ACTIVITY PROGRESS REPORT

Adopt Your Waterway Training

Principal Investigators: Zuzana Bohrerova, OSU, Roxanne Anderson, OSU and Friends of the Olentangy Watershed NGO (Laura Fay) and Ohio Chapter Sierra Club (Elissa Yoder)

Problem and Information Transfer Objectives:
The tributaries of the Lower Olentangy River are under increasing urbanization pressures and lie in areas of aging urban infrastructure, resulting in decreases in native vegetation, development in close proximity to streams, and problems with sewer overflows. Therefore there is concern about current and potential future degradation of these streams. Together with our partners at Ohio Sierra Club Water Sentinel Program and Ohio Water Resources Center and Friends of the Lower Olentangy Watershed (FLOW) we will aim to educate over 100 citizens in the watershed on general water quality issues with the aim to more thoroughly educate and retain about 30 families/volunteers to become Water Stewards of the lower Olentangy Watershed. We are proposing to grow tributary champions via our educational efforts.

The selected tributaries for monitoring - Adena Brook, Glen Echo Ravine, Kempton Run, and Turkey Run - although dominantly suburban and urban, lie in diverse demographic and socioeconomic areas of the lower Olentangy River watershed and drain about 7.1 square miles of the watershed. Due to increasing urbanization pressures and continuing aging of old urban infrastructure, the resulting decrease in greenery, development in close proximity to streams, and problems with sewer overflows there is concern about current and potential future degradation of these streams. Therefore there is an urgent need to monitor their water quality, increase public knowledge about the effects of landscape changes, non-point sources of pollution and nutrient run off on water quality, and to thereby enhance individual stewardship behavior as well as community capacity.

Numerous people have contacted FLOW over recent years expressing an interest in water stewardship and water monitoring activities in an effort to become involved in monitoring and protecting their watershed. Additionally, two of the selected tributaries - Adena Brook and Glen Echo Ravine – have active volunteering groups present that are focused on promoting the services these streams provide to their communities. We will also focus on direct local participation around the selected streams, and identifying and encouraging champions for these target areas, a practice which is often connected to long term success of volunteer programs.

There is previous data on the water quality and in some instances macroinvertebrate sampling of these tributaries collected by Ohio EPA, although most of the data are ten of more years old. However, in recent years positive changes have been made in terms
of watershed health; the city is increasingly working on reducing stormwater overflows and on decreasing point and non-point source pressure might have led to mixed effects on the waterways. Comparing citizens’ collected data with previous archived data will provide additional learning opportunities for the public and enhance their motivation to individual and community action by experiencing the effects of changes in the watershed on water quality.

a. Collaborators: This project brought together three previous FLOW Science Committee members that had not collaborated on a project before: Friends of the Lower Olentangy Watershed (FLOW), Sierra Club’s Ohio Chapter and the Ohio Water Resources Center. Our collaboration has been successful and yielded significant amounts of coordination, knowledge and resources leveraged. We ended up not working closely with the ODNR Scenic River Program due to their staff changes in the program, but their expertise on macroinvertebrate sampling was filled by the FLOW watershed coordinator, Roxanne Anderson. This expertise was essential in leading and coordinating the project in the summer and fall 2015. Roxanne became the key personnel in the project, having field experience and previous event coordination and management experience. Roxanne has a bachelors’ of science in Environmental Science, with a focus on water science. The collaboration between FLOW and the Sierra Club is considered a success by both parties. Sierra Club has donated the WARN Training Materials and Water Sentinel Chemistry Sampling kits as match. They are pleased to have so many new stream monitoring volunteers but were unfamiliar with locations that would be valuable to be sampled!

b. Project Activities: The list of our activities to date are:

Preparation materials, presentations and kits for volunteer training;
Broad public education on watershed issues (Water Alert Reporting Network WARN training (n=3);
Hands-on Volunteer Training to Monitor Stream Water Quality
  macroinvertebrate volunteer training (n=8);
  water sentinel volunteer training (n=3);
Train the Trainer Sessions (n=2);
Stream Monitoring - sampling all four tributaries each at two locations in summer and fall (first sampling with trainer, second by volunteers themselves);
Follow-up meeting with FLOW water stewards (November 2015);
Data sharing and dissemination – presented information about the program and some initial data at the Olentangy Watershed Forum and the Water Management Association of Ohio fall conference.
Survey of Current Volunteers (January 2016)
Development of Water Stewards Facebook page (February 2016)

The first WARN training was organized in the beginning of June, immediately after receiving the award, so we could maximize summer sampling. We advertised the program via emails and flyers posted at Whetstone Library, the Northmoor Park Kiosk, Upper Arlington Library and Lucky’s Market. All of the participants were
interested in hands on volunteer monitoring of the tributaries. We recently recruited quite a few volunteers from our public meeting in November 2015, and our Constant Contact messages online. After the end of sampling year we conducted additional WARN training in January to educate more volunteers and prepare additionally volunteers for next sampling year.

In order to increase the number of citizens more broadly educated about their streams in our watershed, we will organize at least two other WARN workshop in 2016. We will also create newsletter articles dedicated to our monitoring program, explaining what a healthy urban stream looks like as opposed to unhealthy urban stream signs. We will disseminate the newsletters with information about volunteer monitoring in the neighborhoods of our existing and proposed streams monitoring. Additionally, we will dedicate some of our monthly public meetings this year to talk about streams in our watershed.

According to the proposed project plan, we held two types of hands on volunteer trainings, one to monitor water chemistry (Water Sentinel) using Sierra Club methods and the other for macroinvertebrate sampling. We were able to train 16 volunteers and the majority of them wanted to perform both types of stream monitoring, which was close to our goal of 15 volunteers this year. Volunteers, after signing commitment forms to sample 3 times per year, received a sampling kit for macroinvertebrates (Appendix A) and a chemistry analysis kit via a loan agreement with the Sierra Club. Our volunteers sampled in groups of 2-3, all four tributaries twice in 2015, and each tributary was sampled at two points (see map, Attachment B). The volunteers were accompanied in the field during their first sampling by Roxanne, therefore gaining confidence in sampling by themselves (was proposed in project as one-on-one detailed training). At our November meeting volunteers expressed their confidence in sampling.

The group of volunteers were supported by our trainer – Roxanne Anderson. We proposed one trainer per ~10 volunteers. Although other FLOW volunteers were trained to be trainers (Zuzana Bohrerova, Laura Fay and Lisa Daris), they were not needed this year to help with volunteer support in the field.

c. Attendance – As stated before we expected a higher number of people attending our initial training with some people dropping out due to complexity but all the volunteers we trained have stayed with the program! We are working on increasing broader education and interest in stream water quality monitoring in our watershed, via different techniques than initially proposed, such as newsletter articles and public meetings.

Currently our volunteers are a diverse group of people including retirees, young professionals, OSU students, and Upper Arlington high school students along with their science teacher. Seven Science Classes at Upper Arlington High School are each monitoring a location on Turkey Run and helping us with other educational projects like videos, calendars and write ups for our Watershed Wiki!
d. Highlights – We were able to meet with our volunteer monitors in the fall after their last sampling and had a presentation for them of the program so far. We showed them the collected data, had chance to hear from them and meet some new prospective volunteers. We were happy to see that all our planned tributaries were sampled this year and the current volunteers are committed to continue the program in 2016 as well. We anticipate that in 2016 we will be able to expand our sampling to 5 additional tributaries of the lower Olentangy River.

e. Educational objectives and survey: We surveyed our current volunteers about their monitoring experiences from the first year. We got 5 responses back (50%). Some of the analysis of the survey are displayed in the table below. Answers were rated 1 - 5, where 5 means very positive answer/impacts and 1 the lowest or none satisfaction, and the weighted average is displayed.

<table>
<thead>
<tr>
<th>Question/Rank</th>
<th>AVR</th>
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<tbody>
<tr>
<td>How much of an impact do you feel your volunteer work had?</td>
<td>3.3</td>
</tr>
<tr>
<td>How convenient were the volunteer training sessions at FLOW?</td>
<td>3.7</td>
</tr>
<tr>
<td>How useful were the volunteer training sessions at FLOW?</td>
<td>4.4</td>
</tr>
<tr>
<td>How easy was it to get along with the other volunteers at FLOW?</td>
<td>4.6</td>
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<tr>
<td>How friendly are the staff at FLOW?</td>
<td>4.7</td>
</tr>
<tr>
<td>How appreciated did your volunteer supervisors make you feel?</td>
<td>4.7</td>
</tr>
<tr>
<td>Overall, were you satisfied with your volunteer experience with FLOW, neither satisfied nor dissatisfied with it, or dissatisfied with it?</td>
<td>4.6</td>
</tr>
<tr>
<td>How likely are you to continue volunteering at FLOW in the future?</td>
<td>4.6</td>
</tr>
<tr>
<td>How likely are you to recommend FLOW to others as a place to volunteer?</td>
<td>4.7</td>
</tr>
</tbody>
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From the comment it was evident that the three biggest negative comments are that volunteers felt isolated from each other (except of the groups sampling together), volunteers did not see what impact their data have and some volunteers would like to have more resources about sampling available to them.

To remedy some of these comments we created closed facebook group for our water steward where they can post photos, questions, communicate about their sampling. We also added additional resources to this website with more photos of macroinvertebrates, additional sampling techniques etc. We are regularly posting events related to the water steward group, such as training refresher and times to sample. We also posted summary of the volunteers’ data for 2015.
f. Photographs

Field supplies for macroinvertebrate monitoring
“Train the Trainer” session on Adena Brook with Chris Skalski from Ohio EPA

Glen Echo Volunteers sampling macroinvertebrates in the summer with Roxanne
Volunteers sampling Kempton Run
Appendix A – List of supplies in macroinvertebrate kit, loaned to volunteer groups

- clipboard
- 1 mechanical pencil
- ODNR Guide to Stream Quality Monitoring
- 1 pair of forceps
- 2 eyedroppers
- macroinvertebrate scoring sheets on waterproof paper
- D-shaped dip net
- 2 plastic sorting trays
- hand sanitizer
- 5 gallon bucket for storage and for water sampling
- 100 foot measuring cord
- smartphone digital microscope with flashlight (shown below)
Appendix B – Current Sampling Locations
Stream Water Quality Monitoring Program Survey

1. What prompted you to participate in the program?

2. What supports, tools or practices have been most helpful in your time as a volunteer with the program?

3. Please provide a specific example of a hurdle you faced in volunteering with this program? What do you think would have helped you?

4. Have you encouraged others to get involved with the program? If so how?

5. What do you think would be the best way for the program to recruit more volunteers?

6. What suggestions would you offer volunteers new to the program?

7. If you could change one thing about the program, what would it be?

8. If you could change one thing about your experience with the program, what would it be?

9. How much of an impact do you feel your volunteer work had?

- A great deal of impact
- A lot of impact
- A moderate amount of impact
- A little impact
10. How convenient were the volunteer training sessions at FLOW?

- Not any impact at all
- Extremely convenient
- Quite convenient
- Moderately convenient
- Slightly convenient
- Not at all convenient

11. How useful were the volunteer training sessions at FLOW?

- Extremely useful
- Quite useful
- Moderately useful
- Slightly useful
- Not at all useful

12. How easy was it to get along with the other volunteers at FLOW?

- Extremely easy
- Very easy
- Moderately easy
- Slightly easy
- Not at all easy

13. How friendly are the staff at FLOW?

- Extremely friendly
- Quite friendly
- Moderately friendly
- Slightly friendly
- Not at all friendly

14. How appreciated did your volunteer supervisors make you feel?

- Extremely appreciated
- Quite appreciated
15. Overall, were you satisfied with your volunteer experience with FLOW, neither satisfied nor dissatisfied with it, or dissatisfied with it?

☐ Extremely satisfied
☐ Quite satisfied
☐ Somewhat satisfied
☐ Neither satisfied nor dissatisfied
☐ Somewhat dissatisfied
☐ Quite dissatisfied
☐ Extremely dissatisfied

16. How likely are you to continue volunteering at FLOW in the future?

☐ Extremely likely
☐ Quite likely
☐ Moderately likely
☐ Slightly likely
☐ Not at all likely

17. How likely are you to recommend FLOW to others as a place to volunteer?

☐ Extremely likely
☐ Quite likely
☐ Moderately likely
☐ Slightly likely
☐ Not at all likely

18. Other thoughts or comments?

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Appendix D. Materials Produced

Become a Water Steward! Flyer

Stream Quality Monitoring Protocol Document

Water Alert River Network (WARN) Training card and contact information for Franklin County