Oceanographic Dynamics of the Thermal Dome

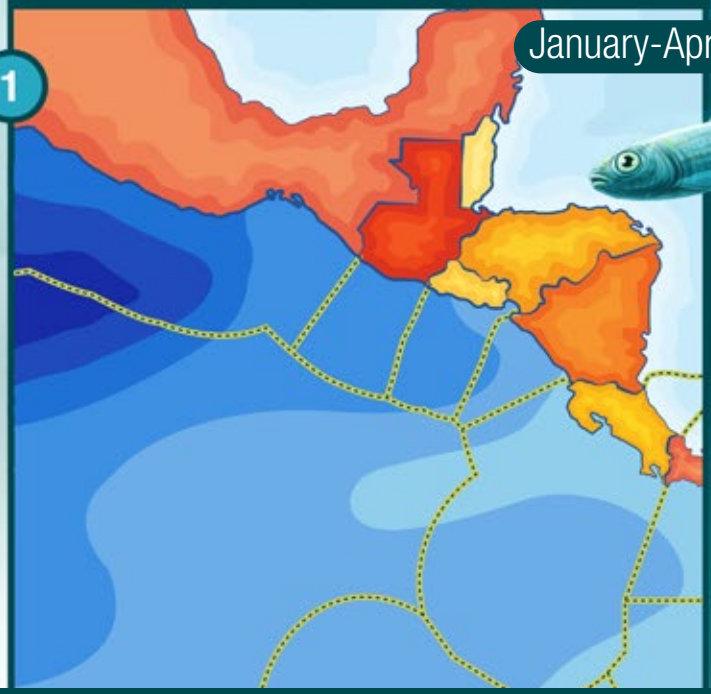
The extension of the Dome fluctuates from year to year, because it depends on the interaction of oceanographic and terrestrial systems that, in themselves, are variable.

Despite this high variability, and based on a 30-year record, average patterns have been established that are of great importance for the region:

Coastal influence

1

January-April



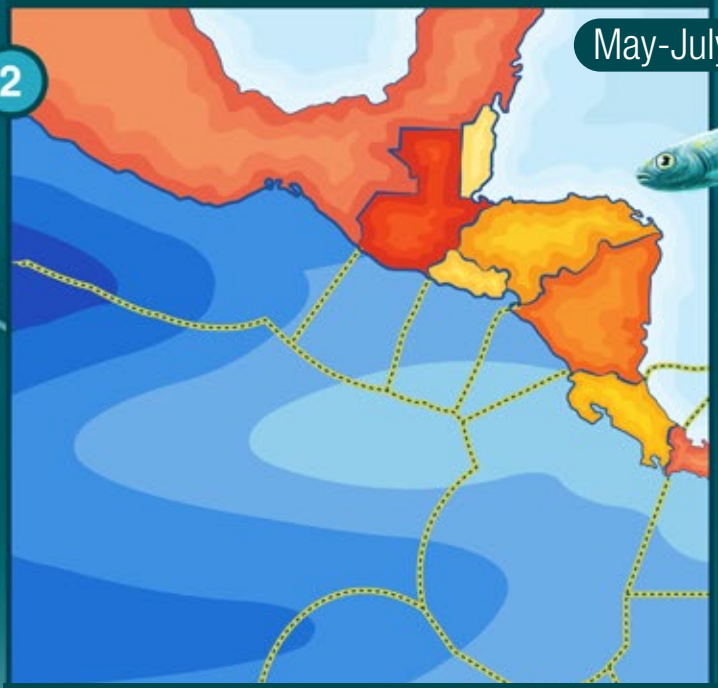
Depth of the Thermocline Depth
(isotherm 20°C)
- 28 to 30 m
- 30 to 40 m
- 40 to 50 m
- 50 to 60 m
- 60 to 70 m
- 70 to 85 m
- 80 to 86 m
- Exclusive Economic Zones (EEZ)

- The Dome is located closer to the coast, **having greater influence** in the Exclusive Economic Zones (EEZ) of the Central American countries.
- Its extension is **between 200 km and 300 km in diameter.**
- In addition, the increase in the intensity of the trade winds ("Papagayo jet") contributes to the displacement of warm waters from the surface, which are replaced by cold waters that emerge from the depths.

Deep sea migration

2

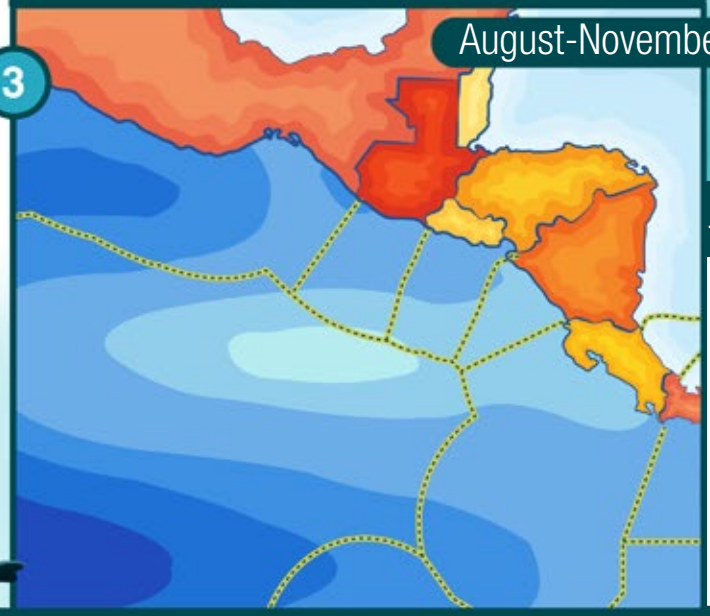
May-July



Depth of the Thermocline Depth
(isotherm 20°C)
- 32 to 40 m
- 40 to 50 m
- 50 to 60 m
- 60 to 70 m
- 70 to 80 m
- 80 to 85 m
- Exclusive Economic Zones (EEZ)

- The Dome is separated from the coast and the cold waters migrate to deeper areas, further away from the mainland.
- During this period, the Dome reaches an extension that varies **between 300 km and 500 km** in diameter, covering **mainly international waters.**

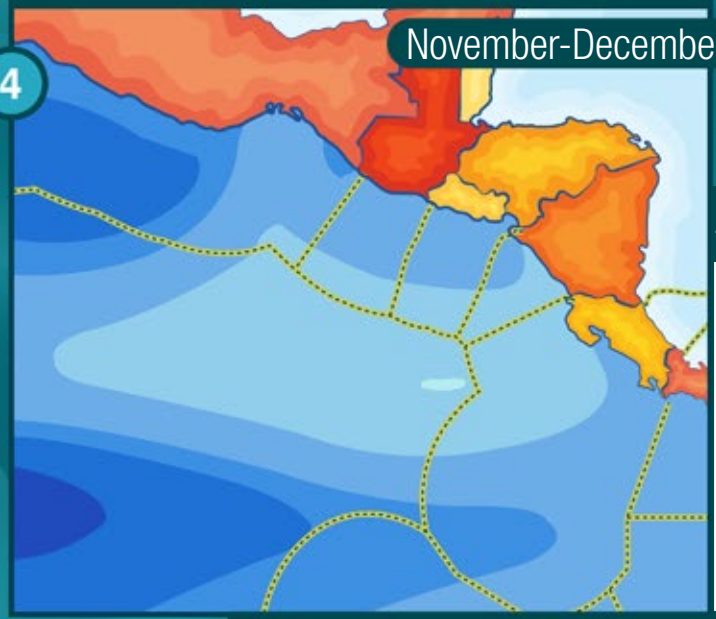
Maximum extension



Depth of the Thermocline Depth
(isotherm 20°C)
- 28 to 30 m
- 30 to 40 m
- 40 to 50 m
- 50 to 60 m
- 60 to 70 m
- 70 to 80 m
- 80 to 90 m
- 90 to 91 m
- Exclusive Economic Zones (EEZ)

- By this time, the nucleus of the Dome is located **entirely in international waters.**
- This is the period of greatest extension of the Thermal Dome, with a diameter of **up to 1,000 km.**

Extension reduction



Depth of the Thermocline Depth
(isotherm 20°C)
- 29 to 30 m
- 30 to 40 m
- 40 to 50 m
- 50 to 60 m
- 60 to 70 m
- 70 to 80 m
- 80 to 90 m
- 90 to 92 m
- Exclusive Economic Zones (EEZ)

- The Dome noticeably reduces its extension due to the waves of warm water coming from the Western Pacific displacing the cold water towards the depth.