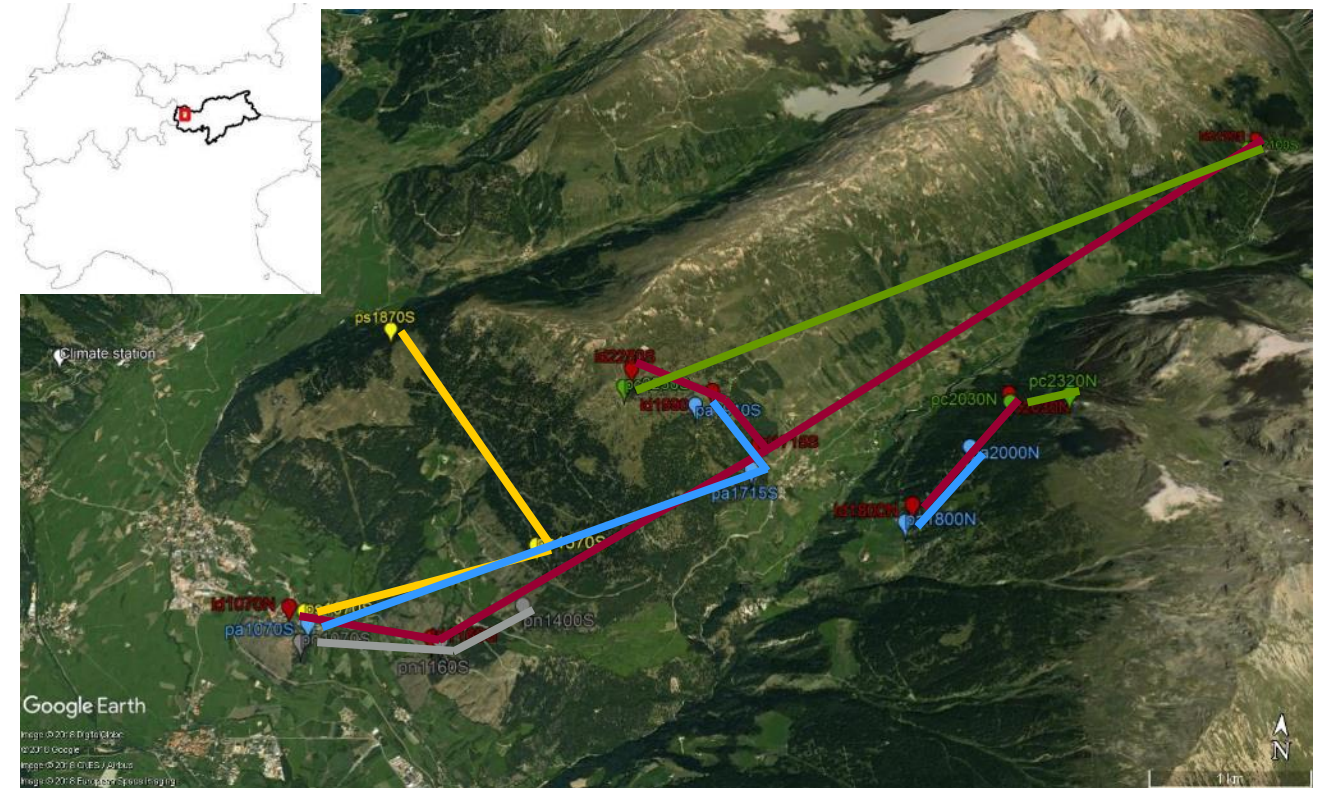
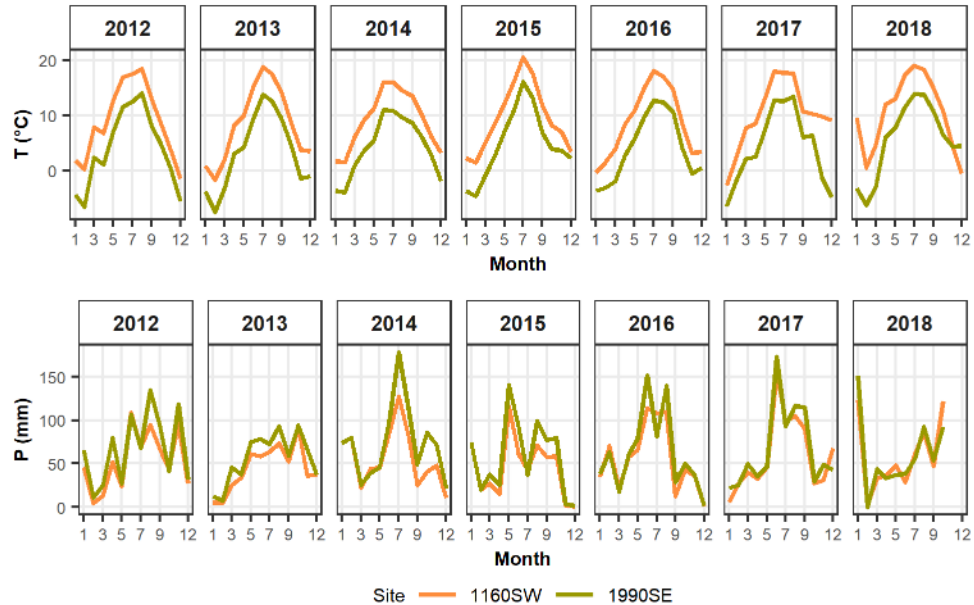


Elevation gradients in inner-alpine dry valleys as a proxy for climate change effects on mountain forests

Obojes N, Tasser E, Oberhuber W, Mayr S, Tappeiner U

Elevation gradient

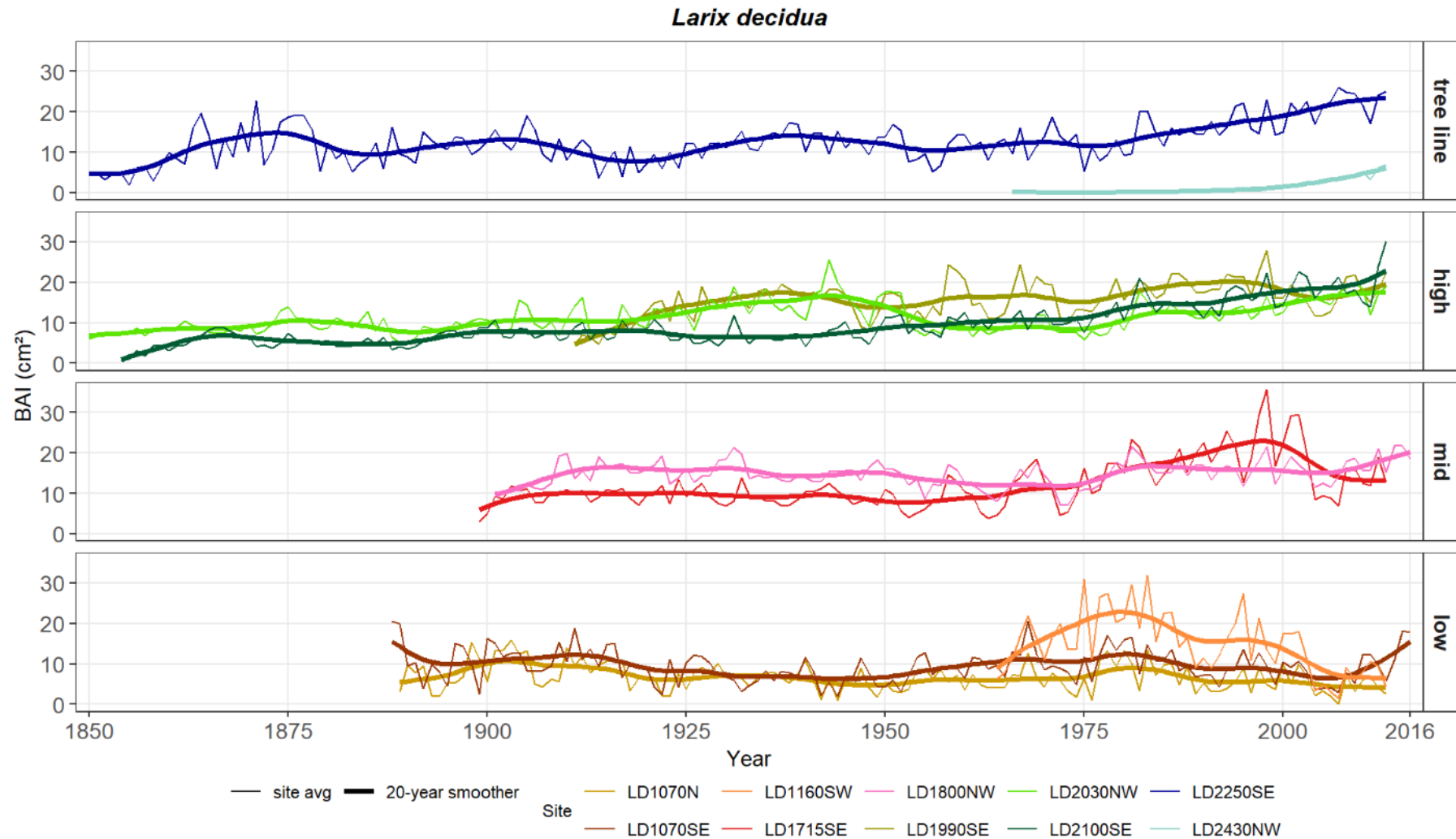


European larch, Pinus cembra, Norway spruce,
Black pine, Scotts pine

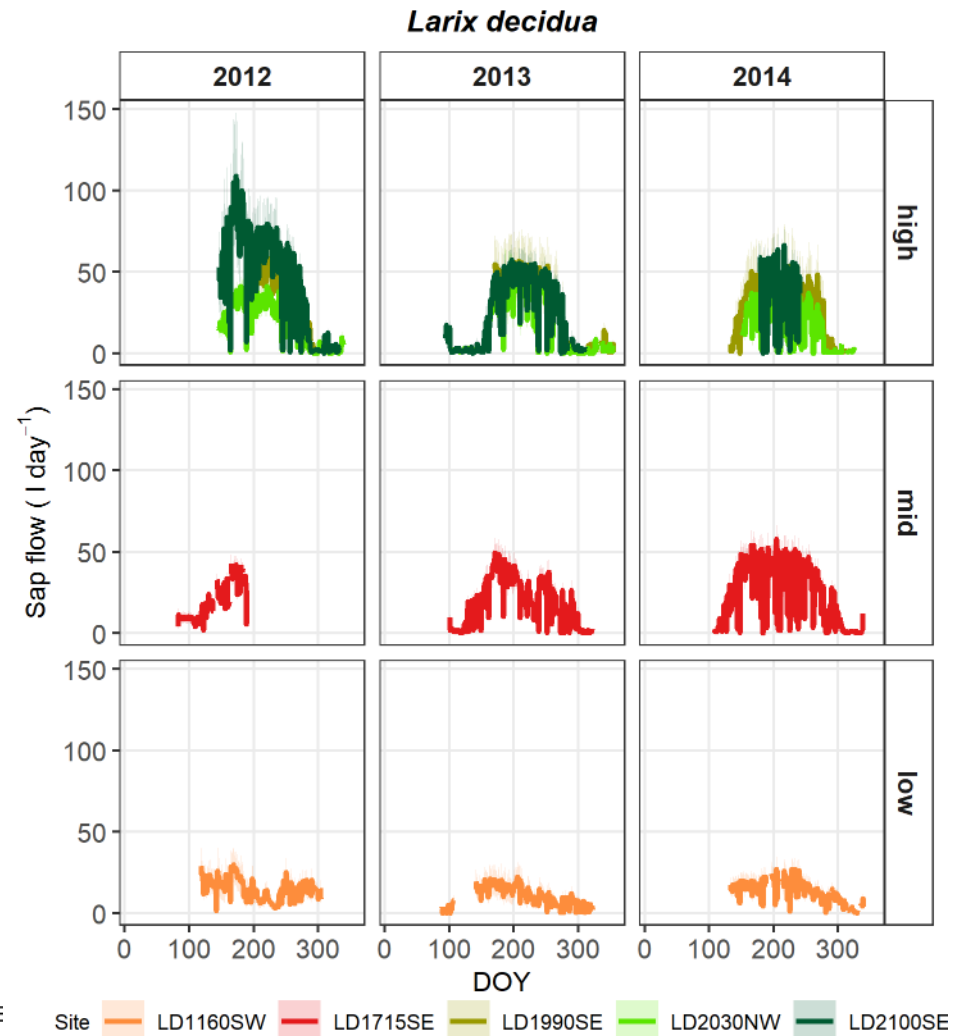
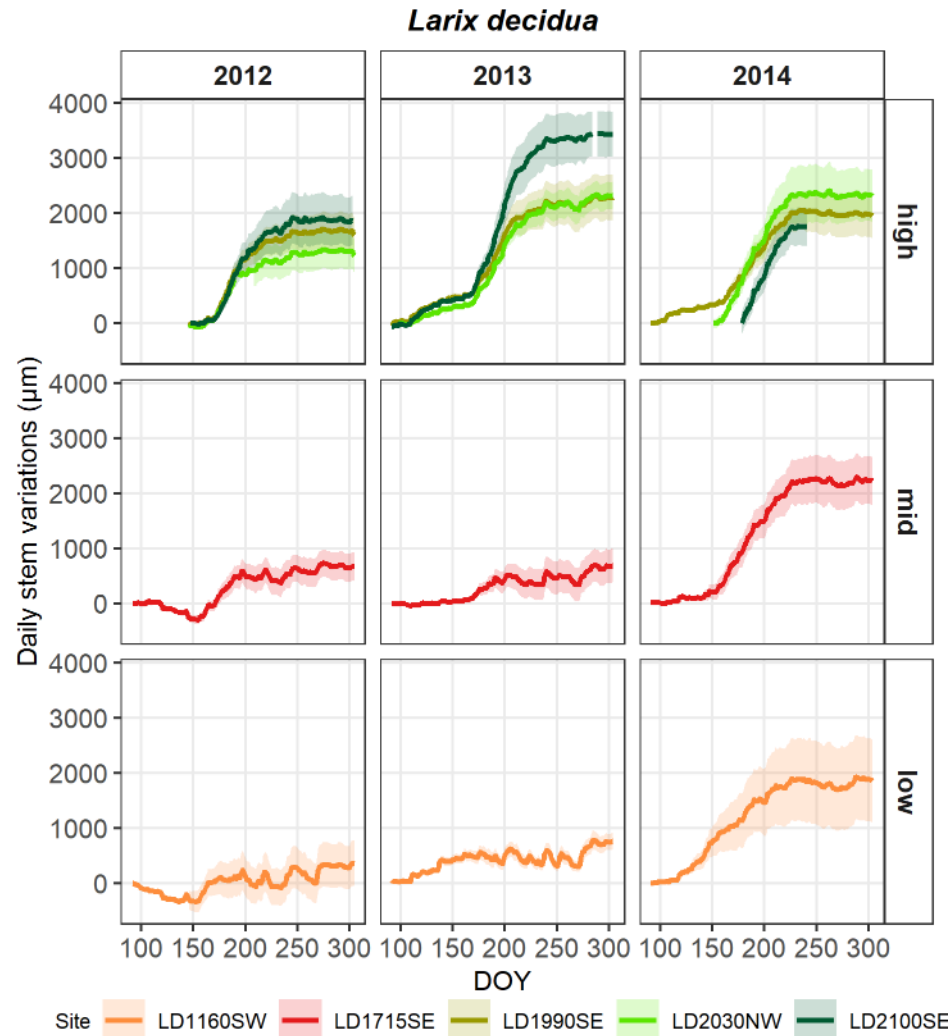
LTSER Matsch | Mazia

$P < 600$ mm/year at lower elevations

Tree ring data



Stem radius variation/Sap flow



Conclusions

- Water limitation/positive precipitation response up to lower subalpine belt (1700 m).
- Positive temperature response only at tree line.
- Stronger climate response of larch and spruce, pine species more complacent.
- Dry periods lead to periodic reduction of stem radius and sap flow at low and mid elevation, resulting in less overall growth in dry years.

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