U.S. Fish & Wildlife Service

Arcata Fish & Wildlife Office Fisheries Program

Trinity River Mainstem Redd Survey Update 10/30/2015

The Arcata Fish and Wildlife Office along with the California Department of Fish and Wildlife, Yurok Tribal Fisheries Program, Hoopa Valley Tribal Fisheries Department, and Shasta-Trinity National Forest survey the mainstem Trinity River to recover salmonid carcasses and count and map Chinook Salmon (*Oncorhynchus tshawytscha*) redds. The distribution of Chinook Salmon spawning is expected to change in response to rehabilitation efforts of the Trinity River Restoration Program and to the relative run size of natural vs. Trinity River Hatchery origin fish. Spawning surveys are attempted weekly between Lewiston Dam and the North Fork Trinity River (reaches 1 through 7) and every other week on the survey reaches downstream of the North Fork Trinity River (Figure 1, Table 1).

This update provides preliminary data on 2015 redd observations encountered and entered into our database as of 10/30/2015 (Table 1). Figure 2 compares preliminary 2015 cumulative redd counts for Reaches 1-10 with the previous 12 years (2002-2014). At this point, redds constructed by Chinook and Coho salmon are not differentiated. After the end of the season, redds are apportioned by association with hatchery or natural origin Chinook Salmon using carcass data.

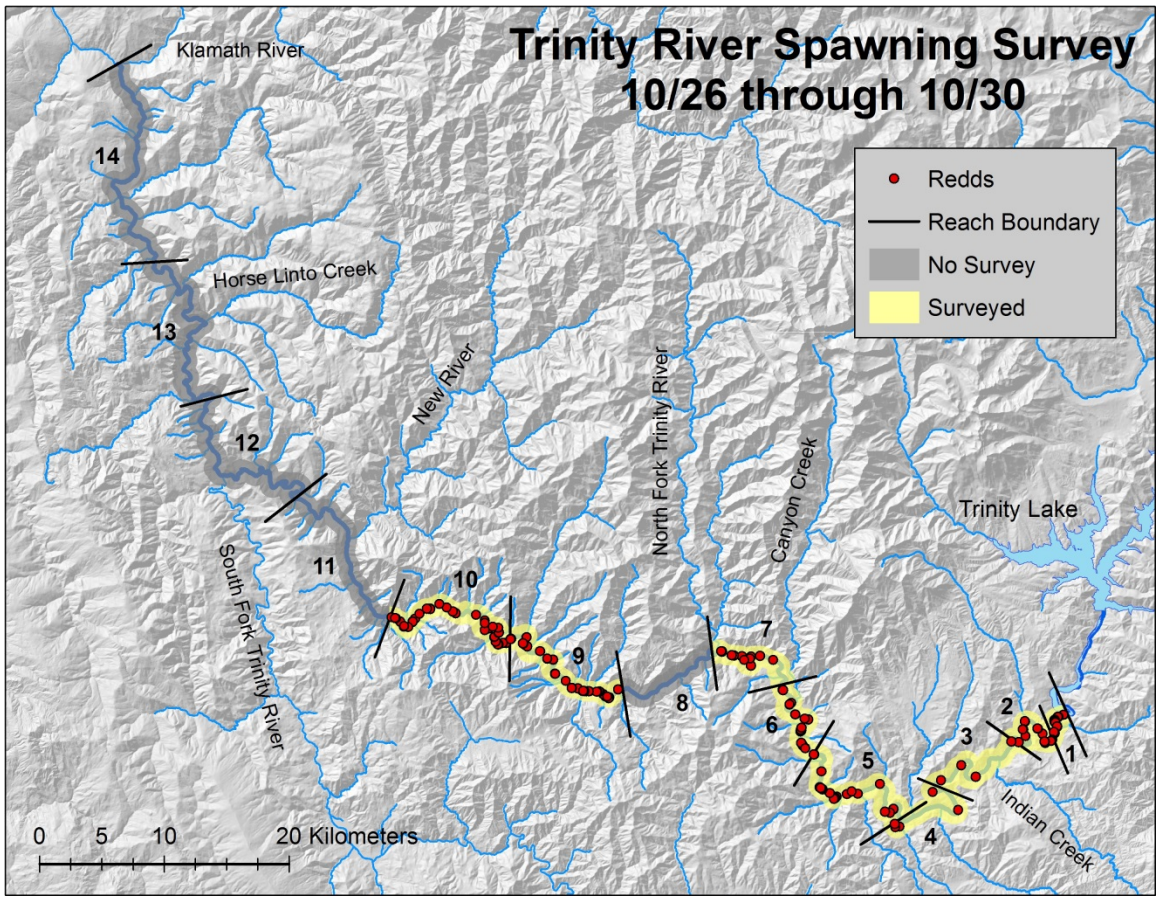

Figure 1. Mainstem Trinity River salmon spawn survey area for this week's update.

Table 1. Preliminary count of redds by reach for the fall 2015 mainstem Trinity River redd survey. Reach 8 (Pigeon Point Run) and Reach 11 (Burnt Ranch Gorge) are not surveyed due to abundant whitewater.

Week start	Reach 01	02	03	04	05	06	07	08	09	10	11	12	13	14	Total
08/31	0														**0**
09/07	0	0	0	NS	NS	0	0								**0**
09/14	0	0	0	0	0	0	0		1	0					**1**
09/21	12	24	9	9	25	19	15								**113**
09/28	13	34	13	30	28	37	39		24	13					**231**
10/05	19	42	67	34	49	30	39					5	0	0	**285**
10/12	10	45	19	15	32	43	30		115	64					**373**
10/19	26	24	31	11	14	44	28					24	7	1	**210**
10/26	43	27	6	5	28	24	25		74	61					**293**
11/02															**0**
11/09															**0**
11/16															**0**
11/23															**0**
11/30															**0**
12/07															**0**
12/14															**0**
Total	**123**	**196**	**145**	**104**	**176**	**197**	**176**		**214**	**138**		**29**	**7**	**1**	**1,506**

These data are preliminary and subject to revision.
"NS" = no survey
*** = partial count due to technical difficulties**

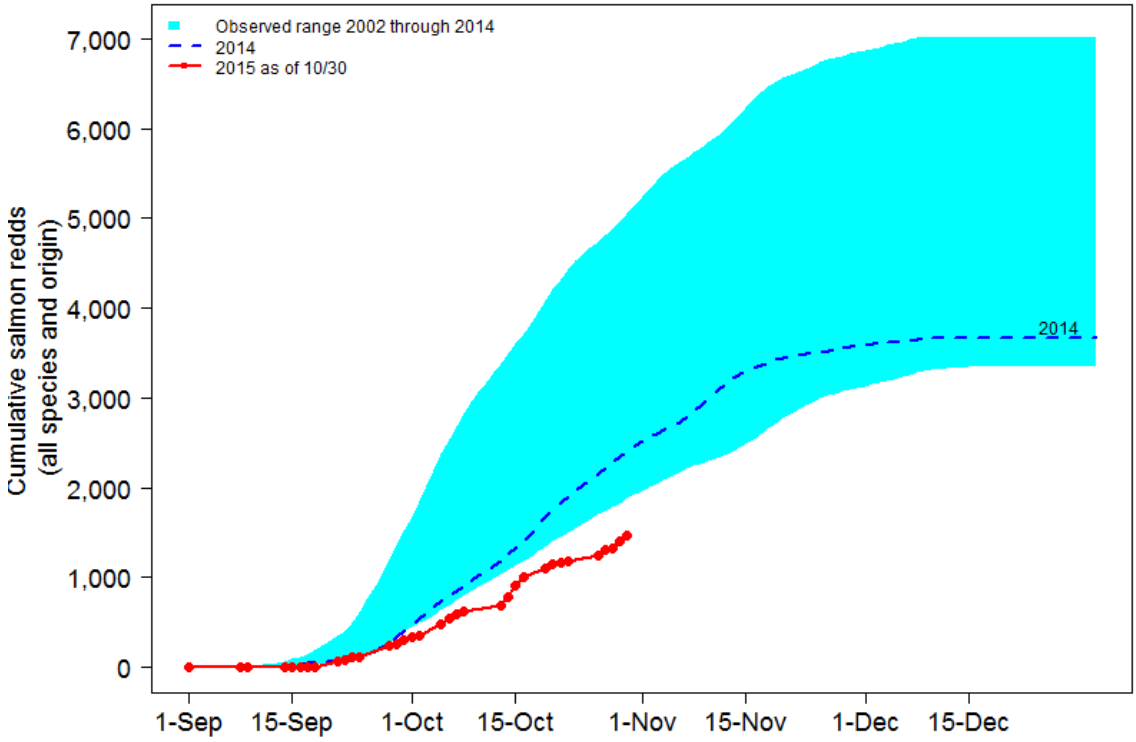

Figure 2. Fall 2015 cumulative Trinity River mainstem redd counts, Reaches 1 to 10 (Reach 8 excluded), as of 10/30/2015 compared to 2014 (dashed line) and the range of counts from 2002-2014 (blue polygon).

We annually track spawning success rates (i.e., pre-spawn mortality versus partially or fully spawned) of female salmon throughout the Trinity River spawning survey season. Figure 3 shows the cumulative percent of female salmon carcasses found pre-spawn compared to recent years. Pre-spawn mortality data is reported only when 10 female salmon carcasses are recovered. As of 10/30 there has been 3 female salmon that died before spawning, out of a total of 315 female carcasses.

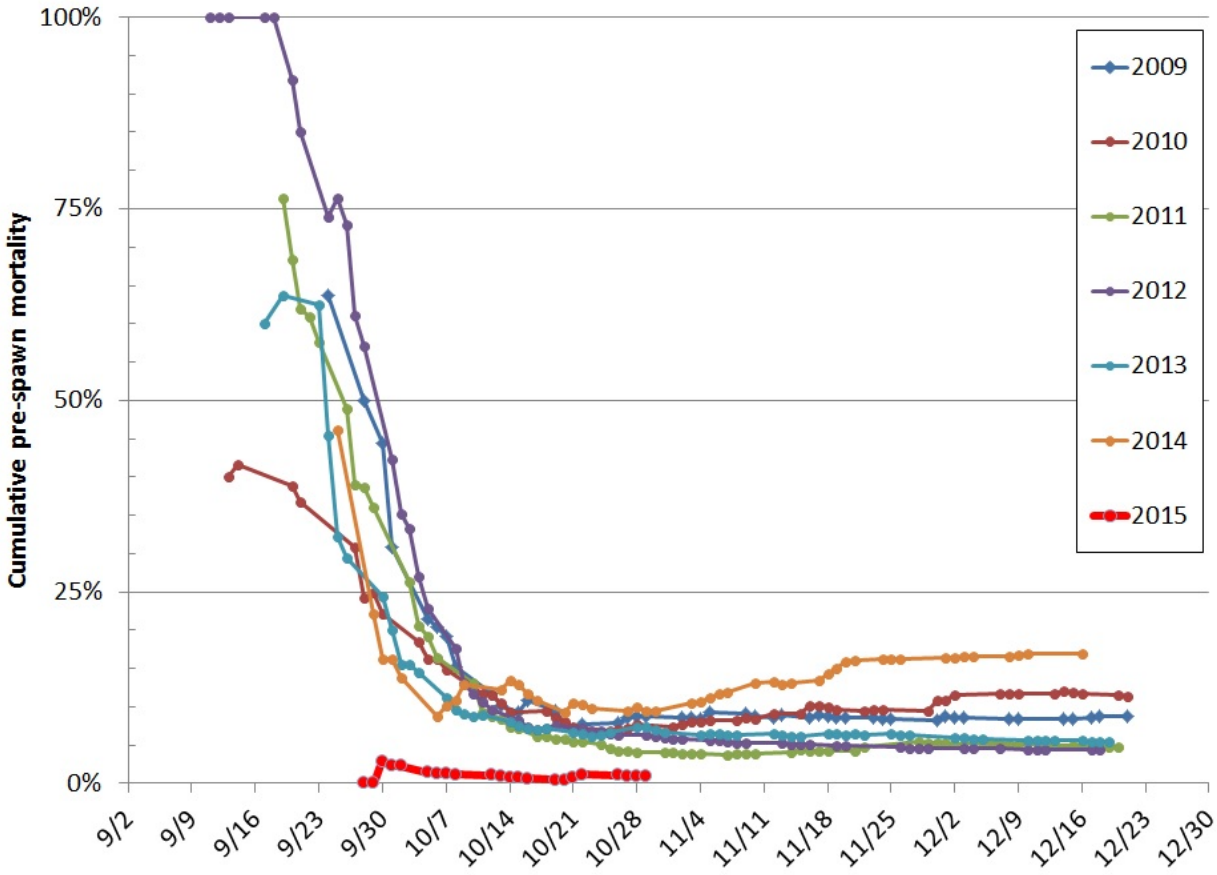

Figure 3. Comparison of fall 2015 cumulative observed pre-spawn mortality as of 10/30/2015 compared to that observed recent years 2009-2014. Plots begin for each year when at least 10 female salmon carcasses have been encountered.

A Keyhole Markup Language file has been created to view redd distribution data with Google Earth. This data is created directly from the data collected by our field crews. Each point is attributed with the date that the redd was initially marked (i.e. "10/2" = October, 2nd).

Trinity_Redds_2015_10_30

If Google Earth fails to launch automatically, the file can be used by first saving it to your computer then launching the Google Earth application. Select the menu option **File**, **Open**, locate the downloaded file ("Trinity_Redds_2015_10_30.kml"); and click the **Open** button.

Note: Background imagery in Google Earth is sometimes not projected with perfect accuracy. Redd locations may appear to be mapped on dry ground in those cases when viewed with Google Earth, but they are indeed in the water! Likewise, the river has changed since the most recently available Google Earth imagery.

Image of the Week: As the water from Lewiston Dam was cut back to winter base flow, the crews were on high alert for dewatered redds, such as this one. You can see the mound has been exposed, though the pit remains underwater. Hopefully the eggs, which are buried deep (~18 in) within the redd, are safe. There have been five redds found in 2015 with exposed mounds. Zero redds have been found fully exposed. (Photograph credit: K. Yamasaki)

For more information regarding mainstem Trinity River redd surveys, please contact Steve Gough (707-825-5197; steve_gough@fws.gov) or Derek Rupert (570-419-2823; derek_rupert@fws.gov).