# Rouge River Advisory Council

**RRAC Meeting**
**1:30 pm, April 16, 2013**
**Lawrence Tech University**

**Meeting Summary**

**Attendance**

| | | | |
|---|---|---|---|
| X | Dan Ballnik, Chair | | Barb Goryca |
| X | Brandy Siedlaczek, Vice-chair | X | Don Carpenter, Lawrence Tech University |
| X | Bill Craig, SPAC representative | | Karen Mondora, Farmington Hills |
| X | Jennifer Tewkesbury, MDEQ Coordinator | X | Laura Gruzwalski, Hubbell Roth and Clark, Inc. |
| X | Rose Ellison, EPA Representative | X | Noel Mullet, Wayne County Dept. of Public Services |
| | Amy Mangus, SEMCOG | X | Sally Petrella, Friends of the Rouge |
| X | Annette DeMaria, Alliance of Rouge Communities | | Zachare Ball, Alliance of Rouge Communities |
| X | Michelle Bruneau, MI Dept of Community Health | | |

## I. Old Business

Following up on a previous request from Dan, Annette reported that ECT will be able to set up an online portal that is accessible by the RRAC. The portal would be used to store files that are of interest to the RRAC, but not necessarily the public. File uploading would be done by ECT, but anyone with access could download them.

## II. Fish Tumor and Fish and Wildlife Consumption Beneficial Use Impairments (BUIs) State Update

Michelle Bruneau presented the state's sampling plans for the collection and analysis of fish to evaluate the status of two BUIs: 1) Fish Tumors and 2) Fish and Wildlife Consumption. Michelle presented the proposed sampling sites, target species, number of samples, and removal criteria. Sampling is planned for summer 2013 and the data would be available in spring 2014. This is funded by a Great Lakes Restoration Initiative (GLRI) grant. Michelle asked that any comments be sent to her within the next four weeks.

There was some discussion regarding the proposed sampling locations for the fish tumor assessment. Subsequent to the meeting, the state updated these sampling locations to be:

1. Main Branch Rouge River between Troy and Detroit, and
2. Upper Branch Rouge River between Farmington Hills to Redford **if** tumors are observed in suckers collected from the Main Branch downstream of Michigan Ave.

The sampling locations for the fish consumption assessment are as follows:

1. Newburgh Lake, and
2. Lower Branch & Main Branch Rouge River downstream of Ford Dam.

The draft sampling plans are included as Attachment A.

## III. Fish Consumption Advisory: Update of Materials

Michelle also presented the state's plans to update their outreach efforts to convey fish consumption restrictions to the public within Areas of Concern (AOCs) and throughout the state. GLRI funding is being used to create AOC-specific fact sheets and update the state's fish consumption guidance documents and materials.

The updated statewide fish consumption documents can be found at www.michigan.gov/eatsafefish. The AOC-specific documents will be available in spring 2014.

## IV. Old Channel Sediment Study Findings

Rose presented the U.S. Environmental Protection Agency's (EPA's) findings on the sediment investigation conducted in the Rouge River's old channel around Zug Island. The investigation took two years to complete and the Remedial Investigation Report was finalized in September 2012.

In general, the data revealed the following:

- The identified areas of contamination are co-located with former municipal and industrial outfalls,
- Polyaromatic hydrocarbon (PAH) concentrations were very high in certain locations,
- PCBs and metals concentrations were low,
- The footprint of impacted sediment is 8.8 acres,
- The volume of contaminated sediment is 33,900 cubic yards and another 45,000 cubic yards of clean material overlays the contaminated material,
- The average daily flow in the channel is 2,200 cubic feet per second and it flows from north to south
- The primary driver of sediment transport in the channel is freighter traffic,
- There are three shipping docks in the channel (verses 20 on the main stem), and
- About 535 cubic yards of sediment is scoured by freighter traffic.

The findings will be used to complete a feasibility study which will present options for remediating the contaminated sediment. A general rule of thumb is that it costs about $200 per cubic yard to remediate contaminated sediment.

## V. Status of Projects

Beneficial Use Impairment Report Card

Noel provided an update on the development of the report card which is scheduled to be complete by September 2013. The report card work group has assisted Noel in

determining the indicators that will be used to evaluate historic and existing conditions. The indicator data has been gathered and summarized in graphical format. Noel is now working on text that describes the progress to date and future efforts needed.

Lower Rouge Delisting Strategy

Annette presented an update on the Lower Rouge Delisting Strategy report. A draft list of projects to be included in the report was distributed. The list includes projects targeted at both the removal of BUIs and restoration of the watershed as outlined in the Rouge River Watershed Management Plan. Progress on the report will continue with a due date of September 2013.

## VI. SPAC Update

- There is a State Public Advisory Council (SPAC) legislative briefing planned for May 1st in Lansing. RRAC will have a table at the meeting. MDEQ and the ARC will supply materials for the table. Bill plans to attend unless others are interested.
- There is a conference call with the Great Lakes Commission (GLC) on April 23rd to plan for the SPAC meeting.

## VII. EPA/MDEQ Update

- Rose was introduced as the new AOC coordinator from the EPA.
- Jen announced that the USGS are expected to release potential alternatives to deal with the failing dam at Henry Ford Estate.
- Jen distributed the state's 2013 Statewide Beach Closing BUI Assessment Report. There were several comments on report that were discussed. Jen thought the report was final, but encouraged comments to be submitted. *Subsequent to the meeting, Jen indicated that the report was a draft and that comments would be taken. Noel and Annette supplied Jen with written comments.*

## VIII. New Business

2013 SPAC Grant Application

Noel announced that the ARC was awarded another SPAC grant from the GLC. This will allow for the continued facilitation of RRAC meetings and the development of project fact sheets to summarize the projects needed to remove various BUIs. The grant request also included the development of promotional materials to highlight the recent successes in the watershed including the removal of the dams at Wayne Road and Danvers Pond, and the green infrastructure improvements implemented under the US Forest Service tree grant and the Transforming the Rouge project. However, the need for this task was questioned; therefore, the task was eliminated. The final scope and budget are being refined to reflect this change.

## IX. Comments

- Annette provided an update on the Main Stem Legacy Act proposal to address the contaminated sediments in the main stem of the Rouge River. $350,000 in match funding has been secured and the proposal will go to EPA within the next couple weeks.

- Bill mentioned interest in Liquid Assets: The Story of Our Water Infrastructure video which was developed by the Water Environment Federation in 2010. He suggested that perhaps Friends of the Rouge could host a public event to display the video to increase the public's knowledge of the importance of water and sewer infrastructure. The online version of the video can be found at http://www.liquidassets.psu.edu/.

**X. Next Meeting Date and Agenda**

August 28th at noon at UM Dearborn Environmental Interpretative Center Room 118.

Suggested agenda items:

- Report card final review
- Delisting strategy final review
- Update on the BUI database being developed by ECT
- Final 2013 SPAC grant

**XI. Walking Tour: Low Impact Development Trial Signage**

Following the meeting, Don took the group on a tour to highlight the green infrastructure best management practices and public education signage that have been installed on LTU's campus. Links to an online version of the tour and to a video of the controlled burn conducted as part of LTU's stormwater improvement efforts are provided below.

Controlled Burn:
http://www.youtube.com/watch?v=dkdznoHrwH4

Online Tour:
http://www.ltu.edu/water/tour.asp

A Plan for the Collection and Analysis of Fish
To Evaluate the Status of the Fish Tumor Beneficial Use Impairment
In the Rouge River Area of Concern

## Background

The Rouge River Area of Concern (RR AOC) includes the entire main branch as well as the lower, middle, and upper branches of the river. The RR AOC is listed for 14 beneficial use impairments, including fish tumors or other deformities. Several studies have associated internal and external tumors in fish with carcinogens in sediment and water at several locations in North America, and they were summarized by Baumann et al. (1996). Specifically, epidermal and liver tumors in brown bullhead and white sucker are strongly correlated with the presence of polynuclear aromatic hydrocarbons (PAH). It has been recommended that one or both species should be used to monitor tumor prevalence.

A fish community survey of the Rouge River watershed was conducted in 1986. During that study the incidence of external lesions on the fish was recorded. Three species of bullhead (brown, black, and yellow) were collected during the survey but only 12 were collected overall and none of the bullhead had external tumors. White sucker were much more numerous with 579 collected, 23 of which (4%) had external lesions. A spatial trend in the distribution of those fish with lesions was apparent: white suckers in the Upper Branch of the Rouge River had an occurrence rate of 6.5%, and white suckers in the Main Branch (between Troy at the upstream end and Detroit downstream) had an occurrence rate of 6.3%. No lesions were observed on white suckers collected in the Middle and Lower Branches. It is important to note that these fish may have been largely young (2 years or less); tumors are more likely to occur in older fish (Bauman 2002).

The prevalence of external lesions in white suckers from 3 relatively pristine areas ranges from 3.4% to 8.6% (Baumann et al.,1996) with an overall average of 5.2%. This is slightly lower than was observed in the RR AOC in 1986, and the difference is probably not statistically significant.

## Recommendations

Although the incidence of external lesions in fish from the RR AOC may be low we should conduct a follow-up study to verify the 1986 results.

Few bullhead of any species were collected during the relatively intense survey of the Rouge River conducted in 1986, and there is no reason to suspect that collections would be any more successful now. White sucker are likely to be more numerous and should be the target species. Any bullhead collected, regardless of species, should also be kept for examination.

At a minimum, collections should be attempted in the Upper Branch and the Main Branch of the Rouge River, as white sucker from these areas had measurable rates of tumor incidence in the 1986 survey. Collection of white sucker from a reference site should also be considered. Sufficient data are available in the literature for brown bullhead but the similar data may not be available for white sucker.

Joseph Bohr / MDEQ / 11 April 2012

Dr. Baumann (2002) has recommended an external tumor rate of 12% as a criterion for an Area of Recovery. A minimum of 100 white suckers should be collected from both the Upper Branch and Main Branch of the Rouge River in order to be sufficiently confident that the rate of tumor incidence in the RR AOC is no greater than the background rate at a reference site or sites.

Age of the fish should be determined in order to help in the interpretation of results. This can be done by collecting scale samples from the white sucker and otoliths (inner-ear structures) from bullhead.

Sampling Plan Summary

A. Fish Collection Sites:
1. Upper Branch Rouge River between Farmington Hills and Wayne
2. Main Branch Rouge River between Troy and Detroit
3. Reference Area - need for site to be determined; possibilities would include the Huron River (Washtenaw, Wayne, and Monroe Counties)

B. Number of Samples: Up to 100 white suckers each from the Upper and Main Branches of the Rouge River, and 100 white suckers from the reference river if needed. Bullhead collected incidentally to the white sucker collection will also be kept for analysis.

C. Sample Processing: Fish samples will be inspected for external lesions (tumors). Lesions will be described as to location on the body and photographed. Appropriate aging structures will be taken from all fish samples.

D. Data Analysis: The prevalence of lesions observed in the Rouge River samples will be compared statistically to lesion rates observed in literature and, if collected, in the reference river samples.

Joseph Bohr
April 11, 2012



References

Baumann, P. C. 2002. *Fish tumor BUI Criteria: Determining numbers for the delisting process*. Downloaded from www.glc.org/spac/proceedings/pdf/15Baumann.pdf on 4/2/2012.

Baumann, P.C., I.R. Smith, and C.D. Metcalfe. 1996. *Linkages between chemical contaminants and tumors in benthic Great Lakes fish.* J. Great lakes Res. 22(2):131-152.

Rouge River Area of Concern
Status of the Restrictions on Fish and Wildlife Consumption BUI

Proposed Sampling Plan

## Background

The Rouge River Area of Concern (RR AOC) includes the entire main branch as well as the lower, middle, and upper branches of the river. The RR AOC is listed for 14 beneficial use impairments, including Restrictions on Fish and Wildlife Consumption.

The current Michigan Department of Community Health fish consumption advisory includes varying recommendations for restricted consumption depending on species and location on the river. The primary contaminant driving the fish consumption advisories in the Rouge watershed is PCBs. The most recent fish contaminant monitoring conducted in the watershed was in 2005 when carp and a few other species were collect from several areas. PCB concentrations tended to be the highest in Newburgh Lake (Middle Branch Rouge River), the Lower Branch Rouge River, and Main Branch of the Rouge downstream of the Ford Dam.

## Proposed Sampling Plan

To determine the status of the Fish Consumption BUI in the RR AOC we propose to compare the concentrations of key contaminants in one or more species of fish collected from 2 areas within the AOC and from an appropriate reference site. The comparisons will be made using 10 fillets from a similar size range of the same species from each of the 3 sites. All samples will be analyzed for mercury, total PCBs, and the standard suite of contaminants normally measured for the Michigan DEQ fish contaminant monitoring program.

We propose to collect fish for contaminant analysis from 2 reaches of the Rouge River and 1 reference area. Fish will be collected from:

1. Newburgh Lake (an impoundment of the Middle Branch Rouge River) has had legacy PCB contamination and in the recent past has been covered by fairly restrictive fish consumption advisories. A sediment remediation project has taken place, and subsequent monitoring indicates that PCB concentrations in fish have declined since that work was completed.
2. The Lower Branch and Main Branch Rouge River downstream of the Ford Dam; several species of fish from these river reaches have had do not eat advisories.
3. Ford Lake (impoundment of the Huron River) is a nearby waterbody without a legacy contamination issue that supports good populations of several potential target species and would be an appropriate reference site.

We propose to collect a minimum of one species for contaminant analysis from each of the 3 sampling areas. Collection and analysis of at least one other species is recommended as it will provide additional weight to the between site comparisons.

We recommend using carp as the primary target species. Although carp are not a popular sport fish in general, they do tend to have the highest PCB burdens for a given waterbody, they are consumed by some anglers, and they are relatively ubiquitous.

Secondary target species should include:

- Channel catfish – this species is a fairly popular food fish and tends to have PCB and other contaminant concentrations similar to what is found in carp from the same water.
- Rock bass are a popular and regularly consumed panfish. The species is fairly ubiquitous and should be available at all proposed sampling sites.
- White sucker are regularly taken and consumed by a segment of the angling population and should be available from all of the proposed sampling sites.
- Northern pike are a popular top predator game fish although they not be available in sufficient numbers at all proposed sampling sites.

In summary, we recommend collecting and analyzing a minimum of 10 carp from each of 3 sampling sites, 2 within the Rouge watershed plus a reference site, for a total of 30 samples. We also recommend collection of up to 10 samples each of one or more secondary target species, as available. These secondary samples may not be analyzed initially but could provide additional evidence to support a BUI removal decision if needed.

In addition, although we plan to analyze 10 fish of a species from each site, we will attempt to collect additional (up to 10) fish per species at each site. This will increase our ability to match length ranges between sites and will allow us the option of analyzing additional samples should the initial results prove inconclusive.

Joseph Bohr
April 1, 2013