

# Somerset's Weir'd Stream

## A Study

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### PURPOSE

The Somerset housing development in west Reno has created a small stream from landscape irrigation. Surface run-off and water seeping through the ground contribute to the drainage of this stream. Local water authorities are concerned about potential nutrient and dissolved solids being deposited into the Truckee River as a result of this developing stream.

### FIELD DAYS AT SOMERSETT

The information gathered consisted of weather conditions, stream slope, UTM coordinates, rate of discharge, and water quality and chemistry analysis. Six sites were profiled with physical characteristics, and photographs were taken of the upstream and downstream views. Weather conditions were measured using a Kestrel anemometer and included temperature, relative humidity and wind speed. The stream slope was determined using a clinometer and tape measure. The UTM coordinates were determined using a handheld GPS. Discharge rate was measured using a V-notch weir and the cross sectional profile of the stream was mapped using a laser level and a measuring stick. Water quality and chemistry was sampled and analyzed using a YSI unit. HOBO temperature recorders were placed at three of the six sites.



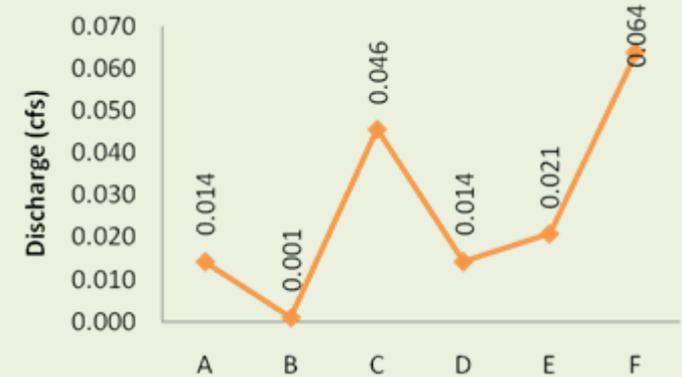
Facing upstream showing discharge.

### A 90° V-Notch Weir.

Facing downstream.



### PHYSICAL STREAM CHARACTERISTICS



Length of stream surveyed:	602 m
Average Stream Slope:	1.84°
Six Study Sites Average Measurements	
pH:	7.64
Dissolved Oxygen:	13.28 mg/L
Water Temperature:	8.09°C
Electrical Conductivity:	0.627 $\mu$ S/cm
Total Dissolved Solids:	0.605 g/L

### BIOLOGICAL STREAM OBSERVATIONS

Evidence of deer (*Odocoileus* spp.) utilizing the stream was prevalent. It appeared the birds were preying upon observed emerged midges (*Chironomidae* spp). Physid snails (*Physidae* spp.) and water striders (*Gerridae* spp.) were the most abundant aquatic invertebrates. Willows (*Salix* spp.) and tall white top (*Lepidium latifolium*) has established along the stream banks.



Special thanks to John Parker, Dave Moeser and Mark Walker, Ph.D., for facilitating and organizing this study.

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- Universal Trans Mercator (UTM) coordinates were determined using a handheld GPS
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- Cross sectional profile of the stream was mapped using a laser level and a measuring stick
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- Water chemistry was analyzed using an YSI unit
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- Information gathered consisted of:
  - weather conditions
  - stream slope
  - UTM coordinates
  - rate of discharge
  - water quality and chemistry analysis
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- Weather conditions were measured using a Kestrel anemometer and included temperature, relative humidity and wind speed
- Stream slope was determined using a clinometer and tape measure



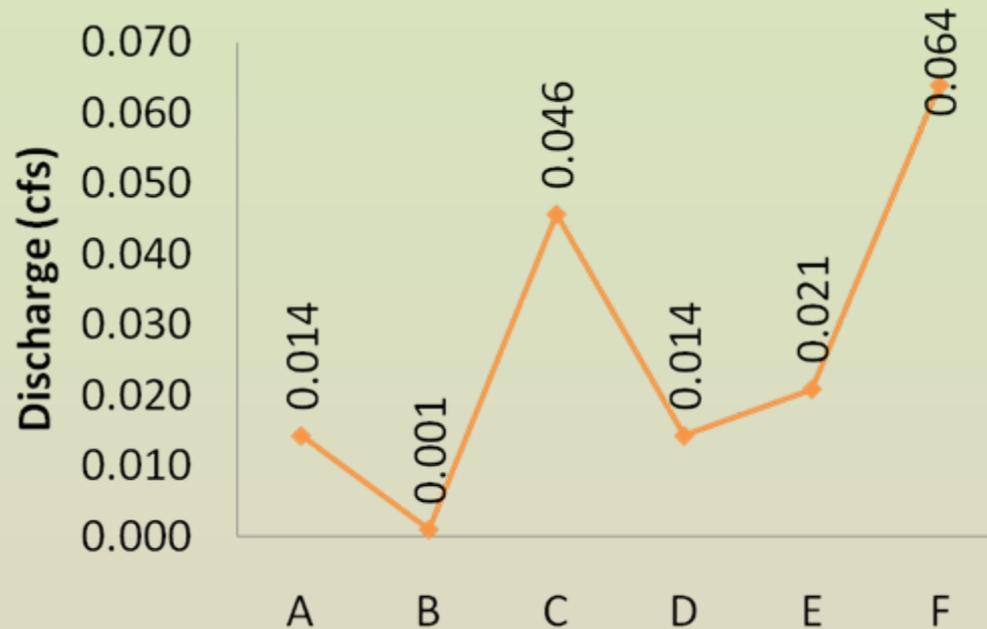
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Facing upstream showing discharge.



Facing downstream.



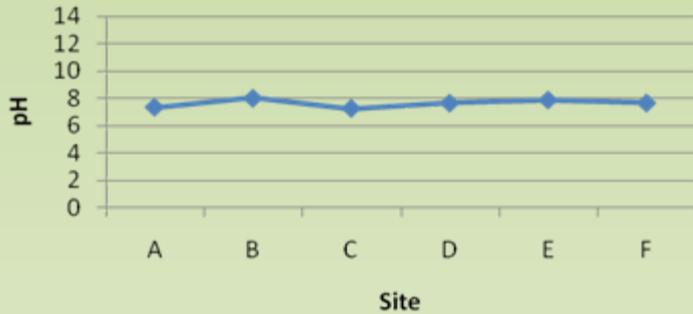
# Physical Stream

## Characteristics

Length of stream: 602 m

Average Stream Slope:  
 $1.84^\circ$

### pH



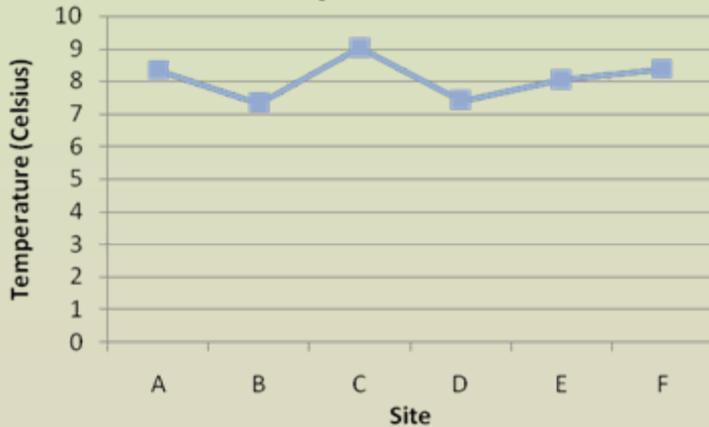
### Dissolved Oxygen



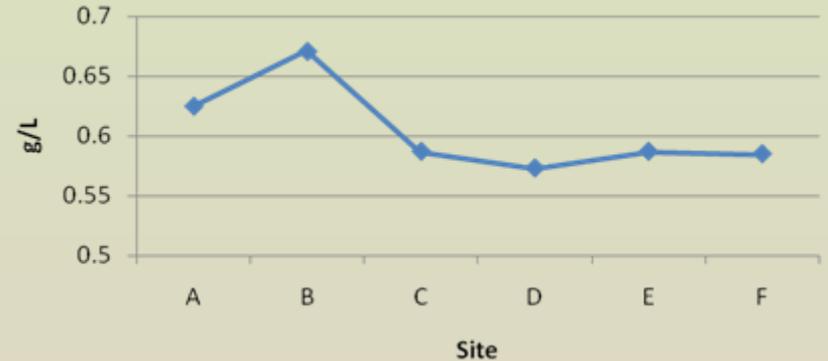
### Electrical Conductivity



### Temperature



### Total Dissolved Solids



# Biological Stream Observations



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