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## Well field of Crépieux-Charmy: Research Platform and SEEGMA

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# Well field of Crépieux-Charmy: Research Platform and SEEGMA

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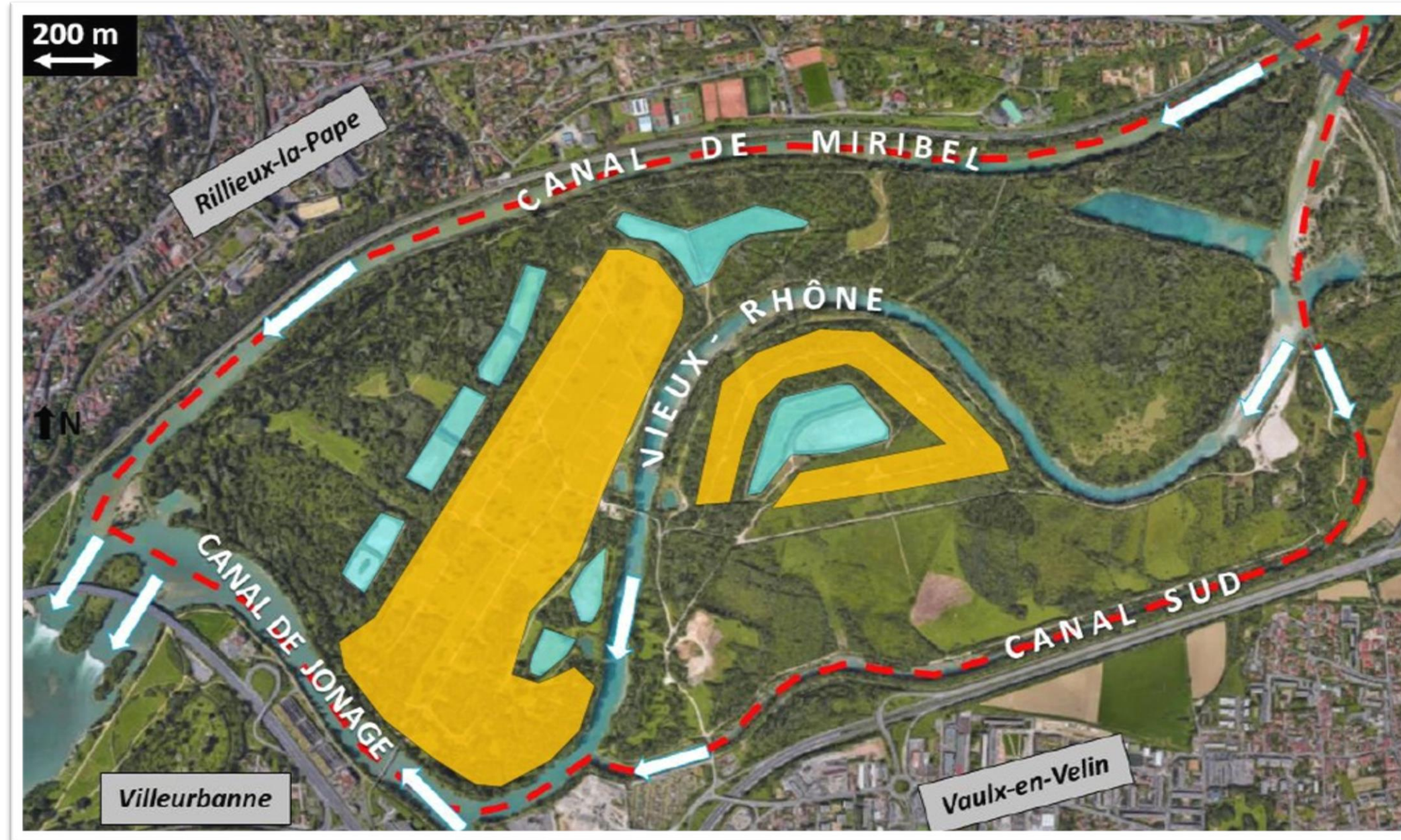
## LYON METROPOLE



- ◆ Area :538 km<sup>2</sup>
- ◆ Municipalities :59
- ◆ Population: 1.3 million
- ◆ Drinking water: 240 000 m<sup>3</sup>/day

91% of the water supplied come from the **well field of Crépieux-Charmy**

## WELL FIELD OF CRÉPIEUX-CHARMY (CONSTRUCTED IN 1954)



- ◆ 375 hectares
- ◆ 111 wells
- ◆ 12 Infiltration basins
- ◆ Capacity : 600 000 m<sup>3</sup>/day
- ◆ Water quality: drinking
- ◆ Added treatment: chlorination when needed

### Underground water recharge (Rhône) :

- Natural recharge based on river-groundwater exchanges
- Artificial recharge with infiltration basins

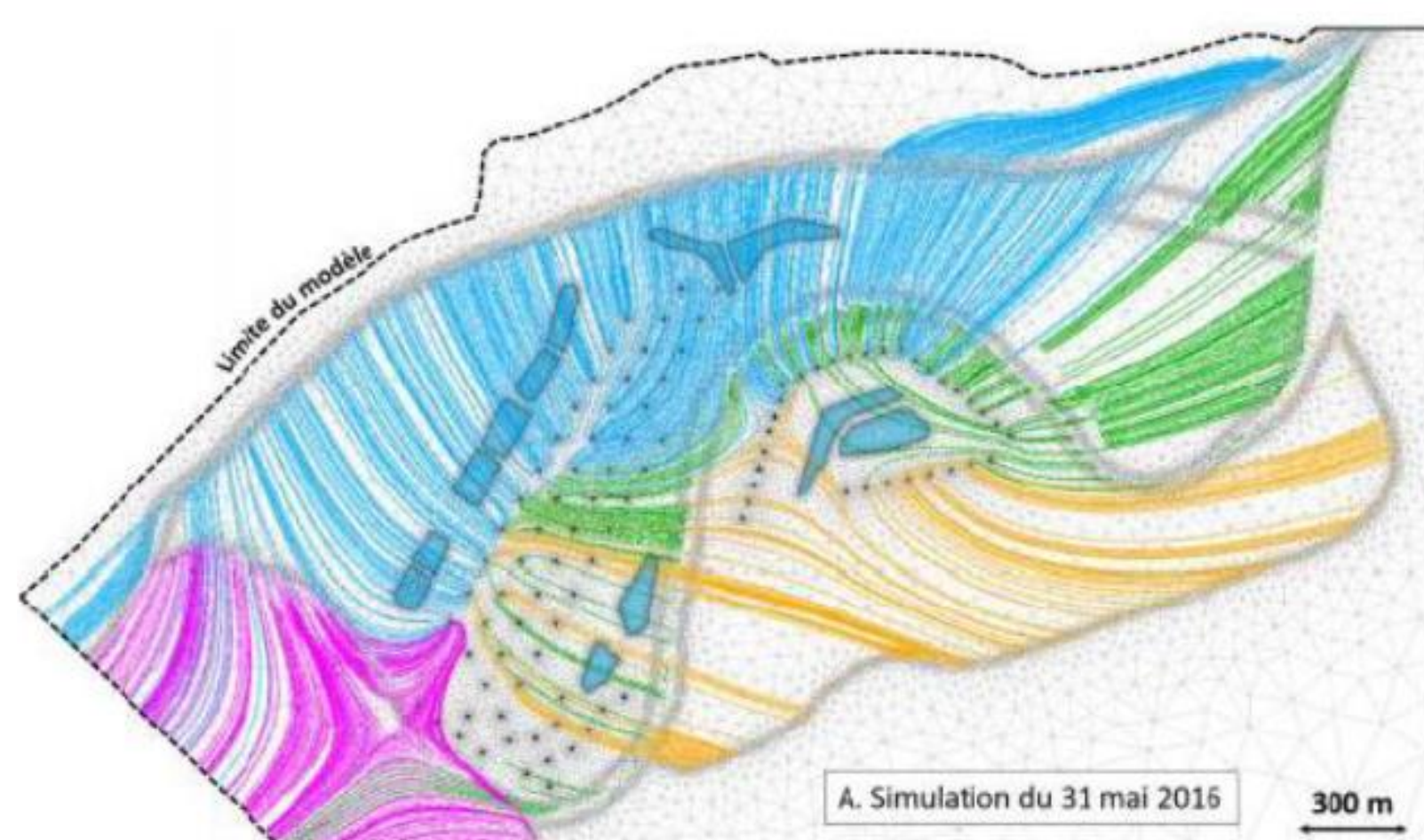
## RESEARCH PLATFORM OF CRÉPIEUX CHARMY (CREATED IN 2010)

**Objectives:** to ensure the quantitative and qualitative sustainability of the water resources in Crépieux-Charmy

**Public-private consortium:** Lyon metropole, academic and institutional partners, private consultants

**Multidisciplinary approaches** to understand the hydro & biogeochemical functioning of Crépieux-Charmy well field

### Hydrogeology & Geophysics



#### 3D Modelling of water pathways

Complex interactions between river, groundwater and infiltration basins

### Ecohydrology



Algal biofilm

Grazing by gastropods

#### Restoration of the hydrological performances of infiltration basins clogged by algal biofilms

Ecological engineering techniques based on trophic interactions "herbivorous gastropods - biofilms"

### Environmental chemistry & microbiology



Piezometers

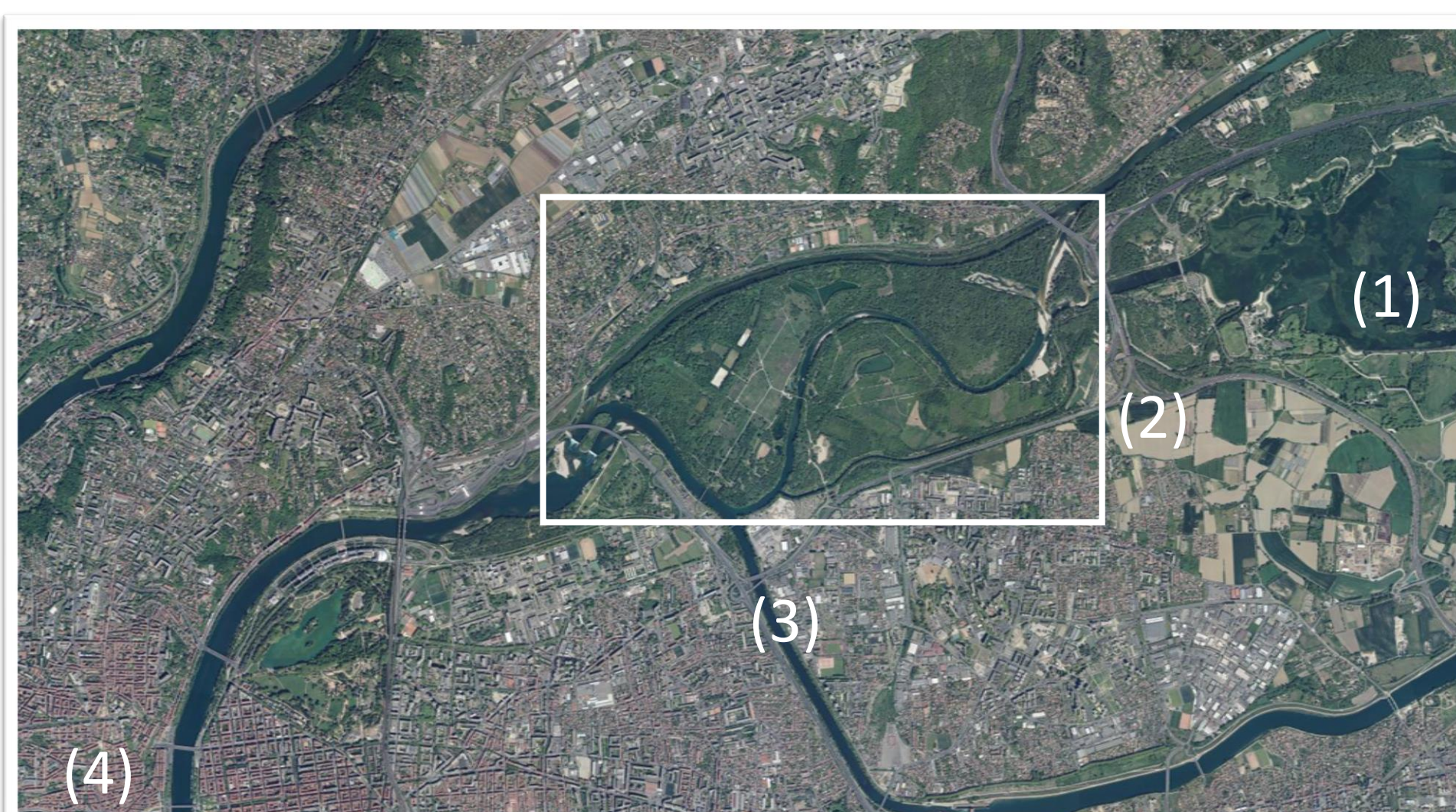
Chemcatchers

Germcatchers

#### Interfaces between surface water and ground water: their influence on water fluxes and quality

Emerging pollutants, nutrients, bacterial communities

## WELL FIELD OF CRÉPIEUX-CHARMY: A VITAL RESOURCE IN ANTHROPIZED ENVIRONMENTS



(1) Recreation areas; (2) A42 Motorway; (3) Ring road of Lyon ; (4) Lyon city center <4 km.

- ◆ 2019: integration in the Rhone Valley Human-Environment Observatory
- ◆ 2022: label SEEGMA - Global Ecology Study Site of Anthropized Environments

NEWS INTERDISCIPLINARITIES



MULTI-SCALE APPROACHES

- ◆ Influence of the Rhône river evolution and management on water resources
- ◆ Impacts of global changes on water resources
- ◆ Social perception of crucial but invisible water resources