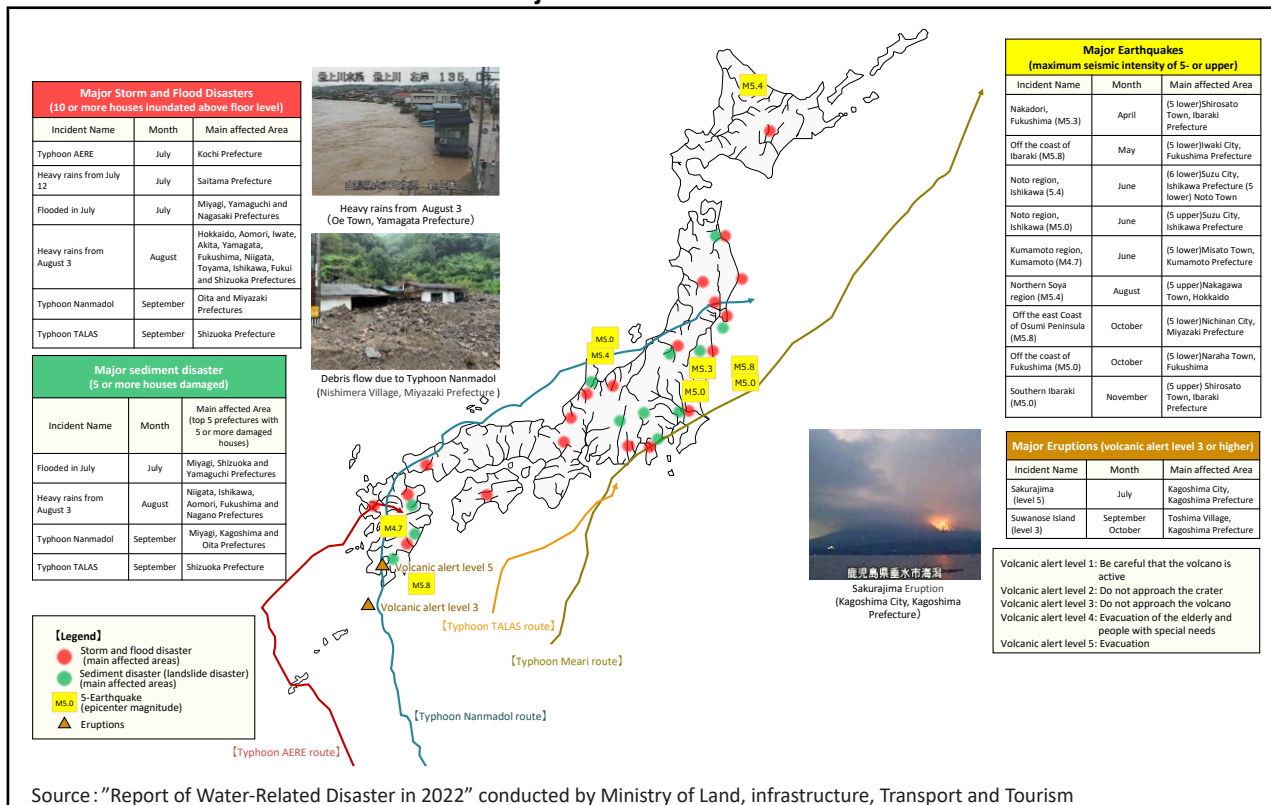


Special Feature 2. Major Disasters in FY2022

Natural conditions in Japan are characterized by features promoting various types of disasters. Due to such conditions, a lot of natural disasters including flood, sediment disaster (landslide disaster), and "earthquake/tsunami" occur almost every single year. In recent years, Japan has suffered greatly from large-scale disasters, such as the 2011 off the Pacific coast of Tohoku Earthquake, the 2016 Kumamoto Earthquake, the Heavy Rain Event of July 2018, Typhoon Hagibis in 2019 (T1919), the Heavy Rain Event of July 2020 and the Heavy Rain from July 1 of 2021. In FY2022, a series of natural disasters, including heavy rain in August, Typhoon Nanmadol (T2214), Typhoon Talas (T2215) in 2022, and heavy snow from December 17 and from December 22 (all in 2022), caused damage all over Japan.

Major Disasters in FY2022



Chapter 1. Volcanic Activity of Sakurajima

(1) Overview

At 8:05 p.m. on July 24, 2022, an eruption occurred at the summit crater of Sakurajima's Minamidake, flying rocks that scattered in a trajectory and landed as far as about 2.4 km from the crater. At 8:50 p.m. on the same day, the volcanic alert level upgraded from 3 (restriction on proximity to the volcano) to level 5 (evacuation) by Japan Meteorological Agency, and it called for extreme caution in residential areas (parts of Arimura-cho and Furusato-cho, Kagoshima City) within approximately 3 km of the Minamidake summit crater and the Showa crater. Subsequently, as the possibility of an eruption impacting areas beyond 2 km from the crater was reduced, the volcanic alert level downgraded to 3 (restriction on proximity to the volcano) by Japan Meteorological Agency at

8:00 p.m. on July 27.

(2) State of Damage

No damage to individuals or residential houses resulting from this volcanic activity has been confirmed. (Source: Fire and Disaster Management Agency information, as of July 28, 2022)

(3) Response by the Government

At 8:50 p.m. on July 24, 2022, the government reorganized the Information Contact Office, established since June 23, 2020, into the Emergency Response Office of the Prime Minister's Office. Prime Minister Kishida issued directives to “swiftly assess the extent of damage,” “collaborate closely with local governments and, under the policy of prioritizing human lives and with a government-wide approach, thoroughly implement measures to prevent damage, including the evacuation of climbers and local residents,” and “strengthen volcanic activity monitoring/observation and provide timely and accurate information to climbers and residents.”

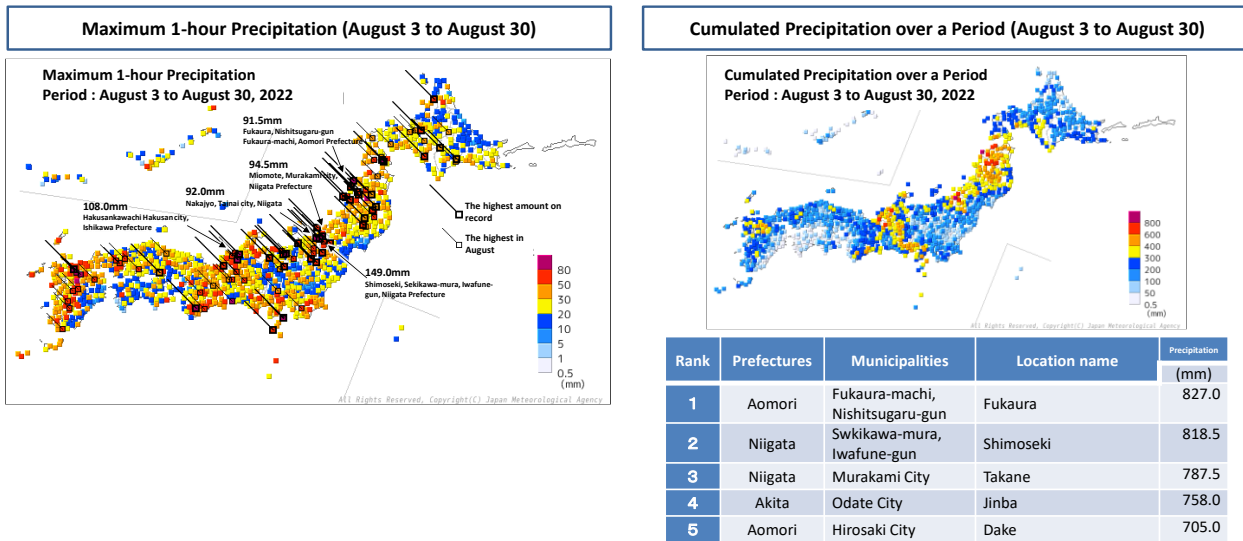
Chapter 2. Disaster due to Heavy Rain in August of 2022

(1) Overview

From August 3 to 4, 2022, a rain front remained stationary from southern Tohoku to Niigata Prefecture, and warm, moist air flowed into the rain front, causing it to become active. Multiple stationary linear mesoscale convective systems developed, and hazardous rain, accompanied by thunderstorms, intermittently poured down, resulting in heavy rainfall. Many observation points in the Tohoku and Hokuriku region experienced record-breaking amounts of hourly and 24-hour precipitation, making it the heaviest rainfall in recorded history. Yamagata and Niigata prefectures, in particular, experienced record-breaking heavy rain, so the Meteorological Agency issued a heavy rain emergency warning for both prefectures. The rain front gradually moved southward, and on the 4th, hazardous rain fell intermittently in Ishikawa and Fukui prefectures, again resulting in record-breaking heavy rain. On the 5th and 6th, Fukui, Shiga, Mie and other prefectures also experienced heavy rain.

From August 8 to 14, the rain front stayed over northern Japan and the Hokuriku region. Hazardous rain fell over a wide area from Hokkaido to Hokuriku, with precipitation in Aomori and Akita prefectures exceeding in seven days twice the average monthly precipitation for August. Heavy rainfall was also observed on the Pacific side of eastern Japan on August 13 and 14 due to Typhoon Meari (T2208) of 2022, which landed on Izu Peninsula. From August 15 to 22, heavy rain fell in northern to western Japan due to the influence of the rain front and low-pressure systems. On the 24th and the 25th, the low pressure systems caused local heavy rainfall in eastern and western Japan.

Maximum 1-hour Precipitation and Cumulated Precipitation



Source: Meteorological Agency

(2) State of Damage

Heavy rains in August 2022 caused debris flows and other damage in Aomori and Niigata prefectures, and 132 rivers managed by the national and prefectural governments overflowed and flooded 14 prefectures. As a result, 2 persons died (Iwate and Nagano prefectures), 1 person went missing (Yamagata Prefecture), 2 persons were seriously injured, and 7 persons sustained minor injuries. As for damage to homes, 37 were completely destroyed, 1,114 were half or partially destroyed, and 6,264 were flooded above or below floor level (Source: Fire and Disaster Management Agency information, as of March 24, 2023).

Damage also occurred to lifelines, with a maximum of 14,044 water outages and 8,072 electric power outages. Transportation infrastructure such as roads and railroads were also damaged.

(3) Response by the Government

The government established the Emergency Contact Office in the Prime Minister's Office at 7:15 p.m. on August 3, 2022, and held Inter-Agency Disaster Management Meetings on August 5 (a total of six meetings were held by August 23).

On August 7, then Minister of State for Disaster Management Ninoyu, visited a disaster site in Yamagata Prefecture. In addition, Minister of State for Disaster Management Tani, visited disaster sites in four prefectures: Niigata on August 20, Akita on August 30, Aomori on August 31, and Yamagata on October 1. On September 4, Prime Minister Kishida visited a disaster site in Niigata Prefecture. The Disaster Relief Act (Act No. 118 of 1947) was applied to 35 municipalities in 5 prefectures.

Regarding the designation of a "disaster of extreme severity," based on the "Act on Special Financial Support to Deal with the Disasters of Extreme Severity" (Act No. 150 of 1962), a cabinet decision was made on September 30, 2022 to designate disasters that occurred due to heavy rains and rainstorms from August 1 to 22, 2022 as disasters of extreme severity.



Then Minister of State for Disaster Management Ninoyu visited a disaster site in Yamagata Prefecture (Source: Cabinet Office)



Minister of State for Disaster Management Tani visited disaster sites in Aomori Prefecture (Source: Cabinet Office)



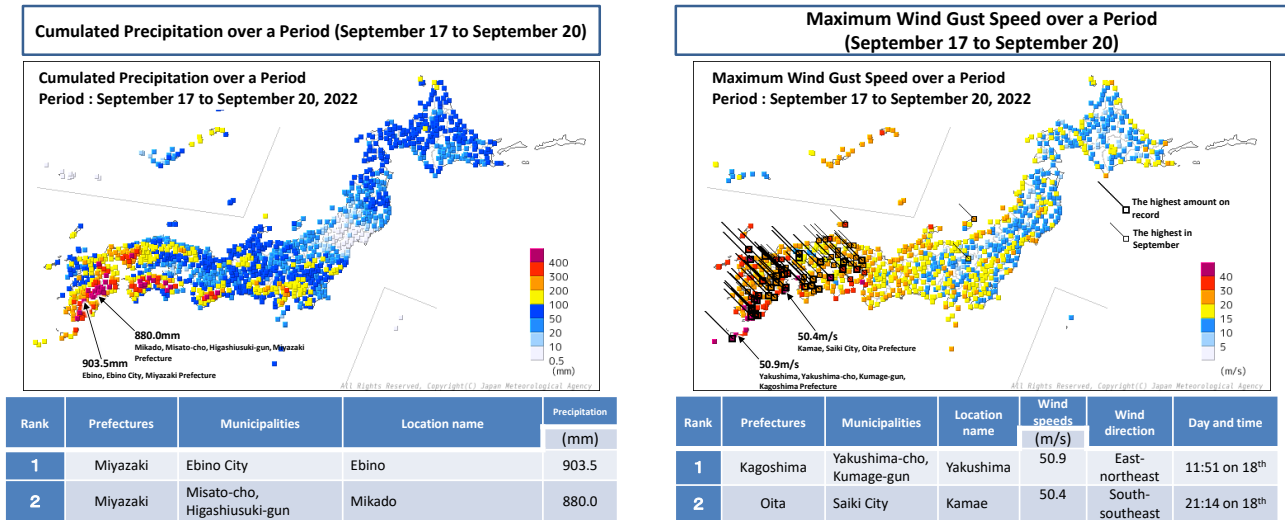
Prime Minister Kishida visited a disaster site in Niigata Prefecture (Source: Cabinet Office)

Chapter 3. Disaster Caused by Typhoon Nanmadol in 2022

(1) Overview

Typhoon Nanmadol in 2022, which originated near the Ogasawara Islands at 3:00 a.m. on September 14, 2022, rapidly developed into a large and ferocious typhoon on September 17. As the likelihood increased of this typhoon approaching Kagoshima Prefecture (excluding the Amami region) with a sufficient force that warranted a windstorm emergency warning, the Meteorological Agency issued a windstorm, wave, and storm surge emergency warning for Kagoshima Prefecture on the same day. It landed with extremely strong force near Kagoshima City at around 7:00 p.m. on the 18th, and it moved through Kyushu on the morning of the 19th. It then changed course, and traveling east, it moved from the Chugoku region to the Sea of Japan. At 3:00 a.m. on the 20th, it turned into an extratropical cyclone over the Sea of Japan. Record-breaking heavy rains and windstorms swept across western Japan, particularly Kyushu. The total rainfall on the 17th was about twice the monthly average for September at several locations in Kyushu and Shikoku, with over 900 mm of rainfall in many areas in Miyazaki Prefecture. The heavy rainfall was particularly extreme in Miyazaki Prefecture, so the Meteorological Agency issued a heavy rain emergency warning for Miyazaki Prefecture. In addition, a maximum wind gust speed of 50.9 meters per second was observed in Yakushima-cho, Kagoshima Prefecture, and many locations from Kyushu to the Chugoku and Kinki regions experienced the highest maximum wind gust speeds ever recorded.

Cumulated Precipitation over a Period and Maximum Wind Gust Speed over a Period



Source: Meteorological Agency

(2) State of Damage

Typhoon Nanmadol in 2022 caused slope failures in Mimata-cho, Miyazaki Prefecture, and 29 rivers managed by the national and prefectural governments overflowed and caused flood damage in Miyazaki and other prefectures. As a result, 5 people died (Hiroshima, Kochi, and Miyazaki prefectures), 20 were seriously injured, and 141 were slightly injured, mainly in the Kyushu region, particularly in Miyazaki Prefecture. As for damage to homes, 17 were completely destroyed, 2,162 were half or partially destroyed, and 1,310 were flooded above or below floor level (Source: Fire and Disaster Management Agency information, as of March 24, 2023).

Damage also occurred to lifelines such as water and electricity, and to transportation infrastructure such as roads and railroads. In particular, damage to utility poles and power lines caused by strong winds resulted in power outages for up to approximately 129,000 homes in Kagoshima Prefecture and 115,000 homes in Miyazaki Prefecture.

(3) Response by the Government

At 3:00 p.m. on September 16, 2022, the government set up the Information Contact Office in the Prime Minister's Office. At 3:00 p.m. on September 17, Prime Minister Kishida issued directives to “provide timely and accurate information to the public regarding the situations of evacuation, heavy rains, windstorms, and river conditions.” “take all possible proactive measures such as evacuation support in close cooperation with the local governments to ensure the evacuation of residents in areas where flooding or slope failures are expected as the typhoon approaches,” and “quickly grasp the extent of damage upon its occurrence, and form a united front as the government to make every effort to implement disaster response measures.” The Specified Disaster Management Headquarters was established for the first time at a stage when a disaster was likely to occur, and the Information Contact Office was reorganized into the Prime Minister’s Official Contact Office. At 4:00 p.m. on the same day, the first meeting of the Authorized Disaster Management Headquarters was held (four meetings were held by Sept. 21). Minister of State for Disaster Management Tani, who headed the Headquarters, encouraged each ministry

and agency to support evacuation and respond with the greatest possible sense of urgency, notified each prefecture that the “Disaster Relief Act” was applicable to prefectures that may suffer a disaster, and encouraged citizens to evacuate whenever necessary without hesitation. On September 18, the first ministerial meeting was held under Prime Minister Kishida (the meeting was held twice by September 19), and the Prime Minister’s Official Contact Office was reorganized into the Prime Minister’s Official Response Office. On September 24, Minister of State for Disaster Management Tani visited the disaster sites in Miyazaki Prefecture.

The Disaster Relief Act was applied, to all 286 municipalities in 9 prefectures, for the first time since its revision in 2021 at a stage when a disaster was likely to occur. Subsequently, the Act was again applied to Miyazaki Prefecture’s two cities where houses were damaged.

The Cabinet decided on October 28, 2022 to designate the disaster caused by rainstorms and heavy rains from September 17 to 24, 2022 as a disaster of extreme severity, along with the decision to designate the after-mentioned disaster due to Typhoon Talas in 2022 as the same.



The first ministerial meeting on Typhoon Nanmadol in 2022
(Source: Prime Minister’s office website)



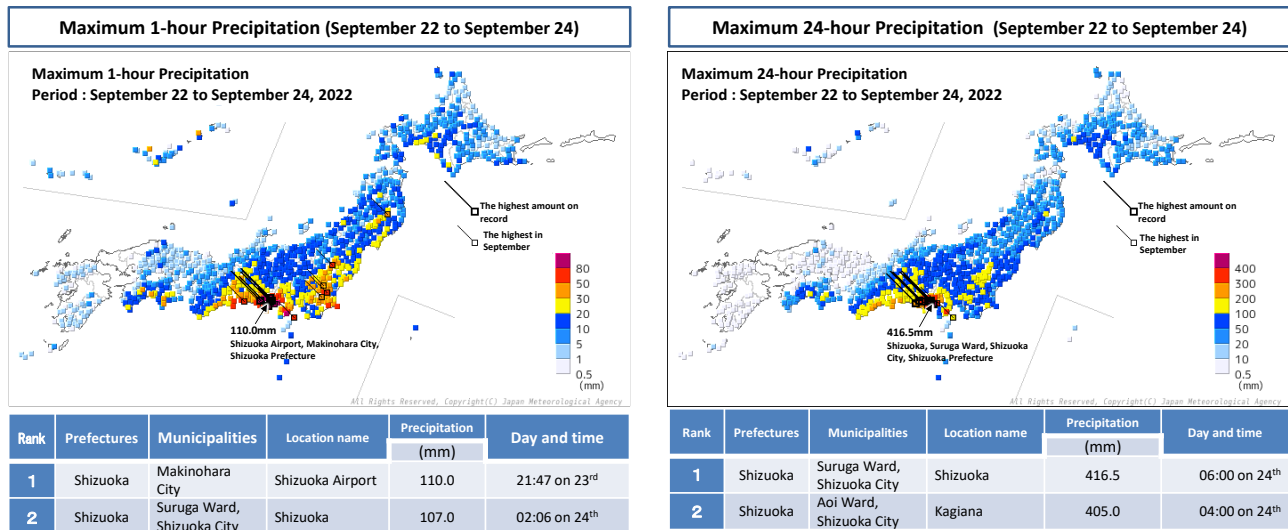
Minister of State for Disaster Management Tani visited a disaster site in Miyazaki Prefecture (Source: Cabinet Office)

Chapter 4. Disaster Caused by Typhoon Talas in 2022

(1) Overview

Typhoon Talas in 2022, which originated in the south of Japan at 9:00 a.m. on September 22, 2022, moved northward from the south of Japan, approached the Kinki region, and then turned into a tropical cyclone in the south of the Kii Peninsula at 9:00 p.m. on September 23. It changed to an extratropical cyclone off the coast of Tokaido at 9:00 a.m. on September 24. Rain-bearing clouds that developed around the typhoon caused heavy rain, mainly in the Pacific Ocean side of eastern Japan. In Shizuoka and Aichi prefectures, a stationary linear mesoscale convective system developed from the evening of the 23rd to dawn of the 24th, resulting in record-breaking heavy rainfall. Particularly in Shizuoka Prefecture, hazardous rain continued, and a number of short-duration heavy rainfall alerts were issued for record-breaking amounts of rainfall. Additionally, 24-hour precipitation exceeded 400 millimeters at several locations, surpassing the average monthly rainfall for September and setting the highest rainfall record.

Maximum 1-hour Precipitation and Maximum 24-hour Precipitation



Source: Meteorological Agency

(2) State of Damage

Typhoon Talas in 2022 caused slope failures in Kakegawa City, Shizuoka Prefecture, and flooded prefecture-managed 28 rivers causing flood damage in three prefectures. As a result, 3 persons died (Shizuoka), 12 persons were seriously injured, and 4 persons were slightly injured, with Shizuoka Prefecture suffering the most. As for damage to homes, 7 were completely destroyed, 3,704 were half or partially destroyed, and 8,950 were flooded above or below floor level (Source: Fire and Disaster Management Agency information, as of March 24, 2023).

Damage also occurred to lifelines such as electricity and water supply, and to transportation infrastructure such as roads and railroads. Particularly in Shizuoka City, water was cut off in up to 74,300 households due to blocked water intakes and other problems.

(3) Response by the Government

At 4:30 p.m. on September 22, 2022, the government held an Inter-Agency Disaster Alert Meeting. At 10:05 a.m. on September 23, an Information Contact Office was set up in the Prime Minister's Office. On September 27, State Minister of Cabinet Office Hoshino and Parliamentary Vice-Minister of Health, Labour and Welfare Honda visited damaged sites in Shizuoka Prefecture.

The Disaster Relief Act was applied to 23 municipalities in Shizuoka Prefecture.

Regarding the designation of a disaster of extreme severity, the Cabinet decided on October 28, 2022 to designate the disaster due to rainstorms and heavy rains from September 17 to 24, 2022 as a disaster of extreme severity, along with the disaster due to the aforementioned Typhoon Nanmadol in 2022.



State Minister of Cabinet Office Hoshino and Parliamentary Vice-Minister of Health, Labour and Welfare Honda visited damaged sites in Shizuoka Prefecture (Source: Cabinet Office)

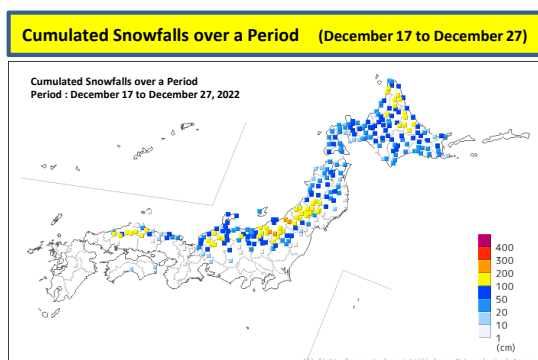
Chapter 5. Disasters Due to Heavy Snow from December 17 and from 22, 2022

(1) Overview

From December 17 to 19, 2022, a strong cold air mass moved over Japan, and a strong winter-type pressure pattern was observed around the country. The Sea of Japan side of northern to western Japan experienced heavy snowfall, mainly in Fukushima, Yamagata, and Niigata prefectures. In some areas in Fukushima and Yamagata, 24-hour snowfall through the 19th exceeded 100 centimeters, which was the highest ever until last winter. In Fukushima and Niigata prefectures, where developed snow clouds flow in, snowfall temporarily intensified, so the Meteorological Agency gave the announcement “weather information on extremely heavy snow” for both prefectures and called for their greater vigilance. In addition, in the Shikoku and Kyushu regions, heavy snow fell, mainly in the mountains, but snow also fell and accumulated on the plains. Furthermore, extremely strong winds with speeds of 20 meters or more a second were observed in the Okinawa region, southern Kyushu, and northern Japan.

From December 22 to 24, another strong cold air mass moved over Japan, and until December 26, a strong winter-type pressure pattern was observed around the country. Heavy snow fell over a wide area on the Sea of Japan side of northern to western Japan, and snowfall intensified in some areas in northern and eastern Japan. Heavy snow also fell on the Okhotsk Sea side of Hokkaido, on the Pacific Ocean side of western Japan, and on the flatlands of the Tokai region, where snow is usually rare. In addition, winds intensified nationwide, and very strong winds with speeds of 20 meters or more a second were observed over a wide area, from western to northern Japan.

Cumulated Snowfalls over a Period (December 17 to December 27)



Cumulated Snowfalls over a Period (December 17 to December 27)			
Prefectures	Municipalities	Location name	Amount of snow
			(cm)
Yamagata	Oguni-machi, Nishiokitama-gun	Oguni	258
Fukushima	Tadami-machi, Minamiaizu-gun	Tadami	236
Niigata	Sekikawa-mura, Iwahune-gun	Shimoseki	222
Niigata	Uonuma City	Sumon	217
Yamagata	Nishikawa-machi, Nishimurayama-gun	Oisawa	197

Source: Meteorological Agency

(2) State of Damage

In the heavy snowfall from December 17, 2022, accidents occurred during snow removal work, resulting in 12 fatalities (Hokkaido, Aomori, Akita, Yamagata, Niigata, and Ishikawa prefectures), 32 serious injuries, and 54 slight injuries. Seven houses were partially damaged (Fire and Disaster Management Agency information, as of January 13, 2023). A maximum of 23,620 households experienced power outages within the service area of Tohoku Electric Power Co. In particular, Sado City, Niigata Prefecture, experienced power outages intermittently due to snow

accumulating on transmission lines (from December 18 to 27). In addition, snow caused traffic disruptions from northern to western Japan, such as road closures, suspension of railway services, and cancellations of aircraft and ships. Particularly in Niigata Prefecture, traffic was intermittently brought to a standstill on National Route 8 (Kashiwazaki City, Niigata Prefecture) and National Routes 8 and 17 (Mitsuke City to Nagaoka City, Niigata Prefecture).

Heavy snowfall on December 22, 2022, caused accidents during snow removal work, resulting in 11 fatalities (Hokkaido, Akita, Yamagata, Ishikawa, Hiroshima and Ehime prefectures), 22 serious injuries, and 34 light injuries. Twenty seven houses were partially damaged (Fire and Disaster Management Agency information, as of January 13, 2023). In addition, power transmission towers collapsed due to heavy snowfall that began on December 22, causing power outages in approximately 26,900 households within the service area of Hokkaido Electric Power Co., mainly in Monbetsu City, Hokkaido, and damaging lifelines. The heavy snow also caused traffic disruptions from northern to western Japan, including road closures, rail service suspensions, and cancellations of aircraft and ships.

(3) Response by the Government

The government continued to respond to the heavy snow that began on December 17, 2022 through the Information Contact Office, which had been established at the Prime Minister's Office on December 1, 2022. The "Disaster Relief Act" was applied to four cities in Niigata Prefecture due to traffic hindrance caused by heavy snow.

In response to the heavy snow that began on December 22, 2022, an Information Contact Office was set up at the Prime Minister's Office at 3:30 p.m. on December 21, 2022, and Inter-Agency Disaster Alert Meetings were held (two meetings by December 23). In addition, a ministerial meeting on the heavy snowfall that began from December 22 was held from 6:25 p.m. on December 22. Furthermore, the "Disaster Relief Act" was applied to 12 cities and towns in Hokkaido and Niigata Prefecture due to long-duration power outages caused by heavy snow and other factors.



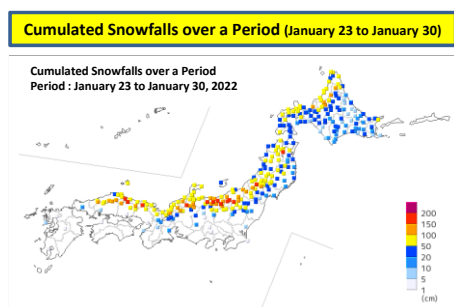
Ministerial meeting on the heavy snowfall that began from December 22
(Source: Prime Minister's office website)

Chapter 6. Disasters Caused by Heavy Snow from January 20, 2023

(1) Overview

Several low-pressure systems passed near Japan on January 23, 2023, and subsequently, a strong cold air mass moved over Japan and remained until January 25, creating a strong winter-type pressure pattern around the country. Through January 25, heavy snow fell, mainly in western Japan and the Hokuriku region. Snow accumulated even in areas where snowfall is usually rare, such as the Kinki and Tokai regions. The Meteorological Agency gave the announcement “weather information on extremely heavy snow” for Okayama Prefecture, where snowfall temporarily intensified, and called for further precautions. In addition, winds intensified nationwide, with very strong winds of 25 meters or more per second observed in northern Japan, and the lowest temperatures on the 25th and 26th were below freezing point nationwide, except for the Nansei Islands, resulting in near-record 10-year lows in a wide area. Heavy snowfall continued, mainly in the Hokuriku and Sanin regions, until the 30th due to the winter-type pressure pattern and a low-pressure system over the Sea of Japan. Especially on the 28th, well-developed snow clouds moved into the Hokuriku region, and the Meteorological Agency gave the announcement "weather information on extremely heavy snow" for Toyama Prefecture.

Cumulated Snowfalls over a Period (January 23 to January 30)



Source: Meteorological Agency

Cumulated Snowfalls over a Period (January 23 to January 30)			
Prefectures	Municipalities	Location name	Amount of snow
			(cm)
Yamagata	Okuramura, Mogami-gun	Hijiori	199
Tottori	Daisen-cho Saihaku-gun	Daisen	194
Aomori	Aomori City	Sukayu	186
Niigata	Uonuma City	Sumon	182
Niigata	Myoukou City	Sekiyama	172

(2) State of Damage

Due to heavy snowfall from January 20, 2023, accidents occurred during snow removal work, resulting in 8 fatalities (Hokkaido, Aomori, Akita, Yamagata, Niigata, Kyoto and Okayama prefectures), 35 serious injuries, and 77 slight injuries. As for damage to houses, 1 house was partially damaged and 7 houses suffered inundation below floor level (Fire and Disaster Management Agency information, as of February 2, 2023).

A strong cold air mass that formed on January 24 damaged lifelines, including water supply cut off for up to 14,385 households mainly in Ishikawa Prefecture due to freezing of water pipes, and power outages for up to approximately 3,100 households mainly in Tottori Prefecture in the service area of the Chugoku Electric Power Co., due to fallen trees caused by snowfall and strong winds breaking electric wires. Furthermore, traffic disruptions occurred in northern to western Japan, including road closures, railroad service suspensions, and cancellations of aircraft and ships. Major traffic jams occurred on the Shin-Meishin Expressway, particularly on the sections between Yokkaichi JCT and Kameyama-Nishi JCT, and between Kameyama JCT and Koga-Tsuchiyama IC). Moreover, 15 trains stopped between Yamashina and Takatsuki Stations of JR West, and 3 trains stopped between Ebetsu and Toyohoro Stations of JR Hokkaido.

(3) Response by the Government

The government established an Information Contact Office in the Prime Minister's Office at 3 p.m. of January 20, 2023, and held Inter-Agency Disaster Alert Meetings (twice by January 23). The “Disaster Relief Act” was adopted to a town of Tottori Prefecture due to a traffic disruption.

Chapter 7 Response by Volunteers and NPOs

(1) Volunteer Response to Major Disasters in 2022

In the disasters caused by heavy rains in August 2022, Disaster Volunteer Centers (hereinafter referred to as "Disaster VCs") were set up in 22 municipalities in Aomori, Iwate, Akita, Yamagata, Niigata, Ishikawa, Fukui and Shizuoka prefectures by the Council of Social Welfare, and a total of about 23,000 volunteers participated in support activities through the Disaster VCs (as of October 15, 2022).

In the disaster caused by Typhoon Nanmadol in September 2022, Disaster VCs were launched in four cities in Oita and Miyazaki prefectures by the Council of Social Welfare, and a total of about 1,200 volunteers worked through the disaster VCs (as of October 11, 2022).

In the disaster caused by Typhoon Talas in September 2022, Disaster VCs were launched in three cities in Shizuoka Prefecture by the Council of Social Welfare, and a total of about 7,000 volunteers worked through the Disaster VCs (As of December 31, 2022).

In the affected areas, relief efforts tailored to the local conditions were undertaken, including cleaning and organizing damaged houses, disposing disaster waste, removing debris and dirt from houses and waterways, distributing supplies at shelters, and aiding people relocating from shelters.

In the affected areas, the scope of volunteer recruitment was defined, taking into account the needs of the affected people and the local COVID-19 situation, and basic infection prevention measures, such as wearing masks, washing hands, and social distancing, were requested of the volunteers. In addition, a pre-registration system utilizing ICT was introduced to alleviate congestion at the reception for volunteers.

In addition to the support from volunteers through the Disaster VCs, specialized NPOs and other organizations engaged in wide-ranging support activities, such as providing technical assistance for removing soil and debris from damaged houses, handling disaster waste in the affected areas, supporting evacuees in their homes (indoor evacuees), creating a comfortable environment for children, and providing psychological care.



Activities by disaster volunteers (Source: Council of Social Welfare in Shizuoka Prefecture)



Volunteer activities by NPOs with experts (Source: JVOAD)

(2) Cooperation among the Administration, Volunteers and NPOs

In the affected areas in Niigata and Shizuoka Prefectures, various support entities such as the administration, the Council of Social Welfare and NPOs held “Information Sharing Meetings” to share information on support activities and to coordinate various activities. It allowed the administration, volunteers and NPOs to provide cooperative support including understanding the needs of affected people and assistance to evacuees at home.

At the national level as well, “national information sharing meetings (Core Conference)” was held by the Cabinet Office, Ministry of the Environment, the Japan Voluntary Organizations Active in Disaster (JVOAD), the Japan National Council of Social Welfare and the Disaster Relief Volunteer Activity Support Project Meeting (hereinafter referred to as “Support P”). They shared information on the affected areas and discussed ways to support the affected areas in the future.



Information sharing meeting in Niigata Prefecture
(Source: Niigata Prefecture)



Information sharing meeting in Shizuoka Prefecture
(Source: Council of Social Welfare in Shizuoka Prefecture)