

Kuwait Dive Team's Report of Coral Bleaching in the Reefs of the State of Kuwait

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Created by: Kuwait Dive Team

“Guardians of the Sea”, Kuwait Dive Team (KDT) resumed the inspection tours for the major coral reefs in the southern part of Kuwait’s sea to examine the state of coral reefs up-close and investigate the percentage of bleaching at each location, the corals’ overall general health conditions, in addition to the most affected species of corals.



KDT realized that all locations of coral reefs located in the southern parts of Kuwait’s sea (50 marine K.M. and 70 K.M. along the coast of the southern borders) were affected by bleaching. The surveys included different sites at each location, and depths ranging from 1 to 13

meters. The overall percentage of coral bleaching was determined based on the coral's color variation (ranging from blue white to beige) within an area of approximately 20 square meters at each site/location. Additionally, “partial damage” was recorded and it refers to parts or edges of coral colonies suffering from bleaching or losing its natural color.

The word "damage" will be used throughout the report to indicate an abnormal state of corals (e.g. bleached, dead, or unhealthy in general).

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Qitaat Benaya Reef – Khairan:

Description	Readings
Approximate Overall percentage damage	95%
Depths (range)	30 CM – 6 M
Water Temperature in centigrade (°C)	33 °C
Major Affected Coral Species	Porites Compressa; Platygyra Daedalea; Pavona Decussata; Acropora Clathrata

The overall percentage of damage to the reef is approximately more than 95% of the entire location affected all corals ranging in depths from 30 cm below the surface till depths of approximately 6 meters and the water temperature recorded is 33 centigrade. The **Porites Compressa** type, which dominates the south and west sides of the colony and featured with huge sizes (excluding the bright blue ones which are unaffected but of fewer numbers and smaller sizes) and the **Platygyra Daedalea** species, dominating over the mid-eastern corals and characterized with the domed huge sizes, are affected 100%. Moreover, there are other species, such as **Pavona Decussata** and **Acropora Clathrata** that are affected partially of about 60%. Nevertheless, Brown, Bright Blue and Black Sponges are growing regularly and naturally.



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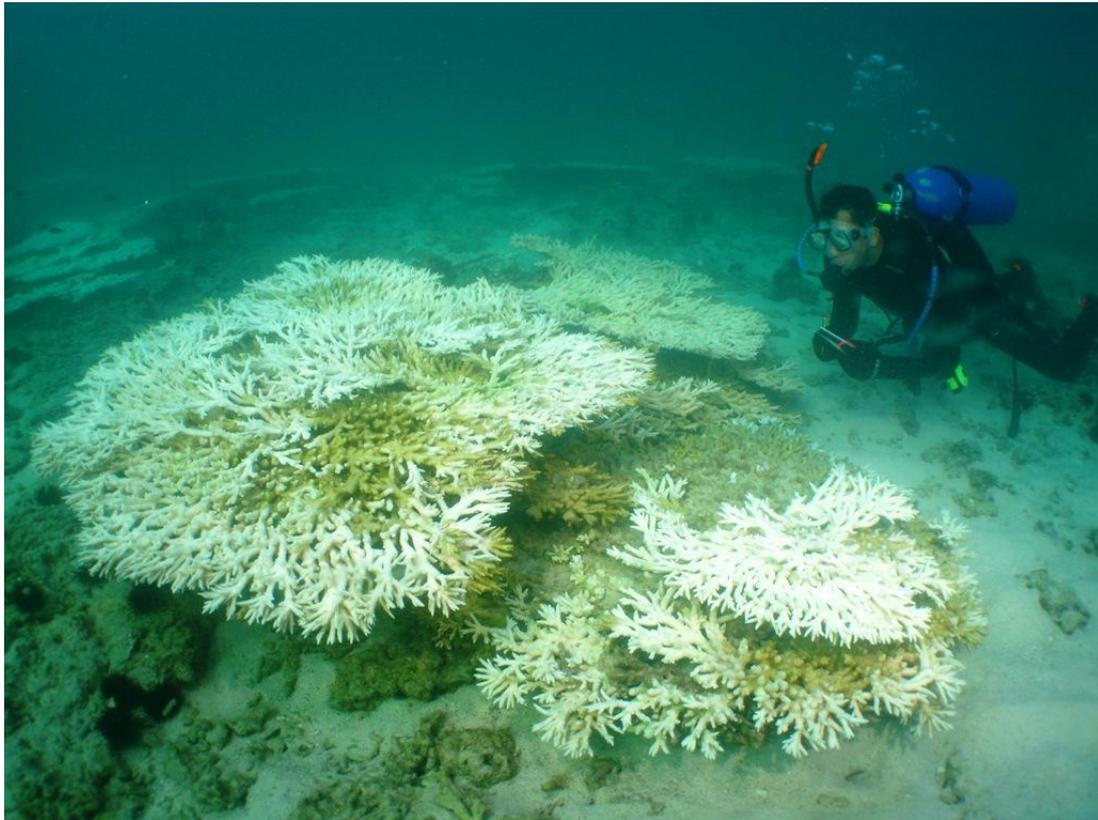
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Raas Azour Reef:

Description	Readings
Approximate Overall percentage damage	97%
Depths (range)	
Water Temperature in centigrade (°C)	33 °C
Major Affected Coral Species	Porites Compressa;

Damage percentage exceeds nearly 97% for the **Porites Compressa** species, which dominates the whole colony and is of aligned huge blocks (except the ones of bright blue color but so few). Also, there are large areas of colonies affected by bleaching but other types of fungi grew thereon, indicating that it was affected before others. The water temperature is 33 centigrade.



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Qaruh Island:

Description	Readings
Approximate Overall percentage damage	80% - 90%
Depths (range)	
Water Temperature in centigrade (°C)	34 °C
Major Affected Coral Species	Porites Compressa; Platygyra Daedalea; Pavona Decussata; Acanthastrea Echinata; Platygyra Daedalea; Acroporidae

Southern Western Corals Surrounding the Island:

General damage percentage is approximately 80%, but the **Platygyra Daedalea** and **Porites Compressa** species (except those of bright blue color, which are unaffected but so few and small) and **Pavona Decussata** and **Acanthastrea Echinata** species, which are damaged of about 97%. As to the **Acroporidae** species, luckily "partial damage" was recorded at an approximate percentage of about 60% and overall damage is about 20%. Water temperature is 34 centigrade.

Northern Corals Surrounding the Island and its Seafront:

General damage of coral colonies exceeds nearly 90% and the corals are of medium and small size. The damage increases in the eastern side.

Eastern Corals Surrounding the Island:

General damage is about 85%, but the **Platygyra Daedalea** species is damaged completely and the **Porites Compressa** is damaged at approximately 97%. Water temperature was 34 centigrade.

Umm Deera Reef (13 km to the North of Qaruh Island):

Description	Readings
Approximate Overall percentage damage	95%
Depths (range)	
Water Temperature in centigrade (°C)	34 °C
Major Affected Coral Species	Porites Compressa; Platygyra Daedalea; Pavona Decussata; Acanthastrea Echinata; Platygyra Daedalea; Acroporidae

General damage exceeds about 95% and the types are damaged the same as in Qaruh Island.



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Taylor Rock Corals (9.5 km to the East of Kobar Island):

Description	Readings
Approximate Overall percentage damage	93%
Depths (range)	
Water Temperature in centigrade (°C)	34 °C
Major Affected Coral Species	Porites Compressa; Platygyra Daedalea; Pavona Decussata; Acanthastrea Echinata; Platygyra Daedalea; Acroporidae

General damage is about 93%, including all types, but the bleaching percentage is less and water temperature is 34 centigrade.

Kubbar Island:

Description	Readings
Approximate Overall percentage damage	95%
Depths (range)	
Water Temperature in centigrade (°C)	34 °C
Major Affected Coral Species	Favia Pallida; Platygyra Daedalea;

Western Corals Surrounding the Island:

General damage is about 95% and the **Platygyra Daedalea** type is affected completely. Also, there is a good number of the **Favia Pallida** species, especially the grey colored one, was not affected by bleaching. Additionally, there are some colonies of Green **Thawanthed** were seen on the coral reefs (similar to corals but does not build solid structures) in good conditions as well as some types of sponges.

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Areefjan Corals:

Description	Readings
Approximate Overall percentage damage	90%
Depths (range)	
Water Temperature in centigrade (°C)	34 °C
Major Affected Coral Species	Favia Pallida;

General damage is about 90% and the location conditions resembles other locations, but there are some types of **Platygyra Daedalea** were not affected completely by bleaching and still maintain the color, although faded. It is noted that there are large areas in the seabed over which the brown sponge spread.

Notes:

1. No dead fish or any living creatures co-existing with the coral reefs were seen and few dead fish were recorded, but such fish do not belong to the coral reefs fish family.
2. Increase in water temperature was clearly felt.
3. The **Favia Pallida** corals, especially the grey colored ones, were not affected by bleaching and they spread all over the investigated sites/locations but of different numbers according to the location and are of relatively smaller size.
4. The bright blue colored **Porites Compressa** type was seen nearly in all locations but of few numbers, dispersed and of smaller sizes.
5. There are many corals suffering from complete bleaching in which its probes appeared clearly.
6. There are some damaged corals which its color seemed brown from the top, but upon investigating up-close and while diving, such colonies were found dead and covered with some bright brown colored fungi that grew on them.