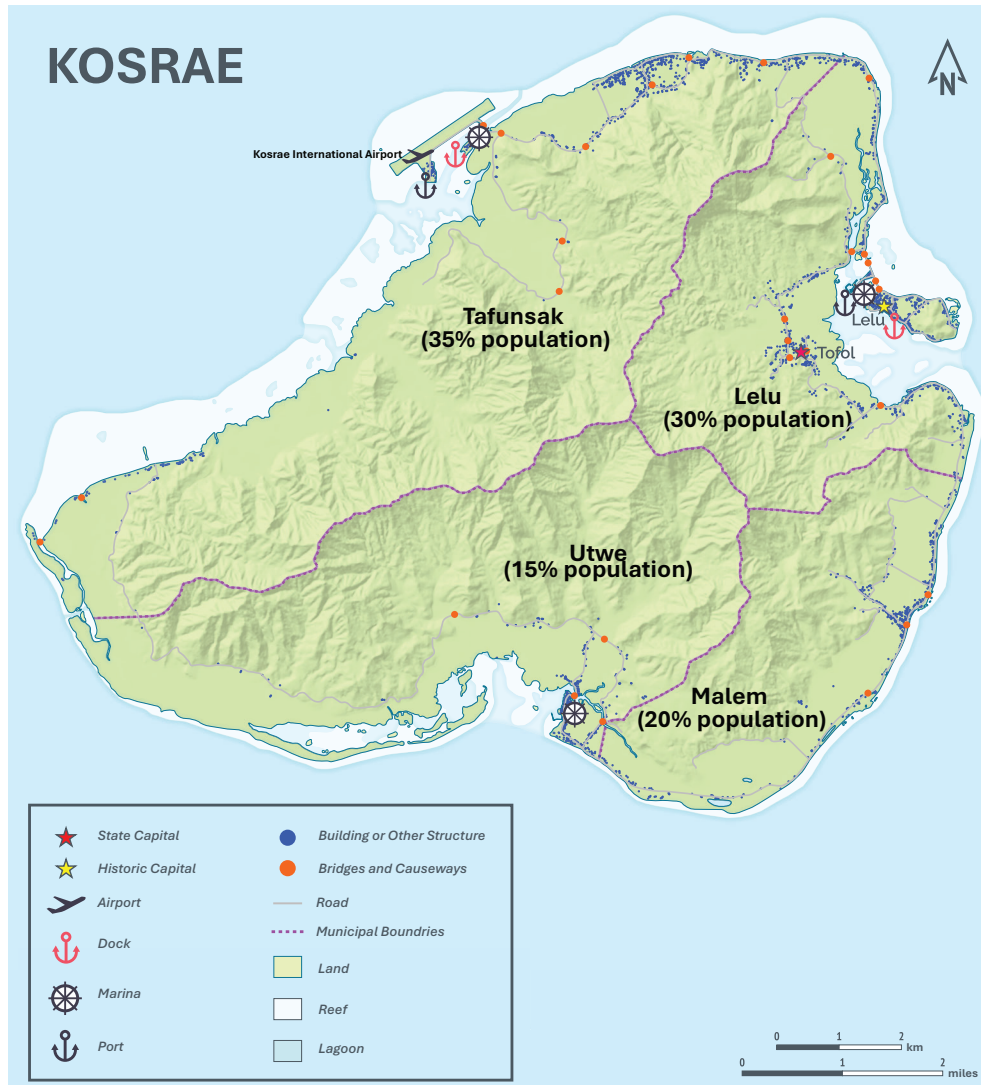


KOSRAE STATE HAZARDS & DISASTER MANAGEMENT

JULY 2026

Kosrae State is primarily exposed to coastal inundation, flooding, and drought hazards. Properties and infrastructure are susceptible to flood damage, particularly in coastal areas, where most houses are located. Drought causes water and food insecurity. Kosrae is indirectly affected by nearby storms contributing to coastal inundation, though it rarely experiences direct hits by tropical cyclones due to its location at the far-eastern end of the country's 2,700-kilometer (km; 1,700-mile [mi]) span. Kosrae's state-level disaster management (DM) structure is highly centralized. Though the state has no outlying islands, the main island does have a few, small intercoastal islands, of which the most significant is Lelu Island, located in Lelu Harbor.



- **Multi-Hazard Environment:** Kosrae is exposed to coastal inundation, flooding, droughts, indirect impacts of nearby tropical cyclones, epidemics, landslides, and tsunamis.
- **State DM Oversight:** The Governor holds authority for disaster response operations in the state. The State Disaster Coordinating Officer (DCO) manages operations. There is robust coordination between the state and municipal governments.
- **Municipal-Led Execution:** The Mayors of Lelu, Malem, Tafunsak, and Utwé Municipalities are the lead disaster managers at the community level and are responsible for conducting the initial damage assessment (IDA). Malem Municipality has published a comprehensive municipal-level DM plan.

Facts about Kosrae State

Kosrae State is the smallest of the four states of the Federated States of Micronesia (FSM) and the only one with no outlying islands. It reaches an elevation of 632 meters (m; 2,073 feet [ft]).



Capital: Tofol



Total Population: 5,092 (per 2023 census)



Total Land Area: 109.6 km² (42.3 mi²)



State and Local Government:

Governor: Chief Executive of Kosrae State

Kosrae Legislature: 14 elected Senators

Judicial: Kosrae State Court

Municipalities: 4 (Lelu, Malem, Tafunsak, and Utwé)



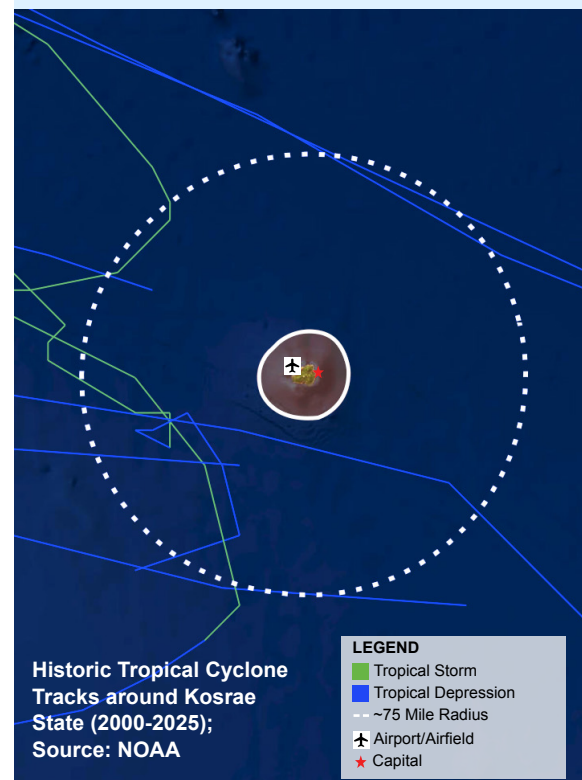
Languages: Kosraean (official), English



Airports/Airfields:

Kosrae International Airport (KSA / PTSA), Okat District

- Elevation: 3.4 m (11 ft)
- Runway dimensions: 1,753 x 46 m (5,751 x 150 ft)
- Surface: Asphalt (grooved)
- Aircraft parking area: 9,680 m² (104,194 ft²)



HAZARDS

Kosrae is commonly exposed to flooding, drought, and tropical cyclone impacts. It may be at risk of damage from tsunamis generated elsewhere in the region. Direct cyclone strikes are rare: the last severe one struck in 1905. Nonetheless, nearby storms still deliver strong winds, high waves, and heavy rain, as illustrated by moderate damage from storms in 1961, 1979, and 2008.



Coastal, Flash, and Riverine Flooding

- **Frequency:** The risk of flooding varies throughout the year and from year to year. Flooding of all types is common and is particularly frequent between December and February. Flooding of low-lying land most commonly occurs with high-tide events.
- **Impacts:** Very high tides, including king tides (the highest tides of the year), cause coastal inundation and erosion. Shoreline properties and infrastructure are at risk of damage. Inland and coastal roads are susceptible to flood damage; roads in coastal areas of Malem Municipality are particularly susceptible.



Drought

- **Frequency:** Drought tends to correlate with moderate or strong El Niño events; they commonly occur in the year following an El Niño.
- **Impacts:** Communities experience water and food insecurity after water sources dry up and crops fail. Malnutrition can become a public health concern.



Tsunami

- **Frequency:** Tsunamis are historically infrequent. Of the 34 separate tsunami events that impacted FSM from 1837 to 2013, none were recorded as significantly affecting Kosrae.
- **Impacts:** Maximum tsunami-wave amplitudes for Kosrae and its neighboring state, Pohnpei, are predicted at 1.1 - 1.9 m (3.6 - 6.2 ft) for a 2000-year return period, a lower probabilistic tsunami hazard than for FSM's western states.

El Niño – Southern Oscillation (ENSO)

ENSO is a recurring cycle characterized by periodic warming (El Niño) and cooling (La Niña) of ocean temperatures in the equatorial Pacific; it causes changes to rainfall, air and ocean temperatures, tropical cyclone formation, and trade winds.

Impacts on Kosrae:

- Rainfall during the El Niño year in eastern FSM, including Kosrae, generally remains above normal through September. However, rainfall starts significantly declining in November, with dryness increasing through December and January and peaking in February. Rainfall in eastern FSM can be as much as 60% below normal from January through April in the year after El Niño.
- The risk of tropical cyclone activity in eastern FSM during El Niño years is increased March - July and October - December. More tropical cyclones are born in eastern FSM waters during El Niño years.



DISASTER PROFILE (1999-2025)

The following narratives cover hazard events that had significant local impact in Kosrae since 1999. Some, but not all, events are in the international disaster database (EM-DAT) from the Centre for Research on Epidemiology of Disasters, which classifies disasters as events resulting in 10 or more deaths, affecting 100 or more people, or triggering a declared state of emergency. Hazard events not meeting those criteria may still significantly affect Kosrae's small population and economy.



March 2024: Drier-than-normal weather that started in December 2023 resulted in a drought that was experienced by all four states of FSM. Some 6,000 people were affected nationwide. On 11 March, the President of FSM declared a State of Emergency. The Micronesia Red Cross Society (MRCS) conducted awareness sessions across FSM; two schools in Kosrae were included in these sessions.



January 2014: Sea levels around Kosrae were about 10 centimeters (4 inches) higher than normal when king tides arrived between December 2013 and February 2014. This higher sea level exacerbated the impacts of the astronomical tides. The highest high-tide levels in early and late January were over 2.3 m (7.5 ft). Minor flooding and damage were reported.



February 2008: Kosrae experienced significant flooding that impacted low-lying land and drove coastal erosion, especially south of Malem. The causes of the flooding were high sea levels due to a combination of high tides, moderately large wave conditions, and strong La Niña conditions that pushed up tide levels and strengthened the northeasterly trade winds between November 2007 and February 2008.



December 1999 and February 2000: Kosrae experienced very high tides in late December 1999. They resulted in flooding along the Tafunsak and Malem coastlines. The inundation event was related to La Niña conditions that exacerbated the typically high spring tide and strong northeast trade winds. Moreover, these conditions coincided with astronomical conditions that magnified the tide height. Around 21 February 2000, high-tide flooding and wave overwash damaged shoreline properties on the northern and eastern coasts of the island.



Very high tides contributed to flooding December 1999 on Lelu Island, located in Kosrae's Lelu Harbor. Source: Kosrae Island Resource Management Authority (KIRMA), <https://kosraecoast.com>



As a single-island state, Kosrae's DM structure is highly centralized at the state level, and it maintains robust coordination between the state and municipal governments. The Kosrae State Standard Operating Procedure (SOP) for Emergency and Disaster Response defines a clear hierarchy for command, control, and coordination. The Governor is responsible for disaster response direction and control and the State DCO manages operations.

Governor – Holds authority for the direction and control of all Kosrae disaster operations

- May declare public warnings and execute necessary response activities.
- May declare a state of emergency based on prevailing disaster situation and activate the state disaster response plan, allocation of funds, etc.
- May request disaster assistance from the FSM national government (President) when state response capacity is surpassed.

State Disaster Coordinating Officer (DCO) – Primary operational coordinator for all phases of DM and the focal point for all response activities. Responsible for maintaining the State Disaster Response Plan and SOP, coordinating damage assessments, and developing the State Action Plan and Budget. Manages the State Emergency Operations Center (SEOC). Activates and chairs the State Disaster Coordination Team (SDCT). Provides direct advice and situation reports to the Governor.

Governor's Disaster Committee (GDC) – High-level advisory body chaired by the Governor and composed of the directors of all state departments and heads of key agencies (e.g., Kosrae Utilities Authority, Port Authority). Advises the Governor on declaring emergencies and requesting national aid. Facilitates inter-departmental coordination. Approves the use of departmental assets and personnel for disaster response.

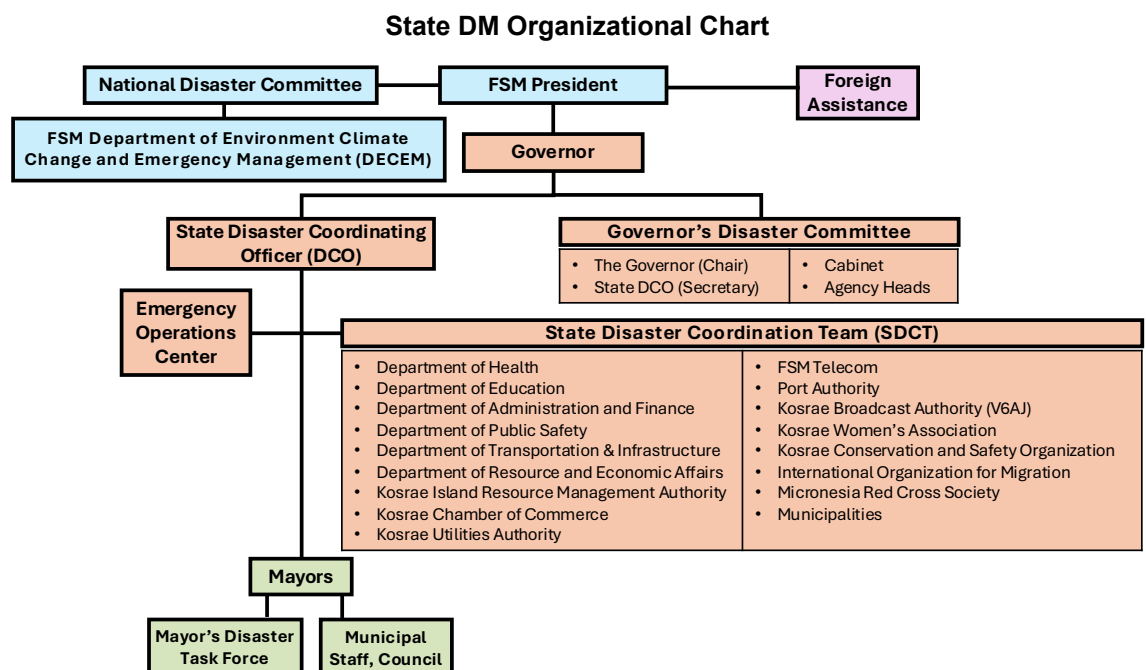
State Disaster Coordination Team (SDCT) – Operational-level team of focal points from all relevant state departments, agencies, and partner organizations. Chaired by the DCO. Responsible for executing the response plan. Staffs the SEOC. Conducts detailed sector-based damage assessments. Identifies needs. Drafts the State Action Plan and Budget for the GDC's review.

Local and Community-Level Response – Kosrae's municipal governments are the nodes that directly integrate local response frameworks with the state system.

- Mayors – Mayors of Kosrae's four municipalities are the lead disaster managers at the community level. They activate community warning systems (e.g., sirens, church bells), oversee orderly evacuations to pre-designated shelters (e.g., schools), and coordinate with the DCO. Mayors conduct the IDA for their municipality within 24 hours of a disaster and deliver it to the SEOC.
- Municipal Representatives – Each Mayor designates a focal point and an alternate to serve on the SDCT and ensure that municipal needs are communicated during state-level planning and that state directives are implemented effectively on the ground.
- Community and Partner Organizations – MRCS volunteers assist with registering evacuees at shelters and conducting damage assessments. The Kosrae Women's Association ensures the specific needs of women and vulnerable groups are addressed in the response. Other organizations also support local disaster response.

Key documents

- Kosrae State Disaster Response Plan (2017)
- Kosrae State SOP for Emergency and Disaster Response (2017)
- Kosrae State Municipal Disaster Preparedness Plan For the Municipality of Malem (2022)



INTERNATIONAL ASSISTANCE REQUESTS

Kosrae State cannot directly request international assistance. State requests for assistance first escalate to the national government. If FSM's national capacity is insufficient to effectively respond, the FSM President formally requests international assistance and the national government coordinates incoming support. Responders may include:

- The United States and other bilateral partners
- United Nations entities, including the International Organization for Migration (IOM)
- The International Red Cross and Red Crescent Movement
- International non-governmental organizations – e.g., the Salvation Army

Compact of Free Association (COFA)

FSM is a sovereign country in free association with the U.S. Key points of the COFA include:

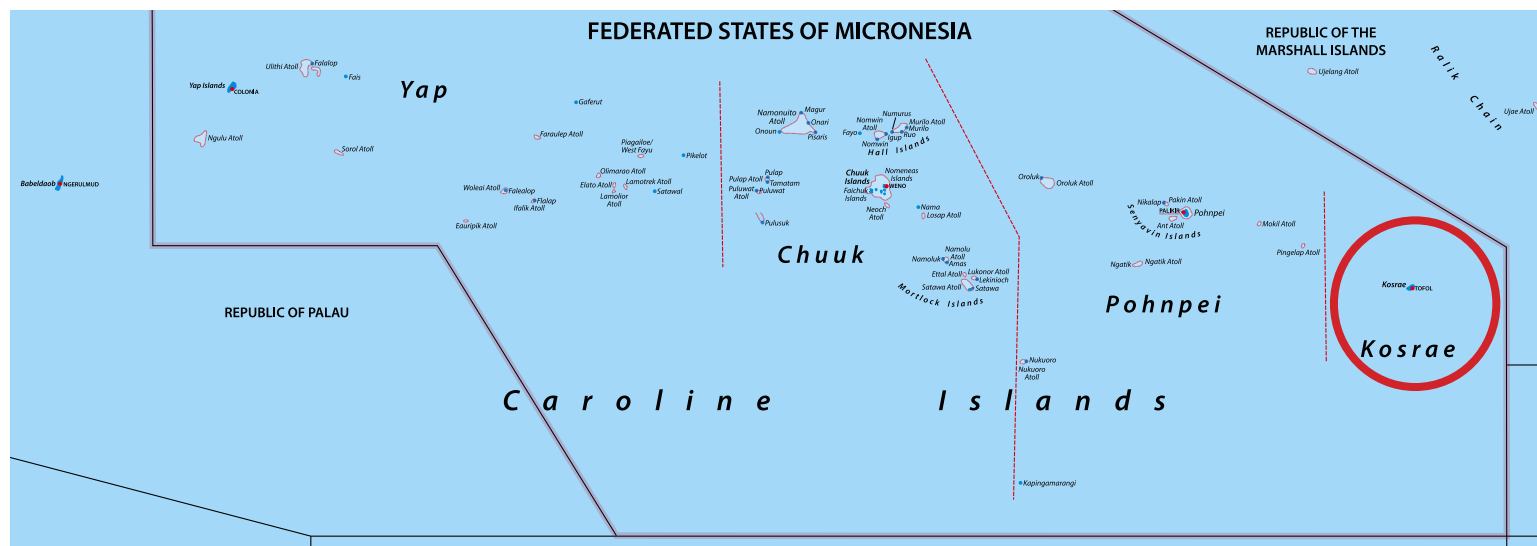
- The U.S. has full authority and responsibility for FSM's defense and security. FSM grants the U.S. military access to its land, waters, and airspace, for strategic security purposes.
- The U.S. provides economic assistance and services.

U.S. ASSISTANCE

Due to Kosrae's remote location and limited logistics capacity, a large-scale disaster may necessitate international assistance, which would include U.S. support in particular. The U.S. Department of State is the lead federal agency for U.S. Government foreign disaster response. The U.S. Chief of Mission in FSM can issue a foreign Declaration of Humanitarian Need, which allows the U.S. to provide initial disaster assistance. U.S. assistance may include Federal Emergency Management Agency (FEMA) funding, technical assessment teams, humanitarian relief supplies, and air or sea lift support, coordinated through the State Department in consultation with FSM authorities. For major disasters, the FSM President may request a U.S. Compact Disaster Declaration to access additional assistance if:

- Public infrastructure damage exceeds US\$1 million
- At least 100 primary residence sleeping homes have been destroyed
- Impact on human life, health, and safety has reached an acute crisis level, when the costs immediately necessary for life-sustaining needs are estimated to exceed US\$1 million over the Disaster Assistance Emergency Fund (DAEF) and other sources.

The DAEF was jointly established under the COFA. FSM and U.S. governments each contribute US\$200,000 annually. Reserved for disaster situations, the DAEF may be accessed to cover all response costs for a nationally declared state of emergency.



Lesniewski - stock.adobe.com. Political vector map of the Federated States of Micronesia, Licensed to CFE-DM, <https://stock.adobe.com/images/political-vector-map-of-the-federated-states-of-micronesia/618389365>

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