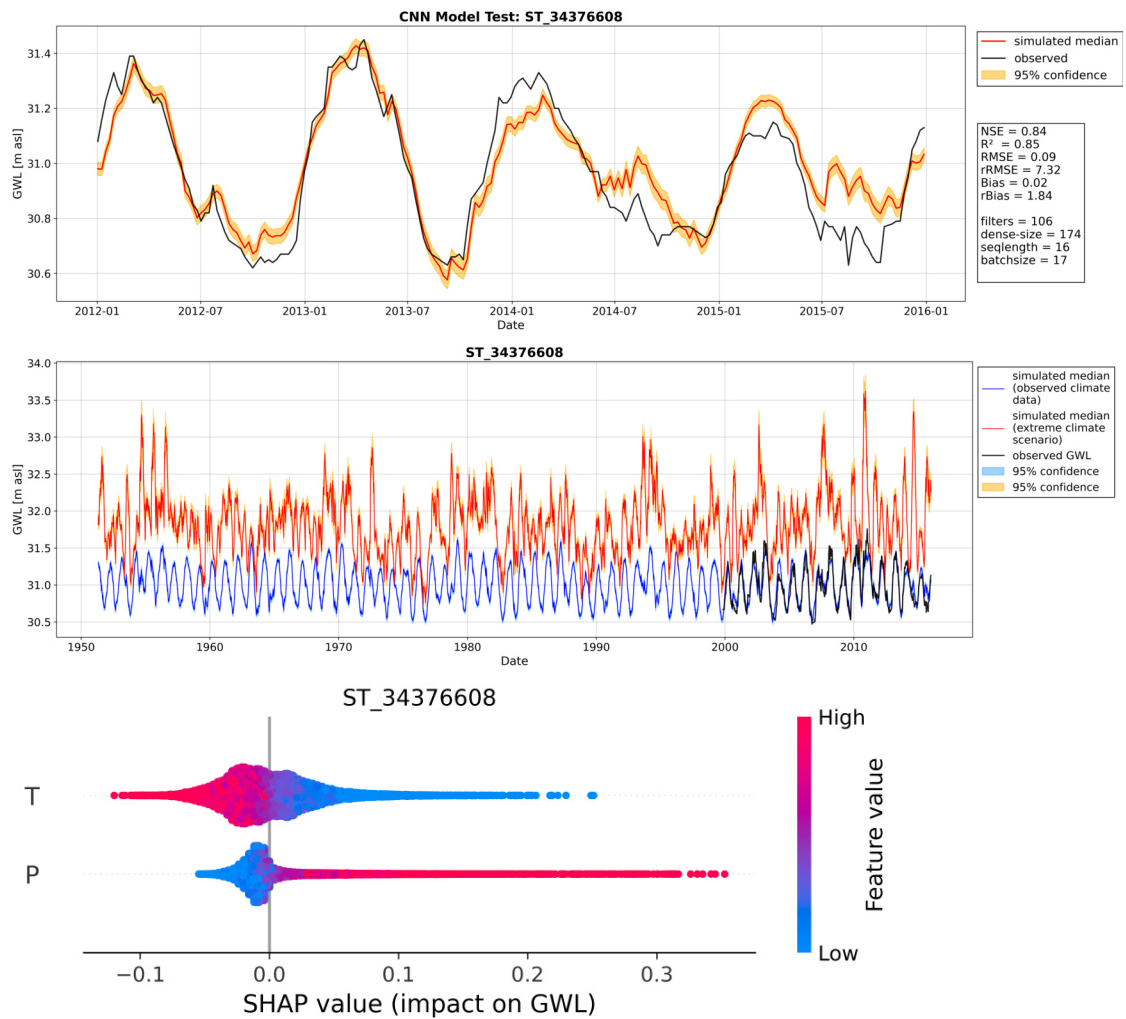


Figure S112: Evaluation of ST_34376608 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

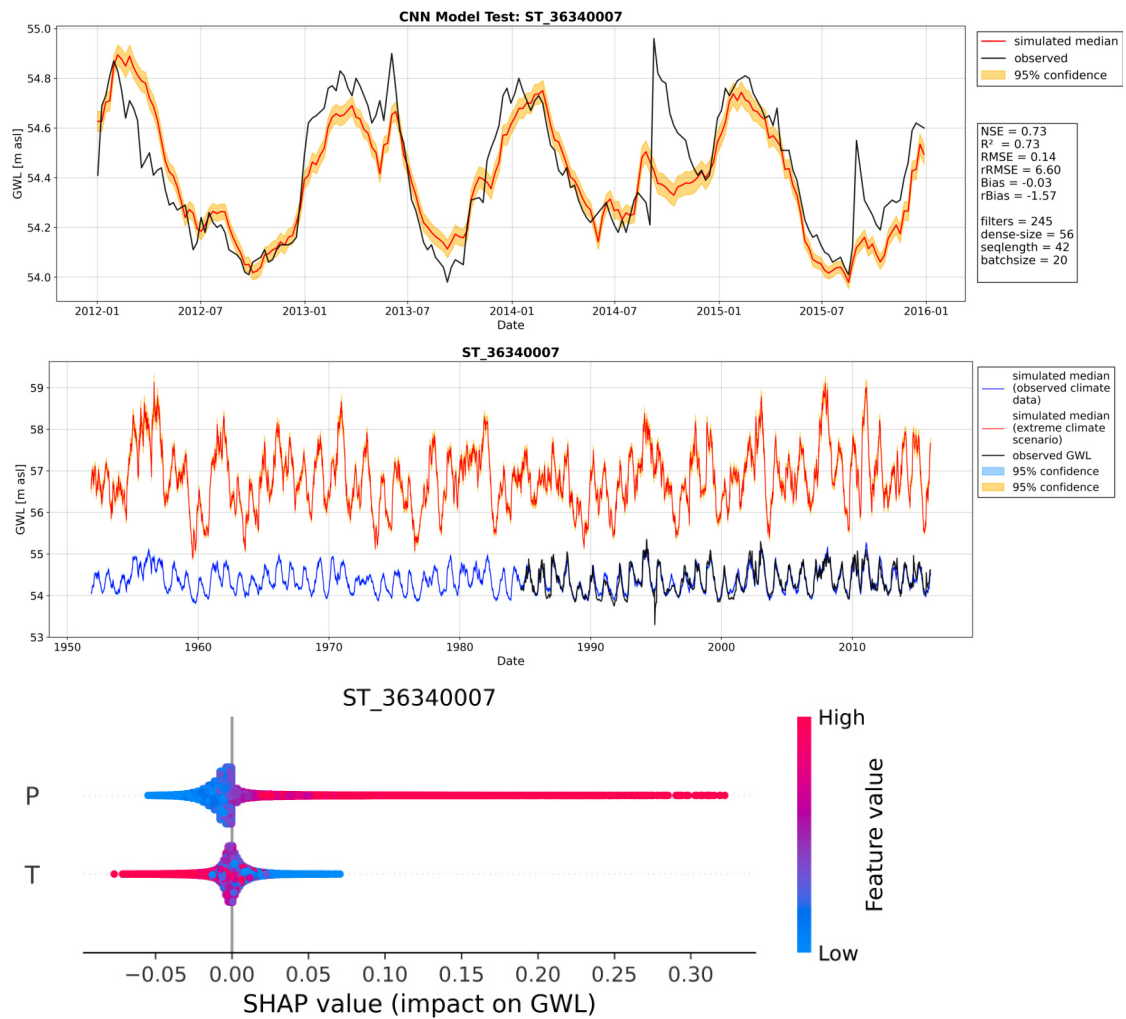


Figure S113: Evaluation of ST_36340007 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

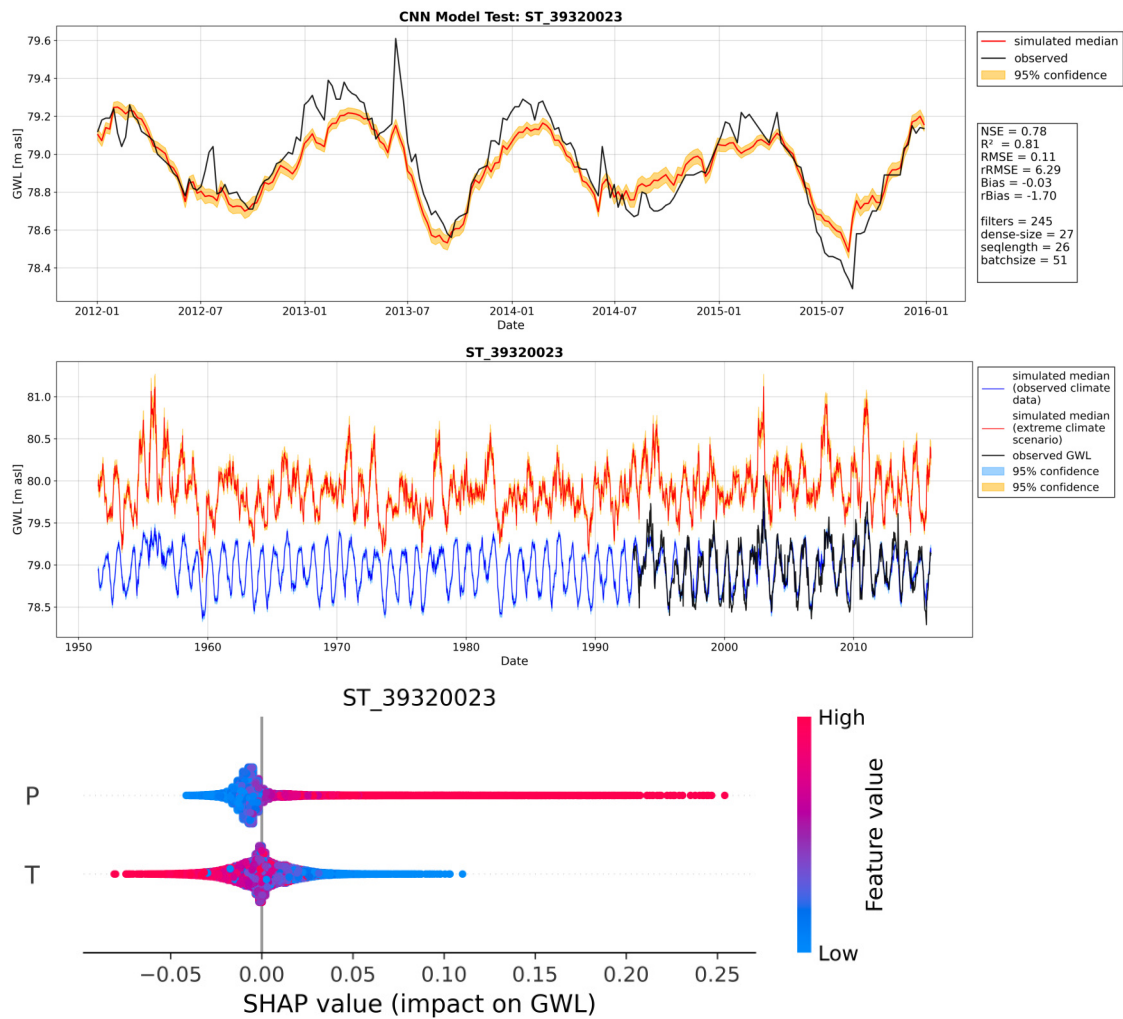


Figure S114: Evaluation of ST_39320023 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

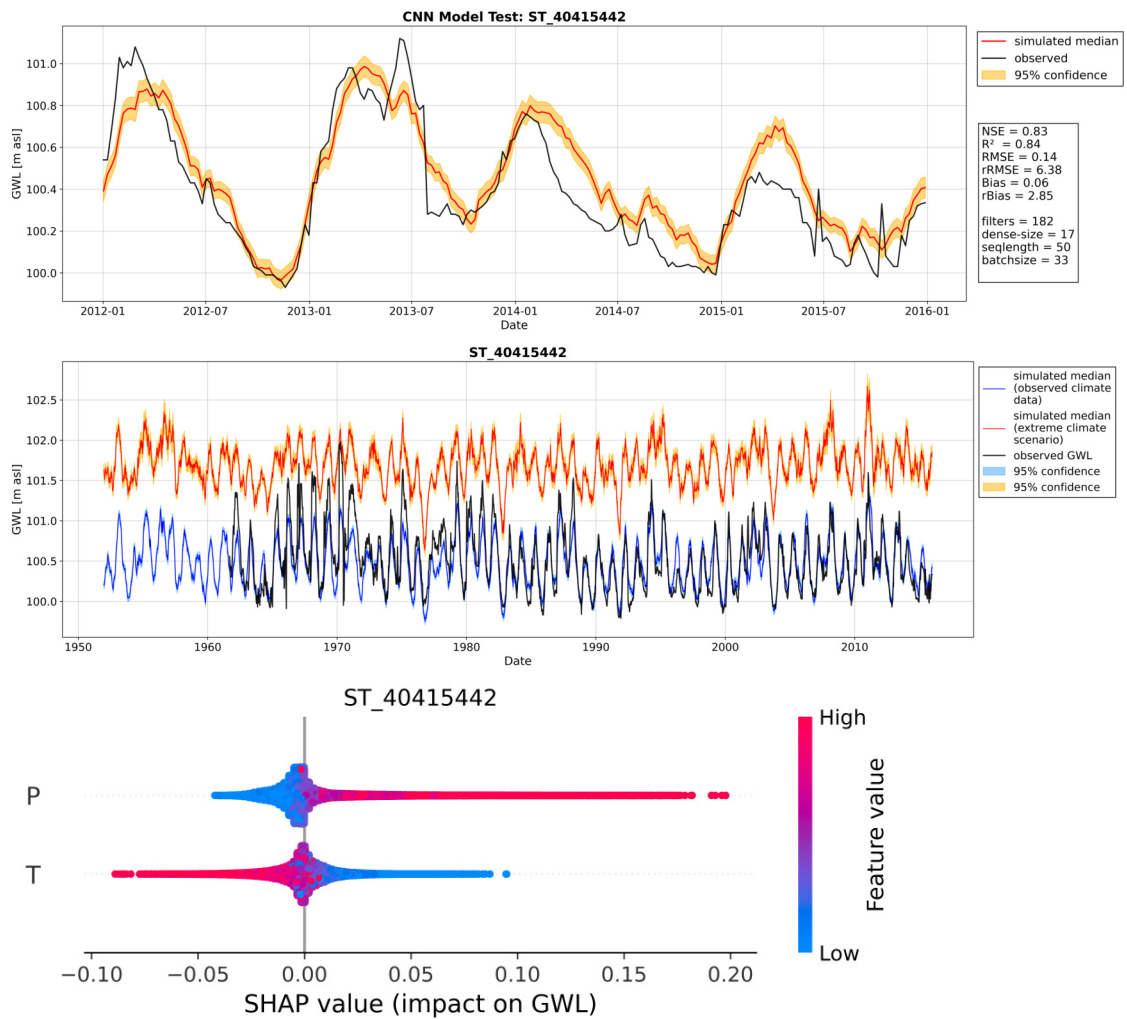


Figure S115: Evaluation of ST_40415442 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

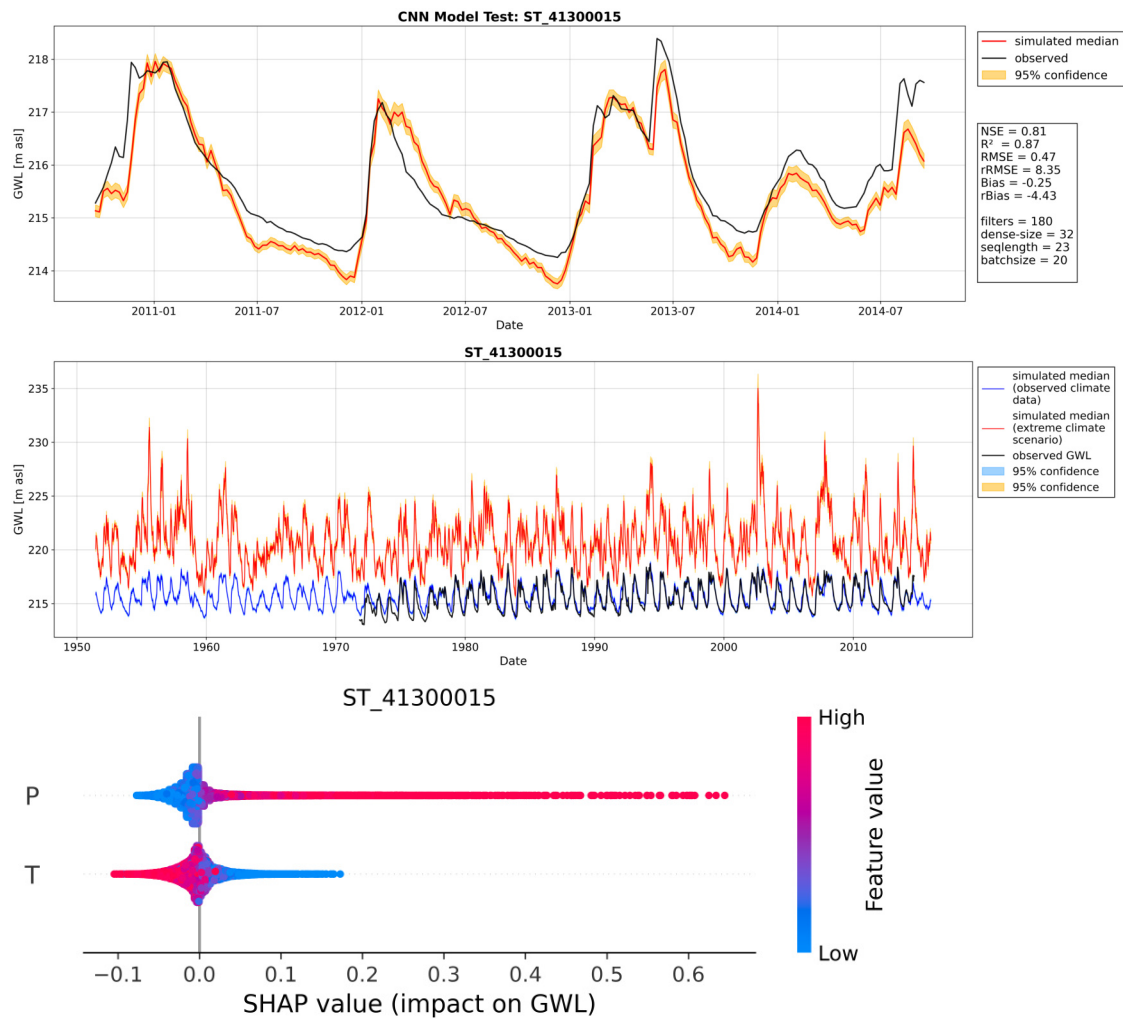


Figure S116: Evaluation of ST_41300015 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

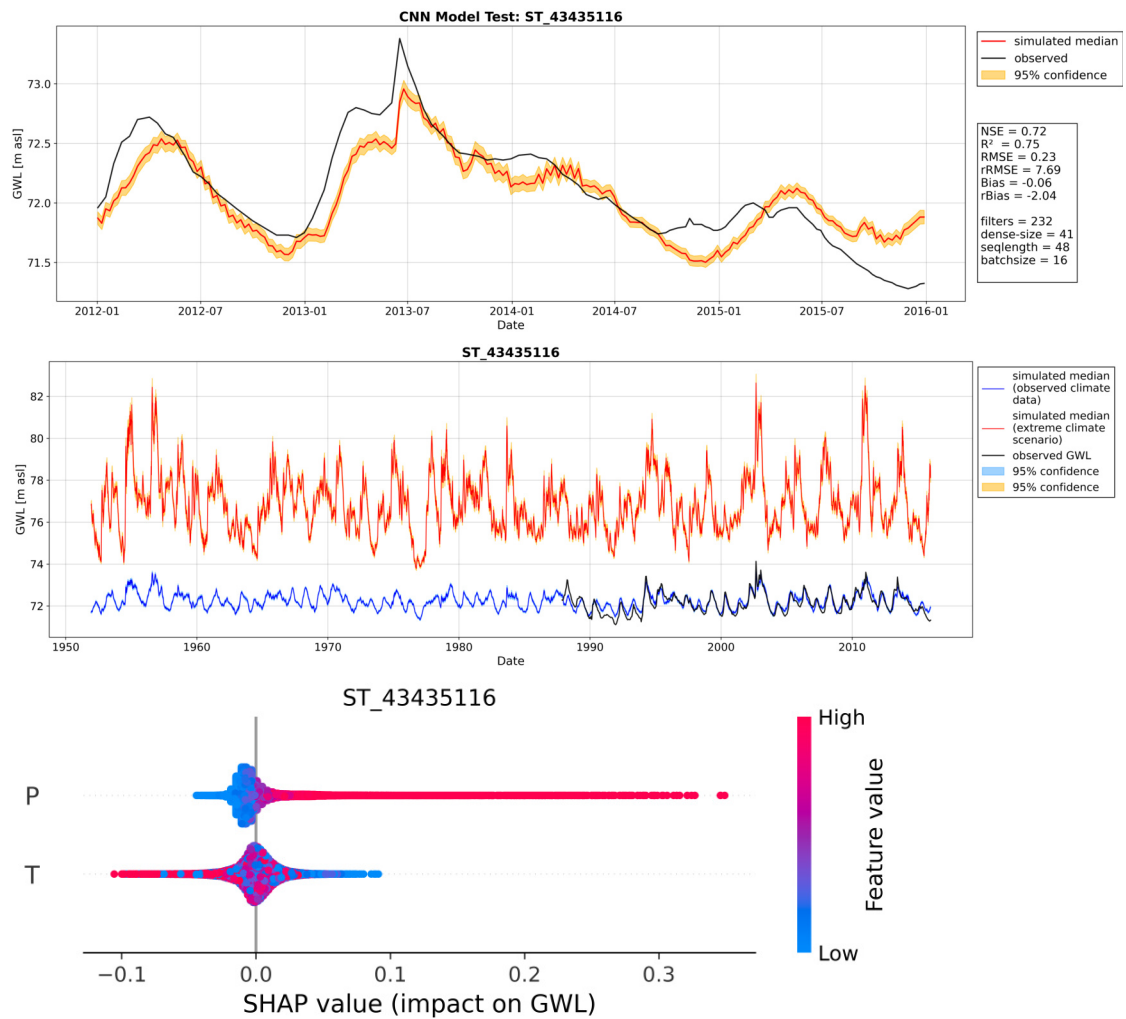


Figure S117: Evaluation of ST_43435116 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

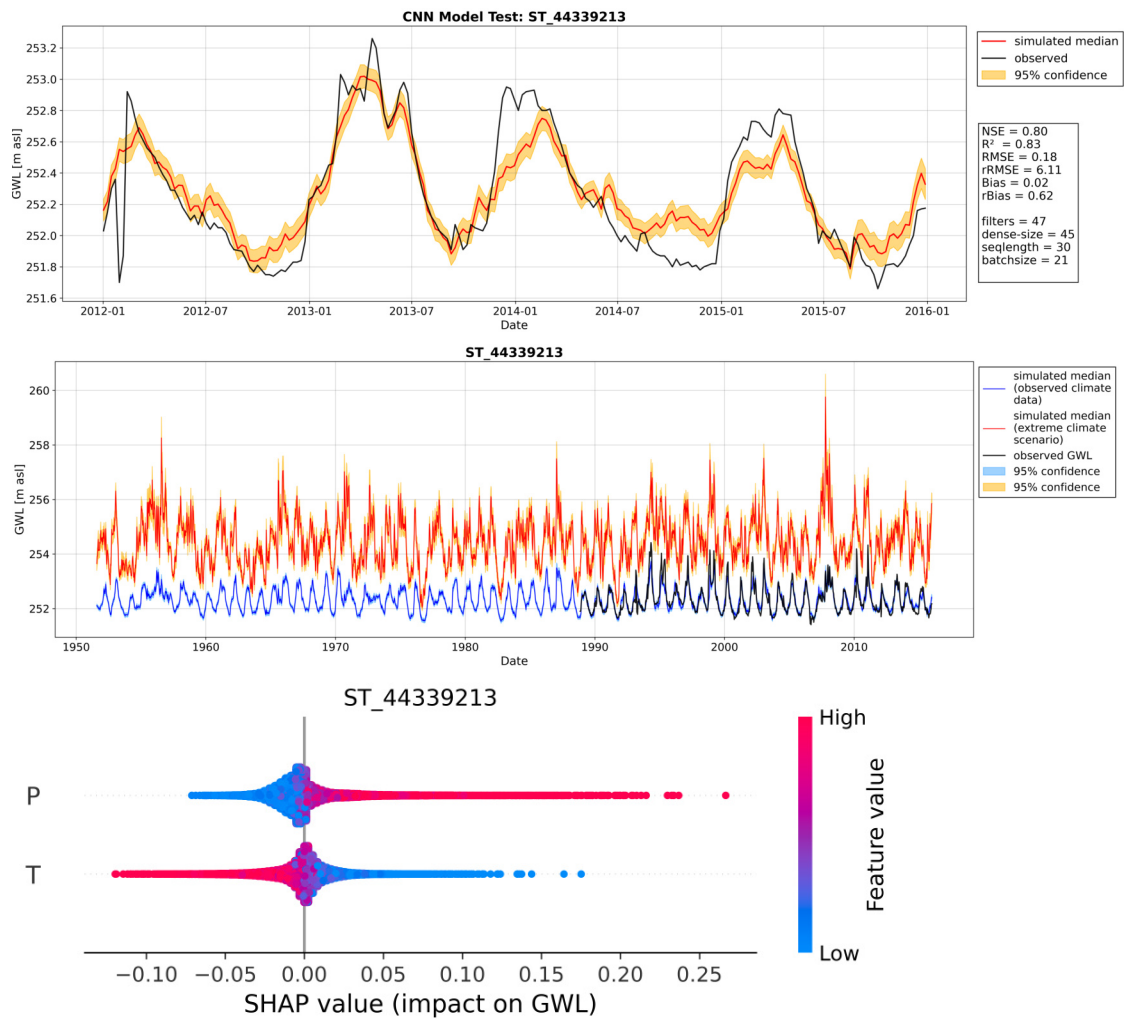


Figure S118: Evaluation of ST_44339213 Model Performance in the past (upper), under extreme climate conditions (middle) and SHAP Summary plot (lower)

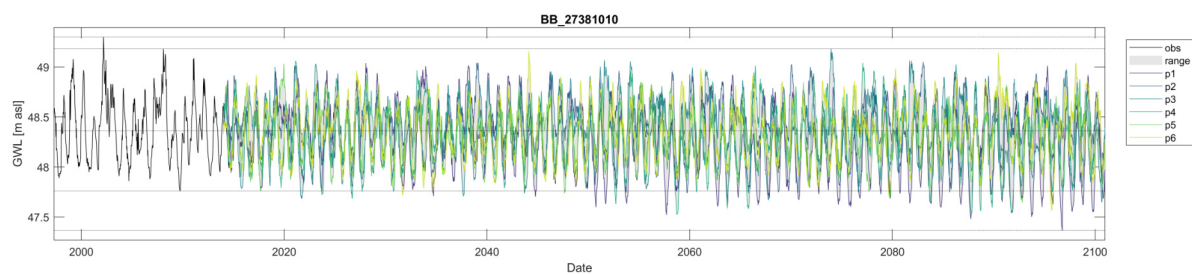


Figure S119: Projection Results BB_27381010 Model

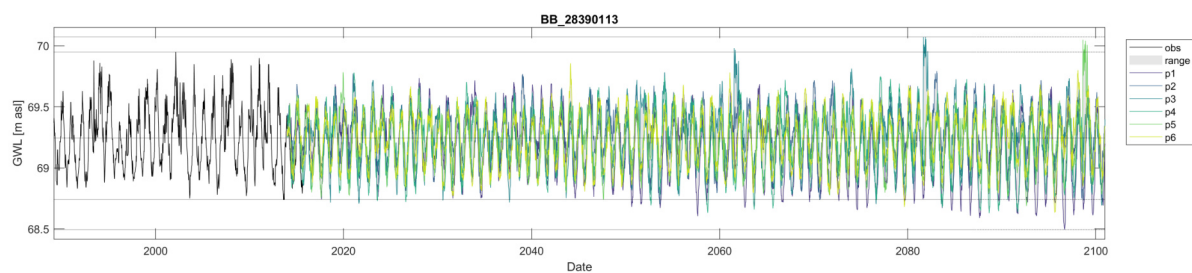


Figure S120: Projection Results BB_28390113 Model

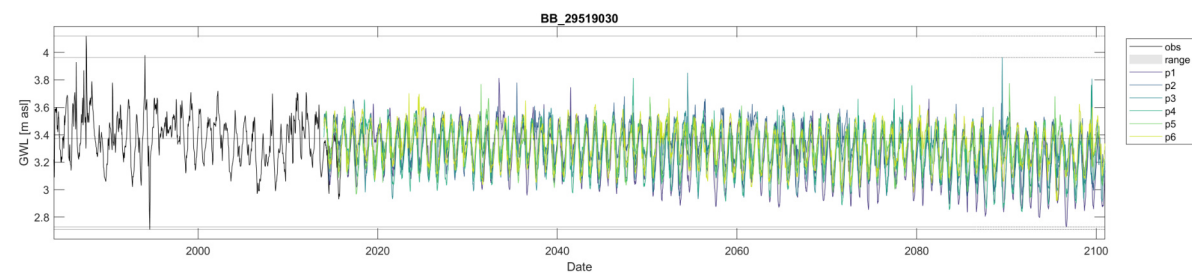


Figure S121: Projection Results BB_29519030 Model

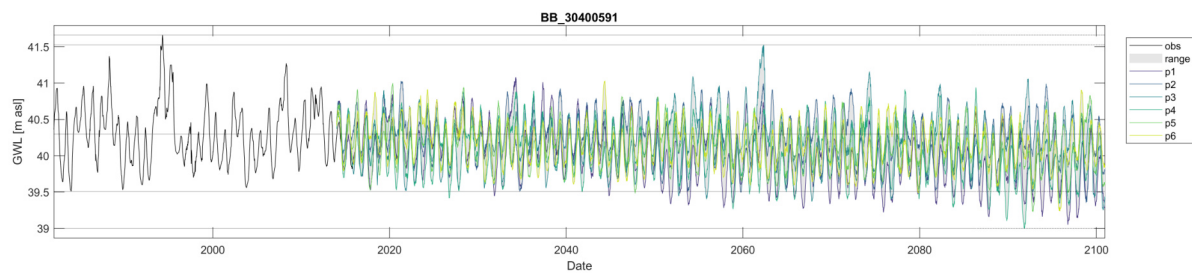


Figure S122: Projection Results BB_30400591 Model

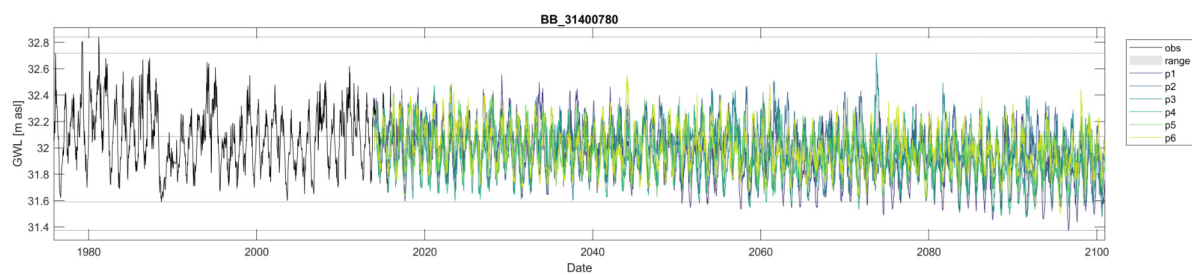


Figure S123: Projection Results BB_31400780 Model

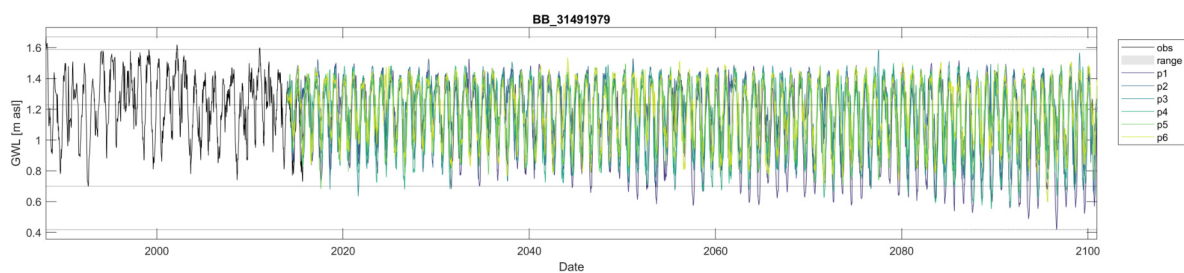


Figure S124: Projection Results BB_31491979 Model

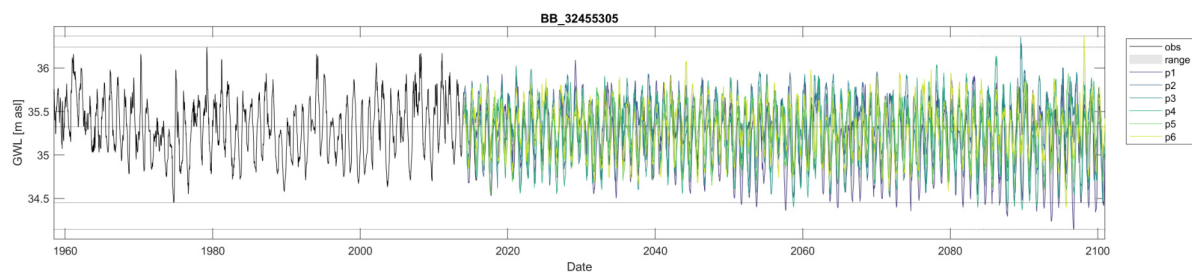


Figure S125: Projection Results BB_32455305 Model

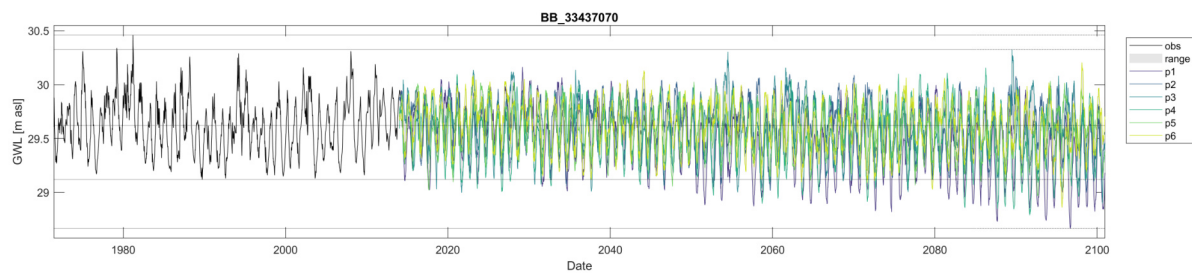


Figure S126: Projection Results BB_33437070 Model

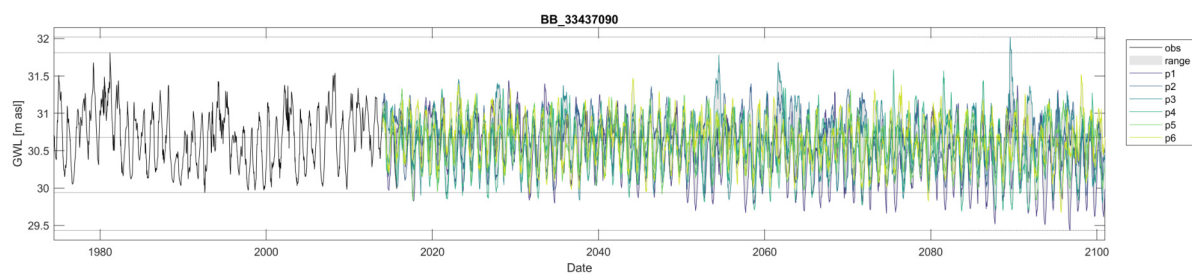


Figure S127: Projection Results BB_33437090 Model

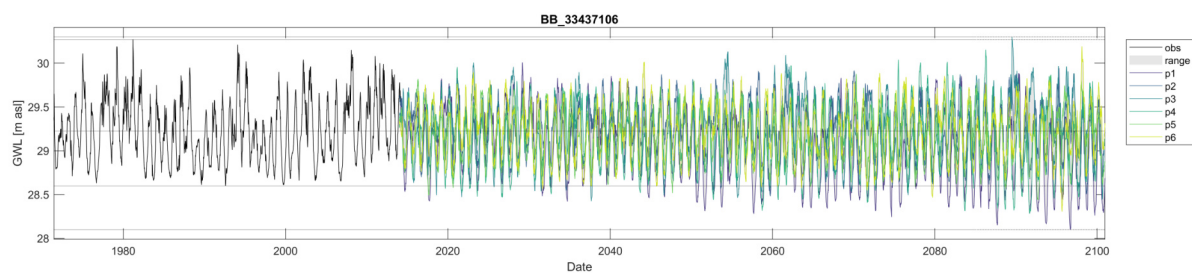


Figure S128: Projection Results BB_33437106 Model

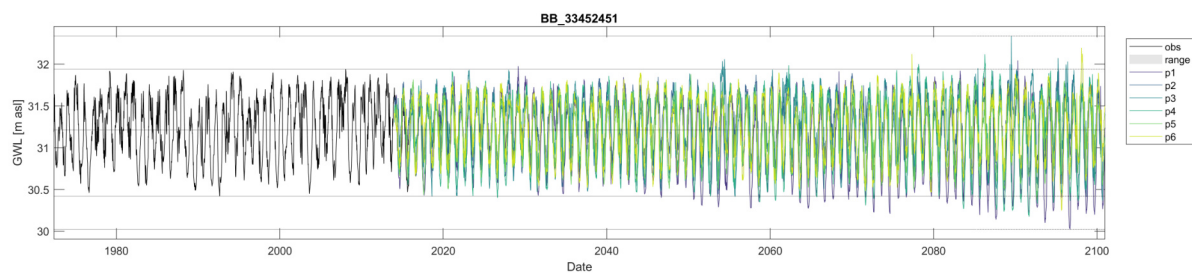


Figure S129: Projection Results BB_33452451 Model

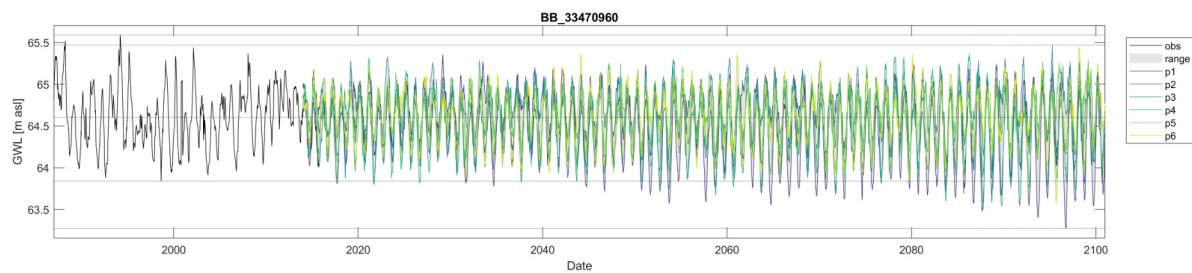


Figure S130: Projection Results BB_33470960 Model

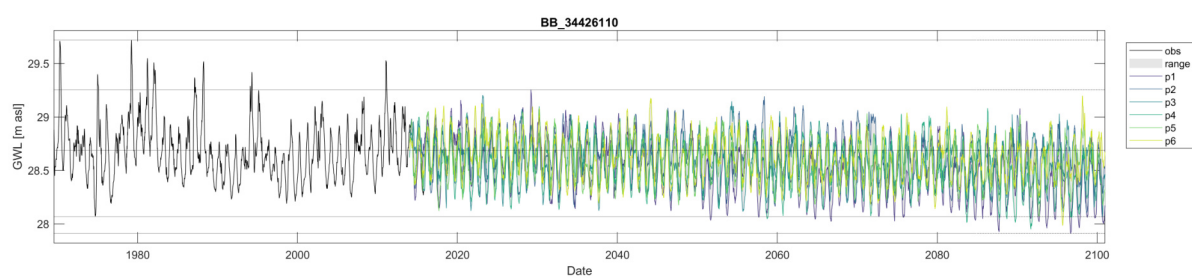


Figure S131: Projection Results BB_34426110 Model

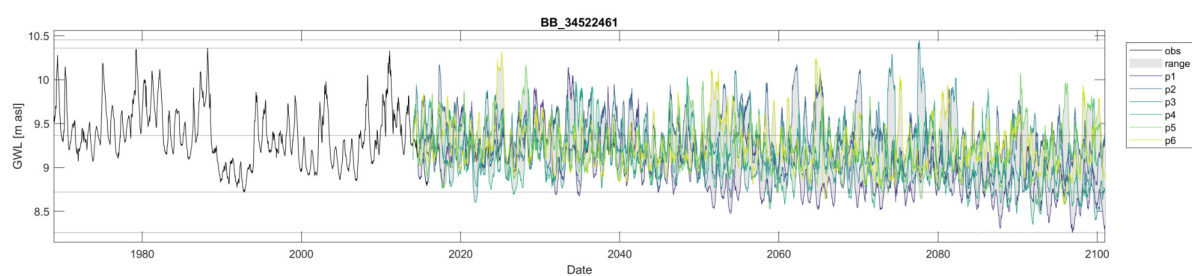


Figure S132: Projection Results BB_34522461 Model

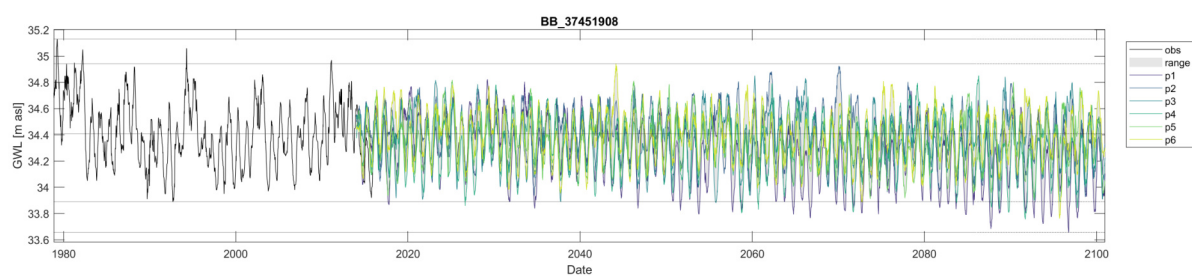


Figure S133: Projection Results BB_37451908 Model

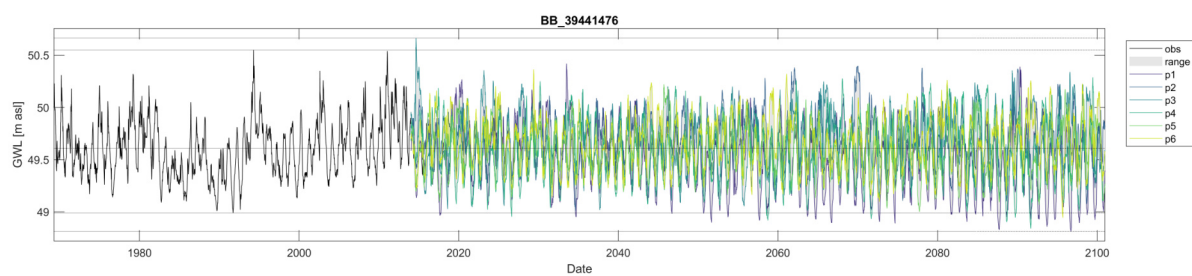


Figure S134: Projection Results BB_39441476 Model

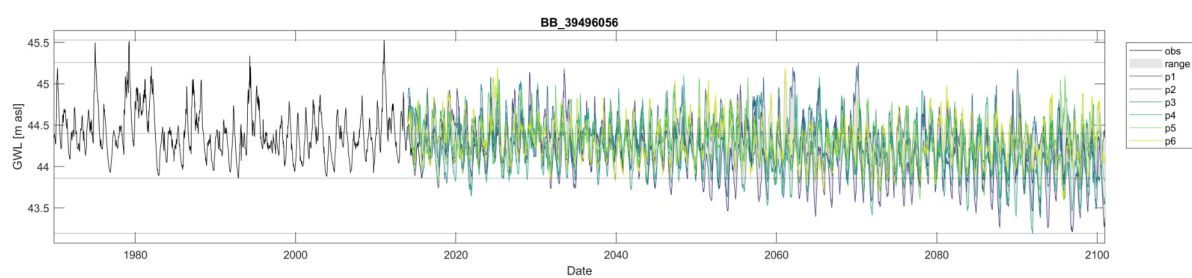


Figure S135: Projection Results BB_39496056 Model

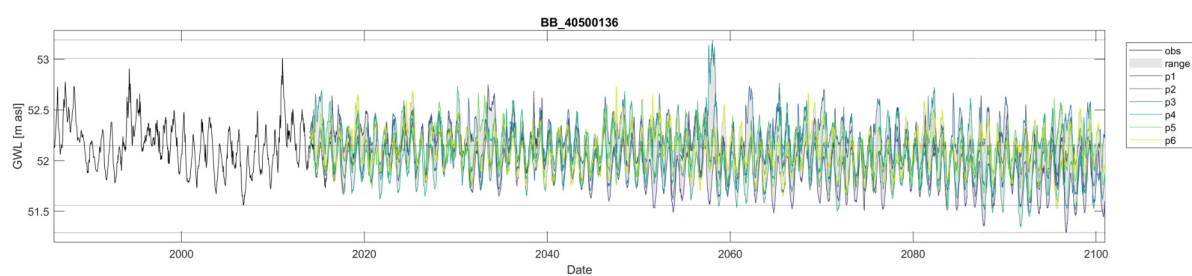


Figure S136: Projection Results BB_40500136 Model

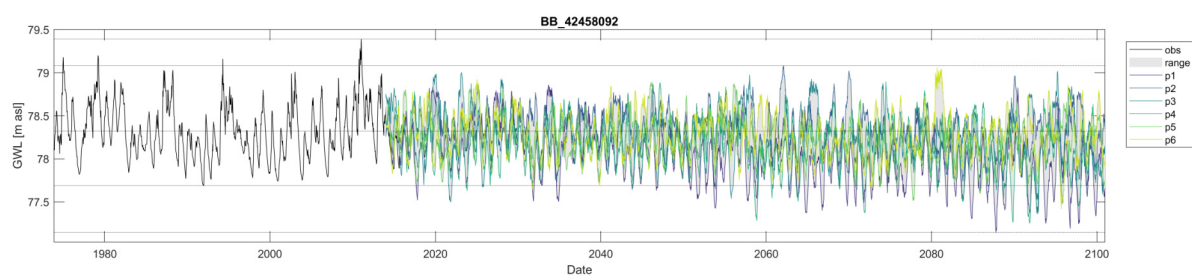


Figure S137: Projection Results BB_42458092 Model

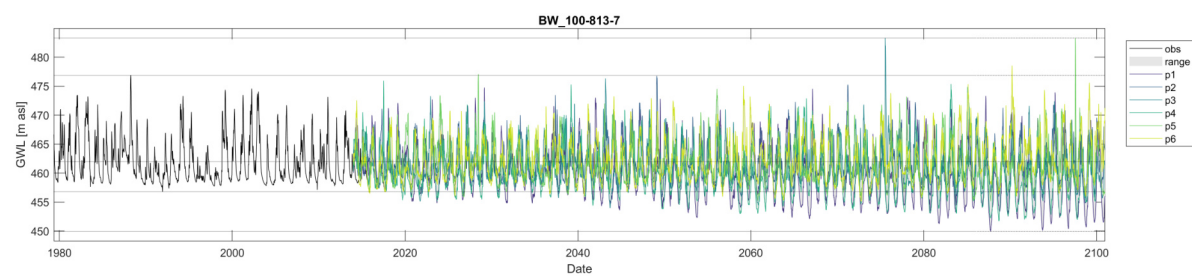


Figure S138: Projection Results BW_100-813-7 Model

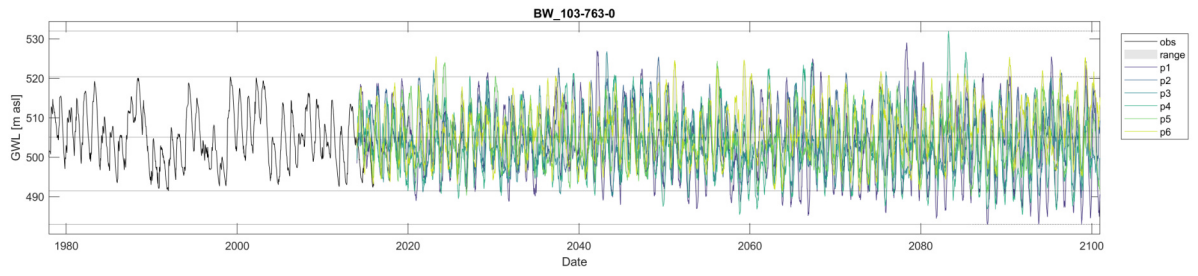


Figure S139: Projection Results BW_103-763-0 Model

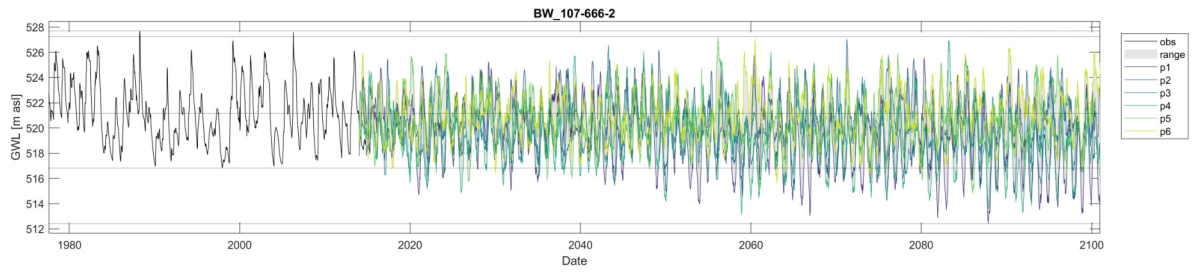


Figure S140: Projection Results BW_107-666-2 Model

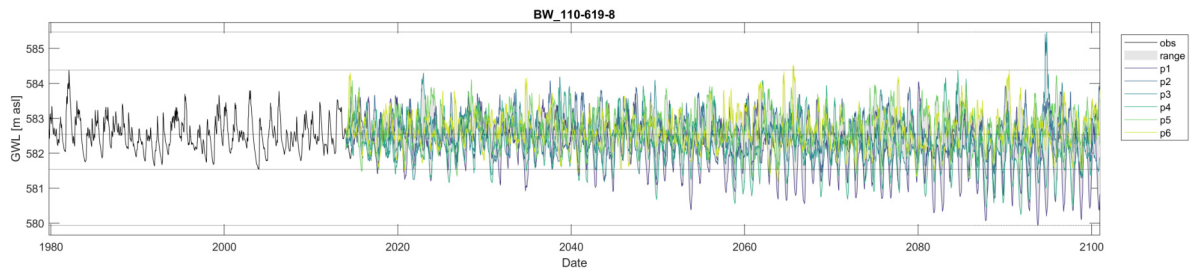


Figure S141: Projection Results BW_110-619-8 Model

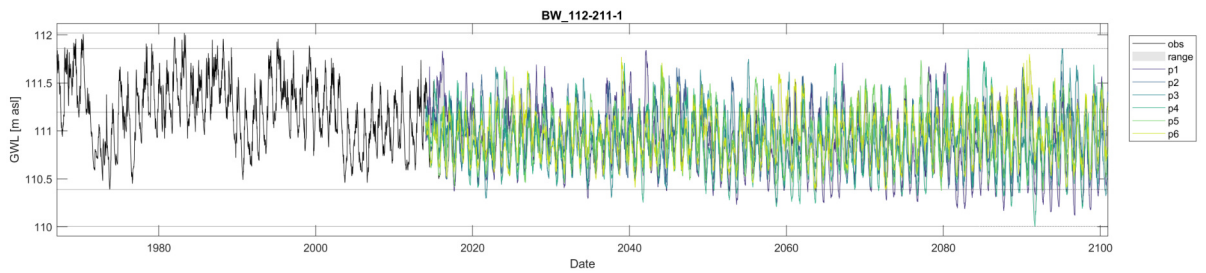


Figure S142: Projection Results BW_112-211-1 Model

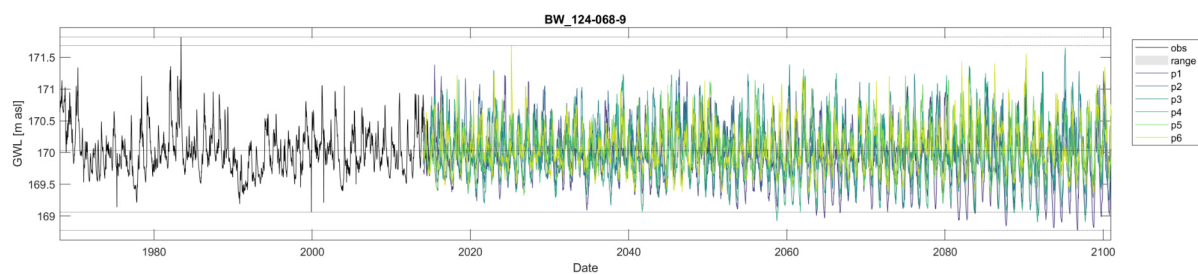


Figure S143: Projection Results BW_124-068-9 Model

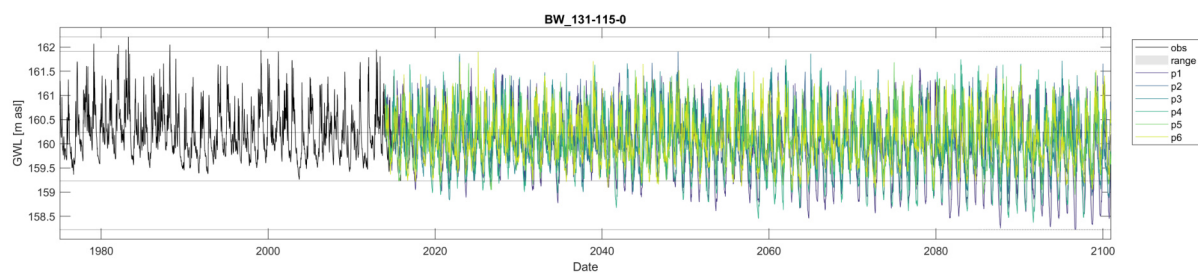


Figure S144: Projection Results BW_131-115-0 Model

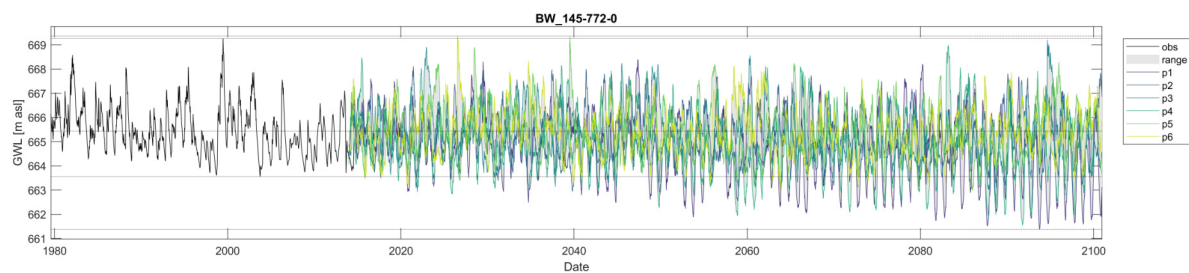


Figure S145: Projection Results BW_145-772-0 Model

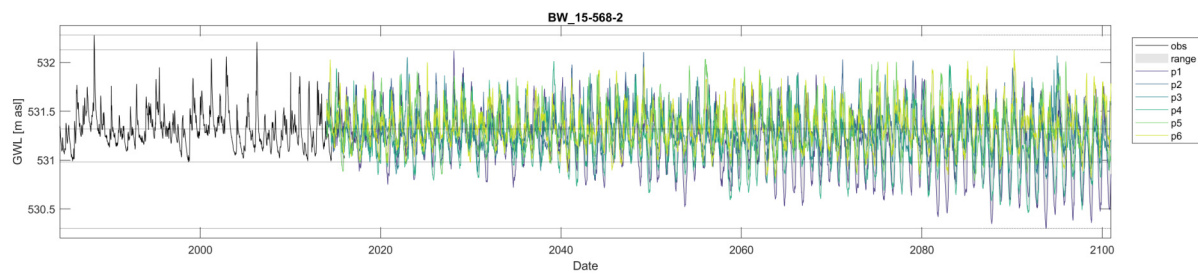


Figure S146: Projection Results BW_15-568-2 Model

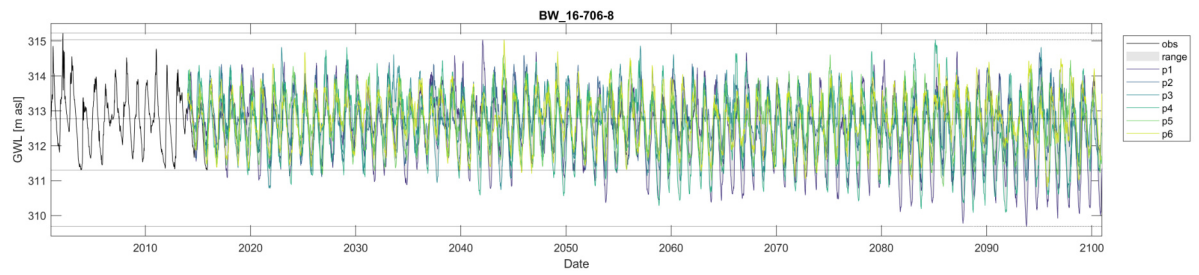


Figure S147: Projection Results BW_16-706-8 Model

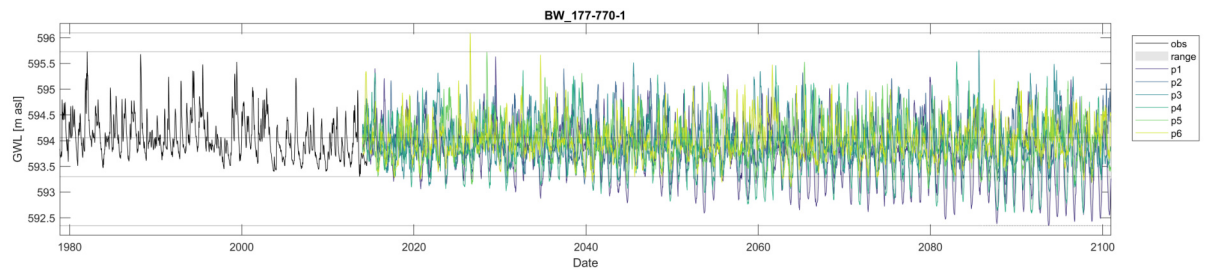


Figure S148: Projection Results BW_177-770-1 Model

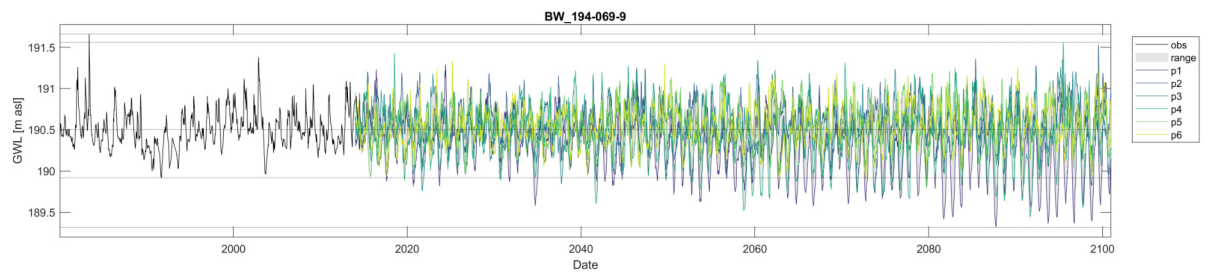


Figure S149: Projection Results BW_194-069-9 Model

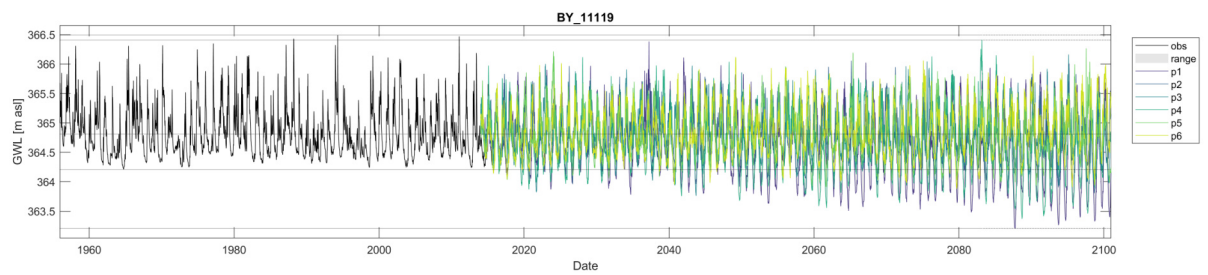


Figure S150: Projection Results BY_11119 Model

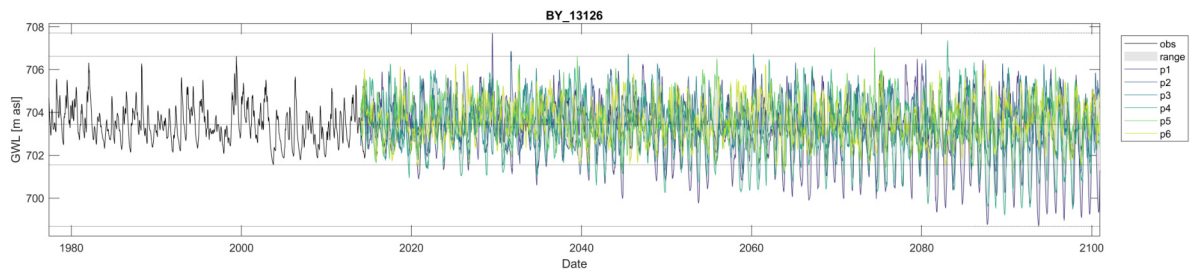


Figure S151: Projection Results BY_13126 Model

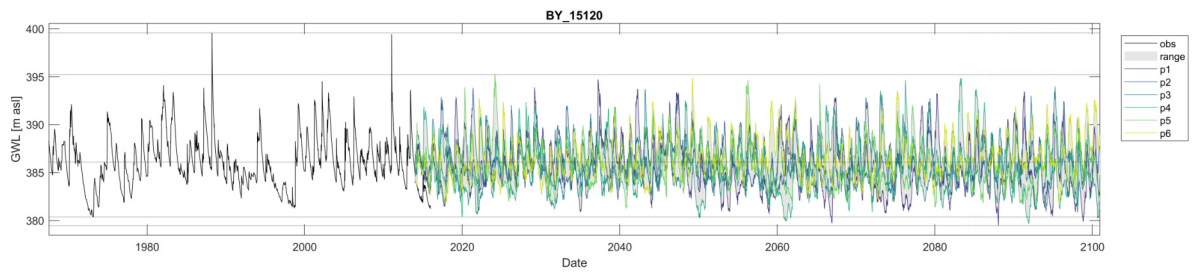


Figure S152: Projection Results BY_15120 Model

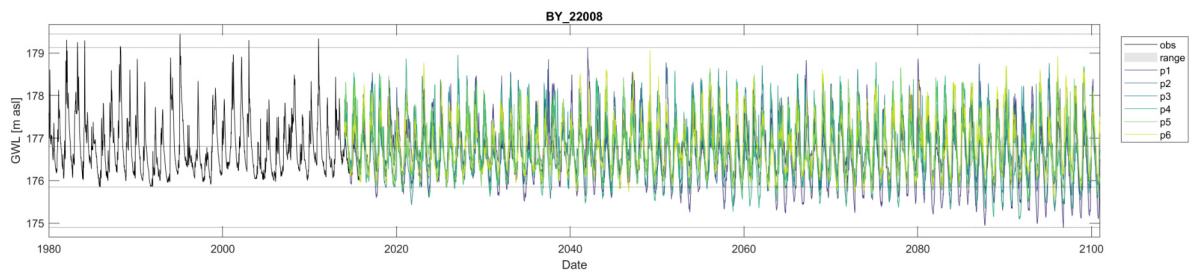


Figure S153: Projection Results BY_22008 Model

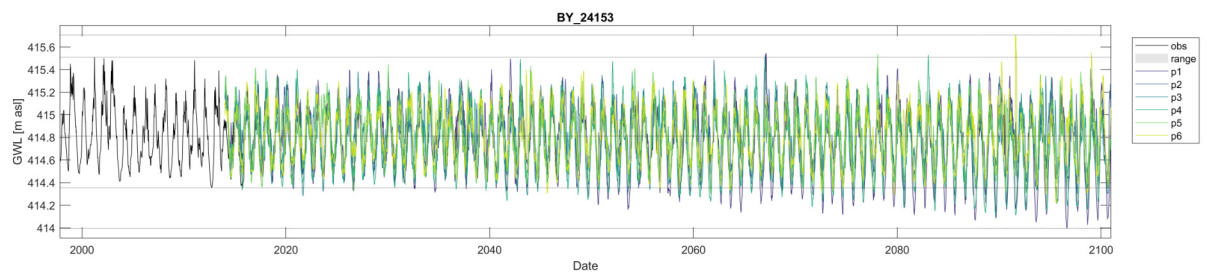


Figure S154: Projection Results BY_24153 Model

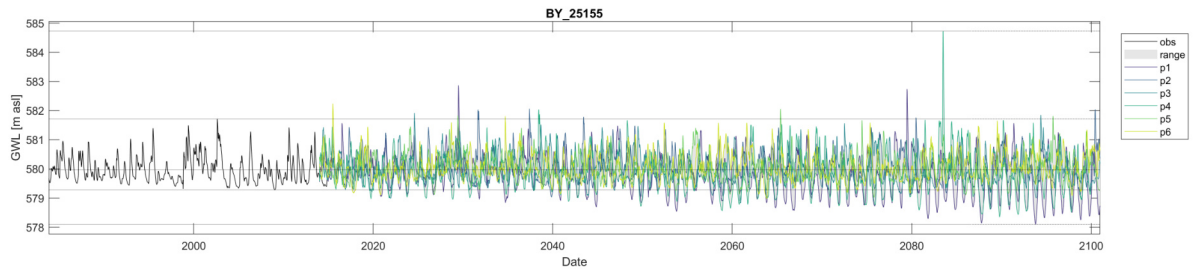


Figure S155: Projection Results BY_25155 Model

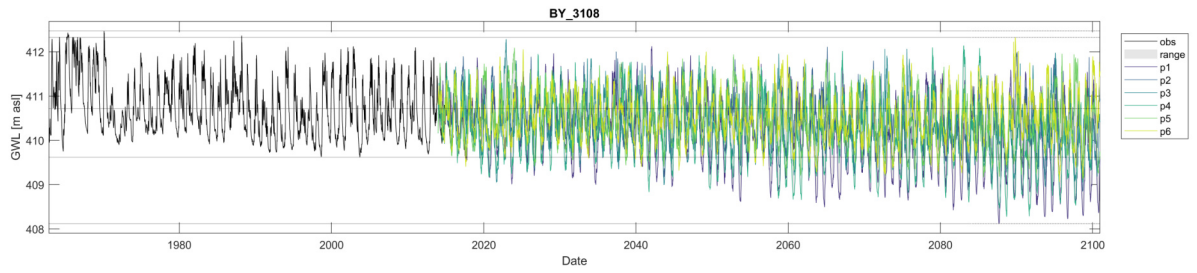


Figure S156: Projection Results BY_3108 Model

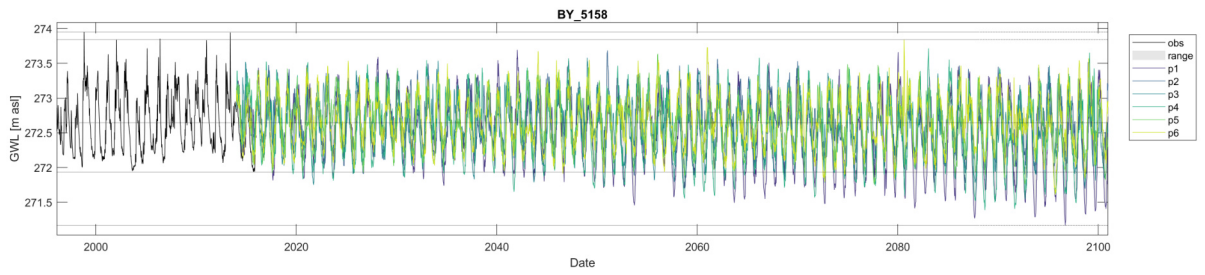


Figure S157: Projection Results BY_5158 Model

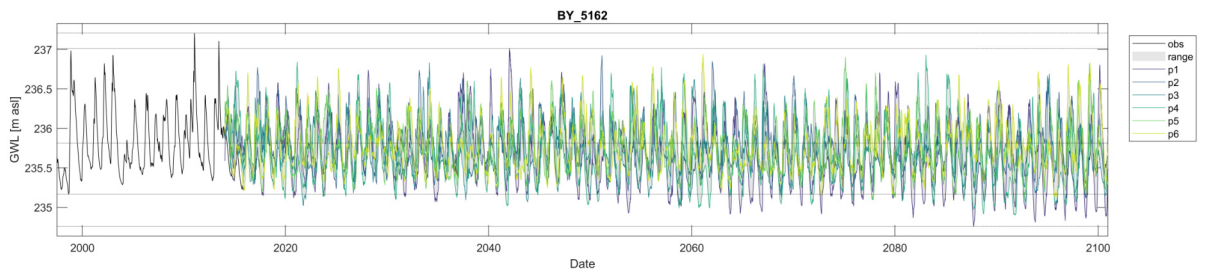


Figure S158: Projection Results BY_5162 Model

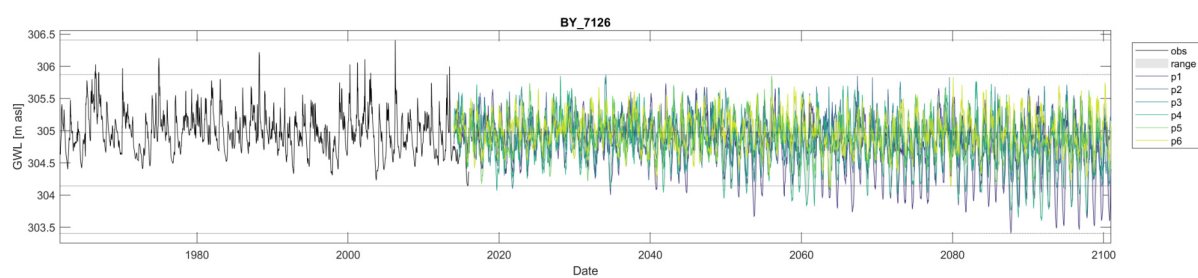


Figure S159: Projection Results BY_7126 Model

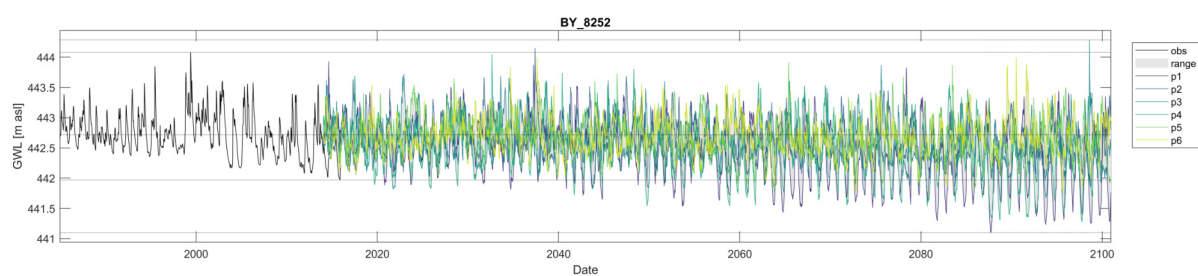


Figure S160: Projection Results BY_8252 Model

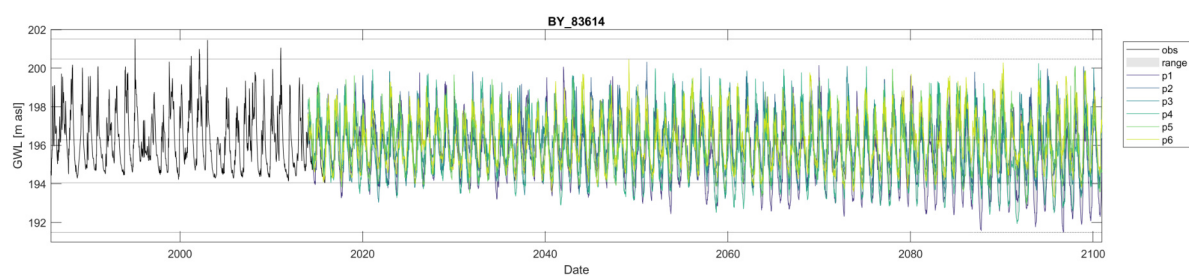


Figure S161: Projection Results BY_83614 Model

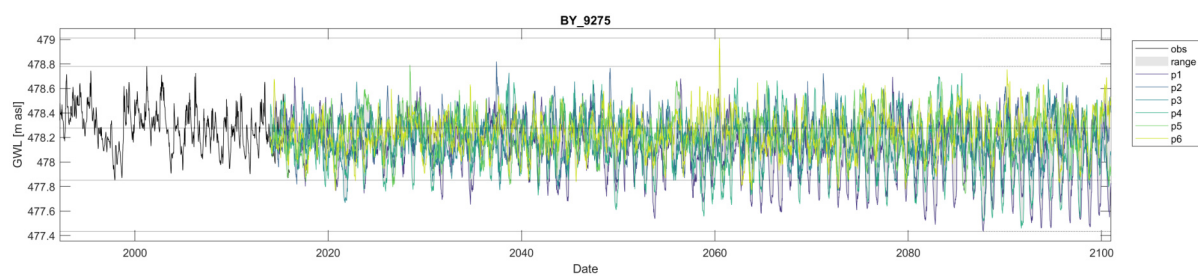


Figure S162: Projection Results BY_9275 Model

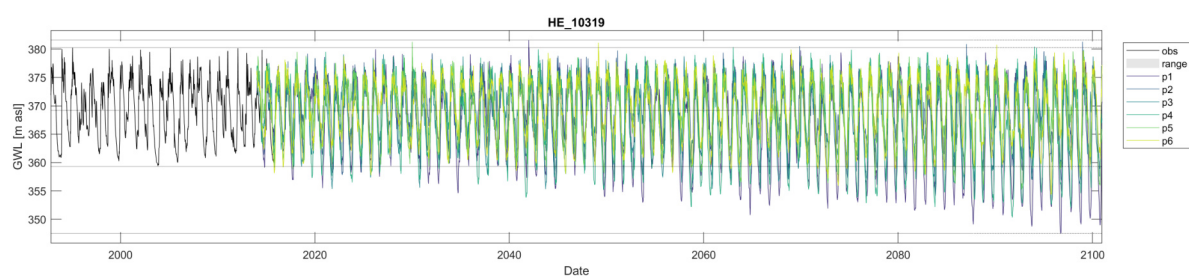


Figure S163: Projection Results HE_10319 Model

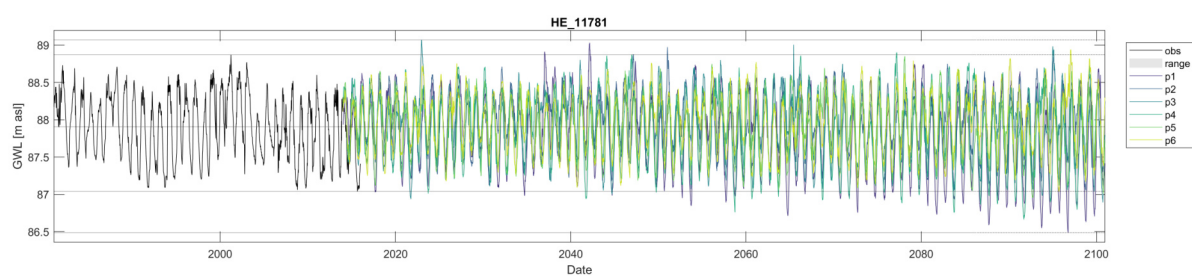


Figure S164: Projection Results HE_11781 Model

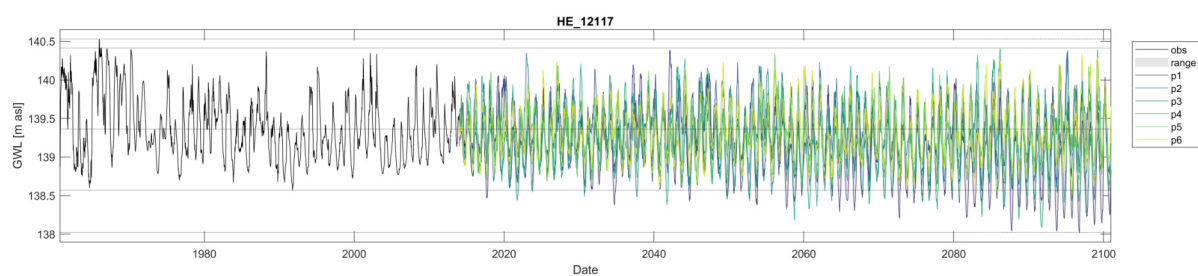


Figure S165: Projection Results HE_12117 Model

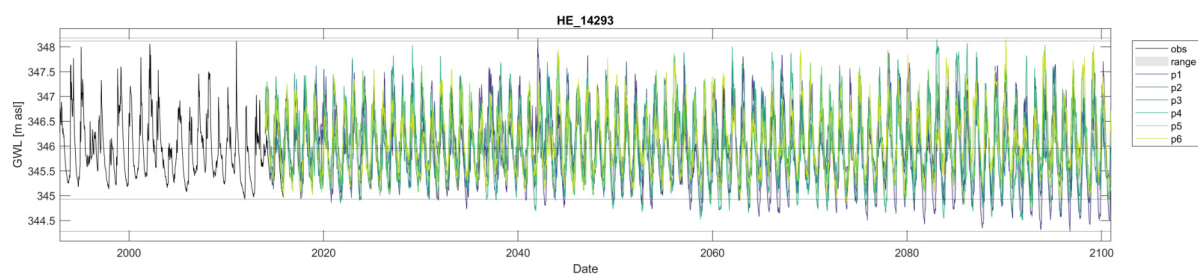


Figure S166: Projection Results HE_14293 Model

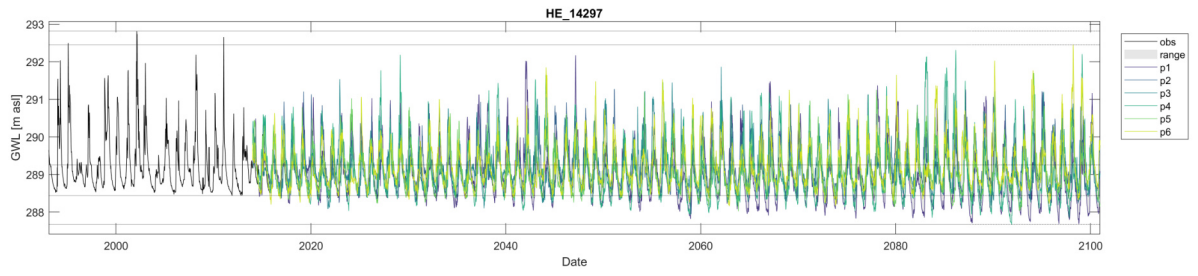


Figure S167: Projection Results HE_14297 Model

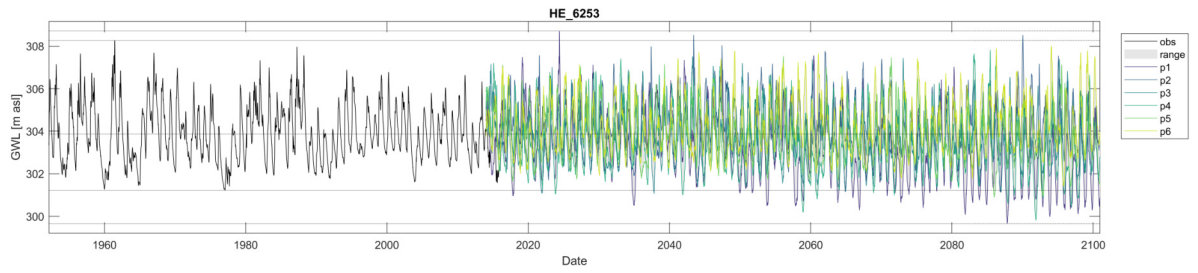


Figure S168: Projection Results HE_6253 Model

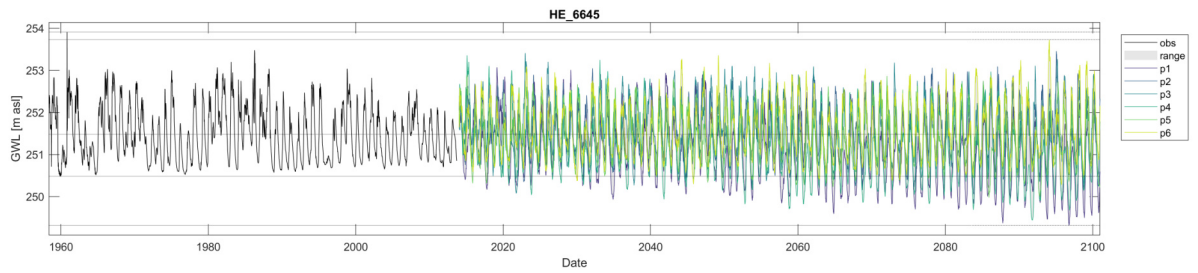


Figure S169: Projection Results HE_6645 Model

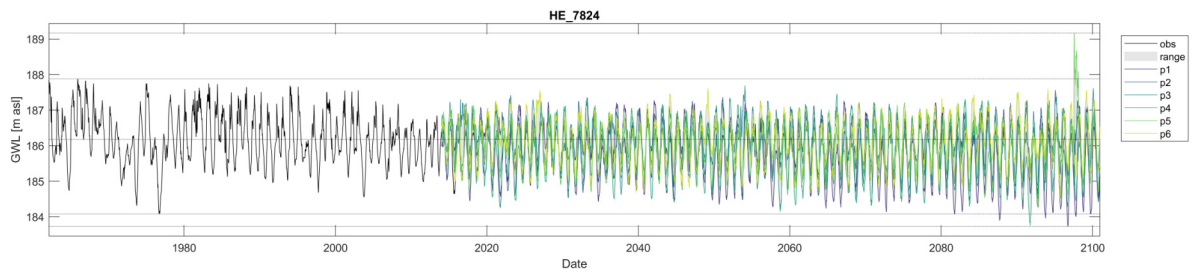


Figure S170: Projection Results HE_7824 Model

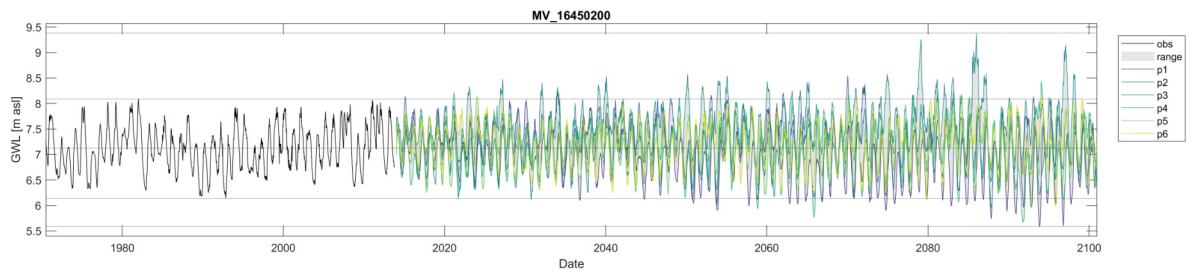


Figure S171: Projection Results MV_16450200 Model

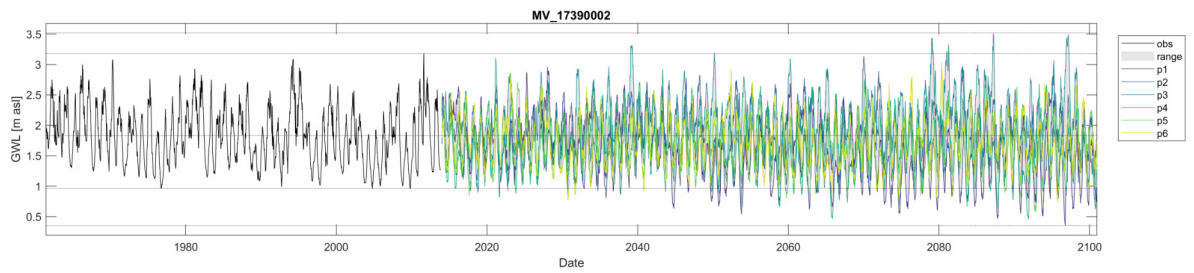


Figure S172: Projection Results MV_17390002 Model

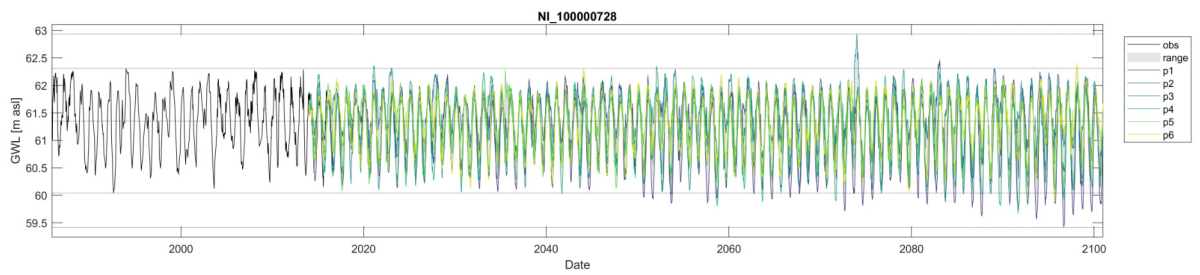


Figure S173: Projection Results NI_100000728 Model

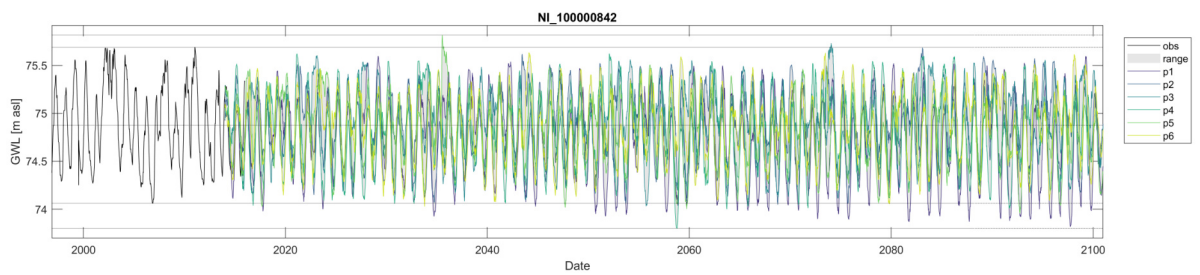


Figure S174: Projection Results NI_100000842 Model

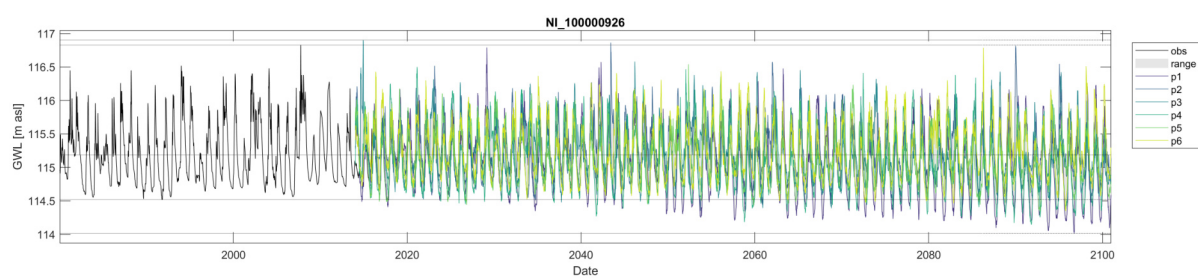


Figure S175: Projection Results NI.100000926 Model

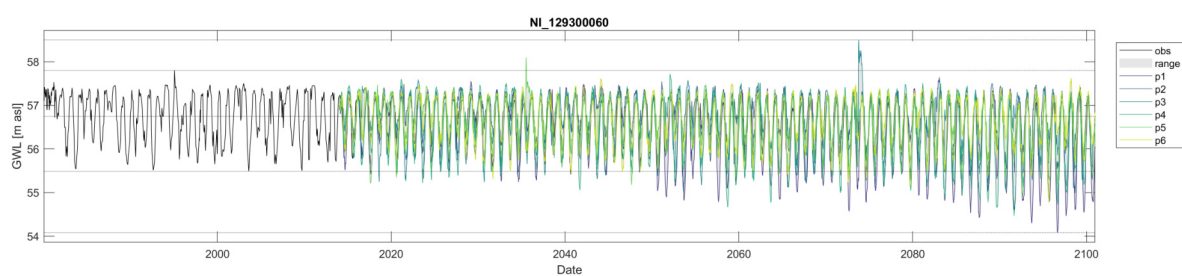


Figure S176: Projection Results NI.129300060 Model

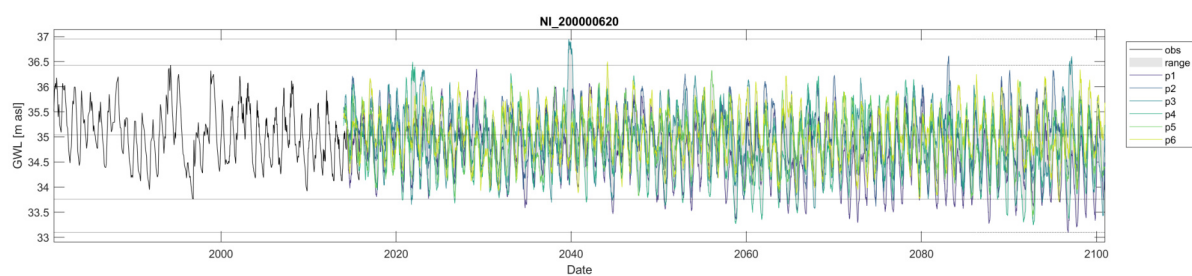


Figure S177: Projection Results NI.200000620 Model

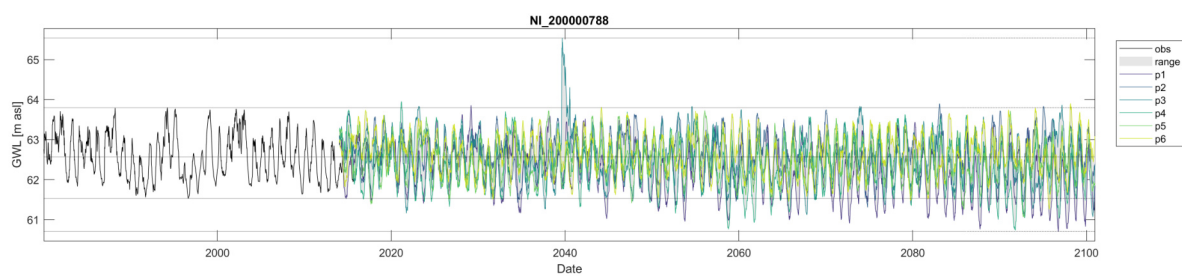


Figure S178: Projection Results NI.200000788 Model

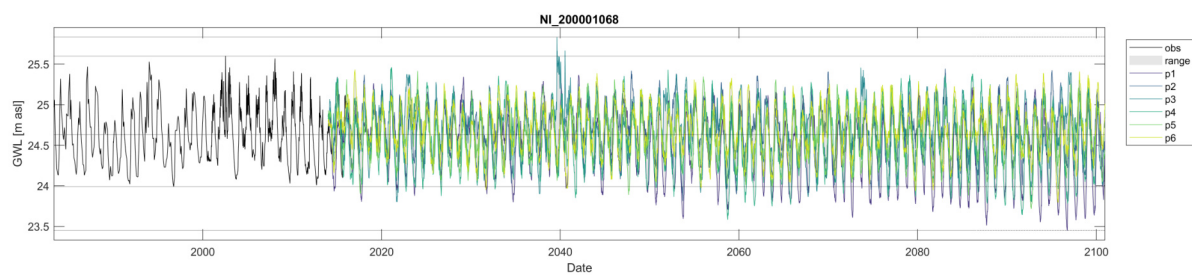


Figure S179: Projection Results NI.200001068 Model

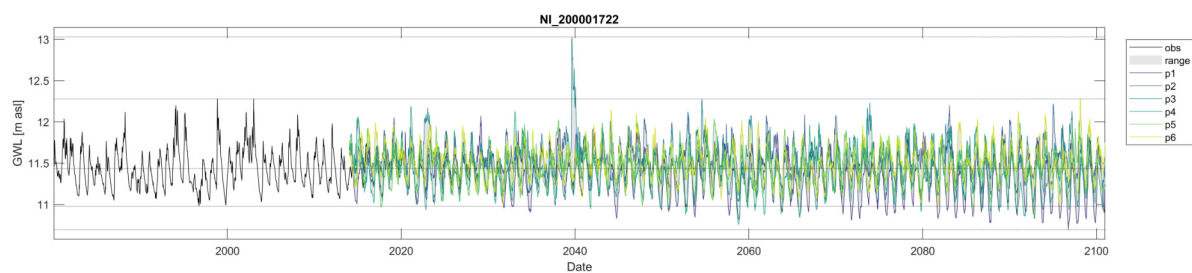


Figure S180: Projection Results NI.200001722 Model

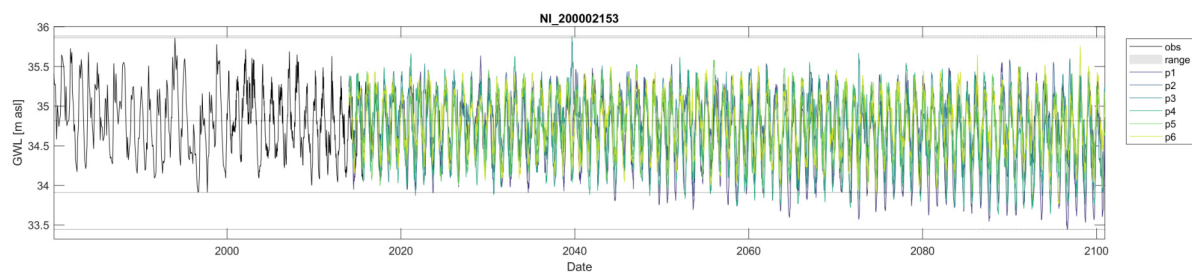


Figure S181: Projection Results NI.200002153 Model

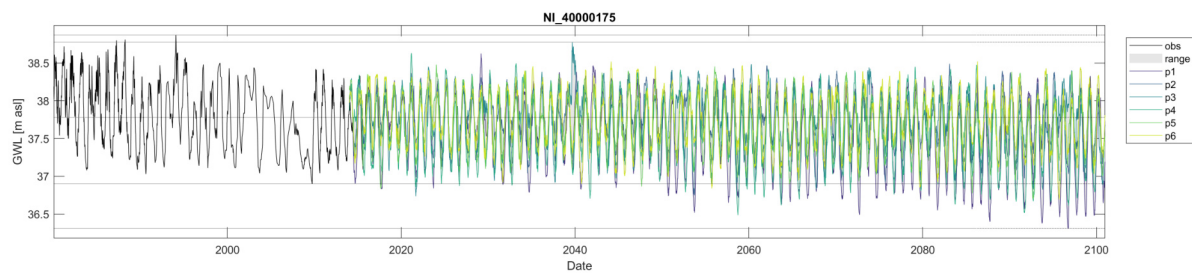


Figure S182: Projection Results NI.40000175 Model

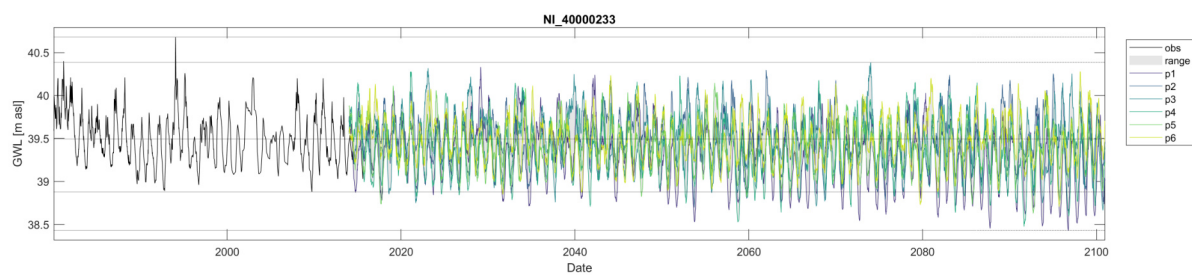


Figure S183: Projection Results NI_40000233 Model

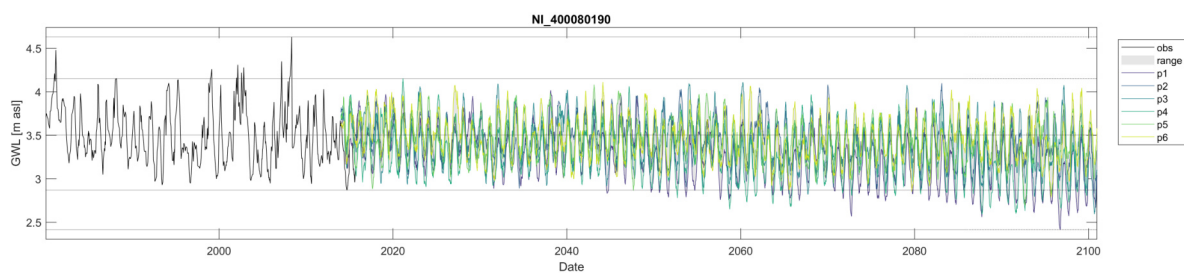


Figure S184: Projection Results NI_400080190 Model

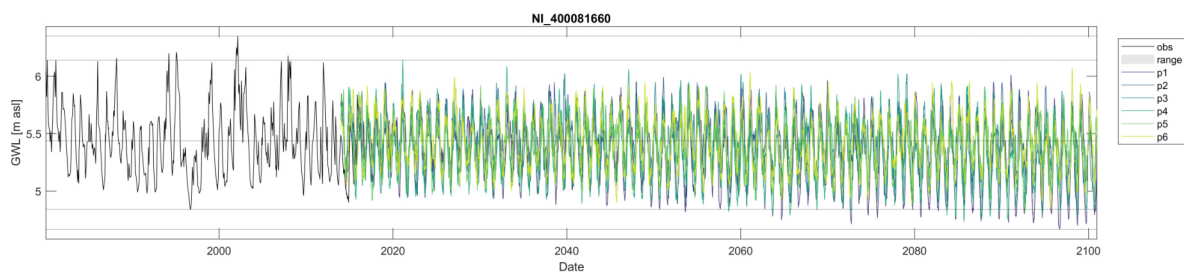


Figure S185: Projection Results NI_400081660 Model

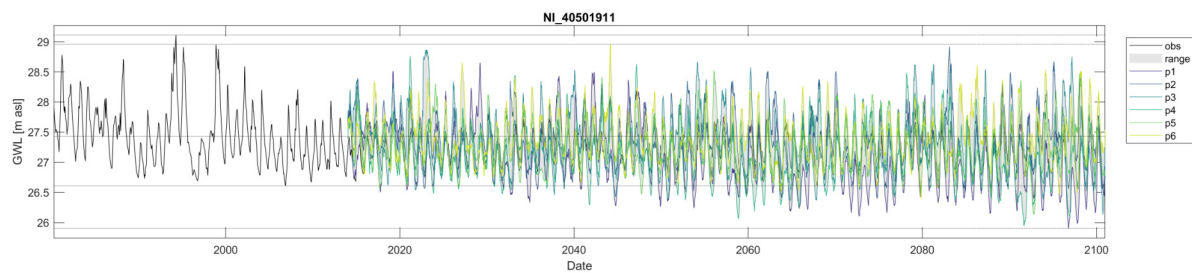


Figure S186: Projection Results NI_40501911 Model

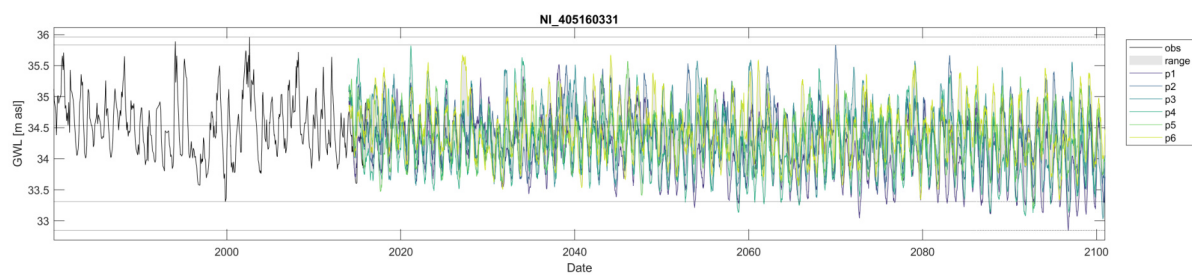


Figure S187: Projection Results NI.405160331 Model

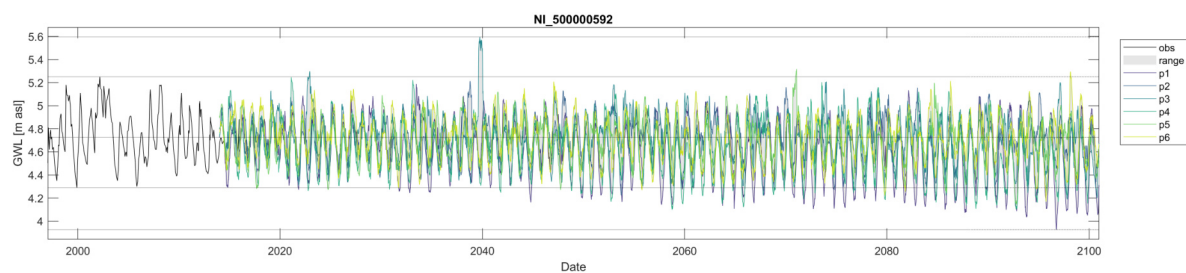


Figure S188: Projection Results NI.500000592 Model

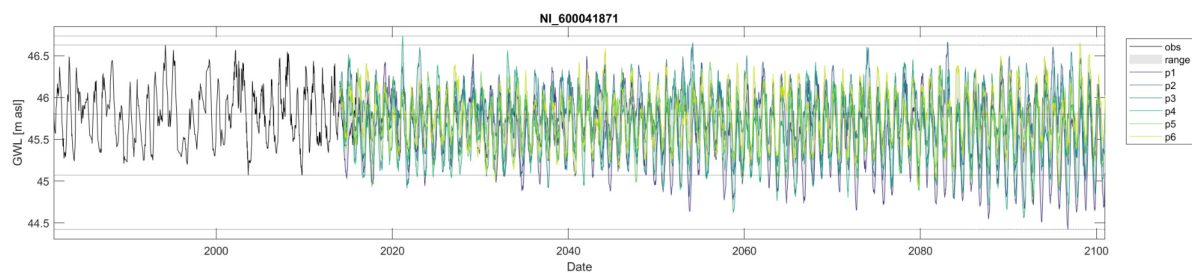


Figure S189: Projection Results NI.600041871 Model

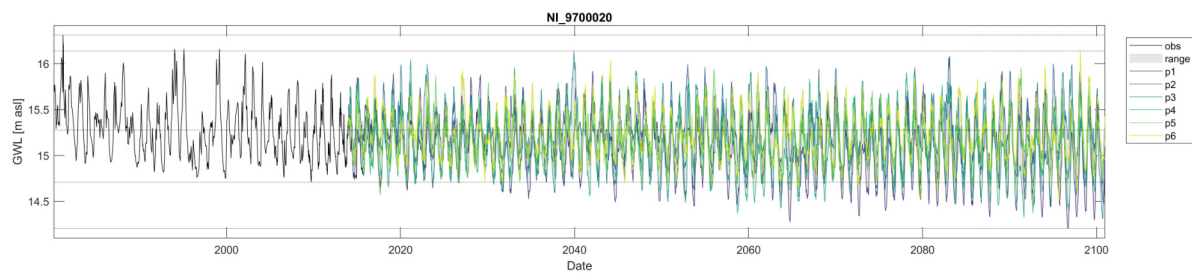


Figure S190: Projection Results NI.97000020 Model

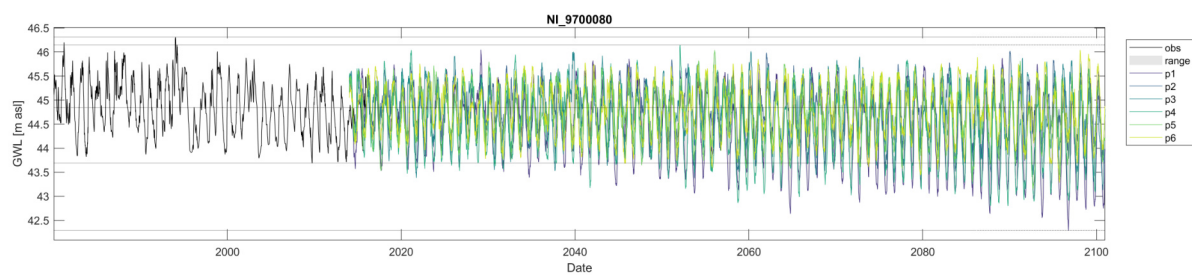


Figure S191: Projection Results NI_9700080 Model

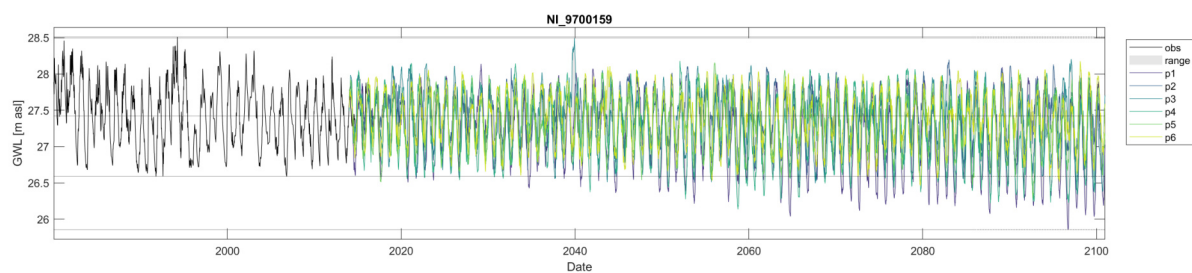


Figure S192: Projection Results NI_9700159 Model

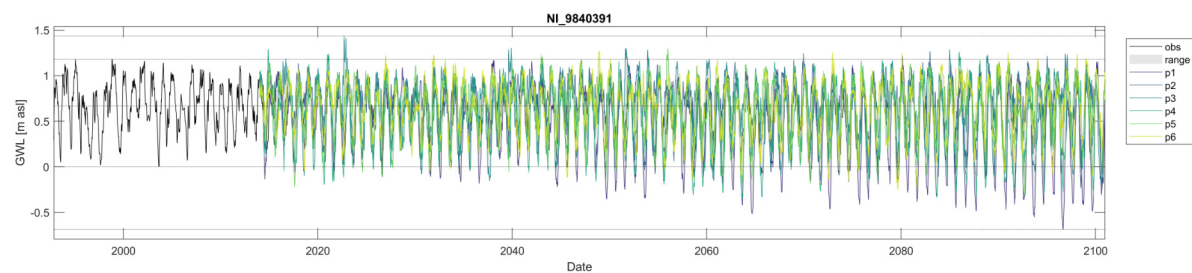


Figure S193: Projection Results NI_9840391 Model

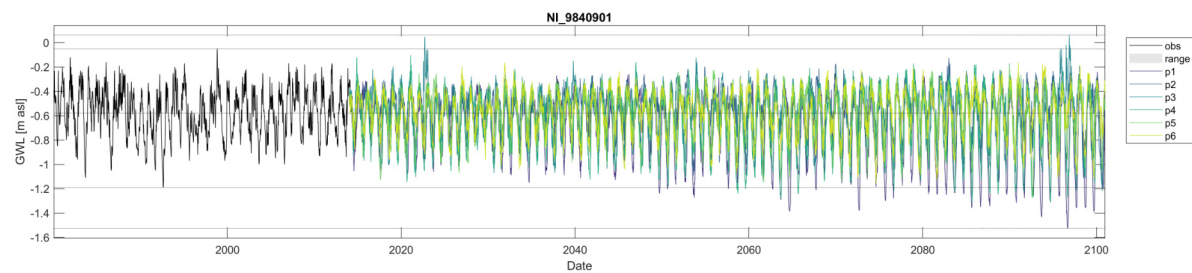


Figure S194: Projection Results NI_9840901 Model

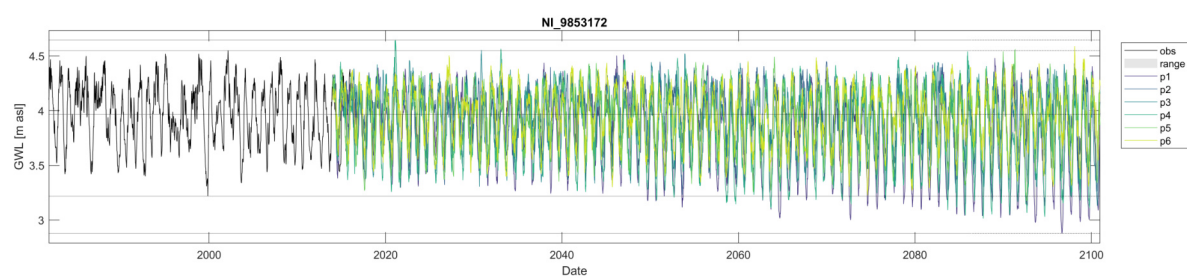


Figure S195: Projection Results NL9853172 Model

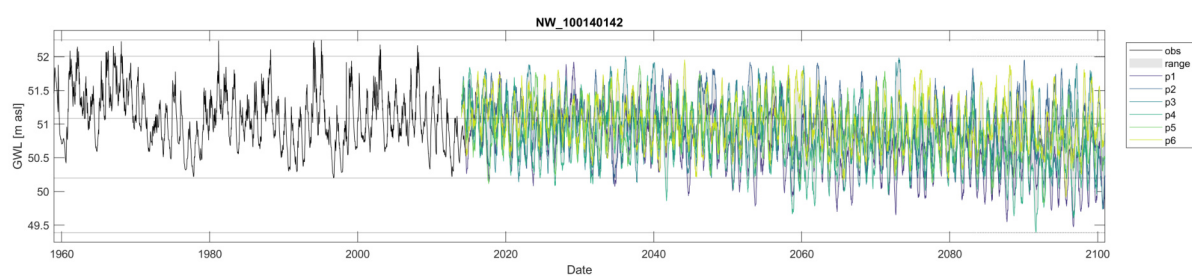


Figure S196: Projection Results NW_100140142 Model

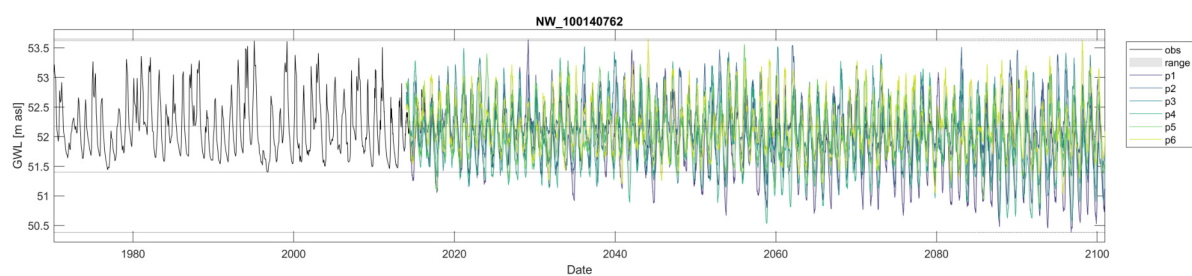


Figure S197: Projection Results NW_100140762 Model

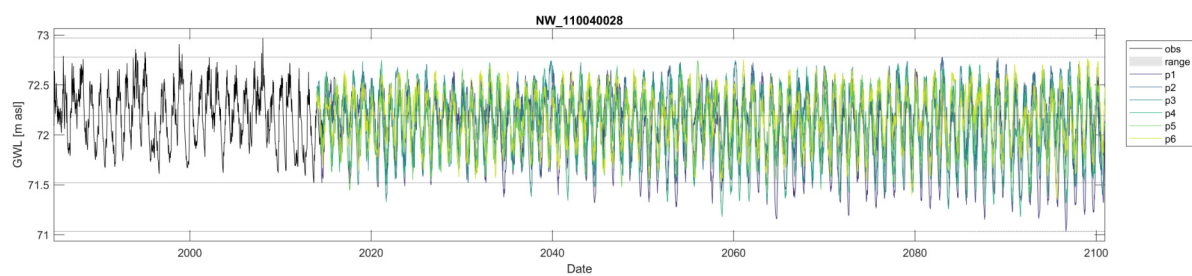


Figure S198: Projection Results NW_110040028 Model

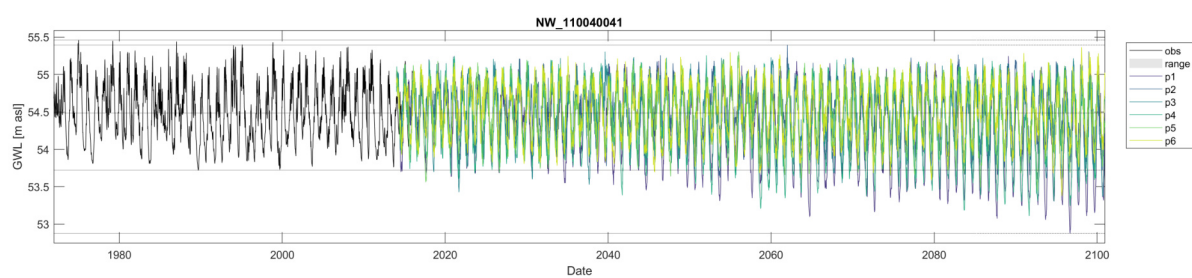


Figure S19: Projection Results NW_110040041 Model

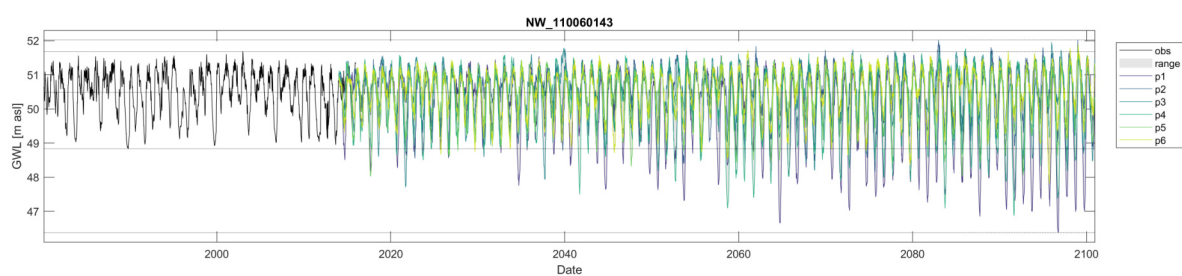


Figure S200: Projection Results NW_110060143 Model

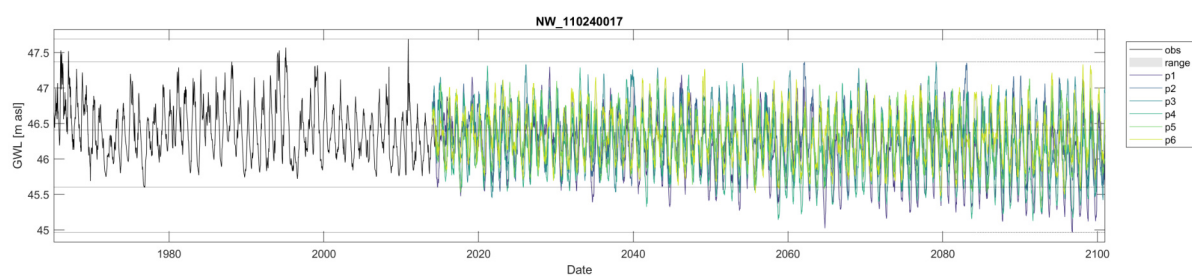


Figure S201: Projection Results NW_110240017 Model

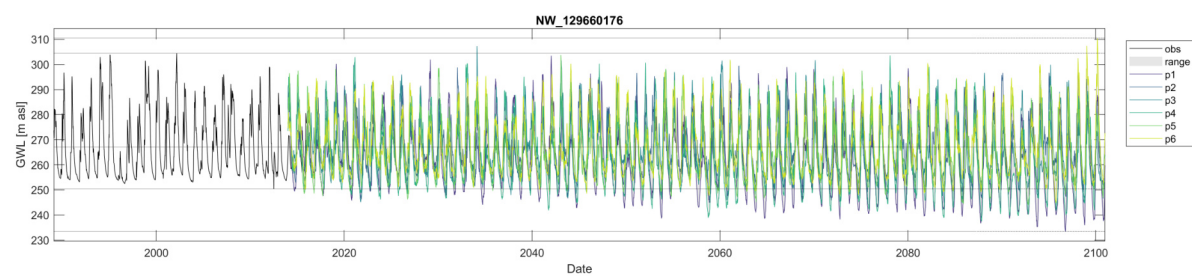


Figure S202: Projection Results NW_129660176 Model

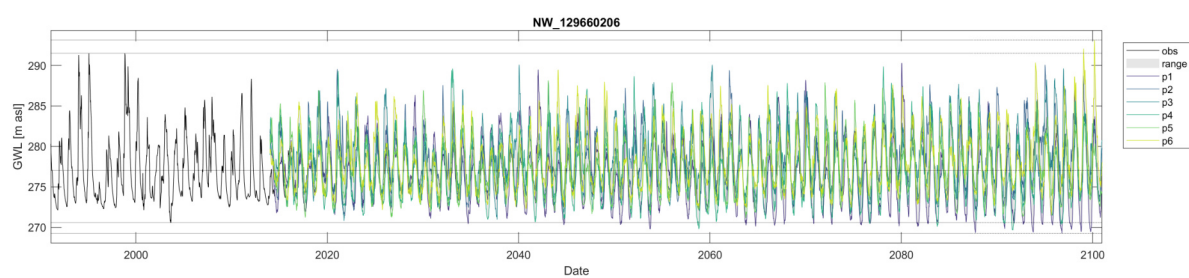


Figure S203: Projection Results NW_129660206 Model

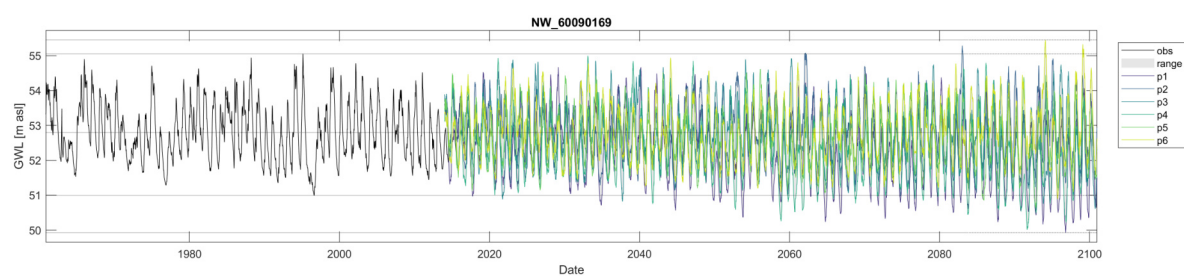


Figure S204: Projection Results NW_60090169 Model

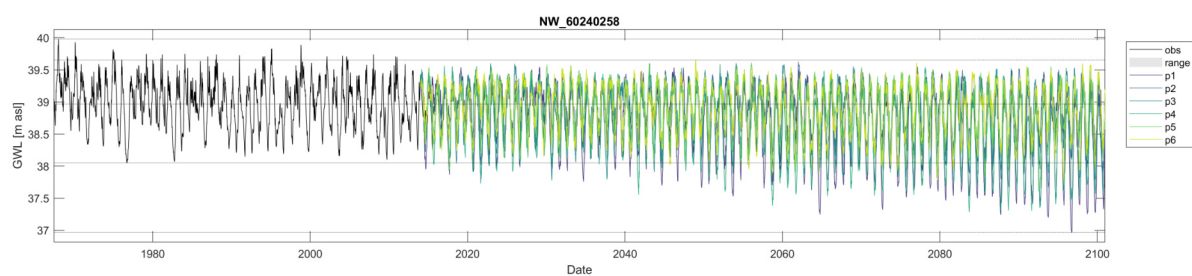


Figure S205: Projection Results NW_60240258 Model

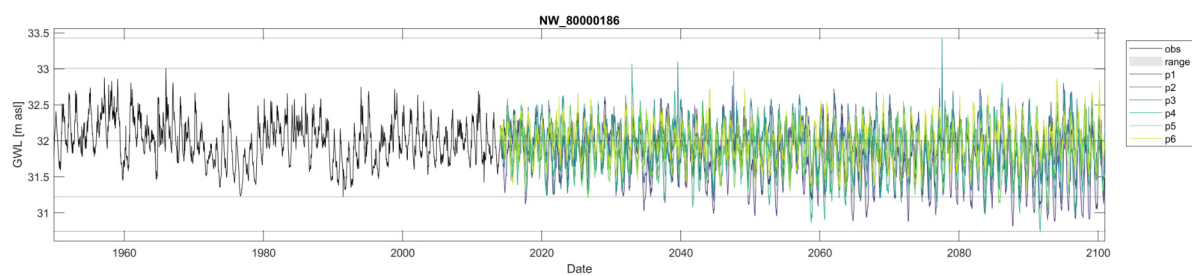


Figure S206: Projection Results NW_80000186 Model

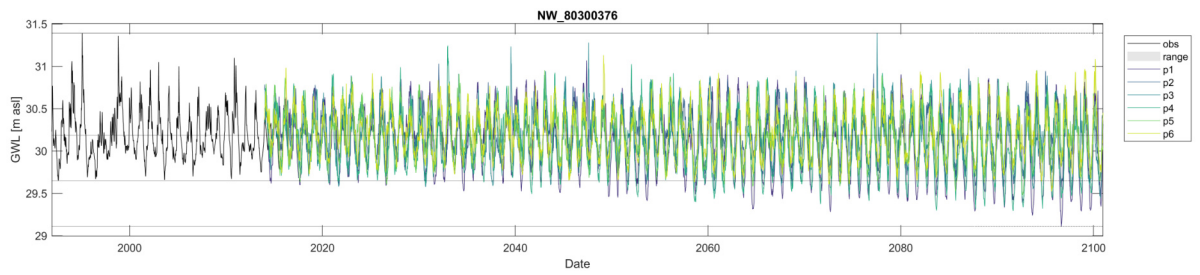


Figure S207: Projection Results NW_80300376 Model

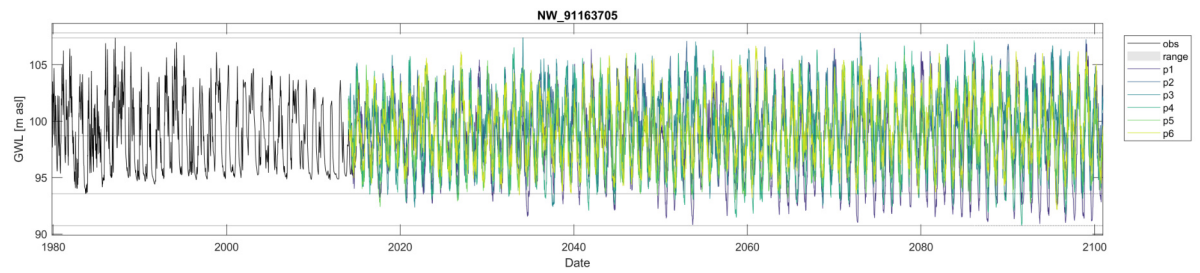


Figure S208: Projection Results NW_91163705 Model

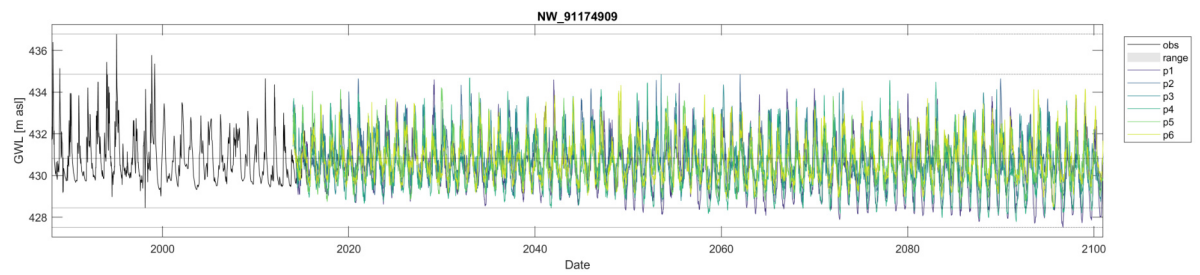


Figure S209: Projection Results NW_91174909 Model

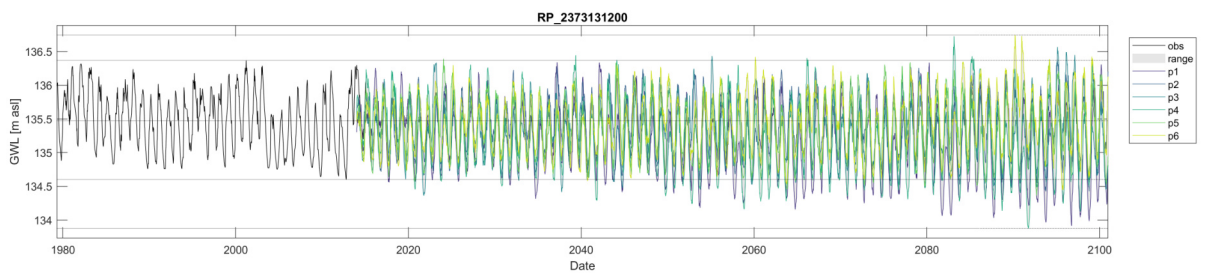


Figure S210: Projection Results RP_2373131200 Model

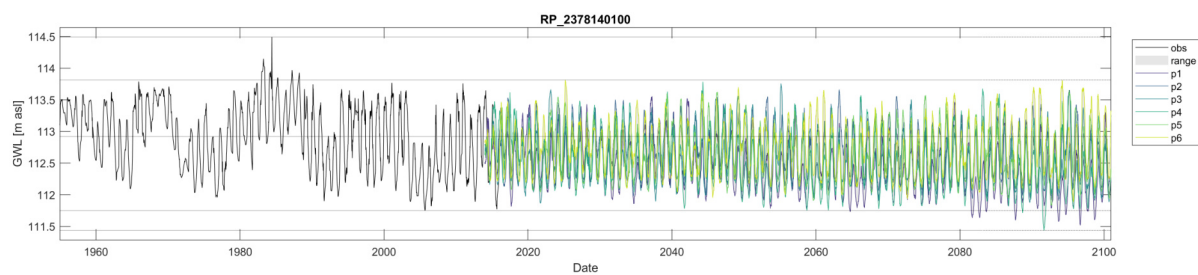


Figure S211: Projection Results RP_2378140100 Model

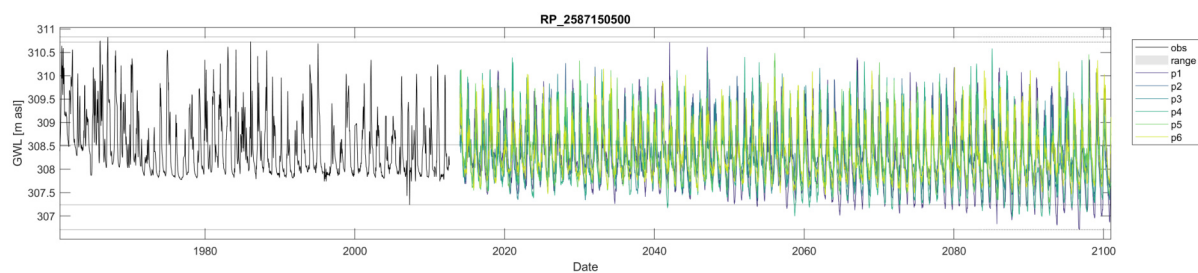


Figure S212: Projection Results RP_2587150500 Model

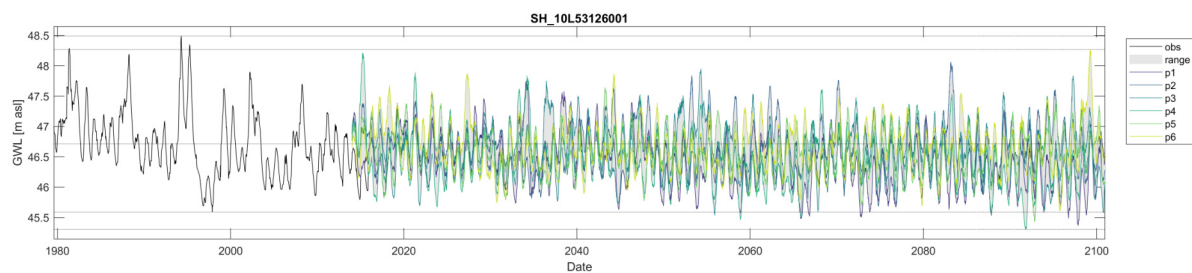


Figure S213: Projection Results SH_10L53126001 Model

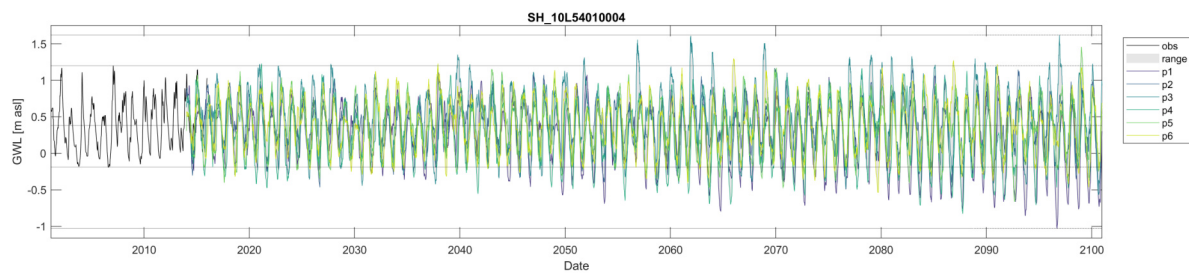


Figure S214: Projection Results SH_10L54010004 Model

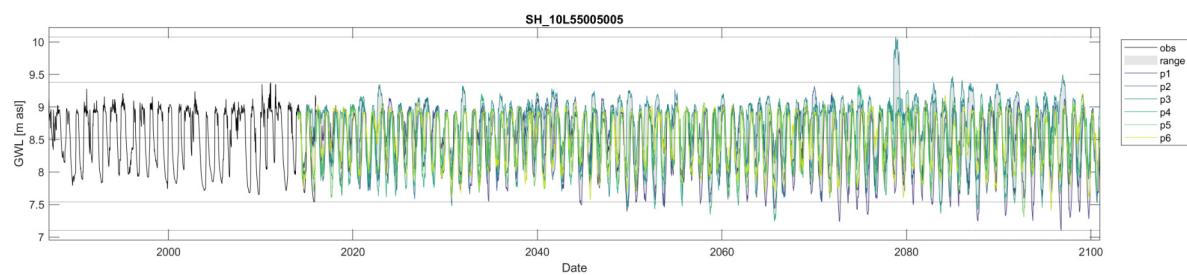


Figure S215: Projection Results SH_10L55005005 Model

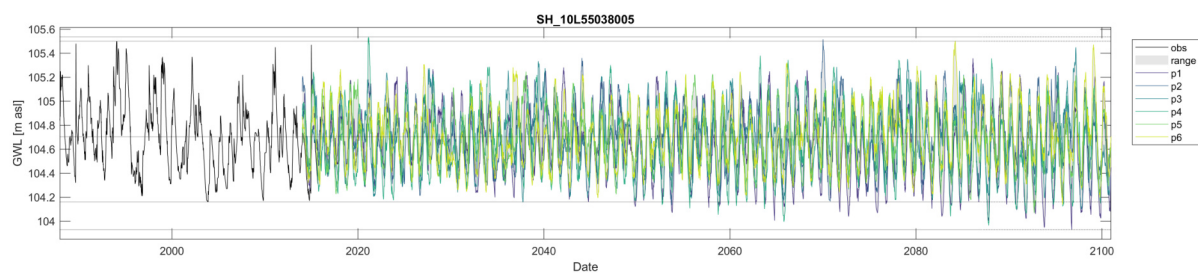


Figure S216: Projection Results SH_10L55038005 Model

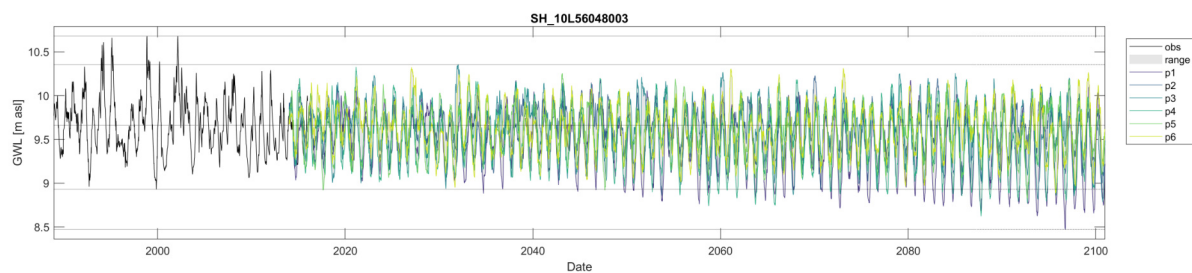


Figure S217: Projection Results SH_10L56048003 Model

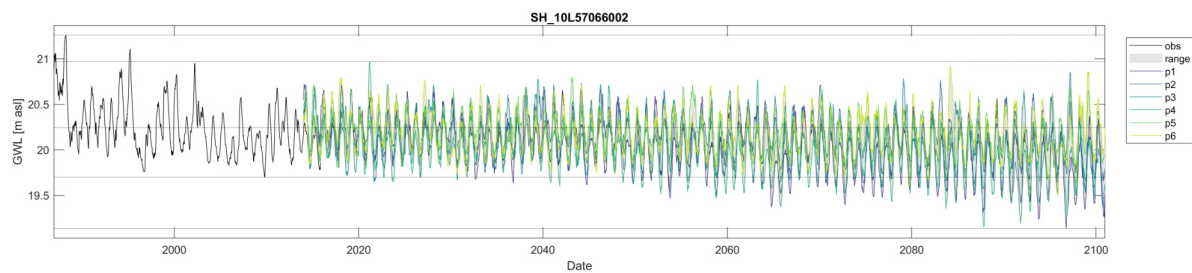


Figure S218: Projection Results SH_10L57066002 Model

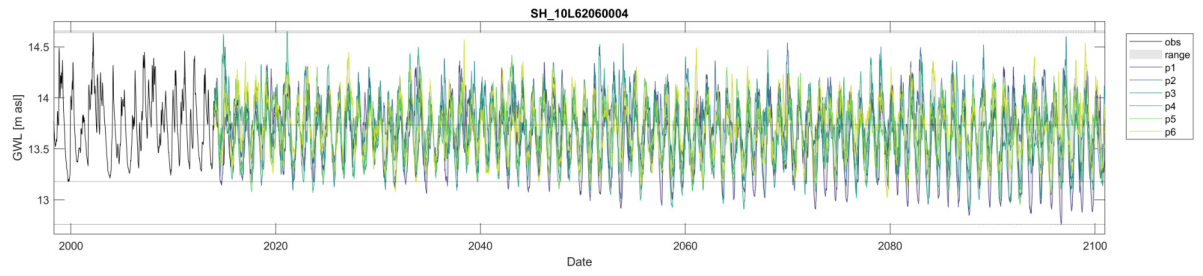


Figure S219: Projection Results SH_10L62060004 Model

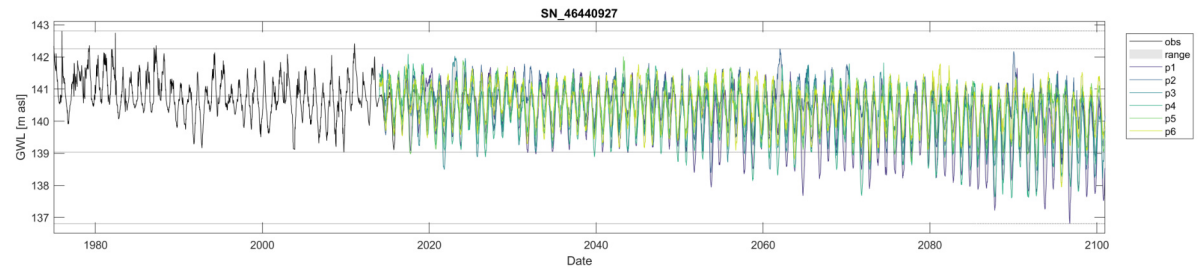


Figure S220: Projection Results SN_46440927 Model

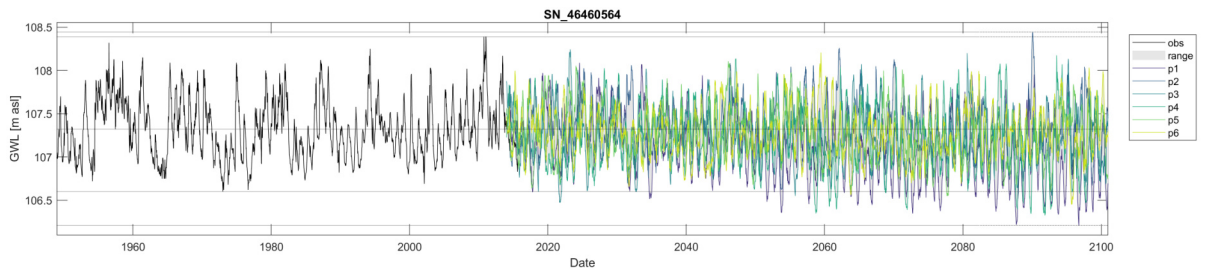


Figure S221: Projection Results SN_46460564 Model

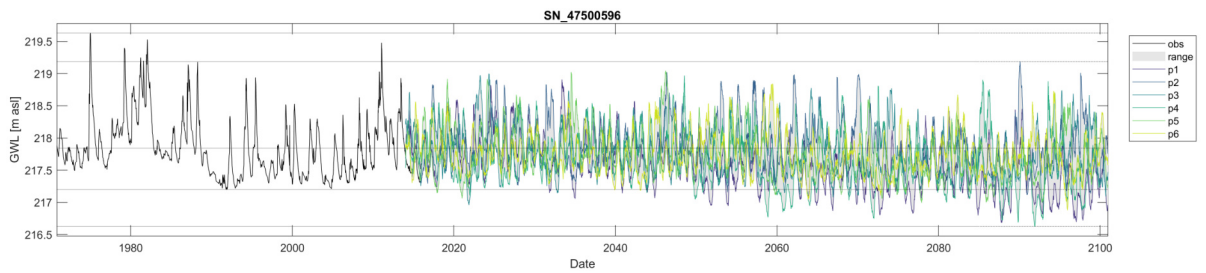


Figure S222: Projection Results SN_47500596 Model

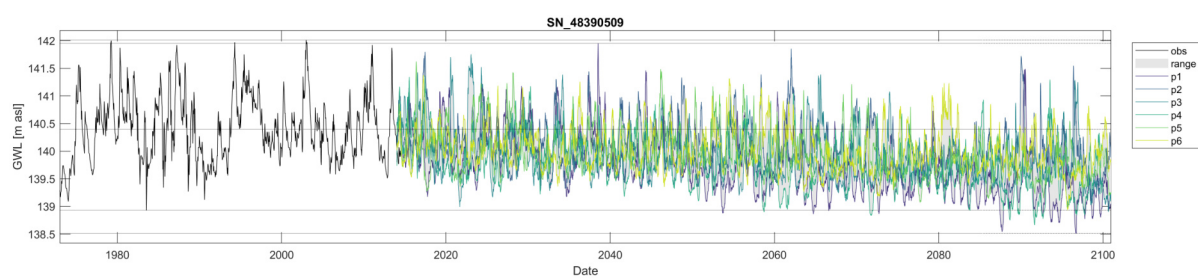


Figure S223: Projection Results SN_48390509 Model

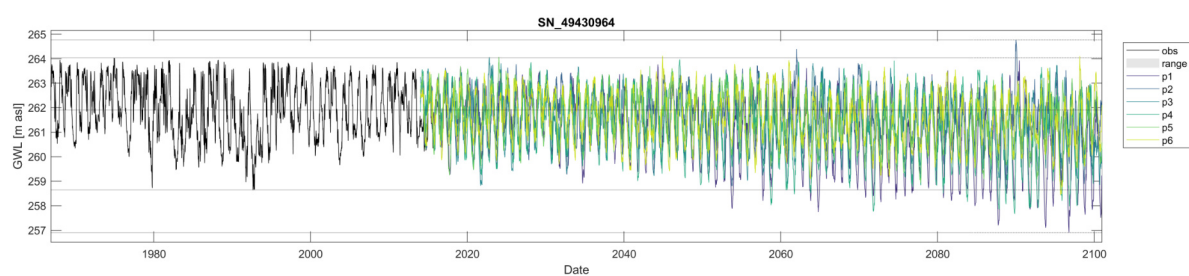


Figure S224: Projection Results SN_49430964 Model

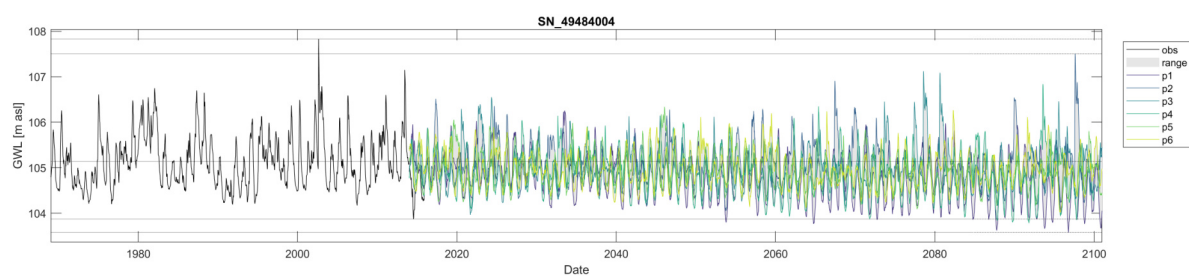


Figure S225: Projection Results SN_49484004 Model

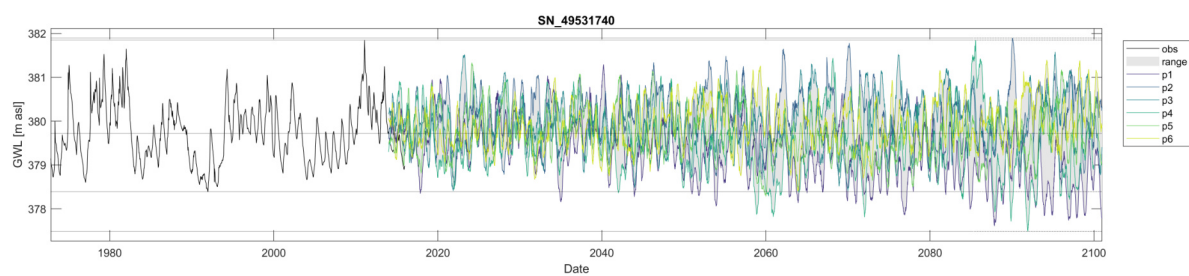


Figure S226: Projection Results SN_49531740 Model

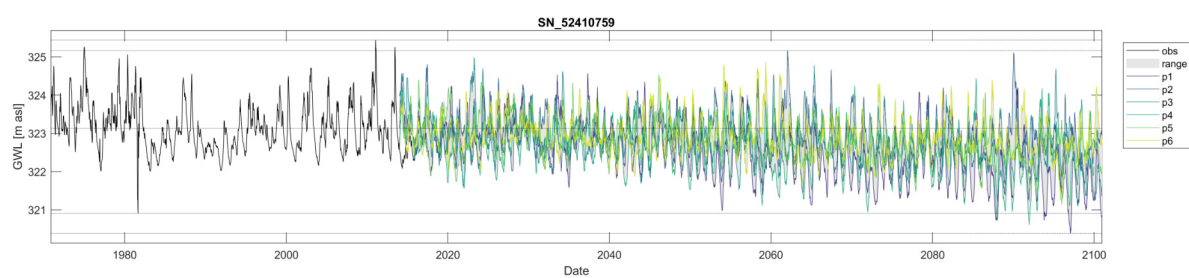


Figure S227: Projection Results SN_52410759 Model

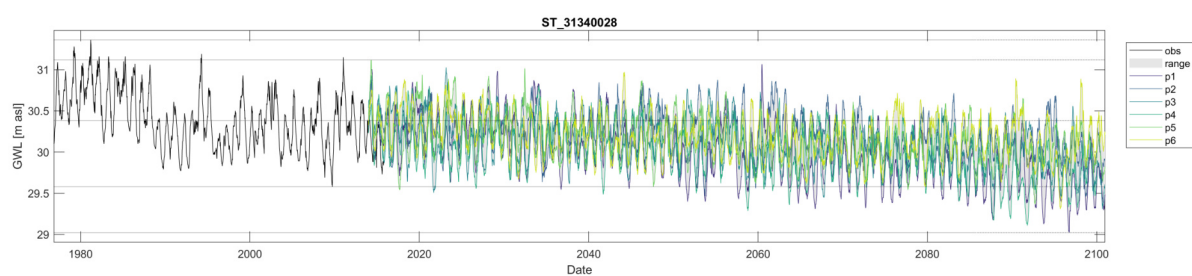


Figure S228: Projection Results ST_31340028 Model

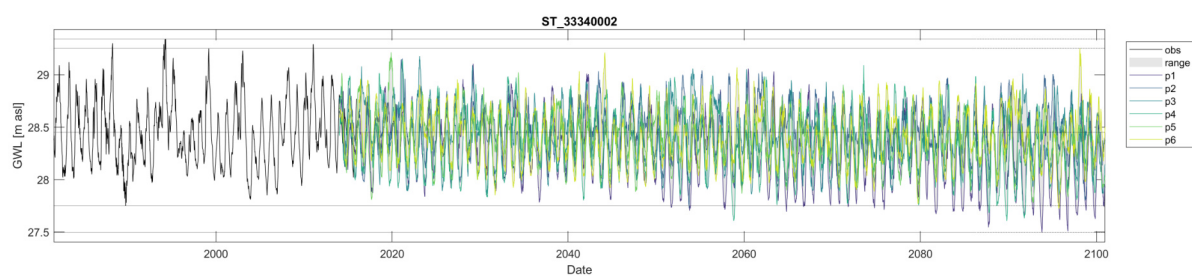


Figure S229: Projection Results ST_33340002 Model

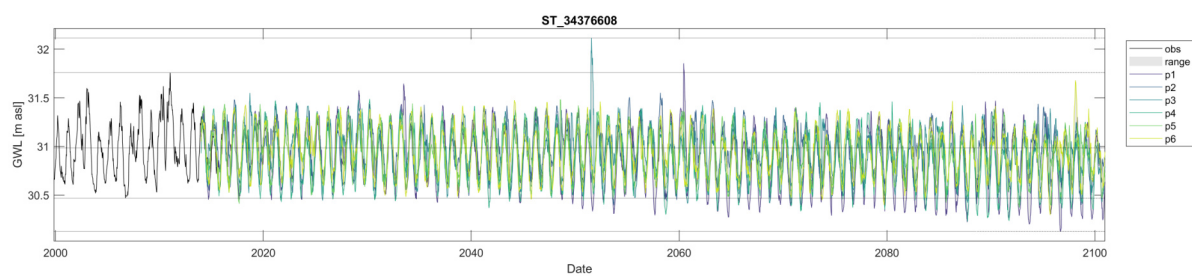


Figure S230: Projection Results ST_34376608 Model

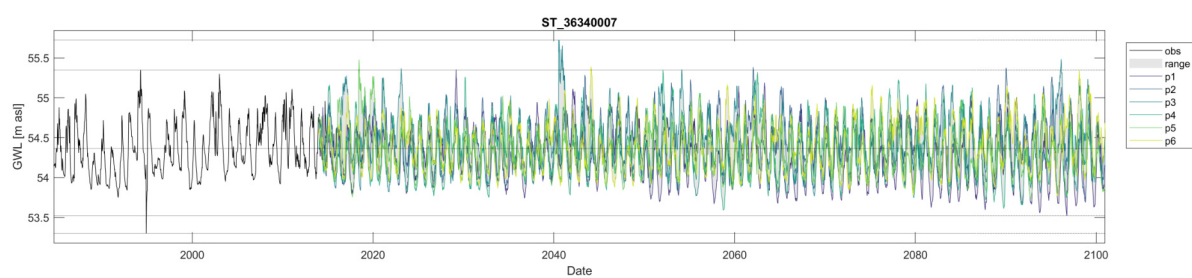


Figure S231: Projection Results ST_36340007 Model

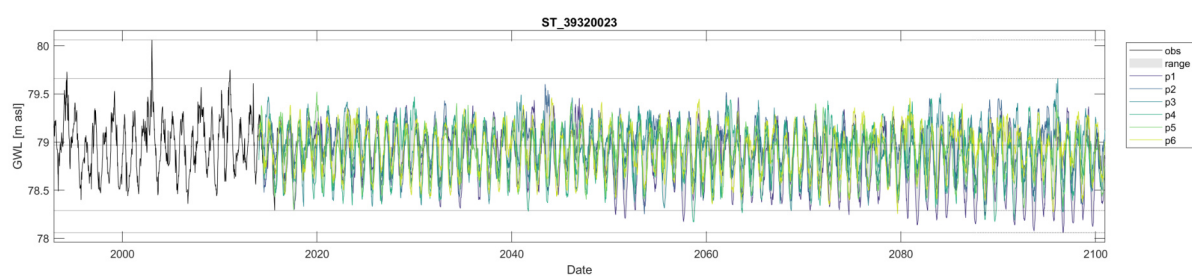


Figure S232: Projection Results ST_39320023 Model

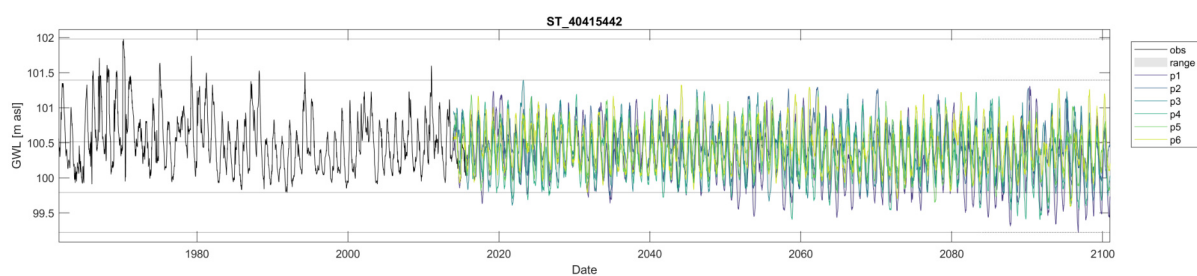


Figure S233: Projection Results ST_40415442 Model

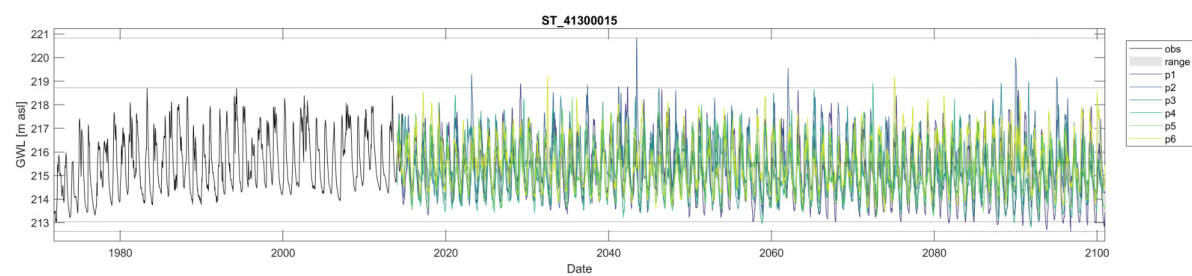


Figure S234: Projection Results ST_41300015 Model

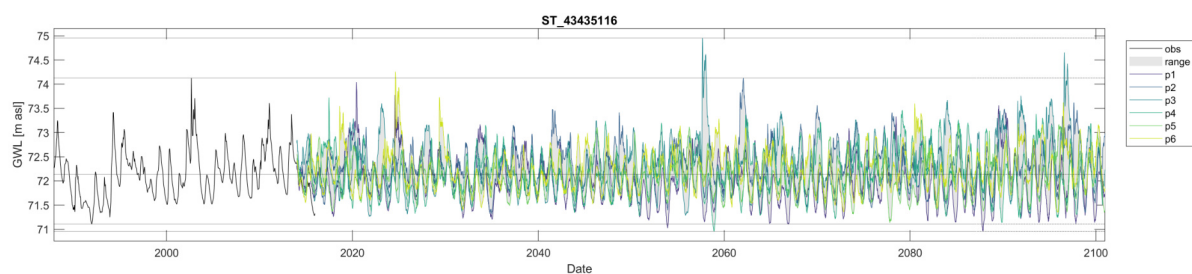


Figure S235: Projection Results ST_43435116 Model

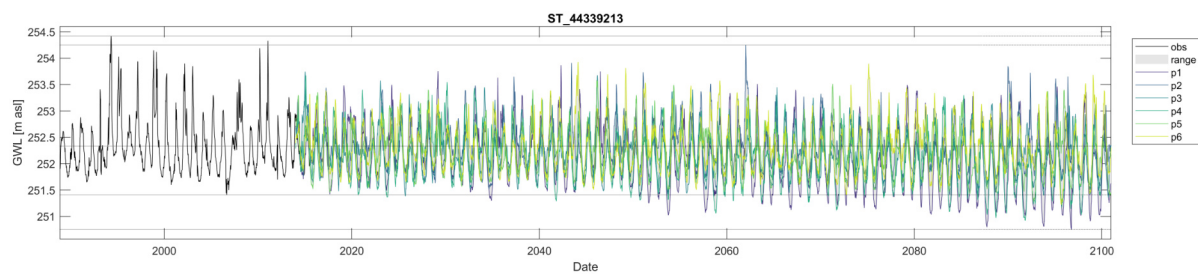


Figure S236: Projection Results ST_44339213 Model