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the sampling sites.

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Environmental Assessment of Cadmium, Mercury and Lead in Suspended Particulate Matter from the Sogamoso River, Colombia.

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INTRODUCTION -ate and ransport **SPM** Bioaccumulation This study evaluated concentrations of Cd, Pb, and Hg in SPM and their relationship with partitioning mechanisms associated with organic carbon **Ecological Risk Assessment** and nitrogen content. **METHODS**

RESULTS & DISCUSSION Metal concentration and C in SPM vs Sediments Metal concentration in SPM 350 Observed Cd and Pb Cd 0.7 300 concentrations in SPM **-**ofoc 0.6 250 exceeded the quality 0.5 : (mg/kg 200 guideline of 0.6 and 35 0.4 150 mg/kg, respectively. 0.3 0.2 foc varied across the sampling sites indicating the influence of land use Metal concentration in sediments 0.30 100 in the basin, the river 0.25 profile and tributary Metals (mg/kg Sediments) 75 loads or dilution. 0.20 0.15 0.10 Low levels of mercury were observed across

S4

S5

Sampling sites

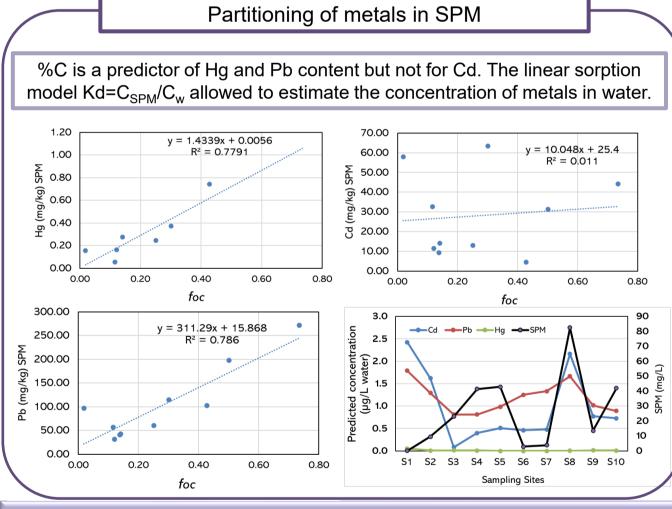
S6

S7

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S8

Filtration 0,45 µm Water and SPM Sampling Maodalena river N Bucaramanga 10 Points Colombia Sampling campaign during September 2019 (Gallego 2024) Determination of C/N and metals



Dry filters subsampling Hg C/N analyzer Fisons Instruments Total Mercury analysis by NA 1500 Series 2 following the thermal decomposition. Direct US EPA method 440.0 Mercury Analyzer RA-915LAB. US EPA 7473, 2007 Cd Pb

Acid Digestion

(ETHOS Milestone) GF AAS iCE 3000

series (SM 3030 K,

SM 3111 B)

CONCLUSION

Low metal concentrations were observed in the upper catchment, a rise in areas dominated by cattle ranching and fruit crops, followed by continuous decline due to the dilution by tributary steams. Positive correlations with organic carbon highlight that SPM with higher organic content serves as the main carrier of these contaminants. Findings suggest that trace metals in the Sogamoso River are predominantly bound to fine suspended fractions, favoring downstream transport to the Magdalena River and posing moderate to high ecotoxicological risks.

REFERENCES

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