



G R A N D C O U N T Y

LEARNING BY DOING

2020 ANNUAL REPORT

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Site of Denver Water river improvement on Williams Fork.
Photo courtesy of Denver Water



Fishing on Williams Fork River.
Photo courtesy of Paula Daukas



Learning By Doing – Working cooperatively to protect Grand County’s aquatic environment

Learning By Doing (LBD) is a cooperative effort of water stakeholders from both sides of the Continental Divide whose goal is to maintain and, where possible, restore or enhance the aquatic environment of the Upper Colorado, Fraser and Williams Fork River basins.

Our group of stakeholders emerged from Inter-Governmental Agreements intended to address impacts from two water diversion projects that affect rivers in Grand County: Denver Water’s Gross Reservoir Expansion Project and Northern Water Subdistrict’s Windy Gap Firming Project. The Learning By Doing partners have an interest in protecting Grand County’s aquatic habitat, while also respecting the interests and legal responsibilities of each partner organization.

While Learning By Doing is already operational, we will receive added resources of funding and enhancement water as the two diversion projects move through government approvals and construction.

Management Committee Partners

Colorado Parks and Wildlife
Colorado River Water Conservation District
Denver Water
Grand County
Middle Park Water Conservancy District
Northern Water and its Municipal Subdistrict
Trout Unlimited

Other partners

Colorado Headwaters Land Trust
Grand County Water Information Network
Grand County Water and Sanitation District
Irrigators of Lands in the Vicinity of Kremmling
Northwest Colorado Council of Governments
Town of Hot Sulphur Springs
U.S. Bureau of Land Management
U.S. Bureau of Reclamation
U.S. Forest Service

Year in Review

Stand-out events of 2020

Suffered destructive wildfires

Drought conditions continued to develop through the summer and fall that contributed to two wildfires in Grand County: the East Troublesome and Williams Fork fires. Together, the fires burned 208,650 acres, or 326 square miles — which is larger than any named fire in Colorado history — taking an enormous toll on the Williams Fork, Willow Creek, Upper Colorado River and neighboring watersheds and communities.

Invested \$48,400 in ongoing monitoring

Learning By Doing's 2020 Aquatic Resources Monitoring program surveyed conditions that affect aquatic resources and habitat in the program area: monitoring 10 sites for stream temperature, 19 sites for sediment, 10 sites for macroinvertebrates and one site for riverbank revegetation.

Engaged the community

Volunteers assisted with nine electrofishing events along the Fraser and Colorado rivers coordinated by Colorado Parks and Wildlife (CPW). Volunteers also counted willows planted along the Fraser River in 2017 to determine the survival rate of riparian plantings.

Progressed on an aquatic habitat improvement project

The Cabin Creek Aquatic Organism Passage (AOP) culvert project to allow for movement of Colorado River Cutthroat Trout was kicked off with design completion in 2020. Procurement of materials and construction has been postponed to 2021 due to the COVID-19 pandemic.

Coordinated water operations

Learning By Doing conducted weekly conference calls with 12 agencies from mid-May through early September to coordinate with reservoir and system operations in an effort to maintain water temperatures suitable for fisheries.

Gained 501(c)(3) designation

Learning By Doing, Inc. became a tax exempt nonprofit organization in June.

Kept stakeholders informed

The first edition of Learning By Doing's eNewsletter went out in September to nearly 800 Grand County residents, statewide water community members and media outlets.



A Learning By Doing monitoring site on the Colorado River.
Photo courtesy of GEI

Projects

Disrupted by the pandemic, LBD focused on plans for the future

Learning By Doing measures success by its projects.

A key function of Learning By Doing is the implementation of on-the-ground projects designed to restore and improve aquatic habitat and increase stream resiliency in the face of water diversions and climate change. While more than \$3 million is expected to be available for such projects once the Gross Reservoir Expansion Project is fully permitted, Learning By Doing is currently undertaking projects using partner contributions and grants.

Cabin Creek Fish Passage Project

Although planned for 2020, the replacement of a culvert where Forest Service Road 128 crosses Cabin Creek east of the Town of Fraser was postponed until 2021. The existing culvert is a barrier to fish movement, and the replacement will allow for fish passage and reconnect fragmented habitats. Progress was made in 2020, including approval of the Forest Service's design and securing funding from the U.S. Fish and Wildlife Service, which positions the project for completion in 2021. Denver Water will provide all labor and equipment for implementation, and Grand County will contribute materials.



Learning By Doing plans to continue willow planting efforts to stabilize riverbanks, provide fish cover and protect from solar influence.
Photo courtesy of Trout Unlimited's Colorado River Headwaters Chapter

Post-project follow up to the Fraser Flats River Habitat Project

Learning By Doing continues post-project monitoring of its Fraser Flats River Habitat Project, completed in 2017, to make sure the created instream habitat features, river restoration and willow plantings continue to provide ecological functions and support aquatic life. Prior to the habitat project, the site yielded the poorest fish biomass results of any test site along the Fraser River. Immediately following completion of the project, the site saw a nearly four-fold increase in fish biomass. Subsequent monitoring, however, shows a decrease in trout abundance, thought to be due to fishing pressure. In response, the Colorado Headwaters Chapter of Trout Unlimited commenced a public information campaign, posting signs and distributing fliers that ask anglers to voluntarily refrain from fishing the Fraser Flats section on Tuesdays and Thursdays. In addition, a follow-up willow planting undertaking will replace willows that didn't survive in the initial planting.

Learn more about our projects and resources by visiting our [website](#).

Proposals for future river restoration projects

Members of Learning By Doing's Technical Advisory Committee submitted five river restoration proposals for consideration, two of which were advanced for pre-project planning with potential implementation of one or more in 2022. These include three and one-half miles of the Fraser River downstream of Fraser Canyon; and one-quarter mile of the Fraser River at Kaibab Park in Granby.

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

Fraser River sediment pond

In a Learning By Doing cooperative project with the Colorado Department of Transportation and Denver Water, a sediment pond constructed on the Fraser River below Berthoud Pass captures traction sand used on the highway that can impair the aquatic habitat. In 2020, 180 tons of traction sand were removed from the Fraser River's sediment pond, and a total of 3,400 tons of sand has been removed during the past eight years.

3,400 tons of sand have been removed in eight years!

Fraser River sediment pond.
Photo courtesy of Denver Water





Due to maintenance projects in 2020, Denver Water bypassed available natural flow down Ranch Creek.
Photo courtesy of Timberline Aquatics

Operations

Notable events of the 2020 water operations season

In 2020, the Learning By Doing Operations Subcommittee conducted weekly water operations teleconferences from May 17 to September 1 with participants from 12 agencies. Discussions during the runoff season included the potential for Coordinated Reservoir Operations (CROS) releases, Moffat Collection System release potential, Granby Reservoir fill, Windy Gap Reservoir pumping status and flushing flow stream prioritization in the Fraser River Basin.

CROS is a cooperative program aimed at improving flows in the 15-mile reach of critical habitat for endangered fish downstream of the Grand Valley Canal Diversion in Mesa County. Voluntary releases from the Moffat Collection System and Granby, Willow Creek and Williams Fork Reservoirs to meet CROS goals have the indirect benefit of improving flows in the Colorado River headwaters in Grand County. This year, CROS resulted in approximately 3,542 acre-feet (AF) released downstream from the Moffat Collection system between May 29 and June 3. Other CROS releases affecting Grand County streams totaled about 20,500 AF. No CROS releases were made from Granby Reservoir in 2020.

This year, Learning By Doing's flushing flow priority was the mainstem of the Fraser River. Additionally, due to maintenance on the canals between Meadow Creek and Buck Creek, Denver Water bypassed available natural flow (1,600 AF) down Ranch Creek and other tributaries through the summer.

A full Learning By Doing 2020 Operations Report can be found on our [website](#).

Stream temperatures in the Colorado River within the cooperative effort area stayed below state temperature standards.

In-season (post-runoff) operations teleconferences focused on monitoring flows and stream temperatures in the Learning By Doing cooperative effort area (the Upper Colorado, Fraser and Williams Fork River basins), and administrative calls on the mainstem of the Colorado River. This included providing information on the timing of releases of 5,412 AF of environmental water from Granby Reservoir as part of the Upper Colorado River Endangered Fish Recovery Program. Learning By Doing works with the U.S. Fish and Wildlife Service and area reservoir operators to coordinate the timing of Granby Reservoir releases for the endangered fish program such that they also improve stream temperature conditions in the Colorado River within Grand County. Dry conditions dictated an earlier than normal start to the endangered fish water releases, July 15th instead of August 1st. Thanks in part to these releases, stream temperatures in the Colorado River within the cooperative effort area stayed below state temperature standards.

In 2020, Denver Water updated its Water Shortage Response and Implementation Plan and Learning By Doing provided input, ensuring consideration of drought conditions in its water catchment areas such as Grand County.

Also in 2020, with funding from the Sonoran Institute, Grand County created and implemented on a trial basis a draft Drought Preparedness Plan that stakeholders — including water, fire, recreation districts, towns, Grand County government and agricultural interests — plan to finalize in 2021. Key provisions in the plan include conservation measures to be implemented under differing levels of water shortage.



Fish surveys conducted by Colorado Parks and Wildlife at sites on the Fraser and Colorado Rivers involve weighing and measuring fish.
Photo courtesy Denver Water



An algae viewing bucket used for monitoring stream health along the Fraser River.
Photo courtesy of GEI

Monitoring

Evaluating Grand County's aquatic habitat

Significant efforts to monitor the aquatic habitat in Learning By Doing's cooperative effort area are ongoing in connection with the proposed Gross Reservoir Expansion and Windy Gap Firing projects. Now in its fourth consecutive year, Learning By Doing's monitoring program supplements those and other monitoring efforts.

This year, Learning By Doing invested \$48,400 to monitor stream temperature, sediment transport and macroinvertebrate populations. Monitoring was conducted in accordance with an annual [Aquatic Resource Monitoring Plan](#) prepared by Learning By Doing's Monitoring Subcommittee. In addition, Learning By Doing considers data from [annual surveys of fish populations](#) and biomass conducted by Colorado Parks and Wildlife on the Fraser and Colorado Rivers.

In 2020, the subcommittee refined Learning By Doing's sediment monitoring efforts, expanding analyses of riverbed substrate conditions and algae presence. In addition, two stream temperature monitoring sites were added to the monitoring plan, resulting in a total of 11 Learning By Doing-supported temperature sites, assuring good spatial distribution when combined with the sites supported by Denver Water and Northern Water. The new temperature sites will help to assess the effectiveness of a riparian revegetation effort on Ranch Creek.

**\$48,400 invested
for monitoring
efforts.**

Ten LBD-supported macroinvertebrate monitoring sites were retained, and the data will be reported along with four Denver Water and four Northern Water sites for a comprehensive overview of the benthic macroinvertebrate population in Learning By Doing's cooperative effort area.

Learning By Doing also conducted post-project riparian monitoring at the site of its Fraser Flats River Habitat Project.

Additionally, the Monitoring Subcommittee tracks:

- Colorado's 303(d) list of streams impaired for water quality, which is informed by U.S. Geological Survey contracts with Northern Water, East Grand Water Quality Board, the Colorado River District and Grand County
- Colorado River Connectivity Channel pre-project monitoring
- River restoration efforts by Irrigators of Lands in the Vicinity of Kremmling (ILVK)

Learning By Doing is currently examining how to best assist in monitoring and watershed restoration efforts in areas affected by the Williams Fork and East Troublesome fires.

The East Troublesome fire as seen from Red Dirt Hill above Granby.
Photo courtesy of Jon Ewert



A plane drops fire retardant on the Williams Fork fire.
Photo courtesy of Grand County





Media and Outreach

Informing the public

Colorado Parks and Wildlife Aquatic Researchers tag fish for the Connectivity Channel fish movement study.

Photo courtesy of CPW

Sign up for the Learning By Doing eNews on our [website](#).

In February, before the COVID-19 pandemic curtailed conferences, meetings and gatherings, the president of Trout Unlimited's Colorado River Headwaters Chapter, Kirk Klancke, presented a program on Learning By Doing's successes at the Headwaters Center in Winter Park.

In September, Learning By Doing issued its first eNewsletter targeting the Grand County community, state water interests and the media.

Learning By Doing's panel presentation for the 2020 Colorado Watershed Conference in October evolved into a video submission after the conference organizers decided on a virtual format. Northern Water produced a [video](#) documenting the installment of fish movement devices (antennas) by Colorado Parks and Wildlife to monitor fish movement through the Colorado River Connectivity Channel before and after the project is constructed around Windy Gap Reservoir. Learning By Doing is a Connectivity Channel project partner.

Denver Water's Public Affairs staff prepared a [news story and video](#) in November for its weekly TAP publication that highlighted Colorado Parks and Wildlife's electrofishing survey at the site of Learning By Doing's Fraser Flats River Habitat Project. The annual survey provides estimates of fish populations in the restored section of the Fraser River.



Volunteers assist Colorado Parks and Wildlife with measuring fish population on the Fraser River.
Photo courtesy of Denver Water

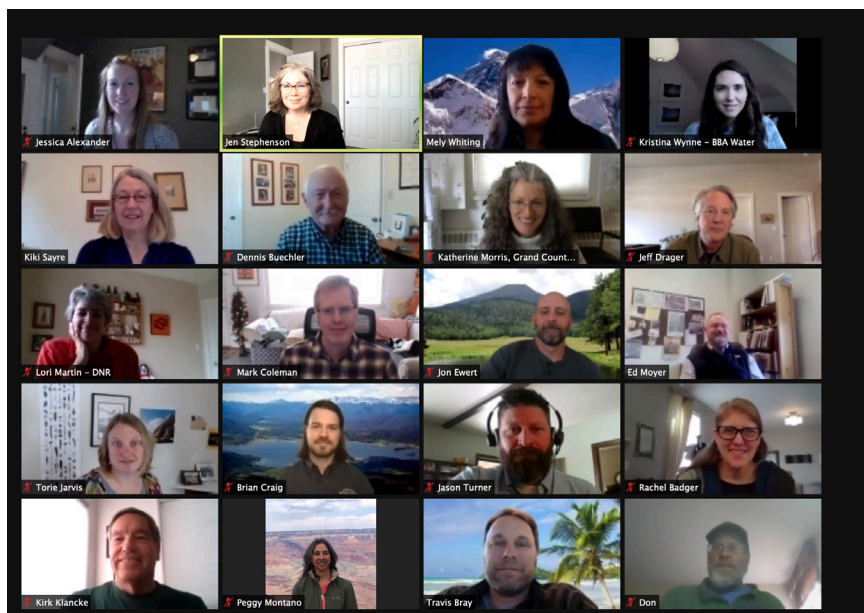
Partner Support

Moving forward through the contributions of dedicated stakeholders

Each Learning By Doing partner organization dedicates numerous hours of staff and/or consultant time, as well as valuable expertise, to Learning By Doing efforts. In addition, what we have accomplished so far would not be possible without the assistance of the Colorado Water Conservation Board, the Colorado River Basin Roundtable and Colorado Parks and Wildlife's Fishing Is Fun program — along with the generosity of Devil Thumb's Ranch.

To all our partners, thank you.

For more information, visit www.grandcountylearningbydoing.org.



Video conferencing became Learning By Doing's new way of conducting meetings in 2020.