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**Central Valley Chinook Salmon  
Current Stream Habitat Distribution Table**

Table to be used with GIS maps (Tierra Data Systems), Bibliography, and Contacts & Expertise list.

(Streams listed from north to south)

Stream <sup>1/</sup> Tributary (RM=river mile)	Run	Upper Limit of Run <sup>2</sup> (RM=river mile)	Sources References / Pers. comm.	Comments	Survey Dates <sup>3</sup>
<b>Sacramento Valley (north to south)</b>					
<b>Sacramento River - Mainstem Spawning</b>	fall	Keswick Dam (RM 302)	CDFG 1998a Fish&Game Code sec.1505 Harvey	Spawning throughout the reach upstream from Princeton Ferry (lowermost point surveyed by CDFG). CDFG-designated spawning area between Keswick and Squaw Hill Bridge, near Vina. Keswick Dam (Central Valley Project, 1950) is present upstream limit.	1952 to present population estimates, current counts at Red Bluff Diversion Dam
	late-fall	Keswick Dam (RM 302)	CDFG 1998a Fish&Game Code sec.1505 Harvey USFWS 1995	Spawning focused between Jellys Ferry and Keswick Dam. Redd counts occur downstream to Princeton Ferry (Lowermost point spawning surveyed by CDFG). Keswick Dam (Central Valley Project, 1950) is present upstream limit.	1972-1975, 1976-1984 (no estimate) 1985-present
	winter	Keswick Dam (RM 302)	Harvey NMFS 1997	Winter Run Critical Habitat designated from Chipps Island (RM 0) to Keswick Dam (Central Valley	1967-present

				Project, 1950). Counts taken at Red Bluff Diversion Dam.	
	spring	Keswick Dam  (RM 302)	Harvey CDFG 1998a,b	Counts taken at Red Bluff Diversion Dam (Lowermost point surveyed by CDFG) in addition to in-river redd counts. Main stem spawning from Red Bluff Diversion Dam to Keswick Dam (Central Valley Project, 1950) with spawning focused at Keswick Dam to Highway 44.	1940-1956 1969-present
<b>Sacramento River - Mainstem Migration</b>	all runs	Keswick Dam (RM 302)	CDFG 1993 NMFS 1997	From Chipps Island (RM 0) to Keswick Dam is designated critical habitat for winter run. All runs migrate through mainstem.	n/a
<b>Rock Creek (RM 302)</b>	fall	To Iron Mountain Rd.	Maslin	Enters the Sacramento as a waterfall, adults concentrated below Keswick Dam may enter during high flows. Surveyed for non-natal rearing, but no fish observed.	1997
<b>Middle Creek (RM 301)</b>	late-fall	To Iron Mountain Rd.	Maslin Maslin 1997	Adults observed during non-natal rearing survey on 1/18/97. Spawning occurs from Iron Mtn. Rd to the mouth. High gradient for juveniles, no sample taken (1/18/97).	1997
<b>Sulphur Creek (RM 297)</b>	fall	Found near the mouth.	Maslin 1997	Non-natal rearing study 2/15/97, 3 fall-run juveniles found. Juveniles found within the first 0.1 km upstream from the mouth.	1997
	late-fall	unknown	Maslin 1997	Mention of adult salmon entering the creek to spawn with the unusual water year. Adult carcasses observed during non-natal rearing study in February.	1997

Olney Creek (RM 297)	fall / spring	Sample taken at 0.5 km and 1.3 km.	Maslin 1997	Fall-run and spring -run individuals found on 2/15/97	1997
	late- fall	Just downstream of the Anderson- Cottonwood Irrigation District (ACID) canal	Maslin Maslin 1997	Non-natal rearing study found juveniles near Girvan, at 3 km upstream. Spawning occurs from ACID canal to Girvan Rd.	1997
Clear Creek	fall	Upstream ~6 miles or ~1 mile below McCormick- Saeltzer Dam, 16.5 miles to Whiskeytown Dam.	CDFG 1998a CDFG 1993 Harvey USFWS 1998 Yoshiyama et al. 1996	Fish passage currently blocked at McCormick - Saeltzer Dam (const. 1903) due to fish ladder design. If fish could pass, Whiskeytown Dam (Central Valley Project, completed 1963) is upstream limit. Below the ACID (Anderson - Cottonwood Irrigation District) canal crossing near the mouth, the channel braids.	1953 - 1960 1962 - 1969 1976 - 1978, 1981, 1982 1984, 1985 1988 to present
	late- fall	Upstream ~6 miles or ~1 mile below McCormick- Saeltzer Dam, 16.5 miles to Whiskeytown Dam.	Harvey Kano et al. 1996 Reavis 1984 USFWS 1998	Fish passage currently blocked at McCormick - Saeltzer Dam (const. 1903) due to fish ladder design. If fish pass, Whiskeytown Dam is the upstream limit. Below the ACID (Anderson- Cottonwood Irrigation District) canal crossing, near the mouth, the channel braids.	1982 1984 1985
	spring	Upstream 16.5 miles to Whiskeytown Dam if fish can pass McCormick- Saeltzer Dam.	CDFG 1998b CDFG 1993 Harvey USFWS 1998 Yoshiyama et al. 1996	Fish ladders at McCormick- Saeltzer Dam have been impassible. Modified again in 1992. 1991-1993 CDFG experiments with stocking of juvenile spring chinook from Feather River Hatchery below Whiskeytown Dam. Spring run hybrid juveniles studied from 1992-1996. Suitable spring- run habitat above McCormick-	1956 1960 1977 1993 - present.

				Saeltzer Dam to Whiskeytown Dam if passage at fish ladder possible.	
<b>Churn Creek</b> (RM 284.5)	late-fall	Sample taken at 10 km. upstream	Maslin 1997	Adult carcass observed on 1/18/97. Evidence of spawning was observed .	1997
	fall / spring	To Hartwell Ave. in Redding	Maslin	Juveniles found during non-natal rearing study. In 1997, close to the mouth. In 1998, up to Hartwell Ave., at least 1.5 km upstream.	1997
	winter	To Hartwell Ave. in Redding	Maslin		1998
<b>Stillwater Creek</b> (RM 281)	fall	To Mountain Gate	CDFG 1998a Rectenwald	Access to creek flow dependant.	1957 1969
	fall / spring	Near the mouth, sample taken at .8 km from the mouth	Maslin	Non-natal rearing study. "Good" habitat. Juveniles only found near the mouth, and not found at 2.6 km upstream in sampling done in 1997. Upstream habitat was not used although it was expected from observations from similar creeks.	1997
	winter	Near the mouth, sample taken at .8 km from the mouth	Maslin Maslin 1997		
<b>Cow Creek</b> (RM 280)	fall	Up to the South Fork confluence.	CDFG 1998a CDFG 1993 Harvey USFWS 1998	Primary spawning areas include: mainstem Cow Creek, the gage station to ~.5 mi below Old Cow Cr.; upstream Little Cow Cr. to the confluence of Oat Creek. Cow Creek suspected of non-natal rearing but no surveys to date. Below the gage station Cow Creek braids into several channels.	1953-1960 1962 1964 -1969 1976 1984 1989
	late fall	Up to the South Fork confluence.	USFWS 1998	Run not surveyed annually by CDFG.	n/a
<i>Clover Creek</i>	fall	To Clover Cr. Falls	CDFG 1993 Harvey	High flows needed, intermittent use.	Recent aerial flights
<i>Little(North) Cow Creek</i>	fall	~to Bella Vista or upstream ~ 6 miles past Bella Vista	CDFG 1993 Harvey Healy	Spawning focused from the confluence to the North Cow Cr. Elementary school.	n/a
<i>Oak Run Creek</i>	fall	unknown	CDFG 1993 Harvey	High flows needed, intermittent use.	n/a

<i>Old Cow Creek</i>	fall	~ to Fern Road	CDFG 1993 Harvey	High flows needed, intermittent use.	n/a
<i>South Cow Creek</i>	fall	to Wagoner Canyon	CDFG 1993 Harvey	Gradient increases at power line crossing.	n/a
	spring	unknown	CDFG 1998b Harvey Kano 1998 USFWS 1998 Yoshiyama et al. 1996	Adults reported, no extensive use now or probably historically. On 9/13/89, a 3.2. km (2 mile) reach of South Fork Cow was snorkeled, no salmon were seen. Spring run habitat survey conducted by CDFG in 1992.	1989 1992
<b>Bear Creek (RM 278)</b>	fall	Surveyed in 1989 from the mouth to ~ 10.5 miles upstream (16.9 km)	CDFG 1998a Harvey Maslin USFWS 1998	Comparable to Antelope Creek, high gradient stream. Natal fish observed rearing, indicating spawning. Access is flow dependant.	1989
	fall / spring	to Dersch Rd.	Maslin	Non-natal rearing primarily around Parkville or at least 5 km upstream.	1997
<i>Dry Creek</i>	winter	to Parkville Rd.	Maslin	Non-natal rearing study, one fish observed, a large winter-run juvenile.	1997
<b>Ash Creek (RM 277)</b>	fall	Surveyed 5.2 miles (8.3 km) upstream	CDFG 1998a Kano 1998	Lower reach surveyed on 11/24 and 12/1, 1989, 7 carcasses found.	1957, 1961 1969, 1989
	fall / spring	~ 1.5 miles	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study, juveniles observed but no sample taken.	1997
	winter	~ 1.5 miles	Maslin	Non-natal rearing study, T. Moore observed winter run.	1997
<b>Anderson Creek</b>	fall / spring	At the mouth	Maslin  Maslin 1996a	Non-natal rearing study. Creek has unique odor and no suitable spawning gravels.	1997
<b>Cottonwood Creek (RM 275)</b>	fall	Gas Point Road intersection with McAuliffe Rd.	CDFG 1998a CDFG 1993 Harvey Kano 1998 USFWS 1998	Spawning focused from the confluence of the South Fork to the mouth. Access to the creek flow dependant. Creek suspected of non-natal rearing but no surveys to date. In a 1989 aerial survey, 1 redd was	1953 - 1969 1976 - 1978 1981 - 1984 1989 1991 - 1992

			observed in 8 miles (18.3 km) on the North Fork, 43 redds in 21.7 miles (35 km) of the South Fork and 772 redds along the mainstem (from the mouth to the confluence with the North Fork).		
	late-fall	The mainstem and lower reaches of the, North Fork, Middle Fork, Beegum Creek and the South Fork	CDFG 1993 Harvey Kano 1998 Yoshiyama et al. 1996	Small run. Access to the creek flow dependant. Typically spawn farther upstream than the fall-run, in the mainstem and lower reaches of the North Fork, Middle Fork and South Fork.	1984 1985 1989
	spring	Middle Fork - up Beegum Cr. ~8 mi. South Fork - above Maple Gulch.	CDFG 1993 CDFG 1998b Harvey Healey, 1998 memo. Yoshiyama et al. 1996	Historic runs of ~500. Individuals reported in 1995. On 9/11/89, a 1 mi. stretch of the South Fork was snorkeled, no fish observed. Population not persistent.	1989 1995 1997
<b>Battle Creek*</b> (RM 271)	fall	To the Coleman National Fish Hatchery (CNFH, const. 1942) weir (RM 5.7). Some escapement above the weir.	CDFG 1998a CDFG 1993 Fish&Game Code sec.1505 Harvey USFWS 1998 Yoshiyama et al. 1996	CDFG only surveys to the Coleman National Fish Hatchery (@ RM 5.7), USFWS conducts surveys upstream of CNFH. Spawning focus at Gover Rd. and old hatchery site. CDFG-designated spawning area from mouth to Coleman Powerhouse.	CNFH counts 1952-present  observations above CNFH 1958 - 1959 1985 - 1989
	late-fall	To the Coleman National Fish Hatchery weir (RM 5.7). Some escapement above the weir.	Harvey Reavis 1983 USFWS 1998 Yoshiyama et al. 1996	CDFG only surveys to the Coleman National Fish Hatchery (CNFH at RM 5.7), USFWS conducts surveys upstream of CNFH, hatchery maintained run.	CNFH counts 1952-present  observations above CNFH 1981-1983
	spring	North Fork Battle Cr. to Eagle Canyon Dam.  South Fork Battle Cr. to Coleman Diversion Dam.	CDFG 1993 CDFG 1998b Croc USFWS 1998 Yoshiyama et al. 1996	USFWS conducts surveys above Coleman National Fish Hatchery. Small spring run (50-100) may be of hybrid origin. Hold in pools in mainstem and tribs. High flows appear to provide access to habitat above dams, even with fish ladders	Above CNFH, estimates 1943-1957, 1995-1997 observations 1970-1975

				closed. Unscreened diversions & limited instream flow releases major impediments to habitat access.	
	winter	North Fork Battle Cr. to Eagle Canyon Dam.  South Fork Battle Cr. to Coleman Diversion Dam.	CDFG 1993 Croci NMFS 1997 USFWS 1998 Yoshiyama et al. 1996	USFWS conducts surveys above Coleman National Fish Hatchery (CNFH). While most of hatchery origin, 1998 trapping efforts discovered several non- hatchery origin winter-run.	1952-1997,  above CNFH, 1975, 1997- 1998
<b>Inks Creek</b> (RM 264)	fall	Surveyed in 1989 from the mouth to the confluence with the South Fork, ~ 3.5 miles (5.6 km)	CDFG 1998a Kano 1998	A survey, on Nov. 7, 1989 was conducted from the mouth to the confluence with the South Fork. Ten carcasses, four lives and three redds were observed.	1969 1989
	fall / spring	~1.5 miles	Maslin	Non-natal rearing occurring at least 2 km upstream. Creek in "good" condition.	1997
<b>Frazier Creek</b> (RM 267)	n/a	unknown	Maslin	Westside tributary. Creek surveyed for non- natal rearing, but no fish observed.	1997
<b>Spring Creek</b> (RM 257.5)	n/a	unknown	Maslin	Westside tributary. Creek surveyed for non- natal rearing, but no fish observed. Gradient of 1.39% at the mouth.	1997
<b>Paynes Creek</b> (RM 253)	fall	~ lower 3 miles (or ~1 mile upstream from "the old bridge crossing" to the diversion ditch)	CDFG 1998a Harvey Maslin USFWS 1998	Small run. Access to the creek flow dependant. Creek surveyed for non- natal rearing, but no fish observed. Gradient of 1.66% at the mouth.	1965,1966 1969 1982 - 1984 1989
<b>Sevenmile Creek</b> (RM 251)	n/a	unknown	Maslin	Eastside tributary. Creek surveyed for non-natal rearing, but no fish observed.	1997
<b>Blue Tent Creek</b> (RM 247.7)	fall / spring	~ 1.8 miles, not to Interstate 5	Moore 1997 Maslin Maslin 1996,b Maslin 1997	Non natal rearing occurring to at least 3 km. Creek condition worse after 1998 flows. T. Moore studied rearing farther upstream. Essentially no	1995-1998

				access to spawning gravels.	
<b>Dibble Creek</b> (RM 246)	fall / spring	~ 1.8 miles not to Interstate 5	Moore 1997 Maslin Maslin 1996a Maslin 1997	Non-natal rearing Occurring at least 2 km upstream. Stream in "terrible" condition. Essentially no access to spawning gravels.	1995-1998
<b>Reeds Creek</b> (RM 244.8)	fall / spring	Reported as far as Wilder Rd. or ~ 5 km upstream.	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study. Marginal habitat there. Usually found below Jackson Road. Tributary, Brickyard Creek sampled in 1995.	1995 1997
<b>Red Bank Creek</b> (RM 243)	fall / spring	Reported as far as Paskenta Rd. or ~5 km upstream.	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study, creek in "poor" condition. Usually just upstream of County Road A8.	1995 1997
<b>Salt Creek</b> (RM 240)	fall	Past Tusken Springs Rd. (where the canyon begins and the gradient increases).	CDFG 1998a CDFG 1993 Kano 1998 Harvey	Most active between Highway 36 and Tusken Springs Rd. On Nov 22, 1989, a 1.5 (2.5 km) mile reach was surveyed 7.7 miles (12.5 km) upstream from the mouth, three carcasses were found.	1972 1973 1982 - 1984 1989
	late- fall	unknown	Hoopaugh 1977 Knutson 1980 Taylor 1974	Brief mention in some annual spawning stock reports.	1972, 1973 1975, 1978
	fall / spring	Just upstream of Highway 99, out of Red Bluff.	Maslin	Non-natal rearing study. Reported at least 6 km upstream.	1997
	winter	Just upstream of Highway 99, out of Red Bluff.	Maslin	Non-natal rearing study, winter juvenile observed.	1997
<b>Antelope Creek</b> (RM 235)	fall	The gage station	CDFG 1998a CDFG 1993 Harvey Kano 1998 USFWS 1998	Access to Antelope Creek includes four migratory routes: New Creek, Craig Creek, Butler Slough and mainstem Antelope Creek. Spawning is scattered throughout the four tributaries with the primary spawning occurring from the confluence with Little Antelope Creek to the gage station.	1953 - 1958 1960, 1962 - 1977 1981 - 1984 1989



				Surveys in 1989 from RM 3.1 to 6.5 observed carcasses, redds and live fish.	
	late-fall	not mentioned	Hoopaugh 1979	Brief mention in annual spawning stock report (2/1/77).	1977
	spring	North Fork Antelope ~ to the McClure Place or Confluence with Judd Creek. South Fork Antelope ~ to Round Mountain Creek	Brown CDFG 1998b CDFG 1993 Harvey	Snorkel surveys conducted from 1989. The lower distribution limit found ~ 2 miles downstream of the Tehama Wildlife Refuge boundary. Population not persistent. Adequate adult holding and spawning habitat but passage limited by two water diversions.	1953 1956 1959 1983 - 1984 1986 - present
<i>Craig Creek</i>	fall	To the confluence of Antelope Creek	CDFG 1998a Harvey Kano 1998	Scattered spawning, access route to Antelope Creek. Suspected of non-natal rearing but no surveys to date. Surveys in 1989 included a .75 mile (1.3 km ) stretch starting .5 miles (.8 km) upstream of its mouth. Redds, lives and carcasses observed.	1973 - 1975 1981 - 1984 1989
	late-fall	To the confluence of Antelope Creek	Kano et al. 1996	Brief mention in annual spawner stock report.	1984
<b>Dye Creek (RM 232)</b>	fall	Up to Foothill Rd. (canyon entrance)	CDFG 1998a Harvey Kano 1998	Small run. Access to the creek flow dependant. Insufficient flow to accommodate spawners during the 12/4/89 survey. Survey included a 1.5 mile (2.4 km) stretch 2.6 miles (4.2 km) upstream of its mouth.	1957, 1969 1971 - 1973, 1982 - 1984 1989
	fall / spring	To Highway 99 bridge	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study. Reported at least 6.7 km upstream. Obstructions at Shasta Blvd, with other barriers farther upstream (a dam).	1997
	winter	Sample taken at 3.6 and 4.7	Maslin 1997	Non-natal rearing study. Two	

		km upstream		winter-run juveniles observed in early April.	
<b>Oat Creek</b> (RM 233)	fall / spring	Up to Tyler Rd.	Maslin	Non-natal rearing study. Maximum distance upstream in 1997 was 3 km.	1997 1998
<b>Coyote Creek</b> (RM 233)	fall	Tehama-Colusa (TC) Spawning Channel	CDFG 1998a Harvey Kano 1998	Access route for fish raised at the TC spawning channel. Winter run observed downstream of canal. No present use. In 1989, any spawning that occurred did not survive since the creek dewatered when Red Bluff Diversion Dam gates were raised.	1974 - 1977 1989
	late-fall	TC spawning channel	Hoopagh 1977 Hoopagh 1978		1975 1976
	winter	TC spawning channel	Hoopagh 1977 Hoopagh 1978		1975 1976
	fall / spring	Upstream ~1/2 mile from the confluence with Oat Creek (first big bend).	Maslin		Non-natal rearing study. Maximum distance upstream in 1997 was 2 km.
<b>Elder Creek</b> (RM 230)	fall	~2.5 miles upstream	Kano 1998 USFWS 1998	Weekly surveys in 1989 (Oct - early Dec) resulted in no fish observed and the stream had become dry. Siltation in the lower reach and flow dependency limit spawning.	1989
	fall / spring	Just upstream of the Highway 99 West at the Tehama Colusa (TC) Canal.	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study. Maximum distance upstream in 1997 was 6.5 km. At the TC Canal is a concrete ford, some juveniles seen above in limited numbers. Difficult stream to sample.	1997
	winter				
<b>Mill Creek</b> (RM 230)	fall	To the canyon entrance (~ 1 mi. upstream from the gage station)	Brown CDFG 1998a CDFG 1993 Harvey USFWS 1998	Have been sighted at Lower Mill Creek confluence during high water years. Clough Dam destroyed in 1997 flooding. Suspected of non-natal rearing but no surveys to date. In the lower reach, the spawning areas are armored with rocks and boulders. Surveys conducted as a CDFG and USFS	1952 - 1989, 1992 - 1994, 1997 - present

				coop. effort.	
	late-fall	not mentioned	Hoopaugh 1978, 1979 Kano et al. 1996 Knutson 1980 Taylor 1974	Observations of fish mentioned in some annual spawning stock reports (1973, 1975-1978).	1973 1975-1978 1985
<b>Mill Creek cont.</b>	winter	lower mainstem reaches of Mill Creek	Menchen 1964	Few fish spawned below Clough Dam, creek temperatures believed to be too high for egg survival. Uncommon occurrence.	1963
	spring	~ 2 miles below Lassen National Park Boundary, or 2 mi. upstream of Hwy. 36 bridge.	Brown CDFG 1998b Harvey USFWS 1998 Yoshiyama et al. 1996	Holding areas primarily downstream of Big Hole (USFS lands). Spawning primarily at the Avery Place and upstream of the Mill Creek Store; or from 2 mi. upstream of Hwy 36 bridge downstream to Lees Camp (24 mi.). Very important habitat as stream supports 1 of 3 wild, persistent, and long-term documented populations of spring-run. Access mainly affected by low flows due to diversions, but new Water Exchange Agreement has helped.	1954-1964 1970-1975 1977, 1978 1980 1982-present
<b>McClure Creek (RM 226.5)</b>	fall / spring	To Highway 99.	Maslin Maslin 1997	Non-natal rearing study. Maximum distance upstream in 1997 was 3.1 km. Many fish observed at Hall Rd.	1997
	winter	To Highway 99	Maslin		
<i>Truckee Creek</i>	n/a	unknown	Maslin	Tributary to McClure Creek. Surveyed for non-natal rearing, but no fish observed.	1997
<b>Thomes Creek (RM 225)</b>	fall	up to Interstate-5 crossing (~ 4 mi.)	CDFG 1998a Healey Kano 1998 USFWS 1998	Access to the creek flow dependant. In 1989, surveys from the mouth upstream 6.2 miles resulted in 3 carcasses and 13 redds. Aerial counts the same day, 18.7 miles, observed 7 redds.	1957 1974 1975 1989

	spring	unknown	USFWS 1998	Adult spring run have been observed in Thomes Creek three times, in 1946, 1958 and 1962.	1946 1958 1962
	fall / spring	to Rawson Road.	Maslin Maslin 1996a	Non-natal rearing study. Juveniles reported to 13 km upstream (11.5 km, 1995). Difficult creek to sample.	1995,1997, 1998
	winter	to Rawson Road.	Maslin		1997, 1998
<b>Toomes (Dry) Creek</b> (RM 223)	fall	Favinger Place, to the canyon entrance.	CDFG 1998a Healy	Access to the creek flow dependant. A 11/9/89 survey showed the lower section of the creek was dry, 2 live salmon observed.	1956, 1967, 1976, 1977, 1980 - 1984 1989
	late-fall	not mentioned	Taylor 1973	Observations mentioned in annual spawning stock reports, 5 fish in 1972.	1972
	fall / spring	~1/2 mile upstream Highway 99 to Tehama & Vina Rd.	Maslin Maslin 1996a	Non-natal rearing study. Reported at 3 km upstream. High gradient system, fish found lower in the creek.	1995 1997
<b>Deer Creek</b> (RM 220)	fall	To the gage station	Brown CDFG 1998a CDFG 1993 Harvey Maslin USFWS 1998	Spawning focused from the "upper dam" downstream to Hwy. 99; present surveys emphasize holding. Suspected of non-natal rearing but no surveys to date. Information collected by CDFG/ USFS coop. efforts.	1952 - 1954, 1956 - 1960, 1962 - 1987 1989 1992 - 1994,
	late-fall	unknown	Kano et al. 1996 USFWS 1998	Observations of fish mentioned in annual spawning stock reports.	1984 1985
	winter	unknown	CDFG 1998a	Egg mortality high with high water temperatures. Uncommon occurrence.	1963
	spring	Upper Deer Creek Falls	Brown CDFG 1998b CDFG 1993 Harvey USFWS 1998	Spawning focused from Ponderosa Way Bridge to Deer Creek Falls. Moak Cove area used in low water years. Habitat extended 6 miles (1943) by fish ladder. Diverters working to provide adequate	1940-1956, 1958 1963,1964, 1970-1976, 1977,1978, 1980- present

				flows. Very important habitat as stream supports 1 of 3 wild, persistent, and long-term documented populations of spring-run.	
<b>Jewet Creek</b> (RM 215)	fall / spring	To Wisconsin Road, ~2.5 miles upstream.	Maslin	Non-natal rearing study. Lower end of creek dries up first. Fish from Coleman National Fish Hatchery.	1997
<b>Singer Creek</b>	fall	unknown	CDFG 1998a Kano et al. 1996	In 1984, one survey was made, 2 live salmon observed. No description of location given.	1972 1973 1984
	fall / spring	unknown	Maslin	Non-natal rearing study.	1997 1998
<b>Pine Creek</b> (RM 197)	fall / spring	Downstream Hwy 99E, up to 22.1 km upstream	Maslin Maslin 1996a	Non-natal rearing study. Juveniles seen up to 22.1 km, upstream.	1995 1997
	winter	Downstream Hwy 99E	Maslin		1997
<b>Rice / Burch Creek</b>	fall / spring	Upstream to Kirkwood	Maslin	Non-natal rearing study. Chinook from Coleman National Fish Hatchery	1998
<b>Big Chico Creek</b> (RM 193)	fall	Iron Canyon Fish Ladder in Bidwell Park	CDFG 1998a Hill Yoshiyama et al. 1996	Small run. Lower Bidwell Park boundary to Salmon Hole. Run not annually surveyed by CDFG at this time.	1957, 1962 1983 - 1985
	late- fall	Iron Canyon Fish Ladder in Bidwell Park	Hill Maslin Menchen, 1965 Yoshiyama et al. 1996	Observed while trapping. Lower Bidwell Park boundary to the Salmon Hole is probable spawning location. Run not annually surveyed by CDFG at this time.	1964 1997
	spring	Higgins Hole, ~.5 to 1 mile upstream of the Ponderosa Way crossing.	CDFG 1998b Hill USFWS 1998 Yoshiyama et al. 1996	Remnant run with sporadic occurrence. Primary holding is Higgins Hole, Forest Ranch and Hennings Hole. Downstream limit of holding and spawning is Salmon Hole. Low flows and high temperatures limit habitat use. Population not persistent.	1956-1960, 1962-1974, 1977,1983- 1985, 1989- 1990,1992- present

	fall / spring	To Lindo Channel	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study. Reported at 4 km upstream.	n/a
	winter	To Lindo Channel	Maslin	Non-natal rearing study.	n/a
<i>Mud Creek</i>	spring	not mentioned	Maslin	Adult spring fish observed in county floodway.	1998
	fall / spring	to Hicks Lane	Maslin Maslin 1996a,b Maslin 1997	Non-natal rearing study. Reported at 13.1 km upstream	1995, 1996,1997 1998
	winter	to Hicks Lane	Maslin Maslin 1996a,b Maslin 1997	Non-natal rearing, found at 8.3 km upstream.	1997
<i>Rock Creek Kusal Slough</i>	fall / spring	Hwy 99 E	Maslin Maslin 1996a Maslin 1997	Non-natal rearing study. Reported at 17.4 km upstream. Access through Kusal Slough.	1995, 1997
	winter	Hwy 99E		Non-natal rearing study. Access through Kusal Slough.	1997
<i>Lindo Channel</i>	fall	below Five Mile Rec. Area	CDFG 1993 Gibbs Maslin	Excellent spawning gravel, most years intermittent flows preclude successful spawning. Formerly called "Sandy Gulch" an old split of Big Chico Creek. Lindo Channel receives more water, (4200 cfs), than Big Chico Creek (1600 cfs). Fall and late-fall not found past Bear Hole. Spring run will migrate with adequate flows available.	n/a
	late-fall	below Five Mile Rec. Area	CDFG 1993 Gibbs Maslin		n/a
	spring	to 5 Mile - site of a diversion dam that diverts water into Lindo Channel. Used to be a gravel push up bar (no longer done).	Gibbs Maslin		n/a
<i>Stony Creek (RM 189)</i>	fall	Black Butte Dam (~24 mi. upstream) and/or the Glenn Colusa Irrigation District Dam (GCID).	CDFG 1998a Kano 1998 USFWS, 1998 USBuRec 1996 Yoshiyama et al. 1996	Black Butte Dam (CVP, constructed 1963) is present upstream limit. 1989 (11/30) surveys from the I-5 bridge downstream 10.4 miles and aerial surveys (12/4) of 19.4 miles observed the stream was dry from the GCID to the mouth, 2 redds were counted.	1957 1968 1981 1989 1994
	late fall	same as above	USBuRec 1996	See Lower Stony Creek Fish, Wildlife and Water Use Management Plan	1994

				on website.	
	fall / spring	Up Hwy 32 to Capay Rd. or 6th Ave.	Maslin Maslin 1996a	Non-natal rearing study. Majority of fish are fall run.	1997
	winter	Up Hwy 32 to Capay Rd. or 6th Ave.	Maslin Maslin 1996a		1997
Butte Creek (RM 139) (RM 80)	fall	Centerville Dam (Constructed 1900) is present upstream limit.	CDFG 1998a CDFG 1993 Hill Ward USFWS 1998 Yoshiyama et al. 1996	The fall-run have fewer numbers than the spring run. Fish may enter Butte Creek through 4 routes. 1) Butte Slough (RM 139) at Moons Bend, 2) Tisdale Bypass which accesses the Sutter Bypass, 3) The Sutter Bypass via Sacramento Slough.(RM 80), 4) The Colusa weir. Majority of spawning occurs from Durham (proximity to the crossing of the Western Canal to the Parrot - Phelan Dam) Dams to be removed on Butte Creek include: McGowan and McPherrin. Dams to be modified in 1998/99 on Butte Creek include: Adams, Gorrill, and Durham (Durham/Mutual).	1971 1972 1974 -1976 1978 1983 1996
	late-fall	Centerville Head Dam	CDFG 1993 CDFG 1998a Hill Yoshiyama et al. 1996	Not surveyed frequently. Spawning occurs above Parrot - Phelan Dam.	1975 1978 1981
	spring	Centerville Head Dam	CDFG 1998b CDFG 1993 Hill USFWS 1998 Yoshiyama et al. 1996	Majority of run (95%) stopped at the natural falls downstream from Centerville Dam, approx. 1 km. Fish tend to hold from confluence of Little Butte Creek upstream of the Centerville Powerhouse and spawn below the powerhouse. Significant habitat alterations and diversions reduce quality. Very important habitat as stream supports 1 of 3 wild, persistent, and long-term documented populations of	1954-present

				spring-run.	
<i>Sutter Bypass</i>	spring	East & West channels provide migration access	CDFG 1998b (Curtis 1996, in CDFG 1998b)	Adult and juvenile migrational route, impacted by flow control structures with no fish screens or ladders. A limited evaluation by CDFG has identified rearing potential for juvenile spring run within the Sutter Bypass.	n/a
	winter	migratory route	Hill Reavis 1981	Adult and juvenile winter run use the Sutter Bypass as a migratory route. Observed near Little Butte Creek.	1979
<b>Feather River*</b> (RM 80)	fall	Feather River Hatchery at Oroville Dam (@ RM 71)	CDFG 1998a Fish&Game Code sec.1505 USFWS 1998 Yoshiyama et al. 1996	Surveys include hatchery counts and in-river counts. CDFG-designated spawning area between Oroville and mouth of Honcut Creek. Oroville Dam (State Water Project, constructed 1967) is the present upstream limit.	1952-present  HATCHERY 1964-present
	late-fall	Feather River Hatchery at Oroville Dam (@ RM 71)	Hoopagh 1978, 1979 Knudson 1980 Reavis 1984 Taylor 1972, 1973, 1976 USFWS 1998	CDFG introduced late-fall run in 1970 from the Coleman National Fish Hatchery, extirpated after two generations. Thermalito Afterbay Outlet to mouth of Honcut Ck. always has warmer temperatures.	1973-1978 1982
	spring	Feather River Hatchery at Oroville Dam (@ RM 71)	CDFG 1998b USFWS 1998 Yoshiyama et al. 1996	Run intergression with fall-run fish and maintained by hatchery; hybrids spawn between Dam and Hwy. 7 and hold over the summer in deep pools within low-flow section between Thermalito Diversion Dam and Thermalito Afterbay Outlet.	1946 1954-present >1964 all counts at Feather River Hatchery
<i>Yuba River</i>	fall	Englebright Dam (@ RM 24)	CDFG 1998a CDFG 1993 Fish&Game Code sec.1505 Nelson USFWS 1998 Yoshiyama et al. 1996	Hwy. 20 downstream to Daguerre Point Dam is area of spawning	1953-present



				concentration, though this dam blocks passage at certain flows.  CDFG-designated spawning area between Englebright Dam and ~ 4 mi. east of Marysville. Englebright Dam (constructed 1941) is the present upstream limit.	
	spring	Englebright Dam (@ RM 24)	CDFG 1998b CDFG 1993 Nelson Baracco	Remnant population persists and is maintained by " fish produced in the river, salmon straying...and infrequent stocking of hatchery reared fish by the DFG." (CDFG 1993). Strays from the Feather R. can be found scattered throughout the system during the summer. Summer refugia is found immediately below the Narrows 1 and 2 powerhouses with deep pools and cool water. This is historic fall-run spawning habitat, which may have led to hybridization. Englebright Dam (constructed 1941) is the present upstream limit, though DaGuerre Point Dam may block at certain flows.	1972, 1980-1986 1988-1989 1997
<i>Deer Creek</i>	fall	~ 2 miles upstream from the Yuba River	Nelson	Access to the creek flow dependant.	n/a
<i>Bear River</i>	fall	South Sutter Irrigation Dam, ~15 miles upstream from the confluence with the Feather River.	CDFG 1993 Nelson	Trib. at RM 12. Intermittent use, access to the river flow dependent. Camp Far West Dam (constructed in 1963, RM 16) is the present physical upstream limit, but SSID dam blocks due to inadequate flow releases.	n/a
	fall	to		Access to the	

<i>Dry Creek (Yuba Co.)</i>		Spenceville	Kano et al. 1996 Nelson Reavis 1986	creek flow dependant. Unpublished, unstudied findings. On 12/19/85, 1.5 mi. surveyed on Beale Air Force Base. The base warden later reported counting four redds and observing seven salmon caught by anglers in this area.	1983 1983
<b>Coon Creek</b>	fall	Above highway 65	Menchen 1964-1967	Access flow dependant. No fish observed, but redds found. Appears to connect with the East Side Canal, contact with Feather River is not researched.	1963-1966
<b>Doty Ravine</b>	fall	Above highway 65	Menchen 1964-1967	Access flow dependant	1963-1966
<b>Auburn Ravine</b>	fall	Highway 65	Reavis 1981	Access flow dependant	1980
<b>American River*</b> (RM 60)	fall	Impassable at Nimbus Fish Hatchery at Nimbus Dam (@RM 23)	CDFG 1998a CDFG 1993 Fish&Game Code sec.1505 Nelson USFWS 1998 Yoshiyama et al. 1996	Hatchery and in-river counts made. 97% of spawning above Watt Ave., 75% of spawning above Sunrise Blvd., 100% above Howe Ave., upstream from the American River Parkway. CDFG-designated spawning area between Nimbus Dam and 1 mi. downstream from Arden Way. Nimbus Dam (Central Valley Project, constructed 1955) is present upstream limit.	1952-present  Nimbus Hatchery 1955-present
	spring	To Nimbus Dam (@ RM 23)	CDFG 1998b Nelson	Strays occasionally observed. No longer exist in American River.	n/a
<i>East Main Drain (Natomas)</i>	fall	not mentioned	Menchen 1964-1966,1969 Nelson	Migratory route to Dry Creek.	1963-1965 1968
<i>Dry Creek</i>	fall	East of Roseville	Nelson	Poor habitat and use based on flows. Past CDFG personnel introduced fry from hatchery stock into Dry Creek at	n/a

				confluence with the East Main Drain (Natomas)	
<i>Antelope Creek</i>	fall	Just above Hwy 65	Nelson	Access to the creek flow and early rain dependant. Accounted for ~10% available habitat up Dry Creek tributaries	n/a
<i>Miners-Ravine Ck.</i>	fall	At town site of Hidden Valley, near Cavitt & Stallman Rd.	Nelson Swanson 1992	Access to the creek flow and early rain dependant. Accounted for ~30% available habitat up Dry Creek tributaries	n/a
<i>Secret Ravine Ck.</i>	fall	Rock Springs Rd.	Nelson	Access to the creek flow and early rain dependant. Accounted for ~60% available habitat up Dry Creek tributaries	n/a
<b>Cache Creek</b>	fall	Not accessible at present	Emig Moyle Yoshiyama et al. 1996	No current access to creek. Historically, supported salmon only in wet years, probably as far as Capay Dam.	n/a
<b>Putah Creek</b>	fall	Up to 1 km below Solano Diversion Dam; spawners and juveniles seen in reach below Stevenson Bridge near Davis.	Moyle Wingate Yoshiyama et al. 1996	Flow dependent access; spawning & rearing successful in high water years. From the Sacramento River fish enter Prospect Slough arm of Cache Slough, then access the Toe Drain which parallels the Shipping Channel. Access to Putah Creek occurs via Yolo By-pass. UC Davis has surveyed in recent years.	1995 1997 1998
<b>Sacramento Deep Water Shipping Channel</b>	fall	Blocked at lock for migrating adults (~ 25 mi.); entire channel used by downstream migrants diverted from Sacramento R.	Wingate	Adults are stopped at the lock 25 miles up channel, while downstream migrants get diverted from Sacramento River. Slow to stagnant waters within channel. Lack of flow consistency between shipping channel and tidal river flows.	1994

San Francisco Bay & Delta

Delta					
Migration and Rearing	fall late-fall spring	Found throughout the Delta	Croteau McLain Neillands USFWS 1995 CDFG 1998b	All open accessible channels are considered migratory / rearing habitat for the four races of chinook as adults and juveniles. Rearing habitat and timing is strongly influenced by magnitude of stream flow and tidal cycle. Fall and spring run fry (although little data available) use the Delta and Bay frequently as rearing habitat. A considerable fall/spring fry population is found migrating into the Delta during Dec., Jan. & March, most pronounced during wet years. They can also stay upriver and emigrate as smolts or yearlings in the spring which tend to move through the Delta rapidly. Spring outmigration can be altered by the installation of the South Delta Barriers (Old River, Grant Line, etc.), which still allow fish to be drawn up from other channels. Winter and late-fall runs tend to rear upstream of the Delta. Juveniles can be found entrained on SWP/ CVP pumps at Clifton Court Forebay.	Annual by USFWS & CDFG
	winter		NMFS 1997 <a href="http://www.delta.dfg.ca.gov/baydelta/monitoring/">http://www.delta.dfg.ca.gov/baydelta/monitoring/</a>	Peak emigration of winter-run occurs from January-April, but range may extend from September-June. Distinct emigration pulses appear to coincide with high precipitation and increased turbidity. Migrate	Annual (1991-present) CDFG & USFWS

				from the Delta to the ocean from Jan-June. Juvenile salmon monitoring started in 1991.	
<b>SF Bay</b>					
Migration and rearing	fall spring winter late-fall	Found throughout Bay	NMFS 1997 Emig McLain	Winter run critical habitat is designated North Bay above the Bay Bridge. Fall run adults in South Bay also. DFG believes fall run are strays from hatchery releases. Fall & spring runs use Bay for rearing habitat.	n/a
<b>South SF Bay</b>					
<i>Alameda Creek</i>	fall	Up to Hwy 4 in Martinez	Leidy, pers. comm. Roper	Observed in this stream but no additional information. May be strays from hatchery releases in Bay. CDFG biologist locates limit at 5.5 miles upstream, at the BART station where an 8 ft. drop structure is found. Upstream of barrier is a water district inflatable dam.	1996 1997
<i>Coyote Creek</i>	fall	Unknown	Roper Smith Leidy, pers. comm.	A small run annually ascends the creek to a series of water percolation dams, up to the Montague Expressway. No extensive surveys, fish are presumably of hatchery origin.	Personal observations over a period of time
<i>Guadalupe River</i>	fall	14 miles up is a barrier. US Army Corps outfall located about 200 yards above the Hwy. 680/242 intersect - or - To ~ Blossom Hill Blvd. where there is a 13 foot barrier.	Leidy et al. in: Kay 1997 Roper SCVWD Biologists Smith Southbay Salmon and Steelhead Restoration	Usually found to 9 miles upstream. Small run spawning during certain years. Historical evidence is lacking and the untimely early appearance of the fish (Sept.) for a low fall flow system indicate hatchery stock. A 1994 San Jose State Univ. mark	1986 1987 1994

				& recapture study found population of ~200 fish. Spawn in lower reaches in Sept. to late Nov. Outmigrant and upstream trapping now conducted by Santa Clara Valley Water District (SCVWD).	
<i>San Tomas Aquinas Creek</i>	fall	Up to Hwy. 101 bridge crossing?	Leidy, pers. comm. Emig	CDFG recorded a female spawned-out chinook carcass 100 yds. below the Hwy. 101 bridge crossing on 1/11/84; 12 redds also noted then in a reach between Walsh Ave. and the Southern Pacific RR drop structure.	1984
<b>San Pablo Bay</b>	(West to East on the North side)				
<i>Gallinas Creek</i>	fall	East side of Hwy. 101	Cox	Spawning unknown, fish observed over multiple years.	Personal observations over a period of time
<i>Miller Creek</i>	fall	Upstream to the Hwy. 101 crossing.	Cox	Spawning unknown, fish observed over multiple years.	Personal observations over a period of time
<i>Novato Creek</i>	fall	½ mile above Hwy. 101	Cox	Spawning unknown, fish observed over multiple years.	Personal observations over a period of time
<i>Petaluma River</i>	fall	To at least the railroad crossing near upstream influence of tidal action / turning basin; & Adobe Creek	Cox Leidy	Small salmon run. Adobe Creek fish spawned by teacher Tom Furrer of Casa Grande H.S., perhaps occasional stream spawning. Tyee Club raises and releases fish.	Personal observations over a period of time
<i>Sonoma Creek</i>	fall	To the confluence with Carriger Creek.	Cox Adams	Dr. Adams confirmed the presence of chinook at the confluence of Sonoma Creek and Carriger Creek in fall 1997.	Personal observations over a period of time
<i>Napa River</i>	fall	Upstream into the town of Calistoga, up to the base of Kimball Canyon Dam	Emig Leidy	A small run (numbers unknown); some occasional spawning, possibly strays. Unknown whether chinook use any of the tributary streams	Personal observations over a period of time

<i>American Canyon Creek</i>	fall	1/4 mile	Edwards	No spawning suspected, possibly strays.	Personal observations over a period of time
<b>Grizzly Bay</b>					
<i>Green Valley Creek</i>	fall	To the base of Green Valley Falls, ~1/2 mi above Green Valley	Edwards	Has seen redds at Mangles (Mankas?) Crossing, The falls are 50 to 80 feet high. Creek feeds to Cordelia Slough.	Personal observations over a period of time
<i>Suisun Creek</i>	fall	Upstream to the Napa Co. / Solano Co. Line	Edwards	Spawning unknown; fish observed over multiple years, possibly strays. Creek feeds to Cordelia Slough.	Personal observations over a period of time
<i>Gordon Valley Creek</i>	fall	Upstream to the base of the dam forming Lake Curry	Edwards	Tributary to Suisun Creek. Spawning unknown; fish observed over multiple years, possibly strays.	Personal observations over a period of time
<i>Ledgewood Creek</i>	fall	Above Hwy 80.	Edwards	Total use and/or spawning unknown; fish observed over multiple years. Creek feeds to Suisun Slough.	Personal observations over a period of time
<i>Laurel Creek</i>	fall	To Travis Blvd. in Fairfield	Edwards	Spawning unknown; fish observed over multiple years, possibly strays. To Suisun Slough.	Personal observations over a period of time
<i>McCoy Creek</i>	fall	To its confluence with Laurels Creek, or upstream to Tabor Ave.	Edwards	Spawning unknown; fish observed over multiple years, possibly strays, poor habitat. Goes through subdivision to Hill Slough.	Personal observations over a period of time
<i>Union Creek</i>	fall	To Travis Air Force Base, East of southern most run way. Behind Laurels.	Edwards	Spawning unknown, fish observed over multiple years, possibly strays. Poor habitat to Hill Slough.	Personal observations over a period of time
<i>Yellow Jacket Slough</i>	fall	To Walters Avenue and Creed Rd.	Edwards	Spawning unknown or not believed to occur. Fish observed over multiple years, possibly strays, poor habitat. Flows to Hill Slough. Chinook have been caught near	Personal observations over a period of time

				Suisun City.	
<b>Carquinez Strait</b>					
<i>Alhambra Creek</i>	fall	Up to Highway 4 in Martinez.	Buelna	Observed in this stream but no additional information.	Personal observations over a period of time
<i>Grayson Creek</i>	fall	Into Pleasant Hill. Up to Murders Creek.	Buelna	An attractant to youth at Valley View Middle School. Spawning unknown.	Personal observations over a period of time
<i>Walnut Creek</i>	fall	unknown; series of barriers and 2 mi. concrete channel make access difficult to good upstream habitat	Leidy et al. in: Kay 1997  Buelna	May be strays from hatchery releases in Bay; population appears to be established. Creek flows to Pacheco Creek. Army Corps' outfall located about 200 yards above the Hwy. 680/242 intersect. Some spawning and reproduction, but not consistent.	1996  1997
<b>San Joaquin Valley</b>					
<b>San Joaquin River - mainstem</b>	fall	Migration path to tributaries. Upstream blocked by barrier and by Friant Dam.	Neillands	No spawning of significance occurs today on the mainstem river. Adult migration upstream of the Merced River is currently blocked in fall by installation of the Hills Ferry Barrier (1992-1995). Spring outmigration can be altered by the installation of the South Delta Barriers (Old River, Grant Line, etc.), which still allow fish to be drawn up from other channels. Friant Dam is present upstream limit (constructed 1949).	1953-present
<b>Mokelumne River*</b> (RM 23)	fall	Camanche Dam is impassable.	CDFG 1998a CDFG 1993 Fjelstad Fish&Game Code sec.1505 USFWS 1998 Yoshiyama et al. 1996	East Bay Municipal Utilities District (EBMUD) conducts ladder counts at Woodbridge with video. Spawning is focused	In-river 1953-present Hatchery 1964- 1983 1985-present



				between Elliot Rd. and Camanche Dam. Mokelumne River has spawning channel owned by EBMUD. CDFG-designated spawning area between Lockeford and Pardee Dam. Camanche Dam (constructed 1963) is the present upstream limit.	
<b>Cosumnes River</b>	fall	Latrobe Rd. South of the town of Latrobe. No dams block access.	CDFG 1998a CDFG 1993 Fjelstad Fish&Game Code sec.1505 Yoshiyama et al. 1996	Tributary of the Mokelumne River at RM 23. Spawning areas between Michigan Bar and Sloughhouse (Hwy 16) or Meiss Rd. To Latrobe Road Bridge. Access to the river flow dependant. CDFG-designated spawning area between Latrobe Rd. Bridge and Meiss Rd. Bridge.	1953-1960 1962-1975 1978-1980 1983-985 1988 1991-1994
<b>Calaveras River (RM 38)</b>	fall	New Hogan Dam is impassable.	CDFG 1993 Fjelstad USFWS 1998 Yoshiyama et al. 1996	Migratory route includes: the original Calaveras River stream channel, Mormon Slough and the Stockton Diverting Canal (into which Mormon Slough drains). Spawning occurs upstream of Bellota Dam (weir). Fish access flow dependent. New Hogan Dam (Central Valley Project, constructed 1964) is present upstream limit.	n/a
	winter	New Hogan Dam is impassable.	CDFG 1993 Yoshiyama et al. 1996	Unusual salmon run that spawned in late winter and spring but unknown if the runs existed before dam construction. Documented for 6 years numbering from 100 to 1000 fish which would spawn in the reach below New Hogan Dam. Fish found in tidewater only in 1976 and	1972 1975 1976 1978 1982 1984

				1982.	
<b>Stanislaus River</b> (RM 75)	fall	Goodwin Dam (RM 52) is impassable.	CDFG 1998a CDFG 1993 Fjelstad Fish&Game Code sec.1505 Mayott USFWS 1998	Spawning focused on the extensive gravel beds from Riverbank to Knights Ferry. 95% of the spawning occurs from Orange Blossom Rd to Knights Ferry and 1 mi. upstream of Knights Ferry, spawning is concentrated at Two Mile Bar. CDFG-designated spawning area between Goodwin Dam and the town of Riverbank. Goodwin Dam (constructed 1912) is present upstream limit.	1952-1981 1983-present
<b>Tuolumne River</b>	fall	La Grange Dam is impassable.	CDFG 1998a CDFG 1993 Fjelstad Fish&Game Code sec.1505 Mayott	Rearing throughout the entire lower river. Spawning focused upstream of Turlock Lake, downstream from the town of Waterford. CDFG-designated spawning area between dam and Geer Rd. (J14) Bridge. La Grange Dam (constructed 1893) is present upstream limit.	1952-present
<b>Merced River*</b> (RM 118)	fall	Crocker-Huffman Diversion Dam is impassable.	CDFG 1993 Fish&Game Code sec.1505 Mayott	Spawning occurs in the 25 mile reach from the town of Cressy to the Crocker-Huffman Dam. Rearing occurs from the CH Dam to the mouth of the San Joaquin River. CDFG-designated spawning area between Dam and Cressey. Crocker-Huffman Diversion Dam (constructed 1988) is present upstream limit.	1954 1957-present Hatchery 1970-1976 1978-present
	late-fall	Crocker-Huffman Diversion Dam is impassable.	CDFG 1993  USFWS 1998	Brief mention of sporadic use by late-fall run. No mention of survey dates or use areas in these reports.	n/a

\* = Hatchery present on the river or creek.

1/ **RM** = river mile of tributary from mouth of the Sacramento River (at Chipps Island) or of the San Joaquin River.

2/ **Locations of upper limits of runs** were sought from those local field biologists with greatest knowledge; such stream details are not readily available in published reports.

3/ **Survey dates** are taken from CDFG (Red Bluff) "Grand Tab" summary table for the fall-run. Run distinctions, aside from the fall run, are not made for the numbers representing the Grand Tab. Information about a particular run surveyed is included in the *Annual Report - Chinook Salmon Spawner Stocks in California's Central Valley*, (year surveyed), by CDFG. The Grand Tab table includes USFWS numbers from Battle Creek and hatchery returns.

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