

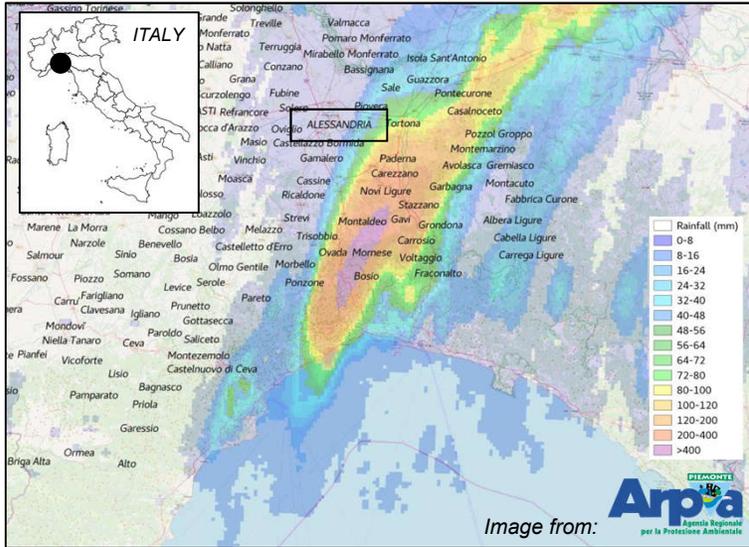
Ground effects triggered by the 19-21 October 2019 extreme rainfall in the middle-lower Lemme River catchment (NW Italy)

Natural Hazards 3.4
Thursday, 7 May

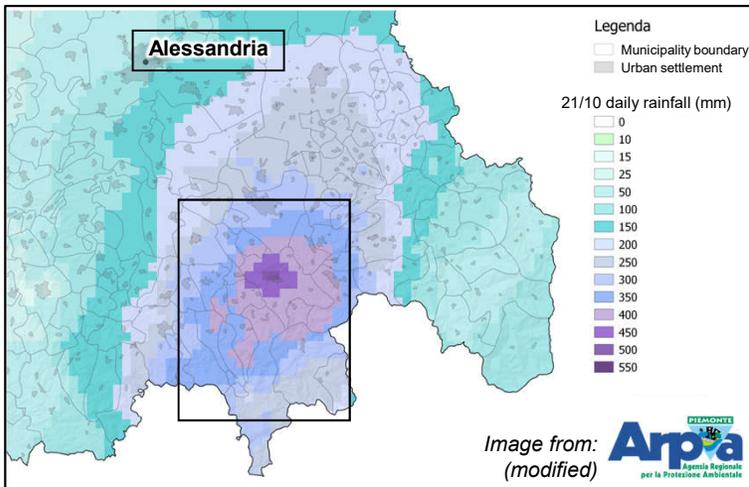
Display D1834
Abstract EGU2020-9833



The rainfall event



12 h cumulate rainfall (radar estimation); 21/10/19, 13:30 - 22/10/19, 01:30 UTC



21/10/19 cumulate rainfall in the Alessandria Province

Lemme River Catchment (NW Italy): 180 km² // middle-lower part: mostly cultivated; upper part: generally forested.

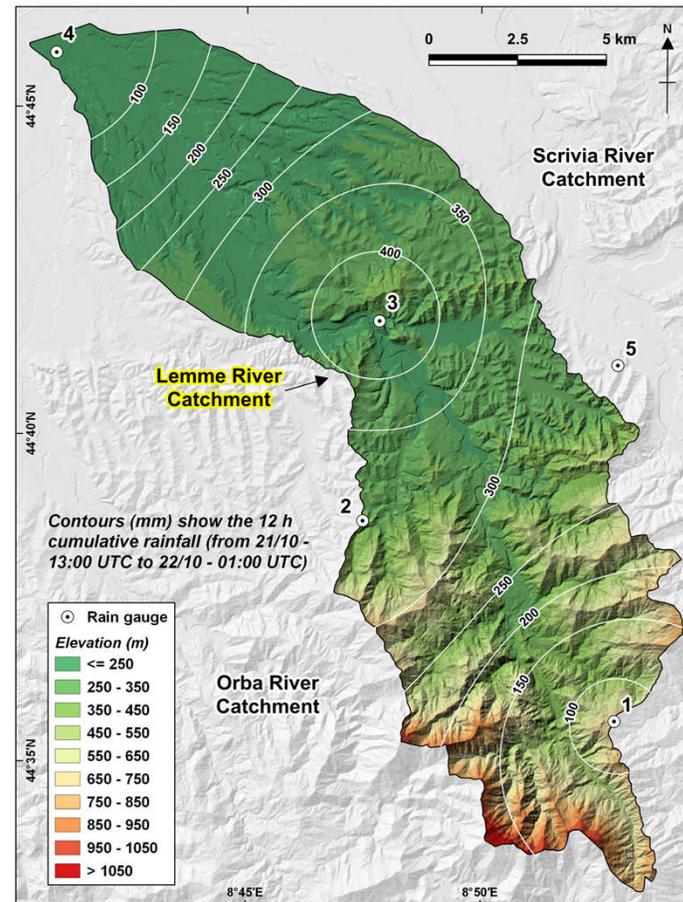
Research objective: Geomorphic response to extreme rainfall assessment

- Rainfall values analysis - Ground effects characterization

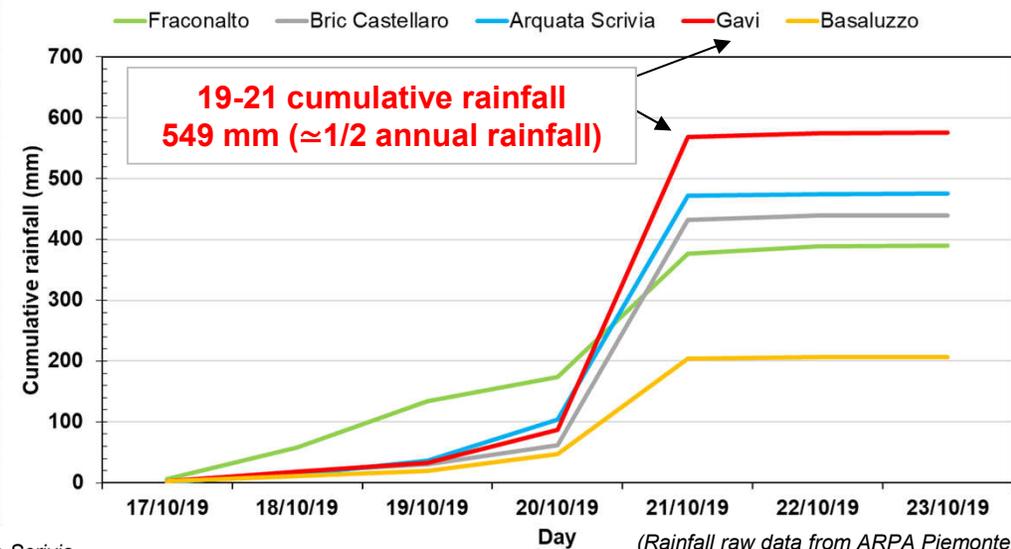
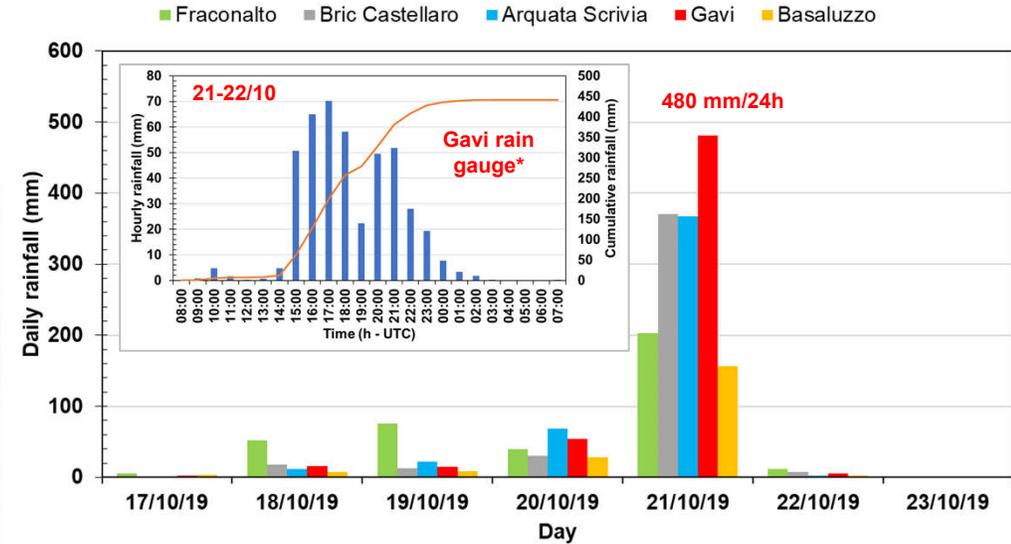
Extreme rainfall event: 19-21/10/2019

Maximum rainfall intensity registered in the 21/10 afternoon and evening

76.4 mm / 1 h
205.8 mm / 3 h
318.4 mm / 6 h
432.6 mm / 12 h (*)

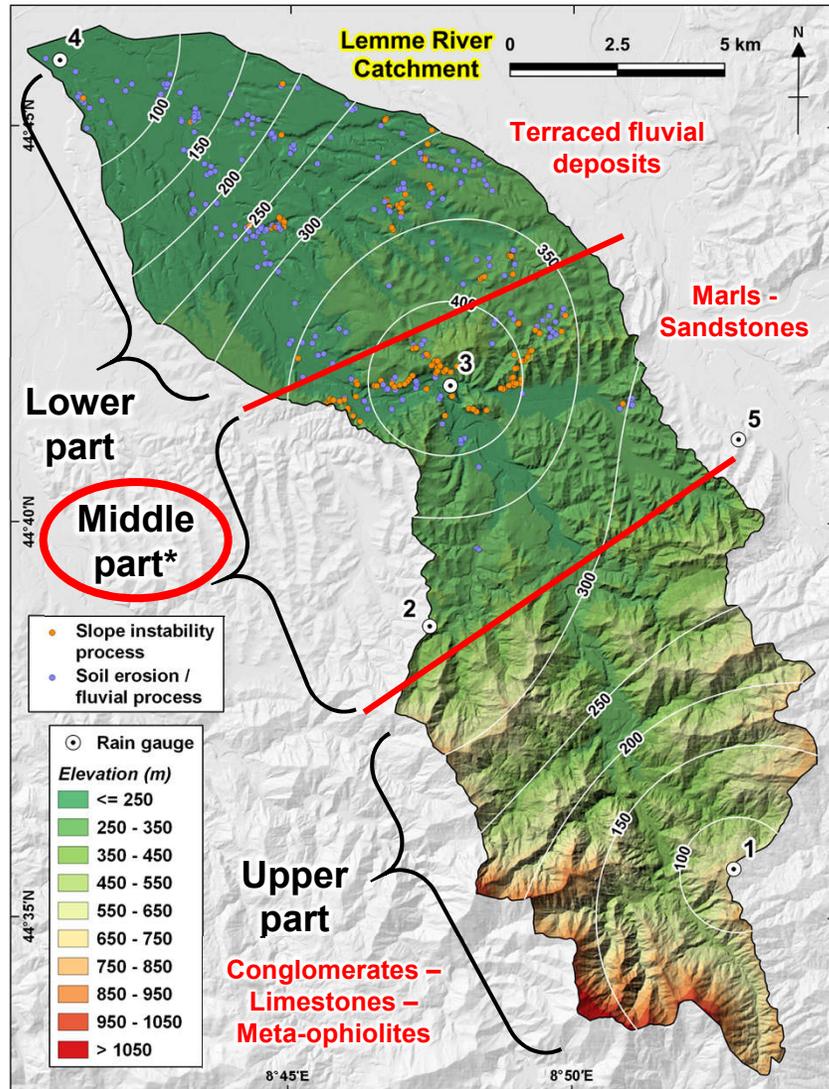


1: Fraconalto; 2: Bric Castellaro; 3: Gavi Ligure; 4: Basaluzzo; 5: Arquata Scrivia



Ground effects

SLOPES



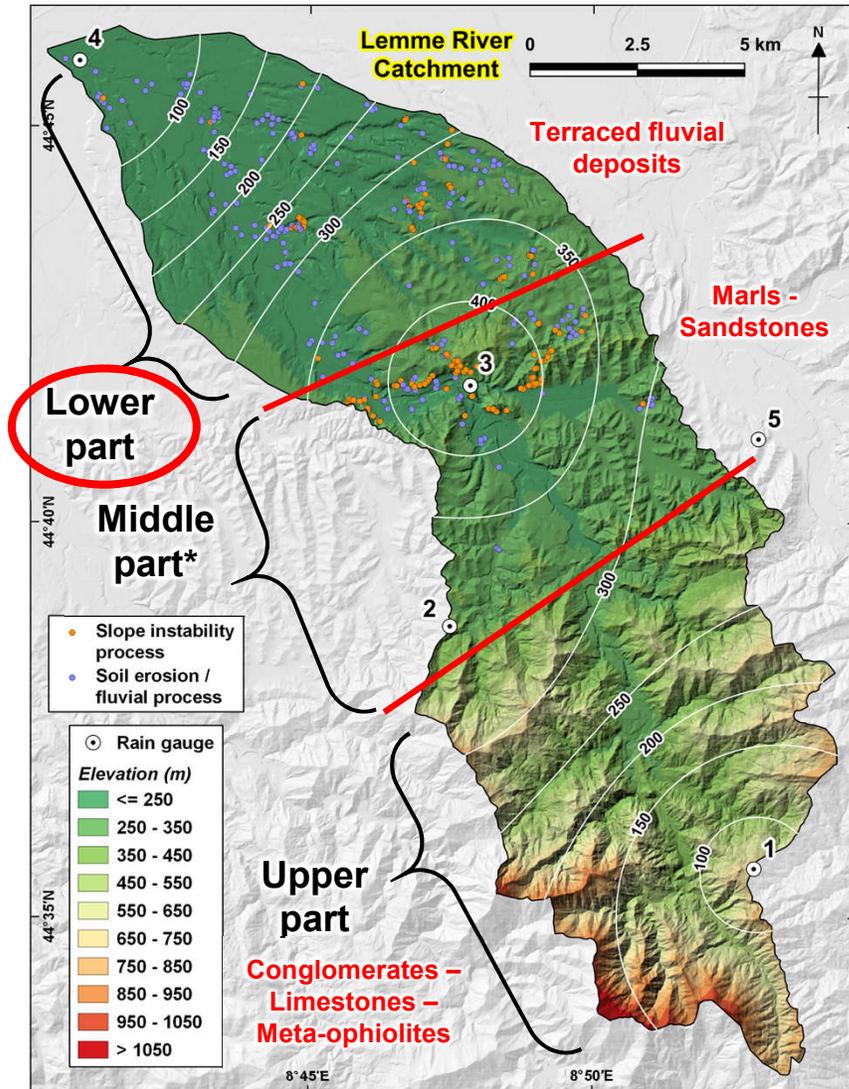
Geomorphic response analysis based on: 1) a wide campaign of field surveys; 2) aerial photographs interpretation (only along the main valley floor)



*Partial inventory of ground effects due to an unfortunate serie of extreme hydrological events

Ground effects

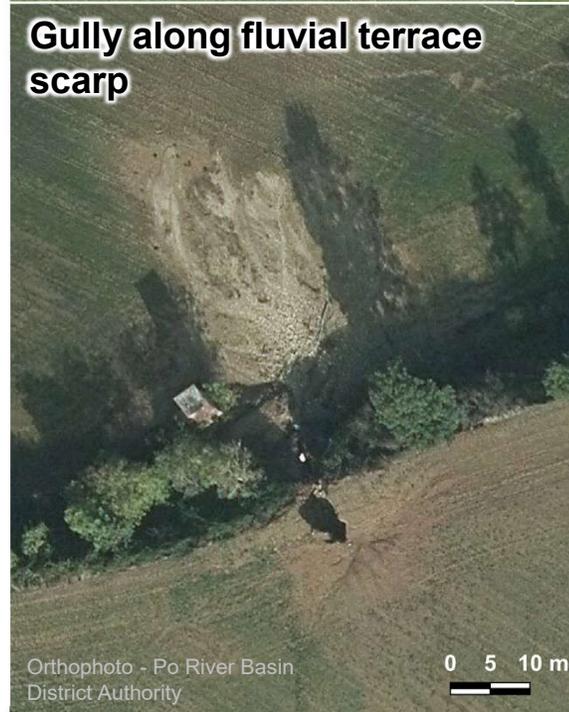
FLUVIAL TERRACES AND SCARPS



Gully along fluvial terrace scarp



Rills in agricultural areas



Orthophoto - Po River Basin District Authority

0 5 10 m

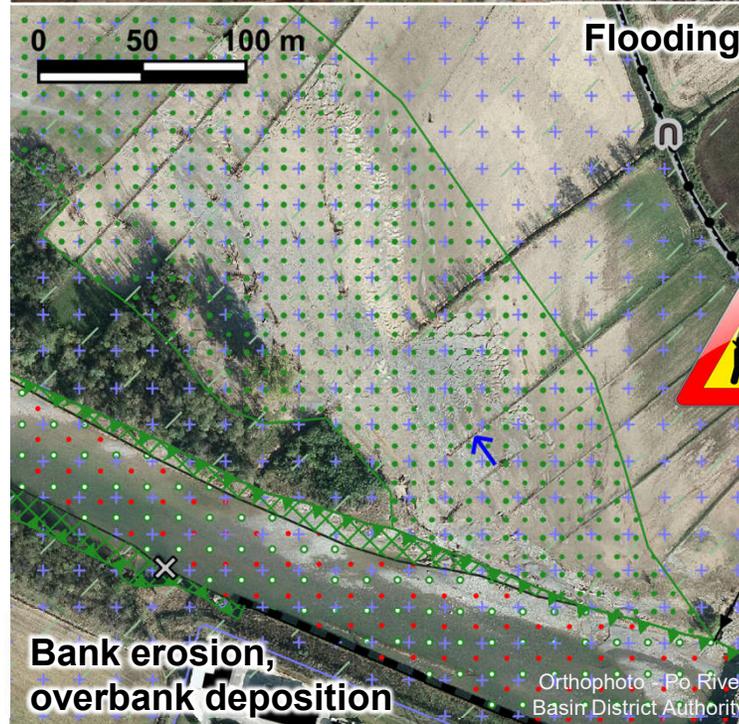
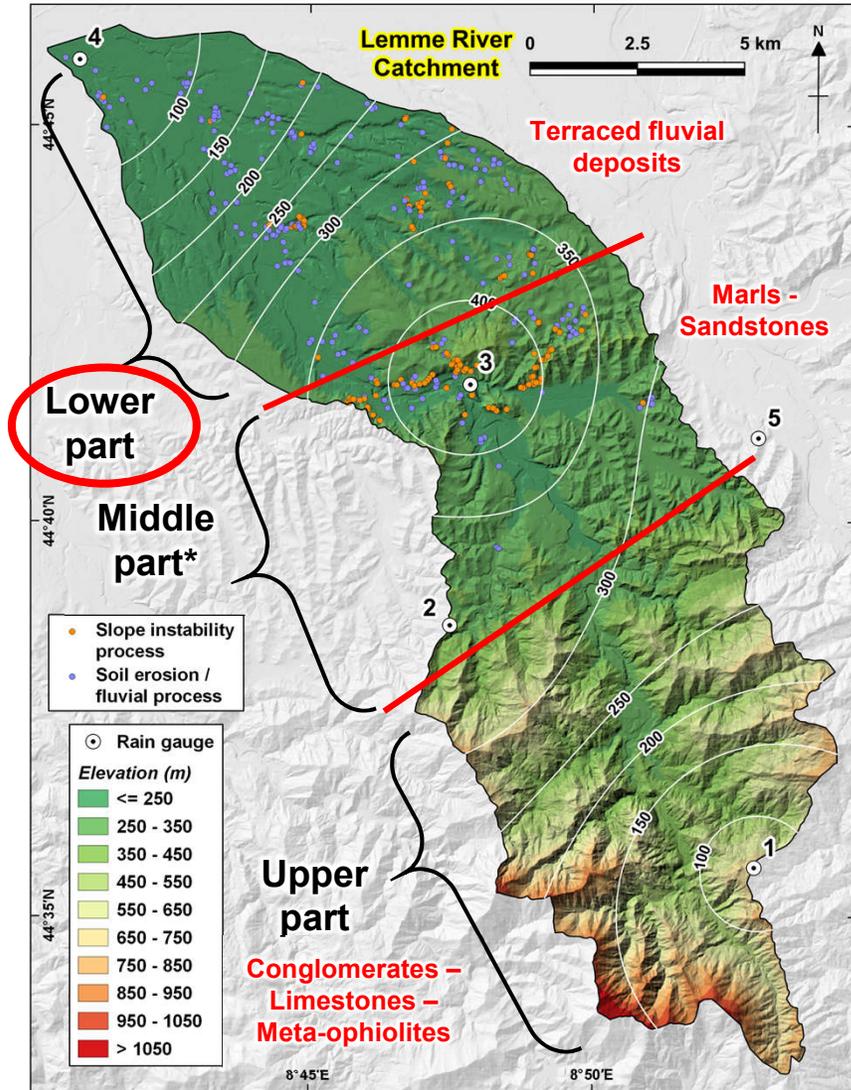


Shallow landslides along fluvial terrace scarps

**Partial inventory of ground effects due to an unfortunate serie of extreme hydrological events*

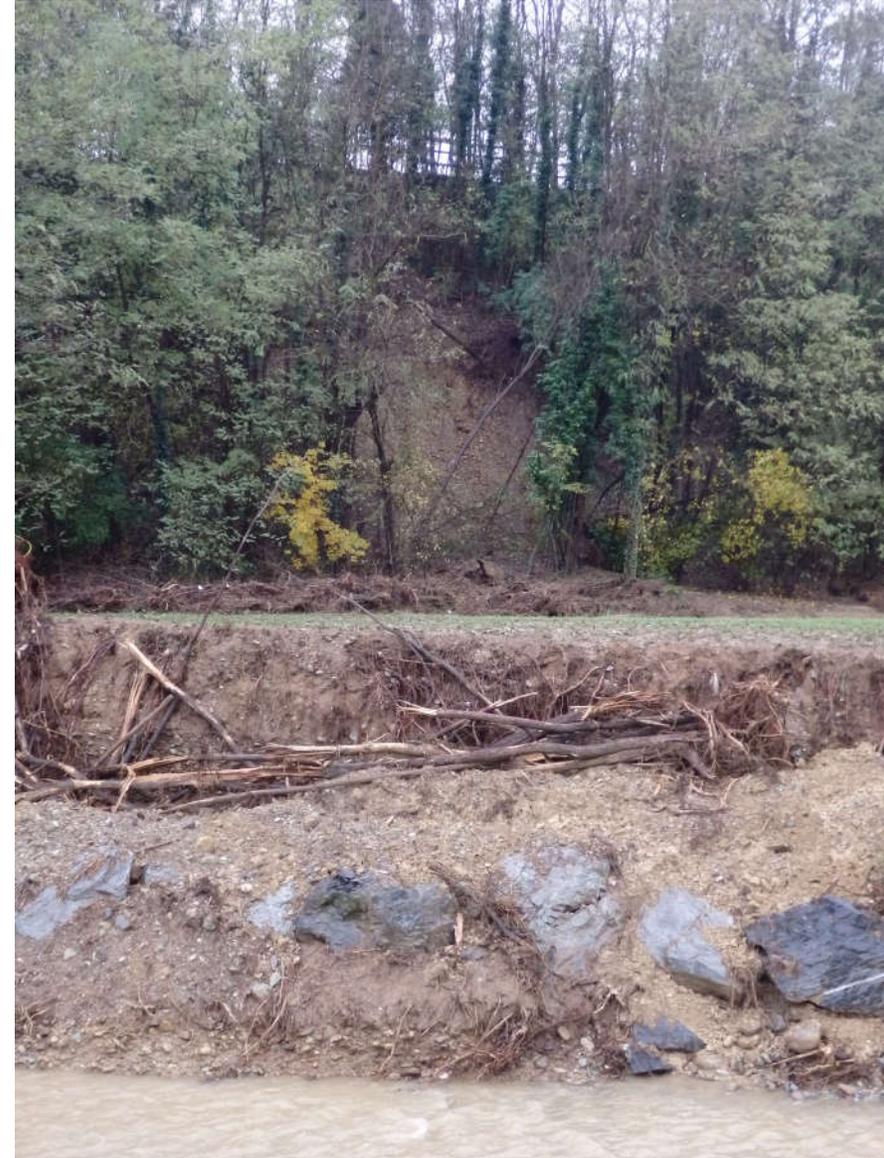
Ground effects

FLUVIAL STEMS AND VALLEY FLOOR



Outcomes: 1) further case of intense geo-hydrological event; 2) data for the implementation of further researches; 3) fundamental information for land management and planning.

**Partial inventory of ground effects due to an unfortunate serie of extreme hydrological events*



Photos by Andrea Mandarino & Piero Mandarino; lower-right photo in the cover slide by Manuela Barisone.

Thank you for your on-line attention!