

SNORKEL SURVEY FISH COUNT

NAPA RIVER – RUTHERFORD REACH

JONATHAN KOEHLER, *BIOLOGIST*



NAPA COUNTY RESOURCE CONSERVATION DISTRICT
AUGUST 18, 2003

GENERAL DESCRIPTION:

A snorkel survey along approximately four miles of the Napa River was conducted on August 15, 2003 by Jonathan Koehler and Todd Adams. The survey began at 10:30 A.M. near the southern extent of the Rutherford Dust Society's boundary (see map) and continued upstream to Zinfandel Lane. The purpose of the survey was to document fish species present in this reach, and to determine whether salmonids (juvenile steelhead or Chinook salmon) are utilizing this section of the river for summer rearing. Size ranges were visually estimated and recorded for target species.

We snorkel surveyed a minimum of every tenth pool, but additional pools with high potential for salmonids were also snorkeled to increase our chances of detecting rare or sparsely distributed fish. This survey followed general snorkel fish count methodologies, which yield rough estimates of relative abundance within the sampling reach. Beginning at the downstream end of the habitat unit, the surveyors quietly enter the water and swim slowly through the unit making observations and counting fish. In larger pools, two people are needed to get a better coverage of the habitat. A mix of habitat units (e.g. pools, riffles, runs) are surveyed to more fully represent all available habitat types within the survey reach.

RESULTS:

A total of eleven fish species were documented in the ~ four mile survey reach (Table 1). This total was comprised of seven native species and four introduced species (primarily from the eastern U.S.). Throughout the reach, twelve pools were fully snorkeled, and several other habitat units were partially surveyed.

Juvenile steelhead in the young-of-year size class (< 3 inches) were observed in one pool. Larger steelhead / resident rainbow trout were found in several locations, but appeared more frequently in the lower half of the survey reach. A total of 22 steelhead/rainbow trout were observed. No juvenile Chinook salmon were seen. Water clarity became worse as we moved upstream, and towards the end of the survey limited our visibility to ~ 2 feet. Water temperatures were not measured; however variations in temperature (~ 5° - 10°F) could be felt as we moved into deeper shaded areas with good canopy cover. In general, we found trout in these colder, well-shaded parts of pools.



California Roach



Threespine Stickleback



Steelhead/Rainbow Trout

*** Note - These pictures were not taken during this survey. No fish were captured.***

Common Name	Scientific Name	Origin	Abundance (estimate)	Size Range (estimate)
California Roach	<i>Lavinia symmetricus</i>	Native	High	~1 – 4 inches
Hardhead	<i>Mylopharodon conocephalus</i>	Native	High	~ 2 – 7 inches
Sacramento Pikeminnow	<i>Ptychocheilus grandis</i>	Native	High	~ 2 – 18 inches
Sacramento Sucker	<i>Catostomus occidentalis</i>	Native	Moderate	~ 2 – 12 inches
Threespine Stickleback	<i>Gasterosteus aculeatus</i>	Native	Moderate	~1 – 2 inches
Steelhead / Rainbow Trout	<i>Oncorhynchus mykiss</i>	Native	Low	~3 – 13 inches
Tule Perch	<i>Hysteroecarpus traski</i>	Native	Low	~ 3 – 5 inches
Bluegill	<i>Lepomis macrochirus</i>	Introduced	Moderate	~ 3 – 6 inches
Green Sunfish	<i>Lepomis cyanellus</i>	Introduced	Low	~ 4 – 6 inches
Smallmouth Bass	<i>Micropterus dolomieu</i>	Introduced	Low	~ 2 – 10 inches
Largemouth Bass	<i>Micropterus salmoides</i>	Introduced	Low	~ 6 inches

Table 1 – Summary of fish species observed during snorkel survey (8/15/03) along ~ 4 miles of the Napa River in the Rutherford Dust Restoration reach. A total of 11 species were documented including seven native and four introduced species.

COMMENTS:

The most abundant fish species were minnows (*Cyprinidae*), and suckers (*Catostomidae*) with large mixed schools in most pools. Trout were found in pools with deep scour, heavy shade, good cover, and cooler temperatures. It was somewhat unexpected to find any salmonids in this reach, since none were observed during last year’s habitat survey in November, 2002. The size classes seen were primarily smolt size (6-8 inches) or resident fish size, but we can’t determine the life history of these fish just by looking at them. The young-of-year were seen in one pool and nowhere else suggesting that successful spawning in this reach is not common. Typically, one would expect to find mostly young-of-year, fewer 1+ fish, and far fewer 2+ fish in a good spawning and rearing stream. The size ranges in the survey reach suggest these are either resident trout or stranded steelhead smolts from upstream tributaries that are waiting out the summer in holding pools on their way to the ocean this winter.



Sacramento Pikeminnow (adult)



Sacramento Sucker (adult)



Bluegill

*** Note - These pictures were not taken during this survey. No fish were captured.***