From:	Kristin Begun - NOAA Affiliate
Sent:	Friday, June 14, 2019 12:25 PM
To:	Barbara Byrne - NOAA Federal
Subject:	Re: East Side ITS section

I like it. And this would need to account for various life stages, so lower temp during times when spawning is occurring (EPA criteria for spawning is 55 degrees Dec-June). The modeling shows temps higher than this, so your idea of defining the extent of take as sum of (e.g.) 5 degrees makes sense.

That second part is what I was struggling with. What action Reclamation should take if temperature is slightly exceeded. By "the sum of monthly deviations... exceeds (e.g.) 5 degrees," then for example they would exceed take if the average measured temps during one month were over the modeled temp by 1 degree, 6 days in a row? (unless less than EPA criteria).

Thanks for your input! I'll be working on updating ITS section this weekend (though not until tomorrow afternoon/evening bc we're going camping tonight/tomorrow :)

On Fri, Jun 14, 2019 at 11:36 AM Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov> wrote:
> How about a hybrid approach that shoots for the EPA criteria but allows higher if the modeling shows that temps would be higher. So, (using juvenile rearing and 65 degree criterion as example) e.g., something like:
> "Extent of incidental take is the extent of the Stanislaus River with 7DADM water temperatures above 65 degrees F, which will likely increase in drier and or warmer years. The extent of incidental take is exceeded if the monthly average of measured average daily water temperature at OBB exceeds the modeled monthly average for that month/yeartype combination at OBB, unless the measured 7DADM water temperatures at OBB are less than 65 degrees F throughout the month." Basically, you should meet modeled temps, but okay to exceed modeled temps if still meeting EPA criteria.
>
> Think should be some allowance for how to allow for variability, since we expect to exceed averages -- maybe say that "over the course of the water year, for each month, Reclamation shall record the deviations of the monthly average of measured average daily water temperature at OBB from the modeled monthly average for that month/yeartype combination at OBB. Positive deviations (observed water temperatures warmer than modeled) may be treated as zero if the measured 7DADM water temperatures at OBB are less than the associated EPA criteria throughout the month. The extent of incidental take is exceeded if the sum of monthly deviations exceeds <choose a number, maybe 5??>"
>
> Add a term and condition that "temperature take" needs to reported annually (could be done by the Stan watershed team).
>
> On Fri, Jun 14, 2019 at 10:39 AM Kristin Begun - NOAA Affiliate <kristin.begun@noaa.gov> wrote:
>> See responses in Red:
>>
>> On Fri, Jun 14, 2019 at 10:22 AM Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov> wrote:
>>> thoughts in blue. call if you want.

On Fri, Jun 14, 2019 at 9:56 AM Kristin Begun - NOAA Affiliate <kristin.begun@noaa.gov> wrote:

Hi Barb,

We had a group discussion about the ITS section yesterday. We briefly discussed how to handle take for Stanislaus and San Joaquin effects. I need to edit the tables so that they don't mention temperature compliance at locations we don't have temperature gauge data for.

I could either move SJR compliance points downstream to where there are gauge locations (Ripon/Vernalis/Mossdale) *alert -- Ripon is on the Stan, not the SJR* (right! so would not use this location)and keep just OBB location on the Stanislaus, OR change take to cover average monthly temps in the modeling tables, maybe incorporating exceedance percentiles (can exceed X% of year?) and if exceeded what action to take to reduce rather than instantly triggering reinitiation *not sure how these are alternates -- wouldn't you use the locations with temp gauges to compare to modeled output at those locations?*. (I currently have EPA temp requirement for each life stage, e.g. "The extent of incidental take is exceeded if the water temperature exceeds 65ºF at X location", but if we used the temps in the modeling table instead, then that would be more strict, *see table below*) We could also add a T&C that Reclamation shall develop a temperature profile model for GDW to OBB and Knights Ferry to OBB *I think I have a draft T&C for developing a temp tool...was thinking of it as a way to clarify the temp model conservation measure but might be close to what you are thinking of...*. (Awesome, I'll check that out)

 *Using the modeling table, temps could not exceed 58.5 degrees at OBB in May in Critical years (for juvenile rearing)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Goodwin Dam												
Wet	53.0	52.6	50.7	47.9	47.9	49.1	50.0	51.4	51.7	52.4	53.0	53.2
Above Normal	55.4	54.3	51.6	48.5	48.2	49.7	50.6	51.9	52.5	53.8	54.7	55.5
Below Normal	54.4	53.8	51.3	48.7	49.0	50.3	51.7	52.3	53.0	54.1	54.6	54.9
Dry	54.8	54.1	51.4	48.5	48.8	50.7	51.7	52.6	53.7	54.5	54.8	55.1
Critical	57.5	56.4	52.8	49.7	49.8	51.5	52.7	53.9	55.5	56.7	57.8	58.2
Knights Ferry												
Wet	53.4	52.8	50.6	48.0	48.2	49.3	50.4	52.0	52.6	54.8	55.1	54.7
Above Normal	55.8	54.3	51.3	48.6	48.7	50.6	51.0	52.6	54.7	56.9	57.3	57.4
Below Normal	54.7	53.8	51.1	48.7	49.4	51.3	52.0	52.9	55.1	57.3	57.1	56.8
Dry	55.2	54.1	51.1	48.5	49.3	51.7	52.4	53.7	56.6	57.6	57.3	57.0
Critical	57.9	56.3	52.5	49.6	50.3	52.6	53.6	55.3	58.7	60.3	60.8	60.2
Orange Blossom												
Wet	54.5	53.6	50.6	48.7	49.3	49.9	51.4	53.3	54.7	59.7	59.7	58.0
Above Normal	56.7	54.8	51.1	49.1	50.0	52.9	51.9	54.1	59.3	63.2	62.6	61.5
Below Normal	55.6	54.4	50.9	49.1	50.5	53.8	52.9	54.3	59.6	63.7	62.4	61.1
Dry	56.2	54.7	50.9	48.9	50.8	54.3	54.1	56.1	62.4	63.9	62.6	61.2
Critical	59.0	56.6	52.1	49.8	51.8	55.3	55.9	58.5	64.9	67.4	66.9	64.5

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On Thu, Jun 13, 2019 at 9:17 AM Kristin Begun - NOAA Affiliate <kristin.begun@noaa.gov> wrote:

Hi Barb,

1. The east side effects section still have some track changes that need to be accepted so we can get a clean version on the server today. Track changes are mostly mine and Susan formatted some tables. Most major edit was updating the temporal occurrence table for adult steelhead, and changing related text to "year round" which we discussed. Do you have time to look through or do you want me to accept and make a "clean" version?

2. Are there temperature compliance points on the Stanislaus River? Our ITS language (which is borrowed from the 2009 BO) includes ecological surrogates based on temperature (different for different life stages) at OBB, GDW, and SJR @ the confluence of Stanislaus. Quickly looking at CDEC, I do not see temperature data for GDW or SJR at Stanislaus. There is temp data at Mossdale, but that's the downstream extent. I suppose I could change the location, but if the requirement is no warmer than 65 degrees F (for juveniles) at the Stanislaus confluence, I'm not sure what temp should be the max at Mossdale. I suppose we could keep it at 65 degrees and hope it doesn't get much hotter than that upstream at times when fish are migrating. Any thoughts?

Thanks!
Kristin

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