

**SUPPLEMENTAL INFORMATION**

**A WETLAND-BASED HABITAT SUITABILITY MODEL FOR SPOTTED  
TURTLES (*CLEMMYS GUTTATA*) IN WEST VIRGINIA, USA,  
USING FIELD SURVEYS AND REGIONAL DATA**

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The following material is provided by the authors and was not subjected to peer review or editing by *Herpetological Conservation and Biology*.

**TABLE S1.** Wetland-level environmental information collected during Spotted Turtle (*Clemmys guttata*) surveys at 63 sites across 42 unique wetlands in West Virginia, USA, including wetland identification (Wetland Code) organized by geographic region. We sampled wetlands in spring and early summer between 2019 and 2021. Wetland size (Wetland Size [acres]) was calculated by manually digitizing wetland areas using satellite imagery in ArcGIS Pro 2.8. Canopy cover (Canopy Cover [%]), emergent herbaceous cover (Emergent Herbaceous [%]), subaquatic herbaceous cover (Subaquatic Herbaceous [%]), shrub cover (Shrub Cover [%]), were rapidly visually estimated at each trap and then averaged per wetland. Water depth (Water Depth [m]) was measured using a ruler or tape measure, at each trap location and averaged.

		Wetland	Canopy	Emergent	Subaquatic	Shrub	Water
Wetland	CLGU	Size	Cover	Herbaceous	Herbaceous	Cover	Depth
Code	Presence	(acres)	(%)	(%)	(%)	(%)	(m)
<b>Eastern Panhandle</b>							
WV1	Present	9.36	31.5	44.9	10.7	13.8	0.18
WV2	Present	1.39	16.6	55.3	6.3	8.2	0.17
WV3	Present	65.13	20.8	63.7	5.9	7.7	0.18
WV4	Not detected	5.68	7.1	90	17	0	0.2
WV5	Not detected	6.55	27	73.2	6.1	10.1	0.15
WV6	Present	1.92	40.5	86	21	19	0.14
WV7	Not detected	2.41	34.7	86	0	9	0.09
WV8	Not detected	8.45	74.7	67.7	0	19.5	0.13
WV9	Present	5.64	56.5	51.5	16.5	37.6	0.24

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WV10	Not detected	1.47	37.8	58	0	10	0.18
WV11	Not detected	17.18	8.4	50	10	8	0.12
WV12	Not detected	4.17	21.1	67	11	13	0.13
WV13	Not detected	8.85	36.6	46.3	2	39	0.16
WV14	Not detected	24.39	35.8	81	9.5	7.5	0.12
WV15	Present	9.03	50.2	80	3	35	0.16
WV29	Present	0.72	59.4	49	24	23	0.13
WV30	Not detected	4.42	22	65	10	1	0.11
WV31	Not detected	7.73	42.4	19	56	0	0.28
WV32	Not detected	2.44	60.2	55	10	3	0.17
WV33	Not detected	8.17	2.4	65.5	24.5	0	0.11
WV34	Not detected	3.41	40.2	34	23	10	0.25

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WV35	Not detected	8.54	23.8	22.5	24	7	0.28
WV36	Not detected	3.67	12	12	49	9	0.25
WV37	Not detected	4.66	11.4	82	8	1.5	0.15
WV38	Not detected	5.63	12	89	4	0	0.12
WV39	Not detected	1.52	41.8	4	19	0	0.21
WV40	Not detected	1.98	88.6	2	1	2	0.29
WV41	Not detected	1.16	18.8	81	4	1	0.1
WV42	Not detected	3.93	8.8	64.5	1.5	15.5	0.13

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**North Central**

WV23	Not detected	2.46	14.8	62	2	29	0.16
WV24	Not detected	3.11	11.4	70	7	24	0.24
WV28	Not detected	4.91	4.8	67	0	12	0.21

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**Northern Panhandle**

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WV16	Not detected	5.54	8.4	12	7	29	0.12
WV17	Not detected	7.17	33.6	0	0	11	0.21
WV18	Not detected	7.64	18.4	63.5	17.5	21	0.22
WV19	Not detected	4.03	15.6	19.8	4	29	0.14
WV20	Not detected	11.27	20.5	69.5	11	4.5	0.25
WV21	Not detected	6.90	10.2	49.3	7.7	29.7	0.27
WV22	Not detected	3.82	10.4	80	17	0	0.27
WV25	Not detected	1.90	9.6	64	4	0	0.3
WV26	Not detected	1.46	38.8	34	1	6	0.22
WV27	Not detected	7.82	28.8	42.7	5	15.1	0.26

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**TABLE S2.** Wetland-level habitat suitability information and environmental predictor values for wetland polygons with observed presence/non-detection of Spotted Turtles (*Clemmys guttata*) in West Virginia, USA (n = 137). Habitat suitability information includes wetland identifier (Wetland ID), observed occurrence (presence = 1, non-detection = 0), raw suitability scores from the random forest model (Estimated Suitability), and binned suitability class based on raw suitability score (Suitability Class). Environmental variables represented values from a 100 m or 300 m buffer, and include number of wetlands (Wetland Richness; 300 m), distance from closest stream (Distance from Stream [m]), mean topographic position index (TPI; 300 m), mean terrain ruggedness index (TRI; 300 m), and several landcover classes derived from the 2019 National Land Cover Database (NLCD), including pasture/hay (%; 100 m), woody wetland (%; 100 m), herbaceous wetland (%; 100 m), and unsuitable environments (not suitable [%]; 100 m). The not suitable class represents a combination of the NLCD classes developed, open space, developed, low intensity, developed, medium intensity, developed, high intensity, barren, and cultivated crops.

Wetland ID	Observed Occurrence	Estimated Suitability	Suitability Class	Wetland Richness	Distance from Stream (m)	TPI	TRI	Pasture/Hay (%)	Woody Wetland (%)	Herbaceous Wetland (%)	Not Suitable (%)
31175	0	0.18	0	4	156.2	-0.01	0.78	98.57	0	0	0
31295	0	0.14	0	3	101.98	-0.01	0.78	43.57	0	0	0
40392	1	0.89	2	10	22.36	0	1.35	0.93	10.03	3.56	1.25
41144	0	0.12	0	9	0	-0.01	0.94	11.63	38.36	24.42	15.29
41230	0	0.1	0	7	0	-0.01	0.83	16.35	43.25	0	1.97
43528	1	0.7	1	2	36.06	-0.02	1.16	15.58	0	0	29.09
44145	0	0.18	0	3	0	0	1.04	22.9	0	0	21.24
44870	0	0.14	0	4	0	-0.01	0.97	21.63	24.96	13.65	23.74
46674	0	0.1	0	5	0	-0.01	1.09	0.46	3.77	0	21.47
48980	0	0.23	0	5	208.81	0	0.51	17.35	0	0.72	24.31
49525	0	0.22	0	4	197.99	-0.01	0.86	3.82	0	0	24.01
50491	0	0.11	0	7	0	-0.01	1.12	7.47	2	0	25.85
51759	0	0.28	0	3	0	-0.01	0.58	0	99.92	0	0
52787	1	0.95	2	7	14.14	-0.04	1.21	0	0	0	0
55012	0	0.24	0	3	58.31	0	0.44	61.31	1.31	3.93	23.38
55522	0	0.23	0	6	323.88	0.01	0.78	89.24	0	0	0
56805	0	0.06	0	8	0	-0.01	1.17	9.15	0	4.58	14.58
56899	0	0.11	0	6	0	-0.01	0.73	7.4	61.36	2.16	0

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58991	0	0.23	0	6	0	-0.03	1.37	0	2.82	12.4	14.62
59318	1	0.84	2	11	30	0	1.34	3.93	12.75	0.85	0
60297	0	0.1	0	4	0	-0.01	0.99	13.95	10.06	4.33	21.98
61590	0	0.14	0	5	291.2	0	0.57	96	0	0	1.95
62054	1	0.91	2	6	41.23	-0.03	1.1	0	0	0	0
62752	0	0.11	0	3	0	-0.02	0.94	16.23	4.23	9.41	37.25
62938	1	0.74	1	8	0	0	1.34	3.44	0.27	5.16	9.78
62953	1	0.76	1	8	10	-0.02	1.28	4.03	16.62	2	2.36
63422	0	0.25	0	1	20	-0.02	1.07	0.12	4.49	6.55	14.9
64015	0	0.12	0	3	354.4	-0.01	0.59	100	0	0	0
64166	0	0.28	0	5	291.55	0	0.44	48.05	0	3.11	6.25
64522	0	0.2	0	5	0	0	0.42	56.71	0	0	43.29
64661	0	0.25	0	9	0	-0.01	1.38	0	0	0	0
65656	0	0.17	0	1	0	-0.01	1.21	10.84	0	0	19.1
66159	0	0.12	0	5	0	-0.01	1.27	0.12	0	0	17.77
67274	0	0.2	0	2	171.17	-0.01	0.77	29.94	1.28	0	29.33
73368	1	0.76	2	10	0	-0.04	1.15	5.19	1.27	0	8.57
73989	0	0.13	0	3	0	-0.01	1.13	15.71	0	0	16.21
73991	0	0.23	0	8	0	0	1.19	2.05	0	3.37	15.18
73993	0	0.1	0	7	0	-0.02	1.17	13.18	0	12.04	15.17
73994	0	0.17	0	8	0	0.01	1.16	1.93	0	1.4	14.24
73999	0	0.2	0	5	0	-0.03	1.35	0.08	1.05	2.81	17.73
74000	0	0.3	0	6	0	-0.03	1.35	0	2.07	5.83	9.34
74222	0	0.11	0	10	0	-0.01	1.16	17.4	0.97	0.48	3.71
74223	0	0.2	0	9	0	-0.01	1.29	0.16	3.56	0	0
74226	0	0.15	0	13	0	-0.01	1.27	0.3	0.94	0	4.28
75635	0	0.38	0	16	10	0	0.65	41.44	29.88	3.04	19.83
75730	0	0.05	0	9	0	-0.01	0.83	49.35	3.43	0	0
75760	0	0.23	0	14	0	-0.01	0.64	46.81	27.3	0	12.35
75790	0	0.16	0	10	0	0	0.74	39.8	0	1.13	11.95
76006	0	0.2	0	14	0	0	0.64	37.86	5.04	23.82	5.92

76052	1	0.86	2	24	0	0	0.74	65.47	24.38	2.52	2.79
76092	0	0.09	0	8	0	0	0.54	96.78	0	0	3.22
76094	0	0.3	0	16	0	0	0.58	70.21	13.79	0	2.97
76095	0	0.15	0	14	0	0	0.54	82.44	7.02	0	5.5
76228	0	0.13	0	7	0	0	0.74	96.73	0	0	0.82
76229	0	0.03	0	10	0	-0.01	0.73	92.67	0	0	5.21
76238	0	0.35	0	7	0	0	0.94	21.67	11.65	0	9.15
76246	0	0.07	0	17	0	-0.02	0.94	12.57	0	0	20.61
76411	0	0.06	0	7	0	-0.01	0.73	85.95	0	9.37	0
76412	0	0.18	0	10	0	0	0.76	79.37	3.54	10.11	5.46
76413	0	0.08	0	9	10	-0.01	0.71	61.98	6.28	5.73	26.01
76416	0	0.24	0	14	80.62	0.01	0.98	0	2.69	0	12.08
76417	0	0.21	0	16	94.87	0.01	0.98	11.92	10.42	0	15.96
76418	0	0.07	0	14	10	0	0.56	65.13	0	14.73	11.89
76419	0	0.06	0	14	0	0	0.6	67.26	0	8.23	17.88
76420	0	0.03	0	13	0	0	0.61	80.24	0	6.24	7.44
76424	1	0.95	2	15	0	0	0.6	33.4	13.73	35.76	15.49
76428	1	0.96	2	25	0	0	0.6	35.6	11.45	50.03	1.08
76431	1	0.83	2	19	0	-0.01	0.55	5.06	33.9	35.63	25.41
76432	1	0.91	2	21	10	0	0.57	10.28	29.47	28.94	22.53
76434	1	0.88	2	21	98.49	0	0.61	63.47	7.36	28.43	0.67
76436	1	0.94	2	22	0	0	0.58	29.63	17.43	39.67	2.51
76437	1	0.8	2	16	0	0	0.66	55.94	12.17	12.45	6.26
76466	0	0.05	0	14	20	0	0.58	75.45	0	9.73	7.37
76522	0	0.37	0	12	92.2	0	0.69	22.49	22.35	2.05	8.86
76634	0	0.04	0	18	0	-0.01	0.81	0	37.33	1.99	0.1
76635	0	0.09	0	18	10	-0.01	0.8	0	28.82	0.9	0.07
76636	0	0.08	0	15	20	-0.01	0.8	0	39.77	4.26	0
76637	0	0.06	0	18	0	-0.01	0.82	0	29.15	1.11	5.8
76821	1	0.84	2	14	20	0	0.57	42.54	2.6	37.44	15.38
76827	1	0.95	2	21	0	0	0.57	35.05	3.1	60.25	1.6

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77253	0	0.23	0	16	0	0	0.74	9.87	13.6	10.84	41.07
77352	0	0.14	0	12	0	-0.02	0.97	13.04	32.47	0	8.7
77375	0	0.25	0	27	0	0.01	0.99	9.66	4.71	0	10.34
77913	0	0.08	0	14	20	-0.01	0.56	57.16	0	20.01	8.75
77927	0	0.12	0	14	0	0	0.63	59.78	3.52	20.32	9.97
77954	1	0.91	2	21	0	0	0.74	34.71	30.67	6.49	18.17
77956	1	0.83	2	23	0	-0.01	0.74	46.35	33.25	4.59	10.12
77958	1	0.87	2	24	22.36	-0.01	0.74	57.19	26.33	4.27	11.16
77971	0	0.29	0	12	0	0	0.65	25.05	41.22	6.01	16.06
77974	0	0.22	0	17	0	0	0.68	22.46	26.03	2.4	12.58
78076	0	0.33	0	7	0	0	0.95	42.77	21.31	0	12.06
78171	1	0.87	2	14	0	0	0.62	33.64	22.42	11.43	30.52
78173	1	0.92	2	14	0	0	0.58	32.2	23.78	43.2	0
78201	1	0.88	2	21	0	0	0.75	39.93	28.06	6.7	22.2
78202	1	0.88	2	21	14.14	0	0.75	48.93	23.49	7	20.57
78205	0	0.08	0	10	0	0	0.9	51.92	0	0	10.66
78248	1	0.89	2	16	0	0	0.7	32.2	21.1	12.99	1
78408	0	0.11	0	10	10	0	0.74	76.15	5.61	14.29	2.99
78409	0	0.18	0	11	0	0	0.75	70.03	3.42	9.38	17.1
78420	1	0.85	2	6	247.59	0	0.64	10.64	14.39	5.54	14.06
78555	1	0.89	2	14	40	0	0.6	49.09	12.78	11	17.57
78561	0	0.42	0	14	36.06	0	0.72	19.59	19.18	15.77	14.51
78562	0	0.17	0	16	0	-0.01	0.76	15.73	20.27	19.99	14.33
78563	0	0.3	0	16	10	0	0.75	17.17	21.79	21.37	9.96
78572	0	0.06	0	14	0	-0.01	0.8	0	27.71	4.16	0
78574	0	0.08	0	12	0	-0.01	0.8	0	7.66	6.34	0
78577	0	0.07	0	14	0	-0.01	0.82	0	14.66	2.53	6.63
78579	0	0.13	0	14	30	-0.01	0.78	0	10.6	3.11	0
78645	0	0.05	0	14	0	0	0.78	31.62	0	0.97	14.14
78781	0	0.04	0	14	0	0	0.67	58.22	0	0.05	20.1
78857	0	0.24	0	15	0	0	0.63	54.26	9.33	8.66	21.86

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78860	1	0.9	2	13	0	0	0.57	37.66	34.52	26.04	0
79085	0	0.3	0	12	92.2	0	0.63	61.26	22.3	0	11.07
79104	1	0.82	2	12	0	0	0.64	24.43	29.68	29.43	0
79726	0	0.01	0	13	0	-0.01	0.74	25.94	0	1.59	12.34
80250	0	0.04	0	14	0	-0.01	0.57	68.02	0	11.56	11.58
80252	0	0.15	0	11	22.36	0	0.7	75.67	0	0	16.91
81432	0	0.12	0	9	10	0	0.91	29.41	1.91	0	13.21
81635	0	0.04	0	14	10	-0.01	0.69	23.18	0	1.52	9.37
81644	1	0.91	2	13	0	0	0.67	52.95	17.9	17.74	0
81664	0	0.14	0	18	0	0	0.62	51.68	2.87	16.81	8.93
81949	0	0.25	0	24	22.36	-0.01	0.84	37.07	19.01	23.84	0
81981	0	0.2	0	20	80.62	-0.01	0.78	29.51	11.55	38.05	0
82016	0	0.12	0	13	28.28	-0.01	0.9	39.32	5.13	0	0
82017	0	0.12	0	13	50	-0.01	0.89	44.91	2.43	0	0
82306	0	0.16	0	29	0	-0.01	0.7	1.35	54.23	29.86	0
82307	0	0.14	0	28	0	-0.01	0.7	0.77	56.24	27.84	0
83870	0	0.13	0	19	100.5	-0.01	0.75	25.54	12.2	24.41	0
83874	0	0.43	0	23	10	0	0.74	9.76	23.84	35.01	0
101890	0	0.27	0	8	80.62	0	0.65	59.17	2.18	9.5	5.44
101891	0	0.3	0	8	243.31	0	0.66	46.03	2.65	9.39	2.64
101892	0	0.05	0	9	10	0	0.64	68	3.09	3.59	11.98
101893	0	0.13	0	9	0	0	0.62	50.61	6.21	2.11	30.6
101894	0	0.08	0	9	10	0	0.63	52.4	4.51	0.01	32.78
102134	1	0.9	2	7	10	-0.04	1.07	0	0	0	0
102137	1	0.9	2	9	31.62	-0.05	1.22	10.96	23.22	0	0
102139	1	0.97	2	4	336.15	0	0.59	11.21	14.15	20.49	0.03

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