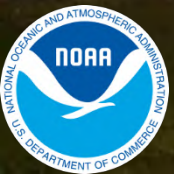


"Climate is what you expect,
weather is what you get."



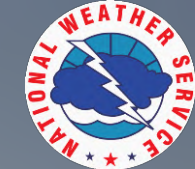


US Department Of Commerce (**USDOC**)

National Oceanic and Atmospheric Administration (**NOAA**)

National Weather Service (**NWS**)

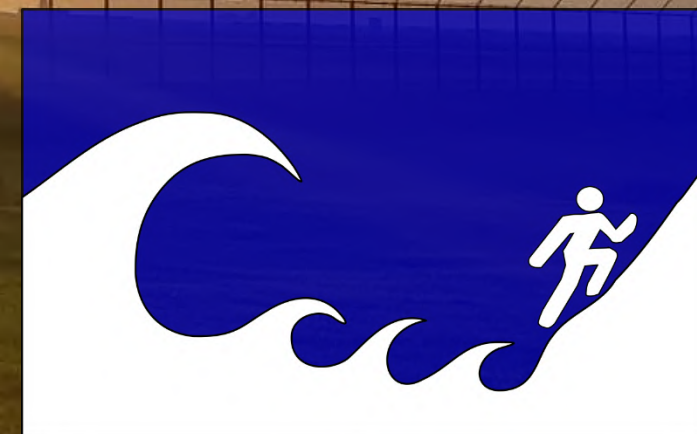
Weather Service Office (**WSO**) Pago Pago



NWS MISSION

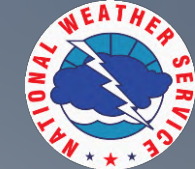
“Provide weather, water and climate data, forecasts, warnings, and impact-based decision support services for the protection of life and property and enhancement of the national economy.”

Tsunami Alerts





LOCAL STAFF



✓ Local

- Meteorologist in Charge (1-MIC)
- Meteorologists (4-Mets)
- Meteorological Technicians (3-Met-Techs)
- Electronic Technician (1-ET)
- Administrative Support Assistant (1-ASA)

✓ National

- Staffing ~22+ employees



PARTNERSHIP

✓ Local

- American Samoa Department of Homeland Security (ASDHS)
- American Samoa Power Authority (ASPA)
- Department of Port Administration (DPA)

✓ National

- Joint Typhoon Warning Center (JTWC)
- Central Pacific Hurricane Center (CPHC)
- Pacific Tsunami Warning Center (PTWC)
- United States Geological Survey (USGS)

✓ International

- Fiji Meteorological Service (Fiji Met-Service)
- Samoa Meteorological Service (Samoa Met-Service)
- Wellington Volcanic Ash Advisory Center (VAAC)



ROLES



✓ Issue all Warnings, Advisories, and Watches

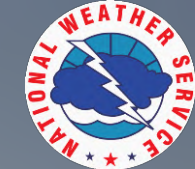
➤ Weather

- Hydrology (flash flood)
- Tropical Cyclones
- Marine (coastal water)
- Aviation (hourly observations-METARS)
- Weather Spotters

➤ Climate

➤ Tsunami

➤ Weather Ready Nation (WRN) Ambassador



Seasons and Products

- ✓ Hurricane Season: November-April
- ✓ Trade-wind Season: June-September
- ✓ Transitional Months: May and October

Regular/Daily Products

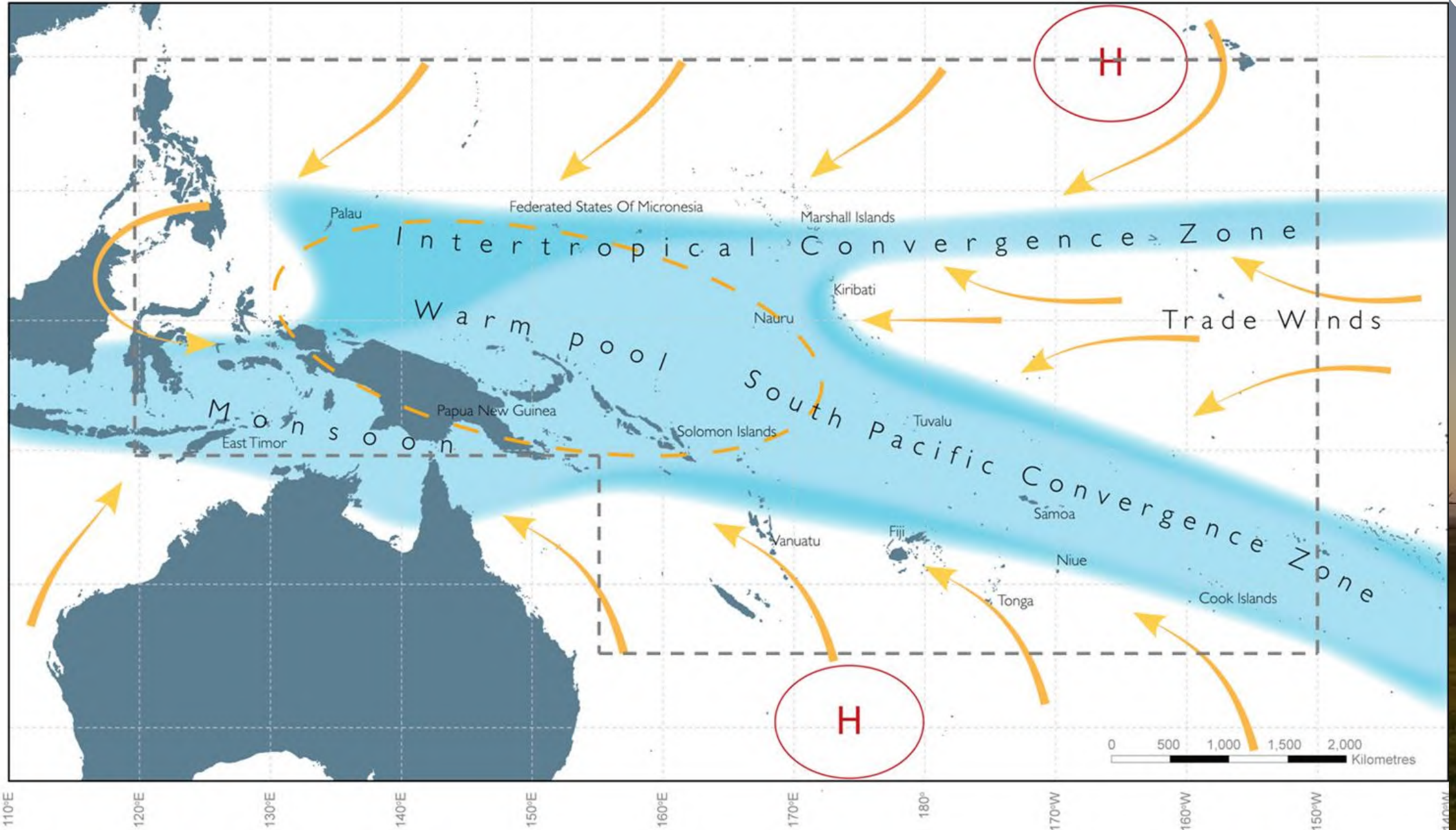
- ✓ Zone (Land) Forecast
- ✓ Coastal (Marine) Forecast

Handouts

- ✓ What it Means...
- ✓ Terminology
- ✓ Tropical Cyclone Evolution, Impacts and Damages
- ✓ Tsunami Alert Levels



Tropical Cyclone Birthplace





Tropical Cyclone Threats



- ✓ Rainfall
- ✓ Wind
- ✓ Storm Surge/Tide
- ✓ Rip Current
- ✓ Tornado/Waterspout



Wind

STORM SURGE

RIP CURRENTS
Break the Grip of the Rip!

IF CAUGHT IN A RIP CURRENT

- ◆ Don't fight the current
- ◆ Swim out of the current, then to shore
- ◆ If you can't escape, float or tread water
- ◆ If you need help, call or wave for assistance

SAFETY

- ◆ Know how to swim
- ◆ Never swim alone
- ◆ If in doubt, don't go out

More information about rip currents can be found at the following web sites:
www.ripcurrents.noaa.gov
www.usfa.org

WATER-SPOUTS



AMERICAN SAMOA

INDEPENDENT SAMOA



<u>WINDS</u>		<u>TERMINOLOGY</u>				<u>WINDS</u>			<u>TERMINOLOGY</u>	
<u>1-Minute Mean Wind</u> <u>KT</u>	<u>MPH</u>	<u>ENGLISH</u>		<u>SAMOAN</u>		<u>10-Minute Mean Wind</u> <u>KT</u>	<u>MPH</u>	<u>km/hr</u>	<u>ENGLISH</u>	<u>SAMOAN</u>
15-20	15-25	Tropical Disturbance		Taaviliga o Savili						
20-33	23-38	Tropical Depression	Small Craft (Marine Only)	Taaviliga o Savili Malolosi	Fautuaga mo Vaa Laiti (Gataifale)	20-25	25-30		Small Craft & Alia Fishing Boats Advisory	Fautuaga mo paopao ma alia fagota (Gataifale)
			Wind Advisory 25-35 KTS (30-40 MPH) (Land Only)		Fautuaga mo Savili Malolosi 25-35 NOTE (30-40 MPH)					High Wind Advisory (Land Only)
34-47	39-54	Tropical Storm Watch/Warning	Gale (Watch/Warning): Marine Only	Matagi Malolosi (Nofo Vaavaaia/Lapataiga)	63-87	34-47	39-54	63-87	Tropical Cyclone Category 1 Warning	Lapataiga o Matagi Afa Vaega 1
48-63	55-73		Storm (Watch/Warning) Marine Only						Tropical Cyclone Category 2 Warning	Lapataiga o Matagi Afa Vaega 2
64-82	74-95	Hurricane Watch/Warning Cat 1		Afa (Numera 1)	118-158	64-85	73-98	118-158	Severe Tropical Cyclone Category 3 Warning	Lapataiga o Matagi Afa Vaega 3
83-95	96-110	Hurricane Warning Cat 2		Afa (Numera 2)	159-204	86-110	99-127	159-204	Severe Tropical Cyclone Category 4 Warning	Lapataiga o Matagi Afa Vaega 4
96-112	111-129	Hurricane Warning Cat 3		Afa (Numera 3)	205+	110+	128+	205+	Severe Tropical Cyclone Category 5 Warning	Lapataiga o Matagi Afa Vaega 5
113-136	130-156	Hurricane Warning Cat 4		Afa (Numera 4)						
137+	157+	Hurricane Warning Cat 5		Afa (Numera 5)						



WHAT IT MEANS...



<p>FLASH FLOOD WATCH (<i>Nofo Vaavaaia mo Lologa ma Tafega</i>)</p>	<p>Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent.</p>
<p>FLASH FLOOD WARNING (<i>Lapataiga mo Lologa ma Tafega</i>)</p>	<p>Issued to inform the public, emergency management, and other cooperating agencies that flash flooding is in progress, imminent, or highly likely.</p>
<p>GALE WATCH - MARINE ONLY (<i>Nofo Vaavaaia mo Matagi Malolosi</i>)</p>	<p>A watch for an increased risk of a gale force wind event for sustained surface winds, or frequent gusts, of 34-47 knots (39-54 mph), but its occurrence, location, and/or timing is still uncertain. Issued up to 48 hours in advance of the anticipated onset of a gale</p>
<p>GALE WARNING - MARINE ONLY (<i>Lapataiga mo Matagi Malolosi</i>)</p>	<p>A Warning of 1-minute sustained surface winds, or frequent gusts, in the range of 34-47 knots (39-54 mph), either predicted or occurring not directly associated with tropical cyclones. Issued up to 24 hours in advance of the anticipated onset of gale force winds.</p>
<p>HIGH SURF ADVISORY (<i>Fautuaga mo Galu Maualuluga</i>)</p>	<p>A statement issued when breaking wave action exceeds 10 feet, and poses a threat to life and property within the surf zone.</p>
<p>HIGH SURF WARNING (<i>Lapataiga mo Galu Maualuluga</i>)</p>	<p>A statement issued when breaking wave action exceeds 15 feet, resulting in an especially heightened threat to life and property within the surf zone.</p>
<p>HIGH WIND WARNING - LAND ONLY (<i>Lapataiga mo Matagi Malolosi</i>)</p>	<p>A 1-minute average surface winds of 35 knots (40mph) or greater lasting for 1 hour or longer, or winds gusting to 50 knots (58 mph) or greater regardless of duration that are either expected or observed over land.</p>
<p>HIGH WIND WATCH—LAND ONLY (<i>Nofo Vaavaaia mo Matagi Malolosi</i>)</p>	<p>A watch issued when conditions are favorable for sustained winds of 40 mph or higher for one hour or more OR wind gusts of 58 mph or higher for any duration in the next 12 to 48 hours.</p>
<p>HURRICANE LOCAL STATEMENT (<i>Faailo e faatatau i le Afa</i>)</p>	<p>A public release prepared by local National Weather Service offices in or near a threatened area giving specific details on: 1) Weather conditions 2) evacuation decisions made by local officials 3) other precautions necessary to protect life and property.</p>
<p>HURRICANE WATCH (<i>Nofo Vaavaaia mo Afa</i>)</p>	<p>An announcement that sustained winds of 64 knots (74mph) or higher are possible within the specified. The hurricane watch is issued up to 48 hours in advance of the anticipated onset of a hurricane force winds.</p>
<p>HURRICANE WARNING (<i>Lapataiga mo Afa</i>)</p>	<p>An announcement that sustained winds of 64 knots (74mph) or higher are expected somewhere within the specified area in association with a tropical, subtropical, or post-tropical cyclone. The hurricane warning is issued up to 24 hours in advance of the anticipated onset of a hurricane force winds.</p>
<p>SMALL CRAFT ADVISORY (<i>Fautuaga mo Va'a Laiti</i>)</p>	<p>An Advisory issued for small crafts for seas of at least 8 feet and/or sustained winds of 20 knots or higher are expected for more than 2 hours.</p>
<p>SMALL STREAMS FLOOD ADVISORY (<i>Fautuaga mo Lologa ma Tafega</i>)</p>	<p>Issued to inform the public of flooding along small streams, low lying areas and roadways in which there is not a serious threat to life or property.</p>

WHAT IT MEANS...

SPECIAL WEATHER STATEMENT <i>(Fa'a'ilo e faatatau i le tau)</i>	A statement issued to provide the public with information concerning ongoing or imminent weather hazards, which require a heightened level of awareness or action.
STORM WATCH - MARINE ONLY <i>(Nofo Vaavaaia mo Matagi Matua Malolosi)</i>	A watch for an increased risk of a storm force wind event for sustained surface winds, or frequent gusts, of 48-63knots (55-73mph), but its occurrence, location and/or timing is still uncertain.
STORM WARNING - MARINE ONLY <i>(Lapataiga mo Matagi Matua Malolosi)</i>	A warning of 1-minute sustained surface winds of 48-63 knots (55-73 mph) or greater, either predicted or occurring, and not directly associated with a tropical cyclone.
TROPICAL STORM WATCH <i>(Nofo Vaavaaia mo Matagi Malolosi)</i>	An announcement that tropical storm conditions (sustained winds of 34-63 knots/39-73 mph) are expected somewhere within the specified coastal area within 48 hours.
TROPICAL STORM WARNING <i>(Lapataiga mo Matagi Malolosi)</i>	An announcement that tropical storm conditions (sustained winds of 34-63 knots/39-73 mph) are expected somewhere within the specified coastal area within 24 hours.
WIND ADVISORY <i>(Fautuaga mo Savili Malolosi)</i>	An advisory issued for sustained winds of 25-33 knots (29-38 mph) and/or gusts to 57 mph.

WATCHES ARE ISSUED WITHIN 48 HOURS IN ADVANCE OF THE ANTICIPATED ONSET
WARNINGS ARE ISSUED WITHIN 24 TO 36 HOURS IN ADVANCE OF THE ANTICIPATED ONSET

CONTACT INFORMATION:

NATIONAL WEATHER SERVICE—WSO PAGO PAGO
P.O. BOX 789
PAGO PAGO, AS 96799
PHONE: 699-9130; FAX: 699-1550



AUTOMATED PUBLIC FORECAST: [699-9333](tel:699-9333)

OPERATIONS EMAIL: nws.pr.pago.operations@noaa.gov

WEBSITE: WWW.WEATHER.GOV/PPG



NOAA WEATHER RADIO FREQUENCIES:

- 162.550 and 162.400
- Stations WZ2529 and WNG710
- <https://www.weather.gov/ppg/nwr>

PREPAREDNESS, SAFETY, EDUCATION & MORE:

<https://www.weather.gov/safety/hurricane>

DO YOU WANT TO BECOME A Weather Ready Nation AMBASSADOR?

<https://www.weather.gov/wrn/ambassadors>

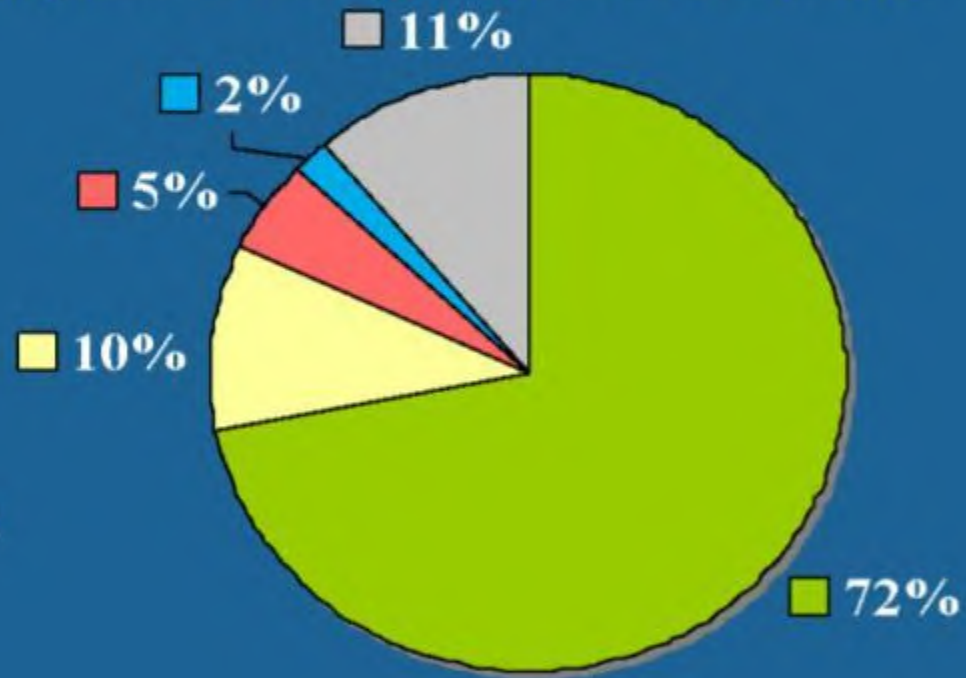


What is a Tsunami?

A tsunami is a series of long-period waves created by an abrupt disturbance that displaces a large amount of water.

Causes:

-  **Earthquakes**
-  **Landslides**
-  **Volcanoes**
-  **Atmosphere**
-  **Other/Unknown**



Iceberg calving

Asteroid impact (no recorded history)



Tsunami Alerts



AMERICAN SAMOA TSUNAMI PRODUCTS

ALERT LEVEL	NEARBY Tongan Trench or nearby surrounding ocean areas		DISTANT Outside the islands or nearby surrounding ocean areas		Max Expected Rise of Sea Level Above the Tide in American Samoa	Threat
	Earthquake Magnitude	Estimated Time of Arrival (ETA)	Earthquake Magnitude	Estimated Time of Arrival (ETA)		
WARNING	7.1 or GREATER	Within 3 hours	7.1 or GREATER	Beyond 3 hours	>3.3 ft (>1m)	Expected Dangerous Flooding, Major Land Threat
ADVISORY	5.5 or GREATER	Within 3 hours	6.5 or GREATER	Beyond 3 hours	1 to 3.3 ft (0.3 to 1m)	Strong Currents Likely, Minor Land Flooding Possible
WATCH	N/A		6.5 or GREATER	3 to 6 hours	Threat Unknown: ~Upgraded to Warning ~Upgraded to Advisory ~Cancelled - No Threat	Danger Level Not Known
INFORMATION STATEMENT	5.5 or GREATER	Within 3 hours	6.5 or GREATER	Beyond 3 hours	0-1 ft (0 to 0.3m)	NONE
				Beyond 6 hours	Tsunami Threat to AS still under evaluation. May be upgraded to WARNINGS, ADVISORY, or WATCH or Cancelled	N/A



ALERT LEVELS	WARNING	ADVISORY	WATCH	INFORMATIONAL STATEMENT
Definition	When a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring.	When a tsunami with the potential to generate strong currents or waves dangerous to those in or very near the water is imminent, expected, or occurring.	Issued to alert emergency management officials and the public of an event which may later impact the watch area.	Issued to inform emergency management officials and the public that an earthquake has occurred, or that a tsunami warnings, watch or advisory has been issued for another section of the ocean.
ETA	Within 3 Hours	N/A	Beyond 3 Hours	N/A
Threat	Expected Dangerous Flooding, Major Land Threat	Strong Currents Likely, Minor Land Flooding Possible	Danger Level Not Known	None
Safety Action	Evacuate Tsunami Evacuation Zones	Stay Out of the Water & Away from Shore, Clear Ports and Harbors	Prepare to Evacuate, Stay Alert for More Information	No Action Suggested

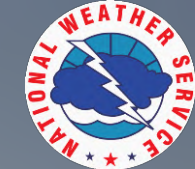


CHALLENGES



- Uncertainties
- Minimal data
- Limited tools and resources
- Short staff for 24hr/365 coverage
- Shift work





QUESTIONS?

Weather Service Office Pago Pago

789 Airport Rd

Pago Pago, AS 96799

Phone: 699-9130; Fax: 699-1550

Operations Email: nws.pr.pago.operations@noaa.gov

Website: www.weather.gov/ppg

Automated Public Forecast: [699-9333](tel:699-9333)

Social Media Platforms: @NWSPagoPago

