

# **Hazel River and Rappahannock River Source Assessment**

**Table 1. Hazel River and Rappahannock River subwatersheds draining to impairments.**

<b>Impairment</b>	<b>Model Region</b>	<b>Subwatersheds Draining to Impairment</b>
Rappahannock River (VAN-E01R-03)	Rappahannock	RAR-1 through RAR-2
Rush River (VAN-E05R-01)	Hazel	HAR-10 through HAR-12
Hughes River (VAN-E03R-01)	Hazel	HAR-1 through HAR-3
Hazel River (VAN-E04R-01)	Hazel	HAR-1 through HAR-9
Hazel River (60076)	Hazel	HAR-1 through HAR-19
Rappahannock River (VAN-E08R-04)	Rappahannock	RAR-1 through RAR-11 + HAR-1 through HAR-20
Marsh Run (VAN-E08R-01)	Rappahannock	RAR-14 through RAR-20
Browns Run (VAN-E08R-02)	Rappahannock	RAR-17 through RAR-18
Craig Run (VAN-E08R-03)	Rappahannock	RAR-14
Rappahannock River (60081)	Rappahannock	RAR-1 through RAR-13 + HAR-1 through HAR-20

**Table 2. Permitted point sources draining to Hazel River watershed.**

Sub-shed	Permit #	Facility Name	Receiving Stream	Facility Type	Design Flow (MGD)
HAR-04	VA0065358	Boston Water and Sewer Company STP - Old Facility	Hazel River, UT	Municipal	0.015
HAR-11	VA0087581	Washington Town Water Treatment Plant	Rush River	Industrial	0.006*
HAR-11	VA0091651	Rush River Waste Water Treatment Plant	Rush River	Municipal	0.060
HAR-13	VA0022471	Rappahannock County Elementary School	Rush River, UT	Municipal	0.008
HAR-13	VA0064181	Rappahannock County High School	Covington River, UT	Municipal	0.005
HAR-14	VA0024449	Panorama Sewage Treatment Plant	Thornton River	Municipal	0.015
HAR-14	VA0062880	Sperryville Sewage Treatment Plant	Thornton River	Municipal	0.055
HAR-18	VAG406399	Residence	Dry Run, UT	General	0.001
HAR-19	VAG406377	Residence	Hazel River, UT	General	0.001
HAR-19	VAG406383	Residence	Hazel River, UT	General	0.001
HAR-20	VA0089354	Emerald Hill Elementary School	Muddy Run	Municipal	0.010
HAR-20	VAG406092	Residence	Muddy Run, UT	General	0.001

\*Average Daily Flow

**Table 3. Permitted point sources draining to Rappahannock River watershed.**

Sub-shed	Permit #	Facility Name	Receiving Stream	Facility Type	Design Flow (MGD)
RAR-06	VA0031763	Marshall Waste Water Treatment Plant	Carter Run, UT	Municipal	0.640
RAR-06	VAG406058	Residence	Carter Run, UT	General	0.001
RAR-07	VAG406334	Fauquier Habitat for Humanity	Borrows Run, UT	General	0.001
RAR-07	VA0029238	South Wales Utility Incorporated	Rappahannock River, UT	Municipal	0.070
RAR-07	VA0077411	Fauquier Springs Country Club STP	Rappahannock River	Municipal	0.020
RAR-07	VA0080527	South Wales Utility Sewage Treatment Plant	Rappahannock River	Municipal	0.857
RAR-07	VA0088731	River Ridge Utility	Rappahannock River	Municipal	0.050
RAR-08	VA0021172	Warrenton Town Sewage Treatment Plant	Great Run, UT	Municipal	2.500
RAR-11	VA0068586	Culpeper County Industrial Airpark STP	Hubbard Run	Municipal	0.025
RAR-11	VA0090603	Culpeper County - Elkwood Wastewater Treatment	Hubbard Run	Municipal	0.900
RAR-11	VAG406358	Residence	Hubbard Run, UT	General	0.001
RAR-11	VAG406023	Residence	Hubbard Run, UT	General	0.001
RAR-12	VA0076805	Remington Wastewater Treatment Plant	Rappahannock River	Municipal	2.500
RAR-12	VA0067750	T P Developed Parcel Limited Liability Corp.	Tinpot Run, UT	Municipal	0.004
RAR-15	VAG406084	Residence	Marsh Run, UT	General	0.001
RAR-15	VAG406138	Bealeton Pentecostal Church	Marsh Run	General	0.001
RAR-15	VAG406311	Eastern Clearing Incorporated	Marsh Run, UT	General	0.001
RAR-16	VA0092053	Spicers Mill STP	Marsh Run	Municipal	0.090
RAR-16	VAG406066	Residence	Marsh Run	General	0.001
RAR-17	VAG406119	Residence	Browns Run, UT	General	0.001
RAR-17	VAG406232	Kastle Greens Golf Course	Browns Run, UT	General	0.001
RAR-17	VAG406145	Residence	Browns Run, UT	General	0.001
RAR-17	VAG406312	Residence	Browns Run, UT	General	0.001
RAR-20	VAG406365	Culpeper Farmers Cooperative Incorporated	Harpers Run, UT	General	0.001

**Table 4. Population, housing units, straight pipes, failing septic systems, and biosolids per subwatershed in Rappahannock River watershed.**

	RAR-1 (#)	RAR-2 (#)	RAR-3 (#)	RAR-4 (#)	RAR-5 (#)	RAR-6 (#)	RAR-7 (#)	RAR-8 (#)	RAR-9 (#)	RAR-10 (#)	RAR-11 (#)
Human	2,624	59	485	1,545	944	3,413	2,052	4,520	1,437	266	481
Housing Unit	1,004	19	190	502	298	1,185	579	1,425	384	90	143
Straight Pipes	31	0	4	1	2	11	13	14	3	2	1
Failing Septic Systems	306	6	59	147	87	241	98	233	69	28	27
Dog	532	10	101	266	158	628	307	755	203	47	76
Cat	602	12	114	301	179	711	347	855	230	54	86
Biosolids	360	8	10	675	147	781	603	523	467	478	320
Beef	2,085	22	346	1,037	400	1,191	501	811	426	320	257
Dairy	0	0	0	0	0	0	0	0	250	0	95
Horses	765	12	88	789	159	906	244	617	228	101	115
Sheep	28	1	1	52	11	60	39	41	31	30	21
Turkey	0	0	0	0	0	0	0	0	0	0	0
Chicken	0	0	0	0	0	0	0	0	0	0	0
Deer	1,553	31	366	1,020	435	1,554	485	784	296	146	141
Raccoon	1,715	38	293	864	392	1,378	503	624	287	151	147
Muskrat	3,804	33	388	2,589	491	2,742	1,091	1,737	986	581	571
Beaver	194	5	33	97	44	154	54	69	32	17	17
Geese	246	5	38	139	56	213	81	109	47	28	24
Wood Duck	125	2	23	49	26	75	28	38	17	10	9
Wild Turkey	149	4	21	79	35	146	48	60	20	8	8
Bear	76	1	21	0	14	0	10	0	4	3	2

**Table 4 (Continued). Population, housing units, straight pipes, failing septic systems, and biosolids per subwatershed in Rappahannock River watershed.**

	RAR-12 (#)	RAR-13 (#)	RAR-14 (#)	RAR-15 (#)	RAR-16 (#)	RAR-17 (#)	RAR-18 (#)	RAR-19 (#)	RAR-20 (#)	RAR-21 (#)
Human	3,139	151	1,836	8,646	1,543	714	434	875	825	268
Housing Unit	926	55	532	3,189	459	232	137	261	281	95
Straight Pipes	4	0	2	1	0	2	0	0	0	0
Failing Septic Systems	130	16	60	165	34	66	30	20	73	26
Dog	491	29	282	1,690	243	123	73	138	149	50
Cat	556	33	319	1,914	275	139	82	156	168	57
Biosolids	590	112	234	249	72	137	85	63	172	90
Beef	667	84	335	357	97	195	123	94	268	87
Dairy	0	0	250	280	0	0	285	0	0	0
Horses	433	36	255	272	74	148	94	72	204	50
Sheep	41	7	17	18	5	10	7	5	14	6
Turkey	0	0	0	0	0	0	0	0	0	0
Chicken	0	0	0	0	0	0	0	0	0	0
Deer	466	73	225	265	110	214	95	69	296	123
Raccoon	342	53	171	198	60	178	63	54	274	133
Muskrat	1,192	99	754	679	123	372	192	228	641	200
Beaver	38	6	19	22	7	20	8	7	30	15
Geese	70	13	33	37	16	30	13	10	41	19
Wood Duck	25	5	12	13	6	11	5	4	15	7
Wild Turkey	25	7	8	13	9	17	5	2	25	13
Bear	2	2	0	0	0	0	0	0	0	2

**Table 5. Population, housing units, straight pipes, failing septic systems, and biosolids per subwatershed in Hazel River watershed.**

	HAR-1 (#)	HAR-2 (#)	HAR-3 (#)	HAR-4 (#)	HAR-5 (#)	HAR-6 (#)	HAR-7 (#)	HAR-8 (#)	HAR-9 (#)	HAR-10 (#)
Human	853	338	555	457	776	917	413	753	663	154
Housing Unit	384	110	263	138	237	364	153	228	173	72
Straight Pipes	34	4	12	13	18	32	1	3	6	4
Failing Septic Systems	88	33	69	35	61	96	44	59	40	27
Dog	204	58	139	73	125	193	81	121	92	38
Cat	230	66	158	83	142	218	92	137	104	43
Biosolids	669	186	2	214	452	187	60	217	125	0
Beef	1019	234	678	162	306	547	86	153	87	64
Dairy	0	0	0	0	0	0	0	0	0	0
Horses	231	60	151	48	93	133	23	47	27	14
Sheep	36	12	0	13	28	12	4	14	8	0
Turkey	0	0	0	0	0	0	0	0	0	0
Chicken	0	0	0	0	0	0	0	0	0	0
Deer	479	194	695	201	272	591	190	177	121	175
Raccoon	738	174	544	189	225	546	158	169	98	101
Muskrat	1,840	440	1,260	384	734	941	169	377	151	129
Beaver	84	20	61	22	25	62	19	19	11	12
Geese	137	22	79	23	32	68	22	21	14	20
Wood Duck	70	12	40	12	16	35	11	11	7	10
Wild Turkey	29	12	52	13	13	43	16	11	9	16
Bear	78	8	44	7	7	31	10	6	4	13

**Table 5 (Continued). Population, housing units, straight pipes, failing septic systems, and biosolids per subwatershed in Hazel River watershed.**

	HAR-11	HAR-12	HAR-13	HAR-14	HAR-15	HAR-16	HAR-17	HAR-18	HAR-19	HAR-20
	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)
Human	203	20	588	1,159	2,974	562	1,303	2,200	397	3,727
Housing Unit	99	9	289	564	1,086	147	338	575	98	1,025
Straight Pipes	9	2	28	39	34	3	5	13	1	32
Failing Septic Systems	44	3	106	93	321	35	84	138	27	273
Dog	52	5	153	299	575	78	179	305	52	543
Cat	59	6	173	339	651	88	203	345	59	615
Biosolids	0	0	0	0	310	142	405	569	270	1,341
Beef	227	60	904	1,370	2,934	98	287	422	191	903
Dairy	0	0	0	0	0	0	0	0	0	275
Horses	50	13	201	304	671	30	88	128	59	278
Sheep	0	0	0	0	20	9	26	37	18	84
Turkey	0	0	0	0	0	0	0	0	0	0
Chicken	0	0	0	0	0	0	0	0	0	0
Deer	250	24	761	1,505	1,847	103	278	492	134	976
Raccoon	200	27	656	1,109	1,624	94	233	427	117	852
Muskrat	481	86	1,690	2,272	4,405	240	656	983	413	1,940
Beaver	24	3	75	124	182	11	26	48	14	94
Geese	29	3	87	171	211	12	33	57	16	113
Wood Duck	15	2	44	87	107	6	17	29	8	57
Wild Turkey	19	1	53	145	104	6	16	32	6	56
Bear	16	1	44	98	84	3	8	16	3	29