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

Climate & Waste Pickers Bulletin No. 05 — **September, 2025**

Manaus - Amazonas

Extreme Weather Event:
Heat Wave
Period: August 19 to 26, 2025

Monitored Waste Pickers Organizations:

- ASCARMAN - Associação de Catadores de Materiais Recicláveis do Estado do Amazonas;
- NOVA RECICLA - Associação de Catadores de Materiais Recicláveis

Characteristics of the Waste Pickers' Associations:

ASCARMAN

Association founded in 2001; has an agreement with the municipality *without* financial transfers

- **10** Associated waste pickers
- **88%** are women
- **100%** of the board is composed of women
- **100%** of waste pickers are Black or Brown
- **90 tons** Average monthly production
- **R$ 1.200,00** Average monthly income per waste picker
- **Rented warehouse** Masonry structure with low ventilation and metal roofing

Nova Recicla

Association founded in 2010; has an agreement with the municipality *without* financial transfers

- **35** Associated waste pickers
- **43%** are women
- **100%** of the board is composed of women
- **86%** of waste pickers are Black or Brown
- **250 tons** Average monthly production
- **R$ 1.300,00** Average monthly income per waste picker
- **Rented warehouse** Masonry structure with low ventilation and metal roofing

Partnership: MÃOS PRO FUTURO – PROGRAMA DE LOGÍSTICA REVERSA

Context

The months of August, September and October are usually the hottest in Manaus. This happens because it is the period with the least rainfall, known as the "Amazonian summer". Typically, August has slightly milder temperatures, with a maximum of 33°C, while September and October reach 34°C. But in 2025, August was much hotter than expected: the average maximum temperature reached 34,7°C. This above-normal heat caused several difficulties in the daily work of waste pickers from the ASCARMAN and NOVA RECICLA associations.

Both waste-picker associations monitored in the municipality operate in environments with high heat exposure, receive only partial institutional support from the city government and work in inadequate structures that cannot withstand extreme events.

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Definition of Heatwave

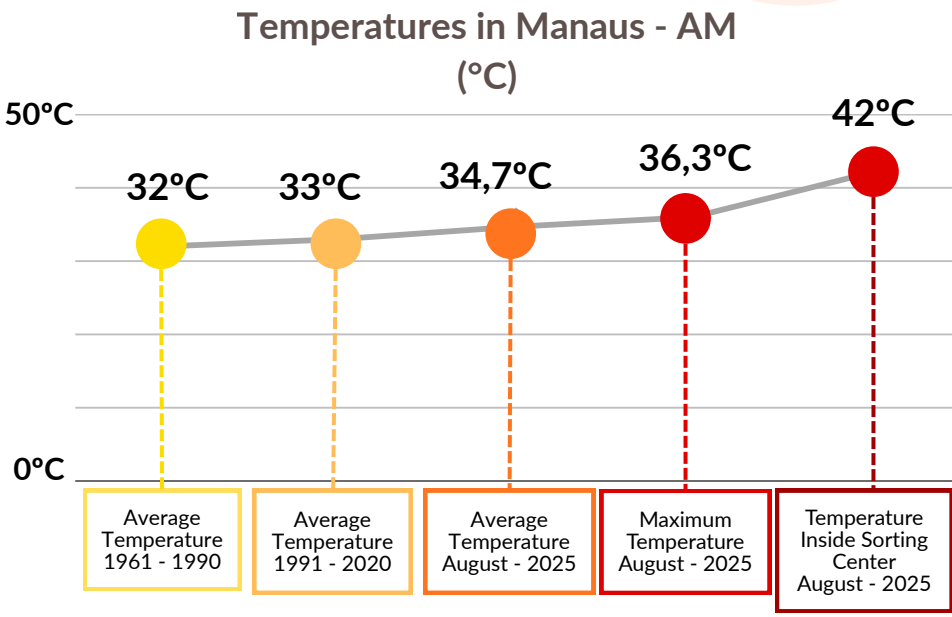
A **heatwave** is a period of abnormally high temperatures capable of generating significant impacts on the economy and the environment. Although there is no single definition (IPCC, 2021), the WMO technically describes it as at least **5 consecutive days** with daily maximum temperatures **5 °C above** the reference climatological value (1961–1990) (WMO, 2015). More broadly, it corresponds to an "**abnormally hot period**" relative to the region's typical climate (IPCC, 2021). Some meteorological services adopt percentile-based criteria, such as days above the **90th or 95th percentile** of local temperature. Recent studies indicate that even **2 days of extreme heat** can pose risks and justify alerts (WMO, 2023).

Extreme heat, even for just a few days, can compromise health and must be treated as a risk situation.

Extreme Climate Event Indicator - ECE

According to records from INMET (National Institute of Meteorology), in Manaus the average monthly maximum temperature for August increased from **32°C** in the 1961–1990 period to **33°C** between 1991–2020. In 2024, the average maximum temperature for the same month reached **34.7°C**, a value even higher than that of the following months of September (**34.2°C**) and October (**33.2°C**), which are normally the hottest of the year.

The period between **August 19 and 26** was the **hottest** in the quarter, with temperatures exceeding 36°C (a maximum of 36.3°C) between the 23rd and 25th. **Thermal sensation**, calculated using air temperature and wind speed, reached 40°C, and the heat index, calculated using air temperature and relative humidity, **reached 42°C**.



Source: Average temperatures from the National Institute of Meteorology (INMET) and data reported by waste pickers (temperature measurement inside ASCARMAN's sorting center), 2025.

August 2025 recorded exceptional heat in Manaus, with the highest average maximum temperature in decades.

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Main Impacts on the Work of the Monitored Waste-Picker Associations

Exposure to extreme heat

The rise in temperature inside the sorting centers, without adequate ventilation or air circulation, made it difficult to remain in the workspace for prolonged periods.

Thermal discomfort

Prolonged exposure to heat affected overall well-being and impacted health, especially for people with preexisting conditions such as hypertension.

Absences from work

During the period of extreme heat, there were absences by 2 waste pickers from ASCARMAN and 6 from Nova Recicla, mostly due to health issues aggravated by the heat.

Impact on production routines

Extreme heat reduced the pace of production. ASCARMAN adopted more frequent breaks as an improvised response to the heat, while Nova Recicla reduced the workday by three hours.

Waste pickers described the heat as alarming and unbearable, intensified by the closed and poorly ventilated spaces where they work, which worsened the impacts on health and productivity.

Impacts on Workers' Health and Well-Being

The consequences of the heatwave in Manaus were severe for the health of workers in both associations. Reports include a range of physical symptoms such as exhaustion, anxiety, excessive sweating, and respiratory problems. Nova Recicla also reported cases of skin rashes and gastrointestinal disorders among workers. Although no cases were referred to health facilities, the impact on the workforce was evident and widespread, affecting all age groups

Infrastructure and Climate Response

The infrastructure of the two associations analyzed **show critical weaknesses** in coping with extreme heat events.

Roofing

Both waste-picker organizations have metal or zinc roofs with no thermal insulation, even though the work does not take place under direct sunlight.

Ventilation

The sorting centers of both associations lack adequate ventilation, making it difficult for heat to dissipate and worsening thermal discomfort.

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Drinking Water

The organizations have access to potable water, ensuring at least hydration during the workday.

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"During that very strong heatwave, it felt like we were inside a pressure cooker. We were dripping with sweat inside the sorting center. There is no air circulation, and we had to send people home. Now there's a lot of turnover, people getting sick, with flu symptoms, and many absences."
Suellen Ramos – President of Nova Recicla.

"There are no fans or exhaust systems in the sorting center, only the gates that let some air in, so that makes the heat much worse. (...) In the office there is no air conditioning, it's an open area, but even so the thermometer in the room reached 42°C. Because of that, there were times when the members had to leave earlier due to the heat."
Andréia Soares da Silva – Leader of ASCARMAN

Indicators of Climate Response and Adaptation

Immediate Response Actions

The reactions to the heat were mostly reactive and short-term, including the use of fans, increased hydration, and the implementation of breaks to reduce work pace and minimize the effects of extreme heat.

Risk Perception and Emergency Actions

The waste pickers in the monitored associations did not receive training to identify risks or adopt emergency measures during extreme weather events, which limits their capacity for response and protection.

The Extreme Weather Event Monitoring Project is developed by WIEGO with support from the Mãos Pro Futuro Program. Its objective is to build a monitoring system that links extreme weather events to their impacts on workspaces, labor conditions, and the livelihoods of waste pickers.
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