



Corrigendum: Extrapolation and Uncertainty Evaluation of Carbon Dioxide and Methane Emissions in the Qinghai-Tibetan Plateau Wetlands Since the 1960s

Jiang Zhang¹, Qiuhan Zhu^{1,2,3*}, Minshu Yuan¹, Xinwei Liu⁴, Huai Chen⁴, Changhui Peng^{1,5}, Meng Wang⁶, Zhenan Yang⁷, Lin Jiang¹ and Pengxiang Zhao^{8*}

¹ Center for Ecological Forecasting and Global Change, College of Forestry, Northwest A&F University, Yangling, China, ² College of Hydrology and Water Resources, Hohai University, Nanjing, China, ³ National Earth System Science Data Center, National Science & Technology Infrastructure of China, Beijing, China, ⁴ Chengdu Institute of Biology, Chinese Academy of Sciences, Chengdu, China, ⁵ Department of Biology Sciences, Institute of Environment Sciences, University of Quebec at Montreal, Montreal, QC, Canada, ⁶ Key Laboratory of Geographical Processes and Ecological Security in Changbai Mountains, Ministry of Education, School of Geographical Sciences, Northeast Normal University, Changchun, China, ⁷ Key Laboratory of Southwest China Wildlife Resources Conservation (China West Normal University), Ministry of Education, Nanchong, China, ⁸ College of Forestry, Northwest A&F University, Yangling, China

OPEN ACCESS

Edited and reviewed by:

Matthias Peichl,
Swedish University of Agricultural
Sciences, Sweden

*Correspondence:

Qiuhan Zhu
zhuq@hhu.edu.cn
Pengxiang Zhao
zhaopengxiang@nwfau.edu.cn

Specialty section:

This article was submitted to
Hydrosphere,
a section of the journal
Frontiers in Earth Science

Received: 15 January 2021

Accepted: 03 March 2021

Published: 26 March 2021

Citation:

Zhang J, Zhu Q, Yuan M, Liu X,
Chen H, Peng C, Wang M, Yang Z,
Jiang L and Zhao P (2021)
Corrigendum: Extrapolation and
Uncertainty Evaluation of Carbon
Dioxide and Methane Emissions in the
Qinghai-Tibetan Plateau Wetlands
Since the 1960s.
Front. Earth Sci. 9:653753.
doi: 10.3389/feart.2021.653753

Keywords: climate change, wetlands, greenhouse gas, carbon fluxes, global warming potential

A Corrigendum on

Extrapolation and Uncertainty Evaluation of Carbon Dioxide and Methane Emissions in the Qinghai-Tibetan Plateau Wetlands Since the 1960s

by Zhang, J., Zhu, Q., Yuan, M., Liu, X., Chen, H., Peng, C., et al. (2020). *Front. Earth Sci.* 8:361. doi: 10.3389/feart.2020.00361

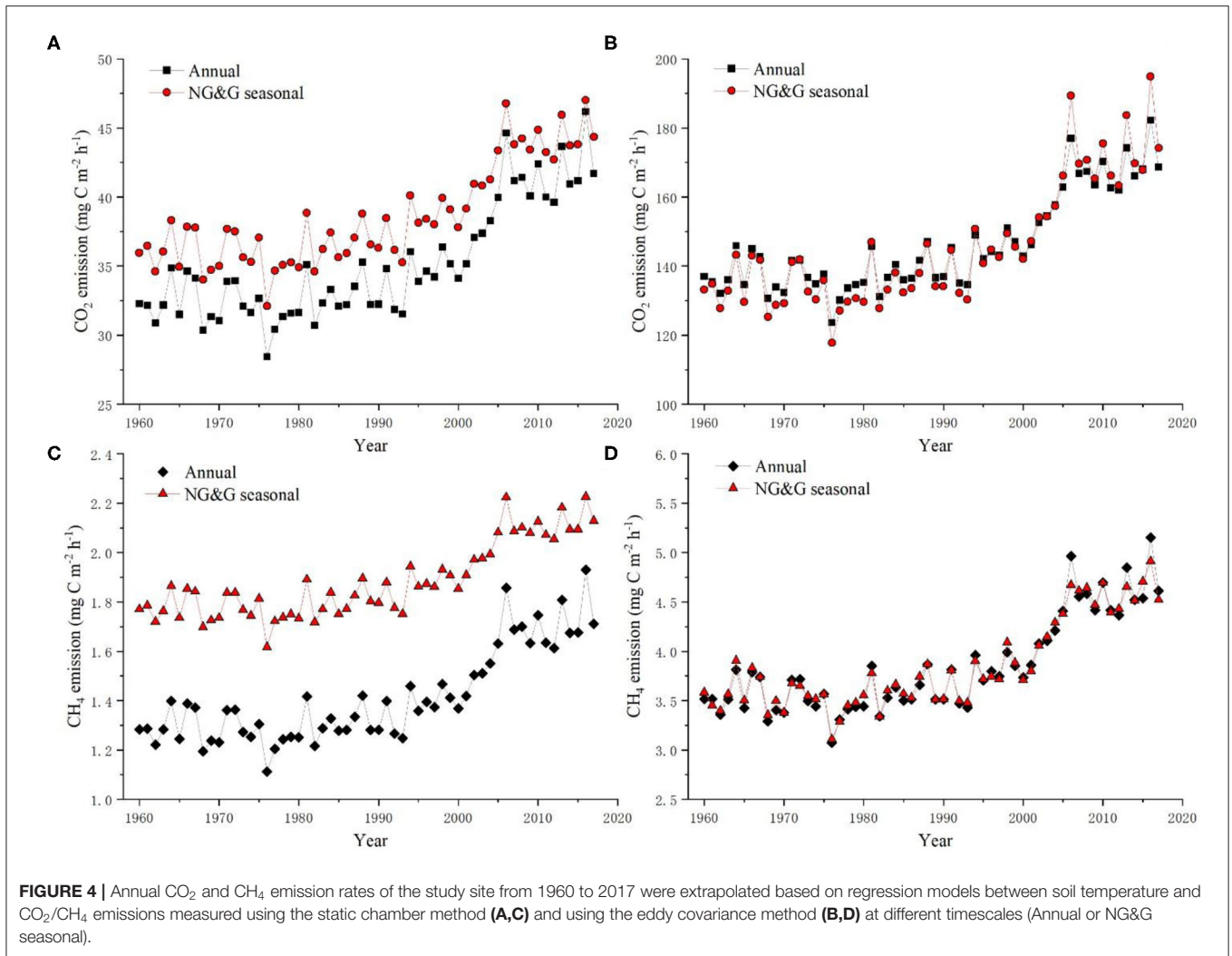
In the original article, we intended to show the annual mean GHG flux rate within **Figures 4, 5,** and **Table 1**. However, there was an oversight in dividing the number by 12 (months).

Below, you can find the corrected **Figures 4, 5,** and **Table 1**, as well as the corrections of the numbers cited at various points in the text. The updated section in the **Abstract**, Page 1, Lines 11–14, can be found below. In addition, the updated portion in the **Results**, section ‘Extrapolation of CO₂ and CH₄ Emission Rates of the Study Site’, Page 7, Lines 1–22, can also be found below.

We apologize for these errors and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

ABSTRACT

Based on such relationship patterns and soil temperature data (1960–2017), we extrapolated the CO₂ and CH₄ emissions of study site for the past 57 years: the mean CO₂ emission rate was 91.38 mg C m⁻² h⁻¹ on different measurement methods and timescales, with the range of the mean emission rate from 35.10 to 146.25 mg C m⁻² h⁻¹, while the mean CH₄ emission rate was 2.75 mg C m⁻² h⁻¹, with the ranges of the mean emission rate from 1.41 to 3.85 mg C m⁻² h⁻¹.



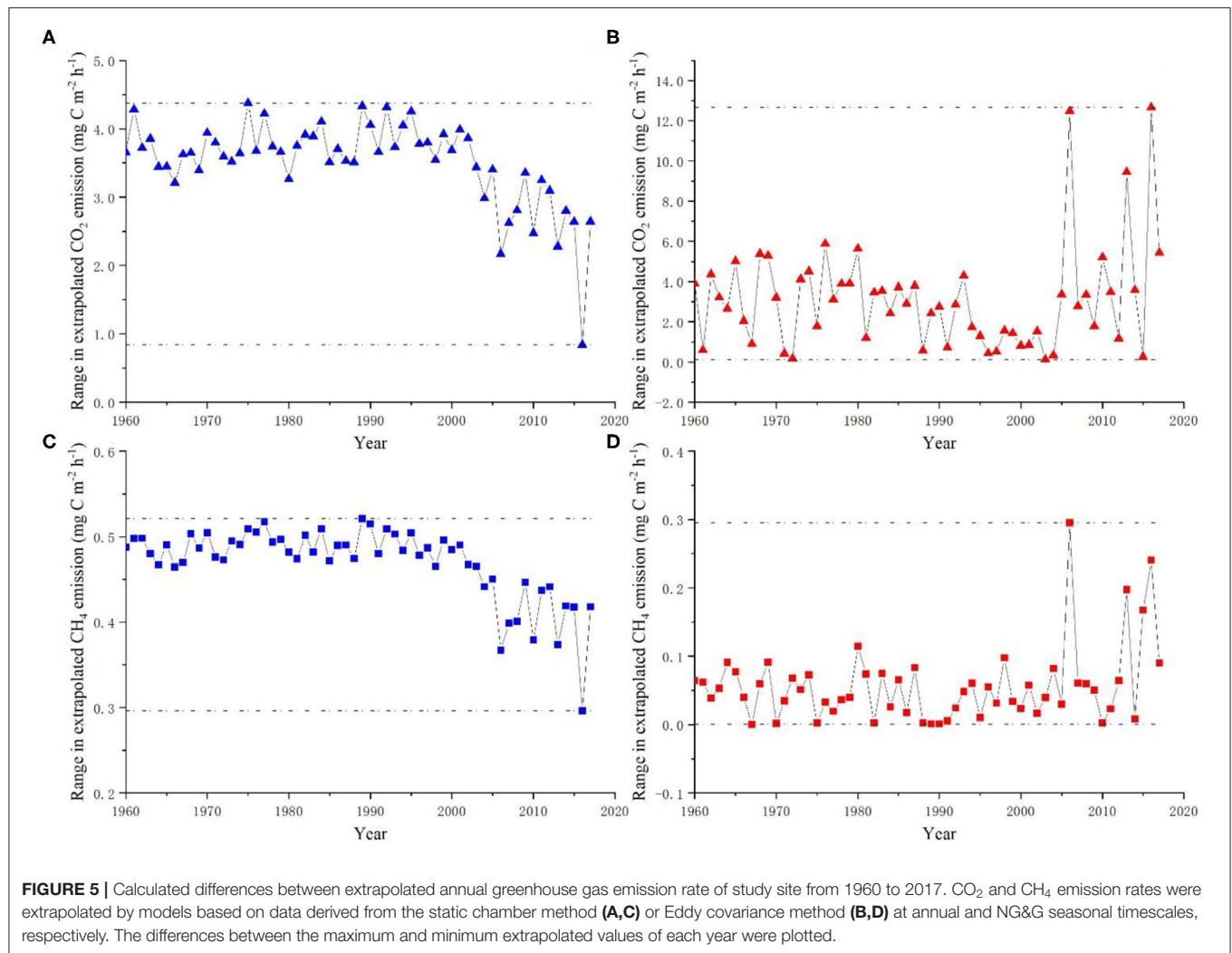


TABLE 1 | Extrapolated mean emission rate of CO₂ and CH₄ of study site for the period 1960–2017, based on models derived from data obtained using the chamber or EC method at different timescales*.

Emission rate (mg C m ² h ⁻¹)	Measurement method	Annual	NG&G seasonal	Average
CO ₂	Chamber	35.10	38.60	91.38
	EC	146.25	145.58	
CH ₄	Chamber	1.41	1.88	2.75
	EC	3.85	3.85	

*Timescales were the entire year (Annual), non-growing season and growing season (NG&G seasonal). Abbreviations: Chamber, static chamber; EC, eddy covariance.

RESULTS

Extrapolation of CO₂ and CH₄ Emission Rates of the Study Site

Extrapolated mean CO₂ emission rate of study site from 1960 to 2017 was calculated to be 91.38 mg C m⁻² h⁻¹, with the ranges of the mean emission rate from 35.10 to 146.25 mg C m⁻² h⁻¹ on different measurement methods and timescales (Table 1). The differences of emission rates between the maximum and minimum values extrapolated for each year

reflected uncertainties from the same measurement method at different timescales. Uncertainties in extrapolation of the CO₂ emission rates ranged from 0.84 to 4.38 mg C m⁻² h⁻¹ based on static chamber data, and from 0.13 to 12.67 mg C m⁻² h⁻¹ based on EC data (Figures 5A,B).

Extrapolated values for CH₄ emission rate based on EC data were three times larger than extrapolated values based on chamber data (Figures 4C,D). Extrapolated mean CH₄ emission rate of the study site was 2.75 mg C m⁻² h⁻¹ from 1960 to 2017, with the ranges of the mean emission rate from 1.41 to 3.85 mg

C m⁻² h⁻¹ on different measurement methods and timescales (**Table 1**). Differences in annual average maxima and minima reflected uncertainties from static chamber method data ranging from 0.30 to 0.52 mg C m⁻² h⁻¹ (**Figure 5C**), while uncertainties in data extrapolated from the EC method ranged from 0 to 0.30 mg C m⁻² h⁻¹ (**Figure 5D**).

Copyright © 2021 Zhang, Zhu, Yuan, Liu, Chen, Peng, Wang, Yang, Jiang and Zhao. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.