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What's Up with the Poudre?

This project was intended to measure how the elevation and surroundings of the Cache la Poudre River affect the levels of nitrates, nitrites, total hardness, total alkalinity, and pH. In essence, the idea was to test the water quality of the river. The test involved measuring levels of nitrates, nitrites, the total hardness, total alkalinity in parts per million (ppm), as well as the pH in the Cache la Poudre River.

The testing route started out at the mouth of the Cache la Poudre River, which is located near the Weld and Larimer County line by the City of Windsor, CO. The procedure was to gather a water sample in order to test, and fill out a sheet of basic observations regarding the general appearance of the water. After these tests were done, the route continued up the Poudre River about 100 feet higher in elevation than the last testing site. The route ended approximately 1,100 feet higher than the original testing site.

The general trend of the data was a decrease in water hardness (ppm), alkalinity (ppm), pH level, Nitrates (ppm) and nitrites (ppm) as the elevation went up. At first, the tests indicated that the pH was 8.7 and decreased until the last testing site, approximately 1,100 feet in elevation to a value of 4. The alkalinity was 250 ppm at the lowest point and decreased dramatically at almost all testing sites until it settled down at approximately 25 ppm. The hardness started at 1000 ppm and decreased to 25 ppm also. The nitrites stayed at a constant value of zero ppm, and the nitrates started at 25 ppm and decreased down to 5 ppm.

While the hard data is useful for figuring water quality, it also proved very useful to observe the surroundings at several water sites. Testing locations closer to the Fort Collins metropolis and areas of higher volume visitor traffic generally had poorer water quality, as opposed to locations farther away from the influence of humans. This investigation should prove useful for fishing and evaluation of the water supply however, it also catches a glimpse of environmental concerns. To preserve the natural beauty that inhabits Fort Collins, and the surrounding wildlife, a clean water supply is necessary. Preferably, more time and greater resources could be utilized to perform a wider range of tests.