

John Magee, Fish Habitat Biologist for the New Hampshire Fish and Game Department made several recommendations based on his observations. Below is a list of the recommendations followed by his observations:

1. NHF&G, led by John Magee and Eric Orff, conducted a fish survey yesterday. The email text below describes summarizes their field observations.
2. Yesterday, with the assistance of a Planning Officer for Emergency Management, DES presented a technical assistance proposal to FEMA. FEMA will be discussing the proposal internally over the next couple of days.
3. On 6/5 NHDES retrieved two data loggers and compiled water quality data collected over a three day period (memo attached).
4. On 6/7, NHDES, conducted an assessment of the downstream well. A course of action has been determined, with the intent of providing temporary impacts to stabilize the breached berm and have the well usable within a 45 days, if not sooner.

I walked along the Suncook River with Eric Orff yesterday. We walked various areas but, in general, we observed most of the new channel and about 1/2 - 3/4 mile of the River upstream of the breach.

Overall, my sense is that there are likely to be very large impacts to the habitat, stability, and hydrology of the Suncook River from the breach and downstream for many miles. The ecological integrity of the River has been drastically reduced. However, I feel that if the River is (or soon becomes) stable from a geomorphic perspective, the much of the ecological integrity will quickly recover (on the order of several years). There will be some long-term impacts that may be noticeable (e.g., trees that will die because of large deposits of material at their base). My concern, and my suspicion, is that the geomorphic stability of the River will take a very long time due to the extremely erodible material in the channel and along the banks, both in the newly formed reach and upstream and downstream of it. We observed many areas of several banks falling into the River literally in front of our eyes. We also observed very fast changes in water levels in one area that I suspect were due to rapid changes in sediment transport as opposed to a simple increase in flow. In one area, I estimate that the water elevation increased a few inches in only one minute. Upstream of the breach, it appears there may be two hydrologic controls that will preclude the amount of headcutting that will occur. One of those is a series of rapids about 1,000 feet upstream of the bridge. The other is at the Route 4 bridge. The banks upstream of the first hydrologic control appear much more stable than downstream of this area. The banks near Route 4 appear rather stable.

Relative to human issues, the massive amount of sediment appears to have been (as is currently being) deposited for several miles downstream, and this may cause dramatic changes in the elevation of the water surface. If this is occurring or occurs in the near future, that may exacerbate flooding near the River. Essentially, it is possible that flooding of the floodplain may become more frequent and occur at lower flows than before. That could directly affect infrastructure and people's homes.

Regarding getting the River back into the original channel, I suspect that will cost millions of dollars at a minimum, but I suppose it is possible given enough money. One would likely have to design, permit, and construct a berm perhaps 1,000 feet along and probably fairly high (and deep) at the breach site.

This site appears, overall, more unstable than what I saw in Warren Brook and the Cold River.