

April 29, 2004

Bureau of Reclamation  
Attn: Nancy Coulam, UC-720  
125 South State Street  
Room 6103  
Salt Lake City, Utah 84138-1102

Re: Glen Canyon Dam Temperature Control Device, Comments  
From: Grand Canyon River Guides

Dear Ms. Coulam,

Following are comments from Grand Canyon River Guides (GCRG) on Reclamation's plans to develop an Environmental Assessment regarding the feasibility of installing temperature control devices (TCD) on two of Glen Canyon Dam's penstocks.

**1) Potential environmental effects of construction and operation of a two-unit pilot project TCD:**

- a) The TCD could reduce a full (45,000 cfs) sediment conservation flow experiment following a sediment trigger during construction. TCD construction might even further reduce the flow if it is concurrent with scheduled generator/turbine maintenance.
- b) Warmer water temperatures may support elevated levels of water-borne pathogens and adversely affect human health in the downstream reach.
- c) Warmer water may distinctly advantage predator, competitor and parasite species to native fish. Warmer conditions in the LCR have apparently advantaged a parasite that is detrimental to the humpback chub (fish in the colder main-stem have a lower infection rate than the fish in the warmer LCR.)
- d) Warmer water/water quality from the near surface may introduce waterborne disease or pathogens that may be detrimental to human use of the downstream reach.
- e) Warmer water/water quality from the near surface may introduce diseases or competitors, predators or parasites that could adversely affect native fish populations. It may also introduce other key biological and physical water quality factors from the lake's upper water levels.

**2) Reasonable alternatives to the proposal:**

- a) Compare native fish recruitment and survival in the upper basin due to the

affects of the Flaming Gorge TCD with what could be expected in Grand Canyon.

- b) Use the TCD at Flaming Gorge to carry out temperature variation experiments on native fish populations in the upper basin. The results could be used for extrapolation of TCD effects in Grand Canyon.
- c) Ensure that refitting two intakes is sufficient to achieve the desired goals and carefully consider what number of modified intakes will accomplish an adequate test in a reasonable time period under different Water Year scenarios (High, Medium, and Low).
- d) Use the predicted warmer temperatures in the near-term from Lake Powell (due to reservoir draw-down) as a stand-in for some of the experiments at a much lower cost.

### **3) Measures to avoid or lessen environmental impact:**

- a) Ensure scheduling of TCD construction and generator/turbine maintenance that will not inhibit the implementation of any future Beach Habitat Building Flows.
- b) Monitor and research the causes of outbreaks in waterborne pathogens to determine if temperature is a controlling factor for human health.
- c) Use information from other agencies to determine water quality related disease outbreaks on the Colorado River below Glen Canyon Dam. You can contact: Coconino County Health Dept., attn: Marlene Gaither (928) 226-2769.
- d) Incorporate strong biological data supporting conclusions and specific, well designed monitoring studies that can discern any detrimental impacts to native fish in this complex system.
- e) Examine closely the risk factors for the introduction/advantaging of disease, parasites, competitors and predators that could adversely affect native fish. Examine research on native fish populations in Cataract Canyon for any parallels.
- f) Use existing knowledge and research from the upper basin conditions to inform the decision on whether to build a TCD on Glen Canyon Dam. We should understand the principal factors in native fish decline before moving forward with construction of the TCD.

Thank you for the opportunity to comment.

Sincerely yours,  
John O'Brien, President  
Andre Potochnik, AMWG Representative  
Matt Kaplinski, TWG Representative  
Lynn Hamilton, Executive Director