

Hello Adopt-A-Stream Volunteers!

Thank you all for volunteering your time and assisting in this very valuable and fun program in 2016. To help us better understand the health of our waters within the Clinton River Watershed, here is a summary of our 2016 monitoring results. When looking at average scores from spring 2016 results, 39% of sites were classified as Poor, 29% were classified as Fair, and 29% were classified as Good. After reviewing the data there were two sites that scored excellent as well. The majority of the “poor” sites were some of our flashy drain systems that have been historically straightened and lack desirable substrates and habitat/structure. Most of these sites are located within some of our most populated areas of our watershed. It is in these sites where the dominant macroinvertebrates identified were very tolerant to stressors. These families include midge larvae, aquatic worms, and black flies. Meanwhile, the majority of the “good” sites were found in our headwaters and tributaries that flow through are more rural landscapes. These sites were located in the Upper Clinton subwatershed, North Branch subwatershed, and the Stony/Paint subwatersheds. It is in these sites where volunteers tended to find more sensitive species such as mayflies, stoneflies, and caddisflies. Overall, across the entire watershed most of our streams were categorized as “fair”.

As for fall 2016 results, 30% of sites were classified as Poor, 40% were classified as Fair, and 27% were classified as Good. Due to large amounts of rain and high flows the week of Adopt-A-Stream some of the site data was likely affected. Almost all subwatersheds had a variety of “Fair” and “Poor” sites. Most of the sites that were determined to be good were located within the Upper Clinton subwatershed. Most of these sites had an abundance of multiple macroinvertebrate families. You can see just below this paragraph the four most abundant macro’s found within the watershed the Scud, Mayfly, net spinning Caddisfly and Damselfly. Mayflies fall under group 1 or “sensitive” while the other three fall under group 2 or “somewhat sensitive”. Overall, across the entire watershed most of our streams were categorized as “fair”. We did have one site that scored an excellent rating and that was UC2 located off of Perry Lake Rd in Independence Township.

- Four most abundant invertebrates collected throughout the watershed (In no particular order):
 1. Scuds (*Amphipoda*)
 2. Mayfly nymphs (*Ephemeroptera*)
 3. Caddisfly’s (*Trichoptera*)
 4. Damselfly (*Odonata*)



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 section (see Appendix A). The scores and classifications I refer to in the first two paragraphs can be seen on the graph below (Figure 1.). For site locations

and ID, please refer to the next page (Table 1). I've included two maps as well one of the spring 2016 sites and one of the fall 2016 sites (Figure 2). 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.crowc.org/programs/adoptastream/results/>.

Thanks Again

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Watershed Ecologist

Table 1: Site ID and Locations for the 2016 monitoring locations

Site ID	Stream	Location
CM6	Clinton River	Yates park
NB3	Coon Creek	Armada center Rd and North Ave
UC5	Clinton River	Airport and Elizabeth Rd
CM11	Clinton River	North of Hamlin Rd
SP15	Stony Creek	Van Hoosen
CREW5	Clinton River	Waldenburg park
NB15	McBride Drain	23 and card
CREW6	Clinton River	Dodge park
RR4	Red Run	Nelson park
SP20	Paint Creek	Rochester municipal
SP3	Paint Creek	Kern and Clarkston
SP1	Paint Creek	Stanton and Newman
UC4	Clinton River	Clarkston Methodist church
UC1	Clinton River	Dixie Hwy
CM5	Clinton River	Avon and Livernois
CM4	Clinton River	Perry and Giddings
SP4	Stony Creek	31 mile and Mt Vernon
CREW8	Pricebrook Drain	Hayes Rd S of 26 mile
UC3	Sashabaw Creek	Pine Knob Rd
SP8	Paint Creek	Kings cove
CM3	Clinton River	Riverside park
UC2	Clinton River	Perry lake Rd
Crew11	Kuku Creek	18 mile and garfield
LSC4	Cottrell Drain	Jefferson and Donaldson
NB1	Clinton River North Branch	Wolcott Mill
RR6	Plumbrook Drain	18 mile and Mound
RR9	Beaver Creek	Sterling Heights
SP9	Paint Creek	Rochester library
CREW10	Gleode Drain	21 mile and garfield
Sp18	Stony Creek	Lakeville
SP5	Stony Creek	Stony creek metro
SP25	Gallagher Creek	Gallgher Rd
CREW4	Utica Drain	MCC campus
NB13	Clinton River North Branch	31 mile rd and romeo plank
RR11	Plumbrook Drain	Fieldcrest Dr
RR3	Nelson Drain	Dequindre and Long Lake
CM10	Galloway Creek	Oakland University
CM9	Avon Creek	CRWC office
SP2	Paint Creek	Childrens park
SP6	Stony Creek	lake george rd
CREW1	Clinton river middle branch	25 mile and van dyke
CREW3	Clinton river middle branch	Schoenher N of 25 mile
NB2	Clinton River North Branch	Dunham and Little rd
SP14	Paint Creek	Paint creek cider mill

Figure 1. Bar graph of Stream Quality scores (based on Adopt-A-Stream volunteer macroinvertebrate samples) for spring and fall 2016.

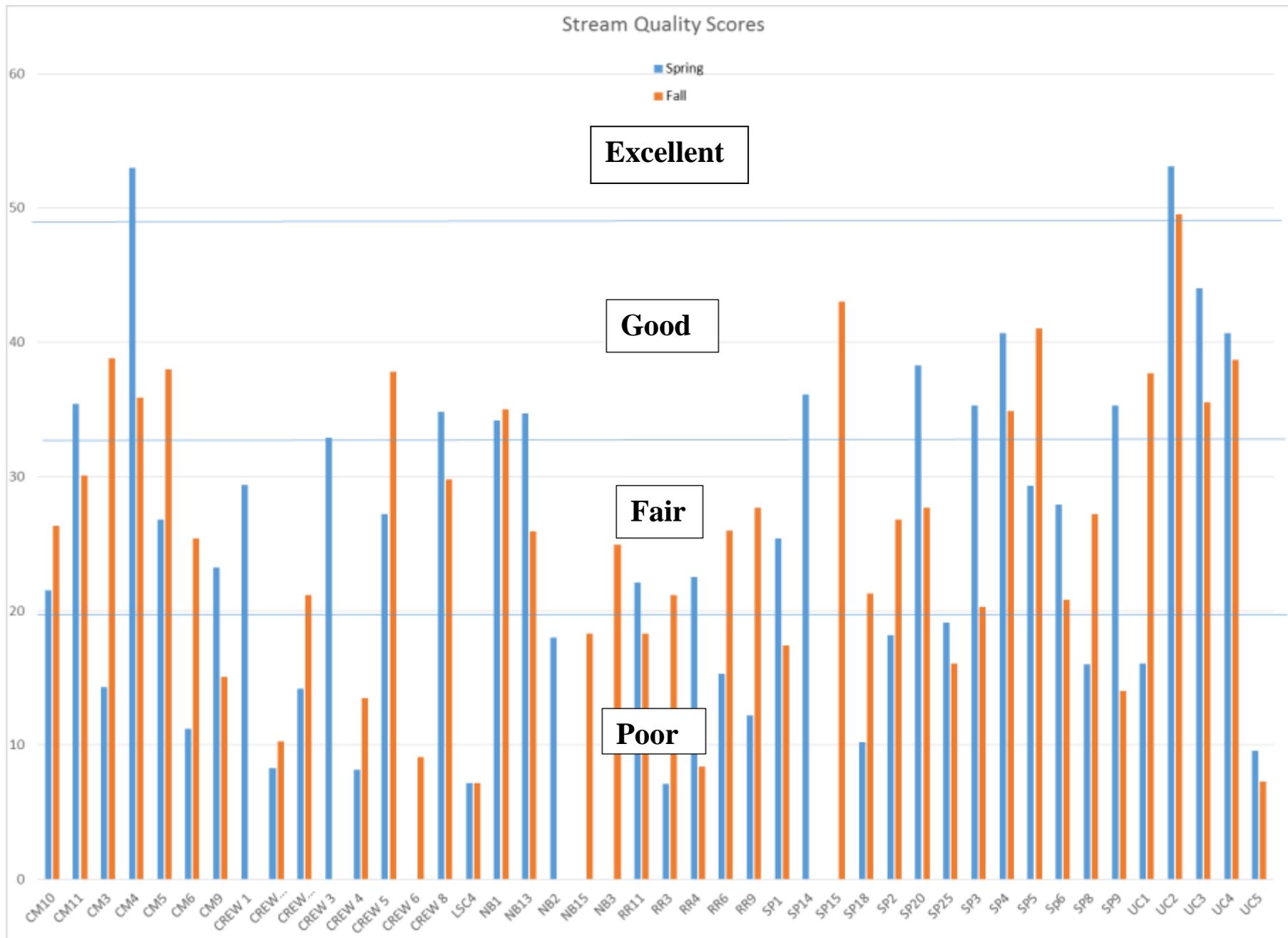
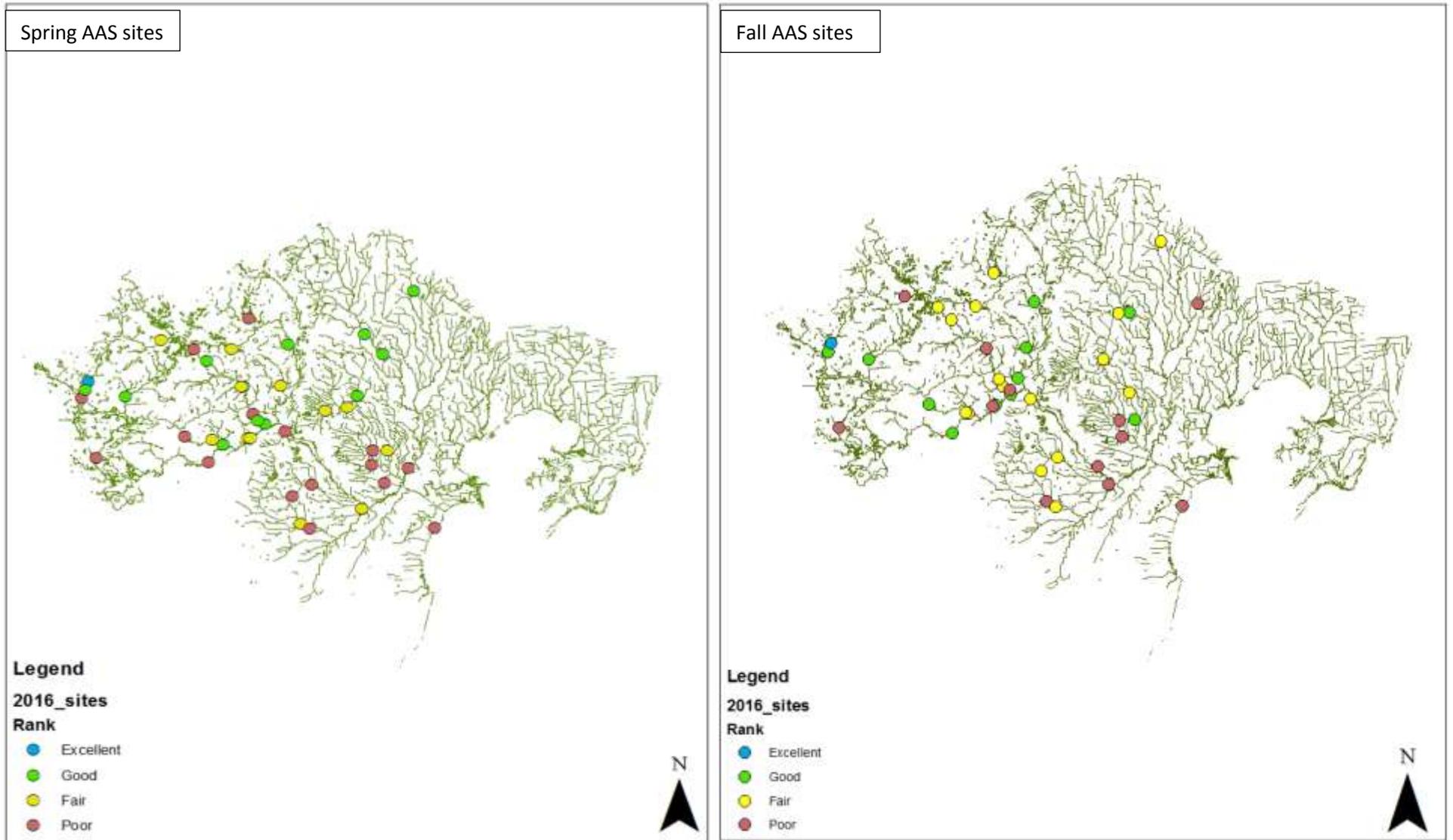


Figure 2: Maps of the Watershed showing all spring and fall 2016 AAS sites and the stream quality at those locations based on the 2016 AAS scores



APPENDIX A: Macroinvertebrate Data Form

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: _____