
Napa River Fisheries Monitoring Program Final Site Location Map and Report



Prepared for:

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Site Location Map and Report

On June 8, 2001 the Stillwater Team and US Army Corps of Engineers (USACE) personnel established 13 fisheries monitoring sample sites in the Napa River Estuary Flood Protection Project Area (see map), including the South Wetlands Opportunity Area (SWOA). Individual sites were usually marked by 6-8' metal posts driven in the substrate, spray painted orange, and flagged with green tape. The Stillwater Team contracted Chaudhary & Associates, Inc. of Napa, CA to survey the sites to the specifications required by the USACE. The tolerance of the survey was one foot for latitude and longitude and 6 inches for elevation. Chaudhary & Associates Inc. conducted the survey during the week of June 10, 2001.

Several sites were not marked with posts at the actual survey point, for a variety of reasons. Three sites (1A-1, 1B-1, 2-1) were previously established by the California Department of Fish and Game (CDFG) for their 20mm trawl surveys and were not marked with a post (see Table 1), but were located based on latitude and longitude coordinates provided by CDFG. The up-river most site (Site 3-1, purse seine) was not marked with a post because it was impractical. Instead, the nearby, easternmost, First Street Bridge abutment was surveyed to the required tolerances in order to provide a nearby reference point for the sampling area. Site 1A-1 (otter trawl) had no post marker since it is in the middle of the river. A reference post was placed in close proximity to the location for Site 1A-2 (otter trawl), which is in Horseshoe Bend, and surveyed to specifications.

A reference post was placed and surveyed for Site 1A-4 (beach seine). However, the location of this site post is simply a landmark, and will only be used as a reference point for the roving beach seine surveys in the marsh. A vertical 24" concrete stand-pipe, located in the northern end of the proposed marsh area, and visible from most of the sites, was also surveyed as a landmark. This standpipe, Site 1A-4, and any other prominent and stationary landmarks, will serve as potential reference points to assist in sample site position determinations.

A tidal gage location was surveyed at the County's JFK Park boat launch dock. A nail hole was placed in the outermost piling of the dock, and surveyed for location and elevation. A tide gauge will be attached to the piling for determining tide height when sampling. Some numerical conversion would be required if it is desired to calculate nautical tide height from the surveyed elevations. The datum used for elevation in the site survey used *mean sea level* in feet (standard for surveyors), while navigational tide tables and charts use the *mean low water* datum. Chaudhary & Associates informs us that the NOAA web site, for the nearby 3rd Street Bridge, calls for a correction of (-1.95) feet to convert to the nautical datum. Corrections are dependent on the location and can be quite variable. We are using one standard in all references to tide height while sampling. For the sake of accuracy, consistency, and clarity, we are using the surveyed standard of elevation in feet (*mean sea level*).

Additional posts will be installed, as needed, for working the various gear types. Only the surveyed post will be painted fluorescent orange. In general, most additional posts will be needed only for fyke nets.

Site numbers and cross-references to other sampling site identifiers are provided in Table 2.

Table 1. Fish Monitoring Sample Site Locations in the Napa River Flood Protection Project Area.

Site No.	Gear Type*	Latitude			Longitude			Elev.
		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	Feet
1A-1** (CDFG site # 347)	OT/LT	38	15	17.7	122	17	0.3	N/A
1A-2	OT/LT	38	14	54.567	122	17	16.942	4.0
1A-3	F/LT	38	16	2.0674	122	17	11.425	0.6
1A-4*	BS (roving)	38	16	1.378	122	17	15.732	5.7
1A-5	F/LT	38	15	16.579	122	17	06.353	1.1
1A-6	F/LT	38	15	13.487	122	17	37.573	-3.2
1A-7	F/LT	38	15	21.592	122	17	34.580	-0.5
1A-8	F/LT	38	15	21.339	122	17	38.150	-1.1
1A-9	PS/LT	38	15	11.124	122	17	38.159	4.3
1A-10	F/LT	38	14	57.725	122	17	16.777	-3.3
1B-1 ** (CDFG site # 348)	OT/LT	38	16	23.1	122	17	4.7	N/A
2-1** (CDFG site # 349)	OT/LT	38	17	10.1	122	17	0.2	N/A
3-1	PS/LT	38	18	8.708	122	16	43.884	26.5
Stand-pipe***	Concrete stand pipe (pos. ref.)	38	16	4.838	122	17	26.263	2.6
Tidal gauge	Nail hole in outer piling JFK boat ramp	38	15	55.985	122	17	2.222	6.3

*Gear Types: F = Fyke, OT = Otter Trawl, PS = Purse Seine, BS = Beach Seine, LT = Light Trap

** Current CDFG 20mm trawl survey sites

*** Reference site for the roving beach seine surveys.

Table 2. Proposed Site Numbers and Cross References

Current Stillwater & USACE Site Number	Surveyor's Site Number	Gear Type	CDFG 20mm Site Number	Comments
1A-1	N/A	OT/LT	347	Current location - Napa River next to Horseshoe bend
1A-2	2	OT/LT		
1A-3	3	F/LT		
1A-4	4	BS (roving)		Arbitrary reference point for roving beach seines in the marsh
1A-5	5	F/LT		
1A-6	6	F/LT		
1A-7	7	F/LT		
1A-8	8	F/LT		
1A-9	9	F/LT		
1A-10	10	F/LT		
1B-1	N/A	OT/LT	348	Current location - Napa River 1 km upstream of JFK Memorial Park boat ramp
2-1	N/A	OT/LT	349	Current location - Napa River at Jacks Bend (Tulocay Creek)
3-1	15	PS/LT		This site is located at the southeast corner, on the top of the east abutment, of the First Street Bridge.
Stand pipe	16	Concrete stand pipe (pos.ref.)		Vertical 24" concrete stand pipe that is located in the northern area of the marsh, position reference point
Outer piling - JFK	17	Nail hole in outer piling JFK boat ramp		Nail hole located in the outermost piling of the dock at the JFK Boat launch, reference point for tide gage

Description of Individual Sites (see maps for further details)

Site 1A-1 is an otter trawl, light trap, and 20mm trawl site. The site position was previously located by CDFG for the 20mm trawls. This site is located by the SWOA in

the main Napa River channel, in close proximity to the peninsula formed by Horseshoe Bend. The otter trawl used at the otter trawl sites is a 10' wide trawl with ¼ inch mesh in the cod end. Trawl sampling will be for 10-15 minutes duration during high tide slack water. Light traps are 12" by 12" square plexiglass boxes with 2.5mm slits and a 505-micron mesh bag. Illumination is achieved by inserting one or two light sticks. Light traps will be fished at night, for 1-3 hours, during slack high tide.

Site 1A-2 is an otter trawl and light trap site that is located in the Horseshoe Bend channel. The position coordinates (Table 1) for Site 1A-2 are for a metal post that is located on the bank on the peninsula formed by Horseshoe Bend, in close proximity to the sample site.

Site 1A-3 is a fyke net and light trap site located on the west bank of the main channel of the Napa River, just upstream of the JFK Park boat ramp. The site is located on bare earth or mud where a levee was removed by the USACE as part of the project. The site is inundated by high tides. The fyke net will be positioned to sample for fish that use habitat along the bank during high tide. All fyke (or hoop) traps are approximately 12 feet long and consist of seven 3-foot diameter hoops with ¼ inch mesh. Each trap will also have two 10-foot leads, of ¼ inch mesh, that can be deployed in various patterns.

Site 1A-4 is an arbitrary point, located in a future upland or seasonal wetland site to the east of Site 1A-3. This point will be used as a landmark for locating roving beach seine positions. The beach seine is 100' long by 6' high with a 6-foot square bag in the middle. Vegetation consisted of pasture grasses when the site was located and surveyed. The beach seine will be used to sample various locations in the marsh at various tide heights, and if possible, after floods during the receding hydrograph.

Site 1A-5 is a fyke net and light trap site that is located on the west bank of the Napa River channel, just north of the north Horseshoe Bend channel. This site is currently vegetated with reeds and other aquatic vegetation. The fyke net will be placed in the reeds and vegetation in order to capture fish moving through the vegetation during a receding tide.

Site 1A-6 is a fyke and light trap site. This site is located in the main marsh drainage channel that drains into Horseshoe Bend from the north, out of the SWOA. The site is just up-channel from where the USACE breached the levee in June 2001 (Mike Dietl, personal communication). The substrate is mud. This site was located to sample fish that have been concentrated in the channel during a receding tide.

Site 1A-7 is a fyke and light trap site. This site is located on a relic tributary channel that drains from the eastern side of the marsh into the main marsh channel, which drains into Horseshoe Bend. Vegetation consisted of pasture grass and some salt tolerant plants when the site was marked and surveyed. This site was located to sample fish that have been concentrated in the tributary channel during a receding tide.

Site 1A-8 is a fyke and light trap site. This site is located on a relic tributary channel that drains from the western side of the marsh into the main marsh channel, which drains into Horseshoe Bend. Vegetation consisted of pasture grass and some salt tolerant plants when the site was marked and surveyed. This site was located to sample fish that have been concentrated in the tributary channel during a receding tide.

Site 1A-9 is a purse seine and light trap site. This site is located at the levee breach where the main marsh channel enters Horseshoe Bend. The purse seine is 100' long by 8' deep and has stainless rings and a purse line on the bottom. The substrate at this site is mud. This site was located to sample for fish concentrated in mid-water at the levee breach.

Site 1A-10 is a fyke and light trap site. This site is located in the channel that drains the marsh on the peninsula formed by Horseshoe Bend. It is located slightly upstream of the proposed peninsula levee breach. The substrate is mud. This site was located to sample for fish concentrated in the channel during a receding tide.

Site 1B-1 is an otter trawl, light trap, and 20mm trawl site. This site position was previously located by the CDFG for the 20mm trawls. This site is located in the main Napa River channel, 1 km upstream of the JFK park boat ramp.

Site 2-1 is an otter trawl, light trap, and 20mm trawl site. This site position was previously located by the CDFG for the 20mm trawls. This site is located in the main Napa River channel, at Jacks Bend (Tulocay Creek).

Site 3-1 is a purse seine and light trap site. This site is located in the main Napa River channel, just downstream of the First Street Bridge. This site was chosen so that a more upstream habitat area could be sampled. It was decided that beach seines and otter trawls would be inappropriate for this location due to the presence of debris and snags. A purse seine was deemed the most practical gear type for sampling mid-water.

The South Wetland standpipe is an approximately 8' tall, 24" diameter, concrete pipe that will serve as a landmark. The standpipe is located in the north end of the high marsh in the SWOA. Vegetation was meadow grass at the time the site was located and surveyed.

A mark was surveyed on the outer most piling of the dock at the JFK boat ramp, where we intend to install a tidal height gauge.