Yale school of the environment



FELLOWSHIP BRIEF

Water Rights as a Conservation Tool Margot Buckelew MEM '21

The Need.

In Colorado during the 1970s, there was a brief period of time when private entities had the opportunity to claim in-stream flow rights – rights that ensure water stays in streams to support and protect aquatic ecosystems. The Rocky Mountain Biological Laboratory (RMBL) in Gothic, Colorado was able to apply for, and receive, decrees for nine streams and lakes in the East River Valley of Gunnison County, CO. As few as three other locations were claimed in this brief legal loophole, but these rights have stood up to legal challenges and attempts to claim these water flows for other purposes. Although in-stream flow rights are no longer available for private entities to claim, it is important to understand the influence that these past in-stream flow right claims may still be having on the landscape and their efficacy as a conservation tool in the future.



Photo by Margot Buckelew

The Project.

Margot assisted with biological assessments of streams within RMBL's in-stream flow decrees. These studies collected data to monitor diversity and community composition of benthic macroinvertebrates, aquatic bugs that act as indicator species of water quality, and have been conducted for 46 years by Dr. Bobbi Peckarsky and her team of "Benthettes."

When not in the field, Margot studied the legal conditions and governance structures that allowed in-stream flow rights to be claimed and why they have remained relevant over the past 50 years. This included investigation into the original applications, decrees, and legal proceedings of the RMBL in-stream flow claims. Contacts with the Colorado Water Trust, Colorado Water Conservation Board, The Nature Conservancy and others also informed this work. Margot sought to explore whether these rights could serve a potential opportunity for expanding environmental protection in the face of growing water scarcity in the region.

The Findings.

With her research on these rights and their status in the current appropriation system in Colorado, Margot wrote a policy analysis report that considered an alternative system focused on decentralized, private claims of in-stream flow rights. The report uses the historical context of RMBL's in-stream flow rights as a case study to support why more diverse mechanisms for claiming environmental flows may be beneficial as ecological needs shift and the climate changes. Additionally, Margot's documentation of the process RMBL used to receive in-stream flow rights in the past, largely only known by word-of-mouth until now, will be a powerful addition to the decades of biological data that has been collected along these streams. Understanding the mechanisms that have protected these important research studies may shed additional light on opportunities to protect other aquatic ecosystems and ecosystem services across the state.

The Impact.

The growing threats from anthropogenic demands and climate change will necessitate a shift away from centralized, municipality-based water management to consideration of collaborative management of resources by diverse stakeholders. This work supports efforts to consider water management at larger scales and encourages a focus on ecosystem services and sustainability. Expansion of in-stream flow rights can be a powerful environmental protection tool for managers as they work to balance human and ecosystem demands. Documentation of RMBL's unique water rights will support the conversation around diversifying the water rights system and allow policymakers to more fully consider use of similar rights in the future. Making these water rights available may allow for local involvement in future water allocations while also maintaining state oversight.

The Student.



Margot is a Master's of Environmental Management candidate at the Yale School of the Environment focusing on water resources. She is interested in studying urban water quantity planning and policy development while at Yale. Before graduate school, Margot became inspired by the western landscape while spending time in Colorado working on mayflies, and working on steel head research in Washington.