

Temporal Variation of Sedimentation on Paved and Unpaved Forest Roads in Belgrad Forest, Istanbul

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Abstract:

Turkey has 57% mountainous terrain a rugged topography with high area covering a large section of forest in mountainous terrain. Activities being undertaken in the forestry sector include; transportation, silviculture, forestation, fire fighting, insect and disease control, growth monitoring, monitoring of forest health and other activities that are required for transport through the forest roads. However, as the importance of the environmental impacts of forest roads increases, the forest habitat of roads, landslide and erosion, and adverse effects on river hydrology are research priorities.

In this context, the reason of forest roads construction, protective vegetation and organic layers were removed from large areas of surface erosion, to become open to the large amounts of soil and rock were dug to be exposed to mass movement and often corrupt bias of the remaining balance is made. As a result, sediment transport in streams after road construction, road construction compared to prior art is hundreds of times. Forest roads cut slopes both surface flow and interrupted the flow of shallow groundwater to collect in the ditch edge. Directly in the cut slopes and road surface downward slope rainfall, surface flow to the ground with not seep down the road to the ditch edge goes to the slopes. As a result, after the rain shower, then surface and groundwater flow is accelerating faster than in the stream is reached. Also, peak flows in streams to increase, river water temperature rises, road surface and edge of the ditch and excavation on the slope from erosion due to movement of material, the amount of sediment reaching the stream bed has been increased.

In this study, the first time in our country sediment amounts determined based on the forest road ditch with land through sediment fences. European countries and the United States seen in studies, but the first time in our country within the borders of the forest land sediment amounts determined through sediment fences which is established on forest road ditch., Significantly differences were found between sedimentation amounts of forest roads and undisturbed area. The data on forest roads to be used for cut and fill slope stabilization methods for the effective implementation of the more opportunities will help.

Keywords: Forest road, Sedimentation, Surface erosion

Remark: Full paper has not been submitted.

1 Acknowledgements

The present work was supported by the Research Fund of Istanbul University, Project Numbers UDP-14724 and T-6667. The authors would like to express special thanks to the Research Fund of Istanbul University. This work partly contains some results presented in the Master of Science Thesis of Merve Kartaloglu in Advisory of Dr.Murat Demir and Dr.Ender Makineci completed in 2011 at Istanbul University, Science Institute. Authors special thanks to Prof.Dr.Lee MacDonald from Colorado State

University, Warner College of Natural Resources; Umit Kilic and Prof.Dr.Kamil Sengonul from Istanbul University, Faculty of Forestry.

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