Hello Adopt-A-Stream Volunteers!

Thank you all for volunteering your time in 2018 to assist in this very valuable and fun program. To help us better understand the health of our waters within the Clinton River Watershed, here is a summary of our 2018 monitoring results. In all, a total of 40 sites were monitored in 2018 between spring and fall.

When looking at average scores from spring 2018 results, 41.8% of sites were classified as Poor, 29.4% were classified as Fair, and 29.4% were classified as Good. As normally found, a majority of the sites that scored as "poor" are located in more populated areas of the watershed. Many of these drain systems have been historically channelized and contain predominantly silt, lacking effective habitat and increasing stress on the macroinvertebrates that make up the overall stream quality score. Families of macroinvertebrates that can withstand the pressure of the urban environment, including aquatic worms, true bugs, leeches, and midge larvae, were commonly found in the sites that were scored as "poor". On the contrary, the majority of sites that scored in the "good" range are located in the Upper Clinton, Clinton Main, and Stony creek subwatersheds along our tributaries that flow through more rural surroundings. At these locations, volunteers were generally able to find more sensitive macroinvertebrate families, such as mayfly nymphs, gilled snails, water pennies, and caddisfly larvae. Overall, a slight majority of the sites (14) sampled by volunteers in spring 2018 were scored as "poor", with an equal number of sites (10) being scored as "fair" and "good". No sites were scored in the "excellent" range.

As for fall 2018 results, 44.1% of sites were classified as Poor, 35.3% were classified as Fair, and 20.6% were classified as Good. Compared to spring, less sites were scored as "good" where more sites were scored as "fair" and "poor". Locations of sites scoring "good" are as expected, with a majority being in the Upper Clinton, Stony Creek, and North Branch subwatersheds. Again, most sites that scored "poor" are found in the more populated Red Run and Clinton River East subwatersheds. Mirroring spring results, no sites scored as "excellent". The four most abundant macroinvertebrates found by volunteers are listed below. The Damselfly nymph, a group 2 or "somewhat sensitive" macroinvertebrate, was found in 32 out of 34 sites sampled during fall monitoring. The mayfly nymph, a sensitive species, was found in 19 sites while the *Hemiptera* (Group 3) family and net-spinning caddisfly (Group 2) were found in 18 and 17 sites respectively.

- Four most abundant invertebrates collected throughout the watershed:
    1. Damselfly *(Odonata)*
    2. Mayfly (*Ephemeroptera*)
    3. True Bugs (*Hemiptera*)
    4. Net-spinning Caddisfly (*Hydropsychidae*)

To refresh your memories, after we collect the macroinvertebrates from the stream and identify them, we can then calculate a "Stream Quality Score" and rank the stream location (see Appendix A). The scores and classifications I refer to in the first two paragraphs can be seen on the graph below (Figure 1.). Also found below are the stream quality graphs from our 2017 (Figure 2) and 2016 (Figure 3) spring and fall results. For site locations and ID, please refer to the next page (Table 1). I've included two maps as well one of the spring 2018 sites and one of the fall 2018 sites (Figure 4). CRWC staff is currently working on looking at long-term trends with our AAS data and analysis which will be shared with everyone and available on our website at a later date. In the meantime, for further historic data or questions please contact me at any time or take a look at the data for the previous years on our website: http://www.crwc.org/programs/adoptastream/results/.

Thanks Again,

Eric Diesing

Watershed Ecologist

Table 1: Site ID and Locations for the 2018 monitoring locations (* indicates sites only monitored once)

Waterbody	Site ID	Site Location
Partridge Creek	CREW12	Behind Partridge Creek Mall
Clinton River	CREW13	Coyote Joe's Fishing Location
Clinton River	CREW5	Waldenburg Park: 21 Mile and Romeo Plank
Cottrell Drain	LSC4	Southwest Corner of Jefferson and Donaldson
Gleode Drain	CREW10*	21 Mile and Garfield
Kuku Creek	CREW11	18 Mile and Garfield
McBride Drain	NB15	Pine Cone Dr. and Ace Dr.
Price Brook Drain	CREW8	26 Mile and Hayes
Clinton River	NB1	Wolcott Mill
Clinton River	NB2*	Dunham Rd. and Little Rd.
Clinton River	NB13	Cascade Dam
Plumbrook Drain	RR11*	Fieldcrest Ln.
Salt River	AB1	New Haven
Stony Creek	SP4	31 Mile/ E. of Mt. Vernon
Avon Creek	CM9	Avon and Livernois
Beaver Creek	RR9	Beaver Creek Park
Chrissman Drain	RR6	18 1/2 Mile and Hillview Rd.
Clinton River	CM5	Southwest Corner of Avon and Livernois
Clinton River	CM6	Yates Cider Mill
Clinton River	UC1	6815 Dixie Hwy
Clinton River	UC2	Kimball Preserve
Clinton River	UC4*	United Methodist Church on Waldon Rd.
Deer Lake Inlet	UC6*	Deerhill Dr.
Clinton River	CM11*	Adams Rd. - Quail ridge
Galloway Creek	CM4	Northwest Corner of Perry and Giddings
Galloway Creek	CM10	Oakland University Preserve
Nelson Drain	RR3	Dequindre and Hill D.
Paint Creek	SP1	Stanton and Newman Rd.
Paint Creek	SP2	Children's Park
West Branch Stony Creek	SP6	Stony Creek on Lake George Rd.
Paint Creek	SP9	Rochester Public Library
Gallagher Creek	SP25	Gallagher/Paint Creek
West Branch Stony Creek	SP5	Park Rd. Inside Stony Creek Metropark
Stony Creek	SP18	Lakeville; Rochester Rd. and Milmine
Clinton River	NB16*	Camp Rotary; Wolcott Mill Metropark
Clinton River	CREW6*	Clinton River Park
East Coon Creek	NB3*	Armada Middle School
Clinton River	UC5*	Elizabeth Lake Road Park
Paint Creek	SP14*	Paint Creek Cider Mill
Sashabaw Creek	UC3*	Pine Knob Rd., West of Clintonville

Figure 1. Bar graph of Stream Quality scores (based on Adopt-A-Stream volunteer macroinvertebrate samples) for spring and fall 2018.
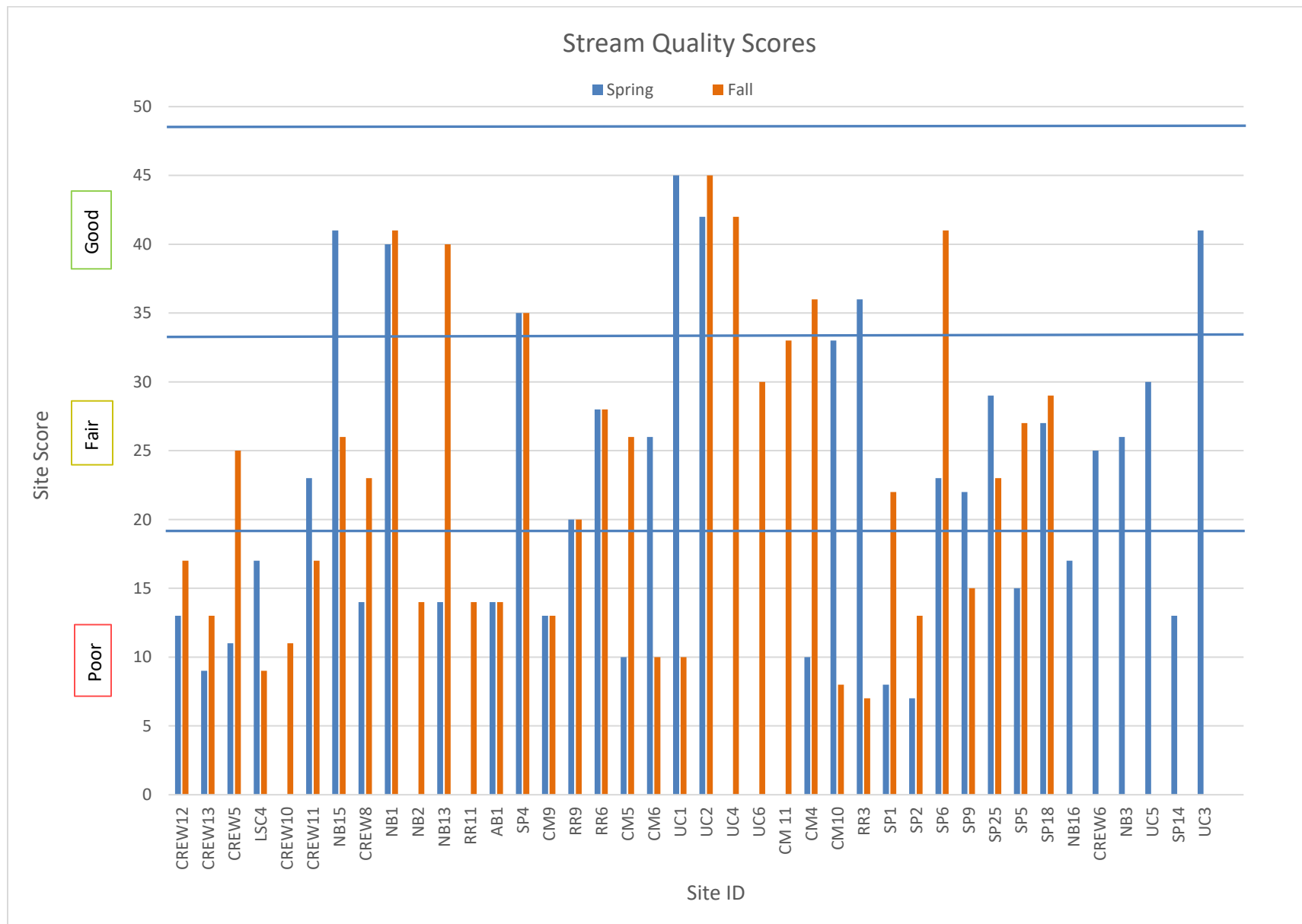
Figure 2: Bar Graphs of Stream Quality Scores From (based on Adopt-A-Stream volunteer macroinvertebrate samples) from spring and fall 2017.
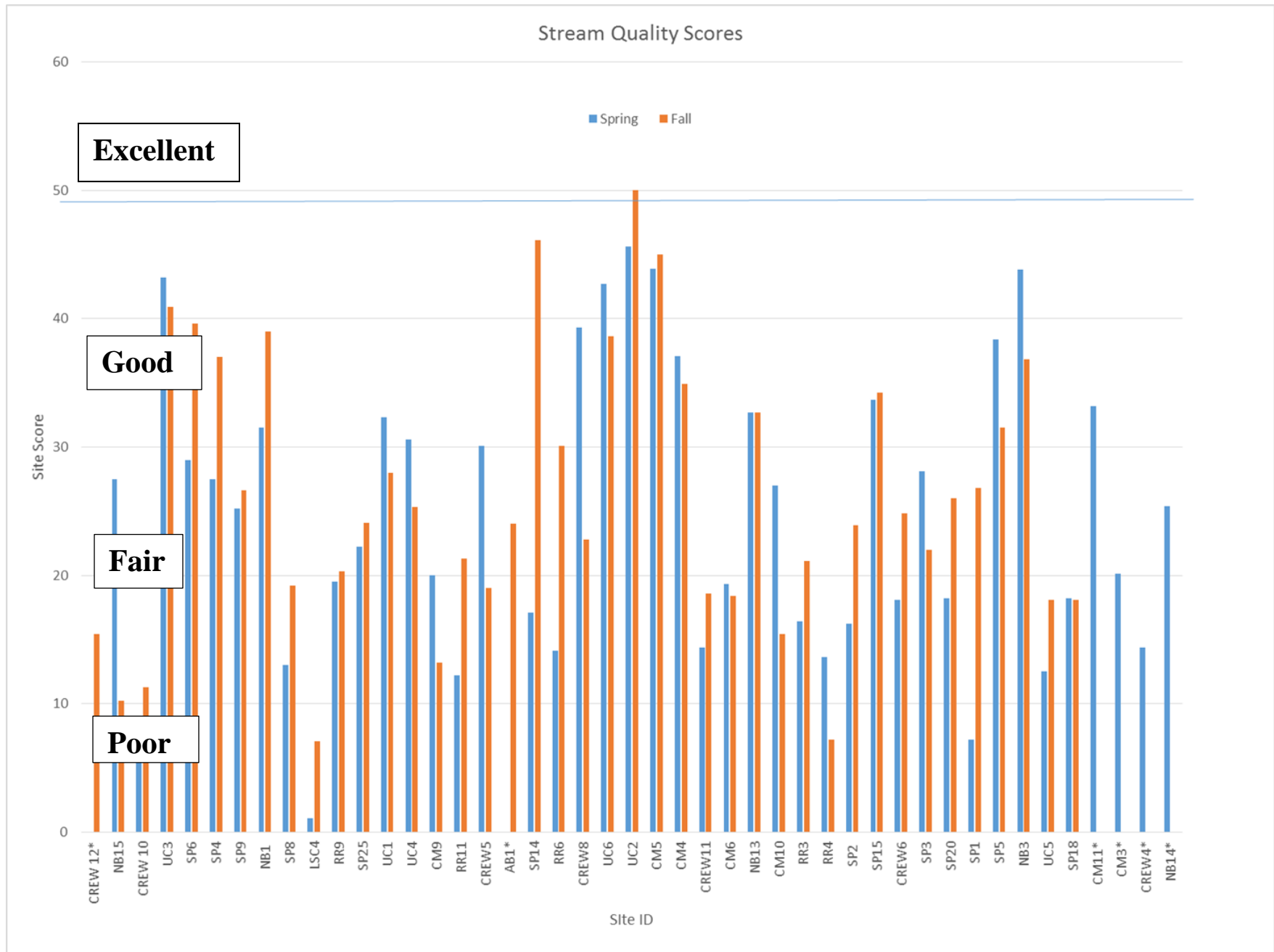
Figure 3: Bar Graphs of Stream Quality Scores From (based on Adopt-A-Stream volunteer macroinvertebrate samples) from spring and fall 2016.
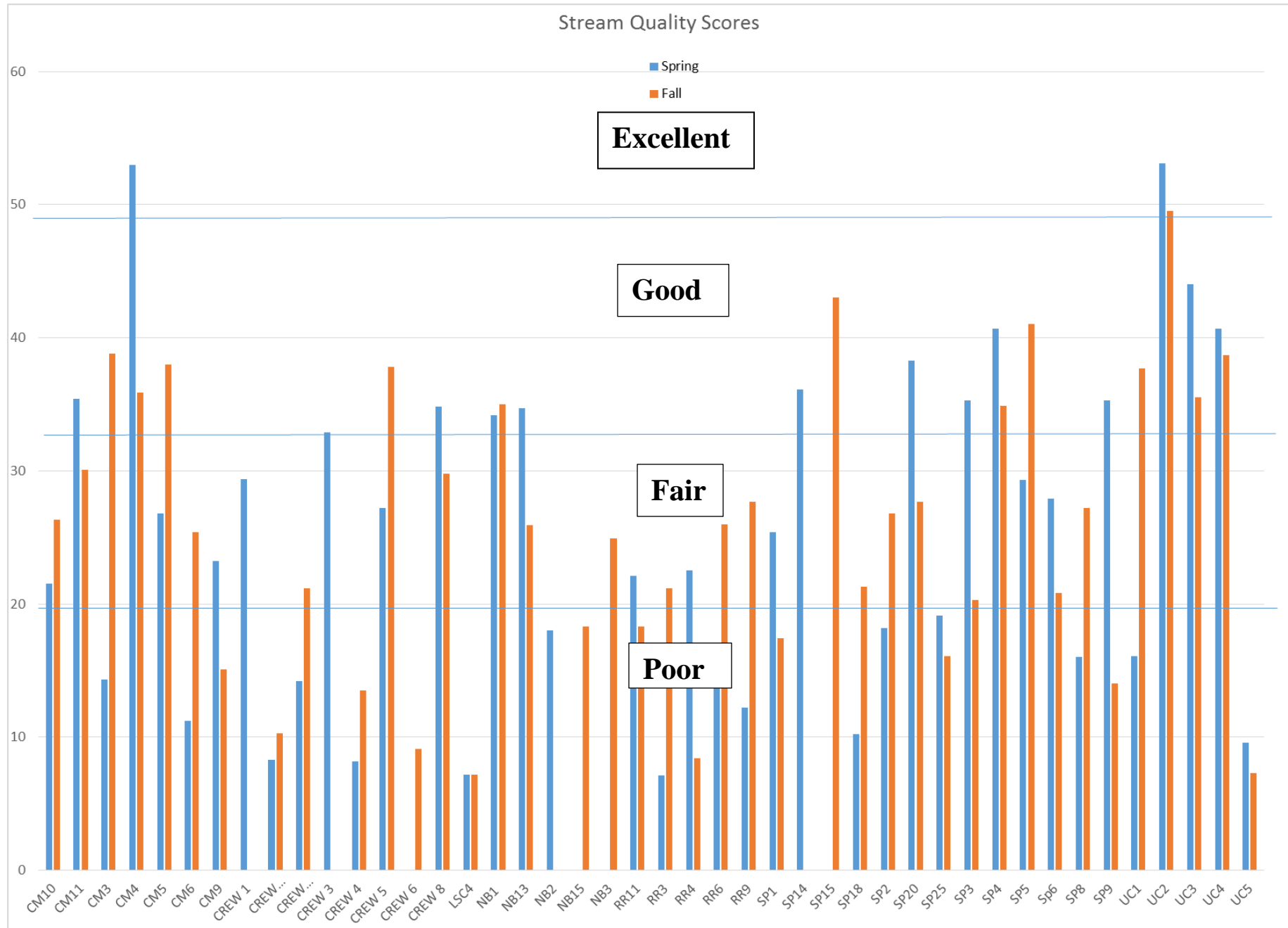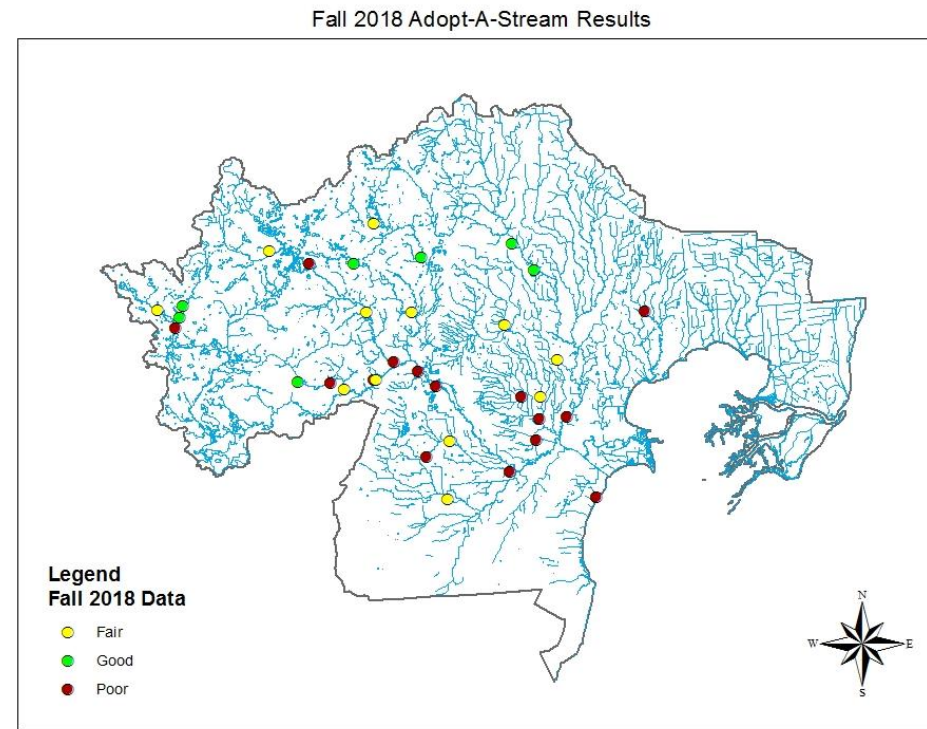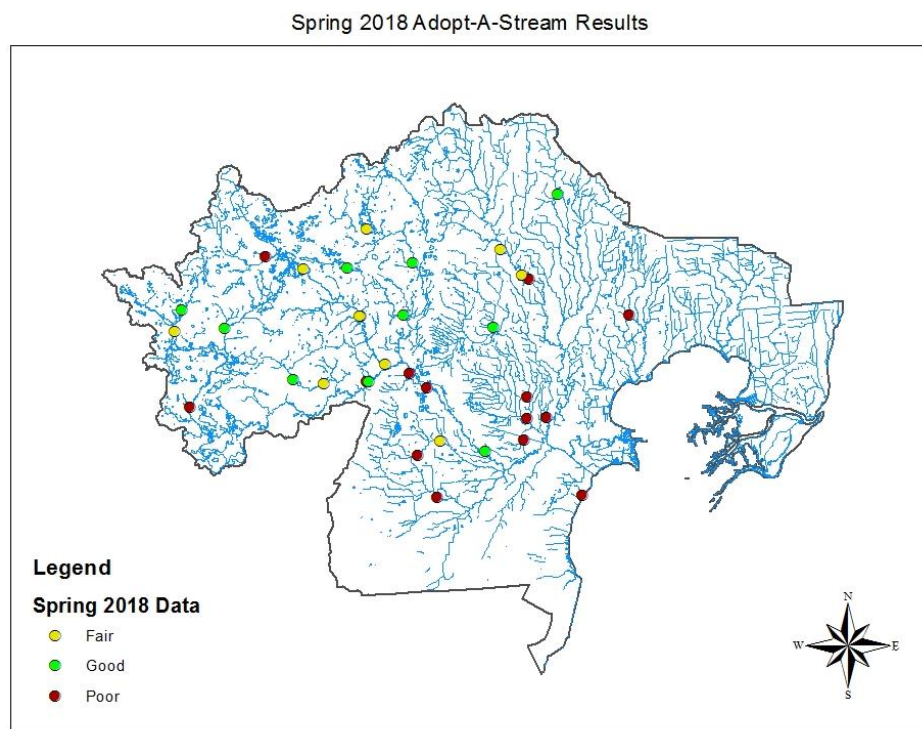
Figure 4: Maps of the Watershed showing all spring and fall 2018 AAS sites and the stream quality at those locations based on the 2018 AAS scores

Spring 2018 Adopt-A-Stream Results

Legend
Spring 2018 Data
- Fair
- Good
- Poor

Fall 2018 Adopt-A-Stream Results

Legend
Fall 2018 Data
- Fair
- Good
- Poor

Site ID or Location: _____

Date: _____

Identification and Enumeration

Use the codes "R" (rare) = 1-10, or "C" (common) = 11 or more when recording the number of individuals in each taxonomic group.

Group 1: Sensitive

_____ Caddisfly larvae (Trichoptera) *EXCEPT Net-spinning caddisflies
_____ Hellgrammites (Megaloptera)
_____ Mayfly nymphs (Ephemeroptera)
_____ Gilled (right-handed) snails (Gastropoda)
_____ Stonefly nymphs (Plecoptera)
_____ Water penny's (Coleoptera)
_____ Water snipe fly (Diptera)

Group 2: Somewhat-Sensitive

_____ Alderfly larvae (Megaloptera)
_____ Beetle adults (Coleoptera)
_____ Beetle larvae (Coleoptera)
_____ Black fly larvae (Diptera)
_____ Clams (Pelecypoda)
_____ Crane fly larvae (Diptera)
_____ Crayfish
_____ Damselfly nymphs (Odonata)
_____ Dragonfly nymphs (Odonata)
_____ Net-spinning caddisfly larvae (Trichoptera)
_____ Scuds (Amphipoda)
_____ Sowbugs (Isopoda)

Group 3: Tolerant

_____ Aquatic Worms (Oligochaeta)
_____ Leeches (Hirudinea)
_____ Midge larvae (Chironomidae)
_____ Pouch snails (Gastropoda)
_____ True bugs (Hemiptera)
_____Other true flies (Diptera)

STREAM QUALITY SCORE
(metric created by MiCorps, www.micorps.net)

Group 1
_____ # of R's * 5.0 = _____
_____ # of C's * 5.3 = _____
      Group 1 Total = _____

Group 2
_____ # of R's * 3.0 = _____
_____ # of C's * 3.2 = _____
      Group 2 Total = _____

Group 3
_____ # of R's * 1.1 = _____
_____ # of C's * 1.0 = _____
      Group 3 Total = _____

Total Stream Quality Score = _____
(Sum of totals for groups 1-3; round to nearest whole number)

Excellent (>48)
Good (34-48)
Fair (19-33)
Poor (<19)

Identifications made by: _____

Identifications verified by:_____