

Pollutri (CH) 25 November 2024

Press Release

### Ecological Transition Sites

**Legambiente's national campaign makes a stop with INWIT in Abruzzo, where technology is a valuable ally in fire and air quality monitoring in protected areas**

**IoT sensors, smart cameras equipped with artificial intelligence and gateways on tlc towers to protect the territory and support law enforcement agencies**

**Environmental monitoring results presented today in Pollutri: on the fire front, 15 alerts were recorded in the autumn months, 9 of which were in the Lecmeta di Torino di Sangro regional reserve and 6 in the Bosco di Don Venanzio regional reserve**

**Air quality monitoring in 7 municipalities in Abruzzo's protected areas is generally good, but there were special observations against which we must not lower our guard, such as Civitella Roveto, Vasto and Roccaraso, where the period average detected for PM10 sees the highest concentration from May to October and several days where it exceeds that**

#### Digital press kit\*

In Abruzzo, the region with the highest percentage of protected territories and the oldest national park in the country with over 100 years of history, technology is an increasingly valuable ally in preventing fires and monitoring air quality in protected areas and neighbouring towns. IoT sensors, smart cameras equipped with artificial intelligence and gateways, installed since 2023 on INWIT's tlc towers, have become key tools for territorial protection and a valuable support for law enforcement agencies in preventing crime. **The first results, presented today by Legambiente in Pollutri (CH), where its national campaign "Ecological Transition Sites" made a stop together with INWIT, speak clearly:** during the autumn period, the installed sensors reported 15 fire alerts, 9 of which were in the Lecmeta di Torino di Sangro regional reserve and 6 in the Bosco di Don Venanzio regional reserve (in September). On the air quality front, the monitoring of the 6 municipalities involved in the project is generally good: Civitella Roveto (AQ), Pescasseroli (AQ), Pettorano sul Gizio (AQ), Picinisco (FR), Vasto (CH), and Roccaraso (AQ), where monitoring sensors were installed. In general, the monitoring in question, whose data was processed together with the University of Molise and concerned the period from May to October 2024, reveal good air quality in the areas under observation, although some special observations revealed some critical issues against which we must not lower our guard, in Civitella Roveto, Vasto and Roccaraso, where the period average detected for PM10 sees the highest concentration from May to October and several days where it exceeds that. **In light of this data on air quality in protected areas, it will be important to observe the impacts of pollution on biodiversity.**

"Today, technology and innovation," commented **Giorgio Zampetti, General Manager of Legambiente**, "are an important ally in protecting the environment and biodiversity. This valuable and winning combination is also at the centre of the monitoring activities started in 2023 by Legambiente and INWIT in Abruzzo to monitor the environment and biodiversity, air quality, and at the same time fight forest fires, which are often caused by human activities and not only destroy vast areas of forest, with damage to wildlife and vegetation, but also release large quantities of carbon into the atmosphere. This is why today at this stage we are also launching a package of proposals calling for investment in forest fire prevention systems and for more intervention means to tackle the fires; on the air quality front, we are calling for the launch of a study network involving sector experts to study the impacts of pollution on biodiversity, starting with data collected by the INWIT Legambiente monitoring, and to promote more information and awareness-raising campaigns to make everyone understand that personal behaviour can affect biodiversity".

“A forest weakened by pollution and flames will be less effective in defending itself against other extreme weather events such as heavy rains or floods, compromising the resistance and resilience of the entire territory and the biodiversity living in it. This is why it is important to actively contribute to fire prevention and the protection of air quality and biodiversity all year round, not only when the summer emergency arises,” said **Michelangelo Suigo, Head of External Relations, Communication and Sustainability at INWIT**. Our air quality monitoring and fire prevention projects in national parks and protected areas are concrete examples of the integration of sustainability into our business and our role as an enabler of innovative services based on artificial intelligence and IoT. These projects carried out in partnership with Legambiente confirm the value of our towers and digital and shared infrastructures for the community and the territories and our solid commitment to protect the environment and biodiversity.”

**Fire monitoring focus:** The forest fire monitoring project launched by INWIT in collaboration with Legambiente involves Pescasseroli (AQ), location of the Abruzzo, Lazio and Molise National Park, Pettorano sul Gizio (AQ), in the Monte Genzana Alto Gizio Regional Nature Reserve, the Lecceta di Torino di Sangro Regional Nature Reserve (CH), the Bosco Don Venanzio Regional Nature Reserve in Pollutri (CH) and the Municipality of Civitella Roveto (AQ) to monitor the Longagna area and the Zompo lo Schioppo Regional Nature Reserve. 5 gateways and 9 smart cameras integrated with artificial intelligence software capable of detecting fires at an early stage have been installed on the 5 INWIT towers in these territories. Their location at the top of the towers also ensures a preferential position allowing the area under observation to be maximised. The maximum distance the cameras can cover varies according to the orographic characteristics of the site and the relative size of the fire plume. The observation radius is on average 2 km around the location point, but in certain cases it can extend to 5 km, covering a maximum area of around 80 square kilometres. The equipment is also capable of operating in adverse environmental conditions and, thanks to AI, distinguishing chimney smoke from that of fires.

**Air quality focus: The period average for PM10 sees the highest concentration detected at the Civitella Roveto station** (29.6 micrograms/cubic metre from 1 May to 30 October with 154 days of detection), followed by **Punta Penna-Vasto** with 25.9  $\mu\text{g}/\text{m}^3$  (period 26 June to 30 October with 125 days of operation), **Roccaraso** (24.1  $\mu\text{g}/\text{m}^3$  from 4 June to 30 October with 149 days of monitoring). Below the threshold of 20  $\mu\text{g}/\text{m}^3$  are the stations of Pettorano (19.1  $\mu\text{g}/\text{m}^3$  from 04/06 to 30/10 with 149 days of operation), Picinisco (17.7  $\mu\text{g}/\text{m}^3$  from 06/07 to 30/10 with 117 days of detection) and finally Pescasseroli where the period average recorded is 14.6  $\mu\text{g}/\text{m}^3$  (reference period from 26/06 to 30/10 with 115 days of operation).

While the period averages are relatively good (considering that the air regulations stipulate an annual average not to be exceeded of 40  $\mu\text{g}/\text{m}^3$  while the WHO guidelines approved in 2021 indicate 15  $\mu\text{g}/\text{m}^3$  as the annual average not to be exceeded to protect human health), some of the daily exceedances recorded at the stations are surprising. The regulations set a limit of 50  $\mu\text{g}/\text{m}^3$  as a daily average not to be exceeded for more than 35 days in a year. At the monitoring stations covered in this project, there were 17 days of exceedances at Civitella Roveto, 12 at Punta Penna-Vasto, 11 at Pettorano sul Gizio, 10 at Roccaraso, 4 at Picinisco and 3 at Pescasseroli. Days of exceedance occurred at different times in the summer and autumn, attributable to generalised and widespread phenomena (e.g. a Saharan or Caucasian dust event often generates this type of anomaly throughout the country), to anthropic factors, having occurred in the pre-summer (June) and late summer (September) periods, especially during weekends, village festivals and fairs; and then coinciding with the arrival of the first cold days with the lighting of fireplaces and heaters in homes in the morning and evening hours.

“As part of a framework agreement between Legambiente and Unimolise, the Bioscience Department contributed to the preliminary statistical analysis of the large amount of data recorded. A more in-depth assessment and correlation with environmental and anthropogenic factors may provide adequate answers,” said **Giancarlo Ranalli, Department of Bioscience and Territory - University of Molise**.

**Ecological Transition Sites:** this is Legambiente's national campaign which brings to the fore stories, sites and projects that are moving in the right direction of transition in Italy by investing in decarbonisation,

environmental sustainability and the circular economy. Launched in May 2023, the campaign also has a website - [cantieridellatransizione.legambiente.it](https://cantieridellatransizione.legambiente.it) - with an interactive map covering the over one hundred sites mapped so far with in-depth information, photos and videos.

\*DIGITAL KIT, to access decryption key  
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