



2023 SDGS提倡家 臺日學生論壇

Effects of Human Activity on Coral Bleaching

National Pingtung Senior High School



Our Treasure under The Ocean

CORAL KINGDOM-KENTING



Species Numbers

More than 212 kinds of coral exist in Kenting, Taiwan.

Tropical Climate

Situated between 22 to 22.16 of latitude, Kenting offers the perfect tropical climate suitable for coral.

Since 1998, 55% of coral reefs have bleached, with extinction of 69 species.



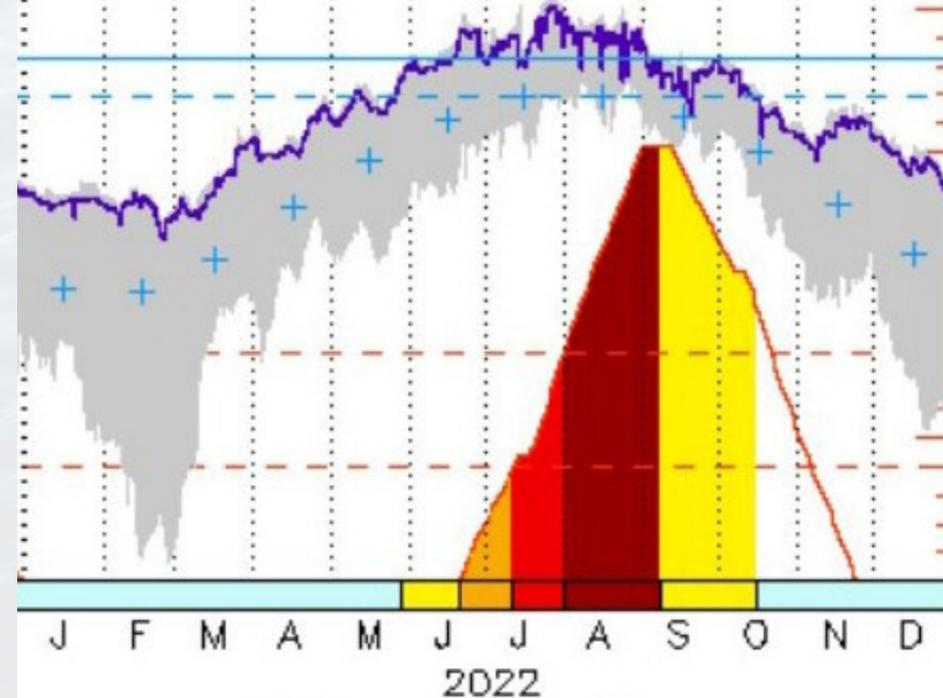
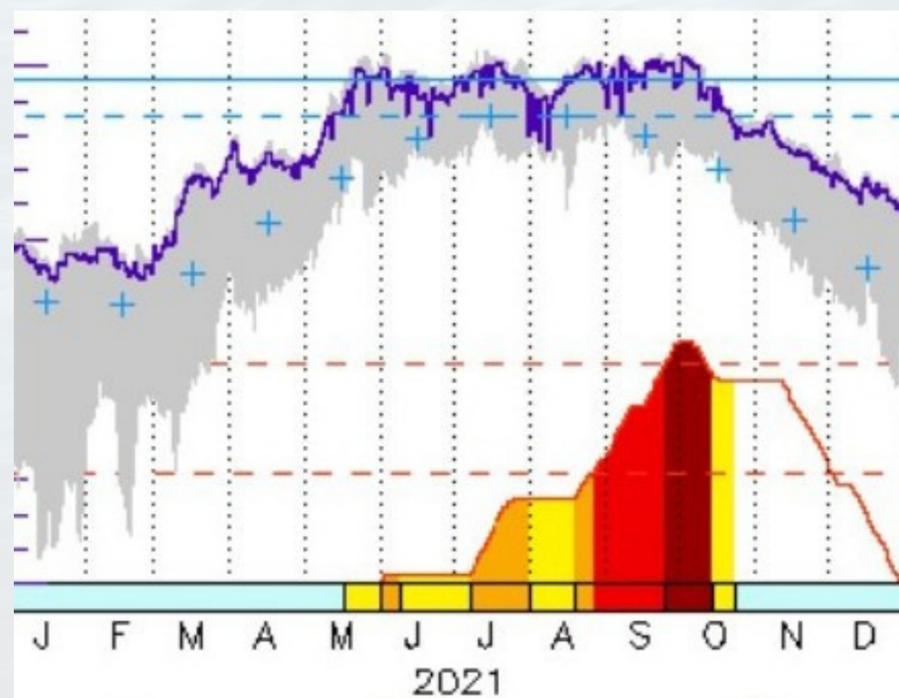
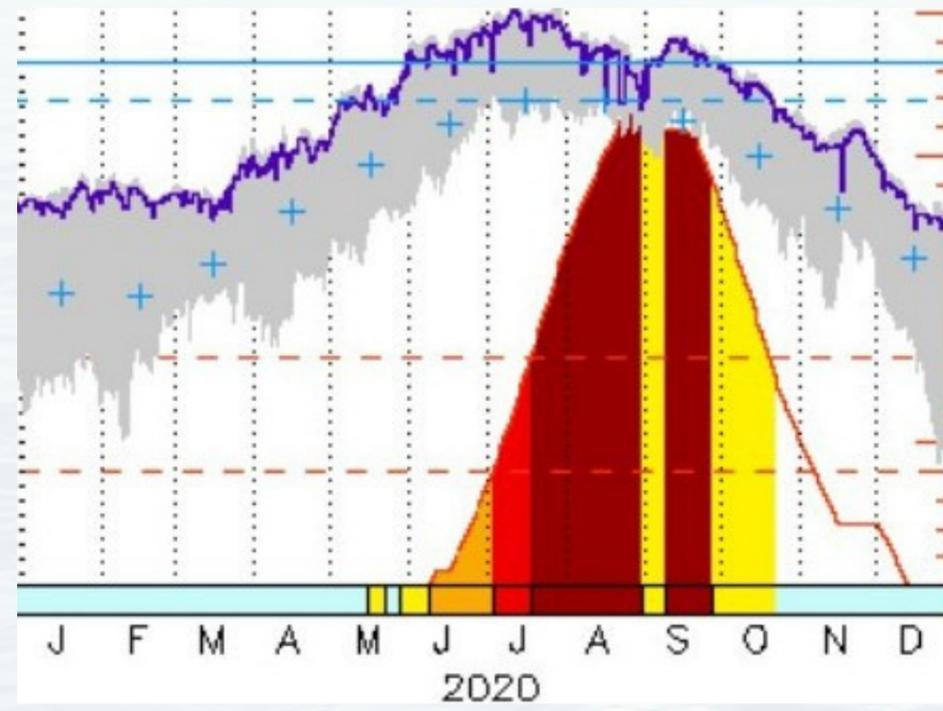
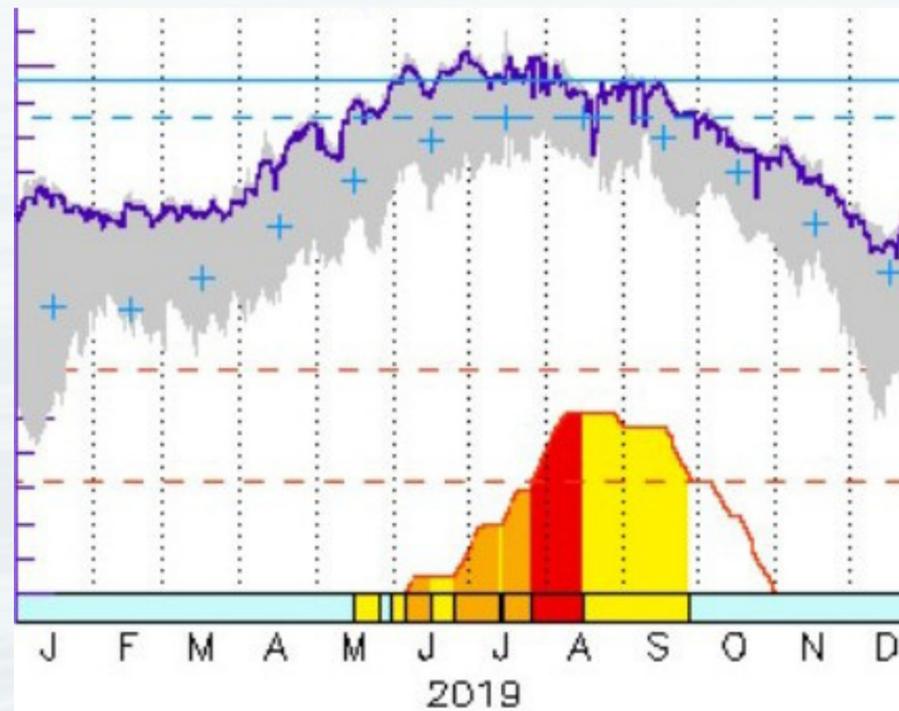
Before



After

Causes for Coral Bleaching

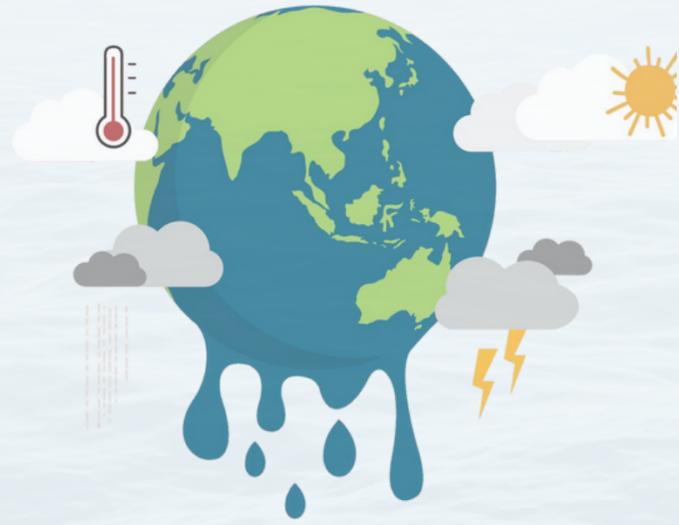
1. Global warming
2. Chemical pollution
3. Effluent discharges



Warning ●
Possibility of Coral Bleaching

Alert Level 1 ●
Apparent Coral Bleaching

Alert Level 2 ●
Mass Coral Mortality



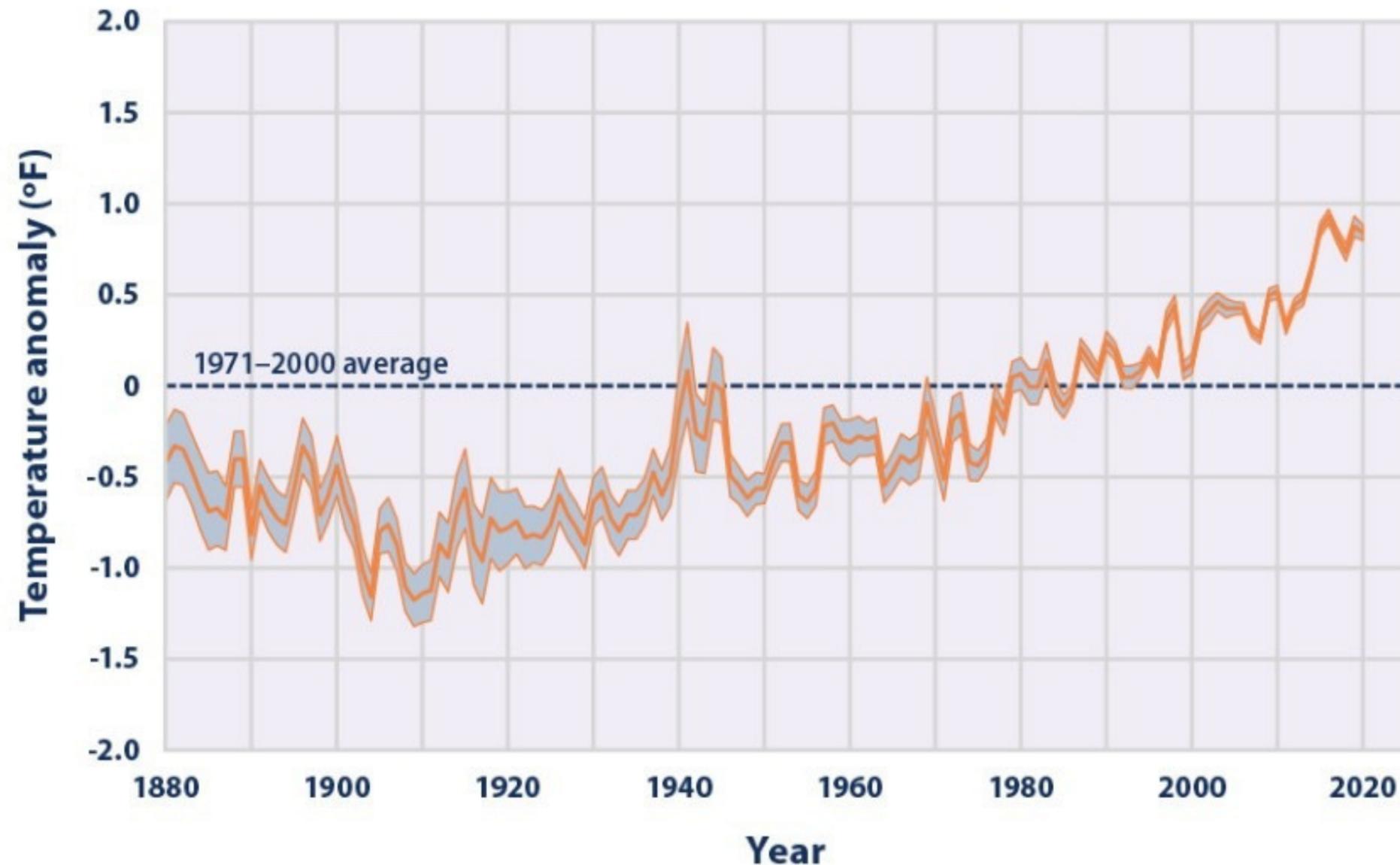
Global Warming

More and more heat waves led to the increase of sea temperature by 1.5°F in the past century.

Climate Change Indicators: Sea Surface Temperature

This indicator describes global trends in sea surface temperature.

Figure 1. Average Global Sea Surface Temperature, 1880–2020





Chemical Pollution



**Benzophenone
and Octinoxate**

Effects:

- 1. Less coral reproduction**
- 2. Death of Zooxanthella**
- 3. Coral bleaching**



Effluent Discharge

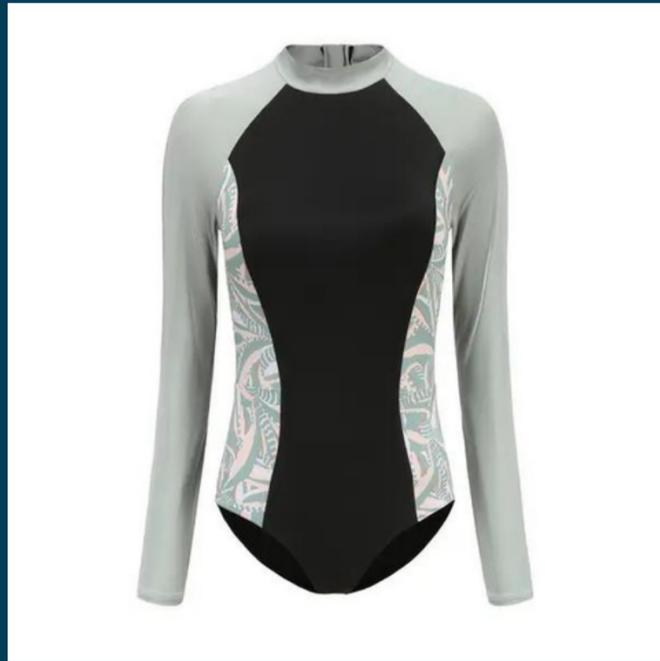
Discarded hot water discharged by nuclear power plants cause surrounding sea temperature to rise by 7~10 °C.

Solution



1. Replace chemical blockers with physical blockers.
2. Adopt energy-efficient measures.
3. Replace fossil fuel power with sustainable energy.

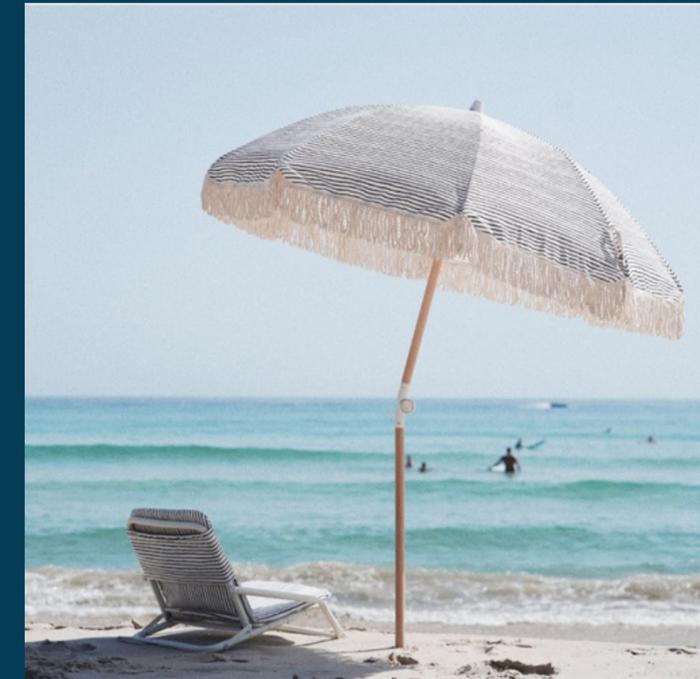
Sun Protection



Rash Guard
Replacing Sunscreen



Physical Blocker
Sunscreen without Toxic
Substances



Parasol
Providing Shade

Energy-efficient Measures

1

Purchase energy-efficient appliances.

2

Set A/C at 26~28°C.

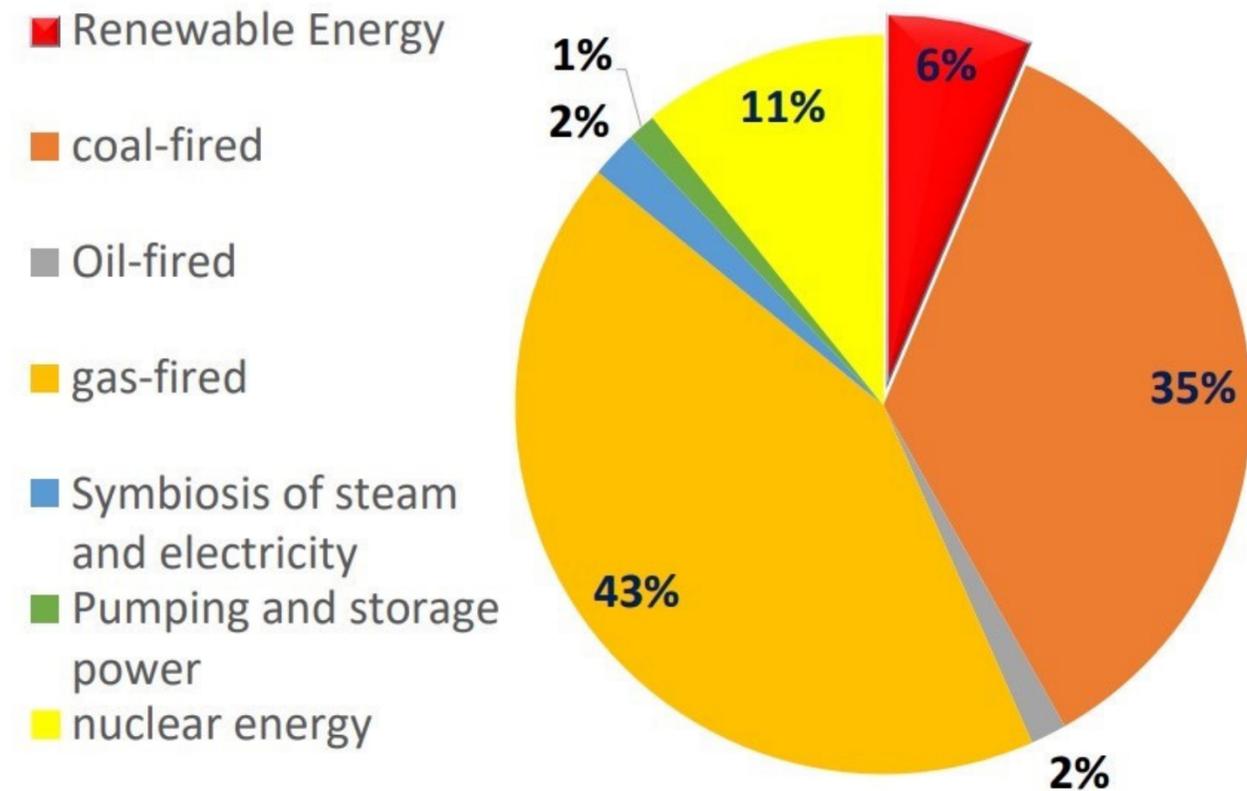
3

Use AI NILM technique.

Sustainable Energy

In Taiwan, sustainable energy accounts for 6.3 % of gross generation of electricity in 2021.

Gross Electricity Generation of 2021, Taiwan



References

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珊瑚是植物還是動物？珊瑚白化的原因、影響及解決辦法是？



THANK YOU



Q & A