

2023

ANNUAL REPORT



GRAND COUNTY

LEARNING BY DOING

A unique East-West Slope partnership

www.grandcountylearningbydoing.org



CONTENTS

1

About Learning By Doing

2

Year in Review

3

Learning By Doing Projects

5

Water Operations

6

Aquatic Resource Monitoring

8

Media and Outreach

9

What's Next for LBD

9

Partner Support

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 permit compliance, mitigation, 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

- ◆ 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 (BLM)
- ◆ U.S. Bureau of Reclamation (BOR)
- ◆ U.S. Forest Service (USFS)
- ◆ U.S. Fish and Wildlife Service (USFWS)

YEAR IN REVIEW – Highlights from 2023

- ◆ **INVESTED \$77,978 IN ONGOING MONITORING** – LBD’s [2023 Aquatic Resources Monitoring Plan](#) surveyed conditions that affect aquatic resources and habitat in the CEA. This monitoring effort includes:
 - Supporting established monitoring at 67 sites for stream temperature and funding for weekly data downloads at select sites to inform LBD’s Operations Subcommittee.
 - Funding monitoring to capture sediment conditions in the streams including core sampling at 5 sites, 400 count pebble counts and algae assessment at 16 sites, and Riffle Stability Index at 8 sites. Pebble counts were conducted at 2 new sites: one on the Fraser River at Kaibab Park to establish conditions prior to a planned restoration project and one on the upper part of Ranch Creek to increase spatial coverage and to monitor the effects of beavers.
 - Supporting established macroinvertebrate monitoring at 8 sites within the CEA. Funding macroinvertebrate monitoring at 15 sites which includes 2 new sites, one on the Fraser River at Kaibab Park to establish conditions prior to a planned restoration project and one on the upper part of Ranch Creek to increase spatial coverage.
 - LBD works with CPW to stay up to date on 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.
- ◆ **COORDINATED WATER OPERATIONS** – LBD conducted weekly conference calls with 12 agencies from April through early September to coordinate operational flexibility for the best use of dedicated environmental water in an effort to maintain water temperatures suitable for fisheries. More information can be found in the Water Operations section and in the [2023 Operations Report](#).
- ◆ **ENGAGED THE COMMUNITY** – LBD partners participated in the Colorado Water Officials Association meeting in the fall of 2023, published [quarterly e-newsletters](#) and a 2023 annual report. [Sign up to receive LBD’s quarterly e-newsletter](#). LBD hosted four open house stakeholder outreach meetings as part of the process to update Grand County’s Stream Management Plan (GC SMP). LBD also published a hard-copy LBD pamphlet to complement the information shared on the LBD website.
- ◆ **UPDATE TO GRAND COUNTY’S STREAM MANAGEMENT PLAN** – LBD was awarded grants from the Colorado Water Conservation Board (CWCB) that were matched with funds from LBD partners and in-kind donations to update [Grand County’s 2010 Stream Management Plan](#) (GC SMP). Phase 1 will be complete in early 2024 and consists of two parts: (1) a comprehensive analysis of data collected to date (i.e., watershed assessment), and (2) a broad stakeholder outreach and engagement program, which will provide the foundation for updating the GC SMP. Funding was also secured from CWCB for Phase 2, which will prioritize stream reaches and potential habitat improvement projects within the CEA and create a new, interactive GC SMP website. Phase 2 of the GC SMP update will begin in 2024.
- ◆ **KAIBAB PARK AND WILLOW CREEK STREAM IMPROVEMENT PROJECTS** – Funding was secured from CWCB and the Windy Gap Fund to advance these two stream improvement projects in the CEA. LBD formed the Projects Subcommittee to complete these and future stream improvement projects.

LBD members toured the Colorado River Connectivity Channel in September, before the first water flowed through the channel in October. Photo by Northern Water.



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 permits for the Gross Reservoir Expansion Project have been accepted, LBD is currently undertaking projects using partner contributions and grants.

COLORADO RIVER CONNECTIVITY CHANNEL

The \$30 Million project, led by Northern Colorado Water Conservancy District Municipal Subdistrict, and supported by Trout Unlimited, Grand County, and the Upper Colorado River Alliance, with technical input by project partner CPW, has built a natural river channel around Windy Gap Reservoir to improve aquatic habitat in the Fraser and Colorado rivers.

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 water habitat quality, the Connectivity Channel will also be open for public fishing, creating approximately one mile of new river angling opportunity.

On October 25, 2023, the first flows went through the new Connectivity Channel. The project will be fully complete in fall of 2024. Opening the area for public angling access will be determined once the riparian habitat and fishery are established to support angling opportunities. [Check out a video of this historic day.](#)

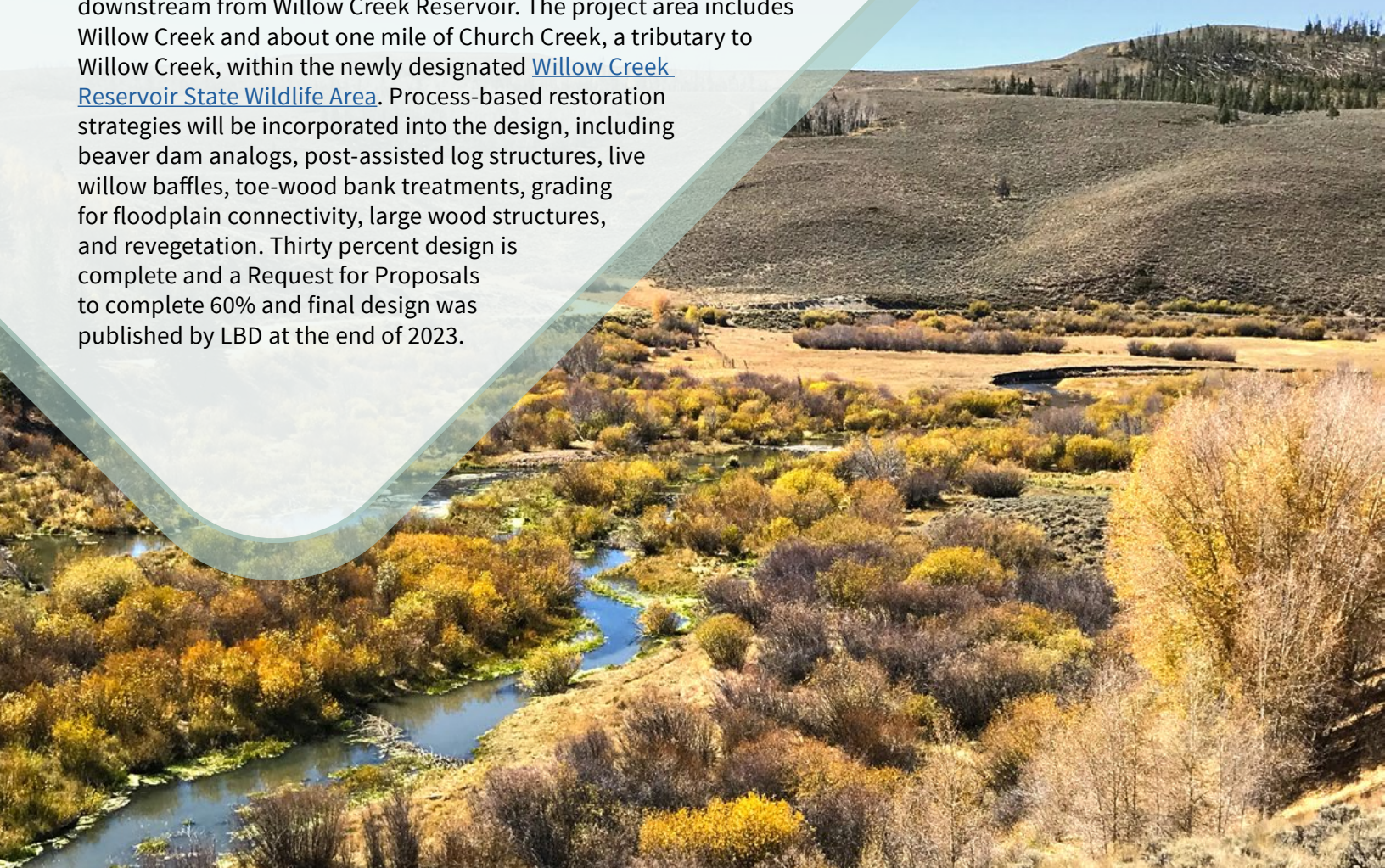
An aerial view of the Colorado River Connectivity Channel looking upstream toward Windy Gap Reservoir. Photo by Northern Water.



WILLOW CREEK RESTORATION PROJECT FINAL DESIGN

This project will be designed to maintain and enhance floodplain connectivity, improve water quality, and improve fish habitat downstream from Willow Creek Reservoir. The project area includes Willow Creek and about one mile of Church Creek, a tributary to Willow Creek, within the newly designated [Willow Creek Reservoir State Wildlife Area](#). Process-based restoration strategies will be incorporated into the design, including beaver dam analogs, post-assisted log structures, live willow baffles, toe-wood bank treatments, grading for floodplain connectivity, large wood structures, and revegetation. Thirty percent design is complete and a Request for Proposals to complete 60% and final design was published by LBD at the end of 2023.

Willow Creek below the reservoir will be the focus of the Willow Creek Restoration Project. Photo by Northern Water.



KAIBAB PARK STREAM IMPROVEMENT PROJECT DESIGN ENGINEERING PLAN

This project aims to improve aquatic habitat for fish and benthic macroinvertebrates in a segment of the Fraser River in the Town of Granby at Kaibab Park. This artificially straight section of the Fraser River lacks sinuosity, which contributes to a lack of stream bed features and aquatic habitat diversity. Once completed, this river section will support a narrowed channel with cooler stream temperatures, increased sediment transport, improved macroinvertebrate habitat, and increased fish density and biomass. LBD is currently working with Stillwater Sciences to design the aquatic habitat improvements and will seek federal funding for the project's construction, which is anticipated in late 2024.

*The Fraser River through Kaibab Park.
Photo by Stillwater Sciences.*

UPDATE TO GRAND COUNTY'S STREAM MANAGEMENT PLAN (GC SMP)

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 hired Lotic Hydrological to conduct the watershed assessment and Peak Facilitation to develop and lead the stakeholder outreach program. In 2023, four open house stakeholder meetings were held to review the watershed assessment and discuss priorities for improved aquatic health. [More information on the stakeholder open houses can be found here.](#)

A Request for Proposals was published in November 2023 for Phase 2 of the update the GC SMP. LBD will hire a consultant in February 2024 for Phase 2, which will consist of the following steps:

- ◆ Selection and application of an assessment framework to prioritize stream reaches within the CEA.
- ◆ Identify measurable planning objectives to respond to priority issues and develop metrics to measure their effectiveness.
- ◆ Use the framework and objectives developed to identify, evaluate, and prioritize potential habitat improvement projects.
- ◆ Develop an implementation process that can be replicated in future years and project cut sheets for initial projects.
- ◆ Create a new GC SMP website, which will contain interactive content and a story map.



Stakeholders attended an open house at the Granby Library in July to learn more and provide input on the update to Grand County's Stream Management Plan. Photo by Jen Stephenson.

WATER OPERATIONS

Notable events of the 2023 water operations season

The LBD Operations Subcommittee held weekly conference calls to discuss runoff operations beginning in April 2023.

A full LBD [2023 Operations Report](#) can be found on our website.

This report summarizes LBD-related operations, including:

- ◆ Release of 5,412 acre-feet from the Endangered Fish Pool in Lake Granby for the Upper Colorado River Endangered Fish Recovery Program
- ◆ Release of 6,000 acre-feet of Endangered Fish water from Wolford Mountain Reservoir, beginning August 5.
- ◆ Release of 320 cubic feet per second of Endangered Fish water from Green Mountain Reservoir, beginning August 30 following declaration of Historic User Pool (HUP) Surplus.
- ◆ Release of 119 acre-feet to Ranch Creek through Denver Water's Voluntary Pilot Program in late August/early September.

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 supplemental to existing partner monitoring programs.

For its tenth consecutive year, LBD continued to monitor the health of aquatic resources within the Colorado, Fraser, and Williams Fork River basins. [The 2022 Aquatic Resource Monitoring Report can be found on LBD's website.](#)

This year, LBD invested \$77,978 to monitor stream temperature, river substrate, and macroinvertebrate (aquatic organism) populations. Monitoring efforts are described in the [2023 Aquatic Resource Monitoring Plan](#), which is prepared by LBD's Monitoring Subcommittee. Note: monitoring results lag annual report publication by 1 year. 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.](#)

Stream temperature monitoring conducted by Grand County Water Information Network. Photo by GCWIN.



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, there was an overall increase in substrate less than 64 mm among most sites and the proportion of fine sediments increased at many sites. However, 12 of the 14 sites surveyed had percentages of fine sediment less than 29.3%, which is the threshold set in CDPHE Policy 98-1. [Click here for the full report.](#)

STREAM TEMPERATURE

In 2022, of the 67 sites monitored where data was available, 9 sites in the Fraser River basin and 11 sites in the Colorado River basin exceeded the Chronic Temperature Standards. This is an increase in exceedances in the Colorado River Basin from 2021 when only 4 sites experienced chronic exceedance, and an increase in the Fraser River basin from 2021 when 7 sites experienced chronic exceedance. [Click here for the full report.](#)

Additionally, LBD's Monitoring Subcommittee tracks:

- ◆ Colorado's 303(d) list of impaired 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 such as GCWIN and the U.S. Geological Survey.
- ◆ Colorado River Connectivity Channel pre-project monitoring.
- ◆ River restoration efforts by ILVK.

*Macroinvertebrate monitoring location at the Fraser River upstream of Granby Sanitation District.
Photo by Timberline Aquatics.*

MACROINVERTEBRATE COMMUNITY

Macroinvertebrate communities are a good indicator of overall stream health. To assess the existing state of macroinvertebrate communities, LBD and LBD Partners monitored macroinvertebrate species diversity and distribution at 20 sites in the Fraser, Colorado, and Williams Fork River Basins in 2022. Of the 20 sites, all but 2 sites received attainment for aquatic life use designation through their MMI score. In general, sites on the Colorado River appeared to be relatively healthy. [Click here for the full report.](#)

MEDIA AND OUTREACH

Informing the public

LBD publishes e-newsletters ([February](#), [April](#), and [November](#)) to keep the public informed as well as [Annual Reports](#). In October, Water Education Colorado [published a story](#) about an instream flow effort in the Fraser River headwaters in which LBD was involved.

LBD engaged the public at [four open house stakeholder meetings in May, July, September, and December](#) to discuss the update to the GC SMP. [Sky Hi News published an article in August](#) about this important stakeholder outreach process.

At the open house in May, Grand County presented the history and background of the SMP, Peak Facilitation Group discussed the overall purpose and scope of the update, and Northern Water and Trout Unlimited gave a high-level summary of the comprehensive watershed assessment. At the July open house Lotic Hydrological presented the background chapter of the watershed assessment and Peak Facilitation Group summarized the [stakeholder survey results](#). In September, LBD informed the stakeholders on flow operations in Grand County and stakeholders participated in a mapping exercise and gave feedback on the vision statement. At the December open house, Lotic Hydrological made the first of two presentations about the watershed assessment.

Stakeholders participate in a mapping and vision statement exercise at the open house in September to discuss the update to the GC SMP. Photo by Anna Drexler-Dreis.



WHAT'S NEXT FOR LEARNING BY DOING

Moving forward through the contributions of dedicated stakeholders

A main focus of LBD in 2024 will be Phase 2 of the update to the GC SMP. The watershed assessment will be complete in early 2024. Phase 2 has two primary objectives, (1) continue to utilize the stakeholder program developed in Phase 1 to receive input on the update to the GC SMP, and (2) create the GC SMP as an interactive website.

LBD will also focus on the Kaibab Park and Willow Creek stream improvement projects. Stillwater Sciences will complete all design work and permitting for the Kaibab Park project and LBD will work on securing federal funding for construction. LBD will have selected a consultant to do the final design and permitting for Willow Creek and will focus on securing federal funding for construction in 2024.

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 Windy Gap Fund — and the generosity of Devil Thumb's Ranch.

To all our partners, thank you.

For more information, visit grandcountylearningbydoing.org.

LBD members tour the Kemp-Breeze stream improvement project in September. Photo by Colorado Parks and Wildlife.





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