

Salmon and Steelhead in Our Creeks

by Gerhard Epke

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After the first winter rains salmon come from the ocean up into this watershed. They sneak upstream like ninjas often in the dark of night or while it rains, methodically working their way upstream from resting pool to resting pool. You would not even notice their presence unless the light shines through the water just right or a splash in a shallow spot catches your attention. Who are these fish and what do they want? Food, like espresso and buttery croissants? Safe homes and good school districts? Access to open space? Well, in a sense, yes, possibly all of the above.

The two species of salmonids—the term for the greater family of fish—known to still inhabit Corte Madera Creek watershed are steelhead trout and Chinook salmon. What they are doing is coming upstream to spawn, or reproduce. While superficially similar, and both engaging in this ‘anadromous’ migrational lifecycle, steelhead and Chinook have some significant differences.

Chinook salmon are also called king salmon, and this species is prized for its large size and good flavor as well as for its cultural and ecological importance from here to Alaska. Chinook historically proliferated in the rivers flowing into the Delta of the Sacramento and San Joaquin rivers, and in their tributaries. Dams and diversions have blocked fish from reaching most of this habitat and today they continue using the Bay bolstered by hatchery programs. But, true to classic salmon lifecycles, both wild and hatchery Chinook born in inland waters migrate out to the ocean, where they live for three years before returning home to complete their lifecycle. They come upstream for the final months of their life, find a partner, build a nest in the gravels, spawn, and die. This lifecycle, wherein all your energy goes to a single reproductive event, is called semelparity.

If the king salmon is the wolf—large and charismatic—fought and legislated over, steelhead are like coyotes—adaptable, ubiquitous but invisible, defying whatever conventions we place on them. Steelhead, for instance, are the same species as rainbow trout. While the young salmon migrate down to the estuary and ocean as soon as possible, young steelhead live in the creek habitat for at least a year, moving upstream and downstream seeking deep, cool pools before somehow “deciding” to migrate out to the saltwater. Another characteristic distinguishing steelhead from true salmon is iteroparity, meaning their spawning can occur several years in a row, i.e., iterative.

Healthy salmon runs are often seen as a goal for habitat restoration, and the presence of these two species with their different reproductive strategies may provide clues about what the future may hold. Since climate change is expected to bring more variability and extremes to our weather, the way these lifecycles hedge against environmental variability matters.

Chinook, with their three-year lifecycle, are known to stray into new watersheds and drainages to spawn. After the October 2022 storm many were seen spawning here in the following weeks. Our 11” storm this November again saw spawners entering the watershed. These two large early storms seem somewhat anomalous, but maybe a few more similar years and we may establish a Chi-nook run. The problem with semelparity is that three years of drought can interrupt all the year classes. Fortunately, our droughts have tended to last two years, but it points to vulnerability of Chinook in Corte Madera Creek.



In unusually clear water, a steelhead pauses on its way up San Anselmo Creek. Photo by Gary Leo

Iteroparity, in theory, offers steelhead several chances to get up-stream and reproduce, which seems like a major advantage here. Also, the ability of a population to persist as trout for years in the deeper pools offers another reason why steelhead are seen as the more reliable restoration target.

Please let us know of any sightings of large fish in the creeks of our watershed! They are fruit of the efforts of many individuals and public agencies.

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