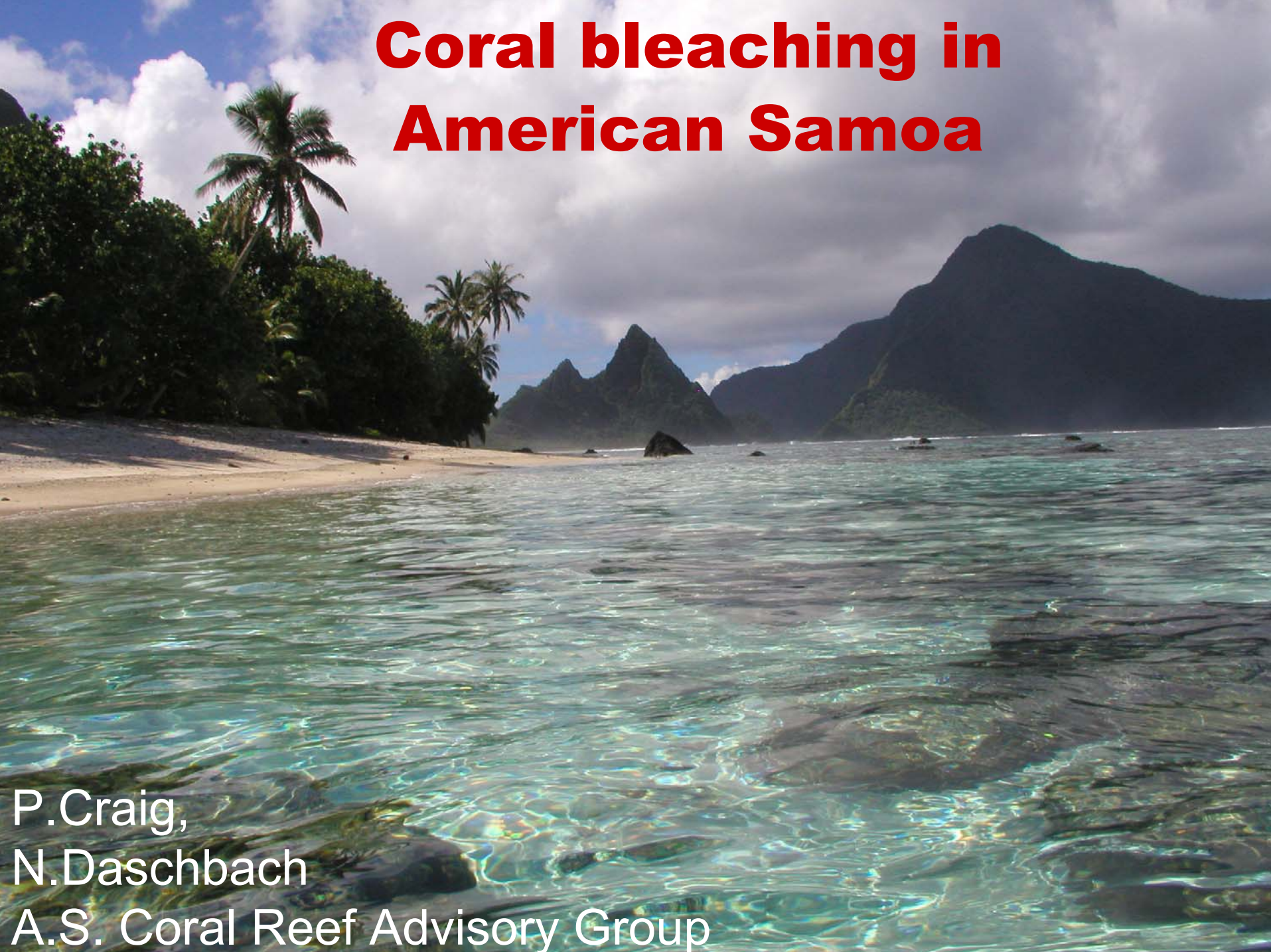
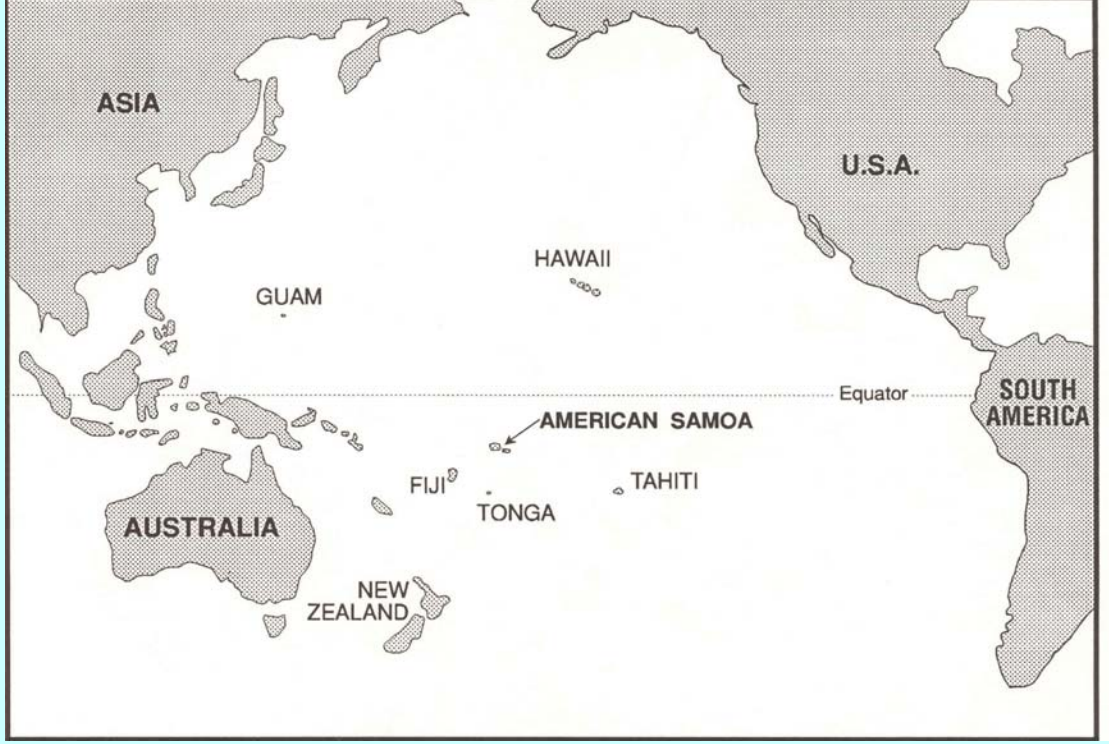
Coral bleaching in American Samoa

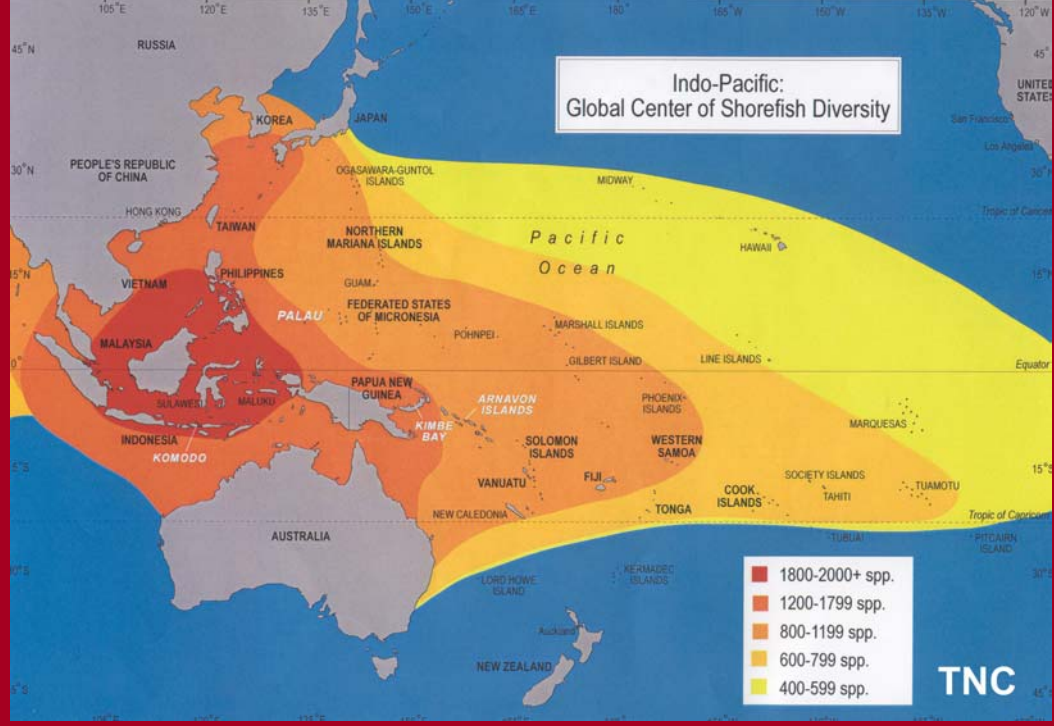


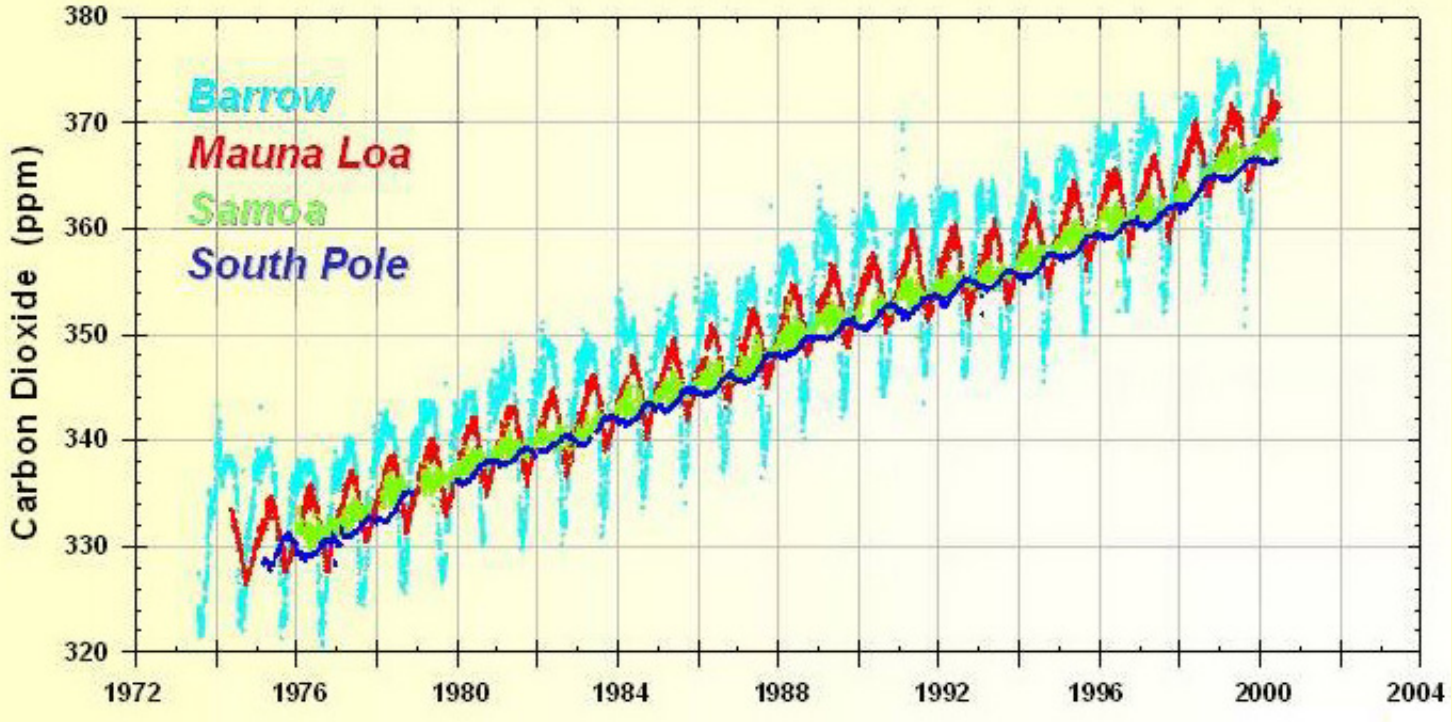
P.Craig,
N.Daschbach
A.S. Coral Reef Advisory Group


ASIA
U.S.A.
HAWAII
GUAM
Equator
SOUTH AMERICA
AMERICAN SAMOA
FIJI
TAHITI
TONGA
AUSTRALIA
NEW ZEALAND

OFU

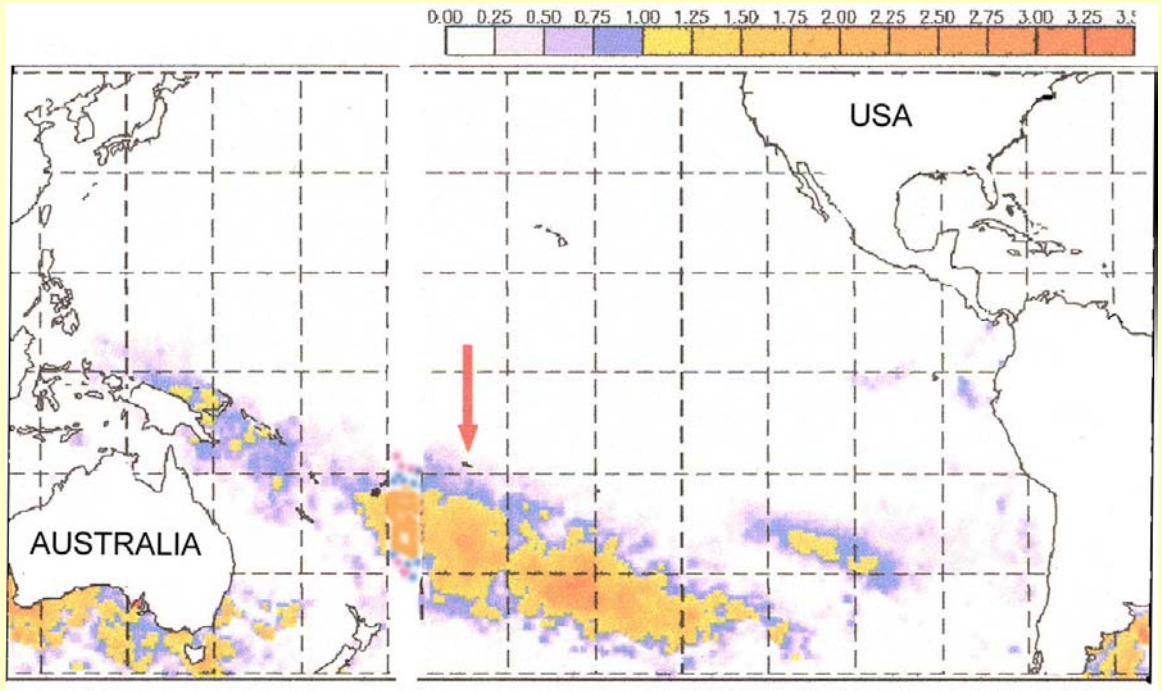
TUTUILA


Indo-Pacific:
Global Center of Shorefish Diversity
RUSSIA
KOREA
JAPAN
PEOPLE'S REPUBLIC OF CHINA
HONG KONG
TAIWAN
OGASAWARA-GUNTOL ISLANDS
MIDWAY
NORTHERN MARIANA ISLANDS
Pacific Ocean
HAWAII
VIETNAM
PHILIPPINES
GUAM
PALAU
FEDERATED STATES OF MICRONESIA
MARSHALL ISLANDS
POHNPEI
MALAYSIA
GILBERT ISLAND
LINE ISLANDS
Equator
PAPUA NEW GUINEA
ARNAVON ISLANDS
PHOENIX ISLANDS
MARQUESAS
SULAWESI
MALUKU
KIMBE BAY
INDONESIA
KOMODO
SOLOMON ISLANDS
WESTERN SAMOA
VANUATU
FIJI
SOCIETY ISLANDS
TAHITI
TUAMOTU
COOK ISLANDS
TONGA
NEW CALEDONIA
Tropic of Capricorn
AUSTRALIA
TUBUAI
PITCAIRN ISLAND
KERMADEC ISLANDS
LORD HOWE ISLAND
Auckland
NEW ZEALAND
1800-2000+ spp.
1200-1799 spp.
800-1199 spp.
600-799 spp.
400-599 spp.
TNC

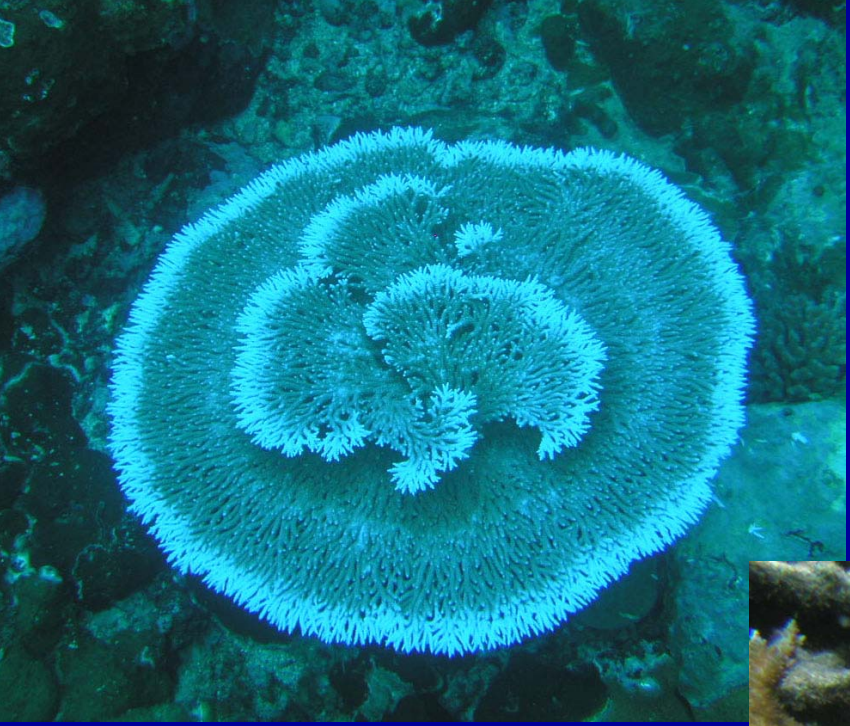


Threats

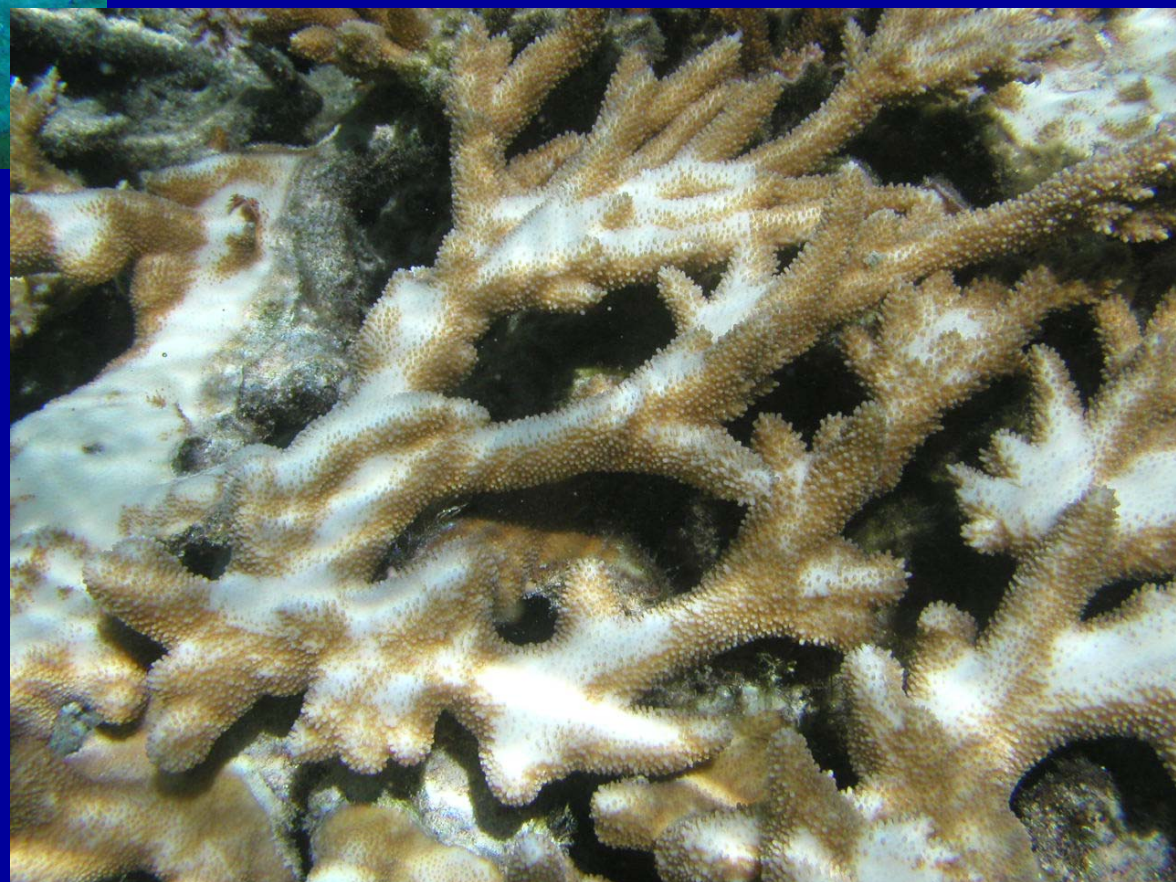
(NOAA data)



Bleaching: 1994, 2002, 2003



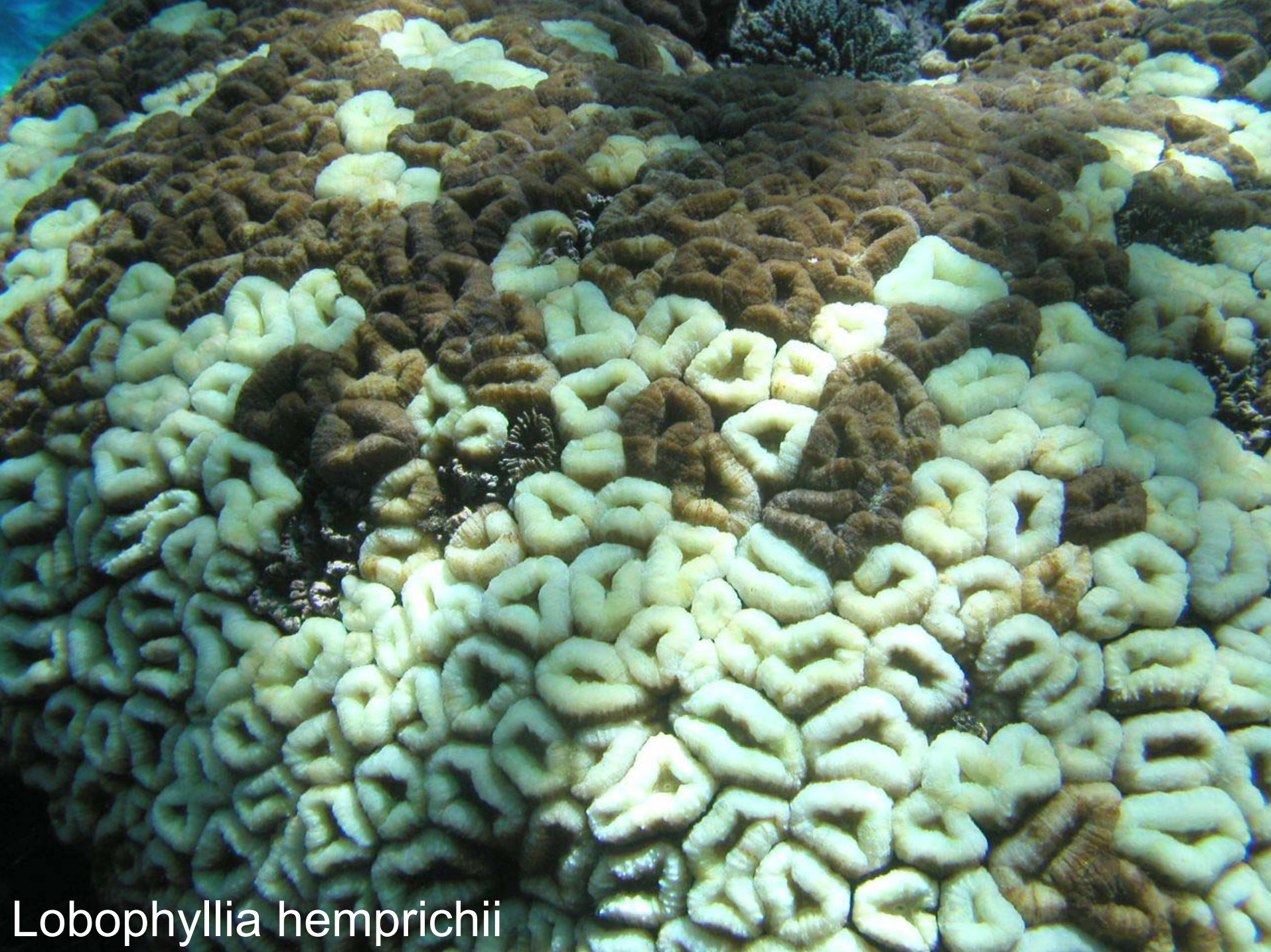
Bleaching “Patterns”

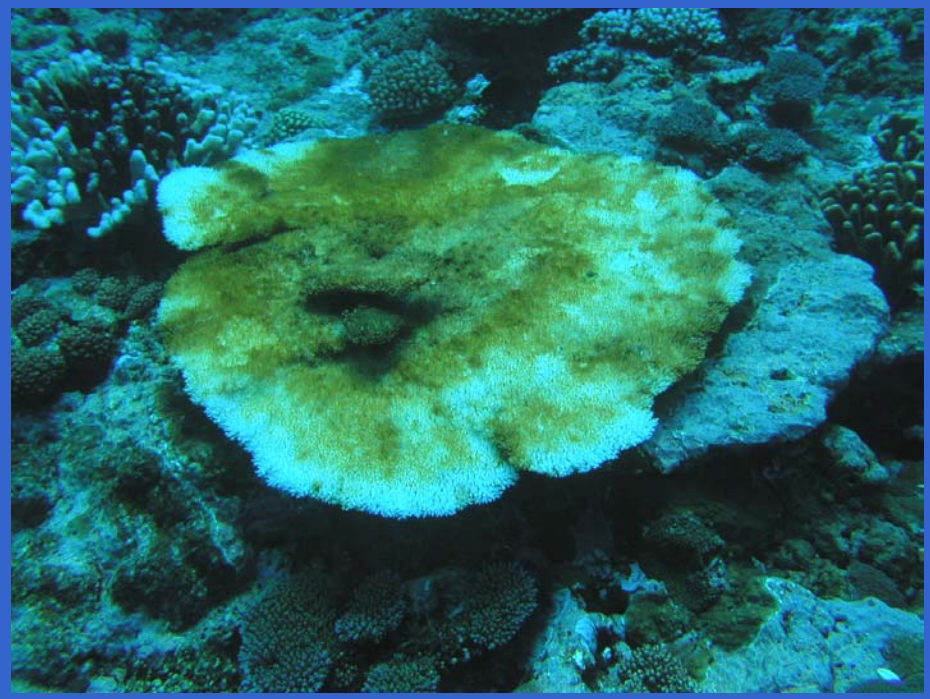


SAME PORITES MOUND

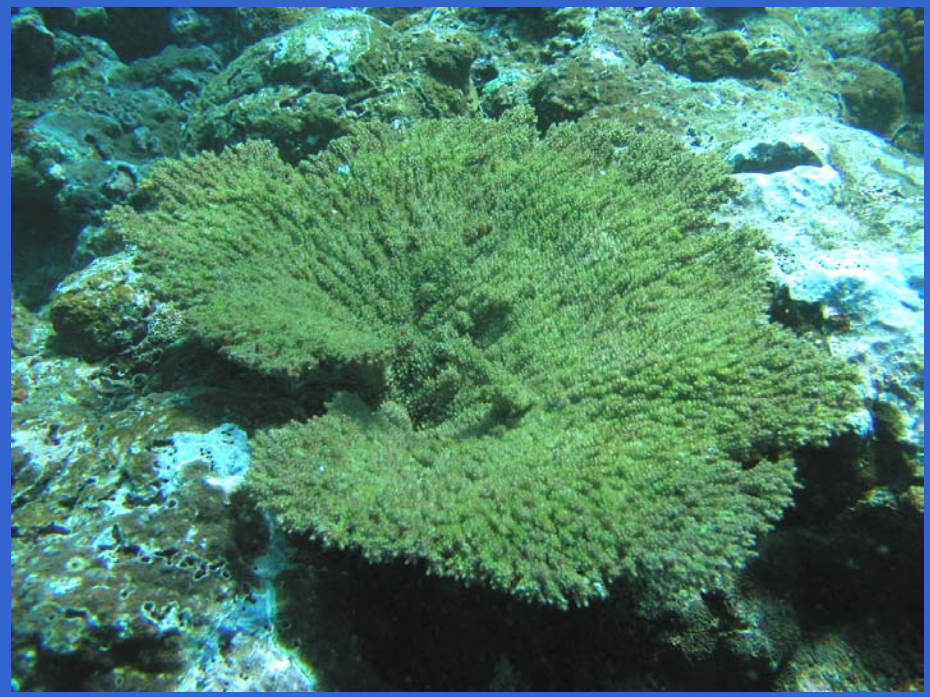
TOP VIEW

SIDE VIEW

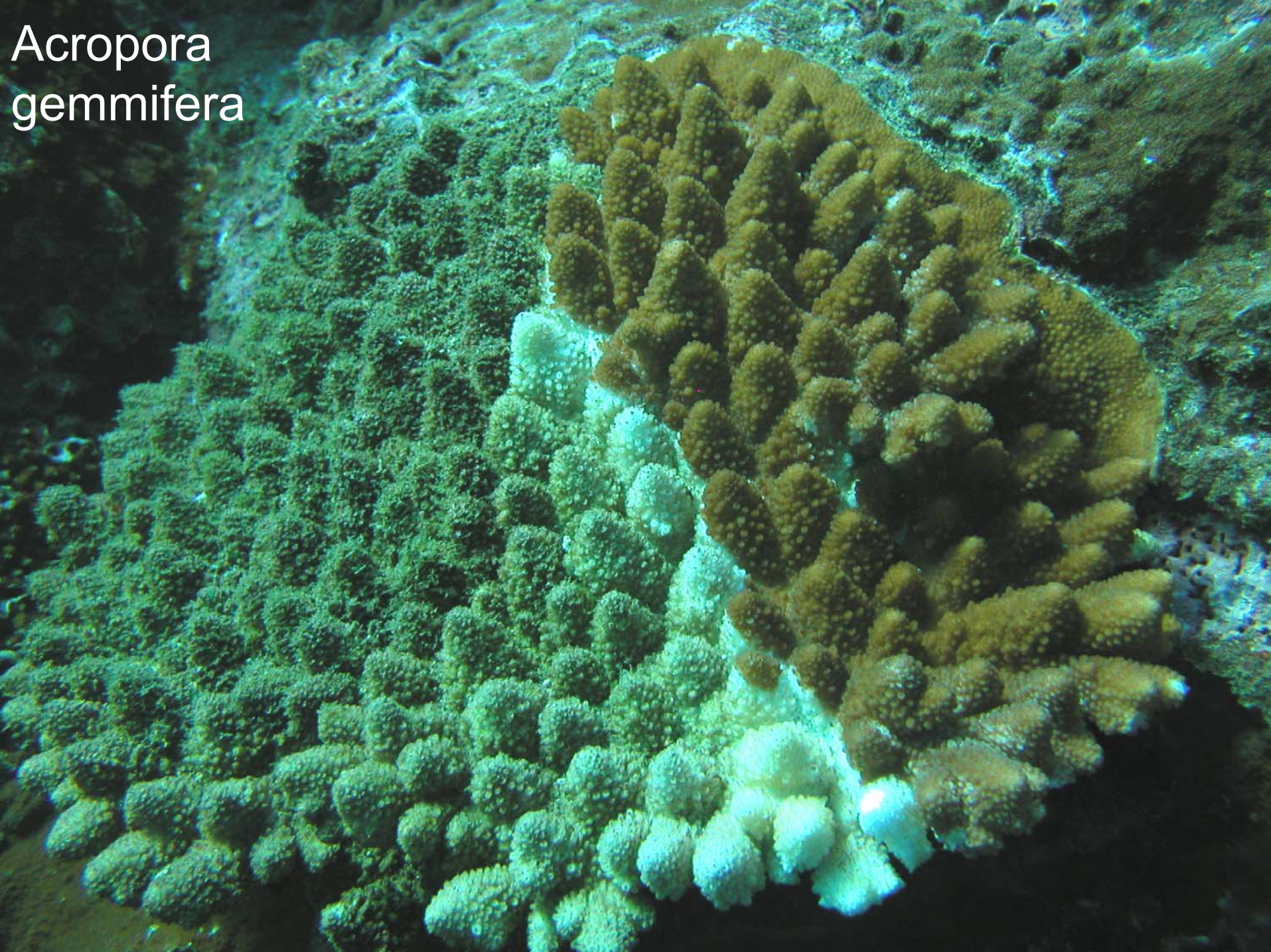

Lobophyllia hemprichii

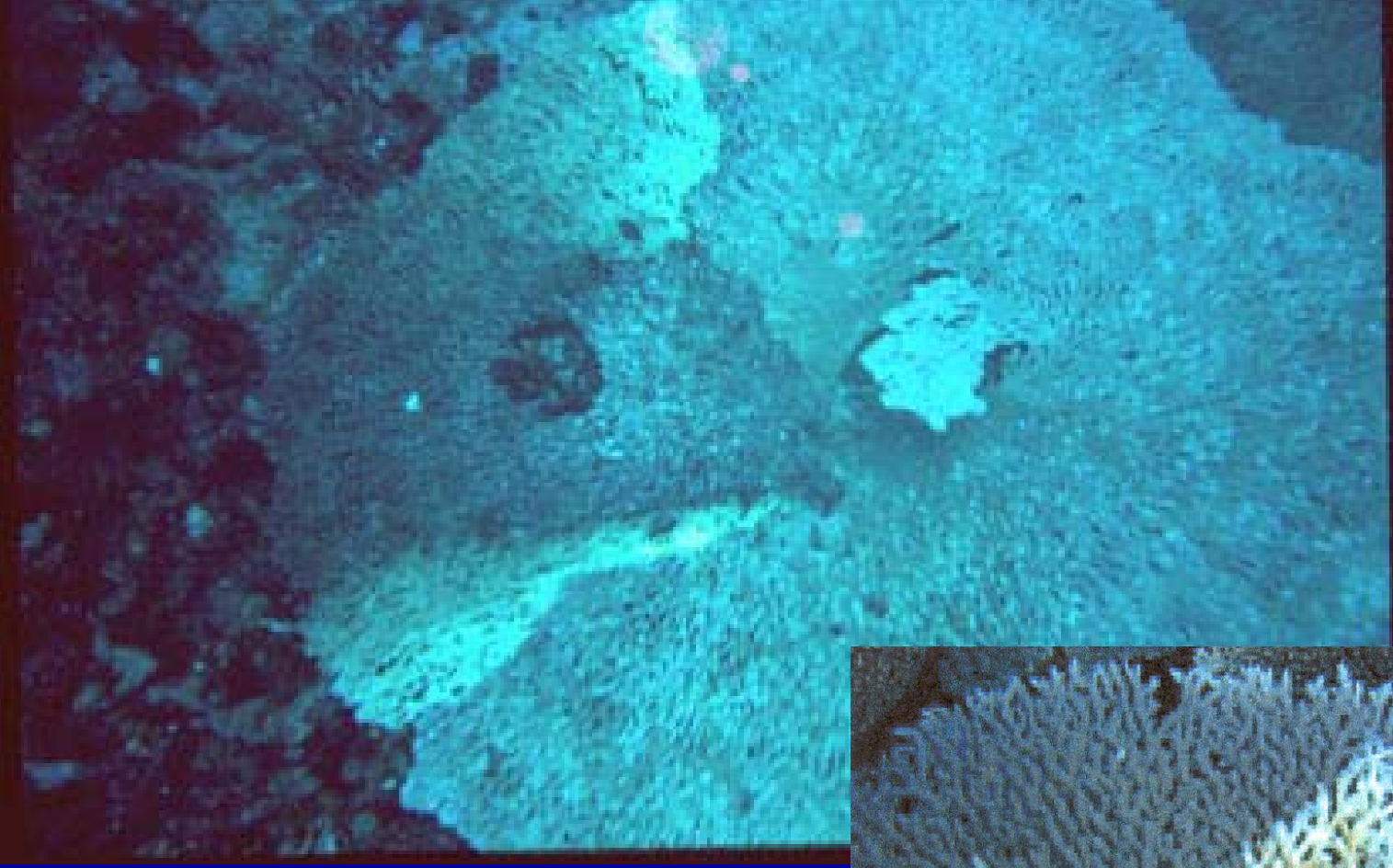


Direct mortality



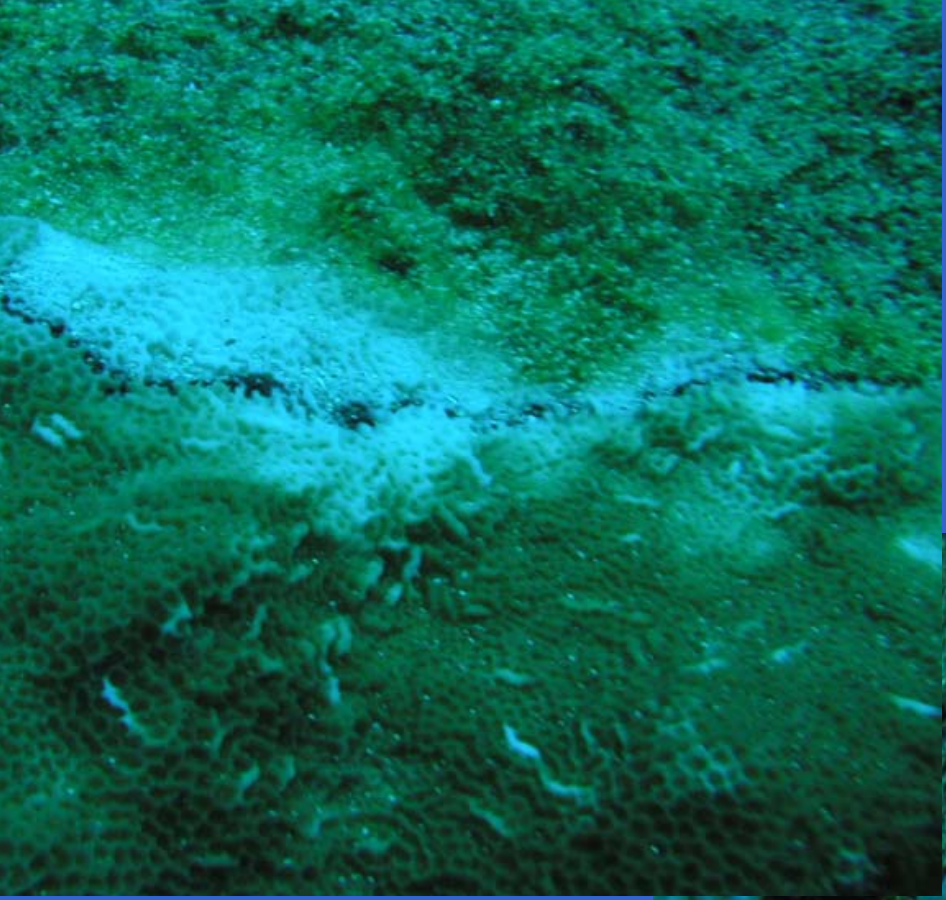
APPARENT
DISEASES

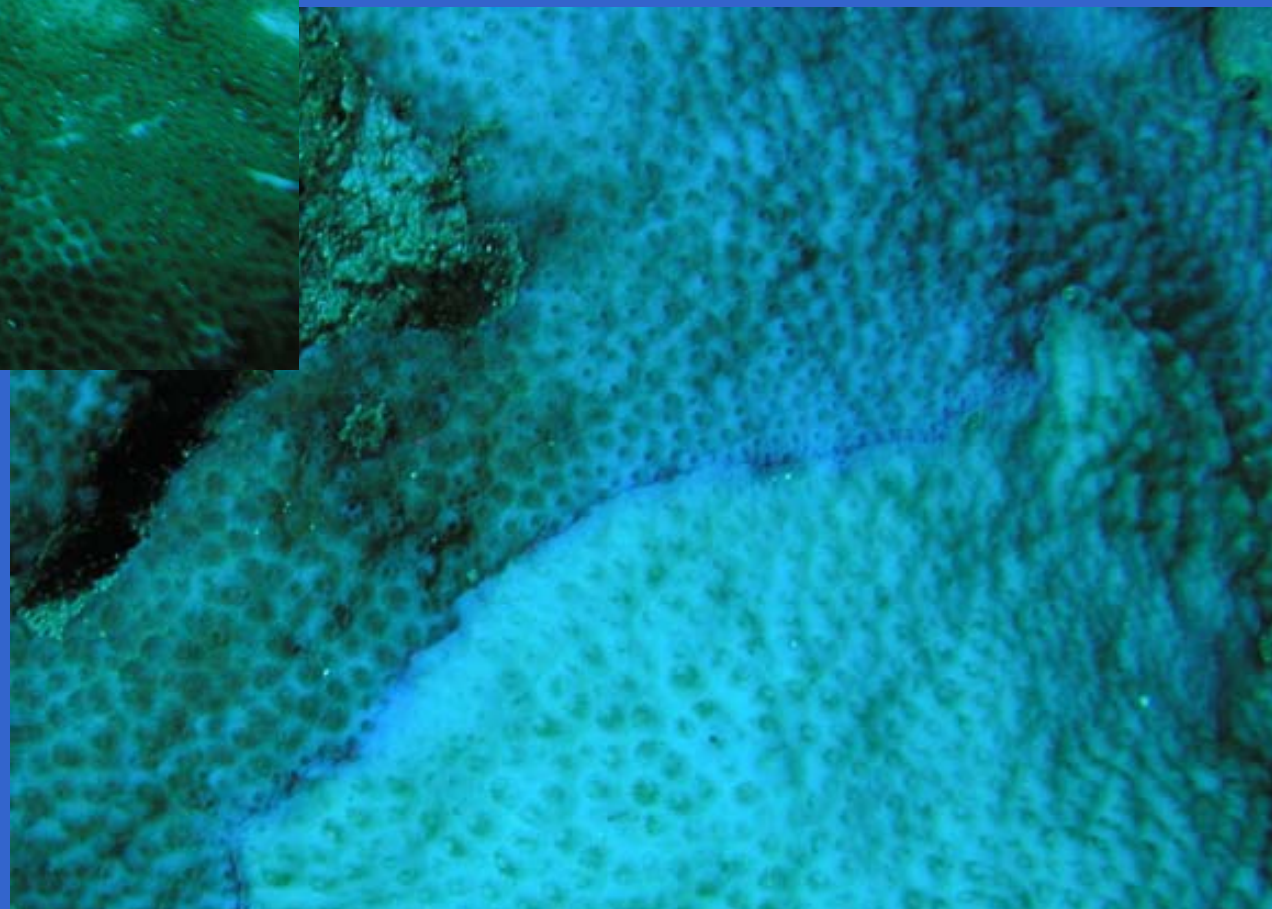

Acropora
gemmifera

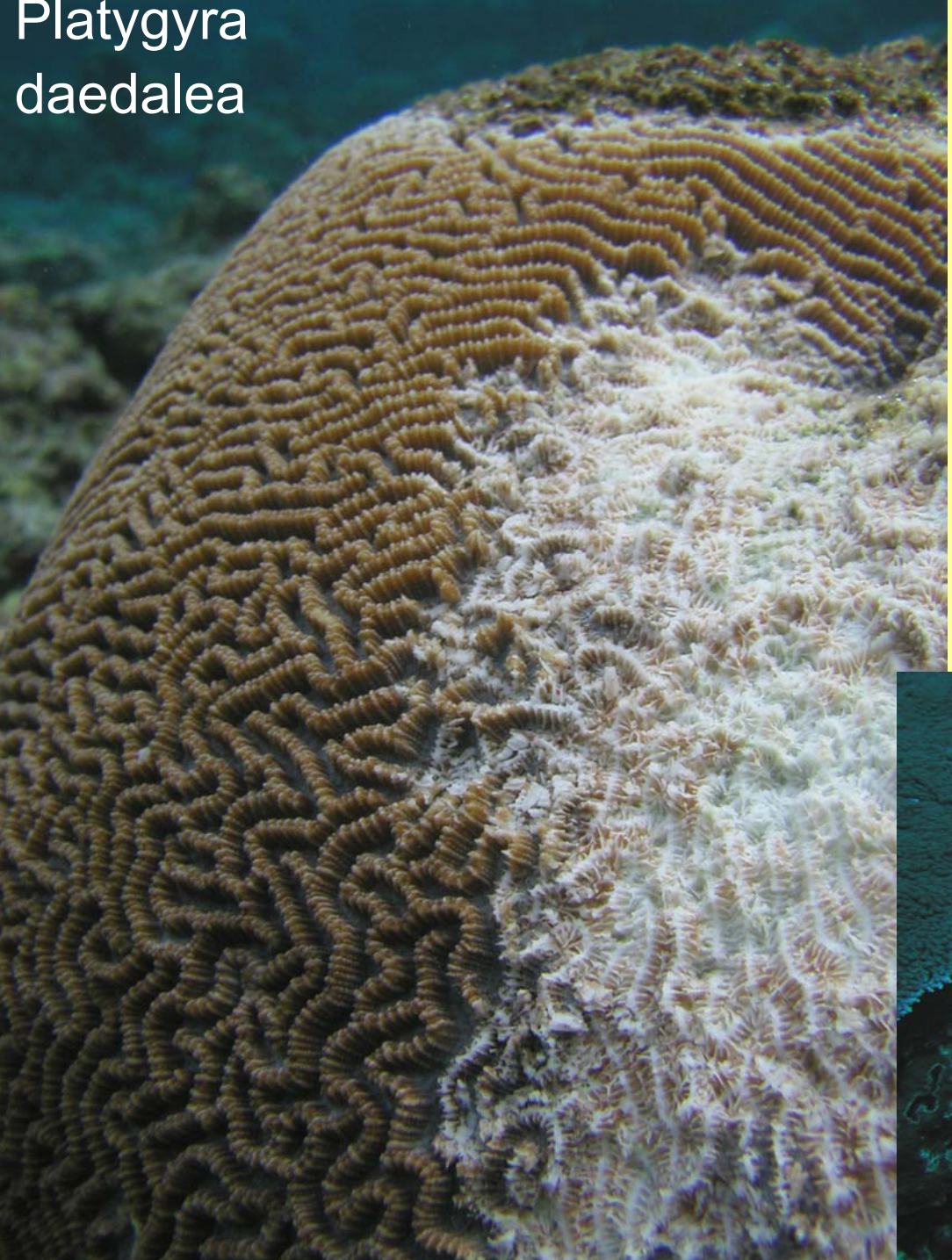


AUSTRALIAN
WHITE SYNDROME

Black line

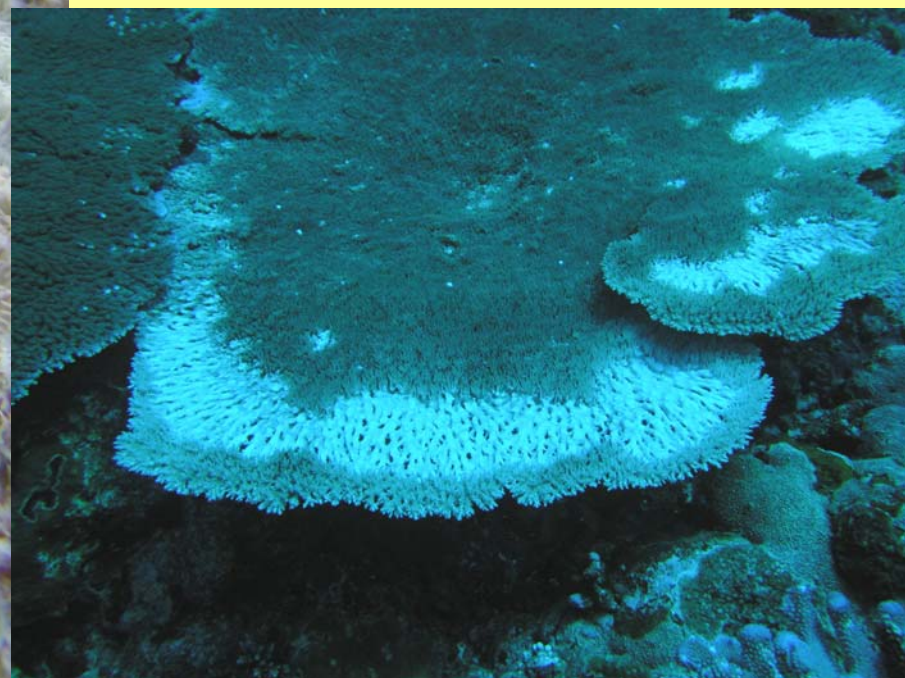


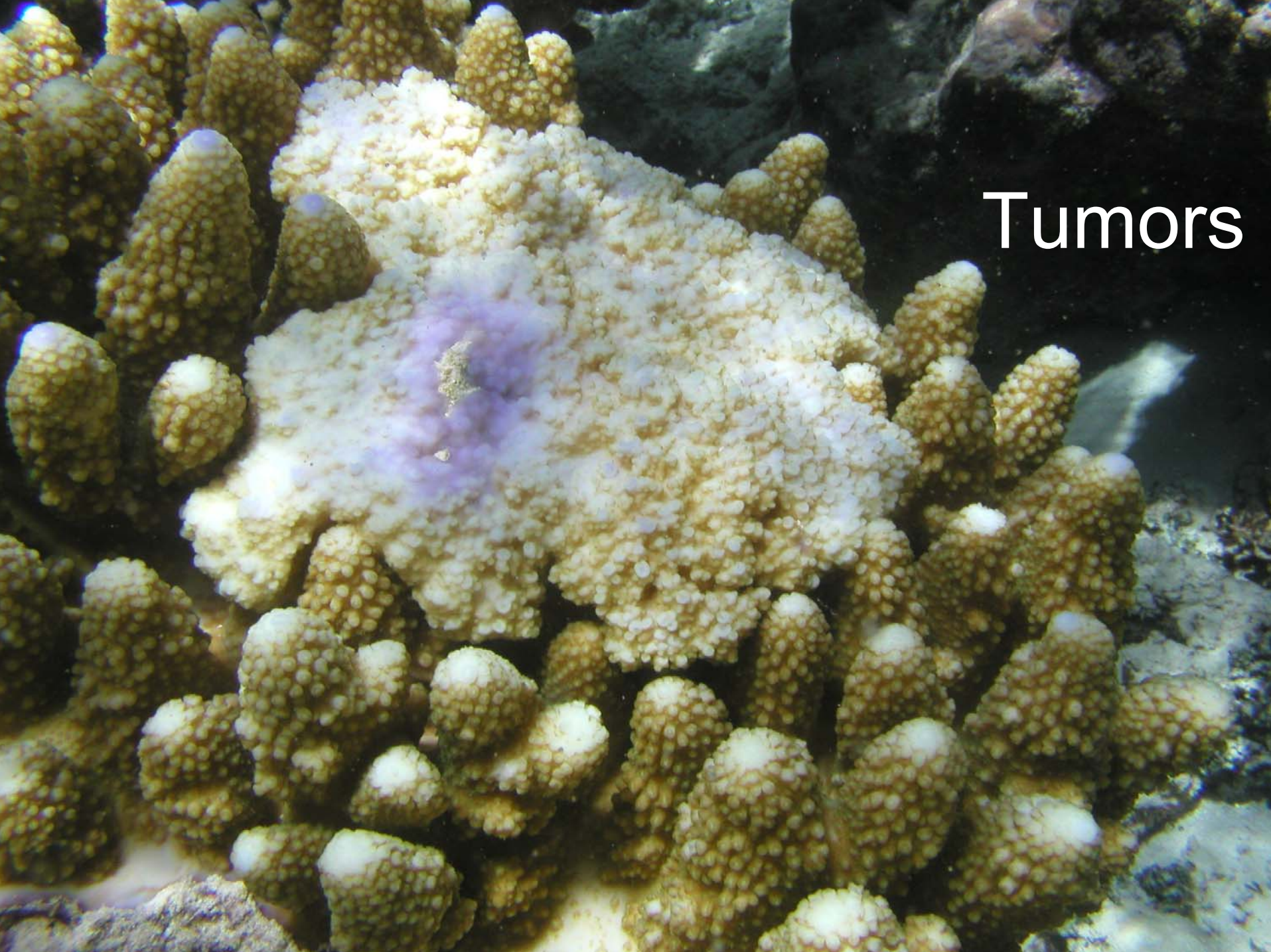




Skeletal Erosion

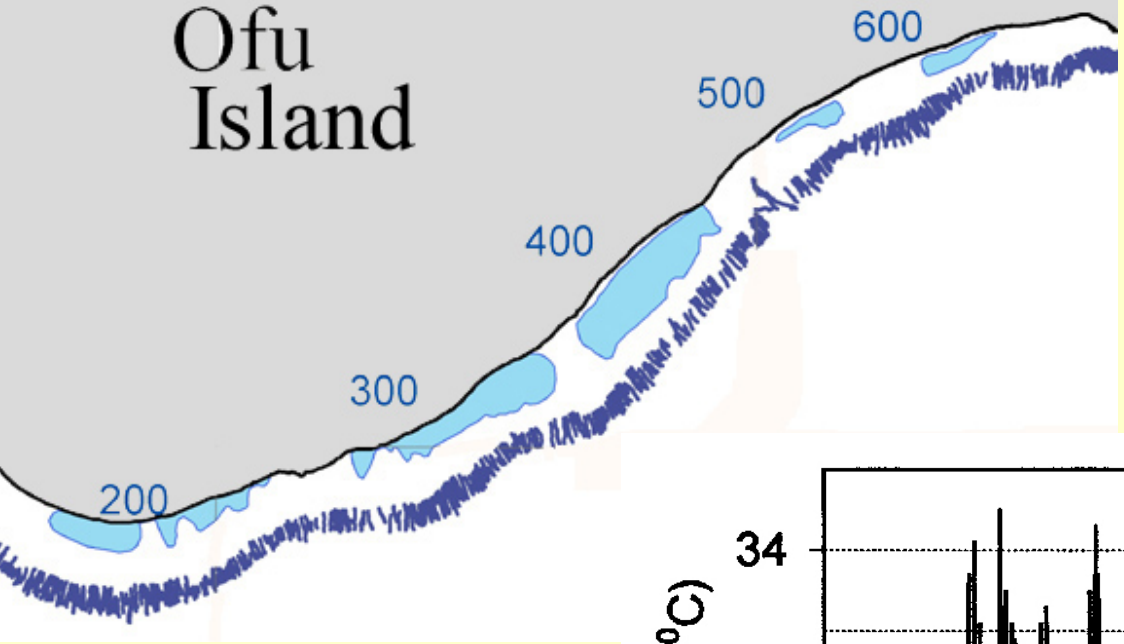
(SEB in GBR)

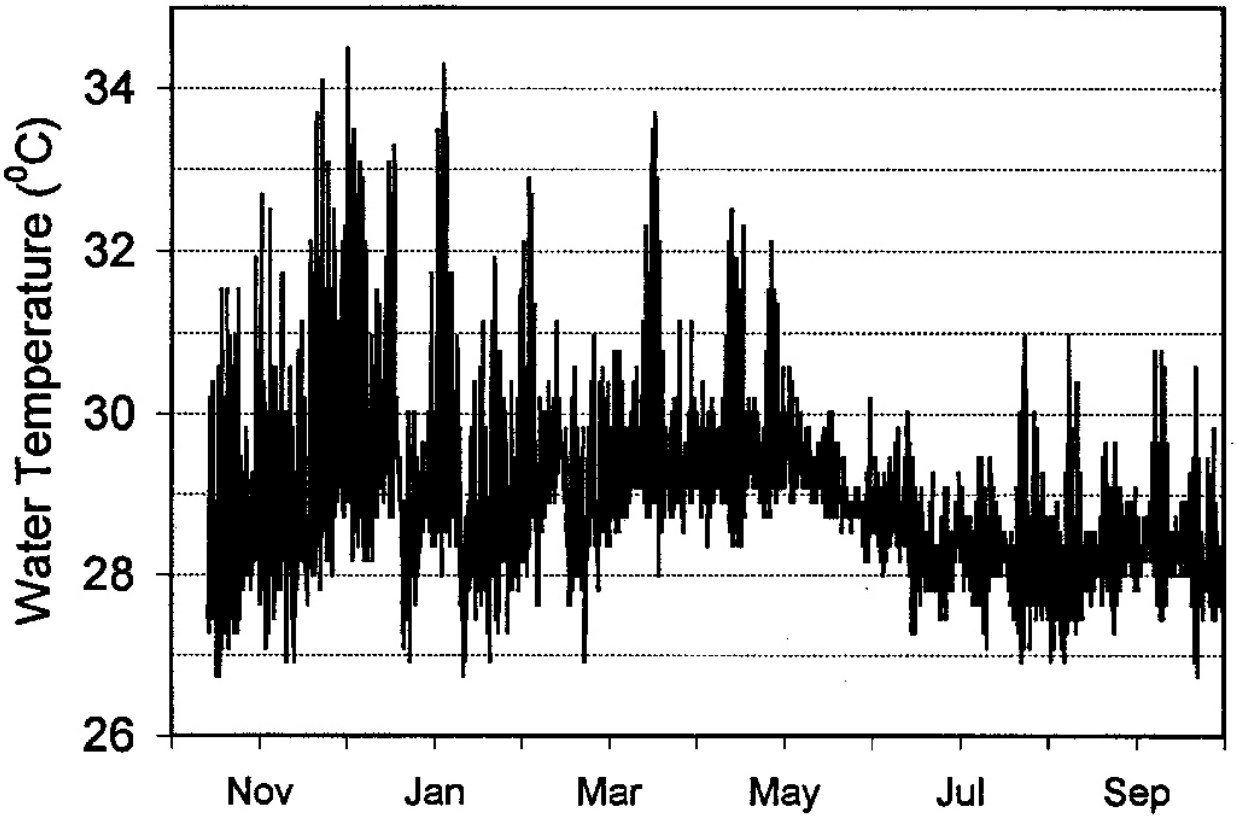



Tumors

Management Responses

- disease (USGS, Thierry Work)
- terrestrial impacts (WWF, EPA)
- long-term monitoring (Birkeland)
- temperature monitoring
  - NOAA satellite data
  - NMFS SST buoys
  - NPS data loggers
- temperature tolerance





Water temperatures in pool A during 1998–1999

Management Needs/Challenges

- standardized terminology
- website: Pacific diseases
- best methods
- research: causative agents,
  recovery potential,
  ecosystem impacts
- what can we do about it?
- improve island capacity