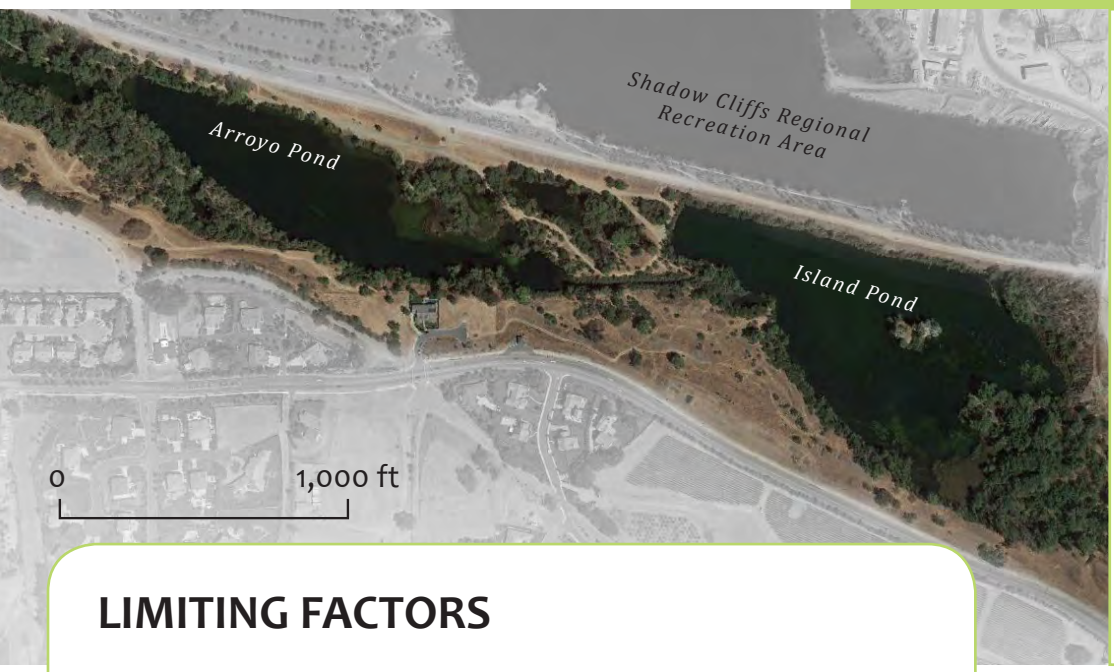
REACH 7c
Ponds at Shadow Cliffs

SPAWNING	REARING	MIGRATION
none	none	YES



LARGEMOUTH BASS

91.6% *n=120*

COMMON CARP

5.3% *n=7*

BLUEGILL

1.5% *n=2*

GOLDFISH

1.5% *n=2*

LIMITING FACTORS

HABITAT:

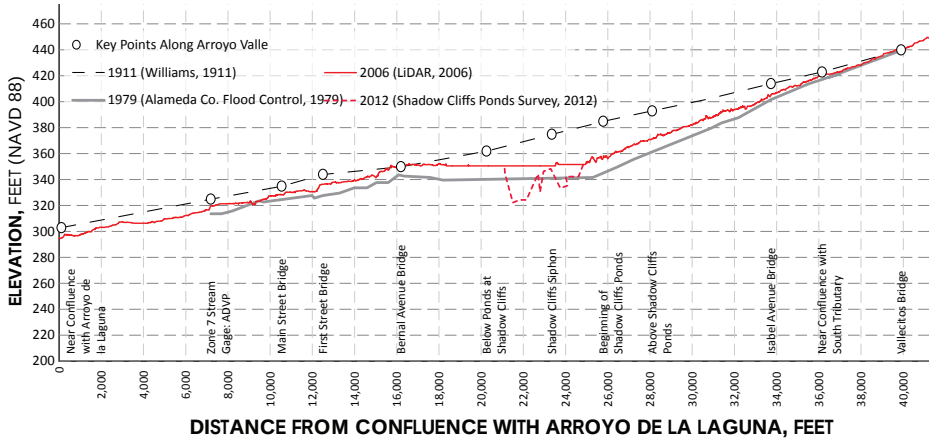
- Lethal temperatures for steelhead.
- Robust population of largemouth bass (known predators of juvenile salmonids).
- Substantial channel alteration.

STAKEHOLDER ISSUES:

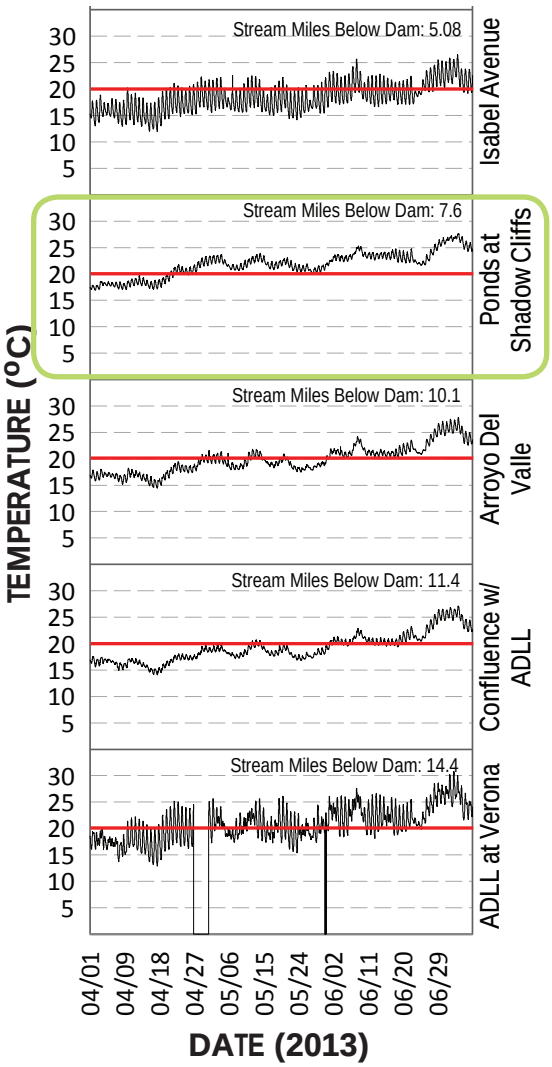
- Owned by East Bay Regional Parks District (EBRPD).
- Present use by locals for recreation.

In-channel mining has lowered the bed elevation substantially (below). The ponds act as a heat sink, dampening the effect of any cool water releases from the dam, as well as propagaing the heat signature to down-stream reaches (right). The ponds at Shadow Cliffs harbor large numbers of entirely non-native fish species (top). Furthermore, the most abundant species, largemouth bass, is a known predator of juvenile salmonids.

Longitudinal Profile Comparison



Instantaneous Temperatures



Temperatures exceeding 20°C are potentially harmful to steelhead

REACH 7c
Ponds at Shadow Cliffs

REACH 4c
Sycamore Grove Park

SPAWNING	REARING	MIGRATION	TEMP.
suitable	marginal	YES	STRESSFUL

LIMITING FACTORS

HABITAT:

- Stressful temperatures for steelhead.

STAKEHOLDER ISSUES:

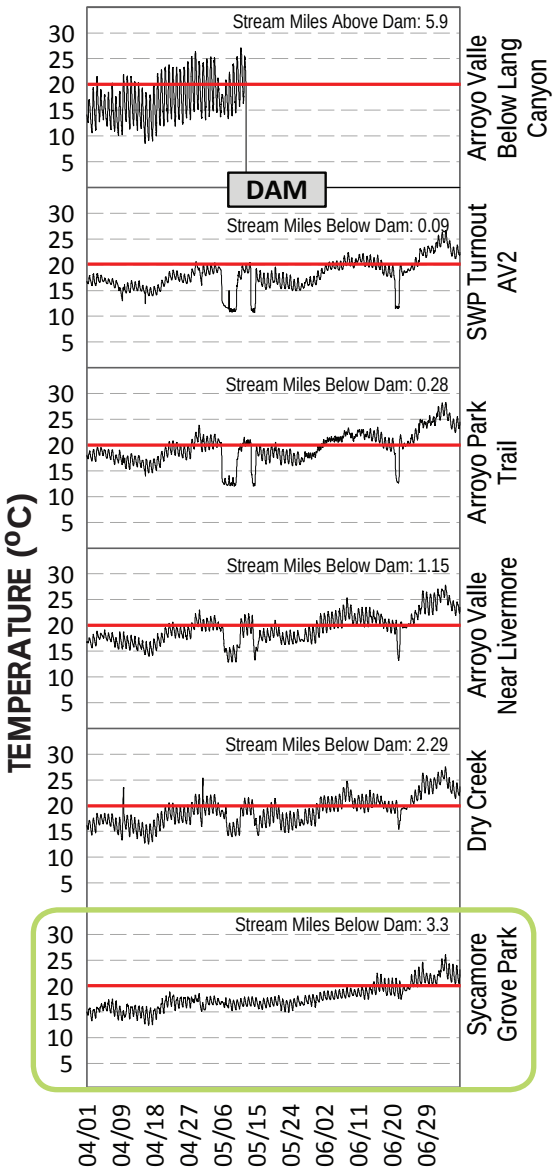
- Owned by Livermore Area Recreation and Parks District (LARPD).

Steelhead Habitat Characteristics of Study Reaches

Study Reach	Pool/Riffle/ Run Ratio (% channel length)	POOL TAILS			POOLS	
		# with Suitable Substrate	Dominant Substrate	% Embeddedness	Avg. Depth (ft)	Mean Cover Complexity6
4a	12/9/4 (52/25/23)	9	Gravel	37	1.8	46
4b	6/4/3 (51/16/33)	6	Gravel	18	2.4	30
4c	4/6/2 (50/43/7)	4	Gravel	14	2.5	28
7a	2/4/11 (8/10/82)	2	Sand	50	2.0	80
7b	2.4.7 (7/14/80)	1	Silt	100	1.6	240
7c	1/0/1 (99/0/1)	0	NA	NA	>10	NA

Photographs of Characteristic Conditions

Instantaneous Temperatures



Temperatures exceeding 20°C are potentially harmful to steelhead

REACH 4c
Sycamore Grove Park