

# Van Duzen River Studies Data Report 2

Main Stem Van Duzen River at Riverside Park, September 26, 2017



## River Flow

*River Flow = (channel width) X (average depth) X (average water velocity)*

*Channel Width= 33 ft.*

River Depth measured at 10 sites across the channel, each 3 feet apart:

- |     |             |
|-----|-------------|
| 1.  | 0.44        |
| 2.  | 0.42        |
| 3.  | 0.70        |
| 4.  | 0.80        |
| 5.  | 0.72        |
| 6.  | 0.69        |
| 7.  | 0.50        |
| 8.  | 0.41        |
| 9.  | 0.45        |
| 10. | <u>0.18</u> |

*Average Depth = 0.53 ft.*

River Flow = (33 feet) X (0.53 feet) X (1.4 feet per second) = **24.5 ft<sup>3</sup> / second**

Average water velocity was estimated by measuring the average time it took orange peels to travel 20 feet downstream along six paths in the flowing channel. Time measurements (in seconds) were made twice (t1 and t2) along each path:

<u>Path</u>	<u>t1</u>	<u>t2</u>
1.		20.7520.19
2.		6.505.35
3.	7.77	7.31
4.	13.59	13.99
5.	21.90	20.22

Approximate Average of all points = 14 seconds  
Water velocity = 20 feet/14 seconds = 1.4 feet per second.

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## Air and Water Temperature

Air temperature was not measured. Water temperature was 64.5 F. Our regional salmon species generally prefer summer water temperatures between 60 and 70F. Salmon avoid areas or may become stressed if water temperature is above 70F and they will likely die at 77F.

## Dissolved Oxygen

Dissolved Oxygen was 8 parts per million (ppm), which is good for fish. When oxygen levels in the water fall below 5 ppm, most fish are stressed and may die.



## pH

pH is a measure of how acidic or basic the water is. pH can vary both daily and seasonally. Three samples of pH were analyzed with a pH meter, which gave readings of 7.96, 7.90, 8.13, and 8.24: Average = 8.06

Water pH is critical to fish habitat. Water Quality Control Board defines healthy pH levels as ranging from 7-8.5. Algae buildup in the Van Duzen increases the pH levels.

## Turbidity

Turbidity is a measure of water clarity due to dissolved or suspended materials such as sediment. Three water samples were analyzed with a turbidity meter for NTU: 1) 0.77, 2) 1.02, and 3) 0.56: Average = 0.78 NTU, which is virtually zero turbidity. These results show the water was clear and good for fish. Turbidity of more than 25 NTU may cause stress to fish.

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## Aquatic Organisms

Aquatic insect larvae and one worm were sampled with a dip net. One stonefly, more than 20 mayflies, and eight caddisflies were identified. Few fish were observed, comprised primarily of California roach and Sacramento pikeminnow. Frog tadpoles were also observed.



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