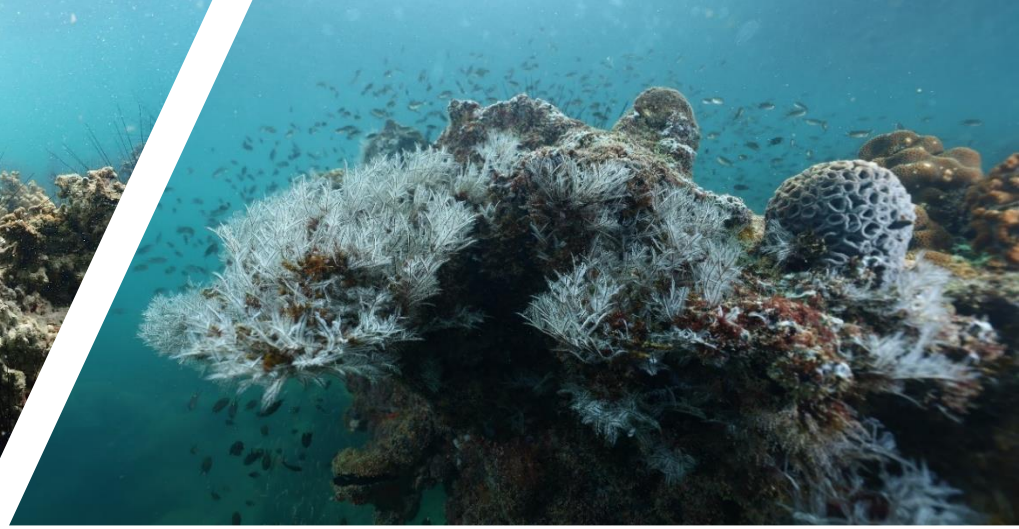
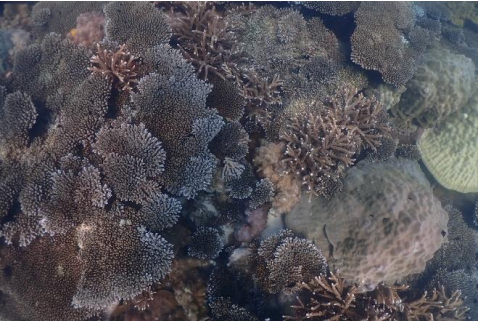


Coral Reef Benthic Identification

Choochai Ruangjaroon

Faculty of Marine Technology, Burapha University,

Chanthaburi Campus, Chanthaburi, Thailand



Hard coral

Rubble

Bare / Metrix

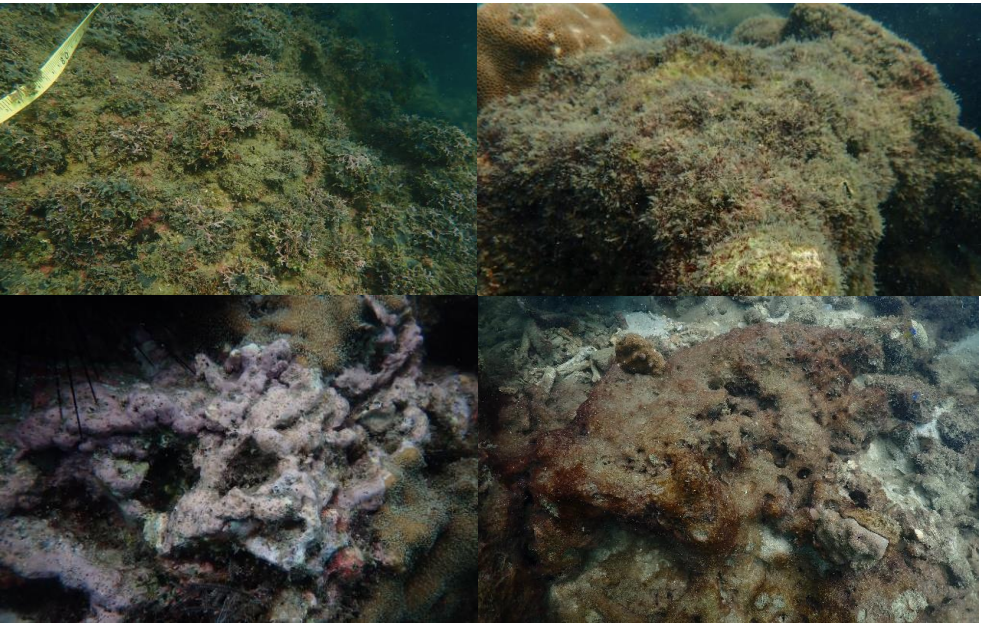
Others
- Sponge
- Ascidian
- Zoanthid
- Corallimorph
- Anemone

Soft coral

Sand

Rock

Resilience / Phase shift



Reef Benthic Community

Benthic algae
-Macroalgae
-Turf algae
-CCA
-Cyanobacteria

Interaction

Interaction

Scrapers, Excavators, Gr
Browsers

Herbivorous Fishes

Coral Recruitment

Benthic Community Identification

Live coral (Genus)

Dead coral

Algae

Sand

Rock

Others

Recently dead coral
Dead coral with algae
Dead coral with sediment
Coral rock / Old dead coral / Bare / Matrix
Rubble

Turf algae
Macroalgae
CCA

Sponge
Anemone
Gorgonian
Soft coral
Zoanthid
Corallimorph
Giant clam
Bivalve

Identification Benthic Community

Live coral (Genus)

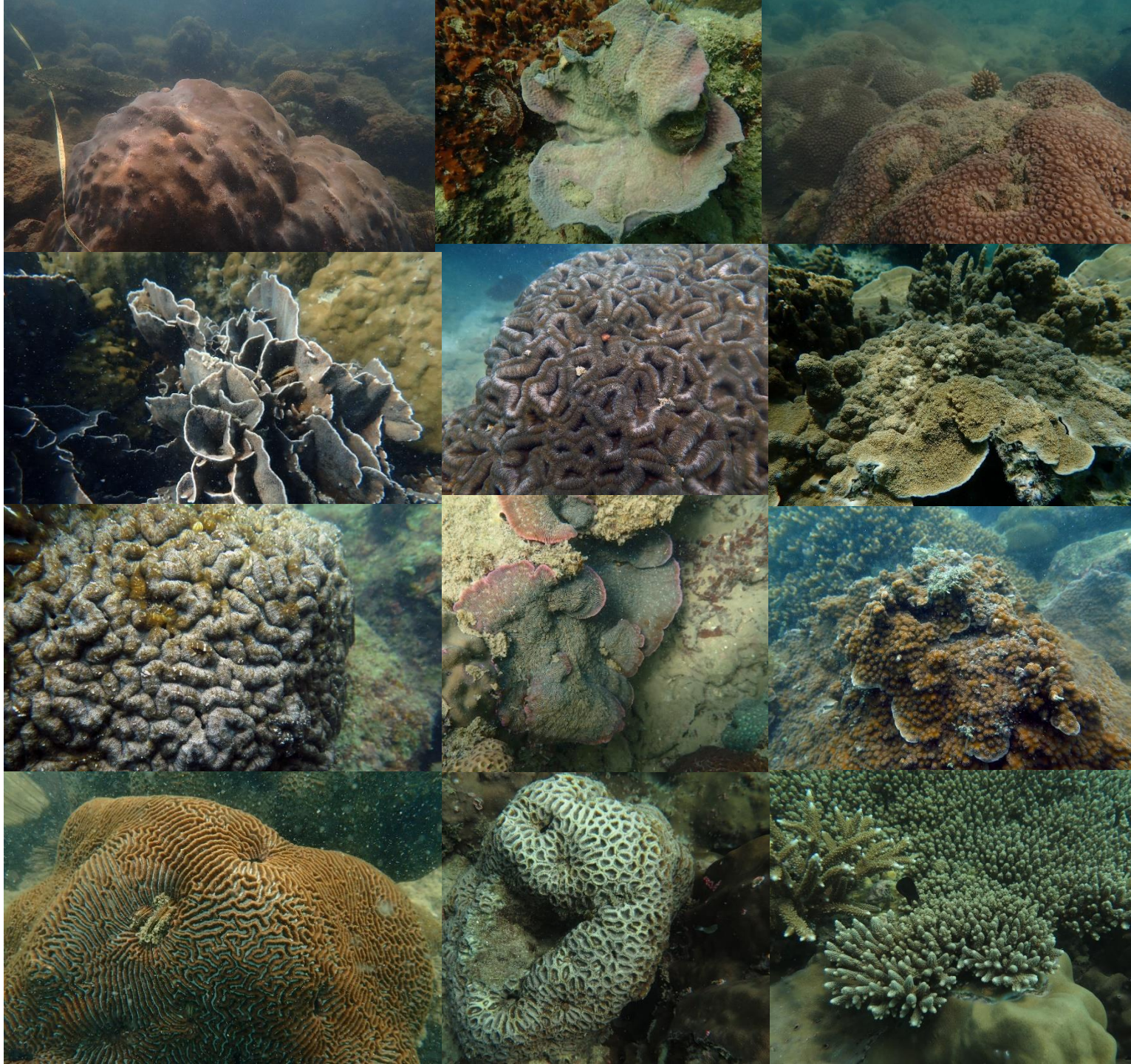
Dead coral

Algae

Sand

Rock

Others



Identification Benthic Community

Live coral (Genus)

Dead coral

Algae

Sand

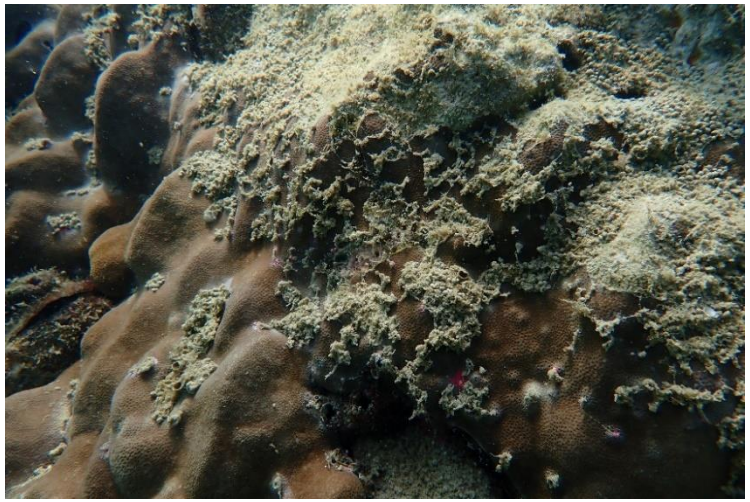
Rock

Others

- RDC / DCA / DCS
- Coral rock
- Rubble

Recently dead coral

Dead coral with algae



Dead coral with sediment

Identification Benthic Community

Live coral (Genus)

Dead coral

Algae

Sand

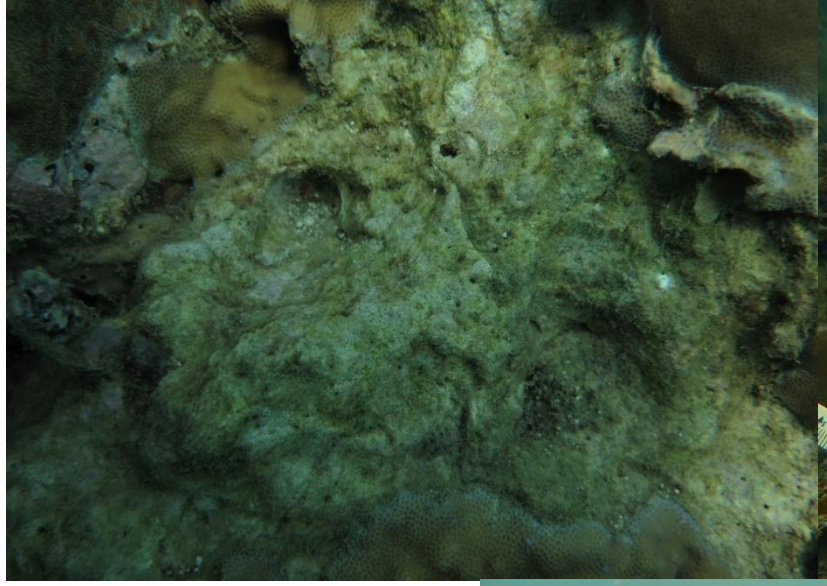
Rock

Others

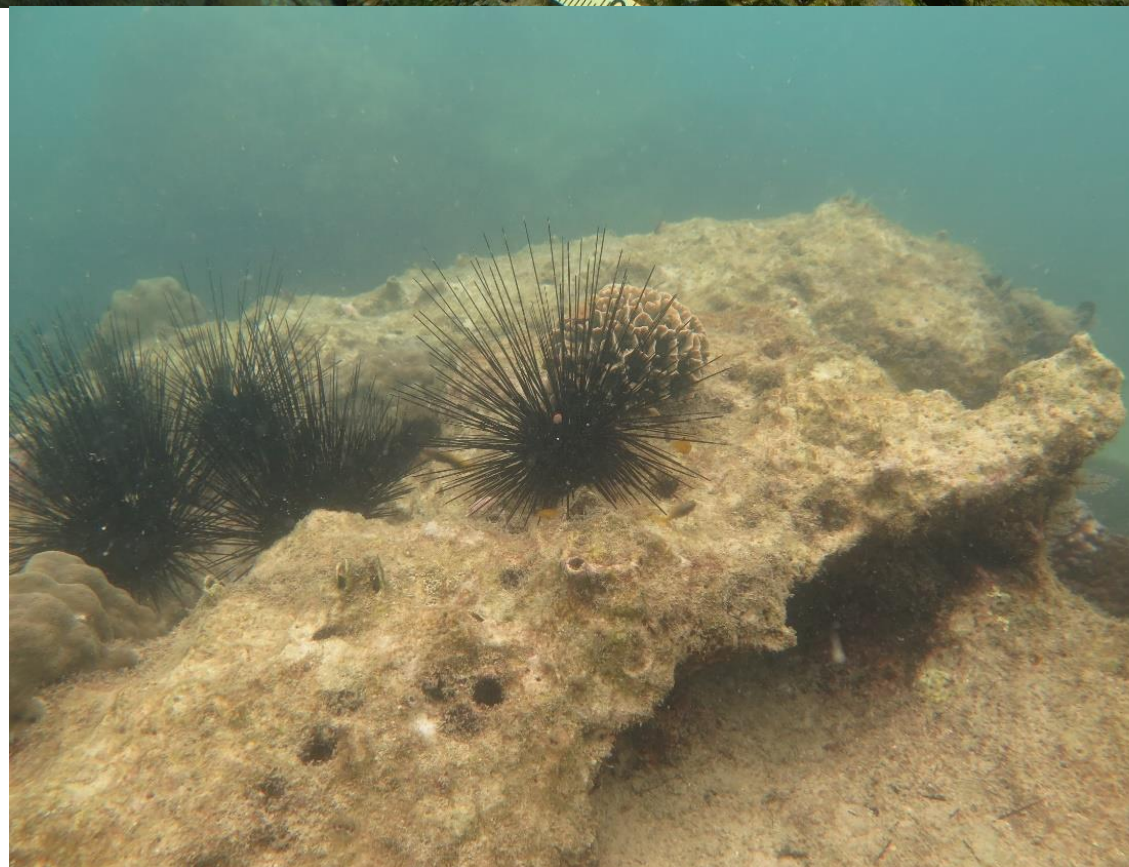
Recently dead coral

Coral rock / OBM

Rubble



Coral rock/ Old dead coral / Bare / Matrix



Identification Benthic Community

Live coral (Genus)

Dead coral

Algae

Sand

Rock

Others

Recently dead coral
Coral rock
Rubble

Rubble

Identification Benthic Community

Live coral (Genus)

Dead coral

Algae

- Turf algae
- Macroalgae

< 2 cm high

Sand

Rock

Others

Identification Benthic Community

Live coral (Genus)

Dead coral

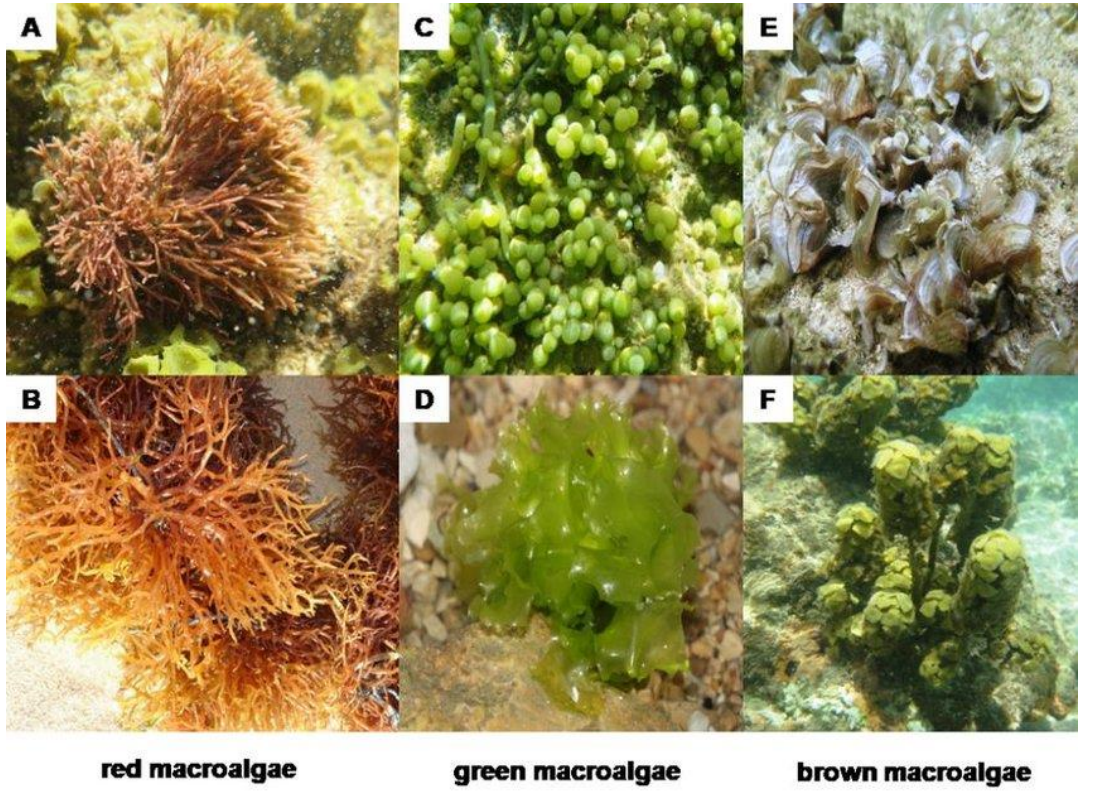
Algae → Turf algae / Macroalgae

> 2 cm high

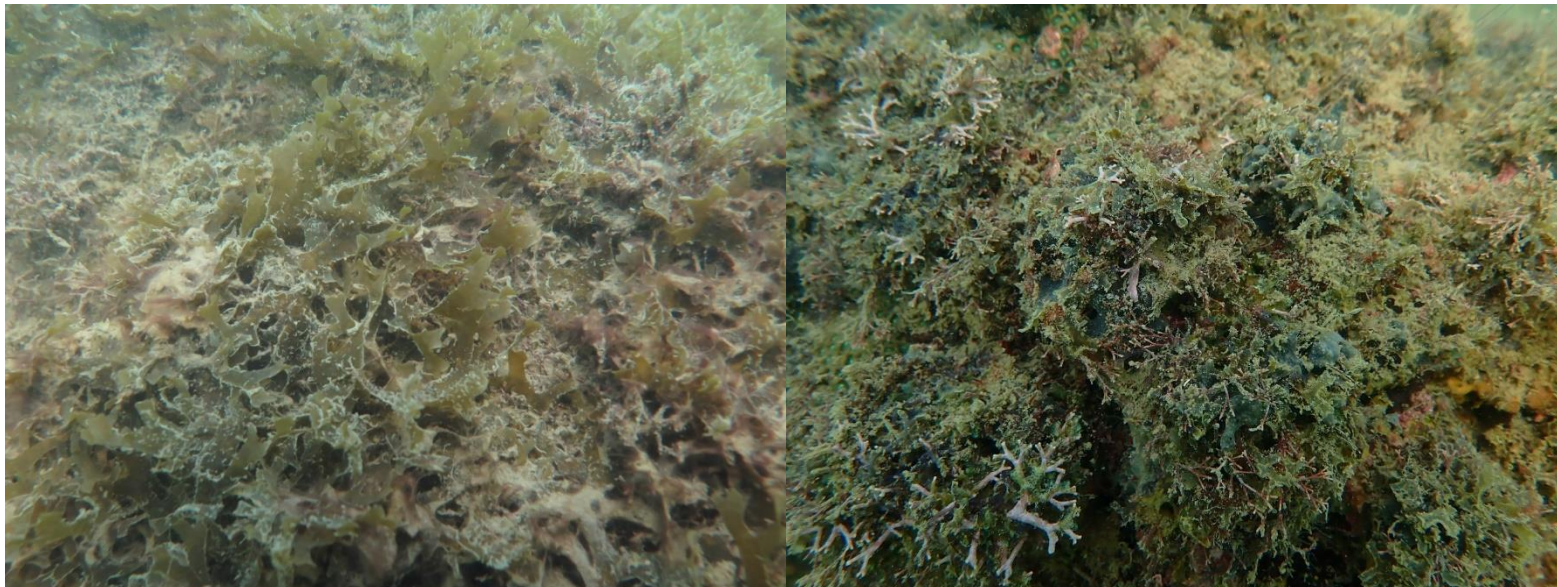
Sand

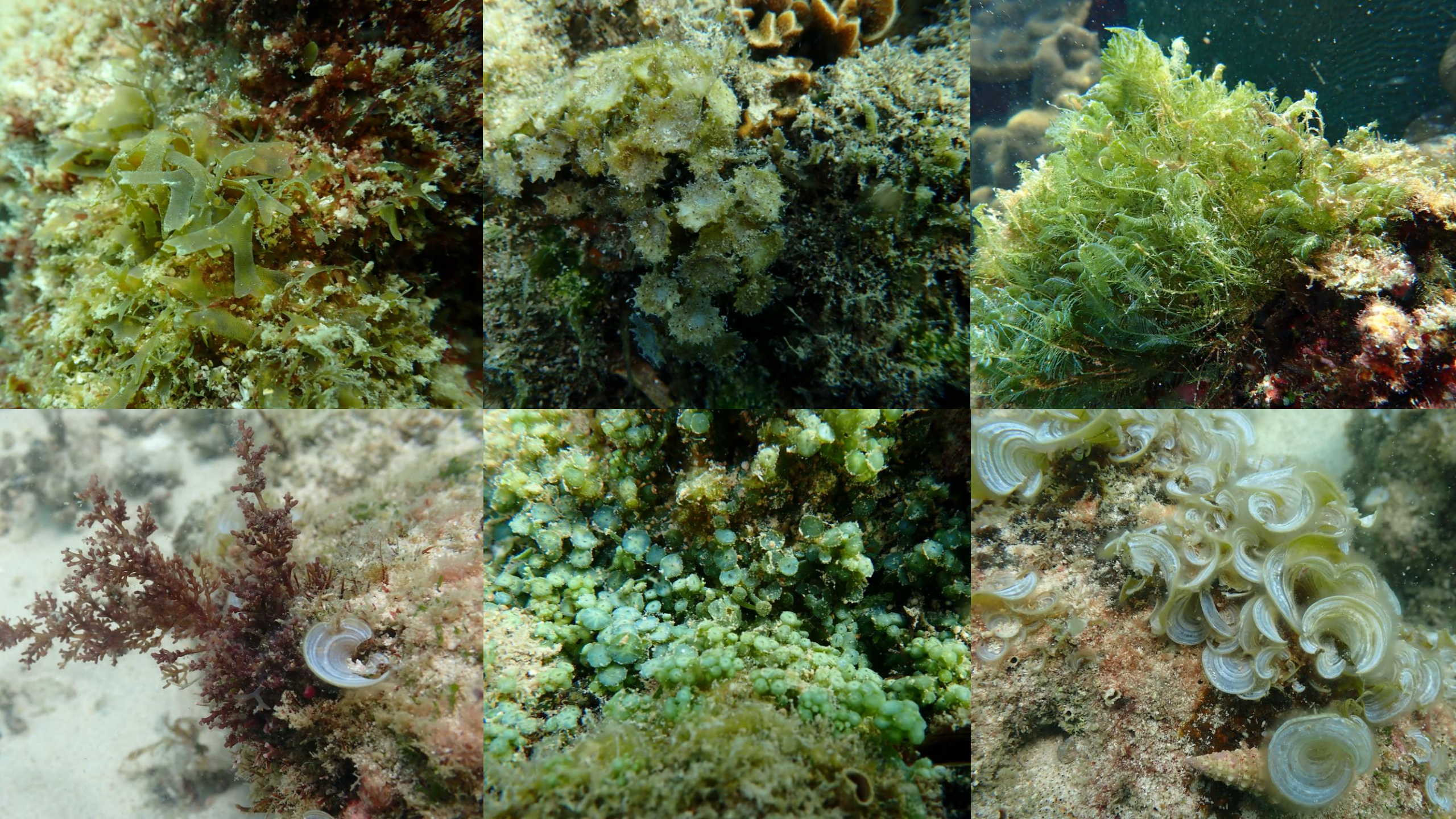
Rock

Others



Bayu and Handayani, 2018





Abdul Wahab et al. (2023)

Identification Benthic Community

Live coral

Dead coral

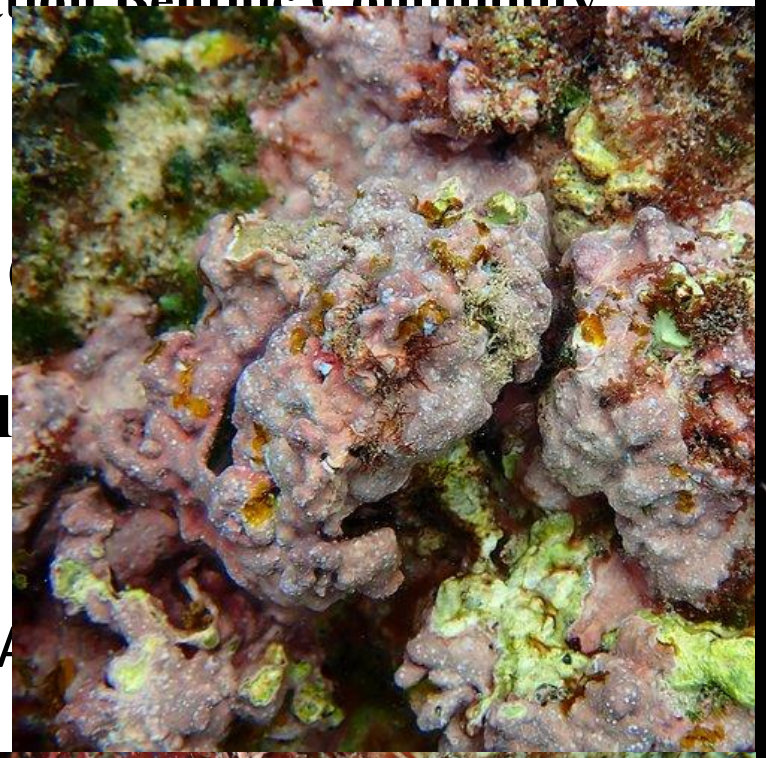
Algae

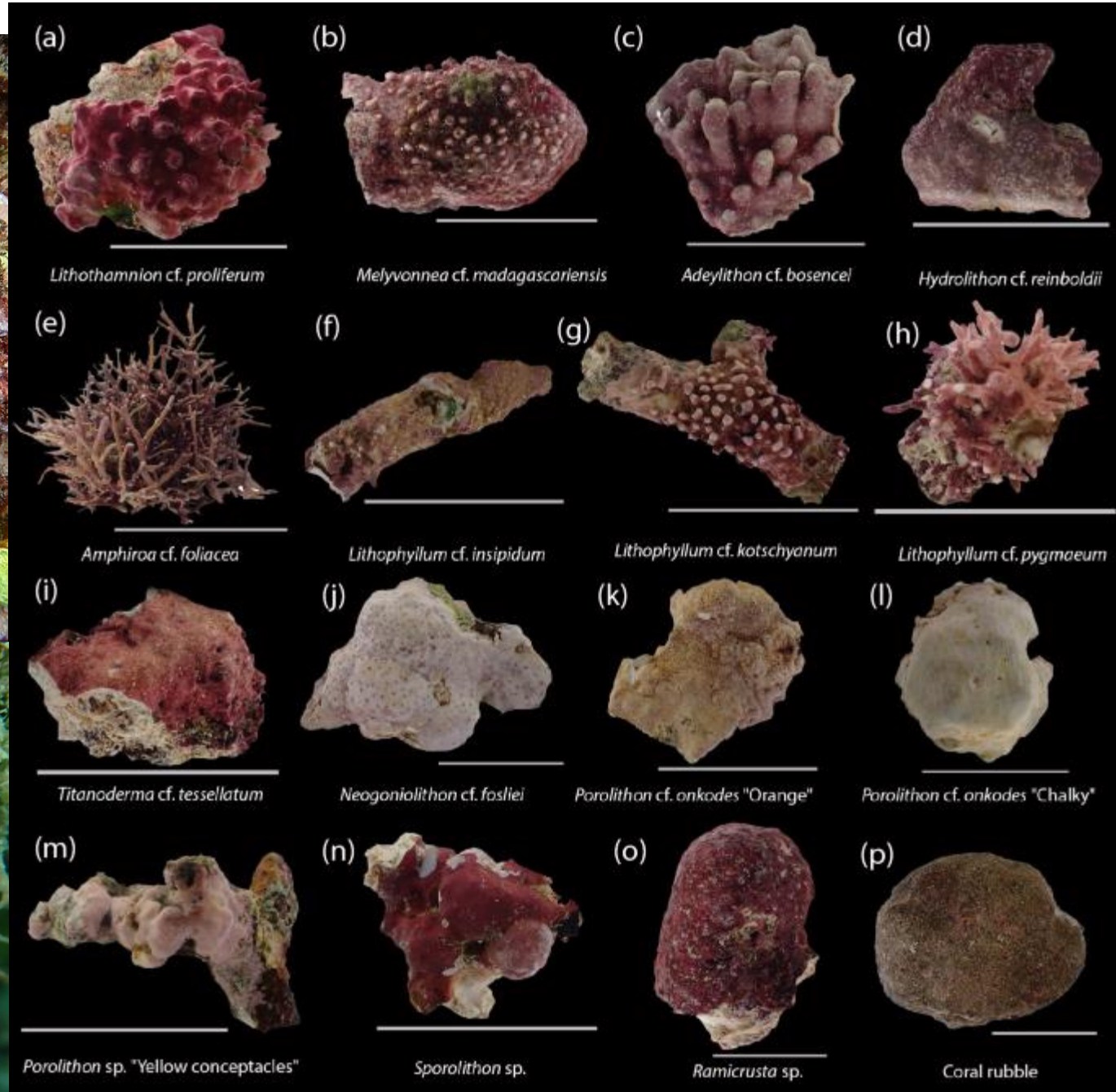
CCA

Sand

Rock

Others





Identification Benthic Community

Live coral (Genus)

Dead coral

Algae

Sand

Rock

Others

Identification Benthic Community

Live coral (Genus)

Dead coral

Algae

Sand

Rock

Others

Identification Benthic Community

Live coral (Genus)

Dead coral

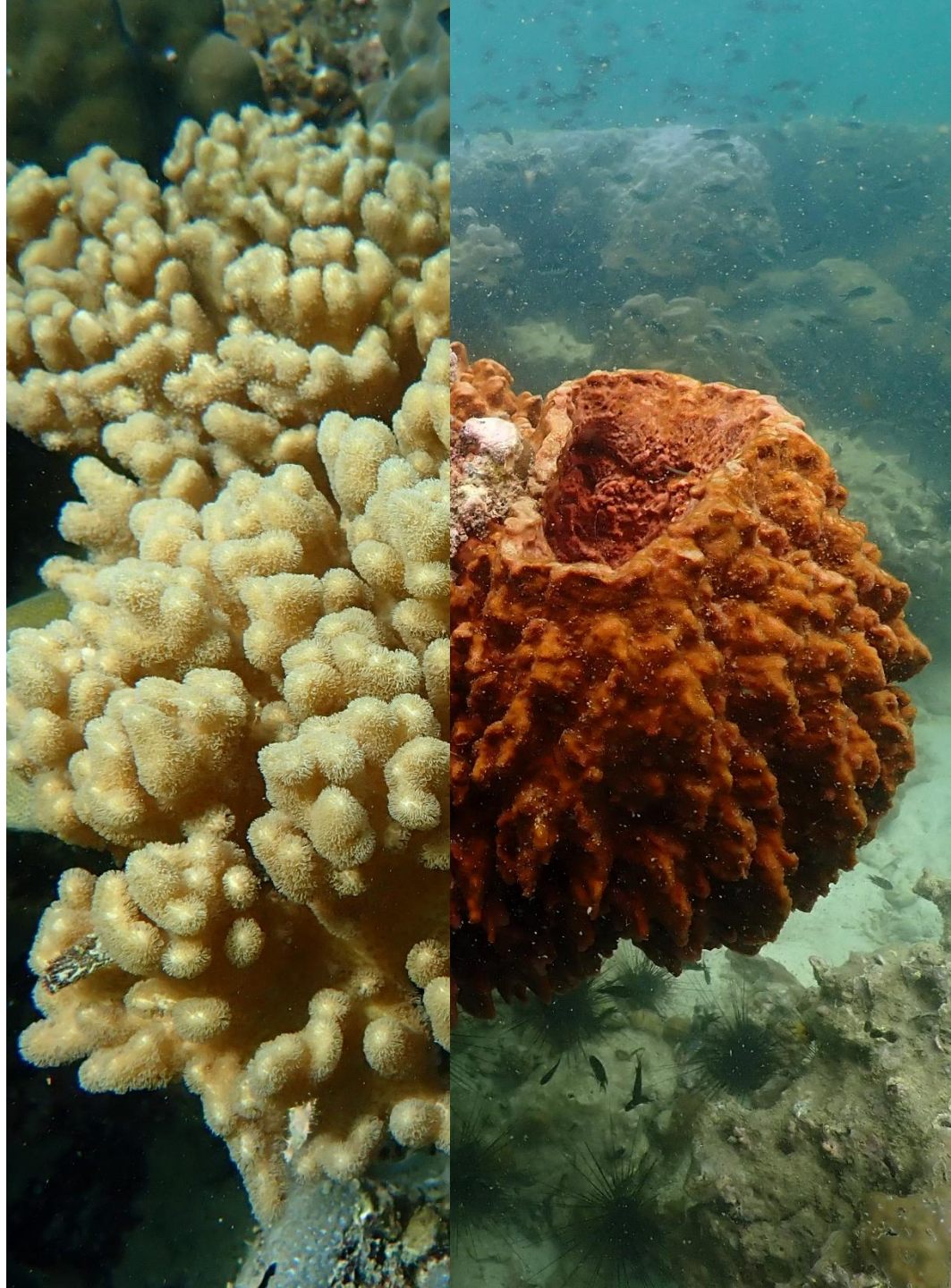
Algae

Sand

Rock

Others

- Sponge
- Anemone
- Gorgonian
- Soft coral
- Zoanthid
- Corallimorph
- Giant clam
- Bivalve



Others

Sponge

Others

Anemone

Gorgonian

Soft coral

Others

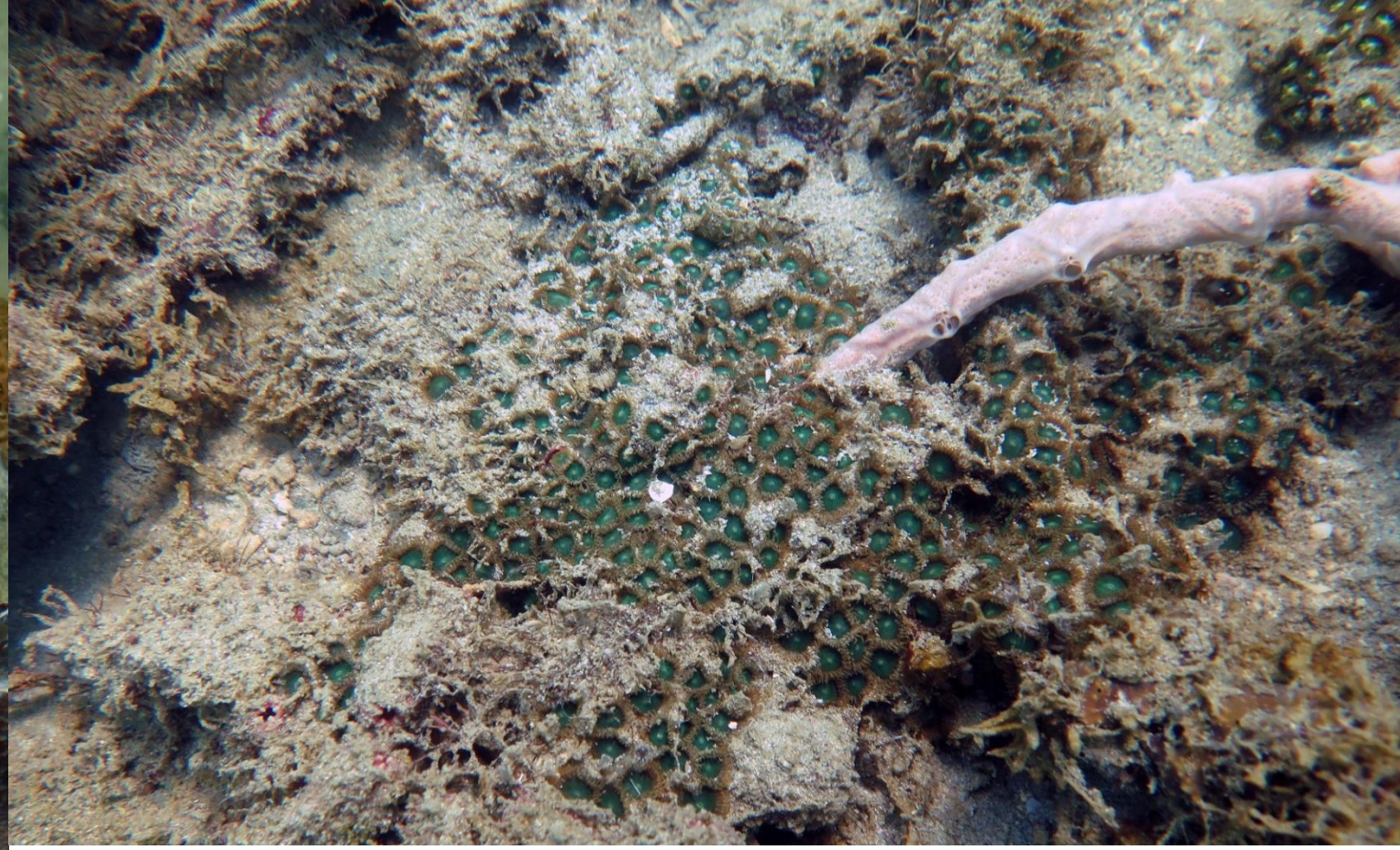
SEA ANEMONES

Others

SEA FANS / GORGONIANS

Others

SOFT CORALS



Others

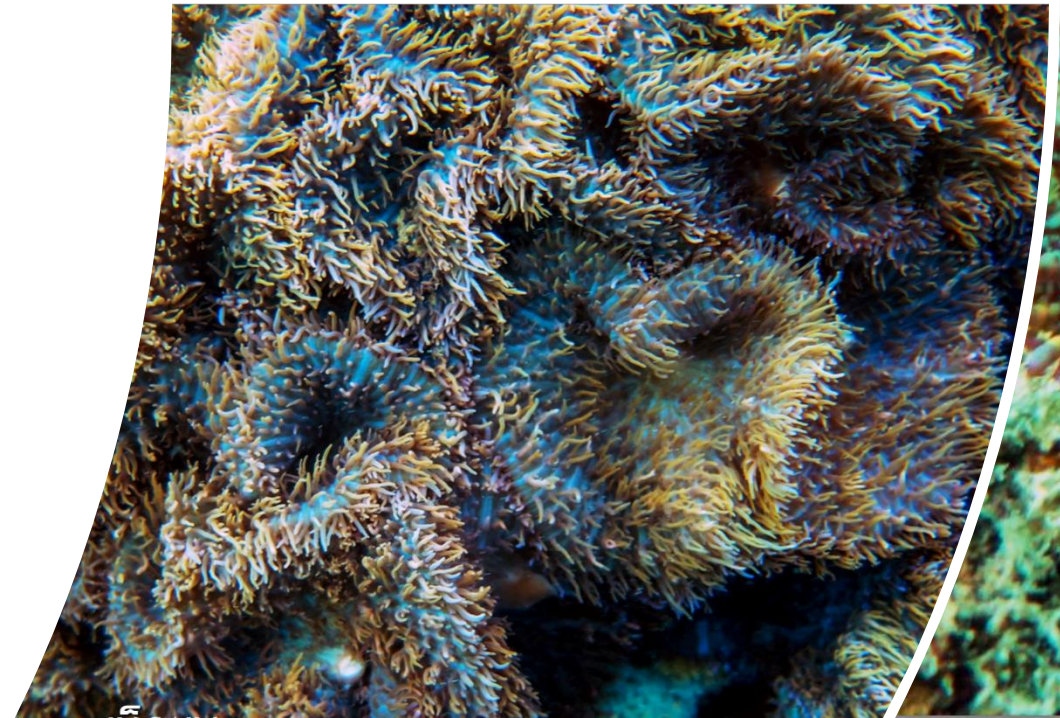
Zoanthid
Corallimorph

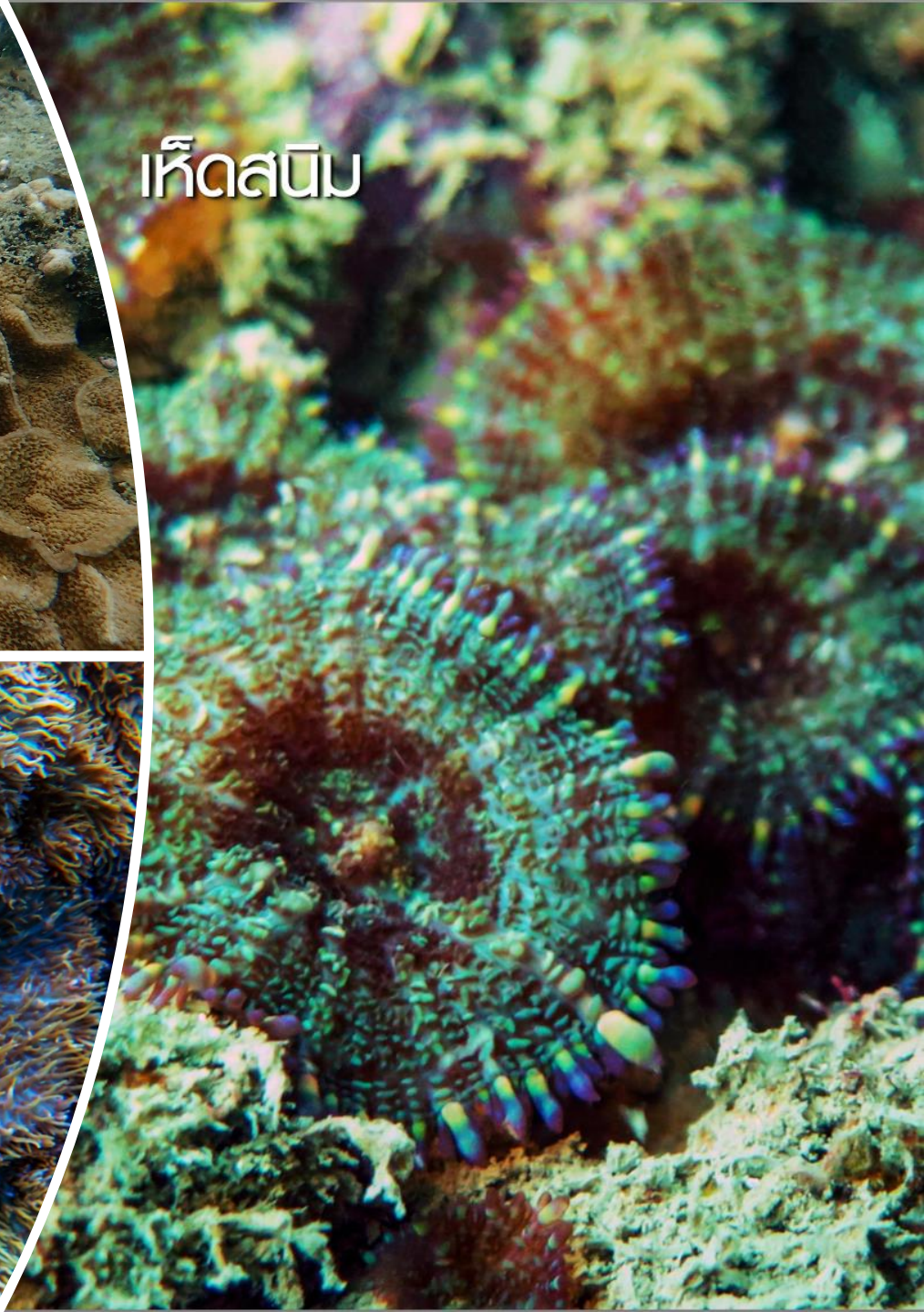
Others

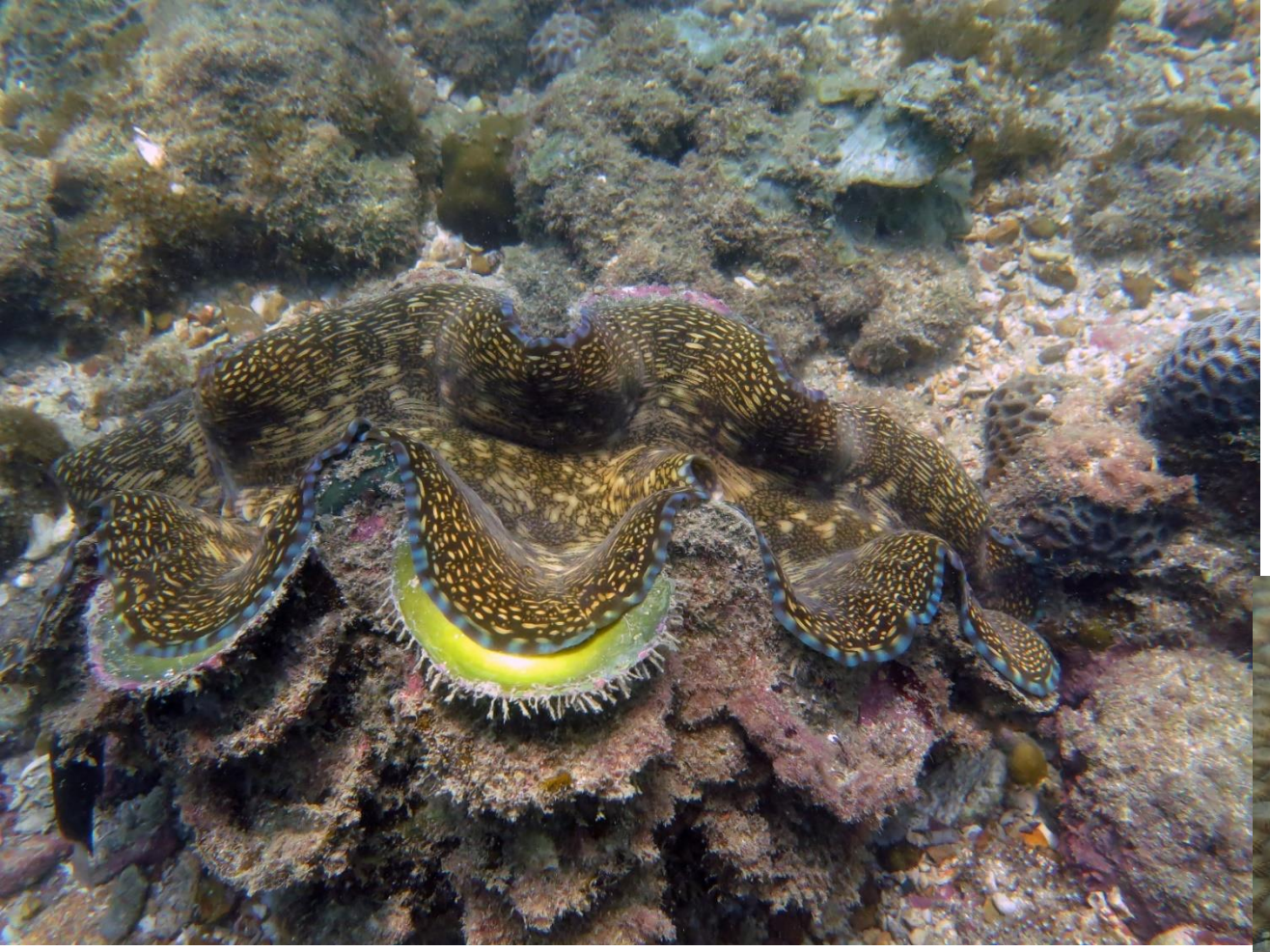
ZOANTHIDS

Others

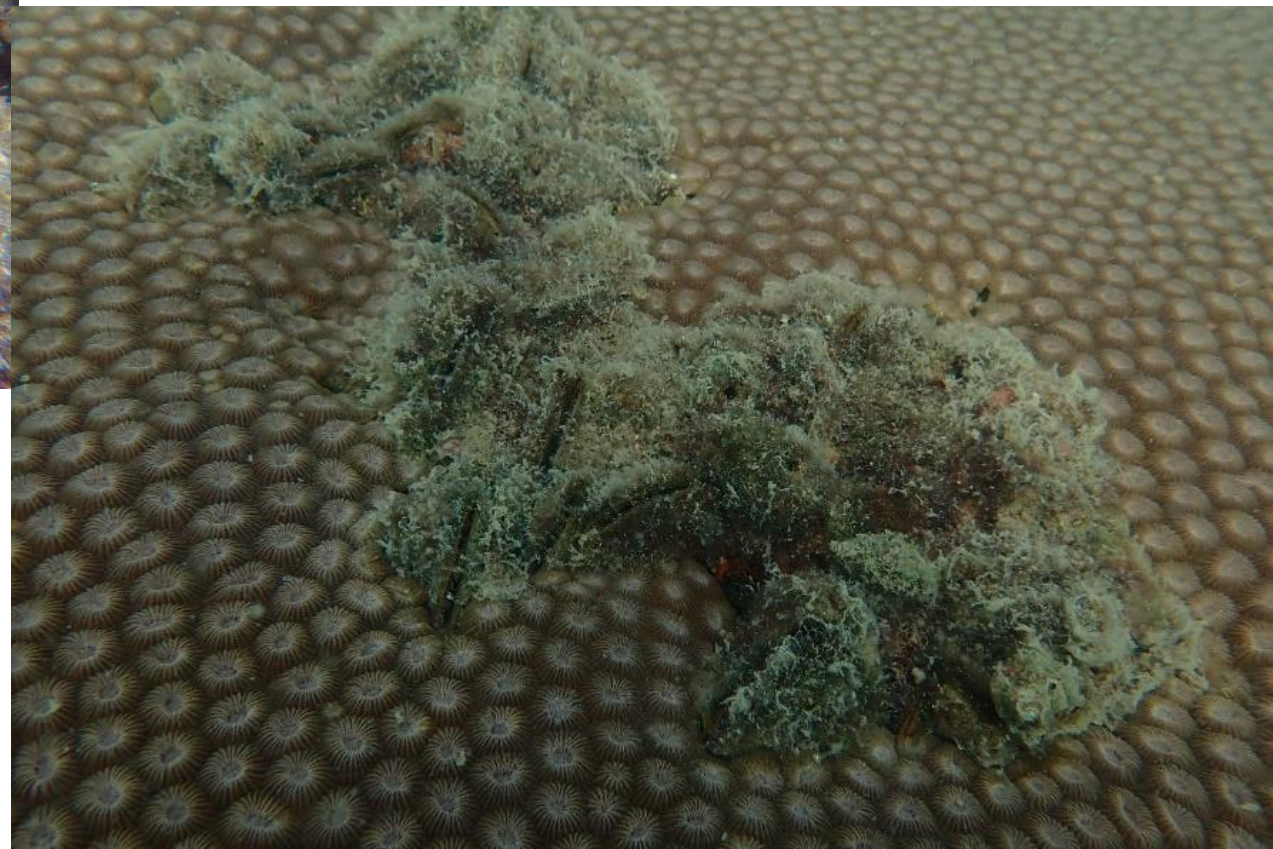
CORALLIMORPHS







Giant clam



Others

Bivalve

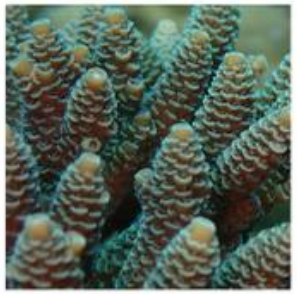
Others

WORMS

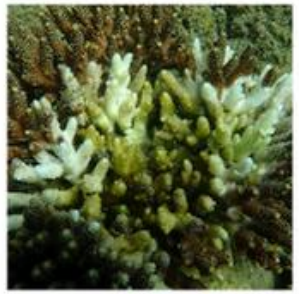
Others

ASCIDIANS

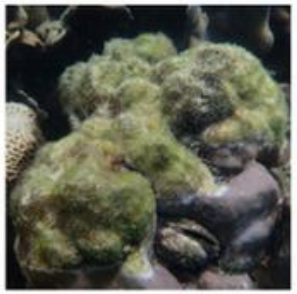
BENTHIC COMMUNITY

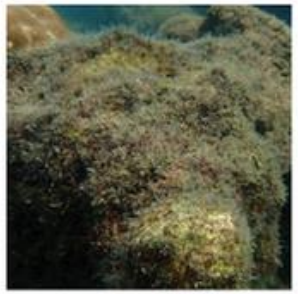


LIVE CORAL



RECENTLY DEAD CORAL





TURF ALGAE (< 2 cm high)

MACROALGAE

CORAL ROCK

RUBBLE

SAND

ROCK

OTHERS

SPONGE

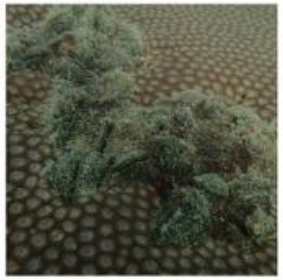
ANEMONE

GORGONIAN

SOFT CORAL

ZOANTHID

CORALLIMORPH



BIVALVE

CORAL HEALTH

Healthy

WHITE SYNDROME

YELLOW SYNDROME

PIGMENTATION RESPONSE

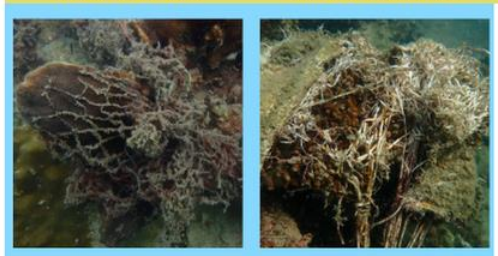
GROWTH ANOMALIES

NON FOCAL BLEACHING

SEDIMENT DAMAGE

COMPETITION

BLEACHING



HUMAN IMPACTS

Healthy:_____% Note:_____

Diseases:_____% Note:_____

Compromised health:_____% Note:_____

Bleaching:_____% Note:_____

Human impacts:_____% Note:_____

E6 E5 E4 E3 E2 E1 D6 D5 D4 D3 D2 D1 C6

RAPID ASSESSMENT SHEET

Observer Name:_____ Phone:_____ Email:_____

Organisation:_____ Site name:_____ Lat:_____ Long:_____

Water temp:_____°C Date:_____

Survey depth:_____m Time:_____

Visibility (circle one)		
<5m	10m	>10m

Reef zone (circle one)		
FLAT	EDGE	SLOPE

NOTES:_____

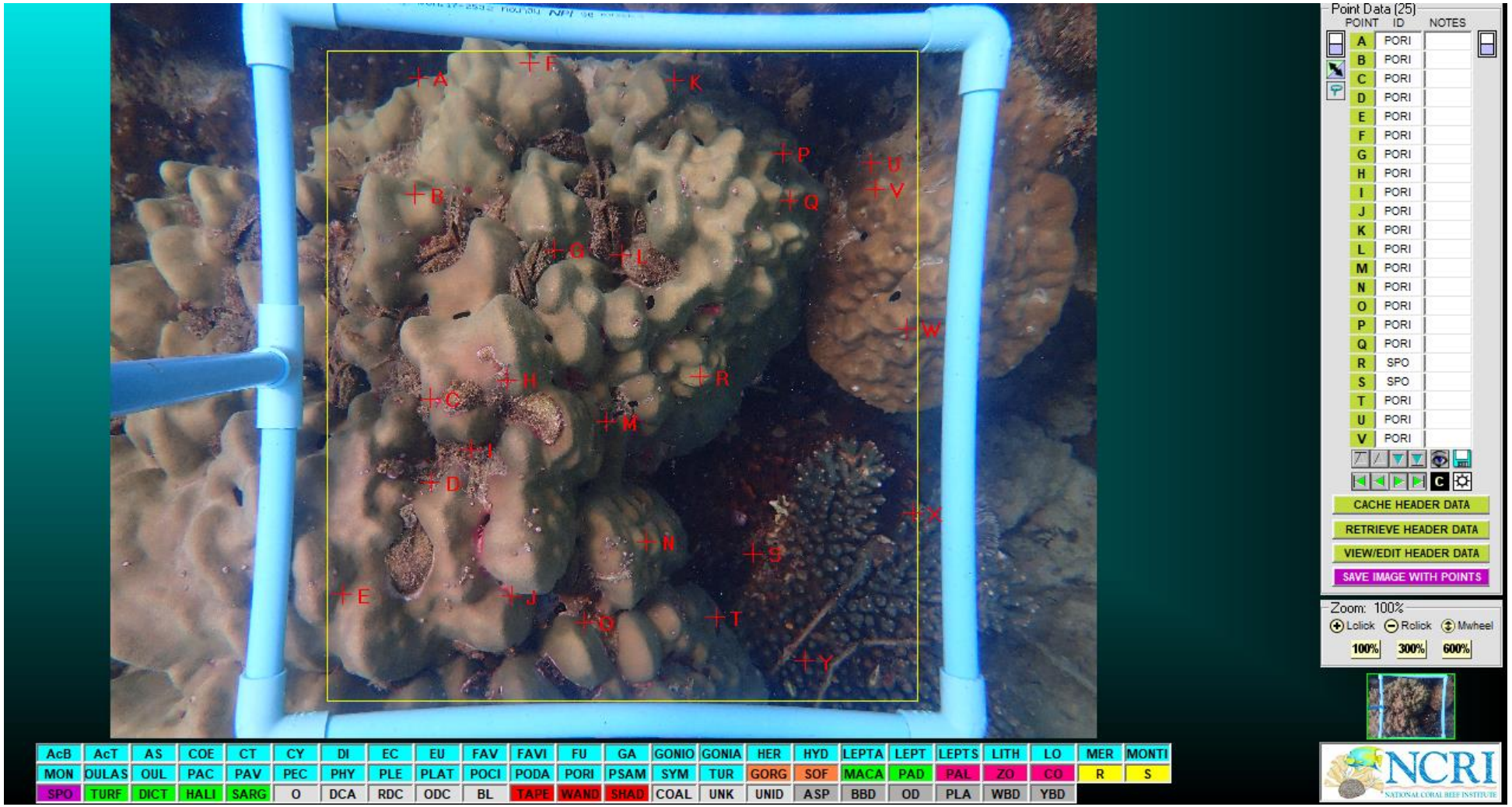
_____

15 cm

Indicator species	Count/Total	Indicator species	Count/Total
Giant clam (all species)		**Parrotfish/ Rabbitfish/ Surgeonfish**	
Snail (*Drupella* spp.)		**Snapper** (all species > 20 cm)	
Cashion star		**Grouper** (all species > 20 cm)	
Sea cucumber (all species)		**Wrasse** (all species)	
Black sea urchin		**Butterfly fish** (all species)	
Crown-of-thorns starfish		**Ray** (all species)	
Nudibranch (all species)		**Shark** (all species)	
Octopus/ Cuttlefish/ Squid		**Sea turtle** (all species)	

คณะเทคโนโลยีทางทะเล มหาวิทยาลัยบูรพา วิทยาเขตจันทบุรี
ภายใต้ โครงการวิจัยเรื่อง "การพัฒนาหลักสูตรบูรณาการเพื่อพัฒนาทักษะการเรียนรู้ด้านเศรษฐกิจ สังคม มรดกทางวัฒนธรรม และภูมิปัญญา สู่การพัฒนาทรัพยากรมนุษย์อย่างยั่งยืน (สนองพระราชดำริโครงการอนุรักษ์พันธุกรรมพืชอันเนื่องมาจากพระราชดำริสมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี)"

Indicator species

- Fishing pressures/ Aquarium trade
- Grazing herbivores
- Population outbrakes
- Good reef health/ Biodiversity
- Reef cleaner (detritus/algae)
- Top-down control

- Coral Point Count with Excel extensions (CPCe) คือ โปรแกรมสำหรับการวิเคราะห์สัดส่วนเปอร์เซ็นต์การปกคลุมพื้นที่ของปะการังมีชีวิต ปะการังตาย ทราย หิน สาหร่าย และสิ่งมีชีวิตอื่นๆ บนพื้นทะเล โดยใช้ภาพถ่ายที่ได้จากการเก็บข้อมูลในภาคสนาม