

---

**Will our trees flush earlier and earlier?  
Insides from an extreme warming experiment.**

Ilka Beil, Jürgen Kreyling, Andrey Malyshev

Experimental Plant Ecology

Institute for Botany and Landscape Ecology

University of Greifswald - Germany

Advancement in spring phenology due to climate warming

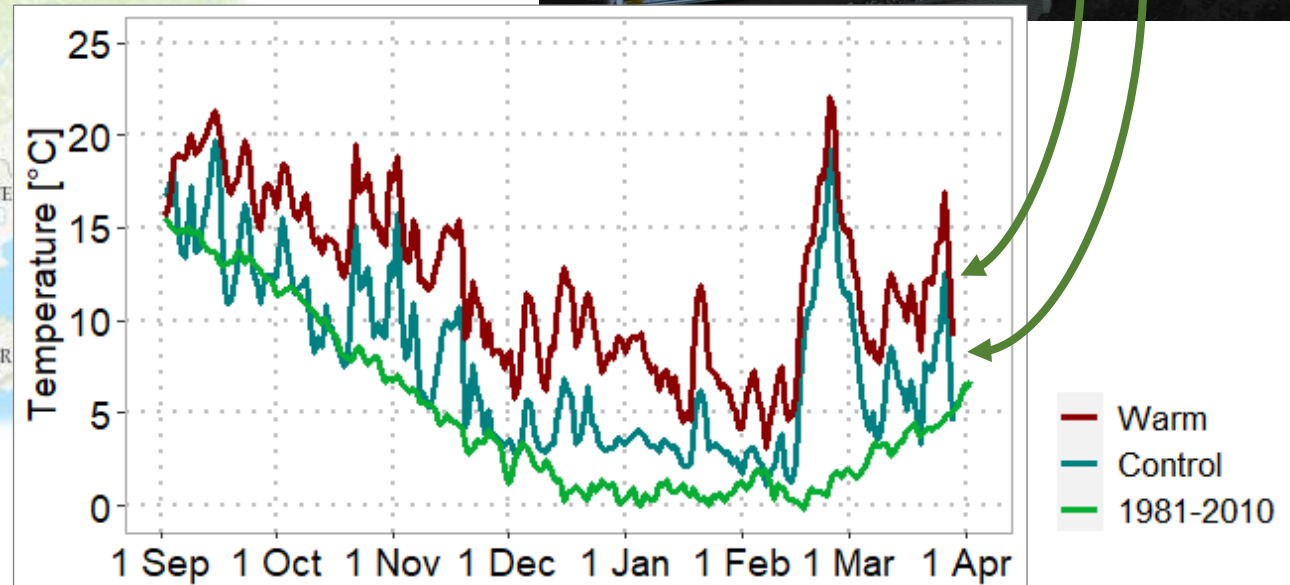
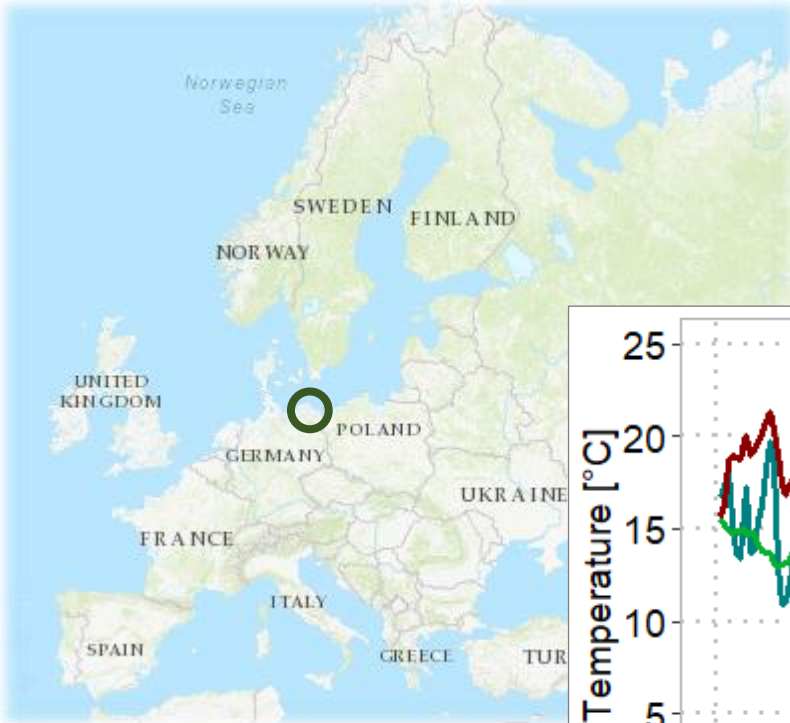


Slowing down of spring advancement due insufficient chilling



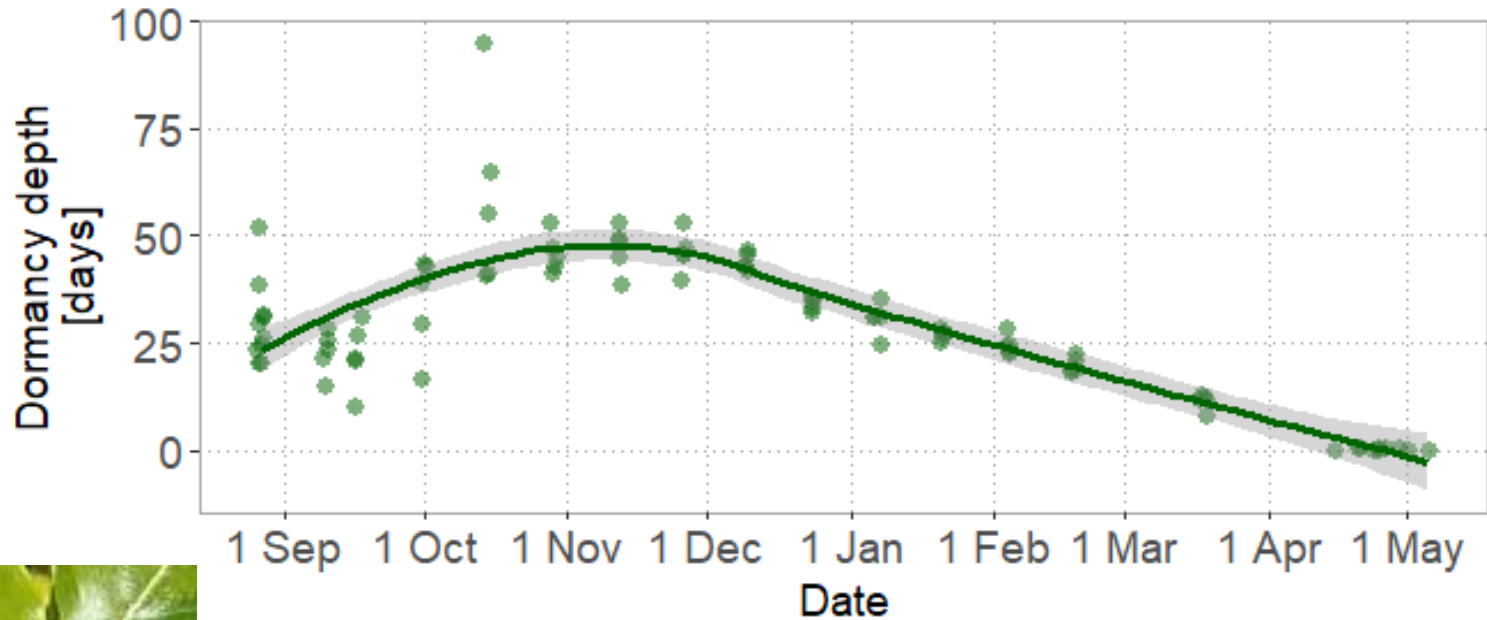
Will the advancing effect of warming be compensated by the delaying effect of reduced chilling? - Or even overcompensated?

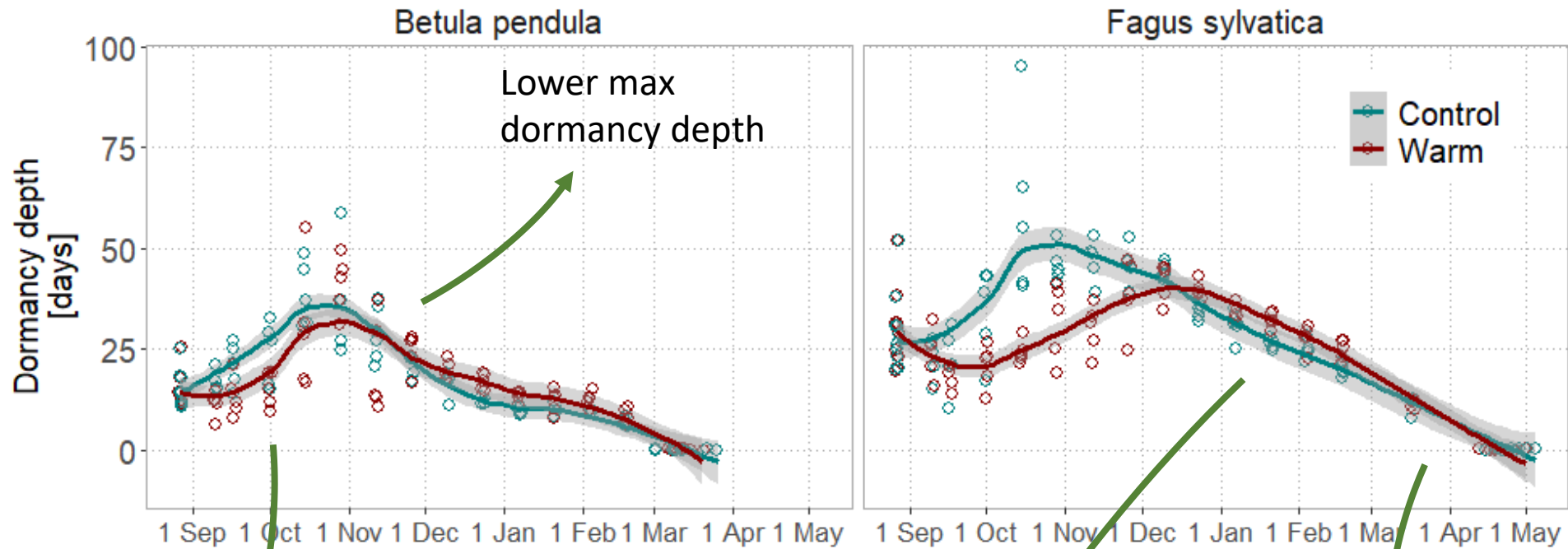
How is dormancy effected by temperature?



How is dormancy induction and release - and spring flushing impacted by high winter temperature?

Dormancy depth as days until bud burst under forcing conditions

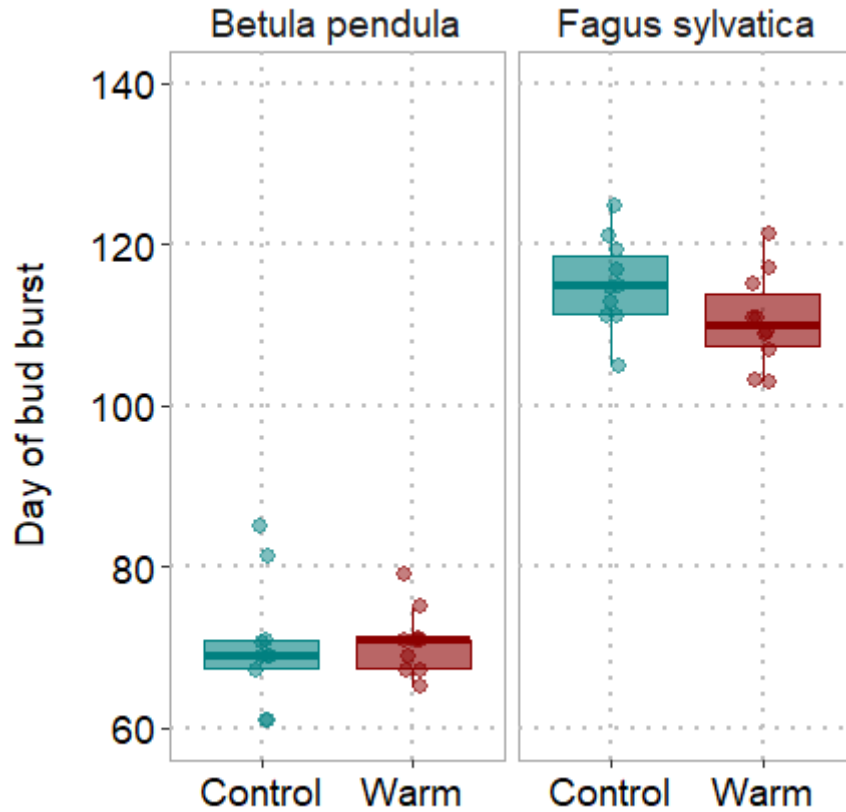




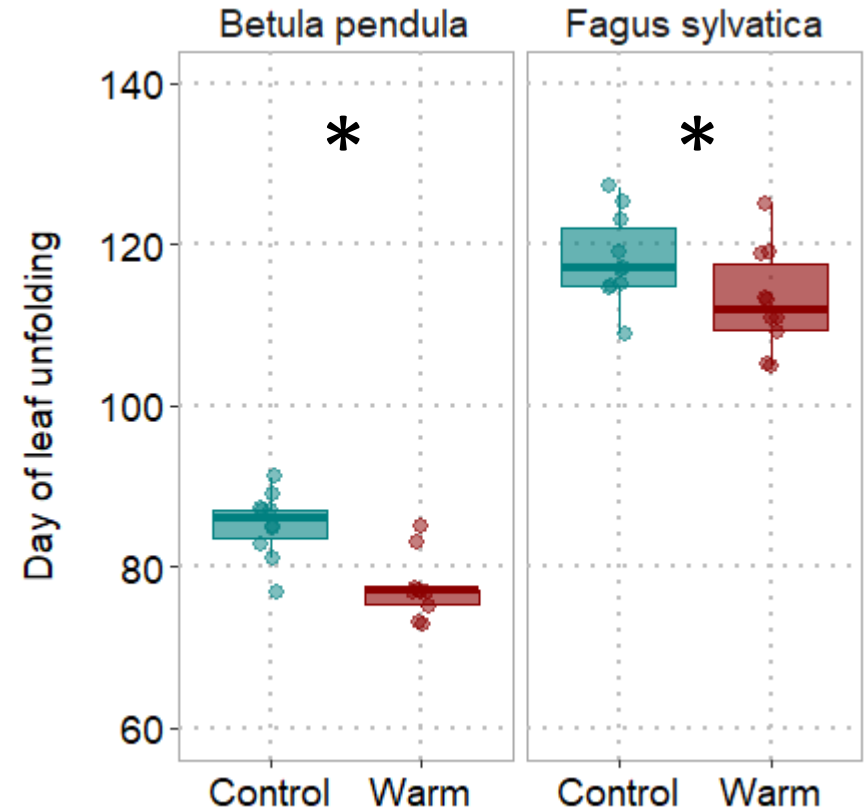
Delay in dormancy induction which on its own delays spring flushing (Beil 2021)

No strong impact on dormancy release rate in winter

Accelerated dormancy release in spring



Bud burst



Leaf unfolding





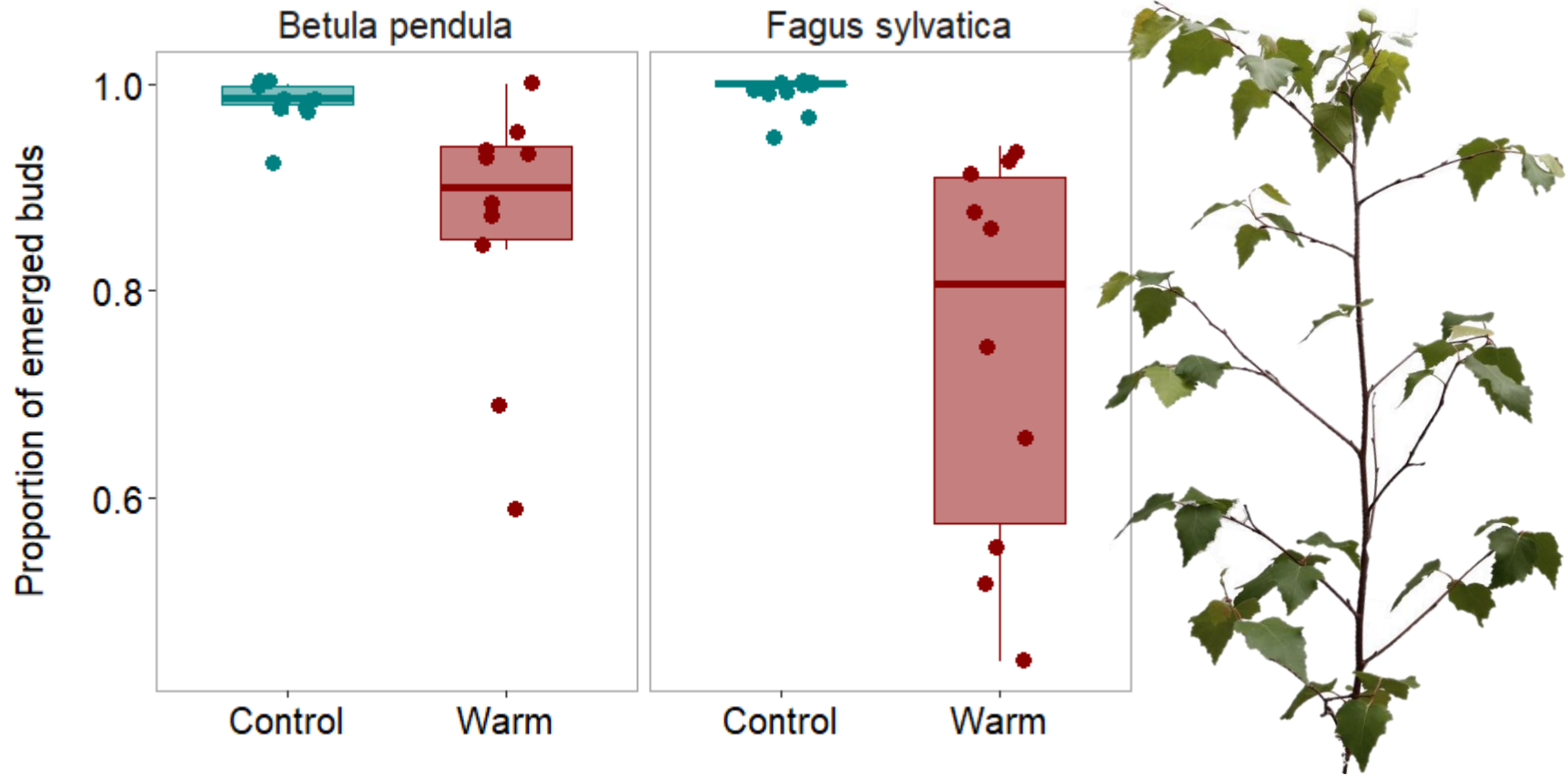
Not all buds were able to flush

# Percent of bud burst

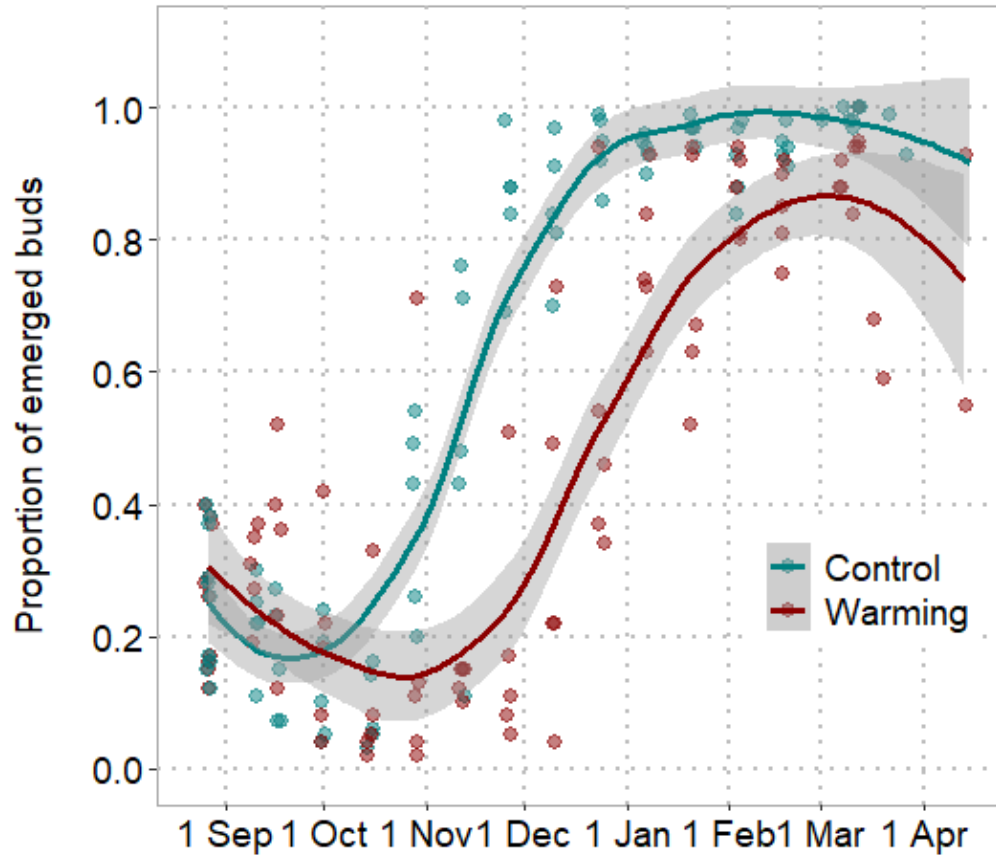




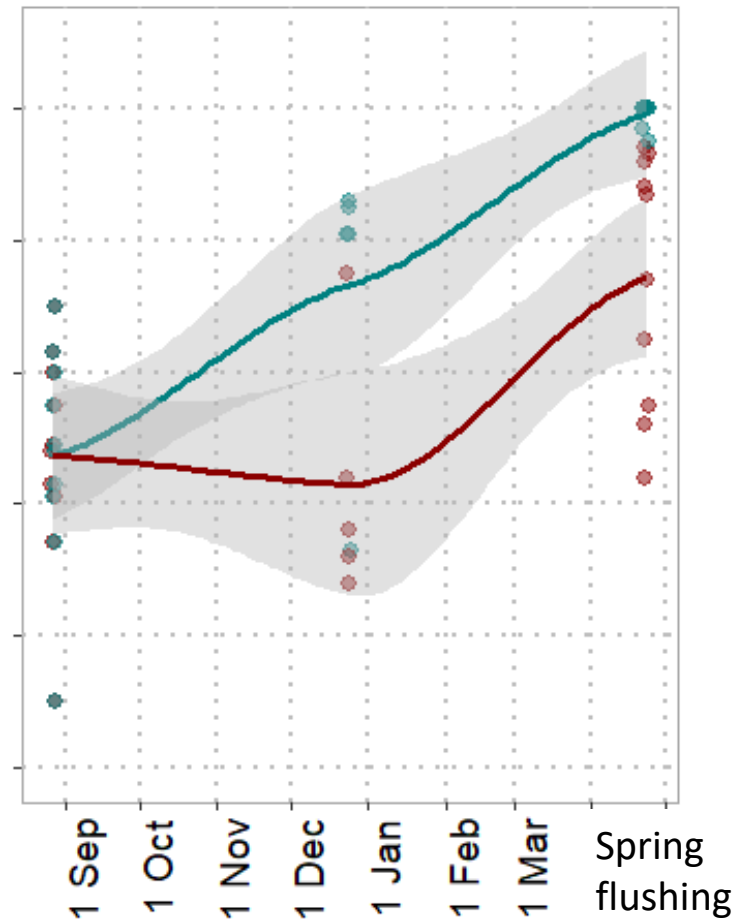
Buds that had burst two weeks after leaf unfolding

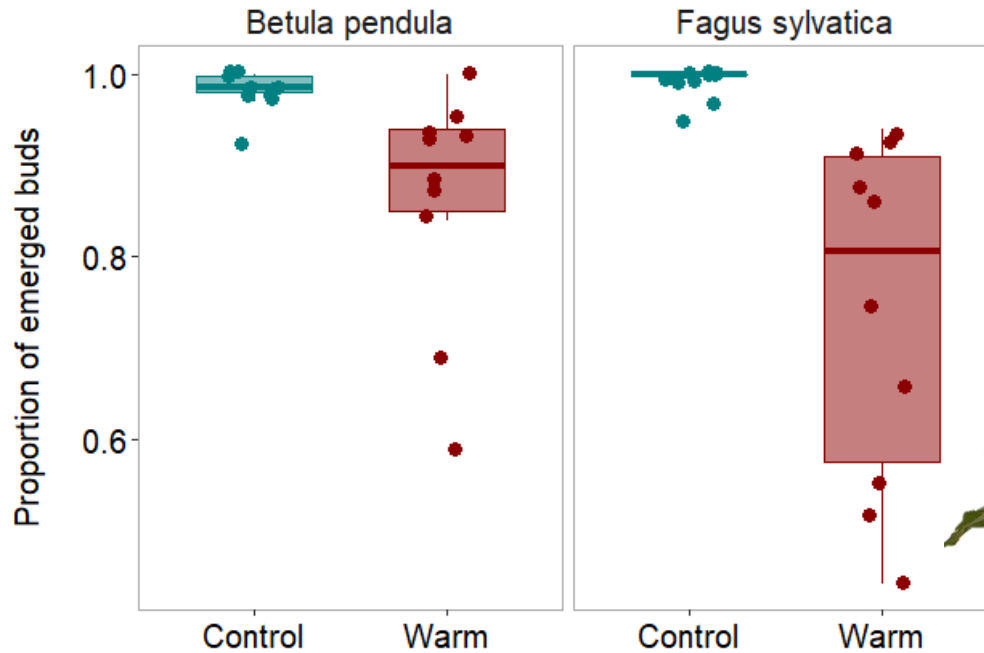


## Betula pendula



## Fagus sylvatica





Under extreme warming:

They still flush earlier  
But not with all of their buds

Thank you for your attention

