Appendix 1. Description of the artificial neural network models used in the the Model-to-Marsh Decision Support System-Version 2 (M2M-2 DSS).

[Modified from Conrads and others, 2006. USGS, U.S. Geological Survey; R^2, coefficient of determination]

Model	Input Variables	Output Variable	Number of Hidden Neurons	Training Matrix Size	Testing Matrix Size	Percent Testing	R^2-training	R^2-testing
USGS river network water level models								
wl8840a-2005-1	Q8500A	WL8840A	3	11051	81446	88	0.969	0.964
	DQ8500A							
	FWL8980A							
	XWL8980A							
	DXWLAD1							
	DWLAD1							
wl8840h-2005-1	LG1NWL	WL8840	3	2303	70796	97	0.987	0.983
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
	PWL8840A							
wl8920a-2005-1	Q8500A	WL8920A	3	10482	68121	87	0.977	0.883
	DQ8500A							
	FWL8980A							
	XWL8980A							
	DXWLAD1							
	DWLAD1							
wl8920h-2005-1	LG1NWL	WL8920	2	10538	68368	87	0.995	0.991
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
	PWL8920A							
wl8977a-2005-1	Q8500A	WL8977A	2	10612	79682	88	0.960	0.965
	DQ8500A							
	FWL8980A							
	XWL8980A							
	DXWLAD1							
	DWLAD1							
wl8977h-2005-1	LG1NWL	WL8977	2	10717	79951	88	0.994	0.995
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
	PWL8977A							
wl8979a-2005-1	Q8500A	WL8979A	2	7987	70993	90	0.952	0.961
	DQ8500A							
	FWL8980A							
	XWL8980A							
	DXWLAD1							
	DWLAD1							
wl8979h-2005-1	LG1NWL	WL8979	2	8029	71187	90	0.984	0.981
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
	PWL8979A							
USGS river network specific conductance models								
sc8840a-2005-1	Q8500A	SC8840A	3	10056	77309	88	0.887	0.851
	DQ8500A							
	LAQ2							
	DAQ2							
	DAQ16							
	DAQ30							
	FWL8980A							
	XWL8980A							
	DWLA							
	DXWLA							
sc8840h-2005-1	LG1NWL	SC8840	2	10197	77772	88	0.879	0.567
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	PSC8840A							
	NXWL							
sc8920a-2005-1	Q8500A	SC8920A	2	9836	67677	87	0.897	0.883
	DQ8500A							

Appendix 1. Description of the artificial neural network models used in the the Model-to-Marsh Decision Support System-Version 2 (M2M-2 DSS).

[Modified from Conrads and others, 2006. USGS, U.S. Geological Survey; R^2, coefficient of determination]

Model	Input Variables	Output Variable	Number of Hidden Neurons	Training Matrix Size	Testing Matrix Size	Percent Testing	R^2-training	R^2-testing
	LAQ2							
	DAQ2							
	DAQ16							
	DAQ30							
	FWL8980A							
	XWL8980A							
	DWLA							
	DXWLA							
	LG2DWLA							
	LG2DXWLA							
sc8920h-2005-1	FWL8980A	SC8920	2	9900	67820	87	0.900	0.867
	XWL8980A							
	NXWL							
	LG1NWL							
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
	PSC8920A							
sc89784a-2005-1	Q8500A	SC89784A	3	8534	70348	89	0.880	0.853
	DQ8500A							
	LAQ2							
	DAQ2							
	DAQ16							
	DAQ30							
	FWL8980A							
	XWL8980A							
	DWLA							
	DXWLA							
	LG2DWLA							
	LG2DXWLA							
sc89784h-2005-1	PSC89784A	SC89784	3	8600	71064	89	0.825	0.793
	FWL8980A							
	XWL8980A							
	NXWL							
	LG1NWL							
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
sc89791a-2005-1	Q8500A	SC89791A	3	9660	75782	89	0.887	0.870
	DQ8500A							
	LAQ2							
	DAQ2							
	DAQ16							
	DAQ30							
	FWL8980A							
	XWL8980A							
	DWLA							
	DXWLA							
	LG2DWLA							
	LG2DXWLA							
sc89791h-2005-1	FWL8980A	SC89791	3	9736	76366	89	0.888	0.826
	XWL8980A							
	NXWL							
	LG1NWL							
	LG1D3NWL							
	LG4D3NWL							
	LG7D3NWL							
	LG10D3NWL							
	LG13D3NWL							
	PSC89791A							
USGS marsh network water-level models								
pb1mwl-2005	FWL8840	B1MWL	2	3143	17653	85	0.770	0.762
	DFWL8840							
	LG3DFWL8840							
	LG6DFWL8840							
	FWLDIF8977							
	FWLDIF8979							
	FWLDIF8920							

Appendix 1. Description of the artificial neural network models used in the the Model-to-Marsh Decision Support System-Version 2 (M2M-2 DSS).

[Modified from Conrads and others, 2006. USGS, U.S. Geological Survey; R^2, coefficient of determination]

Model	Input Variables	Output Variable	Number of Hidden Neurons	Training Matrix Size	Testing Matrix Size	Percent Testing	R^2-training	R^2-testing
pb2mwl-2005	FWL8840 DFWL8840 LG3DFWL8840 LG6DFWL8840 FWLDIF8977 FWLDIF8979 FWLDIF8920	FB2MWL	2	3284	18228	85	0.797	0.768
pb3mwl-2005	FWL8840 DFWL8840 LG3DFWL8840 LG6DFWL8840 FWLDIF8977 FWLDIF8979 FWLDIF8920	FB3MWL	2	3558	20082	85	0.858	0.866
pb4mwl-2005	FWL8840 DFWL8840 LG3DFWL8840 LG6DFWL8840 FWLDIF8977 FWLDIF8979 FWLDIF8920	FB4MWL-0P1	2	2879	15877	85	0.887	0.883
pf1mwl-2005	FWL8840 DFWL8840 LG3DFWL8840 LG6DFWL8840 FWLDIF8977 FWLDIF8979 FWLDIF8920	FF1MWL	2	4243	23982	85	0.839	0.836
pm1mwl-2005	FWL8840 DFWL8840 LG3DFWL8840 LG6DFWL8840 FWLDIF8977 FWLDIF8979 FWLDIF8920	FM1MWL	2	2424	13299	85	0.694	0.722
pm2mwl-2005	FWL8840 DFWL8840 LG3DFWL8840 LG6DFWL8840 FWLDIF8977 FWLDIF8979 FWLDIF8920	M2MWL	2	1751	9676	85	0.808	0.778
USGS marsh network specific-conductance models								
pb1msc-2005-2	SCDIF8840A SCDIF8920A FSC89791A4WK LG672FSC89791A4WKD4WK FSC89791A2WKD4WK FSC89791A1WKD2WK FSC89791A48D1WK FSC89791DA48 DFSC89791DA48 LG3DFSC89791DA48	B1MSC	1	2333	20555	90	0.857	0.849
pb2msc-2005-2	SCDIF8840A SCDIF8920A FSC89791A4WK LG672FSC89791A4WKD4WK FSC89791A2WKD4WK FSC89791A1WKD2WK FSC89791A48D1WK FSC89791DA48 DFSC89791DA48 LG3DFSC89791DA48	B2MSC	1	2142	18770	90	0.827	0.832
pb3msc-2005-2	SCDIF8840A SCDIF8920A FSC89791A4WK LG672FSC89791A4WKD4WK FSC89791A2WKD4WK FSC89791A1WKD2WK FSC89791A48D1WK FSC89791DA48 DFSC89791DA48	B3MSC	1	2326	20519	90	0.549	0.532

Appendix 1. Description of the artificial neural network models used in the the Model-to-Marsh Decision Support System-Version 2 (M2M-2 DSS).

[Modified from Conrads and others, 2006. USGS, U.S. Geological Survey; R^2, coefficient of determination]

Model	Input Variables	Output Variable	Number of Hidden Neurons	Training Matrix Size	Testing Matrix Size	Percent Testing	R^2-training	R^2-testing
	LG3DFSC89791DA48							
pb4msc-2005-2	SCDIF8840A	B4MSC	1	2093	18577	90	0.654	0.641
	SCDIF8920A							
	FSC89791A4WK							
	LG672FSC89791A4WKD4WK							
	FSC89791A2WKD4WK							
	FSC89791A1WKD2WK							
	FSC89791A48D1WK							
	FSC89791DA48							
	DFSC89791DA48							
	LG3DFSC89791DA48							
pf1msc-2005-2	SCDIF8840A	F1MSC	1	2496	22073	90	0.816	0.820
	SCDIF8920A							
	FSC89791A4WK							
	LG672FSC89791A4WKD4WK							
	FSC89791A2WKD4WK							
	FSC89791A1WKD2WK							
	FSC89791A48D1WK							
	FSC89791DA48							
	DFSC89791DA48							
	LG3DFSC89791DA48							
pm1msc-2005-2	SCDIF8840A	M1MSC	1	2147	18927	90	0.809	0.808
	SCDIF8920A							
	FSC89791A4WK							
	LG672FSC89791A4WKD4WK							
	FSC89791A2WKD4WK							
	FSC89791A1WKD2WK							
	FSC89791A48D1WK							
	FSC89791DA48							
	DFSC89791DA48							
	LG3DFSC89791DA48							
pm2msc-2005-2	SCDIF8840A	M2MSC	1	2323	20593	90	0.841	0.830
	SCDIF8920A							
	FSC89791A4WK							
	LG672FSC89791A4WKD4WK							
	FSC89791A2WKD4WK							
	FSC89791A1WKD2WK							
	FSC89791A48D1WK							
	FSC89791DA48							
	DFSC89791DA48							
	LG3DFSC89791DA48							
GPA River Specific-Conductance Decorrelation Models								
dc_gpa_a1wk_10s_11b	PSCGPA11B_FLR_A1WK	PSCGPA10S_FLR_A1WK	1	7644	30459	80	0.800	0.804
dc_gpa_a1wk_10s_11rb	PSCGPA11RB_FLR_A1WK	PSCGPA10S_FLR_A1WK	1	7750	30921	80	0.957	0.958
dc_gpa_a1wk_10s_12rs	PSCGPA12RS_FLR_A1WK	PSCGPA10S_FLR_A1WK	1	7750	30921	80	0.881	0.880
Residual USGS Marsh Models								
prb1msc	RSC10S_12RS_A1WK	RB1MSC	1	4547	18224	80	0.080	0.087
	RSC10S_11RB_A1WK							
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							
prb2msc	RSC10S_12RS_A1WK	RB2MSC	1	4176	16736	80	0.067	0.059
	RSC10S_11RB_A1WK							
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							
prb3msc	RSC10S_12RS_A1WK	RB3MSC	1	4519	18209	80	0.020	0.018
	RSC10S_11RB_A1WK							
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							
prb4msc	RSC10S_12RS_A1WK	RB4MSC	1	4097	16456	80	0.020	0.020
	RSC10S_11RB_A1WK							
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							
prf1msc	RSC10S_12RS_A1WK	RF1MSC	1	4873	19579	80	0.042	0.050
	RSC10S_11RB_A1WK							
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							
prm1msc	RSC10S_12RS_A1WK	RM1MSC	1	4163	16803	80	0.073	0.065
	RSC10S_11RB_A1WK							
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							
prm2msc	RSC10S_12RS_A1WK	RM2MSC	1	4539	18260	80	0.034	0.016
	RSC10S_11RB_A1WK							

Appendix 1. Description of the artificial neural network models used in the the Model-to-Marsh Decision Support System-Version 2 (M2M-2 DSS).

[Modified from Conrads and others, 2006. USGS, U.S. Geological Survey; R^2, coefficient of determination]

Model	Input Variables	Output Variable	Number of Hidden Neurons	Training Matrix Size	Testing Matrix Size	Percent Testing	R^2-training	R^2-testing
	RSC10S_11B_A1WK							
	PSCGPA10S_FLR_A1WK							