



**Final Narrative Report for GLFT Grant #2015.1570
Song of the Morning Dam Removal - Pigeon River
Huron Pines**

BACKGROUND/OVERVIEW

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

Great Lakes Fishery Trust funding was requested for on-the-ground costs related to the removal of Song of the Morning Dam. This project aimed to restore aquatic habitat connectivity and natural hydrologic processes in the Pigeon River, a blue ribbon trout stream and state designated Natural River. Through this work trout and other aquatic wildlife now have restored access to 15 miles of critical spawning and refuge habitat in the upper Pigeon River and its tributaries. In addition, because of the educational potential of this project many people from across Michigan now have an increased understanding of the importance of river restoration and the problem of aging and failing dams.

Huron Pines and project partners set out to achieve the following goals by removing Song of the Morning Dam:

- **Reconnect** the Pigeon River for aquatic passage, allowing fish (including steelhead and brook, rainbow and brown trout) to reach the upstream 15 miles above the dam for the first time in more than a century
- **Restore** the Pigeon River's bankfull width from a constricted channel of 21' to its natural 35' width
- **Reestablish** natural river processes including hydrology, geomorphology and flow of sediment and woody debris through the system
- **Reduce** thermal pollution associated with the impoundment
- **Leverage** this important story to promote conservation of Great Lakes natural resources

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?

Yes, Song of the Morning Dam has been successfully removed and the associated project deliverables have been fully achieved. The project's success was directly tied to the positive collaborative partnership among members of the project Steering Committee. For example, due to the complexity of the project, contractual expenses came in significantly higher than anticipated. Together, we were able to raise an additional \$50,000 in funding. This outreach campaign was successful and allowed us to secure the last dollars needed to move ahead with the project in 2015 (GLFT's investment was prominently highlighted during that campaign).

During the entire project period we engaged the Steering Committee in collaborative decision-making to increase the success and cost-effectiveness of the project. For example, we significantly reduced costs by negotiating on-site disposal of dam pieces in an appropriate upland area as opposed to trucking to a landfill. We also decided as a group to directly purchase timber bridge components and then hire a construction contractor to complete the build. By directly ordering the bridge materials we experienced a significant savings (we estimate 10%) as compared to past projects where construction contractors have handled purchasing of materials, with sales tax, and have charged a fee to do so. These decisions were able to be made confidently because of the technical expertise of the Steering Committee, comfort level with our engineer and detailed structural specifications.

OUTCOMES

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

The outcomes of the project were fully met through the removal of Song of the Morning Dam. Huron Pines completed the following activities in order to successfully complete the project:

- **Restored** connectivity of the Pigeon River for fish and other wildlife through removal of Song of the Morning Dam and returned the river system to its natural hydrology. Because of this dam removal effort this blue-ribbon trout stream and its fish populations will never again be susceptible to catastrophic sediment release from dam failure.
- **Administered** a competitive bid process to hire engineering and bridge construction contractors for the Song of the Morning Dam Removal.
- **Developed** contracts with the engineering firm, private construction contractors and the Golden Lotus, Inc. (property owner).
- **Prepared** permits and approvals, including Michigan Natural Rivers, County Soil Erosion, Department of Environmental Quality (DEQ) Joint and DEQ Floodplain.
- **Coordinated** with partners throughout the construction process to promote positive collaboration and ensure projects were completed as designed and in accordance with project timelines, budgets, and permit requirements.

- **Completed** milestone tasks that required careful coordination included the disconnection and reconnection of onsite utility lines, the sizing and digging of a sand trap to capture sediment from drawdown and construction, and onsite disposal of the dam materials.
- **Raised** \$50,000 in additional funding through a targeted outreach campaign in response to unanticipated expenses related to the Song of the Morning Dam Removal.
- **Collaborated** with partners to carry out monitoring and data collection including stream cross-sections, longitudinal profiles, pebble counts and temperature logging. We also used a trail camera to document time-lapse images of the whole project from the drawdown of the 40-acre impoundment to the natural cutting of the Pigeon River's new channel. Post-project monitoring will continue beyond the project period.
- **Led** tours and events at the dam removal site for community leaders to celebrate and learn about the need to invest in healthy Great Lakes natural resources.
- **Highlighted** the project and partners prominently through a wide array of print and online media.

4. What audiences were you particularly hopeful of reaching? To what extent did you reach them? Did you receive any feedback?

Huron Pines worked with private engineering and construction contractors and with a Steering Committee made up of Huron Pines, Michigan Trout Unlimited, the Pigeon River Country Association and Golden Lotus (property owner) to remove Song of the Morning Dam and restore aquatic habitat connectivity for a free-flowing Pigeon River. As a result of this project we have strengthened relationships with these partners, funders and contractors, putting us in a position to continue pursuing impactful restoration projects in the future. Besides its restoration outcomes, the Song of the Morning Dam removal project has brought additional educational value by serving as a case study for how groups can work together to reach common goals. We know that conservation and restoration of natural resources begins with an understanding and appreciation for healthy waters and lands, and to cultivate that understanding we led tours at the dam removal site for more than 200 community leaders and natural resource professionals.

We targeted the following audiences with project outreach and hands-on learning with the hope of increasing awareness and support for long-term conservation strategies:

- **Natural resource professionals.** Huron Pines communicated regular project updates and provided technical advice at Steering Committee meetings and through on-site events. This project provided great opportunities to share lessons with natural resource managers and to generate meaningful discussion about the need for Great Lakes restoration.
- **Local leaders, decision-makers and legislators.** Through active tours and targeted outreach we reached dozens of decision makers to raise awareness about the impacts dams have on an ecosystem as well as the importance of addressing aging infrastructure. This project generated palpable excitement from nontraditional partners like County Commissioners, who were interested to explore the intersection of benefits to ecosystems and people communities. It was also an opportunity to educate public figures, including Congressman Dan Benishek, about Great Lakes human impacts and the multiple values associated with river restoration projects like the Song of the Morning Dam removal.

- **Watershed residents and recreationists.** Huron Pines and partners promoted the project to the general public, and especially people with an interest in nature all across the state through print news releases and online media like MLive and Huron Pines' website, electronic newsletter and social media outlets. Because of the decades of conflict leading up to this successful project, there were many community members interested in following the dam removal's progress. Through the project period we communicated openly with the community with river access signage, regular online updates and a huge array of press in print and on television.
- **Funders.** We highlighted and communicated with funders regularly through print and online project updates. When project costs came in higher than initially estimated, a wide array of different funders were approached and encouraged to support this project's completion in 2015. We received an overwhelmingly positive response with many diverse people and groups coming together to do the right thing for the river by contributing toward the last needed \$50,000 in project funding. In particular, Michigan DNR provided additional funding and the Great Lakes Fishery Trust funding was critical for leveraging those final funds required to successfully complete the project.

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

This dam removal project was guided by a Steering Committee consisting of Huron Pines, Michigan Trout Unlimited, the Pigeon River Country Association and Golden Lotus (property owner). The partnership worked smoothly through the project process and through challenges, such as higher-than-estimated contractual costs. Huron Pines and Michigan Trout Unlimited provided technical guidance for the project from combined experience of more than a dozen dam removals of varying levels of complexity and community involvement. As the property owner, Golden Lotus was involved with each decision and extremely supportive of the project. PRCA's participation allowed for robust monitoring, strong engagement of the local community and successful fundraising efforts. Michigan DNR's investment in the project provided major funding, expertise and guidance on restoration efforts including monitoring activities. The lessons learned from the wide array of nontraditional funders who were compelled to support this project give us an expanded network of conservation supporters to approach for similar projects. Through our good working relationship with all project partners, contractors and funders, we now have an increased regional capacity and comfort level for taking on similar projects in the future. Huron Pines views this project as a major collaborative success as all the partners remain fully engaged in project communications and monitoring. By moving forward after the project period, these activities will lend long-term sustainability to the project and continue to strengthen our conservation network.

6. Was an evaluation included as part of this project? If so, what were the key findings?

The Song of the Morning Dam previously acting as a fish passage barrier has been successfully replaced with a new structure designed to pass at minimum a 100-year storm event flow. The project engineer, Huron Engineering and Surveying, Inc., has inspected the

project site and confirmed in writing that each project was completed in accordance with engineered designs.

Huron Pines and project partners analyzed river features like water velocity, sediment transport, and geomorphology prior to dam removal, and we will conduct post-project monitoring in 2016 to ensure that aquatic passage and natural stream function have been restored. Huron Pines will coordinate with the Michigan DNR to ensure that any future fish population data collection in the affected stream reaches will be applicable to determining successful passage at the targeted crossings. Temperature data from before and after dam removal already shows a decrease in temperature difference upstream and downstream of the crossing.

Partners like Golden Lotus and the PRCA have been highly engaged in the data collection and sampling process. Their efforts have focused on pebble counts for accurate measurements of sediment size and movement (aiding in sand trap maintenance and construction) in addition to dissolved oxygen and Total Suspended Solids (TSS) monitoring. Members of the PRCA worked tirelessly to gather data and perform very accurate longitudinal and cross-sectional profiles on upstream and downstream sections of the river and will continue to do so to aid in the data collection and interpretation effort.

A trail camera was used to document river processes pre- and post-dam removal. Huron Pines and partners are also actively monitoring the former impoundment area to prevent the threat of invasive species and continue the community engagement momentum sparked by this project.

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

Perhaps the most important outcome of this project is the benefit of increased aquatic habitat connectivity for fish and other aquatic organisms, which was a primary goal of this project. Fish need access to different habitat types to spawn, forage and find refuge from environmental stressors. Removing the Song of the Morning Dam to reconnect the Pigeon River and its cold headwater tributaries will promote self-sustaining fish populations. Access to cold, stable, groundwater fed streams may become particularly important for sensitive aquatic wildlife as we face an uncertain climate that may include more extreme temperature and precipitation patterns. The 15 miles of upstream aquatic habitat restored through this project also contain high-quality spawning sites that will benefit trout and other wildlife. This dam had failed several times in the past causing catastrophic fish kills. By removing the dam we are ensuring that the fish populations in the Pigeon River will never again be threatened by sediment releases from dam failure.

Another significant benefit of the project was the building of long-term relationships with partners including the project Steering Committee, local leaders and diverse funders. These strong relationships and the new possibilities for collaboration will extend far beyond the scope of this individual project.

RELATED EFFORTS

8. Was this project a stand-alone 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?

The Pigeon River is one of Michigan's premier trout fishing streams and currently Song of the Morning Dam was the only dam limiting aquatic organism passage on the river. Reconnecting the river to the rest of the watershed and its tributaries will lead to a healthier fishery. This site was ranked as a very high priority in the DNR's Cheboygan River Watershed Assessment and scored as the highest priority for Huron Pines habitat restoration efforts in the Northeast Lower Peninsula. Restoring natural river processes will result in improved health of game and native fish communities, while allowing native vegetation to reestablish in the former impoundment. This will continue to strengthen streambanks and shade the river, keeping the water cool and improving instream and riparian habitat.

Funders that contributed to the Song of the Morning Dam Removal project included

➤ Great Lakes Fishery Trust	\$46,000
➤ Michigan DNR Aquatic Habitat Grant Program:	\$293,000
➤ Golden Lotus, Inc.:	\$100,000
➤ Golden Lotus, Inc. (in-kind):	\$100,000
➤ Pigeon River County Association:	\$21,000
➤ Patagonia: World Trout Initiative:	\$10,000
➤ Great Lakes Energy: People Fund:	\$10,000
➤ Charlevoix County Community Foundation:	\$10,000
➤ J.A. Woollam Foundation:	\$10,000
➤ Mullett Lake Area Preservation Society:	\$5,000
➤ Otsego County Community Foundation:	\$5,000
➤ <u>Individual Contributions:</u>	<u>\$10,000</u>
➤ Total	\$590,000

This project joins and adds value to Huron Pines' ongoing efforts to protect and restore water quality, enhance wildlife habitat and strengthen communities in the Cheboygan River Watershed. Through this initiative Huron Pines and partners have raised more than \$500,000 to complete additional on-the-ground restoration projects and engage the public in watershed planning and restoration activities through 2017.

9. Has there been any spin-off work or follow-on work related to this project?

Removal of Song of the Morning Dam would not have been successfully completed without this GLFT funding, which helped cover project expenses and also helped leverage the additional funding necessary to cover remaining costs. Follow-up work that will continue beyond the project period will include outreach and monitoring efforts. We are working with partners including the property owner to develop a vegetative management plan for newly-exposed riparian areas after the dam removal, to ensure that emerging invasive species are detected and treated with fast response and lowest cost. This is a great opportunity for continued community stewardship and long-term investment to keep the Pigeon River

healthy. Huron Pines, the Steering Committee and other partners have developed a strong working relationship through this project which will lead to an increased regional capacity for additional conservation work.

COMMUNICATION/DISSEMINATION

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

During the project period, Huron Pines and partners promoted the project to thousands of people through in-person, print and online communications. Huron Pines gave tours of the dam removal site to more than 200 community leaders including legislators, congressmen, county commissioners, Trout Unlimited groups and other resource managers. These efforts will continue in 2016 with the project serving as a learning tool for partners, leaders and resource professionals in the region. During the project period Huron Pines highlighted the Song of the Morning Dam Removal project at many partner events and meetings including a groundbreaking event in November (see photo attached). We also presented about the project at high-profile conferences including The Stewardship Network's *The Science, Practice and Art of Restoring Native Ecosystems* which in one session drew more than 50 attendees to learn about this project and its lessons. We featured the Song of the Morning Dam Removal project prominently in our print and online newsletters as well as through content on our website and social media. Press releases and other project articles were published in the Gaylord Herald Times, The Guide, and the Detroit Free Press and the project was also featured on 9&10 News, 7&4 News and MLive.

Additional Outreach Planned/In Progress:

Huron Pines will continue to leverage the community engagement value of the Song of the Morning Dam Removal beyond the project period, with the following plans:

- **Ribbon-cutting Ceremony:** A public ribbon-cutting event is planned for the summer of 2016 for project partners and community leaders to again gather and celebrate success. News media will be on hand to help capture and disseminate this success story to the public to increase understanding of the importance of free, connected river systems and tell the story of what is possible when people come together in a spirit of collaboration.
- **Professional Video:** Huron Pines has hired a media consultant to produce a 2-3 minute short video using aerial footage of the river pre- and post-dam removal. This emotionally engaging video will highlight this project's success story and the benefits to community and nature that are possible through collaboration. Huron Pines has worked closely with our consultant to storyboard and fine-tune key messages to share back with communities all over Michigan and nationwide, where there are many aging and failing dams.
- **Tours:** We will continue to highlight this project beyond the project period by leading tours to increase understanding among decision-makers about the importance of restoring and preserving river connectivity. SOGL funds, which extend through 2017, as well as funding for habitat work in the Pigeon River Country State Forest, will allow us to use this project site as a teaching tool to continue a conservation strategy that results in

maximum benefits on a watershed scale. The dam removal is directly tied to that strategy, building on previous efforts and adding value to ongoing work within the Cheboygan River Watershed for years to come.

Project communications developed during the project period included:

Handouts (*Uploaded as attachment*)

- **SOM Booklet.** A project summary distributed widely to audiences including visitors to the PRC and attendees at natural resource-based events, meetings and conferences (200 copies).
- **SOM Update.** A project update used as an attachment for fundraising efforts.
- **River Signage.** A posted sign to inform river users about future changes to the appearance of the Pigeon River during the dam removal project.
- **Funding Appeal Thank You.** This thank you letter went out to supporters who contributed to our funding appeal (to raise the last \$50,000 in funding).

Partner Outreach: Project partners were invested in spreading awareness about the project in various ways (e.g., the Pigeon River Country Association's newsletter).

Links

- http://www.petoskeynews.com/gaylord/featured-ght/top-gallery/song-of-the-morning-dam-expected-to-be-removed-this/article_cfbed262-bd85-5d24-b39d-30fe801afa1b.html
- http://www.petoskeynews.com/gaylord/sports/outdoors/song-of-the-morning-dam-removal-to-start-next-week/article_c02fd039-85b5-570e-b9a5-e4cf50a621bb.html
- <http://upnorthlive.com/news/local/removal-started-on-century-old-song-of-the-morning-dam>
- http://www.mlive.com/outdoors/index.ssf/2014/07/pigeon_river_will_thrive_with.html
- <http://america.aljazeera.com/articles/2016/1/7/the-quiet-controversy-of-dam-removal.html>
- <https://howardmeyerson.com/2014/09/30/golden-lotus-dam-permanent-draw-down-complete-removal-to-come/>
- <http://www.michigantu.org/index.php/home-sp-1195961509/64-river-stewards/200-song-of-the-morning-dam-removal>
- <https://www.stewardshipnetwork.org/rebirth-pigeon-river-conservation-story-about-reconnecting-native-ecosystems-through-dam-removal-and>
- <http://www.9and10news.com/story/29836547/northern-michigan-community-unites-to-remove-unwanted-dam>
- http://www.gtlakes.com/wp-content/uploads/2015/12/MECA-12027-GLE-Annual-Report-Cover-Wrap_v1r3_FINAL.pdf
- <http://www.americanrivers.org/blog/62-dams-removed-in-2015/>
- http://www.petoskeynews.com/gaylord/sports/outdoors/song-of-the-morning-dam-project-awaits-permit-oks-fundraising/article_9da825a3-a92b-5afd-b9b4-0cd0e9edbf60.html
- http://www.mlive.com/outdoors/index.ssf/2015/10/post_11.html

- <http://www.freep.com/story/sports/outdoors/2015/08/08/michigan-outdoors-pigeon-river-fishing/31338365/>
- http://www.petoskeynews.com/gaylord/sports/outdoors/wild/gallery-pigeon-river-dam/collection_bafeda86-cbf2-11e3-9809-0017a43b2370.html
- http://www.petoskeynews.com/gaylord/sports/outdoors/pigeon-dam-gone-a-lot-more-to-be-done/article_ae2d12aa-1dd1-5a3a-8913-d3b32909dd82.html
- <https://www.youtube.com/watch?v=Z2UDMsft938>
- <https://www.youtube.com/watch?v=J6SgobvuiMA>
- <https://huronpines.files.wordpress.com/2015/09/hpnewsletter-fall2015.pdf>
- <https://huronpines.files.wordpress.com/2015/09/hpnewsletterweb.pdf>
- https://huronpines.files.wordpress.com/2015/09/huronpinesnewsletter_fall2014web.pdf
- https://huronpines.files.wordpress.com/2015/09/huronpinesnewsletter_summer2014.pdf
- https://huronpines.files.wordpress.com/2015/09/huronpinesnewsletter_spring2014.pdf
- <http://huronpines.org/2015/10/30/song-of-the-morning-dam-is-gone/>
- <http://www.icontact-archive.com/QVY7xyjTX8AQiFjAtUX-7FtOAg51L7s6?w=3>
- <http://www.icontact-archive.com/QVY7xyjTX8AQiFjAtUX-7CJraSl7rrTh?w=3>
- <http://www.icontact-archive.com/QVY7xyjTX8AQiFjAtUX-7ChLA7aGejBy?w=3>
- www.huronpines.org/water
- www.huronpines.org features our social media accounts on the homepage

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

Education and outreach are important components of Huron Pines’ strategy to fulfil our mission—protecting the Great Lakes by conserving the forests, lakes and streams of Northeast Michigan. Through this project we built partnerships, secured significant local investment in the Song of the Morning Dam Removal project and engaged diverse audiences including bringing more than 200 community leaders on tours of the project site. Our Huron Pines print and online newsletters reached about 4000 people regularly with project news. We also met with resource professionals and watershed residents through the Steering Committee, community meetings, and special events (like tours and a groundbreaking event), to discuss project designs, share project updates and celebrate accomplishments.

REFLECTIONS

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

Restoring aquatic habitat connectivity was a major goal of this project, but one unanticipated benefit was just how well our project Steering Committee would come together to make the

project a success. The momentum and excitement about this project has continued to grow past the project period and we are excited to continue sharing this project's story and how it relates to larger conservation efforts in the Great Lakes.

The largest challenge during this project was the higher than anticipated construction expense, but through a targeted campaign by our actively engaged Steering Committee we were able to raise enough funding to complete the project.

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

Involving the right parties in a Steering Committee that communicated well and invested in project decisions was key to this project's success. In addition to engaging the right people in leadership roles to drive projects forward, Huron Pines recommends completing preparatory tasks for all projects as soon as possible to allow sufficient time to adjust to challenges that arise. These preparatory tasks includes building relationships, developing partner contracts, completing engineering designs, preparing permit applications and securing adequate project funding as early in the process as possible.

ATTACHMENTS

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

- Project photographs
- PDF attachments of project communications
- Final Financial Report for GLFT Grant Number #2015.1570

Project Photos



Before and after



Huron Pines Associate Director Lisha Ramsdell (project manager) with before and after



The Pigeon River flows free again for the first time in more than a century!



Groundbreaking event held to celebrate the beginning of the dam removal