

Memorandum

Ref ID 90669

To: Files and Distribution List

Date: August 22, 2003

From: **Colleen Harvey Arrison**
Northern California-North Coast Region
Department of Fish and Game

Subject: 2003 Annual Deer Creek Adult Spring-run Chinook Salmon Survey

On the 5 and 11 of August 2003, Deer Creek, Tehama County, was snorkel surveyed to count adult spring-run Chinook salmon. The survey reaches extended from Upper Deer Creek Falls downstream to Dillon Cove, a distance of 25 miles (Figure 1). **A total of 2,759 spring-run Chinook salmon was observed.**

The salmon counts are summarized below:

<u>Section</u>	<u># of Salmon</u>	<u>% of Total Salmon</u>
Upper Falls to Potato Patch	283	10
Potato Patch to Hwy-32 Bridge	198	7
Hwy-32 Bridge to Lower Falls	35	1
Lower Falls to A-Line	389	14
A-Line to Wilson Cove	405	15
Wilson Cove to Polk Springs	647	24
Polk Springs to Murphy Trail	393	14
Murphy Trail to Ponderosa Way	320	12
Ponderosa Way to Trail 2E17	77	3
Trail 2E17 to Dillon Cove	12	<1
	2,759	100

This year's survey was terminated at Dillon Cove due to the low numbers of salmon observed in the last 3 mile reach. This year 97% of the salmon were holding upstream of Ponderosa Way at elevations greater than 1700 ft. In addition to the live salmon counted, 16 salmon carcasses were observed. These carcasses are not included in the total count. Since the same reaches are surveyed at the same time each year, this count provides an index of run size. Snorkel counts are not expanded to a population estimate. In order to minimize harassment and stress to holding salmon, only one survey is conducted during the summer holding period.

Water flow in Deer Creek during the survey was 126 cfs, (recorded at the USGS gage, DCV). From 1995 thru 2001 August flows at the gage have ranged between 74 and 202 cfs. The Department has water temperature loggers placed in salmon holding and spawning habitat between Upper Falls and Trail 2E17. These temperature loggers will be downloaded this fall.

This year's count is the highest since snorkel surveys of the holding habitat were first made in 1992. During the previous 11-years of record, counts have ranged from a high of 2,185 fish in 2002 to a low of 209 fish in 1992 (Table 1). The average count over this time period is 1022 salmon. Between 1940 and 1964, an average of 2,200 spring-run salmon was counted annually using fish ladder counts and carcass surveys. This year's count of 2,759 salmon represents an increase from both the 1999 and 2000 cohorts of 1,591 and 637, respectively. Although, since the age structure (percentage of 2-, 3-, and 4-year-olds) of Deer Creek spring run is not known at this time, caution should be used when speculating the replacement rate of this year's run. Due to the difficulty in separating grilse-sized fish in pools with numerous salmon, grilse are included in the adult counts.

Lassen National Forest fisheries crews will survey Deer Creek again in October from the Upper Falls to Dillon Cove for spawning success, redd distribution, and carcass recovery for DNA tissue collection.

This year's survey included participants from the Department of Fish and Game (CDFG), U.S. Forest Service Lassen National Forest (LNF), National Oceanic and Atmospheric Administration Fisheries (NOAA), and U.S. Fish and Wildlife Service's Northern Central Valley Fishery Resource Office (USFWS). The first prize winner of this year's "Deer Creek Salmon Guess Contest," held during the pre-snorkel camp out, was Jimmy Faulkner with a guess of 2750 salmon. Jimmy won the prized DFG "Sworn to Protect" T-shirt. Thank you to all who volunteered their time to participate in the year's annual Deer Creek salmon count.

Attachments

FIGURE 1. Deer Creek Survey Reaches, August 2003.

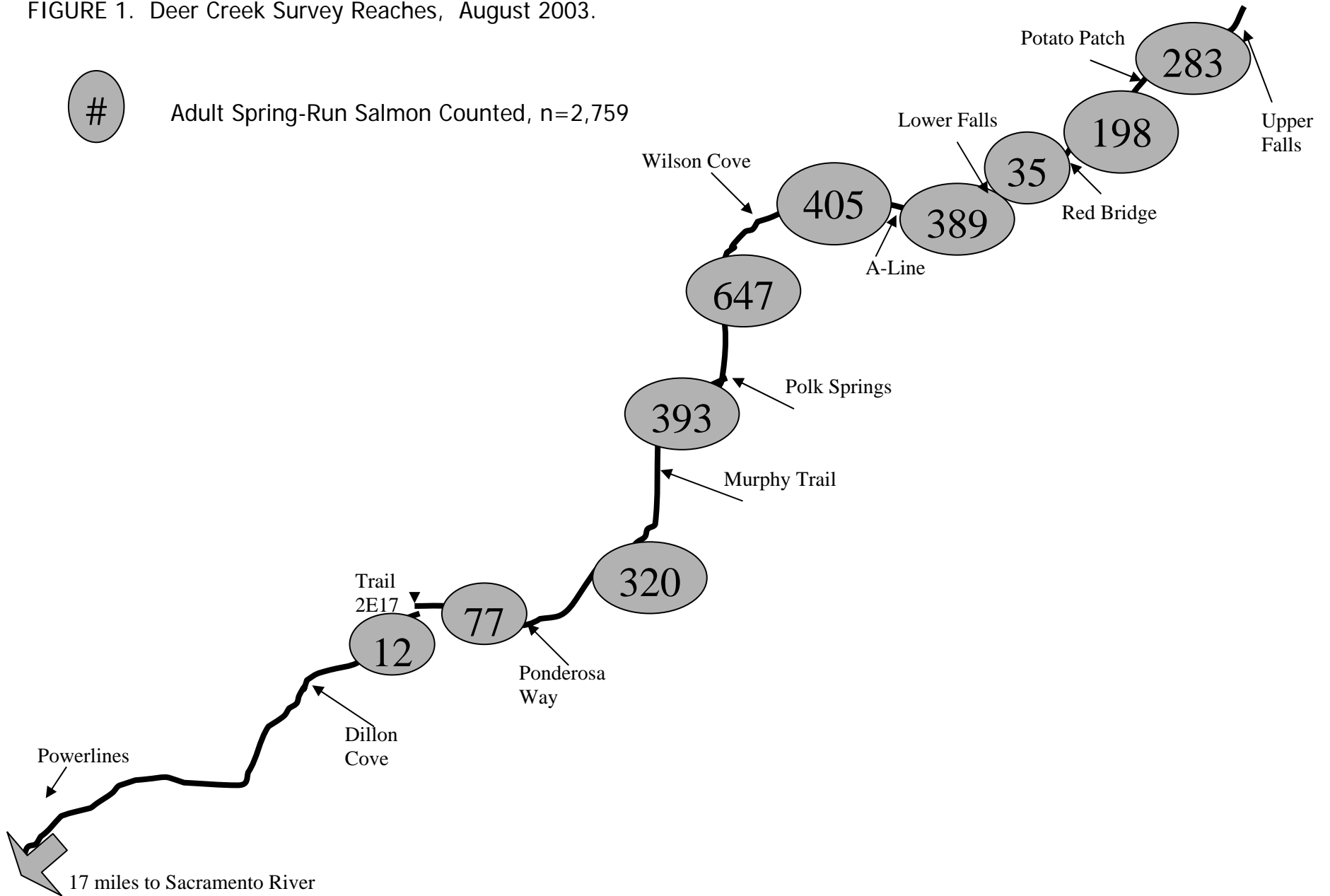


TABLE 1. Holding Distribution of Spring-Run Chinook salmon in Deer Creek, 1992-2002

Section	1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Upper Falls to Potato Patch	12	6	35	14	100	21	267	21	67	11	102	22	14	<1	114	7	34	5	204	13	311	14	283	10
Potato Patch to Hwy-32	5	2	17	7	31	6	67	5	44	7	19	4	11	<1	91	6	45	7	131	8	78	4	198	7
Hwy-32 to Lower Falls	7	3	4	2	4	1	37	3	12	2	9	2	4	<1	28	2	7	1	59	4	52	2	35	1
Lower Falls to A-Line	65	31	54	21	215	44	225	17	170	28	153	33	93	5	241	15	151	24	357	22	492	23	389	14
A-Line to Wilson Cove	13	6	35	14	2	0	134	10	67	11	22	5	98	5	167	10	76	12	149	9	160	7	405	15
Wilson Cove to Polk Springs	51	24	4	2	69	14	124	10	88	14	26	6	182	10	158	10	96	15	346	21	451	21	647	24
Polk Springs to Murphy Trail	21	10	51	20	56	12	219	17	102	17	59	13	270	14	247	16	92	15	303	19	350	16	393	14
Murphy Trail to Ponderosa	35	16	59	21	8	1	177	13	58	9	74	16	615	33	389	24	135	2	34	2	183	8	320	12
Ponderosa to Trail 2E17	ns	0	ns	0	ns	0	45	3	6	0	2	0	476	25	106	7	1	<1	37	2	107	5	77	3
Trail 2E17 to Dillon Cove	ns	0	ns	0	ns	0	ns	0	ns	0	ns	0	116	6	50	3	0	0	2	<1	1	<1	12	<1
Totals	209		259		485		1,295		614		466		1,879		1,591		637		1,622		2,185		2,759	

List of Participants in 2003 Deer Creek Snorkel Survey

<u>Date</u>	<u>Section</u>	<u>Participants</u>
8/5	Upper Falls to Potato Patch	Matt Galli, CDFG Mike Berry, CDFG
8/5	Potato Patch to Hwy-32	Chris Mayes, LNF Jake Alliman, LNF
8/5	Hwy-32 to Upper Falls	Caitlan Dalby, LNF Bobette Jones, LNF Jimmy Faulkner, USFWS
8/5	Upper Falls to A-Line	Caitlan Dalby, LNF Bobette Jones, LNF Jimmy Faulkner, USFWS
8/5	A-Line to Wilson Cove	Ken Roby, LNF Tim Loux, LNF
8/5	Wilson Cove to Polk Springs	Colleen Harvey Arrison, CDFG Melanie McFarland, LNF Andy Holland, CDFG
8/5	Polk Springs to Murphy Trail	Mike Ricketts, CDFG Matt Johnson, CDFG
8/5	Murphy Trail to Ponderosa Way	Matt Staudacher, LNF Carl Anderson, LNF
8/5	Ponderosa Way to Trail 2E17	Ryan Foote, LNF Howard Brown, NOAA
8/11	Trail 2E17 to Dillon Cove	Ryan Foote, LNF Carl Anderson, LNF

DISTRIBUTION LIST

Department of Fish and Game, Redding

Randy Benthin
Steve Baumgartner
Mike Berry
Patricia Bratcher
Curt Babcock
Connie Shannon

Department of Fish and Game, Chico

Paul Ward
Matt Galli

Department of Fish and Game, Sacramento

Dennis McEwan
Alice Low
Jim White
Quinquin Liu
Bob Kano

Lassen National Forest

Melanie McFarland
Ken Roby
Ryan Foote

U.S. Fish and Wildlife Service

Jim Smith
Patricia Parker
Jack Williamson

National Oceanic and Atmospheric Administration, Fisheries

Dan Viele
Howard Brown

Department of Water Resources

Shiela Greene

Sierra Pacific Industries

Julie Kelley

Deer Creek Watershed Conservancy

Diane Gaumer
Bill Berens