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Mr. Kent Jones
State Engineer
1594 West North Temple, Suite 220
Salt Lake City, UT 84116

Dear Mr. Jones:

Heal Utah has asked me to respond to Dr. Thom Hardy's comments on the potential impacts of the proposed Blue Castle Project on endangered fish in the Green River. Dr. Hardy correctly noted that the 70 cfs continuous withdrawal was a fairly small amount compared to the flow of the river. Unfortunately, he determined that such a small amount of withdrawal would not affect the endangered fish. I would disagree with that conclusion and base that premise on the following information.

The impact of water withdrawal today is typically not the direct effect of any single withdrawal, but the cumulative effect of that withdrawal when taken into consideration with past, and potential future, withdrawals, such as the Million Pipeline Project. I don't have an accurate number of current withdrawals from the Green River system but it is considerably greater than 70 cfs. Hence, the 70 cfs would add to the cumulative depletions in the river at the point of withdrawal and below. My over 40 years of experience with the Green River and its endangered fish leads me to conclude that cumulative impacts of water withdrawal have impacted, and will continue to impact, the endangered fish. This withdrawal will add to that cumulative impact.

Recently, the USFWS and Upper Basin Recovery Implementation Program developed instream flows considered necessary for recovery of the endangered fish in the Green River. Base flow recommendations for the lower Green River are already not being met in some years, and a constant 70 cfs withdrawal would increase the time that the recommended flows were not met. This fact points out the issue with cumulative flow depletions.

In addition, fairly small changes in elevation of the water surface can have dramatic effects on backwater habitats used by young Colorado pikeminnow. In this portion of the river, the mouths of intermittent washes, such as Brown's Wash a short distance below the withdrawal site, often serve as backwaters. The mouths of these washes can be closed off by water changes of only an inch or two, within the range expected by this project. A study we conducted in the late 1990's at Browns Wash found 19 Colorado pikeminnow in that one backwater and closing off the mouth of such a habitat may have dire consequences for the trapped fish.



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In addition, a Colorado pikeminnow spawning area is located a few miles upstream from the withdrawal site (Two Fords Rapid), therefore the withdrawal site would be within a major larval drift area for the lower Green River. Although the intake would be designed to reduce intake of larvae, it would most likely still reduce the number of larvae making it to nursery habitats below the site.

In addition, ponds associated with the project have the potential to harbor exotic fish species, such as sunfishes and bullheads, that could escape into the river. These species are known to prey on native fishes. Ponds associated with a power plant in the Four Corners area recently allowed the introduction of gizzard shad to the Colorado River system, and they are now very common in Lake Powell and in the Green River all the way up to the Vernal area. This threat was not mentioned in Dr. Hardy's testimony.

In conclusion, there are a number of important points related to the Blue Castle Project that Dr. Hardy failed to mention that have the potential to impact the endangered fish. I would hope the state takes a closer look at those potential impacts in considering this application.

Sincerely,

Paul B. Holden, PhD
Senior Fisheries Biologist

Cc: Eric Spreng