
2019 ANNUAL REPORT

GRAND COUNTY LEARNING BY DOING

A new approach to managing aquatic resources

www.grandcountylearningbydoing.org

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Highlights of 2019

Learning By Doing highlights and accomplishments from last year.

Established LBD as a Non-Profit Corporation
in the State of Colorado.

Planted 1,500 Willow Stakes
with volunteer participation to shade a section of Ranch Creek impaired by stream temperature exceedances.

Pursued Two New Projects
for 2020, securing partial grant support.

Invested \$40,514
in the implementation of an extensive monitoring program.

Made Recommendations
for coordinating water operations in the Fraser and Upper Colorado River basins.

Removed 330 Tons
of highway traction sand from the Fraser River.

Implemented Aquatic Resource Monitoring Plan
including collection of stream temperature, macroinvertebrate and sediment data.

Received \$21,000 +
in financial support through a local lodging surcharge.

A Unique Partnership

Learning By Doing (LBD) is a solution-focused collaborative group of local, state, federal and non-profit water stakeholders charged with safeguarding Grand County rivers and streams.

Formed from intergovernmental agreements tied to the permitting of two water diversion projects — the Windy Gap Firming Project (Northern Water Subdistrict) and Gross Reservoir Expansion Project (Denver Water) — the LBD stakeholder group works to monitor and restore aquatic habitat within the LBD Cooperative Effort Area (CEA). The CEA includes the Colorado, Fraser and Williams Fork River basins, upstream of the Colorado River confluence with the Blue River.

LBD's Management Committee includes representatives from the following organizations:

- Grand County, Colorado
- Colorado Parks & Wildlife (CPW)
- Colorado River District
- Denver Water
- Northern Water
- Middle Park Water Conservancy District
- Trout Unlimited

A [Technical Committee](#), which includes additional stakeholders, advises the LBD Management Committee.

Despite the fact that dedicated resources for LBD will not be available until outstanding permits (including legal challenges) for the two diversion projects have concluded, LBD partners began working together five-years ago to build the foundation for this collaborative effort.

Since that time, LBD's ongoing work includes documenting existing aquatic monitoring efforts and implementing supplemental monitoring efforts where needed, prioritizing river reaches where restoration is needed, implementing river restoration projects using grants and partners' contributions, and coordinating the voluntary releases of environmental water to respond to low flows and high stream temperatures. Once final permits are obtained, additional resources will be made available to LBD to continue its work to preserve and, where possible, improve the health of the rivers and the aquatic habitat in Grand County.

The following report describes the highlights of LBD's collaborative effort in 2019.



Projects

Following on the heels of Learning By Doing's pilot project in 2017–2018, the Fraser Flats River Habitat Project, in 2019 LBD began planning two new projects: The Hammond Ditch Improvement Project and the Cabin Creek Aquatic Organism Passage (AOP) Culvert Project.

Learning By Doing measures success by its projects.

To learn more about project partnership, download the [guidelines for public/private partnerships](#) on the [Learning By Doing website](#).

The Learning By Doing Committee selects projects based on recommendations from the [Grand County Stream Management Plan](#), available resources, involvement of affected landowners and other considerations.

Hammond Ditch Improvement Project

The project involves channel stabilization, prevention of fish entrainment and improving the diversion structure. Contingent on ditch owners' approval, design and construction are expected to take place in 2020.

Cabin Creek AOP Culvert Project

Learning By Doing has put components in place to design and replace a culvert on Cabin Creek under Forest Service Road 128 with an AOP culvert to provide habitat connectivity for native Colorado River Cutthroat Trout. Learning By Doing's collaborative approach to this project involves Denver Water conducting a topographic survey, and the U.S. Forest Service providing the engineering with its design slated for completion in early 2020.

Grand County will be requested to provide a portion of the needed materials. This project integrates multiple objectives, including improvements to habitats, fish passage, and water supply delivery.



Volunteers plant willow stakes to shade a section of Ranch Creek.
Photo courtesy of Trout Unlimited Colorado River Headwaters Chapter

Ranch Creek Riparian Habitat Restoration

In 2019, Learning By Doing and the Colorado River Headwaters Chapter of Trout Unlimited partnered for a second year on a revegetation project for a 1.0-mile section of Ranch Creek. Ranch Creek is on Colorado Department of Public Health and Environment's Section 303(d) List of Impaired Waters for temperature.

The partners recruited 75 volunteers to harvest 1,500 nearby willow stakes and plant them along the stream bank to provide a shaded canopy.

LBD also partnered in planning and implementing other much-needed river habitat projects.

**330 tons is equal to
three Air Force One-
size planes or 660,000
pounds. That is a lot
of sand.**

Fraser River Sediment Pond

Learning By Doing continued to partner with the Colorado Department of Transportation (CDOT), the East Grand Water Quality Board and the Town of Winter Park in its seventh year to remove traction sand used along Highway 40 from the Fraser River. In 2019, the pond captured and CDOT removed 330 tons of sand. Since its inception, a total of 3,230 tons of traction sand has been removed.

Monitoring downstream of the sediment pond shows significant habitat improvement.



Fraser River Sediment Pond
Photo courtesy of Denver Water



Aerial photo of Windy Gap Reservoir

Photo courtesy of Northern Water

Colorado River Connectivity Channel

Northern Water and a consortium of water stakeholders are finalizing funding and starting design on this high priority project to modify Windy Gap Reservoir and restore highly impacted aquatic habitat. The project will modify the mainstem reservoir so that it will function as an off-channel reservoir, reconnecting the Colorado River at the confluence with the Fraser River. This will provide a fish passage and enable sediment transfer while also leveraging other efforts to improve conditions above and below the reservoir. The new connectivity channel will be open for public fishing and recreation. LBD partners are involved as lead agencies, funders and advocates.

**Partnering to
help restore
highly impacted
aquatic habitat.**

Williams Fork River Restoration

This Denver Water project in 2018-2019 improved and enhanced 2.08 river miles of the Williams Fork River upstream and downstream of Williams Fork Reservoir, including 0.86 mile on the Kemp Breeze State Wildlife Area above the confluence with the Colorado River that is open to public fishing. The restoration activities will result in improved low flow conditions, instream habitat diversity, channel stability and streamside vegetation. Denver Water intends to open a portion of its property upstream of the Williams Fork Reservoir to public fishing in the future. The restoration work on the State Wildlife Area was performed by Denver Water in partnership with CPW, with support and collaboration with LBD including habitat and fish migration improvements and water supply delivery improvements.



Before

Channel overwide,
long continuous riffles
present, limited
deep pool habitat at
low flows.

9-30-19

Before Williams Fork
River Restoration

*Photo courtesy of
Denver Water*



After

New point bars direct
low flows to central,
deeper channel shown
on far right. Deeper
pools hold boulders
and trees with rootballs
placed for fish habitat
shown in far right.

10-22-19

After Williams Fork
River Restoration

*Photo courtesy of
Denver Water*



Operations

Learning By Doing's Operations Subcommittee, representing 12 agencies and organizations, conducts weekly operations calls from May through September.

For more in-depth information, access the [2019 Annual Operations Report on the Learning By Doing website](#).

Learning By Doing's Operations Subcommittee makes recommendations on the timing of releases of environmental water to respond to low flows and/or high stream temperatures, or to direct flushing flows, when possible. Additionally, it makes requests for operations changes on Denver Water's Moffat Collection System and Williams Fork Reservoir, the River District's Wolford Mountain Reservoir, and U.S. Fish and Wildlife Service Endangered Fish 5412 water released by Northern Water from Granby Reservoir. The subcommittee analyzes stream temperature data, hydrologic and water supply forecasts, and water supply system conditions to optimally implement Learning By Doing's Operations Plan.

The coordinated operations calls represent the true spirit of LBD as partners work together to promote, as system flexibility and available water allows, optimum flows for the rivers and their tributaries.

In 2019, an above average snowpack that continued to build into May and early June resulted in a water supply forecast of 129 percent above average (at Kremmling gage). A cool and wet spring and early summer led to a July peak runoff — the latest runoff date posted since 1957. Reservoirs filled on both sides of Colorado's Continental Divide. Due to a heavy precipitation event in late June, Granby Reservoir spilled, including previously pumped Windy Gap water. An extended dry period then followed in August and lasted into early fall.

While plentiful water is always desirable, it led to challenging water operations in 2019.



LBD's stream temperature monitoring consultant takes a reading.

Photo courtesy of Grand County Water Information Network

The Operations Subcommittee prioritized flows on Ranch Creek, which often records temperature exceedances, and, working with Denver Water, was able to enhance native flows on Ranch Creek throughout most of the summer season.

While plentiful water is always desirable, it led to challenging water operations in 2019. Releases of endangered fish water from Granby Reservoir to benefit the 15-mile Critical Habitat reach on the Colorado River near Grand Junction are typically timed to also benefit trout fisheries in the upper portions of the Colorado River. Due to full reservoirs and adequate water in the 15-mile reach in early August, releases from Granby reservoir for the Endangered Fish program were delayed and low flows became a concern in the upper Colorado River.

However, thanks to coordination, the River District was able to vacate space at Wolford Reservoir, adding flow to the upper Colorado River while simultaneously, by exchange, storing Endangered Fish water for later delivery to the Critical Habitat reach.

Denver Water coordinated with LBD regarding its construction activities in the Fraser River basin, which required low stream flows during the late and above-average runoff period this summer.



One of 10 LBD sites for 2019 macroinvertebrate monitoring. This one, on the Colorado River, is 1.7 miles from the confluence with the Blue River.

Photo courtesy of Timberline Aquatics

Monitoring

The Monitoring Subcommittee designs and implements a supplemental monitoring program informed by existing monitoring efforts in the Collaborative Effort Area (CEA).

For more in-depth information, access [Aquatic Resource Monitoring Plans and Reports on the Learning By Doing website](#).

The Learning By Doing monitoring program is funded by LBD and five LBD partners. In 2019, LBD conducted a review of the macroinvertebrate monitoring program goals and methodology to ensure that the program's metrics would provide the information needed to track changes in and sufficiently monitor the health of the aquatic ecosystem.

LBD's [2019 Aquatic Resource Monitoring Plan](#) describes monitoring efforts including: stream temperature, sediment, fish populations, macroinvertebrate health, riparian habitat and pre- and post-project monitoring. The monitoring informs LBD on existing conditions in the aquatic habitat and highlights areas that require attention. The 2019 program marks the third consecutive year of LBD managing its own monitoring program, as well as cataloguing existing monitoring efforts in the CEA.

The Monitoring Subcommittee assembled 2018 data in an [Aquatic Resource Monitoring Report](#). Report compilations help inform LBD regarding changes to the aquatic habitat over time.

Colorado Parks and Wildlife's aquatic biologist conducts fish monitoring at Fraser Flats.

Photo courtesy of Colorado Parks and Wildlife



Media and Outreach

Keeping Grand County and people across the state informed of Learning By Doing's new and successful approach to restoring, maintaining and, where possible, enhancing the aquatic habitat.

One of Learning by Doing's members, Kirk Klancke, president of the Colorado River Headwaters Chapter of Trout Unlimited, published a series of articles this past year in the *Winter Park Times*: “[When East Meets West over Water Resources](#)” in March, “[Healing Our Rivers](#)” in April, and in October, “[Sound Bites and Other False Promises](#).” *Colorado Politics* republished the third article in November.

Additionally, in November the *Colorado Sun* covered the efforts of LBD in a feature story, “[After decades of negotiations, restoration efforts on Colorado's heavily diverted Fraser River are showing signs of success](#)”.

Learning By Doing also told its story of a new approach to managing aquatic resources at the National Water Quality Monitoring Conference, held in Denver, Colorado, in March, with a presentation and a poster session. LBD partners presented updates to community members at the River District-hosted “State of the River” event in Kremmling in May, and the Headwaters Center in Winter Park hosted an LBD panel presentation in October to community members.



FORMATION OF LEARNING BY DOING, INC.

Early in 2019, LBD established itself as a non-profit corporation in the State of Colorado and formed a five-member board of directors. This milestone places LBD in a position to sign contracts, including those for grant funding. As a result, LBD, Inc. was able to secure a grant for partial payment of the Hammond Ditch Improvement Project design from the Colorado Basin Roundtable.



Grand County Water Information Network monitoring water quality for Learning By Doing.
Photo courtesy of Grand County Water Information Network

Investing in Learning By Doing

In 2019, Learning By Doing was able to make headway through shared contributions among partners, grants and the local community.

While several million dollars in dedicated Learning By Doing resources are tied to issuance of Denver Water and Northern Water's permits and completion of any legal challenges, which have not yet been met, LBD was able to make headway through shared contributions among partners, grants and the local community.

- Shared monitoring costs among partners, including two shared macroinvertebrate sites with Irrigators of Lands in the Vicinity of Kremmling (ILVK) in 2019, totaled \$40,514.
- A lodging surcharge from Devil's Thumb Ranch dedicated \$21,425.78 to LBD in 2019, and was applied to the Fraser Flats monitoring program.
- A grant award of \$27,000 was received by LBD towards the Hammond Ditch Improvement Project design from the Colorado Basin Roundtable.



Next Steps for 2020

Goals for the upcoming year and plans Learning By Doing has in place.

- Contingent on ditch owner approval, complete design and implement the Hammond Ditch Improvement Project to prevent fish entrainment, improve the diversion structure, and channel stabilization.
- Complete design and implement replacement of the Cabin Creek culvert with an AOP culvert that will extend habitat for native Colorado River Cutthroat Trout.
- Coordinate with Colorado River Connectivity Channel Stakeholders to release \$1 million in LBD funds for the project and to review improvements for consistency with other LBD projects.
- Explore viability of restoring a 1.05-mile section of the Fraser River downstream of Fraser Canyon in a public/private partnership with BLM and Granby Ranch.
- Continue to utilize the [Grand County Stream Management Plan](#) to identify and prioritize additional projects to improve the aquatic habitat in critical areas.
- Pursue grants to help fund Learning By Doing projects.
- Develop and implement an Aquatic Resource Monitoring Plan for 2020.
- Implement a 2020 Operations Plan to coordinate LBD partner operations.
- Pursue outreach opportunities to targeted water, conservation and public policy groups, as well as the Grand County community at large.