



FINAL REPORT FOR PROJECT #2019.1869

SAND CREEK ROAD STREAM CROSSING INVENTORY



Ottawa Conservation District
Oct 12, 2021

Synopsis

- **Sand Creek Habitat Assessment Project**
- **Ottawa Conservation District**
- **Project Team** Benjamin Jordan, Megan Boos, Frank Shroyer
 - **Benjamin Jordan – Project Manager**
 - **Megan Boos – Project Administrator**
 - **Frank Shroyer – Project Assistant**
 - **Habitat Assessment Technicians:** Ethan Teranes, Frederick Jaeger, Nick VanderStelt, Brittany Beavers, Erika Horne, Jacob Grochowski, Keely Dunham Adkins.
- **Contact Person** Benjamin Jordan, Ottawa Conservation District.
- **Grant Amount** \$15,175.00
- **Time Frame** 8/15/2019 – 8/13/2021
- **Focus Areas** EHSFP Habitat Protection and Restoration (including Dam Management)
- **Brief Project Summary** The Sand Creek is a cold water stream located in Ottawa and Kent County Michigan. It is designated as a Trout Stream by the Michigan EGLE but has a history of impairments due to flow regime alterations and sedimentation. We hope to conduct an inventory of all road stream crossings in the watershed, a habitat assessment at key locations, and to identify areas of concern where future restoration efforts may be beneficial.

Project in Context

The Sand Creek is located in NE Ottawa County and NW Kent County, and flows through 5 townships before discharging into the Grant River. It is designated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) as a cold-water trout stream but faces a number

of hydrology and water quality concerns that threatens that designation. The Sand Creek is also home to several county drains, numerous roadside ditches, and culverts under the jurisdictions of the Ottawa County Water Resources Commission, and the Ottawa County Road Commission. Although multiple partners and organizations have a stake in the Sand Creek, no modern and reliable data existed on road stream crossings throughout the watershed. This project was initiated to identify current concerns including perched, undersized, or failing culverts that could affect water quality and hydrology, as well as sources of non-point source pollution that could further degrade the watershed. This data will be shared with project partners to assist with future planning and will be used in grant applications to address identified concerns. The OCD recently applied for a 319 grant through EGLE to address water quality concerns in the Sand Creek and utilized some of the data collected to identify areas of concern and potential BMPs. The OCD was awarded this grant in August of 2021.

Goals of the Effort

The overall goal of this project was to assess the current water/habitat quality available in the Sand Creek watershed to aquatic animals, macro-invertebrates, and fish species. We also wanted to document current and potential impairments including non-point source pollution sources, and areas where restoration might occur utilizing water quality BMPs. To achieve this goal we set out to: 1. Conduct a road stream crossing inventory of over 130 crossings previously identified using ArcGIS. 2. Conduct a habitat assessment and limited macroinvertebrate sampling at 12 locations throughout the Sand Creek Watershed. 3. Identify potential BMP locations that can be addressed in future projects. This information will then be shared with project partners in order to inform decision making, and to help plan future grant applications.

Results

Throughout the grant period the OCD was able to meet or exceed all grant deliverables. We inventoried a total of 143 road stream crossings throughout the Sand Creek watershed, and input data into a Microsoft Access database to be shared with all grant partners. Other sites were identified and visited but not inventoried due to several factors including 1) no crossing existed (or underground). 2) Crossing was dry or was a small drainage ditch (true stormwater ditches) and had a negligible impact on water quality/fish habitat. 3) The site was located on private property and could not be reached. The OCD also completed a habitat assessment and macroinvertebrate sampling on 12 sites throughout the watershed and documented a number of potential BMP sites to be explored in future grant applications. In August of 2021 the OCD received a 319 grant for residential/agricultural BMPs in the Sand Creek/Crockery Creek watersheds and will be working to address some of the problem areas identified in this inventory project.

Products and Resources

All inventory data collected through this project will be shared with project partners through a Microsoft Access database, as well as uploaded to the Michigan DNR's statewide Road Stream Crossing Inventory. A link to this inventory will be provided to all project partners. We will also be including project results on the OCD website at ottawacd.org, where a separate page for the Sand Creek project is currently under construction.

FINAL NARRATIVE REPORT

Background/Overview

1. Briefly summarize the project description as outlined in the original proposal.

The project focused on 1) Completing a road stream crossing inventory on around 130 sites, 2) Completing a habitat assessment on 12 sites, 3) Identifying potential BMP locations throughout the watershed, and 4) Sharing data with project partners for future planning and decision making

2. Was the project completed as originally intended? If not, indicate how the final outcome(s) differed from what was anticipated. Does your experience suggest that original expectations were realistic? What factors hindered or helped progress?

All grant Deliverables were met during the project period including 143 crossings, habitat assessments, and identification of potential BMPs. I think our original expectations were reasonable, and our efforts were assisted by utilizing additional crews/technicians to collect data.

Outcomes

3. Whether they were intended or unintended, what do you consider the most important benefits or outcomes of this habitat restoration project?

The biggest benefit of this project was the identification of multiple perched, undersized, and failing culverts that are having an impact on water quality and the movement of game fish species. Not only were we able to identify trout/salmon species in the stream, but we were able to visually confirm that several of these problem culverts were slowing down, or completely impeding their movement. If addressed in future projects, the OCD could help reconnect several miles of trout stream & improve habitat availability throughout the watershed.

4. What activities were pursued in relationship to intended outcomes, and to what extent did you achieve the intended outcomes listed in your proposal?

All listed outcomes were achieved. We inventoried 143 road stream crossings, conducted limited habitat and macro invertebrate sampling, and identified a number of potential BMP areas that were included on our application for an EGLE 319 grant in the Sand Creek.

5. What audience(s) were you particularly hopeful of reaching? To what extent did you reach them? Did you receive any feedback?

Project partners such as the GLFT, Trout Unlimited, Ottawa County Road Commission, Ottawa County Water Resources Commission, Michigan EGLE, Michigan DNR, and the National Fish and Wildlife Service were all intended audiences for this data. We are currently working with Ottawa County to identify areas where repairs/culvert replacements can be scheduled within their jurisdictions, and are putting together a proposal with the National Fish and Wildlife Service to replace multiple culverts, or address them through other means like grade control, fish ladder structures, etc.

6. What relationships or opportunities were developed or strengthened through the work?

We've been able to meet several landowners in the Sand Creek watershed that are interested in restoration efforts, and have signed on to participate in our EGLE 319 grant to address agricultural runoff and sediment deposition through BMPs such as cover crops, reduced tillage, buffer strips, etc. We have also strengthened our relationship with local government departments, as they find this data very valuable when it pertains to culverts or stretches of the stream under their jurisdiction. Through several meetings and conversations we have also developed a relationship with the NFWS, who are interested in funding several culvert projects, and providing us with additional resources such as a P51 survey, water quality sampling, and more data needed to develop future grant applications.

7. Was an evaluation included as part of this project? If so, what were the key findings? (Please attach a copy of the evaluation report.)

N/A

Related Efforts

8. Was this project a standalone effort or was there a broader effort beyond the part funded by the GLFT? Have other funders been involved either during the time of your GLFT grant or subsequently?

This was part of a broader effort to improve water quality in the Sand Creek Watershed. The Ottawa County Water Resources commission was concurrently managing a project through EGLE to address streambank restoration through the installation of two stage ditching and bio-engineering on the Upper Sand Creek, paired with native plantings and other stabilization techniques. The OCD has also written an EGLE 319 grant, and received \$1.3 million in 2021 to address non-point source pollution in the Sand Creek such as agricultural runoff, livestock access to the creek, failing septic systems, etc. The OCD is currently putting together proposals to address the culverts identified in the project, which will be submitted to GLFT for future funding, the NFWS, and EGLE's fish passage program.

9. Has there been any spinoff or follow-up work related to this project? Did this work inspire subsequent, related restoration projects involving you or others?

As described above, additional efforts are being made to address water quality concerns in the Sand Creek Watershed. Subsequent restoration projects will follow, but the OCD is currently working on those proposals.

Communication/Dissemination

10. List publications, presentations, websites, and other forms of formal dissemination of the project deliverables, tools, or results, including those that are *planned* or *in process*.

Microsoft Access Database with Road Stream Crossing data on the Pigeon River (previous project) and the Sand Creek will be shared with project partners ASAP.

Project results and information will also be included on the OCD website when our Sand Creek Project page is finished.

11. Please characterize your efforts to distribute and encourage use of products, processes, programs, etc. developed through this grant.

We have continuously kept in contact with the Road Commission and Water Resources Commission regarding problem culverts, and are sharing data/photos, information as needed prior to the release of the full Microsoft Access database. We have encouraged their departments to follow up on problem sites and explore the possibility of culvert replacements/repairs if their maintenance budgets allow for it.

Reflections

12. Please describe any unanticipated benefits, challenges or surprises, and/or important lessons learned over the course of the project.

One of the most surprising things about this project is the positive feedback we received from landowners. Sometimes they were understandably hesitant when they saw us working in the stream, but after introducing ourselves and giving a brief project overview, almost all the landowners we interacted with were very pleasant and supportive. Several of these landowners have since reached out about participating in our 319 grant for the Sand Creek watershed, which started in August of 2021.

13. What recommendations (if any) would you make to other project directors working on similar efforts or to the GLFT?

Collect data using trained, and qualified personnel, and using consistent methods. All of our data collection and entry was done under the direct supervision of full-time watershed staff.

Pictures

14. Provide at least three photos of the completed project (if applicable).

Attached

15. The GLFT requires each project it funds to have suitable permanent public acknowledgement of GLFT assistance. If applicable, the GLFT will provide a sign to you (via mail) and requires photo verification of the posting of the sign before it will process your final reimbursement request.

No signage is required for this project, but GLFT assistance will be mentioned on our Sand Creek project website page, and any/all documents related to the project. We have always the GLFT in update/stakeholder meetings, presentations, social media, press releases, etc.

Attachments

16. Please attach any reports or materials developed through the grant.

The following items are attached:

- Project Profile for Grant # 2019.1869
- Final financial reporting form
- Project Photos
- Inventory data will be submitted via an access database file ASAP