

2022 ANNUAL REPORT



GRAND COUNTY

LEARNING BY DOING

A unique East-West Slope partnership

www.grandcountylearningbydoing.org

CONTENTS



CPW fish surveying efforts in 2022. Photo courtesy of CPW.

01

About Learning By Doing

02

Year in Review

03

Learning By Doing Projects

05

Water Operations

06

Aquatic Resource Monitoring

08

Media and Outreach

09

What's Next for LBD

09

Partner Support



LBD partners helped Colorado Parks & Wildlife collect fish data by electrofishing the Fraser River as it flows through Granby Ranch. Photo courtesy of Jon Ewert of CPW.

ABOUT 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 within the Cooperative Effort Area (CEA). The LBD partners have committed to this goal while also respecting the interests and legal responsibilities of each partner organization. Our group of stakeholders emerged from two Intergovernmental 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 Municipal Subdistrict's Windy Gap Firming Project. While LBD 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 (CPW)
- ▶ Colorado River Water Conservation District (River 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 (GCWIN)
- ▶ Grand County Water and Sanitation District
- ▶ Irrigators of Lands in the Vicinity of Kremmling (ILVK)
- ▶ 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 (USFS)
- ▶ U.S. Fish and Wildlife Service (USFWS)

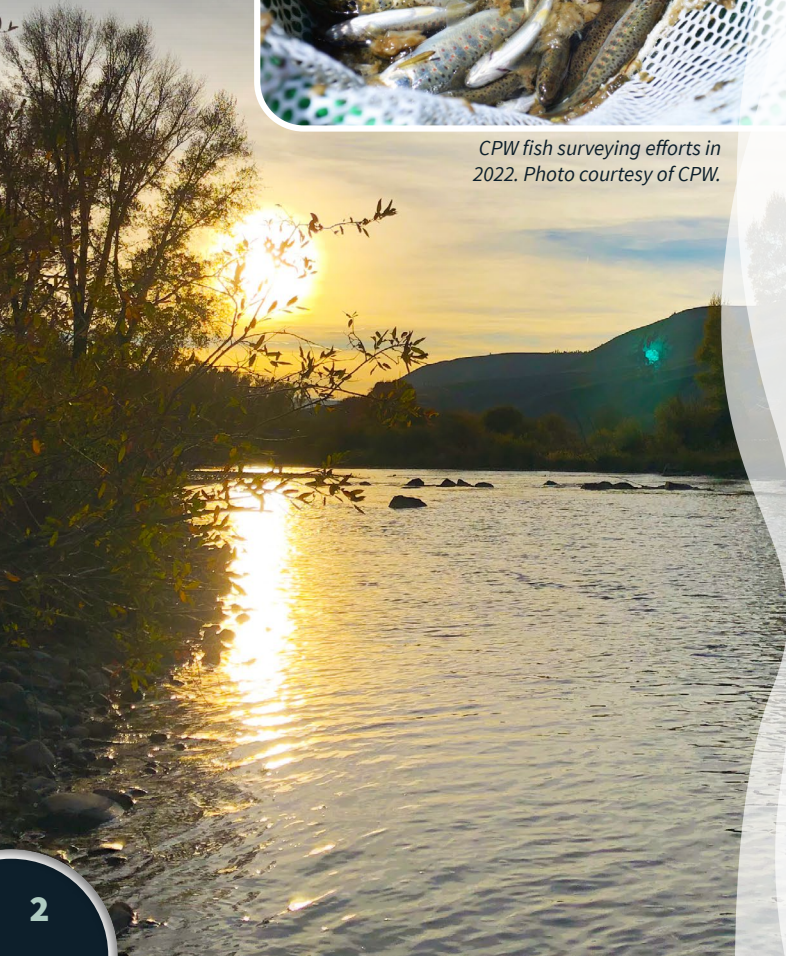
YEAR IN REVIEW



GCWIN collects stream temperature data for LBD. Picture of Mary Price, GCWIN Executive Director, collecting data at the Fraser Flats River Habitat Project site. Photo courtesy of GCWIN.



CPW fish surveying efforts in 2022. Photo courtesy of CPW.



Highlights from 2022

▶ **INVESTED \$58,873 IN ONGOING MONITORING**

LBD's [2022 Aquatic Resources Monitoring Plan](#) surveyed conditions that affect aquatic resources and habitat in the CEA: assessing stream temperature data at 67 sites including weekly assessment of data at 10 sites to support coordinated water operations, 15 sites for sediment and algae assessment, and 12 sites for macroinvertebrates. LBD keeps close track of CPW fish population survey results in the Fraser River, Colorado River, Williams Fork River, and Willow Creek. LBD's monitoring efforts track and supplement extensive ongoing monitoring by individual partners.

▶ **ENGAGED THE COMMUNITY**

LBD partners participated in the 2022 Colorado Basin Mini-Tour hosted by Water Education Colorado in August 2022 and published [quarterly e-newsletters](#). LBD also kicked off the stakeholder engagement program of Grand County's Stream Management Plan (GC SMP) update. [Sign up to receive LBD's quarterly e-newsletter](#).

▶ **COORDINATED WATER OPERATIONS**

LBD conducted weekly conference calls with 12 agencies from June through early September to coordinate reservoir releases and system operations in an effort to maintain water temperatures suitable for fisheries. More information can be found in the Water Operations section and in the 2022 Operations Report.

▶ **PHASE 1 UPDATE TO GRAND COUNTY'S STREAM MANAGEMENT PLAN**

LBD was awarded grants from the Colorado Water Conservation Board that were matched with funds from LBD partners and in-kind donations to start the process to update [Grand County's 2010 Stream Management Plan](#) (GC SMP). Phase 1 consists of two parts: (1) conduct a comprehensive analysis of data collected to date (i.e., watershed assessment), and (2) design a broad stakeholder outreach and engagement program, which will provide the foundation for updating the GC SMP.



LEARNING BY DOING PROJECTS

LBD focuses on restoring aquatic habitat and plans for the future

A key function of LBD 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, drought 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, LBD is currently undertaking projects using partner contributions and grants.

COLORADO RIVER CONNECTIVITY CHANNEL

On May 9, 2022 the Natural Resources Conservation Service released a Finding of No Significant Impact for the Environmental Assessment of the Colorado River Connectivity Channel project.

The \$30 million project, proposed by Trout Unlimited, Northern Water Municipal Subdistrict, Grand County, the Upper Colorado River Alliance, and supported by project partner Colorado Parks and Wildlife (CPW), will build a natural river channel around Windy Gap Reservoir to improve aquatic habitat in the Fraser and Colorado rivers.

Built in the mid-1980s, Windy Gap currently blocks fish movement upstream and downstream of the dam, as well as sediment transport downstream. It also elevates

stream temperatures downstream of the dam when the shallow reservoir water is released. Construction of the Connectivity Channel will reconnect aquatic habitat, reduce stream temperatures, and restore natural river processes that are currently impacted by the dam.

In addition to its benefits for fish passage and habitat quality, the Connectivity Channel will also be open for public fishing, creating approximately one mile of new river angling opportunity.

Work on the project began in August 2022 and is expected to be substantially complete by the end of 2023. Opening the area for public angling access will be determined once the riparian habitat and fishery are established to support angling opportunities.



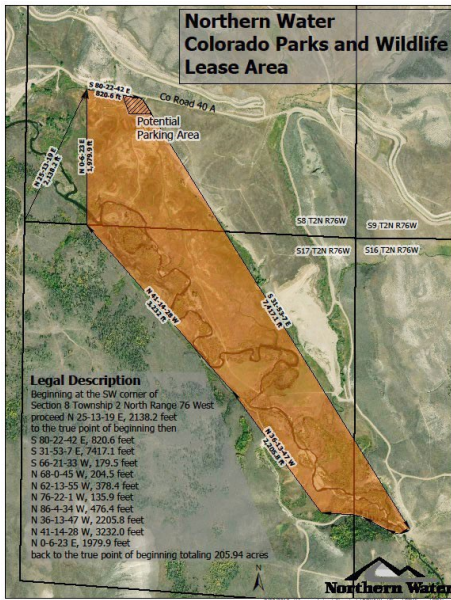
Ongoing construction on the Colorado River Connectivity Channel. Photo courtesy of Kevin Lock of Northern Water.



Fraser River sediment pond that helps to reduce the amount of sand in the Fraser River. Photo courtesy of Denver Water.

FRASER RIVER SEDIMENT POND

In 2010, Denver Water and the Colorado Department of Transportation, in cooperation with LBD, constructed a sediment pond on the Fraser River below Berthoud Pass to capture traction sand used on the pass that later flows into the Fraser River and can impair its aquatic habitat. Tons of traction sand are captured in the pond every year. In 2022, 90 tons of traction sand were removed from the sediment pond. A total of 5,556 tons of traction sand has been removed since 2010. The improvement in the aquatic environment has been evident, with the return of a variety of habitats (deep holes, riffles, and runs) for trout.



Map of the proposed public angling access and restoration work below Willow Creek Reservoir. Photo courtesy of Northern Water.

WILLOW CREEK RESTORATION CONCEPTUAL DESIGN

Northern Water is completing work with Stillwater Sciences on a conceptual design for restoration, improved habitat for fisheries, and basic facilities to accommodate public angling access to Willow Creek in an area below Willow Creek Reservoir. The project includes approximately 2 miles of Willow Creek within an area Northern Water has leased to CPW for public angling and small game hunting. The project area has previously been impacted by cattle grazing, and experiences issues with water quality, including warm temperatures at times, and some nutrient loading due to inflows from Church Creek. Grazing was discontinued in 2021. The conceptual design project is nearing completion and lays out a phased implementation of primarily process-based restoration approaches to address physical, aquatic life, and water quality concerns.

PROPOSALS FOR FUTURE RIVER RESTORATION PROJECTS

Members of LBD's Management Committee updated the [Public/Private Partnership Project Guidance](#) document and project ranking scoresheet in anticipation of ranking and selecting new projects to focus on in 2023.

PHASE 1 UPDATE TO THE GRAND COUNTY STREAM MANAGEMENT PLAN

Since the inception of the 2010 GC SMP, changes have occurred throughout Grand County on both minor and landscape scales that warrant a necessary reexamination of the technical aspects of the SMP to better reflect current conditions. In addition, a significant amount of new data has been collected throughout the CEA that would support a robust watershed assessment to improve characterization and prioritization of areas of concern compared to the existing GC SMP. The Intergovernmental Agreements that founded LBD state that it is the task and responsibility of LBD to update the GC SMP.

During Phase 1, LBD released a Request for Proposals to seek a consulting firm to conduct the comprehensive analysis of data collected to date (i.e., watershed assessment). After extensive review and interviews, LBD hired Lotic Hydrological to conduct the watershed assessment. Similarly, a Request for Proposals was released to seek a consulting firm to design and facilitate a broad stakeholder outreach and engagement program, which will provide the foundation for updating the GC SMP. LBD hired Peak Facilitation to lead the stakeholder outreach program, which was kicked off in 2022.



WATER OPERATIONS

Notable events of the 2022 water operations season

The LBD Operations Subcommittee held weekly teleconference calls to discuss runoff operations beginning June 1, 2022. Discussion focused on the challenges brought about by multiple factors, including:

- ▶ A two-week long outage at the Shoshone Power Plant
- ▶ Below average runoff conditions
- ▶ The prospect of minimum releases from a depleted Green Mountain Reservoir impacting streamflow and water temperature in the Colorado River below Kremmling

A full LBD 2022 Operations Report can be found on our [website](#). This report summarizes 2022 LBD-related operations, including:

- ▶ Denver Water's Moffat Collection System bypasses totaling approximately 200 acre-feet (af) during runoff season in August to mitigate high water temperatures.
- ▶ River District's Wolford bypass and release from storage of approximately 500 af to mitigate high water temperatures.
- ▶ Release of 5,412 af from the Endangered Fish Pool in Granby Reservoir for the Upper Colorado River Endangered Fish Recovery Program.



AQUATIC RESOURCE MONITORING

Evaluating Grand County's aquatic habitat

Each year, LBD evaluates, funds, and implements an extensive monitoring program for streams throughout its CEA in Grand County. LBD's efforts to monitor the local aquatic habitat in the CEA are ongoing and supplement those monitoring efforts in connection with Denver Water's Gross Reservoir Expansion Project and Northern Water's Municipal Subdistrict's Windy Gap Firing Project.

For its ninth consecutive year, LBD continued to monitor the health of aquatic resources within the Colorado, Fraser, and Williams Fork River Basins in 2022. [Click here to view monitoring results in the 2021 Aquatic Resource Monitoring Report.](#)

This year, LBD invested \$58,873 to monitor stream temperature, river substrate, and macroinvertebrate (aquatic organism) populations. Monitoring efforts are described in the [2022 Aquatic Resource Monitoring Plan](#), which is prepared by the LBD Monitoring Subcommittee. In addition, LBD considers data from fish population surveys conducted by CPW in the Fraser and Colorado rivers. [All monitoring reports can be accessed on LBD's website.](#)

MACROINVERTEBRATE COMMUNITY

Macroinvertebrate communities are a good indicator of overall stream health. To assess the existing state of macroinvertebrate communities, LBD monitored macroinvertebrate species diversity and distribution at 12 sites in the Fraser, Colorado, and Williams Fork River Basins in 2022. These data will be used to assess compliance with Colorado's aquatic life standard and the impacts of restoration efforts performed by LBD.



GEI Consultants collected pebble counts and core samples from this location on the Colorado River upstream of Williams Fork. Photo courtesy of GEI Consultants.

RIVER SUBSTRATE

Monitoring of river substrate helps to evaluate the efficiency of flushing flows in key river reaches within the CEA. Substrate data include field assessments of the physical conditions in riffles, sediment size and embeddedness in trout spawning habitat, changes in particle size and distribution, and algal conditions. In 2022, LBD monitored 15 sites in the Fraser River, Saint Louis Creek, Ranch Creek, Colorado River, and Willow Creek for 400-count pebble counts and algae and embeddedness. Historic core sampling at spawning beds occurred at 5 sampling sites in the Fraser River, Ranch Creek, and Colorado River. A Riffle Stability Index was measured at 9 sites in the Fraser River, Ranch Creek, Colorado River, and Saint Louis Creek.

STREAM TEMPERATURE

In 2022, LBD monitored stream temperature at 11 sites within the CEA. LBD's stream temperature monitoring program supplements the efforts of the LBD partner entities and other entities which in total monitor temperature at 67 sites within the CEA. The data collected helps the LBD Operations Subcommittee make informed decisions about releases of flows that were determined to best maintain the ecological needs of the stream in relation to its fisheries.

Additionally, LBD's Monitoring Subcommittee tracks:

- ▶ Colorado's 303(d) list of impaired for waters, where water bodies are not meeting water quality standards or designated uses. 303(d) listings are informed by data collected by LBD partners and others under contracts with entities like GCWIN and the U.S. Geological Survey.
- ▶ Colorado River Connectivity Channel pre-project monitoring, and
- ▶ River restoration efforts by ILVK.


MEDIA AND OUTREACH

Informing the public

LBD publishes quarterly e-newsletters ([February](#), [June](#), [August](#), [October](#)) to keep the public informed. In addition, LBD published a [press release on September 1, 2022](#), which discussed how our partners worked to bolster flows in Grand County.

LBD facilitated a Post-Fire Science, Research, and Monitoring Network to discuss research projects, recovery efforts and data collection surrounding the East Troublesome and Williams Fork Fires. This group meets twice annually to share results, build partnerships for future projects, and track various initiatives.

Along with GCWIN, LBD worked with an intern to compile and upload sediment, macroinvertebrate, and stream temperature data to GCWIN's AWQMS database. These data will be used for the comprehensive watershed assessment. This data is currently available for public access. [Access data currently housed in the GCWIN database.](#)

A photograph showing a helicopter in flight, dropping a large net filled with hay mulch. The net is suspended by a rope and is positioned over a field of hay. In the background, there are trees and a yellow tractor. The sky is cloudy.

LBD partners worked with federal agencies to implement 8,000 acres of high priority aerial mulching on federal lands to reduce the potential of hillslope erosion in watersheds at high risk. Photo courtesy of Northern Water.

WHAT'S NEXT FOR LEARNING BY DOING

Moving forward through the contributions of dedicated stakeholders

A main focus of LBD in 2023 will be the phase 1 update to the GC SMP. The watershed assessment and stakeholder engagement program will be complete in the winter of 2023. During 2023, LBD will host five open house stakeholder meetings (three in person and two virtual) with the help of Peak Facilitation. In addition to these open house meetings, several focus group meetings will be held virtually. LBD will start planning for phase 2, which will rely on results from the watershed assessment to identify and prioritize areas of concern to update the GC SMP.

LBD will also focus on prioritizing restoration projects in 2023. The Management Committee will select a project(s) to focus our efforts on in 2023.

Partner Support

Each LBD partner organization dedicates numerous hours of staff and/or consultant time, funding, and valuable expertise to LBD efforts. In addition, what we have accomplished so far would not be possible without the funding assistance of the CWCB — and the generosity of Devil Thumb's Ranch.

To all our partners, thank you.

For more information, visit grandcountylearningbydoing.org.

LBD partners conducts site visits of potential restoration projects. Photo courtesy of Anna Drexler-Dreis.





GRAND COUNTY
LEARNING BY DOING

A unique East-West Slope partnership

www.grandcountylearningbydoing.org