Dissolved Oxygen in Allen Creek

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Background

- Dissolved oxygen (DO) enters the water by diffusion from air, as a by-product of photosynthesis and by aeration of water over falls and rapids.
- There is an inverse relationship between temperature and DO, i.e. colder water holds more oxygen.
- DO is consumed by respiration of animals, plants and microorganisms.
- DO is important because it supplies oxygen to aquatic organisms.
- Higher DO levels also give the water a better taste.

**Figure 1.** We observed a slight inverse relationship between temperature and DO, but this trend was potentially skewed by the biological activity in the water (see Fig. 2). Because our samples were taken during the early spring when the water is very cold, the water was frequently supersaturated. During the warmer months, we would expect lower DO values because of the increased water temperature and increased respiration rate of aquatic organisms.

**Figure 2.** During sunny days, the DO was higher during the afternoon than in the morning even though the water temperature was higher in the afternoon. We speculate that this is because the algae growing on the creek bottom are actively photosynthesizing and releasing oxygen into the water. We did not observe this trend on 4/9, when there was cloud cover.