

## 6.0 PROJECT RESULTS

This project was conducted to restore riparian corridor, wetlands and upland habitat in the Rouge River Area of Concern (AOC) to advance the removal of the Benthos Beneficial Use Impairment (BUI) and ultimately lead to the removal of the Fish and Wildlife Habitat and Population Beneficial Use Impairments. The project was implemented to continue the measurable progress shown on the Rouge River as documented in improvements in flooding statistics (decreased peak flows occurring less frequently) and an increase in the diversity of benthos.

The work outlined in this project continued the documented success of the Alliance of Rouge Communities (ARC) efforts to reduce extreme flow variation and volume (both peaks and low flows) to improve habitat and conditions for macroinvertebrates. The foundation of these efforts has been to create or restore habitat with grow zones, wetland restoration, invasive species management and preservation of the floodplain.

### 6.1 RESTORED VALLEY WOODS WETLAND

This project was conducted from October, 2010 through June, 2013 to address the Fish and Wildlife-Related BUIs in the Rouge River AOC by enhancing and converting approximately 25 acres of turf grass to native vegetation and restoring seven acres of wetland. Proposed outcomes for this project were:

- Removal of approximately 11,250 cubic feet of storm water volume from the Rouge River based on the fact that 450 cubic feet of storm water volume is removed for every acre of turf grass converted to grow zones (Schueler, 2005).
- Fifteen percent of one of the Rouge River AOC delisting target projects identified in the *Rouge AOC Delisting Document* would be implemented and help move the AOC towards removing the Benthos BUI by 2014. Removing the Benthos BUI has a direct impact on the removal of the Fish and Wildlife-related BUIs in the Rouge River AOC and this is anticipated to occur in the next 15 years.
- Native vegetation would increase from 0% to 75% in the implementation area.
- The Center for Watershed Protection (2005) has shown pollutant removal efficiencies to be:
  - Constructed Wetlands: Total Suspended Solids (TSS) 51%-75%; Total Phosphorus (TP) 51%-75% and Oil and Grease 26%-51%
  - Grow Zones: TSS 26%-51%, TP 51%-75%, Bacteria 51%-75% and Oil and Grease 26%-51%



In the Valley Woods Wetlands, invasive species were removed, plant diversity was re-introduced and wetland hydrology was restored. This project also fulfilled local and subwatershed goals by improving the quality of the ecosystem and restoring habitat for fish and terrestrial wildlife and the following Rouge River Main 1-2 Subwatershed objectives: (1) Minimize the amount of soil erosion and sedimentation; (2) Improve and maintain the river ecosystem for wildlife, and (3) Restore/maintain aesthetically appealing conditions.

## 6.2 WAYNE COUNTY PARKS AND DETROIT PARKS GROW ZONES

In Wayne County Parks, 15.4 acres of turf grass was converted to native plant grow zones along riparian corridors on the Lower Rouge River and the Upper Rouge River. Another 11.1 acres of established grow zones were restored. In the City of Detroit, 10 acres of parkland was restored or converted to native prairie. Based on the Schueler formula above 16,425 cubic feet of storm water volume was removed from the Rouge River after completion of these projects.

## 6.3 ECOLOGICAL BENEFITS

As the ARC continues to monitor and assess the success of these projects, the following ecological benefits from the *Transforming the Rouge* habitat restoration projects are occurring in the AOC. We believe these indicators can only improve in our efforts to continue to restore fish and wildlife habitat. To date, benefits in the Rouge River AOC include:

- Spring benthic monitoring scores appear to be improving in 3 of the 4 subwatersheds associated with the *Transforming the Rouge* project sites. This includes the Main 1-2, the Upper and the Main 3-4. The Main 1-2's positive trend is statistically significant. The fall benthic monitoring scores appear to be declining, but are not statistically significant; therefore, no true trend has been established yet. In the Middle 1 and Middle 3 subwatersheds, which have upland grow zones that were planted in 2006 and 2007, the benthic monitoring data trends are improving significantly in both spring and fall. It is anticipated that, like the Middle 1 and Middle 3 subwatersheds, the negative/declining trends in the other subwatersheds will turn positive as the *Transforming the Rouge* project sites mature.
- Increased focus on the benefits of native areas and habitat. A Detroit Public Schools program by a local stewardship group expanded from two classrooms to 10 classrooms in Detroit's Rouge Park since the prairie was restored in 2012. Students visit the restored prairie throughout the school year to document seasonal changes. At the annual Rouge Rescue watershed stewardship event on June 1, 2013, 70 schoolchildren participated in activities such as invasive species management and tree planting.
- Increased wildlife. Wild turkeys and coyotes were observed in Rouge Park in 2012 and a Blue Heron rookery is thriving in Rouge Park. At the Valley Woods Wetlands in Southfield, increased wildlife usage of the project site was evident. Whitetail deer, great blue herons and coyotes have been observed. Small mammal tracks have been observed. Frogs and toad have also been served. Wildlife usage will increase as the vegetation grows and matures.
- Increased butterflies and birds. There is an increase in butterflies in Detroit's Eliza Howell and Rouge parks since the prairie was restored and native areas planted. There are more butterfly and bird watching events at Eliza Howell Park. In February, 2013, Leonard Webber, the president of the Detroit Audubon Society wrote: "I thought you might be interested in hearing that the grasses and wildflowers that grew this year in Eliza Howell in the area of the burn have been very popular with birds all fall and continue to be this winter. Most days when I go there, there



Deer at the Valley Woods Site

are a couple dozen individuals (usually at least three different species) foraging for seeds. There have probably been more birds in that area of the park in the period from October to February this year than in any of the previous years I have been going there.”

- An abundance of praying mantis was observed in Rouge Park and a local school group captured and released some praying mantis from Rouge Park into Eliza Howell Park.
- Sensitive stoneflies were observed hatching in the channelized portion of the lower portion of the Rouge Main Branch, downstream of three of the Transforming the Rouge projects (Valley Woods Nature Preserve, Eliza Howell Park and Rouge Park).



**Black swallowtail on Butterfly Weed at Rouge Park**