Appendix A – Soil Descriptions

The following Tables include the soil types for each of the subwatersheds in the Difficult Run Watershed. The Fairfax County soil number is included in parenthesis. Other information provided for each soil includes the hydrologic soils group and a brief description of the drainage properties. Following is a discussion of the hydrologic soil group.

Hydrologic Soil Group

Soils are classified by the Natural Resource Conservation Service into four Hydrologic Soil Groups based on the soil's runoff potential. The four Hydrologic Soils Groups are A, B, C and D. Where A's generally have the smallest runoff potential and Ds the greatest.

Group A is sand, loamy sand or sandy loam types of soils. It has low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission.

Group B is silt loam or loam. It has a moderate infiltration rate when thoroughly wetted and consists chiefly or moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures.

Group C soils are sandy clay loam. They have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine structure.

Group D soils are clay loam, silty clay loam, sandy clay, silty clay or clay. This HSG has the highest runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface and shallow soils over nearly impervious material.

Table A.1 – Soils, Captain Hickory Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	55%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	14%	B	Poor suitability for infiltration
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	9%	C	Water table within 1.5 feet of surface; hydric in low areas
Manor silt loam (21)	Sloping uplands	8%	B	Suitable for infiltration; highly susceptible to erosion
Elioak silt loam (24)	Hilltops	6%	C	Suitable for infiltration; highly susceptible to erosion
Wehadkee silt loam (5)	Within floodplains	2%	D	Water table within 0.5 feet of surface; predominantly hydric

Table A.2 – Soils, Dog Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	51%	B	Suitable for infiltration; highly susceptible to erosion
Elioak silt loam (24)	Hilltops	11%	C	Suitable for infiltration; highly susceptible to erosion
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	8%	C	Water table within 1.5 feet of surface; hydric in low areas
Meadowville silt loam (20)	Drainageways and footslopes	8%	B	Poor suitability for infiltration
Glenville silt loam (10)	Drainageways and footslopes	6%	C	Poor suitability for infiltration
Fairfax silt loam (32)	Upland soil	5%	B	Perched water table; marginal suitability for infiltration

Table A.3 – Soils, Piney Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	53%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	9%	B	Poor suitability for infiltration
Glenville silt loam (10)	Drainageways and footslopes	7%	C	Poor suitability for infiltration
Mixed Alluvial (1)	Floodplains and drainageways	7%	NA	Water table within 2.5 feet of surface; hydric soils
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	6%	C	Water table within 1.5 feet of surface; hydric in low areas
Elioak silt loam (24)	Hilltops	6%	C	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	4%	B	Suitable for infiltration; highly susceptible to erosion
Fairfax silt loam (32)	Upland soil	2%	B	Perched water table; marginal suitability for infiltration
Rocky Orange silt loam (141)	Hilltops and sideslopes	1%	NA	Plastic clays; poor suitability for infiltration

Table A.4 – Soils, Lower Difficult Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	31%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	28%	B	Suitable for infiltration; highly susceptible to erosion
Elioak silt loam (24)	Hilltops	9%	C	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	9%	B	Poor suitability for infiltration

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	6%	C	Water table within 1.5 feet of surface; hydric in low areas
Mixed Alluvial (1)	Floodplains and drainageways	6%	NA	Water table within 2.5 feet of surface; hydric soils
Wehadkee silt loam (5)	Within floodplains	3%	D	Water table within 0.5 feet of surface; predominantly hydric
Rocky Acidic (18)	Occurs with outcrops and surface boulders	2%	NA	Bedrock within 0-6 feet of surface
Very Rocky Acidic (19)	Occurs with outcrops and surface boulders	1%	NA	Bedrock within 0-6 feet of surface; poor suitability for infiltration
Bucks Loam (72)	Hilltops	1%	B	Shallow bedrock; infiltration may be limited
Rocky Orange silt loam (141)	Hilltops and sideslopes	1%	NA	Plastic clays; poor suitability for infiltration

Table A.5 – Soils, Sharpers Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	41%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	25%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	18%	B	Poor suitability for infiltration
Mixed Alluvial (1)	Floodplains and drainageways	10%	NA	Water table within 2.5 feet of surface; hydric soils
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	3%	C	Water table within 1.5 feet of surface; hydric in low areas

Table A.6 – Soils, Rocky Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	35%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	18%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	10%	B	Poor suitability for infiltration
Mixed Alluvial (1)	Floodplains and drainageways	7%	NA	Water table within 2.5 feet of surface; hydric soils
Elioak silt loam (24)	Hilltops	10%	C	Suitable for infiltration; highly susceptible to erosion
Worsham silt loam (8)	Lower drainageways, toe slopes	5%	D	Water table within 0.5 feet of surface; hydric
Glenville silt loam (10)	Drainageways and footslopes	5%	C	Poor suitability for infiltration
Fairfax gravelly silt loam (113)	Upland soil	2%	NA	Perched water table; marginal suitability for infiltration
Iredell silt loam	Hilltops and sideslopes		C / D	Slow permeability; plastic clay subsoil
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	1%	C	Water table within 1.5 feet of surface; hydric in low areas

Table A.7 – Soils, Colvin Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	50%	B	Suitable for infiltration; highly susceptible to erosion
Elioak silt loam (24)	Hilltops	9%	C	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	8%	B	Suitable for infiltration; highly susceptible to erosion
Mixed Alluvial (1)	Floodplains and drainageways	8%	NA	Water table within 2.5 feet of surface; hydric soils
Meadowville silt loam (20)	Drainageways and footslopes	5%	B	Poor suitability for infiltration

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenville silt loam (10)	Drainageways and footslopes	5%	C	Poor suitability for infiltration
Rocky Orange silt loam (141)	Hilltops and sideslopes	2%	NA	Plastic clays; poor suitability for infiltration
Manassas silt loam (14)	Drainageways	2%	C	Poor suitability for infiltration
Lloyd loam (66)	Hilltops	2%	NA	Moderate permeability; favorable for most uses
Orange silt loam (59)	Hilltops and sideslopes	2%	D	Shallow perched water table; plastic clays
Rocky Acidic (18)	Occurs with outcrops and surface boulders	<1%	NA	Bedrock within 0-6 feet of surface

Table A.8 – Soils, Snakeden Branch

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	55%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	13%	B	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	8%	C	Poor suitability for infiltration
Mixed Alluvial (1)	Floodplains and drainageways	7%	NA	Water table within 2.5 feet of surface; hydric soils
Elioak silt loam (24)	Hilltops	4%	C	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	3%	B	Poor suitability for infiltration
Rocky Acidic (18)	Occurs with outcrops and surface boulders	1%	NA	Bedrock within 0-6 feet of surface

Table A.9 – Soils, The Glade

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	66%	B	Suitable for infiltration; highly susceptible to erosion
Mixed Alluvial (1)	Floodplains and drainageways	6%	NA	Water table within 2.5 feet of surface; hydric soils
Glenville silt loam (10)	Drainageways and footslopes	6%	C	Poor suitability for infiltration
Meadowville silt loam (20)	Drainageways and footslopes	6%	B	Poor suitability for infiltration
Manor silt loam (21)	Sloping uplands	14%	B	Suitable for infiltration; highly susceptible to erosion

Table A.10 – Soils, Middle Difficult Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	31%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	22%	B	Suitable for infiltration; highly susceptible to erosion
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	14%	C	Water table within 1.5 feet of surface; hydric in low areas
Elioak silt loam (24)	Hilltops	10%	C	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	8%	B	Poor suitability for infiltration
Mixed Alluvial (1)	Floodplains and drainageways	2%	NA	Water table within 2.5 feet of surface; hydric soils
Wehadkee silt loam (5)	Within floodplains	2%	D	Water table within 0.5 feet of surface; predominantly hydric
Glenville silt loam (10)	Drainageways and footslopes	2%	C	Poor suitability for infiltration

Table A.11 – Soils, Wolftrap Creek

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	23%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	9%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	7%	B	Poor suitability for infiltration
Elioak silt loam (24)	Hilltops	7%	C	Suitable for infiltration; highly susceptible to erosion
Mixed Alluvial	Floodplains and	6%	NA	Water table within 2.5 feet of

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
(1)	drainageways			surface; hydric soils
Beltsville loam (37)	Hilltops of coastal plain and old coastal plain terraces	6%	C	Perched water table; poor suitability for infiltration
Glenville silt loam (10)	Drainageways and footslopes	5%	C	Poor suitability for infiltration
Worsham silt loam (8)	Lower drainageways, toe slopes	3%	D	Water table within 0.5 feet of surface; hydric
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	3%	C	Water table within 1.5 feet of surface; hydric in low areas
Fairfax gravelly silt loam (113)	Upland soil	2%	NA	Perched water table; marginal suitability for infiltration
Fairfax silt loam (32)	Upland soil	2%	B	Perched water table; marginal suitability for infiltration
Rocky Acidic (18)	Occurs with outcrops and surface boulders	1%	NA	Bedrock within 0-6 feet of surface

Table A.12 – Soils, Old Courthouse Spring Branch

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	40%	B	Suitable for infiltration; highly susceptible to erosion
Mixed Alluvial (1)	Floodplains and drainageways	10%	NA	Water table within 2.5 feet of surface; hydric soils
Glenville silt loam (10)	Drainageways and footslopes	10%	C	Poor suitability for infiltration
Fairfax gravelly silt loam (113)	Upland soil	9%	NA	Perched water table; marginal suitability for infiltration
Meadowville silt loam (20)	Drainageways and footslopes	6%	B	Poor suitability for infiltration
Worsham silt loam (8)	Lower drainageways, toe slopes	4%	D	Water table within 0.5 feet of surface; hydric
Fairfax silt loam (32)	Upland soil	4%	B	Perched water table; marginal suitability for infiltration
Elioak silt loam (24)	Hilltops	3%	C	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	3%	B	Suitable for infiltration; highly susceptible to erosion

Table A.13 – Soils, Piney Branch

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	15%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	10%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	8%	B	Poor suitability for infiltration
Elioak silt loam (24)	Hilltops	4%	C	Suitable for infiltration; highly susceptible to erosion
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	3%	C	Water table within 1.5 feet of surface; hydric in low areas
Mixed Alluvial (1)	Floodplains and drainageways	3%		Water table within 2.5 feet of surface; hydric soils
Manassas silt loam (14)	Drainageways	2%	C	Poor suitability for infiltration
Glenville silt loam (10)	Drainageways and footslopes	1%	C	Poor suitability for infiltration
Penn fine sandy loam (67)	Hilltops	1%	??	Suitable for infiltration except for areas of shallow bedrock

Table A.14 – Soils, Little Difficult Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	57%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	10%	B	Poor suitability for infiltration
Manor silt loam (21)	Sloping uplands	7%	B	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	7%	C	Poor suitability for infiltration
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	6%	C	Water table within 1.5 feet of surface; hydric in low areas
Mixed Alluvial (1)	Floodplains and drainageways	5%	NA	Water table within 2.5 feet of surface; hydric soils
Elioak silt loam (24)	Hilltops	2%	C	Suitable for infiltration; highly susceptible to erosion
Rocky Acidic (18)	Occurs with outcrops and surface boulders	2%	NA	Bedrock within 0-6 feet of surface

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Wehadkee silt loam (5)	Within floodplains	<1%	D	Water table within 0.5 feet of surface; predominantly hydric
Penn fine sandy loam (67)	Hilltops	<1%	NA	Suitable for infiltration except for areas of shallow bedrock

Table A.15 – Soils, Angelico Branch

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	31%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	19%	B	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	8%	C	Poor suitability for infiltration
Mixed Alluvial (1)	Floodplains and drainageways	8%	NA	Water table within 2.5 feet of surface; hydric soils
Elioak silt loam (24)	Hilltops	8%	C	Suitable for infiltration; highly susceptible to erosion
Lloyd loam (66)	Hilltops	8%	NA	Moderate permeability; favorable for most uses
Meadowville silt loam (20)	Drainageways and footslopes	7%	B	Poor suitability for infiltration
Rocky Orange silt loam (141)	Hilltops and sideslopes	5%	NA	Plastic clays; poor suitability for infiltration

Table A.16 – Soils, South Fork Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	55%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	12%	B	Poor suitability for infiltration
Manor silt loam (21)	Sloping uplands	8%	B	Suitable for infiltration; highly susceptible to erosion
Mixed Alluvial (1)	Floodplains and drainageways	7%	NA	Water table within 2.5 feet of surface; hydric soils
Glenville silt loam (10)	Drainageways and footslopes	5%	C	Poor suitability for infiltration
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	4%	C	Water table within 1.5 feet of surface; hydric in low areas
Elioak silt loam (24)	Hilltops	3%	C	Suitable for infiltration; highly susceptible to erosion
Penn fine sandy loam (67)	Hilltops	2%	NA	Suitable for infiltration except for areas of shallow bedrock

Table A.17 – Soils, Rocky Branch

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	28%	B	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	9%	C	Poor suitability for infiltration
Meadowville silt loam (20)	Drainageways and footslopes	8%	B	Poor suitability for infiltration
Enon silt loam (69)	Hilltops and sideslopes	7%	C	Plastic clays; poor suitability for infiltration
Elioak silt loam (24)	Hilltops	7%	C	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	6%	B	Suitable for infiltration; highly susceptible to erosion
Orange silt loam (59)	Hilltops and sideslopes	5%	D	Shallow perched water table; plastic clays
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	5%	C	Water table within 1.5 feet of surface; hydric in low areas
Rocky Acidic (18)	Occurs with outcrops and surface boulders	3%	NA	Bedrock within 0-6 feet of surface
Mixed Alluvial (1)	Floodplains and drainageways	2%	NA	Water table within 2.5 feet of surface; hydric soils
Average Elbert & Orange (152)	Drainageways and footslopes	2%	NA	Poor suitability for infiltration; plastic clays; hydric soils
Lloyd loam (66)	Hilltops	1%	NA	Moderate permeability; favorable for most uses
Rocky Orange silt loam (141)	Hilltops and sideslopes	<1%	NA	Plastic clays; poor suitability for infiltration

Table A.18 – Soils, Upper Difficult Run

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	38%	B	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	11%	B	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	10%	B	Poor suitability for infiltration
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	9%	C	Water table within 1.5 feet of surface; hydric in low areas
Orange silt loam (59)	Hilltops and sideslopes	6%	D	Shallow perched water table; plastic clays
Elioak silt loam (24)	Hilltops	6%	C	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	5%	C	Poor suitability for infiltration

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Mixed Alluvial (1)	Floodplains and drainageways	3%	NA	Water table within 2.5 feet of surface; hydric soils
Enon silt loam (69)	Hilltops and sideslopes	2%	C	Plastic clays; poor suitability for infiltration
Average Elbert & Orange (152)	Drainageways and footslopes	2%	NA	Poor suitability for infiltration; plastic clays; hydric soils
Rocky Acidic (18)	Occurs with outcrops and surface boulders	1%	NA	Bedrock within 0-6 feet of surface
Lloyd loam (66)	Hilltops	1%	NA	Moderate permeability; favorable for most uses
Wehadkee silt loam (5)	Within floodplains	1%	D	Water table within 0.5 feet of surface; predominantly hydric
Worsham silt loam (8)	Lower drainageways, toe slopes	<1%	D	Water table within 0.5 feet of surface; hydric