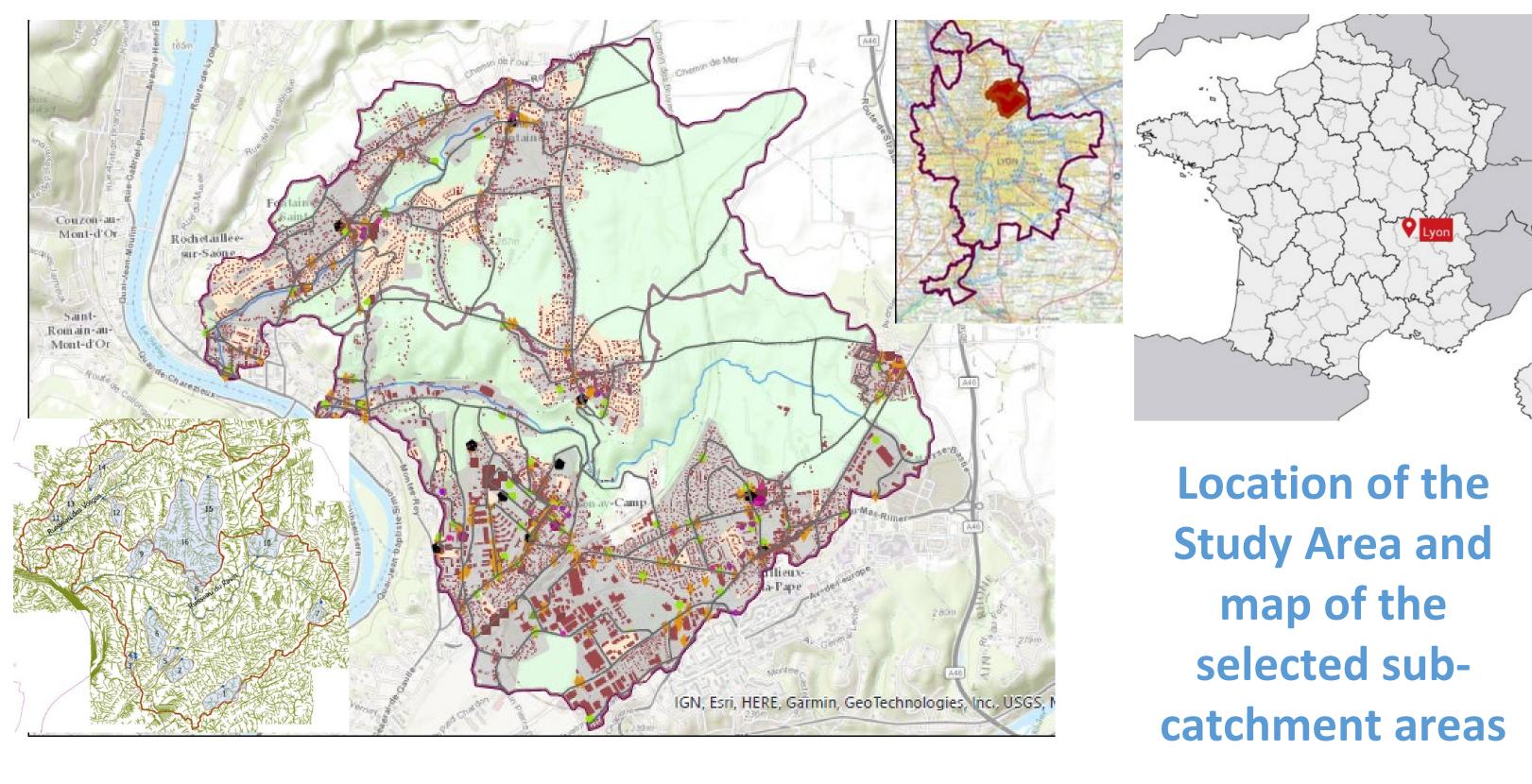
Building a strategy for preventing and managing macrowastes in urban hydraulic systems: A pilot study in Grand Lyon metropolitan area

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Aim Evolutions of regulations and social issues encourage local authorities to implement a strategy of waste prevention and management to limit their impact on the environment. The Lyon metropolitan area is considering measures to combat the macrowaste that reaches wastewater and river systems.

An original combined approach in 5 steps

is being carried out in the catchments of rivers Vosges and Ravin, 2 tributaries of the Saône located to the north of Lyon within various urban, residential and agricultural contexts, so as to transpose the results to the overall area of Lyon Metropolis.



1. Diagnosis Analysis of

the types, quantities, aggravating factors and management of macro-waste in the environments, by stakeholders interview and field collections

2.Bibliography

Review of solutions for macro-wastes prevention and/or capture

3.Systemic modeling for

evaluating the cumulative impacts of solutions

4.Experiments

in situ tests of solutions with follow-up protocol an monitoring indicators

Paper fragments

Cigarette butts

Building materials

Disposable wipes

Sweet and crisps packaging

Hard plastic fragments (2.5-50 cm)

Paper/cardboard food packaging

Tissues, paper towels, toilet paper

Fragments of plastic film (2.5-50 cm)

Other paper and cardboard objects

Graph: Histogram of main macro-waste items found

over the whole area (example from the April campaign,

based on OSPAR classification)

TOP 10 Surface Macro-waste (number)

5.Strategy

scenarios of deployment of the selected solutions

Classification of macro-waste with OSPAR classification

compared to a simplified classification by category of material and activity (restoration, works, etc.) in order to trace sources and assess contributions from diverse types of land cover.

Characterization of the macro-waste collected during 1 week per month for 4 months over 2 seasons (spring and autumn) supported by the Lyon Metropolis' services and providers.

Collective choice of preferred solutions

awareness-raising measures, organizational improvements and retention technical solutions. The solutions also aim to improve knowledge on macrowaste behavior from the surface to the hydrographic networks. The solutions to be implemented and the monitoring indicators designed to assess the effectiveness of the measures implemented were defined on the basis of a literature review and by questioning stakeholders knowledge during co-construction workshops.

Technical

Nets, camera-traps,

Distribution of collect points, frequency, survey, changes in Service Operations...

Awareness & communication one-touch collection operation, poster campaigns, nudges, recycling ambassadors...

sensors... Dynamic model of the system of production and

relationships between the supply zones (surface and underground) and the watercourses. In the end, the model should help to assess the global efficiency of various scenarios of implementation of the 3 types of selected solutions, for normal conditions or for exceptional rainfall conditions.

A participatory workshop with the main players in the system enabled the emergence of an agreed top 5 of macro-waste that

Organization

Centralised stormwater Direct Surface Input













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transfers of macro-wastes by water which at its present conceptual stage, highlights the main

will be used to run the model.

