

# **GrandTab 2014.04.22**

## **California Central Valley Chinook Population Report**

Compiled: 4/22/2014 by Jason Azat

### **California Department of Fish and Wildlife**

#### **Fisheries Branch**

#### **Anadromous Resources Assessment**

#### **California Central Valley**

#### **Sacramento and San Joaquin River Systems**

#### **Chinook Salmon Escapement**

#### **Hatcheries and Natural Areas**

The Fisheries Branch Anadromous Resource Assessment Unit compiles annual population estimates of Chinook salmon, *Oncorhynchus tshawytscha*, in the Sacramento San Joaquin River system. The GrandTab report is a compilation of sources estimating the late-fall, winter, spring, and fall-run Chinook salmon total populations for streams surveyed. Estimates are based on counts of fish entering hatcheries and migrating past dams, carcass surveys, live fish counts, and ground and aerial redd counts. Estimates are provided by the California Department of Fish and Wildlife, the US Fish and Wildlife Service, the California Department of Water Resources, the East Bay Municipal Utilities District, the US Bureau of Reclamation, the Lower Yuba River Management Team, and the Fisheries Foundation of California.

The Sacramento-San Joaquin River system is the principal producer of Chinook salmon caught in California's ocean fisheries. Its salmon runs also contribute to the ocean fisheries of Oregon and Washington. The fall run has been monitored since 1952, spring run since 1960, and late-fall and winter runs since 1970. The four runs are distinguished as follows:

1) Late-fall run: These salmon spawn mainly in the upper Sacramento River and its tributaries near and upstream of Red Bluff. They arrive in this area in early November through February, with spawning occurring from January through mid-April. Adults of this run are usually larger in physical size than fall- and winter-run salmon spawning in the same area.

2) Winter run: These salmon spawn almost entirely in the Sacramento River and its tributaries upstream of Red Bluff, arriving there as early as December, with spawning occurring from April through August.

3) Spring run: Once widespread in Central Valley tributaries, this run has been extirpated from most of the streams in which dam construction has blocked access to upper watershed spawning habitat. Spring-run spawners return to the system from the ocean in late January through August; early arrivals to their natal streams oversummer in holding pools. Spawning occurs from mid-August through October.

4) Fall run: These are presently the most numerous and widely distributed salmon in the Central Valley. They return from the ocean during June through November and spawn from early October through late December.

Monitoring of salmon escapement in Central Valley tributaries is an important component of the California Department of Fish and Game's fishery management function. The primary objectives of this work are to determine size and composition of salmon populations. Changes in salmon abundance, distribution, and habitat conditions that may reflect adverse effects on salmon are noted to determine if corrective action is necessary.

Azat, J. 2014 GrandTab 2014.04.22 California Central Valley Chinook Population Database Report. California Department of Fish and Wildlife

GrandTab is available for download here: <http://www.calfish.org/tabid/213/Default.aspx>

# CHINOOK SALMON ESCAPEMENT - ALL RUNS

## CENTRAL VALLEY: Sacramento and San Joaquin river systems

LATE-FALL			
YEAR	Hatcheries	In-River	TOTAL
Nov 1959 - Apr 1960			
Nov 1960 - Apr 1961			
Nov 1961 - Apr 1962			
Nov 1962 - Apr 1963			
Nov 1963 - Apr 1964			
Nov 1964 - Apr 1965			
Nov 1965 - Apr 1966			
Nov 1966 - Apr 1967			
Nov 1967 - Apr 1968			
Nov 1968 - Apr 1969			
Nov 1969 - Apr 1970			
Nov 1970 - Apr 1971		16,741	16,741
Nov 1971 - Apr 1972		31,559	31,559
Nov 1972 - Apr 1973		21,781	21,781
Nov 1973 - Apr 1974		6,083	6,083
Nov 1974 - Apr 1975		19,261	19,261
Nov 1975 - Apr 1976		15,908	15,908
Nov 1976 - Apr 1977	914	9,455	10,369
Nov 1977 - Apr 1978		12,479	12,479
Nov 1978 - Apr 1979		10,284	10,284
Nov 1979 - Apr 1980		9,093	9,093
Nov 1980 - Apr 1981	147	6,571	6,718
Nov 1981 - Apr 1982	445	6,454	6,899
Nov 1982 - Apr 1983	105	14,984	15,089
Nov 1983 - Apr 1984		10,388	10,388
Nov 1984 - Apr 1985	181	9,999	10,180
Nov 1985 - Apr 1986	197	8,104	8,301
Nov 1986 - Apr 1987	349	16,222	16,571
Nov 1987 - Apr 1988	53	13,165	13,218
Nov 1988 - Apr 1989	65	12,807	12,872
Nov 1989 - Apr 1990	92	7,986	8,078
Nov 1990 - Apr 1991	161	8,102	8,263
Nov 1991 - Apr 1992	344	9,787	10,131
Nov 1992 - Apr 1993	528	739	1,267

WINTER		
YEAR	TOTAL	RBDD
Dec 1959 - Apr 1960		
Dec 1960 - Apr 1961		
Dec 1961 - Apr 1962		
Dec 1962 - Apr 1963		
Dec 1963 - Apr 1964		
Dec 1964 - Apr 1965		
Dec 1965 - Apr 1966		
Dec 1966 - Apr 1967		
Dec 1967 - Apr 1968		
Dec 1968 - Apr 1969		
Dec 1969 - Apr 1970	40,409	40,409
Dec 1970 - Apr 1971	53,089	53,089
Dec 1971 - Apr 1972	37,133	37,133
Dec 1972 - Apr 1973	24,079	24,079
Dec 1973 - Apr 1974	21,897	21,897
Dec 1974 - Apr 1975	23,930	23,430
Dec 1975 - Apr 1976	35,596	35,096
Dec 1976 - Apr 1977	17,214	17,214
Dec 1977 - Apr 1978	25,012	24,862
Dec 1978 - Apr 1979	2,364	2,364
Dec 1979 - Apr 1980	1,156	1,156
Dec 1980 - Apr 1981	22,797	20,041
Dec 1981 - Apr 1982	1,281	1,242
Dec 1982 - Apr 1983	1,831	1,831
Dec 1983 - Apr 1984	2,763	2,663
Dec 1984 - Apr 1985	5,407	3,962
Dec 1985 - Apr 1986	2,596	2,596
Dec 1986 - Apr 1987	2,185	2,088
Dec 1987 - Apr 1988	2,878	2,150
Dec 1988 - Apr 1989	696	682
Dec 1989 - Apr 1990	430	402
Dec 1990 - Apr 1991	211	211
Dec 1991 - Apr 1992	1,240	1,196
Dec 1992 - Apr 1993	387	378

YEAR	SPRING			FALL		
	Hatcheries	In-River	TOTAL	Hatcheries	In-River	TOTAL
1960		11,068	11,068	38,771	437,245	476,016
1961		4,327	4,327	22,465	231,157	253,622
1962		3,642	3,642	17,510	234,126	251,636
1963		10,817	10,817	8,325	285,887	294,212
1964		8,021	8,021	30,860	284,367	315,227
1965		1,788	1,788	20,571	177,019	197,590
1966		427	427	11,326	184,507	195,833
1967	146	330	476	10,303	170,125	180,428
1968	208	455	663	15,657	194,657	210,314
1969	348	21,030	21,378	10,684	309,706	320,390
1970	235	7,437	7,672	16,144	219,349	235,493
1971	481	8,800	9,281	17,075	221,544	238,619
1972	256	8,588	8,844	14,081	138,982	153,063
1973	205	11,225	11,430	26,515	244,805	271,320
1974	198	9,053	9,251	17,120	217,506	234,626
1975	691	22,887	23,578	18,201	177,188	195,389
1976	699	25,141	25,840	14,858	180,350	195,208
1977	185	12,545	12,730	23,226	162,437	185,663
1978	202	7,924	8,126	17,441	139,521	156,962
1979	250	2,866	3,116	26,360	201,286	227,646
1980	269	12,195	12,464	31,397	140,740	172,137
1981	469	21,636	22,105	42,455	217,804	260,259
1982	1,910	25,980	27,890	42,077	188,629	230,706
1983	1,702	6,256	7,958	32,985	172,305	205,290
1984	1,562	8,037	9,599	46,433	216,474	262,907
1985	1,632	13,589	15,221	37,410	318,894	356,304
1986	1,433	24,263	25,696	29,367	268,453	297,820
1987	1,213	12,675	13,888	34,210	267,373	301,583
1988	6,833	12,100	18,933	29,305	239,131	268,436
1989	5,078	7,085	12,163	29,468	152,882	182,350
1990	1,893	5,790	7,683	25,725	62,128	87,853
1991	4,303	1,623	5,926	28,611	103,844	132,455
1992	1,497	1,547	3,044	31,249	79,164	110,413
1993	4,672	1,404	6,076	32,807	132,616	165,423

**CHINOOK SALMON ESCAPEMENT - ALL RUNS**

## CENTRAL VALLEY: Sacramento and San Joaquin river systems

LATE-FALL			
YEAR	Hatcheries	In-River	TOTAL
Nov 1993 - Apr 1994	598	291	889
Nov 1994 - Apr 1995	323	166	489
Nov 1995 - Apr 1996	1,337	48	1,385
Nov 1996 - Apr 1997	4,578		4,578
Nov 1997 - Apr 1998	3,079	39,340	42,419
Nov 1998 - Apr 1999	7,075	8,683	15,758
Nov 1999 - Apr 2000	4,181	8,702	12,883
Nov 2000 - Apr 2001	2,439	19,374	21,813
Nov 2001 - Apr 2002	4,186	36,220	40,406
Nov 2002 - Apr 2003	3,183	5,699	8,882
Nov 2003 - Apr 2004	5,166	8,984	14,150
Nov 2004 - Apr 2005	5,562	10,720	16,282
Nov 2005 - Apr 2006	4,822	10,267	15,089
Nov 2006 - Apr 2007	3,361	15,482	18,843
Nov 2007 - Apr 2008	6,334	4,038	10,372
[Nov 2008 - Apr 2009]	6,429	3,889	10,318
[Nov 2009 - Apr 2010]	5,505	4,481	9,986
[Nov 2010 - Apr 2011]	4,635	3,811	8,446
[Nov 2011 - Apr 2012]	3,031	2,938	5,969
[Nov 2012 - Apr 2013]	3,577	5,376	8,953

WINTER		
YEAR	TOTAL	RBDD
Dec 1993 - Apr 1994	186	186
Dec 1994 - Apr 1995	1,297	1,290
Dec 1995 - Apr 1996	1,337	1,337
Dec 1996 - Apr 1997	880	880
Dec 1997 - Apr 1998	2,992	2,930
Dec 1998 - Apr 1999	3,288	3,288
Dec 1999 - Apr 2000	1,352	1,352
Dec 2000 - Apr 2001	8,224	5,499
Dec 2001 - Apr 2002	7,441	9,157
Dec 2002 - Apr 2003	8,218	9,724
Dec 2003 - Apr 2004	7,869	7,192
Dec 2004 - Apr 2005	15,839	5,299
Dec 2005 - Apr 2006	17,296	7,415
Dec 2006 - Apr 2007	2,541	6,144
Dec 2007 - Apr 2008	2,830	3,635
[Dec 2008 - Apr 2009]	4,537	
[Dec 2009 - Apr 2010]	1,596	
[Dec 2010 - Apr 2011]	827	
[Dec 2011 - Apr 2012]	2,674	
[Dec 2012 - Apr 2013]	6,123	

YEAR	SPRING			FALL		
	Hatcheries	In-River	TOTAL	Hatcheries	In-River	TOTAL
1994	3,641	2,546	6,187	45,622	175,045	220,667
1995	5,414	9,824	15,238	49,249	280,919	330,168
1996	6,381	2,702	9,083	41,960	309,591	351,551
1997	3,653	1,540	5,193	78,888	323,909	402,797
1998	6,746	24,903	31,649	78,918	167,108	246,026
1999	3,731	6,369	10,100	54,444	359,815	414,259
2000	3,657	5,587	9,244	58,361	427,320	485,681
2001	4,135	22,528	26,663	68,709	555,922	624,631
2002	4,189	20,854	25,043	106,001	766,668	872,669
2003	8,662	22,035	30,697	126,763	464,229	590,992
2004	4,212	12,938	17,150	128,275	258,573	386,848
2005	1,774	21,319	23,093	193,411	244,282	437,693
2006	2,181	10,725	12,906	84,883	208,071	292,954
2007	1,916	9,228	11,144	23,641	73,527	97,168
2008	1,460	11,927	13,387	19,100	52,191	71,291
[2009]	989	3,516	4,505	22,703	30,426	53,129
[2010]	1,661	2,962	4,623	51,727	111,463	163,190
[2011]	1,969	5,439	7,408	103,972	123,917	227,889
[2012]	3,738	18,511	22,249	144,330	197,493	341,823
[2013]	4,294	19,403	23,697	113,280	340,370	453,650

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

# CHINOOK SALMON ESCAPEMENT - LATE-FALL RUN

## SACRAMENTO RIVER SYSTEM

YEAR	SACRAMENTO RIVER MAIN STEM						Battle Creek 5/				Feather River		TOTAL LATE-FALL RUN			
	Upstream of RBDD 1/			Downstream of RBDD			In-River Above CNFH	Coleman Hatchery	TOTAL	Clear Ck	Cotton-wood Ck	Salt Ck		Craig Ck	In-River	Hatchery
	In-River 2/	Coleman NFH 3/	TOTAL	TCFF 4/	In-River	TOTAL										
Nov 1970 - Apr 1971	16,741		16,741													16,741
Nov 1971 - Apr 1972	31,559		31,559													31,559
Nov 1972 - Apr 1973	21,781		21,781													21,781
Nov 1973 - Apr 1974	5,446	637	6,083													6,083
Nov 1974 - Apr 1975	18,324	937	19,261													19,261
Nov 1975 - Apr 1976	15,814	94	15,908													15,908
Nov 1976 - Apr 1977	8,678	532	9,210					914	914			245				10,369
Nov 1977 - Apr 1978	11,767	712	12,479													12,479
Nov 1978 - Apr 1979	9,572	712	10,284													10,284
Nov 1979 - Apr 1980	8,347	746	9,093													9,093
Nov 1980 - Apr 1981	6,423	148	6,571					147	147							6,718
Nov 1981 - Apr 1982	3,734	247	3,981					43	43	875				1,598	402	6,899
Nov 1982 - Apr 1983	14,437	547	14,984					105	105							15,089
Nov 1983 - Apr 1984	6,205	335	6,540		3,098	3,098				200	400		150			10,388
Nov 1984 - Apr 1985	7,929	207	8,136		1,863	1,863		181	181							10,180
Nov 1985 - Apr 1986	7,229	591	7,820		284	284		197	197							8,301
Nov 1986 - Apr 1987	15,768	454	16,222					349	349							16,571
Nov 1987 - Apr 1988	12,103	404	12,507		658	658		53	53							13,218
Nov 1988 - Apr 1989	11,990	817	12,807		0	0		65	65							12,872
Nov 1989 - Apr 1990	6,792	100	6,892		1,094	1,094		92	92							8,078
Nov 1990 - Apr 1991	6,493	118	6,611		1,491	1,491		161	161							8,263
Nov 1991 - Apr 1992	8,958	398	9,356		431	431		344	344							10,131
Nov 1992 - Apr 1993	339	400	739					528	528							1,267
Nov 1993 - Apr 1994	137	154	291					598	598							889
Nov 1994 - Apr 1995		166	166					323	323							489
Nov 1995 - Apr 1996		48	48					1,337	1,337							1,385
Nov 1996 - Apr 1997								4,578	4,578							4,578
Nov 1997 - Apr 1998	38,239		38,239		1,101	1,101		3,079	3,079							42,419
Nov 1998 - Apr 1999	8,683		8,683					7,075	7,075							15,758
Nov 1999 - Apr 2000	8,580		8,580		122	122	0	4,181	4,181							12,883
Nov 2000 - Apr 2001	18,351		18,351		925	925	98	2,439	2,537							21,813
Nov 2001 - Apr 2002	36,004		36,004		0	0	216	4,186	4,402							40,406

# CHINOOK SALMON ESCAPEMENT - LATE-FALL RUN

## SACRAMENTO RIVER SYSTEM

YEAR	SACRAMENTO RIVER MAIN STEM						Battle Creek 5/				Feather River		TOTAL LATE- FALL RUN			
	Upstream of RBDD 1/			Downstream of RBDD			In-River Above CNFH	Coleman Hatchery	TOTAL	Clear Ck	Cotton- wood Ck	Salt Ck		Craig Ck	In- River	Hatchery
	In-River 2/	Coleman NFH 3/	TOTAL	TCFF 4/	In-River	TOTAL										
Nov 2002 - Apr 2003	5,346	38	5,384		148	148	57	3,183	3,240	110						8,882
Nov 2003 - Apr 2004	8,824	60	8,884		0	0	40	5,166	5,206	60						14,150
Nov 2004 - Apr 2005	9,493	79	9,572		1,031	1,031	23	5,562	5,585	94						16,282
Nov 2005 - Apr 2006	7,678	12	7,690		2,485	2,485	50	4,822	4,872	42						15,089
Nov 2006 - Apr 2007	13,798	66	13,864		1,477	1,477	72	3,361	3,433	69						18,843
Nov 2007 - Apr 2008	3,673	0	3,673		291	291	19	6,334	6,353	55						10,372
[Nov 2008 - Apr 2009]	3,424	32	3,456		65	65	32	6,429	6,461	336						10,318
[Nov 2009 - Apr 2010]	3,843	81	3,924		439	439	27	5,505	5,532	91						9,986
[Nov 2010 - Apr 2011]	3,686	39	3,725		0	0	28	4,635	4,663	58						8,446
[Nov 2011 - Apr 2012]	2,811	47	2,858		11	11	19	3,031	3,050	50						5,969
[Nov 2012 - Apr 2013]	4,918	30	4,948		309	309	42	3,577	3,619	77						8,953

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ Red Bluff Diversion Dam

2/ May include numbers of fish for tributaries where estimates were not made

3/ Coleman National Fish Hatchery. Transferred to Coleman National Fish Hatchery from Keswick Dam and / or RBDD

4/ Transferred to Tehama Colusa Fish Facility from Red Bluff Diversion Dam

5/ In 2009 USFWS conducted a comprehensive analysis of Battle Creek coded wire tag data from 2000 - 2008 to estimate numbers of fall and late-fall Chinook returning to Battle Creek. Previously, a cutoff date of December 1st was used to assign run. This changed some Battle Creek estimates.

# CHINOOK SALMON ESCAPEMENT - WINTER RUN

## CENTRAL VALLEY: Sacramento and San Joaquin river systems

YEAR	SACRAMENTO RIVER SYSTEM							San Joaquin System Calaveras River	TOTAL CENTRAL VALLEY SYSTEM
	Mainstem In-River			Hatchery Transfers 1/		Battle Creek 4/	TOTAL 5/ SAC SYSTEM		
	Upstream RBDD 2/	Downstr. RBDD 3/	TOTAL In-River	Coleman Hatchery	Livingston Stone NFH				
Dec 1969 - Aug 1970	40,409		40,409				40,409		40,409
Dec 1970 - Aug 1971	53,089		53,089				53,089		53,089
Dec 1971 - Aug 1972	35,929		35,929				37,133		37,133
Dec 1972 - Aug 1973	22,651		22,651				24,079		24,079
Dec 1973 - Aug 1974	21,389		21,389				21,897		21,897
Dec 1974 - Aug 1975	22,579		22,579				23,430	500	23,930
Dec 1975 - Aug 1976	33,029		33,029				35,096	500	35,596
Dec 1976 - Aug 1977	16,470		16,470				17,214		17,214
Dec 1977 - Aug 1978	24,735		24,735				24,862	150	25,012
Dec 1978 - Aug 1979	2,339		2,339				2,364		2,364
Dec 1979 - Aug 1980	1,142		1,142				1,156		1,156
Dec 1980 - Aug 1981	19,795	2,756	22,551				22,797		22,797
Dec 1981 - Aug 1982	1,233	39	1,272				1,281		1,281
Dec 1982 - Aug 1983	1,827		1,827				1,831		1,831
Dec 1983 - Aug 1984	2,662		2,662				2,663	100	2,763
Dec 1984 - Aug 1985	3,686	1,445	5,131				5,407		5,407
Dec 1985 - Aug 1986	2,566		2,566				2,596		2,596
Dec 1986 - Aug 1987	2,068	97	2,165				2,185		2,185
Dec 1987 - Aug 1988	2,129	728	2,857				2,878		2,878
Dec 1988 - Aug 1989	635	14	649	42			696		696
Dec 1989 - Aug 1990	384	28	412	14			430		430
Dec 1990 - Aug 1991	177	0	177	33			211		211
Dec 1991 - Aug 1992	1,159	44	1,203	34			1,240		1,240
Dec 1992 - Aug 1993	369	9	378				387		387
Dec 1993 - Aug 1994	144	0	144	42			186		186
Dec 1994 - Aug 1995	1,159	7	1,166	43		88	1,297		1,297
Dec 1995 - Aug 1996	1,012	0	1,012			325	1,337		1,337
Dec 1996 - Aug 1997	836	0	836			44	880		880
Dec 1997 - Aug 1998	2,831	62	2,893		99		2,992		2,992
Dec 1998 - Aug 1999	3,264	0	3,264		24		3,288		3,288
Dec 1999 - Aug 2000	1,261	0	1,261		89	2	1,352		1,352
Dec 2000 - Aug 2001	8,085	35	8,120		104		8,224		8,224

Sacramento Mainstem Winter Salmon Data 1/			
Fish Passing RBDD 3/	Angler Harvest 4/	REDD distribution 2/	
		Upstream of RBDD	Downstr. of RBDD
40,409			
53,089			
37,133	1,204		
24,079	1,428		
21,897	508		
23,430	851		
35,096	2,067		
17,214	744		
24,862	127		
2,364	25		
1,156	14		
20,041	246	87.8%	12.2%
1,242	9	97.0%	3.0%
1,831	4		
2,663	1		
3,962	276	71.8%	28.2%
2,596	30		
2,088	20	95.5%	4.5%
2,150	21	74.5%	25.5%
682	5	97.9%	2.1%
402	4	93.3%	6.7%
211	1	100.0%	0%
1,196	3	96.4%	3.6%
378	9	97.7%	2.3%
186	0	100.0%	0%
1,290	0	99.4%	0.6%
1,337	0	100.0%	0%
880	0	100.0%	0%
2,930	0	97.9%	2.1%
3,288	0	100.0%	0%
1,352	0	100.0%	0%
5,499	0	99.6%	0.4%

# CHINOOK SALMON ESCAPEMENT - WINTER RUN

## CENTRAL VALLEY: Sacramento and San Joaquin river systems

YEAR	SACRAMENTO RIVER SYSTEM							San Joaquin System Calaveras River	TOTAL CENTRAL VALLEY SYSTEM
	Mainstem In-River			Hatchery Transfers 1/		Battle Creek 4/	TOTAL 5/ SAC SYSTEM		
	Upstream RBDD 2/	Downstr. RBDD 3/	TOTAL In-River	Coleman Hatchery	Livingston Stone NFH				
Dec 2001 - Aug 2002	7,325	12	7,337		104		7,441	7,441	
Dec 2002 - Aug 2003	8,105	28	8,133		85		8,218	8,218	
Dec 2003 - Aug 2004	7,784	0	7,784		85		7,869	7,869	
Dec 2004 - Aug 2005	15,730	0	15,730		109	0	15,839	15,839	
Dec 2005 - Aug 2006	17,149	48	17,197	0	93	6	17,296	17,296	
Dec 2006 - Aug 2007	2,487	0	2,487	0	54	0	2,541	2,541	
Dec 2007 - Aug 2008	2,725	0	2,725	0	105	0	2,830	2,830	
[Dec 2008 - Aug 2009]	4,416	0	4,416		121	0	4,537	4,537	
[Dec 2009 - Aug 2010]	1,533	0	1,533	0	63	0	1,596	1,596	
[Dec 2010 - Aug 2011]	738	0	738	2	86	1	827	827	
[Dec 2011 - Aug 2012]	2,581	0	2,581	0	93		2,674	2,674	
[Dec 2012 - Aug 2013]	5,959	0	5,959	0	164		6,123	6,123	

Sacramento Mainstem Winter Salmon Data 1/			
Fish Passing RBDD 3/	Angler Harvest 4/	REDD distribution 2/	
		Upstream of RBDD	Downstr. of RBDD
9,157	0	99.8%	0.2%
9,724	0	99.7%	0.3%
7,192	0	100.0%	0%
5,299	0	100.0%	0%
7,415	0	99.7%	0.3%
6,144	0	100.0%	0%
3,635	0	100.0%	0%
		100.0%	0%
		100.0%	0%
		100.0%	0%
		100.0%	0%

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

- 1/ Fish transferred from Red Bluff Diversion Dam (RBDD) and Keswick Trap to hatcheries
- 2/ Upstream mainstem in-river estimates prior to 2001 were based on RBDD counts. Subsequent estimates are based on carcass surveys. Numbers using RBDD data are adjusted for angler harvest.
- 3/ Downstream mainstem numbers based on upstream estimates and redd distribution.
- 4/ Fish passed upstream of Coleman Weir
- 5/ Total winter estimate includes mainstem in-river, tributaries, hatcheries, and angler harvest

- 1/ Data used (when appropriate) to determine mainstem in-river estimate.
- 2/ Based on aerial survey
- 3/ Estimated from fish counts at Red Bluff Diversion Dam (RBDD)
- 4/ Estimated angler harvest upstream of RBDD. After 1995, it was assumed that there was no harvest due to winter-run salmon angling closure.

# CHINOOK SALMON ESCAPEMENT - SPRING RUN

CENTRAL VALLEY: Sacramento and San Joaquin river systems

YEAR	Sacramento River Mainstem			Battle Ck 4/	Clear Ck	Cotton-wood Ck	Antelope Ck	Mill Ck	Thomes Ck	Deer Ck	Big Chico Ck	Butte Ck Snorkel	Butte Ck 5/ Carcass	Feather River			Yuba River	Calaveras River	TOTAL SPRING RUN
	Upstr. RBDD 1/	Downstr. RBDD	TOTAL											In-River 2/	Hatchery 3/	TOTAL			
1960								2,368				8,700						11,068	
1961								1,245				3,082						4,327	
1962								1,692			200	1,750						3,642	
1963					0			1,315		2,302	500	6,100		600		600		10,817	
1964					0			1,539		2,874	100	600		2,908		2,908		8,021	
1965					0						50	1,000		738		738		1,788	
1966					0						50	80		297		297		427	
1967											150	180			146	146		476	
1968					0						175	280			208	208		663	
1969	20,000		20,000		0						200	830			348	348		21,378	
1970	3,652		3,652					1,500		2,000		285			235	235		7,672	
1971	5,830		5,830					1,000		1,500	0	470			481	481		9,281	
1972	7,038		7,038					500		400		150			256	256	500	8,844	
1973	7,175		7,175			0		1,700		2,000	50	300			205	205		11,430	
1974	3,800		3,800			3		1,500		3,500	100	150			198	198		9,251	
1975	10,234		10,234			3		3,500		8,500		650			691	691		23,578	
1976	25,095		25,095									46			699	699		25,840	
1977	11,545		11,545					460		340	100	100			185	185		12,730	
1978	5,669		5,669					925		1,200		128		2	202	204		8,126	
1979	2,856		2,856									10			250	250		3,116	
1980	9,363	6	9,369					500		1,500		226		400	269	669	200	12,464	
1981	20,655		20,655									250		531	469	1,000	200	22,105	
1982	23,156		23,156			0		700		1,500		534		90	1,910	2,000		27,890	
1983	3,854	1,793	5,647				59			500		50			1,702	1,702		7,958	
1984	7,823		7,823					191			0	23			1,562	1,562		9,599	
1985	10,200	2,713	12,913					121		301	0	254			1,632	1,632		15,221	
1986	15,948	6,110	22,058					291		543		1,371			1,433	1,433		25,696	
1987	10,911	1,460	12,371					90		200		14			1,213	1,213		13,888	
1988	9,601	266	9,867					572		371		1,290			6,833	6,833		18,933	
1989	5,131	0	5,131	7		0		563		84		1,300			5,078	5,078		12,163	
1990	3,896	302	4,198	2				844		496		250			1,893	1,893		7,683	
1991	766	59	825					319		479					4,303	4,303		5,926	
1992	371	0	371				0	237		209		730			1,497	1,497		3,044	



# CHINOOK SALMON ESCAPEMENT - SPRING RUN

CENTRAL VALLEY: Sacramento and San Joaquin river systems

YEAR	Sacramento River Mainstem			Battle Ck 4/	Clear Ck	Cotton-wood Ck	Antelope Ck	Mill Ck	Thomes Ck	Deer Ck	Big Chico Ck	Butte Ck Snorkel	Butte Ck 5/ Carcass	Feather River			Yuba River	Calaveras River	TOTAL SPRING RUN
	Upstr. RBDD 1/	Downstr. RBDD	TOTAL											In-River 2/	Hatchery 3/	TOTAL			
1993	391	0	391		1	1	3	61		259	38	650			4,672	4,672			6,076
1994	862	0	862		0		0	723		485	2	474			3,641	3,641			6,187
1995	349	77	426	66	2	8	7	320		1,295	200	7,500			5,414	5,414			15,238
1996	378	0	378	35		6	1	253		614	2	1,413			6,381	6,381			9,083
1997	126	2	128	107		0	0	202		466	2	635			3,653	3,653			5,193
1998	1,115	0	1,115	178	47	477	154	424	1	1,879	369	20,259			6,746	6,746			31,649
1999	262	0	262	73	35	102	40	560		1,591	27	3,679			3,731	3,731			10,100
2000	43	0	43	78	9	122	9	544		637	27	4,118			3,657	3,657			9,244
2001	600	21	621	111	0	245	8	1,104		1,622	39	9,605	18,670		4,135	4,135	108		26,663
2002	195	0	195	222	66	125	46	1,594	2	2,195	0	8,785	16,409		4,189	4,189			25,043
2003	0	0	0	221	25	73	46	1,426		2,759	81	4,398	17,404		8,662	8,662			30,697
2004	370	0	370	90	98	17	3	998		804	0	7,390	10,558		4,212	4,212			17,150
2005	0	30	30	73	69	47	82	1,150		2,239	37	10,625	17,592		1,774	1,774			23,093
2006	0	0	0	221	77	55	102	1,002		2,432	299	4,579	6,537		2,181	2,181			12,906
2007	248	0	248	291	194	34	26	920		644	0	4,943	6,871		1,916	1,916			11,144
2008	0	52	52	105	200	0	3	381		140	0	3,935	11,046		1,460	1,460			13,387
[2009]	0	0	0	194	120	0	0	220		213	6	2,059	2,763		989	989			4,505
[2010]	0	0	0	172	21	15	17	482		262	2	1,160	1,991		1,661	1,661			4,623
[2011]	0	0	0	157	8	2	6	366		271	124	2,130	4,505		1,969	1,969			7,408
[2012]	0	0	0	799	68	1	1	768		734	0	8,615	16,140		3,738	3,738			22,249
[2013]	0	0	0	608	659	1	0	644		708	0	11,470	16,783		4,294	4,294			23,697

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ Red Bluff Diversion Dam. Estimates for 1960 - 1968 spring run are included with fall run.

2/ Feather River Survey does not provide separate estimates for fall and spring escapement. Spring-run estimates are included with fall-run estimates. Fish were transported above Oroville Dam in 1964-1966.

3/ Feather River Hatchery implemented a methodology change in 2005 for distinguishing spring-run from fall-run. Fish arriving prior to the spring-run spawning period were tagged and returned to the river.

The spring-run escapement was the number of these tagged fish that subsequently returned to the hatchery during the spring-run spawning period.

4/ In 2009 USFWS conducted a comprehensive analysis of Battle Creek coded wire tag data from 2000 - 2008 to estimate numbers of fall and late-fall Chinook returning to Battle Creek. Previously, a cutoff date of December 1st was used to assign run. This changed some Battle Creek estimates.

5/ Butte Creek CARCASS survey estimate is included in the "Total Spring Run" INSTEAD OF the snorkel survey estimate, when the carcass survey estimate is available. Carcass survey estimates are shown alongside snorkel survey estimates for comparison.

# CHINOOK SALMON ESCAPEMENT - FALL RUN Summary I

## CENTRAL VALLEY: Sacramento and San Joaquin River Systems

YEAR	Sacramento River System				San Joaquin River System			Sacramento and San Joaquin River Systems		
	Hatcheries 1/	In-River		TOTAL	Hatcheries 2/	In-River Tributaries	TOTAL	Hatcheries	In-River	TOTAL
		Mainstem	Tributaries							
1952	11,000	267,000	60,000	338,000		22,000	22,000	11,000	349,000	360,000
1953	12,000	408,000	93,000	513,000		84,000	84,000	12,000	585,000	597,000
1954	8,000	276,000	128,000	412,000		75,000	75,000	8,000	479,000	487,000
1955	18,000	231,000	120,300	369,300		31,000	31,000	18,000	382,300	400,300
1956	8,995	93,157	52,448	154,600		12,174	12,174	8,995	157,779	166,774
1957	3,920	67,189	31,889	102,998		15,182	15,182	3,920	114,260	118,180
1958	24,214	127,753	88,620	240,587		46,879	46,879	24,214	263,252	287,466
1959	24,076	266,600	135,517	426,193		52,706	52,706	24,076	454,823	478,899
1960	38,771	232,940	147,050	418,761		57,255	57,255	38,771	437,245	476,016
1961	22,465	149,581	78,989	251,035		2,587	2,587	22,465	231,157	253,622
1962	17,510	136,337	96,034	249,881		1,755	1,755	17,510	234,126	251,636
1963	8,325	145,681	137,905	291,911		2,301	2,301	8,325	285,887	294,212
1964	30,498	148,084	126,400	304,982	362	9,883	10,245	30,860	284,367	315,227
1965	20,398	103,376	66,195	189,969	173	7,448	7,621	20,571	177,019	197,590
1966	10,846	114,981	60,700	186,527	480	8,826	9,306	11,326	184,507	195,833
1967	10,053	91,690	55,900	157,643	250	22,535	22,785	10,303	170,125	180,428
1968	14,703	110,229	66,640	191,572	954	17,788	18,742	15,657	194,657	210,314
1969	10,069	133,252	124,857	268,178	615	51,597	52,212	10,684	309,706	320,390
1970	15,496	71,002	110,898	197,396	648	37,449	38,097	16,144	219,349	235,493
1971	15,950	81,549	96,263	193,762	1,125	43,732	44,857	17,075	221,544	238,619
1972	13,609	50,979	73,727	138,315	472	14,276	14,748	14,081	138,982	153,063
1973	25,733	60,219	177,473	263,425	782	7,113	7,895	26,515	244,805	271,320
1974	15,898	76,380	136,741	229,019	1,222	4,385	5,607	17,120	217,506	234,626
1975	17,102	89,302	81,160	187,564	1,099	6,726	7,825	18,201	177,188	195,389
1976	14,140	83,735	92,660	190,535	718	3,955	4,673	14,858	180,350	195,208
1977	22,565	63,396	97,991	183,952	661	1,050	1,711	23,226	162,437	185,663
1978	16,855	80,241	56,705	153,801	586	2,575	3,161	17,441	139,521	156,962
1979	25,626	112,743	84,180	222,549	734	4,363	5,097	26,360	201,286	227,646
1980	30,601	50,549	83,891	165,041	796	6,300	7,096	31,397	140,740	172,137
1981	41,531	69,552	118,554	229,637	924	29,698	30,622	42,455	217,804	260,259
1982	39,211	40,544	131,190	210,945	2,866	16,895	19,761	42,077	188,629	230,706
1983	26,622	56,977	72,046	155,645	6,363	43,282	49,645	32,985	172,305	205,290
1984	44,324	54,925	99,483	198,732	2,109	62,066	64,175	46,433	216,474	262,907

**CHINOOK SALMON ESCAPEMENT - FALL RUN Summary I****CENTRAL VALLEY: Sacramento and San Joaquin River Systems**

YEAR	Sacramento River System				San Joaquin River System			Sacramento and San Joaquin River Systems		
	Hatcheries 1/	In-River		TOTAL	Hatcheries 2/	In-River Tributaries	TOTAL	Hatcheries	In-River	TOTAL
		Mainstem	Tributaries							
1985	35,976	94,148	148,431	278,555	1,434	76,315	77,749	37,410	318,894	356,304
1986	26,804	107,365	135,144	269,313	2,563	25,944	28,507	29,367	268,453	297,820
1987	32,622	107,682	134,480	274,784	1,588	25,211	26,799	34,210	267,373	301,583
1988	28,720	82,260	136,245	247,225	585	20,626	21,211	29,305	239,131	268,436
1989	29,305	59,069	90,484	178,858	163	3,329	3,492	29,468	152,882	182,350
1990	25,611	48,284	12,803	86,698	114	1,041	1,155	25,725	62,128	87,853
1991	28,528	30,631	72,296	131,455	83	917	1,000	28,611	103,844	132,455
1992	30,171	32,229	44,995	107,395	1,078	1,940	3,018	31,249	79,164	110,413
1993	30,234	46,231	82,975	159,440	2,573	3,410	5,983	32,807	132,616	165,423
1994	42,760	58,546	111,078	212,384	2,862	5,421	8,283	45,622	175,045	220,667
1995	45,324	63,934	211,025	320,283	3,925	5,960	9,885	49,249	280,919	330,168
1996	36,936	84,086	213,646	334,668	5,024	11,859	16,883	41,960	309,591	351,551
1997	71,448	119,296	185,484	376,228	7,440	19,129	26,569	78,888	323,909	402,797
1998	75,028	6,318	141,079	222,425	3,890	19,711	23,601	78,918	167,108	246,026
1999	49,657	161,192	180,501	391,350	4,787	18,122	22,909	54,444	359,815	414,259
2000	50,965	96,688	290,698	438,351	7,396	39,934	47,330	58,361	427,320	485,681
2001	61,318	75,296	453,323	589,937	7,391	27,303	34,694	68,709	555,922	624,631
2002	96,248	65,690	672,962	834,900	9,753	28,016	37,769	106,001	766,668	872,669
2003	118,097	89,229	362,161	569,487	8,666	12,839	21,505	126,763	464,229	590,992
2004	116,869	43,604	202,904	363,377	11,406	12,065	23,471	128,275	258,573	386,848
2005	187,427	57,012	172,457	416,896	5,984	14,813	20,797	193,411	244,282	437,693
2006	80,594	55,468	146,427	282,489	4,289	6,176	10,465	84,883	208,071	292,954
2007	22,511	17,061	54,767	94,339	1,130	1,699	2,829	23,641	73,527	97,168
2008	18,785	24,743	25,618	69,146	315	1,830	2,145	19,100	52,191	71,291
[2009]	20,904	5,827	22,842	49,573	1,799	1,757	3,556	22,703	30,426	53,129
[2010]	46,306	16,372	90,154	152,832	5,421	4,937	10,358	51,727	111,463	163,190
[2011]	87,679	11,957	105,460	205,096	16,293	6,500	22,793	103,972	123,917	227,889
[2012]	136,710	28,701	155,450	320,861	7,620	13,342	20,962	144,330	197,493	341,823
[2013]	107,001	40,084	285,618	432,703	6,279	14,668	20,947	113,280	340,370	453,650

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ Coleman National Fish Hatchery, Tehama-Colusa Fish Facility, Feather River Hatchery, and Nimbus Hatchery

2/ Mokelumne River Fish Installation and Merced River Fish Facility

# CHINOOK SALMON ESCAPEMENT - FALL RUN Summary II

## SACRAMENTO RIVER SYSTEM

YEAR	Keswick Dam to Red Bluff Diversion Dam				Red Bluff Diversion Dam to Princeton Ferry				Princeton Ferry to Sacramento		
	Coleman Hatchery	In-River		TOTAL	Tehama Colusa Hatchery	In-River		TOTAL	Feather + Nimbus Hatcheries	In-River Tributaries	TOTAL
		Mainstem	Tributaries			Mainstem	Tributaries 1/				
1952	11,000	210,716	4,000	225,716		56,284	31,000	87,284		25,000	25,000
1953	12,000	321,409	12,300	345,709		86,591	18,700	105,291		62,000	62,000
1954	8,000	217,551	13,000	238,551		58,449	13,000	71,449		102,000	102,000
1955	10,000	182,293	18,800	211,093		48,707	4,500	53,207	8,000	97,000	105,000
1956	7,458	87,357	21,500	116,315		5,800	2,848	8,648	1,537	28,100	29,637
1957	3,045	54,989	3,853	61,887		12,200	9,249	21,449	875	18,787	19,662
1958	14,643	107,153	20,530	142,326		20,600	8,240	28,840	9,571	59,850	69,421
1959	10,833	256,700	25,120	292,653		9,900	2,347	12,247	13,243	108,050	121,293
1960	9,605	218,940	16,160	244,705		14,000	1,990	15,990	29,166	128,900	158,066
1961	8,156	140,181	13,200	161,537		9,400	1,689	11,089	14,309	64,100	78,409
1962	4,857	127,837	21,100	153,794		8,500	7,184	15,684	12,653	67,750	80,403
1963	5,114	138,881	25,900	169,895		6,800	2,835	9,635	3,211	109,170	112,381
1964	3,875	142,584	19,000	165,459		5,500	600	6,100	26,623	106,800	133,423
1965	3,194	101,876	10,785	115,855		1,500	410	1,910	17,204	55,000	72,204
1966	900	111,881	14,500	127,281		3,100	800	3,900	9,946	45,400	55,346
1967	3,050	82,490	3,680	89,220		9,200	620	9,820	7,003	51,600	58,603
1968	3,526	98,429	20,140	122,095		11,800	1,100	12,900	11,177	45,400	56,577
1969	2,626	115,652	16,537	134,815		17,600	2,690	20,290	7,443	105,630	113,073
1970	3,512	65,142	8,628	77,282		5,860	1,590	7,450	11,984	100,680	112,664
1971	2,004	53,888	3,285	59,177	295	27,661	1,533	29,489	13,651	91,445	105,096
1972	2,822	33,958	2,030	38,810	110	17,021	1,330	18,461	10,677	70,367	81,044
1973	3,835	41,129	4,300	49,264	886	19,090	1,712	21,688	21,012	171,461	192,473
1974	1,607	47,019	2,294	50,920	843	29,361	2,324	32,528	13,448	132,123	145,571
1975	2,431	53,129	2,426	57,986	1,994	36,173	2,226	40,393	12,677	76,508	89,185
1976	2,297	45,753	7,480	55,530	1,430	37,982	800	40,212	10,413	84,380	94,793
1977	5,244	16,176	8,478	29,898	1,669	47,220	1,518	50,407	15,652	87,995	103,647
1978	1,882	32,235	2,950	37,067	2,052	48,006	390	50,448	12,921	53,365	66,286
1979	8,729	47,758	4,430	60,917	2,456	64,985	1,590	69,031	14,441	78,160	92,601
1980	9,503	21,961	4,940	36,404	1,865	28,588	681	31,134	19,233	78,270	97,503
1981	10,272	29,212	13,422	52,906	2,384	40,340	2,907	45,631	28,875	102,225	131,100
1982	19,525	17,966	8,785	46,276	1,225	22,578	2,082	25,885	18,461	120,323	138,784
1983	8,756	26,226	6,327	41,309	1,267	30,751	1,240	33,258	16,599	64,479	81,078
1984	21,581	36,965	13,152	71,698	1,206	17,960	7,150	26,316	21,537	79,181	100,718
1985	16,320	52,120	24,188	92,628	4,752	42,028	4,765	51,545	14,904	119,478	134,382

# CHINOOK SALMON ESCAPEMENT - FALL RUN Summary II

## SACRAMENTO RIVER SYSTEM

YEAR	Keswick Dam to Red Bluff Diversion Dam				Red Bluff Diversion Dam to Princeton Ferry				Princeton Ferry to Sacramento		
	Coleman Hatchery	In-River		TOTAL	Tehama Colusa Hatchery	In-River		TOTAL	Feather + Nimbus Hatcheries	In-River Tributaries	TOTAL
		Mainstem	Tributaries			Mainstem	Tributaries 1/				
1986	12,481	68,821	18,771	100,073		38,544	830	39,374	14,323	115,543	129,866
1987	16,256	76,562	7,993	100,811		31,120	346	31,466	16,366	126,141	142,507
1988	13,615	63,998	58,313	135,926		18,262	1,487	19,749	15,105	76,445	91,550
1989	11,986	48,968	21,215	82,169		10,101	1,923	12,024	17,319	67,346	84,665
1990	14,635	32,109	7,464	54,208		16,175		16,175	10,976	5,339	16,315
1991	10,683	20,523	9,260	40,466		10,108		10,108	17,845	63,036	80,881
1992	7,275	23,914	7,618	38,807		8,315	999	9,314	22,896	36,378	59,274
1993	7,587	33,471	12,275	53,333		12,760	2,047	14,807	22,647	68,653	91,300
1994	18,991	44,729	26,820	90,540		13,817	1,388	15,205	23,769	82,870	106,639
1995	26,677	53,385	65,813	145,875		10,549		10,549	18,647	145,212	163,859
1996	21,178	71,725	58,331	151,234		12,361		12,361	15,758	155,315	171,073
1997	50,670	98,765	59,313	208,748		20,531	1,681	22,212	20,778	124,490	145,268
1998	44,351	5,718	58,216	108,285		600	816	1,416	30,677	82,047	112,724
1999	26,970	133,365	100,932	261,267		27,827		27,827	22,687	79,569	102,256
2000	21,659	87,793	60,134	169,586		8,895		8,895	29,306	230,564	259,870
2001	24,698	57,920	111,469	194,087		17,376		17,376	36,620	341,854	378,474
2002	65,924	45,552	413,220	524,696		20,138	2,611	22,749	30,324	257,131	287,455
2003	88,234	66,485	74,239	228,958		22,744	2,426	25,170	29,863	285,496	315,359
2004	69,172	34,050	30,226	133,448		9,554	1,492	11,046	47,697	171,186	218,883
2005	142,673	44,950	35,344	222,967		12,062	3,389	15,451	44,754	133,724	178,478
2006	57,832	46,568	32,124	136,524		8,900	3,308	12,208	22,762	110,995	133,757
2007	11,744	14,097	17,495	43,336		2,964	1,414	4,378	10,767	35,858	46,625
2008	10,639	23,134	12,970	46,743		1,609	412	2,021	8,146	12,236	20,382
[2009]	6,152	5,311	7,597	19,060		516	160	676	14,752	15,085	29,837
[2010]	17,238	13,824	15,497	46,559		2,548	310	2,858	29,068	74,347	103,415
[2011]	42,383	10,623	21,308	74,314		1,334	1,893	3,227	45,296	82,259	127,555
[2012]	85,293	22,435	43,229	150,957		6,266	1,763	8,029	51,417	110,458	161,875
[2013]	70,303	32,515	49,956	152,774		7,569	3,223	10,792	36,698	232,439	269,137

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ Data for 1952 - 1959 may include some estimates from tributaries between Keswick Dam and Red Bluff.

# CHINOOK SALMON ESCAPEMENT - FALL RUN Section 1

## SACRAMENTO RIVER SYSTEM: Keswick Dam to Red Bluff Diversion Dam (RBDD)

YEAR	Sacramento River Mainstem			Battle Creek 5/				Clear Ck	Spring Gulch	China Gulch	Olney Ck	Cottonwood	Paynes Ck	Cow Ck	Bear Ck	Ash Ck	Still-water	Inks Ck	Other 4/
	In-River 1/	Trans. to CNFH 2/	TOTAL	CNFH	Downstr. CNFH	Upstr. CNFH 3/	TOTAL												
1952	203,716	7,000	210,716	11,000	4,000		15,000												
1953	313,409	8,000	321,409	12,000	4,000		16,000	1,500				3,000		3,000	800				
1954	211,551	6,000	217,551	8,000	4,000		12,000	3,000				1,000		4,500	500				
1955	176,293	6,000	182,293	10,000	16,000		26,000	500				800		1,300	200				
1956	84,716	2,641	87,357	7,458	13,650		21,108	2,650	950	385		660		3,200	5				
1957	47,300	7,689	54,989	3,045	2,285		5,330	330				358		700	30	10	140		
1958	99,300	7,853	107,153	14,643	14,500	100	29,243	1,600		200	30	600		3,300	200				
1959	249,600	7,100	256,700	10,833	19,300	100	30,233	775	955			3,300		680	10				
1960	210,000	8,940	218,940	9,605	14,200		23,805	900				350		650	50	10			
1961	134,700	5,481	140,181	8,156	11,700		19,856					1,500							
1962	115,500	12,337	127,837	4,857	8,200		13,057	5,400				6,000		1,500					
1963	135,200	3,681	138,881	5,114	12,400		17,514	10,000				3,500							
1964	140,500	2,084	142,584	3,875	12,000		15,875	2,500				3,450		1,000	50				
1965	98,900	2,976	101,876	3,194	6,000		9,194	2,500				900	35	1,000	350				
1966	107,900	3,981	111,881	900	2,400		3,300	900				2,900	300	7,600	400				
1967	78,100	4,390	82,490	3,050	2,160		5,210	370				600		520	30				
1968	95,600	2,829	98,429	3,526	2,950		6,476	800				8,540		7,540	310				
1969	114,600	1,052	115,652	2,626	3,200		5,826	1,240				4,967	300	5,570	560	320	150	230	
1970	62,298	2,844	65,142	3,512	3,320		6,832												5,308
1971	52,247	1,641	53,888	2,004	3,285		5,289												
1972	33,559	399	33,958	2,822	2,030		4,852												
1973	40,424	705	41,129	3,835	4,300		8,135												
1974	45,590	1,429	47,019	1,607	2,294		3,901												
1975	52,248	881	53,129	2,431	2,426		4,857												
1976	43,604	2,149	45,753	2,297	3,147		5,444	1,013				2,427		726	167				
1977	15,784	392	16,176	5,244	5,604		10,848	1,362				1,512							
1978	32,235		32,235	1,882	1,770		3,652	60				1,120							
1979	47,758		47,758	8,729	4,430		13,159												
1980	21,961		21,961	9,503	4,940		14,443												
1981	26,261	2,951	29,212	10,272	6,933		17,205	3,133				3,356							
1982	17,731	235	17,966	19,525	7,270		26,795	785				700	30						
1983	26,226		26,226	8,756	5,227		13,983					1,000	100						
1984	36,898	67	36,965	21,581	8,312		29,893	4,000				500	90	250					
1985	52,120		52,120	16,320	12,792	10,696	39,808	700											
1986	68,593	228	68,821	12,481	11,508	7,263	31,252												

# CHINOOK SALMON ESCAPEMENT - FALL RUN Section 1

## SACRAMENTO RIVER SYSTEM: Keswick Dam to Red Bluff Diversion Dam (RBDD)

YEAR	Sacramento River Mainstem			Battle Creek 5/				Clear Ck	Spring Gulch	China Gulch	Olney Ck	Cottonwood	Paynes Ck	Cow Ck	Bear Ck	Ash Ck	Still-water	Inks Ck	Other 4/
	In-River 1/	Trans. to CNFH 2/	TOTAL	CNFH	Downstr. CNFH	Upstr. CNFH 3/	TOTAL												
1987	76,562		76,562	16,256	5,868	2,125	24,249												
1988	63,998		63,998	13,615	51,923	1,937	67,475	4,453											
1989	48,968		48,968	11,986	18,829	233	31,048	2,153											
1990	32,109		32,109	14,635	6,453		21,088	1,011											
1991	20,523		20,523	10,683	6,558		17,241	2,026				676							
1992	23,914		23,914	7,275	5,433		12,708	600				1,585							
1993	33,471		33,471	7,587	11,029		18,616	1,246											
1994	44,729		44,729	18,991	24,274		43,265	2,546											
1995	53,385		53,385	26,677	56,515		83,192	9,298											
1996	71,725		71,725	21,178	52,409		73,587	5,922											
1997	98,765		98,765	50,670	50,744		101,414	8,569											
1998	5,718		5,718	44,351	53,957		98,308	4,259											
1999	133,365		133,365	26,970	92,929		119,899	8,003											
2000	87,793		87,793	21,659	53,447	0	75,106	6,687											
2001	57,920		57,920	24,698	100,604	0	125,302	10,865											
2002	45,552		45,552	65,924	397,149	0	463,073	16,071											
2003	66,485		66,485	88,234	64,764	0	152,998	9,475											
2004	34,050		34,050	69,172	23,861	0	93,033	6,365											
2005	44,950		44,950	142,673	20,520	0	163,193	14,824											
2006	46,568		46,568	57,832	19,493	0	77,325	8,422						4,209					
2007	14,097		14,097	11,744	9,904	0	21,648	4,157				1,250		2,044	140				
2008	23,134		23,134	10,639	4,286	0	14,925	7,677				510		478	19				
[2009]	5,311		5,311	6,152	3,047	0	9,199	3,228				1,055		261	6				
[2010]	13,824		13,824	17,238	6,631	1	23,870	7,192				1,137		536					
[2011]	10,623		10,623	42,383	12,513	0	54,896	4,841				2,144		1,810					
[2012]	22,435		22,435	85,293	31,554		116,847	7,631				2,556		1,488					
[2013]	32,515		32,515	70,303	30,834		101,137	13,337				2,774		3,011					

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA.

1/ For 1952-1955, the original data provided a total for the Sacramento mainstem. Data presented here is that total multiplied by the average % of the fall-run estimate above Red Bluff, from 1956-2007.

2/ Salmon from the mainstem population that were trapped at Keswick or Anderson-Cottonwood dams and transferred to Coleman National Fish Hatchery (CNFH)

3/ Salmon in Battle Creek upstream of the Hatchery

4/ The data source did not provide a breakdown of individual tributaries.

5/ In 2009 USFWS edited some 2000 - 2008 estimates of fall and late-fall Chinook returning to Battle Creek based on CWT data. Previously, a December 1st cutoff was used to assign run.

# CHINOOK SALMON ESCAPEMENT - FALL RUN Section 2

SACRAMENTO RIVER SYSTEM: Red Bluff Diversion Dam (RBDD) to Princeton Ferry

YEAR	Sacramento River Mainstem			TCFF	Salt Ck	Antelope Ck	Craig Ck	Dye Ck	Mill Ck	Toomes Ck	Thomes Ck	Deer Ck	Coyote Ck	Stoney Ck	Singer Ck	Big Chico	Other 3/
	In-River 1/	Trans. to TCFF 2/	TOTAL														
1952	56,284		56,284						16,000			12,000					3,000
1953	86,591		86,591			4,000			10,000			4,000					700
1954	58,449		58,449			1,000			7,000			3,000					2,000
1955	48,707		48,707			900			3,000								600
1956	5,800		5,800			327			896	5		120					1,500
1957	12,200		12,200			838		25	5,316		25	2,195				50	800
1958	20,600		20,600			400			4,340			1,300					2,200
1959	9,900		9,900						837			10					1,500
1960	14,000		14,000			250			940			800					
1961	9,400		9,400						1,689								
1962	8,500		8,500			800			4,384			2,000					
1963	6,800		6,800			300			1,286			1,249					
1964	5,500		5,500			50			450			100					
1965	1,500		1,500			60			150			200					
1966	3,100		3,100			200			500			100					
1967	9,200		9,200			60			500			60					
1968	11,800		11,800			80			750			270					
1969	17,600		17,600			180		20	1,700	40		750					
1970	5,860		5,860			400			690			500					
1971	22,920	4,741	27,661	295		205		100	980			248					
1972	15,350	1,671	17,021	110	30	275		50	631	25		304			15		
1973	16,599	2,491	19,090	886	43	200	90	153	420	40		676			90		
1974	27,127	2,234	29,361	843		440	140		944		60	640	100				
1975	34,200	1,973	36,173	1,994		90	270		1,208		170	328	160				
1976	36,100	1,882	37,982	1,430		60			245	20		315	160				
1977	44,074	3,146	47,220	1,669		660			318	120		220	200				
1978	45,921	2,085	48,006	2,052					300			90					
1979	64,932	53	64,985	2,456					810			780					
1980	28,413	175	28,588	1,865					320		151	210					
1981	40,340		40,340	2,384		407	100		1,020		167	820		393			
1982	22,578		22,578	1,225	20	162	90	25	1,290	15		480					
1983	30,751		30,751	1,267	15	60	60	20	200	15		370				500	
1984	17,960		17,960	1,206	30	260	60	50	5,800	50		680			20	200	
1985	42,028		42,028	4,752					3,840			900					25
1986	38,544		38,544						574			256					



# CHINOOK SALMON ESCAPEMENT - FALL RUN Section 2

## SACRAMENTO RIVER SYSTEM: Red Bluff Diversion Dam (RBDD) to Princeton Ferry

YEAR	Sacramento River Mainstem			TCFF	Salt Ck	Antelope Ck	Craig Ck	Dye Ck	Mill Ck	Toomes Ck	Thomes Ck	Deer Ck	Coyote Ck	Stoney Ck	Singer Ck	Big Chico	Other 3/
	In-River 1/	Trans. to TCFE 2/	TOTAL														
1987	31,120		31,120					282				64					
1988	18,262		18,262					1,487									
1989	10,101		10,101					1,565				358					
1990	16,175		16,175														
1991	10,108		10,108														
1992	8,315		8,315			0		999									
1993	12,760		12,760					1,975				72					
1994	13,817		13,817					1,081				307					
1995	10,549		10,549														
1996	12,361		12,361														
1997	20,531		20,531					478				1,203					
1998	600		600					546				270					
1999	27,827		27,827														
2000	8,895		8,895														
2001	17,376		17,376														
2002	20,138		20,138					2,611									
2003	22,744		22,744					2,426									
2004	9,554		9,554					1,192				300					
2005	12,062		12,062					2,426				963					
2006	8,900		8,900					1,403				1,905					
2007	2,964		2,964					851				563					
2008	1,609		1,609					218				194					
[2009]	516		516					102				58					
[2010]	2,548		2,548					144				166					
[2011]	1,334		1,334					1,231				662					
[2012]	6,266		6,266					890				873					
[2013]	7,569		7,569					2,197				1,026					

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ For 1952-1955, the original data source only provided a total estimate for the entire Sacramento mainstem, above and below Red Bluff combined. The data presented here is that total estimate multiplied by the average % of the fall-run estimate below Red Bluff, from 1956-2007.

2/ Salmon from the mainstem population that were trapped at Red Bluff Diversion Dam (RBDD) and transferred to Tehama-Colusa Fish Facility (TCFF)

3/ The data source did not provide a breakdown of individual tributaries. NOTE: The number of fish listed may include those for tributaries from Keswick Dam to RBDD.

**CHINOOK SALMON ESCAPEMENT - FALL RUN Section 3****SACRAMENTO RIVER SYSTEM: Princeton Ferry to Sacramento**

YEAR	Feather River				American River						
	Butte Ck	Hatchery	In-River 1/	TOTAL	Yuba River	Bear River	Dry Ck	Nimbus Hatchery	In-River 2/	TOTAL	Natomas Drain
1952									25,000	25,000	
1953			28,000	28,000	6,000				28,000	28,000	
1954			68,000	68,000	5,000				29,000	29,000	
1955			86,000	86,000	2,000			8,000	9,000	17,000	
1956			18,200	18,200	5,000			1,537	4,900	6,437	
1957			10,750	10,750	1,205			875	6,832	7,707	
1958			34,650	34,650	7,900			9,571	17,300	26,871	
1959			80,150	80,150	10,000			13,243	17,900	31,143	
1960			83,300	83,300	20,400			29,166	25,200	54,366	
1961			43,700	43,700	9,200			14,309	11,200	25,509	
1962			19,050	19,050	34,300			12,653	14,400	27,053	
1963			33,900	33,900	37,000			3,211	37,810	41,021	460
1964		5,952	32,400	38,352	34,900			20,671	38,500	59,171	1,000
1965	0	3,635	19,600	23,235	10,200			13,569	25,000	38,569	200
1966	0	1,850	19,000	20,850	7,800			8,096	18,600	26,696	
1967		1,856	10,100	11,956	23,500			5,147	18,000	23,147	
1968		5,944	12,200	18,144	7,000			5,233	26,100	31,333	100
1969		4,378	56,200	60,578	5,230			3,065	44,200	47,265	
1970		3,355	58,170	61,525	13,830			8,629	28,680	37,309	
1971	615	3,541	43,500	47,041	5,650			10,110	41,680	51,790	
1972	450	3,635	43,200	46,835	9,258			7,042	17,459	24,501	
1973		8,477	65,100	73,577	24,119			12,535	82,242	94,777	
1974	200	5,248	60,518	65,766	17,809			8,200	53,596	61,796	
1975	1,000	5,265	37,735	43,000	5,641			7,412	32,132	39,544	
1976	640	5,198	56,802	62,000	3,779			5,215	23,159	28,374	
1977		8,784	37,668	46,452	8,722			6,868	41,605	48,473	
1978	20	4,759	33,000	37,759	7,416			8,162	12,929	21,091	
1979		4,090	28,415	32,505	12,430			10,351	37,315	47,666	
1980		3,690	31,605	35,295	12,406			15,543	34,259	49,802	
1981		8,282	44,738	53,020	14,025			20,593	43,462	64,055	
1982		7,563	47,956	55,519	39,367			10,898	33,000	43,898	
1983	1,000	7,699	22,823	30,522	13,756		500	8,900	26,400	35,300	
1984		9,288	41,769	51,057	9,665	300		12,249	27,447	39,696	

**CHINOOK SALMON ESCAPEMENT - FALL RUN Section 3****SACRAMENTO RIVER SYSTEM: Princeton Ferry to Sacramento**

YEAR	Feather River							American River			Natomas Drain
	Butte Ck	Hatchery	In-River 1/	TOTAL	Yuba River	Bear River	Dry Ck	Nimbus Hatchery	In-River 2/	TOTAL	
1985	100	5,811	50,191	56,002	13,042		25	9,093	56,120	65,213	
1986		8,628	46,843	55,471	19,328			5,695	49,372	55,067	
1987		10,108	67,738	77,846	18,518			6,258	39,885	46,143	
1988		6,480	42,556	49,036	9,000			8,625	24,889	33,514	
1989		7,578	40,541	48,119	7,622			9,741	19,183	28,924	
1990		6,126		6,126				4,850	5,339	10,189	
1991		10,717	31,345	42,062	14,008			7,128	17,683	24,811	
1992		16,440	24,105	40,545	6,362			6,456	5,911	12,367	
1993		11,991	30,923	42,914	6,703			10,656	31,027	41,683	
1994		15,202	38,382	53,584	10,890			8,567	33,598	42,165	
1995	445	12,149	59,912	72,061	14,237			6,498	70,618	77,116	
1996	500	8,107	57,170	65,277	27,900			7,651	69,745	77,396	
1997	800	15,128	50,547	65,675	25,948			5,650	47,195	52,845	
1998	500	18,889		18,889	31,090			11,788	50,457	62,245	
1999		12,927		12,927	24,230			9,760	55,339	65,099	
2000		18,146	114,717	132,863	14,995			11,160	100,852	112,012	
2001	4,433	24,870	178,645	203,515	23,392			11,750	135,384	147,134	
2002	3,665	20,507	105,163	125,670	24,051			9,817	124,252	134,069	
2003	3,492	14,976	89,946	104,922	28,316			14,887	163,742	178,629	
2004	2,516	21,297	54,171	75,468	15,269			26,400	99,230	125,630	
2005	4,255	22,405	49,160	71,565	17,630			22,349	62,679	85,028	
2006	1,920	14,034	76,414	90,448	8,121			8,728	24,540	33,268	
2007	1,225	6,170	21,909	28,079	2,604			4,597	10,120	14,717	
2008	275	4,914	5,939	10,853	3,508			3,232	2,514	5,746	
[2009]	306	9,963	4,847	14,810	4,635			4,789	5,297	10,086	
[2010]	370	19,973	44,914	64,887	14,375			9,095	14,688	23,783	
[2011]	416	32,616	47,289	79,905	8,928			12,680	25,626	38,306	
[2012]	813	42,160	63,649	105,809	7,668			9,257	38,328	47,585	
[2013]	2,200	27,622	151,209	178,831	14,880			9,076	64,150	73,226	

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ Feather River Survey does not provide separate estimates for fall and spring escapement. Spring-run estimates are included with fall-run estimates.

2/ In 2009 CDFW conducted a reanalysis of historic American River Fall data from 1990 - 2008 to consistently include fish taken at Nimbus Racks and exclude angler estimates.

**CHINOOK SALMON ESCAPEMENT - FALL RUN Section 4**

## SAN JOAQUIN RIVER SYSTEM: Tributaries

YEAR	Mokelumne River						Merced River		
	Cosumnes River	Mokelumne Hatchery	In-River	TOTAL	Stanislaus River	Tuolumne River	MRFF 1/	In-River	TOTAL
1952			2,000	2,000	10,000	10,000			
1953	2,000		2,000	2,000	35,000	45,000			
1954	5,000		4,000	4,000	22,000	40,000		4,000	4,000
1955	2,000		2,000	2,000	7,000	20,000			
1956	1,200		474	474	5,000	5,500			
1957	142		2,400	2,400	4,090	8,170		380	380
1958	600		7,579	7,579	5,700	32,500		500	500
1959			2,106	2,106	4,300	45,900		400	400
1960	1,400		2,205	2,205	8,300	45,000		350	350
1961			137	137	1,900	500		50	50
1962	900		230	230	315	250		60	60
1963	1,500		481	481	200	100		20	20
1964	2,200	362	1,848	2,210	3,700	2,100		35	35
1965	800	173	1,127	1,300	2,231	3,200		90	90
1966	600	480	209	689	2,872	5,100		45	45
1967	500	250	2,750	3,000	11,885	6,800		600	600
1968	1,500	954	753	1,707	6,385	8,600		550	550
1969	4,400	615	2,070	2,685	12,327	32,200		600	600
1970	600	548	4,452	5,000	9,297	18,400	100	4,700	4,800
1971	500	925	4,275	5,200	13,621	21,885	200	3,451	3,651
1972	1,600	352	750	1,102	4,298	5,100	120	2,528	2,648
1973	900	407	2,193	2,600	1,234	1,989	375	797	1,172
1974	285	222	1,200	1,422	750	1,150	1,000	1,000	2,000
1975	725	399	1,501	1,900	1,200	1,600	700	1,700	2,400
1976		18	455	473	600	1,700	700	1,200	1,900
1977		0	250	250	0	450	661	350	1,011
1978	100	486	600	1,086	50	1,300	100	525	625
1979	150	507	1,000	1,507	110	1,183	227	1,920	2,147
1980	200	639	2,592	3,231	100	559	157	2,849	3,006
1981			4,954	4,954	1,000	14,253	924	9,491	10,415
1982		2,677	6,695	9,372		7,126	189	3,074	3,263
1983	200	4,568	11,293	15,861	500	14,836	1,795	16,453	18,248
1984	1,000		8,298	8,298	11,439	13,689	2,109	27,640	29,749

**CHINOOK SALMON ESCAPEMENT - FALL RUN Section 4**

## SAN JOAQUIN RIVER SYSTEM: Tributaries

YEAR	Mokelumne River						Merced River		
	Cosumnes River	Mokelumne Hatchery	In-River	TOTAL	Stanislaus River	Tuolumne River	MRFF 1/	In-River	TOTAL
1985	220	223	7,459	7,682	13,473	40,322	1,211	14,841	16,052
1986		1,913	5,254	7,167	6,497	7,404	650	6,789	7,439
1987	0	630	1,000	1,630	6,292	14,751	958	3,168	4,126
1988	100	128	400	528	10,212	5,779	457	4,135	4,592
1989		81	199	280	1,510	1,275	82	345	427
1990		68	429	497	480	96	46	36	82
1991		42	368	410	394	77	41	78	119
1992		710	935	1,645	255	132	368	618	986
1993		2,164	993	3,157	677	471	409	1,269	1,678
1994		1,919	1,238	3,157	1,031	506	943	2,646	3,589
1995		3,323	2,194	5,517	619	827	602	2,320	2,922
1996		3,883	4,038	7,921	168	4,362	1,141	3,291	4,432
1997		6,494	3,681	10,175	5,588	7,146	946	2,714	3,660
1998	300	3,091	4,122	7,213	3,087	8,910	799	3,292	4,091
1999	229	3,150	2,183	5,333	4,349	8,232	1,637	3,129	4,766
2000	460	5,450	1,973	7,423	8,498	17,873	1,946	11,130	13,076
2001		5,728	2,307	8,035	7,033	8,782	1,663	9,181	10,844
2002	1,350	7,913	2,840	10,753	7,787	7,173	1,840	8,866	10,706
2003	122	8,117	2,122	10,239	5,902	2,163	549	2,530	3,079
2004	1,208	10,356	1,588	11,944	4,015	1,984	1,050	3,270	4,320
2005	370	5,563	10,406	15,969	1,427	668	421	1,942	2,363
2006	530	4,139	1,732	5,871	1,923	562	150	1,429	1,579
2007	77	1,051	470	1,521	443	224	79	485	564
2008	15	239	173	412	865	388	76	389	465
[2009]	0	1,553	680	2,233	595	124	246	358	604
[2010]	740	5,275	1,920	7,195	1,086	540	146	651	797
[2011]	53	15,922	2,674	18,596	1,309	893	371	1,571	1,942
[2012]	1,071	6,620	5,471	12,091	4,006	783	1,000	2,011	3,011
[2013]	0	5,181	7,071	12,252	2,845	1,926	1,098	2,826	3,924

DATA FOR [YEARS IN BRACKETS ] ARE PRELIMINARY. BLANK ENTRY INDICATES NO DATA

1/ Merced River Fish Facility. Fish were trapped in San Joaquin mainstem in 1977. Only 389 of these were transported to the hatchery spawning channel.