

**SNOW-DRIFT REDISTRIBUTION AS THE MAIN FACTOR
OF REGULATION OF WATER AVAILABILITY FOR FOREST CULTURES
IN STEPPE CONDITIONS**

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The applicability and necessity of analysis of snow-drift redistribution features for optimizing moisture availability for both forest cultures and adjacent territories are recommended while creating artificially-planted protective forest belts in previously treeless territories. The average distance traveled by individual snowflakes by wind, which usually does not exceed several hundred meters, is the most important parameter of snow cover formation. Just this particular mechanism regulates the amount of snow accumulation in forest belts, controls the width of snow-gathering area, and contributes to the even distribution of snow on flat lands without forests. By analysis of the ratio of potential evaporation and the average volume of additional snow-melted water per length unit of a forest belt, some specific features of moisture accumulation and peculiarities of tree desiccation on various types of soils were revealed. Evidence is given for the impossibility of the creation of stable close-planted forests on light chestnut soils in semi-desert and dry steppe regions due to the weak accumulation of snow masses and the losses of significant amounts of spring infiltration water due to secondary salinization. Ways are disclosed to optimize the water availability for crops in chernozem steppes by the adjustment of the forest belts' width according to the mechanics of snow-drift redistribution. The conducted research shows the possibility of mathematical calculation of the optimal parameters and spatial configuration of newly-planted forest belts on the reclaimed territory. The impossibility of increasing the life cycle duration of artificial forest stands with the help of only traditional agrotechnical and silvicultural techniques without considering these criteria has been proved.

Key words: steppe territories, snowstorm, snow redistribution, growing protective forest belts.

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