

**HOLISTIC WATERSHED MANAGEMENT FOR EXISTING AND FUTURE LAND  
USE DEVELOPMENT ACTIVITIES: OPPORTUNITIES FOR ACTION FOR LOCAL  
DECISION MAKERS: PHASE 1 – MODELING AND DEVELOPMENT OF FLOW  
DURATION CURVES (FDC 1 PROJECT)**

**SUPPORT FOR SUTHEAST NEW ENGLAND PROGRAM (SNEP)  
COMMUNICATIONS STRATEGY AND TECHNICAL ASSISTANCE**

**FINAL REPORT. APPENDIX B  
STUDY SUB-WATERSHED CHARACTERISTICS  
SEPTEMBER 30, 2021**

Prepared for:

**U.S. EPA Region 1**



Prepared by:

**Paradigm Environmental**



**Great Lakes Environmental Center**



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**Table 1. Land use – Land cover area distribution in Wading River watershed and pilot sub-watersheds**

Land Use - Land Cover	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
	Acres	Acres	Acres	Acres
Residential - single family	778.30	26.29	61.91	17.70
Residential - multi-family	147.79	4.85	9.65	8.26
Residential - other	7.13	0.47	2.86	1.89
Commercial	375.75	0.64	49.24	45.60
Industrial	366.21	0.24	223.28	223.30
Mixed use, primarily residential	13.39	0.00	0.00	0.00
Mixed use, primarily commercial	0.02	0.00	0.00	0.00
Mixed use, other	0.23	0.00	0.00	0.00
Other Impervious	249.04	1.17	10.90	10.04
Right-of-way	956.59	23.51	152.87	116.92
Cultivated	62.25	1.52	1.91	0.00
Pasture/Hay	234.92	0.63	12.02	2.23
Developed Open Space	3,151.86	84.71	396.18	265.12
Deciduous Forest	8,591.74	579.07	605.94	286.39
Evergreen Forest	4,944.03	213.60	456.90	174.70
Grassland	631.52	30.35	16.35	3.58
Scrub/Shrub	233.92	42.02	16.15	11.95
Bare Land	203.16	14.76	16.23	8.32
Forested Wetland	5,281.34	355.10	448.53	147.59
Non-forested Wetland	719.87	77.14	19.98	8.49

Land Use - Land Cover	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
	Acres	Acres	Acres	Acres
Saltwater Wetland	0.48	0.00	0.00	0.00
Water	440.44	0.75	1.81	1.66
Unconsolidated Shore	0.00	0.00	0.00	0.00
Aquatic Bed	208.64	0.09	2.46	2.46
<b>Total</b>	<b>27,598.62</b>	<b>1,456.95</b>	<b>2,505.17</b>	<b>1,336.21</b>

**Table 2. SSURGO Hydrologic Soil Group area distribution in Wading River watershed and pilot sub-watersheds**

Hydrologic Soil Group	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
	Acres	Acres	Acres	Acres
NoData	2,610.7	0.9	239.2	239.2
A	9,174.3	309.6	670.8	263.8
A/D	1,592.4	71.3	103.5	26.3
B	2,633.7	78.0	170.8	65.3
B/D	3,589.9	170.2	271.8	66.4
C	3,081.1	322.5	335.7	194.7
C/D	1,828.2	171.8	294.2	211.1
D	3,090.9	332.6	419.1	269.3
<b>Total</b>	<b>27,601.2</b>	<b>1,456.9</b>	<b>2,505.2</b>	<b>1,336.2</b>

**Table 3. STATSGO2 Hydrologic Soil Group area distribution in Wading River watershed and pilot sub-watersheds**

Hydrologic Soil Group	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
	Acres	Acres	Acres	Acres
NoData	0.0	0.0	0.0	0.0
A	12,136.0	264.1	575.9	14.2
A/D	0.0	0.0	0.0	0.0
B	2,950.0	0.0	0.0	0.0
B/D	0.0	0.0	0.0	0.0
C	11,557.4	1,192.9	1,929.3	1,322.0
C/D	0.0	0.0	0.0	0.0
D	957.9	0.0	0.0	0.0
<b>Total</b>	<b>27,601.2</b>	<b>1,456.9</b>	<b>2,505.2</b>	<b>1,336.2</b>

**Table 4. Elevation range in Wading River watershed and pilot sub-watersheds**

Range	Elevation (m)			
	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
Minimum	18.3	30.1	31.9	42.4
Mean	55.0	40.3	53.1	60.3
Max	134.8	52.2	92.8	92.8

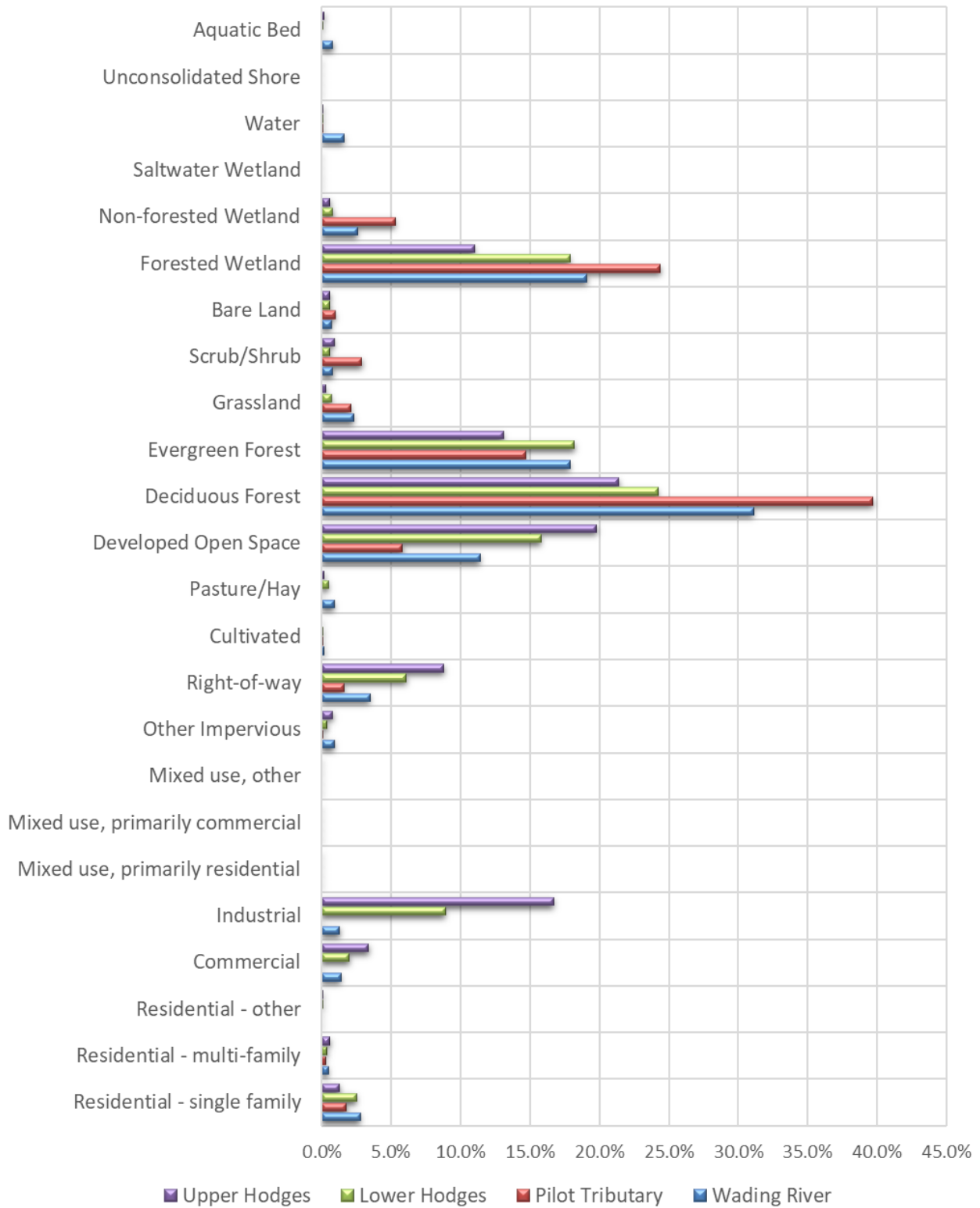
**Table 5. Slope category area distribution in Wading River watershed and pilot sub-watersheds**

Slope Category	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
	Acres	Acres	Acres	Acres
Low	20,686.8	1,407.2	2,343.4	1,235.6
Med	5,321.9	48.9	150.9	92.3
High	1,591.5	1.8	12.6	9.5
<b>Total</b>	<b>27,600.2</b>	<b>1,457.9</b>	<b>2,506.9</b>	<b>1,337.3</b>

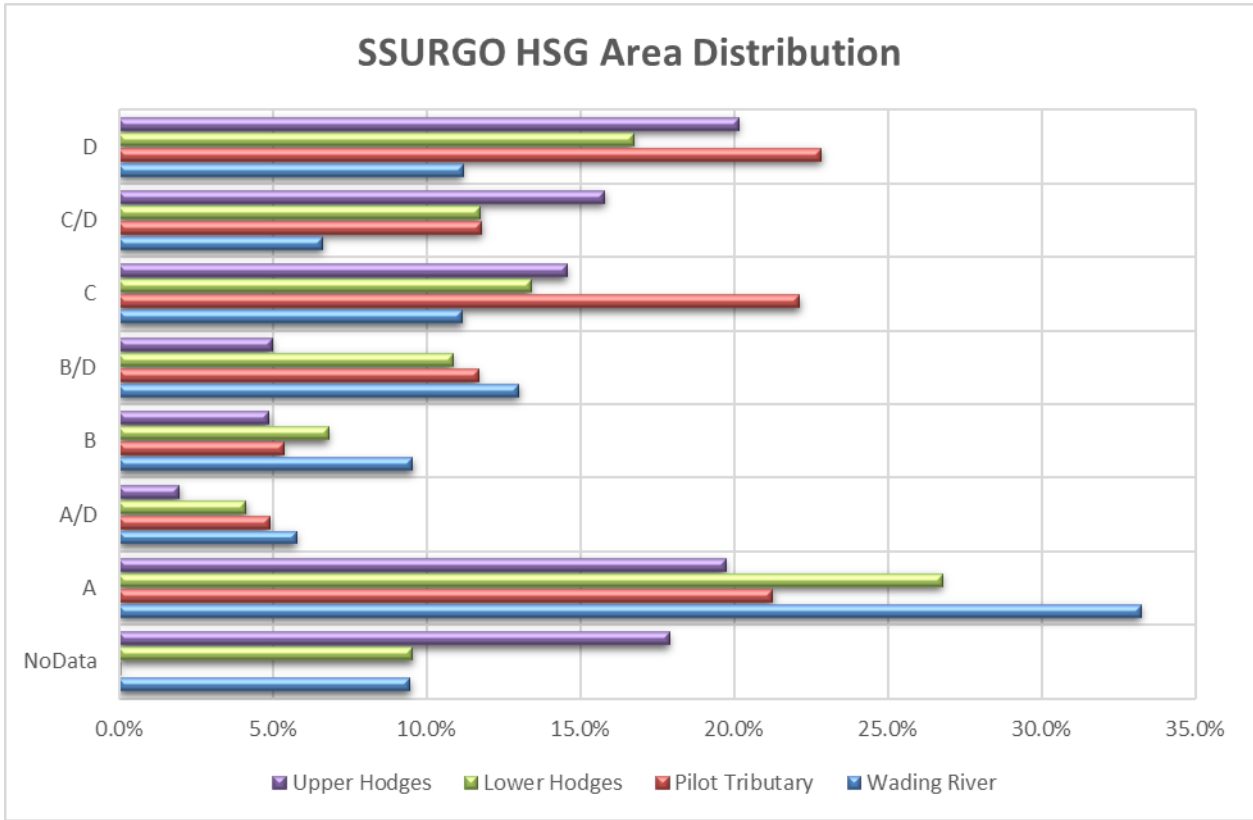
**Table 6. Total Impervious Cover comparison by a data source in Wading River watershed and pilot sub-watersheds**

Data Source	Wading River	Pilot Tributary	Lower Hodges	Upper Hodges
	Acres	Acres	Acres	Acres
NLCD 2001	2,658.3	43.4	523.6	433.3
NLCD 2006	2,849.6	49.2	556.7	464.1
NLCD 2011	3,066.8	52.5	578.3	483.1
NLCD 2016	3,113.7	52.6	580.6	485.1
Mass-Imp 2005	3,192.6	72.5	506.0	413.0
Mass-LULC 2016	2,894.2	57.2	511.1	424.1

## Land Use - Land Cover Area Distribution

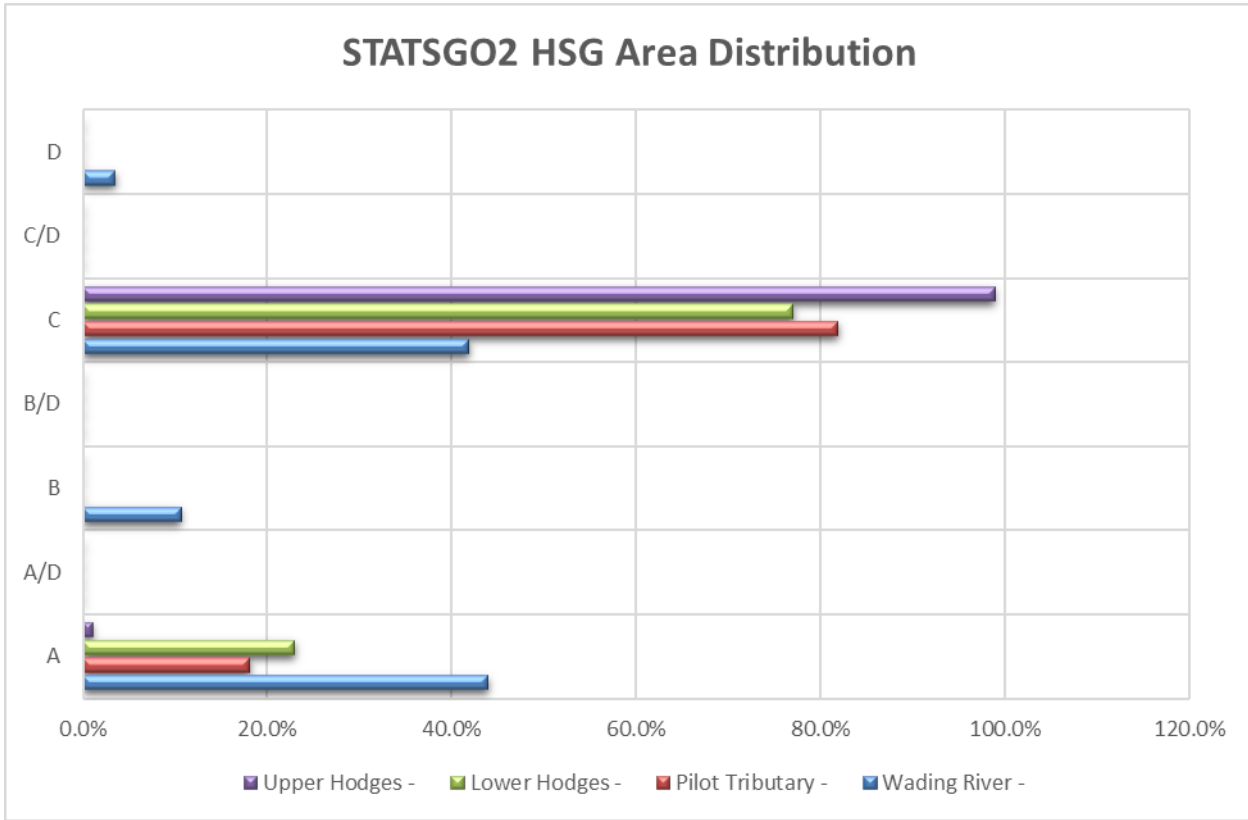


**Figure 1. Land use – Land cover area distribution in Wading River watershed and pilot sub-watersheds.**

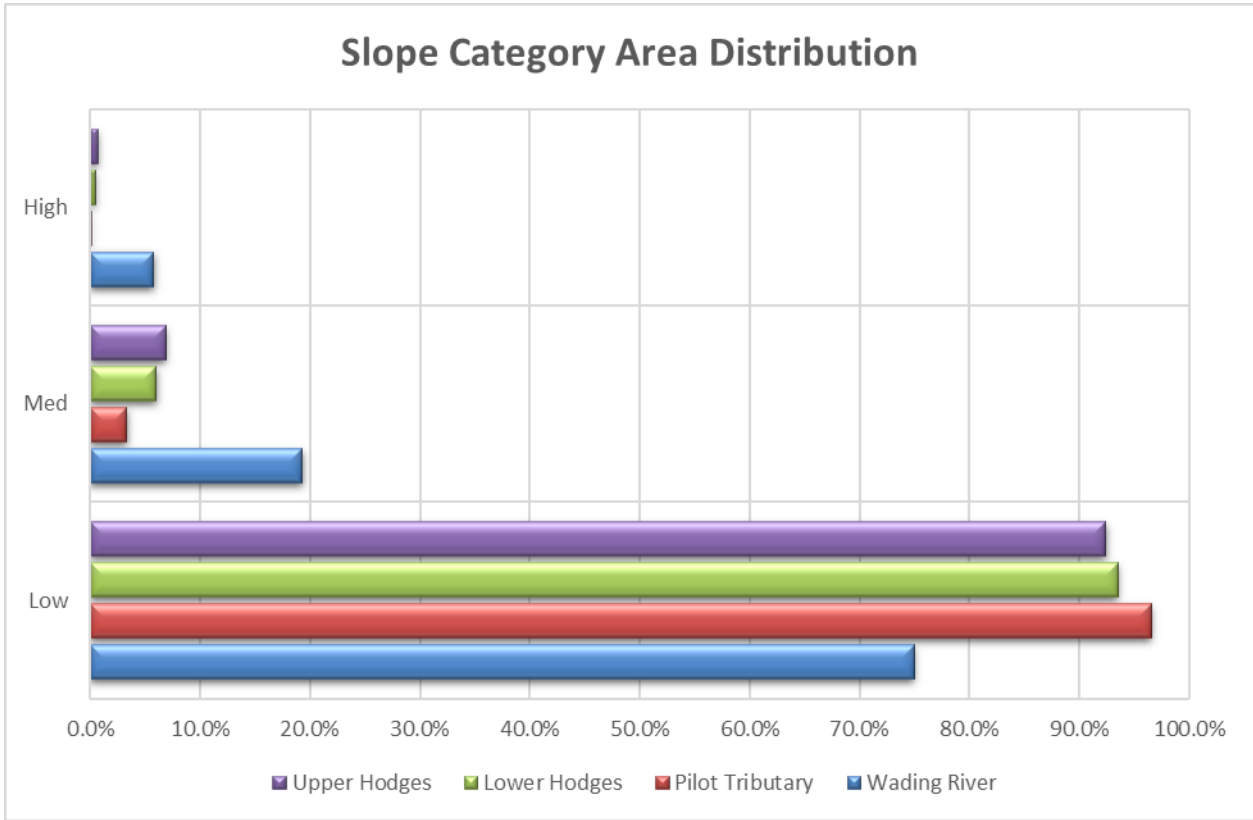


**Figure 2. SSURGO Hydrologic Soil Group area distribution in Wading River watershed and pilot sub-watersheds.**

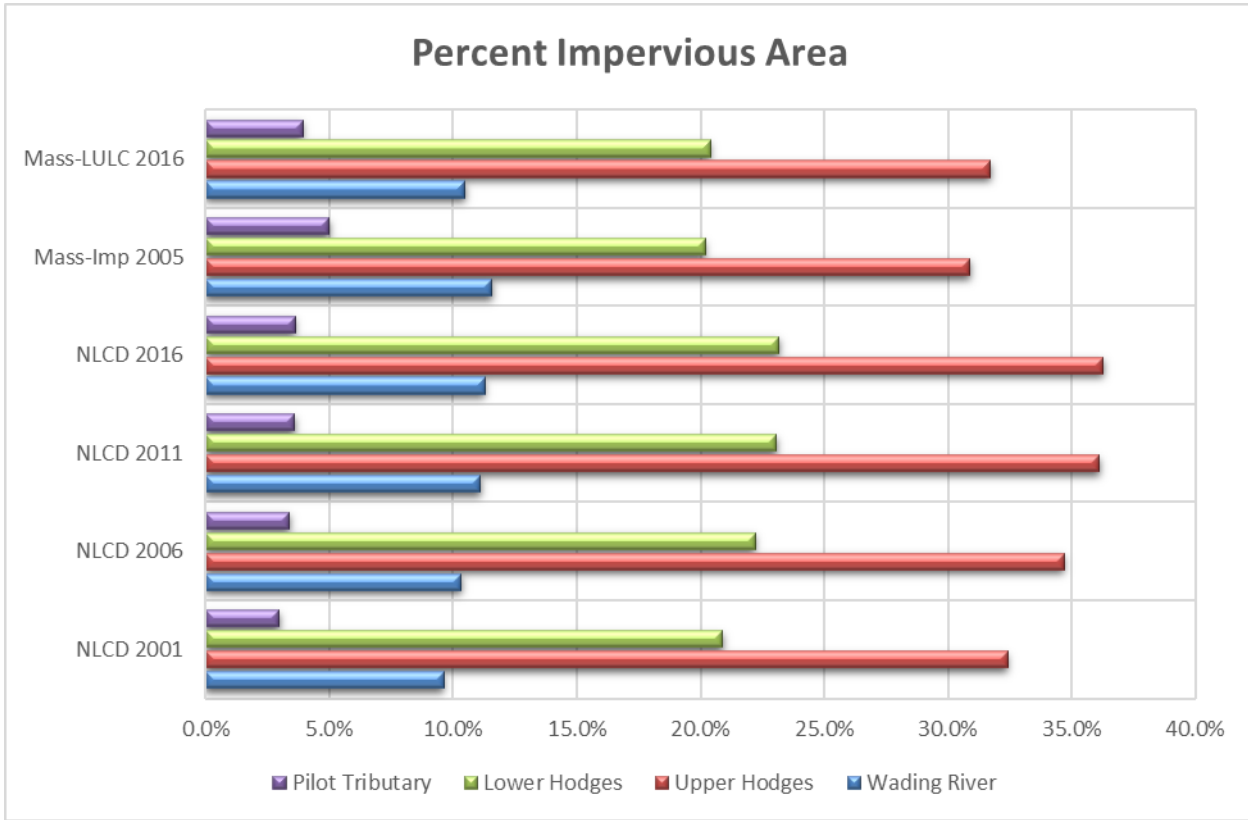




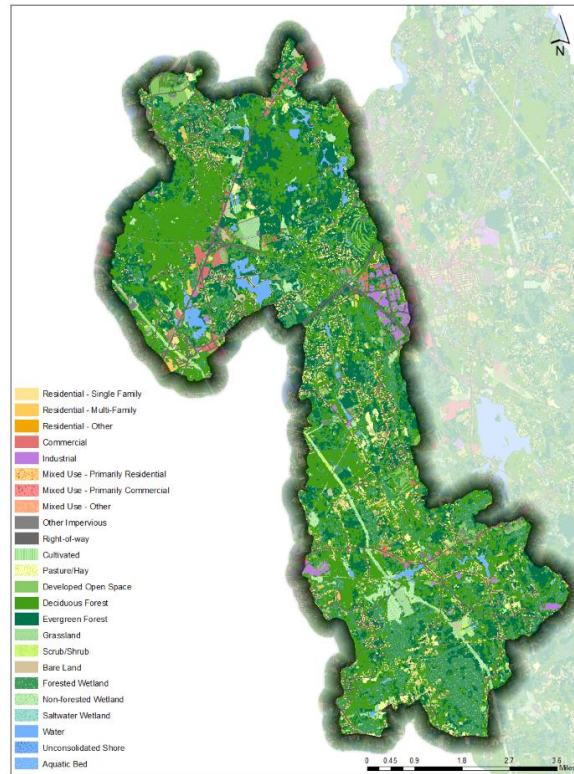
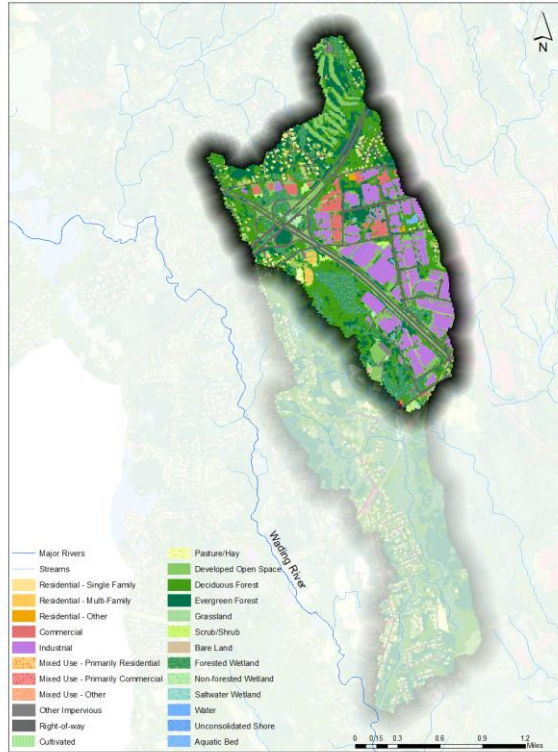
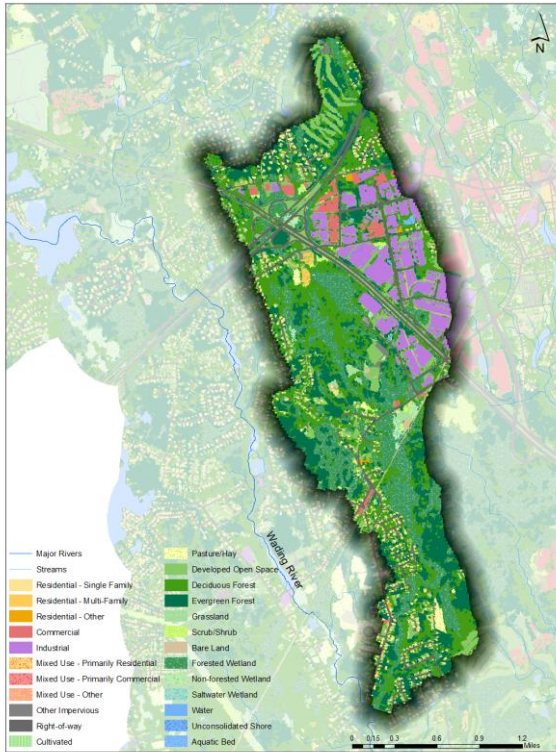
**Figure 3. STATSGO2 Hydrologic Soil Group area distribution in Wading River watershed and pilot sub-watersheds.**



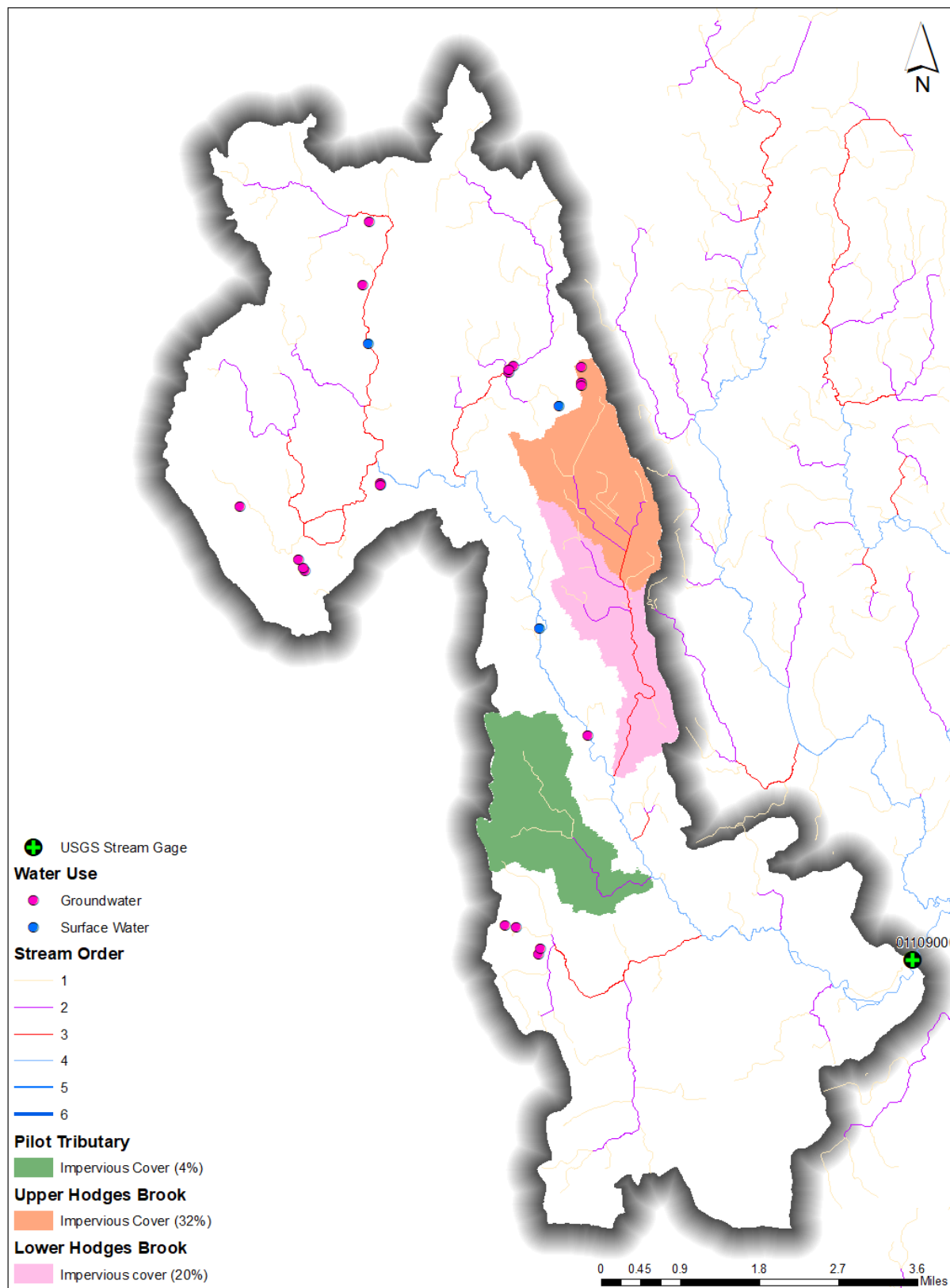
**Figure 4. Slope Group area distribution in Wading River watershed and pilot sub-watersheds.**



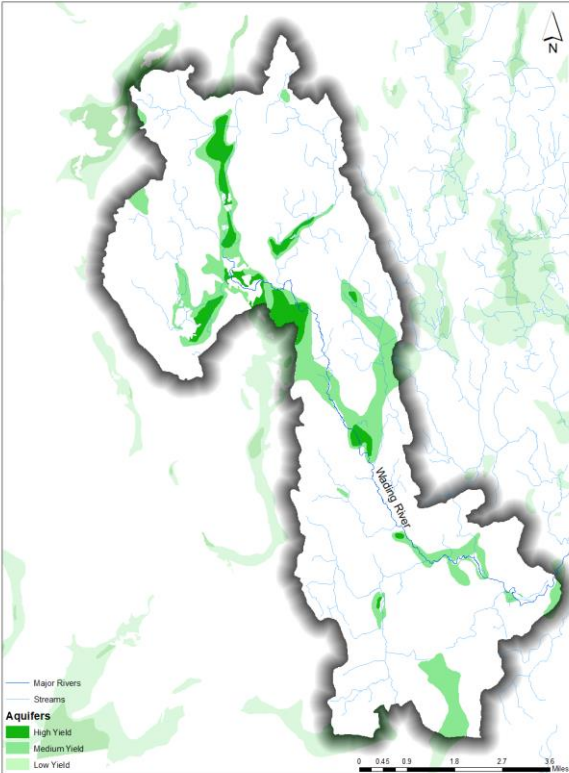
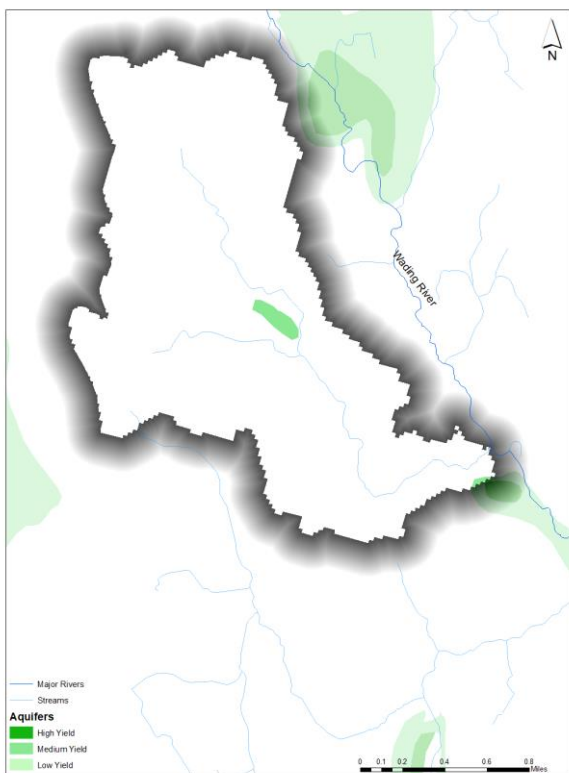
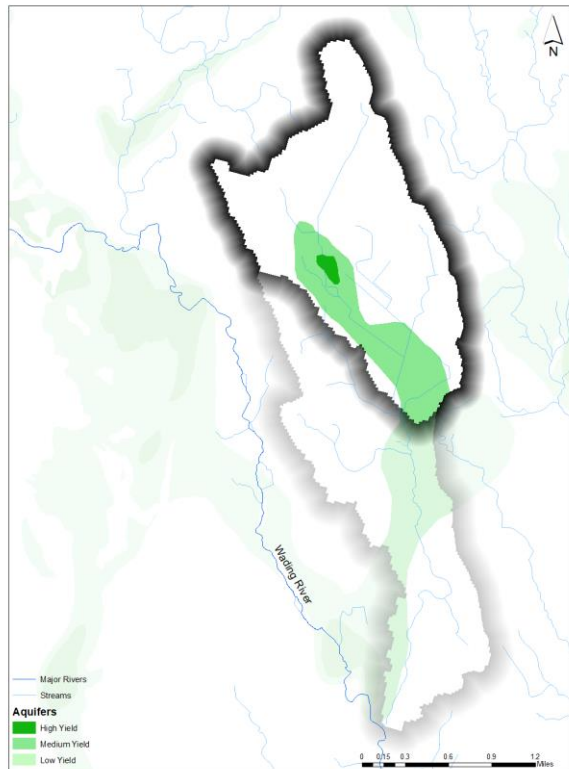
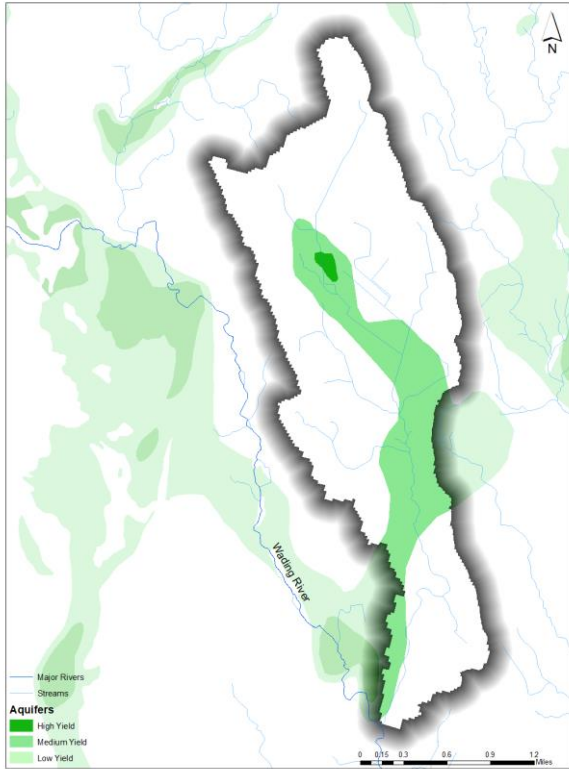
**Figure 5. Total Impervious Cover comparison by a data source in Wading River watershed and pilot sub-watersheds.**



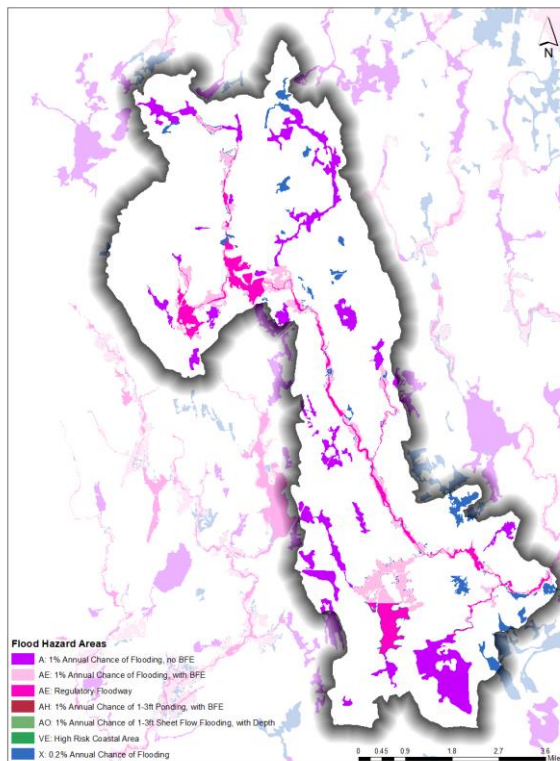
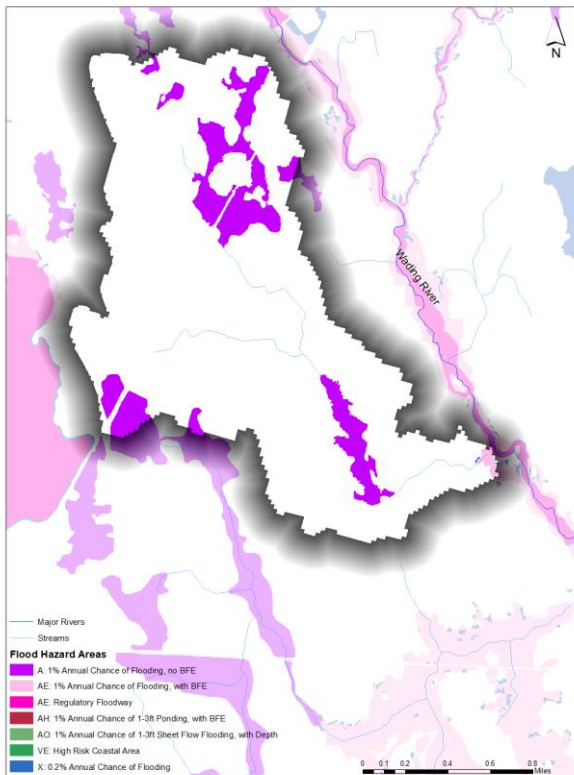
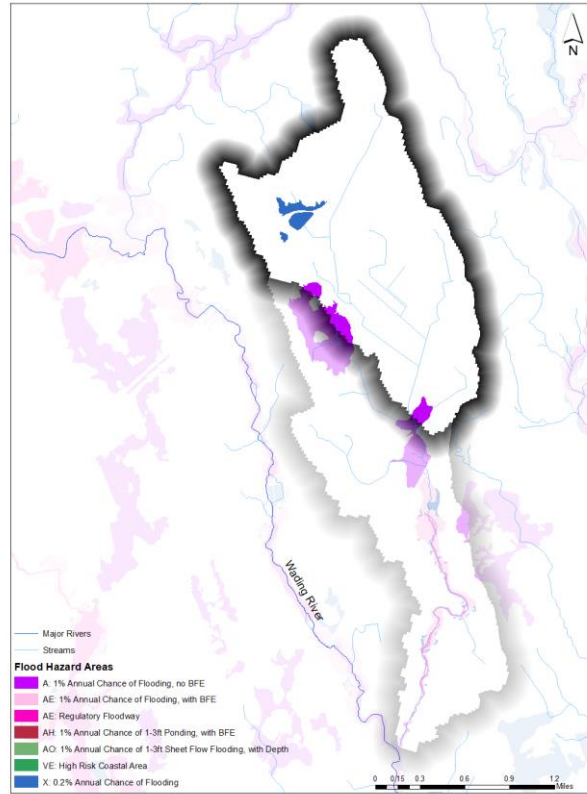
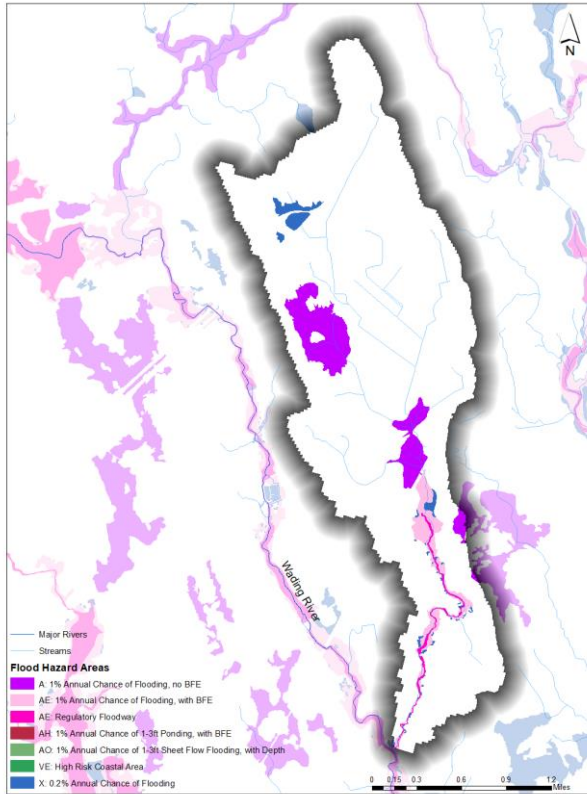
**Figure 6. 2016 Land use – Land cover for Lower Hodges Brook (top left), Upper Hodges Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**



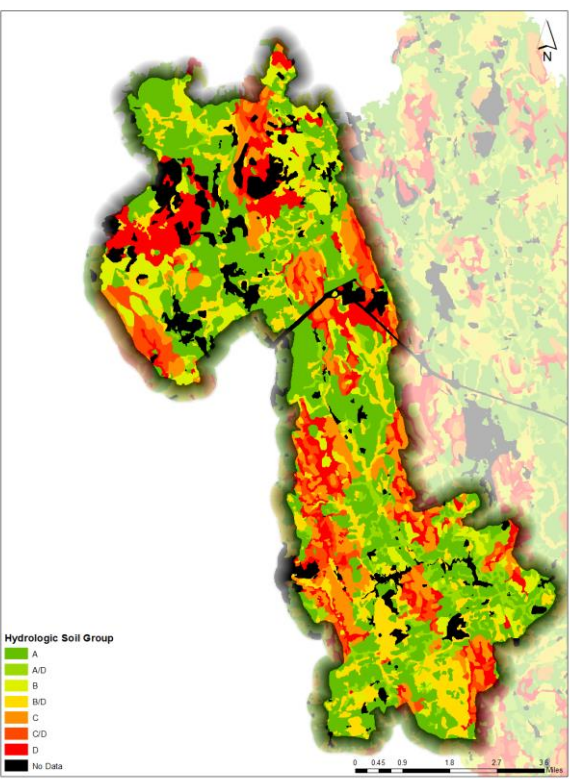
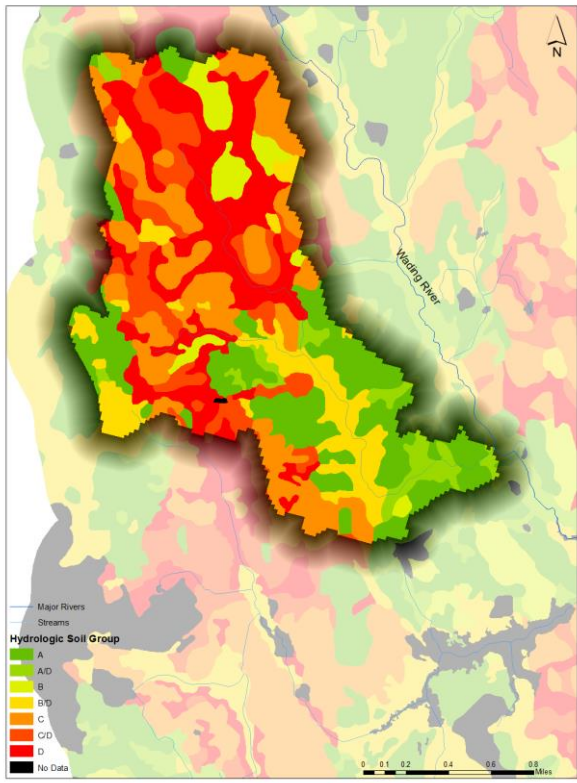
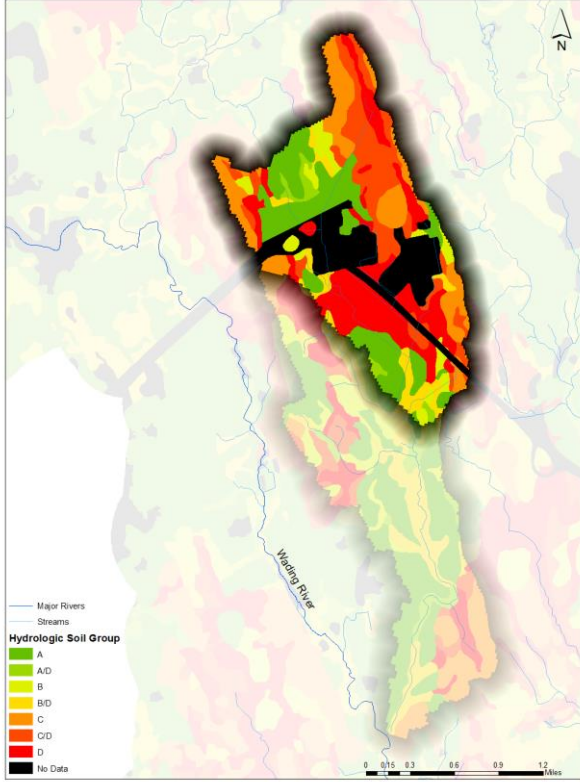
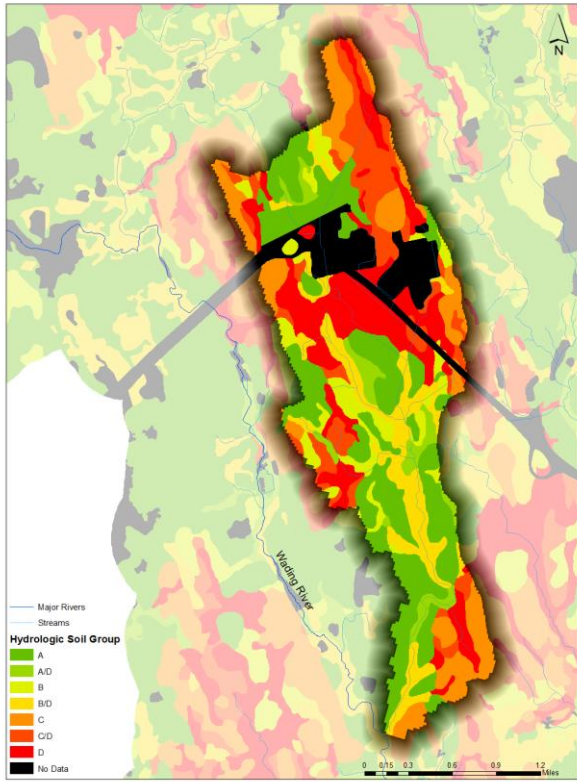
**Figure 7. Water use locations and selected sub-watersheds in the Wading River watershed.**



**Figure 8. Aquifer locations in Lower Hodes Brook (top left), Upper Hodes Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**

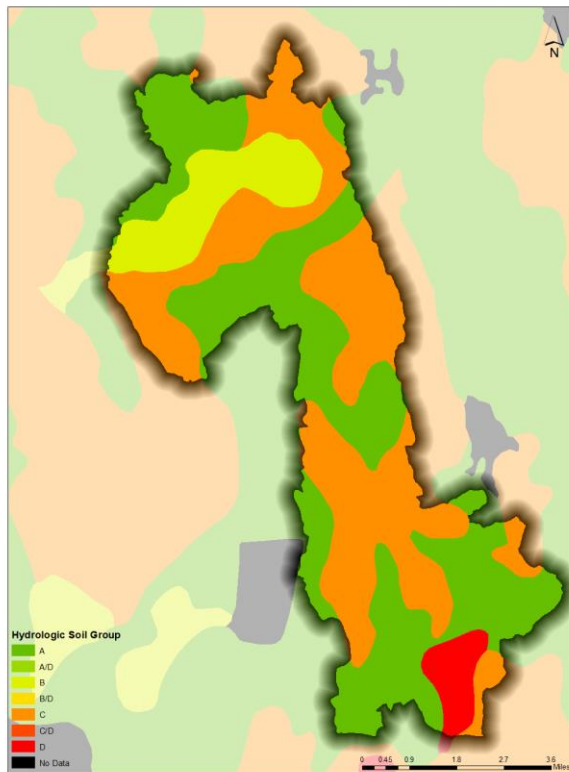
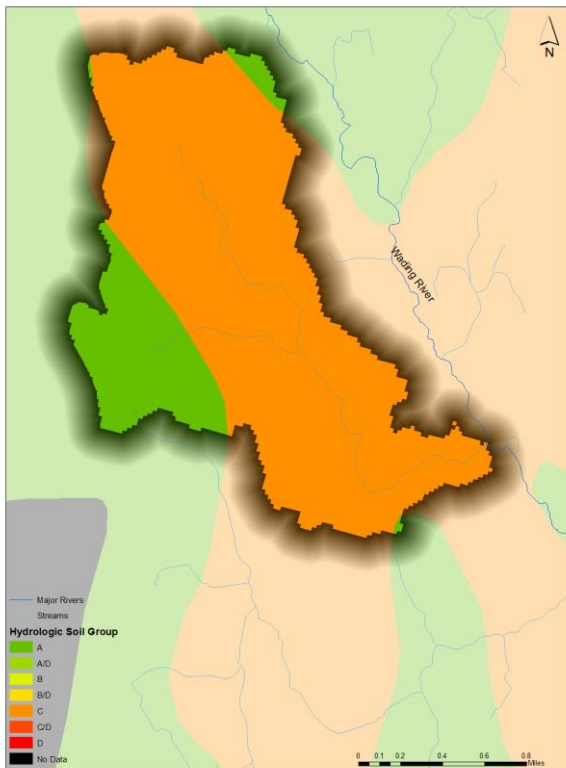
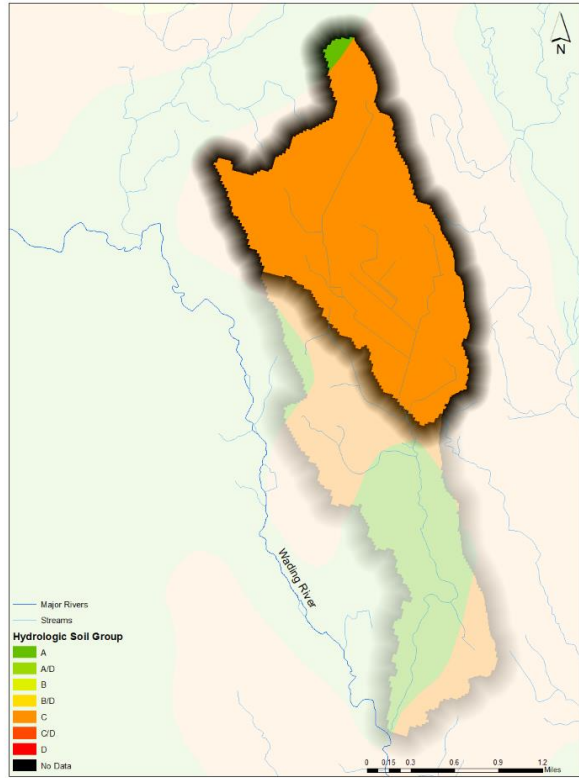
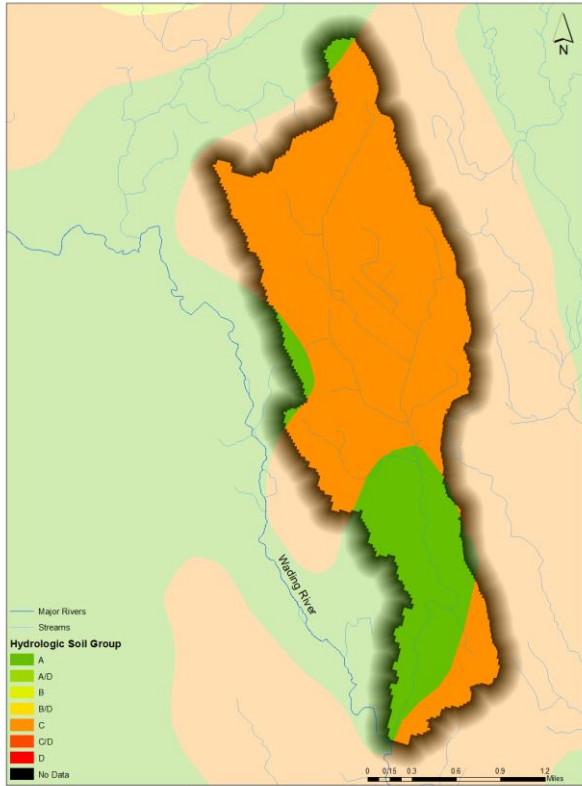


**Figure 9. FEMA Special Flood Hazard Areas locations in Lower Hodges Brook (top left), Upper Hodges Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**

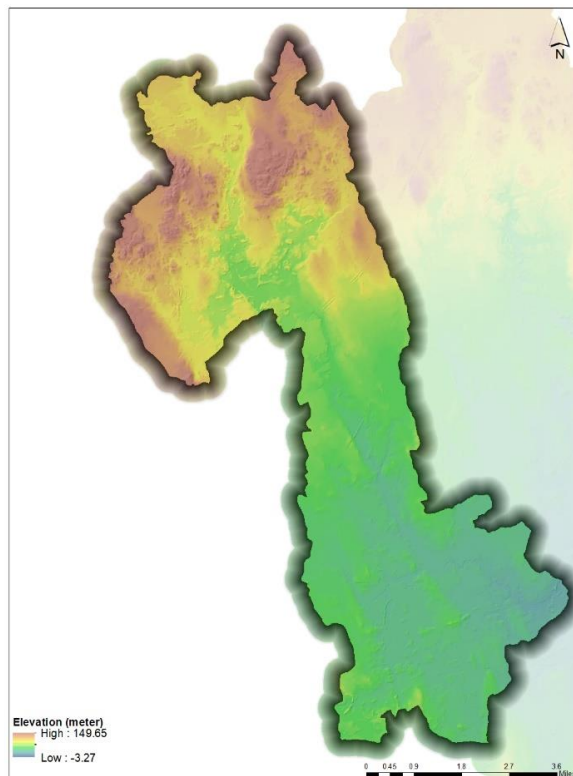
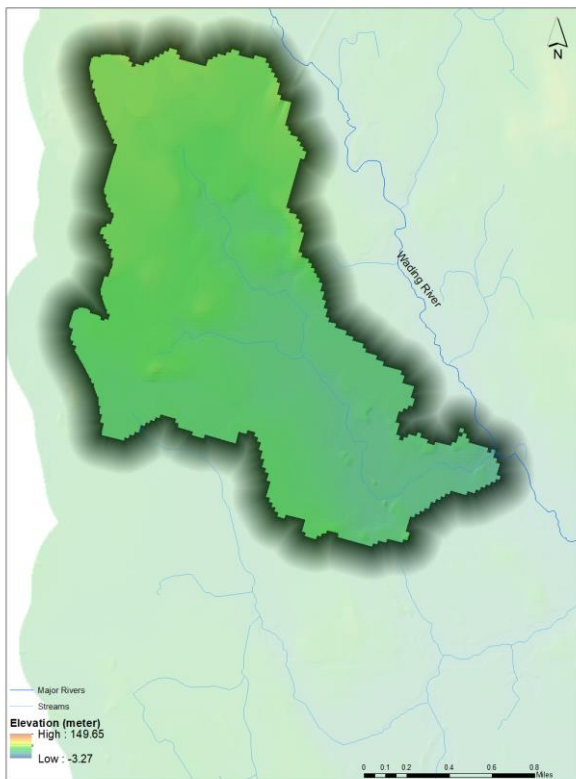
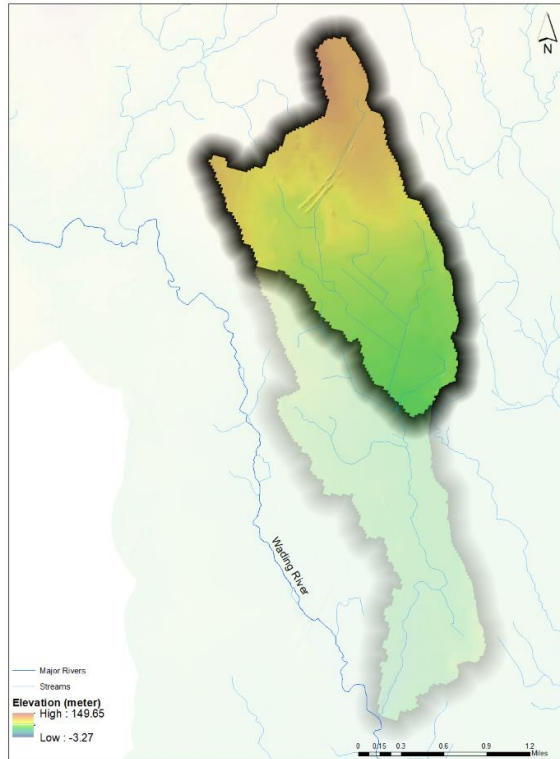
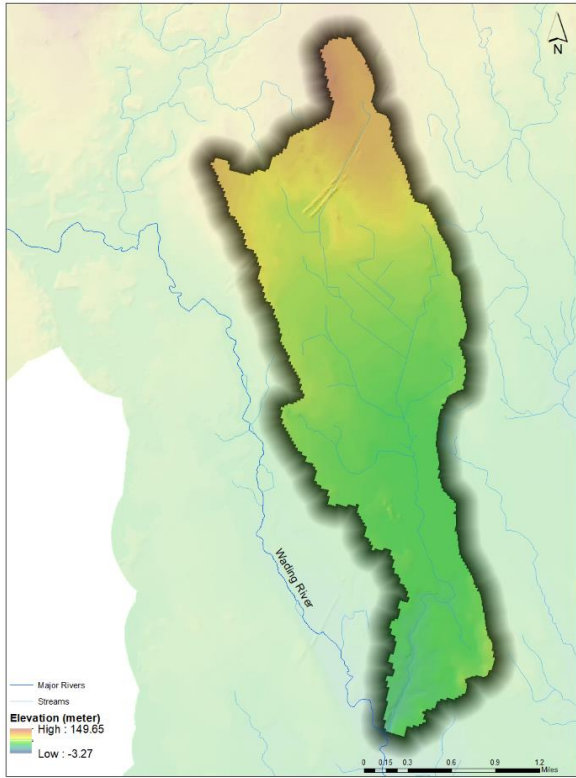


**Figure 10. SSURGO information for Lower Hodge Brook (top left), Upper Hodge Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**

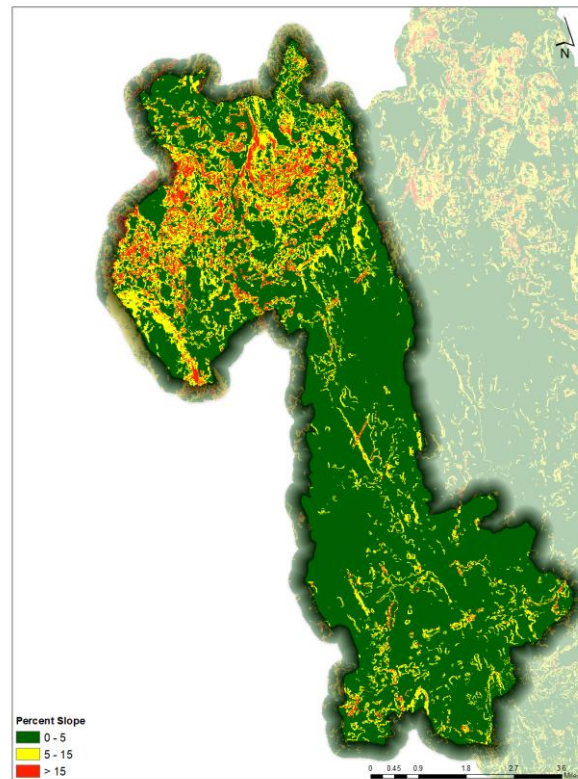
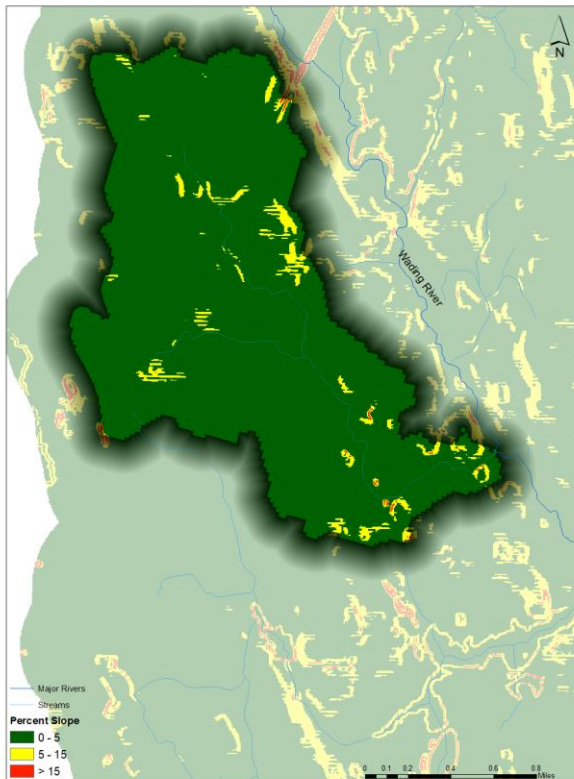
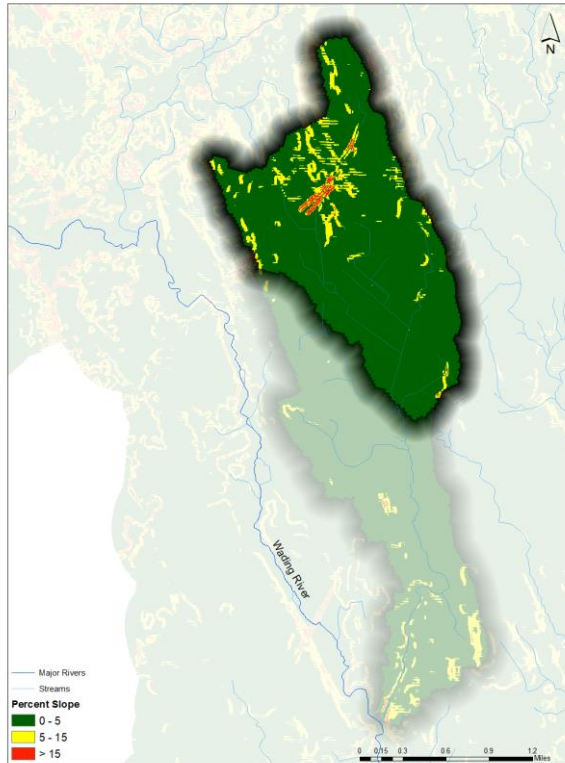
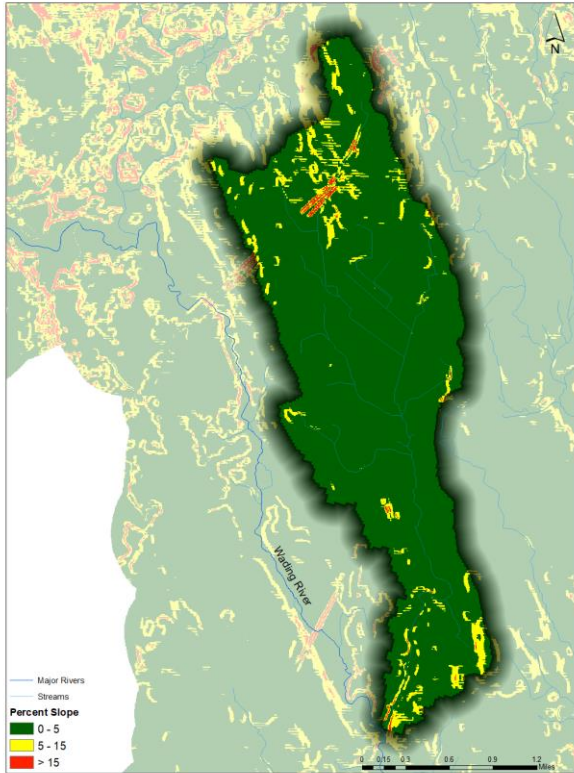




**Figure 11. STATSGO2 information for Lower Hedges Brook (top left), Upper Hedges Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**



**Figure 12. Elevation information for Lower Hodes Brook (top left), Upper Hodes Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**



**Figure 13. Slope information for Lower Hodes Brook (top left), Upper Hodes Brook (top right), Pilot Tributary (bottom left), and Wading River (bottom right).**