

Near Real-Time Monitoring Extreme Weather Events and Impacts on Waste Pickers' Cooperatives (NRTM)

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Florianópolis - Santa Catarina



Extreme Weather Event:

Heat Wave

Period: February 9 - March 9, 2025

Monitored Waste Pickers Organization



ACMR - Associação de Coletores de Materiais Recicláveis

Context

February 2025 was the third hottest month ever recorded globally. In Santa Catarina, the Civil Defense issued three consecutive heat wave alerts, and data from Epagri/Ciram show record temperatures in at least four municipalities. The first official heat wave in the state occurred from February 9 to 14, with five consecutive days above 2°C of the average.

In Florianópolis, the maximum reached 38°C on the 17th, the highest of the year, according to INMET. During this period, about one-third of ACMR cooperative members stopped working after lunch for two hours due to the extreme heat. ACMR has been operating since 1999 in the sorting and processing of recyclables received through selective collection by COMCAP/SMMA, Florianópolis' public urban cleaning company.

ACMR characteristics:



Foundation:
March 2000

No. of Waste Pickers: 63



43%
are women



50%
of its board members are women

41%
of the waste pickers are foreign immigrants

87%
of the waste pickers are black or mixed-race people



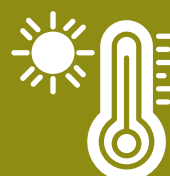
300 tons per month
of average production

BRL 233,000.00
of average monthly revenue



BRL 1,800.00
of average monthly income per waste picker

Reverse Logistics Partnership:



What is a Heat Wave ?

The World Meteorological Organization (WMO) defines heat waves as **five or more consecutive days** during which the daily maximum temperature **exceeds the monthly average maximum by 5°C or more.**



Florianópolis - Santa Catarina

Affected Area: Estate of Santa Catarina

Extreme Weather Event Indicador (EWEI):

According to INMET records, the average monthly maximum temperature between 1991 and 2020 in Florianópolis was 29.5°C in February and 28.7°C in March (Figure 1). In 2025, **three heat waves were recorded**, each lasting at least five consecutive days above average temperatures, two of which occurred back-to-back: from February 9 to 13, from February 24 to 28, and from March 1 to 9 (Figures 2 and 3). This resulted in **13 consecutive days of extreme heat** between February 24 and March 9, according to alerts issued by the Civil Defense of the State of Santa Catarina.

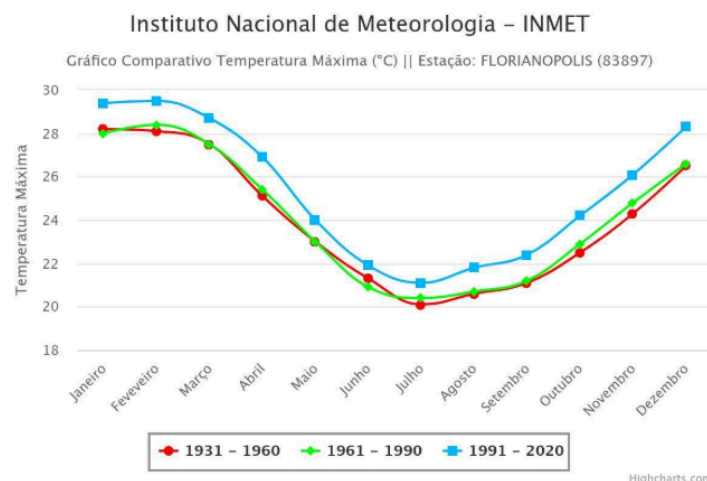


Figure 1: Comparative graph of average monthly maximum temperature (°C). Source: INMET, 2025

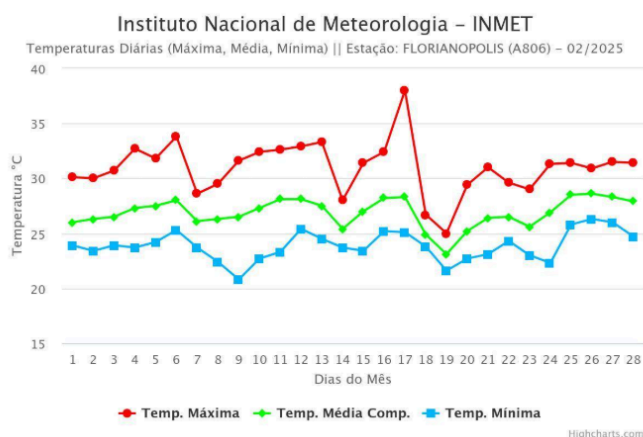


Figure 2: Daily temperatures - Florianópolis Station, 02/2025, INMET.

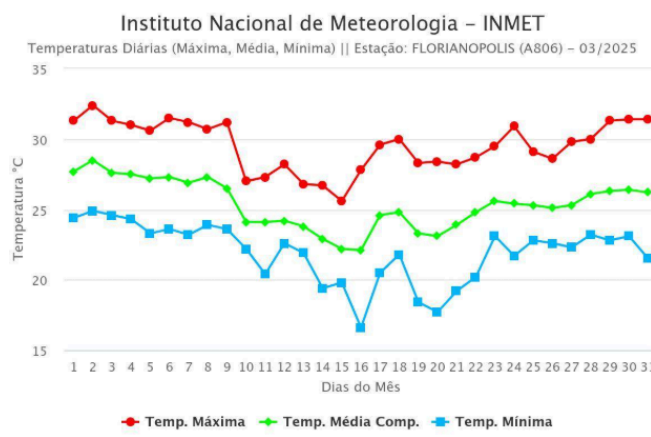


Figure 3: Daily temperatures - Florianópolis Station, 03/2025, INMET.

On February 17, at the monitoring point closest to the waste pickers' organization ACMR, located in the Itacorubi neighborhood, the Center for Environmental Resources and Hydrometeorology Information (Epagri/Ciram) recorded **a maximum temperature of 37 °C around 1 p.m.**, with a **heat index – the temperature felt due to the combination of actual air temperature and relative humidity – reaching 44 °C.**

(Source: Epagri/Ciram, 2025)

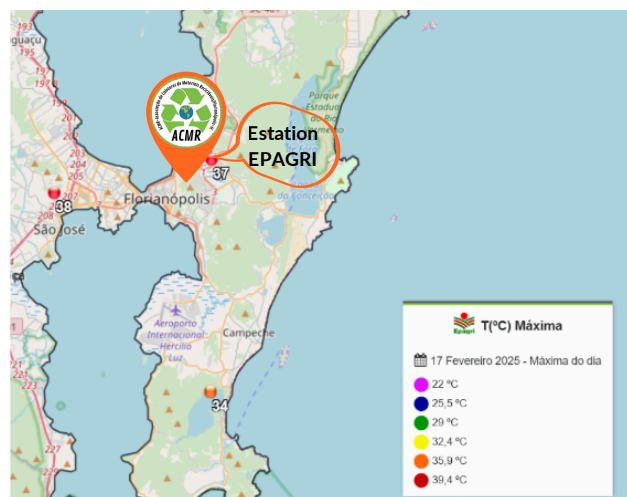


Figure 4: Location of the Waste Pickers' Association and the Epagri Station. Source: Epagri, Ciram, 2025.



Florianópolis - Santa Catarina

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Main impacts on the monitored waste pickers' association



Extreme heat indoors

The cooperative's board reported that the sorting areas, meeting room, and cafeteria became **extremely hot** during the heat waves.



Absence from work

During the period, one case of dengue was reported, resulting in a **15-day leave**, and another case of absence for one day due to low blood pressure experienced by a cooperative member.



Impacts on production

The intense heat led the waste pickers working on the production line **to take breaks of up to two hours longer than usual** after lunch, waiting for the temperature to drop. About one-third of the members adopted this strategy and, in return, often **extended their workday by one to four hours** after regular hours to compensate for production, since their pay is based on output.



Impacts on workers' health

The intense heat directly affects **the work pace and impacts the health** of waste pickers.

Main reported health problems:

- Malaise;
- Headaches;
- Dizziness;
- Exhaustion;
- Stress.

Climate Adaptation and Coping Strategies



Immediate Response Actions

To immediately cope with the heat, **14 fans** were purchased (installed in the sorting area, meeting room, and kitchen) and **2 air conditioning** units were installed in the dining area.



Preparedness

During the heatwave, ACMR waste pickers **did not receive** any alerts from the Civil Defense, nor were they trained to identify risks or follow emergency procedures during extreme weather events. In addition, the association **did not receive any guidance or information** about the existence of prevention and contingency plans for such situations.



Future Coping Measures

ACMR plans **to renovate the sorting shed**, increasing the ceiling height and opening side vents to **improve ventilation and reduce the impacts of extreme heat**. However, despite having financial resources, the association has not yet obtained **the official usage concession** of the shed from the City Hall, which prevents the renovation from being carried out.

Source:

EPAGRI/CIRAM. Monitoramento climático e hidrometeorológico de Santa Catarina. Disponível em: <https://ciram.epagri.sc.gov.br/agroconnect/> Acesso em: 15 maio de 2025