

THE STATUS OF CORAL REEF IN INDONESIA



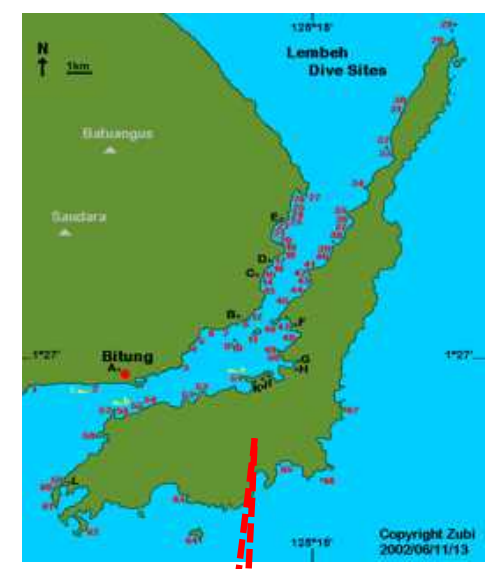
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Sam Ratulangi University



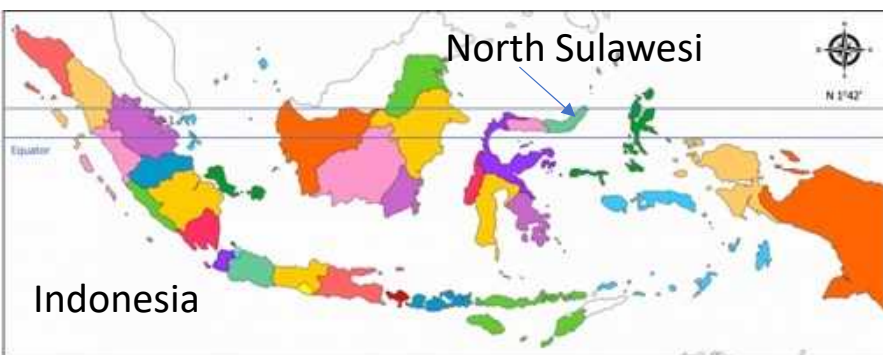


Coral Reef Ecosystem

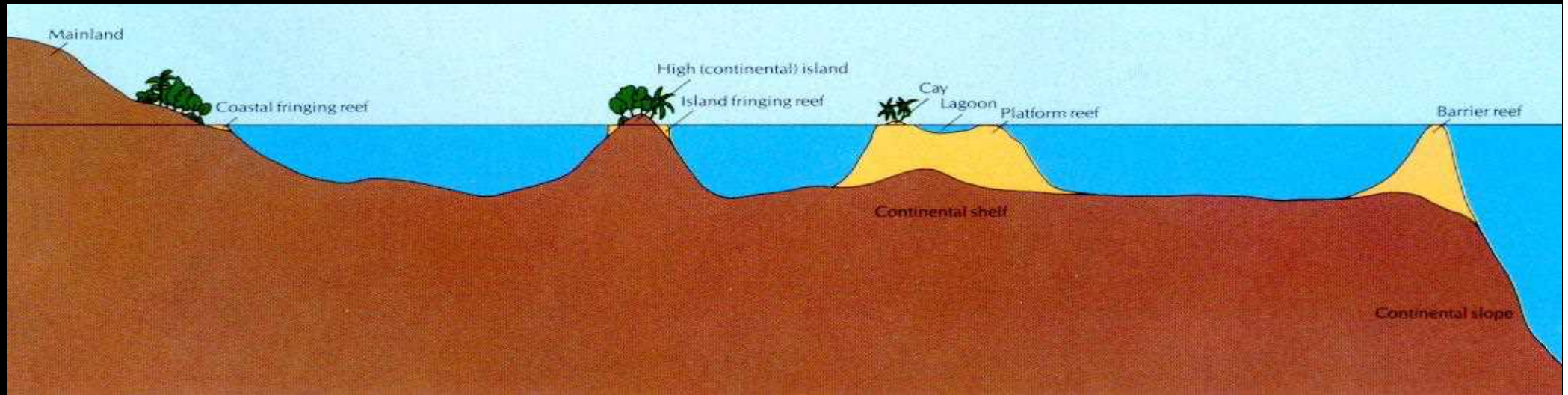
- ✓ One of the most biologically diverse ecosystems on earth
- ✓ Economic and recreational value
- ✓ Source of Protein
- ✓ Source of medicines
- ✓ Coastal protection



Marine Tourisms in North Sulawesi

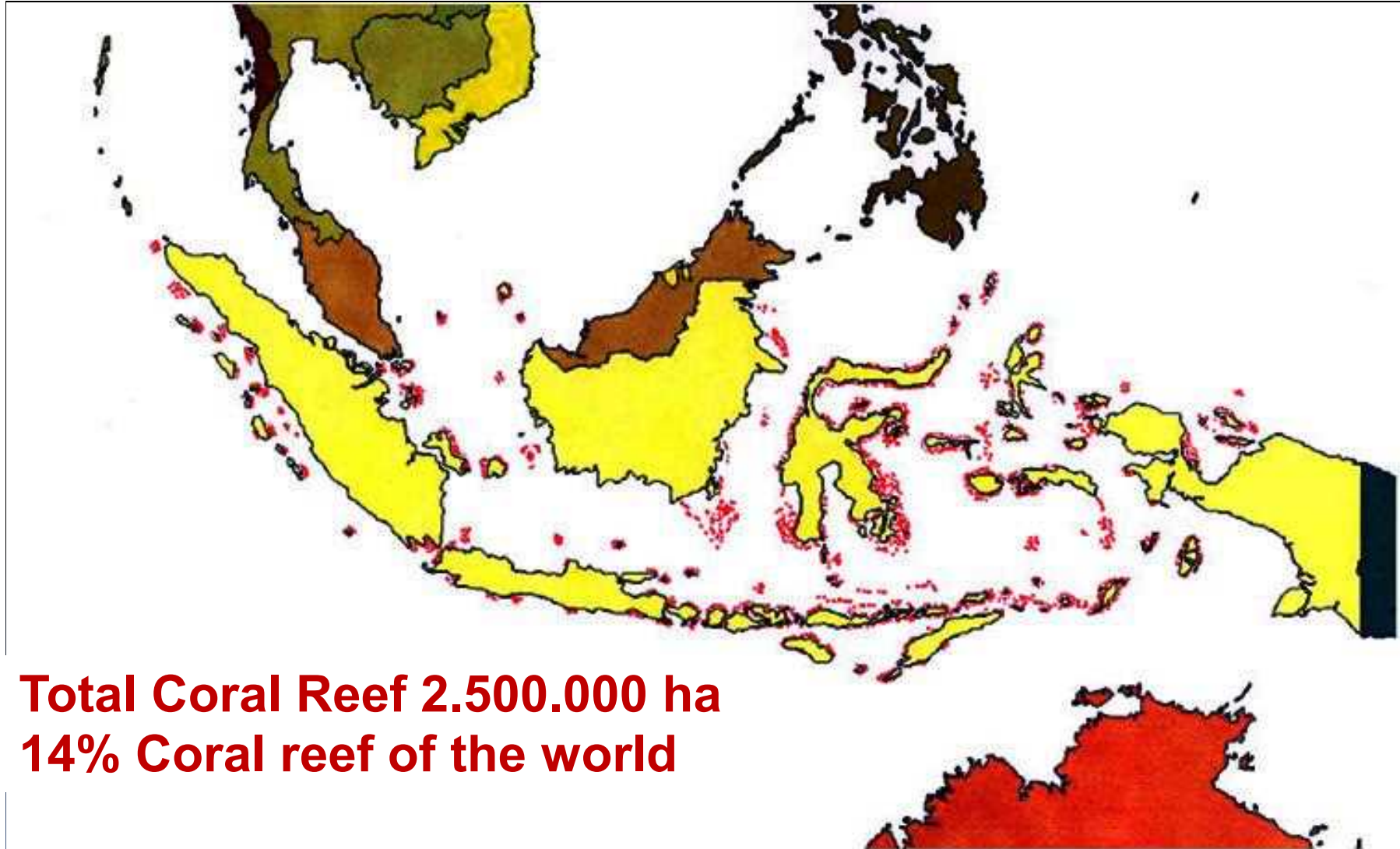


Coral reefs type in Indonesia



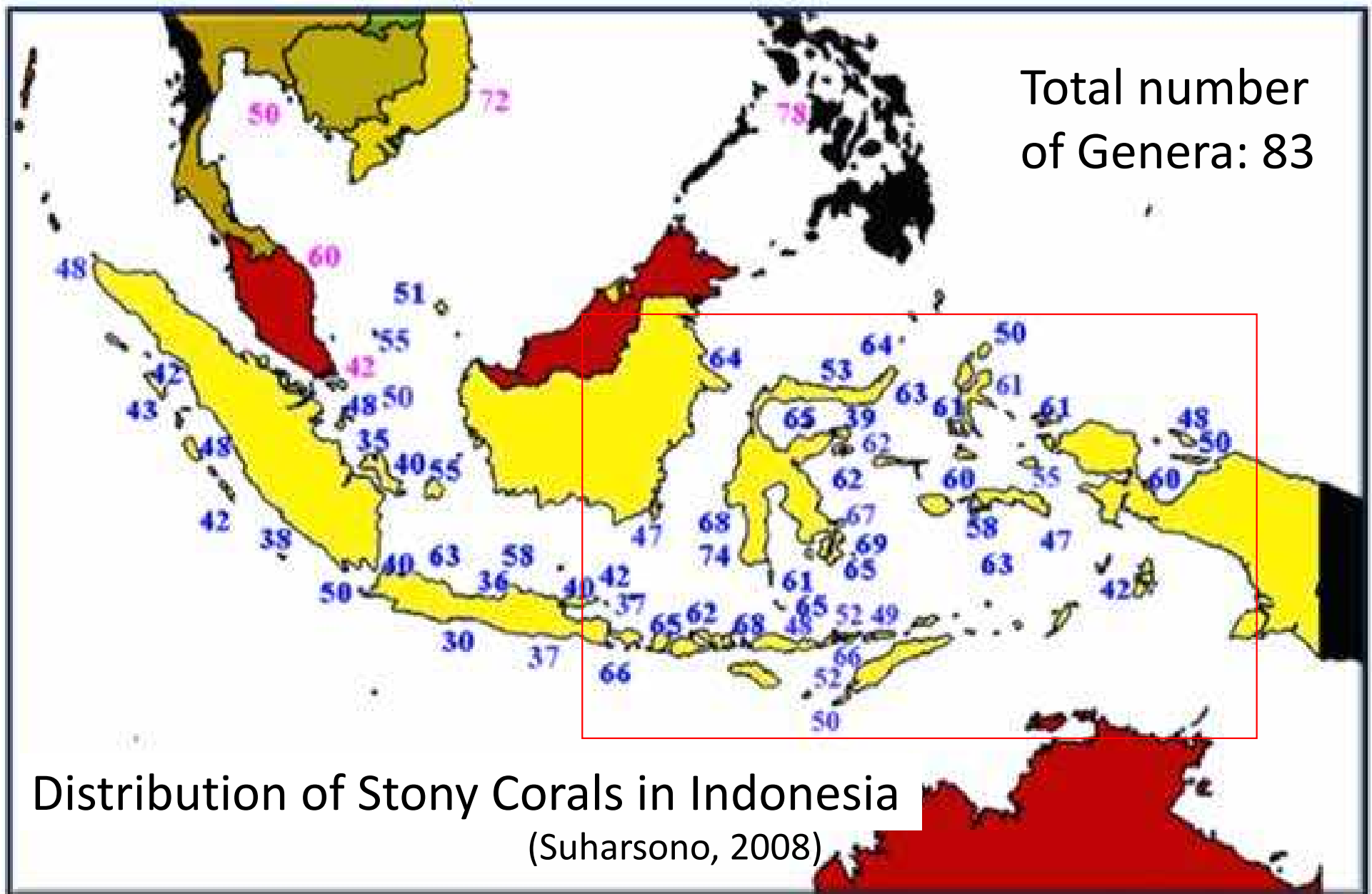
- a. Fringing reef / Karang tepi (70%).
- b. Barrier reef / Karang penghalang (20%).
- c. Atoll / Atol (2.5%)
- d. Patch reef / Gosong karang (7.5%).

Distribution of Coral Reef in Indonesia



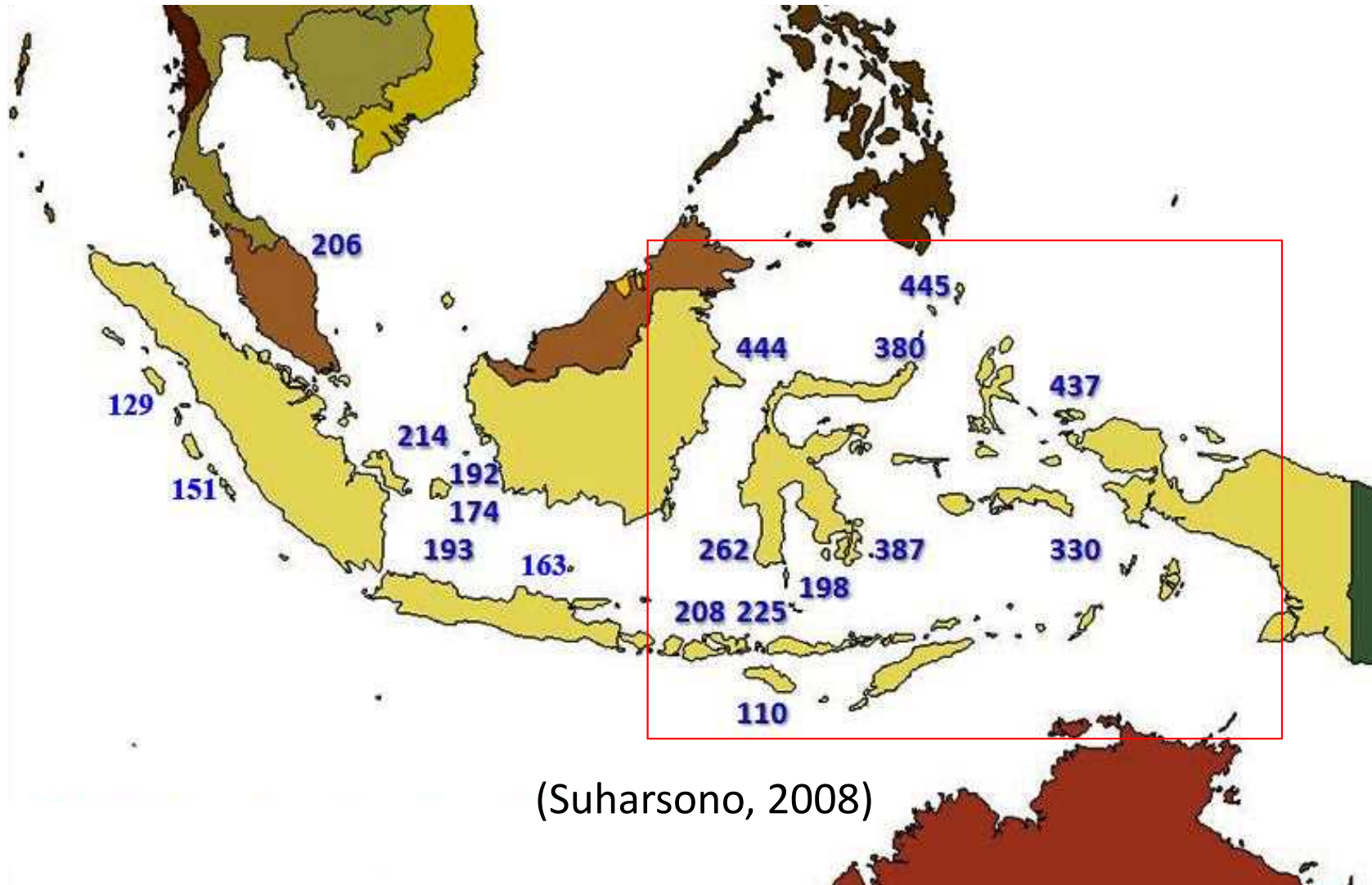
Total Coral Reef 2.500.000 ha
14% Coral reef of the world

Total number
of Genera: 83



Distribution of Stony Corals in Indonesia
(Suharsono, 2008)

Distribution of Coral Species in Indonesia



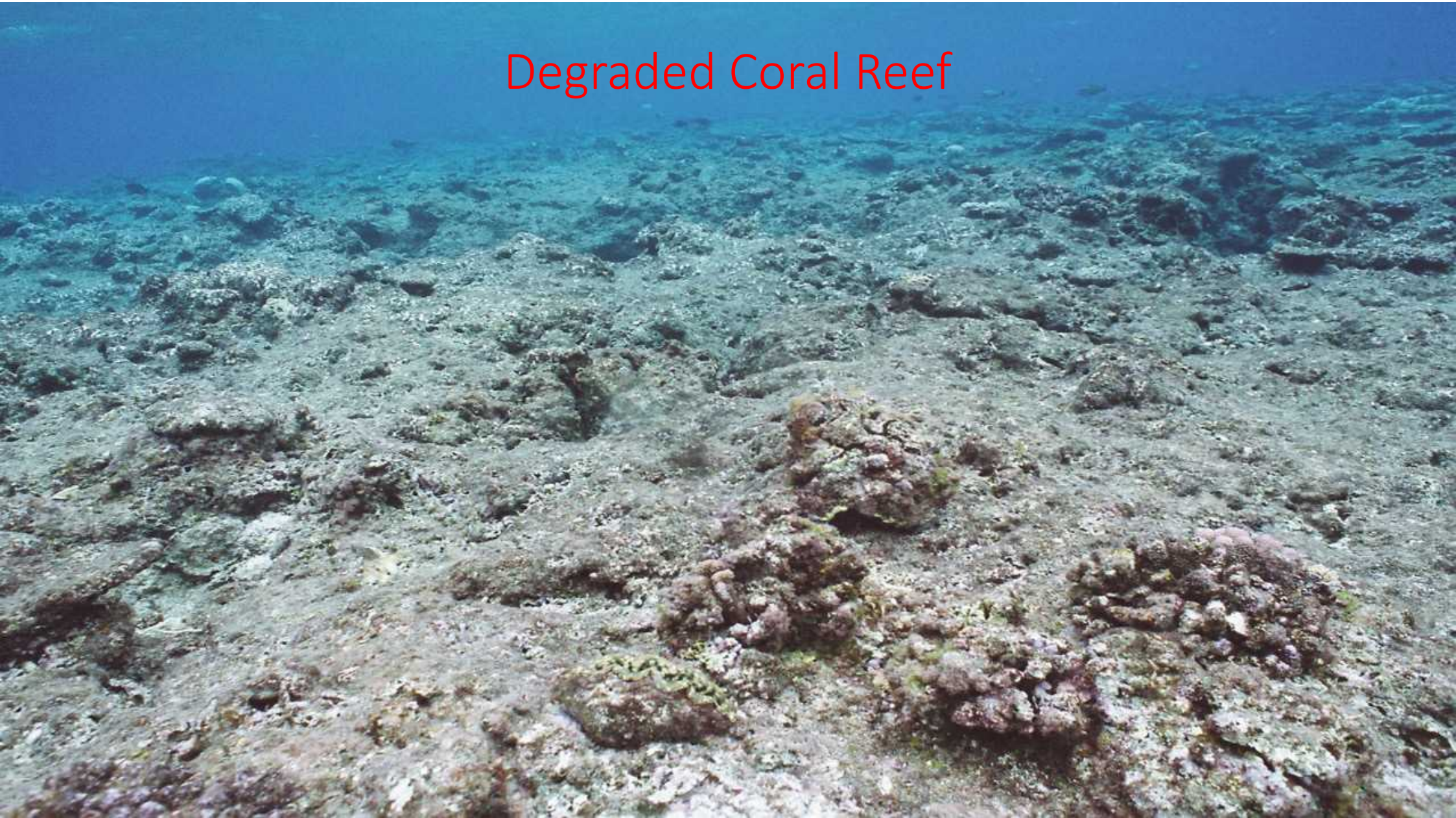
Coral Endemic Species



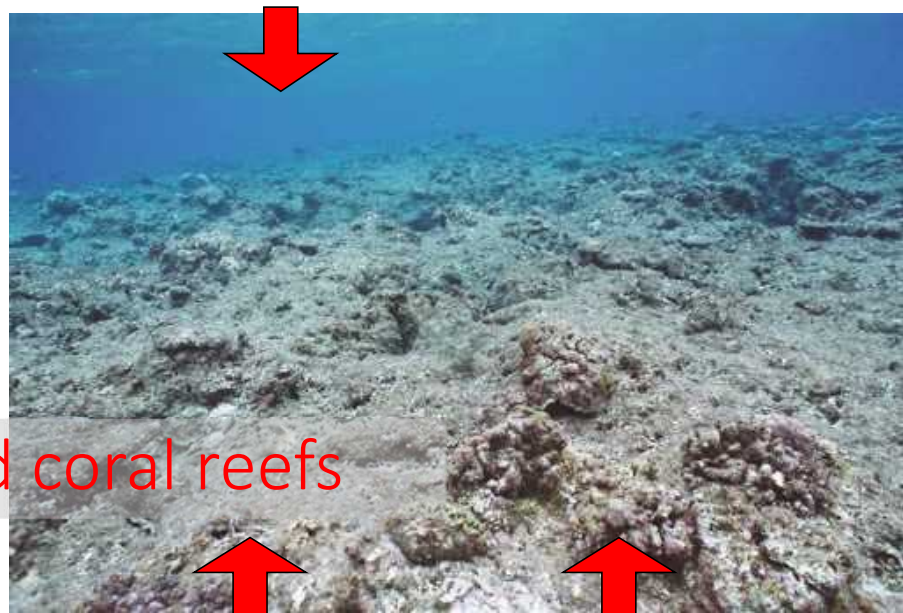
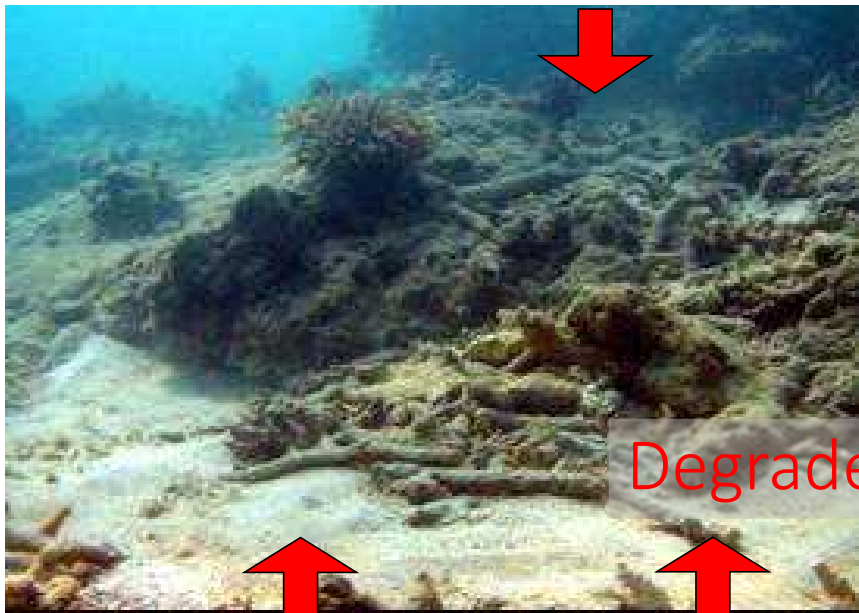


- ✓ Hot spot marine biodiversity
- ✓ 647 million Ha
- ✓ Indonesia, Malaysia, the Philippines, Papua New Guinea, Timor Leste and Solomon Islands
- ✓ Highest concentration marine species: Coral 76%, Reef fish 37%,

Degraded Coral Reef



Global scale (could not control)
(increasing seawater temperature)



Degraded coral reefs

Coastal development,
water pollution
(construction, farming)

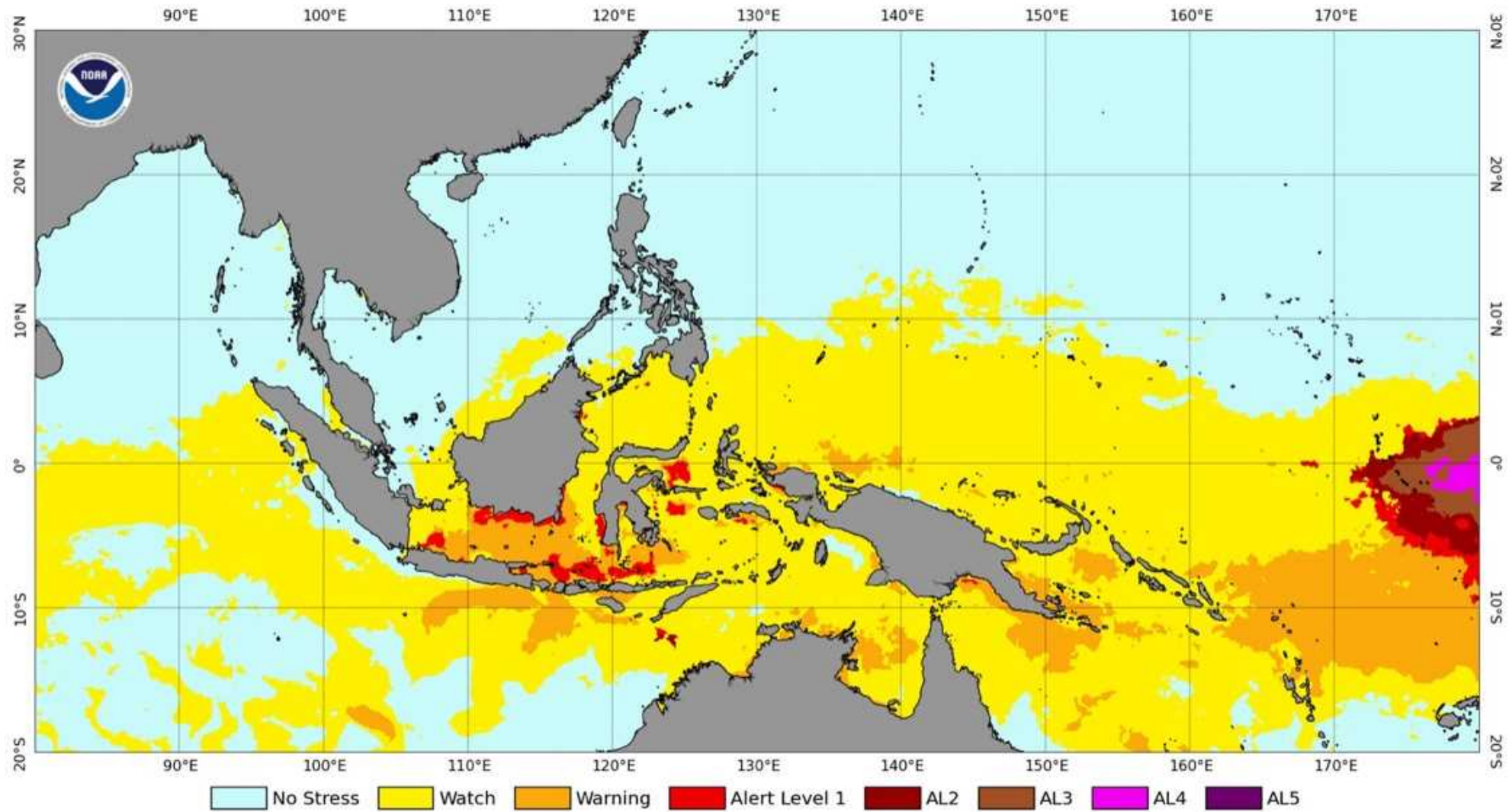
Destructive fishing method
(bombing, cyanide)

Deforestation
(logging, agriculture,
urban use)

Regional scale (we could control)

Bleaching

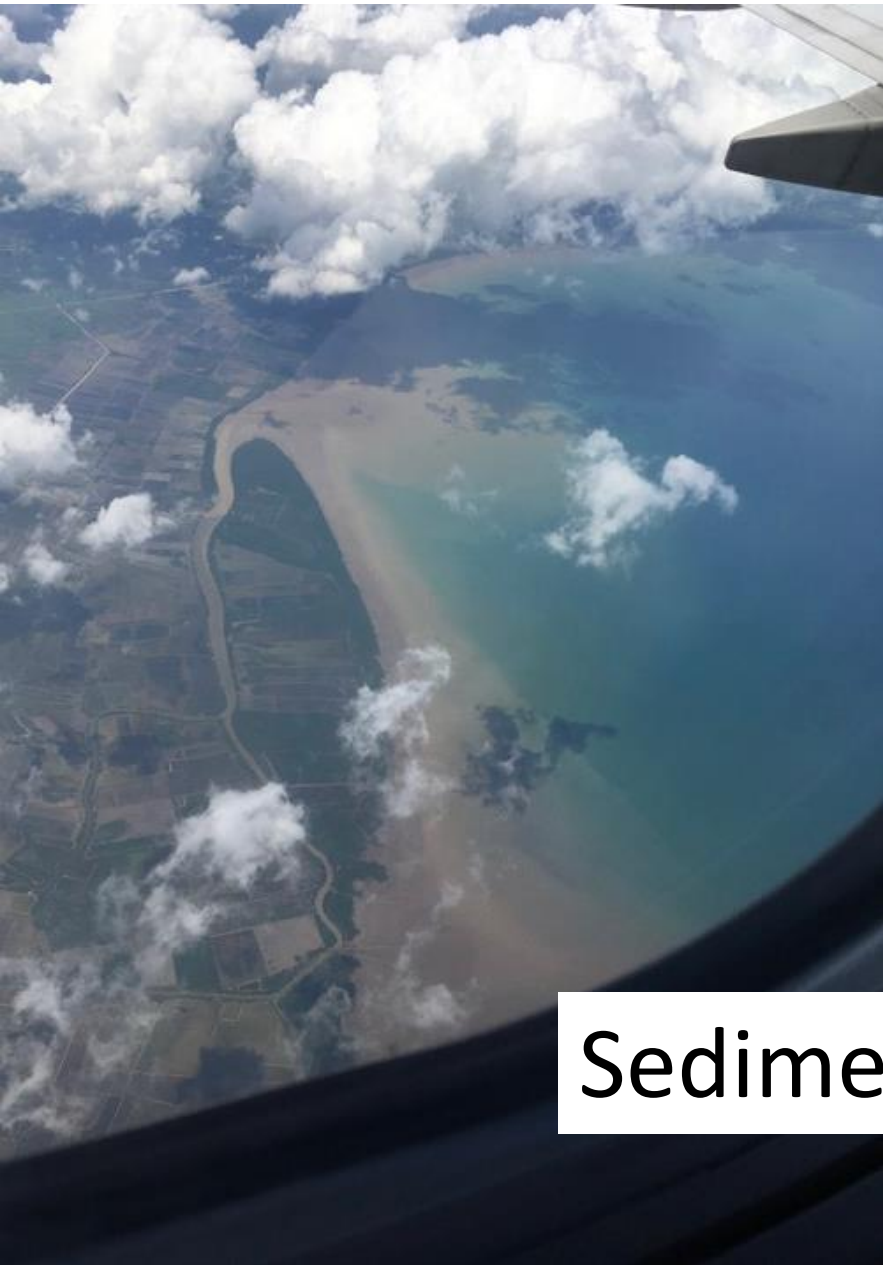
NOAA Coral Reef Watch Daily 5km Bleaching Alert Area 7-day Maximum (v3.1) 26 Dec 2023





Deforestation

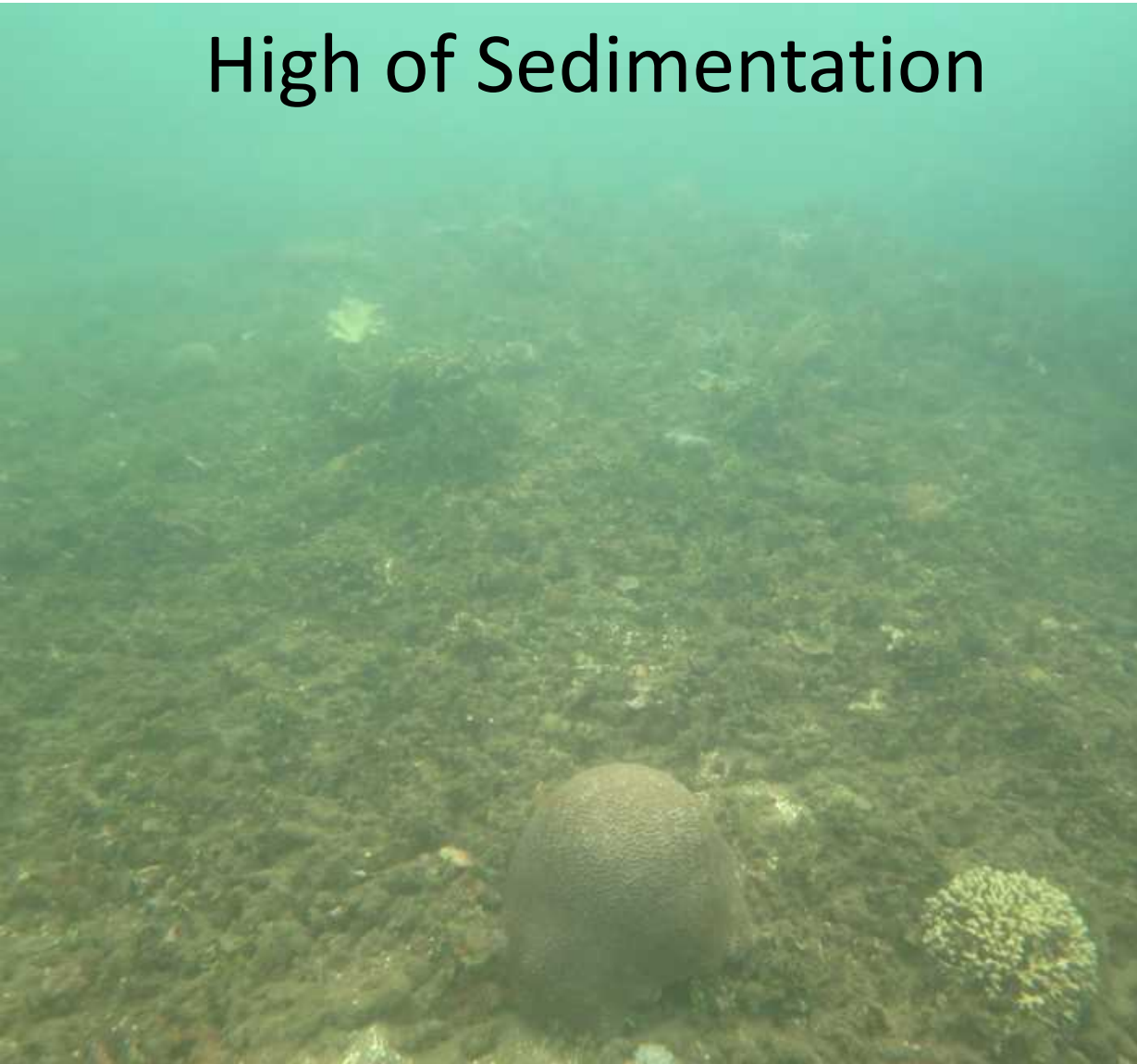




Sedimentation



High of Sedimentation



Pollution/Plastic Debris

FOTO BREAKING NEWS: Semalaman Manado Diguyur Hujan, Pesisir Teluk Manado 'Lautan' Sampah

Selasa, 21 Juni 2016 13:35



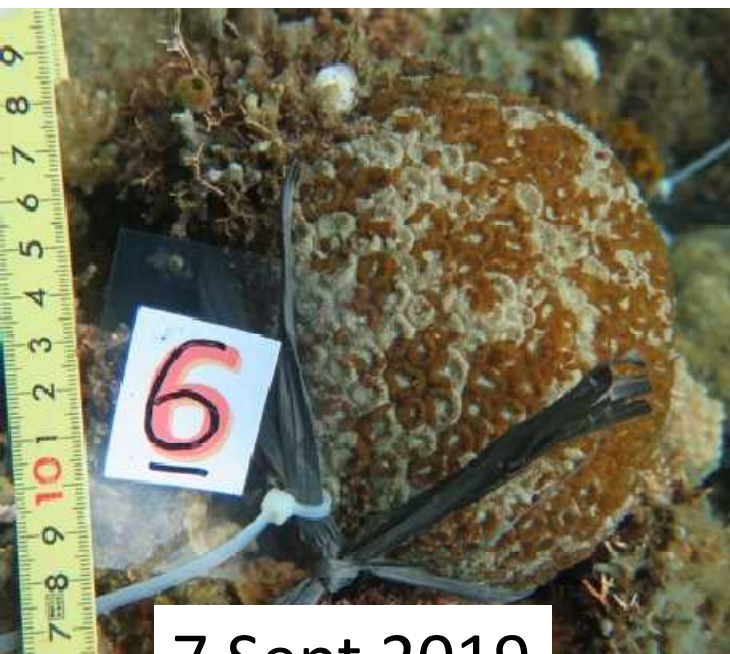
TRIBUNMANADO/ANDREAS RUAUW



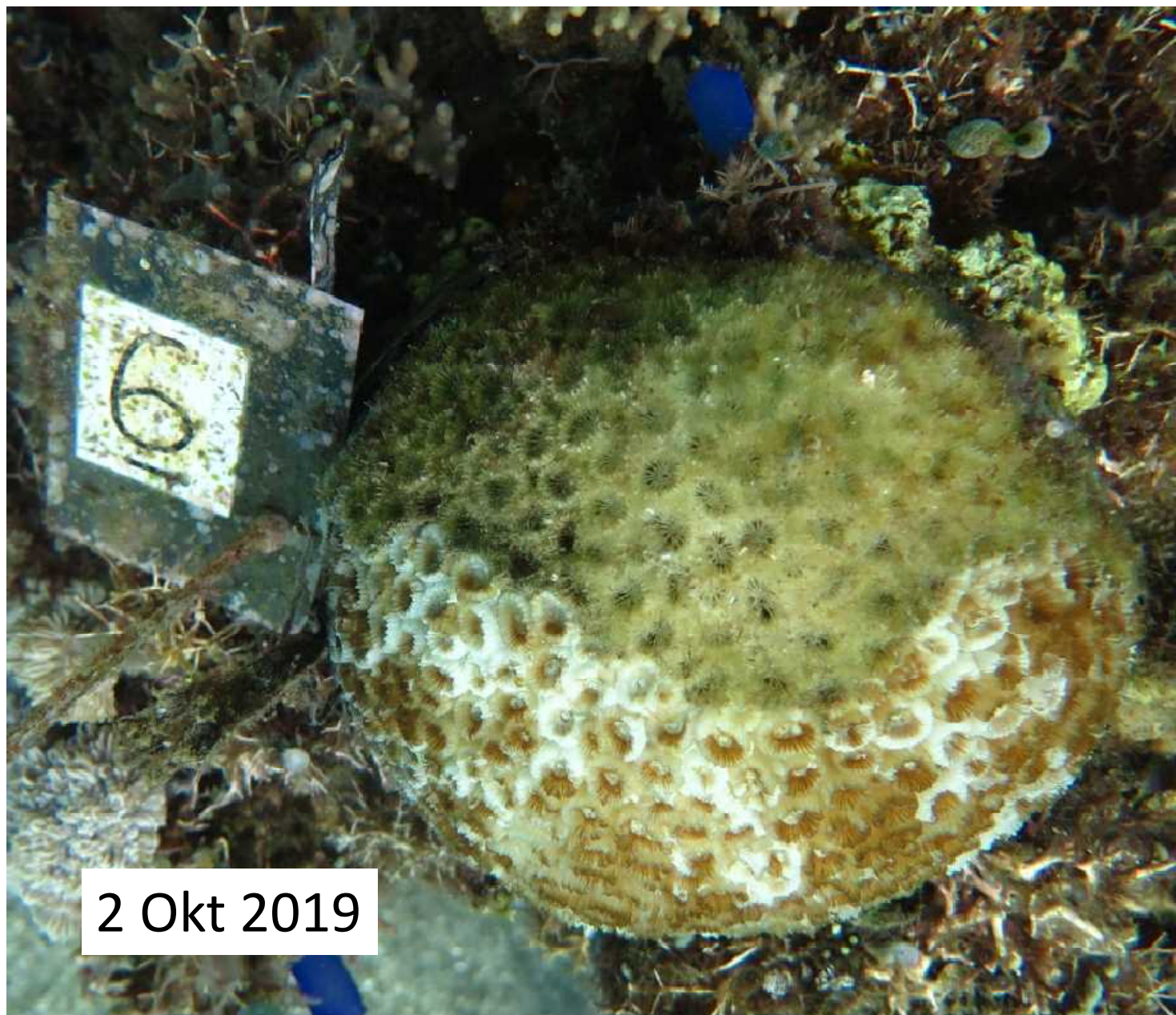


Impact of Plastic Debris





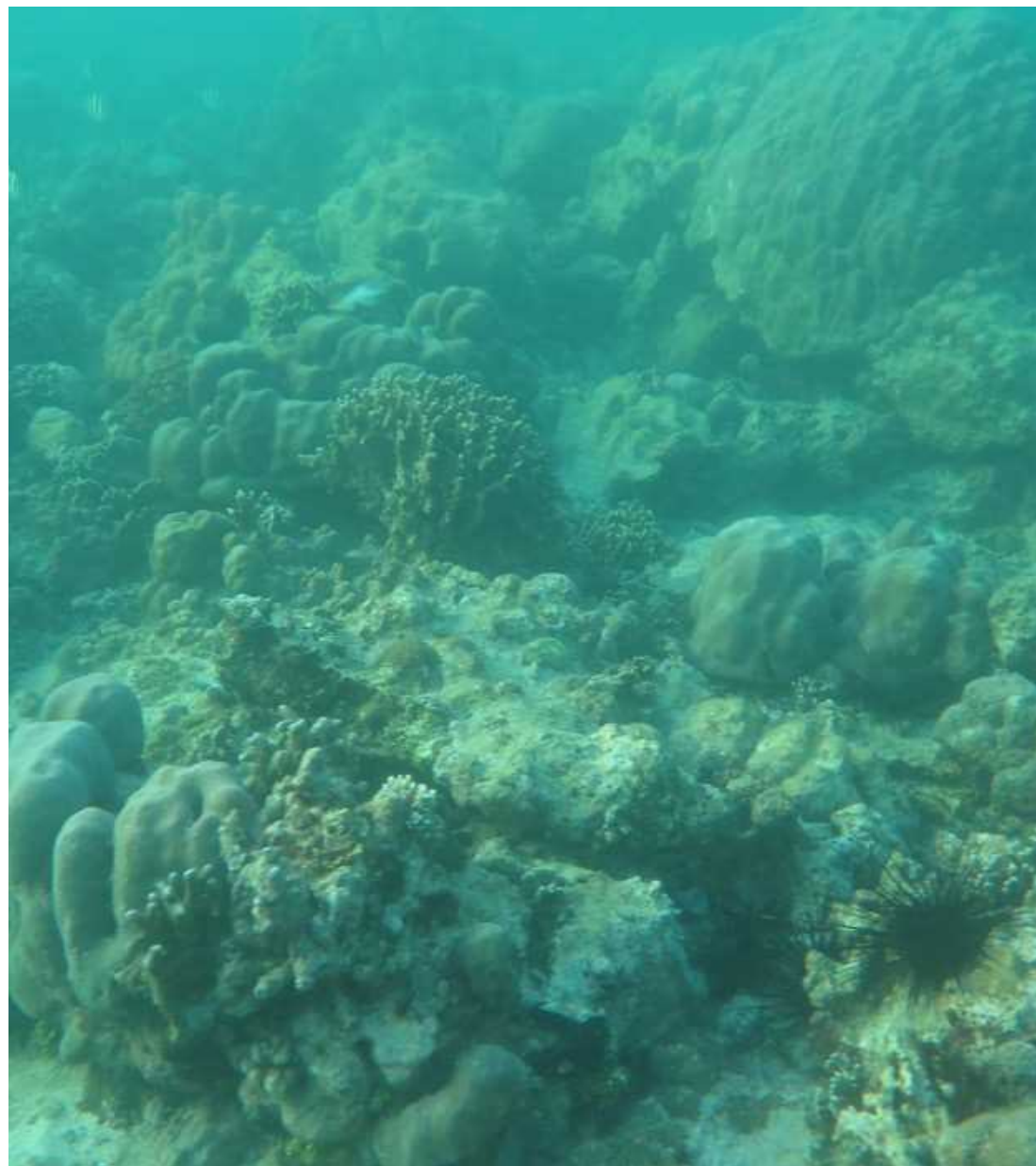
7 Sept 2019

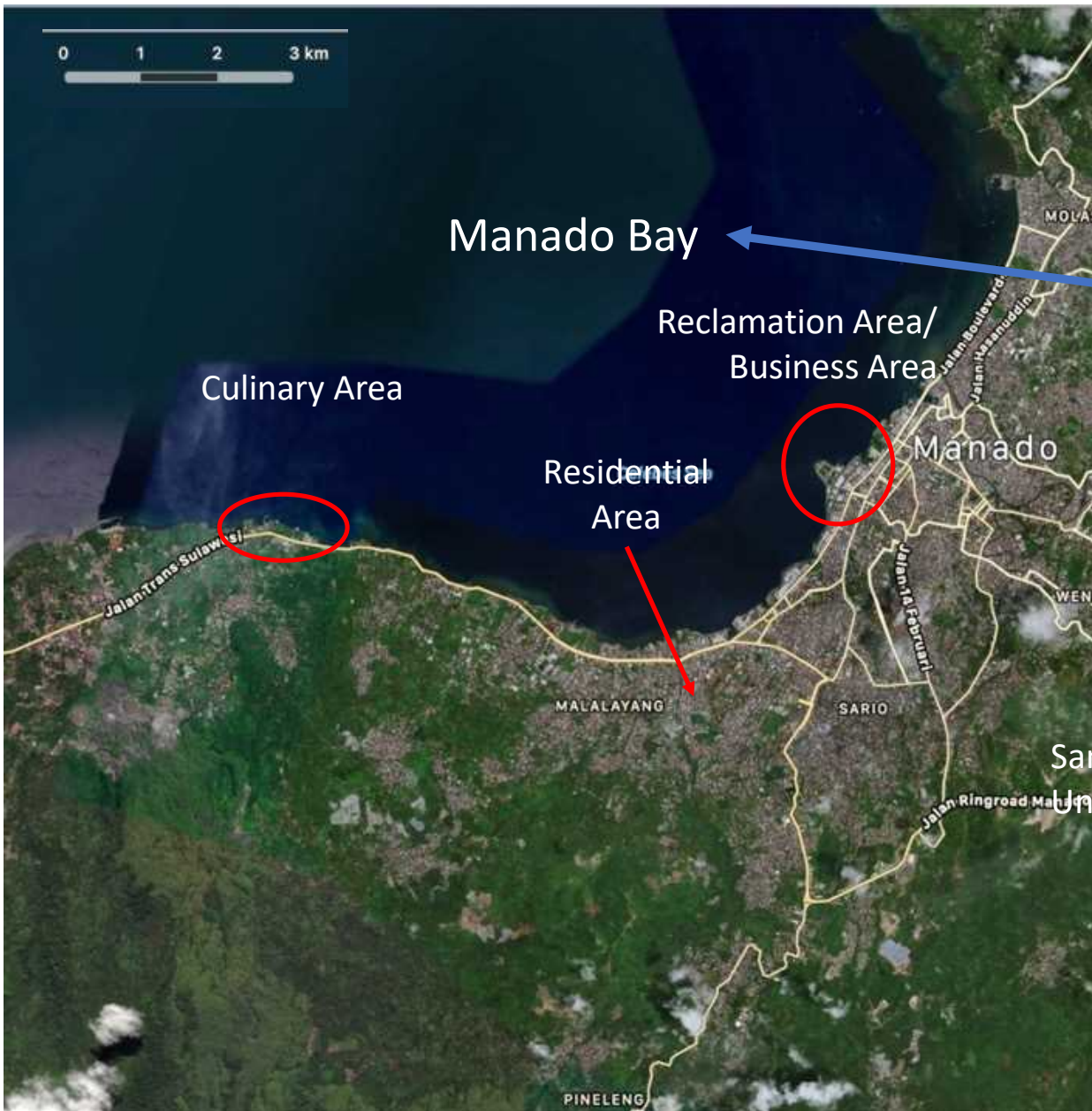


2 Okt 2019

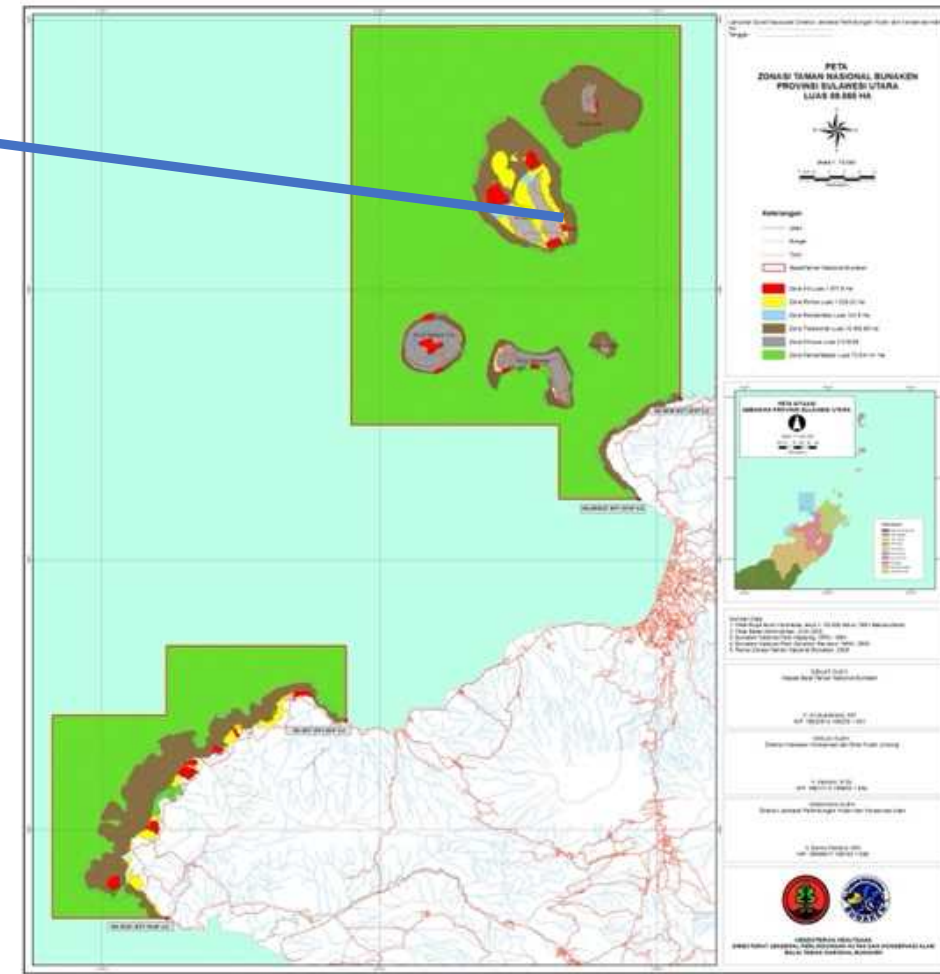


Destructive Fishing Method





Damage Coral Reef Caused by Anthropogenic Factors





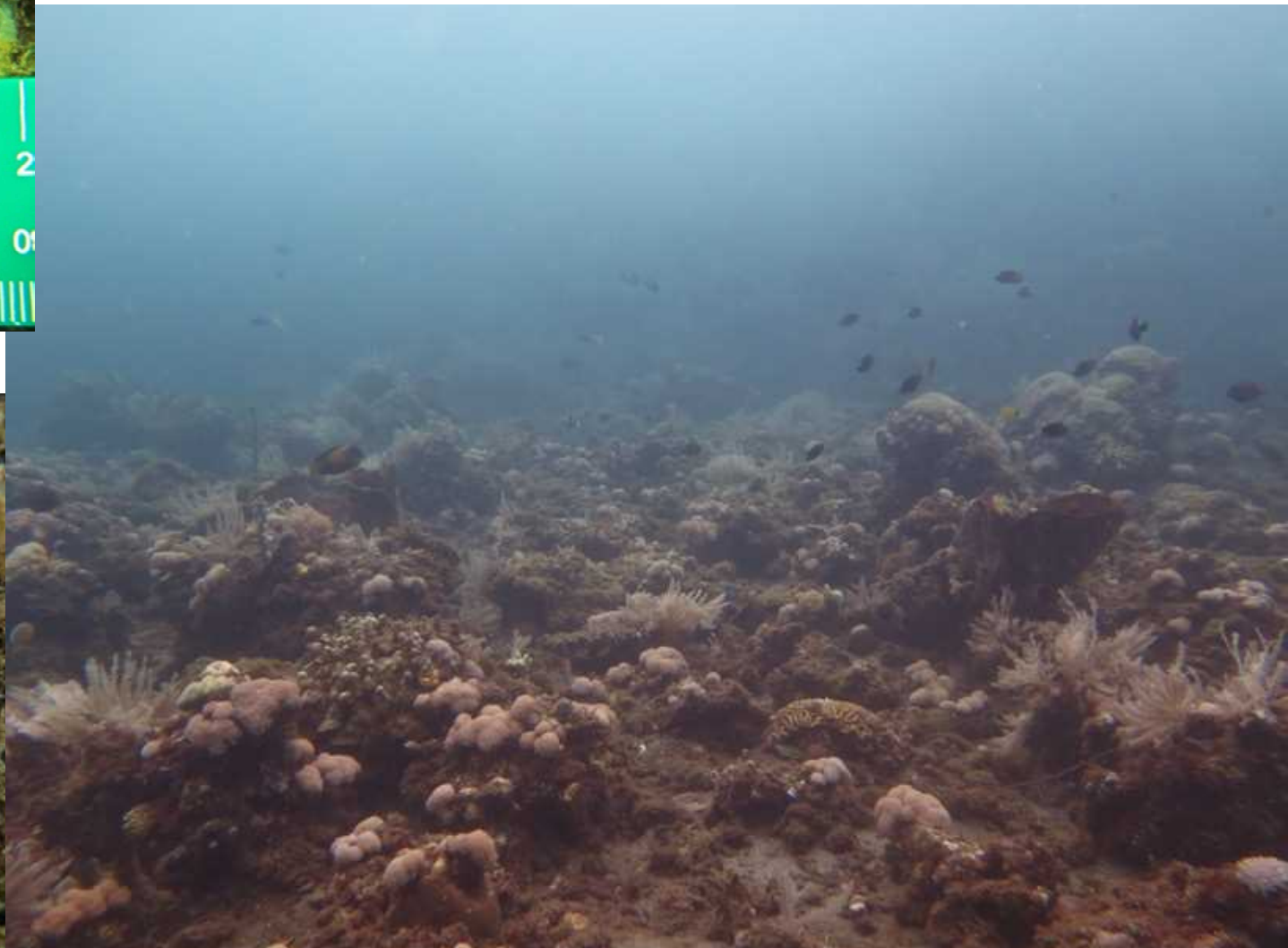
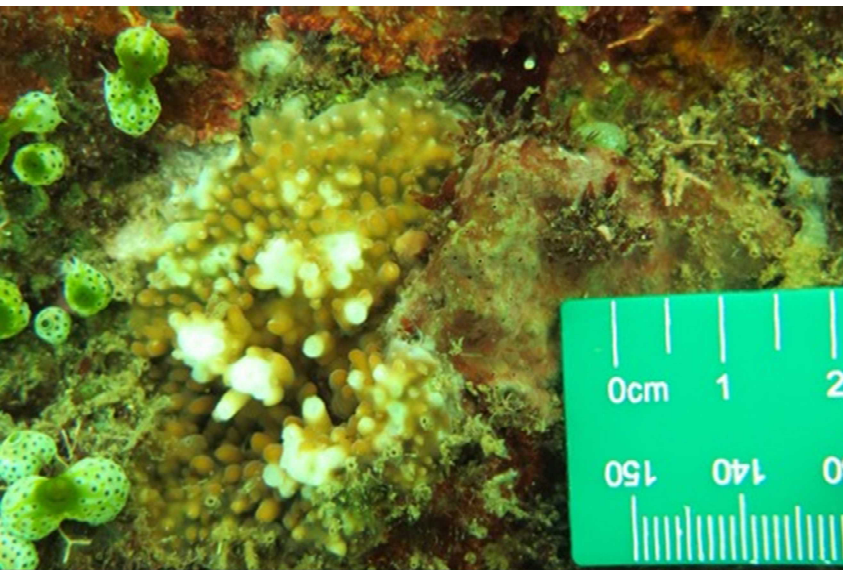
Culinary Area



Reclamation Area/Business Area

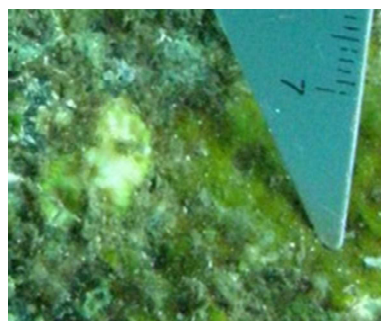


Culinary Area





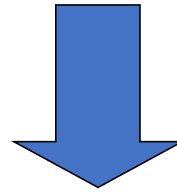
Residential Area



Reclamation Area/
Business Area



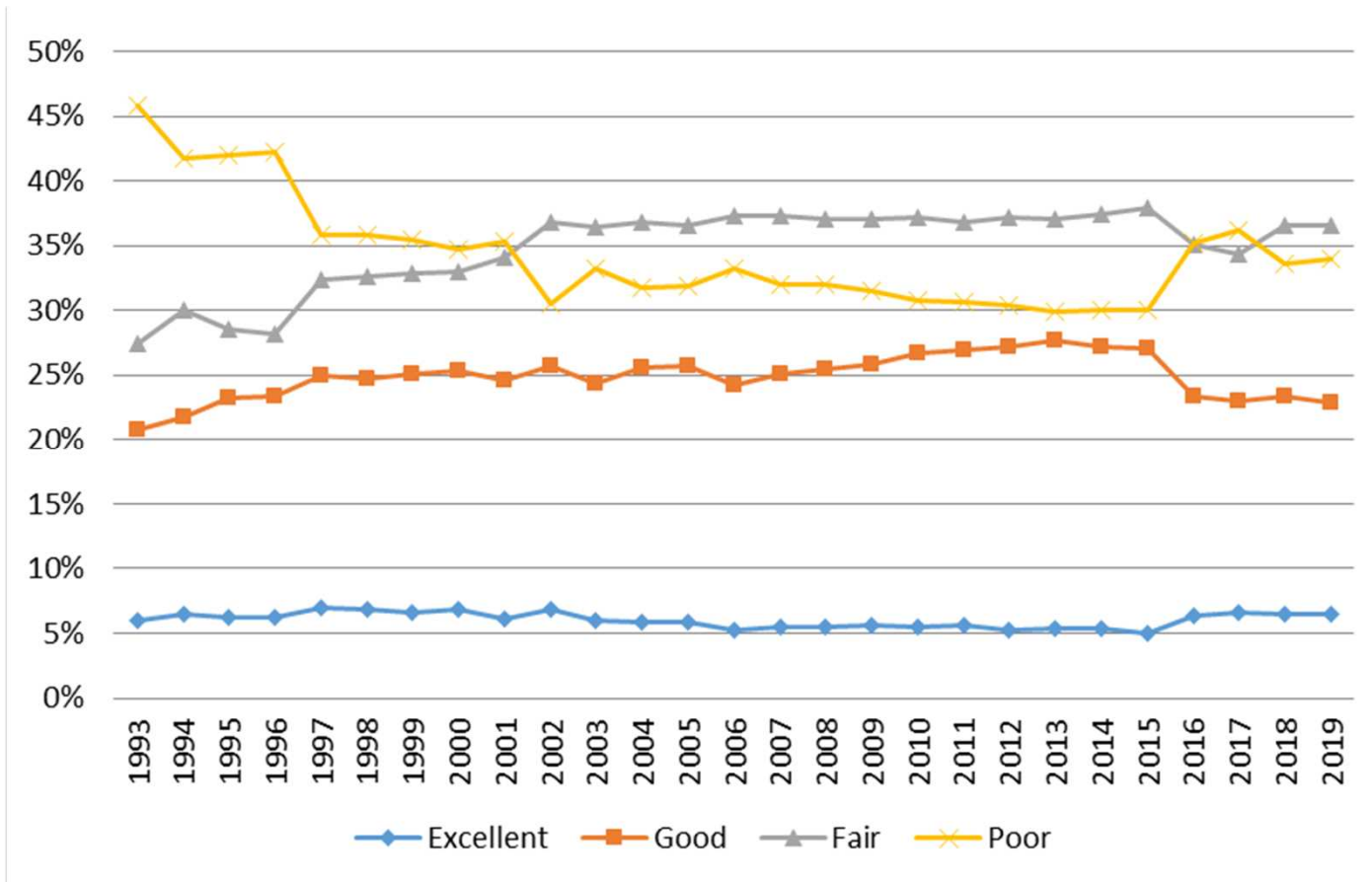
- ✓ **Weakening of coral reproduction ability**
- ✓ **Decrease of coral larvae**
- ✓ **Lack of substrata for larvae to settle**
- ✓ **Terrestrial stresses**



Problem in
Manado
Bay

Coral reefs are not recovering
after damaged

Trend of Coral Reef Conditions in Indonesia



(Hadi et al., 2019)

In general, coral reefs condition remained stable in the last four years, indicating the environmental condition is in good condition



Thank You For Your Attention