

Imagine a Great River For ALL

The Denver South Platte River for the kids along the river:

Trout-in-the-Classroom Environmental-Field-Careers



Trout in the Classroom

DTU Provided Resources:

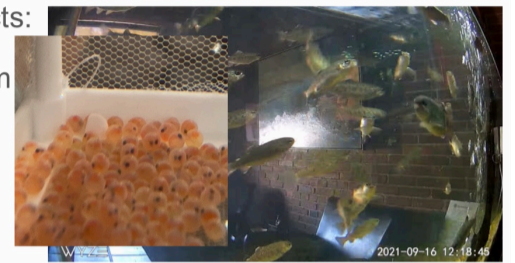
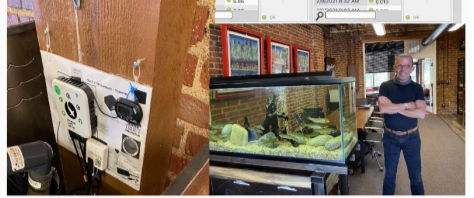
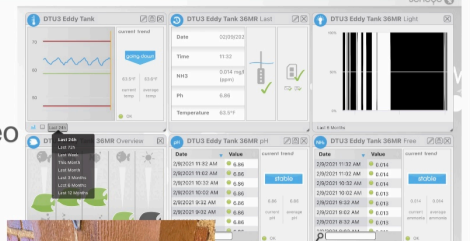
- ❖ Telemetry and livestream Video \$700
- ❖ Curriculum

Opportunities:

- ❖ Raising trout to fingerlings.

Potential Projects:

1. In curriculum



Trout-in-the-Classroom

Release in their Denver South Platte

DTU Provided Resources:

- ❖ Trout-in-the-Classroom trout fingerlings.
- ❖ Plastic buckets, Recovery bins and portable aerator, visible implant elastomer tags.
- ❖ Aquaculture License, Trout Health Certificate for TIC trout, Hatchery coordination.

Opportunities:

- ❖ River Mile: 4-2021, Eddy Tank Sanderson Gulch: 6-2021, MiHi Fishing Derby: 10-2021, Grant Frontier & Overland: 9-2021

Potential Projects:

1. Hands on release of trout into neighborhoods along the Denver South Platte or Denver City park lakes.
2. Lincoln Hills Cares TIC Programs at Prairie View and Vista Peak.
3. Blacklight fingerling habitat study.



Environmental-Field-Careers

River Monitoring with 24x7 Temperature Logg

DTU Provided Resources:

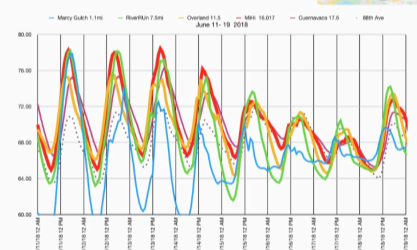
- ❖ Onset hourly temperature sensors logged at 8 sites from Chatfield to 88th Ave in the Denver South Platte.
- ❖ Onset shuttle to readout data from loggers.
- ❖ Google Drive storage of data from 2/2016 in .csv

Opportunities:

- Quarterly readout and cleaning of sensors. 6 hours.
- Download data from shuttle, check quality, copy to Google Drive and append to site data.

Potential Projects:

1. Temperature profiles by season by flow by site by rainfall by ambient temp by date.



Environmental-Field-Careers

eDNA - fish and algae species

DTU Provided Resources:

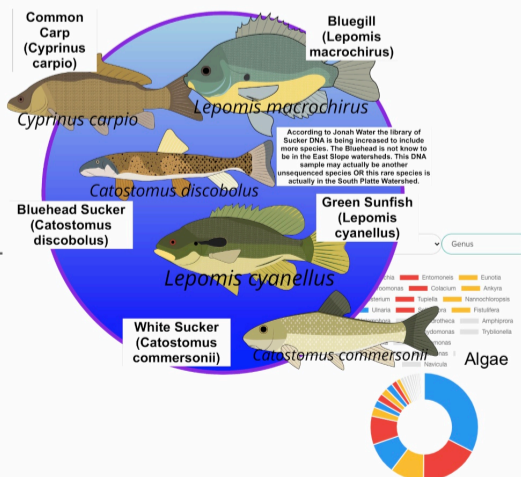
- ❖ Aquatic Environment DNA kit - \$89/test

Opportunities:

- Grab river or lake sample.
- Run sample through filter and submit for eDNA analysis

Potential Projects:

- [Teach eDNA](#) Fish Assemblage - DNA sequencing. Lesson plan, slides, and [activity sheets](#).
- Discover rare or endangered species.



Environmental-Field-Careers

eDNA - River Biodiversity -Fish & Macroinvertebrates

DTU Provided Resources:

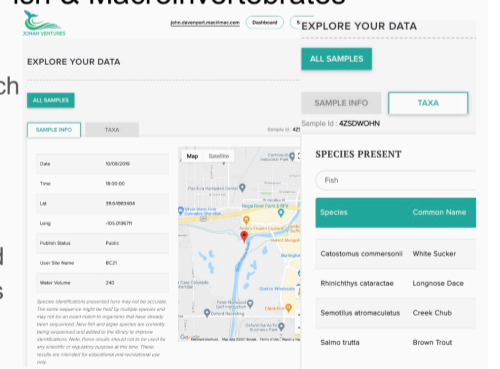
- ❖ eDNA Sampling Kit: \$140/each

Opportunities:

- Spring and Fall sampling.
- Grab river or lake sample.
- Run sample through filter and submit for eDNA analysis

Potential Projects:

1. Validate species found by fishing and macroinvertebrate sampling.
2. Post data and plot species found at each site over time.
3. Correlate species density with restoration projects and fish kills.
4. Provide data to the Colorado Water Quality Control Commission.
5. Work on projects of interest to Colorado Parks and Wildlife.



Urban Rivers for ALL

Access - Education - Careers - Recreation



HAS SERVED OVER **103,000** YOUTH, FACILITATED MORE THAN **10,000**

HOURS OF CURRICULUM AND PARTNERED WITH OVER 75 ORGANIZATIONS.

Access to the River

The youth from marginalized communities live in very close proximity to the Denver South Platte

But they experience numerous social, cultural, physical, and economic barriers to **accessing, using** and **learning** about the river.



Barriers to Access the River



- Generations of segregation from public places.
- 'Silent exclusion' in outdoor spaces.
- Lack of a sense of belonging.
- Lack of awareness of opportunities.
- Lack of cultural models.
- Lack of access point to the river.
- Lack of aquatic life habitat.
- Lack of porta-toilets, receptacles, and trash pickups.
- Lack of river health and species diversity.
- Economic, transportation and time constraints

The **Urban River for All** uses the river

As an educational tool for Science Technology Engineering and Math programs.

Study areas include:

- eDNA biodiversity,
- water pollution,
- fish pathogens,
- aquatic temperature,
- eColi,
- New Zealand Mud Snails,
- macroinvertebrate health



Education - The River as Classroom.

- People of color are underrepresented in STEM careers.
- But Environmental or "Green" Careers have a bigger diversity problem.
- There are 3 times the disparities when compared to other STEM science careers.

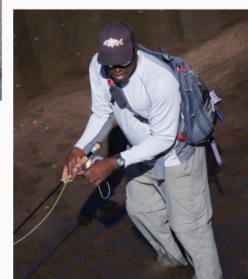
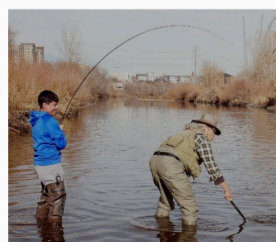


- The DSP: a 26.2 mile laboratory/classroom.
- River improvements downtown created a valuable and attractive area.
- The same water flows through marginalized communities on both sides of downtown.
- There is plenty to study about our urban river.
- "Every time we turn over a rock in the Denver South Platte, there's another new problem under it."
- There is universal support for a healthy Denver South Platte.
- Career pathway programs supply info (like species diversity) to DSP agencies.



Recreation For ALL on our Urban River

- People of color are underrepresented in outdoor recreation activities. Only 7% of anglers in the United States are African American.
- **Urban Rivers for All** provides educational and recreation opportunities for youth residing in close proximity to the river,



The GOAL: Break down the barriers - develop environmental-focused young anglers of color.