

Emergency Warning System

The Japan Meteorological Agency (JMA) launched the Emergency Warning System on 30 August 2013. Emergency Warnings are issued to alert people to the significant likelihood of catastrophes in association with natural phenomena of extraordinary magnitude.

Residents should take all measures possible to protect themselves in the event that an Emergency Warning is issued.

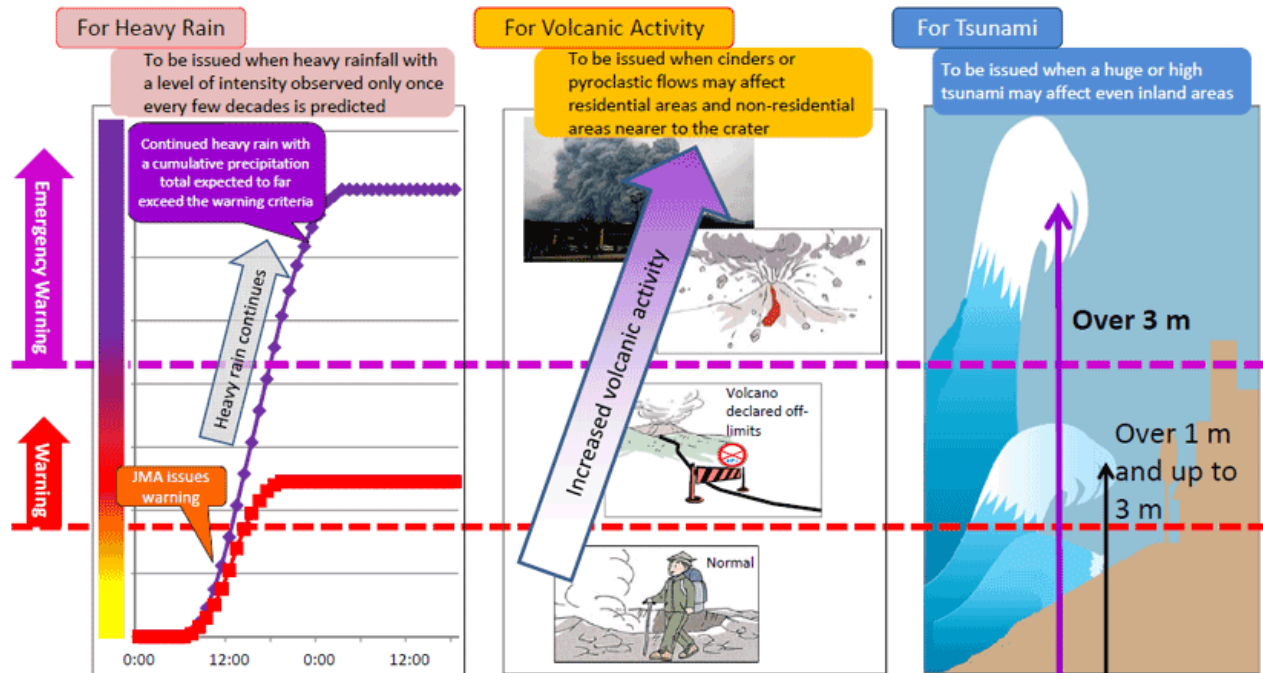
What is an Emergency Warning?

JMA issues various warnings to alert people to possible catastrophes caused by extraordinary natural phenomena such as heavy rain, earthquakes, tsunami and storm surges. In addition to such warnings, advisories and other bulletins, JMA started issuing **Emergency Warnings** to alert people to the significant likelihood of catastrophes if phenomena are expected to be of a scale that will far exceed the warning criteria.

Emergency Warnings are intended for extraordinary phenomena such as the major tsunami caused by the 2011 Great East Japan Earthquake by which 18,000 people were killed or left missing, the 1959 storm surge in Ise Bay caused by Typhoon Vera, by which more than 5,000 people were killed or left missing, and the 2011 heavy rain caused by Typhoon Talas, by which around 100 people were killed or left missing.

The issuance of an Emergency Warning for an area indicates a level of exceptional risk of a magnitude observed only once every few decades. Residents should pay attention to their surroundings and relevant information such as municipal evacuation advisories and orders, and should take all steps necessary to protect life.

Emergency Warning Overview



Relationship between Emergency Warnings and Warnings/Advisories

Emergency Warnings are intended for extraordinary phenomena expected to be of a scale that will far exceed the warning criteria. Warnings and Advisories continue to be issued in their current form even after the introduction of Emergency Warnings.

Residents should not let down their guard even if no Emergency Warning is currently in effect in the area. It is important to take action early wherever possible with reference to relevant weather bulletins, Advisories and Warnings, which are updated in response to the latest phenomenon observations or predictions.

The criteria for Emergency Warning issuance were determined in response to the views of local governments in charge of disaster management for their own areas. In regard to earthquakes, tsunami and volcanic eruptions, JMA maintains the system of warning nomenclature used until 29 August, 2013 but issues messages in the new classification of Emergency Warnings for high-risk conditions. These include Major Tsunami Warnings, Volcanic Warnings (Level 4 or more) and Earthquake Early Warnings (incorporating prediction of tremors measuring 6-lower or more on JMA's seismic intensity scale).

If you see/hear an Emergency Warning

Recommended responses to all Emergency Warnings

Take all steps possible to protect yourself if an Emergency Warning is issued.

An extraordinary phenomenon of a magnitude never experienced by local residents is likely to occur. Take immediate action to protect life.

The possibility of a catastrophe is high even if the area has not experienced a disaster for several decades. Do not let your guard down.

Tsunami

Evacuate immediately to a safer place such as high ground or a tall building designated as an evacuation center.

Volcanic activity

Evacuate or prepare to evacuate from alert areas.

Earthquakes

Earthquake Early Warnings incorporating prediction of tremors measuring 6-lower or more on JMA's seismic intensity scale will be issued in the classification of Emergency Warnings. The action to be taken will not change. Remain calm and secure personal safety based on your surroundings.

| Phenomenon | Criteria | |
|-------------|---|--|
| Heavy rain | <ul style="list-style-type: none"> • Heavy rainfall with a level of intensity observed only once every few decades is predicted in association with a typhoon or similar. Or: • Heavy rainfall is predicted in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity. | |
| Storm | A Storm is predicted | in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity. |
| Storm surge | A storm surge is predicted | |
| High waves | High waves are predicted | |
| Snowstorm | A snowstorm is predicted in association with an extratropical cyclone expected to have a level of intensity observed only once every few decades. | |
| Heavy snow | Heavy snowfall with a level of intensity observed only once every few decades is predicted. | |

Change in Volcanic Warning System classification with the establishment of Emergency Warnings (for volcanoes where volcanic alert levels are applied)

Before Meteorological Service Act amendment

After Meteorological Service Act amendment

| Classification | Classification | Name of Warning with targeted area | Targeted area | Level | Keyword |
|----------------|-------------------|--|--|-------|-----------------------------|
| Warning | Emergency Warning | Volcanic Warning (residential areas*) (a.k.a. Residential-area Warning) | Residential areas* and non-residential areas nearer the crater | 5 | Evacuate |
| | | | | 4 | Prepare to evacuate |
| | Warning | Volcanic Warning (near the crater) (a.k.a. Near-crater Warning) | Non-residential areas near the crater Around the crater | 3 | Do not approach the volcano |
| | | | | 2 | Do not approach the crater |
| Forecast | Forecast | N/A | Inside the crater | 1 | Normal |

* When residential areas are not defined, *residential areas* is replaced with *foot-of-mountain areas*.

Change in Volcanic Warning System classification with the establishment of Emergency Warnings (for volcanoes where volcanic alert levels are *not* applied)

Before Meteorological Service Act amendment After Meteorological Service Act amendment

| Classification | Classification | Name of Warning with targeted area | Targeted area | Keyword | Expected volcanic activity |
|----------------|--------------------------|---|--|--|---|
| Warning | Emergency Warning | Volcanic Warning (residential areas*) (a.k.a. Residential-area Warning) | Residential areas* and non-residential areas nearer the crater | Extreme caution advised in residential areas* and non-residential areas nearer the crater | Eruption or possibility of eruption that may cause serious damage in residential areas* and non-residential areas nearer the crater |
| | Warning | Volcanic Warning (near the crater) (a.k.a. Near-crater Warning) | Non-residential areas near the crater | Caution advised in non-residential areas near the crater | Eruption or possibility of eruption that may severely affect places near residential areas (possible threat to life in such areas) |
| | | | Around the crater | Caution advised around the crater | Eruption or possibility of eruption that may affect areas near the crater (possible threat to life in such areas) |
| Forecast | Forecast | N/A | Inside the crater | Normal | Calm: Volcanic ash emissions or other related phenomena may occur in the crater (possible threat to life in the crater) |

* When residential areas are not defined, *residential areas* is replaced with *foot-of-mountain areas*.

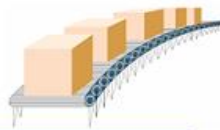
Change in Earthquake Early Warning System (i.e., Warning System for earthquake ground motion) classification with the establishment of Emergency Warnings

| Before Meteorological Service Act amendment | | | After Meteorological Service Act amendment | |
|---|----------|---|--|-------------------------------------|
| Earthquake Early Warning (warning) | Warning | Seismic intensity of 6-lower or more | Emergency Warning | Earthquake Early Warning (warning) |
| | | | Warning | |
| Earthquake Early Warning (forecast) | Forecast | Seismic intensity of 3 or more, or magnitude of 3.5 or more | Forecast | Earthquake Early Warning (forecast) |

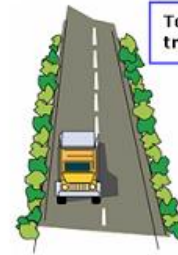
While Emergency Warnings fall within the category of Warnings from a strictly legal perspective and Advisories fall within the category of Forecasts, the above table is simplified to facilitate comparison of the new and old systems.



Controlling trains



Controlling factory lines
--> To mitigate damage



To prevent traffic accidents



Controlling elevators
--> To prevent people from being trapped



At home
--> To enable personal protection



Suspending work in progress
--> To avoid mistakes



Workers performing hazardous tasks
--> To secure safety



Alerting schools and assembly halls
--> To guide evacuation