



Harnessing a voluntary market to restore flow to dewatered rivers and streams

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This article examines a water restoration certificate scheme that aims to restore flows to dewatered rivers and streams through a voluntary offset market. The author argues that the scheme can provide a stable funding source to secure environmental flows, develop market signals demonstrating the economic value of environmental water, educate the public, and encourage policy reform.

The Global Water Forum publishes a series of discussion papers to share the insights and knowledge contained within our online articles. The articles are contributed by experts in the field and provide original academic research; unique, informed insights and arguments; evaluations of water policies and projects; as well as concise overviews and explanations of complex topics. We encourage our readers to engage in discussion with our contributing authors through the GWF website.

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Across the western United States, thousands of miles of rivers, streams, and wetlands are critically de-watered as a result of over-appropriated water rights. In the U.S. state of

Montana alone, chronic or periodic dewatering occurs across over 4,000 miles of rivers and streams annually, and the resulting low flow conditions exacerbate water quality; restrict the movement and productivity of fish and wildlife; impair natural riparian vegetative processes; and limit human recreational opportunities¹.

In an effort to pilot a new strategy to encourage and advance flow restoration in critically dewatered ecosystems, the Bonneville Environmental Foundation (BEF) launched the first national, market-based environmental streamflow restoration program in 2009. BEF's Water Restoration Certificate™ (WRC) Program offers an innovative, market-based solution that allows companies and individuals to restore to the environment an amount of water equal to their own consumptive water use. The

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program's goal is to utilize voluntary purchases of WRCs to help catalyze and expand a movement to restore environmental flows in critically dewatered ecosystems.

The Water Restoration Certificate™

Each Water Restoration Certificate produced by BEF represents 1,000 gallons of water that is restored to a dewatered river, stream, or wetland during a critical time of year. BEF collaborates with and provides funding to local conservation organizations that work with water rights holders to design and implement projects that restore environmental flows to dewatered ecosystems. These projects use a range of strategies to improve flows including irrigation infrastructure and efficiency upgrades, water conservation projects, instream leases, and water rights acquisitions and transfers².

The water restored through each BEF-funded WRC project is measured, reported in a signed attestation, and is then converted to 1,000-gallon units. An international registry serializes each WRC generated and tracks the issuance and retirement of each credit sold³. With each WRC delivered, BEF conveys to the buyer the right to claim responsibility for providing funding that resulted in the restoration of 1,000 gallons of water to a dewatered ecosystem. This claim allows

companies and businesses to build brand equity based on their environmental commitment to “balance” their own water footprint by “giving water back” to the planet.

Program criteria and project review

Establishing rigorous environmental criteria and project screening processes is necessary to assure that each WRC project produces the environmental gains desired by (and promised to) WRC customers. To achieve this, the National Fish and Wildlife Foundation's (NFWF) Western Water Program developed independent environmental criteria and established a selection and certification process for WRC projects. The fundamental goal of the NFWF criteria is to ensure that each WRC project physically restores new (or “additional”) flow at both a location and time of year where low flows are a limiting factor for fish and wildlife, biodiversity, and/or ecosystem function.

Project locations

BEF works closely with select conservation organizations that focus on flow restoration to identify, co-develop, and fund projects that can restore flows and generate WRC inventory. In 2009, BEF funded three environmental flow projects to provide the program's first year of WRC inventory. Funded project

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locations included the Deschutes River, OR and tributaries to both the upper Missouri River, MT and Rogue River, OR. BEF has since expanded its WRC portfolio with commitments to support new projects that restore flow in the states of Arizona, Utah, Oregon, and Colorado.

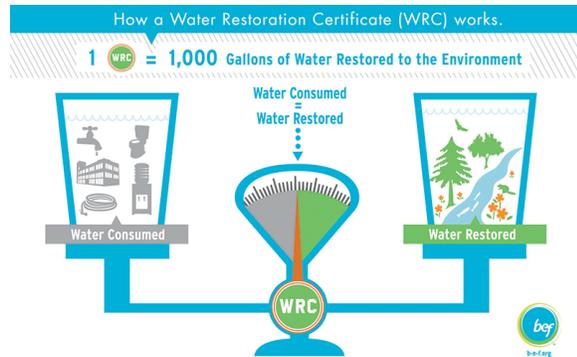


Figure 1. How BEF Water Certificates work

Water conservation and retirement

The WRC program strives to promote increasingly sustainable use of water. To this end, the WRC program also encourages and facilitates water conservation among WRC customers. For example, the delivery of water conservation devices (such as low flow showerheads) is included with WRC purchases on the BEF website. In addition, a wide range of water saving tips are integrated into the website content.

Once a WRC is sold, it is retired from use—meaning that it cannot be resold or used in

any trading or mitigation program. In addition, in order to avoid any customer using a WRC purchase to justify further water use that could result in natural resource degradation, WRC sales contracts specify that buyers will not use WRC purchases to facilitate the establishment of new water rights that increase consumptive use of water.

Customer awareness and sales

BEF expects to use the WRC program to increase awareness about the extent and ecological effects of dewatering. Over time, we hope that growing public awareness will lead to increased water conservation and support for policy reforms that will facilitate increasingly efficient, voluntarily reallocation of water to mitigate chronic low flow conditions. To date, BEF has sold WRC's to hi-tech companies, outdoor products manufactures, organic food and beverage companies, data centers, professional sports teams, breweries, and others. In 2012, BEF entered into a first-of-its-kind WRC agreement that allows a university to balance its entire annual on-campus water use with an equal amount of water restored to a nearby, dewatered ecosystem.

Conclusion

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BEF's WRC program provides an innovative, market-based solution to a chronic and extensive issue: dewatering of streams, rivers, and wetlands by legal withdrawal of fully appropriated surface water. The program utilizes WRCs as a tool to connect water users everywhere with projects that restore water in the places that are in greatest need of environmental flow restoration.

In marketing WRCs on a national level, BEF seeks to engage a broad customer base that includes corporations, businesses, and individuals. As demand and sales of WRCs increase, it is our hope that this program will achieve four primary outcomes:

- Provide a stable funding source to significantly expand environmental

flow restoration efforts in critically dewatered ecosystems.

- Develop a market signal demonstrating the tangible economic value associated with using water to support ecological function.
- Educate the public about freshwater conservation needs and provide a simple and effective way for individuals and institutions to restore water to the environment.
- Use successful projects and the emergence of a voluntary market to generate support for policy reforms that facilitate efficient transfer and protection of water rights to meet environmental flow needs.

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About the author(s)

Todd Reeve is the Vice President of BEF Watershed Program. Todd has over fifteen years' experience building partnerships and pursuing innovations around small-scale renewable energy projects, collaborative environmental solutions, watershed restoration, and ecosystem services. Todd co-developed BEF's Water Restoration Certificate Program and developed the first 10-year Model Watershed approach to support community-based efforts to restore watershed ecosystems. He earned an MS degree from the University of Wisconsin-Madison and a BA from the University of Oregon.

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