

INFOMARE-ER



arpae
emilia-romagna



User Guide



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1. Introduction

Infomare-ER application is a tool by which the tourist of the Adriatic coast of Emilia-Romagna (“Riviera”) can receive on mobile phones meteorological and marine forecasts and environmental information for 108 maritime tourist destinations. The parameters displayed by the application are: air and sea temperature, humidity, precipitation, cloud cover, wind speed and direction, wave height and direction, marine currents, UV radiation, bathing water, air quality and allergenic pollen. The data displayed in the application derive from the forecast models and observations of the Regional Agency for Prevention, Environment and Energy of Emilia-Romagna (Arpae). The development of this application was co-financed by the Emilia-Romagna Regional Operational Program - European Regional Development Fund (POR-FESR).

1.1 Through the app, the user can:

- View weather and marine forecasts, up to 48 hours, for the desired seaside location;
- Check the environmental conditions for each seaside location;
- View environmental information in summary form or as graphs;
- View the forecasts and observations for the 108 seaside destinations.

1.2 Device features

Tablet or smartphone with iOS or Android operating system. Functionality fully guaranteed by version 5.0 for Android and version 7.0 for iOS.

1.3 How to download the application

The Infomare-ER application can be freely downloaded in its 2.0 version by following the instructions on the web page <https://www.infomare-er.it> or by searching on Google Play (for Android systems) and App Store (for iOS).

systems). The App automatically updates to later versions through Google Play and App Store. If you have problems downloading the application or in its general operation, you can contact directly the Infomare team at the email comunicazione@arpae.it.



Figure 1: QR CODE to download the application

1.4 Installation

The installation of the Infomare-ER application is completely standard: just follow the steps indicated by the reference store. During the installation phase, the user is asked to allow access to the geolocation of the device: this permission is not mandatory and can be modified even once the application is installed, in the application properties screen.

2. Getting started

2.1 First access

The application does not require any type of registration. At the first access it will ask the access to the system position, to activate the automatic location (figure 2).

This function can be enabled or disabled in a totally optional way without affecting the correct functioning of the application.

In the event that permission to access the geolocation was not granted during the installation, it must be granted in the properties of the application. Then it is necessary to turn on the Geolocation in the device.

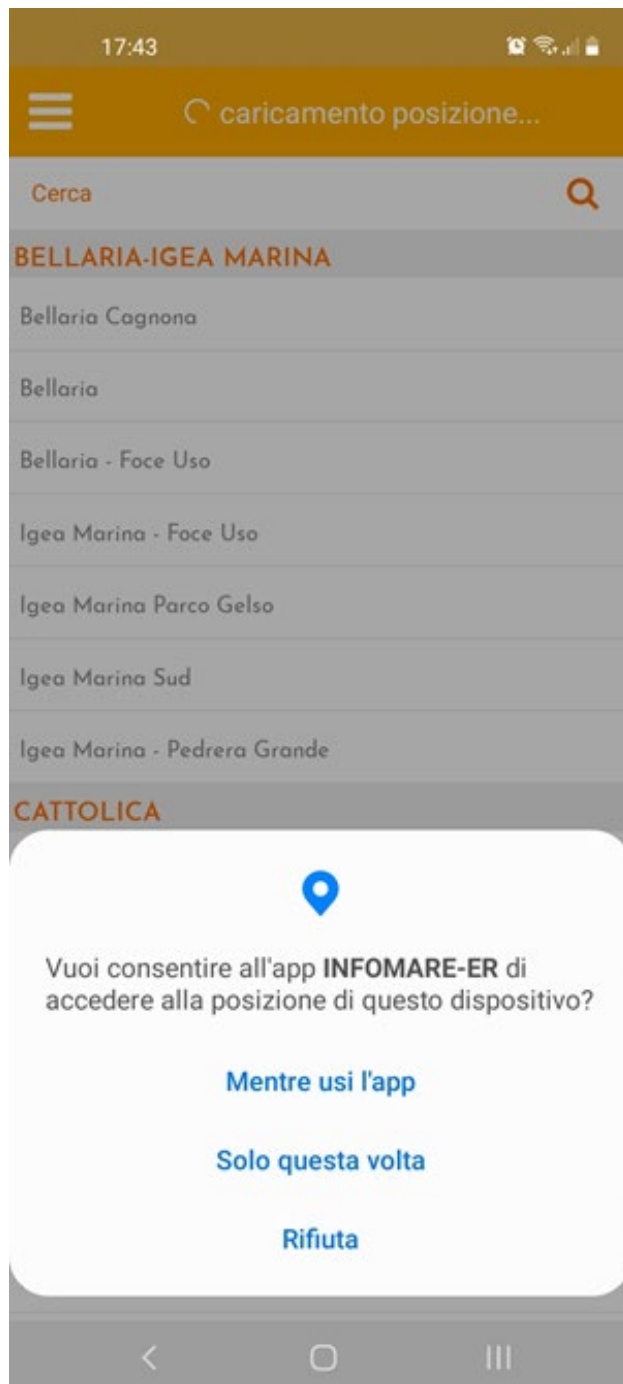


Figure 2: Startup screen

2.2 Location choice

On first access, the application shows the initial screen (Figure 3). Here, the user can choose the desired location in the Riviera of Emilia-Romagna or turn the GPS on to activate automatic localization.

The locations are grouped by municipalities, from North to South. In the application there is an option to manually search the desired location by its name.

The choice of location is also maintained for subsequent accesses to the application. However, it can be changed at any time through the relative menu, accessible from the “triangle” icon, as described in point 4.2 of this document.



Figure 3: Location selection screen

3. Home screen

3.1 General screen

The initial screen for the first access is shown in figure 4. Here the meteorological data, marine data and air quality data are shown for the selected location, based on the reference layout (Beach, Sea, Air).

From the initial screen it is possible to access to side menus, as described below. (Chapter 4).



Figure 4: Home screen - Beach scenario

3.2 Detail screen

The detailed features of each layout are describe below:

- reference parameters - red circles in figure 5. The data displayed are specific for the seaside location and for the date shown in the upper left part;
- forecast - blue box on the righth. It is possible to view the data for the next steps (every 3 hours) by enabling the time buttons on the right.
- layout - green box at the bottom. It is possible to change the reference layout ("Beach", "Sea" and "Air"). Each layout collects specific data and will be described in subsequent chapters.



Figure 5: Home screen - Detail

3.3 Parameter detail

Whatever the selected layout, it is always possible to have additional information on the parameter by clicking on the symbol / animation to view:

- for forecasts the data in the next 48 hours, in the case of a parameter based on a forecast model (Figure 6);
- for observed data, the tendencies in the following days (eg pollens and allergens).

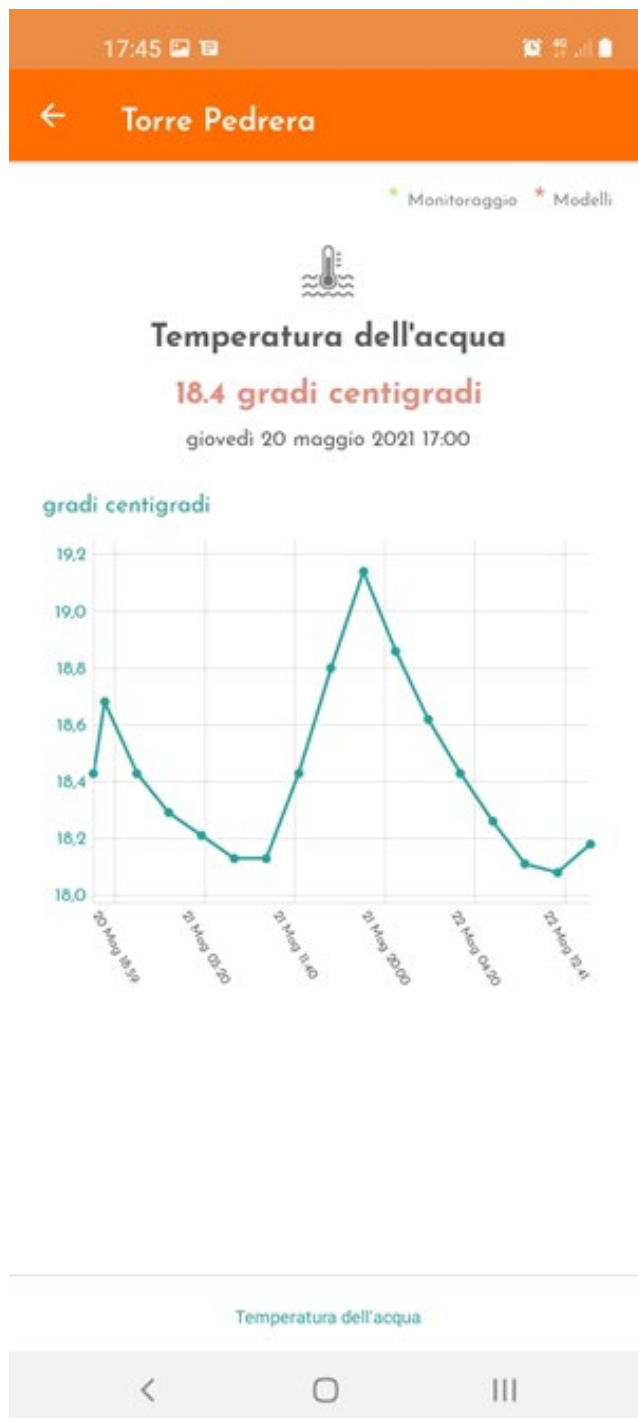


Figure 6: Details of the “Water temperature” parameter

4. Other menu

4.1 Sidebar Menu

From this menu it is possible to select the following items:

- Data: the page describes in detail the Arpae sources of the data displayed on the application (Chapter 6);
- Contact us: to send an email to the support address comunicazione@arpae.it
- Legal notice: the page illustrates any limitations in the use of the application and data displayed (Chapter 7);
- Credits: the page provides information on the Infomare-ER project which led to the development of the App (www.infomare-er.it).

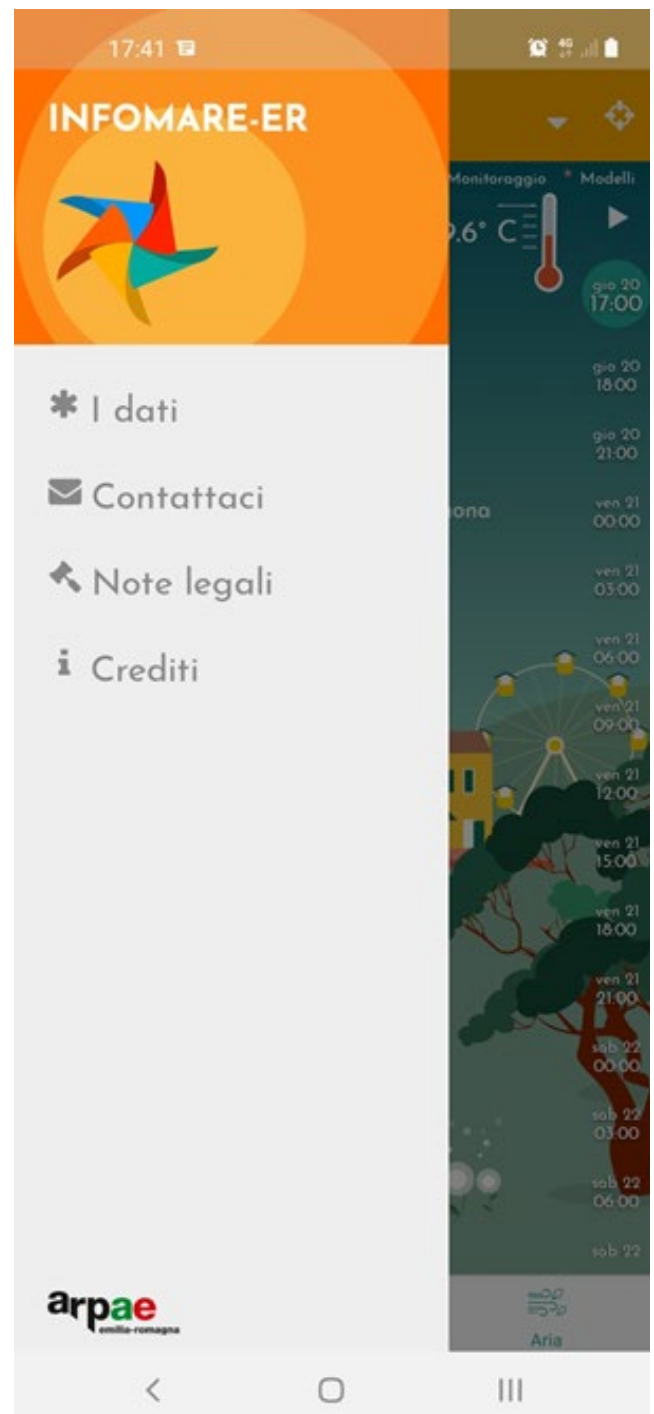


Figure 7: Sidebar menu

4.2 Location Menu

To change the seaside location it is possible to access the drop-down menu at the top, from which it is possible to search and select a new destination.



The Riviera of Emilia-Romagna was divided into an appropriate number of seaside locations in order to provide a high density of information of the whole coast: these are the seaside localities for which, during the bathing season, periodic surveys of bathing water quality are carried out by Arpae.

4.3 Geolocation

The icon at the top activates the automatic geolocation in the nearest seaside location.



If you are outside the area of relevance of the Infomare system (Riviera of Emilia-Romagna), a message will appear that the geolocation is impossible and you will have to manually choose a location. Otherwise, the location in which you are located will be chosen, which can always be subsequently manually modified.

5. Scenarios details

5.1 “Beach” scenario detail

It is the starting screen for beach lovers, showing the following parameters:

- Cloud cover - sun / cloud animation in the upper left
- Relative humidity - left center animation
- UV radiation index - Umbrella bottom left
- Precipitation - clouds top center animation
- Water temperature - fish animation in the center
- Wind direction and intensity - pinwheel animation, down center
- Air temperature - top right thermometer animation
- Bathing water - bathing animation in the lower right corner



Figure 8: Beach scenario

5.2 “Sea” scenario detail

It is the starting screen for water sports lovers, showing the following parameters:

- Cloud cover - sun / cloud animation in the upper left
- Water temperature - fish animations on the bottom left
- Precipitation - clouds top center animation
- Wind direction and intensity - kitesurf animation in the bottom center
- Air temperature - top right thermometer animation
- Wave height and direction - center right animation
- Direction and intensity of the currents - bottom right animation



Figure 9: Sea scenario

5.3 “Air” scenario detail

It is the starting screen for lovers of outdoor activities, showing the following parameters:

- Cloud cover - sun / cloud animation in the upper left
- Precipitation - clouds top center
- Air quality index - center icon
- Pollens and allergens - flower animation in the center at the bottom
- Air temperature - top right thermometer animation



Figure 10: Air scenario

6. Data sources

The environmental data (such as weather, marine, water quality, air quality and pollen) used in the Infomare-ER app originate from the monitoring systems and the forecast models developed by Arpae - Environmental Agency for Prevention, Environment and Energy of Emilia Romagna Region, Italy (<https://www.arpae.it/>).

In particular:

- Cloudiness (time zero, +3hrs,... ,+48hrs) and rainfall (+3hrs,..., +48hrs) data originate from the forecast by Arpae meteorological control room; For more info (italian): <https://www.arpae.it/it/temi-ambientali/meteo/previsioni-meteo/previsioni-meteo-regionali>
- Rainfall data at time zero originate from estimates by Arpae meteorological radars; For more info (italian): <https://www.arpae.it/it/temi-ambientali/meteo/dati-e-osservazioni/stima-radar-della-pioggia>
- Wind direction and intensity, air temperature and relative humidity data (time zero, +3hrs,..., +48hrs) originate from the forecast model COSMO-LAMI developed by Arpae in collaboration with other institutions; For more info (italian): <https://www.arpae.it/it/temi-ambientali/meteo/previsioni-meteo/previsioni-meteo-modellistiche>
- Water temperature and water-flow direction and intensity data (time zero, +3hrs,...,+48hrs) originate from the forecast model AdriaROMS developed by Arpae; For more info (italian): <https://www.arpae.it/it/temi-ambientali/mare/previsioni-mare/previsioni-oceanografiche>
- Waves direction and height data (time zero, +3hrs,..., +48hrs) originate from the forecast model SWAN-MEDITARE developed by Arpae; For more info (italian): <https://www.arpae.it/it/temi-ambientali/mare/previsioni-mare/previsioni-dello-stato-del-mare>

- Bathing data originate from the monitoring and the analysis performed by Arpae during the summer season, to safeguard bathers' health according to the schedule established by the Emilia-Romagna Region together with Public Local Health Authorities; For more info (italian): <https://www.arpae.it/it/temi-ambientali/balneazione/qualita-acque-balneazione/mappa-balneazione>
- The evaluation of the bathing waters quality (excellent, good, sufficient and poor) is obtained at the end of each summer season and is based on the data of the current season + the data of the previous 3 seasons; For more info (italian): <https://www.arpae.it/it/temi-ambientali/balneazione/scopri-di-piu/classificazione-delle-acque-di-balneazione>
- The air quality information is a forecast of the air quality index, which synthetically represents the quality level of the air we breathe. It is a forecast, issued daily for the current day and for the next two days. The index values are grouped into five classes: very poor, poor, moderate, fair, good. An orange, red or purple color indicates that at least one of the components exceeds the legal limit; For more info (italian): <https://www.arpae.it/it/temi-ambientali/aria/previsioni/previsioni-di-qualita-dellaria>
- The data of allergenic pollen and fungal spores derive from the weekly monitoring carried out by Arpae through its measurement network. This is the weekly average concentration data (expressed in classes) and the trend for the week following the sampling; For more info (italian): <https://www.arpae.it/it/temi-ambientali/pollini>

Marine and meteorological models cited above are capable to provide forecast data up to 3 days with a good degree of reliability. However, it could be altered by peculiar atmospheric and water conditions, so that the intrinsic randomness of subjective evaluations is reduced, but not completely erased.

7. Legal notice

This section illustrates the limitations in the use of the contents of this application and any connected external site/application.

7.1 Copyright

All trademarks, registered and unregistered, logos, banners, domains, and any other distinctive sign that appear in the Infomare-ER application are owned by Arpae and/or Proambiente S.c.r.l. All rights reserved. They can be used only with the prior written consent of the owner (Arpae, Via Po n.5, 40139 Bologna, Italy, urp@arpae.it).

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Any action reserved to the owner of the rights by national and international laws on trademarks and distinctive signs carried out without the owner's authorization

will be legally prosecuted.

7.2 Privacy Policy

Infomare-ER does not collect personal information of the users. The application can, upon request by the user, access the geolocation service. The user's location is not remotely stored and is used for the sole purpose of suggesting the nearest seaside resort. Aggregate usage data collected through Google Firebase are anonymized and used for the sole purpose of providing usage statistics, exactly as Google Analytics is used for the web.

7.3 Use of the application

Arpae informs that changes in the contents of the Infomare-ER application (and of these notes) may be made at any time and without notice, without this leading to any liability for any problems of any nature caused directly or indirectly by accessing the application, by the inability or impossibility of accessing it, by the information contained therein or by their use.

The contents offered by the Infomare-ER application are processed with the greatest possible expertise on the basis of the available information and of mathematical models and are subjected to an accurate control by the owners. This expertise reduces, but does not eliminate the intrinsic uncertainty of forecast evaluations regarding meteorological and marine factors. Arpae and Proambiente S.c.r.l. therefore decline any direct or indirect responsibility for any delay, inaccuracy, error, omission, damage (direct, indirect, consequent and punishable) deriving from the mentioned contents.

In no case Arpae or Proambiente S.c.r.l. will be responsible for any type of damage, including, without limitation, damage deriving from the loss of goods, profits and income, biological damage, damage deriving from the cost of restoration, replacement, or other similar costs, direct or indirect, incidental or consequential, or even hypothetically connected with the use of the meteorological and marine forecasts displayed by the application.

7.4 Access to external linked sites

The links to external sites indicated in this application are provided as a simple service to users, with the exclusion of any responsibility for the correctness and completeness of the set of links indicated. The indication of the links does not imply any kind of approval or sharing of responsibility by Arpaè regarding the legitimacy, completeness and correctness of the information contained in the linked sites.

8. Final Note

The Infomare-ER application was created by the Proambiente consortium (Tecnopolo Bologna CNR), in collaboration with Inkode Soc. Coop., on behalf of Arpae which is the coordinator of the project, with the co-financing of the European Regional Development Fund POR-FESR of the Emilia Romagna region.

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