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.

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Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	55%	В	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	14%	В	Poor suitability for infiltration
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	9%	С	Water table within 1.5 feet of surface; hydric in low areas
Manor silt Ioam (21)	Sloping uplands	8%	В	Suitable for infiltration; highly susceptible to erosion
Elioak silt Ioam (24)	Hilltops	6%	С	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.1 – Soils, Captain Hickory Run

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%	В	Suitable for infiltration; highly susceptible to erosion
Elioak silt Ioam (24)	Hilltops	11%	С	Suitable for infiltration; highly susceptible to erosion
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	8%	С	Water table within 1.5 feet of surface; hydric in low areas
Meadowville silt loam (20)	Drainageways and footslopes	8%	В	Poor suitability for infiltration
Glenville silt loam (10)	Drainageways and footslopes	6%	С	Poor suitability for infiltration
Fairfax silt Ioam (32)	Upland soil	5%	В	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 Ioam (55)	Hilltops and sideslopes	53%	В	Suitable for infiltration; highly susceptible to erosion	
Meadowville silt loam (20)	Drainageways and footslopes	9%	В	Poor suitability for infiltration	
Glenville silt loam (10)	Drainageways and footslopes	7%	С	Poor suitability for infiltration	
Mixed Alluvial (1)	Floodplains and drainageways	7%	NA	Water table within 2.5 feet of surface; hydric soils	
Chewacla silt Ioam (2)	Floodplains and terraces adjacent to active stream channels	6%	С	Water table within 1.5 feet of surface; hydric in low areas	
Elioak silt loam (24)	Hilltops	6%	С	Suitable for infiltration; highly susceptible to erosion	
Manor silt loam (21)	Sloping uplands	4%	В	Suitable for infiltration; highly susceptible to erosion	
Fairfax silt loam (32)	Upland soil	2%	В	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 Ioam (55)	Hilltops and sideslopes	31%	В	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	28%	В	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%	В	Poor suitability for infiltration

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

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt Ioam (55)	Hilltops and sideslopes	35%	В	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	18%	В	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	10%	В	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%	С	Suitable for infiltration; highly susceptible to erosion
Worsham silt Ioam (8)	Lower drainageways, toe slopes	5%	D	Water table within 0.5 feet of surface; hydric
Glenville silt loam (10)	Drainageways and footslopes	5%	С	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 Ioam (2)	Floodplains and terraces adjacent to active stream channels	1%	С	Water table within 1.5 feet of surface; hydric in low areas

Table A.6 – Soils, Rocky Run

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%	В	Suitable for infiltration; highly susceptible to erosion
Elioak silt loam (24)	Hilltops	9%	С	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	8%	В	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%	В	Poor suitability for infiltration

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenville silt loam (10)	Drainageways and footslopes	5%	С	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%	С	Poor suitability for infiltration
Lloyd Ioam (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%	В	Suitable for infiltration; highly susceptible to erosion
Manor silt Ioam (21)	Sloping uplands	13%	В	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	8%	С	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%	С	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	3%	В	Poor suitability for infiltration
Rocky Acidic (18)	Occurs with outcrops and surface boulders	1%	NA	Bedrock within 0-6 feet of surface

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

Table A.9 – Soils, The Glade

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%	В	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	22%	В	Suitable for infiltration; highly susceptible to erosion
Chewacla silt Ioam (2)	Floodplains and terraces adjacent to active stream channels	14%	С	Water table within 1.5 feet of surface; hydric in low areas
Elioak silt loam (24)	Hilltops	10%	С	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	8%	В	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%	С	Poor suitability for infiltration

Table A.11 – Soils, Wolftrap Creek

Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt	Hilltops and	23%	В	Suitable for infiltration; highly
loam (55)	sidesiopes			susceptible to erosion
Manor silt	Sloping uplands	9%	В	Suitable for infiltration; highly
loam (21)				susceptible to erosion
Meadowville	Drainageways	7%	В	Poor suitability for infiltration
silt loam (20)	and footslopes			
Elioak silt	Hilltops	7%	С	Suitable for infiltration; highly
loam (24)				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%	С	Poor suitability for infiltration	
Worsham silt Ioam (8)	Lower drainageways, toe slopes	3%	D	Water table within 0.5 feet of surface; hydric	
Chewacla silt Ioam (2)	Floodplains and terraces adjacent to active stream channels	3%	С	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 Ioam (32)	Upland soil	2%	В	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%	В	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 Ioam (10)	Drainageways and footslopes	10%	С	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%	В	Poor suitability for infiltration
Worsham silt Ioam (8)	Lower drainageways, toe slopes	4%	D	Water table within 0.5 feet of surface; hydric
Fairfax silt Ioam (32)	Upland soil	4%	В	Perched water table; marginal suitability for infiltration
Elioak silt loam (24)	Hilltops	3%	С	Suitable for infiltration; highly susceptible to erosion
Manor silt Ioam (21)	Sloping uplands	3%	В	Suitable for infiltration; highly susceptible to erosion

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Soil Series	Location	Percent of Subwatershed	Hydrologic Soil Group	Drainage Properties
Glenelg silt loam (55)	Hilltops and sideslopes	15%	В	Suitable for infiltration; highly susceptible to erosion
Manor silt loam (21)	Sloping uplands	10%	В	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	8%	В	Poor suitability for infiltration
Elioak silt Ioam (24)	Hilltops	4%	С	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%	С	Poor suitability for infiltration
Glenville silt loam (10)	Drainageways and footslopes	1%	С	Poor suitability for infiltration
Penn fine sandy loam (67)	Hilltops	1%	??	Suitable for infiltration except for areas of shallow bedrock

Table A.13 – Soils, Piney Branch

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%	В	Suitable for infiltration; highly susceptible to erosion
Meadowville silt loam (20)	Drainageways and footslopes	10%	В	Poor suitability for infiltration
Manor silt Ioam (21)	Sloping uplands	7%	В	Suitable for infiltration; highly susceptible to erosion
Glenville silt loam (10)	Drainageways and footslopes	7%	С	Poor suitability for infiltration
Chewacla silt loam (2)	Floodplains and terraces adjacent to active stream channels	6%	С	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 Ioam (24)	Hilltops	2%	С	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	Within	<1%	D	Water table within 0.5 feet of
silt loam (5)	floodplains			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	Hilltops and	31%	В	Suitable for infiltration; highly
loam (55)	sideslopes			susceptible to erosion
Manor silt	Sloping	19%	В	Suitable for infiltration; highly
loam (21)	uplands			susceptible to erosion
Glenville silt	Drainageways	8%	С	Poor suitability for infiltration
loam (10)	and footslopes			
Mixed Alluvial	Floodplains	8%	NA	Water table within 2.5 feet of
(1)	and			surface; hydric soils
	drainageways			
Elioak silt loam	Hilltops	8%	С	Suitable for infiltration; highly
(24)				susceptible to erosion
Lloyd Ioam	Hilltops	8%	NA	Moderate permeability;
(66)				favorable for most uses
Meadowville	Drainageways	7%	В	Poor suitability for infiltration
silt loam (20)	and footslopes			
Rocky Orange	Hilltops and	5%	NA	Plastic clays; poor suitability
silt loam (141)	sideslopes			for infiltration

Table A.16 – Soils, South Fork Run

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

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

Table A.17 – Soils, Rocky Branch

Table A.18 – Soils, Upper Difficult Run

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

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