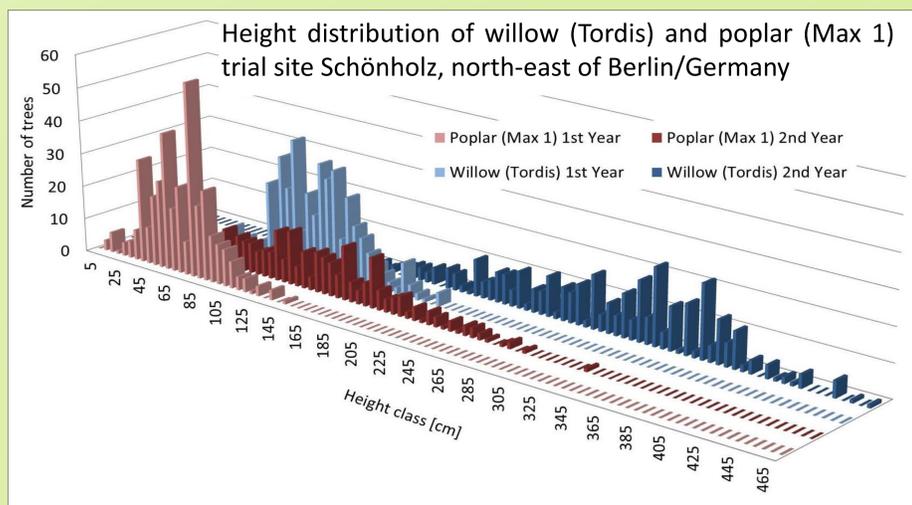


# Short rotation coppice (SRC) on marginal sites

## Current research at HNEE

### ELaN WP 7 – Willow and poplar on groundwater-influenced grassland and inundated farmland

SRC of willow variety 'Tordis' and poplar variety 'Max 1' could successfully be established on groundwater-influenced grassland using a low-impact planting technique (in order to preserve soil carbon storage) without ploughing, heavy machinery or herbicides. Initial growth was slow due to competition for light in dense grass cover. During the 2<sup>nd</sup> year, growth performance of willow increased (mean height: 3 m, 87% tree survival), while poplar had difficulties to cope with the excess of water (mean height: 1.5 m, 69% tree survival).



On agricultural soils, poplar has proven to tolerate waterlogging for prolonged periods of time, when site conditions are suitable. Unplanned inundations at two plantations lead to extreme results (see below), suggesting that site-specific soil and hence, water chemistry play a more important role in tree survival and performance than duration or intensity of inundation. In trials, willow was more tolerant to inundation or waterlogging than poplar, even under less favorable conditions.



### Short rotation coppice on former sewage plantations

During the last four years we accompanied the implementation of SRC plantations on former sewage farm soil around Berlin. Ecological effects on plant growth were studied focusing on water stress and microclimate in relation with contamination levels during the first years of establishment. In order to provide decision tools that help finding feasible solutions for successful establishment of fully stocked SRC's we need to understand hampering effects on plant growth and test measures to mitigate different levels of contamination.

This particularly involves:

- defining integrated damaging thresholds for contamination levels in relation to available soil water for different species and clones
- test screening methods (phyto-screening) and means to mitigate effects of contamination before and during plantation establishment (soil prep, planting material)
- investigate turnover rates of contaminants in plants and possible restrictions in utilizing these materials



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### DENTRASS - Power line tracks for bioenergy production

Power line tracks in forests have to be maintained with high effort to avoid disturbances with wires by wild growing trees and shrubs. The DENTRASS project investigated how power line tracks could be used for energy wood production with fast-growing tree species managed in short rotation. Power line tracks are characterized by an unfavorable area shape, limited space for height growth due to required security distances to electricity lines, browsing by deer, and competing ground vegetation.



In a joint project, Vattenfall Europe Wärme AG, the Federal Forest Service Germany and the University of Applied Sciences Eberswalde (HNEE) established a large-scale plantation south of Berlin incorporating plot trials with site specific tree species in order to explore potential management options. The project concluded that intensive cultivation may not be feasible. Reasons are lower yield expectations and potential conflicts which arise from regulations of "good forest practice" and requirements for forest certification, especially if the power line tracks are part of forests regulated under federal state law. Results suggested that a feasible option to utilize these areas for energy wood production could be rather cost-extensive methods that support, complement and use natural regeneration of pioneer trees at the site. In this context, we now aim to explore different approaches of soil preparation and drilling of pioneer trees.

