

Testing the use of crowdsourced data for supporting post-event understanding and simulation of flooding impacts in ungauged basins

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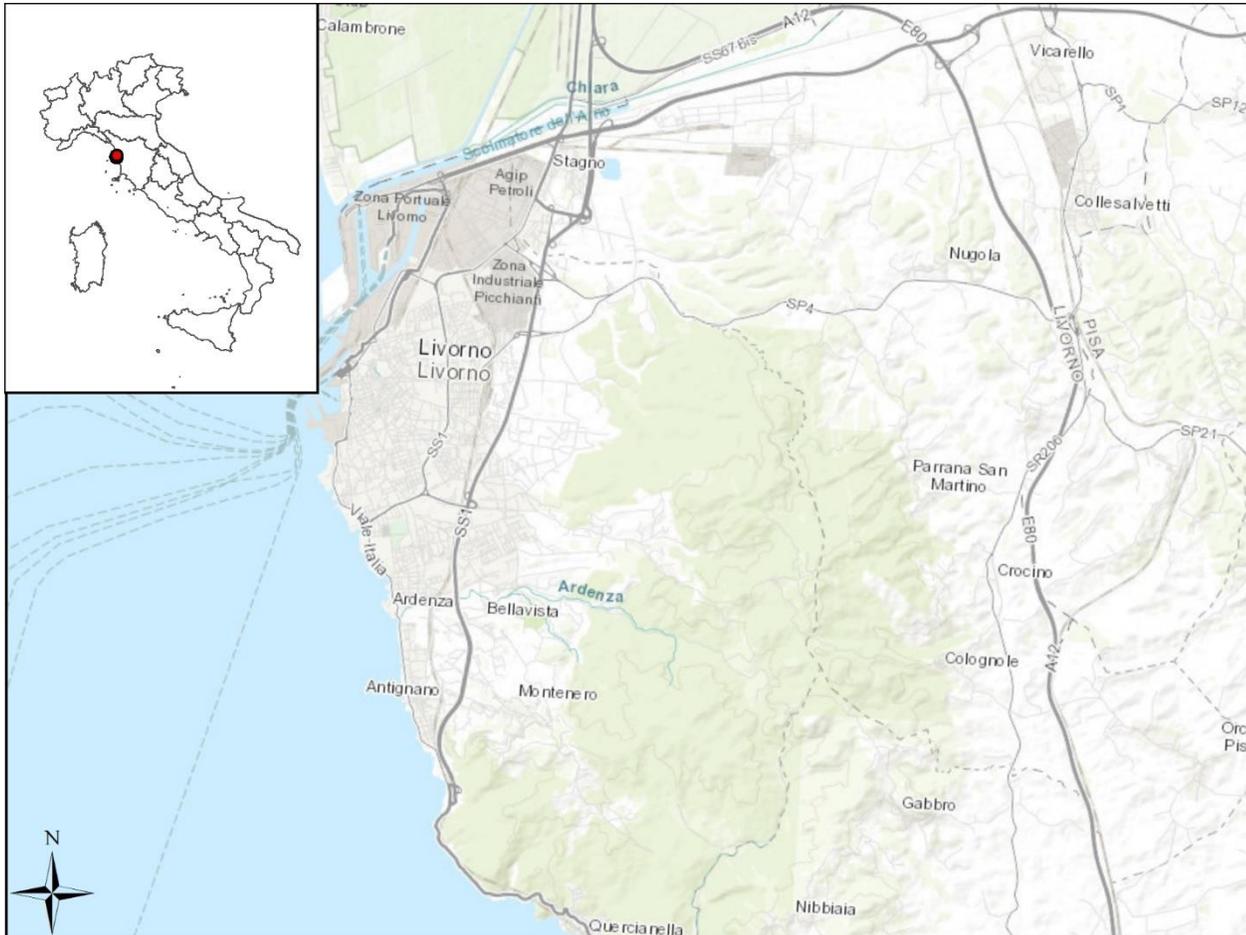
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Research aim

- Using multisource data (e.g. crowdsourcing, civil protection data, hydro-geomorphic models) for post-event simulation of flooding impacts in urban areas (ungauged small basins)
- Improving post event analysis by merging different dataset

Case study



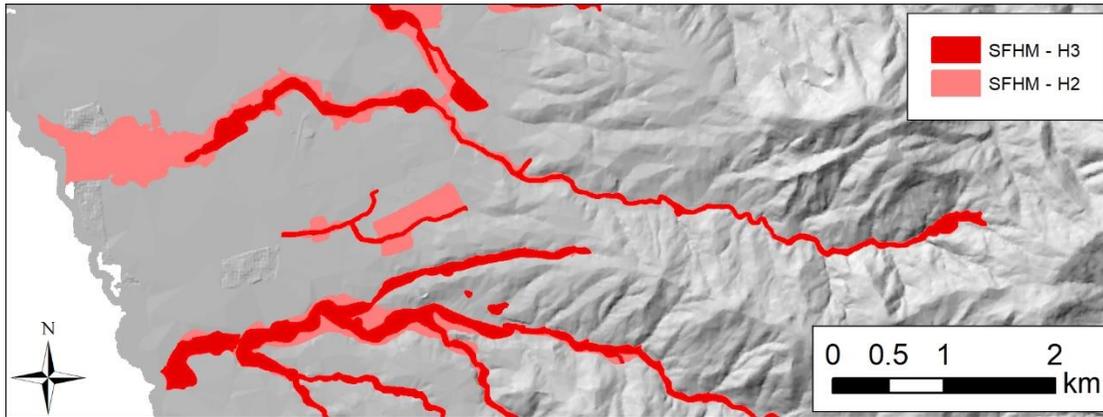
Livorno, Italy September 2017 flood



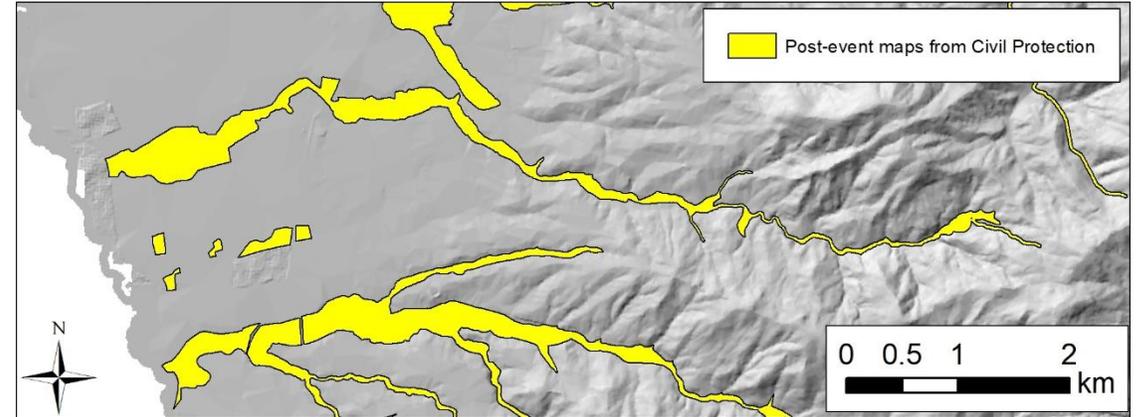
Source: <https://www.secondopianonews.it/news/cronaca/2017/09/10/maltempo-tre-morti-in-toscana-livorno-allagata-allerta-rossa-in-liguria.html>

Available data and models

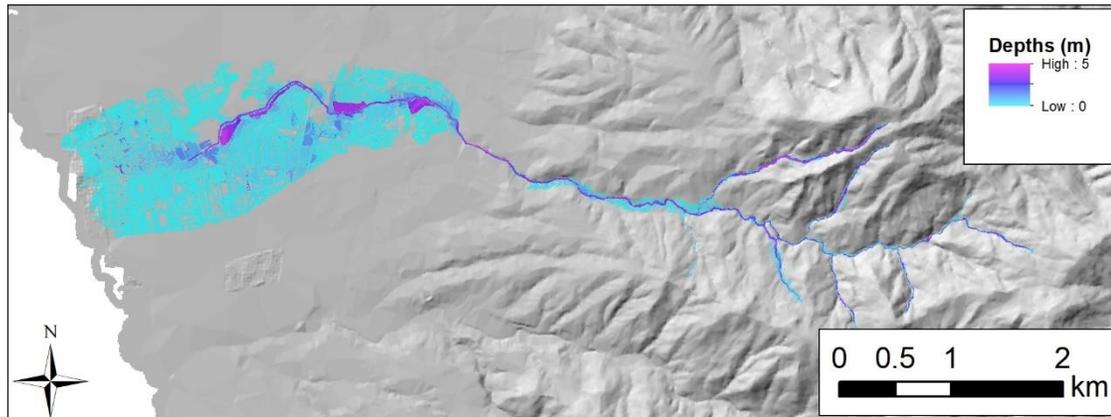
Standard flood hazard maps



Digitized maps from the Civil Protection Agency



High resolution hydraulic model

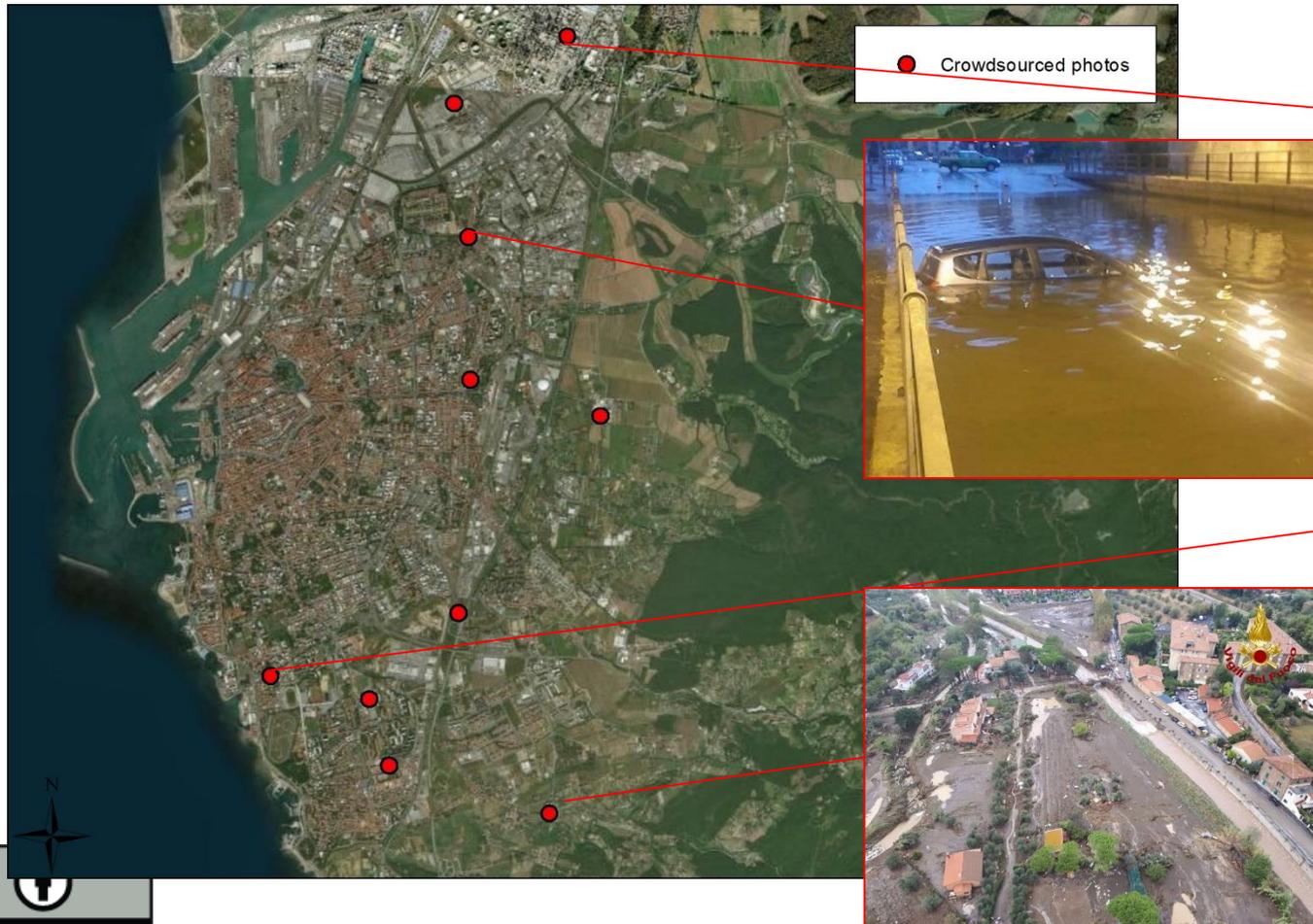


Hydro-geomorphic floodplain model

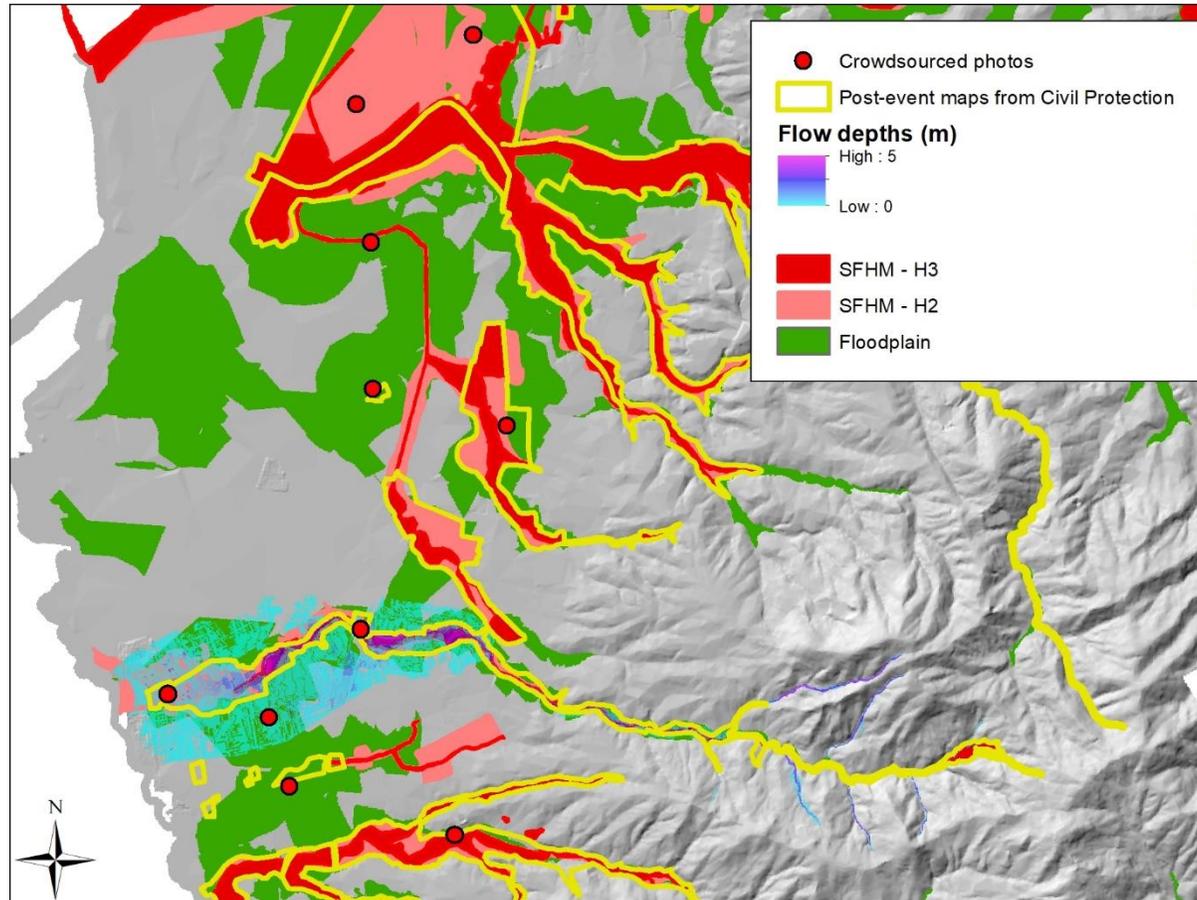


Available data and models

Crowdsourced data



Preliminary analysis



- The location of some crowdsourced photos are outside the areas delineated by the Civil Protection and the standard flood hazard maps with high magnitude return periods
- The hydrogeomorphic model provides complementary information, but underestimates the flooded areas in the flat coastal zones
- The flood maps generated by the high resolution hydraulic model (in one stream of the domain) is consistent with the flood extension retrieved by the crowdsourced photos

Work in progress...

Questions?

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