

### Inventory and Assessment of Culverts, Bridges, and Stormwater Outfalls



SEWRPC staff has completed an inventory and survey of all stream crossings within the Oak Creek watershed.

In total, 48 culverts and 34 bridges were assessed for general physical condition and for potential fish passage barriers. In addition, general conditions have been assessed for 75 stormwater outfalls that discharge directly to Oak Creek. The City of Racine Health Department has also been sampling effluent at selected stormwater outfalls within the Oak Creek watershed.



### Large Trash and Debris



Locations of large trash items encountered during the stream survey were mapped and photographed. The location of these large trash items will be available to municipalities and other groups to assist in stream cleanup efforts.

### Important Biological, Hydrologic, and Geomorphic Features

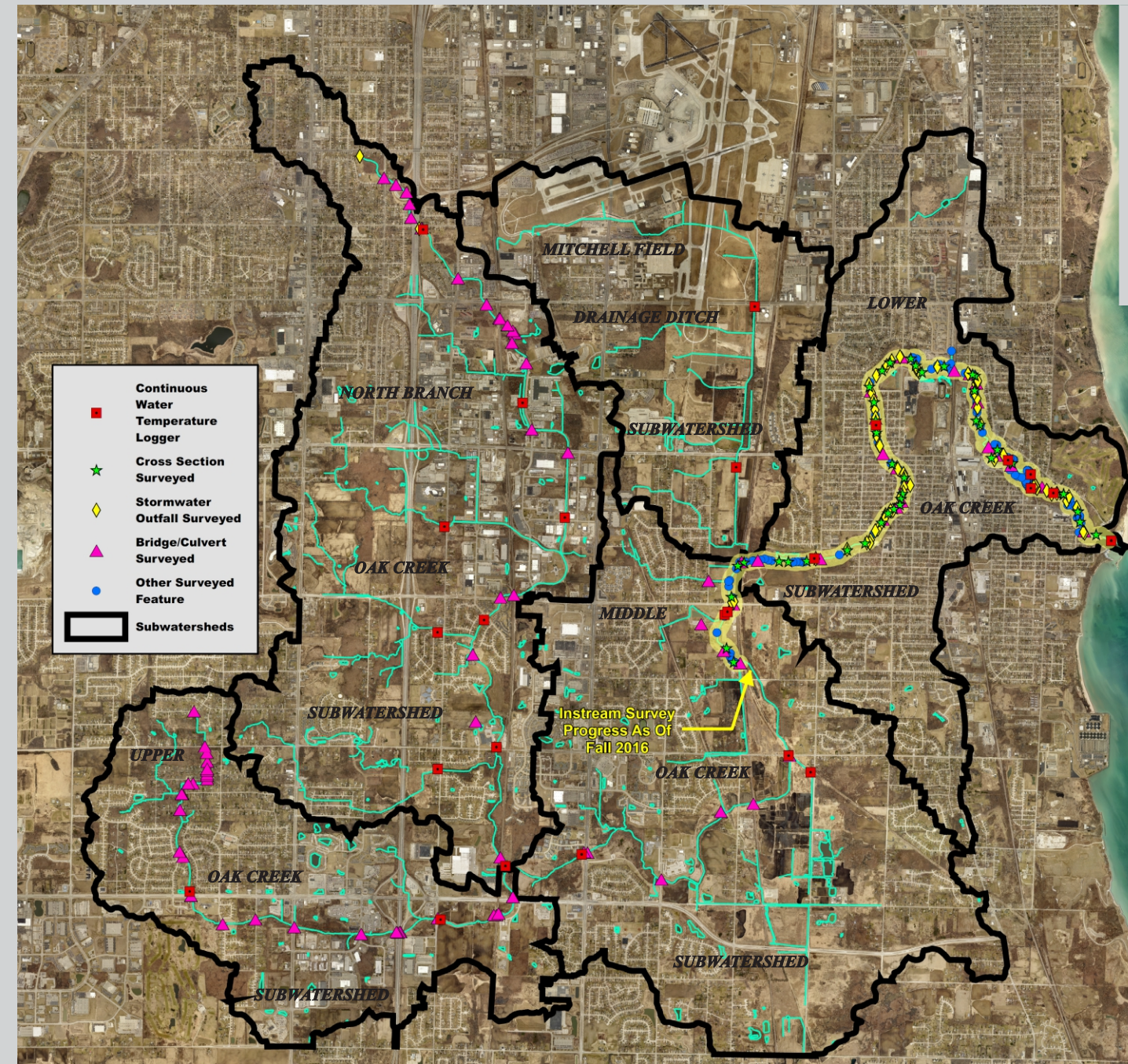


As the survey crew walks upstream, the location of notable features including springs and groundwater seepages, mussels, fish beds, alcove channels, tributaries, drain tiles, and trash in the stream are mapped and photographed. In the photo to the left, rust colored water indicates iron precipitation associated with groundwater seepage. The photo above shows a native freshwater mussel.

Source: SEWRPC.

# Oak Creek Watershed Restoration Plan

## *Instream Survey Progress Update-Fall 2016*



### Water Temperature Monitoring

Water temperatures are being monitored in streams throughout the Oak Creek watershed. In May 2016, SEWRPC staff deployed water temperature loggers at 25 locations in the mainstem of Oak Creek, the North Branch of Oak Creek, the Mitchell Field Drainage Ditch, and several unnamed tributaries. Temperatures will continue to be logged every hour through the winter, spring, and summer of 2017.

43 streambank erosion sites--ranging from moderate to severe erosion--were documented along the portion of the mainstem of Oak Creek that was surveyed in the summer and fall of 2016. At each site, measurements of length, maximum height, and average depth of eroding bank were collected. The sites were also mapped. These measurements will allow SEWRPC staff to estimate the amount of total suspended sediment and phosphorous that is entering the Creek from bank erosion.



### Cross-Section Survey to Assess Instream Habitat



As of November 2016, cross-section surveys have been conducted at 43 sites along about six miles of the mainstem of Oak Creek, from Lake Michigan upstream to Forest Home Avenue. At each cross-section, physical parameters were measured to assess the amount, quality, and diversity of instream habitat. These measurements included water and sediment depth, substrate composition, undercut bank, bank slope, channel width, bankfull width, and bankfull depth. In addition to cross-section surveys, locations and water depths were recorded at each pool and riffle to assess habitat quality and quantity between cross-sections.



### Large Woody Debris Jams and Accumulations



The presence and quantity of large woody debris (LWD) was recorded in both cross-section surveys and at large accumulations. LWD plays a vital role in the hydraulic, geomorphic, and biological function of streams. In general, LWD in a stream is good as it provides essential food and habitat for aquatic organisms. In some cases, however, LWD can form massive jams that span the entire width of the stream or block a culvert, altering the path of the stream or leading to flooding concerns and fish passage obstructions.



### Streambank Erosion Assessment

