
From: Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov>
Sent: Monday, March 25, 2019 12:10 PM
To: Provins, Samuel
Subject: Re: [EXTERNAL] Re: CC Data

Looking for a summary of spring run and steelhead juvenile emmigration. Is this something Mike could provide without too much trouble.

spring run fry emmigration 2013 to present (Range Nov 1 through April?) from UCC RST ; peak, and any smolt data?

steelhead fry emmigration from LCC (range Jan 15-June 30?); peak, and any smolt data?

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

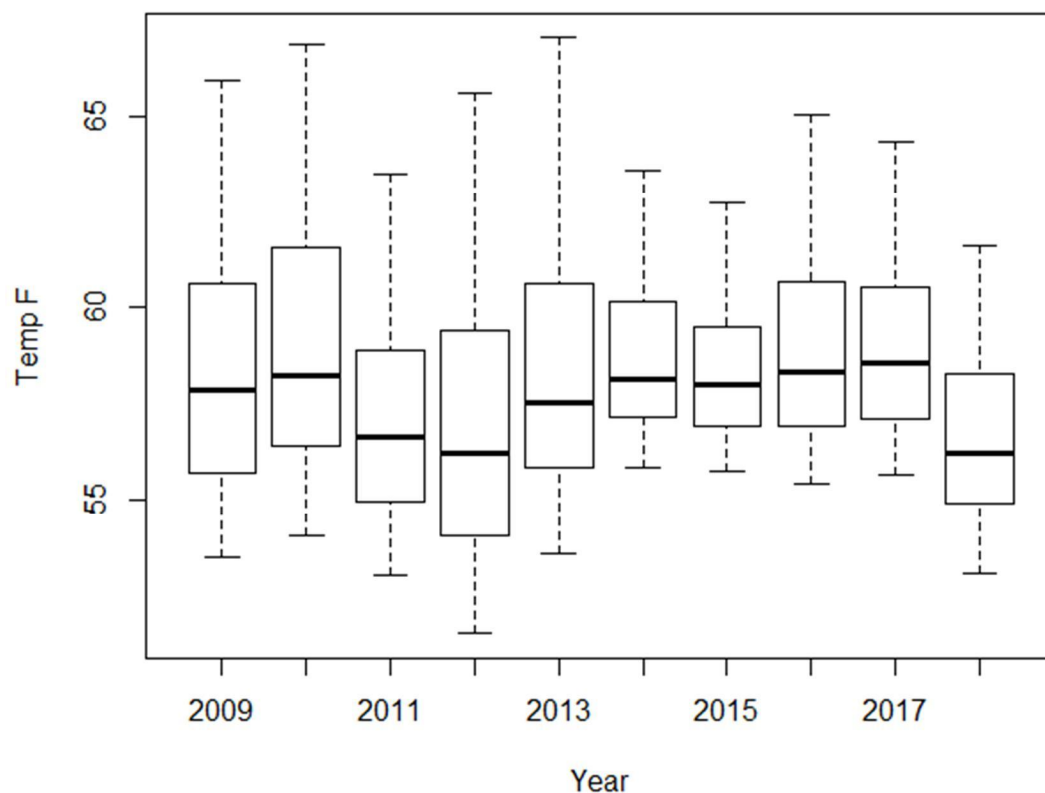
650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

On Mon, Mar 25, 2019 at 11:42 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

Sorry my mistake is complicating things, R wanted quotes around rm for some reason so it was selecting rm 0.7 instead of 7.8... Thanks for having me check

Range of Temperatures at Observed SR Holding locations August 2009-2018



Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
Pacific Southwest Region
United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
10950 Tyler Road, Red Bluff, CA 96080
Red Bluff Desk: (530) 527-3043 ext. 254
Mobile:(856) 313-7455
Anderson Field Office:(530) 365-2410
Samuel_Provins@fws.gov

On Mon, Mar 25, 2019 at 11:36 AM Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov> wrote:
Ya, I was looking at for example 2012, and looks like the north state pool fish ranged from 52-64 F (June-Sept 14) mean 60.7, so thought this seemed a bit warm. I think I need to make this as simple as possible, knowing that is a little complicated to assess since fish move. Thinking about their exposure to temperatures, comparing to how it has been and what it may look like in the future with the PA.

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

On Mon, Mar 25, 2019 at 11:29 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

Yeah...I spot checked that holding temperature data and my code has an error. I will fix

Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
Pacific Southwest Region
United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
10950 Tyler Road, Red Bluff, CA 96080
Red Bluff Desk: (530) 527-3043 ext. 254
Mobile:(856) 313-7455
Anderson Field Office:(530) 365-2410
Samuel_Provins@fws.gov

On Mon, Mar 25, 2019 at 11:08 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

Yes - adult holding observations during the august index survey temps were above 60. The median is of holding locations, not individuals. I can expand the data by number of individuals and the median will likely move a little but the range will stay the same.

Mikes says- Anecdotally, pulse flows seem to move more Juv RBT than Juv CHN. Also he sees less Juv movement with pulses than with natural flow events around the same time.

Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
Pacific Southwest Region
United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
10950 Tyler Road, Red Bluff, CA 96080
Red Bluff Desk: (530) 527-3043 ext. 254
Mobile:(856) 313-7455
Anderson Field Office:(530) 365-2410
Samuel_Provins@fws.gov

On Mon, Mar 25, 2019 at 10:55 AM Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov> wrote:
Is the range of temperatures for adult holding exposure (08-19) showing they are always above 60? And the median is of all the individuals in a given year?

Do you know if for year when the traps were run during pulse flows, did the data show increases in migration of steelhead or spring run juveniles? Or does Mike have that summarized?

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

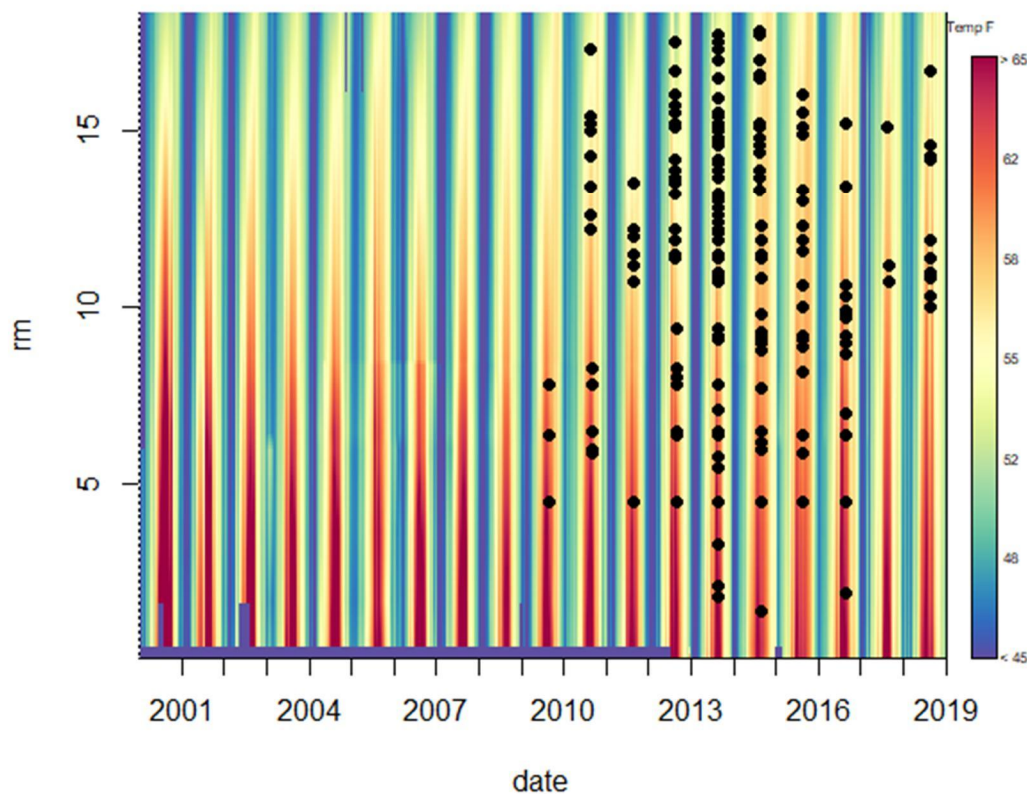
650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

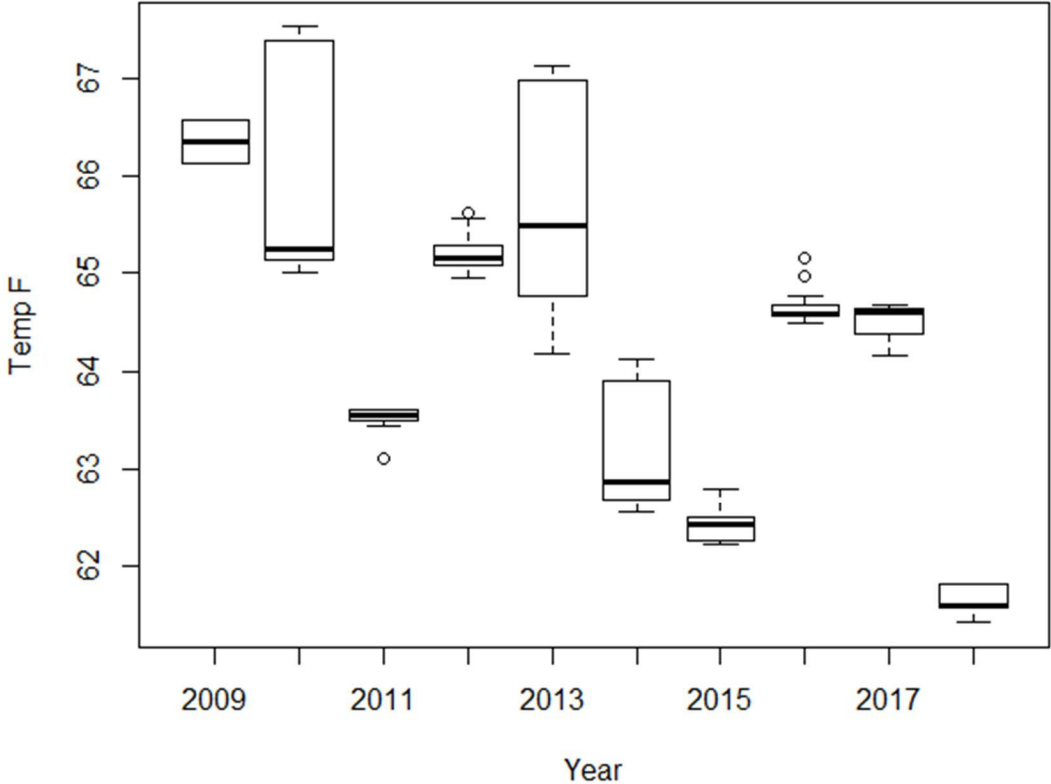
On Thu, Mar 21, 2019 at 11:53 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

The last plot of adult exposure temps I sent was all Chinook snorkel observations.

This one is just August indexes that I have clean

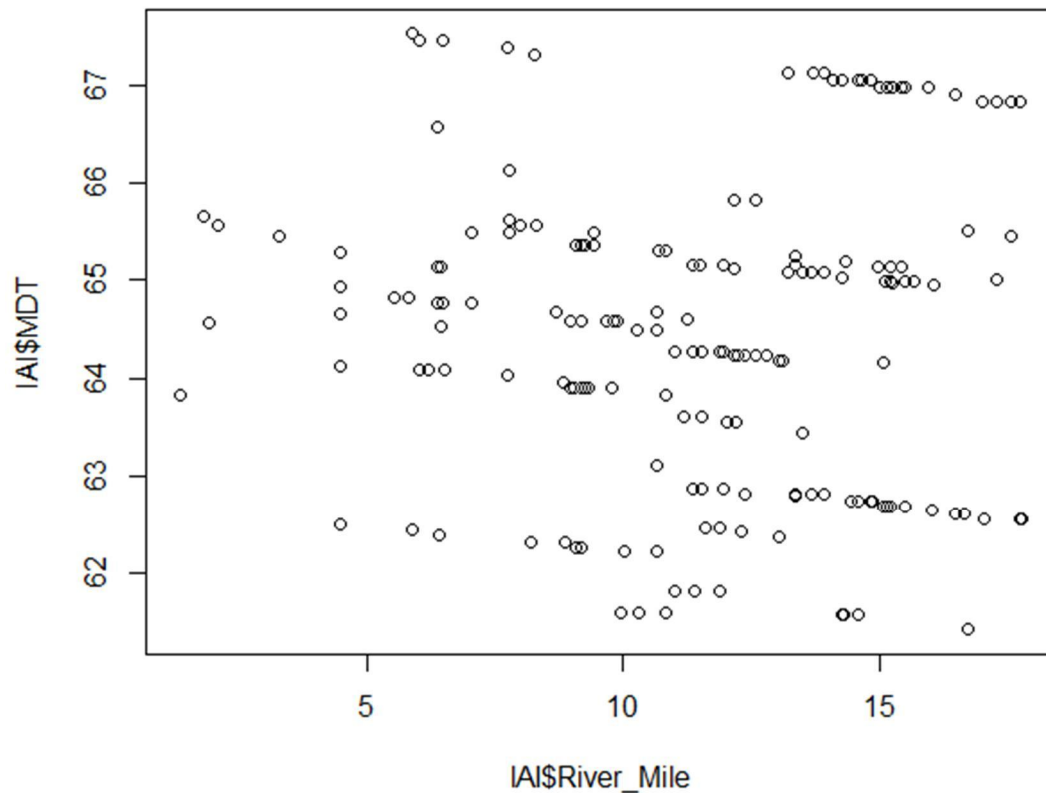


Range of Temperatures at Observed SR Holding locations August 2009-2018



rm not predictive of temp across years..

August index Chinook Observations 2009-2018; Temp F by rm



Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
Pacific Southwest Region
United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
10950 Tyler Road, Red Bluff, CA 96080
Red Bluff Desk: (530) 527-3043 ext. 254
Mobile:(856) 313-7455
Anderson Field Office:(530) 365-2410
Samuel_Provins@fws.gov

On Thu, Mar 21, 2019 at 11:26 AM Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov>
wrote:

Adult exposure temperatures -what period?

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

On Thu, Mar 21, 2019 at 11:24 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

We do not have 2003-2007 in the database yet so it would take several extra steps, I could do this late next week if ya like

Same with august index back to 2001 - I will get you what I have . I am not sure what you are asking here: Are temps June/July/Aug/mid Sept?

Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
Pacific Southwest Region
United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
10950 Tyler Road, Red Bluff, CA 96080
Red Bluff Desk: (530) 527-3043 ext. 254
Mobile:(856) 313-7455
Anderson Field Office:(530) 365-2410
Samuel_Provins@fws.gov

On Thu, Mar 21, 2019 at 11:17 AM Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov> wrote:

By chance easy to put since 2003 on there with redds?

Live fish; 2001 forward August Index. Are temps June/July/Aug/mid Sept?

Thinking about 5..

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

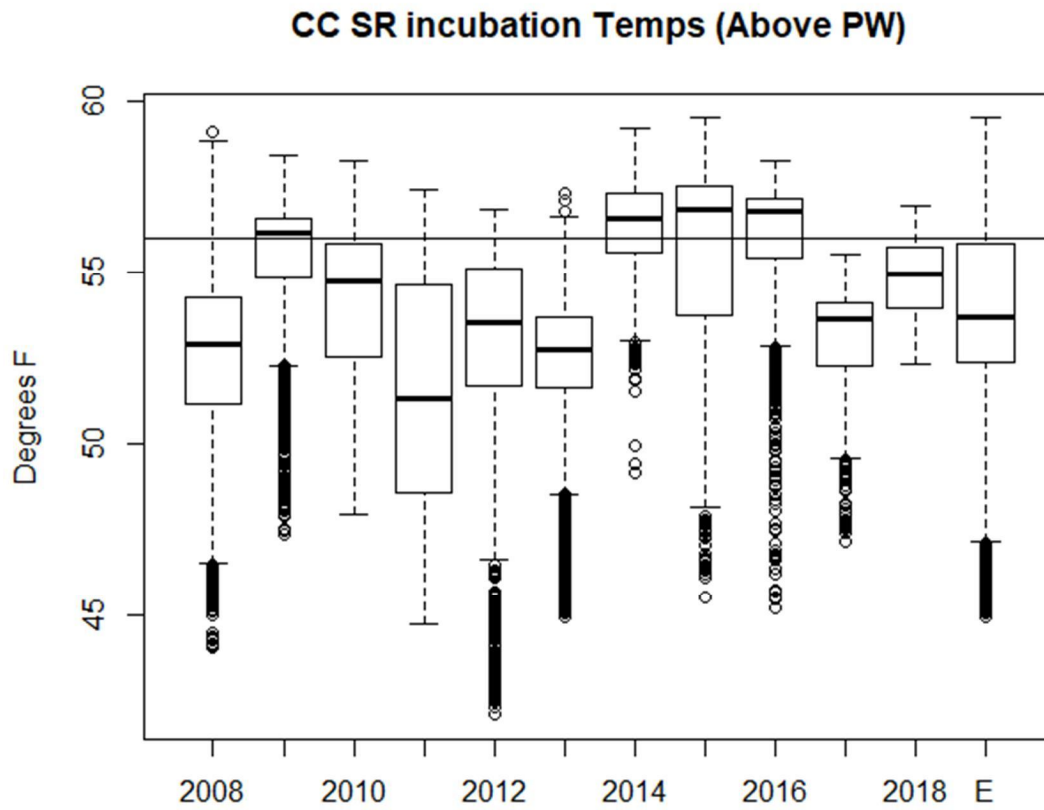
650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

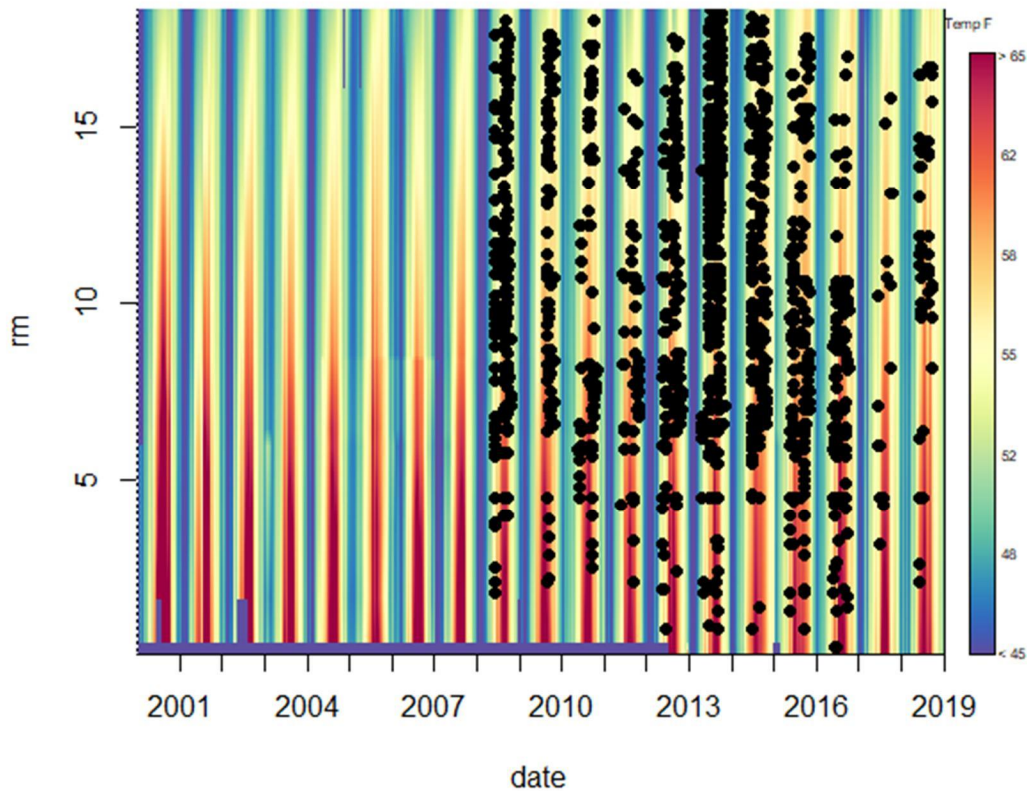
On Thu, Mar 21, 2019 at 10:20 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

- 1.Yeah i think CCs plot does a good job of describing passage.
- 2.No response from Tom yet..

3. In the last 11 years, SR eggs in Clear Creek experienced mean daily temperatures over 56F approximately 25% of days. The proportion of incubation days over 56F was greater than half in 2014,2015 and 2016.



4. Lots of live observations...which data do you want?



5. Yes that distribution still describes spawning timing. It seems like the proportion has gotten smaller (along with the number of fish) down towards 0-10% before Sept 15th. It looks like in all but one year (2015) the early fish also spawned at a lower average RM in addition to spawning earlier. I can do a stat or make a figure if you would like, but yeah they will have experienced higher incubation temps.

Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
 Pacific Southwest Region
 United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
 10950 Tyler Road, Red Bluff, CA 96080
 Red Bluff Desk: (530) 527-3043 ext. 254
 Mobile:(856) 313-7455
 Anderson Field Office:(530) 365-2410
Samuel.Provins@fws.gov

On Thu, Mar 21, 2019 at 9:21 AM Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov> wrote:

Thanks Sam, Just realized I have the plot for spring run timing from Charlie's pulse flow. I think only the redds upstream of PW since uncertainty -I am guessing the 1000 ft redd counts are in with the first plot which are mostly fall run. I think the format works but a verbal description would help (and in F). One thing this plot does is combine all redds and some difficulty in telling when they were exposed temperatures warmer than 56. Things I am thinking about are, how often and what proportion of redds are exposed to temps over 56? As far adult timing of steelhead- that would be great if Tom had anything summarized generally from video data. From my recollection, they start moving in late September, peaks in Dec and Jan, and goes through March.

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

On Thu, Mar 21, 2019 at 6:39 AM Provins, Samuel <samuel_provins@fws.gov> wrote:

Getting you this stuff is my priority today. Cook is on AL for a week so we will have to piece together what we have. First day of telework! so call my cell if you have thoughts

1. General SR upstream timing

-CC presented this info recently I will get you the plot

2. General Steelhead upstream timing

-I can contact Tom from the state to get you this

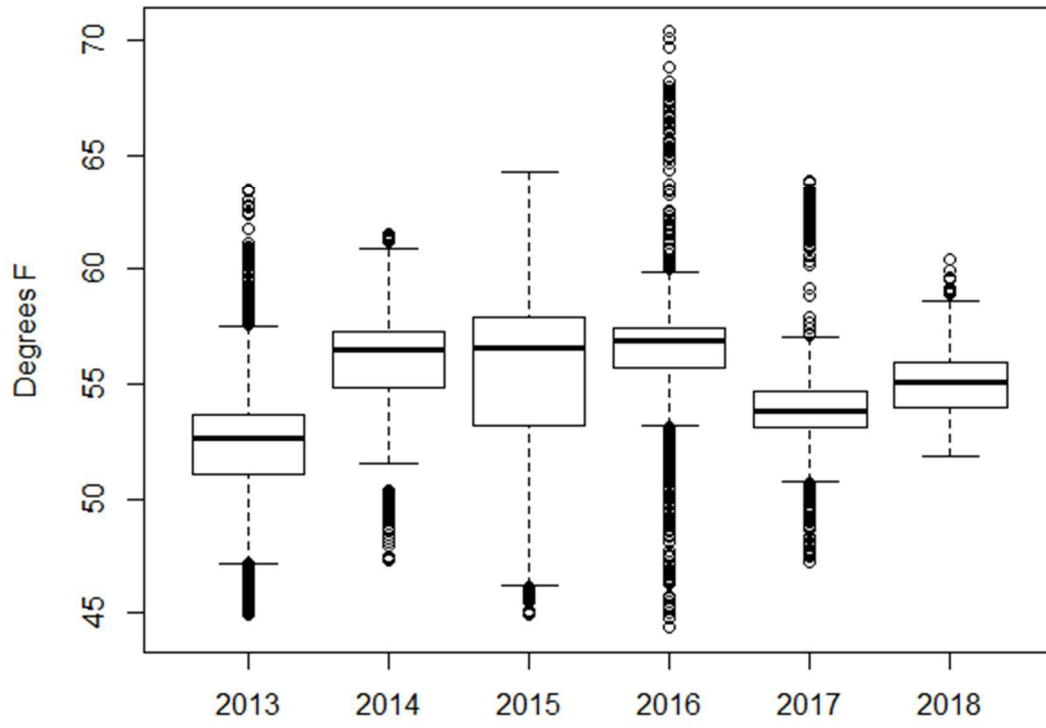
3. SR redd incubation temperature distribution

-I will get you this for all years we have clean

-Do you want all redds or redds above the picket weir?

-Does this data format work for you?

All Chinook Redd observations on Snorkel



Average portion of redd count constructed before Sept 15 ranged from 0-26% from 2003-15. Has that changed with recent years? And can you tell from your analysis if those were those redds more exposed to higher temperatures?

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

On Mon, Mar 18, 2019 at 3:28 PM Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov> wrote:

Perfect thank you!

Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region

U.S. Department of Commerce

650 Capitol Mall, Suite 5-100, Sacramento, CA 95814

916-930-3712 | Sarah.Gallagher@noaa.gov

On Mon, Mar 18, 2019 at 3:23 PM Provins, Samuel <samuel_provins@fws.gov> wrote:

Hey Sarah,

Good talking to you. Ryan and I are going to try and get you three things:

1. General SR upstream timing
2. General Steelhead upstream timing
3. SR redd incubation temperature distribution
- 4 SR holding temperature distribution

Working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

Sam Provins, Fish Biologist
Pacific Southwest Region
United States Fish and Wildlife Service

Red Bluff Fish and Wildlife Office
10950 Tyler Road, Red Bluff, CA 96080
Red Bluff Desk: (530) 527-3043 ext. 254
Mobile:(856) 313-7455
Anderson Field Office:(530) 365-2410
Samuel_Provins@fws.gov