

Small Watershed, Big Restoration

Rocky Gulch Salmonid Access and Habitat Restoration Project

Few watersheds along the northcoast escaped human impacts during the past century, but rarely



Figure 1. Young-of-year coho salmon in Rocky Gulch were positively identified in August 2005.

does a watershed as small as Rocky Gulch embody so many historical impacts, contemporary issues, and restoration opportunities. Rocky Gulch, tributary to Humboldt Bay, is a small watershed of only one square mile, but was once home to steelhead trout and coho salmon. Although those species are believed to have been absent since the 1960's, things are changing for Rocky Gulch. The stream is now benefiting from a comprehensive, multi-phased restoration project which began with the installation of new tide gate. The new gate replaced one that had been a barrier to fish migration for over 40 years. To everyone's delight, juvenile coho salmon were found in Rocky Gulch the very next year (Figure 1)!

Rocky Gulch has faced many hardships, in the form of logging, railroad grades, highways, levees, timber mills, and residential developments. Entire tidal marshes were converted from wetlands to pasture by the installation of a tide gate to prevent the flow of salt water to the fields. However, the heavy top-hinged door excluded both salt water and fish (Figure 2).

As part of the project, the antiquated tide gate was replaced with a new "fish-friendly" gate. A side-hinge allows the door to open easily with the outgoing tide, allowing unimpeded fish passage (Figure 3). An auxiliary door allows fish passage and a controlled amount of sea water to pass through the gate even when the door is closed (Figure 3). Many benefits have been attributed to daily seawater intrusion past the gate, but undoubtedly the most exciting came in August 2005. Following the first winter with the new tide gate in operation, coho salmon were positively identified in Rocky Gulch for the first time in nearly 40 years (Figure 1)! Not only juvenile coho salmon, but rainbow and coastal cutthroat trout were found as well.



Figure 2. The old tide gate during an outgoing tide showing the gate partially open but a barrier to adult fish migration.



Figure 3. Top: the new side-hinged tide gate during the outgoing tide showing the door wide open to fish passage. Bottom: the new tide gate at low tide showing the auxiliary door which is always open.

Other phases of the project extend upstream of the tide gate, where 3,900 feet of stream channel and 4,900 feet of dike were reconstructed. The channel rebuilding included restoration of 4.3 acres of riparian floodplain and the addition of several instream habitat structures. The next construction phase will replace a culvert to eliminate the last man-made barrier to fish migration in this watershed. Among the benefits and supported uses for this small watershed include the elimination of flooding, maintenance of salt marshes, improved fish habitat and migratory access, better cattle grazing practices, and increased plant diversity.

This project serves as an example of successful stream restoration on many levels. It clearly illustrates the mutual benefits to private landowners and fisheries resources and the feasibility to rapidly design and implement a large-scale project. Cooperation of the landowners, dedicated restorationists, volunteers and personnel from utilities, city, state and federal agencies was momentous. Rocky Gulch is now one step closer in returning the legendary salmon runs of our past to our future.

Photos and project information provided by Darren Mierau of McBain and Trush, Inc.

Summary prepared by Brooke Budnick, PSMFC