Supplement of Atmos. Chem. Phys., 19, 12141–12161, 2019
https://doi.org/10.5194/acp-19-12141-2019-supplement
© Author(s) 2019. This work is distributed under
the Creative Commons Attribution 4.0 License.

Atmospheric Chemistry and Physics
Open Access
EGU

Supplement of

Assessment of the theoretical limit in instrumental detectability of northern high-latitude methane sources using $\delta^{13}C_{CH4}$ atmospheric signals

Thibaud Thonat et al.

Correspondence to: Marielle Saunois (marielle.saunois@lsce.ipsl.fr)

The copyright of individual parts of the supplement might differ from the CC BY 4.0 License.

Figure S1. Time series of δ^{13}C-CH_4 contribution of each source (in ‰), simulated by CHIMERE, in Alert (ALT) in 2012. The coloured shades represent the range of δ^{13}C-CH_4 values when varying isotopic signatures. (Note the different scales.)

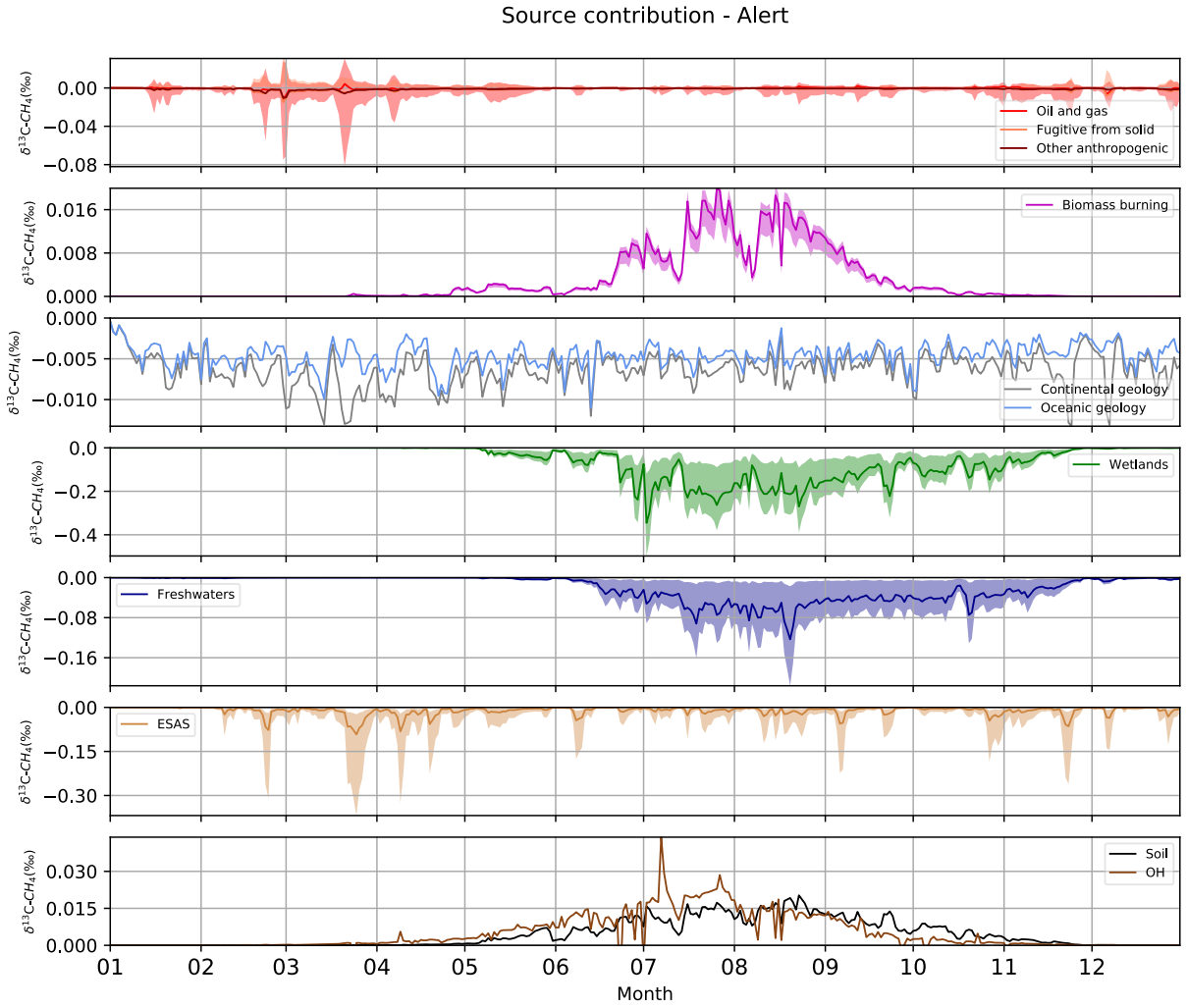

Figure S2. Same as S1 for Ambarchik site (AMB).

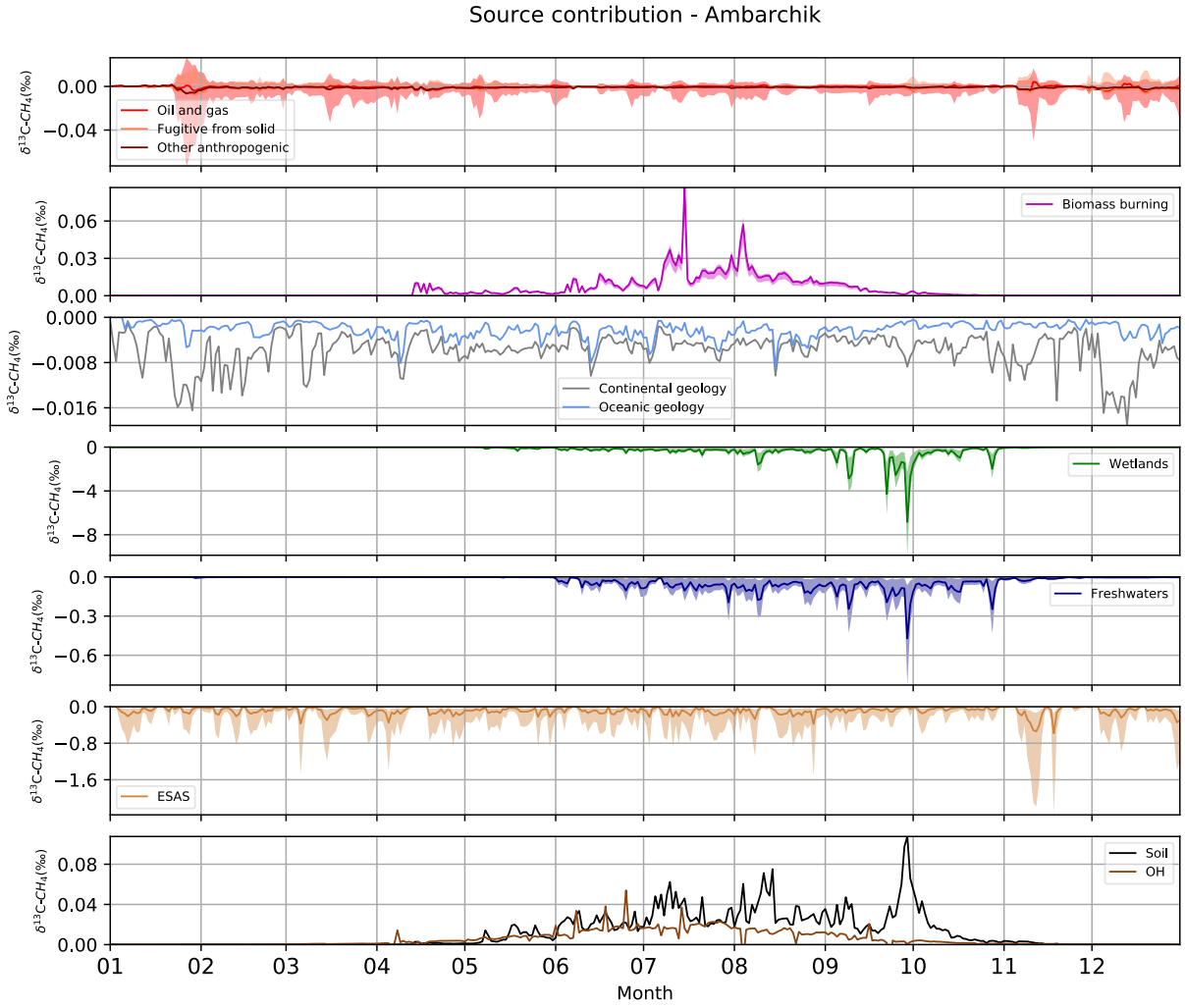

Figure S3. Same as S1 for Baker Lake site (BKL).

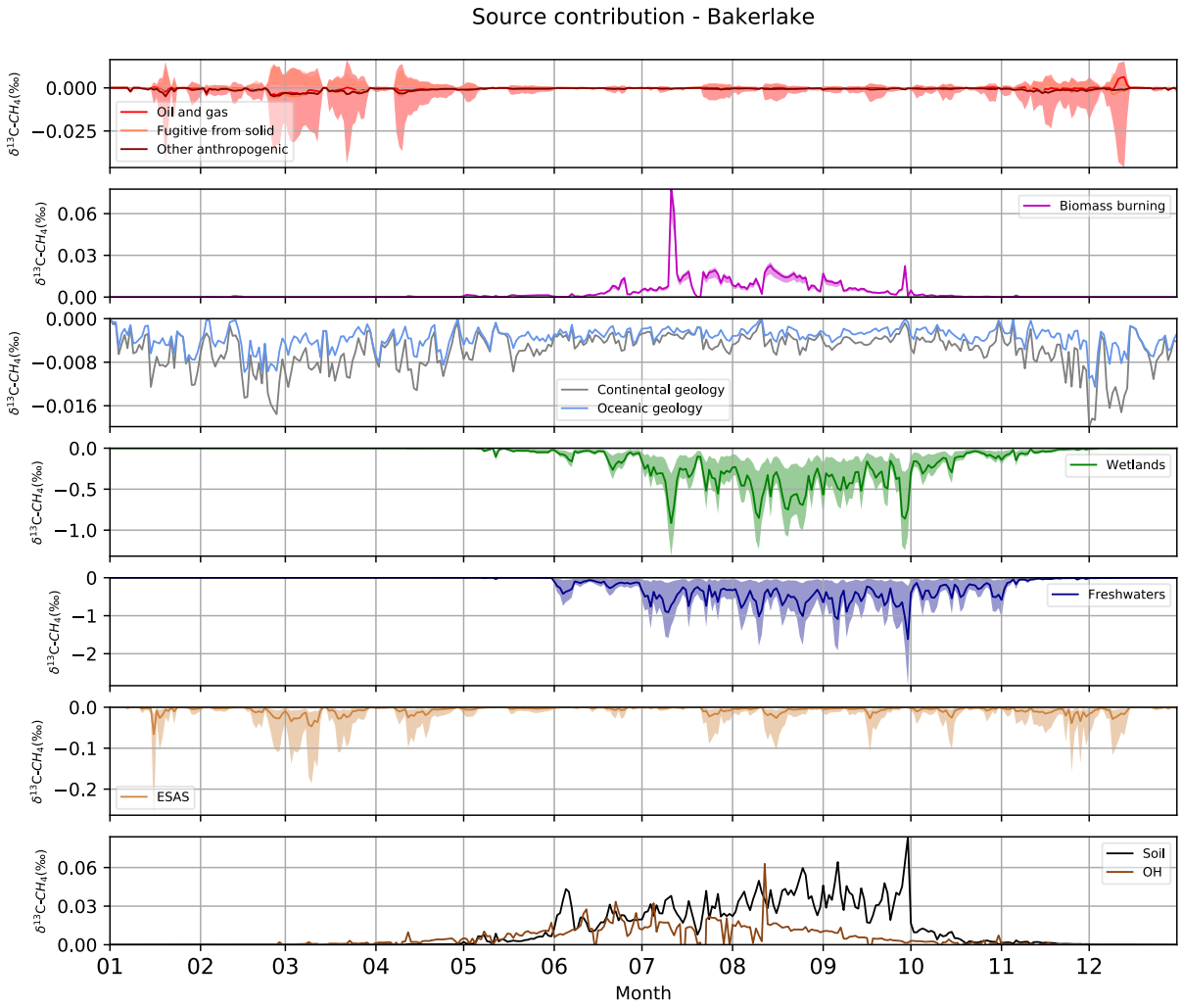

Figure S4. Same as S1 for Barrow site (BRW).

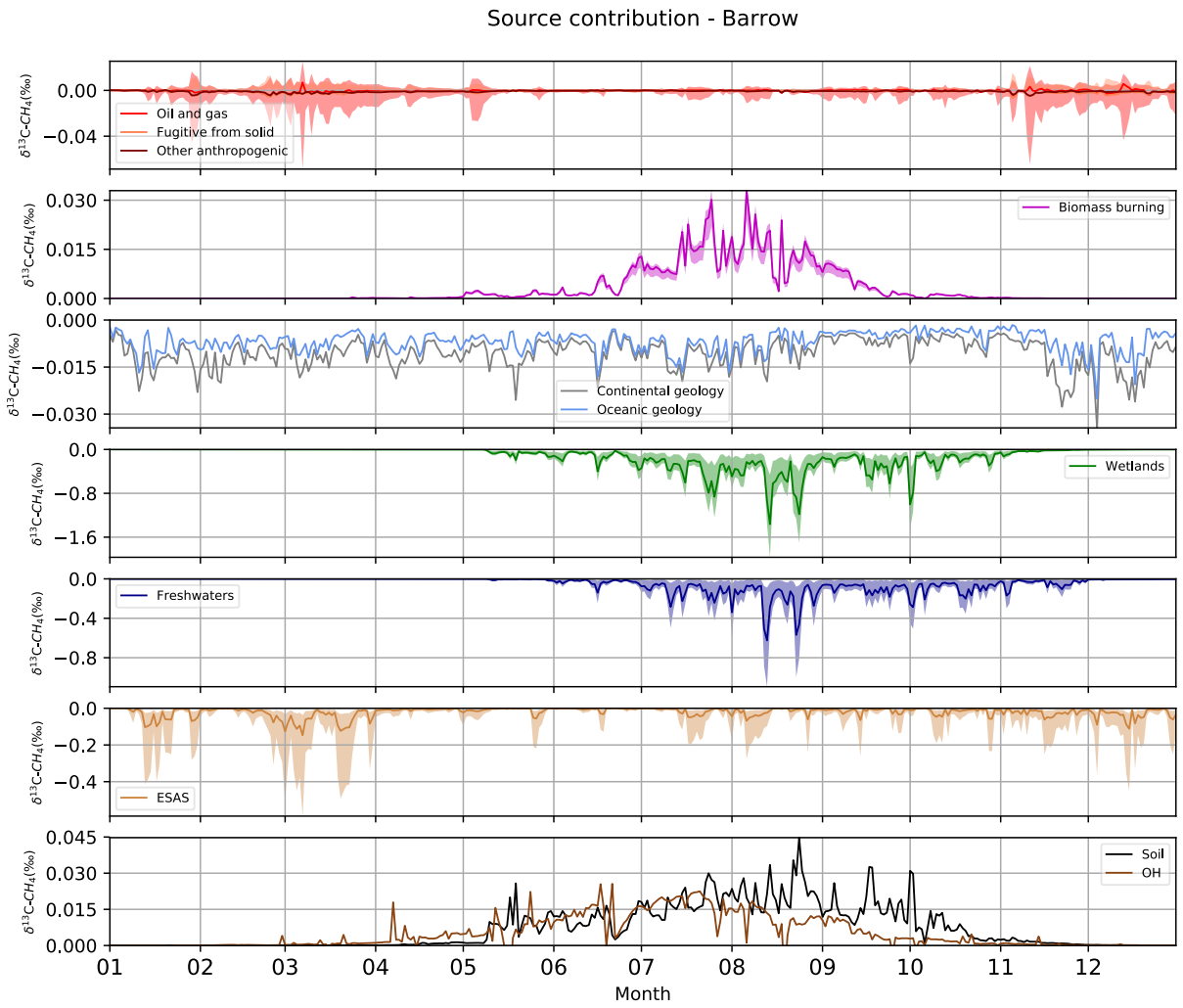

Figure S5. Same as S1 for Behchoko site (BCK).

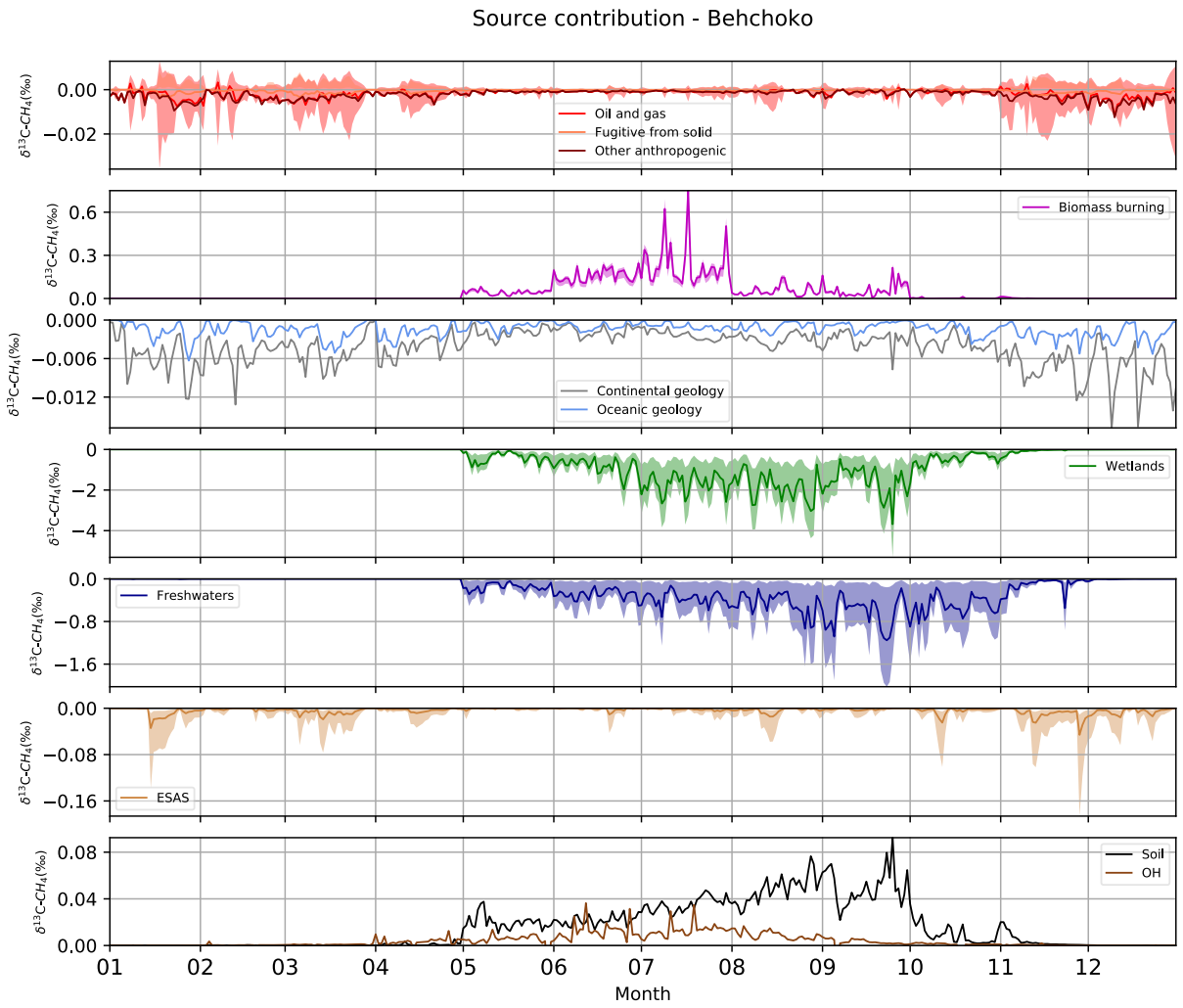

Figure S6. Same as S1 for Cambridge Bay site (CBB).

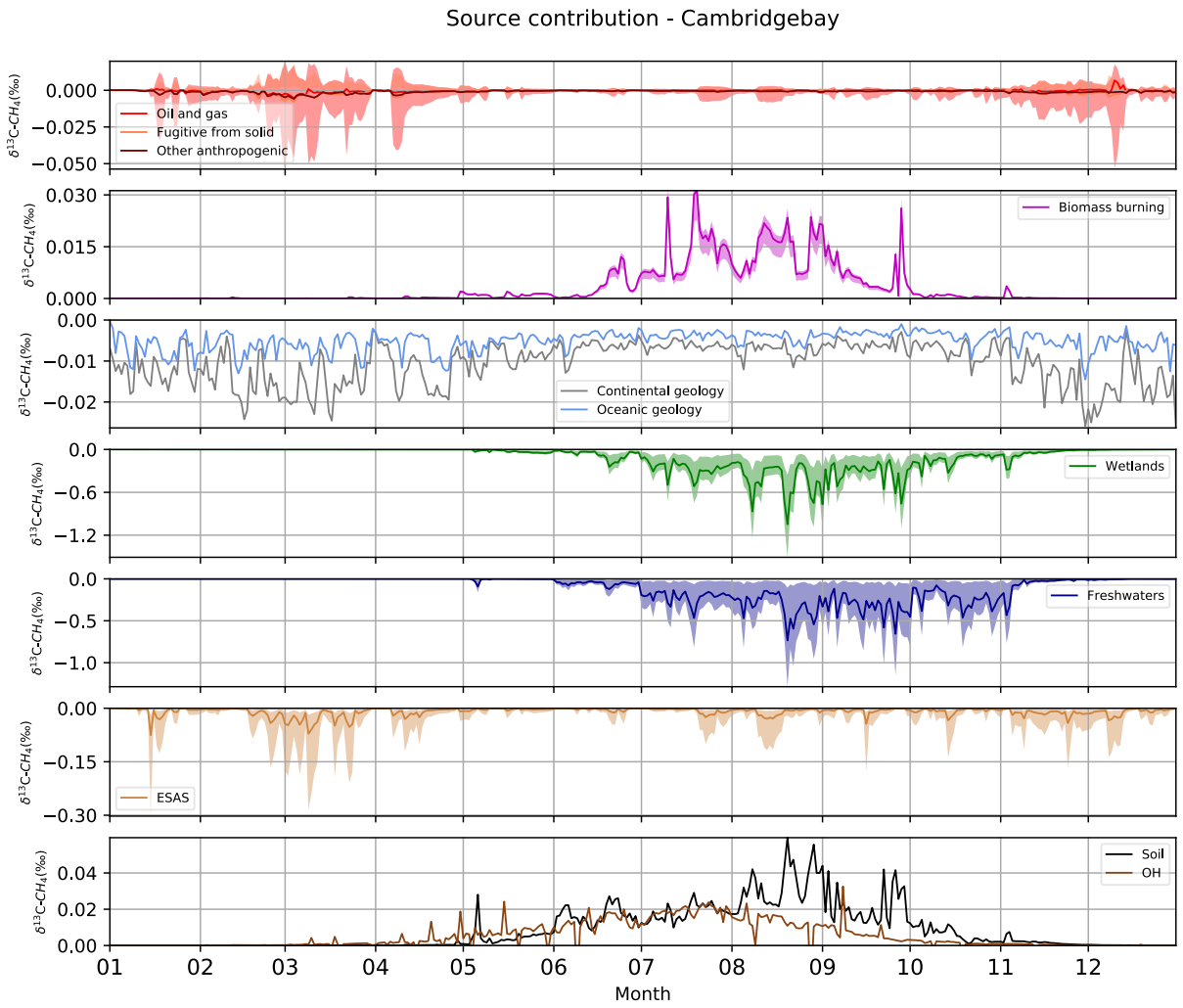

Figure S7. Same as S1 for CARVE Tower site (CAR).

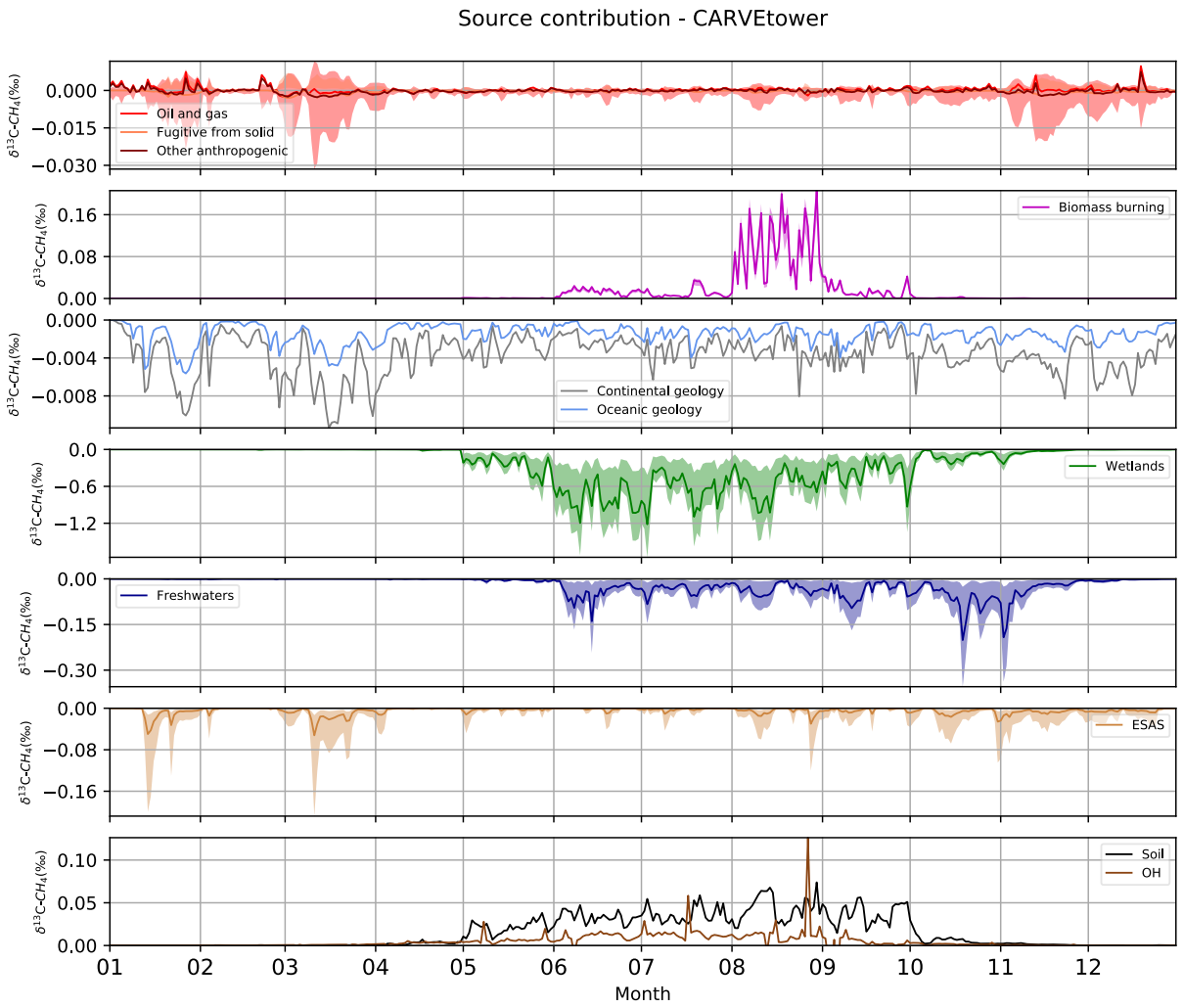

Figure S8. Same as S1 for Cherskii site (CHS).

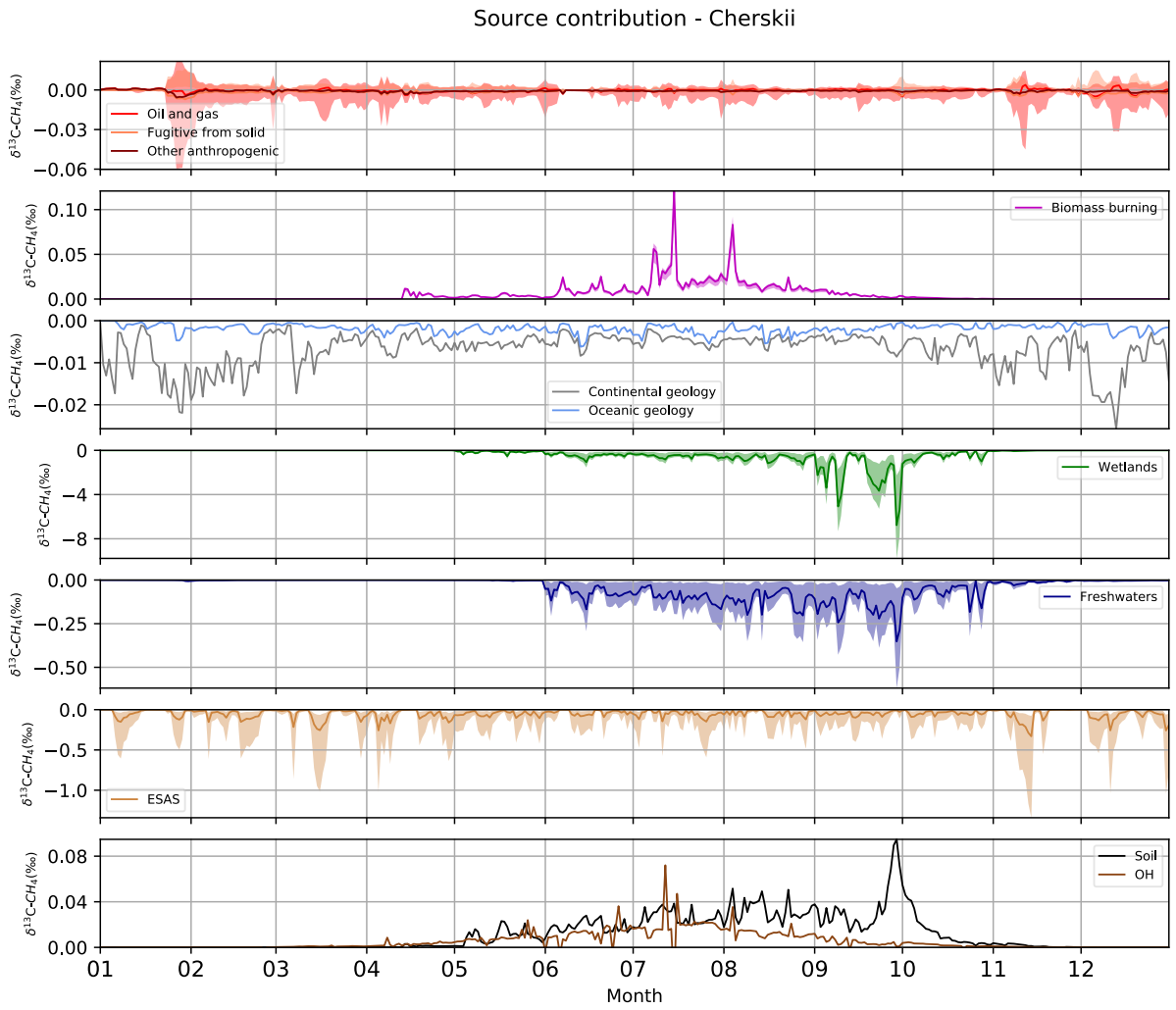

Figure S9. Same as S1 for Churchill site (CHL).

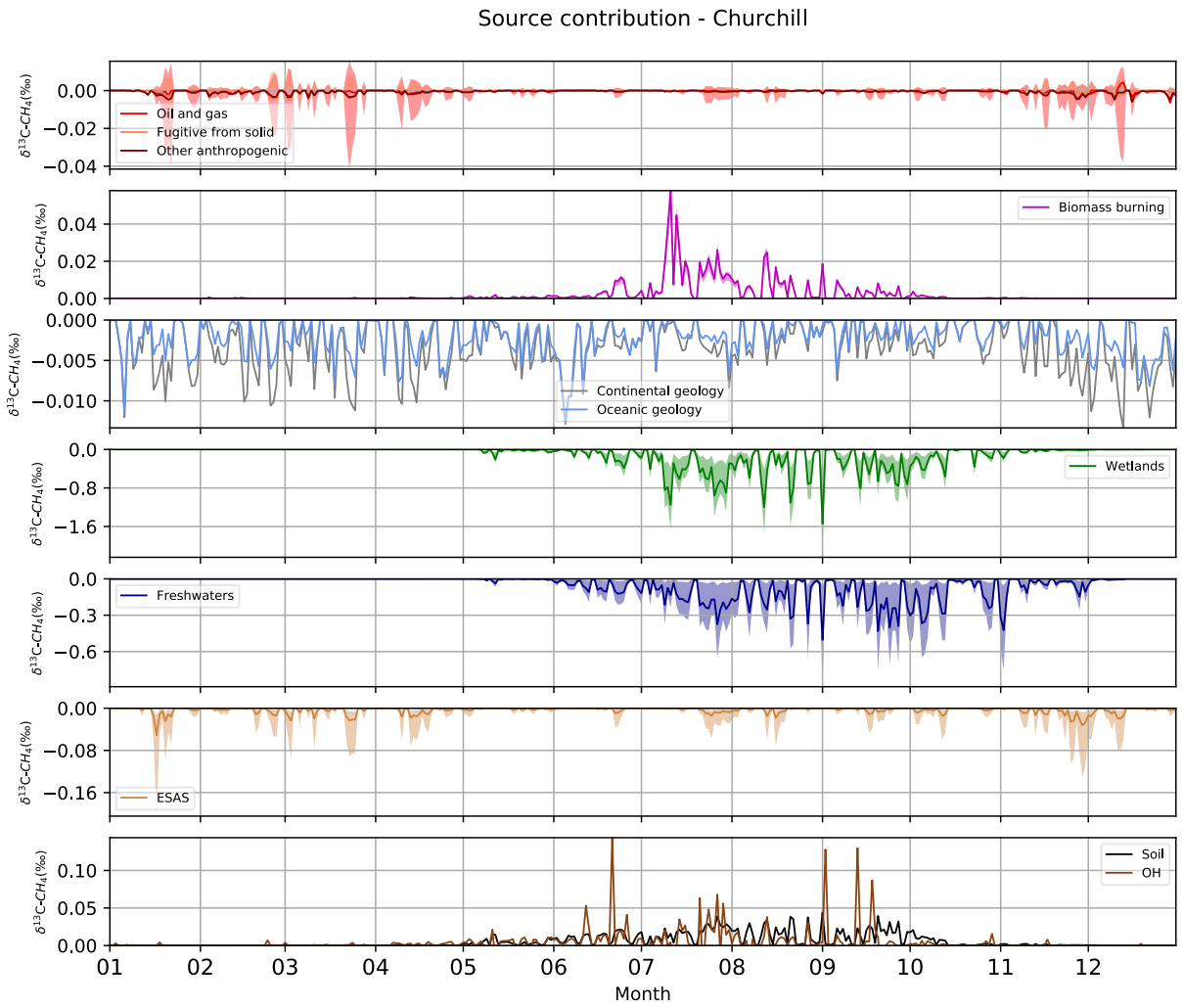

Figure S10. Same as S1 for Coldbay site (CBA).

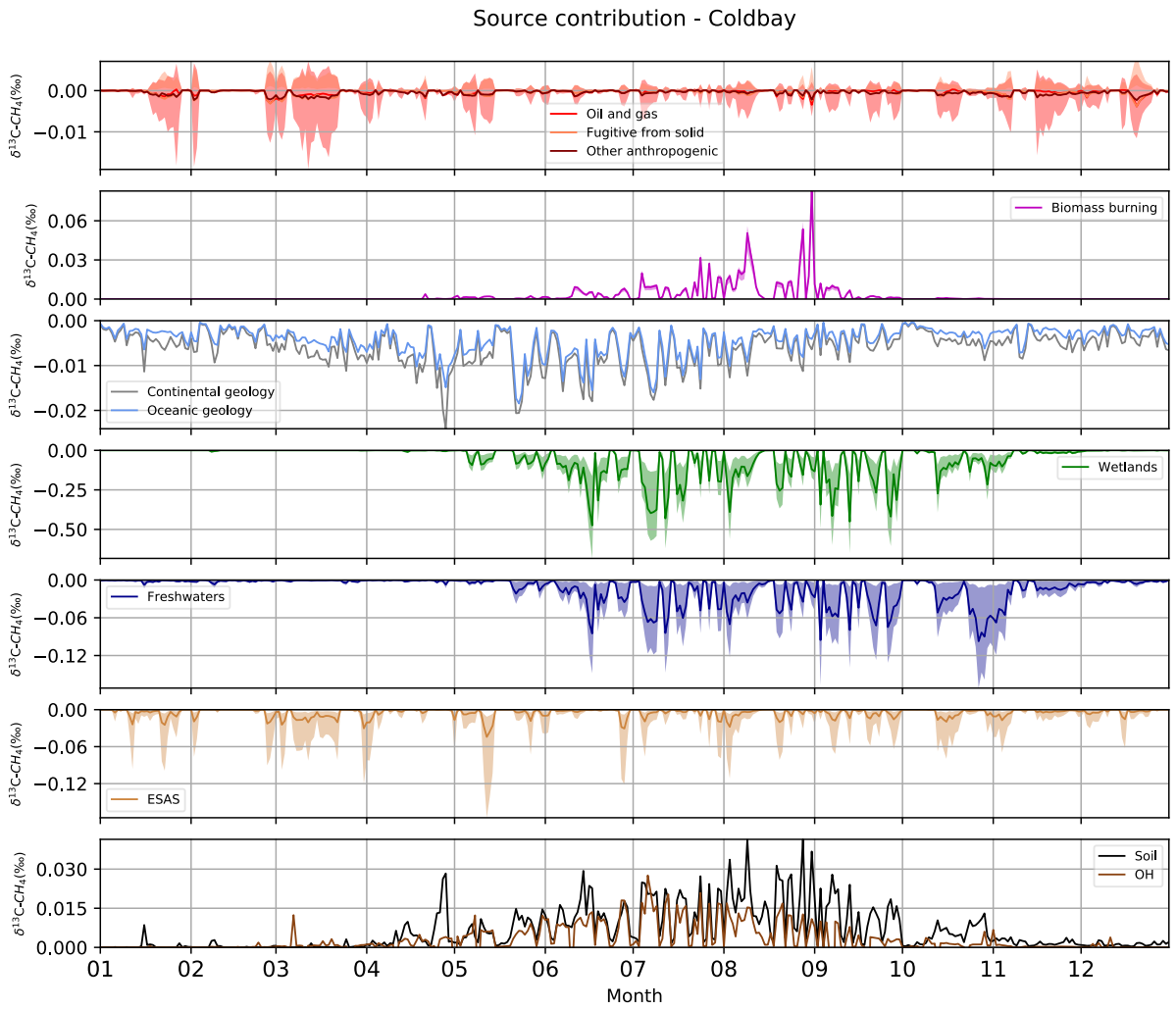

Figure S11. Same as S1 for Demyanskoe site (DEM).

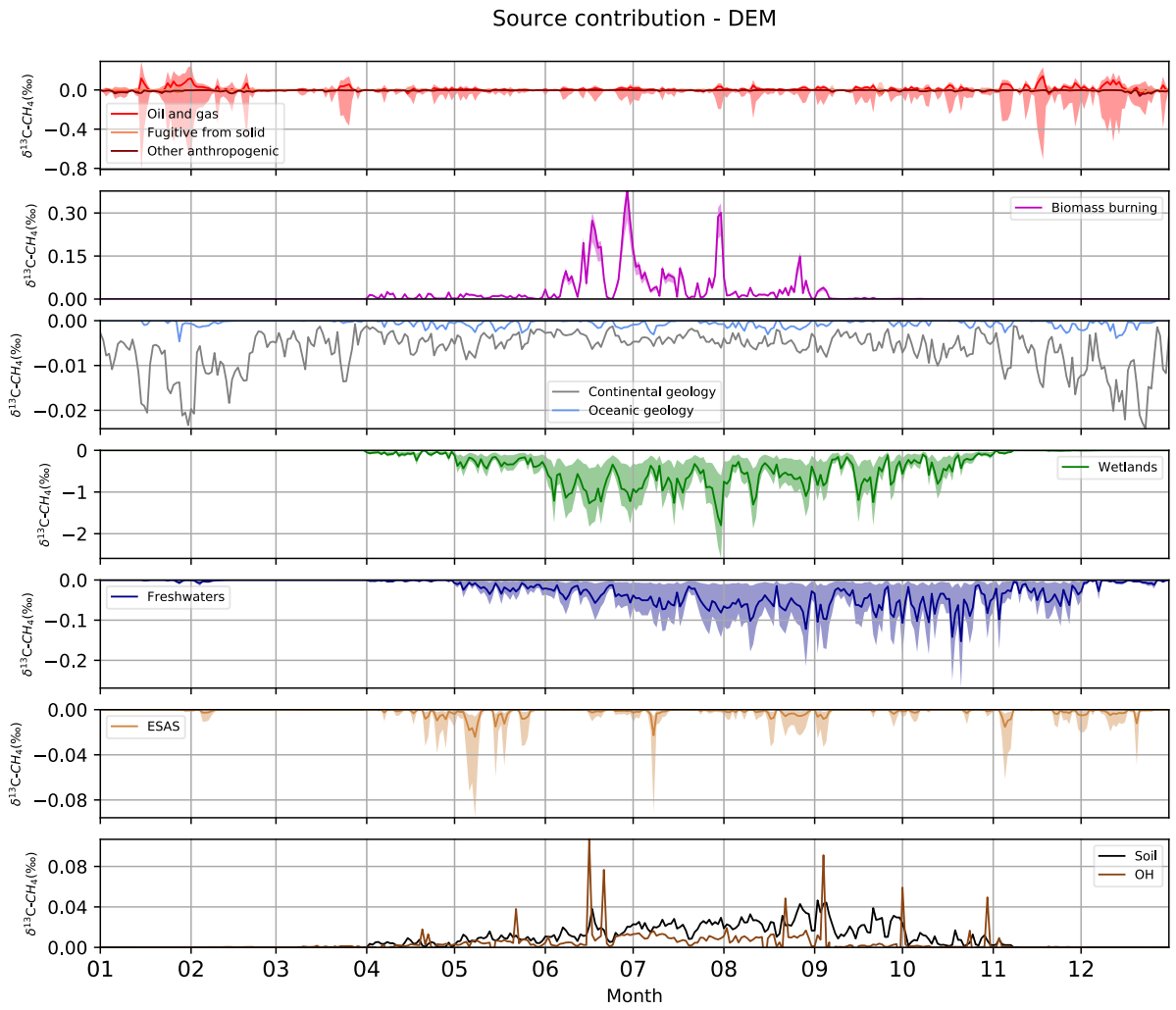

Figure S12. Same as S1 for Igrim site (IGR).

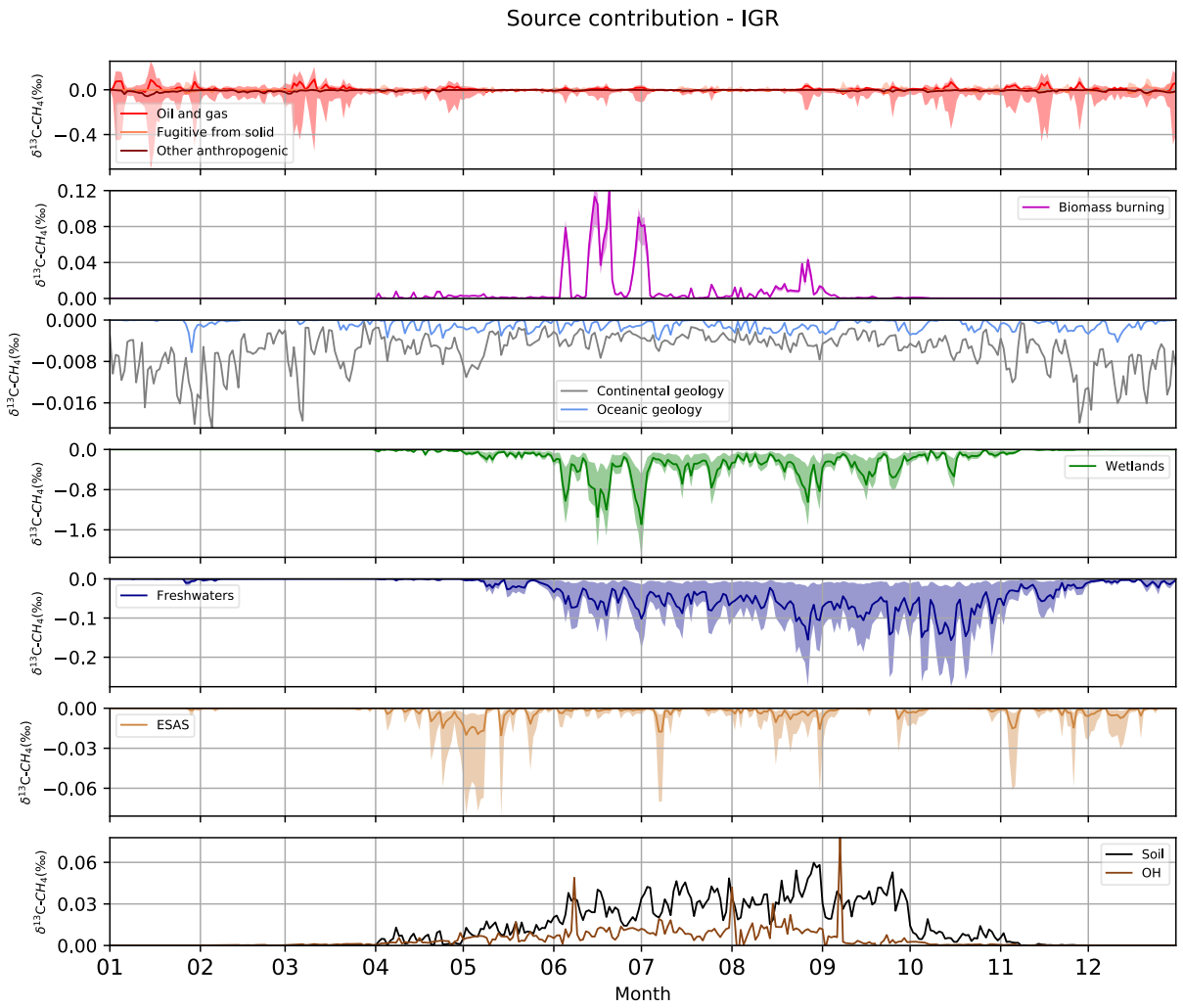

Figure S13. Same as S1 for Inuvik site (INU).

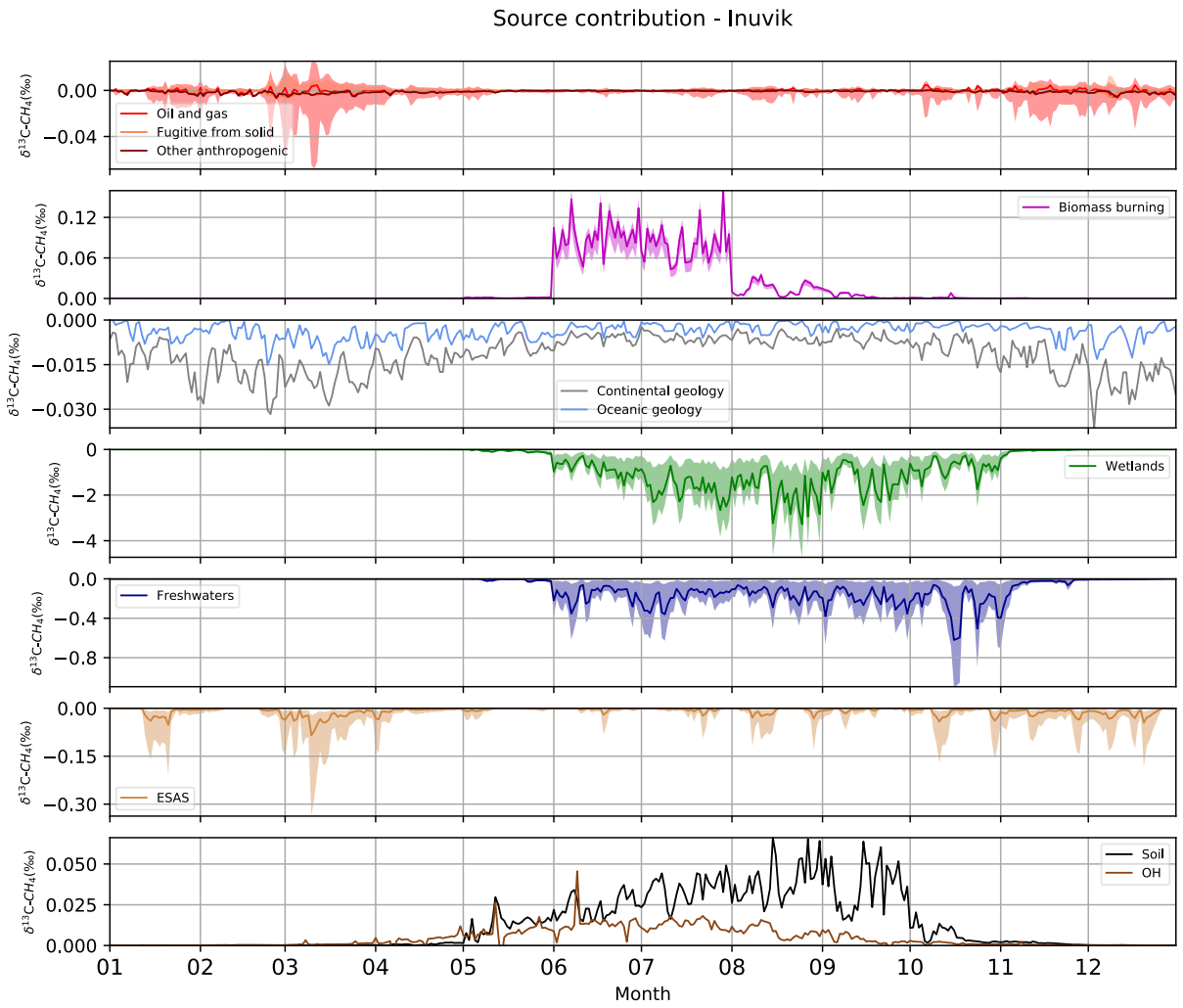

Figure S14. Same as S1 for Karasevoe site (KRS).

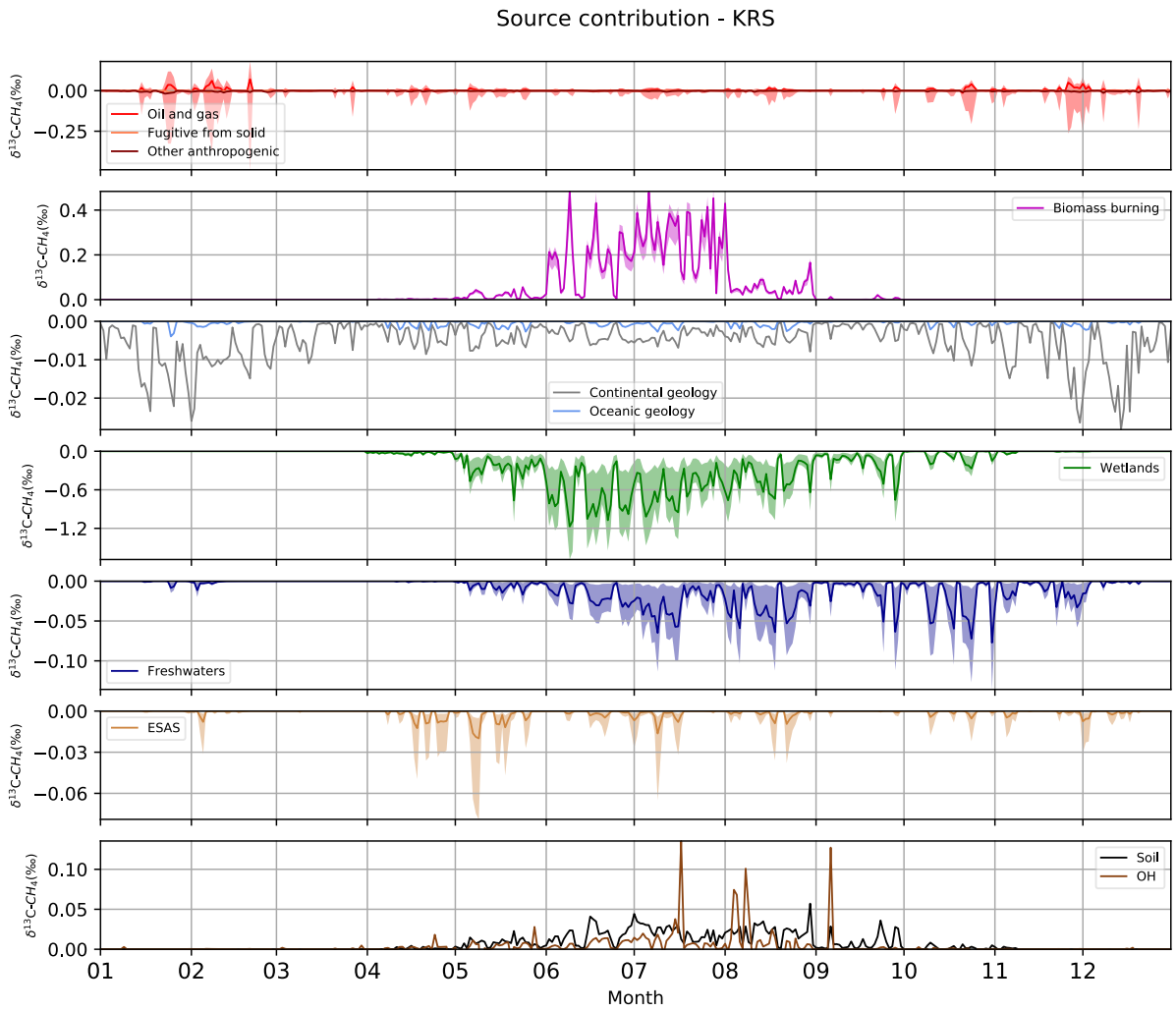

Figure S15. Same as S1 for Noyarbrsk site (NOY).

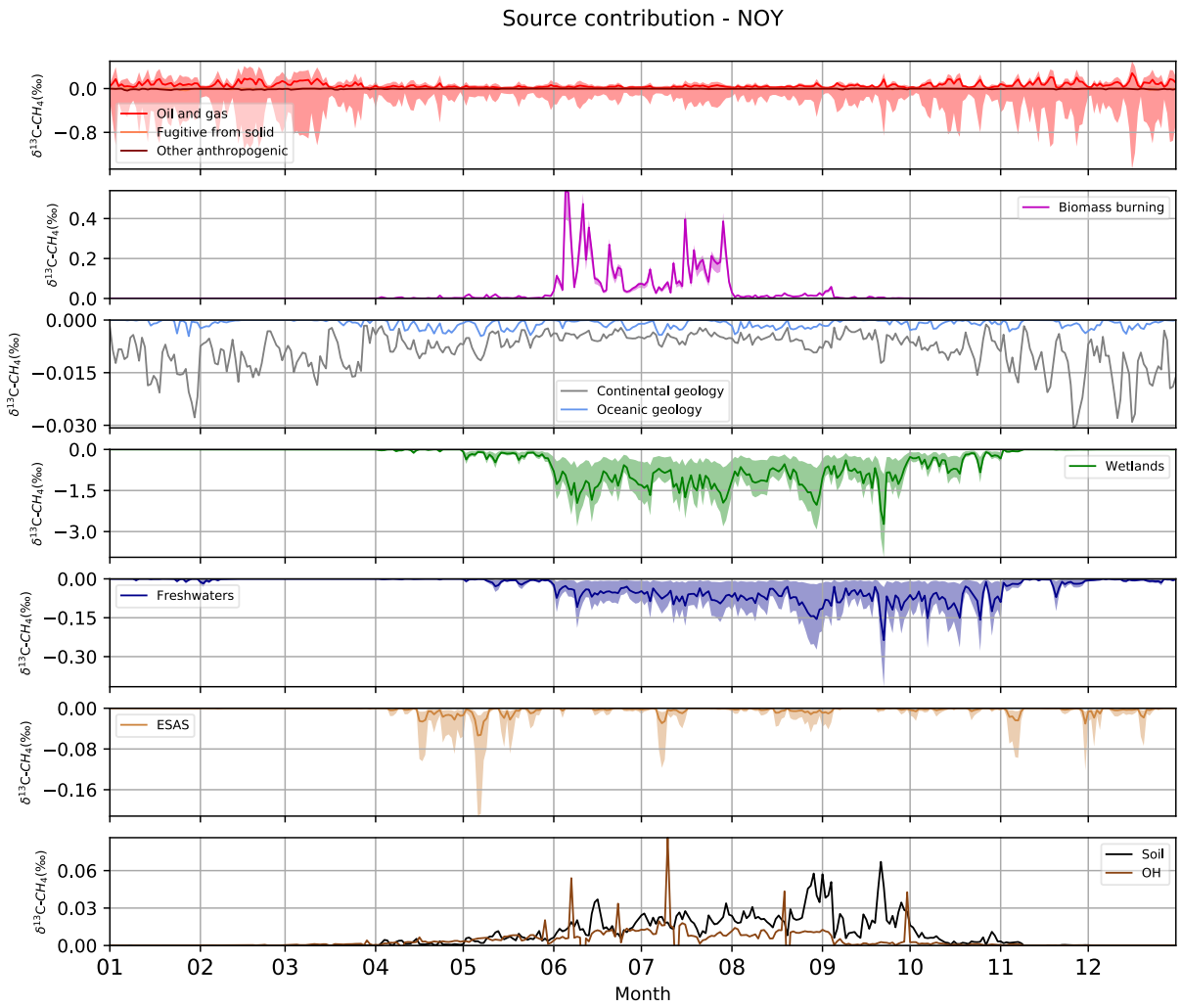

Figure S16. Same as S1 for Pallas site (PAL).

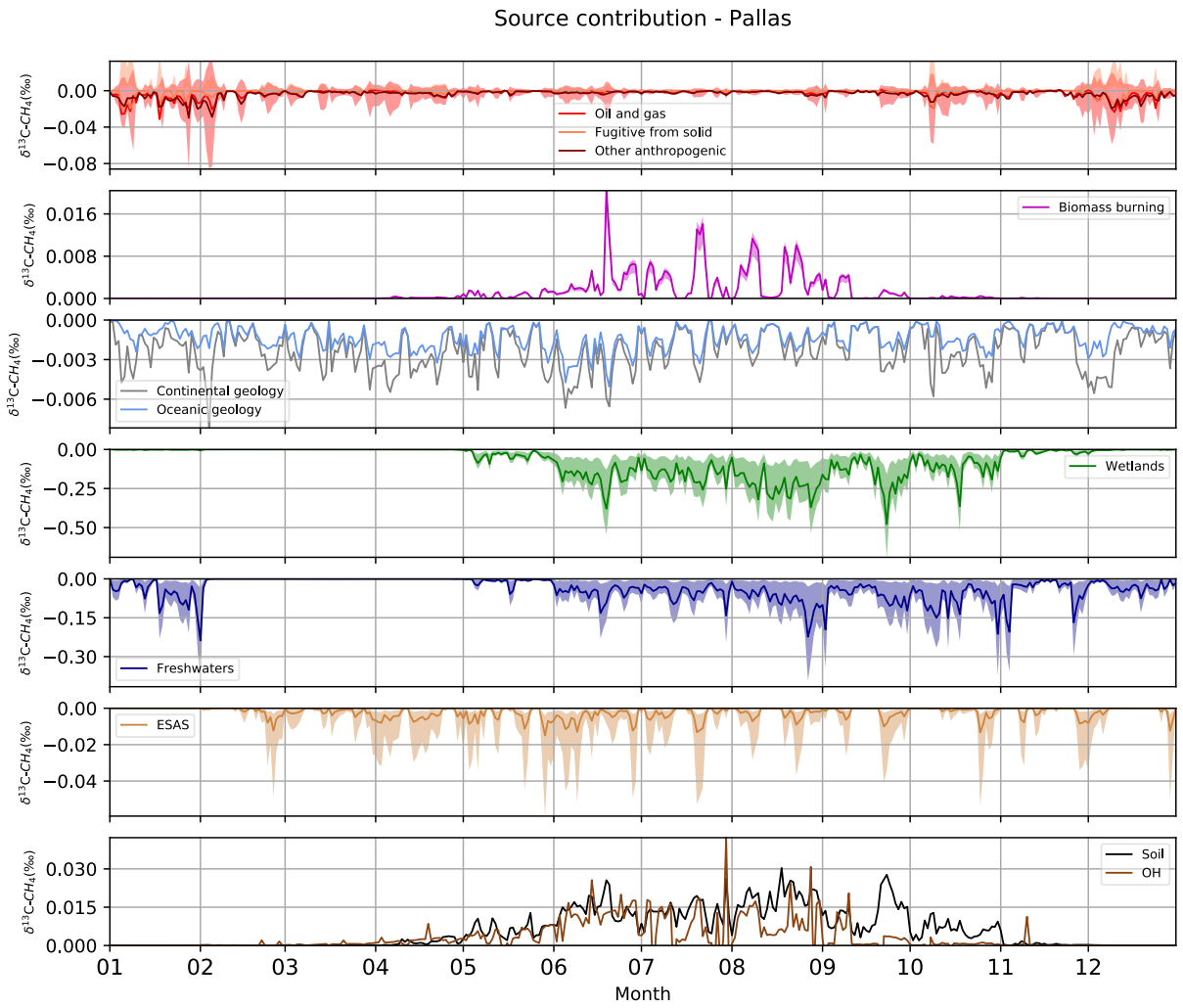

Figure S17. Same as S1 for Storhfoldi site (ICE).

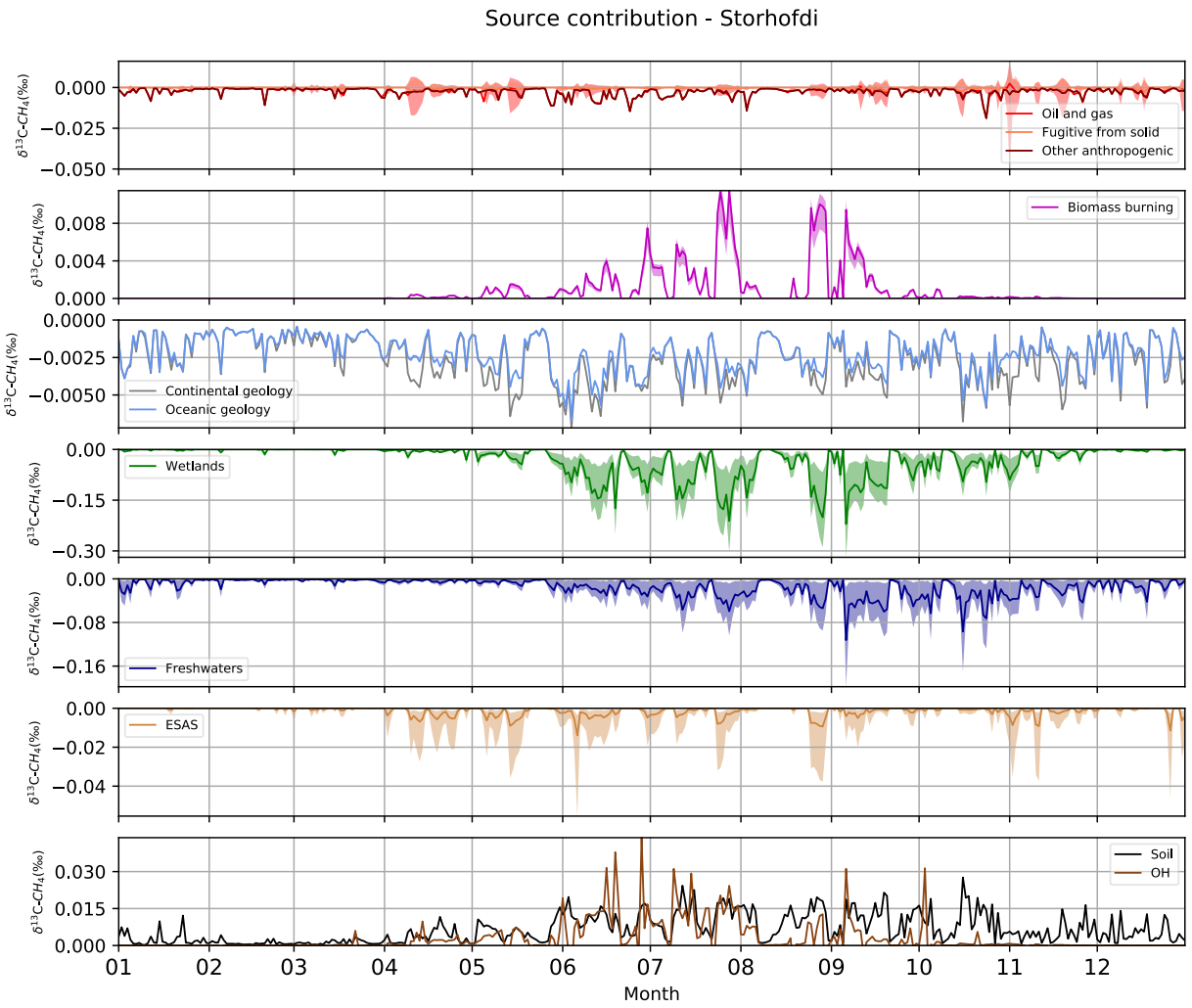

Figure S18. Same as S1 for Summit site (SUM).

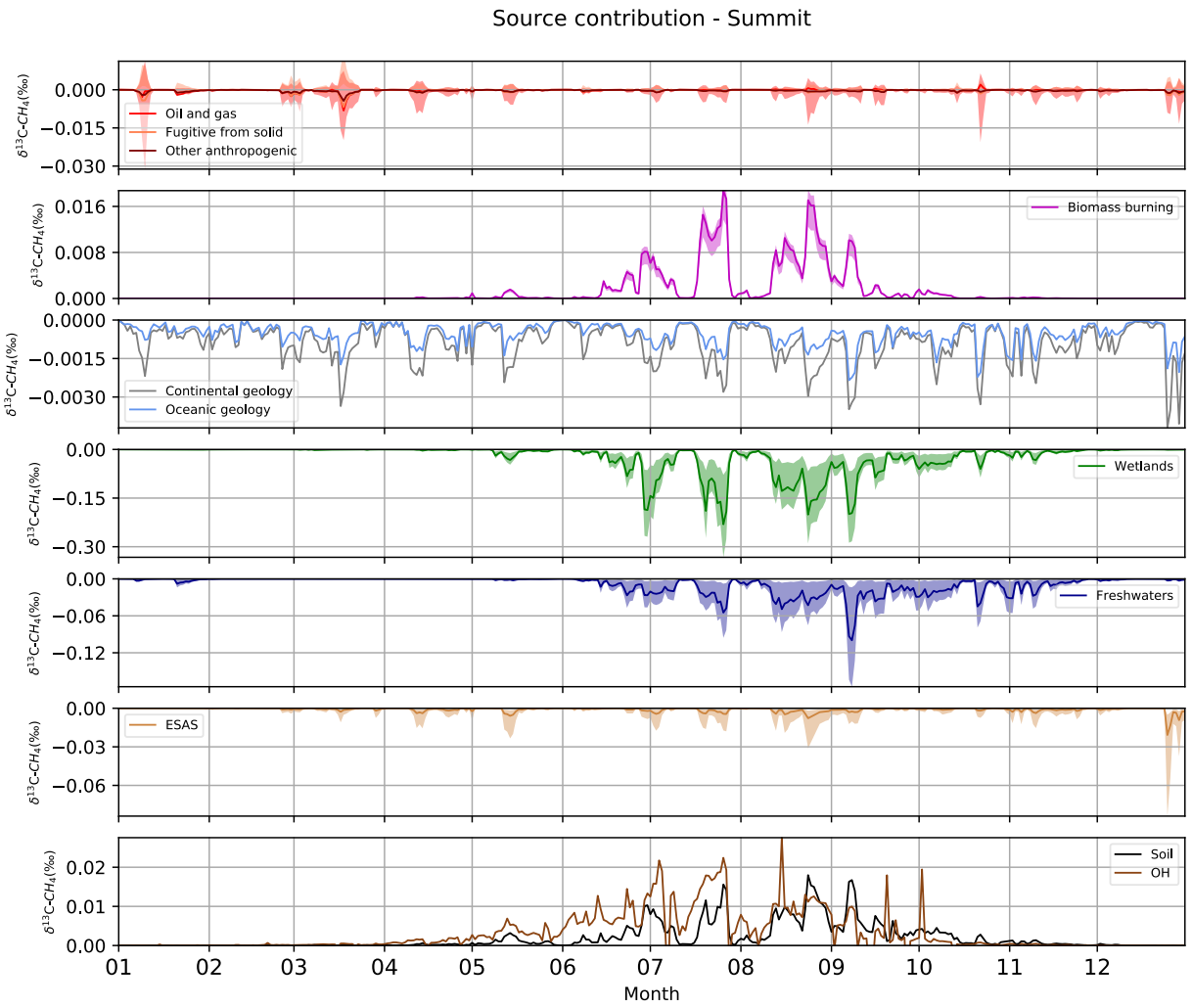

Figure S19. Same as S1 for Teriberka site (TER).

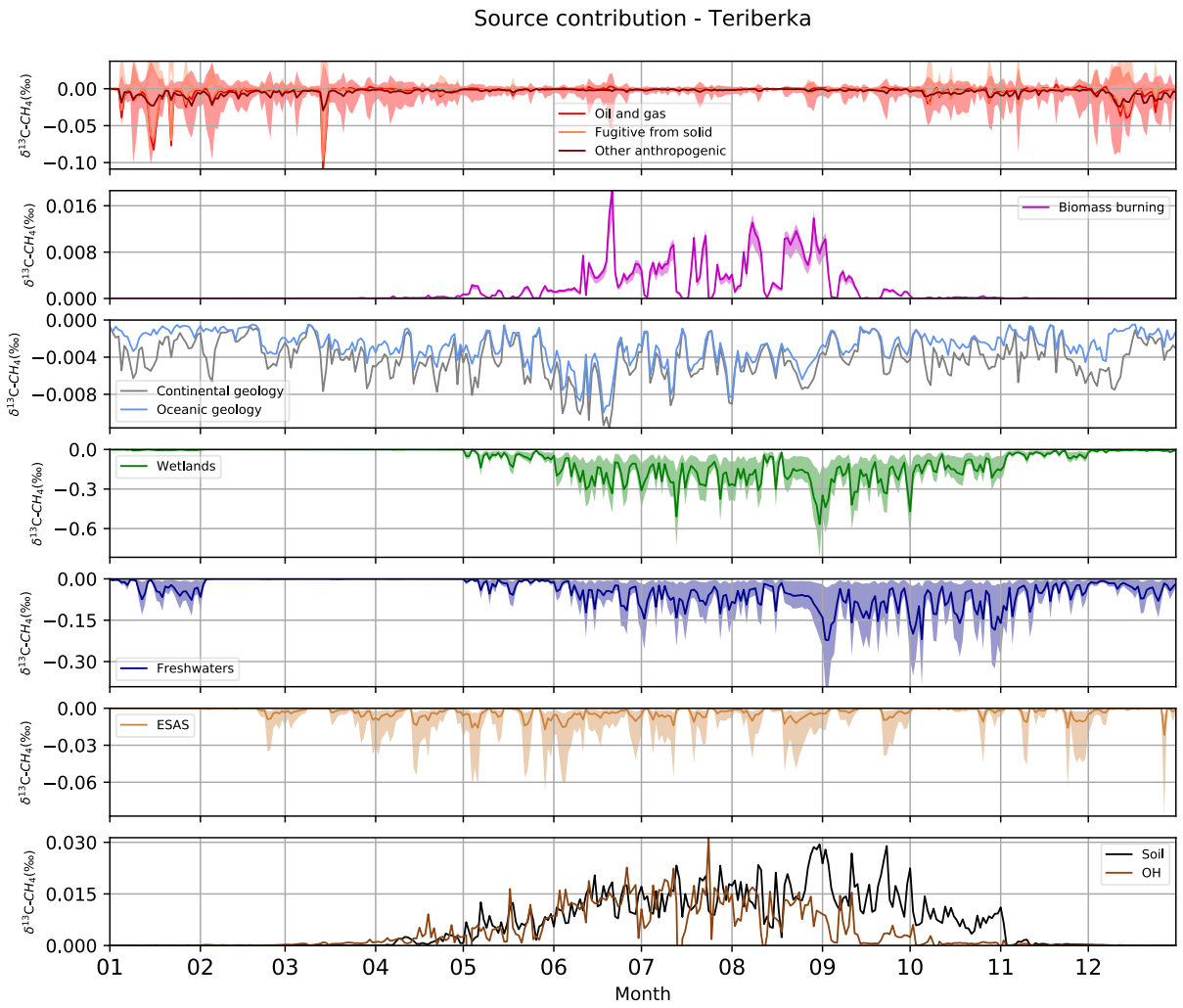

Figure S20. Same as S1 for Tiksi site (TIK).

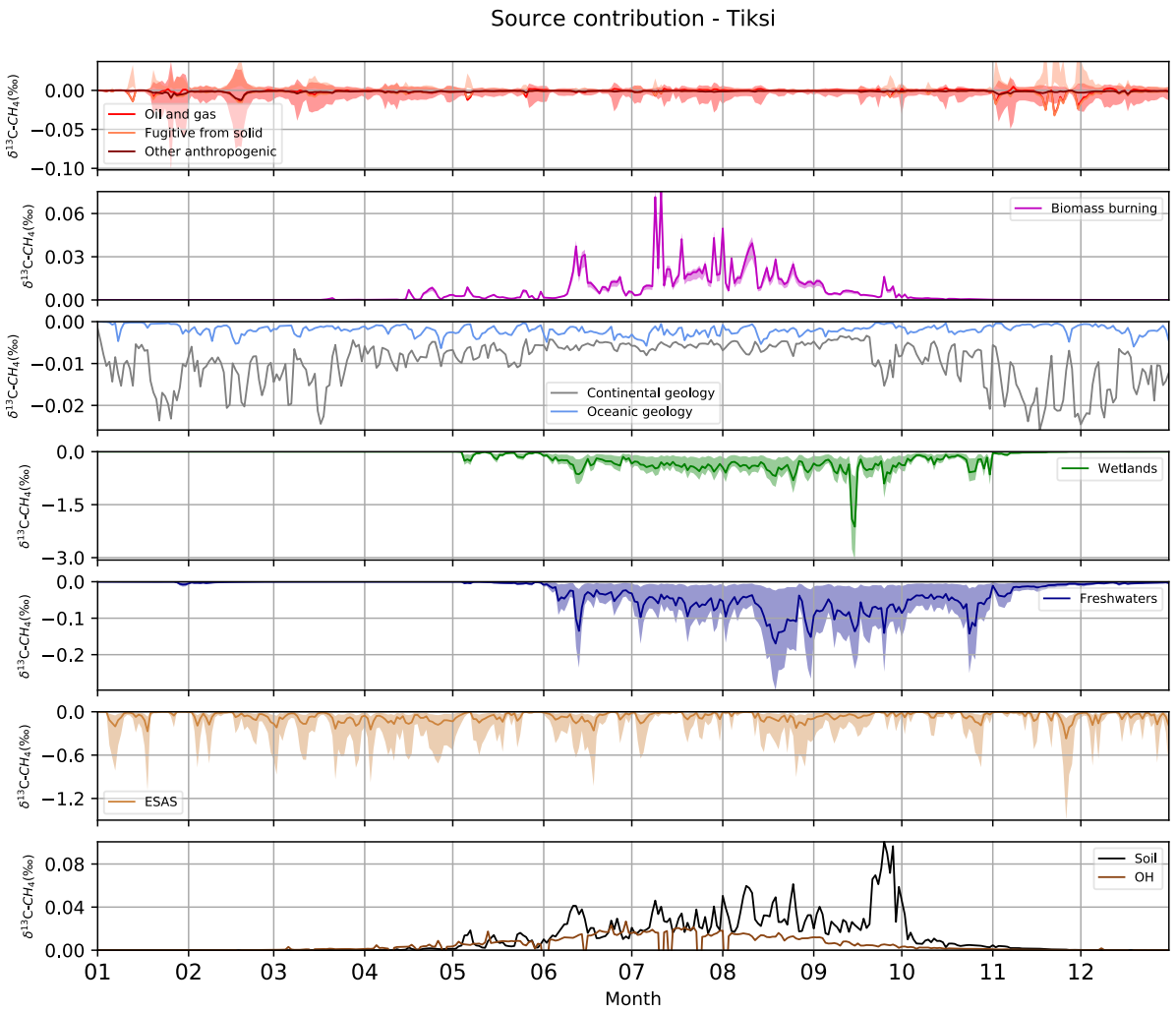

Figure S21. Same as S1 for Vaganovo site (VGN).

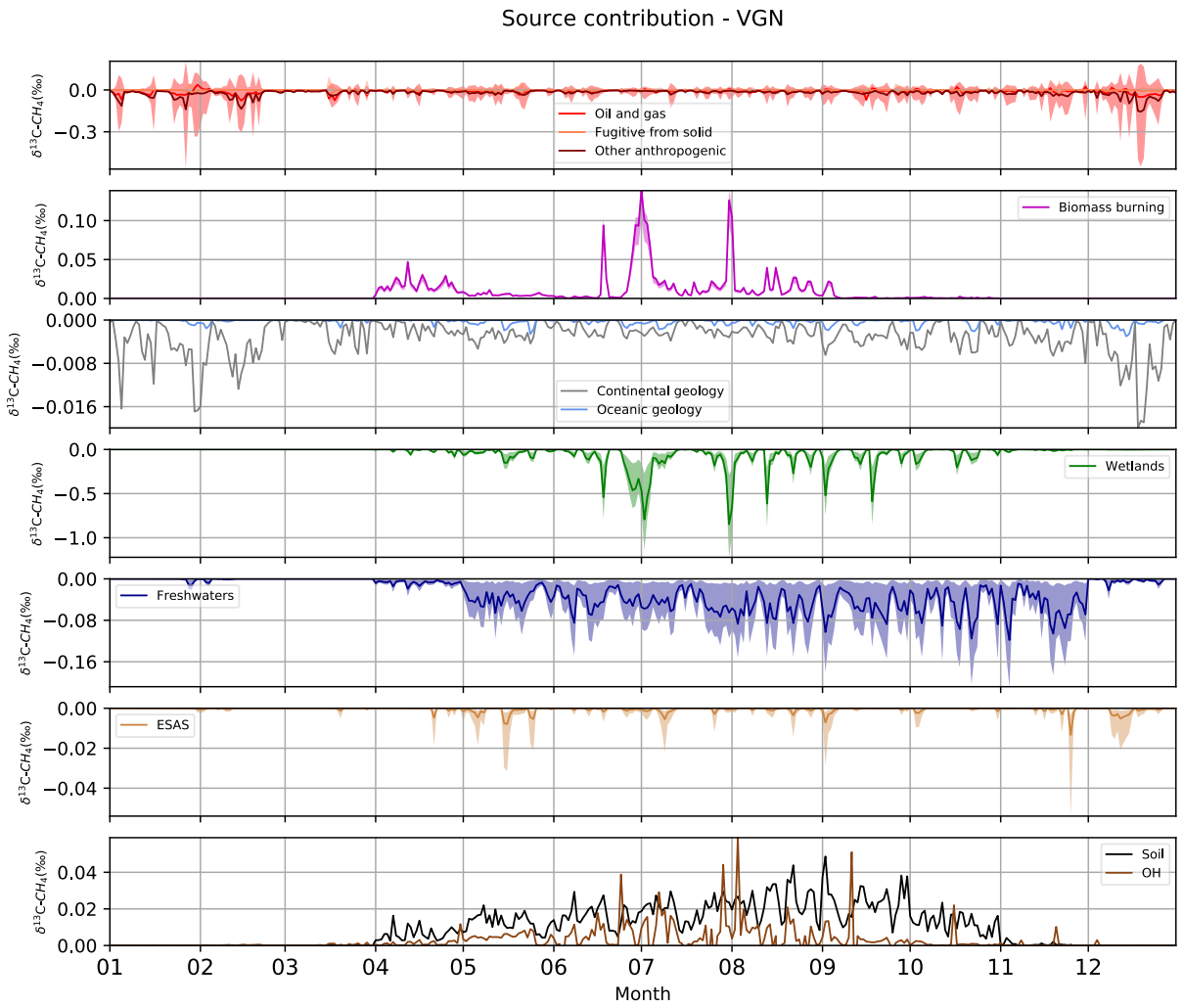

Figure S22. Same as S1 for Yakutsk site (YAK).

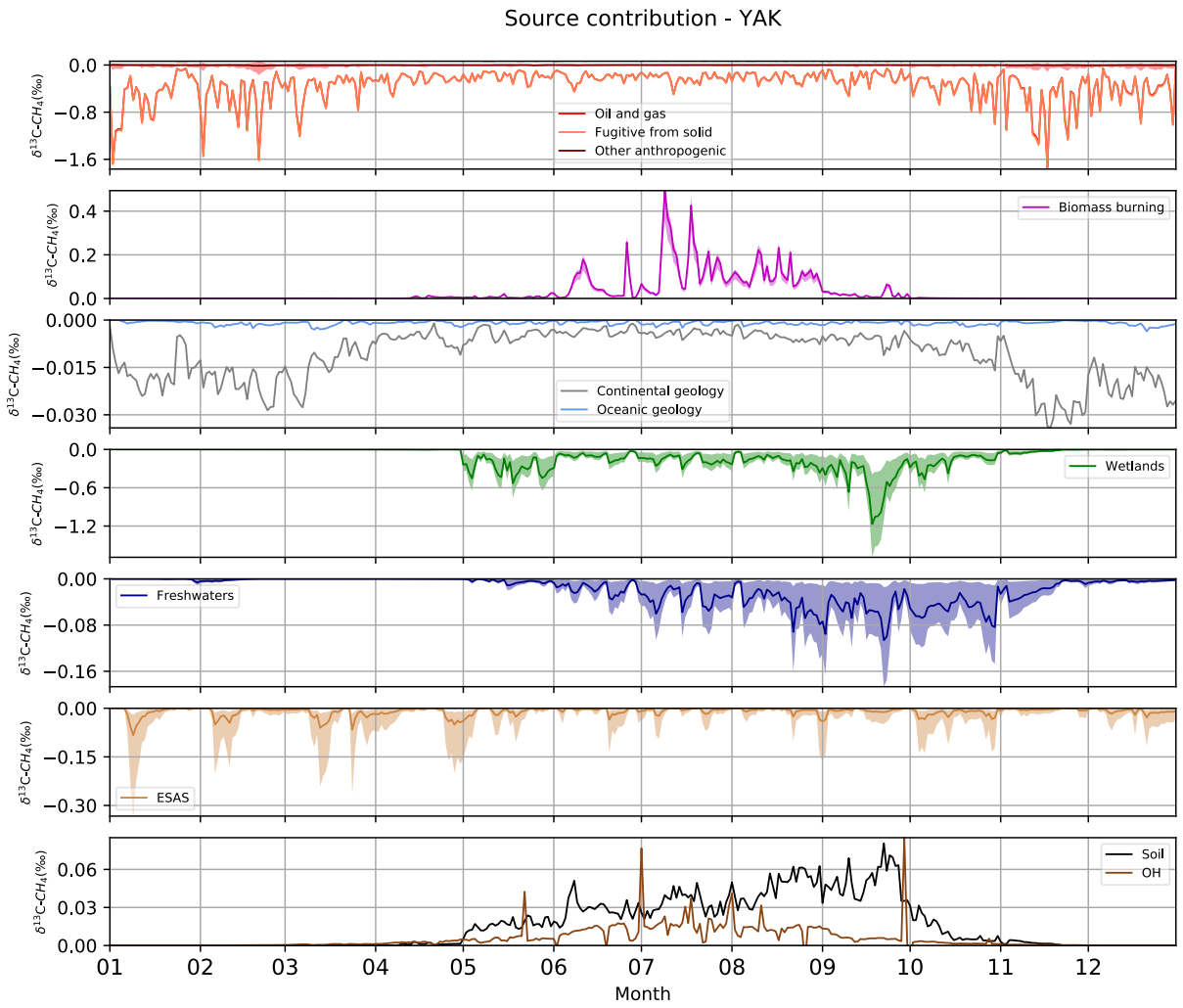

Figure S23. Same as S1 for Zottino site (ZOT).

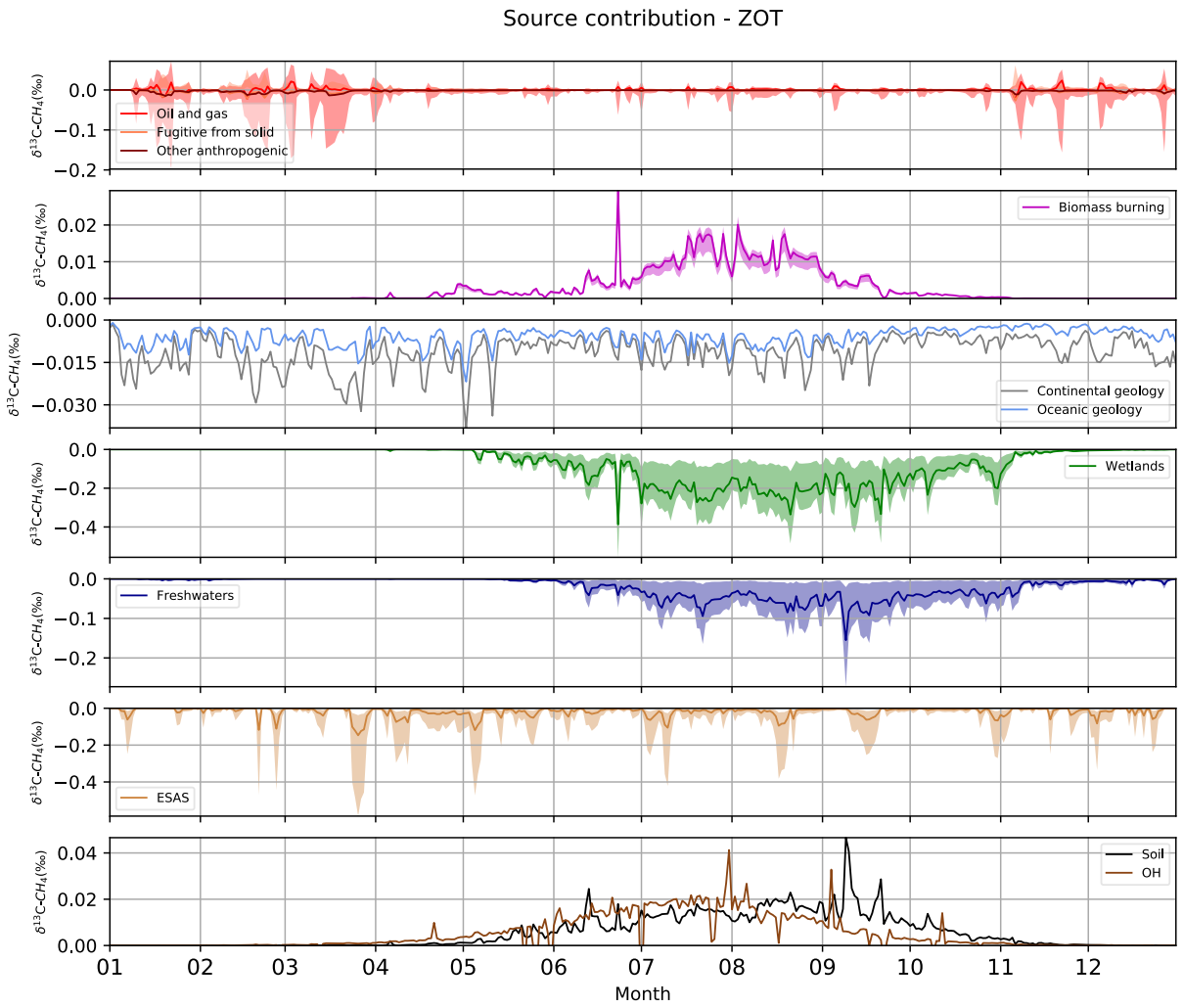

Figure S24. Same as Figure 5 but with an isotopic signature for wetland emissions of -55‰ (top two rows) and (-80‰ (bottom two
rows).

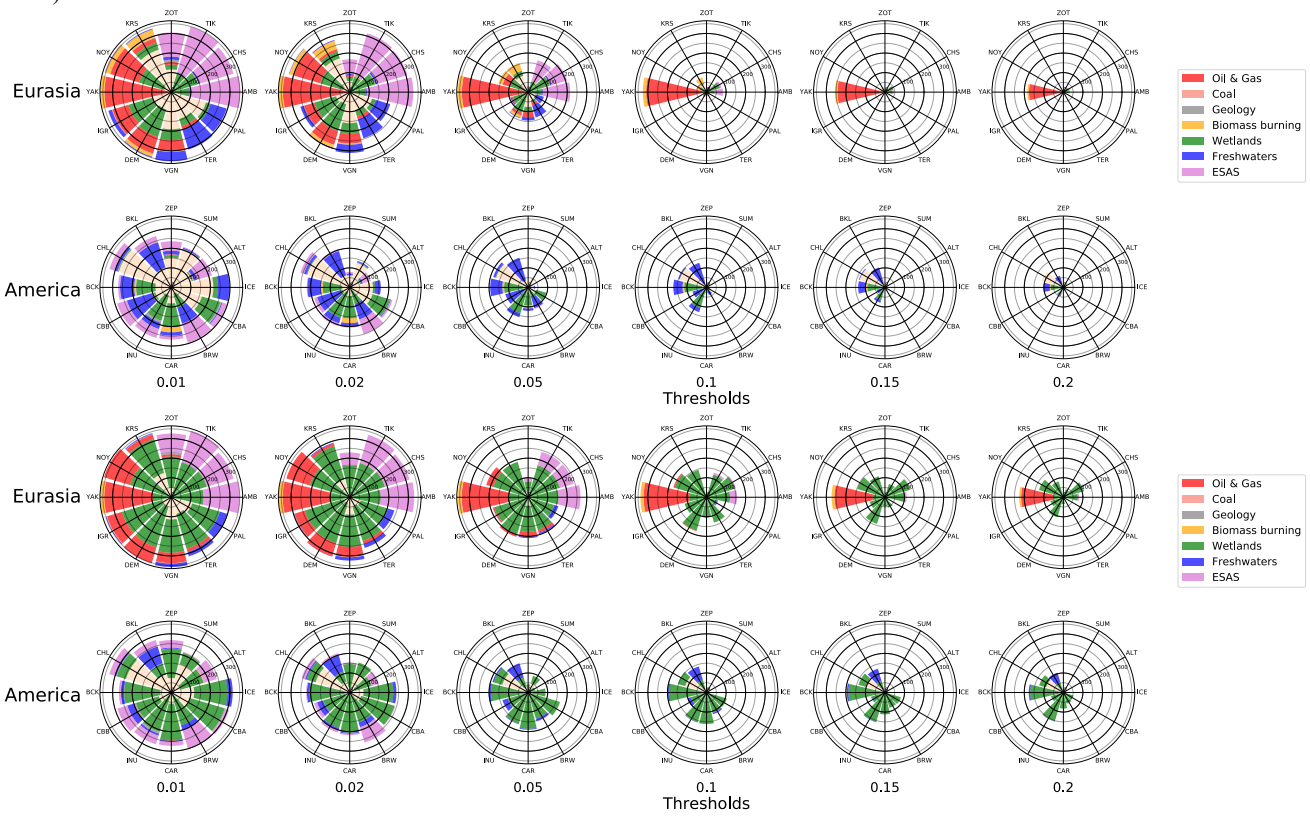

Figure S25. Same as Figure 5 but with an isotopic signature for freshwater emissions of -50‰ (top two rows) and (-80‰ (bottom two
rows).

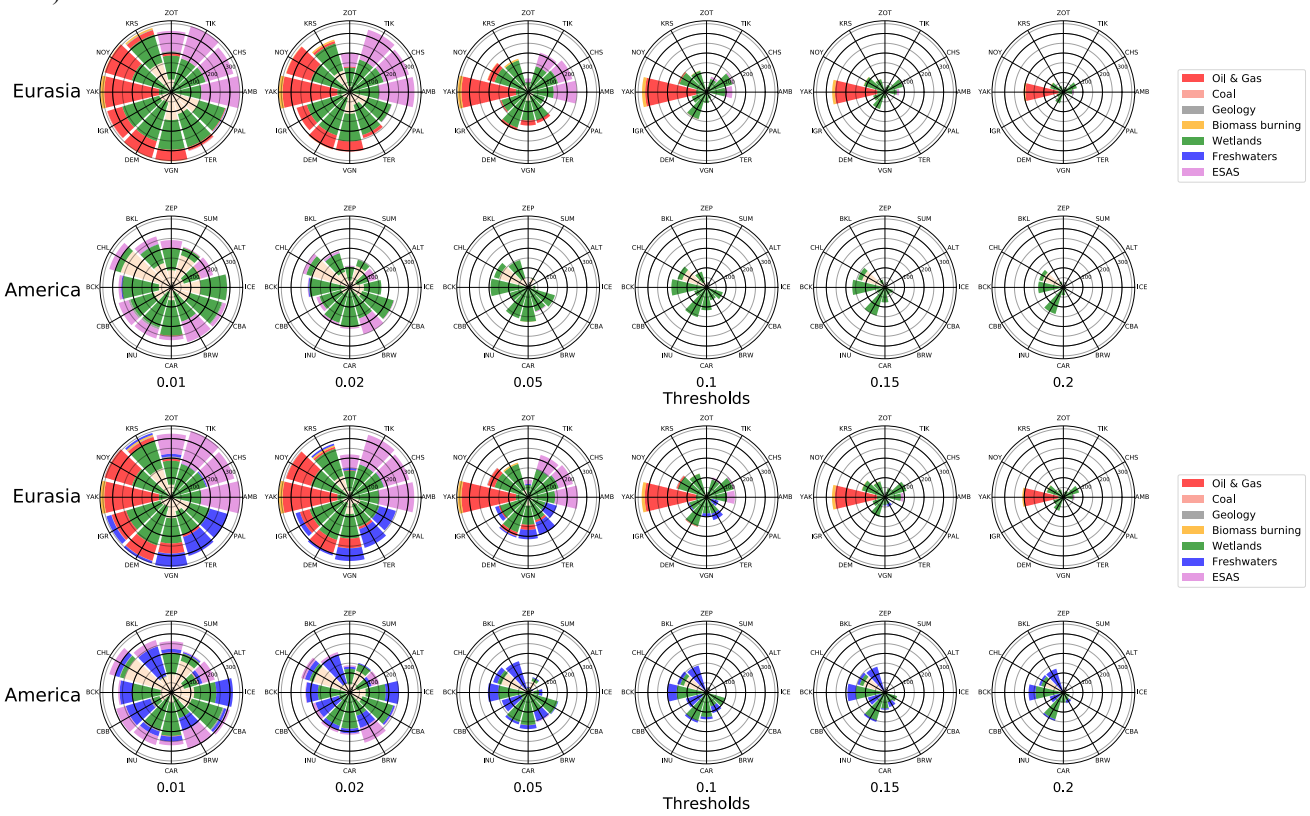

Figure S26. Same as Figure 5 but with an isotopic signature for oil and gas emissions of -40‰ (top two rows) and (-50‰ (bottom two
rows).

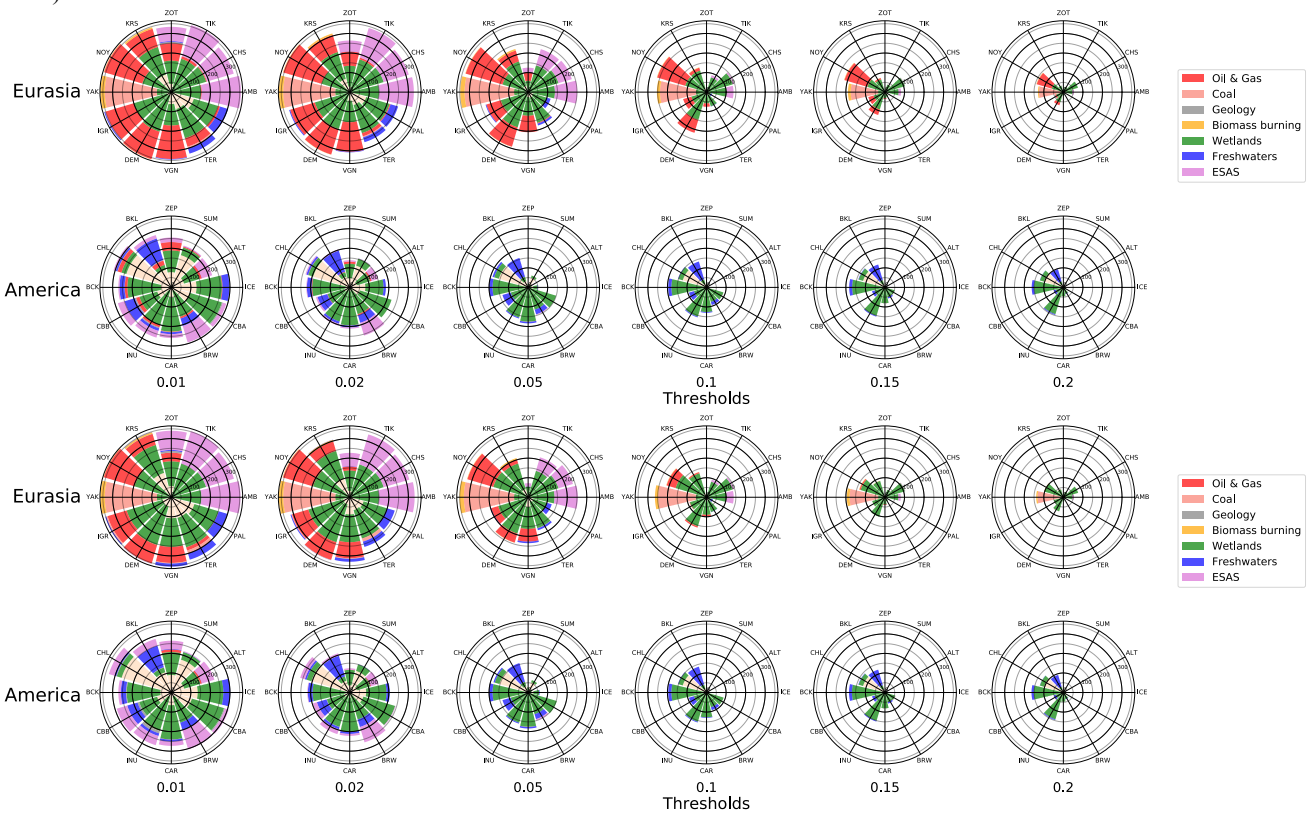

Figure S27. Same as Figure 5 but with an isotopic signature for coal emissions of -50‰ (top two rows) and -65‰ (bottom two
rows).

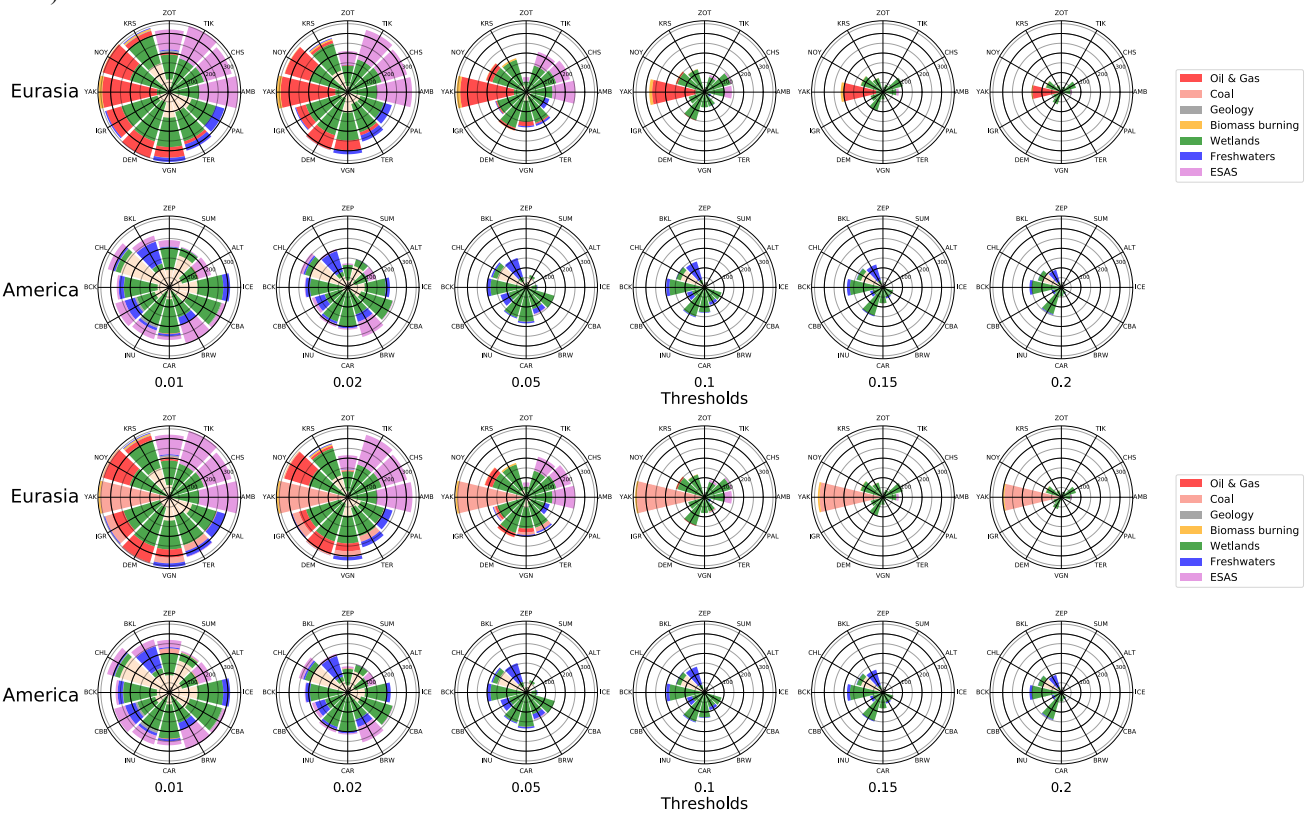

Figure S28. Same as Figure 5 but with an isotopic signature for ESAS emissions of -50‰ (top two rows) and -80‰ (bottom two rows).

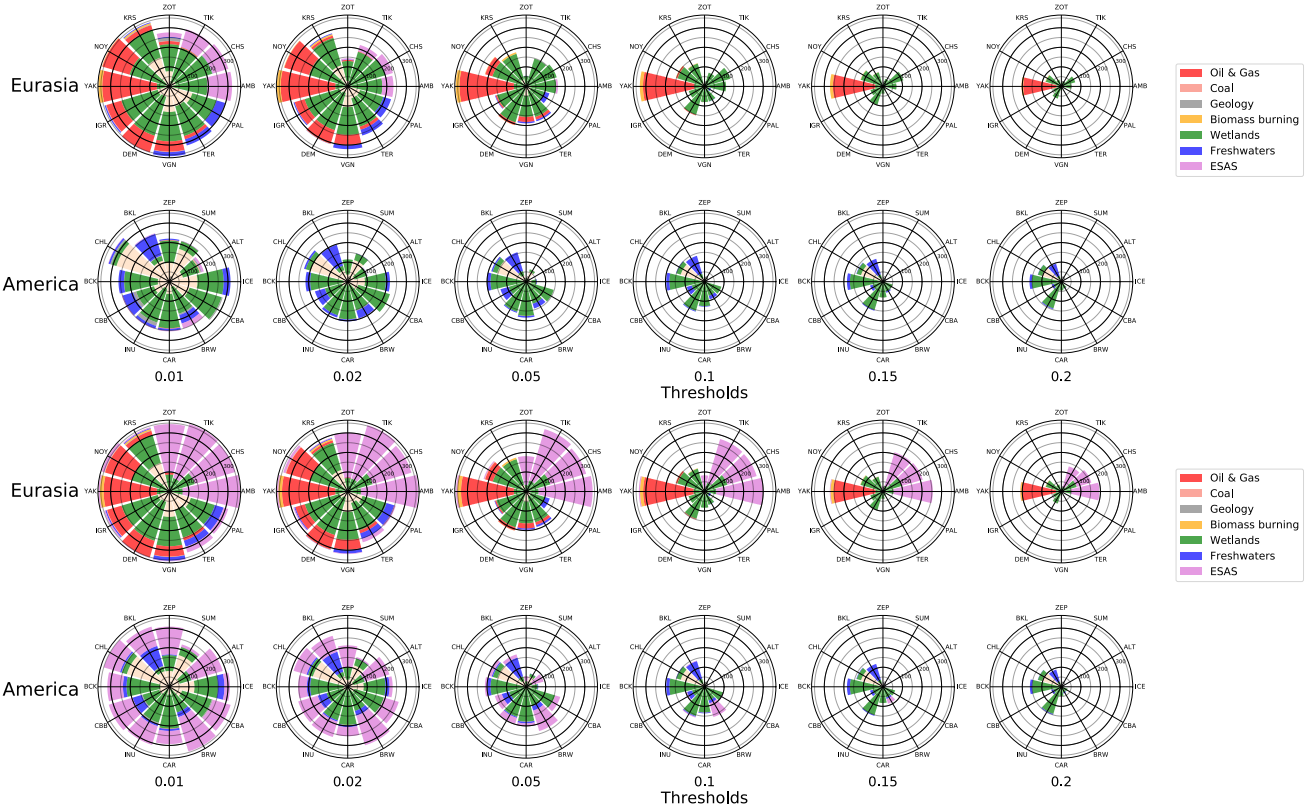

Figure S27. Same as Figure 5 but with an isotopic signature for Biomass burning emissions of -21‰ (top two rows) and -30‰ (bottom two rows).