

BRINKMAN FARM STREAM REHABILITATION PROJECT



A FINAL SUMMARY REPORT

for

**BRUCE RESOURCE STEWARDSHIP
NETWORK**

from

**THE BRUCE PENINSULA
BIOSPHERE ASSOCIATION**

January 16th, 2006

Craig Todd
Stewardship Coordinator
Bruce Resource Stewardship Network
1450 7th Avenue East
Owen Sound, ON
N4K 2Z1

Subject: Final Summary Report for the Brinkman Farm Stream Rehabilitation Project

Dear Craig,

The Bruce Peninsula Biosphere Association respectfully submits this final summary report for the Brinkman Farm Stream Rehabilitation project.

The successful completion of this project demonstrates the effectiveness of working together to achieve a common vision of a healthy, sustainable community. Through the collaboration of government organizations, community groups, landowners, and schools, this project has made a significant contribution to the natural integrity of our community while demonstrating sustainable land-use practices.

The Bruce Resource Stewardship Network was instrumental in the planning and implementation of this project by providing funds, resources and expertise. The success of this project is due, in large part, to your strong support.

On behalf of the Biosphere Association, I would like to commend you for your commitment to the sustainability of Bruce County's natural resources, and furthermore, thank you for your support in the endeavours of our Association.

Should you have any questions or concerns pertaining to this report, please do not hesitate to contact me.

Sincerely,

Sean Liipere, Chairperson
Bruce Peninsula Biosphere Association

Final Summary Report for the
BRINKMAN FARM STREAM
REHABILITATION PROJECT

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Please address all questions and inquiries to:

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Bruce Peninsula Biosphere Association
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Project Description

Located on the upper Bruce Peninsula, the Brinkman Farm is a second-generation farm operation that is representative of many of the small rural farms throughout Bruce County. Situated on the farm is a unique system of ponds and streams that is fed by a natural spring and drained through a sinkhole, potentially leading underground to the Lake Huron shoreline. As a result of the karst topography of the Bruce Peninsula, including these natural springs, sinkholes and crevices through which water can flow underground, the land-use activities occurring on the Brinkman farm can have significant impacts on the health of the overall watershed in the area.



Adjacent to the stream is a pasture area, providing cattle with access to the stream banks for water, which can have significant impacts on the health of the stream. It can reduce water quality through contamination and inhibit the growth of terrestrial and aquatic vegetation, which provide habitat for wildlife, prevent soil erosion and act as a buffer for run-off.

Realizing its significance to the integrity of the local watershed, the Brinkman family, along with several other community partners and sponsors, commenced the Brinkman Farm Stream Rehabilitation project in 2003. This project demonstrated the effectiveness of working together toward a common vision of a healthy and sustainable community

The following groups, associations and organizations contributed to the success of the Brinkman Farm Stream Rehabilitation project:

- The Brinkman Family
- Bruce Peninsula Biosphere Association
- Bruce Resource Stewardship Network
- Bruce Peninsula Environment Group
- Bruce Peninsula District School
- Ministry of Natural Resources
- Bruce County Forests
- Parks Canada
- Wes Rydall Contracting

Project Goals

According to its mission, the Bruce Peninsula Biosphere Association promotes a sustainable balance between conservation and development. It strives for co-operative efforts to conserve biodiversity, promote sustainable development, and increase local capacity within the community. The Brinkman Farm Stream Rehabilitation project fulfills this mission, as is illustrated in the following project goals:

- ❑ Promote a balance between economic and natural benefits of agriculture
- ❑ Promote active stewardship among farmers in the community
- ❑ Cultivate a sense of pride in sustainable land-use practices
- ❑ Rehabilitate aquatic and terrestrial ecosystems to conserve biodiversity

- ❑ Improve water quality in the stream to ensure the integrity of the local watershed
- ❑ Maintain a strong link with the youth by engaging them in an educational, community-based initiative
- ❑ Promote collaboration and build trusting relationships among diverse sectors of the community
- ❑ Celebrate the accomplishments of the community in working towards a sustainable future

Did Project Achieve Intended Outcomes?

(a) Excluding Livestock

Traditionally, allowing livestock to enter in any portion of a stream has been a cost-effective way to water livestock, however, this practice can often have significant local and regional impacts on the health of the respective watershed. Excluding livestock from ponds and streams not only contributes to a healthy watershed by improving water quality, but it also reduces erosion of the stream banks and streambed, thereby allowing the ecosystem to return to a natural state. To exclude cattle from the stream area, a fence was installed surrounding the stream bank. The water supply was relocated using a solar-powered pump that drew water from the stream to a water tank in the adjacent pasture area. Gravel and small rock was laid in the area surrounding the water tank to prevent injury to the cattle.



(b) Creating Buffer Areas and Wildlife Habitat

Planting native vegetation along the stream banks can significantly improve the health of the ecosystem. Root systems of trees and shrubs prevent wind and soil erosion, while grasses and other vegetation planted in buffer areas can act as filters to remove sediments and contaminants carried by runoff into the water system. This vegetation also provides natural habitat and a food source for local species, therefore, enhancing the natural biodiversity on the property. A variety of native species were planted as a buffer along the stream bank.



(c) Monitoring Water Quality

As a continuing component of the project, students from Bruce Peninsula District School have been monitoring the water quality of the ponds and streams at Brinkman farm as part of a biology course to determine changes in the ecosystem and the effectiveness of the rehabilitation efforts. This provides a unique opportunity for students to become



involved in local environmental issues and, furthermore, directly contribute to the health of their community.

(d) Communicating the Project

Communicating the goals, outcomes, and partners of the Brinkman Farm Stream Rehabilitation project is crucial in engaging community members to be active stewards of their land and water. Various methods were used to communicate the project, including:

- ❑ Articles were submitted to local newspapers to provide updates on the project and celebrate the accomplishments of the community
- ❑ The project outcomes and partners were profiled through presentations to various local to national organizations, including the Municipality of Northern Bruce Peninsula, Canadian Biosphere Reserves Association and the Canadian Commission for UNESCO
- ❑ A commemorative sign, which is to be installed at the front of the property on Brinkman Road, has been produced to celebrate the outcomes of the project and profile the partners involved

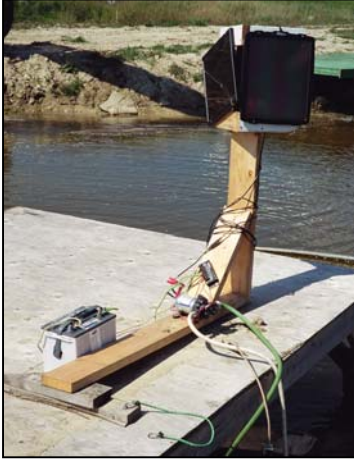
**BRINMAN FARM
STREAM REHABILITATION
2003-2005**

This project supported the landowner in his efforts to improve the water quality of the stream on his property. Work included cattle exclusion fencing, tree and shrub planting for shade and stream bank stabilization, installation of a solar pump for off-watering cattle, and water quality monitoring to record improvements that will benefit downstream landowners and the community.

**Brinkman Family · Bruce Resource Stewardship Network
Ministry of Natural Resources · Bruce Peninsula Biosphere Association
Bruce Peninsula Environment Group · Bruce County Forests
Bruce Peninsula District School · Wes Rydall Contracting**

How Did BRSN Funding Help?

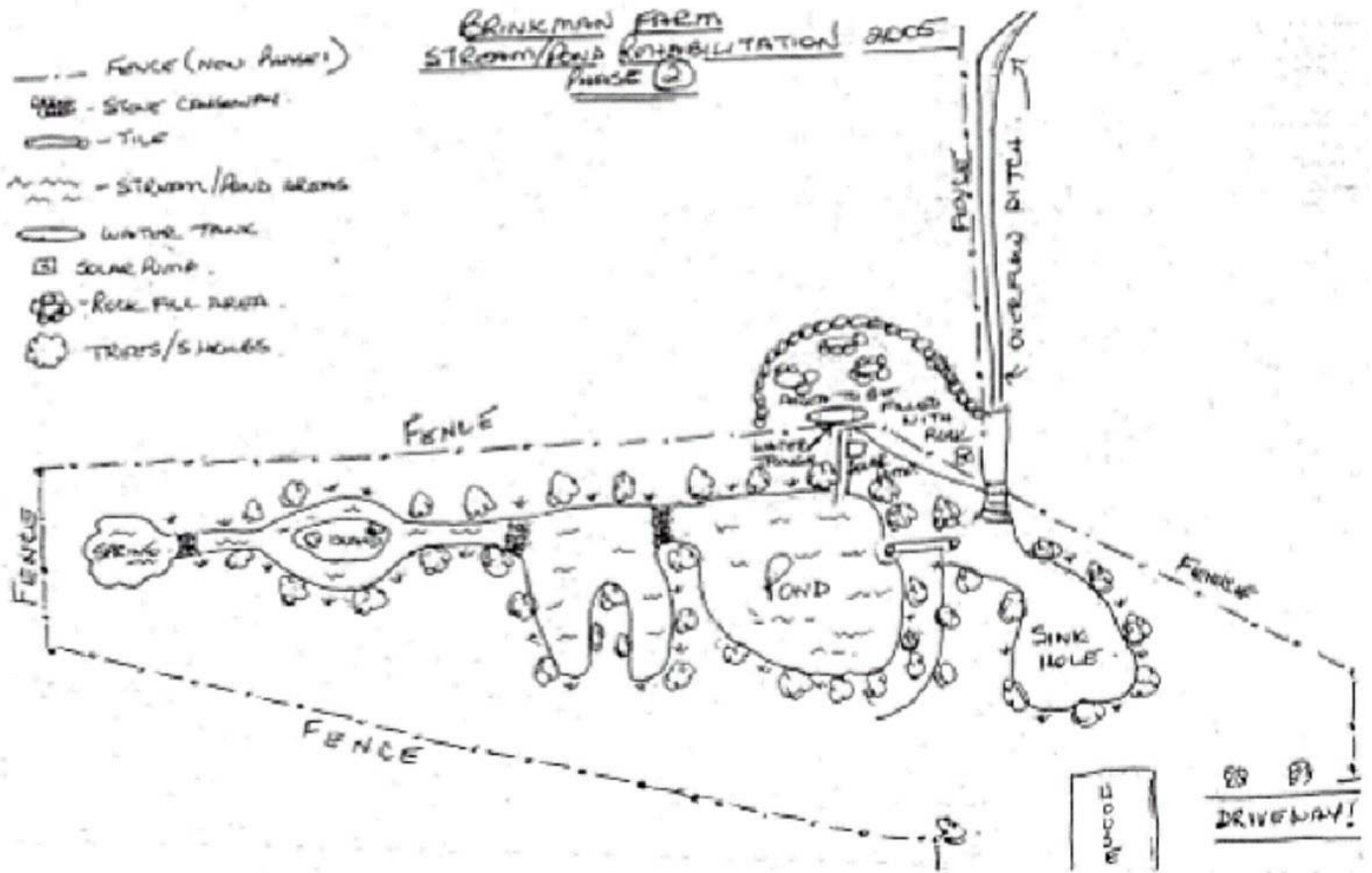
The Bruce Resource Stewardship Network provided \$500 for the Brinkman Farm Stream Rehabilitation project. This funding was fundamental in the exclusion of livestock from the stream as it enabled the water source to be relocated to an adjacent pasture, a safe distance from the stream banks. By watering cattle away from the stream, there will be a reduced risk of contamination, an improvement in water quality, and the stream banks can be restored to a natural, healthy state.



The following invoices were received by Gail Brinkman on September 6, 2005 and were reimbursed using the \$500.00 provided by the Bruce Resource Stewardship Network. The remaining \$29.12 was allocated to the purchase of trees.

Hose	\$22.99
Float Valve	\$13.49
Pump	\$138.00
Battery	\$99.00
Two Solar Panels	\$156.38
Subtotal	\$429.86
TOTAL	\$470.88

Appendix 1: Site Map



Appendix 2: Newspaper Article

Working Together to Preserve Our Water



submitted by Bruce Peninsula Biosphere Reserve

Above: Gail Brinkman standing near the watering trough and solar-powered water pump that was installed to bring water from the ponds and streams to the adjacent pasture area.

Surrounded by two pristine bodies of water, a multitude of inland lakes and wetlands, and an extensive network of rivers and streams, all of us living on the Bruce Peninsula are inevitably connected through water. Our water system, however, is directly influenced by what occurs on the surrounding landscapes and activities that degrade the quality of water in one area can have significant impacts on the health of the entire watershed and groundwater within the community.

In 2004, a local rehabilitation project was started, as several community partners joined the Brinkman family in their endeavours to restore a significant water system on their farm near Dyer's Bay. The Brinkman farm has a unique system of ponds and streams that is fed by a natural spring and drained through a sinkhole that leads back underground into the watershed. Traditionally, livestock has been allowed access to portions of the ponds and streams, as it has been a cost-effective way to provide water for cattle. However, recognizing that this practice can impact the health of the local watershed and groundwater through contamination and reduced water quality, the Brinkman family sought help from the community to restore these ponds and streams to a natural, healthy state.

Several community members came together in the spring of 2004 to install fences around the ponds and streams to exclude livestock from the water. Cattle exclusion not only benefits the farmer by preventing diseases in the livestock, such as foot rot and pink eye, but it also benefits the entire community by improving the water quality within the local watershed. To provide water for the cattle, a watering trough and solar-powered water pump was then installed to bring water from the ponds and streams to the adjacent pasture area.

As the second phase of the project, native trees and shrubs were planted as a buffer along the stream banks to provide shade, and prevent erosion and runoff. This vegetation will also provide natural habitat and a food source for local flora and fauna, therefore, enhancing the natural biodiversity on private land.

As a continuing component of the project, students from Bruce Peninsula District School have been monitoring the water quality of the ponds and streams at Brinkman farm as part of a biology course to determine changes in the ecosystem and the effectiveness of the rehabilitation efforts. This provides a unique opportunity for students to become involved in local environmental issues and, furthermore, directly contribute to the health of their community.

With a common vision of preserving the health of our environment and promoting sustainability on the Bruce Peninsula, this project has demonstrated the effectiveness of working together to achieve a healthy community and a healthy environment. A commemorative sign will be installed at the Brinkman farm to celebrate the accomplishments of our community in working together to achieve a healthy future on the Bruce Peninsula.

The following groups, associations and organizations should be recognized for their contributions and support in the completion of the Brinkman farm stream rehabilitation project:

- The Brinkman family
- Bruce Peninsula Biosphere Association
- Bruce Peninsula Environment Group
- Bruce Peninsula District School
- Bruce Resource Stewardship Network
- Ministry of Natural Resources
- Bruce County Forests
- Parks Canada
- Wes Rydall Contracting