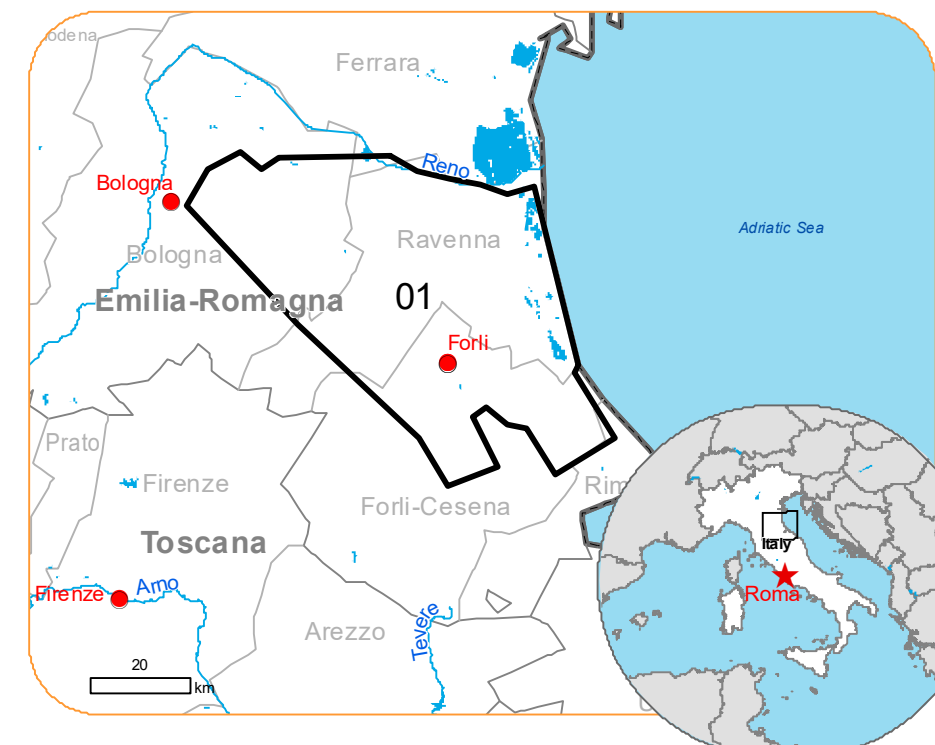




Situation as of 21/05/2023 16:50 UTC
Delineation MONIT03 - Overview map 01



Previous flooded area
8,773.6 ha
Flooded area
4,476.9 ha

Potentially affected population
~ 750

Potentially Affected Built-up and Transportations

Built-Up
28.3 ha

Road
43.1 km

Airport
0.5 km
0.3 ha

All statistics, excluding the "Previous flooded area", refer to the Area of Interest (AOI) that has been analyzed based on satellite imagery coverage, and they do not encompass the entire extent of the AOI.

Crisis Information	Facilities
Flooded Area	Long-distance pipelines or lines
Previous Flooded Area (20/05/2023 05:19 UTC)	Local pipelines or lines
Area of Interest	Water or Aquatic infrastructure
Detail map	Dam
Image Footprint	Mining or extraction site
Not Analysed	Water Well
Administrative boundaries	Power plant
Province	Sport and recreation constructions
Municipality	Dump Site
Built-Up Area	Water or Aquatic infrastructure
Residential	Dam
Non residential	Highway
School, university and research buildings	Main road
Hospital or institutional care buildings	Railway
Military	Airfield
Hydrography	Helipad
Coastline	Water or Aquatic infrastructure
River	All data displayed on the map(s), as well as the Land Use -Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the activation webpage.
Stream	
Lake	
Land Subject to Inundation	
Reservoir	
River	

Event
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volturno, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

Data sources and analysis: Pre-event image: Sentinel-2A/B (2022) (acquired on 24/11/2022 at 10:13 UTC, resolution 10 m)
Post-event image: PAZ satellite image © Hisdesat Servicios Estratégicos S.A., 2022 (acquired on 20/05/2023 at 05:19 UTC, resolution 8.0 m)
Post-event image: COSMO-SkyMed © ASI (2023), distributed by e-GEOS S.p.A. (acquired on 21/05/2023 at 16:50 UTC, resolution 5.0 m).
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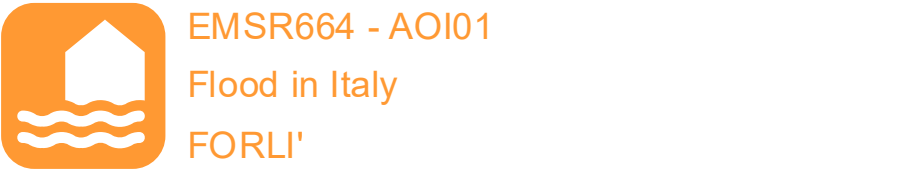
Base vector layers: OpenStreetMap © OpenStreetMap contributors (2023), Wikimapia.org, GeoNames 2015. Corine Land Cover (CLC) 2018, EuroBoundaryMap 2017 © EuroGeographics, refined by the producer.
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Population data: GHS Population Grid © European Commission, 2022
https://ghsl.jrc.ec.europa.eu/ghs_pop2022.php
Digital Elevation Model: SRTM (90 m) or (30 m) (NASA/USGS).

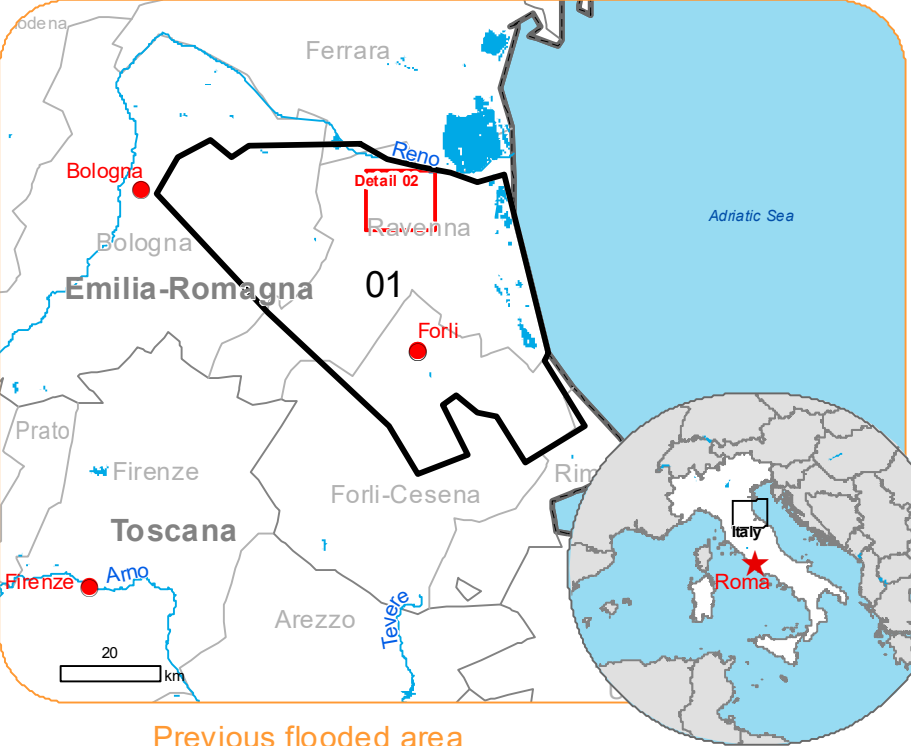
The thematic layer has been derived from post-event satellite image using a semi-automatic approach. Please be aware that the thematic accuracy might be lower in urban areas due to inherent limitations of the SAR analysis technique).
The scale of analysis is 1:25000. The estimated geometric accuracy (RMSE) is 10 m or better, from native positional accuracy of the background satellite image. The minimum mapping unit (MMU) is 625 sq. m.

Map produced by ITHACA released by e-GEOS on the 22/05/2023.

Details on this activation and service conditions available through the QR code or at the link:
<https://emergency.copernicus.eu/EMSR664>



Situation as of 21/05/2023 16:50 UTC
Delineation MONIT03 - Detail map 02



Previous flooded area
2,014.5 ha
23.0% of total in AOI
Flooded area
2,131.7 ha
47.6% of total in AOI

Potentially affected population
~ 150
20% of total affected

Potentially Affected Built-up and Transportations

Built-Up	Road	Airport
0.6 ha	26.0 km	0.3 km
2.1% of total affected	60% of total affected	60% of total affected

All statistics, excluding the "Previous flooded area", refer to the Area of Interest (AOI) that has been analyzed based on satellite imagery coverage, and they do not encompass the entire extent of the AOI.

Crisis Information	Facilities
<div>Flooded</div>	<div>Long-distance pipelines or lines</div>
<div>Previous Flooded Area (20/05/2023 05:19 UTC)</div>	<div>Power plant</div>
<div>Area of Interest</div>	<div>Sport and recreation constructions</div>
<div>Province</div>	<div>Water or Aquatic</div>
<div>Municipality</div>	<div>Transportation</div>
<div>Built-Up Area</div>	<div>Highway</div>
<div>Residential</div>	<div>Main road</div>
<div>Non residential</div>	<div>Railway</div>
<div>School, university and research buildings</div>	
<div>Hydrography</div>	
<div>River</div>	
<div>Stream</div>	
<div>Lake</div>	
<div>River</div>	

Event:
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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Inset maps: JRC 2013, GISCO 2010 © EuroGeographics, Natural Earth 2012, CCM River DB © EUJRC2007, GeoNames 2015.

Population data: GHS Population Grid © European Commission, 2022
https://ghsl.jrc.ec.europa.eu/ghs_pop2022.php
Digital Elevation Model: SRTM (90 m) or (30 m) (NASA/USGS).

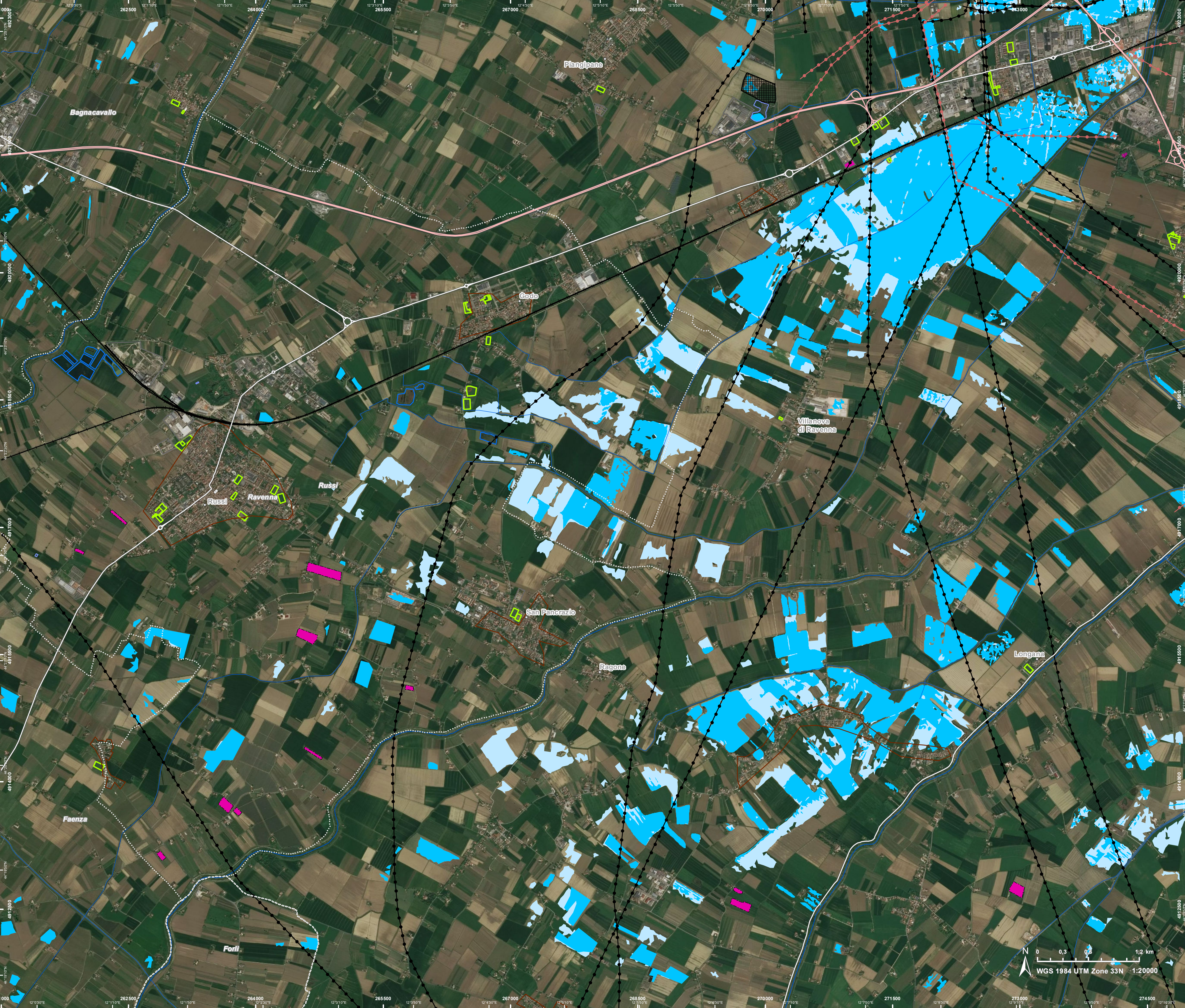
The thematic layer has been derived from post-event satellite image using a semi-automatic approach. Please be aware that the thematic accuracy might be lower in urban areas due to inherent limitations of the SAR analysis technique).

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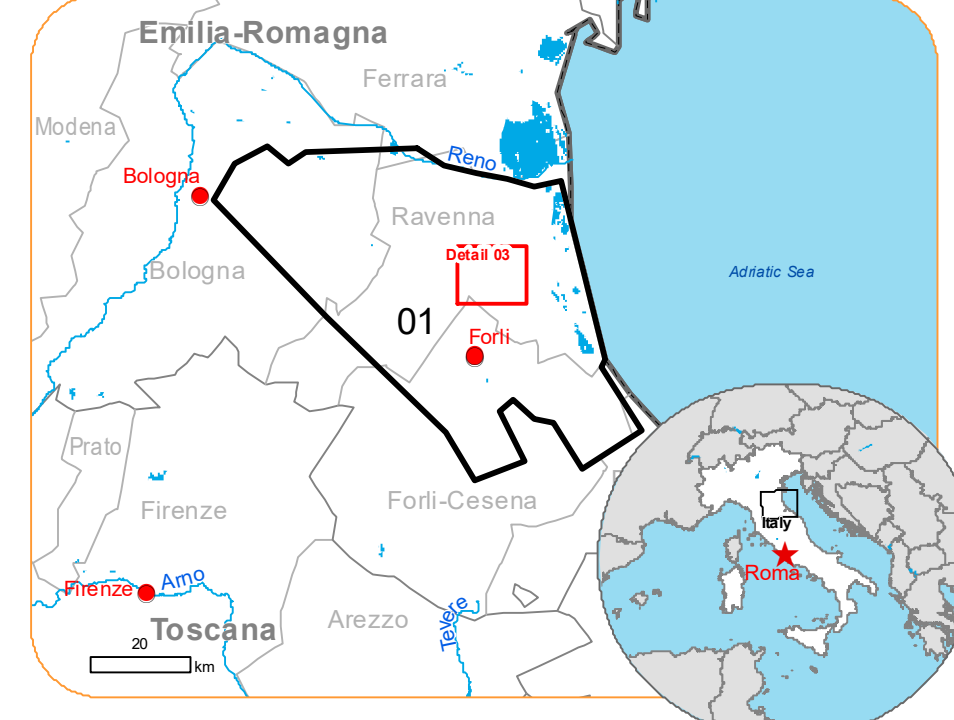
Details on this activation and service conditions available through the QR code or at the link:
<https://emergency.copernicus.eu/EMS/R664>





 **EMSR664 - AOI01**
Flood in Italy
FORLÌ'


Situation as of 21/05/2023 16:50 UTC
Delineation MONIT03 - Detail map 03




 **Previous flooded area**
1,207.3 ha
13.8% of total in AOI
Flooded area
957.1 ha
21.4% of total in AOI


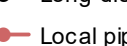
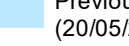



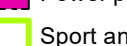
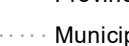
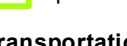
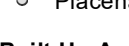

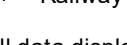

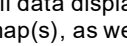



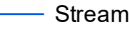


 **Potentially affected population**
~ 300
40% of total affected

Potentially Affected Built-up and Transportations

 **Built-Up**
5.7 ha
20.1% of total affected

 **Road**
6.4 km
14.9 % of total affected

All statistics, excluding the "Previous flooded area", refer to the Area of Interest (AOI) that has been analyzed based on satellite imagery coverage, and they do not encompass the entire extent of the AOI.

Crisis Information	Facilities
 Flooded Area	 Long-distance pipelines or lines
 Previous Flooded Area (20/05/2023 05:19 UTC)	 Local pipelines or lines
Administrative boundaries	 Mining or extraction site
 Province	 Power plant
 Municipality	 Sport and recreation constructions
Placenames	Transportation
 Placename	 Highway
Built-Up Area	 Main road
 Residential	 Railway
 Non residential	
 Hospital or institutional care buildings	
Hydrography	
 River	
 Stream	
 Lake	
 Reservoir	

Event:
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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EMSR664 AOI: 01 Forli Delineation

Consequences within the AOI				
		Unit of measurement	Affected	Total in AOI
Previous flooded area		ha		8,773.6
Flooded area		ha		4,476.9
Estimated population	Number of inhabitants		~ 750	~ 950,000
Built-up	Residential Buildings	ha	6.2	12,351.6
	Office buildings	ha	0.0	279.1
	Wholesale and retail trade buildings	ha	0.0	75.2
	Industrial buildings	ha	22.1	5,447.6
	School, university and research buildings	ha	0.0	163.3
	Hospital or institutional care buildings	ha	0.0	82.5
	Other non-residential buildings	ha	0.0	139.6
	Military	ha	0.0	356.2
	Cemetery	ha	0.0	202.2
Transportation	Airfield runways	ha	0.3	525.5
	Navigable canals	ha	0.0	7.8
	Helipad	ha	0.0	2.2
	Airfield runways	km	0.5	16.9
	Navigable canals	km	0.0	8.1
	Highways	km	0.2	484.8
	Primary Road	km	0.5	533.7
	Secondary Road	km	0.4	700.6
	Local Road	km	11.1	5,292.0
	Cart Track	km	29.5	6,576.7
	Railway Yard	km	0.0	1.3
	Long-distance railways	km	1.1	700.3
Facilities	Settling Basin	ha	0.0	74.2
	Dams	ha	0.0	0.0
	Constructions for mining or extraction	ha	1.1	394.1
	Power plant constructions	ha	0.1	314.3
	Sport and recreation constructions	ha	5.3	3,608.5
	Other civil engineering works not elsewhere classified	ha	0.0	213.3
	Long-distance pipelines, communication and electricity lines	km	28.1	1,386.4
	Local pipelines and cables	km	5.1	135.2
	Breakwater	km	0.0	2.2
	Dams	km	0.0	0.1
Land use	Arable land	ha	3,851.6	170,541.0
	Heterogeneous agricultural areas	ha	578.8	106,013.3
	Other	ha	43.5	27,297.3
	Permanent crops	ha	2.0	3,251.1
	Forests	ha	1.1	5,798.3
	Pastures	ha	0.0	221.2
	Shrub and/or herbaceous vegetation association	ha	0.0	2,783.2
	Open spaces with little or no vegetation	ha	0.0	636.5
	Inland wetlands	ha	0.0	2,054.9
	Coastal wetlands	ha	0.0	2,400.9

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<https://emergency.copernicus.eu/mapping/ems/online-manual-rapid-mapping-products>

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