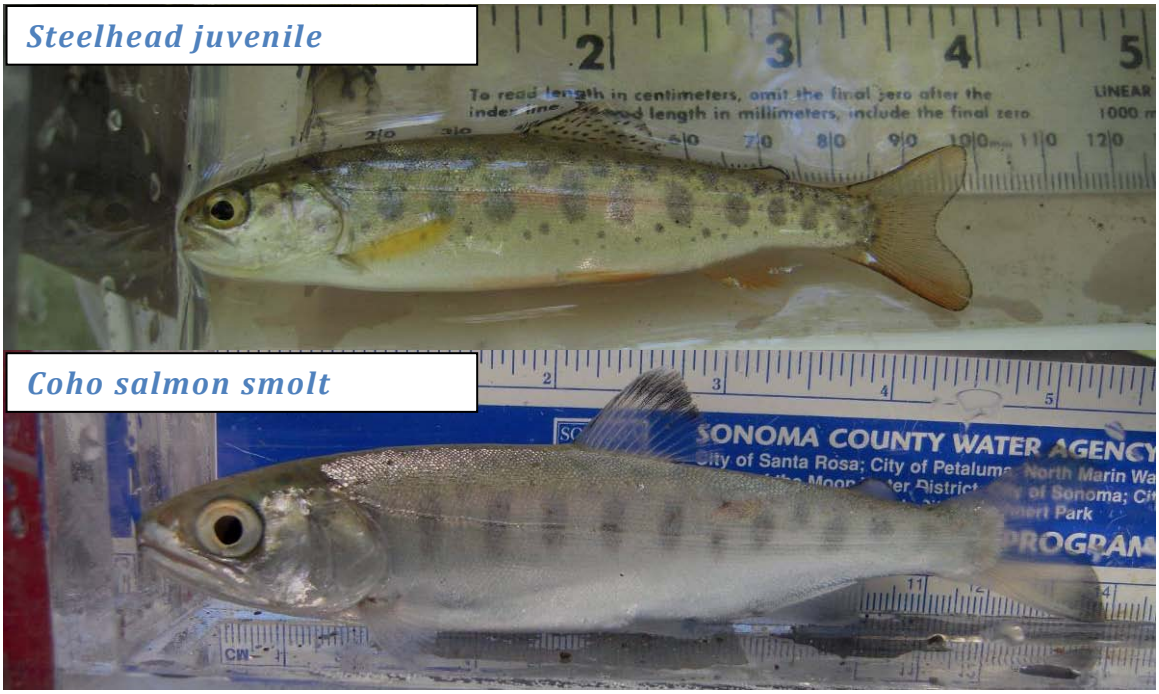
Downstream Migrant Trapping in Russian River Mainstem, Tributaries, and Estuary

Introduction

In September 2008, the National Marine Fisheries Service issued the Russian River Biological Opinion, which requires the Sonoma County Water Agency (Water Agency) to improve conditions for coho salmon, steelhead and Chinook salmon in the Russian River. The Biological Opinion requires the Water Agency to increase monitoring of coho and steelhead juveniles and smolts in the river and tributaries. (The term "smolt" refers to the life cycle stage when salmon and steelhead migrate to the ocean and the term "juvenile" refers to stages prior to migrating to the ocean.) Dutch Bill Creek and Austin Creek are both important habitat for coho and steelhead. Fish from these tributaries, as well as from the many other tributaries to the Russian River, may also take advantage of the estuary to enhance their growth before entering the ocean. Because land along both creeks (and most of the river and estuary) is privately owned, the cooperation of willing landowners is critical to monitoring efforts.

The following is a summary of the Sonoma County Water Agency's 2011 monitoring efforts in Dry Creek, the mainstem of the Russian River, Dutch Bill Creek, Austin Creek and the upstream portion of the Russian River estuary.

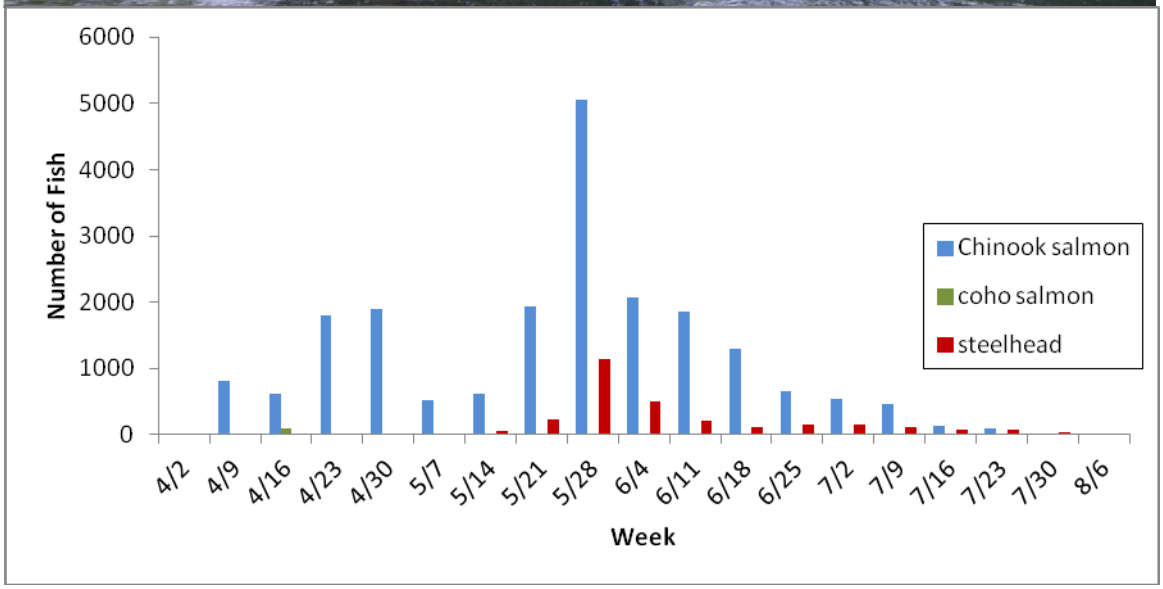


Dry Creek

On April 13, 2011 the Water Agency began operating a rotary screw trap in Dry Creek just downstream of the Westside Road bridge (approximately 2.1 miles upstream of the creek mouth) to monitor young steelhead, Chinook, and coho as they made their way downstream. A rotary screw trap uses stream flow to turn a cone-shaped metal drum to capture and retain fish in a live-well. The trap was checked each morning at which time all fish were removed, measured, examined for tags and marks, and released back into the river to continue their migration. Trapping operations were concluded on August 10, 2011.

Over the course of the 2011 trapping season, 2,977 steelhead juveniles and smolts, 214 coho juveniles and smolts, and 20,917 Chinook smolts were captured. Most of the coho salmon captured were fish that had been previously stocked into tributaries of Dry Creek as part of a multi-agency effort (known as the Russian River Coho Salmon Captive Broodstock Program – or coho broodstock program) to recover coho populations to the Russian River (see http://ca-sgep.ucsd.edu/focus-areas/healthy-coastal-marine-ecosystems/russian-river-coho/russian-river-coho-salmon-captive-4), although a few were offspring from fish that returned from the ocean to spawn in the creek. Coho smolts averaged about 5 inches while steelhead ranged in size from 1-inch newly hatched juveniles to 10-inch smolts.

Dry Creek, rotary screw trap

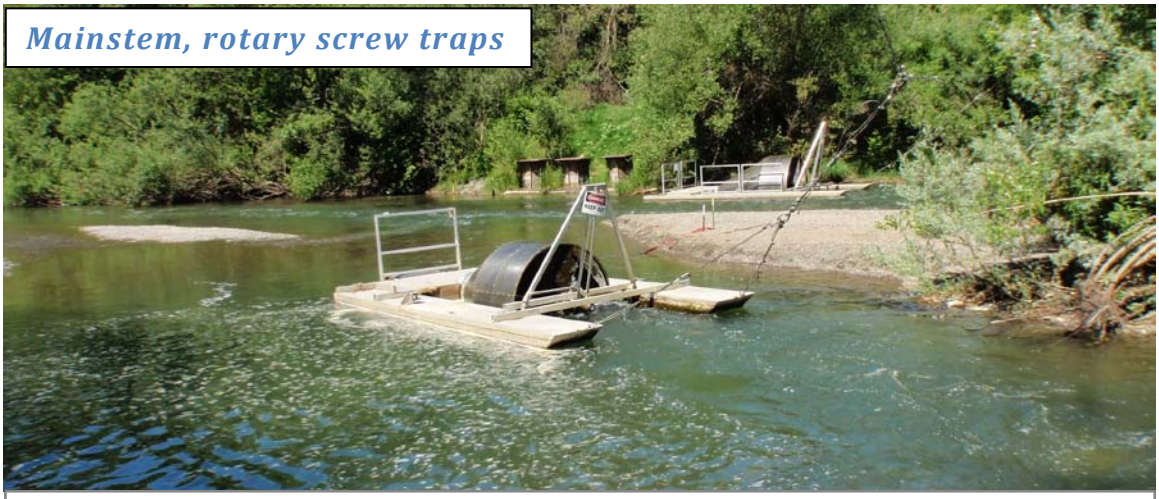


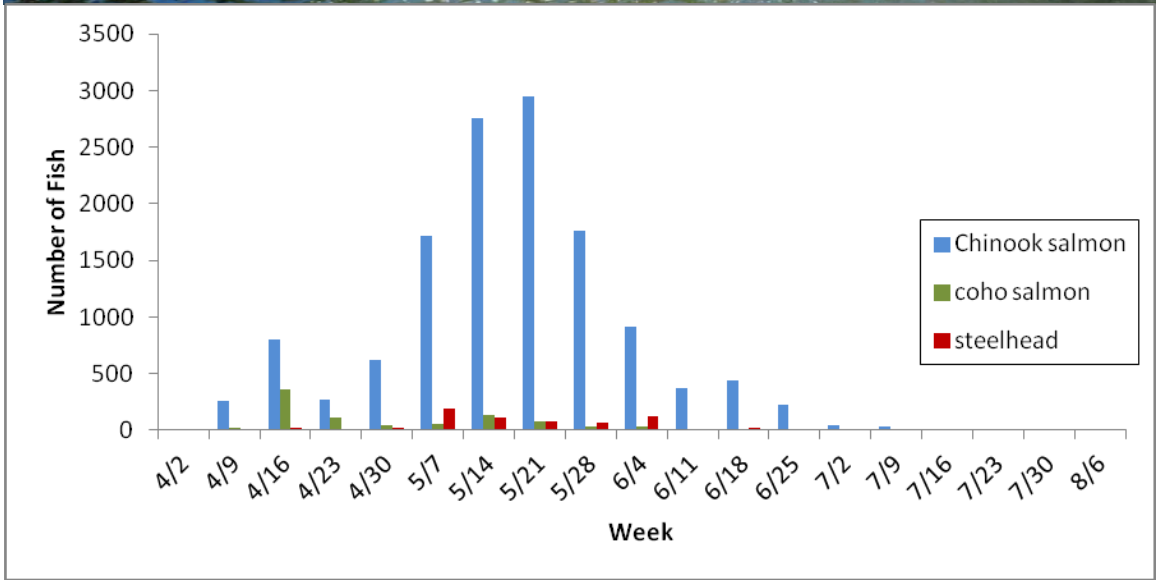
Mainstem Russian River

On April 15, 2011 the Water Agency began operating a pair rotary screw traps in the mainstem of the Russian River just downstream of an inflatable dam at Mirabel, near Forestville, to monitor young steelhead, Chinook, and coho as they made their way downstream. A rotary screw trap uses stream flow to turn a cone-shaped metal drum to capture and retain fish in a live-well. The trap was checked each morning at which time all fish were removed, measured, examined for tags and marks, and released back into the river to continue their migration. Trapping operations were concluded on July 19, 2011 when Chinook smolts were no longer captured.

Over the course of the 2011 trapping season, 691 steelhead juveniles and smolts, 897 coho juveniles and smolts, and 13,753 Chinook smolts were captured. Most of the coho salmon captured were fish that had been previously stocked into tributaries of the Russian River as part of a multi-agency effort to recover coho populations to the Russian River through the coho broodstock program, although a few were offspring from fish that returned from the ocean to spawn in the creek. Coho smolts averaged about 5 inches while steelhead ranged in size from 1-inch newly hatched juveniles to 10-inch smolts.

Mainstem, rotary screw traps



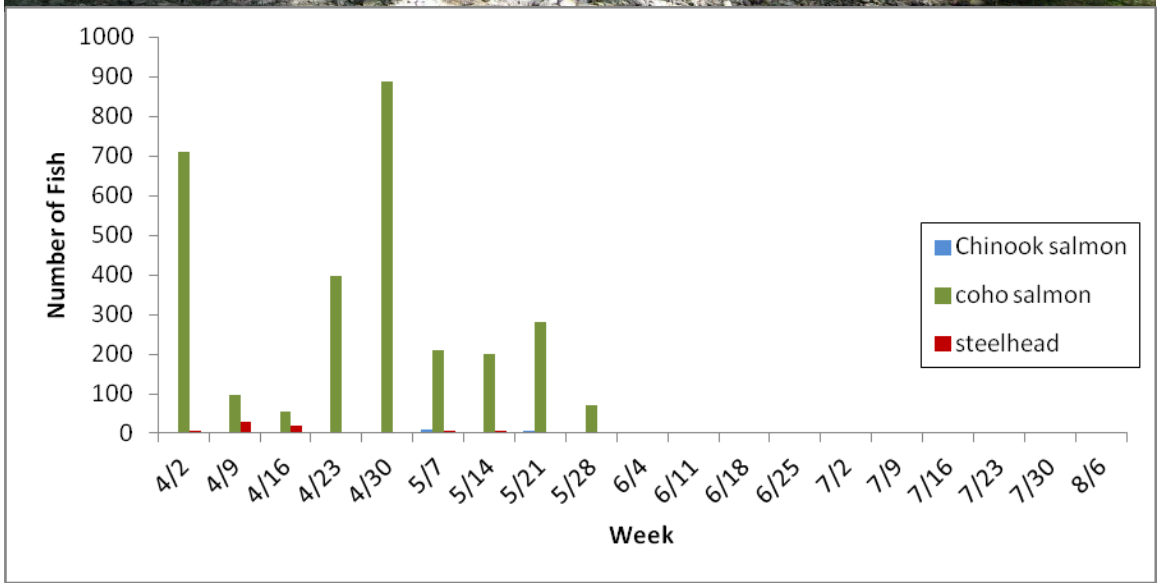


Dutch Bill Creek

On April 6, 2011, the Water Agency began operating a combination pipe trap and fish weir in Dutch Bill Creek adjacent to the park in downtown Monte Rio (approximately 0.2 miles upstream of the creek mouth) to monitor young steelhead and coho salmon as they made their way downstream. A pipe trap uses mesh panels to direct stream flow and fish through a plastic pipe and into a live-well. Once fish enter the live-well, water pressure through the pipe discourages them from swimming upstream and out of the live-well. The trap was tended each day at which time all fish were removed, measured, examined for tags and marks, and released downstream. Trapping operations were concluded on July 5, 2011 when water levels became too low and there was no longer contiguous flow between the mouth of Dutch Bill Creek and the Russian River.

Over the course of the 2011 trapping season, 78 steelhead juveniles and smolts and 2,913 coho salmon smolts and 34 Chinook smolts were captured were captured. Most of the coho salmon captured were fish that had been previously stocked into Dutch Bill Creek as part of a multi-agency effort to recover coho populations to the Russian River through the coho broodstock program, although a few were offspring from fish that returned from the ocean to spawn in the creek. Coho smolts averaged about 5 inches while steelhead ranged in size from 1-inch newly hatched juveniles to 10-inch smolts.

Dutch Bill Creek, pipe trap

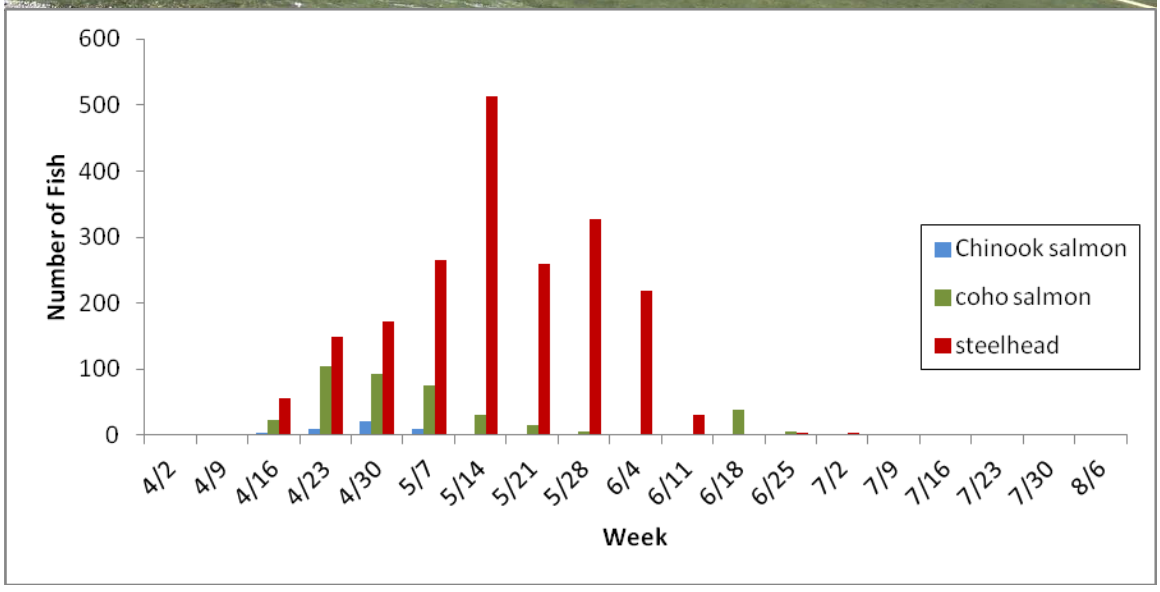


Austin Creek

On April 14, 2011 the Water Agency began operating a rotary screw trap in Austin Creek just upstream of the steel bridge (approximately 0.7 miles upstream of the creek mouth) to monitor young steelhead and coho as they made their way downstream. A rotary screw trap uses stream flow to turn a cone-shaped metal drum to capture and retain fish in a live-well. The trap was tended each morning at which time all fish were removed, measured, examined for tags and marks, and released downstream. Trapping operations were concluded on July 5, 2011 when there was no longer contiguous surface flow between the mouth of Austin Creek and the Russian River.

Over the course of the 2011 trapping season, 2,004 steelhead juveniles and smolts, 394 coho juveniles and smolts, and 48 Chinook smolts were captured. Most of the coho salmon captured were fish that had been previously stocked into tributaries of Austin Creek as part of a multi-agency effort to recover coho populations to the Russian River through the coho broodstock program, although a few were offspring from fish that returned from the ocean to spawn in the creek. Coho smolts averaged about 5 inches while steelhead ranged in size from 1-inch newly hatched juveniles to 10-inch smolts.

Austin Creek, rotary screw trap



Russian River Estuary

On April 28, 2011 the Water Agency began operating an underwater video camera near the upstream end of the Russian River estuary between Austin Creek and Moscow Bridge (approximately 6.5 miles upstream of the mouth of the river) to monitor young steelhead as they made their way downstream into the estuary. The video camera recorded footage 24 hours a day through July 19. Although fish were not physically captured or handled, we were able to estimate their size by means of a ruler that served as a background as fish swam by.

Over the course of the 2011 season, 98 steelhead juveniles and smolts, 45 coho juveniles and smolts, and 149 Chinook smolts were recorded as they made their way into the estuary. Chinook smolts averaged about 4 inches, coho smolts averaged about 5 inches, and steelhead ranged in size from 1-inch newly hatched juveniles to 10-inch smolts.

Estuary video chamber and juvenile steelhead image