Fish in Your Backyard?

Finding Trout in Wasatch Front Creeks

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Introduction

Many small creeks flow into communities between Bountiful and Brigham City along the Wasatch Front in Northern Utah (Figs. 1 - 4). These creeks originate in canyons that share similar topography, flow fluctuations, size, and vegetation. Many support populations of trout (Figs. 2 & 9). Suburban growth has isolated the canyon stretches of each creek through diversion of water into pipes for agricultural and culinary purposes. Remaining flow is diverted into municipal storm sewers. Isolation of these similar creeks allows for a unique investigation of factors that influence trout populations. Our goal was to determine the factors associated with presence or absence of trout. An understanding of factors that contribute to a creek's ability to support trout could benefit future management for recreational fishing and native trout conservation.

Figure 1. The authors in Centerville's Parrish Creek. Trout were present above and below cascades like this.

Methods

Backpack electrofishing (Fig. 3) was conducted near the mouth of each canyon, upstream of major manmade structures or large waterfalls. One-hundred-meter sections of creek were fished (twice consecutively) and trout were netted, measured, and immediately released. Maximum depth, wetted width, and substrate composition were measured along 20 evenly spaced transects. Creek length, drainage circumference, maximum drainage elevation, and creek slope were taken from USGS topographical maps. Creek measurements were compared among creeks with and without trout, and among nearby creeks of similar size that are yet to be sampled.

Figure 2. Trout in Parrish Creek, Centerville, Utah. Trout rarely get much larger than this in small creeks (Downs et al. 1997).

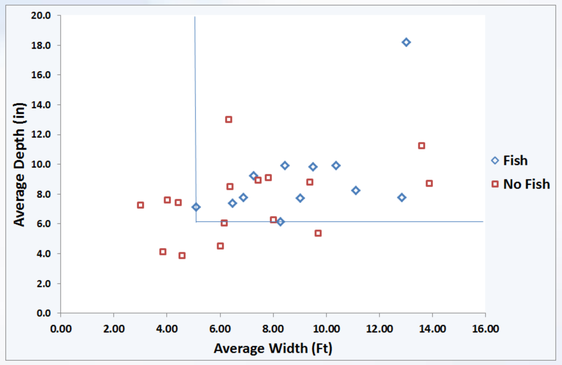

Figure 5. Average depth vs. average wetted width for creeks with and without trout. Lines represent minimum values of creeks with trout.

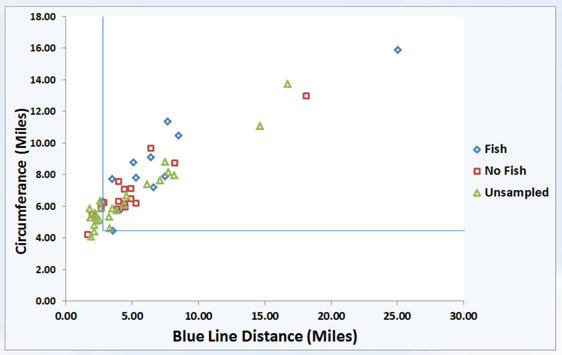

Figure 6. Creek length vs. drainage circumference for creeks with and without trout and for nearby creeks that are yet-to-be sampled. Lines represent minimum values of creeks with trout.

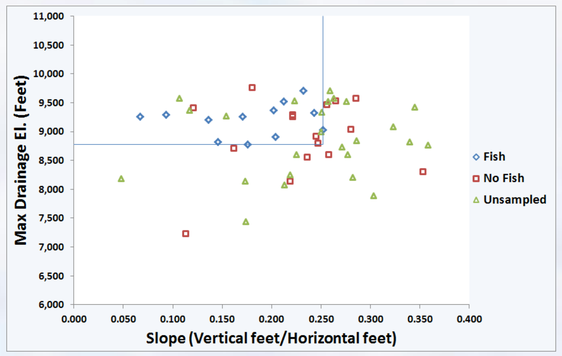

Figure 7. Maximum drainage elevation vs. creek slope for creeks with and without trout and for nearby creeks that are yet-to-be sampled. Lines represent maximum slope and minimum max drainage elevation of creeks with trout.

Figure 3. Bryce Galbraith, Wes Swenson, Chris Hoagstrom, and Lessie Swenson in Farmington Creek.

Table 1. Presence or absence of trout in sampled creeks. Creeks are arranged from north to south along the Wasatch Front.

Creek	Adjacent Community	Trout?
Threemile	Perry	Yes
Willard	Willard	No
Coldwater	North Ogden	No
Strong	Ogden	Yes
Taylor	Ogden	No
Beus	Ogden	No
Burch	Washington Terrace	Yes
Spring	Uintah	Yes
North Fork Homes	Layton	Yes
Middle Fork Kays	Layton	No
North Fork Kays	Layton	No
South Fork Kays	Layton	No
Bair	Fruit Heights	Yes
Farmington (Lower)	Farmington	Yes
Left Fork Farmington	Farmington	Yes
Right Fork Farmington	Farmington	Yes
Steed	Farmington	No
Shepard	Farmington	No
Davis	Farmington	No
Rudd	Farmington	No
Centerville	Centerville	Yes
Parrish	Centerville	Yes
Ricks	Centerville	No
Barnard	Centerville	No
Holbrook	Bountiful	Yes
Mill	Bountiful	No
Stone	Bountiful	No
North Canyon	North Salt Lake	No

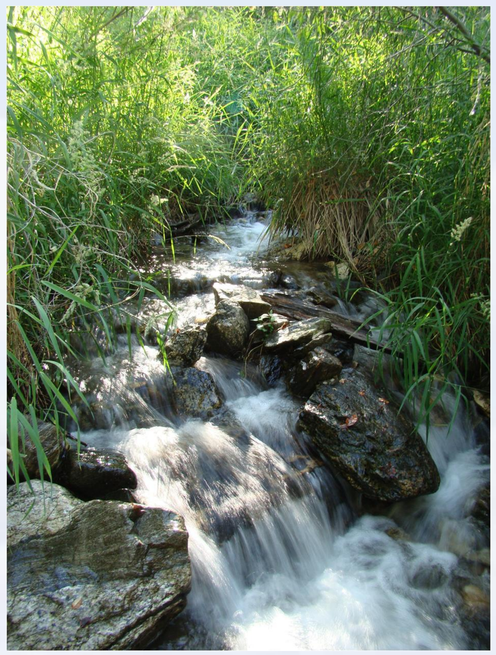

Figure 4. Parrish Creek, Centerville, Utah. Though small, this creek supported trout.

Results

Twelve of 28 creeks contained trout (Table 1). All creeks with trout had an average maximum depth of at least 6.3 in. and were nearly 2 ft. wider on average than creeks without trout (Fig. 5). Creeks with trout also averaged 2 mi. longer and had a 1.6 mi. longer drainage circumference than creeks without (Fig. 6). Creeks with trout were less steep and had a maximum drainage elevation of at least 8,500 ft. (Fig. 7). There were several creeks lacking trout, despite having similar features to those with trout. Notable examples include Mill and Stone Creeks in Bountiful and Willard Creek near Willard.

Figure 9. Rainbow trout in Parrish Creek, Centerville, Utah. In small creeks, trout rarely live beyond 7 or 8 years.

Conclusion

In general, larger creeks that were less steep were more likely to contain trout, but these features did not guarantee the presence of trout. Historical events, such as drought, fire, erosion, or even severe flooding and landslides may have destroyed historical trout populations in certain creeks. It is also possible some creeks were never stocked with trout and native trout disappeared over time. In either case, isolated trout populations are at high risk of extinction due to very small distributions and population sizes (Hilderbrand 2003). Nevertheless, it is possible that improved habitat management has reduced the threat of catastrophe, in which case, larger creeks (e.g., Mill Creek, Willard Creek) may be suitable for re-introductions of trout.

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References

Downs, C.C., White, R. G., Rieman, B.E. 1997. Habitat fragmentation and extinction risk of Lahontan cutthroat trout. North American Journal of Fisheries Management 17, 1126-1133.

Hilderbrand, R.H. 2003. The roles of carrying capacity, immigration, and population synchrony on persistence of stream-resident cutthroat trout. Biological Conservation 110, 257-266.