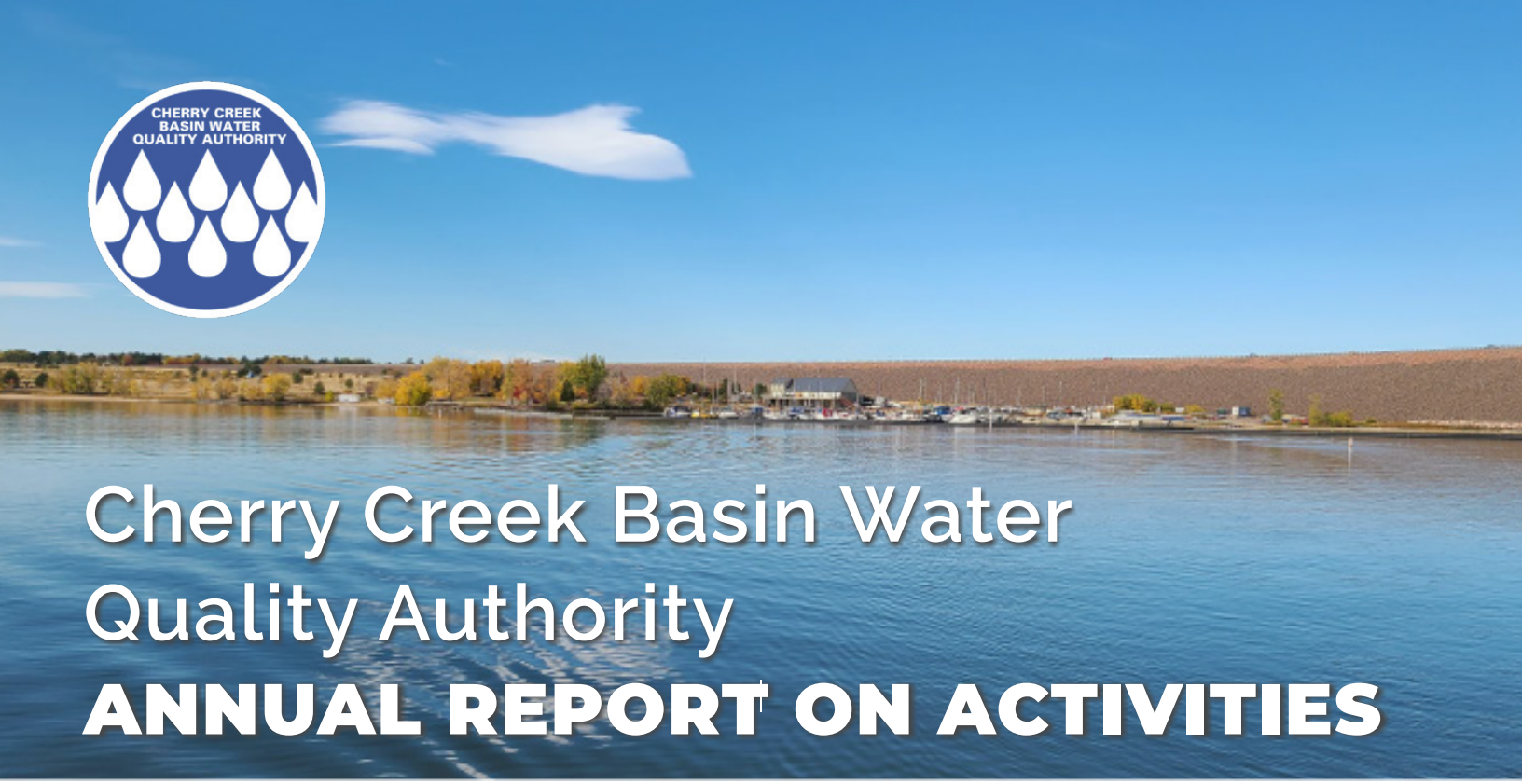
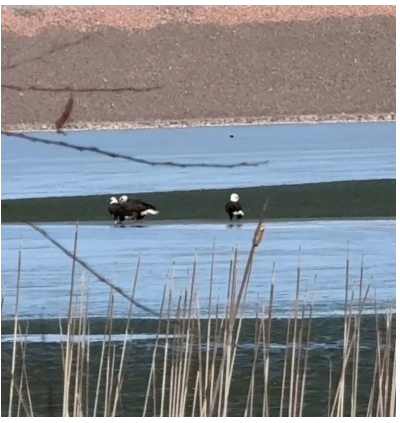
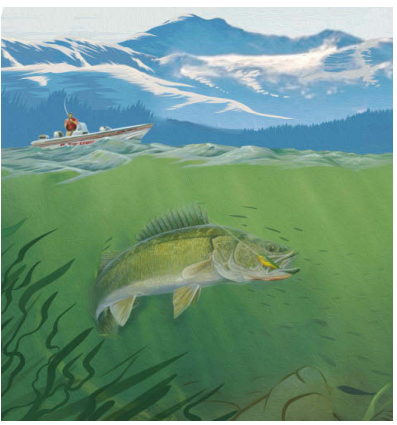


Cherry Creek Basin Water Quality Authority
ANNUAL REPORT ON ACTIVITIES

2024 EXECUTIVE SUMMARY

This is an interactive document.
Click on **bold green text** to get to the referenced material on the CCBWQA interactive website.





CHERRY CREEK WATERSHED AT A GLANCE

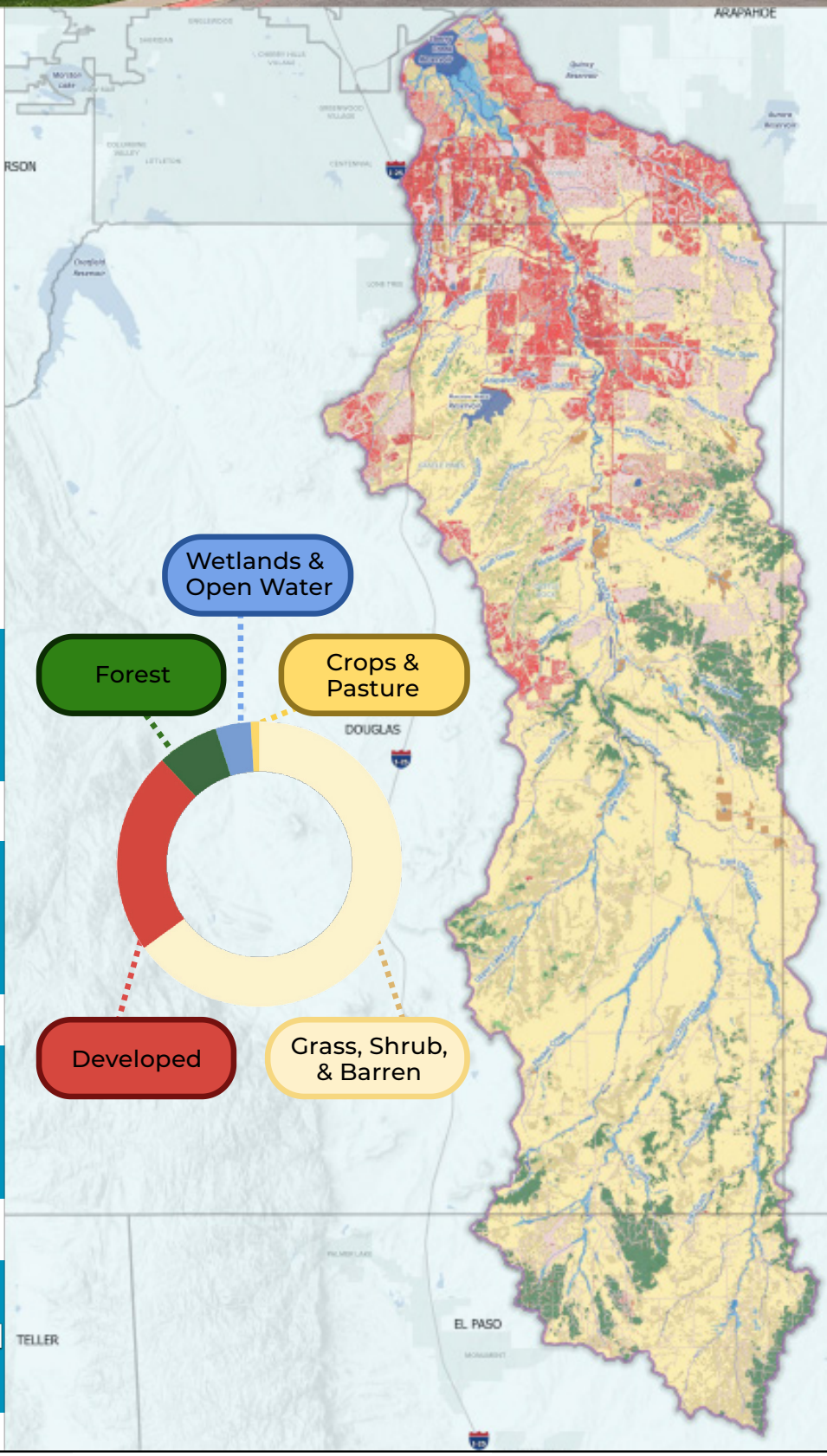
CONTENTS

POPULATION QUADRUPLED From 1990-2020

386 SQUARE MILES Over 2.5x the size of Denver County

SPANS 4 COUNTIES 75% Douglas County

75% OF RESERVOIR INFLOWS Cherry Creek & Cottonwood Creek



2024 ACTIVITIES

The Cherry Creek Basin Water Quality Authority worked with its partners to preserve and protect water quality in Cherry Creek Reservoir

LEADERSHIP FROM ACROSS THE BASIN

BOARD OF DIRECTORS

17 members represented by Counties, Municipalities, Special Districts and Governor Appointees

STREAM RECLAMATION

OVER $2.3 MILLION

Invested into pollution abatement projects in the watershed in 2023 alone.

EXTENSIVE MONITORING PROGRAM

OVER 2,700

Water quality samples analyzed

PUBLIC EDUCATION & OUTREACH

115 ATTENDEES

At the Annual Cherry Creek Watershed Conference

ADVANCED WASTEWATER TREATMENT

6 WASTEWATER TREATMENT PLANTS

below nutrient effluent permitting limits

SPECIAL STUDIES & MODELING EFFORTS

120,000+ LBS OF MATERIAL REMOVED

Wetland Harvesting Pilot Study reduced nutrients from reaching the Reservoir

POLLUTANT REDUCTION FACILITY OPERATION & MAINTENANCE

170 DAYS

Operating the Reservoir Destratification System (RDS)

STORMWATER MANAGEMENT

10 MS4 PERMITEES

Implemented stormwater control measures and innovative programs

HOW IS THE RESERVOIR?

BENEFICIAL USES

Cherry Creek State Park has a record number of visitors every year, and the Reservoir continues to provide space where people enjoy recreating and connecting.

>1.5 MILLION VISITORS
to Cherry Creek Park in 2024

Colorado Parks and Wildlife biologists reported that the **walleye fishery is doing well.**

"This is our version of March Madness, from Day One to when we end, we will have fertilized over 119 million walleye eggs." - Kara Van Hoose, CPW

RESERVOIR WATER QUALITY

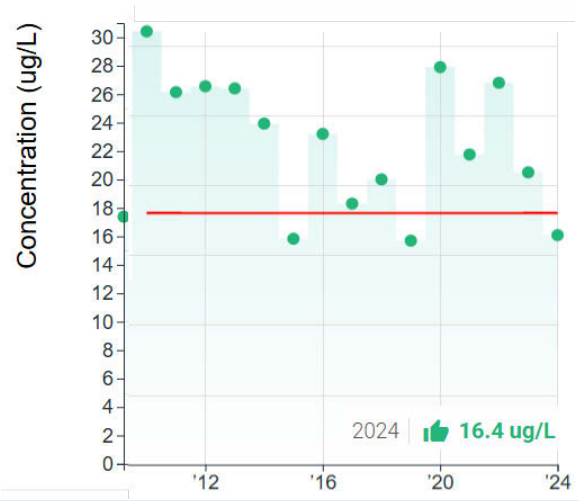
Due in part to on-going efforts to reduce nutrient loading to the Reservoir, the Reservoir attained its chlorophyll-a standard of 18 ug/L during 2024. **The average chlorophyll-a concentration was 16.4 ug/L** for the growing season of July through September.

Seasonal phosphorus concentrations in the Reservoir were higher than they have been relative to the past 20 years, but were significantly lower than last year.

The Reservoir has exceeded the standard for four of the past five years; however, the average chlorophyll-a concentrations were the lowest they've been in the last five years. One undesirable blue-green algae bloom occurred in late July and was responsible for closure to human contact due to the detection of toxins. The bloom dissipated in a few days.

CHERRY CREEK RESERVOIR MET AQUATIC LIFE STANDARDS
for temperature, pH, & dissolved oxygen

Seasonal average chlorophyll-a concentrations.

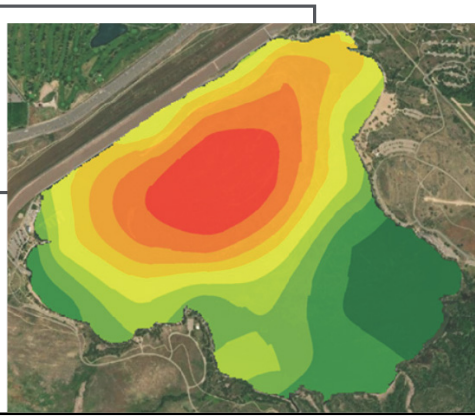


RESERVOIR DYNAMICS

Some of the factors affecting conditions in the Reservoir are challenging or impossible to control and result in year-to-year variations in water quality and environmental conditions. Some of these factors include weather conditions such as **temperature, wind, and precipitation patterns.**

Other factors include background sources of phosphorus **loading from the watershed** and **alluvial groundwater** and the release of stored nutrients from **Reservoir sediments** (internal loading). CCBWQA operates a Reservoir Destratification System from April through October to help mitigate some of these influences.

Internal loading from sediments can impact nutrient concentrations in the Reservoir.



HOW IS THE WATERSHED?

~90%
OF AVERAGE
ANNUAL
PRECIPITATION

<3% TOTAL
PHOSPHORUS LOAD TO THE RESERVOIR FROM **WASTEWATER TREATMENT PLANTS**

COTTONWOOD CREEK PRF PROJECTS
EFFECTIVELY REDUCING PHOSPHORUS AND SUSPENDED SOLIDS
DURING STORM FLOWS

The watershed has **experienced significant growth** since Control Regulation 72 was implemented.

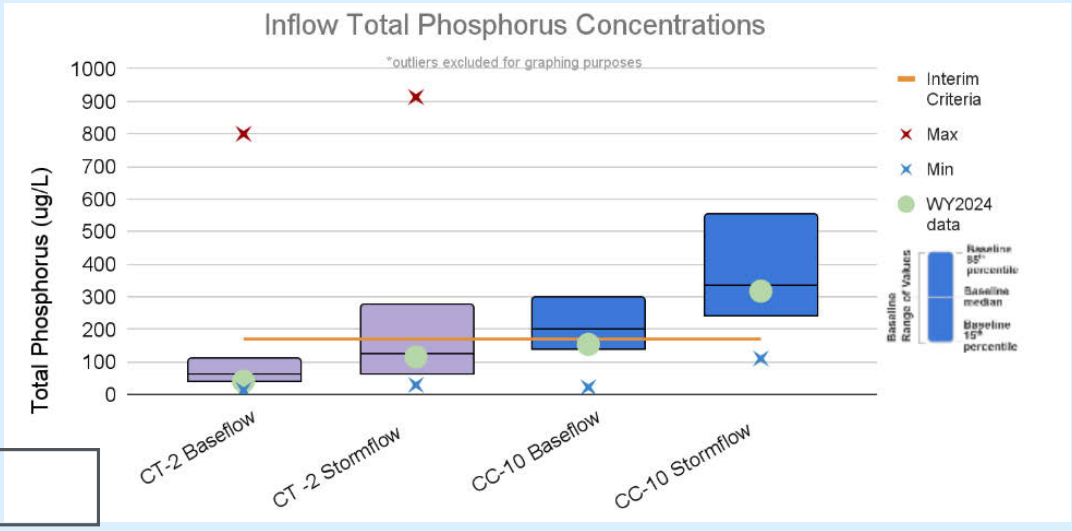
Celebrating the grand opening of the new Education Center Building at Built Wild Days

2024 WATERSHED WATER QUALITY

CCBWQA monitors **phosphorus and nitrogen concentrations in Cherry Creek and Cottonwood Creek** since they are the two main inflows to the Reservoir.

Key findings from 2024 include

- Median total phosphorus concentrations in baseflows and storm flows were lower than long term medians in both Cherry Creek and Cottonwood Creek.
- Baseline phosphorus concentrations in Cottonwood Creek were ~ 60% lower than concentrations in Cherry Creek.
- Total nitrogen concentrations in both Cherry Creek and Cottonwood Creek were slightly higher than the long-term historical median.
- Median nitrogen concentrations in Cherry Creek were 50% lower than concentrations in Cottonwood Creek.
- Conductivity in the watershed is increasing in both streams and groundwater.
- Median nutrient concentrations were lower downstream of the stream reclamation project on McMurdo Gulch.



Inflow phosphorous concentrations

WHAT DID WE DO TO PRESERVE WATER QUALITY?

CCBWQA and its partners continue to implement pollutant reduction facilities, stormwater control measures, construct stream reclamation projects and conduct several special projects and studies to reduce nutrient loading throughout the watershed

STREAM RESTORATION

Dove Creek Phase 2 (Chambers Rd to Pond D-1)

In 2024, Phase 2 of the Dove Creek stream restoration project was completed.

The project included step pool structures for grade control, bank protection and grading to create overbanks providing a wider stream corridor that stabilizes the stream and reduces erosion potential. The Southeast Metro Stormwater Authority (SEMSWA) is the project lead.

Under Construction

Cherry Creek at Scott Avenue

Cherry Creek at Dransfeldt: Design was completed in 2024 and construction began in April 2024 and is expected to be completed in April 2025.

Cherry Creek upstream of Scott Avenue: Construction began in September 2024 and is expected to be completed in May 2025.

Wetlands Harvesting Project

In 2024, CCBWQA completed year four of a six-year pilot project to cut and dispose of wetland vegetation to reduce phosphorus and nitrogen from being carried to Cherry Creek Reservoir after the plants decay. Vegetation rebounds within the year.

Stormwater Best Management Practice (BMP) Effectiveness Study
CCBWQA continued a study to synthesize the most current information on the expected effectiveness of stormwater BMPs (also known as stormwater control measures). The draft report was completed in 2024.

Wetland plants harvested in 2024 removed nutrients from the watershed.

Receiving Pervious Area Study

CCBWQA partnered with SEMSWA and the Mile High Flood District to develop a more quantitative understanding of volume reduction benefits of receiving pervious areas such as grass buffers, grass swales and other landscape areas. Reducing runoff volumes through green infrastructure can reduce pollutant loads and channel erosion.

OUR PLANS FOR 2025

CCBWQA will continue its routine activities along with some new activities in 2025. Highlights include:

Continue the extensive **long-term monitoring program** that includes weather and stream flow, water quality in the watershed and Reservoir, pollutant reduction facility performance and phytoplankton and zooplankton in the Reservoir

Invest $3.4 million in stream reclamation projects in the watershed. These include projects on Cherry Creek, Happy Canyon, Lone Tree Creek, Piney Creek and the Reservoir shoreline.

Conduct the conceptual and preliminary design of Cherry Creek Reach 1 just upstream of the Reservoir to determine feasibility of restoration staging, timing and funding.

Continue the **wetland harvesting pilot project** for the Pollutant Reduction Facility on Cottonwood Creek and evaluate potential benefits through water quality analysis.

Finalize a major update to the 2012 Watershed Plan, including joint TAC and Board workshops and subcommittee participation. The updated Watershed Plan integrates **geospatial data** from multiple partners integrated into **CCBWQA's Data Portal**.

Continue to host the **Cherry Creek Stewardship Partners** annual watershed conference in the fall of 2025.

Operate the Reservoir Destratification System from April through October.

Communicate and share information and data with sister watersheds on the front range, including **Bear Creek, Chatfield, Barr-Milton,** the North American **(NALMS)** and Colorado Lake and Management Associations **(CLRMA).**

Participate with MHFD, Parker and Douglas County to support a Sulphur Gulch, Sara Gulch, Tallman Gulch & Tall Tributary Master Drainage Plan.

Finalize a Capital Improvement Plan project identification and prioritization process to implement for future projects and funding allocation in the basin.

LEARN MORE

LEARN MORE ABOUT THE PROGRAM

- CCBWQA WY 2024 Annual Report on Activities
- WY 2024 Monitoring Program Annual Report
- CCBWQA Data Portal
- Cherry Creek Basin Water Quality Authority Website
- Cherry Creek Stewardship Partners
- Cherry Creek State Park
- CCBWQA Interactive Map

THANK YOU TO OUR PARTNERS

MS4s

WWTFs