

Movement of juvenile Dolly Varden and cutthroat trout and stream stage in a 2nd order stream in southeast Alaska

Progress Report for 2006 Monitoring Report

The Clean Water Act requires that migration and movement of aquatic organisms within a water body occur without disruption and the State of Alaska statute 16.05.840 requires fish passage in all streams except during peak discharges that occur from 1 to 2 percent of the time. To meet these requirements, approximately 1,200 culverts may have to be replaced in the Tongass National Forest at a cost of up to 70 million dollars. The one goal of this study is to determine upper limits of flows at which fish do not move and the probability of the occurrence of these flows over the course of a year. The information from the study can be used to evaluate current interim fish passage design discharge standards for fish passage at culverts.

In 2006, five weirs with paired antenna recorded the date, time and movement of fish with Pit tags in Hobo Creek, near Petersburg. The date and time was paired with stream stage/discharge measured at a stage recorder located about 40 m below the lowest antenna. Most fish that were tagged were less than 100 mm fork length; cutthroat trout tended to be larger than Dolly Varden (Figure 1). Most Dolly Varden were detected moving upstream during late summer and early fall; most cutthroat trout were detected moving upstream during late spring and early summer (Figure 2). Preliminary analysis shows that 95 % of all fish were detected at discharge levels less than 20 cfs which were exceeded less than 10 % of the time from 2002 through 2006 (Figure 3). More detailed analysis will be presented in the final report which is expected to be completed by May 2007. No further fieldwork is scheduled for 2007.

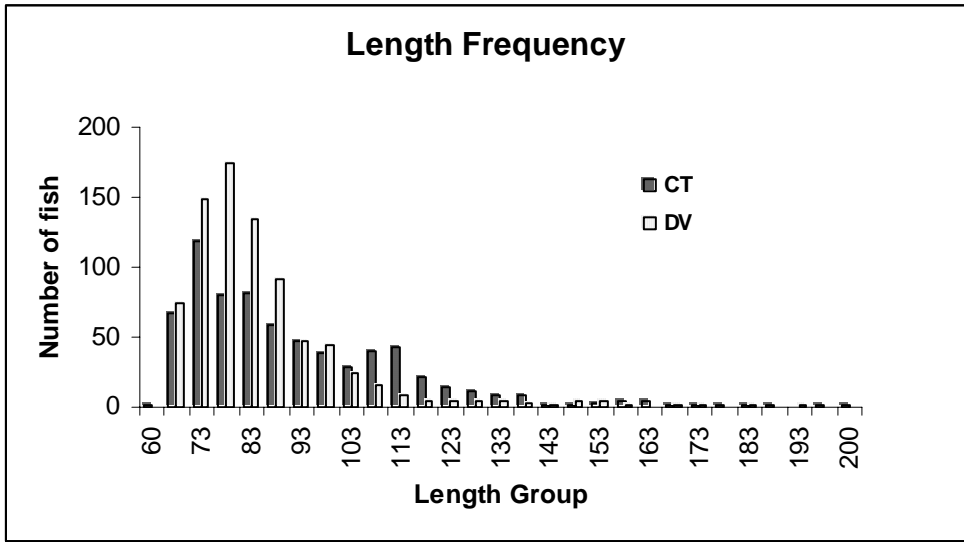


Figure 1. Length frequency of cutthroat trout and Dolly Varden captured and tagged in the Hobo Creek study reach from 2002 through 2006.

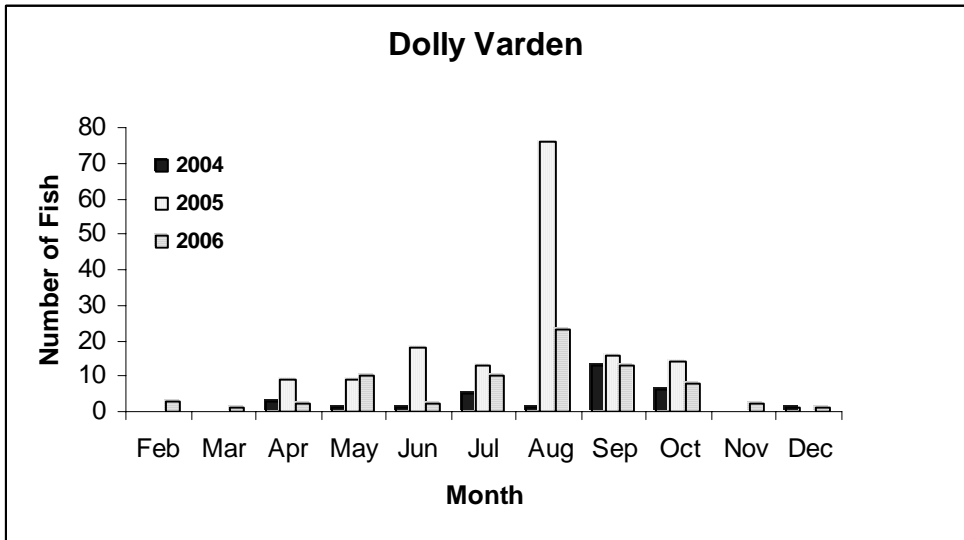
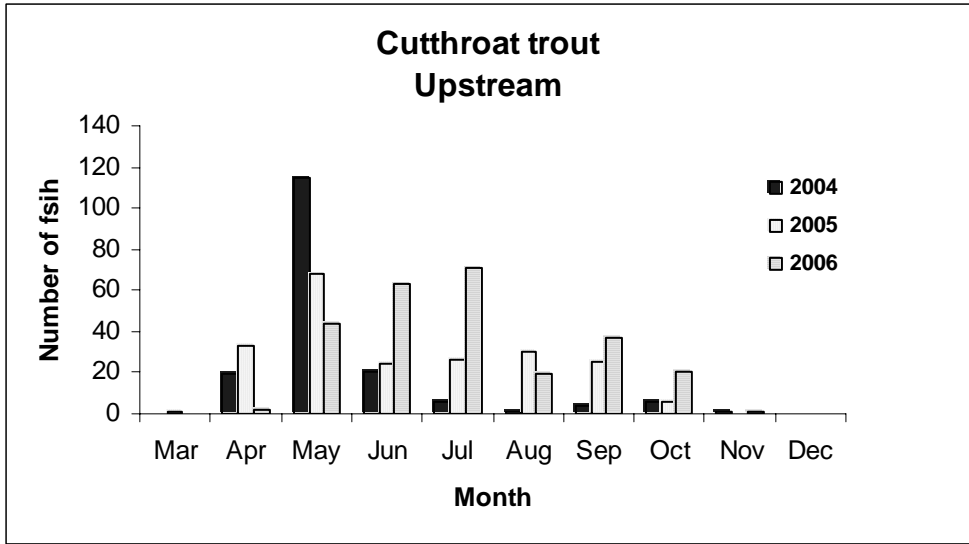


Figure 2. Number of Cutthroat trout and Dolly Varden detected at all weirs moving upstream in Hobo Creek from 2004 through 2006.

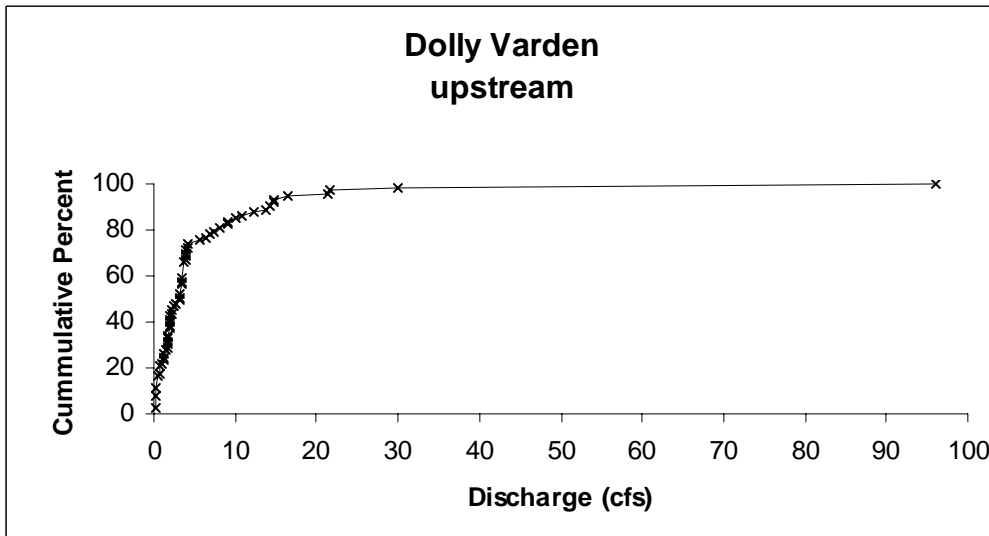
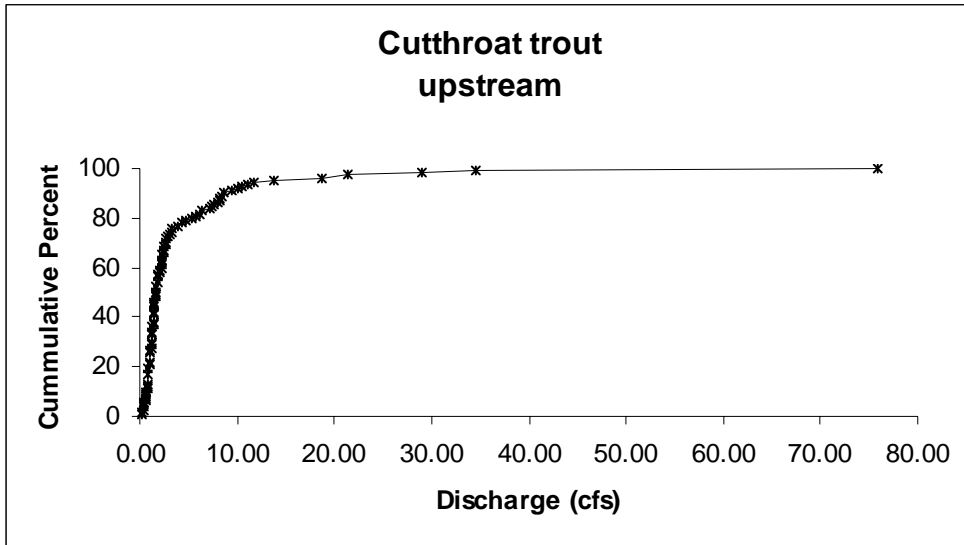


Figure 3. Cumulative percent of fish detected moving upstream past all weirs, 2004-2006 and distance moved >20m.