

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 181

Country: Marshall Islands

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Jul-2022	Aug-2022	Sep-2022				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Majuro (1954-2022)	271.8	219.7	450.1	264.0	365.2	315.2	60/69
Kwajalein (1945-2022)	234.4	325.4	186.4	229.4	299.8	268.1	12/78

TABLE 2: Three-month Total Rainfall for July to September 2022

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Majuro (1954-2022)	941.6	Normal	829.9	973.8	900.6	40/69
Kwajalein (1945-2022)	746.2	Normal	727.2	848.1	774.5	33/78

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$

Low: $0 \leq X < 5$

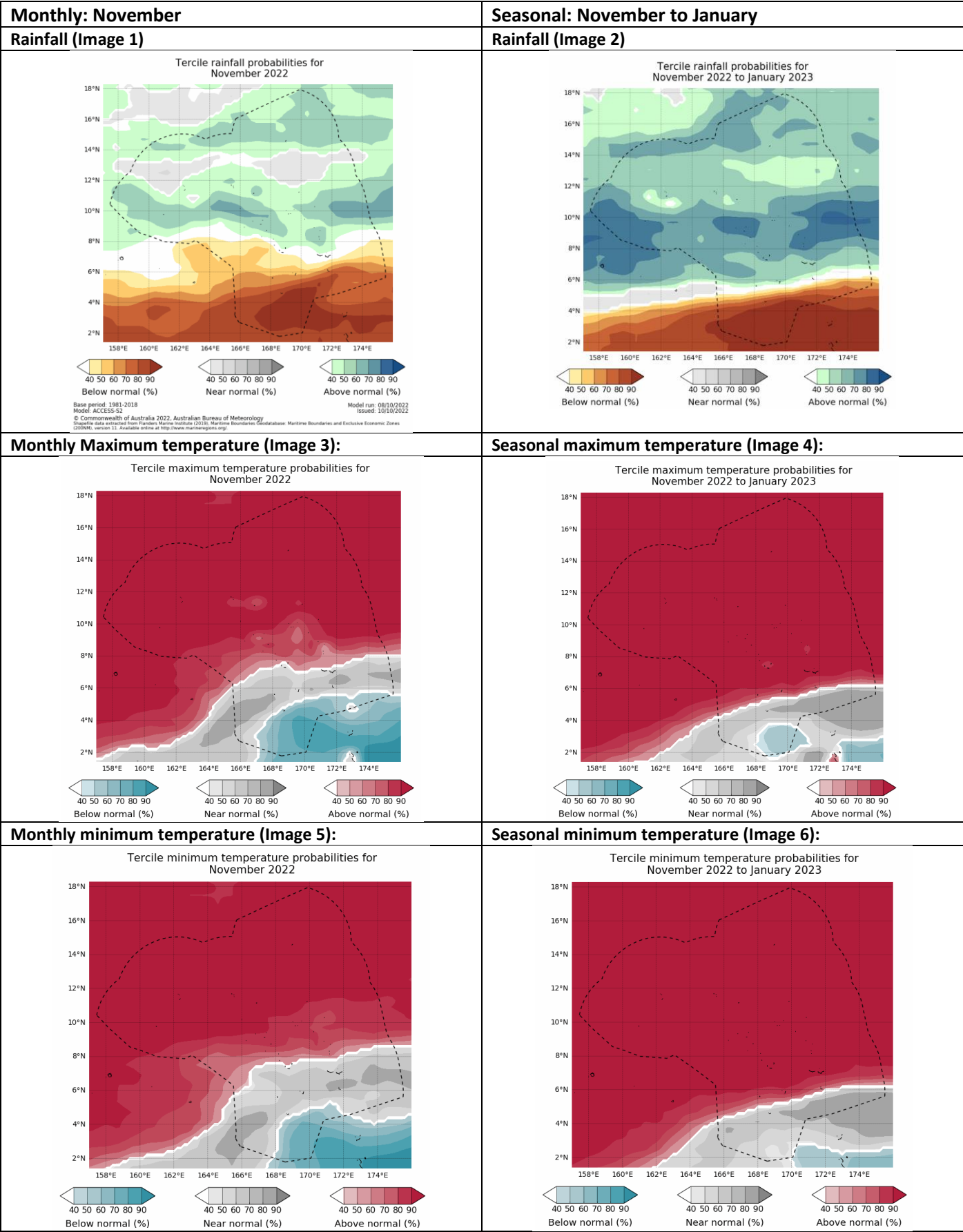
Moderate $5 \leq X < 10$

Good: $10 \leq X < 15$

High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

Part 1i. Monthly and Seasonal Outlooks for November and November to January 2023



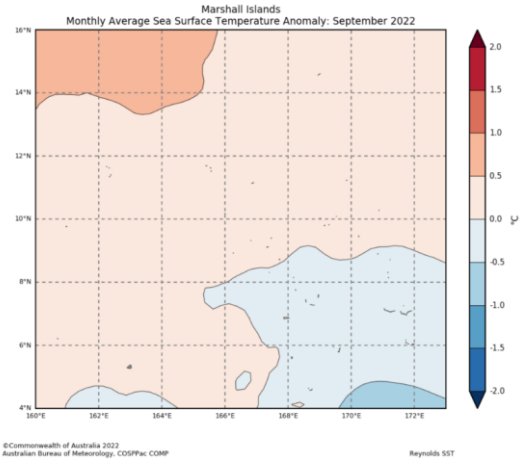
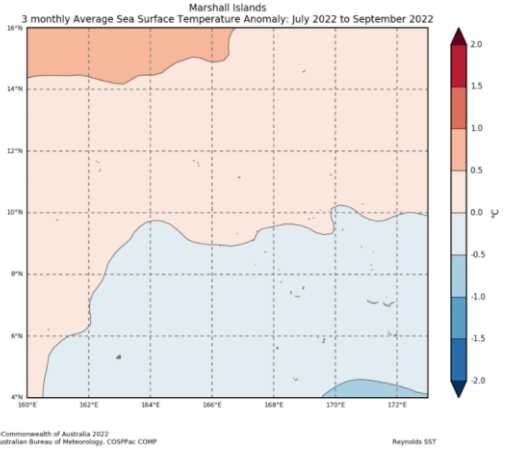
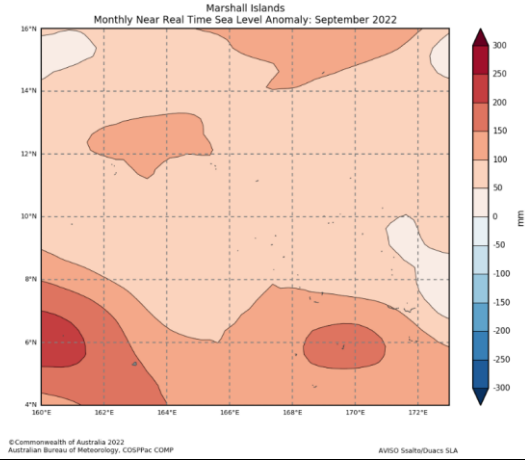
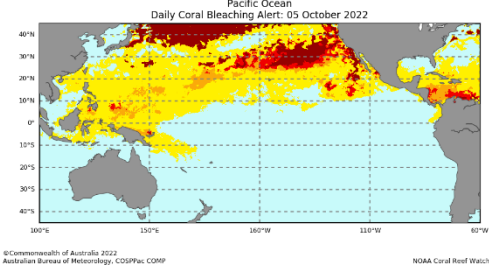
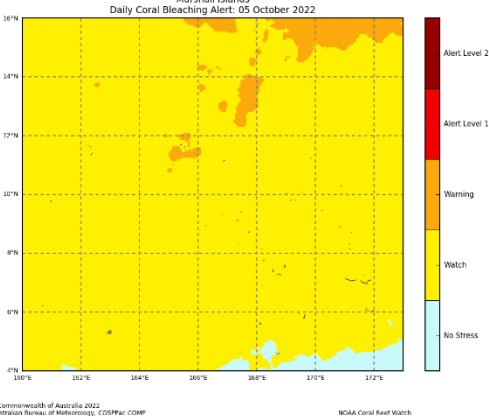
NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$ Low: $0 \leq X < 5$ Moderate: $5 \leq X < 10$ Good: $10 \leq X < 15$ High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

Part 2: Recent Ocean Observation

Monthly/Three months: September 2022 and July to September 2022

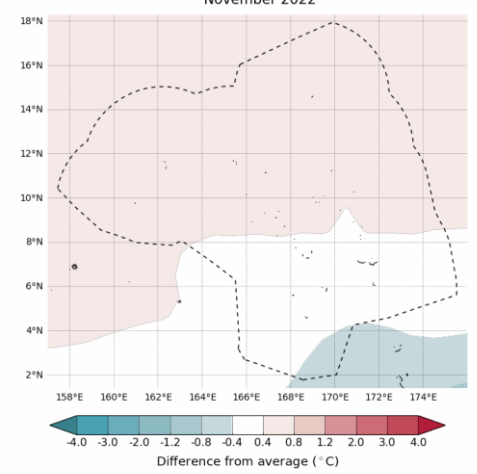
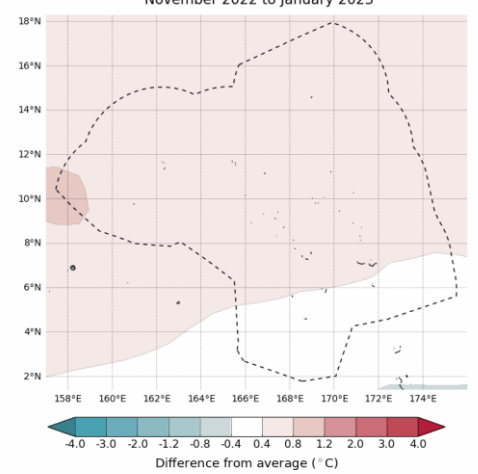
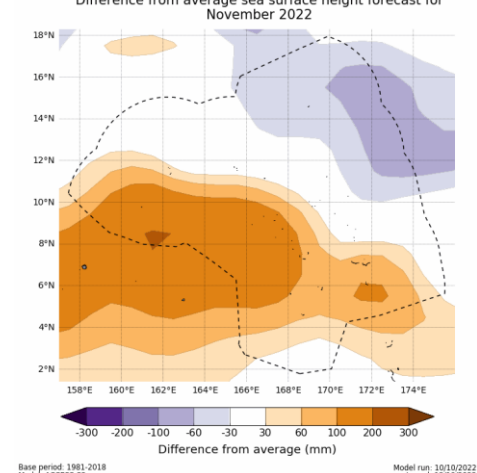
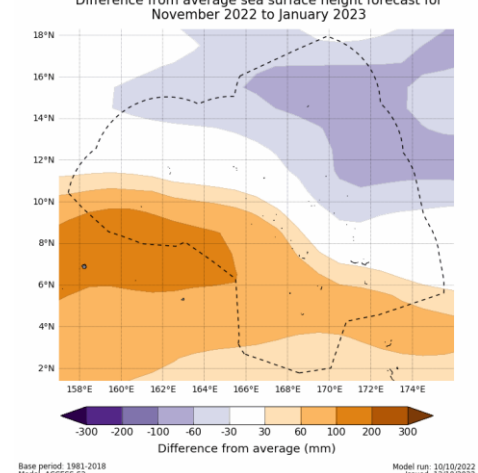
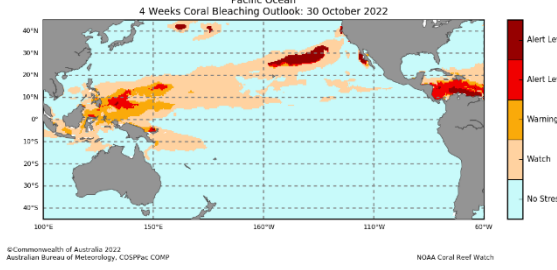
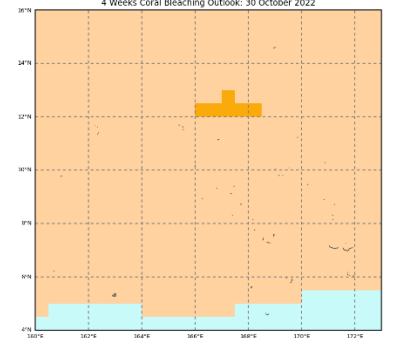
<p>Monthly: September</p> <p>Sea Surface Temperature (Image 1):</p>  <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac, COMF</p> <p>Reynolds SST</p>	<p>Last three months: July to September 2022:</p> <p>Sea Surface Temperature (Image 4):</p>  <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac, COMF</p> <p>Reynolds SST</p>
<p>Sea level (Image 2):</p>  <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac, COMF</p> <p>AVISO SeaWiFS/QuikSCAT SLA</p>	
<p>Daily coral bleaching alert (Image 3):</p>  <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac, COMF</p> <p>NOAA Coral Reef Watch</p>	 <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac, COMF</p> <p>NOAA Coral Reef Watch</p>

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$ Low: $0 \leq X < 5$ Moderate $5 \leq X < 10$ Good: $10 \leq X < 15$ High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

Part 2i. Monthly and Seasonal Outlooks for November and November to January 2023

Monthly: November	Seasonal: November to January
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for November 2022</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Geospatial data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009A), version 1.1. Available online at http://www.maritimeregions.org/</p> <p>Model run: 10/10/2022 Issued: 12/10/2022</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for November 2022 to January 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Geospatial data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009A), version 1.1. Available online at http://www.maritimeregions.org/</p> <p>Model run: 10/10/2022 Issued: 12/10/2022</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for November 2022</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Geospatial data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009A), version 1.1. Available online at http://www.maritimeregions.org/</p> <p>Model run: 10/10/2022 Issued: 12/10/2022</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for November 2022 to January 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Geospatial data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009A), version 1.1. Available online at http://www.maritimeregions.org/</p> <p>Model run: 10/10/2022 Issued: 12/10/2022</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 30 October 2022</p>  <p>© Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>NOAA Coral Reef Watch</p>	<p>Marshall Islands 4 Weeks Coral Bleaching Outlook: 30 October 2022</p>  <p>© Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>NOAA Coral Reef Watch</p>

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$ Low: $0 \leq X < 5$ Moderate $5 \leq X < 10$ Good: $10 \leq X < 15$ High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

Summary Statement

Monthly and last three months: September 2022/July to September 2022 statement

Above normal rainfall was recorded at Majuro in September, while below normal rainfall was recorded at Kwajalein. For the July to September period, normal rainfall was recorded at both stations.

Part 1i. Monthly and Seasonal Outlooks for November and November to January 2023

Monthly /Seasonal rainfall and temperature Outlook statements

Rainfall for November is likely to be above normal across northern and central RMI, including Kwajalein, while below normal rainfall is very likely in the south. Majuro is in a narrow zone where there is no clear signal in the outlook. For November to January, rainfall is likely or very likely to be above normal across most of RMI, apart from the far south where November to January's rainfall is very likely to be below normal.

Maximum and minimum temperatures during November are very likely to be above normal for the northern two-thirds of the RMI, but Majuro and neighbouring atolls are in a region where normal temperatures are the most likely.

Maximum and minimum temperatures averaged for November to January are very likely to be above normal for most parts of the RMI, while normal temperatures are likely in the southern-most reaches of the EEZ.

Part 2: Recent Ocean summary statement

Monthly and last three months: September/July to September 2022

The sea surface temperature for RMI for September and the last three months, July to September, was near-normal, with temperature anomalies ranging from -0.5 to 0.5°C .

The sea level for September was above average across the RMI's EEZ, with anomalies ranging from $+100\text{mm}$ to $+150\text{mm}$ in the southern parts, and $+50\text{mm}$ to $+100\text{mm}$ in the northern parts of the EEZ.

Coral bleaching alerts reveals Watch status for most of the RMI's EEZ.

Part 2i. Monthly and Seasonal Outlooks for September and September to January 2023

Ocean Variable statement

The monthly SST outlook for November predicts temperatures to be above normal by 0.4 to 0.8°C between 8°N and 14°N , while near-normal temperatures are predicted between 4°N and 8°N .

The seasonal SST outlook for November to January predicts temperatures of to be above normal by 0.4 to 0.8°C across the RMI, while near-normal temperatures are predicted between 4°N and 6°N .

The monthly sea level anomaly outlook for November reveals above normal sea level height differences of 30mm to 200mm for islands situated between 4°N and 12°N including both Majuro and Kwajalein.

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$

Low: $0 \leq X < 5$

Moderate $5 \leq X < 10$

Good: $10 \leq X < 15$

High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

The seasonal sea level anomaly outlook indicates above average sea level of 30mm to 200mm across both island chains, with exception for Majuro and neighbouring atolls to the east and north where near-normal sea levels are predicted.

Coral bleaching outlook for the next four weeks reveals a WATCH status across the RMI.

TABLE 3: Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

Product	Date: September 2022	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin					
EAR Watch					
Monthly Climate Briefing	09/23/22	Chief Secretary Office (CSO) and National Disaster Management Office (NDMO)	6	3	3
Ocean Outlook					
Climate data request					
Total			6	3	2

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$

Low: $0 \leq X < 5$

Moderate $5 \leq X < 10$

Good: $10 \leq X < 15$

High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$