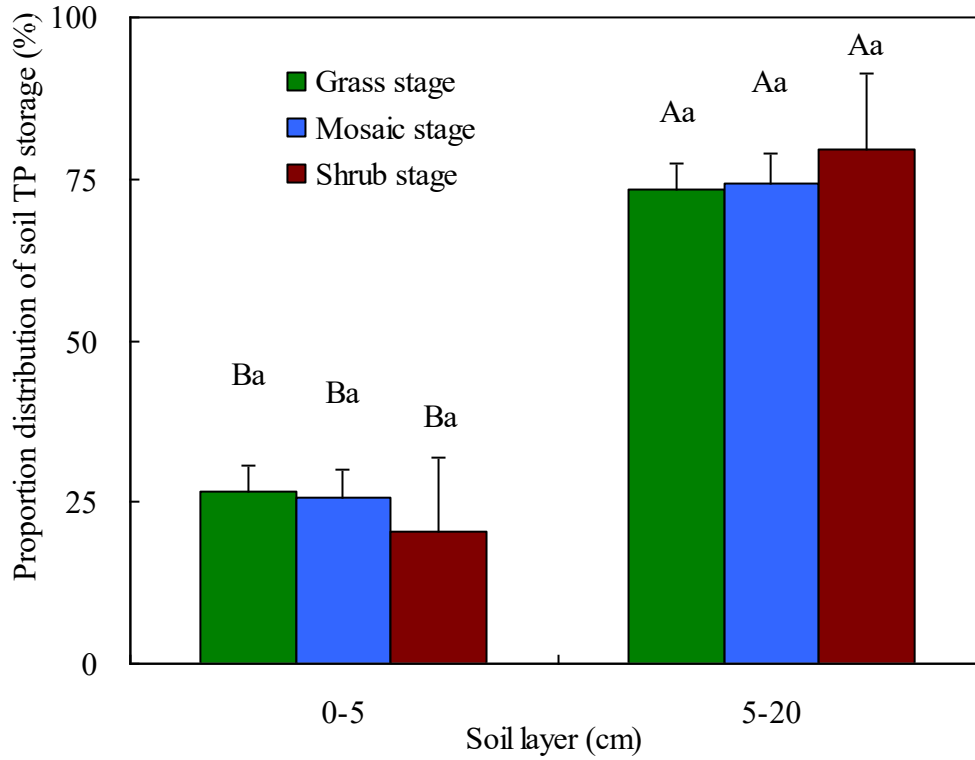


Figure S3. Proportional distribution of soil total phosphorus (TP) storage at the soil layers (0-5 and 5-20 cm) with shrub encroachment.



Different capital letters within a same succession indicate significant differences ($p < 0.05$), but same lowercase letter within a same soil layer indicates no significant differences ($p > 0.05$). This figure showed the higher proportion of soil total phosphorus (TP) storage in the deep soil layer than in the shallow soil layer, and the proportion of soil total phosphorus (TP) storage in the deep soil layer had the increased trend. Soil total phosphorus (TP) storage was calculated according to the following formula:

$$TP \text{ storage} = \sum_{i=1}^n I_i \times B_i \times TP_i$$

Where n is the number of soil layers, I_i is the interval of soil layer (cm) of i , B_i is the soil bulk density ($\text{g} \cdot \text{cm}^{-3}$) of soil layer of i , TP_i is the soil TP concentration ($\text{mg} \cdot \text{g}^{-1}$) at the soil layer of i .