

**Fig. S1** - Spatial distribution of *Rhamnus davurica* and *Rhamnus schneideri* var. *manshurica* in the 360m×660m research plot. Solid circles indicate females (*R. davurica*: 310 shrubs, *R. schneideri* var. *manshurica*: 113 shrubs); hollow circles indicate males (*R. davurica*: 53 shrubs, *R. schneideri* var. *manshurica*: 90 shrubs); crosses indicate non-flowering trees (*R. davurica*: 225 shrubs, *R. schneideri* var. *manshurica*: 23 shrubs) in the observed period.

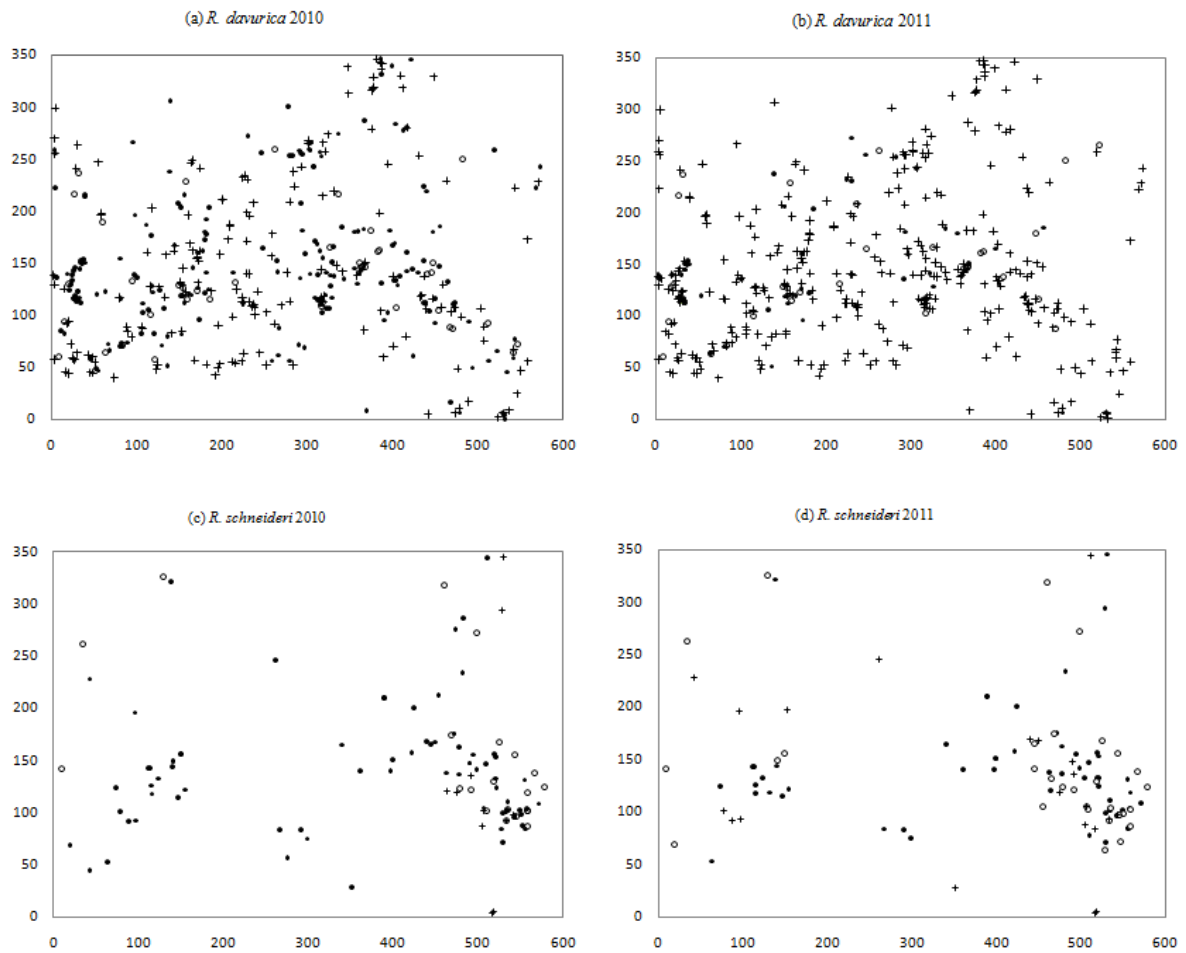


Fig. S2 - Comparison of flower biomass and fruit biomass between males and females in *Rhamnus* shrub species at shoot level.

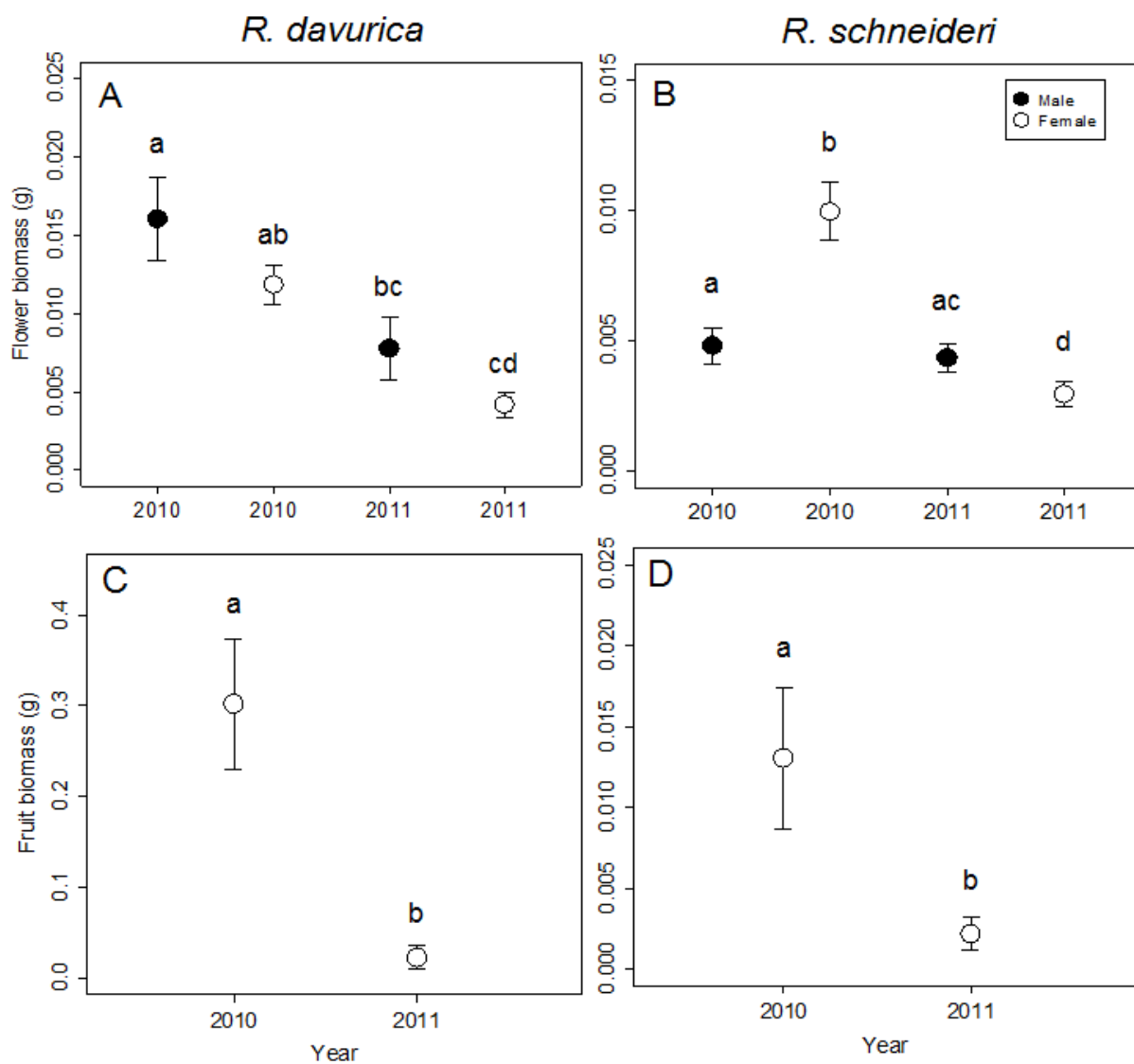
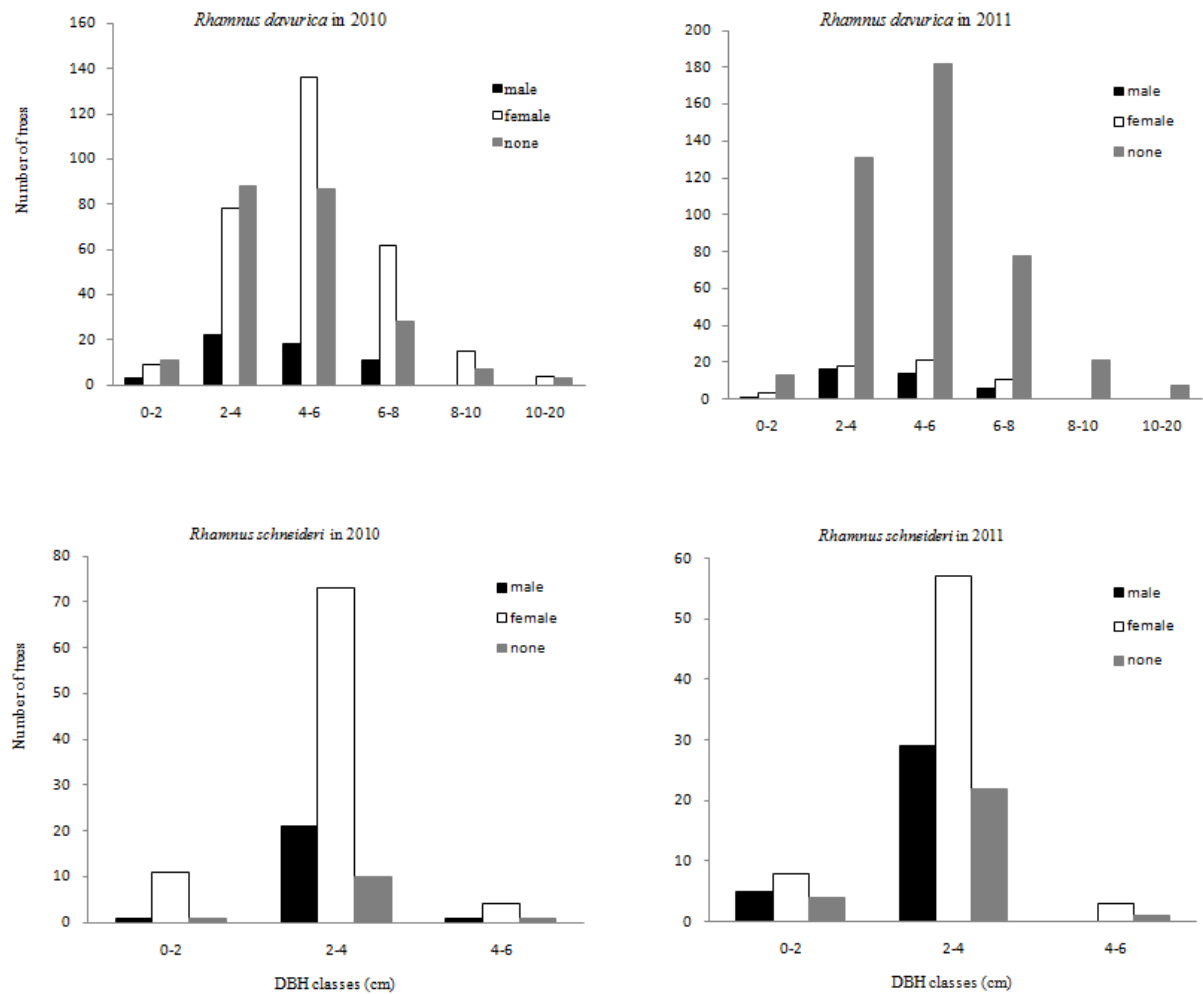


Fig. S3 - The annual DBH distribution in males, females and non-reproductive individuals in 2010 and 2011.



**Fig. S4** - Accumulated annual ring width of males (hollow circles) and females (solid circles) for two species.

