**Figure Supplementary captions**

**Figure S1.** Location of experiment sites.

**Figure S2.** Changes in the NO3– concentration in the soil solution below the rooting zone (50 cm depth) in the (a) Shibecha (b) Ashoro (c) Nakagawa (d) Shiiba and (a) Kasuya during the study period in 2020. The error bars indicate the standard errors.

**Figure S3.** The correlation between soil net nitrification and average NO3– concentration in the soil solution below the rooting zone (50 cm depth) in unfertilized plots among replicates plots in five Japanese oak forests in 2018 and 2020.

**Figure S4.** The correlation between soil CN ratio and average NO3– concentration in the soil solution below the rooting zone (50 cm depth) in unfertilized plots among five Japanese oak forests in 2018 and 2020. The labels “18” and “20” represent “in 2018” and “in 2020”.