CPW White River Studies 2018

COLORADO
Parks and Wildlife
Department of Natural Resources

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December 14 2018

Overview

1. CPW Pond Nutrient Sampling
2. CPW & TU Macroinvertebrate Sampling
3. Fish Population Surveys
4. Time-Lapse Photography of Algal Blooms
5. Lake Avery Water Release

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CPW Pond Nutrient Sampling

Are CPW's ponds contributing nutrients to the White River?

CPW sampled nutrients in pond inflows and outflows in March 2018 and July 2018.

Lab	Analyte
Metro	Ammonia
	Nitrate + Nitrite
	Total Kjeldahl nitrogen
	Total Nitrogen
	Total Phosphorous

North Fork Bel Aire Ponds

- Occasionally stocked with fish (2012, 2019)
- No fish feeding now or in the past

South Fork Bel Aire Ponds

- Stocked annually with fish
- Former hatchery that was decommissioned in early 1970s
- No feeding since it was decommissioned

Sleepy Cat Ponds

- Annually stocked with fish
- No fish feeding now or in the past

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CPW & TU Bug Sampling

- How do MMI scores compare across sites?
- How do MMI scores compare over time? Any trends?

- 10 sites established in 2015 and sampled using semi-quantitative method every year since
- Added quantitative sampling method in 2018

CPW & TU Bug Sampling

•How do MMI scores compare with semi-quantitative vs quantitative methods?

• Needed side by side comparison if we switch to quantitative method for future sampling

CPW & TU Bug Sampling

•Has aerial spraying of pesticides reduced macroinvertebrates that would normally graze on *Cladophora*?

- Established sampling sites above and below two locations with aerial pesticide application
- Sampled those sites pre-spray, post spray, and again almost one month after spraying
- Only one location ended up spraying
- Increased algae present during post spray sampling

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CPW Fish Monitoring

Objectives

- Asses health of salmonid populations in the river
- Use sampling information to make management decisions (e.g., stocking, special regulations)

CPW Fish Monitoring

Four standardized study sites on the main stem White River spanning 37 river miles

Additional sites added in 2018 (Kenney Res. to CR 14)

Information gathered during sampling included:

1. Estimated size of population for each species (e.g. fish/mile)
2. Size structure of populations (e.g., length frequency and relative weight)
3. Spawning success from year to year
4. Presence of disease (e.g. whirling disease, bacterial kidney disease, gill lice)

CPW 2018 Fish Monitoring

1. Sampled 2 of 4 standardized mainstem White River sites by raft electrofishing
2. Sampled an additional 4 mainstem White River sites by jet boat, raft, and bank electrofishing
3. Will analyze data over winter

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Time Lapse

How does the algae change seasonally?

- Addressed this question qualitatively through time-lapse.
- Overall, a failure
- Note – have a time-lapse specific camera for 2019

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Lake Avery Water Release

July 9 - Public Meeting held

July 27 – September 13 -Release 10 to 20 cfs from Avery

About 1,700 AF of water released, 7.6 ft drop in water surface elevation

Lake Avery Water Release

Nutrient samples @ different depths (Total N, Total P)

Nutrient samples downstream of outlet (Total N, Total P, TKN, Nitrite, Nitrate, Ammonia)

Monitored temperature at 7 locations, DO at 1

- July 22 – 79.57 ⁰F at Circle Park
- August 16 – 17.9 cfs at Wakara