

June 12, 2006

To: Laura Kidd  
FR: David Asbury  
Andy Gunther  
RE: Report on Fish Capture and Release for 2006-2007

### Overview

The winter of 2005-2006 was the first full migration season that the internet accessible fish-monitoring camera at the BART weir was completely operational. The season was characterized by a relatively dry fall period followed by an unusually wet spring. Also, a week of rain between Christmas and New Years brought extremely heavy flooding to much of Northern California. The relatively late rainfall likely contributed to a distinct temporal shift in steelhead sightings at the weir, as the first sighting did not occur until December 29<sup>th</sup>. The final sighting was on May 1<sup>st</sup>. A total of 6 fish were captured and transported during this time frame, including the largest presumed non-hatchery trout seen in the creek since the 1960's.

### Operations

Prior to the first fish sighting, several maintenance trips were required to prepare the camera. A periodic system failure was resolved by uninstalling the unit and getting warranty work done to replace the camera motherboard. We also disabled the timer that had been used to turn the camera on in the morning, and off at night. It was hypothesized that the failures had been brought about from having the camera startup in the mornings, during a period of low system voltages. The camera performed without incident if it underwent normal operating functions during the period of low battery voltage, but if powered up during this time, non-optimal performance characteristics and occasional failures occurred.

Two trips were required to perform this maintenance. Gordon Becker and I spent two days working on-site, one to remove the camera (on September 15<sup>th</sup>) and a second (November 11<sup>th</sup>) to re-install.

The camera functioned optimally up until the first of the year when almost two weeks of clouds and rain drastically reduced the power reserve of our solar powered instrument. Combined with the fact that during this period of time the sun was at its nadir and the days were some of the shortest of the year, insolation was reduced to insufficient levels to sustain operation. The batteries were drained to a point where the charge controller automatically shut off the load, safely preserving the batteries until they could be recharged. This was done on January 5<sup>th</sup> by me, and our solar-power consultant, Hal Aronson. On that sunny day, we attached several extra solar panels to the system giving the batteries the boost they needed to make up for the loss during the late December storm.

For the remainder of the migration season the camera operated without incident. On May 19<sup>th</sup>, an employee of Roberson Trucking drove a dump truck off the lot with the

bucket raised and pulled down the power lines that ran into the building where the receiving antenna is located. The support beam that was holding the receiving antenna was also compromised and the antenna fell off the building, disabling communication with the camera. As of May 30<sup>th</sup>, power had been restored to the building and the DSL router, but communications with the camera had not been reestablished.

### Visitors

On December 1<sup>st</sup>, I conducted a site visit for Mark Merritt and two other employees of the Santa Clara Valley Water District. I showed them around the site, explained some of the hurdles that were crossed while getting the project going, and answered questions regarding design and implementation.

### Sightings and Rescues

On December 29<sup>th</sup> and 30<sup>th</sup>, Manny DaCosta and Dave Garges, respectively, used the camera to spot an unidentified salmonid that was attempting to ascend the weir. Due to the timing around the holidays as well as the subsequent flooding, no rescue was attempted.

On March 1<sup>st</sup>, Steve Powers, at school in Madison, WI, was checking the camera and saw two fish jump. A water district employee confirmed the sighting of an approximately 14-inch steelhead and another, smaller steelhead. Other on-site and online sightings were made, and the rescue machinery was set in motion. On Saturday, March 4<sup>th</sup> Jeff Miller reported:

“We rescued two adult steelhead trout in the Alameda Creek flood control channel this morning and moved them upstream, releasing them in good condition into Niles Canyon. This is the ninth consecutive winter the Alameda Creek Alliance has documented ocean-run steelhead trout in the creek. One of the steelhead, 31 inches long and weighing 11 pounds, was the largest steelhead documented in the creek since the early 1960s. The other fish was 26 ¼ inches long and weighed 6 1/2 pounds.”

On March 8<sup>th</sup>, Pete Alexander (EBRPD) was visiting the weir and saw one and possibly more steelhead. Another sighting was made on March 10<sup>th</sup> by an ACA member. On March 11<sup>th</sup>, volunteers caught four steelhead. Again, from Miller:

“Today we caught and moved upstream four wild adult steelhead and one smaller trout (7 inches).

Male 26 inches, 7.5 pounds  
Male 25 inches, 5.1 pounds  
Male 22 inches, 3.7 pounds  
Female 27 inches, 8.3 pounds

These are in addition to the two large males moved upstream last week.”

On March 29<sup>th</sup> and 30<sup>th</sup> Jeff Miller reported that an ACA member Dennis Gambs saw two or three steelhead, but flows were too high to attempt a rescue. Miller also reported that on Saturday, April 29<sup>th</sup> one or two small steelhead were seen and on Monday May 1<sup>st</sup>, at least one fish was seen jumping at the weir. No rescue attempts were made on these occasions because of abnormally high flows due to continuous SFPUC releases from Calaveras Reservoir in April and May.

#### Recommendations and Next Steps

In order for the camera system to be repaired following the trucking accident, a site visit must take place to evaluate damage sustained by the receiving antenna. Additionally, the decision has been made to remove the camera from the flood control channel wall during non-migratory periods to lessen the risk of vandalism and to perform annual maintenance. A site visit to decommission the camera for the summer will be made in the upcoming weeks, and a subsequent trip to re-install will be made before the inception of the rainy season.