Hello Adopt-A-Stream Volunteers!

Thank you all for volunteering your time in 2019 to assist in the very valuable and rewarding Adopt-A-Stream (AAS) program. To help us better understand the health of our waters within the Clinton River Watershed, here is a summary of our 2019 monitoring results. Overall, a total of 45 different sites were monitored in 2019 between spring and fall.

When looking at average scores from spring 2019 results, 48% of sites were classified as Poor, 27% were classified as Fair, and 22% were classified as Good, and only 1 site (3%) was classified as Excellent. SP15, the one site that scored Excellent in spring AAS monitoring, is located on Stony Creek at the Vanhoosen Museum in Rochester Hills. This site has historically been known to have excellent water quality and a diverse variety of macroinvertebrate including those extremely pollution sensitive such as Hellgrammites (*Megaloptera*) and Stoneflies (*Plecoptera*). As usually found, the sites that scored in the Poor classification are generally in the more populated and urbanized areas of the watershed. Those that scored in the Fair and Good range are primarily located in the more rural and forested areas, such as Independence, Addison, and Ray Townships. Historically, the streams and drains in these areas have not been channeled to the extent as those in more urbanized communities. This means that these areas likely have a more complex substrate composition and more effective habitat for macroinvertebrates than those that have been channeled and contain mostly silt.

As for the fall of 2019, 43% of the site monitored were classified as Poor, 37% were classified as fair, and 20% were classified as Good. These results were very similar to those of spring 2019, though slightly more sites were scored Fair, and slightly less sites were scored as Good. 5% less sites scored as Poor in spring 2019 than in fall 2019. 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. As opposed to spring results, no sites scored as Excellent. The four most abundant macroinvertebrates found by volunteers are listed below. Scuds, a Group 2 organism, were the most common macroinvertebrate found. Scuds appeared in 27 sites in spring monitoring and 21 sites in fall monitoring. Pouch snails (Group 3) were also quite abundant, with 31 sites showing a presence in the spring and 13 sites showing a presence in the fall. Damselflies (Group 2) followed with 18 sites in the spring and 23 sites in the fall. The fourth most common macroinvertebrate was the net-spinning caddisfly (Group 2), being found in 23 sites in the spring and 17 sites in the fall.

- Four most abundant invertebrates collected throughout the watershed:
  - Scud (*Amphipoda*)
  - Pouch Snail (*Physidae*)
  - Damselfly *(Odonata)*
  - 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 2018 (Figure 2) and 2017 (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 2019 sites and one of the fall 2019 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 2019 monitoring locations (* indicates sites only monitored once)

Waterbody	Site ID	Site Location
Salt River	AB1*	New Haven, Decora Park
Clinton River	CM11	Adams Rd- Quail Ridge
Galloway Creek	CM10	Oakland University Preserve
Clinton River	CM12*	Yates AHG, Behind Cider Mill
Clinton River	CM3*	Riverside Park in Auburn Hills
Galloway Creek	CM4	Northwest Corner of Perry and Giddings
Clinton River	CM5	Southwest Corner of Avon and Livernois
Clinton River	CM6	Yates Park
Clinton River	CM7*	Goldner Walsh Nursery on Orchard Lk Rd
Galloway Ditch	CM8*	Bald Mtn Road, South of Hawk Woods Nature Center
Avon Creek	CM9	Behind CRWC Office
Gleode Drain	CREW10	21 Mile and Garfield Rd
Kuku Creek	CREW11*	18 Mile and Garfield Rd
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
Clinton River	CREW6	Clinton River Park
Price Brook Drain	CREW8	26 Mile and Hayes
Clinton River	NB1	Wolcott Mill
McBride Drain	NB15*	Macomb Rec Center
Clinton River	NB16	Camp Rotary; Wolcott Mill Metropark
East Coon Creek	NB3*	Armada Middle school
Plumbrook Drain	RR11*	Fieldcrest Lane, Sterling Heights
Big Beaver Creek	RR4	James Nelson Park
Chrissman Drain	RR6	18 1/2 Mile and Hillview Rd
Beaver Creek	RR9	Beaver Creek Park, Bieber Dr
Paint Creek	SP14	Paint Creek Cider Mill
Stony Creek	SP15	Van Hoosen Museum
Stony Creek	SP18	Lakeville; Rochester Rd and Milmine
Paint Creek	SP1*	Stanton and Newman Rd
Paint Creek	SP2	Children's Park
Paint Creek	SP20	Rochester Municipal Park
Gallagher Creek	SP25*	Gallagher/Paint Creek
Stony Creek	SP4	31 Mile/ E. of Mt. Vernon
W. Branch Stony Creek	SP6	Stony Creek on Lake George Rd.
Paint Creek	SP8*	Upstream of Kings Cove Bridge off Tieken
Paint Creek	SP9	Rochester Public Library
Clinton River	UC1	6815 Dixie Hwy
Clinton River	UC2	Kimball Preserve
Sashabaw Creek	UC3	Pine Knob Rd., West of Clintonville
Clinton River	UC4*	United Methodist Church on Waldon Rd.
Clinton River	UC5	Elizabeth Lake Road Park
Deer Lake Inlet	UC6*	Deerhill Dr.
Headwaters	UC7	Oakland County Sportsmen's Club
Cottrell Drain	LSC4*	Southwest corner of Jefferson and Donaldson

Figure 1. Bar graph of Stream Quality scores (based on Adopt-A-Stream volunteer macroinvertebrate samples) for spring and fall 2019.
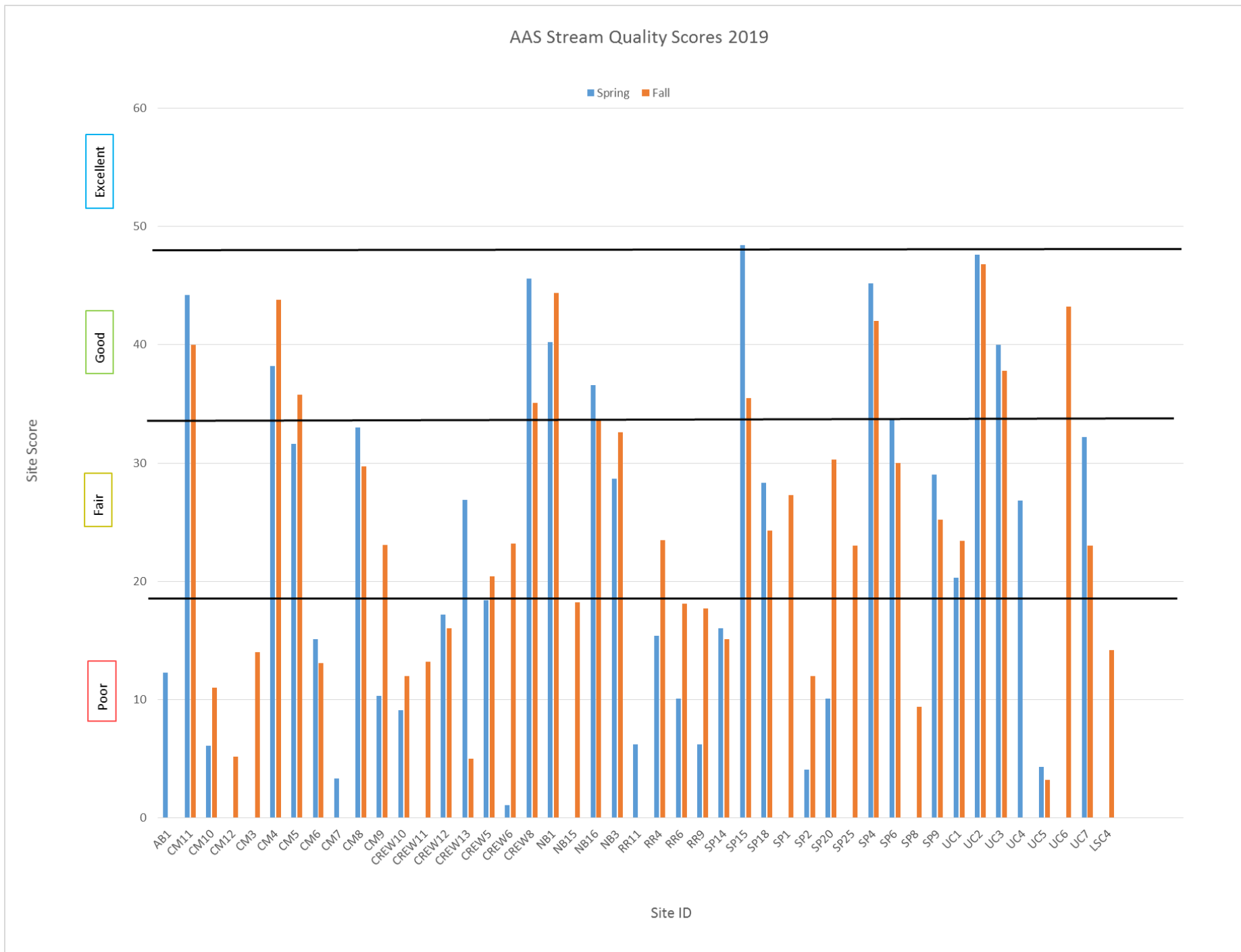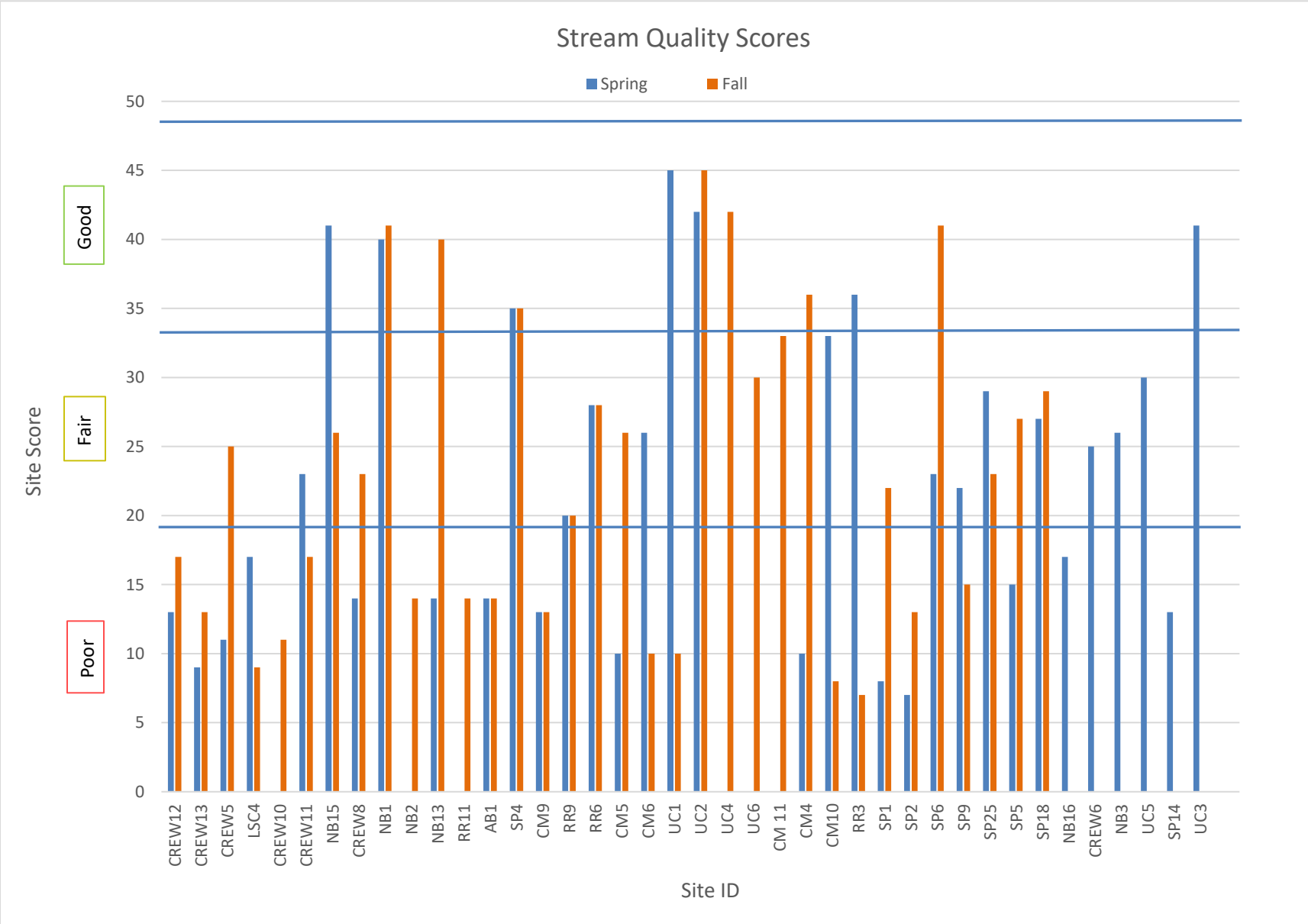
Figure 2: Bar Graphs of Stream Quality Scores From (based on Adopt-A-Stream volunteer macroinvertebrate samples) from spring and fall 2018.
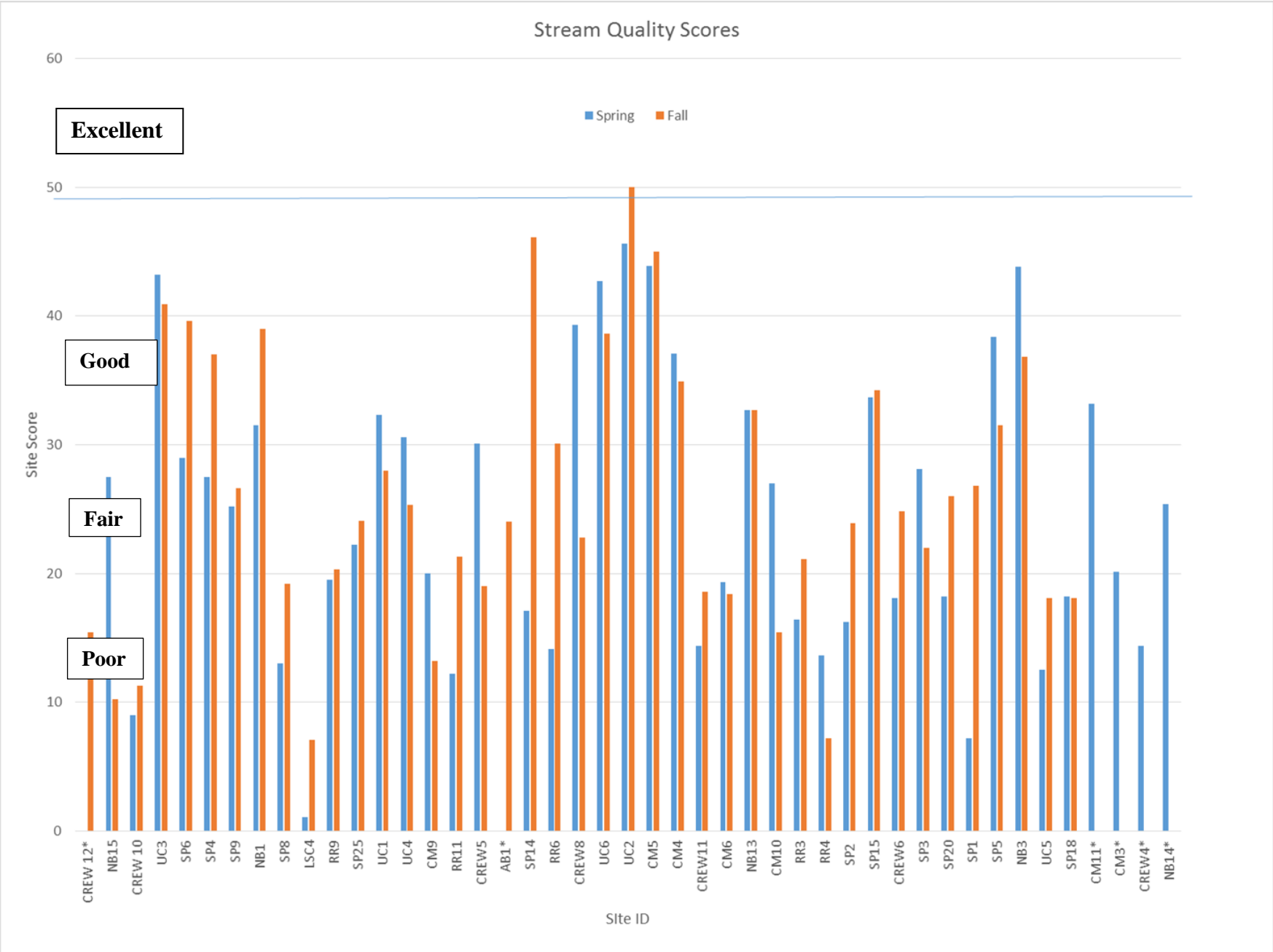
Figure 3: Bar Graphs of Stream Quality Scores From (based on Adopt-A-Stream volunteer macroinvertebrate samples) from spring and fall 2017.
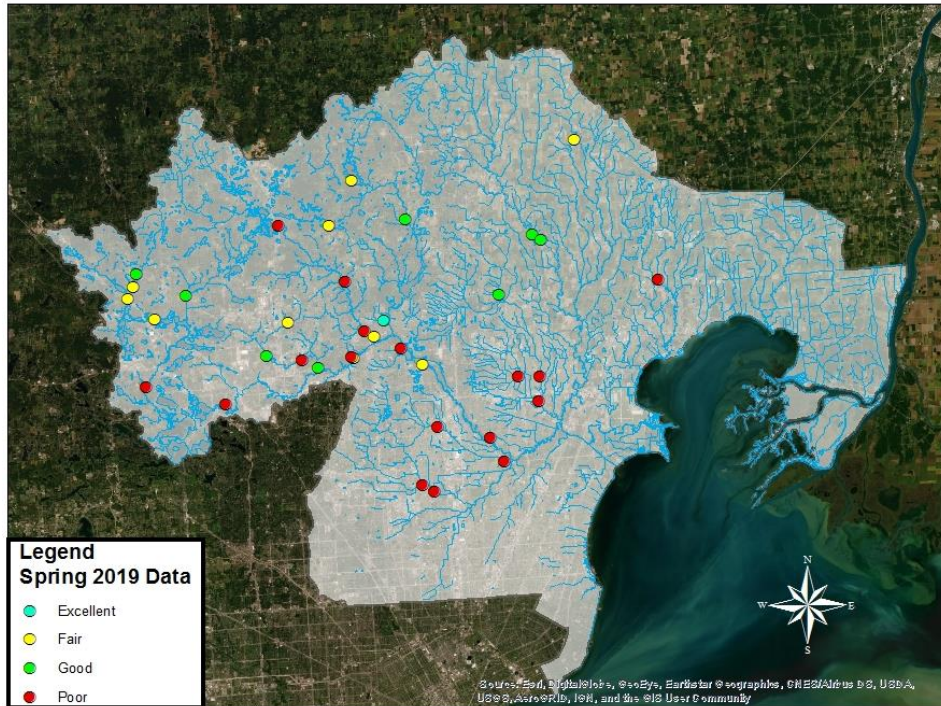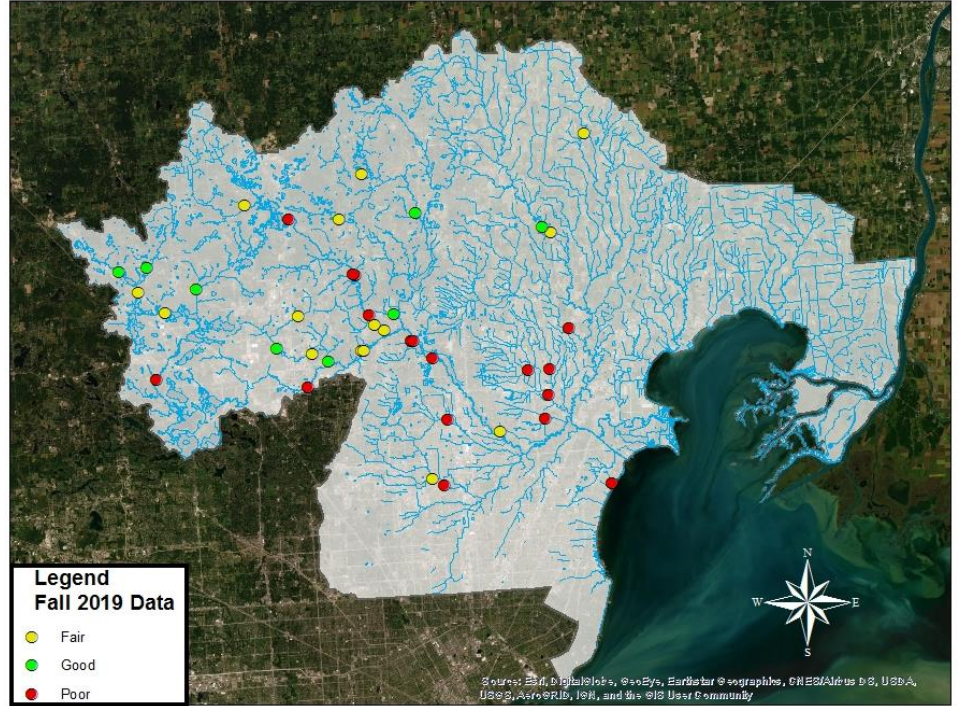
Figure 4: Maps of the Watershed showing all spring and fall 2019 AAS sites and the stream quality at those locations based on the 2019 AAS scores.

Spring 2019 Adopt-A-Stream Results

Legend
Spring 2019 Data
- Excellent
- Fair
- Good
- Poor

Fall 2019 Adopt-A-Stream Results

Legend
Fall 2019 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:_____