From: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>

Sent: Thursday, May 23, 2019 8:46 AM **To:** Evan Sawyer - NOAA Affiliate

Subject: Fwd: Type in Word?

Attachments: IOS model description excerpt.docx

Here's the IOS text typed up to insert into the LCM section. I'd also include something like:

For a full description on methods of the IOS model as well as results summary, please refer to APPENDIX_IOS.

[We are working on these, it will likely be an appendix bundled with SALMOD and DPM descriptions.]

----- Forwarded message -----

From: Norma Hinton - NOAA Affiliate < norma.hinton@noaa.gov >

Date: Thu, May 23, 2019 at 8:27 AM

Subject: Re: Type in Word?

To: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>

Morning Cathy,

Attached document

On Wed, May 22, 2019 at 4:26 PM Cathy Marcinkevage - NOAA Federal < cathy.marcinkevage@noaa.gov wrote:

Can you type this up for me in Word sometime on Thursday?

It is the IOS model description excerpt that we'll use in ROC LTO.

Thanks!

Cathy

5.D.3.1.1 Model Structure

The IOS Model is composed of six model stages defined by a specific spatiotemporal context and are arranged sequentially to account for the entire life cycle of winter-run Chinook salmon, from eggs to returning spawners (Figure 5.D-135). In sequential order, the IOS Model stages are listed below.

- Spawning, which models the number and temporal distribution of eggs deposited in the gravel at the spawning grounds in the upper Sacramento River between Red Bluff Diversion Dam and Keswick Dam.
- Early Development, which models the effect of temperature on maturation timing and mortality of eggs at the spawning grounds.
- Fry Rearing, which models the relationship between temperature and mortality of fry during the river rearing period in the upper Sacramento River between Red Bluff Diversion Dam and Keswick Dam.
- River Migration, which estimates mortality of migrating smolts in the Sacramento River between the spawning and rearing grounds and the Delta.
- Delta Passage, which models the effect of flow, route selection, and water exports on the survival of smolts migrating through the Delta to San Francisco Bay.
- Ocean Survival, which estimates the effect of natural mortality and ocean harvest to predict survival and spawning returns by age.

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Norma Hinton Administrative Assistant III

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