Author responses to the Editor decision: Publish subject to minor revisions (review by editor. By Carla Ferreira)

Responses to Editor comments and suggestions were organized as follows: (1) Rewritten comments, (2) Response from authors, and (3) Changes implemented in the revised version of the manuscript. Each reviewer's comment was numbered with the letter "C" followed by a sequential number only to maintain a sequence.

C1. Introduce DO abbreviation in L179 rather than L188.

Changes were made as recommended (In the revised version, the L179 and L188 correspond to L156 and L166, respectively).

- The DO abbreviation has been set in L156.

> duration rains in winter (719 mm). DMW soils are mainly composed of fine soils such as silt and clay with abundant natural phosphate. Despite improvements in Dissolved Oxygen (DO) levels in certain streams, temperatures in a significant number of streams remain above natural values (CWL, 2019; ODA, 2018). Regarding land use, there are three main areas: the northern half area is dominated by forestry involving around 55% of the DMW, the middle part is dominated by agriculture that encompasses around 40%, and the southern part is dominated by a growing urban area by around 5%. The upstream part of the DMW is dominated by long-lived trees species such as evergreen forest and shrubland, while the downstream part is dominated by seasonal crops such as Slender Wheatgrass, and at the most downstream extent, is dominated by urban areas. Due to the predominance of fine soils, upstream areas are vulnerable to erosion and landslides phenomena (Hawksworth,
>
> **Efrain Noa-Yarasca**
> **Deleted:** DO
>
> 1999). In agricultural areas, water quality has been found to degrade rapidly, with higher water temperature and higher phosphorus concentrations (CWL, 2019; Hawksworth, 1999; ODEQ, 2001). Some streams such as the West Fork Dairy Creek show lower DO levels than natural conditions, limiting aquatic life (Hennings, 2014; ODA, 2018).
>
> **2.2 Hydrologic Model**
>
> **Efrain Noa-Yarasca**
> **Deleted:** Dissolved Oxygen (
>
> **Efrain Noa-Yarasca**
> **Deleted:**)

C2. L396: add reference to Fig. 1

Changes were made as recommended (In the revised version the L396 corresponds to L365).

- Reference to Fig. 1 has been added.

> **3.2.2 Calibration**
>
> The values of the four calibrated coefficients (λ, tair_lag, C_1, and C_2) driving the modified stream temperature model were 0.88, 5, 0.67, and 1.16 for sub-basin #31 and 1.06, 6, 0.74, and 1.17 for sub-basin #59, respectively (Fig. 1). The Nash Sutcliffe Efficiency (NSE) values for sub-basins # 31 and # 59 were 0.74 and 0.82, respectively. These two NSE values are considered as good fit and very good fit (Moriasi et al., 2007), respectively, and are consistent with successful calibrations reported in other studies ranging from 0.70 to 0.89 (Du et al., 2018; Ficklin et al., 2012; Mustafa et al., 2018). Figure 3a-b shows the

C3. Please, add units for the MAE values throughout the paper and tables.

Changes were made as recommended.

- In L332, it was clarified that MAE is given in the same units as the target variable (temperature).
- In Table 1, MAE units were added.

Moreover, model error was performed using the mean absolute error (MAE), given by

$$MAE = \frac{1}{n}\sum_{i=1}^{n}|S_i - O_i| \qquad (14)$$

This is an arithmetic average of the absolute errors between paired observed and simulated values. The MAE ranges from 0 to ∞ in the same units as the target variable (temperature - °C). Given that it is a negatively oriented score, models with low MAE are preferable, with MAE = 0 being the ideal model.

3 Results and Discussion

Table 1. Calibration Coefficients for the Linear, Original Ficklin et al., and Modified Ficklin et al. Stream Temperature Model

Calibration site	Modified Ficklin et al. stream temperature model			Original Ficklin et al. stream temperature model			Linear stream temperature model		
	NSE	PBIAS	MAE (°C)	NSE	PBIAS	MAE (°C)	NSE	PBIAS	MAE (°C)
Sub-basin #31	0.74	-8.2%	1.65	0.77	-3.6%	1.41	0.46	22.8%	2.47
Sub-basin #59	0.82	-4.4%	1.40	0.85	-3.1%	1.31	0.7	20.4%	2.28

Efrain Noa-Yarasca
Formatted Table