

Summary of Stream Assessment Data

This section summarizes the results of the stream assessment County-wide and by watershed. The data summaries provide a baseline for future data analysis to allow improved understanding of stream and watershed conditions. These summaries establish the framework for future assessments and development of targeted watershed management activities.

The data presented in this section include an initial countywide summary followed by watershed-specific summaries for stream habitat, infrastructure inventory, and CEM geomorphic condition.

3.1 County-Wide Summary

3.1.1 Habitat Assessment

The habitat assessment protocol used in this study assigned high scores to streams that have habitats with the greatest probability of supporting a diverse assemblage of aquatic species (i.e., diverse habitats). Low scores were assigned to areas that are degraded and have less-diverse habitats.

Habitat assessments were performed in combination with inventory assessments for 1,526 stream reaches totaling 716.8 miles. (See Section 2 for an explanation of why habitat scores were not assigned to some reaches.)

The habitat assessments yielded scores from 32 to 168, out of a maximum possible score of 200. The mean value of all the scores was 100, while the reach-length-weighted mean was 104. Figure 3-1 shows the distribution of the habitat scores based on score ranges for the reaches. Figure 3-2 shows the distribution of habitat scores based on stream lengths. The data indicate that the habitat and biotic integrity of many of the streams in Fairfax County have been somewhat degraded. There are a few stream reaches in very good condition and several in very poor condition.

FIGURE 3-1
Distribution of Stream Habitat Scores by Number of Reaches

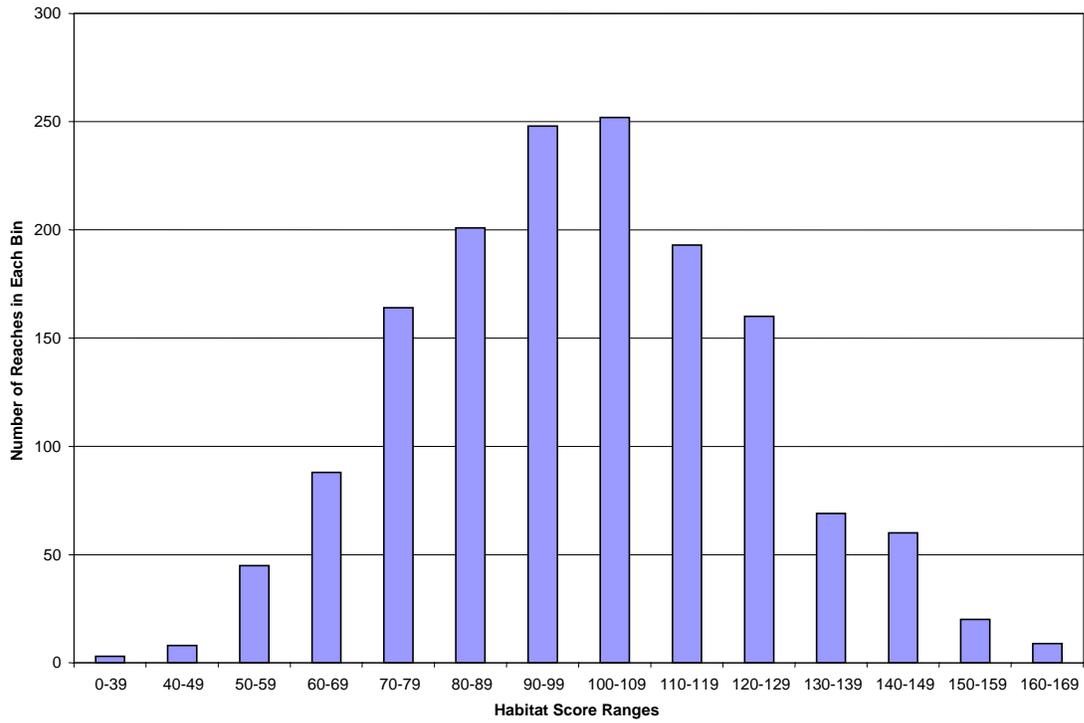
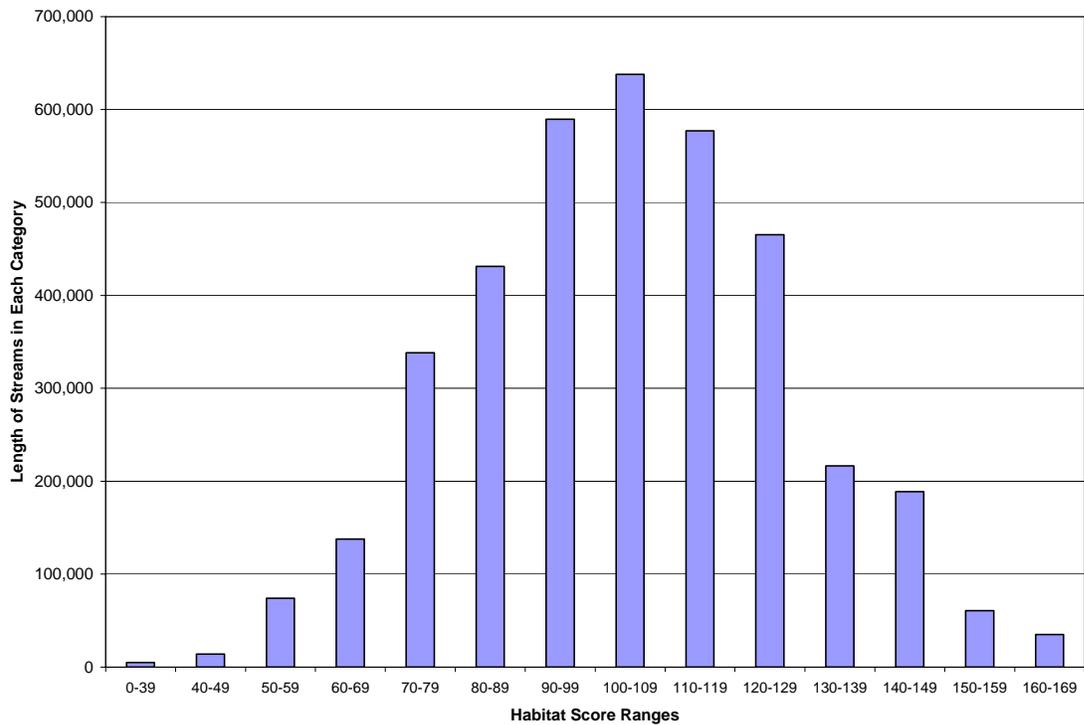


FIGURE 3-2
Distribution of Stream Habitat Scores by Stream Length



In order to allow qualitative interpretations of the habitat assessment results, stream reaches were classified into one of five categories on the basis of total habitat score: excellent, good, fair, poor, and very poor. Three options were considered for categorizing the total habitat score into these categories. Equal partitioning of the data was considered (1) over the theoretical range of 0 to 200, (2) on the basis of USEPA-recommended ranges, and (3) over the range of observed scores. Following discussions with County staff, it was agreed that for consistency with the approach used in the SPS baseline, the third option would be used. The resulting rating category names and score ranges are

- Excellent (142–168)
- Good (114–141)
- Fair (87–113)
- Poor (59–86)
- Very Poor (32–58)

3.1.1.1 Habitat Definitions

The following definitions of the habitat condition rating categories provide narrative descriptions of the field conditions expected to be observed when a site is scored within the range of scores in each rating category. The definitions are based on the USEPA RBP (Barbour et al., 1999) guidelines but also account for the numerical range of observed scores (32–168) used in this study and the addition of a fifth condition category.

Excellent. A minimally impaired aquatic system with a relatively high potential for supporting a diverse biological community. The watershed is generally undeveloped, there are few water quality issues, and the channels are undisturbed and uninterrupted. Instream habitat is generally undisturbed.

Those streams whose habitat includes greater than 70 percent favorable instream cover (50 percent in slower gradient streams) for benthos and fish with little to no effects from sediments and anthropogenic alterations, stable banks with less than 10 percent bank failure covered by more than 90 percent with native vegetation, and a riparian zone width of greater than 18 m with no negative impacts by encroachment. (Range: 142–168.)

Good. Habitat integrity is slightly degraded with a moderate potential for supporting a diverse biological community. The watershed may include low-density development. Channels are moderately disturbed due to road crossings and natural obstructions. Primary habitat for fish and benthos is moderately degraded due to siltation and embeddedness.

Those streams whose habitat includes 55–70 percent favorable instream cover (45–50 percent in slower gradient streams) for benthos and fish with only minor effects from sediments and anthropogenic alterations, moderately stable banks with only 10–30 percent evident bank failure covered 70–90 percent by native vegetation, and a riparian zone width of 14–18 m with some minimal encroachment. (Range: 114–141.)

Fair. Habitat integrity is moderately degraded with a fair potential for supporting a diverse biological community. The watershed may include low- to high-density development, with noticeable channel disturbance due to encroachment and other factors. Primary habitat for fish and benthos is significantly degraded due to bank erosion, siltation, and embeddedness.

Those streams whose habitat includes 35–55 percent instream cover (25–45 percent in slower gradient streams) for benthos and fish with noticeable effects from sediments and anthropogenic alterations, moderately stable banks with 30–40 percent evident bank failure covered 50–70 percent by native vegetation, and a riparian zone width of 10–14 m with apparent encroachment. (Range: 87–113.)

Poor. Habitat integrity is significantly degraded with a low potential for supporting a diverse biological community. The watershed may include a range of low- to high-density development. Much of the natural forested vegetation in the watershed was replaced with alternative land uses. Channels are highly disturbed, and primary habitat for fish and benthos is highly degraded due to some bank erosion, siltation, and embeddedness.

Those streams whose habitat includes only moderate 20–35 percent instream cover (10–25 percent in slower gradient streams) for benthos and fish with significant effects from sediments and anthropogenic alterations, moderately unstable banks with 40–60 percent evident bank failure covered by only 30–50 percent by native vegetation, and a riparian zone width of 6–10 m with significant encroachment. (Range: 59–86.)

Very Poor. Habitat integrity is severely degraded with little potential for supporting a diverse biological community. The watershed includes extensive development and the riparian zone is severely altered. Channels are substantially disturbed. The hydrology is severely altered and flows are erosive. Primary habitat for fish and benthos is severely degraded due to extensive bank erosion, siltation, and embeddedness.

Those streams whose habitat includes significantly impacted less than 20 percent instream cover (less than 10 percent in low gradient streams) for benthos and fish with major effects from sediments and anthropogenic alterations, severely unstable banks with 60–100 percent evident bank failure covered by less than 30 percent with native vegetation, and a riparian zone width of less than 6 m with encroachment causing a substantial loss of riparian vegetation. (Range: 32–58.)

3.1.1.2 Habitat Results

Table 3-1 summarizes the lengths of stream reaches falling in each of the five rating categories. Exhibit 1 (in map pocket) depicts the habitat rating for each reach.

TABLE 3-1
Stream Length in Each Habitat Rating
Fairfax County Stream Physical Assessment

Category	Score Range	Length of Stream (ft)	% of Total Stream Length
Excellent	142–168	201,628	5%
Good	114–141	1,037,462	25%
Fair	87–113	1,715,080	45%
Poor	59–86	742,973	20%
Very Poor	32–58	78,882	2%

TABLE 3-2
Length-Weighted Total Habitat Scores and Total Habitat Category by Watershed
Fairfax County Stream Physical Assessment

Watershed	Length-Weighted Total Habitat Score	Total Habitat Category
Accotink Creek	100	Fair
Belle Haven	71	Poor
Bull Neck Run	128	Good
Bull Run	108	Fair
Cameron Run	92	Fair
Cub Run	110	Fair
Dead Run	103	Fair
Difficult Run	108	Fair
Dogue Creek	96	Fair
Four Mile Run	96	Fair
High Point	124	Good
Horsepen Creek	100	Fair
Johnny Moore Creek	104	Fair
Kane Creek	128	Good
Little Hunting Creek	82	Poor
Little Rocky Run	102	Fair
Mill Branch	106	Fair
Nichol Run	127	Good
Occoquan	117	Good
Old Mill Branch	99	Fair
Pimmit Run	112	Fair
Pohick Creek	95	Fair
Pond Branch	99	Fair
Popes Head Creek	103	Fair
Ryans Dam	145	Excellent

TABLE 3-2
 Length-Weighted Total Habitat Scores and Total Habitat Category by Watershed
Fairfax County Stream Physical Assessment

Watershed	Length-Weighted Total Habitat Score	Total Habitat Category
Sandy Run	104	Fair
Scotts Run	108	Fair
Sugarland Run	111	Fair
Turkey Run	124	Good
Wolf Run	99	Fair
County-wide	104	Fair

In addition, a length-weighted average total habitat score was calculated for each watershed and the corresponding total habitat rating was determined (see Table 3-2).

3.1.2 Channel Evolution Model

Table 3-3 summarizes the length of stream reach in each of the five CEM stages, countywide. Exhibit 2 (in map pocket) depicts the CEM stage for each stream reach. The large majority of streams are in CEM stage 3, indicating active evolution to a new geomorphic equilibrium and generally unstable channel morphology. These results are discussed in more detail for each watershed below.

3.1.3 Infrastructure Inventory

Table 3-4 summarizes the number of inventory points countywide by impact score. Exhibits 3, 4, 5 and 6 (in map pocket) depict the inventory point locations for the entire County, as follows: Crossings (Exhibit 3), Buffer Deficiency (Exhibit 4), Pipes, Ditches, Dumps, and Utilities (Exhibit 5), and Erosion and Obstructions (Exhibit 6).

3.2 Watershed Summaries

The watershed summaries are arranged into 12 groups, to be consistent with the groupings presented in the Stream Protection Strategy Report (Fairfax County, 2001). The original groups were created based on characteristics of area, geography and, in most cases, physiographic province and proximity of watersheds to each other. Text and tables are provided in each section, summarizing the results from individual watersheds. A single set of maps is provided at the end of each section, depicting assessment results for all of the watersheds summarized within that section. Watersheds included within each section are listed below:

Watershed Group	Watershed(s)
Sugarland Run	Sugarland Run, Horsepen Creek
Upper Potomac	Nichol Run, Pond Branch
Difficult Run	Difficult Run
Middle Potomac	Bull Neck Run, Scotts Run, Dead Run, Turkey Run, Pimmit Run
Cameron Run	Cameron Run, Four Mile Run
Lower Potomac	Dogue Creek, Little Hunting Creek, Belle Haven
Accotink Creek	Accotink Creek
Pohick Creek	Pohick Creek
Upper Bull Run	Cub Run, Bull Run
Lower Bull Run	Little Rocky Run, Johnny Moore Creek, Popes Head Creek
Upper Occoquan	Old Mill Branch, Wolf Run, Sandy Run, Ryans Dam, Occoquan
Lower Occoquan	Mill Branch, Kane Creek, High Point

TABLE 3-3
Channel Evolution Model Stage, County-Wide
Fairfax County Stream Physical Assessment

Watershed	Evolution Stage										Total of Reach Length
	1		2		3		4		5		
	Length (ft)	%	Length (ft)	%	Length (ft)	%	Length (ft)	%	Length (ft)	%	
Accotink Creek	0%	16,057	4%	407,162	91%	23,916	5%	0	0%	447,135	
Belle Haven	0%	0	0%	8,477	100%	0	0%	0	0%	8,477	
Bull Neck Run	0%	0	0%	37,408	54%	31,599	46%	0	0%	69,007	
Bull Run	0%	8,923	35%	16,399	65%	0	0%	0	0%	25,323	
Cameron Run	0%	13,273	6%	180,167	75%	45,548	19%	0	0%	238,988	
Cub Run	0%	32,274	8%	224,790	59%	118,313	31%	8,165	2%	383,541	
Dead Run	0%	0	0%	31,618	100%	0	0%	0	0%	31,618	
Difficult Run	0%	77,984	12%	487,764	73%	101,820	15%	4,973	1%	672,542	
Dogue Creek	0%	13,335	15%	44,528	49%	32,215	36%	0	0%	90,078	
Four Mile Run	0%	0	0%	1,654	41%	2,422	59%	0	0%	4,076	
High Point	0%	15,856	100%	0	0%	0	0%	0	0%	15,856	
Horsepen Creek	0%	6,163	7%	77,322	93%	0	0%	0	0%	83,485	
Johnny Moore Creek	0%	0	0%	60,371	97%	1,720	3%	0	0%	62,092	
Kane Creek	0%	24,118	64%	13,861	36%	0	0%	0	0%	37,979	
Little Hunting Creek	0%	12,042	23%	22,037	42%	18,174	35%	0	0%	52,253	
Little Rocky Run	0%	24,219	34%	34,826	49%	11,586	16%	0	0%	70,631	
Mill Branch	0%	16,798	23%	55,675	77%	0	0%	0	0%	72,473	
Nichol Run	0%	1,918	3%	64,682	91%	4,467	6%	0	0%	71,067	
Occoquan	0%	1,679	6%	21,806	78%	4,368	16%	0	0%	27,853	
Old Mill Branch	0%	0	0%	22,874	72%	8,755	28%	0	0%	31,629	
Pimmit Run	0%	0	0%	92,439	97%	2,917	3%	0	0%	95,356	

TABLE 3-3
Channel Evolution Model Stage, County-Wide
Fairfax County Stream Physical Assessment

Watershed	Evolution Stage										Total of Reach Length
	1		2		3		4		5		
	Length (ft)	%	Length (ft)	%	Length (ft)	%	Length (ft)	%	Length (ft)	%	
Pohick Creek		0%	16,965	5%	264,729	74%	76,533	21%	0	0%	358,226
Pond Branch		0%	0	0%	89,885	100%	0	0%	0	0%	89,885
Popes Head Creek		0%	18,297	7%	159,781	61%	82,003	32%	0	0%	260,081
Ryans Dam		0%	9,326	41%	13,164	59%	0	0%	0	0%	22,490
Sandy Run		0%	0	0%	66,114	65%	35,102	35%	0	0%	101,217
Scotts Run		0%	3,389	8%	38,775	89%	1,379	3%	0	0%	43,543
Sugarland Run		0%	0	0%	82,412	60%	54,492	40%	0	0%	136,904
Turkey Run		0%	0	0%	14,777	100%	0	0%	0	0%	14,777
Wolf Run		0%	1,665	2%	83,324	98%	0	0%	0	0%	84,989
Total		0%	314,282	8%	2,718,822	73%	657,330	18%	13,138	0.4%	3,703,572

TABLE 3-4
Inventory Impact Scores, County-Wide
Fairfax County Stream Physical Assessment

Inventory Type	Impact Score												Total
	0	1	2	3	4	5	6	7	8	9	10	>10	
Deficient Buffers	3	22	271	434	510	689	190	312	73	20	42		2566
Crossings	946	821	669	291	150	90	31	27	9	2	3		3039
Ditches and Pipes	1187	329	265	191	93	123	21	23	21	8	18		2279
Erosion		1	6	22	43	143	95	155	50	13	22		550
Head Cut			4	21	38	19	4	1	1	2	32		122
Obstruction	58	27	82	208	114	114	38	45	44	23	41		794
Utility	19	8	11	46	26	21	22	14	2	2	10	5	186
Total	2213	1208	1308	1213	974	1199	401	577	200	70	168	5	9536

N/A = Not applicable, impact score range was 0 to 10

3.2.1 Sugarland Run Group Summary

3.2.1.1 Sugarland Run Watershed

Description. Sugarland Run Watershed is a medium sized watershed, with approximately 26 miles of stream assessed. It is located along the northwestern boundary of the County. The County contains most of the headwaters of the stream. Sugarland Run continues through Loudoun County before it discharges into the Potomac River.

Habitat. The habitat assessment results for Sugarland Run Watershed are summarized by stream in Table 3-5. Habitat scores for each reach are depicted in Figure 3-3. Based on a length weighted habitat score of 111 (Table 3-2), Sugarland Run Watershed is in the upper middle range of quality, compared to the rest of the County. Approximately 4.2 miles of stream were categorized as having “poor” habitat conditions, 7.6 miles as “fair,” and 13.9 miles as “good.”

CEM. On the basis of the CEM evaluations approximately 60 percent of the channels in Sugarland Run Watershed are in Evolutionary Stage 3 (Table 3-3) and the remainder are in Stage 4. Figure 3-4 summarizes the CEM results.

Infrastructure. The infrastructure inventory resulted in 281 inventory points. The most significant problems were related to two deficient buffers, two head cuts, a crossing, a pipe, and an erosional area, which were given an impact scores of 10. The infrastructure inventory results are summarized in Table 3-6. Figures 3-5, 3-6, 3-7, 3-8, and 3-9 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

3.2.1.2 Horsepen Creek Watershed

Description. Horsepen Creek Watershed is a medium-sized watershed, with approximately 17 miles of stream assessed. It is located along the middle of the northwestern boundary of the County. The lower portion of the watershed is located in Loudoun County, before the Creek discharges into Broad Run and eventually into the Potomac River.

Habitat. The habitat assessment results for Horsepen Creek Watershed are summarized by stream in Table 3-7. Habitat scores for each reach are depicted in Figure 3-3. Based on a length weighted habitat score of 100 (Table 3-2), Horsepen Creek Watershed is in the lower middle range of quality, compared to the rest of the County. Approximately 1.1 mile of stream was categorized as having “very poor” habitat conditions, 3.5 miles as “poor,” 6.1 miles as “fair,” 6.1 miles as “good,” and 0.3 miles as “excellent.”

CEM. Based on the CEM evaluations, nearly all of the channels assessed in Horsepen Creek Watershed are in Evolutionary Stage 3 (Table 3-3), with all of the remainder in Stage 2. Figure 3-4 summarizes the CEM results.

Infrastructure. The infrastructure inventory resulted in 322 inventory points. The most significant problems were related to two head cuts, which were given impact scores of 9 and 10. The infrastructure inventory results are summarized in Table 3-8. Figures 3-5, 3-6, 3-7, 3-8, and 3-9 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

TABLE 3-5
Habitat Assessment Summary for Sugarland Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Folly Lick Branch	0 (0.00)	3,996 (18.56)	8,770 (40.72)	8,771 (40.72)	0 (0.00)	21,537
Hughes Branch	0 (0.00)	0 (0.00)	1,257 (100.00)	0 (0.00)	0 (0.00)	1,257
Muddy Branch	0 (0.00)	0 (0.00)	0 (0.00)	2,034 (100.00)	0 (0.00)	2,034
Offuts Branch	0 (0.00)	0 (0.00)	3,437 (33.59)	6,796 (66.41)	0 (0.00)	10,233
Rosiers Branch	0 (0.00)	0 (0.00)	413 (4.67)	8,439 (95.33)	0 (0.00)	8,853
Sugarland Run	0 (0.00)	17,928 (23.67)	24,069 (31.78)	33,747 (44.55)	0 (0.00)	75,744
Sugarland Run Tributary	0 (0.00)	0 (0.00)	2,434 (14.95)	13,850 (85.05)	0 (0.00)	16,283
Watershed Total	0 (0.00)	21,925 (16.13)	40,380 (29.70)	73,637 (54.17)	0 (0.00)	135,942

TABLE 3-6
Infrastructure Assessment Summary for Sugarland Run Watershed
Fairfax County Stream Physical Assessment

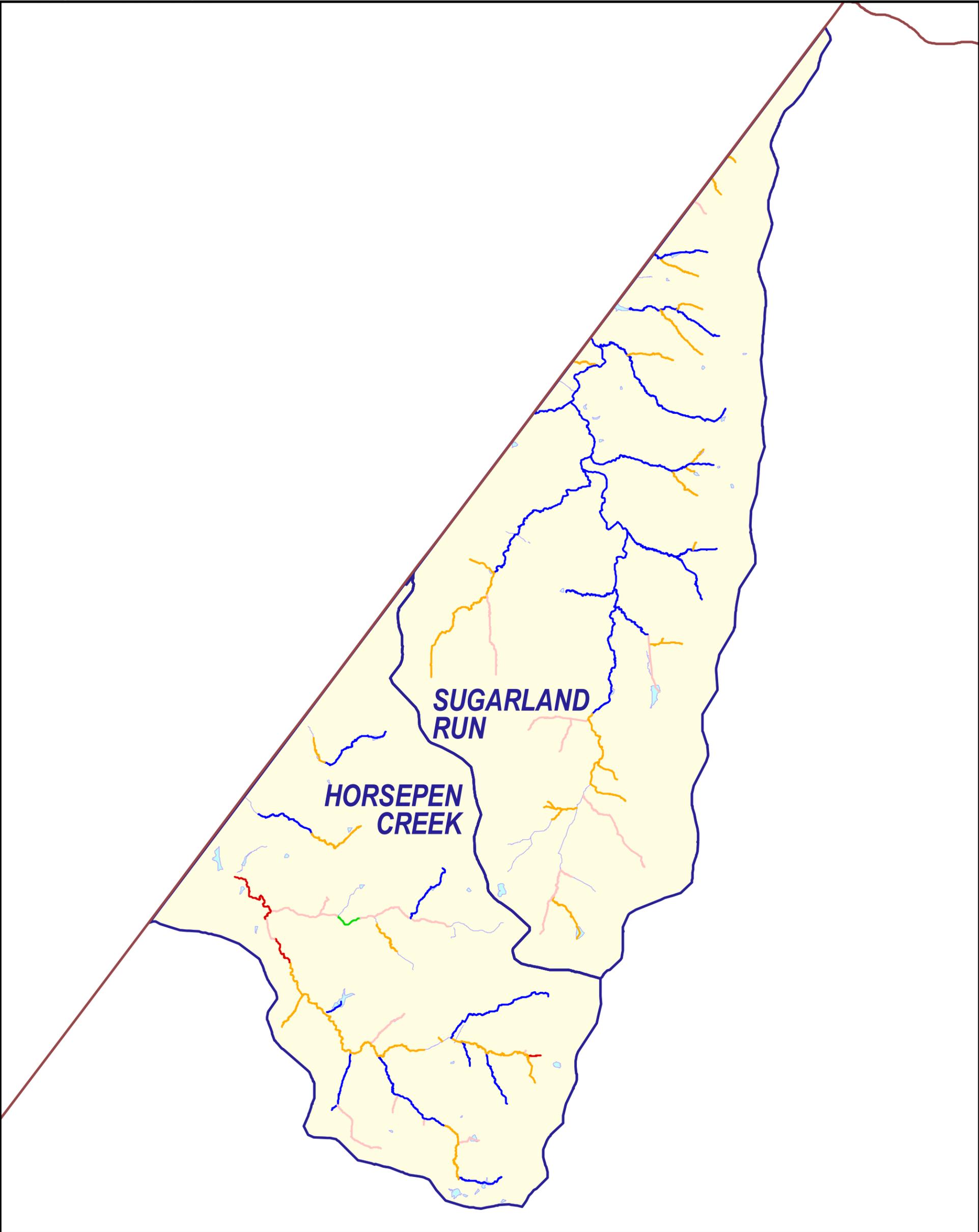
Impact Score	0	1	2	3	4	5	6	7	8	9	10	> 10	Total
Buffers	0	0	8	15	14	23	1	8	1	1	2	N/A	73
Crossings	0	88	34	11	3	4	0	0	0	0	1	N/A	141
Ditches and Pipes	1	30	7	2	0	2	0	0	0	0	1	N/A	43
Erosion	0	0	0	0	1	3	0	1	0	0	1	N/A	6
Head Cut	0	0	0	0	0	0	0	0	0	0	2	N/A	2
Obstruction	1	0	4	6	1	1	0	0	0	0	0	N/A	13
Utility	0	0	0	3	0	0	0	0	0	0	0	0	3
Total	2	118	53	37	19	33	1	9	1	1	7	0	281

TABLE 3-7
Habitat Assessment Summary for Horsepen Creek Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Cedar Run	0 (0.00)	2,317 (17.17)	3,513 (26.04)	7,662 (56.79)	0 (0.00)	13,493
Frying Pan Branch	0 (0.00)	9,321 (57.87)	2,057 (12.77)	3,334 (20.70)	1,395 (8.66)	16,108
Horsepen Creek	0 (0.00)	0 (0.00)	3,442 (100.00)	0 (0.00)	0 (0.00)	3,442
Horsepen Run	6,028 (14.30)	4,703 (11.16)	18,514 (43.93)	12,901 (30.61)	0 (0.00)	42,146
Merrybrook Run	0 (0.00)	0 (0.00)	3,413 (51.90)	3,163 (48.10)	0 (0.00)	6,575
Tributary To Horsepen Run	0 (0.00)	2,289 (30.53)	0 (0.00)	5,210 (69.47)	0 (0.00)	7,499
Watershed Total	6,028 (6.75)	18,631 (20.87)	30,938 (34.66)	32,270 (36.15)	1,395 (1.56)	89,262

TABLE 3-8
Infrastructure Assessment Summary for Horsepen Creek Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	> 10	Total
Buffers	0	0	26	12	4	34	3	16	1	0	0	N/A	96
Crossings	31	11	14	3	0	4	2	1	0	0	0	N/A	66
Ditches and Pipes	31	6	16	6	6	9	0	2	1	0	0	N/A	77
Erosion	0	0	0	0	2	6	4	2	0	0	0	N/A	14
Head Cut	0	0	0	5	6	1	0	0	0	1	1	N/A	14
Obstruction	1	0	9	21	4	7	1	3	3	0	0	N/A	49
Utility	0	3	1	0	0	2	0	0	0	0	0	0	6
Total	63	20	66	47	22	63	10	24	5	1	1	0	322



-  Fairfax County Boundary
- Habitat Rating
-  Excellent
-  Good
-  Fair
-  Poor
-  Very Poor
-  No Habitat Assessment
-  Lakes and Ponds
-  Watersheds

**WATERSHED GROUP:
SUGARLAND RUN**

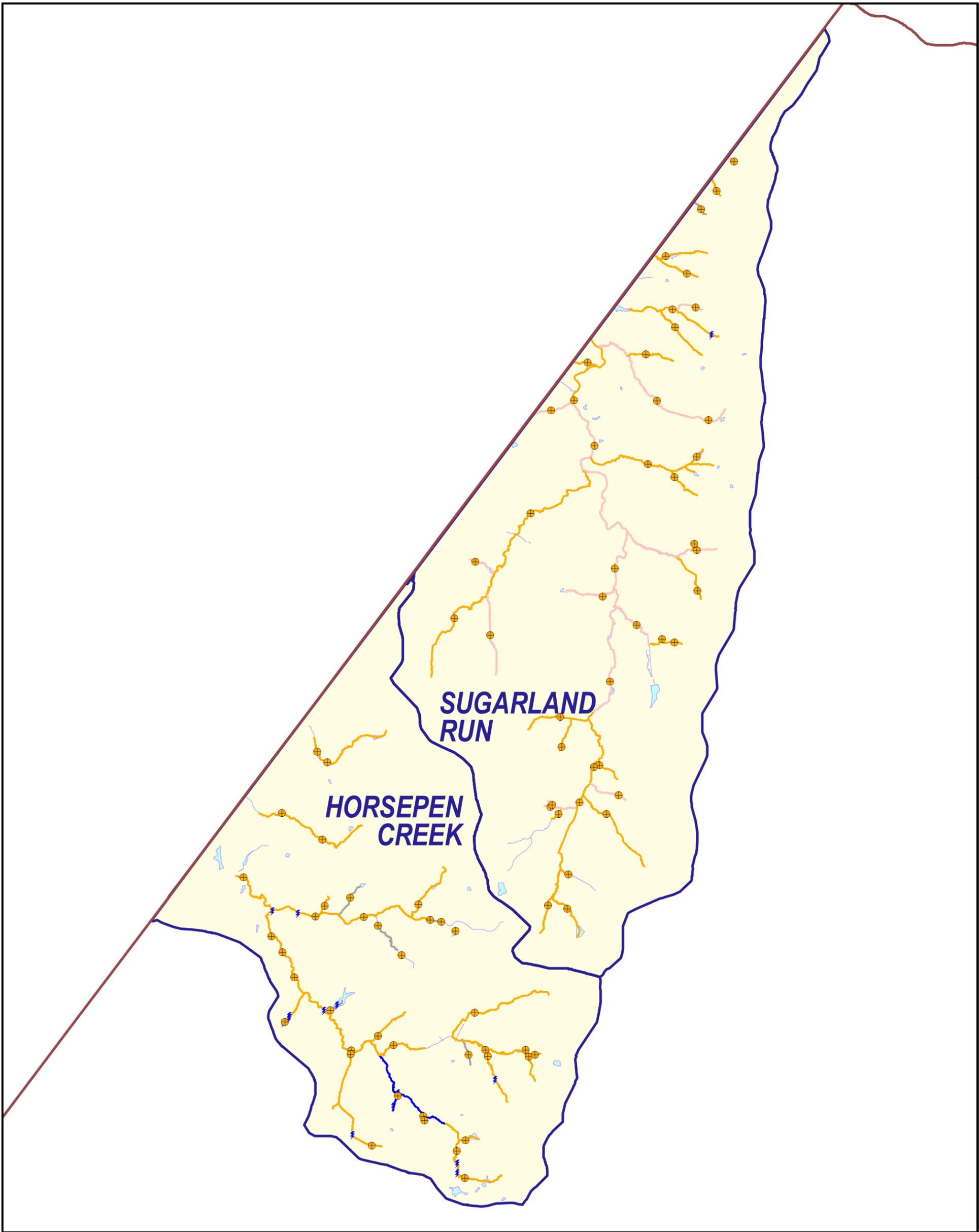


**Figure 3-3
Habitat Assessment
Sugarland Run Group
Fairfax County Stream Physical Assessment**



0 3000 6000 9000 12000 Feet





Inventory Types

-  Cross Section
-  Head Cut

CEM Stage

-  Not Assigned
-  1
-  2
-  3
-  4
-  5

-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds

**WATERSHED GROUP:
SUGARLAND RUN**

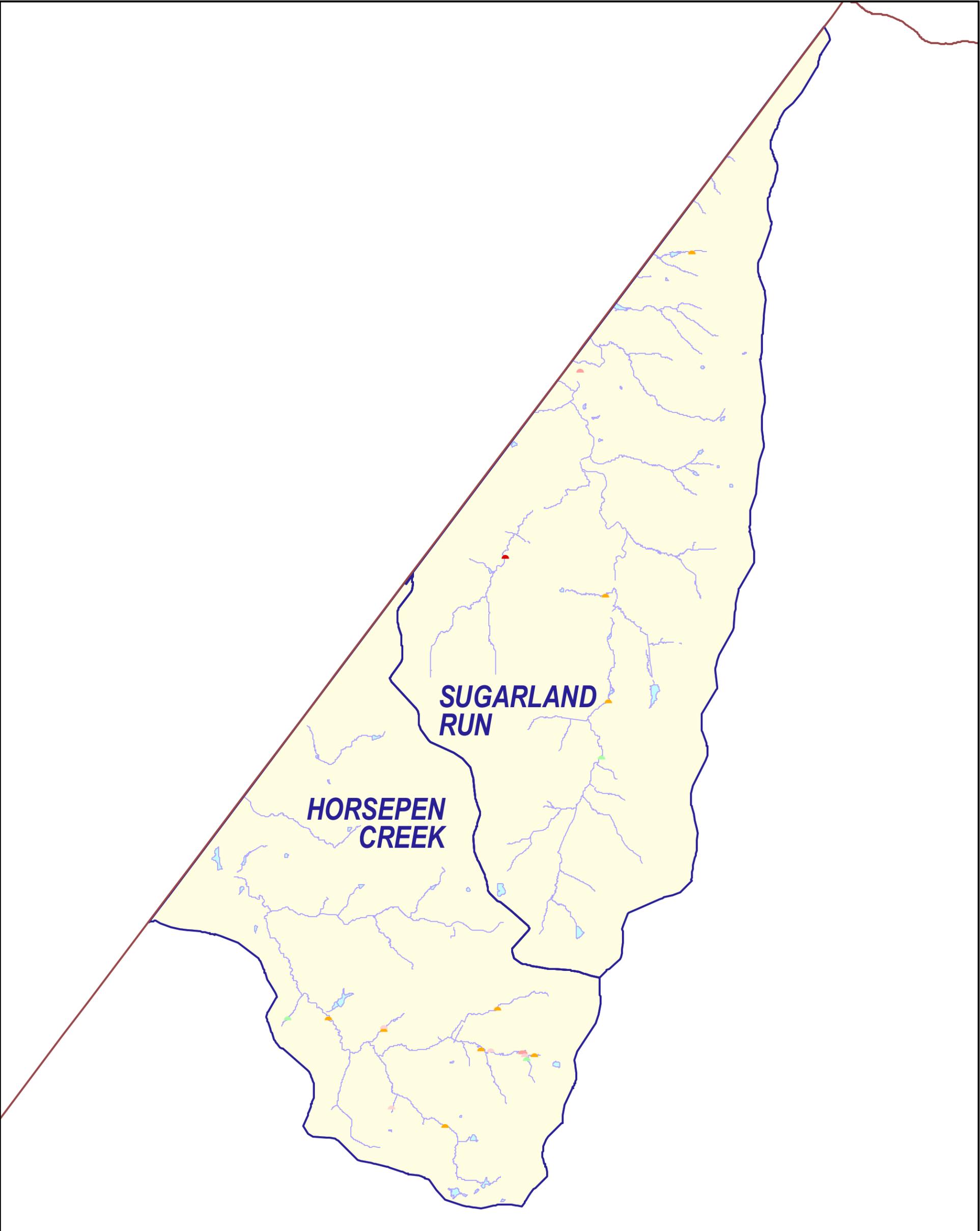


0 3000 6000 9000 12000 Feet



Figure 3-4
CEM Stages
Sugarland Run Group
Fairfax County Stream Physical Assessment





Erosion by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

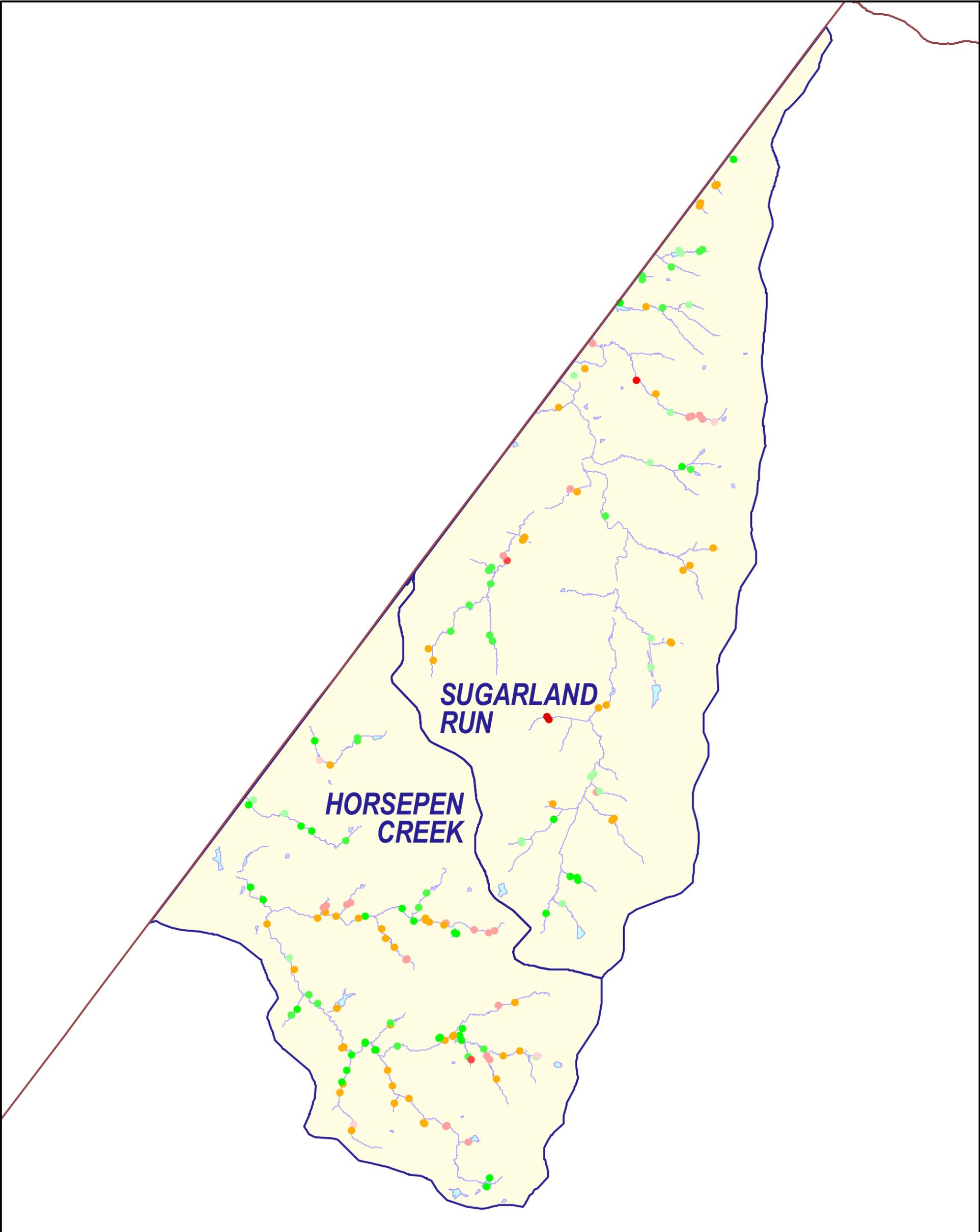
WATERSHED GROUP:
SUGARLAND RUN



0 3000 6000 9000 12000 Feet

Figure 3-5
Erosion Impacts
Sugarland Run Group
Fairfax County Stream Physical Assessment





Deficient Buffer by Impact Score

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

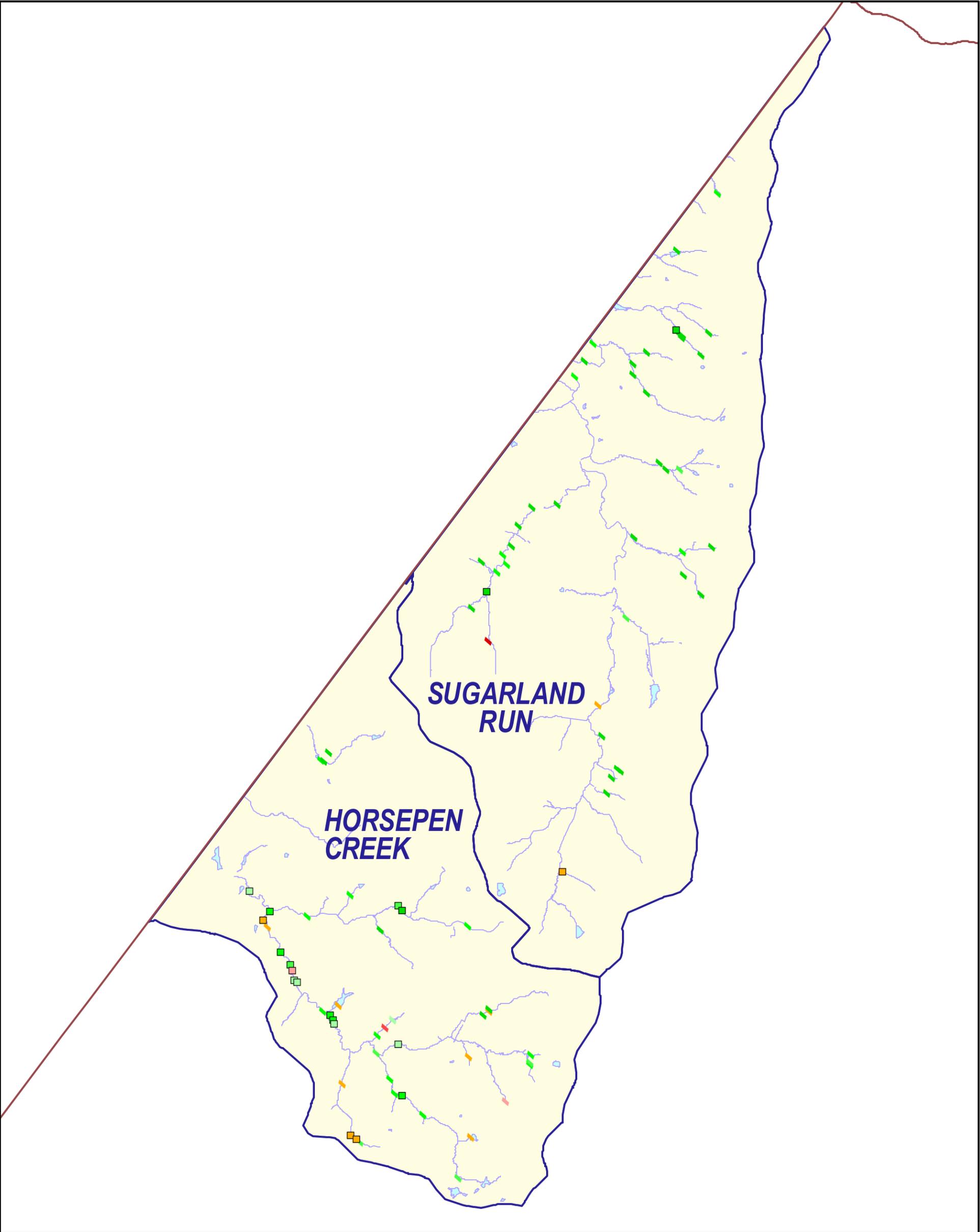
WATERSHED GROUP:
SUGARLAND RUN



0 3000 6000 9000 12000 Feet

Figure 3-6
Deficient Buffer Impacts
Sugarland Run Group
Fairfax County Stream Physical Assessment





Pipe / Ditch by Impact Score

- 1 (Green dashed line)
- 2 (Light Green dashed line)
- 3 (Light Green solid line)
- 4 (Light Green dashed line)
- 5 (Orange dashed line)
- 6 (Light Red dashed line)
- 7 (Light Red solid line)
- 8 (Red dashed line)
- 9 (Red solid line)
- 10 (Dark Red dashed line)

- Fairfax County Boundary (Brown line)
- Lakes and Ponds (Light Blue area)
- Streams (Light Blue line)
- Watersheds (Yellow area)

WATERSHED GROUP:
SUGARLAND RUN

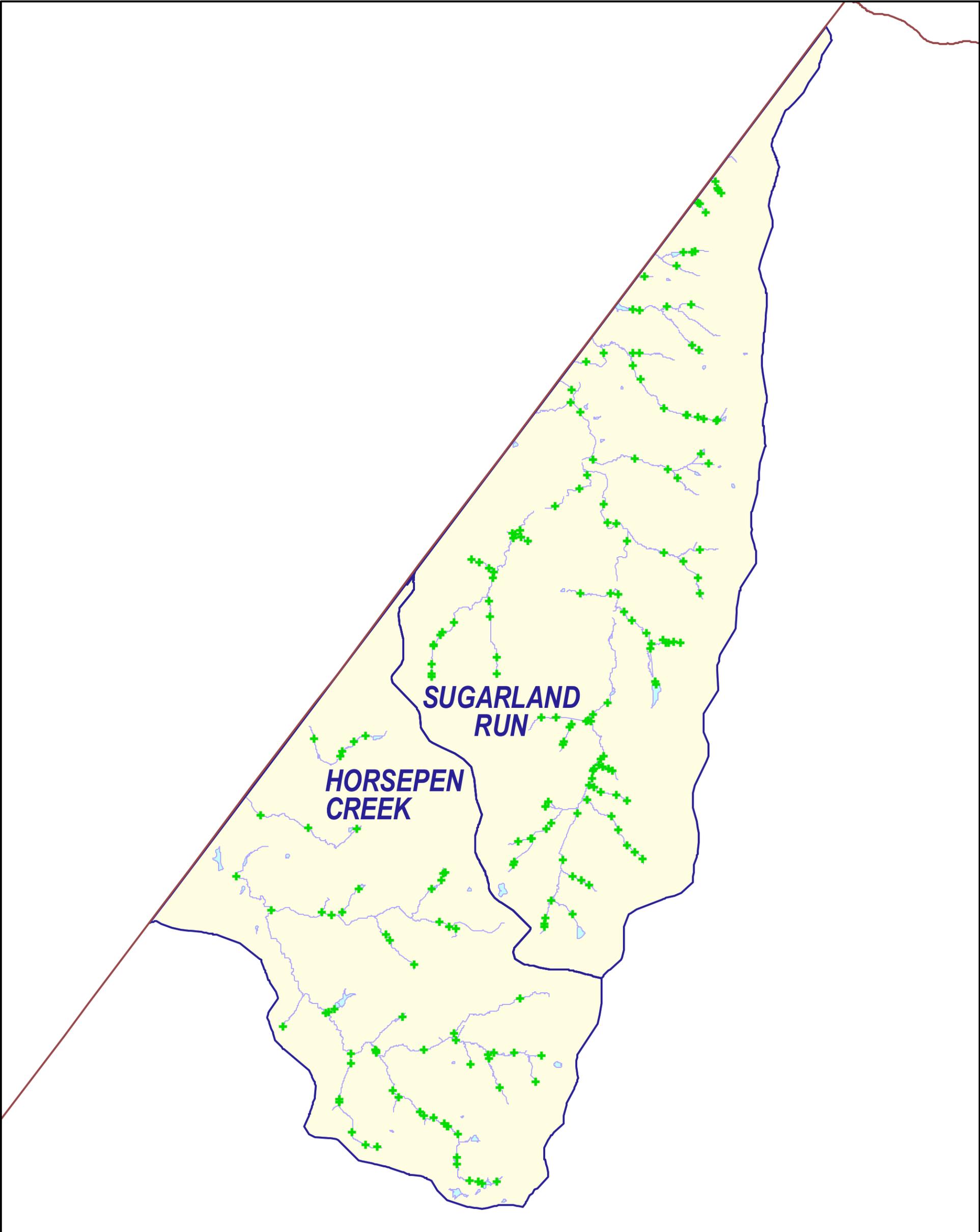


0 3000 6000 9000 12000 Feet



Figure 3-7
Pipe and Ditch Impacts
Sugarland Run Group
Fairfax County Stream Physical Assessment





SUGARLAND RUN

HORSEPEN CREEK

**WATERSHED GROUP:
SUGARLAND RUN**



Inventory Type

-  Crossing
-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds

**Figure 3-8
Crossings
Sugarland Run Group
Fairfax County Stream Physical Assessment**

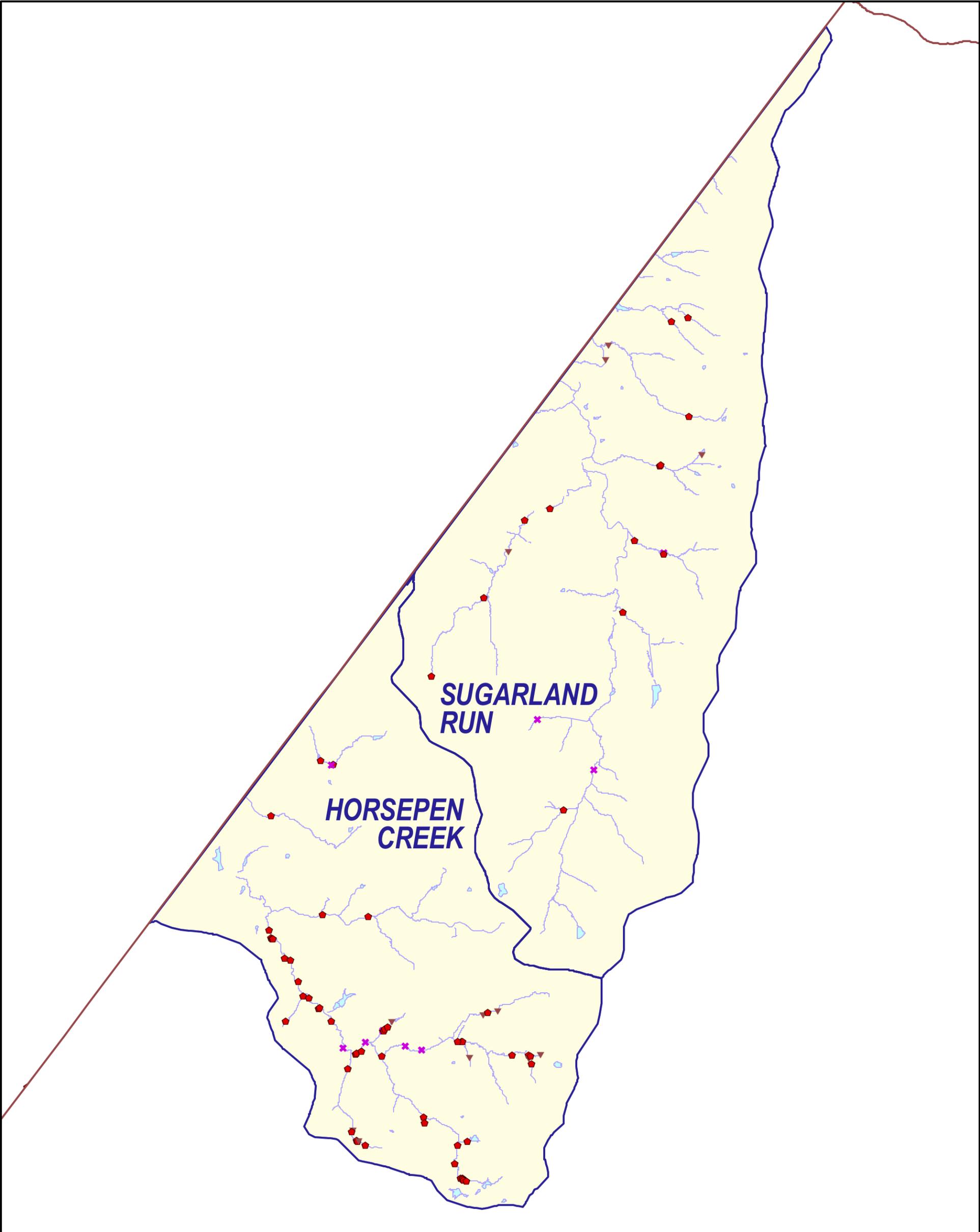


0 3000 6000 9000 12000 Feet



A horizontal scale bar with markings at 0, 3000, 6000, 9000, and 12000 feet.





Inventory Types

- ▼ Dump
- ◆ Obstruction
- * Utility

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

**WATERSHED GROUP:
SUGARLAND RUN**



0 3000 6000 9000 12000 Feet

Figure 3-9
Dumps, Obstructions, and Utilities
Sugarland Run Group
Fairfax County Stream Physical Assessment



3.2.2 Upper Potomac Group Summary

3.2.2.1 Nichol Run Watershed

Description. Nichol Run Watershed is a medium-sized watershed, with just under 14 miles of stream assessed. It is located in the very northern end of the County. The watershed is contained entirely within the county boundaries, and drains directly to the Potomac River.

Habitat. The habitat assessment results for Nichol Run Watershed are summarized by stream in Table 3-9. Habitat scores for each reach are depicted in Figure 3-10. Based on a length-weighted habitat score of 127 (Table 3-2), Nichol Run Watershed is one of the highest-quality watersheds in the County. Approximately 1 mile of stream was categorized as having “poor” habitat conditions, 1 mile as “fair,” and 8 miles as “good,” and 3 miles as “excellent.”

CEM. Based on the CEM evaluations, 91 percent of the channels in Nichol Run Watershed are in Evolutionary Stage 3 (Table 3-3). Figure 3-11 summarizes the CEM results for Nichol Run Watershed.

Infrastructure. The infrastructure inventory resulted in 113 inventory points. The most significant problems were related to two head cuts and one obstruction which were each given an impact score of 10. The infrastructure inventory results are summarized in Table 3-10. Figures 3-12, 3-13, 3-14, 3-15, and 3-16 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

3.2.2.2 Pond Branch Watershed

Description. Pond Branch Watershed is a medium sized watershed, with approximately 17 miles of stream assessed. It consists of several small stream networks that drain directly to the Potomac at the northern end of the County.

Habitat. The habitat assessment results for Pond Branch Watershed are summarized by stream in Table 3-11. Habitat scores for each reach are depicted in Figure 3-10. Based on a length weighted habitat score of 99 (Table 3-2), Pond Branch Watershed is in the lower middle range of quality, compared to the rest of the County. Approximately 1 mile of stream was categorized as having “very poor” habitat conditions, 4 miles were categorized as “poor,” 8 miles as “fair,” and 4 miles as “good.” No miles were “excellent.”

CEM. On the basis of the CEM evaluations all of the channels in Pond Branch Watershed are in Evolutionary Stage 3 (Table 3-3). Figure 3-11 summarizes the CEM results for Pond Branch Watershed.

Infrastructure. The infrastructure inventory resulted in 143 inventory points. The most significant problems were related to a head cut that was given an impact score of 10 and a deficient buffer and obstruction, which were given impact scores of 9. The infrastructure inventory results are summarized in Table 3-12. Figures 3-12, 3-13, 3-14, 3-15, and 3-16 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

TABLE 3-9
Habitat Assessment Summary for Nichol Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Harkney Branch	0 (0.00)	0 (0.00)	0 (0.00)	5,316 (100.00)	0 (0.00)	5,316
Jefferson Branch	0 (0.00)	0 (0.00)	0 (0.00)	13,077 (58.70)	9,199 (41.30)	22,275
Nichols Run	0 (0.00)	0 (0.00)	0 (0.00)	18,381 (69.31)	8,139 (30.69)	26,520
Tributary to Jefferson Branch	0 (0.00)	0 (0.00)	1,648 (100.00)	0 (0.00)	0 (0.00)	1,648
Tributary to Nichols Run	0 (0.00)	6,683 (40.14)	5,567 (33.43)	4,401 (26.43)	0 (0.00)	16,652
Watershed Total	0 (0.00)	6,683 (9.23)	7,215 (9.96)	41,175 (56.86)	17,338 (23.94)	72,412

TABLE 3-10
Infrastructure Assessment Summary for Nichol Run Watershed
Fairfax County Stream Physical Assessment

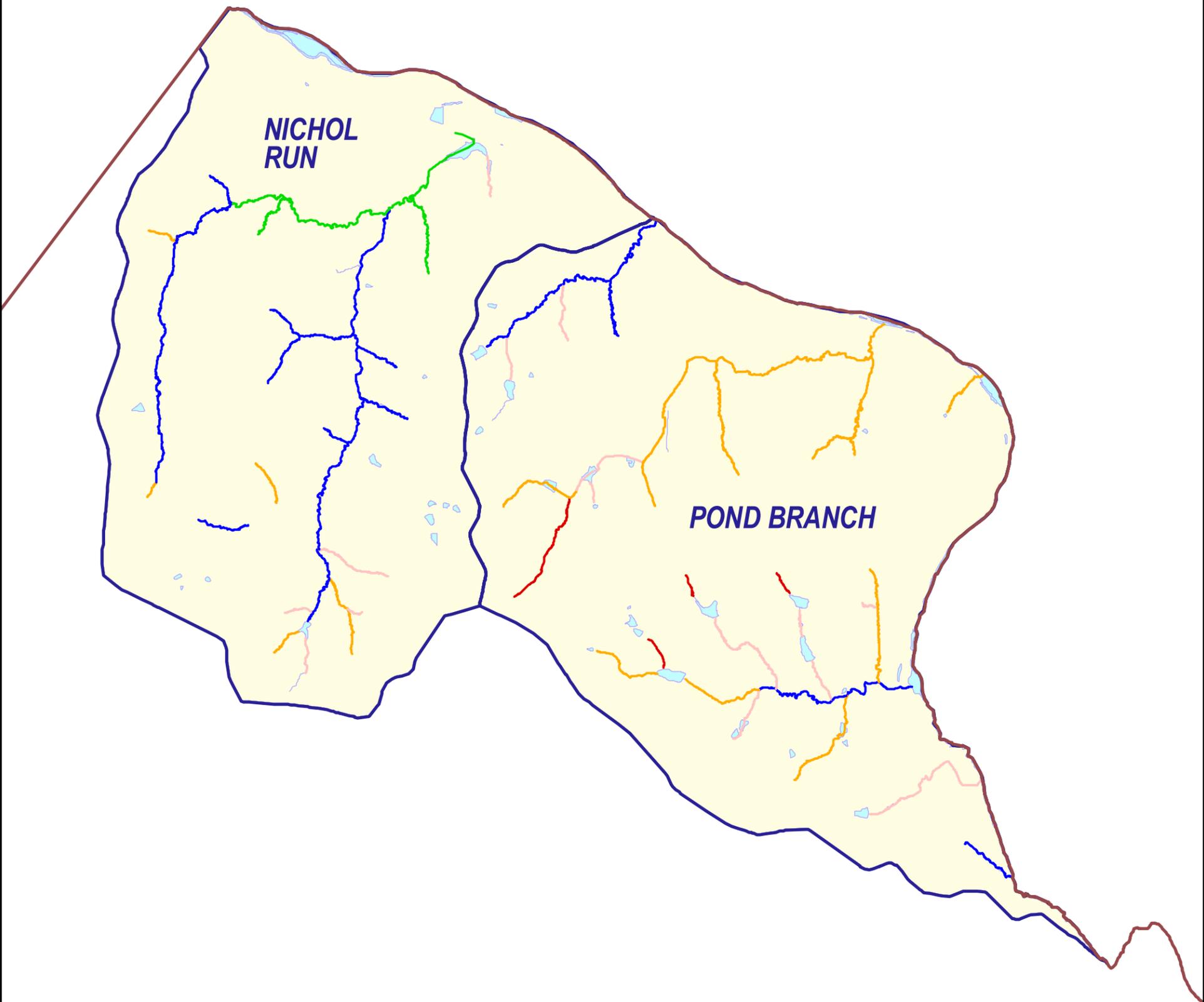
Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	8	2	1	19	0	7	0	0	0	N/A	37
Crossings	16	5	15	0	0	4	1	1	0	0	0	N/A	42
Ditches and Pipes	4	0	3	0	0	1	0	0	0	0	0	N/A	8
Erosion	0	0	0	0	0	1	1	3	0	0	0	N/A	5
Head Cut	0	0	0	0	0	2	0	0	0	0	2	N/A	4
Obstruction	1	0	3	7	1	2	0	0	1	0	1	N/A	16
Utility	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	21	5	30	9	2	29	2	11	1	0	3	0	113

TABLE 3-11
Habitat Assessment Summary for Pond Branch Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Clarks Branch	3,918 (12.05)	3,308 (10.18)	25,286 (77.77)	0 (0.00)	0 (0.00)	32,513
Mine Run Branch	1,829 (7.65)	8,925 (37.35)	6,529 (27.33)	6,612 (27.67)	0 (0.00)	23,895
Tributary to Clarks Branch	0 (0.00)	0 (0.00)	1,722 (100.00)	0 (0.00)	0 (0.00)	1,722
Tributary to Mine Branch	766 (10.37)	0 (0.00)	6,621 (89.63)	0 (0.00)	0 (0.00)	7,387
Tributary to Pond Branch	0 (0.00)	3,528 (22.96)	0 (0.00)	11,839 (77.04)	0 (0.00)	15,368
Tributary to Potomac River	0 (0.00)	4,962 (55.12)	1,979 (21.99)	2,060 (22.89)	0 (0.00)	9,001
Watershed Total	6,513 (7.25)	20,724 (23.06)	42,138 (46.88)	20,511 (22.82)	0 (0.00)	89,885

TABLE 3-12
Infrastructure Assessment Summary for Pond Branch Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	2	18	11	10	1	5	0	1	0	N/A	48
Crossings	67	1	0	4	0	0	2	2	0	0	0	N/A	76
Ditches and Pipes	8	0	0	0	0	1	0	0	0	0	0	N/A	9
Erosion	0	0	0	0	0	1	1	0	0	0	0	N/A	2
Head Cut	0	0	0	0	0	1	0	0	0	0	1	N/A	2
Obstruction	0	0	2	2	0	0	0	0	0	1	0	N/A	5
Utility	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	75	1	4	24	12	13	4	7	0	2	1	0	143



-  Fairfax County Boundary
- Habitat Rating**
-  Excellent
-  Good
-  Fair
-  Poor
-  Very Poor
-  No Habitat Assessment
-  Lakes and Ponds
-  Watersheds

**WATERSHED GROUP:
UPPER POTOMAC**

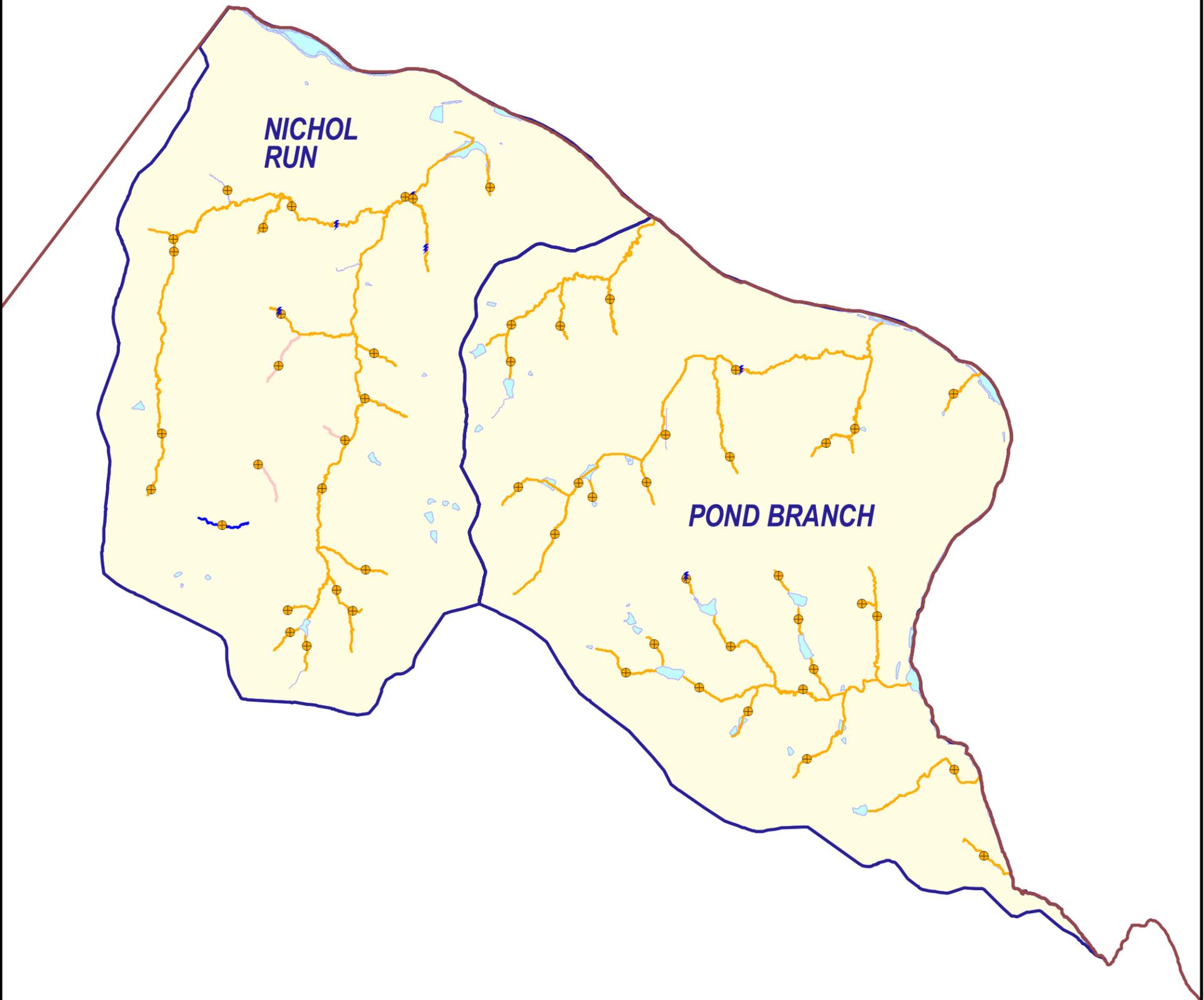


0 2000 4000 6000 8000 Feet



Figure 3-10
Habitat Assessment
Upper Potomac Group
Fairfax County Stream Physical Assessment





Inventory Types

- Cross Section
- ⚡ Head Cut

CEM Stage

- ⚡ Not Assigned
- 1
- 2
- 3
- 4
- 5

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

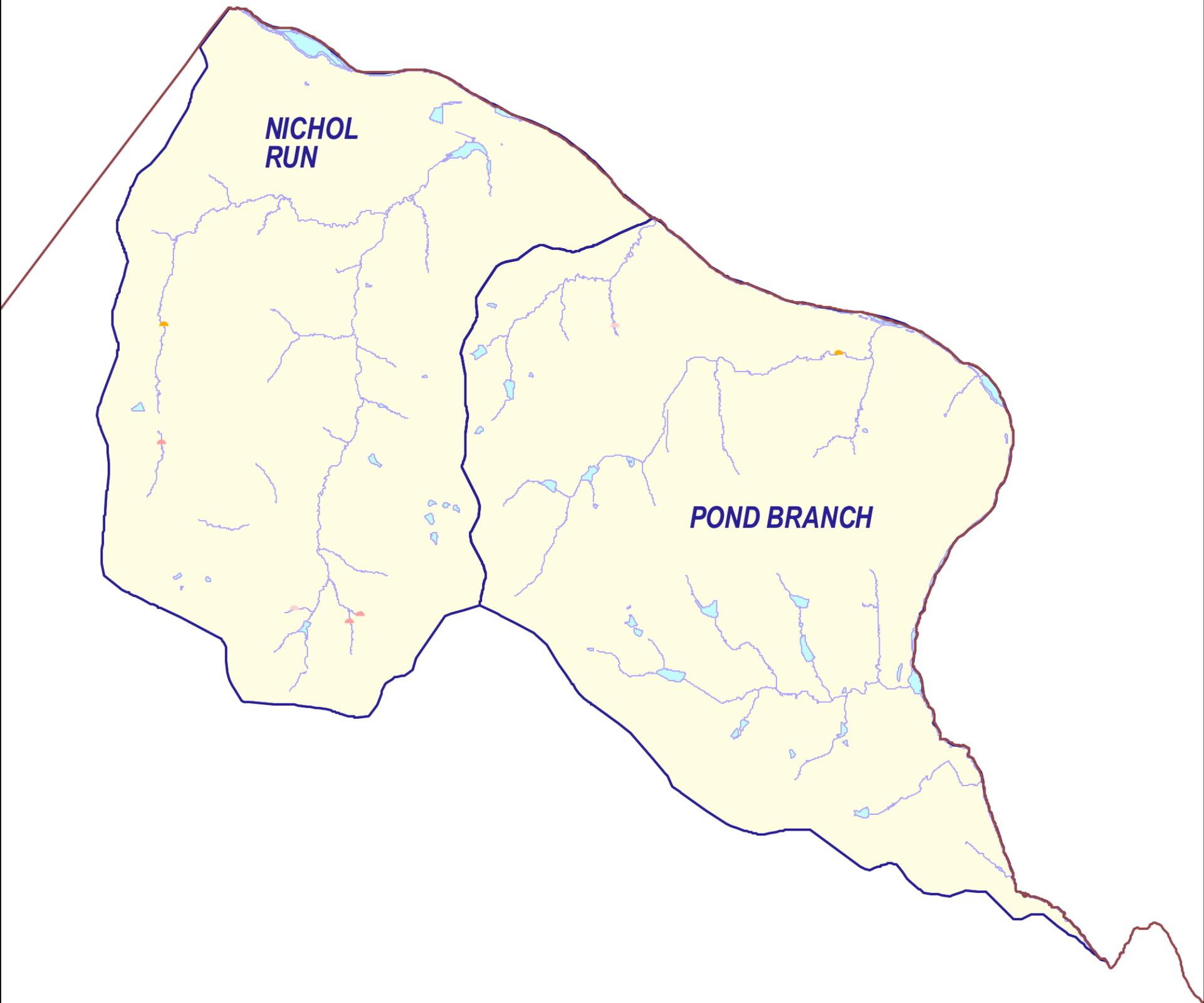
WATERSHED GROUP:
UPPER POTOMAC



0 2000 4000 6000 8000 Feet

Figure 3-11
CEM Stages
Upper Potomac Group
Fairfax County Stream Physical Assessment





Erosion by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

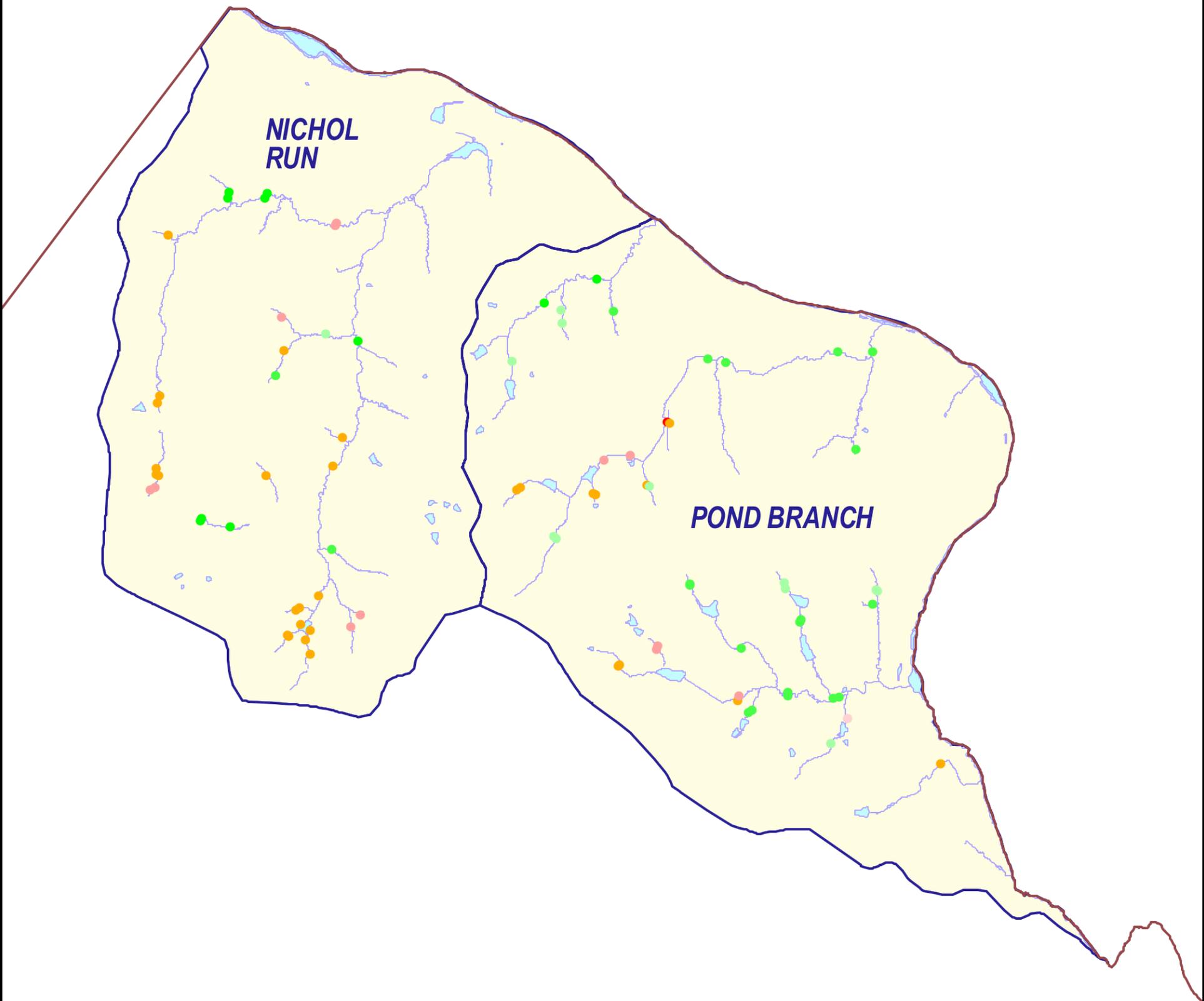
WATERSHED GROUP:
UPPER POTOMAC



0 2000 4000 6000 8000 Feet

Figure 3-12
Erosion Impacts
Upper Potomac Group
Fairfax County Stream Physical Assessment





Deficient Buffer by Impact Score

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

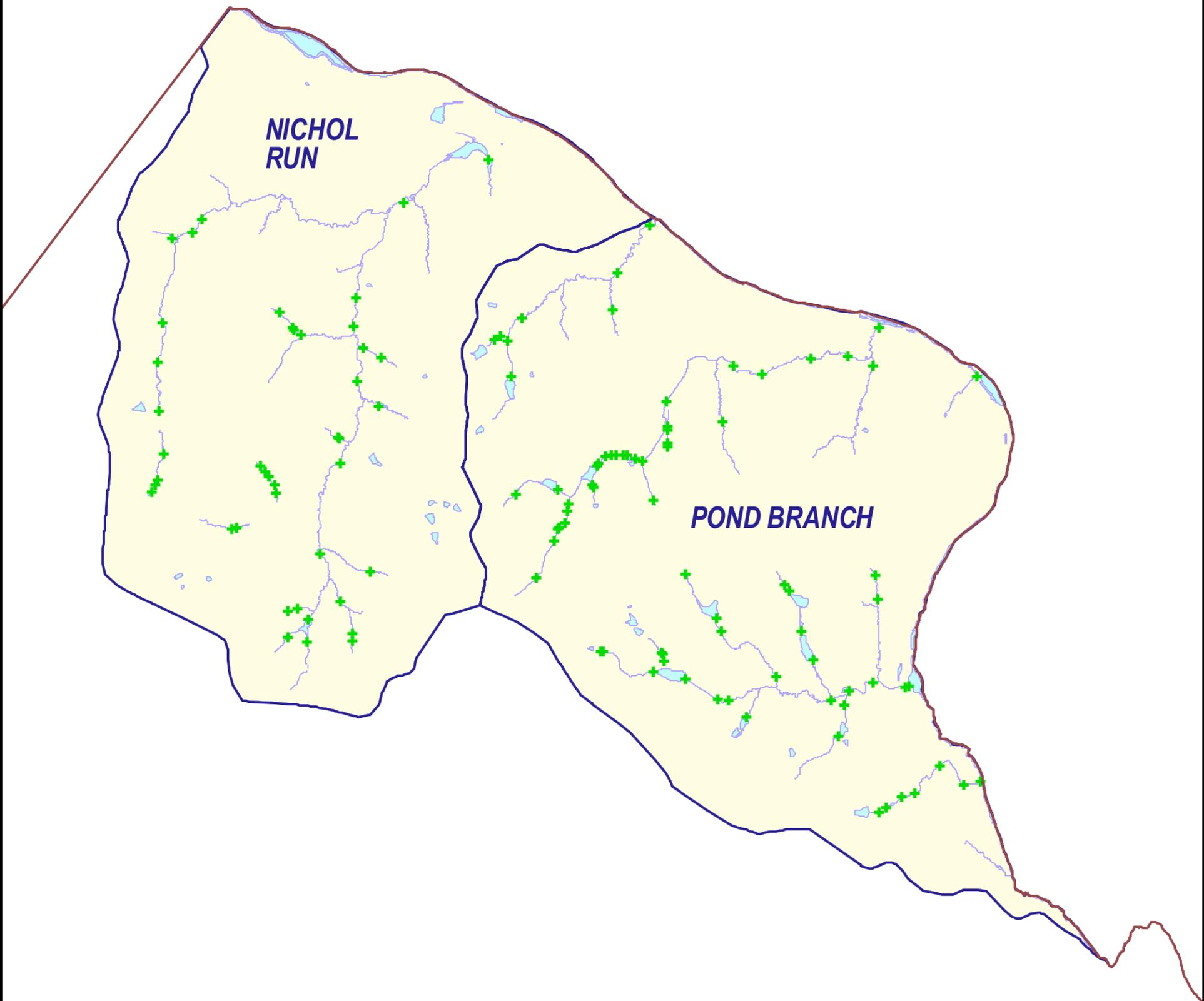
WATERSHED GROUP:
UPPER POTOMAC



0 2000 4000 6000 8000 Feet

Figure 3-13
Deficient Buffer Impacts
Upper Potomac Group
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
UPPER POTOMAC**



Inventory Type
+ Crossing

-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds

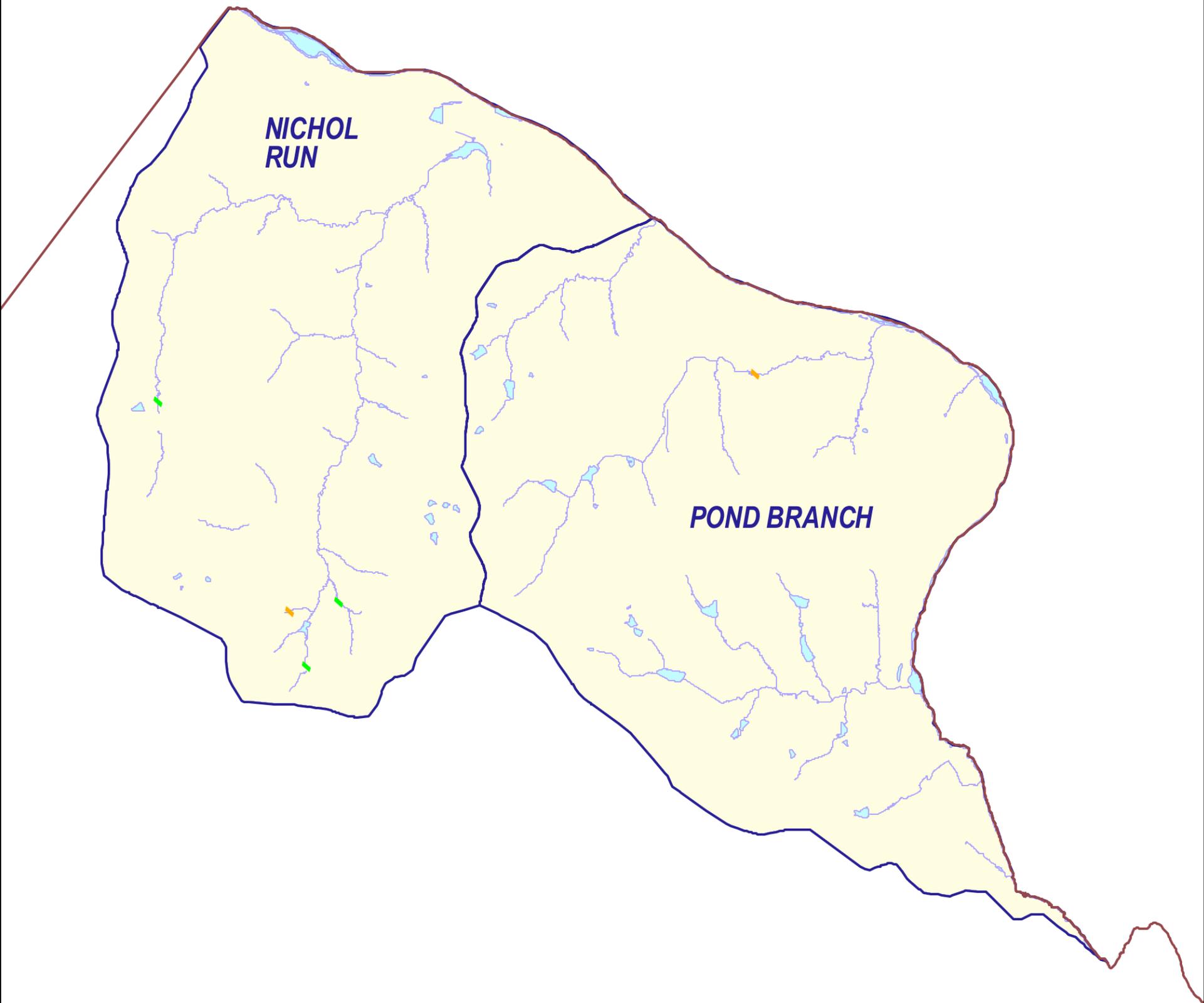


0 2000 4000 6000 8000 Feet



**Figure 3-14
Crossings
Upper Potomac Group
Fairfax County Stream Physical Assessment**





Pipe / Ditch by Impact Score

-  1
-  2
-  3
-  4
-  5
-  6
-  7
-  8
-  9
-  10

-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds

WATERSHED GROUP:
UPPER POTOMAC

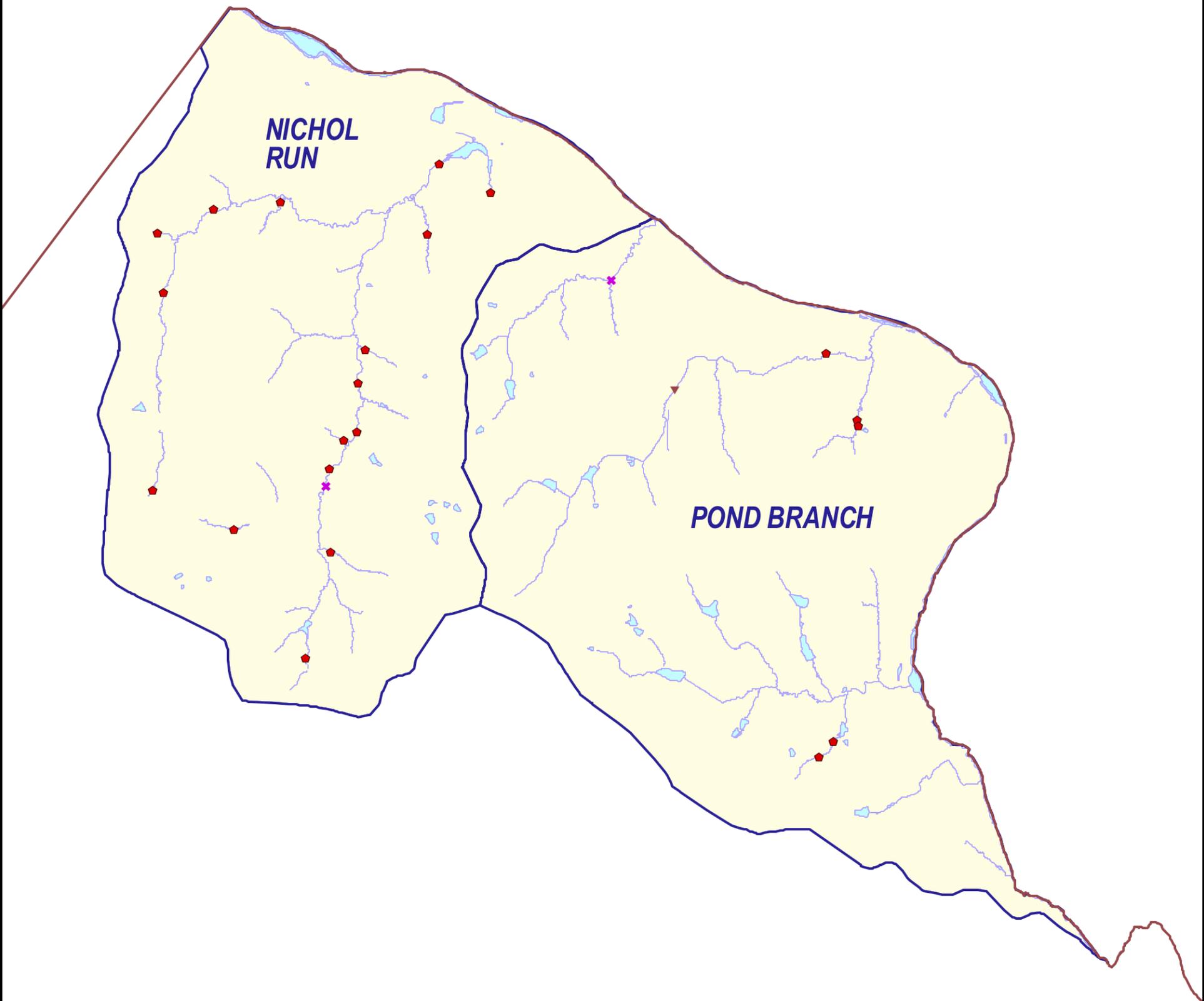


0 2000 4000 6000 8000 Feet



Figure 3-15
Pipe and Ditch Impacts
Upper Potomac Group
Fairfax County Stream Physical Assessment





Inventory Types

- ▼ Dump
- ◆ Obstruction
- * Utility

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

WATERSHED GROUP:
UPPER POTOMAC



0 2000 4000 6000 8000 Feet

Figure 3-16
Dumps, Obstructions, and Utilities
Upper Potomac Group
Fairfax County Stream Physical Assessment



3.2.3 Difficult Run Summary

3.2.3.1 Difficult Run Watershed

Description. Difficult Run Watershed is the largest watershed in Fairfax County, with just over 131 miles of stream assessed. It encompasses most of the northern portion of the County. The watershed is contained entirely within the county boundaries, and drains directly to the Potomac River.

Habitat. The habitat assessment results for Difficult Run Watershed are summarized by stream in Table 3-13. Habitat scores for each reach are depicted in Figure 3-17. Based on a length-weighted habitat score of 108 (Table 3-2), Difficult Run Watershed is in the middle to upper range of quality, compared to the rest of the County. Less than 1 mile of stream was categorized as having “very poor” habitat conditions; approximately 14 miles were categorized as “poor,” 64 miles as “fair,” 42 miles as “good,” and 9 miles as “excellent.”

CEM. On the basis of the CEM evaluations, approximately 73 percent of Difficult Run Watershed is in Evolutionary Stage 3 (Table 3-3). Figure 3-18 summarizes the CEM results for Difficult Run Watershed.

Infrastructure. The infrastructure inventory resulted in 1814 inventory points. The most significant problems were related to three exposed utility lines that were given an impact score over 10 and many obstructions, and erosion points which were each given an impact score of 10. The infrastructure inventory results are summarized in Table 3-14. Figures 3-19, 3-20, 3-21, 3-22, and 3-23 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

TABLE 3-13
Habitat Assessment Summary for Difficult Run Watershed
Fairfax County Stream Physical Assessment

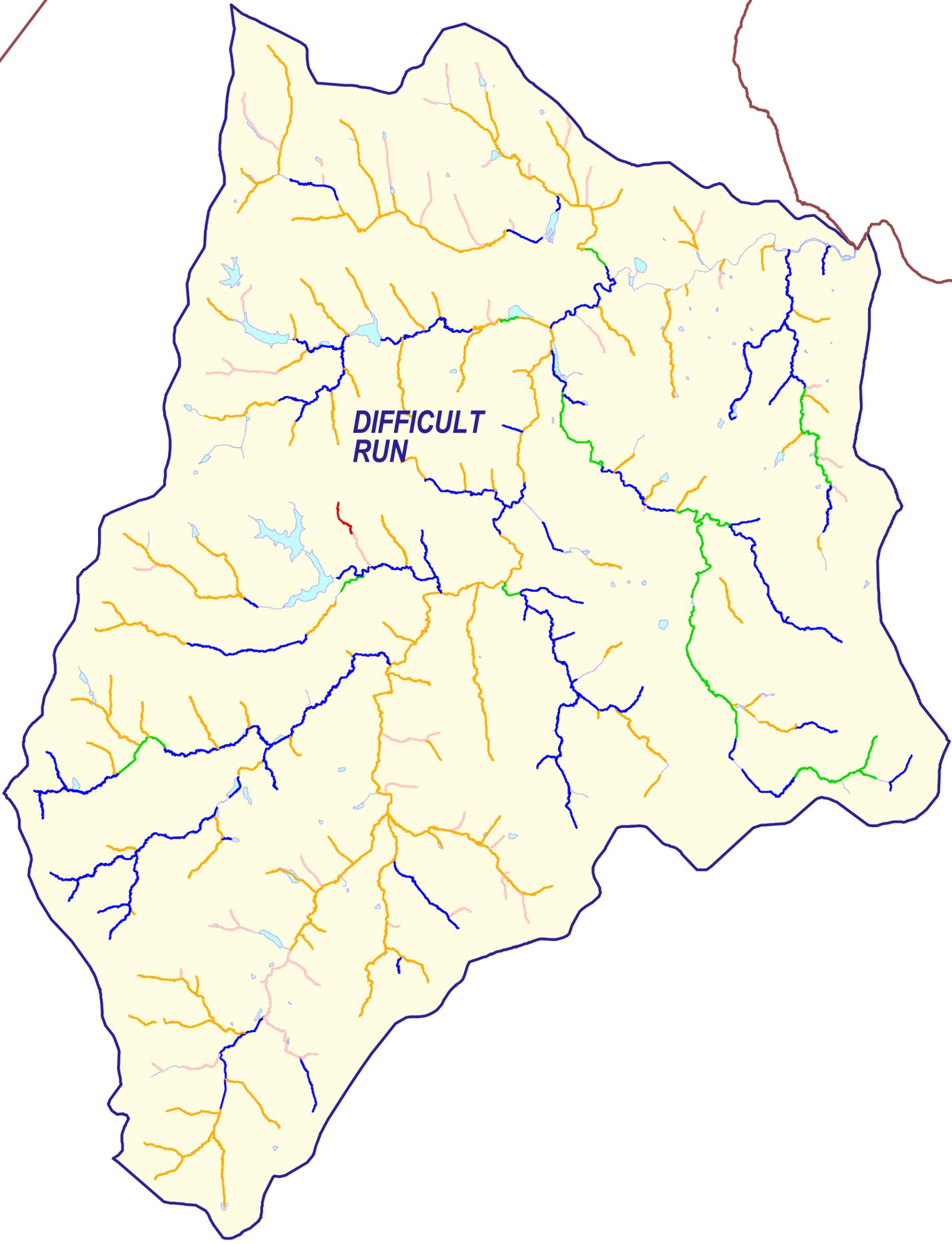
Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Angelico Branch	0 (0.00)	0 (0.00)	10,672 (100.00)	0 (0.00)	0 (0.00)	10,672
Bridge Branch	0 (0.00)	0 (0.00)	0 (0.00)	1,524 (100.00)	0 (0.00)	1,524
Captain Hickory Run	0 (0.00)	5,118 (24.54)	13,298 (63.75)	977 (4.68)	1,468 (7.04)	20,861
Colvin Run	0 (0.00)	1,412 (2.86)	28,799 (58.36)	18,062 (36.60)	1,075 (2.18)	49,348
Difficult Run	0 (0.00)	23,261 (14.26)	110,245 (67.58)	29,629 (18.16)	0 (0.00)	163,134
Dog Run	0 (0.00)	0 (0.00)	7,339 (100.00)	0 (0.00)	0 (0.00)	7,339
Little Difficult Run	0 (0.00)	0 (0.00)	19,225 (35.91)	30,580 (57.12)	3,732 (6.97)	53,536

TABLE 3-13
Habitat Assessment Summary for Difficult Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Moonac Creek	0 (0.00)	0 (0.00)	2,977 (100.00)	0 (0.00)	0 (0.00)	2,977
Old Courthouse Spring Branch	0 (0.00)	0 (0.00)	0 (0.00)	10,750 (80.46)	2,611 (19.54)	13,361
Piney Branch	0 (0.00)	0 (0.00)	7,294 (20.29)	27,124 (75.44)	1,536 (4.27)	35,953
Piney Run	0 (0.00)	10,098 (24.22)	25,508 (61.19)	6,083 (14.59)	0 (0.00)	41,689
Rocky Branch	0 (0.00)	6,997 (15.34)	32,034 (70.24)	6,574 (14.42)	0 (0.00)	45,606
Rocky Run	0 (0.00)	2,962 (9.56)	6,525 (21.06)	14,373 (46.38)	7,127 (23.00)	30,987
Sharpers Run	0 (0.00)	0 (0.00)	0 (0.00)	8,224 (100.00)	0 (0.00)	8,224
Snakeden Branch	2,090 (6.03)	3,681 (10.63)	16,550 (47.78)	12,313 (35.55)	0 (0.00)	34,634
South Fork Run	0 (0.00)	0 (0.00)	8,819 (24.46)	27,233 (75.54)	0 (0.00)	36,052
The Glade	0 (0.00)	0 (0.00)	10,534 (54.20)	7,285 (37.49)	1,616 (8.31)	19,434
Tributary To Captain Hickory Run	0 (0.00)	2,732 (20.78)	10,419 (79.22)	0 (0.00)	0 (0.00)	13,151
Tributary To Colvin Run	0 (0.00)	6,313 (32.84)	11,583 (60.26)	1,326 (6.90)	0 (0.00)	19,222
Tributary To Difficult Run	0 (0.00)	7,264 (66.87)	3,599 (33.13)	0 (0.00)	0 (0.00)	10,863
Tributary To Dog Run	0 (0.00)	3,979 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	3,979
Tributary To Piney Branch	0 (0.00)	0 (0.00)	515 (26.37)	1,438 (73.63)	0 (0.00)	1,954
Tributary To Rock Branch	0 (0.00)	1,657 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	1,657
Wolftrap Creek	0 (0.00)	303 (0.52)	9,928 (16.92)	19,468 (33.18)	28,968 (49.38)	58,666
Watershed Total	2,090 (0.31)	75,778 (11.07)	335,862 (49.04)	222,963 (32.56)	48,132 (7.03)	684,825

TABLE 3-14
 Infrastructure Assessment Summary for Difficult Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	12	15	18	20	Total
Deficient Buffers	0	0	14	38	90	165	58	70	31	5	3	N/A	N/A	N/A	N/A	474
Crossings	114	172	148	61	47	25	8	6	2	0	1	N/A	N/A	N/A	N/A	584
Ditches and Pipes	197	65	23	26	17	27	4	5	6	0	6	N/A	N/A	N/A	N/A	376
Erosion	0	0	0	0	5	25	24	47	26	5	12	N/A	N/A	N/A	N/A	144
Head Cut	0	0	0	0	4	0	1	0	0	0	1	N/A	N/A	N/A	N/A	6
Obstruction	12	5	9	27	16	32	15	16	17	10	32	N/A	N/A	N/A	N/A	191
Utility	2	1	4	9	10	3	0	4	0	0	3	1	1	1	0	39
Total	325	243	198	161	189	277	110	148	82	20	58	1	1	1	0	1814



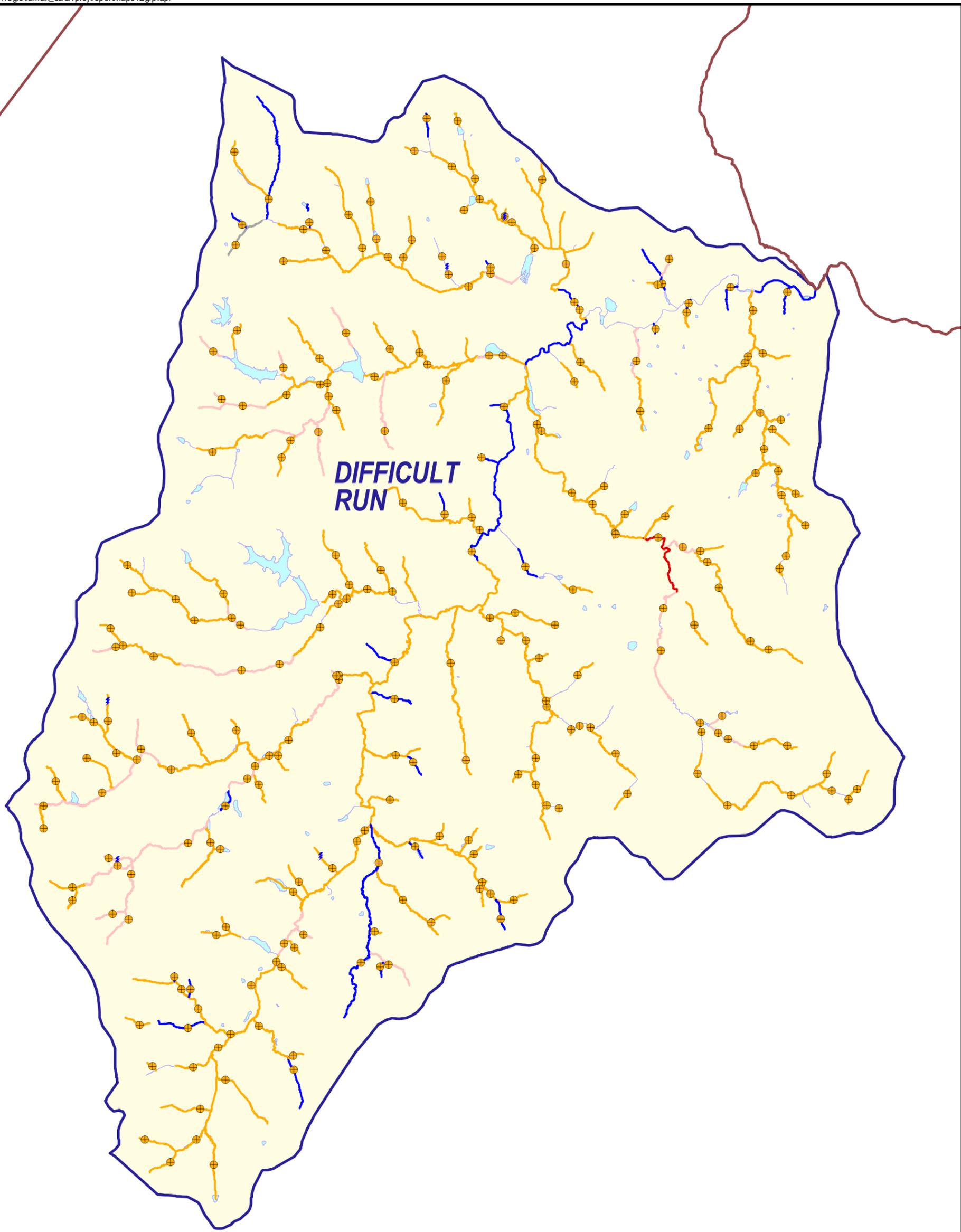
-  Fairfax County Boundary
- Habitat Rating**
-  Excellent
-  Good
-  Fair
-  Poor
-  Very Poor
-  No Habitat Assessment
-  Lakes and Ponds
-  Watersheds

**WATERSHED GROUP:
DIFFICULT RUN**



Figure 3-17
Habitat Assessment
Difficult Run
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
DIFFICULT RUN**

Inventory Types

- Cross Section
- ⚡ Head Cut

CEM Stage

- Not Assigned
- 1
- 2
- 3
- 4
- 5

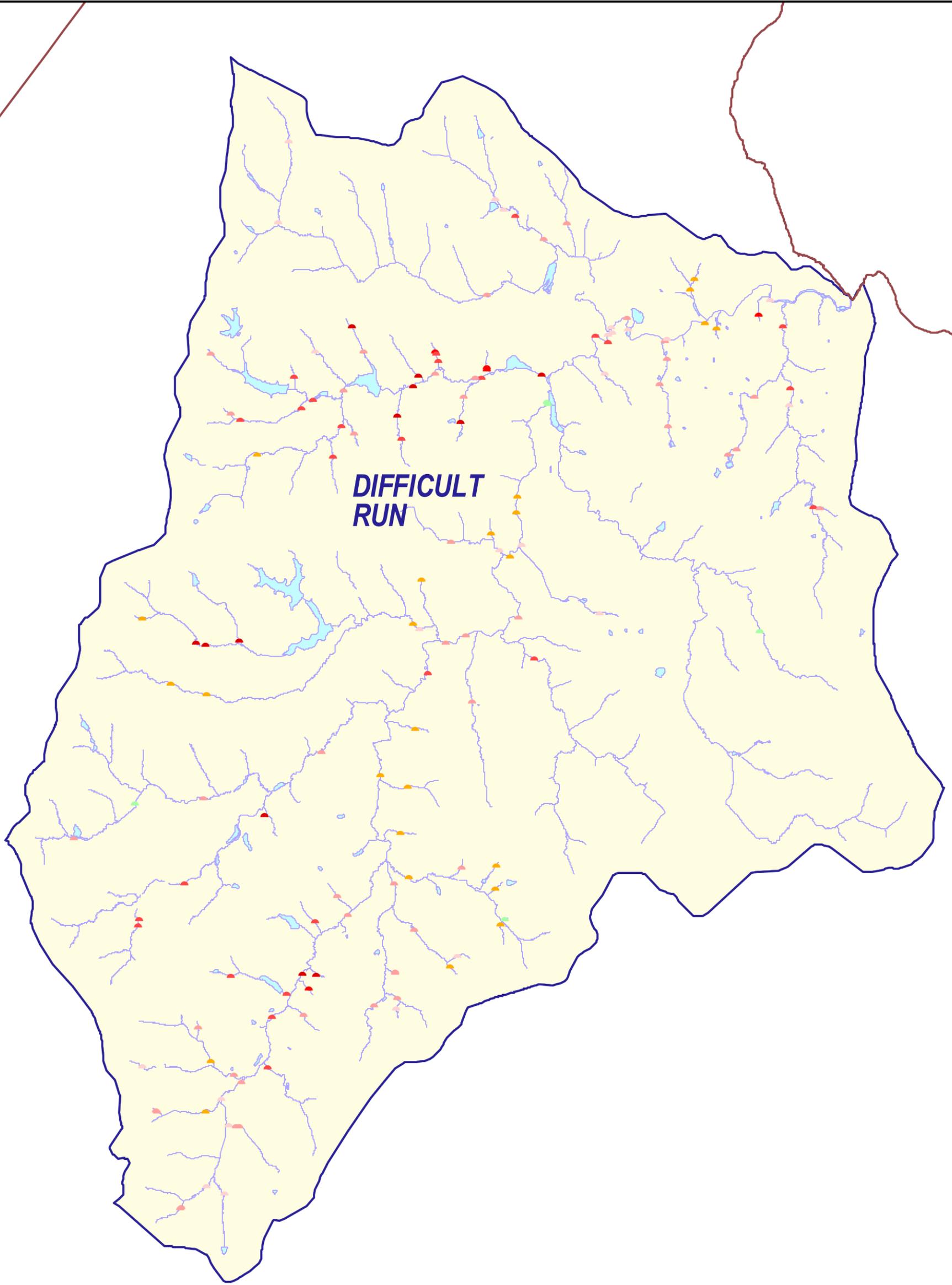
- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds



0 3000 6000 9000 12000 Feet

Figure 3-18
CEM Stages
Difficult Run
Fairfax County Stream Physical Assessment





Erosion by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

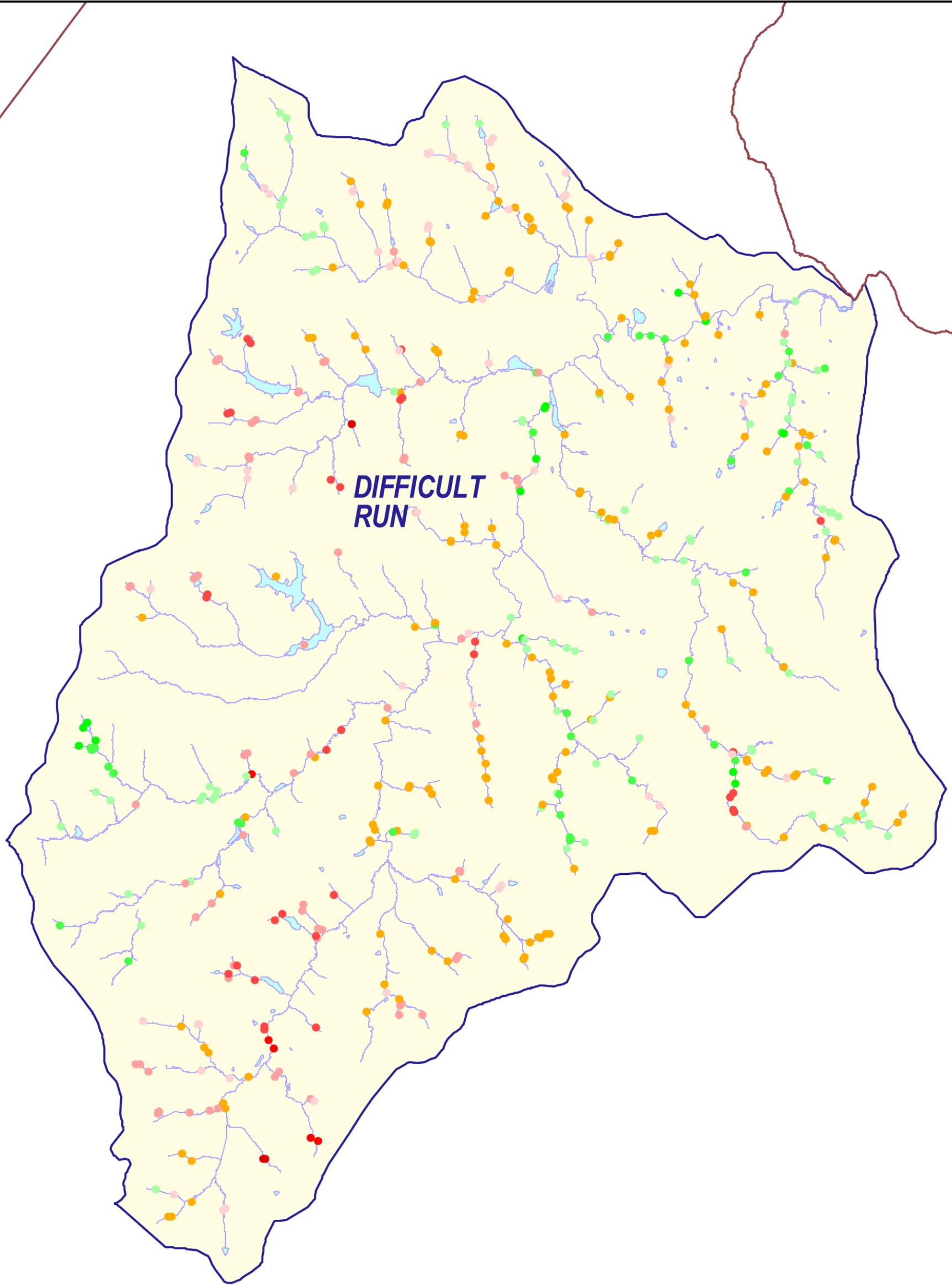
WATERSHED GROUP:
DIFFICULT RUN



0 3000 6000 9000 12000 Feet

Figure 3-19
Erosion Impacts
Difficult Run
Fairfax County Stream Physical Assessment





Deficient Buffer by Impact Score

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

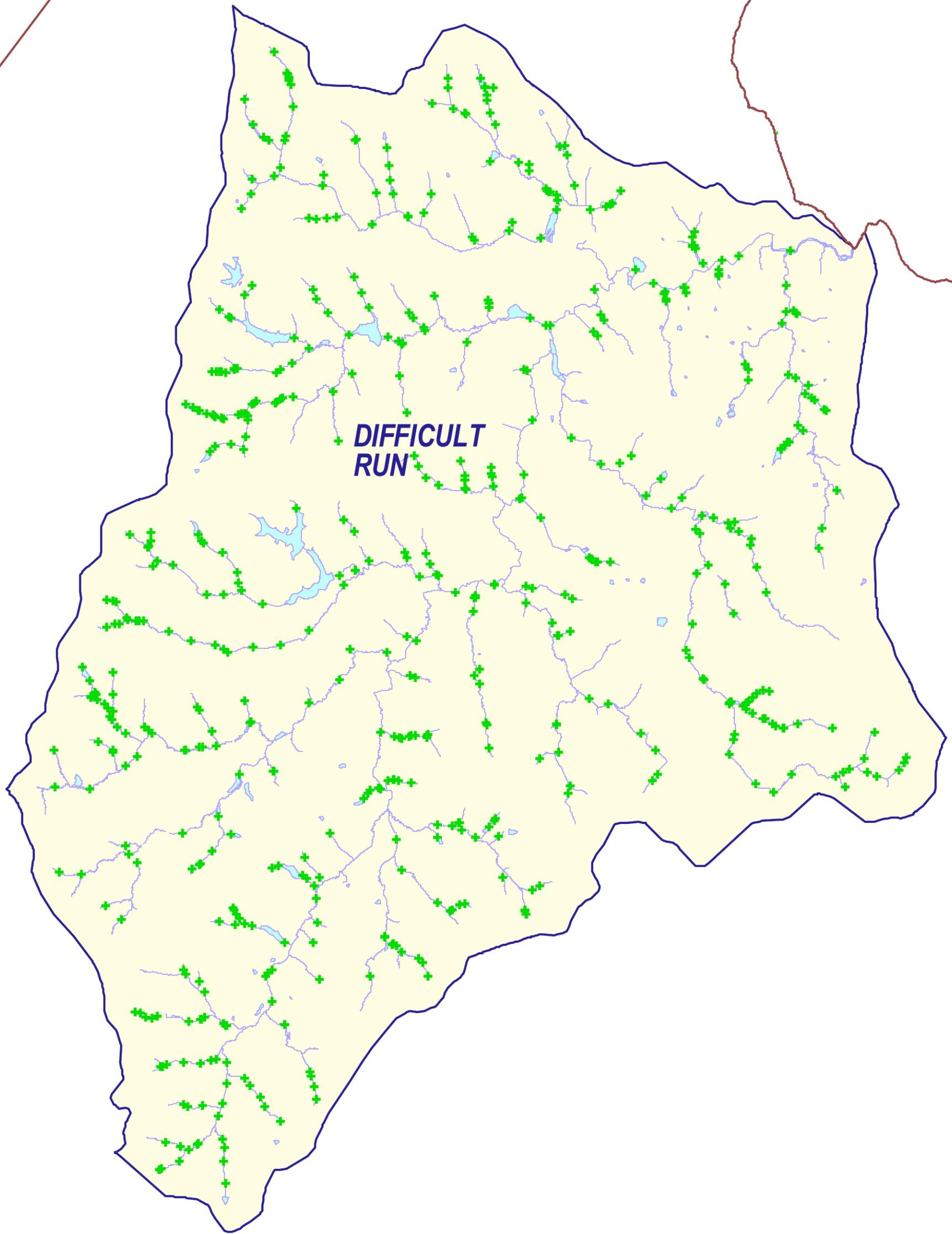
WATERSHED GROUP:
DIFFICULT RUN



0 3000 6000 9000 12000 Feet

Figure 3-20
Deficient Buffer Impacts
Difficult Run
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
DIFFICULT RUN**

Inventory Type
+ Crossing

-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds

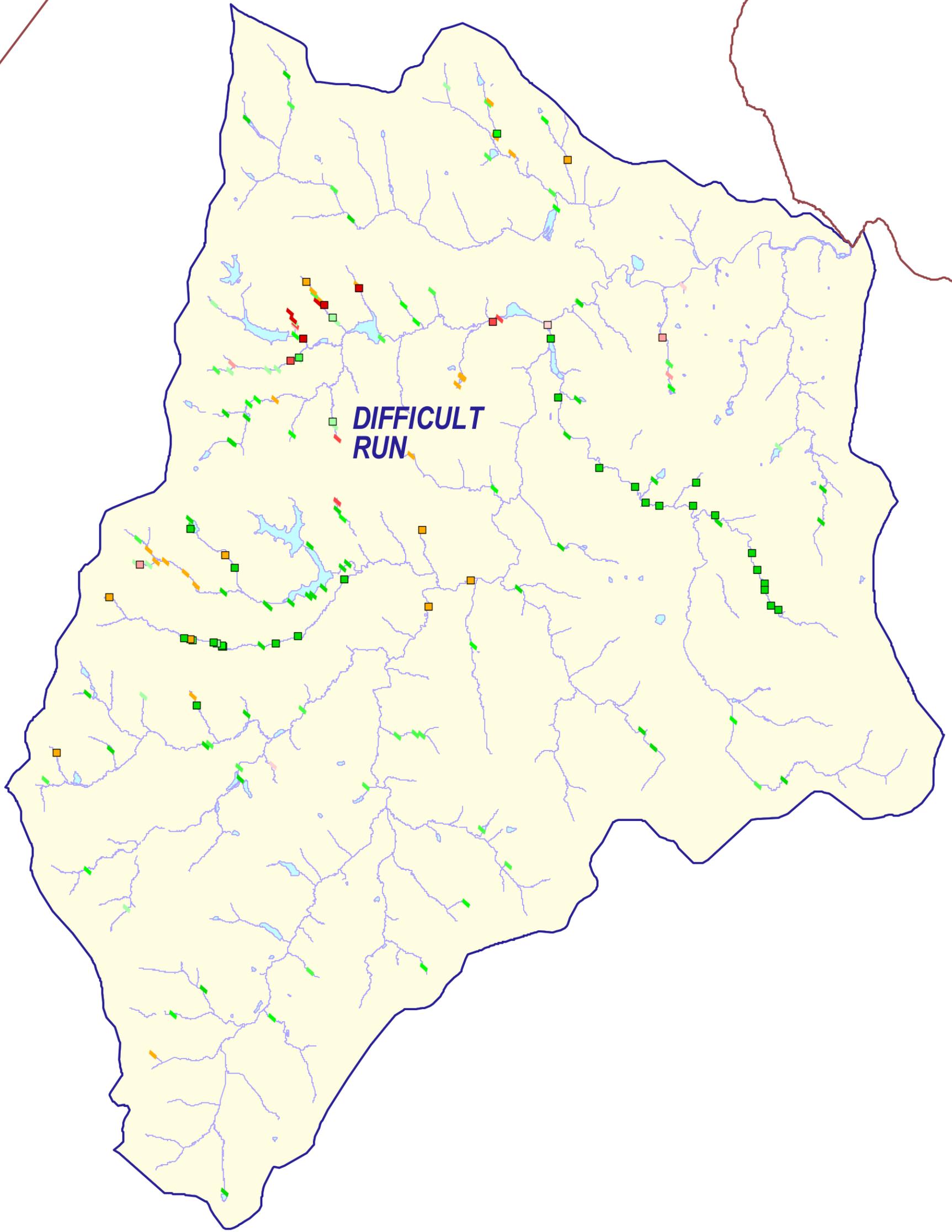


**Figure 3-21
Crossings
Difficult Run
Fairfax County Stream Physical Assessment**



0 3000 6000 9000 12000 Feet





**WATERSHED GROUP:
DIFFICULT RUN**

Pipe / Ditch by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

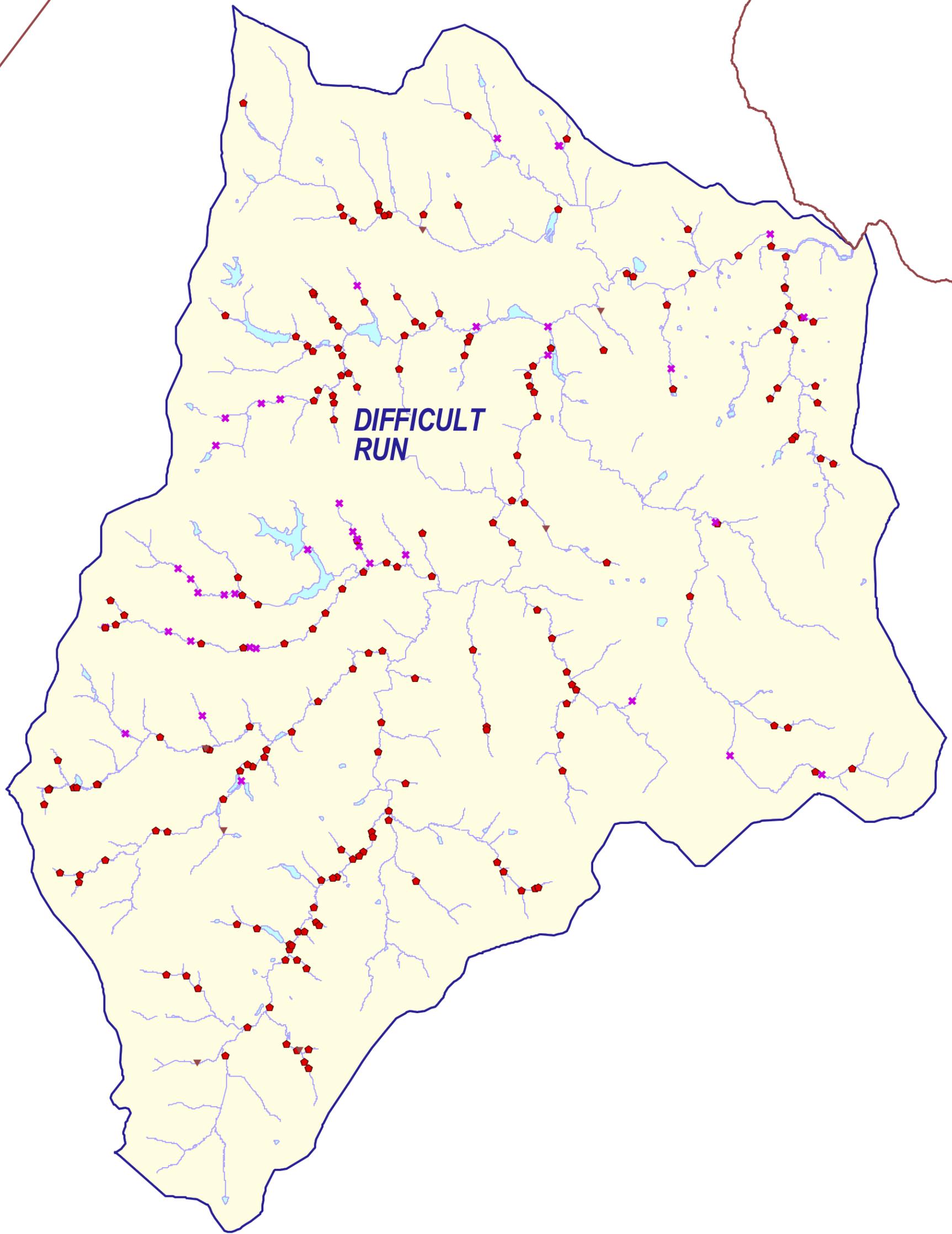
- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds



0 3000 6000 9000 12000 Feet

Figure 3-22
Pipe and Ditch Impacts
Difficult Run
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
DIFFICULT RUN**



Inventory Types

- ▼ Dump
- ◆ Obstruction
- * Utility

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds



0 3000 6000 9000 12000 Feet

Figure 3-23
Dumps, Obstructions, and Utilities
Difficult Run
Fairfax County Stream Physical Assessment



3.2.4 Middle Potomac Group Summary

3.2.4.1 Bull Neck Run Watershed

Description. Bull Neck Run Watershed is one of the smaller watersheds in Fairfax County, with just under 5 miles of stream assessed. It consists of a small stream network that drains directly to the Potomac River.

Habitat. The habitat assessment results for Bull Neck Run Watershed are summarized by stream in Table 3-15. Habitat scores for each reach are depicted in Figure 3-24. Based on a length weighted habitat score of 128 (Table 3-2), Bull Neck Run Watershed is one of the highest quality streams, compared to the rest of the County. Just over 1 mile of stream was categorized as having “fair” habitat conditions; 2 miles were categorized as “good,” and 1 mile as “excellent.”

CEM. Based on the CEM evaluations the channels in Bull Neck Run Watershed are divided nearly equally between Stage 3 and Stage 4 (Table 3-3). Figure 3-25 summarizes the CEM results for Bull Neck Run Watershed.

Infrastructure. The infrastructure inventory resulted in 25 inventory points. The most significant problems were related to two erosional areas that were each given an impact score of 7. The infrastructure inventory results are summarized in Table 3-16. Figures 3-26, 3-27, 3-28, 3-29, and 3-30 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

3.2.4.2 Scotts Run Watershed

Description. Scotts Run Watershed is a small watershed, with approximately 8 miles of stream assessed. It is located in the middle of the northeastern boundary of the County. The watershed is contained entirely within the county boundaries, and drains directly to the Potomac River.

Habitat. The habitat assessment results for Scotts Run Watershed are summarized by stream in Table 3-17. Habitat scores for each reach are depicted in Figure 3-24. Based on a length weighted habitat score of 108 (Table 3-2), Scotts Run Watershed is in the middle range of quality, compared to the rest of the County. Approximately 1.5 miles of stream were categorized as having “poor” habitat conditions, 4 miles as “fair,” and 1 mile as “good,” and 1.5 miles as “excellent.”

CEM. On the basis of the CEM evaluations 89 percent of the channels in Scotts Run Watershed are in Evolutionary Stage 3 (Table 3-3). Figure 3-25 summarizes the CEM results for Scotts Run Watershed.

Infrastructure. The infrastructure inventory resulted in 78 inventory points. The most significant problem was related to a crossing that was given an impact score of 8. The infrastructure inventory results are summarized in Table 3-18. Figures 3-26, 3-27, 3-28, 3-29, and 3-30 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

3.2.4.3 Dead Run Watershed

Description. Dead Run Watershed is one of the smaller watersheds in Fairfax County, with approximately 6 miles of stream assessed. It consists of a small stream network that drains directly to the Potomac River at the north end of the County.

Habitat. The habitat assessment results for Dead Run Watershed are summarized by stream in Table 3-19. Habitat scores for each reach are depicted in Figure 3-24. Based on a length weighted habitat score of 103 (Table 3-2), Dead Run Watershed is in the middle range of quality, compared to the rest of the County. Less than 1 mile of stream was categorized as having “poor” habitat conditions, approximately 4 miles of stream were categorized as having “fair,” and 1 mile as having “good.”

CEM. On the basis of CEM evaluations, all of the channels in Dead Run Watershed are in Stage 3 (Table 3-3). Figure 3-25 summarizes the CEM results for Dead Run Watershed.

Infrastructure. The infrastructure inventory resulted in 49 inventory points. The most significant problems were related to two deficient buffers that were each given an impact score of 7. The infrastructure inventory results are summarized in Table 3-20. Figures 3-26, 3-27, 3-28, 3-29, and 3-30 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

3.2.4.4 Turkey Run Watershed

Description. Turkey Run Watershed is a small watershed, with approximately 3 miles of stream assessed. It is located along the middle of the northeastern boundary of the County. The watershed consists of a couple small tributaries that drain directly to the Potomac River.

Habitat. The habitat assessment results for Turkey Run Watershed are summarized by stream in Table 3-21. Habitat scores for each reach are depicted in Figure 3-24. Based on a length weighted habitat score of 124 (Table 3-2), Turkey Run Watershed is one of the highest quality watersheds in the County. Approximately 1 mile of stream was categorized as having “fair” habitat conditions and 2 miles as “excellent.”

CEM. On the basis of the CEM evaluations all of the channels assessed in Turkey Run Watershed are in Evolutionary Stage 3 (Table 3-3). Figure 3-25 summarizes the CEM results for Turkey Run Watershed.

Infrastructure. The infrastructure inventory resulted in 21 inventory points. The most significant problem was related to an erosional area that was given an impact score of 7. The infrastructure inventory results are summarized in Table 3-22. Figures 3-26, 3-27, 3-28, 3-29, and 3-30 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

3.2.4.5 Pimmit Run Watershed

Description. Pimmit Run Watershed is a medium sized watershed, with approximately 19 miles of stream assessed. It is located in the middle of the northeastern boundary of the County. The watershed is contained entirely within the county boundaries, and drains directly to the Potomac River.

Habitat. The habitat assessment results for Pimmit Run Watershed are summarized by stream in Table 3-23. Habitat scores for each reach are depicted in Figure 3-24. Based on a length weighted habitat score of 112 (Table 3-2), Pimmit Run Watershed is in the upper middle range, compared to the rest of the County. Just over 1 mile of stream was categorized as having “poor” habitat conditions, approximately 8 miles as “fair,” 8 miles as “good,” and nearly 0.5 mile as “excellent.”

CEM. Based on the CEM evaluations approximately 97 percent of the channels in Pimmit Run Watershed are in Evolutionary Stage 3 with the remainder in Stage 4 (Table 3-3). Figure 3-25 summarizes the CEM results for Pimmit Run Watershed.

Infrastructure. The infrastructure inventory resulted in 311 inventory points. The most significant problems were related to 1 deficient buffer and 1 erosional point that were given impact scores of 9 and 10 respectively. The infrastructure inventory results are summarized in Table 3-24. Figures 3-26, 3-27, 3-28, 3-29, and 3-30 summarize impact scores for the erosion problems; deficient buffers; pipes/ditches; crossings; and dumps, obstructions, and utilities, respectively.

TABLE 3-15
 Habitat Assessment Summary for Bull Neck Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Bull Neck Run	0 (0.00)	0 (0.00)	0 (0.00)	10,005 (100.00)	0 (0.00)	10,005
Tributary to Bull Neck Run	0 (0.00)	0 (0.00)	6,394 (55.51)	0 (0.00)	5,125 (44.49)	11,519
Tributary to Potomac River	0 (0.00)	0 (0.00)	0 (0.00)	1,175 (30.95)	2,623 (69.05)	3,798
Watershed Total	0 (0.00)	0 (0.00)	6,394 (25.25)	11,181 (44.15)	7,748 (30.60)	25,323

TABLE 3-16
 Infrastructure Assessment Summary for Bull Neck Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	0	4	1	0	0	0	0	0	0	N/A	5
Crossings	0	8	2	2	1	0	0	0	0	0	0	N/A	13
Ditches and Pipes	0	0	0	0	1	0	0	0	0	0	0	N/A	1
Erosion	0	0	0	0	0	1	0	2	0	0	0	N/A	3
Head Cut	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Obstruction	0	0	0	2	1	0	0	0	0	0	0	N/A	3
Utility	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	8	2	8	4	1	0	2	0	0	0	0	25

TABLE 3-17
Habitat Assessment Summary for Scotts Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Bradley Branch	0 (0.00)	0 (0.00)	3,647 (100.00)	0 (0.00)	0 (0.00)	3,647
Scott Run	0 (0.00)	0 (0.00)	12,458 (54.53)	2,726 (11.93)	7,664 (33.54)	22,848
Tributary to Scott Run	0 (0.00)	7,938 (46.56)	4,735 (27.77)	4,375 (25.66)	0 (0.00)	17,049
Watershed Total	0 (0.00)	7,938 (18.23)	20,840 (47.86)	7,101 (16.31)	7,664 (17.60)	43,543

TABLE 3-18
Infrastructure Assessment Summary for Scotts Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	1	4	5	3	1	0	0	0	0	N/A	14
Crossings	0	12	9	9	3	0	0	0	1	0	0	N/A	34
Ditches and Pipes	1	1	0	3	2	0	0	0	0	0	0	N/A	7
Erosion	0	0	0	8	4	3	0	0	0	0	0	N/A	15
Head Cut	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Obstruction	0	0	1	2	2	1	0	0	0	0	0	N/A	6
Utility	0	0	0	2	0	0	0	0	0	0	0	0	2
Total	1	13	11	28	16	7	1	0	1	0	0	0	78

TABLE 3-19
Habitat Assessment Summary for Dead Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Dead Run	0 (0.00)	0 (0.00)	6,718 (47.11)	6,436 (45.14)	1,105 (7.75)	14,260
Tributary to Dead Run	0 (0.00)	3,740 (22.98)	12,532 (77.02)	0 (0.00)	0 (0.00)	16,271
Tributary to Potomac River	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1,087 (100.00)	1,087
Watershed Total	0 (0.00)	3,740 (11.83)	19,250 (60.88)	6,436 (20.36)	2,193 (6.93)	31,618

TABLE 3-20
Infrastructure Assessment Summary for Dead Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	0	5	6	1	0	2	0	0	0	N/A	14
Crossings	1	12	8	2	1	0	0	0	0	0	0	N/A	24
Ditches and Pipes	0	1	2	1	0	0	0	0	0	0	0	N/A	4
Erosion	0	0	0	0	0	2	1	0	0	0	0	N/A	3
Head Cut	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Obstruction	0	0	0	0	1	1	0	0	0	0	0	N/A	2
Utility	0	0	0	0	0	0	2	0	0	0	0	0	2
Total	1	13	10	8	8	4	3	2	0	0	0	0	49

TABLE 3-21
Habitat Assessment Summary for Turkey Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Tributary to Turkey Run	0 (0.00)	1,487 (24.89)	4,488 (75.11)	0 (0.00)	0 (0.00)	5,975
Turkey Run	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	8,801 (100.00)	8,801
Watershed Total	0 (0.00)	1,487 (10.07)	4,488 (30.37)	0 (0.00)	8,801 (59.56)	14,777

TABLE 3-22
Infrastructure Assessment Summary for Turkey Run Watershed
Fairfax County Stream Physical Assessment

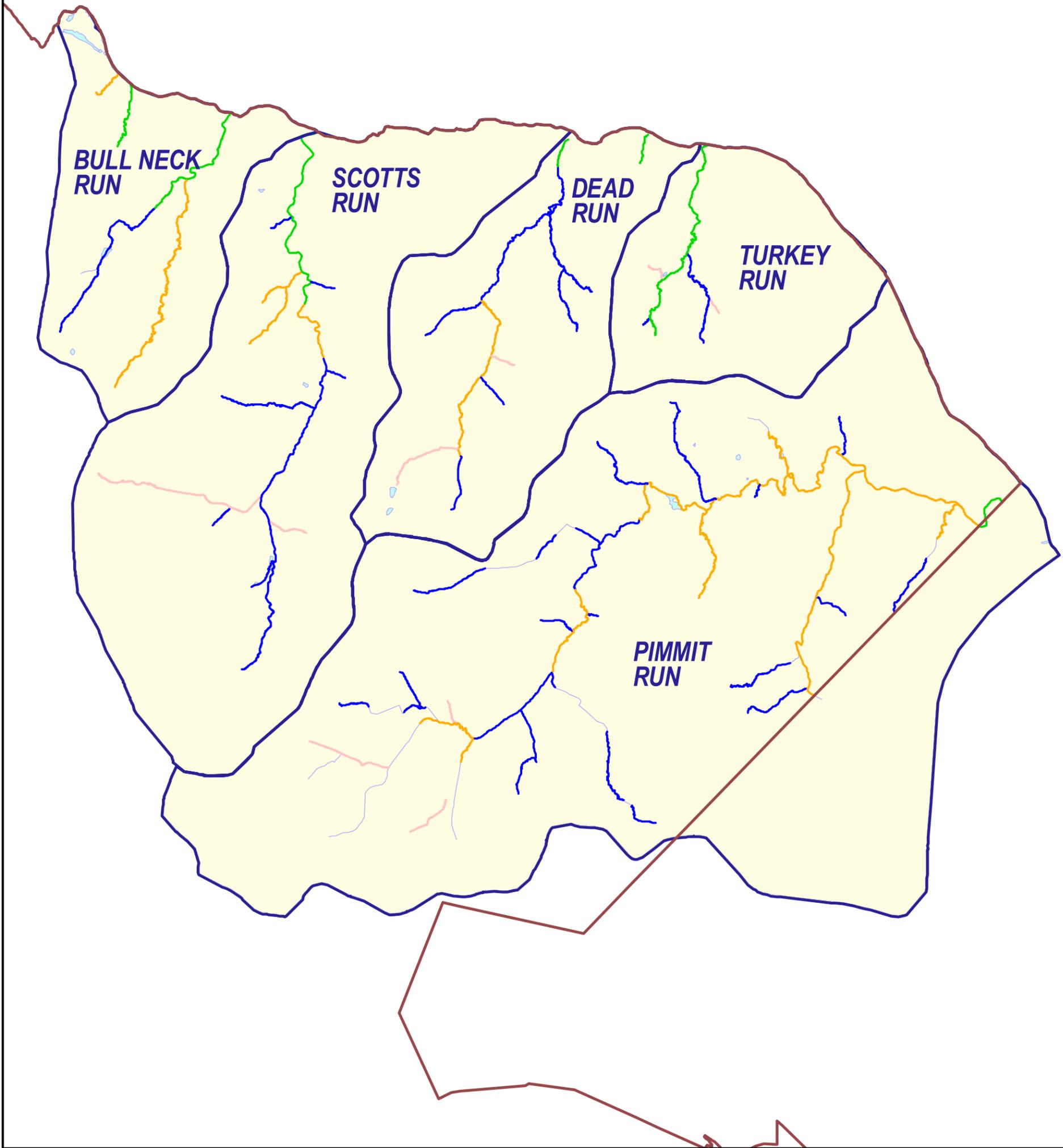
Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	0	0	4	3	0	0	0	0	0	N/A	7
Crossings	0	1	2	3	1	0	0	0	0	0	0	N/A	7
Ditches and Pipes	0	0	1	0	0	0	0	0	0	0	0	N/A	1
Erosion	0	0	0	0	2	1	0	1	0	0	0	N/A	4
Head Cut	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Obstruction	0	0	0	2	0	0	0	0	0	0	0	N/A	2
Utility	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	3	5	7	4	0	1	0	0	0	0	21

TABLE 3-23
 Habitat Assessment Summary for Pimmit Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Bryan Branch	0 (0.00)	0 (0.00)	0 (0.00)	4,073 (100.00)	0 (0.00)	4,073
Burkes Spring Branch	0 (0.00)	0 (0.00)	3,580 (100.00)	0 (0.00)	0 (0.00)	3,580
Little Pimmit Run	0 (0.00)	0 (0.00)	6,729 (42.39)	9,146 (57.61)	0 (0.00)	15,875
Pimmit Run	0 (0.00)	5,554 (7.73)	34,317 (47.78)	30,329 (42.22)	1,631 (2.27)	71,830
Watershed Total	0 (0.00)	5,554 (5.82)	44,626 (46.80)	43,547 (45.67)	1,631 (1.71)	95,357

TABLE 3-24
 Infrastructure Assessment Summary for Pimmit Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers				14	38	15	8			1		N/A	76
Crossings	4	7	42	20	7	1	2					N/A	83
Ditches and Pipes	46	1	17	26	5	3						N/A	98
Erosion				2	2	13	10	3	1		1	N/A	32
Head Cut												N/A	0
Obstruction	1		2	2	4	1			1			N/A	11
Utility				1	2	2	4	2				0	11
Total	51	8	61	65	58	35	24	5	2	1	1	0	311



-  Fairfax County Boundary
- Habitat Rating**
-  Excellent
-  Good
-  Fair
-  Poor
-  Very Poor
-  No Habitat Assessment
-  Lakes and Ponds
-  Watersheds

**WATERSHED GROUP:
MIDDLE POTOMAC**

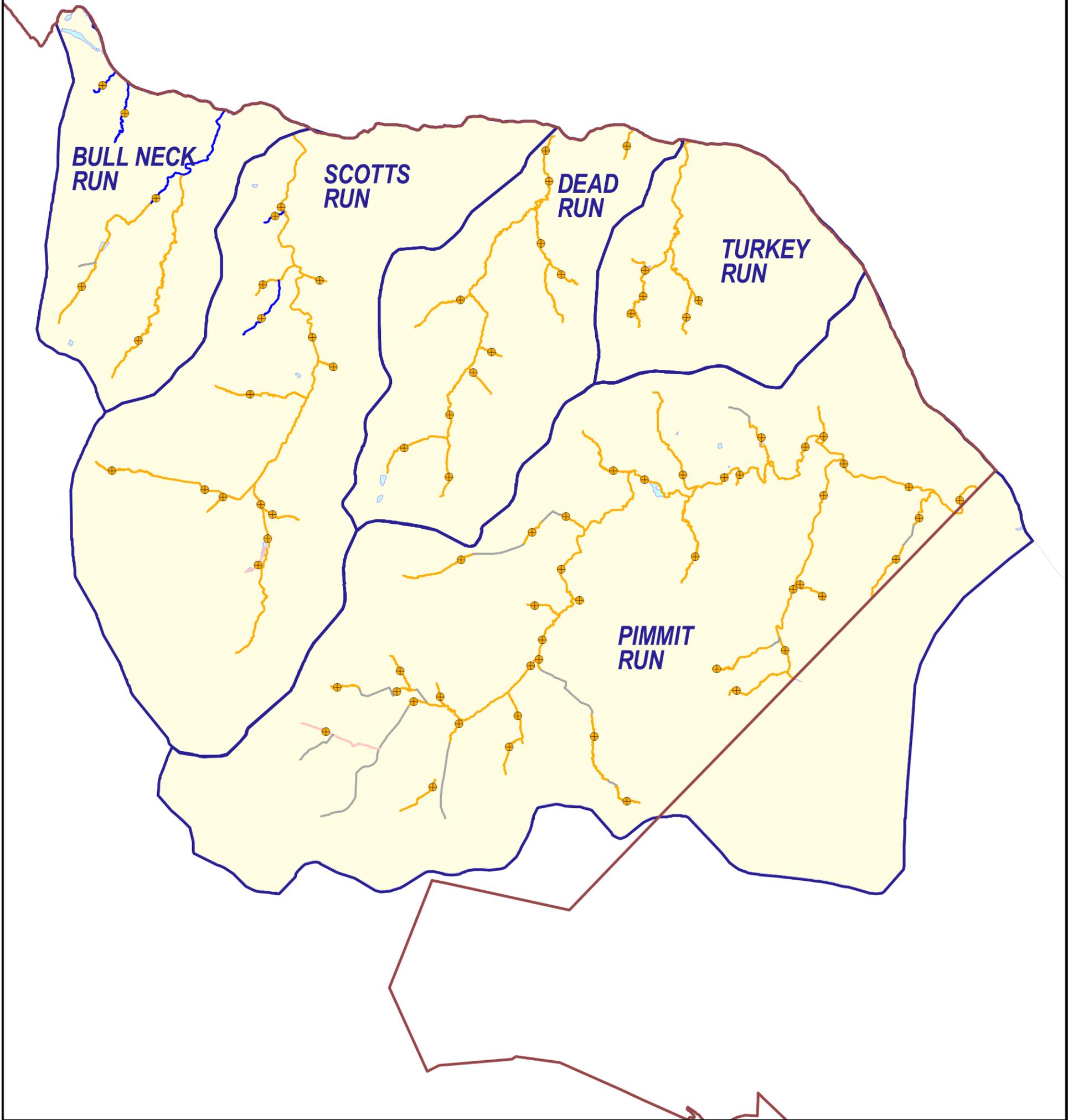


0 2000 4000 6000 8000 Feet



Figure 3-24
Habitat Assessment
Middle Potomac Group
Fairfax County Stream Physical Assessment





Inventory Types

- Cross Section
- ⚡ Head Cut

CEM Stage

- Not Assigned
- 1
- 2
- 3
- 4
- 5

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

**WATERSHED GROUP:
MIDDLE POTOMAC**

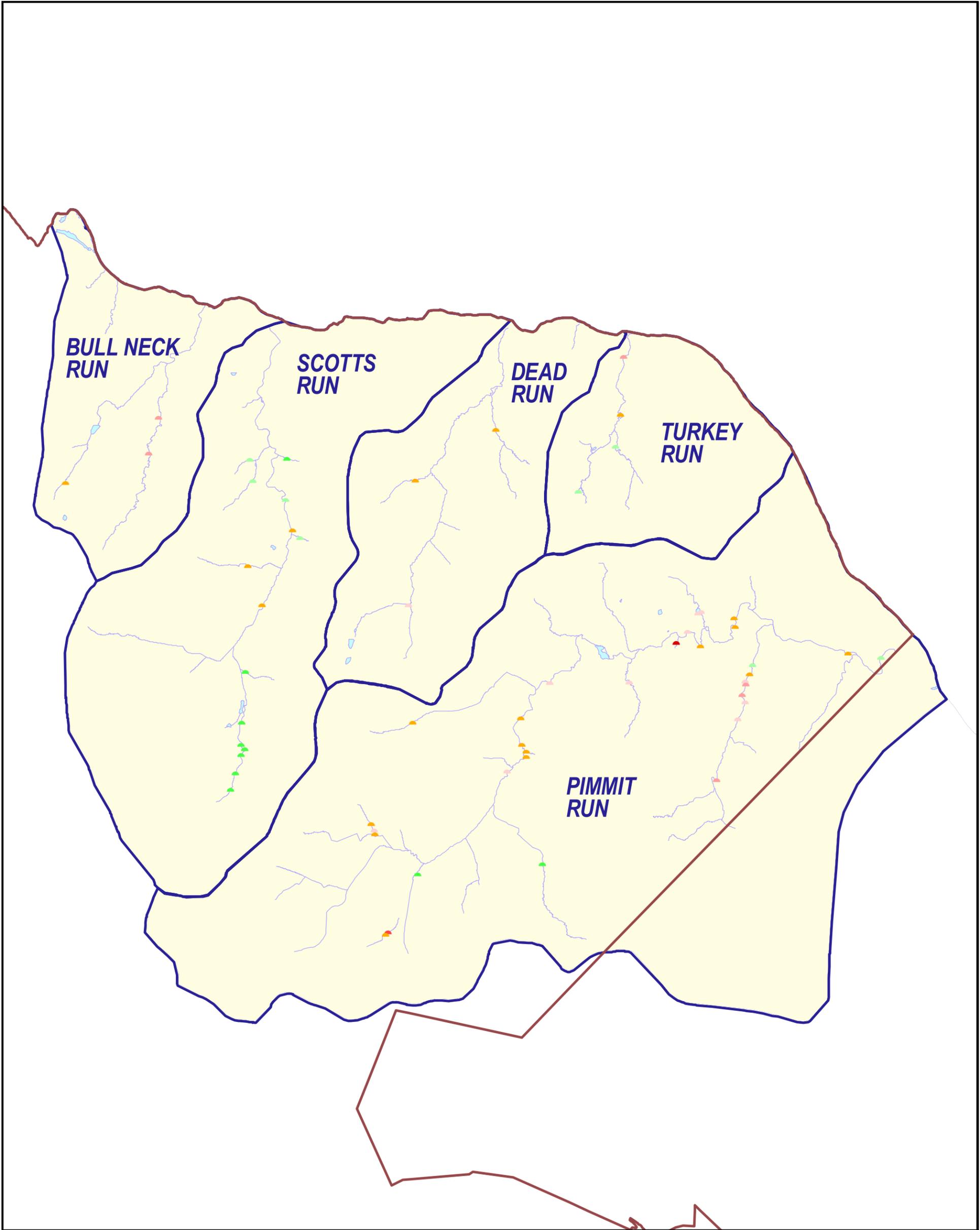


0 2000 4000 6000 8000 Feet



Figure 3-25
CEM Categories
Middle Potomac Group
Fairfax County Stream Physical Assessment





Erosion by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

WATERSHED GROUP:
MIDDLE POTOMAC

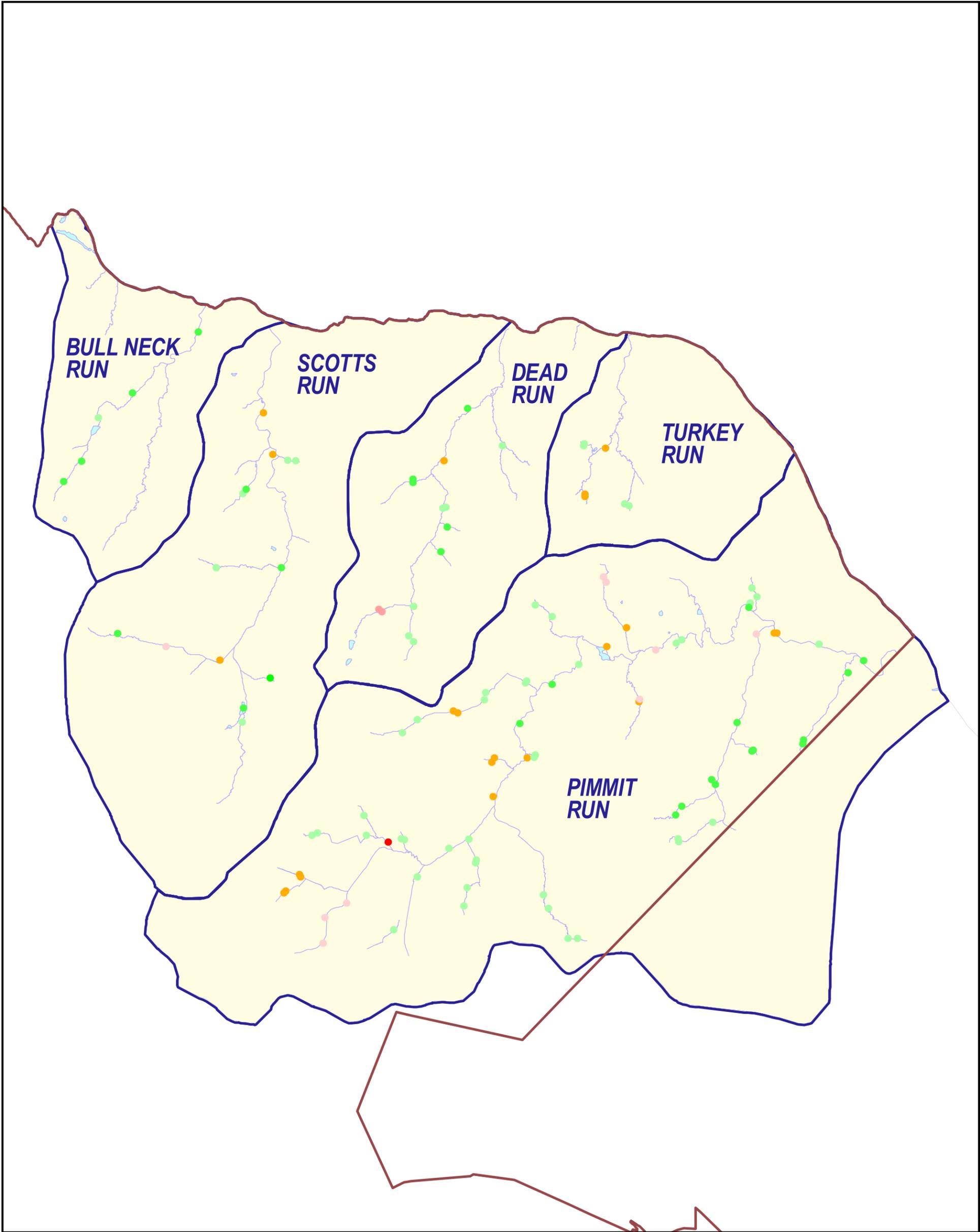


0 2000 4000 6000 8000 Feet



Figure 3-26
Erosion Impacts
Middle Potomac Group
Fairfax County Stream Physical Assessment





Deficient Buffer by Impact Score

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

WATERSHED GROUP:
MIDDLE POTOMAC

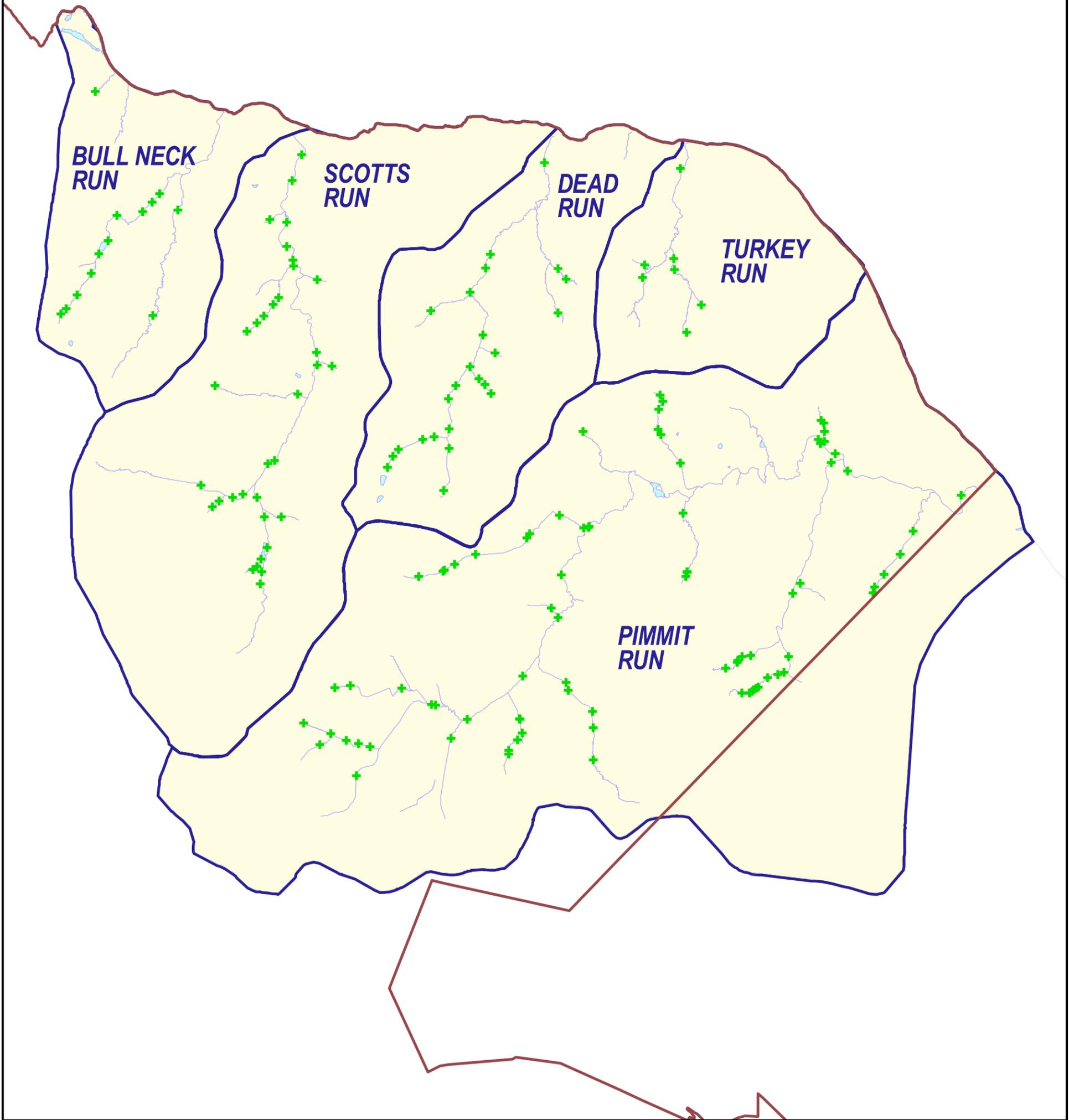


0 2000 4000 6000 8000 Feet



Figure 3-27
Deficient Buffer Impacts
Middle Potomac Group
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
MIDDLE POTOMAC**



Inventory Type
+ Crossing

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

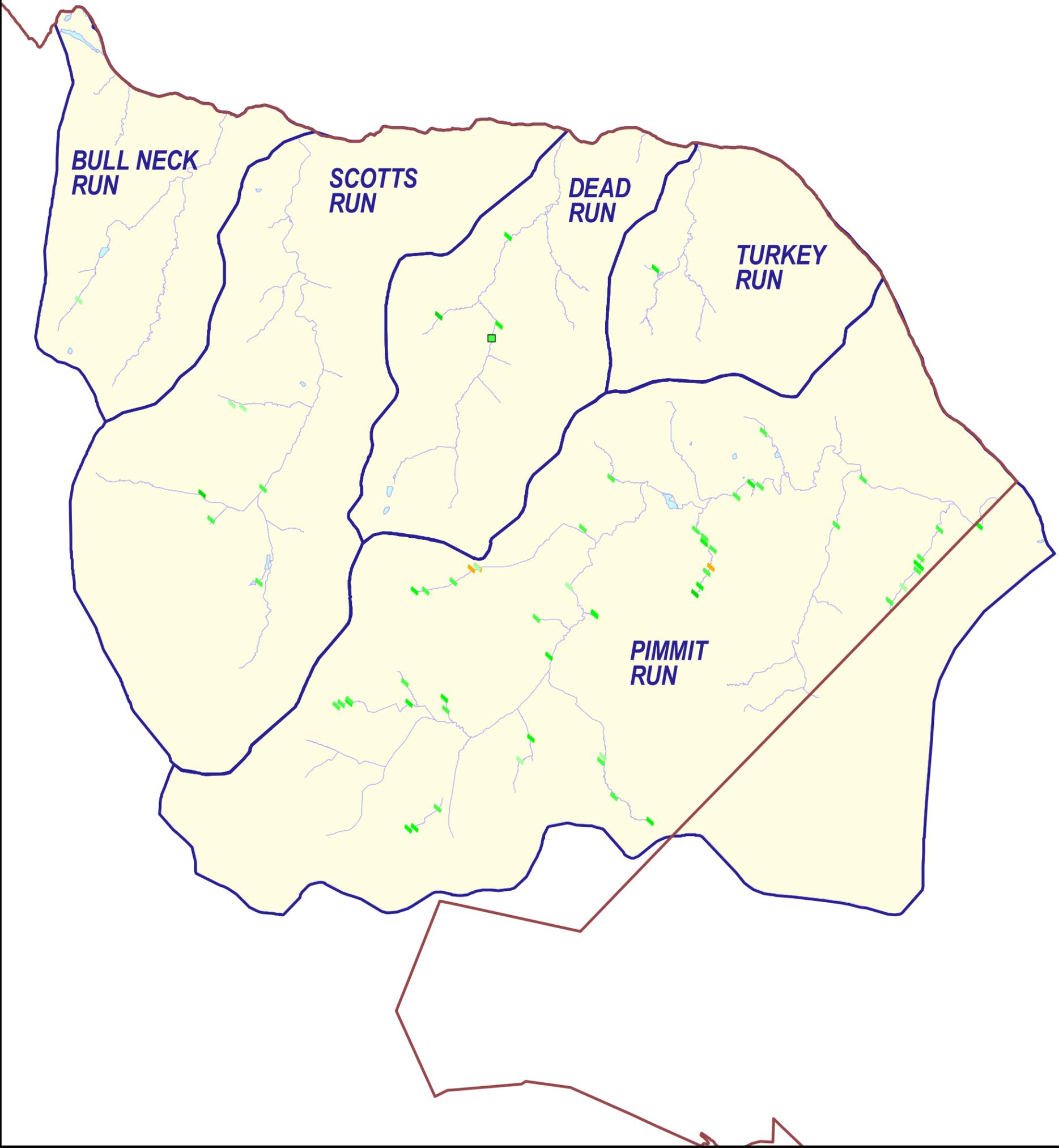


0 2000 4000 6000 8000 Feet



**Figure 3-28
Crossings
Middle Potomac Group
Fairfax County Stream Physical Assessment**





Pipe / Ditch by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

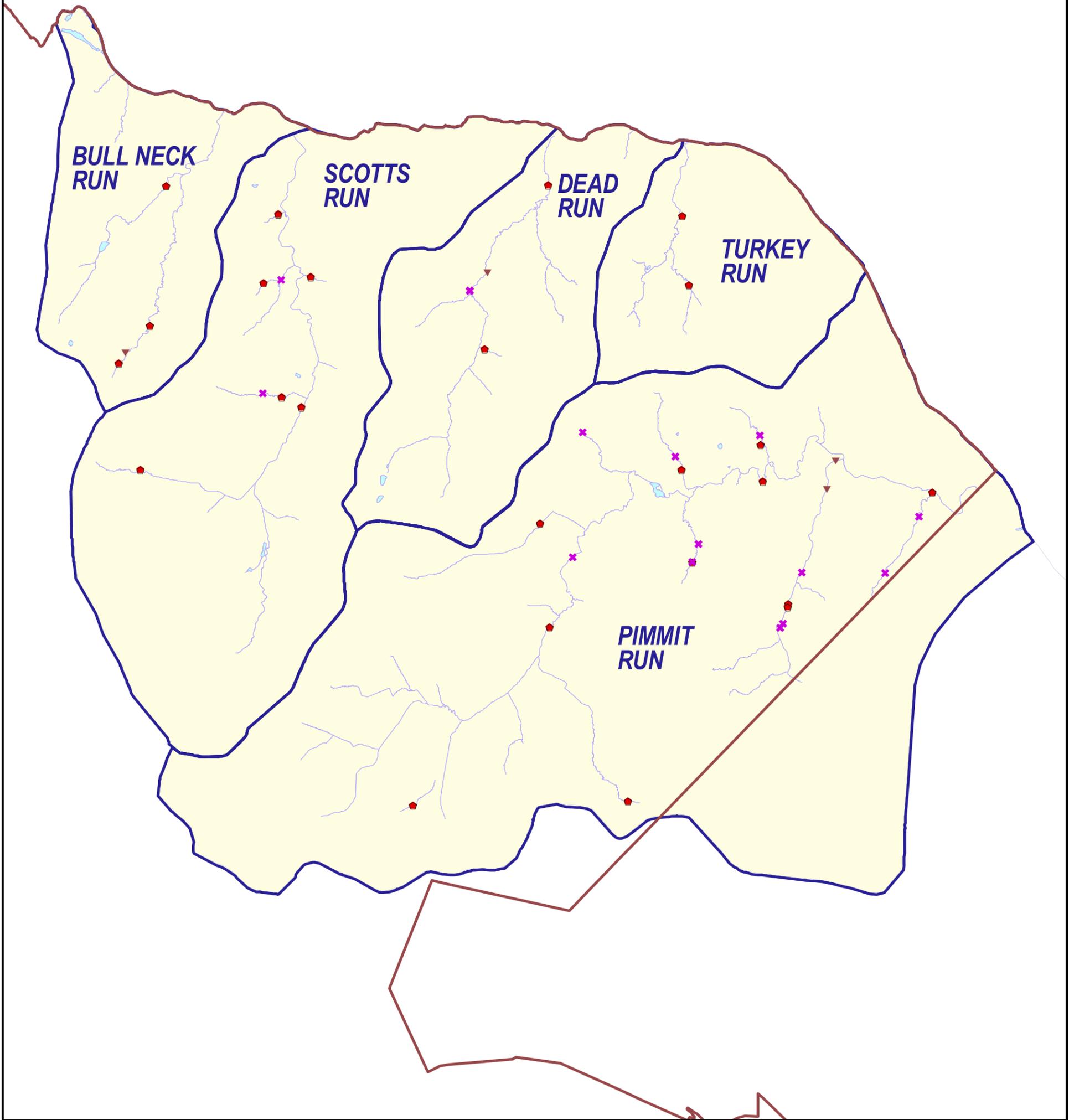
WATERSHED GROUP:
MIDDLE POTOMAC



0 2000 4000 6000 8000 Feet

Figure 3-29
Pipe and Ditch Impacts
Middle Potomac Group
Fairfax County Stream Physical Assessment





Inventory Types

- ▼ Dump
- ◆ Obstruction
- * Utility

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

**WATERSHED GROUP:
MIDDLE POTOMAC**



0 2000 4000 6000 8000 Feet

Figure 3-30
Dumps, Obstructions, and Utilities
Middle Potomac Group
Fairfax County Stream Physical Assessment



3.2.5 Cameron Run Group Summary

3.2.5.1 Cameron Run Watershed

Description. Cameron Run Watershed is a large watershed, with approximately 49 miles of stream assessed. The main stem drains through the City of Alexandria prior to re-entering Fairfax County and draining into the Potomac River.

Habitat. The habitat assessment results for Cameron Run Watershed are summarized by stream in Table 3-25. Habitat scores for each reach are depicted in Figure 3-31. Based on a length weighted habitat score of 92 (Table 3-2), Cameron Run Watershed is one of the poorest watersheds, compared to the rest of the County. Approximately 2 miles of stream were categorized as having “very poor” habitat conditions, 19 miles as “poor,” 23 miles as “fair,” and 4 miles as “good.”

CEM. Based on the CEM evaluations approximately three quarters of the channels assessed in Cameron Run Watershed are in Evolutionary Stage 3 (Table 3-3), with most of the remainder of the watershed in Stage 4. Figure 3-32 summarizes the CEM results for Cameron Run Watershed.

Infrastructure. The infrastructure inventory resulted in 1015 inventory points. The most significant problems were related to a utility line, which was given an impact score of 15, and several pipes, ditches, erosional areas that were given impact scores of 10. The infrastructure inventory results are summarized in Table 3-26. Figures 3-33, 3-34, 3-35, 3-36, and 3-37 summarize impact scores for the erosion problems; deficient buffers; crossings; pipes/ ditches; and dumps, obstructions, and utilities, respectively.

3.2.5.2 Four Mile Run Watershed

Description. Four Mile Run Watershed is a large watershed with very little stream channel in the County, with approximately 1 miles of stream assessed. The majority of the watershed is contained within the City of Alexandria and Arlington County. Four Mile Run eventually drains to the Potomac River.

Habitat. The habitat assessment results for Four Mile Run Watershed are summarized by stream in Table 3-27. Habitat scores for each reach are depicted in Figure 3-31. Based on a length weighted habitat score of 96 (Table 3-2), Four Mile Run Watershed is in the lower range of quality, compared to the rest of the County. Nearly the entire mile assessed was categorized as “fair.”

CEM. Based on the CEM evaluations approximately 60 percent of the channels assessed in Four Mile Run Watershed are in Evolutionary Stage 4 (Table 3-3), with most of the remainder of the watershed in Stage 3. Figure 3-32 summarizes the CEM results for Four Mile Run Watershed.

Infrastructure. The infrastructure inventory resulted in 32 inventory points. The most significant problems were related to two utilities and a buffer, which was given impact scores of 6. The infrastructure inventory results are summarized in Table 3-28. Figures 3-33, 3-34, 3-35, 3-36, and 3-37 summarize impact scores for the erosion problems; deficient buffers; crossings; pipes/ ditches; and dumps, obstructions, and utilities, respectively.

TABLE 3-25
Habitat Assessment Summary for Cameron Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Backlick Run	3,359 (6.48)	19,609 (37.81)	28,893 (55.71)	0 (0.00)	0 (0.00)	51,861
Cameron Run	5,246 (32.86)	6,036 (37.82)	4,680 (29.32)	0 (0.00)	0 (0.00)	15,962
Holmes Run	296 (0.37)	30,373 (37.44)	34,736 (42.81)	13,800 (17.01)	1,927 (2.37)	81,133
Indian Run	0 (0.00)	1,882 (10.34)	16,321 (89.66)	0 (0.00)	0 (0.00)	18,202
Pike Branch	0 (0.00)	11,344 (65.71)	5,920 (34.29)	0 (0.00)	0 (0.00)	17,264
Poplar Branch	0 (0.00)	1,554 (77.27)	457 (22.73)	0 (0.00)	0 (0.00)	2,011
Poplar Branch Trib to Indian Run	0 (0.00)	1,428 (24.41)	4,422 (75.59)	0 (0.00)	0 (0.00)	5,850
Tributary to Backlick Run	0 (0.00)	0 (0.00)	1,696 (41.02)	2,439 (58.98)	0 (0.00)	4,135
Tributary to Cameron Run	0 (0.00)	0 (0.00)	976 (100.00)	0 (0.00)	0 (0.00)	976
Tributary to Holmes Run	0 (0.00)	814 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	814
Tributary to Indian Run	0 (0.00)	1,314 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	1,314
Tributary to Tripps Run	0 (0.00)	10,992 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	10,992
Tripps Run	0 (0.00)	6,605 (57.75)	3,371 (29.47)	1,462 (12.78)	0 (0.00)	11,438
Turkeycock Creek	0 (0.00)	5,891 (34.81)	11,032 (65.19)	0 (0.00)	0 (0.00)	16,923
Turkeycock Run	0 (0.00)	4,306 (23.43)	9,525 (51.83)	4,546 (24.74)	0 (0.00)	18,377
Watershed Total	8,901 (3.46)	102,149 (39.71)	122,029 (47.44)	22,247 (8.65)	1,927 (0.75)	257,252

TABLE 3-26
Infrastructure Assessment Summary for Cameron Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	>10	Total
Deficient Buffers	4	2	18	23	28	107	38	38	11	3	0	272
Crossings	97	50	49	22	16	11	3	0	0	1	0	249
Ditches and Pipes	192	38	40	15	8	11	2	0	7	2	4	319
Erosion	0	1	0	2	4	18	14	28	8	3	3	81
Head Cut	0	0	0	1	2	1	0	0	0	0	1	5
Obstruction	3	1	7	10	13	6	8	5	4	2	1	60
Utility	2	0	0	8	3	3	6	3	0	2	2	29
Total	298	92	114	81	74	157	71	74	30	13	11	1015

TABLE 3-27
Habitat Assessment Summary for Four Mile Run Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Four Mile Run	0 (0.00)	0 (0.00)	1,654 (100.00)	0 (0.00)	0 (0.00)	1,654
Long Branch	0 (0.00)	0 (0.00)	2,422 (100.00)	0 (0.00)	0 (0.00)	2,422
Watershed Total	0 (0.00)	0 (0.00)	4,076 (100.00)	0 (0.00)	0 (0.00)	4,076

TABLE 3-28
 Infrastructure Assessment Summary for Four Mile Run Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	0	0	0	5	1	0	0	0	0	N/A	6
Crossings	0	7	0	1	0	0	0	0	0	0	0	N/A	8
Ditches and Pipes	14	0	0	0	0	0	0	0	0	0	0	N/A	14
Erosion	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Head Cut	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Obstruction	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Utility	0	0	0	0	0	2	2	0	0	0	0	0	4
Total	14	7	0	1	0	7	3	0	0	0	0	0	32



-  Fairfax County Boundary
- Habitat Rating
-  Excellent
-  Good
-  Fair
-  Poor
-  Very Poor
-  No Habitat Assessment
-  Lakes and Ponds
-  Watersheds

**WATERSHED GROUP:
CAMERON RUN**

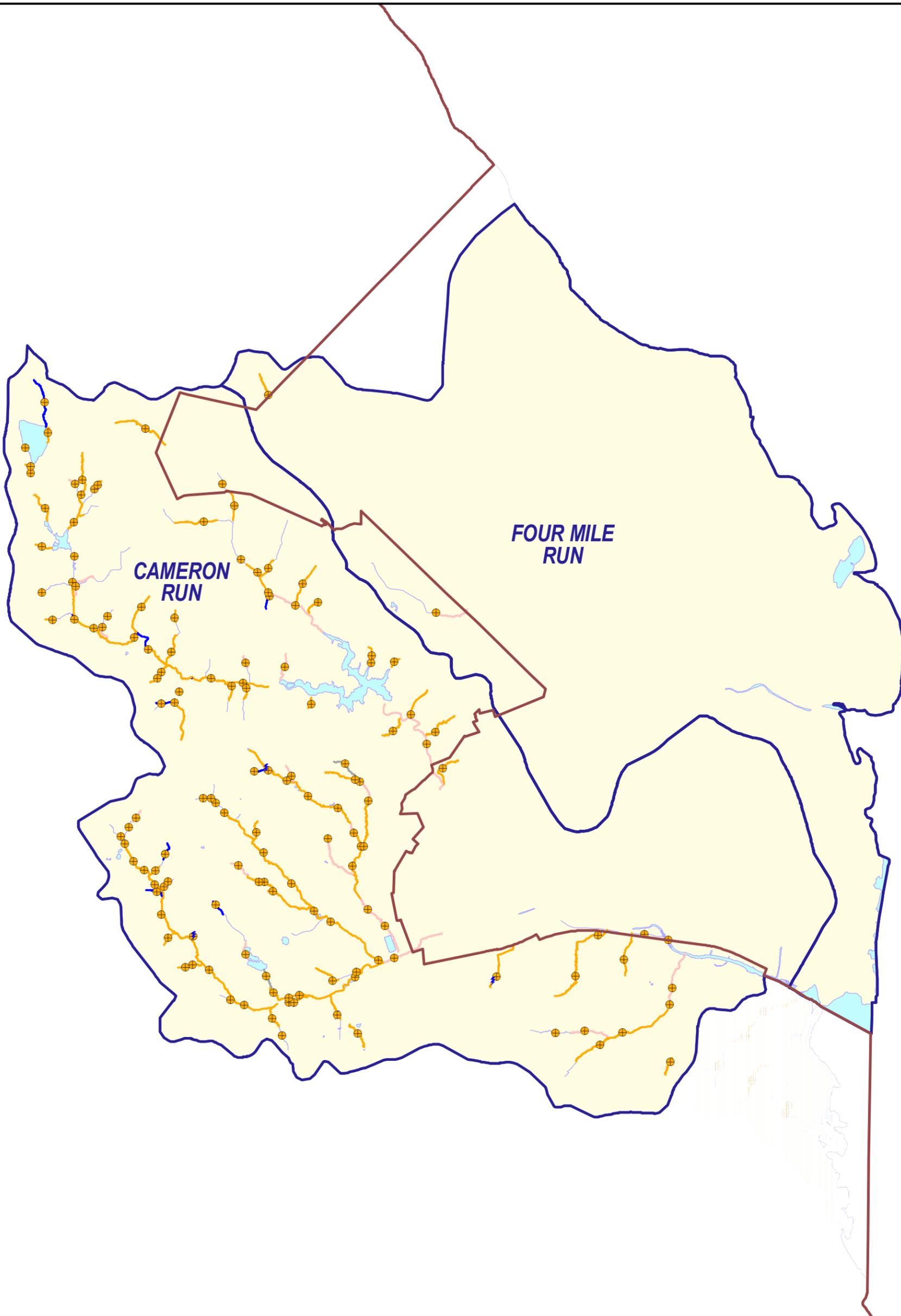


0 3000 6000 9000 12000 Feet



**Figure 3-31
Habitat Assessment
Cameron Run Group
Fairfax County Stream Physical Assessment**





Inventory Types

- Cross Section
- ⚡ Head Cut

CEM Stage

- Not Assigned
- 1
- 2
- 3
- 4
- 5

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

WATERSHED GROUP:
CAMERON RUN



0 3000 6000 9000 12000 Feet

Figure 3-32
CEM Stages
Cameron Run Group
Fairfax County Stream Physical Assessment





Erosion by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

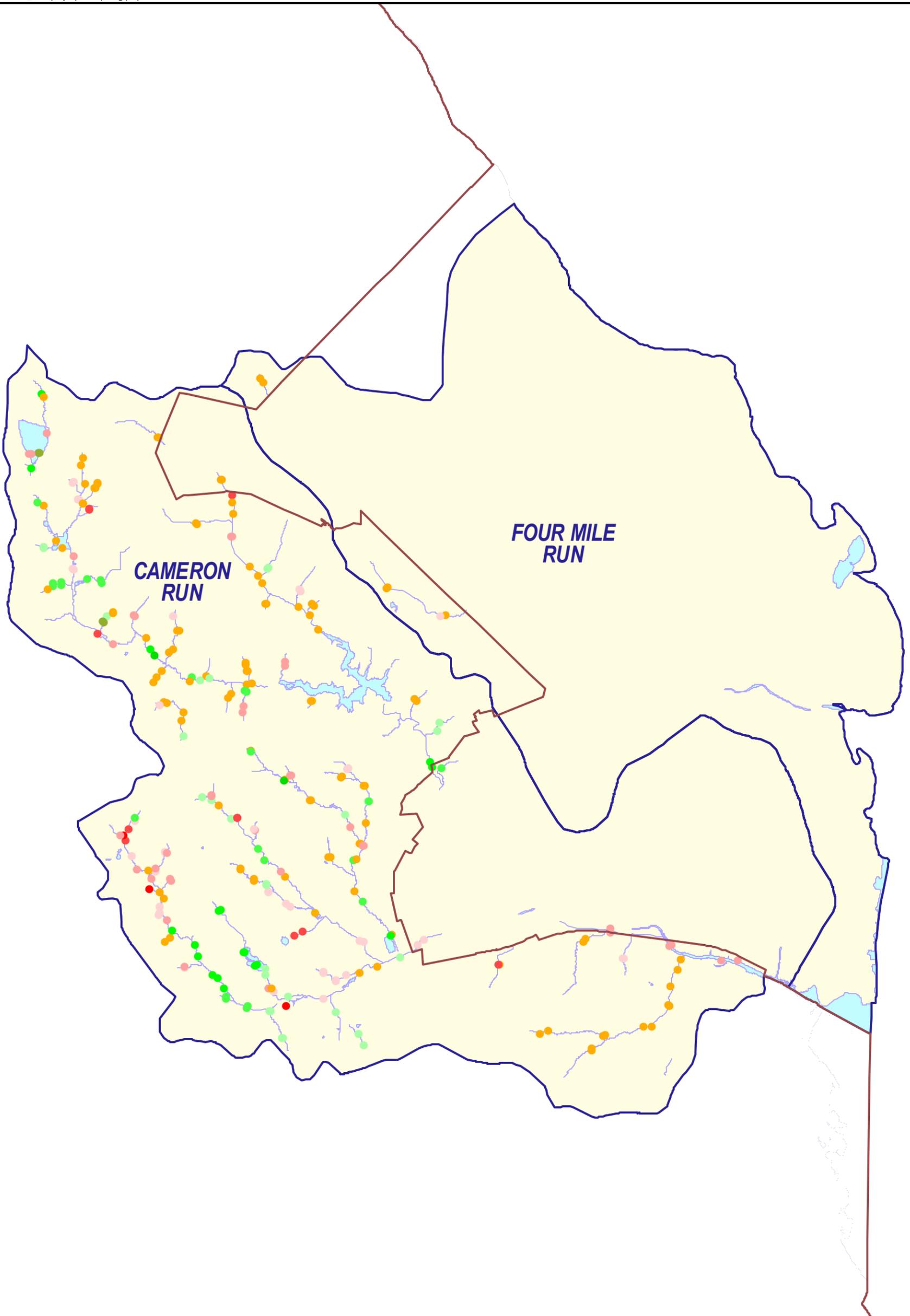
WATERSHED GROUP:
CAMERON RUN



0 3000 6000 9000 12000 Feet

Figure 3-33
Erosion Impacts
Cameron Run Group
Fairfax County Stream Physical Assessment





Deficient Buffer by Impact Score

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

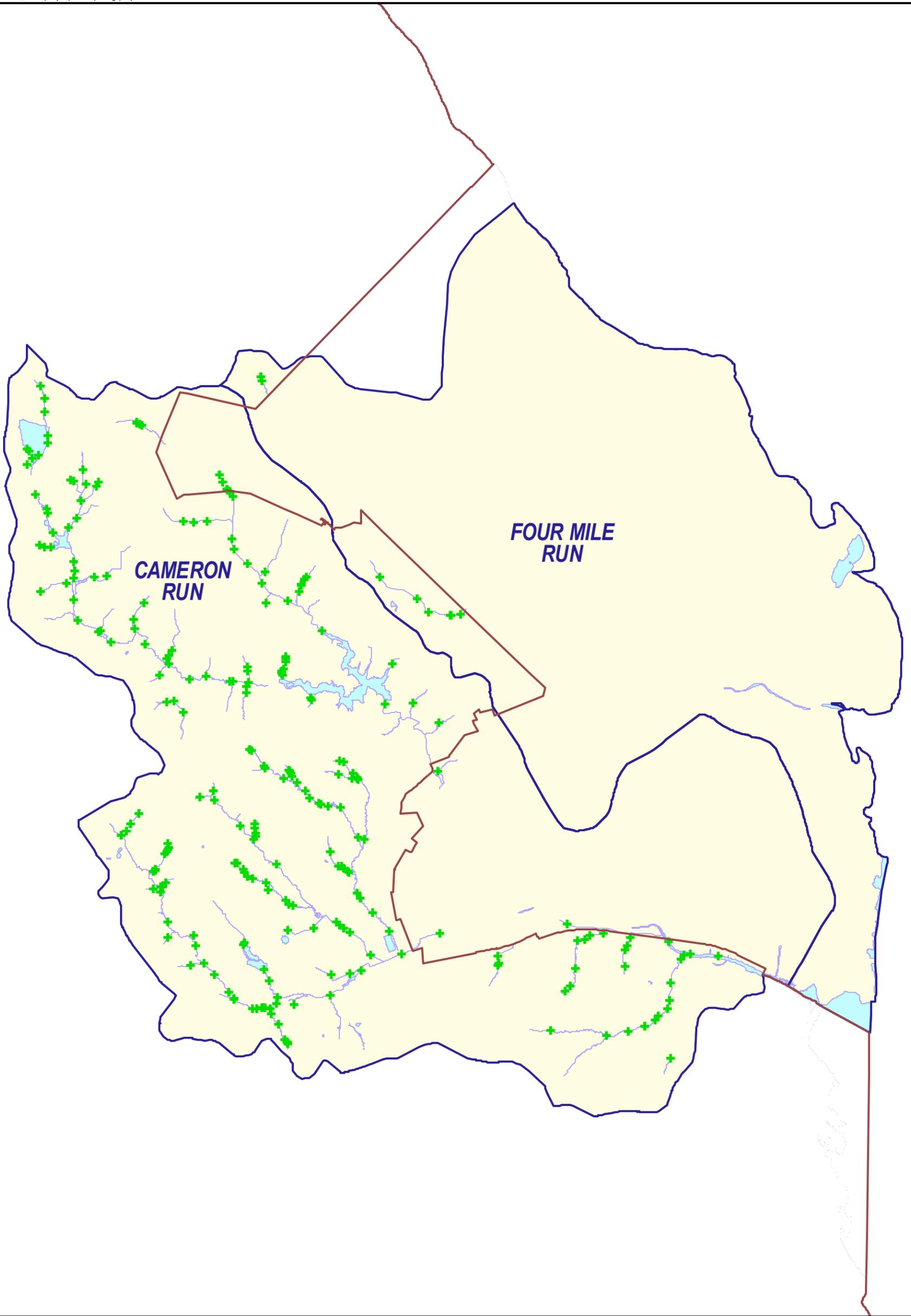
WATERSHED GROUP:
CAMERON RUN



0 3000 6000 9000 12000 Feet

Figure 3-34
Deficient Buffer Impacts
Cameron Run Group
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
CAMERON RUN**



Inventory Type

-  Crossing
-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds



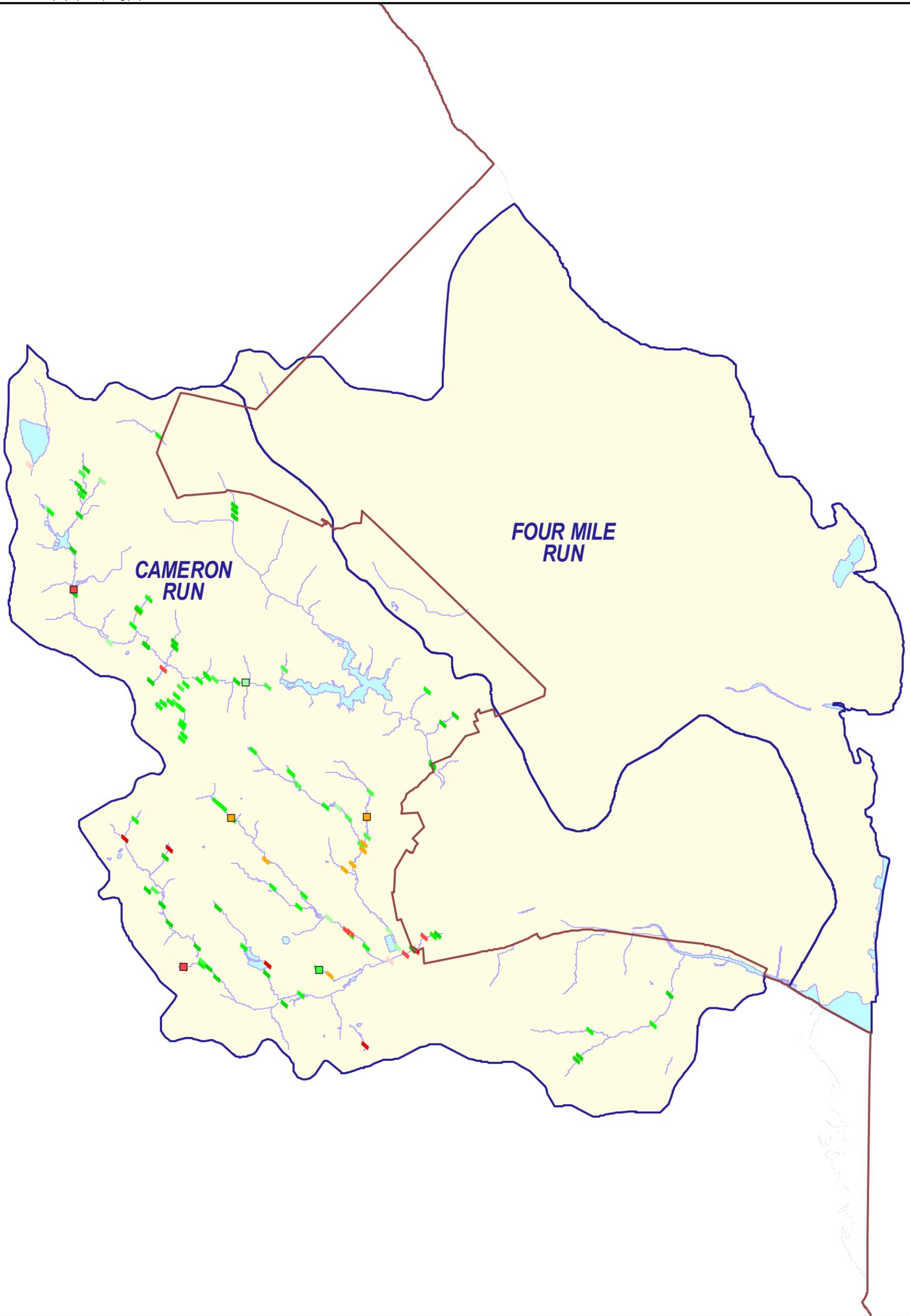
0 3000 6000 9000 12000 Feet



A horizontal scale bar with markings at 0, 3000, 6000, 9000, and 12000 feet.

**Figure 3-35
Crossings
Cameron Run Group
Fairfax County Stream Physical Assessment**





Pipe / Ditch by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

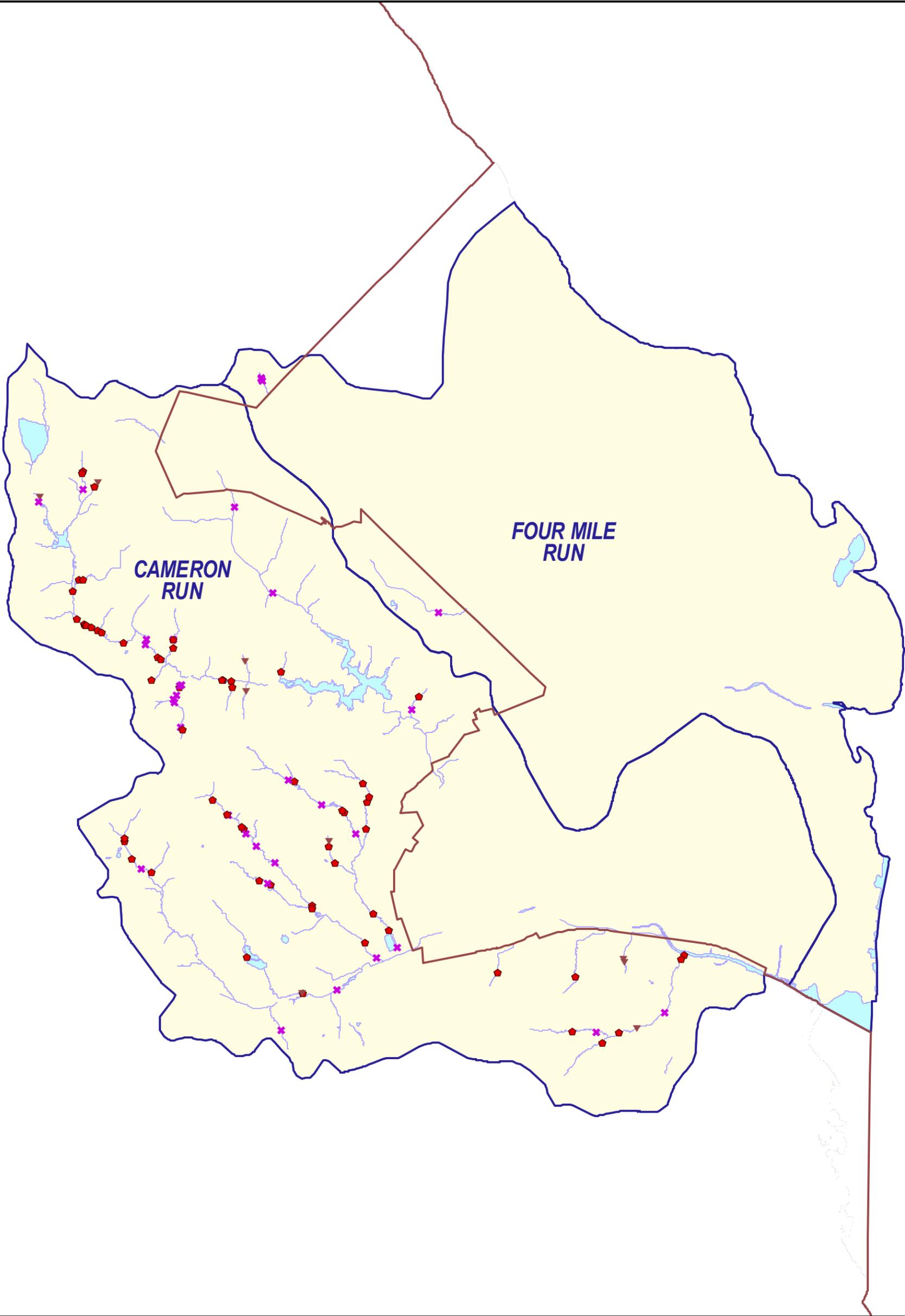
WATERSHED GROUP:
CAMERON RUN



0 3000 6000 9000 12000 Feet

Figure 3-36
Pipe and Ditch Impacts
Cameron Run Group
Fairfax County Stream Physical Assessment





Inventory Types

- ▼ Dump
- ◆ Obstruction
- * Utility

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

WATERSHED GROUP:
CAMERON RUN



0 3000 6000 9000 12000 Feet

Figure 3-37
Dumps, Obstructions, and Utilities
Cameron Run Group
Fairfax County Stream Physical Assessment



3.2.6 Lower Potomac Group Summary

3.2.6.1 Dogue Creek Watershed

Description. Dogue Creek Watershed is a medium-sized watershed, with approximately 17 miles of stream assessed. It is located along the middle of the southeastern boundary of the County. The watershed is entirely contained within the County Boundaries, and drains directly to the Potomac River.

Habitat. The habitat assessment results for Dogue Creek Watershed are summarized by stream in Table 3-29. Habitat scores for each reach are depicted in Figure 3-38. Based on a length weighted habitat score of 96 (Table 3-2), Dogue Creek Watershed is in the lower range of quality, compared to the rest of the County. Approximately 5 miles of stream were categorized as having “poor” habitat conditions, 9 miles as “fair,” and 3 miles as “good.”

CEM. Based on the CEM evaluations approximately 50 percent of the channels assessed in Dogue Creek Watershed are in Evolutionary Stage 3 (Table 3-3), with most of the remainder of the watershed in Stage 4. Figure 3-39 summarizes the CEM results for Dogue Creek Watershed.

Infrastructure. The infrastructure inventory resulted in 313 inventory points. The most significant problems were 10 inventory points, which was given impact scores of 10, including deficient buffers, head cuts, obstructions, and an erosional area. The infrastructure inventory results are summarized in Table 3-30. Figures 3-40, 3-41, 3-42, 3-43, and 3-44 summarize impact scores for the erosion problems; deficient buffers; crossings; pipes/ditches; and dumps, obstructions, and utilities, respectively.

3.2.6.2 Little Hunting Creek Watershed

Description. Little Hunting Creek Watershed is a medium-sized watershed, with approximately 10 miles of stream assessed. It is located along the southeastern boundary of the County. The watershed is entirely contained within the County Boundaries, and drains directly to the Potomac River.

Habitat. The habitat assessment results for Little Hunting Creek Watershed are summarized by stream in Table 3-31. Habitat scores for each reach are depicted in Figure 3-38. Based on a length weighted habitat score of 82 (Table 3-2), Little Hunting Creek Watershed is one of the poorest quality watersheds in the County. Approximately 2 miles of stream were categorized as having “very poor” habitat conditions, 4 miles as “poor,” 5 miles as “fair.”

CEM. Based on the CEM evaluations approximately 40 percent of the channels assessed in Little Hunting Creek Watershed are in Evolutionary Stage 3 (Table 3-3), with most of the remainder of the watershed in Stage 4. Figure 3-39 summarizes the CEM results for Little Hunting Creek Watershed.

Infrastructure. The infrastructure inventory resulted in 207 inventory points. The most significant problems were related to a pipe and a deficient buffer, which was given impact scores of 9. The infrastructure inventory results are summarized in Table 3-32. Figures 3-40, 3-41, 3-42, 3-43, and 3-44 summarize impact scores for the erosion problems; deficient buffers; crossings; pipes/ditches; and dumps, obstructions, and utilities, respectively.

3.2.6.3 Belle Haven Watershed

Description. Belle Haven Watershed is a small watershed, with approximately 2 miles of stream assessed. It is located on the eastern boundary of the County. The watershed is entirely contained within the County Boundaries, containing multiple tributaries that drain directly to Cameron Run and the Potomac River.

Habitat. The habitat assessment results for Belle Haven Watershed are summarized by stream in Table 3-33. Habitat scores for each reach are depicted in Figure 3-38. Based on a length weighted habitat score of 71 (Table 3-2), Belle Haven Watershed is the poorest quality watershed in the County. Approximately 1 mile of stream was categorized as having “poor” habitat conditions and 0.5 mile as “fair.”

CEM. Based on the CEM evaluations all of the channels assessed in Belle Haven Watershed are in Evolutionary Stage 3 (Table 3-3). Figure 3-39 summarizes the CEM results for Belle Haven Watershed.

Infrastructure. The infrastructure inventory resulted in 35 inventory points. The most significant problem was related to an erosional area, which was given an impact score of 8. The infrastructure inventory results are summarized in Table 3-34. Figures 3-40, 3-41, 3-42, 3-43, and 3-44 summarize impact scores for the erosion problems; deficient buffers; crossings; pipes/ditches; and dumps, obstructions, and utilities, respectively.

TABLE 3-29
Habitat Assessment Summary for Little Dogue Creek Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Barnyard Run	0 (0.00)	0 (0.00)	843 (27.07)	2,271 (72.93)	0 (0.00)	3,114
Dogue Creek	304 (1.35)	5,078 (22.46)	5,636 (24.93)	11,586 (51.26)	0 (0.00)	22,603
North Fork	0 (0.00)	3,320 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	3,320
North Fork of Dogue Creek	0 (0.00)	12,430 (41.03)	17,866 (58.97)	0 (0.00)	0 (0.00)	30,295
Piney Run	0 (0.00)	3,951 (15.31)	21,855 (84.69)	0 (0.00)	0 (0.00)	25,806
Tributary to Douge Creek	0 (0.00)	0 (0.00)	0 (0.00)	2,355 (100.00)	0 (0.00)	2,355
Watershed Total	304 (0.35)	24,778 (28.32)	46,199 (52.80)	16,212 (18.53)	0 (0.00)	87,493

TABLE 3-30
Infrastructure Assessment Summary for Dogue Creek Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	0	3	1	6	5	41	14	6	2	N/A	78
Crossings	32	20	30	13	12	3	0	1	0	0	0	N/A	111
Ditches and Pipes	43	21	5	5	3	1	0	0	0	0	0	N/A	78
Erosion	0	0	0	0	1	1	2	8	4	1	1	N/A	18
Head Cut	0	0	0	0	0	1	0	0	0	0	4	N/A	5
Obstruction	6	2	0	0	1	0	1	1	3	4	3	N/A	21
Utility	0	0	0	1	0	0	0	0	1	0	0	0	2
Total	81	43	35	22	18	12	8	51	22	11	10	0	313

TABLE 3-31
Habitat Assessment Summary for Little Hunting Creek Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Little Hunting Creek	6,610 (32.96)	6,322 (31.52)	7,125 (35.52)	0 (0.00)	0 (0.00)	20,057
North Branch	1,127 (9.14)	10,111 (81.96)	1,098 (8.90)	0 (0.00)	0 (0.00)	12,337
Paul Spring Branch	0 (0.00)	3,267 (17.08)	15,860 (82.92)	0 (0.00)	0 (0.00)	19,127
Tributary to Potomac River	0 (0.00)	732 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	732
Watershed Total	7,737 (14.81)	20,433 (39.10)	24,083 (46.09)	0 (0.00)	0 (0.00)	52,253

TABLE 3-32
Infrastructure Assessment Summary for Little Hunting Creek Watershed
Fairfax County Stream Physical Assessment

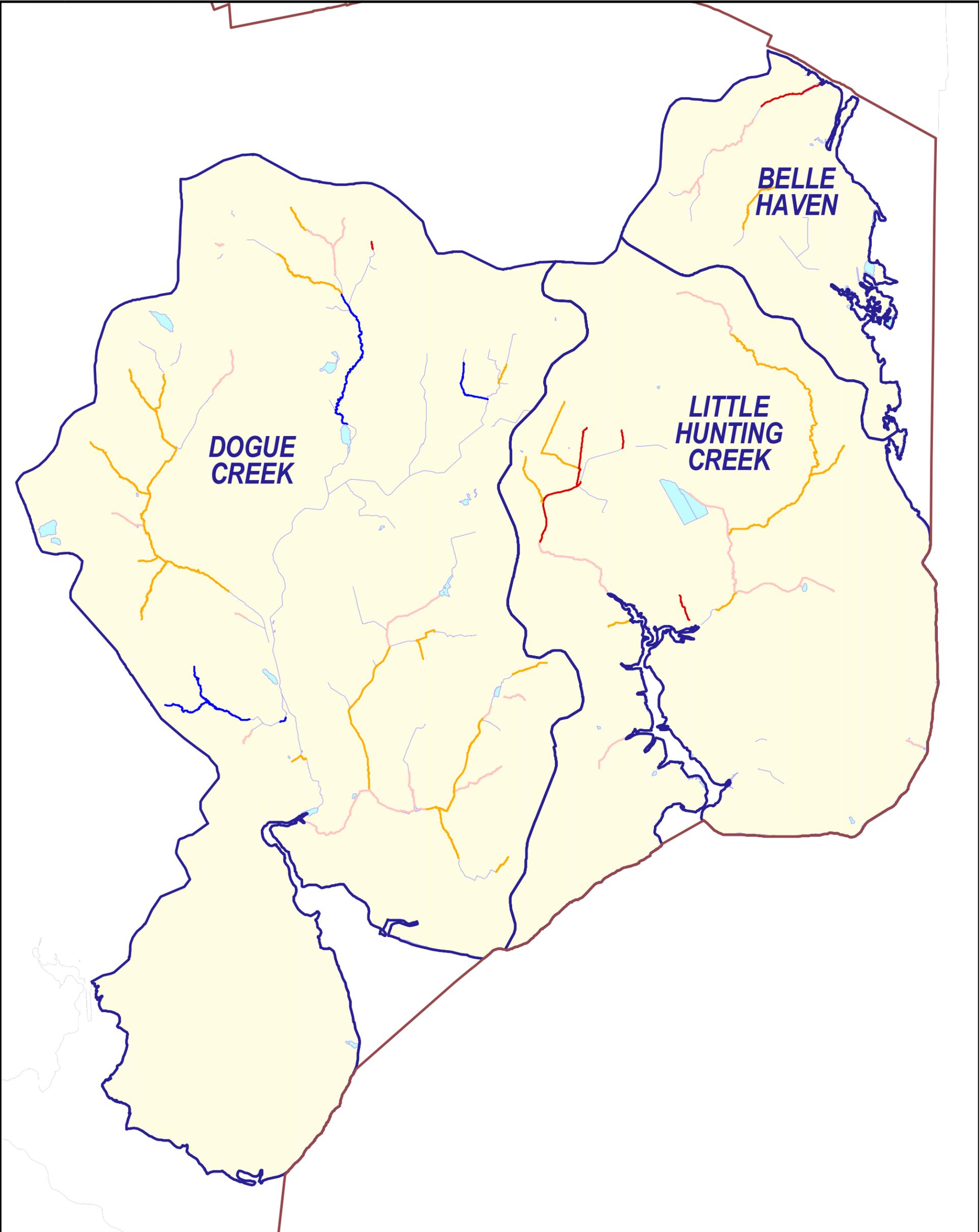
Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	1	0	5	15	4	20	4	8	1	1	0	N/A	59
Crossings	26	11	5	2	1	2	2	1	0	0	0	N/A	50
Ditches and Pipes	38	8	5	5	3	0	1	1	0	1	0	N/A	62
Erosion	0	0	0	0	0	3	2	1	0	0	0	N/A	6
Head Cut	0	0	0	0	2	0	0	0	0	0	0	N/A	2
Obstruction	0	1	6	9	1	1	1	0	0	0	0	N/A	19
Utility	1	2	3	3	0	0	0	0	0	0	0	0	9
Total	66	22	24	34	11	26	10	11	1	2	0	0	207

TABLE 3-33
Habitat Assessment Summary for Belle Haven Watershed
Fairfax County Stream Physical Assessment

Stream	Linear Feet (Percent) of Stream					Total
	Very Poor	Poor	Fair	Good	Excellent	
Hunting Creek	2,664 (60.72)	1,723 (39.28)	0 (0.00)	0 (0.00)	0 (0.00)	4,387
Tributary to Hunting Creek	0 (0.00)	2,583 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	2,583
Tributary to Potomac River	0 (0.00)	0 (0.00)	2,396 (100.00)	0 (0.00)	0 (0.00)	2,396
Watershed Total	2,664 (28.44)	4,306 (45.98)	2,396 (25.58)	0 (0.00)	0 (0.00)	9,366

TABLE 3-34
Infrastructure Assessment Summary for Belle Haven Watershed
Fairfax County Stream Physical Assessment

Impact Score	0	1	2	3	4	5	6	7	8	9	10	>10	Total
Deficient Buffers	0	0	0	3	2	3	0	3	0	0	0	N/A	11
Crossings	8	0	0	0	0	0	0	0	0	0	0	N/A	8
Ditches and Pipes	10	0	0	0	0	0	0	0	0	0	0	N/A	10
Erosion	0	0	0	0	0	2	0	0	1	0	0	N/A	3
Head Cut	0	0	0	0	0	0	0	0	0	0	0	N/A	0
Obstruction	0	0	0	0	0	1	0	1	0	0	0	N/A	2
Utility	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	18	0	0	4	2	6	0	4	1	0	0	0	35



- Fairfax County Boundary
- Habitat Rating**
- Excellent
- Good
- Fair
- Poor
- Very Poor
- No Habitat Assessment
- Lakes and Ponds
- Watersheds

**WATERSHED GROUP:
LOWER POTOMAC**

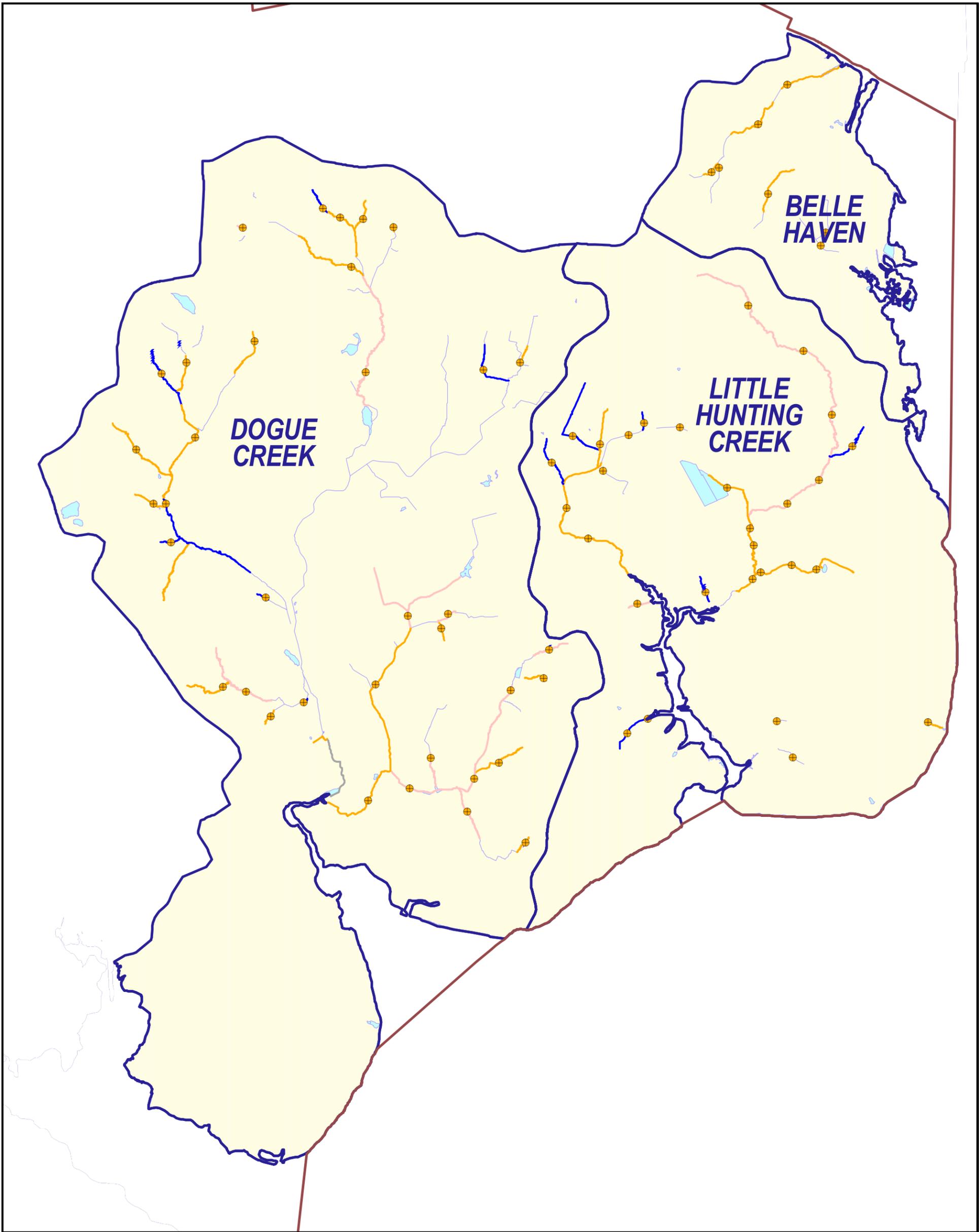


0 2000 4000 6000 8000 Feet



Figure 3-38
Habitat Assessment
Lower Potomac Group
Fairfax County Stream Physical Assessment





Inventory Types

- Cross Section
- ⚡ Head Cut

CEM Stage

- Not Assigned
- 1
- 2
- 3
- 4
- 5

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

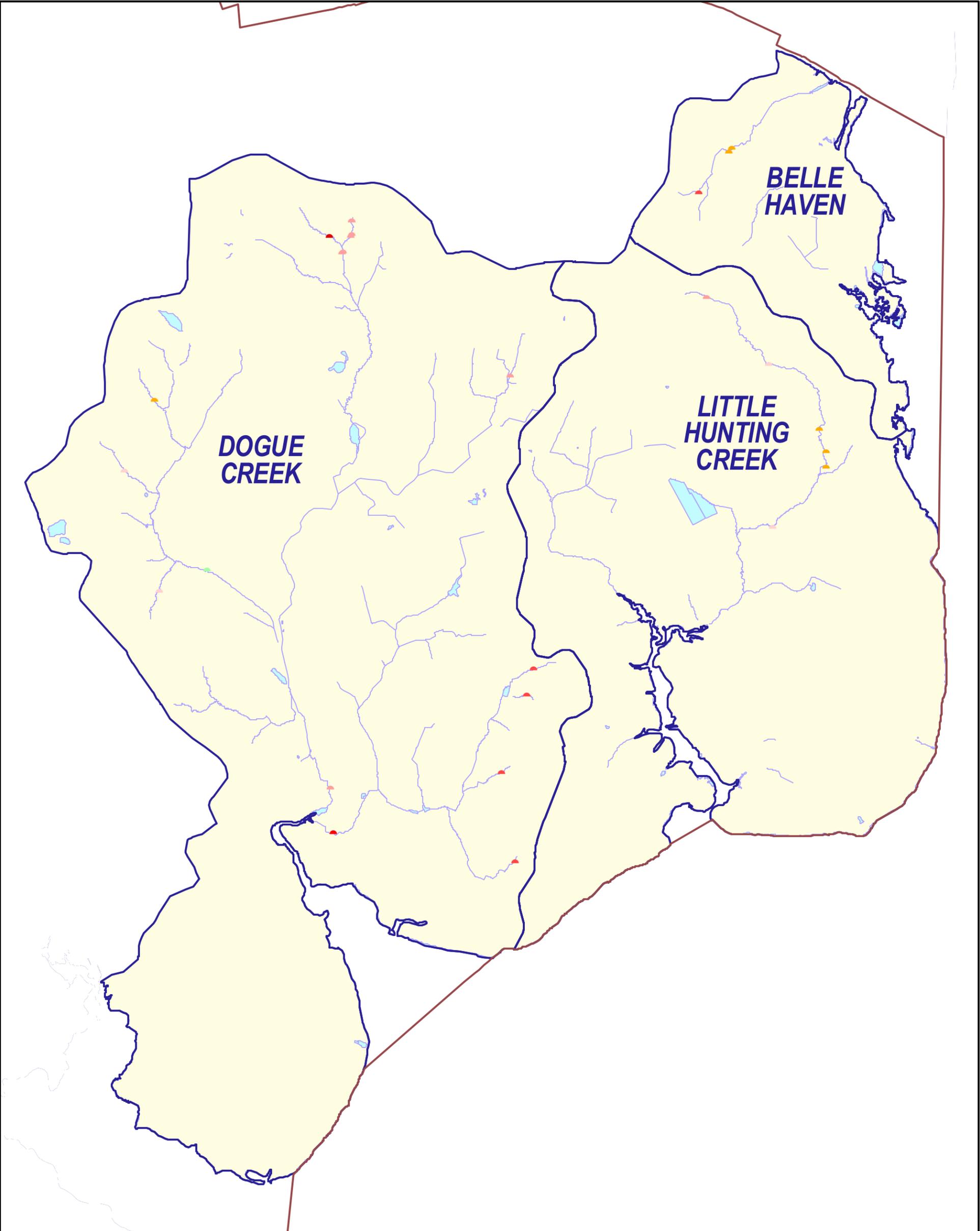
**WATERSHED GROUP:
LOWER POTOMAC**



0 2000 4000 6000 8000 Feet

Figure 3-39
CEM Stages
Lower Potomac Group
Fairfax County Stream Physical Assessment





Erosion by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

WATERSHED GROUP:
LOWER POTOMAC

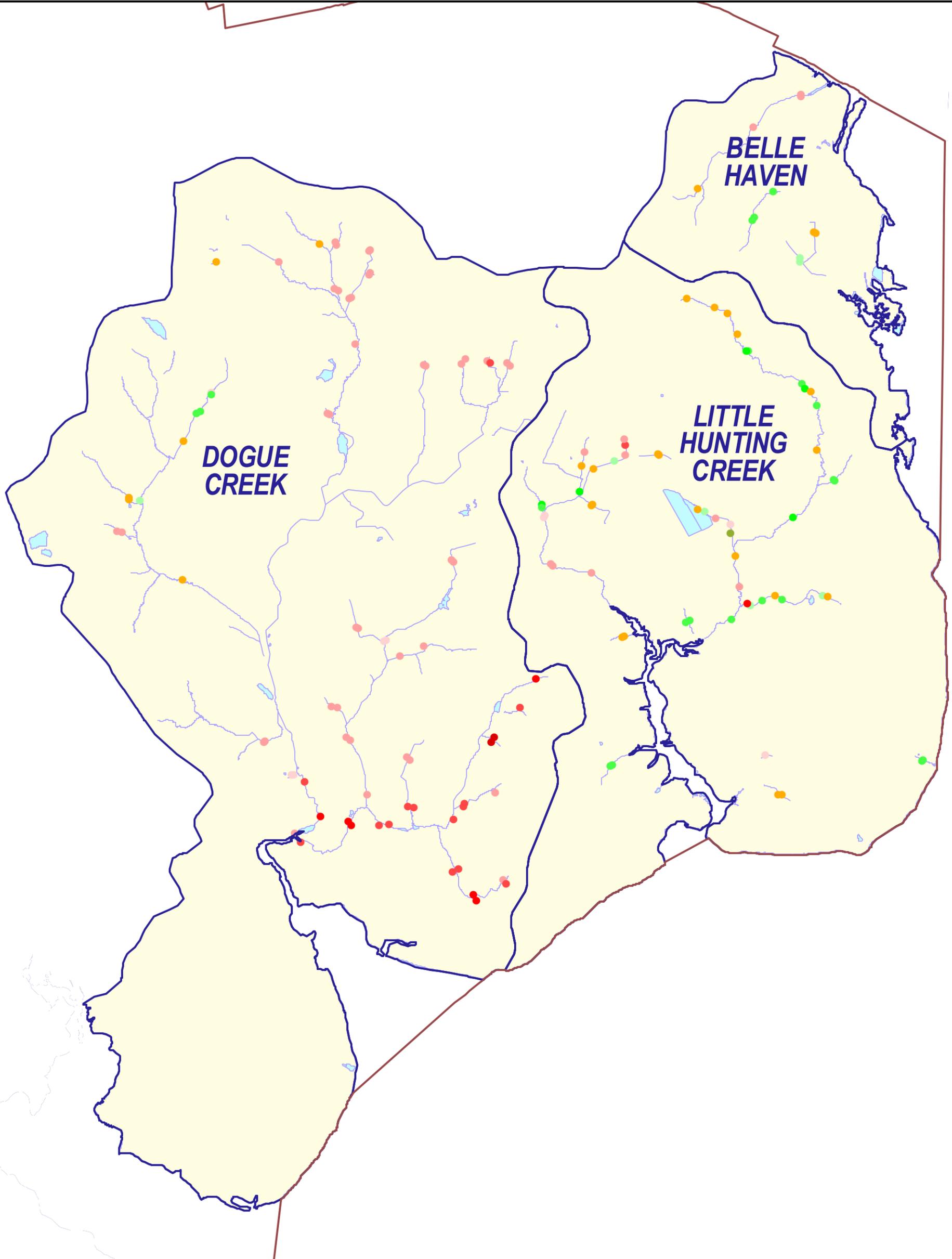


0 2000 4000 6000 8000 Feet



Figure 3-40
Erosion Impacts
Lower Potomac Group
Fairfax County Stream Physical Assessment





Deficient Buffer by Impact Score

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds

WATERSHED GROUP:
LOWER POTOMAC

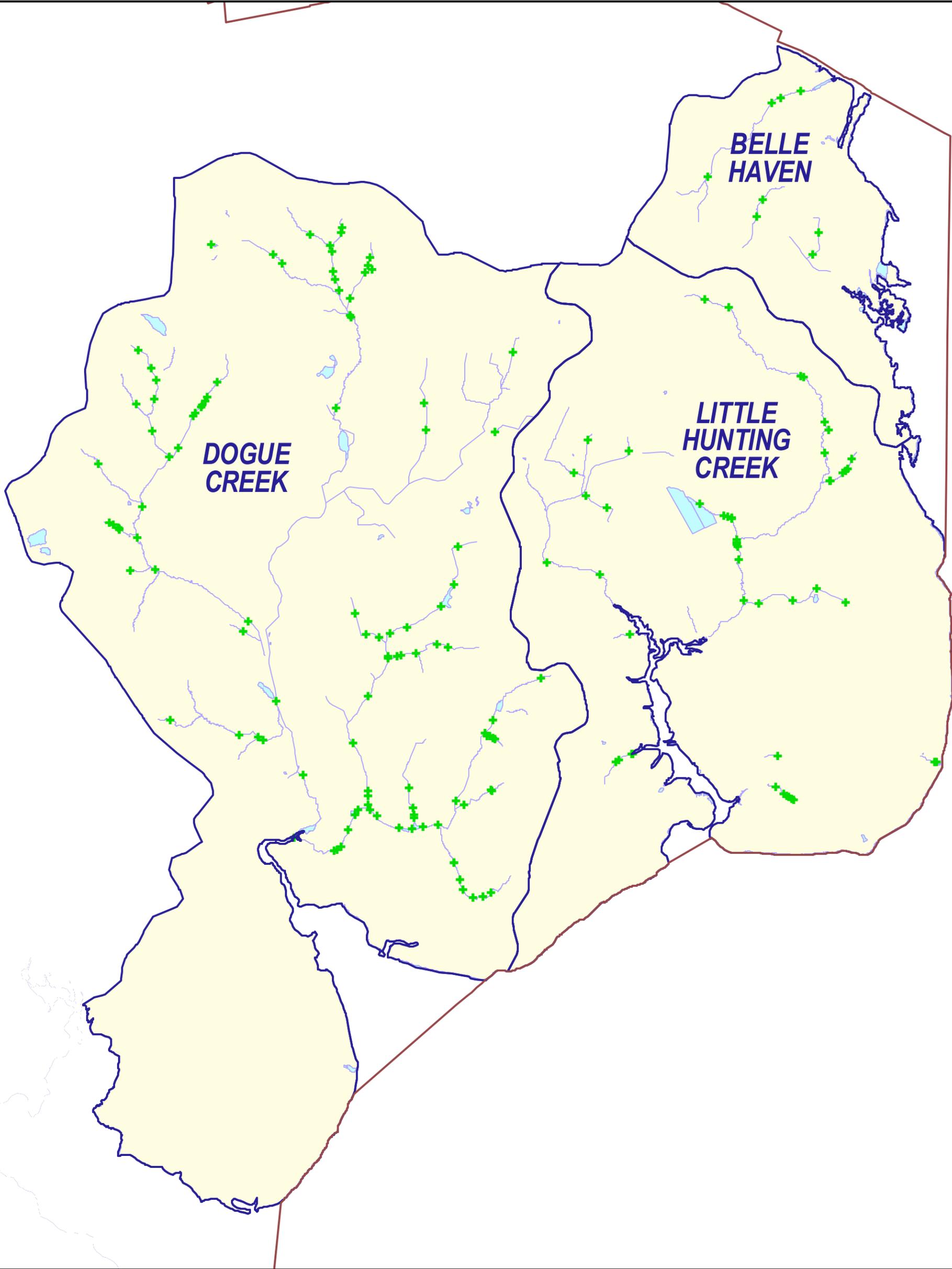


0 2000 4000 6000 8000 Feet



Figure 3-41
Deficient Buffer Impacts
Lower Potomac Group
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
LOWER POTOMAC**



Inventory Type
+ Crossing

-  Fairfax County Boundary
-  Lakes and Ponds
-  Streams
-  Watersheds

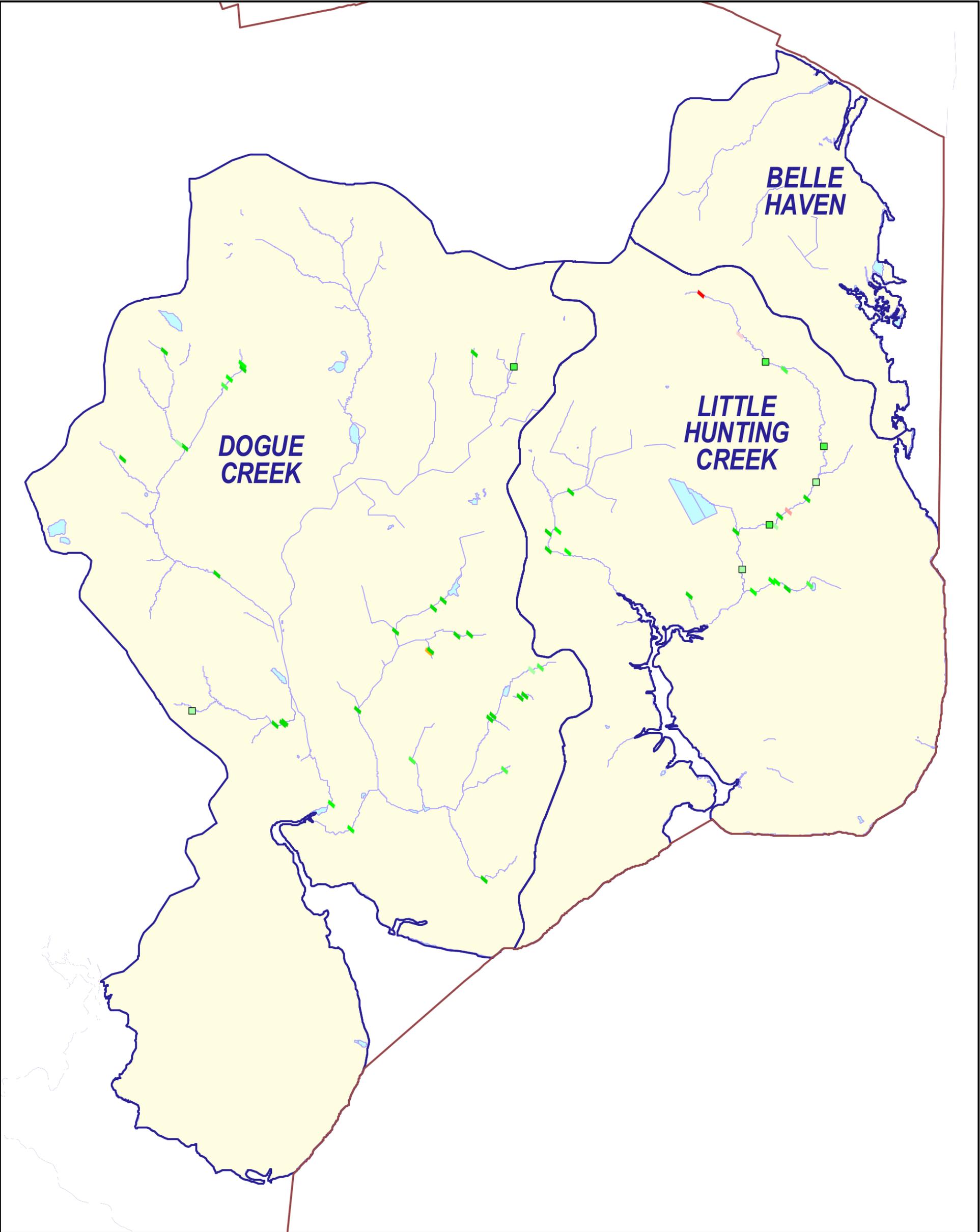


0 2000 4000 6000 8000 Feet



Figure 3-42
Crossings
Lower Potomac Group
Fairfax County Stream Physical Assessment





Pipe / Ditch by Impact Score

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- Fairfax County Boundary
- Lakes and Ponds
- Streams
- Watersheds

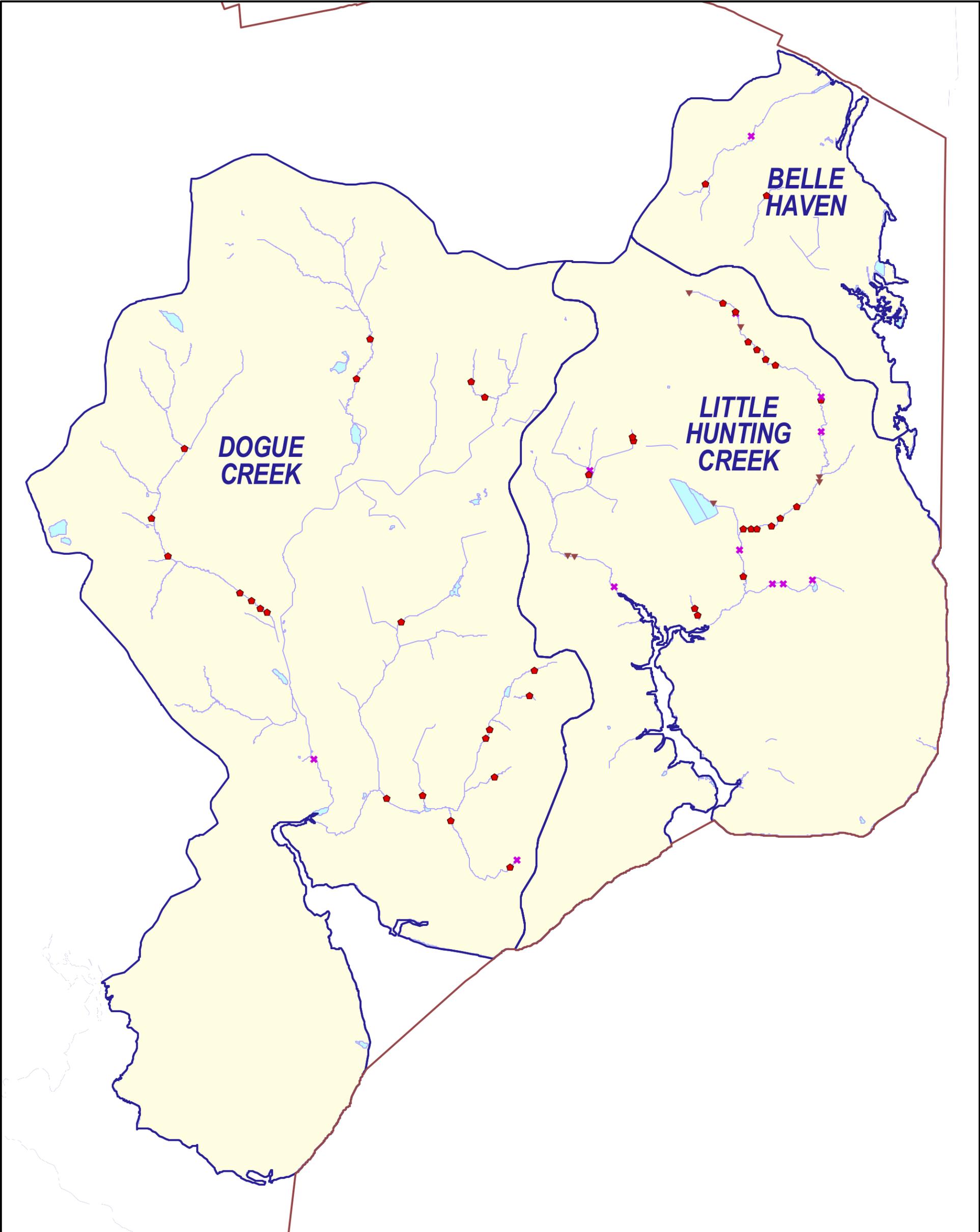
WATERSHED GROUP:
LOWER POTOMAC



0 2000 4000 6000 8000 Feet

Figure 3-43
Pipe and Ditch Impacts
Lower Potomac Group
Fairfax County Stream Physical Assessment





**WATERSHED GROUP:
LOWER POTOMAC**

Inventory Types

- ▼ Dump
- ◆ Obstruction
- * Utility

- ▭ Fairfax County Boundary
- ▭ Lakes and Ponds
- ▭ Streams
- ▭ Watersheds



0 2000 4000 6000 8000 Feet



Figure 3-44
Dumps, Obstructions, and Utilities
Lower Potomac Group
Fairfax County Stream Physical Assessment

