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Freak waves cause damage at US army base, shut airports in remote islands

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Screenshots of wave hitting Roi-Namur dining room. The waves smashed down the dining hall's doors, knocking people down and flooding the facility as this screenshot from a video taken Saturday night shows. Photo: Screenshot / Roi-Namur wave video

Powerful waves, driven by offshore storm surges, hit an important US military installation in the Marshall Islands on Saturday night, causing damage and resulting in the evacuation of all "non-mission personnel" from the island.

Flooding caused by the waves also hit two airports at Ailinglaplap Atoll, leaving rocks, coral and debris in their wake, keeping those airports closed for weeks. Other islands reported flooding and moderate damage.

The US Army in a statement on Sunday afternoon that at approximately 9pm on January 20, "a series of weather-induced waves hit Roi-Namur which caused significant flooding in the northern portions of the island".

A video circulating from Roi-Namur, an island at the northern end of Kwajalein Atoll, shows an approximately one-metre wave hitting the Army's dining hall, breaking down doors, knocking people down and washing them from outside into the facility.

Roi-Namur houses the US Army's most sophisticated space-tracking equipment as part of the Ronald Reagan Ballistic Missile Test Site.



Screenshots of wave hitting Roi-Namur dining room. The waves smashed down the dining hall's doors, knocking people down and flooding the facility as this screenshot from a video taken Saturday night shows. Photo: Supplied

A second follow-up wave, caught on video, was higher, possibly as high as one-and-a-half metres, washing through the dining hall.

No deaths were reported at Roi-Namur, but one person was being treated for injuries at the clinic on Kwajalein Island, the base headquarters.

"One individual sustained injuries to lower extremities and is currently being seen at the Kwaj Clinic," said Army public affairs officer Mike Brantley. "He is in stable condition."

The Army said in a statement on Sunday US Army Garrison-Kwajalein Atoll and mission partners have established an Emergency Operations Cell to oversee and coordinate all recovery efforts.

"We have accountability of all employees (US and Marshall Islands) and evacuated all non-mission essential personnel to

Kwajalein."

Kwajalein Island is the missile testing range headquarters and is located about 40 miles to the south at the other end of the atoll.

"All Roi residents will remain on Kwajalein until basic services can be restored on Roi," the Army said. "Recovery efforts will be our top priority."

Roi-Namur, which was hit by storm-driven waves Saturday night causing serious flooding, houses some of the Reagan Ballistic Missile Test Site's most sophisticated missile and space tracking equipment, including the ALTAIR Radar, pictured. Photo: Giff Johnson

On Sunday, the Marshall Islands National Weather Service issued a mass text message alert saying: "Northern swells may cause inundation in northern atolls and north-facing shores. Hazardous conditions for swimming and sailing in small crafts due to crashing waves and stronger than usual currents due to swells."

An aerial damage assessment conducted by the Army on Sunday morning showed "how water inundation washed over the northwest side of the island (Roi-Namur), flooding at least one-third of it", the Army said in a brief update Sunday morning.

"There is standing water on both sides of the north end of the runway and the first floors of all but two bachelors' quarters."

There was flooding in multiple buildings, including the Tradewinds Theater, the Army store, "and all of the automotive warehouse area".

Remarkably, the small island of Santo, located three miles away from Roi-Namur, which houses a Marshallese community of 1,000, appeared to be unaffected by flooding, said Kwajalein Member of Parliament David Paul Sunday.

He said the Kwajalein Atoll Local Government had initiated a survey of all inhabited islands in Kwajalein to determine damage.

Kwajalein is the world's largest atoll and has Marshallese communities on over 10 islands.

Wave swells also seriously flooded islands in Ailinglaplap Atoll, tossing debris onto airfields at Woja and Jeh islands.

It likely will take weeks to clear the runways for air service to return. Kili Island, home of the displaced Bikini

Islanders, also experienced flooding Saturday-Sunday.

The elevation of most islands in this atoll nation is in the one-to-two-metre range. Ocean flooding due to rising sea levels has increased throughout the Marshall Islands in recent years, with dozens of small, "nuisance" inundations on Majuro Atoll, the capital, and other atolls each year. Saturday night's wave flooding incident at Roi-Namur was a significant escalation over minor ocean inundations seen in the Marshall Islands in the past year.

Kwajalein aerial landing. Workers from Roi-Namur Island in the northern side of Kwajalein Atoll were evacuated Saturday to the base headquarters, pictured, after high waves flooded much of Roi-Namur, causing significant damage Photo: Giff Johnson

While Kwajalein and Ailinglaplap were dealing with the aftermath of wave-driven ocean flooding, Majuro has been facing an ongoing power crisis for the past two

weeks, with numerous extended power outages affecting most parts of the capital atoll.

These have resulted from the decline of old generators that constantly break down, leaving the utility company without adequate electrical generating capacity to power the entire atoll.

US Department of Defense climate study

A 2018 US Department of Defense climate study that focused on Roi-Namur Island concluded that "the impact of sea-level rise inundation combined with annual wave-driven flooding will begin to significantly negatively impact Roi-Namur when mean sea level is 0.4 meters higher than at present".

Repeated flooding of the low-lying island by seawater during storms "will be of sufficient volume to make the groundwater non-potable year-round", and at this level of flooding, the isthmus that connects the two islands, Roi and Namur, "will be flooded annually, negatively impacting the facilities in those locations".

The 2018 study was conducted by the US Geological Survey, National Oceanographic and Atmospheric Administration, Deltares, and University of Hawaii.

It said the "tipping point" for when potable groundwater on Roi-Namur will be unavailable due to extreme flooding, in the worst-case scenario, could be reached before 2035. The report indicated the outside best-case scenario was 2055-2065.

"Even if the groundwater supply was supplemented or replaced with another source (e.g., desalinization or delivery of freshwater from elsewhere), the annual wave-driven flooding will disrupt operations on Roi-Namur," the report concluded.