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PRIGEO Flood hazard map: new insights for risk assessment tools

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The Spanish Geological Survey is currently developing a National Mapping Program towards a better understanding and management of geological hazards (PRIGEO). Regarding river or torrential floods, a new approach in mapping the phenomena is being proposed. On the one hand, classical flood-prone areas will be shown considering the return periods of 50, 100 and 500 years. On the other hand, a three color intensity scale will be used to consider the ratio of the sediment load being transported by the flow. Relevant parameters to hazard assessment will also be included, such as water height - velocity ratio, the time of concentration before strategic places (villages, power plants), obstacles to flow or possible current-blocking elements (such as landslides or bridges), geomorphological features relevant to floods (erodable or sedimentary-prone areas, pipings), historical data (containing information regarding number of events registered in certain areas), in-situ precipitation floodable areas (endorreism), and so on. This map, will end up being an organized summary of the knowledge gained about the overall flooding process and will show up with both an easy and a difficult side. Interpreting the map will be easily performed by managers or the public in general with no other knowledge than reading a topographic map and differentiating three color schemes based upon the three major probabilities considered. On the other side, hydrologic and hydraulic engineers will find a summary of the most important features regarding floods and will therefore use the maps as the reference point towards more detailed studies.