

# Juvenile Coral Identification Review

## Disturbance Response Monitoring (DRM) 2020



# Target (Sub-)Families

- Faviinae (FAVI)

- *Colpophyllia natans*
- *Diploria labyrinthiformis*
- *Favia fragum*
- *Manicina areolata*
- *Pseudodiploria* spp.

- Mussinae (MUSS)

- *Isophyllia* spp.
- *Mussa angulosa*
- *Mycetophyllia* spp.
- *Scolymia* spp.

- Meandrinidae (MEAN)

- *Dendrogyra cylindrus*
- *Dichocoenia stokesii*
- *Eusmilia fastigiata*
- *Meandrina* spp.



# Why Survey These Groups?

- Included species are highly (or presumed) susceptible to stony coral tissue loss disease (SCTLD)
- Determine recovery and/or survivorship of juveniles in endemic zone of SCTLD

## Why (Sub-)Family Level?

- Not all species are juveniles at <4cm but there's difficulty in distinguishing genera and/or species
- Facilitate rapid survey & additional transects



# Faviinae (FAVI)

CNAT



DLAB



MARE



*Pseudodiploria*



FFRA





# FAVI Juveniles

CNAT



DLAB



MARE



*Pseudodiploria*

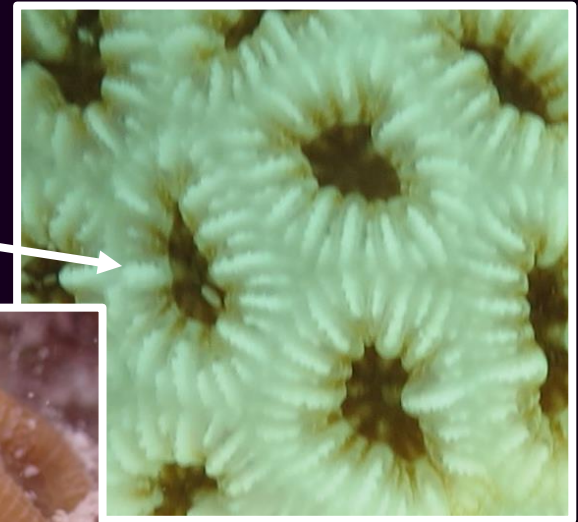


FFRA



# FAVI Juvenile Characteristics

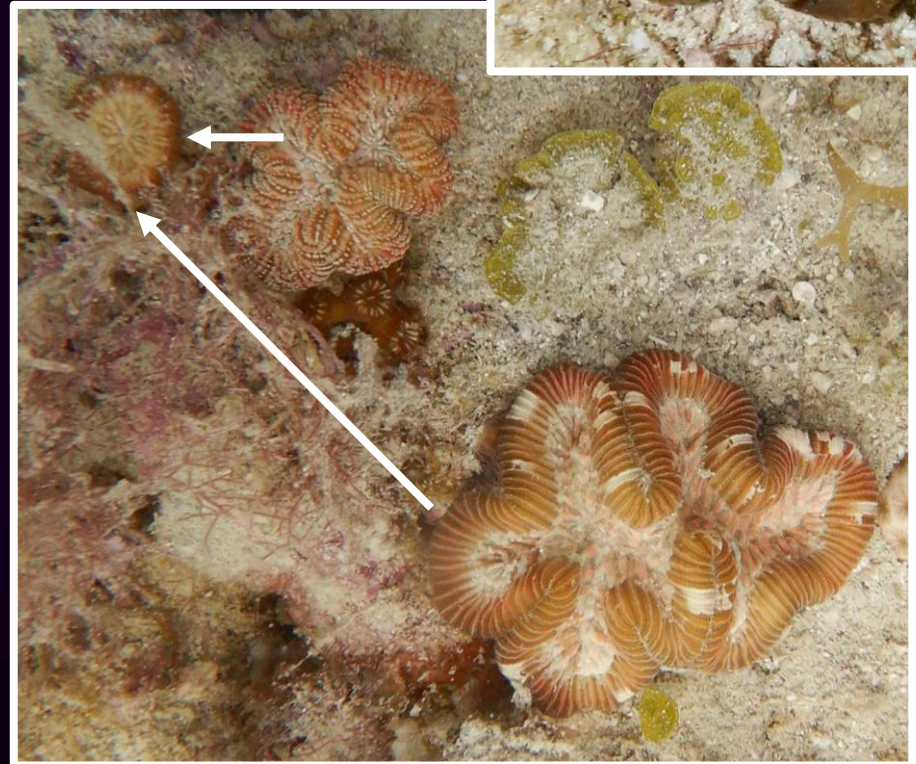
- Narrow, sharp septa with small serrations/teeth
- Septa fairly regular in size & arrangement
- Tissue line/flap partway down septa moving from ridge to valley





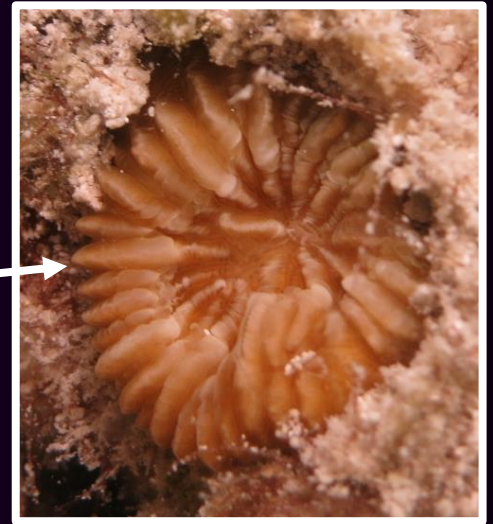
# FAVI Juvenile Characteristics Cont'd

Juveniles look more like miniature adults than do those of MUSS & MEAN



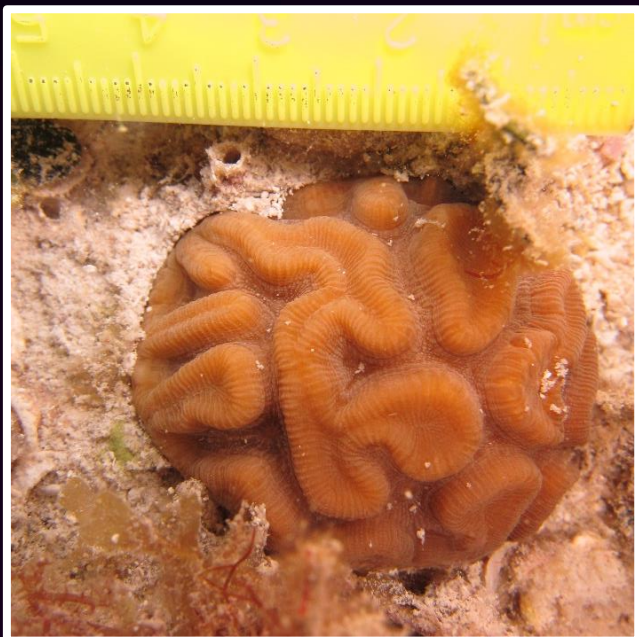


# FAVI Examples





# FAVI Examples





# Mussinae (MUSS)

*Isophyllia*



MANG



*Mycetophyllia*



*Scolymia*





# MUSS Juveniles

*Isophyllia*  
?

*Mycetophyllia*



# MANG



*Scolymia*

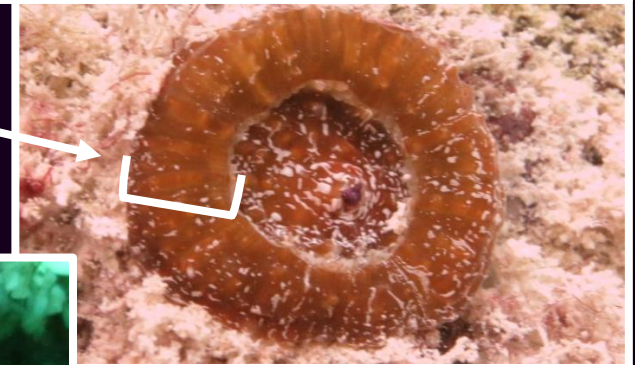


# MUSS Juvenile Characteristics

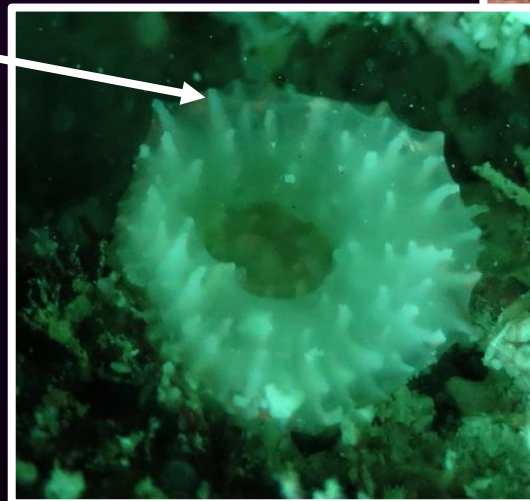
- Begin as single, (mostly) round, fleshy polyp with sometimes pronounced wheel-spoke design in central valley



- Wide ridge along outside of colony



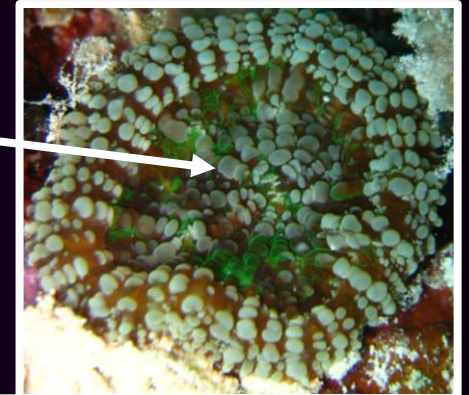
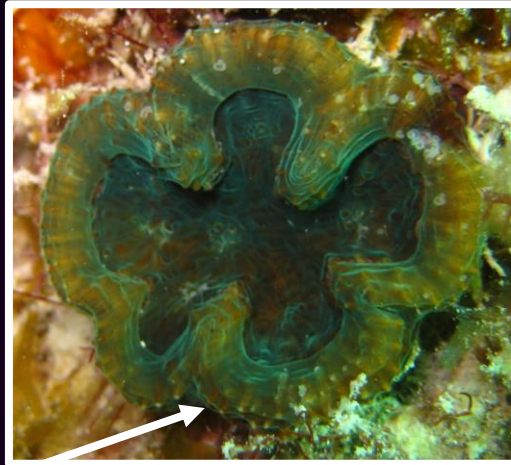
- Septa with tall, sharp teeth on ridges (can wrap under colony edge in *Scolymia*)





# MUSS Juvenile Characteristics Cont'd

- Can have fleshy bumps on septa teeth on ridges or around polyp mouths

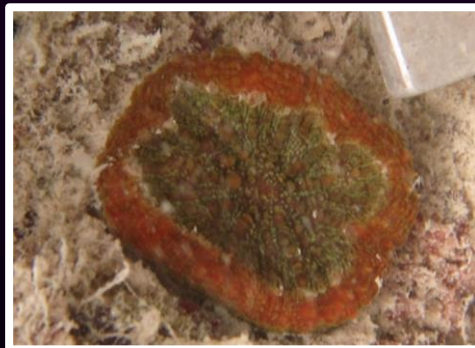
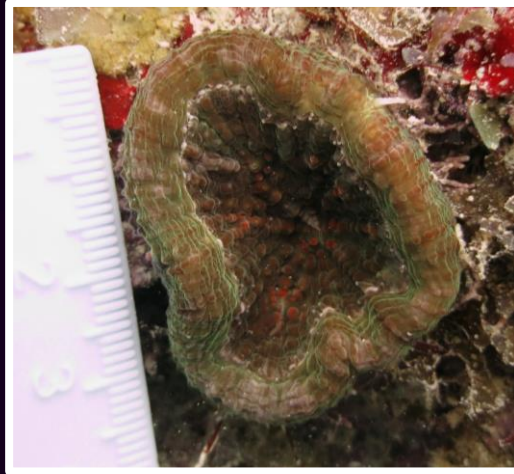
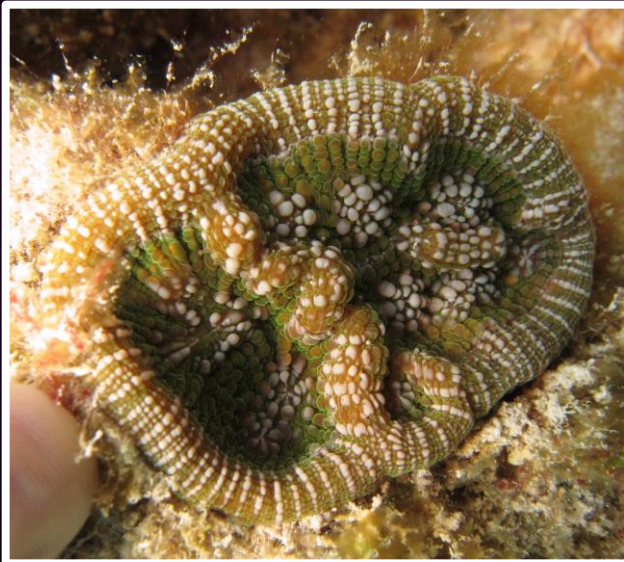
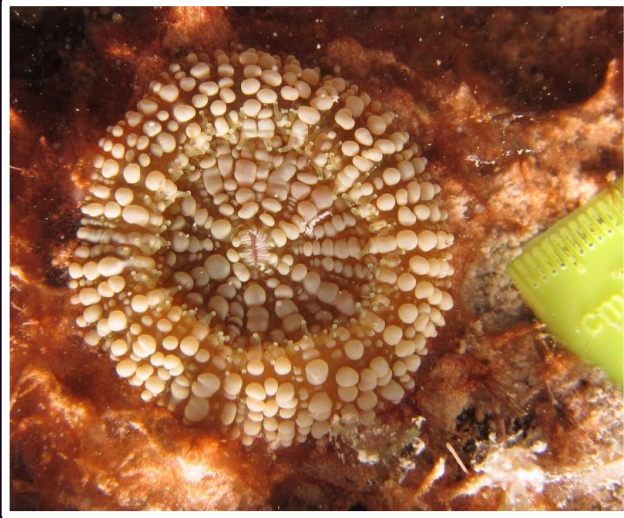


- *Mycetophyllia* colonies start to “flower” as outer ridge folds inward
- Often fluorescent with reds, oranges and/or greens





# MUSS Examples



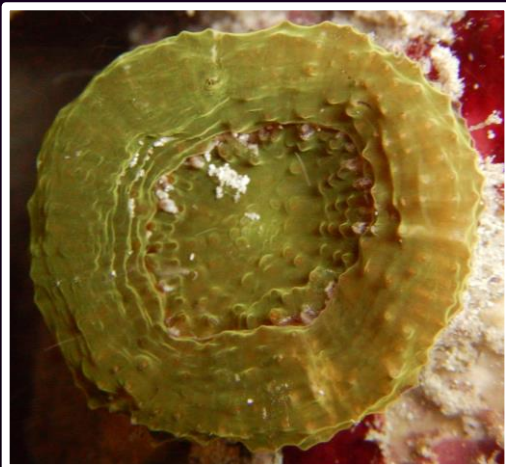
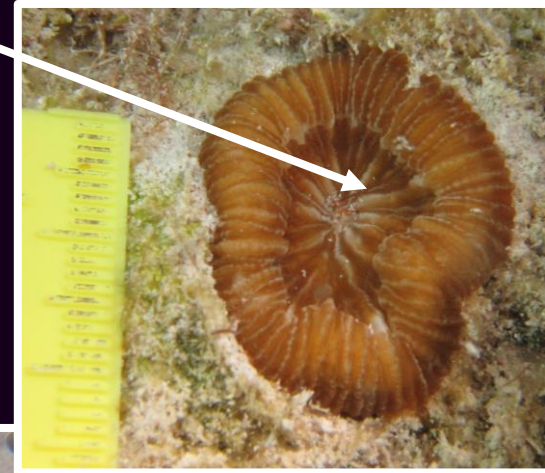
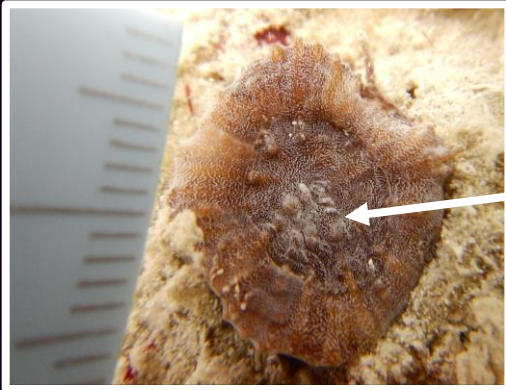


# MUSS vs FAVI

FAVI tissue flap partway down septa; MUSS have flap at juncture of ridge and valley

Lines of FAVI septa continue into valleys

MUSS septa in valleys, if noticeable, are mostly noticeable as rows of bumps (tops of teeth)

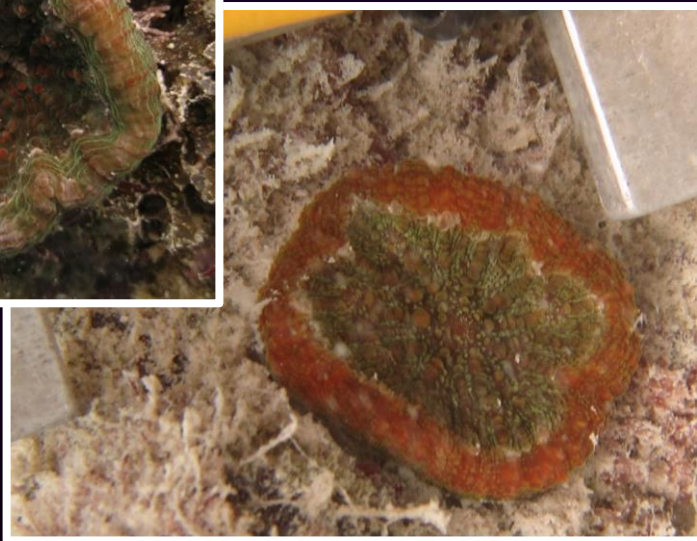
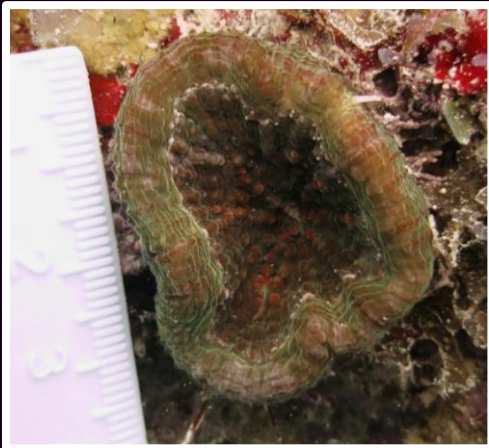
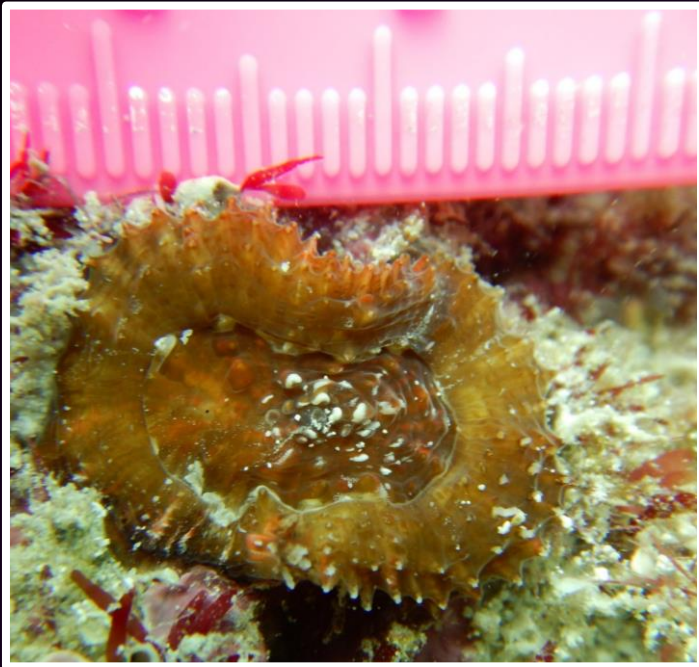




# MUSS vs FAVI

Ridges usually  
wider on MUSS  
than FAVI

Labyrinthine FAVI  
species start  
folding ridges at  
smaller colony  
sizes than MUSS



metal  
brackets  
are 4cm

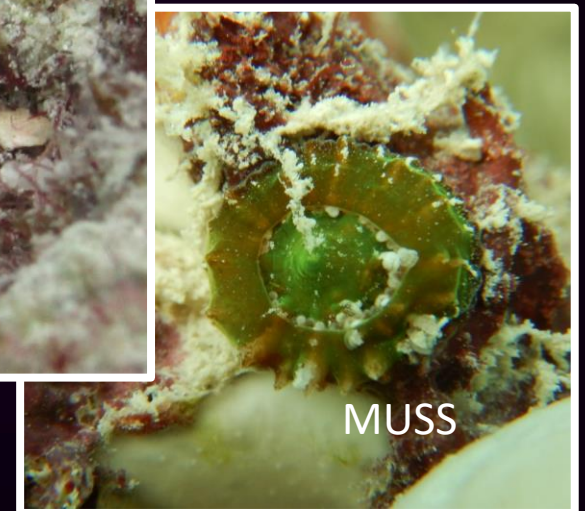
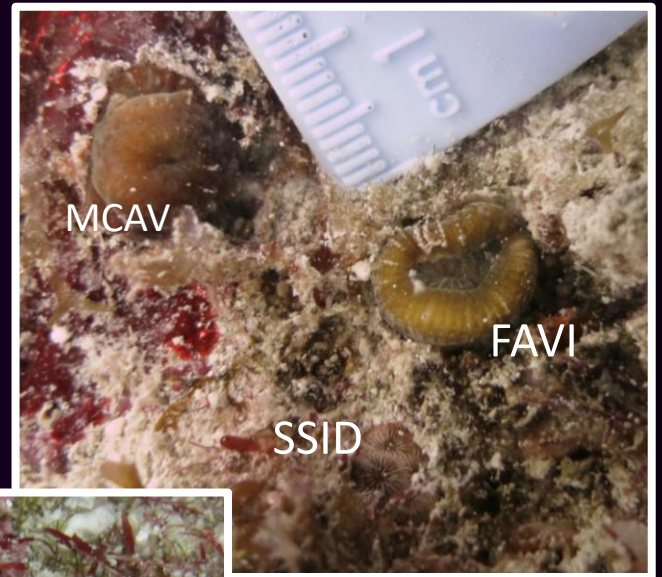
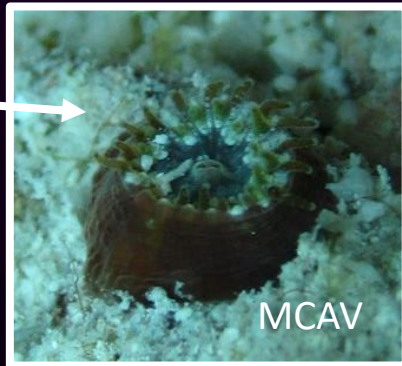


# MCAV vs FAVI & MUSS Juveniles

Single *M. cavernosa* polyps may be confused with very small FAVI & MUSS

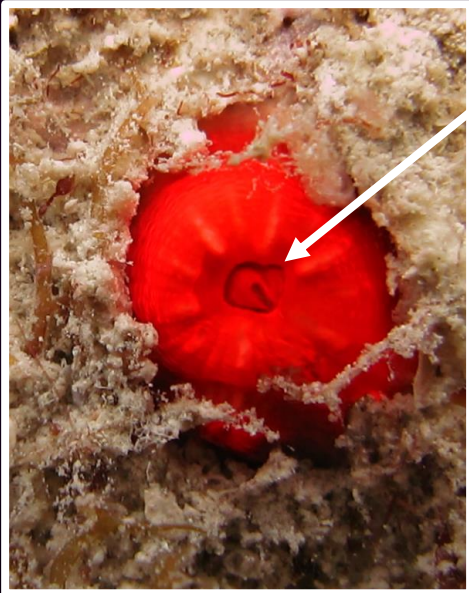
MCAV polyps are exsert/mound upward; FAVI/MUSS are flat or cupped

MCAV frequently have tentacles out





# MCAV vs FAVI/MUSS Cont'd



MCAV has peristome and surface tissue which close polyp when retracted; FAVI/MUSS polyps can't "close" their valleys





# Meandrinidae (MEAN)

DCYL



*Meandrina*



DSTO



EFAS





# MEAN Juveniles

DCYL  
?

DSTO



# *Meandrina*



EFAS





# MEAN Juvenile Characteristics

Thick, not noticeably toothy septa

Septa of alternating size/height  
(primary & secondary) or similar  
height but varying extension into  
valleys, toward polyp mouths

Tentacles frequently out during day





# MEAN Juvenile Characteristics Cont'd

- Typically tan, yellow-ish tan, or light brown
- Can have orange or green fluorescence, but whole tissue fluorescence rare

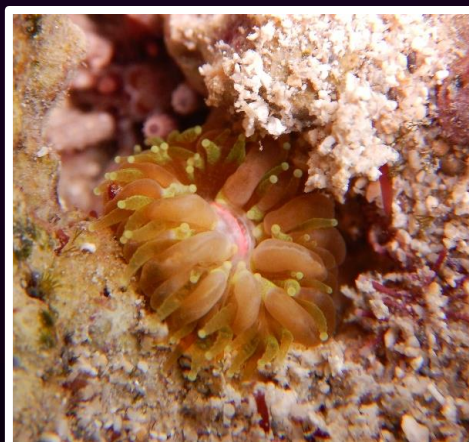






EFAS

MEAN  
Examples

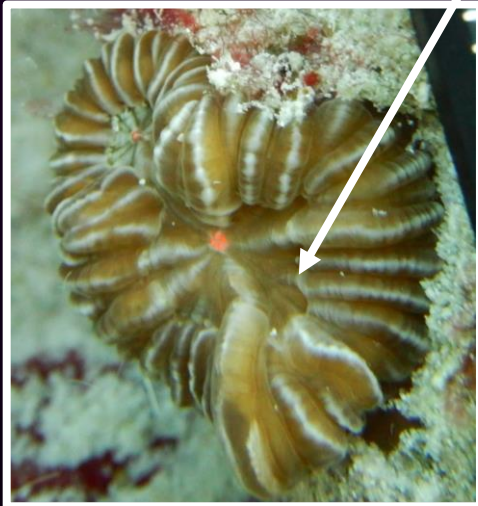
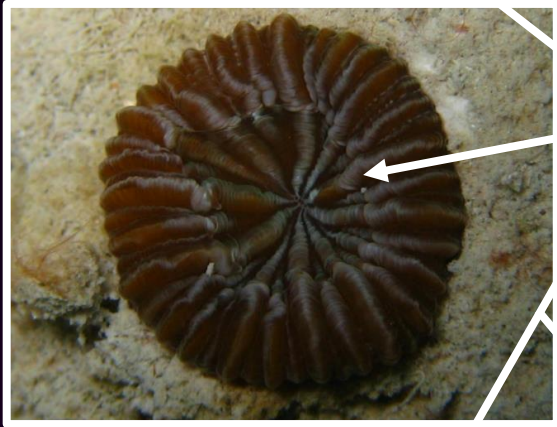
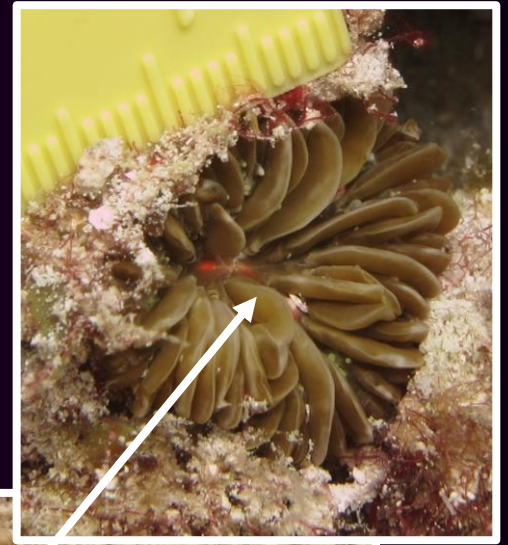
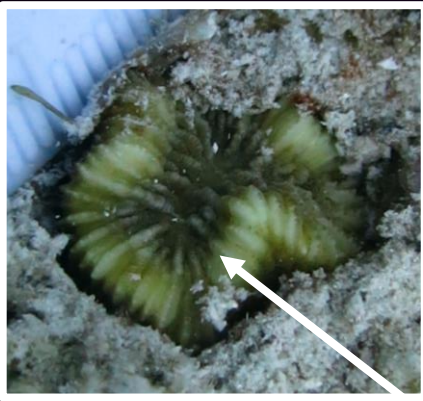




# FAVI vs MEAN

FAVI septa more even in size and arrangement than MEAN septa

FAVI have noticeable line/tissue flap partway down septa moving from ridge to valley that is absent in MEAN





# FAVI vs MEAN



FAVI have line/tissue flap partway down ridge that is absent in MEAN



Individual FAVI septa not usually separately obvious in ridges of labyrinthine species, as are MEAN septa

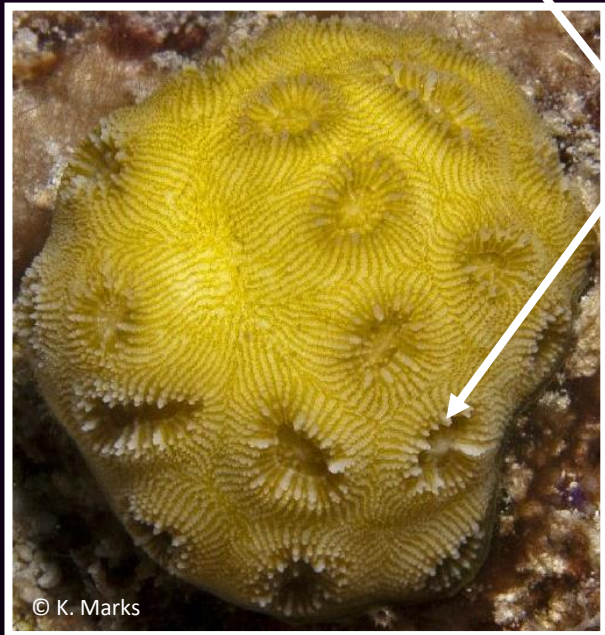
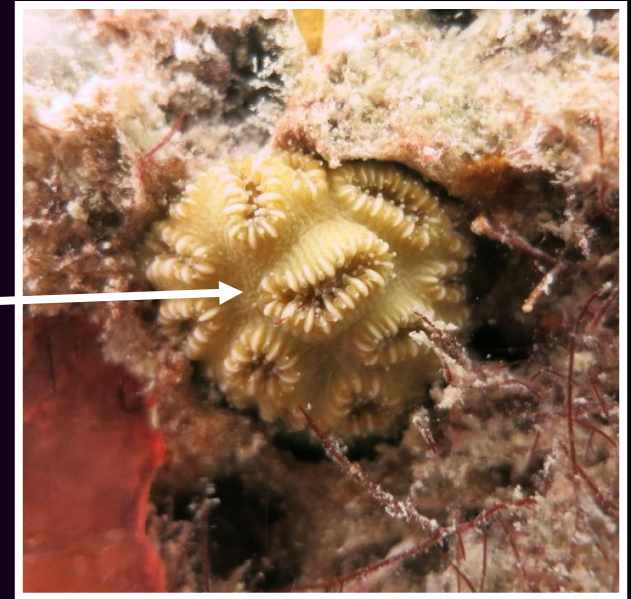




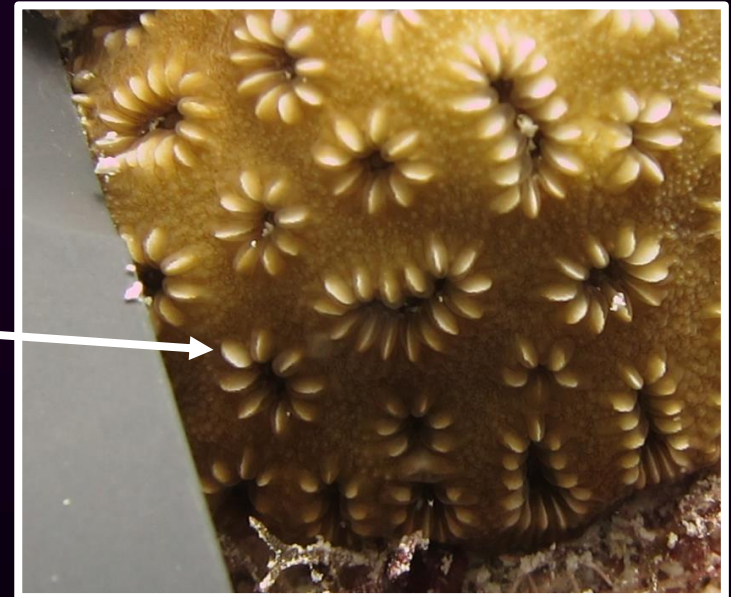
# FAVI vs MEAN: FFRA vs DSTO



FFRA corallites usually less protruded than those of DSTO



FFRA septa teeth are sharp and up/outward facing; DSTO septa mostly smooth

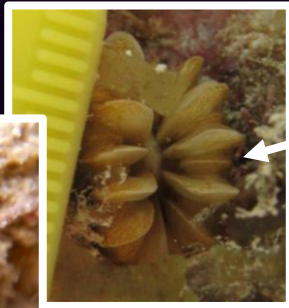
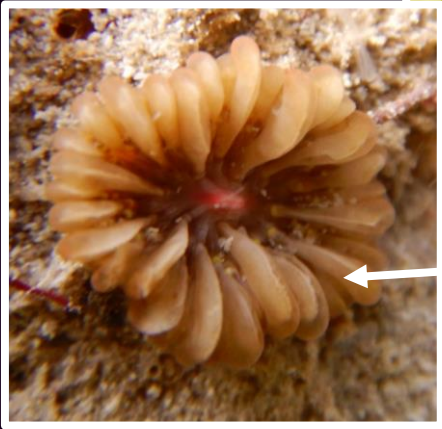




# MEAN Juveniles vs *P. americana*



PAME polyps flat to substratum;  
MEAN tend to grow outward



MEAN septa of primary & secondary alternating height or similar height but varying extension into valleys



MEAN nematocyst batteries visible on tentacle tip; on PAME they're visible on entire tentacle





# Not juvenile FAVI/MUSS/MEAN (other cnidarians)

Small or newly recruited anemones, corallimorphs, and zoanthids can look like some juvenile corals; make sure to waft and confirm there is a skeleton



BioObs © Adrien Weckel

