U.S. Fish & Wildlife Service

Arcata Fish & Wildlife Office Fisheries Program

Trinity River mainstem redd survey update
11/08/2014

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 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 (Figure 1, Table 1).

This update provides preliminary data on 2014 redd observations encountered and entered into our database as of 11/07/2014 (Table 1). Figure 2 compares preliminary 2014 cumulative redd counts for Reaches 1-10 with the previous 10 years (2002-2013). Redds constructed by Chinook and Coho Salmon are not differentiated. Numbers are adjusted post season for Chinook Salmon of hatchery and natural origin using carcass data.

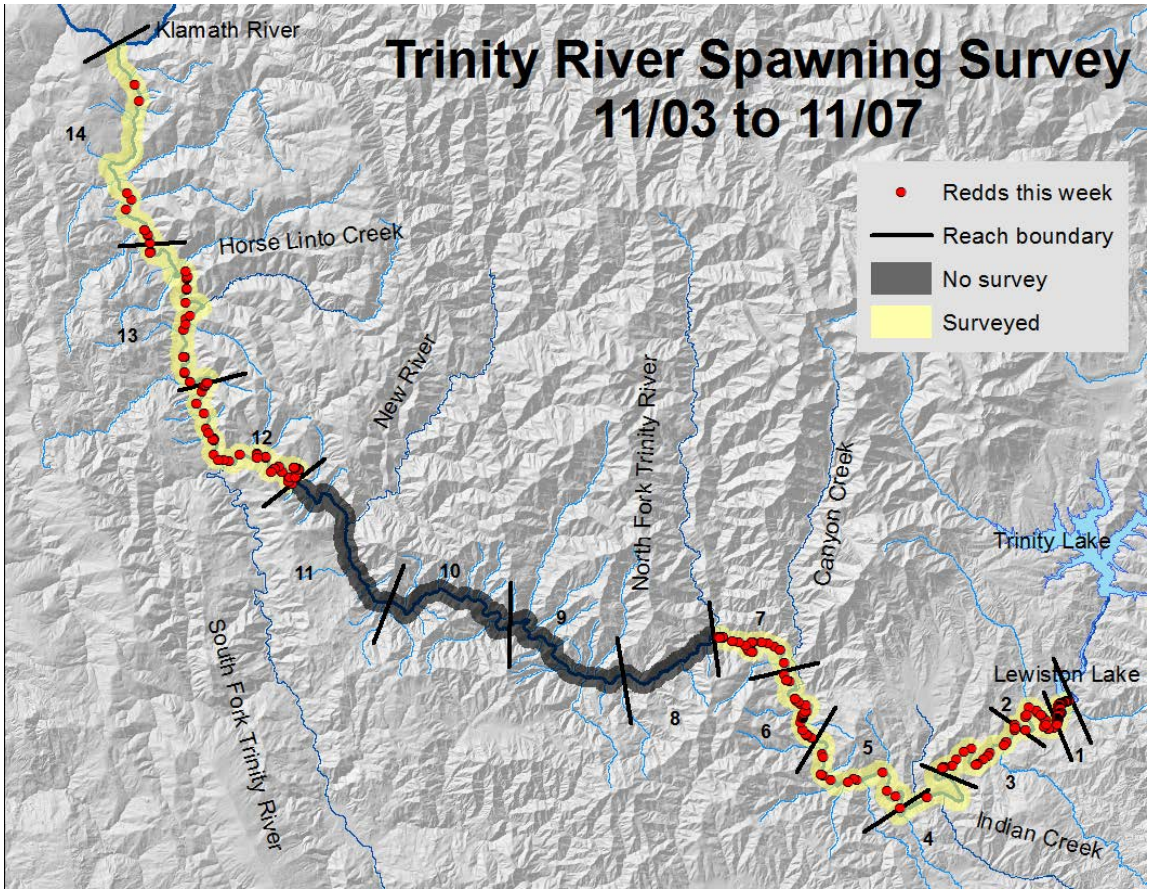

Figure 1. Mainstem Trinity River survey area of this update and observed activity.

Table 1. Preliminary count of redds by logistic reach for the fall 2014 mainstem Trinity River redd survey. Reach 8 and reach 11 are not surveyed due to whitewater (Pigeon Point Run and Burnt Ranch Gorge).

Week start	Reach 01	02	03	04	05	06	07	08	09	10	11	12	13	14	Total
09/01	0														**0**
09/08	0	0	3	0	0	0	0								**3**
09/15	8	7	**NS**	**NS**	**NS**	0	0		**NS**	**NS**					**15**
09/22	23	21	50	23	25	8	4								**154**
09/29	29	39	61	29	62	49	10		9	6					**294**
10/06	19	62	50	37	52	84	42					4	0	0	**350**
10/13	22	42	76	75	68	56	33		125*	87					**584**
10/20	60	32	26	9	76	107	85					45	5	**NS**	**445**
10/27	79	37	30	16	36	83	68		143	61					**553**
11/03	205	39	24	2	13	57	43					100	25	12	**520**
11/10															**0**
11/17															**0**
11/24															**0**
12/01															**0**
12/08															**0**
12/15															**0**
Total	**445**	**279**	**320**	**191**	**332**	**444**	**285**		**277**	**154**		**149**	**30**	**12**	**2,918**

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

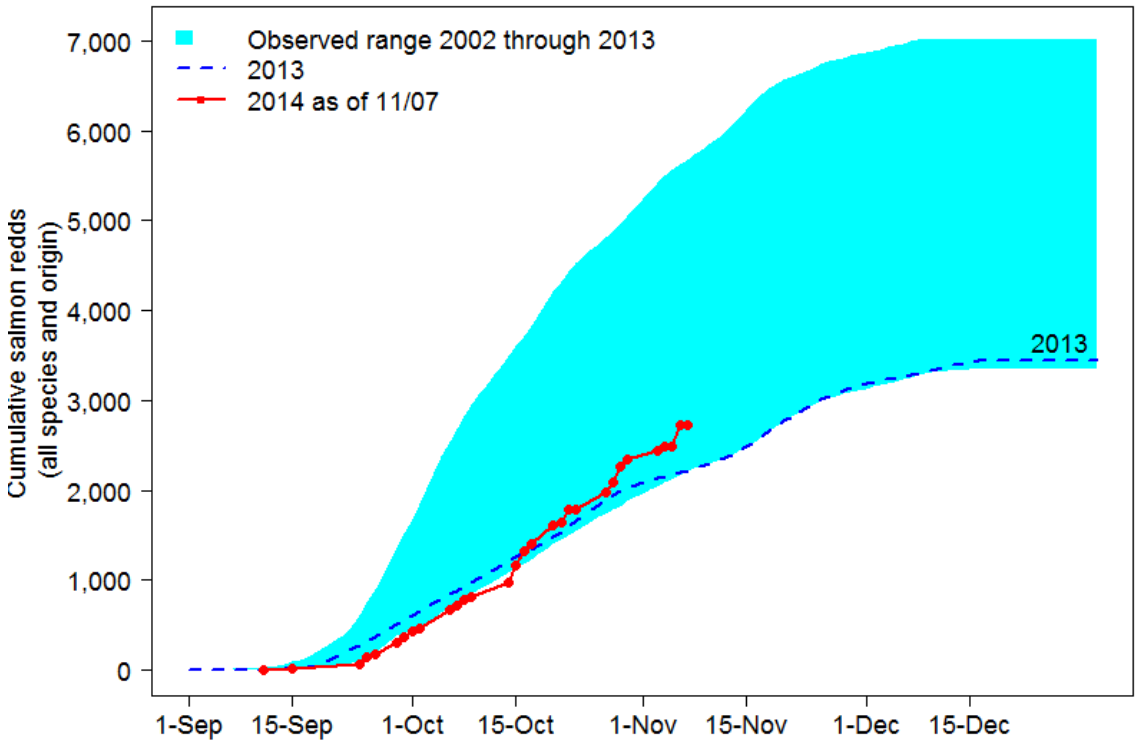

Figure 2. Comparison of fall 2014 cumulative Trinity River mainstem redd counts reaches 1 to 10 as of 11/07/2014 to counts in 2013 and the range of years 2002-2013 (reach 8 excluded).

High infection levels of the fish parasite *Ichthyophthirius multifilis* (Ich) have been recently detected in Chinook Salmon sampled in the lower Klamath River. To reduce the severity of the Ich outbreak and decrease the chances of large scale pre-spawn mortality of Klamath and Trinity River salmon, Trinity River flow releases from Lewiston Dam were increased to as high as 3,400 cubic feet per second in September 2014 (Bureau of Reclamation news release here).

We annually track mortality of female salmon pre-spawn vs spawned during our Trinity River spawning survey. Figure 3 below shows the cumulative percent of female salmon carcasses observed in pre-spawn condition thus far in 2014 compared to that of recent years. We caution the reader that high levels of pre-spawn mortality are common in the early portions of the spawning season. Early in our spawn survey season, few if any salmon have spawned and died, and low levels of background mortality account for most carcasses encountered. As seasons progress, pre-spawn mortality typically decreases as the number of fish that successfully spawn becomes large relative to background mortality.

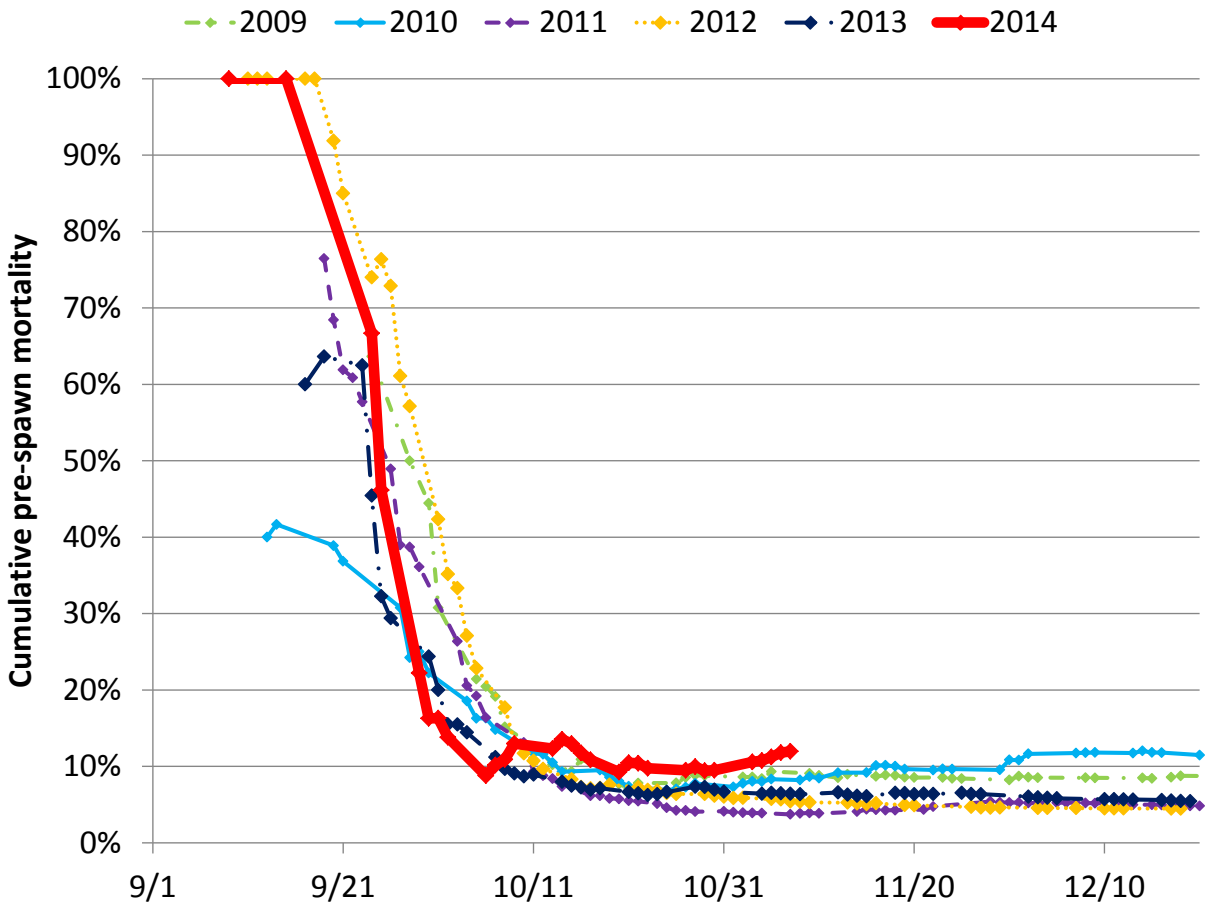

Figure 3. Comparison of fall 2014 cumulative observed pre-spawn mortality as of 11/07/2014 compared to that observed recent years 2009-2013. Plots begin for each year when at least 10 female salmon carcasses have been encountered.

A Keyhole Markup Language file has been created to view redd distribution data with Google Earth.

Redds_2014_through_11_07.kml
(last modified November 8, 2014)

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 (Redds_2014_through_11_07.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.

For more information regarding mainstem Trinity River redd surveys, please contact Charlie Chamberlain at (707) 822-7201 or charles_chamberlain@fws.gov