

EVALUATING WETLANDS WATER
QUALITY IMPACT: THE
BEGINNINGS OF A DATA PORTAL
TOOL TO CUT THROUGH THE
JUNGLE OF WHAT, WHEN,
WHERE, WHY AND HOW



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SOLITUDE
LAKE MANAGEMENT

Restoring Balance. Enhancing Beauty.

November 6, 2019

WHAT FUNCTION DO WETLANDS SERVE IN THE CHERRY CREEK WATERSHED?

Today at work I found some Wild Corndogs growing in their natural habitat. This was real exciting for me as I have never picked fresh corndogs before, but I have no idea how to tell when they are ripe as they tasted horrible no matter how much mustard I put on them



WETLANDS AS POLLUTION REDUCTION FACILITIES IN THE CHERRY CREEK WATERSHED

What is a PRF?

WQCC Regulation No. 72 (CHERRY CREEK RESERVOIR CONTROL REGULATION) states:

"Pollutant Reduction Facility (PRF) means projects that reduce nonpoint source pollutants in stormwater runoff that may also contain regulated stormwater. PRFs are structural measures that include, but are not limited to, detention, wetlands, filtration, infiltration, and other technologies with the primary purpose of reducing pollutant concentrations entering the Reservoir or that protect the beneficial uses of the Reservoir."



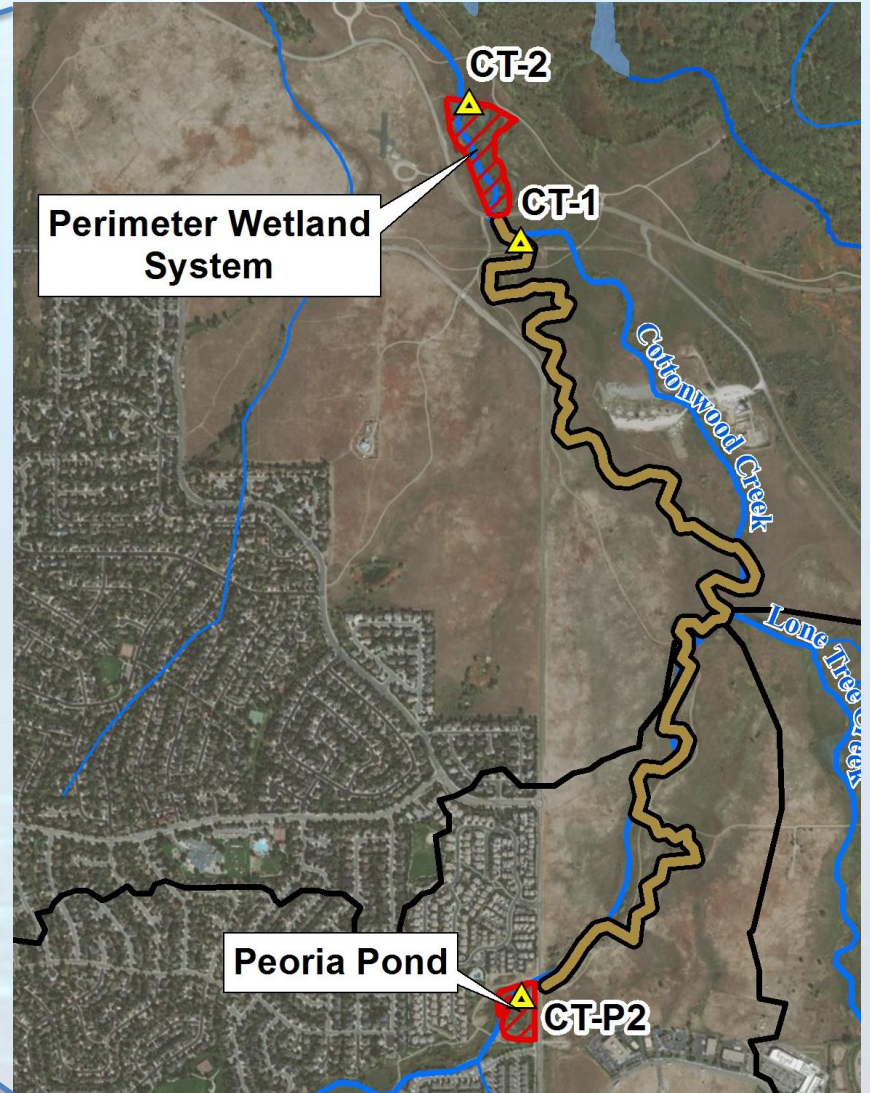
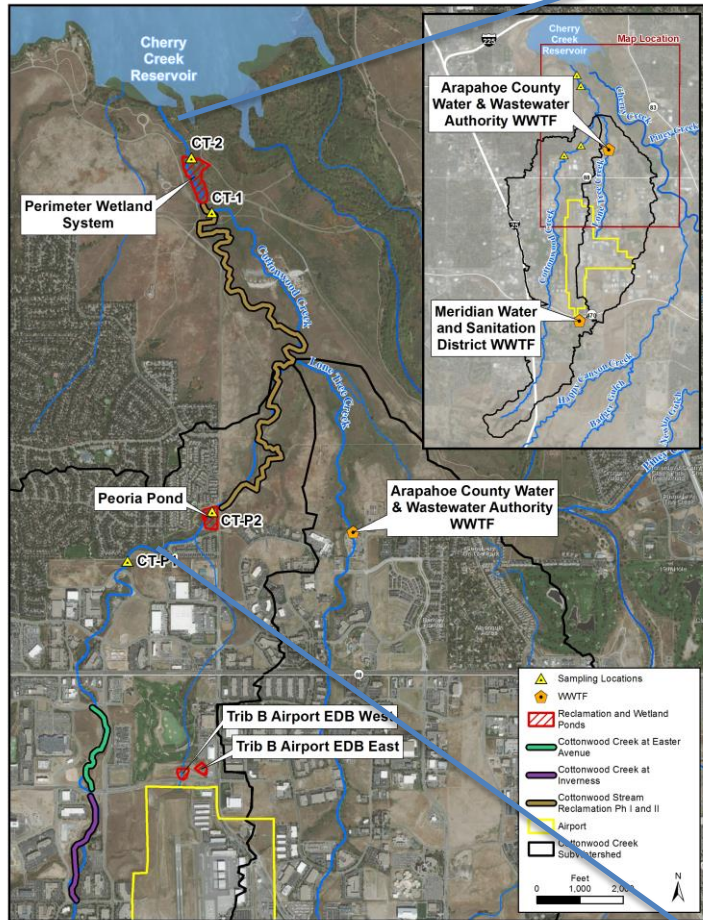
Our Vision:

Water quality in Cherry Creek Reservoir and Watershed that optimizes beneficial uses for public.

Our Mission:

Protect Watershed by preserving, enhancing and balancing water quality in Cherry Creek Reservoir and Cherry Creek Watershed.

COTTONWOOD CREEK WETLAND PONDS



COTTONWOOD CREEK PRF PERFORMANCE STORYBOARD

Filters

[View Locations on Map](#)

Start Date

09/01/2013

End Date

09/30/2018

PRFs

Peoria Pond PRF

Parameter

TP

Flow Conditions

All Flow

Season

Annual



FILTERS

- Period of Analysis
- PRF Location
- Parameters – Nutrients, Suspended Solids, etc.
- Base vs storm flow
- Annual vs seasonal
 - Spring – Summer
 - Fall - Winter

From: <http://ccbwaportal.org/>

PEORIA POND WETLAND WATER QUALITY

Example - 2012-present

Upstream (•blue) to downstream (•green)

Total P concentrations

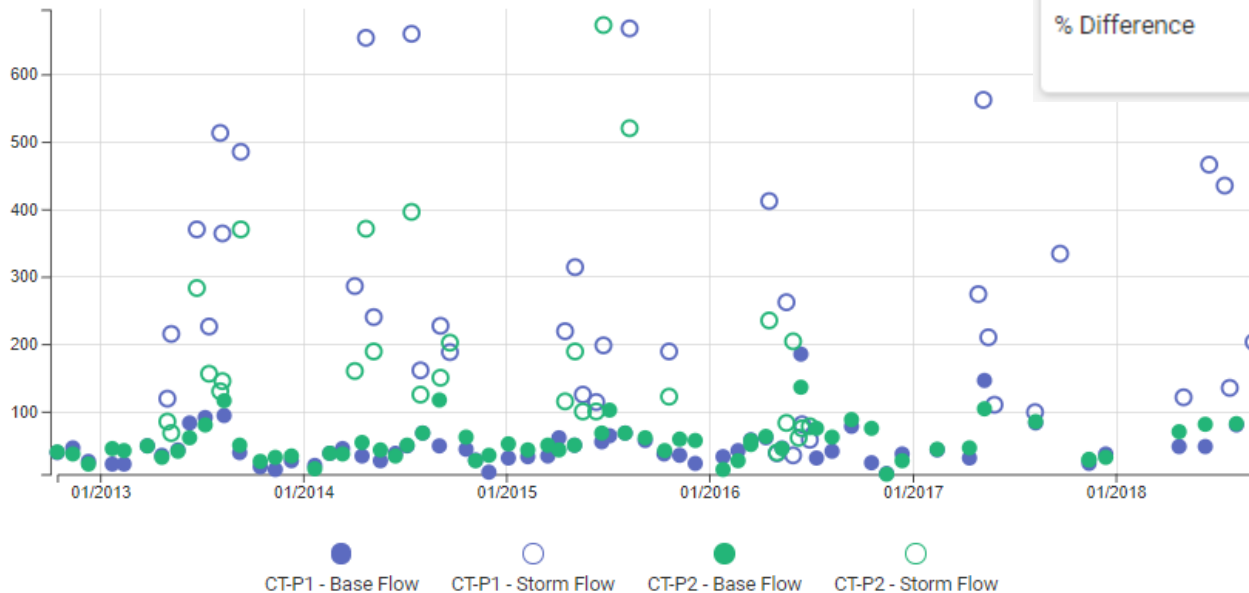
Base and Storm Flow Conditions

Summary

Type	Average	Max	Min
CT-P1 (Upstream)	140.4	696.0	8.0
CT-P2 (Downstream)	97.0	673.0	7.0
Net Difference	-43.3	-23.0	-1.0
% Difference	-30.9	-3.3	-12.5

Upstream to Downstream Concentrations Over Time (ug/L)

TP @ Peoria Pond PRF



PEORIA WETLANDS WATER QUALITY

Example - 2012-present

Base (• solid) and storm flow (o empty)

Net Change TP over time

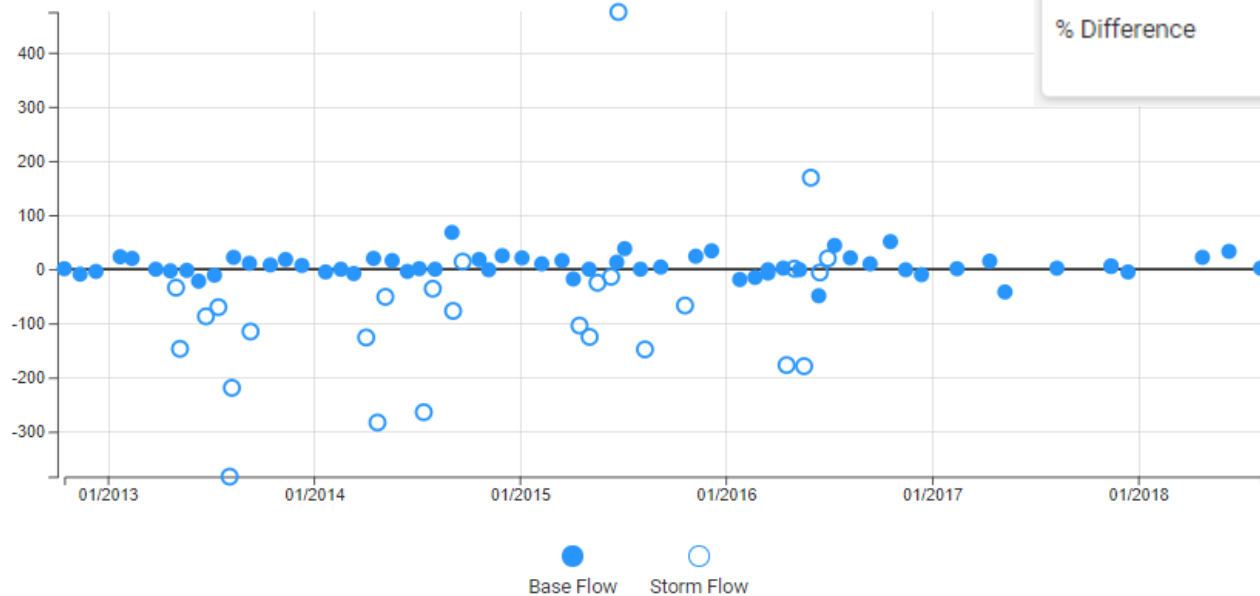
Above/ Below line – increase/ decrease

Summary

Type	Average	Max	Min
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Net Difference	-43.3	-23.0	-1.0
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Net Change Over Time (ug/L)

TP @ Peoria Pond PRF



PERIMETER POND WETLAND WATER QUALITY

Example - 2014-present

Upstream (●blue) to downstream (●green)

Total Suspended Solids

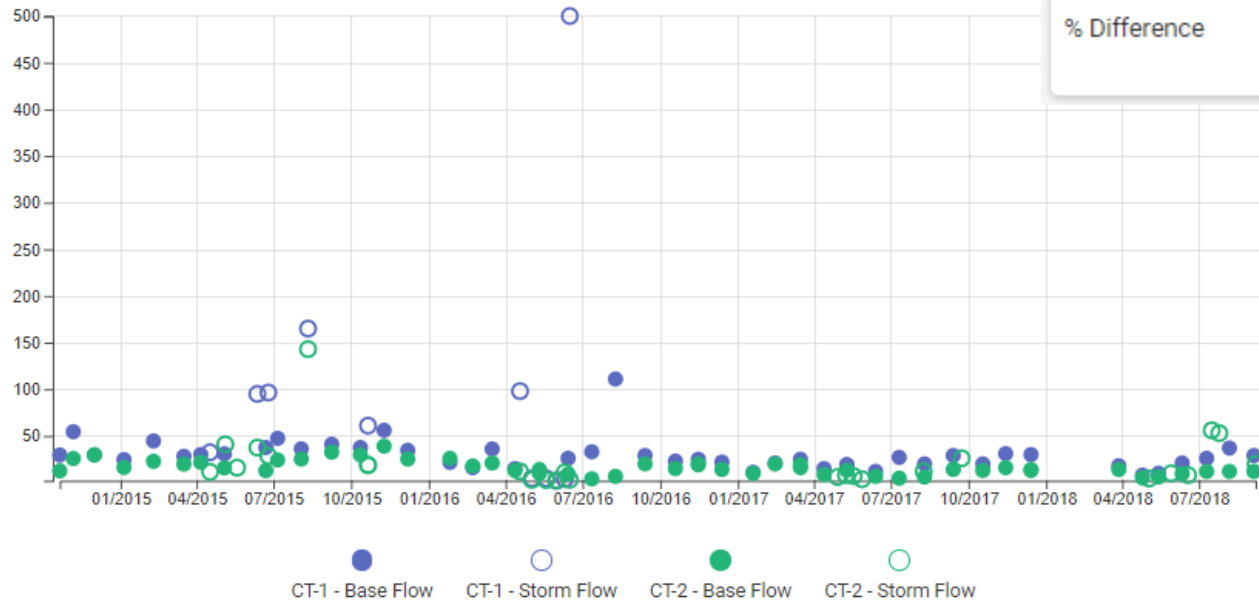
Base and Storm Flow Conditions

Summary

Type	Average	Max	Min
CT-1 (Upstream)	41.8	500.0	2.0
CT-2 (Downstream)	18.0	143.0	2.3
Net Difference	-23.7	-357.0	0.3
% Difference	-56.8	-71.4	15.0

Upstream to Downstream Concentrations Over Time (mg/L)

TSS @ Perimeter System Wetland PRF



PERIMETER POND WETLANDS WATER QUALITY

Example - 2014-present

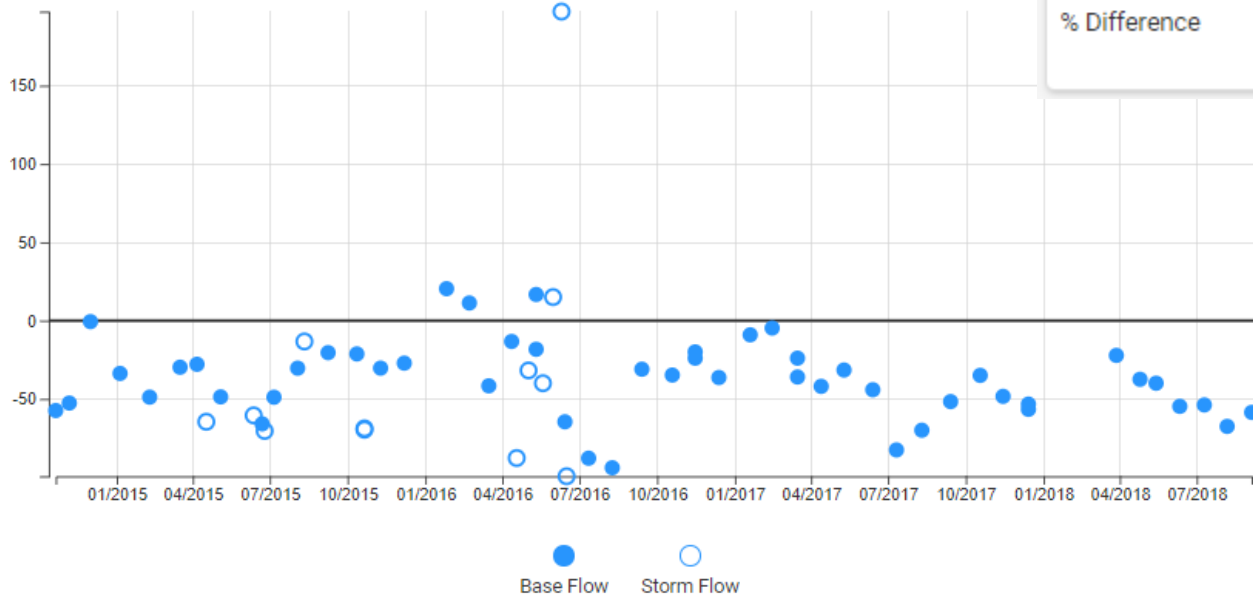
Base (• solid) and storm flow (o empty)

Percent Change - TSS

Base and Storm Flow Conditions

Percent Change Over Time

TSS @ Perimeter System Wetland PRF



Summary

Type	Average	Max	Min
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WETLAND WATER QUALITY – NEXT STEPS

EVALUATE

Evaluate data in more detail

- Add statistical analyses to the tool
- Examine function over time
 - Decrease in performance
 - Changes based on time of year
- Response to maintenance



ACTION

Use the findings to guide Authority activities

- Determine if Wetland Harvesting would be effective
 - Leaves or whole plant
 - Timing of activities
- Dredging/ maintenance schedules

THANK YOU! QUESTIONS?



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