

Importance of better enforcement of existing legislations

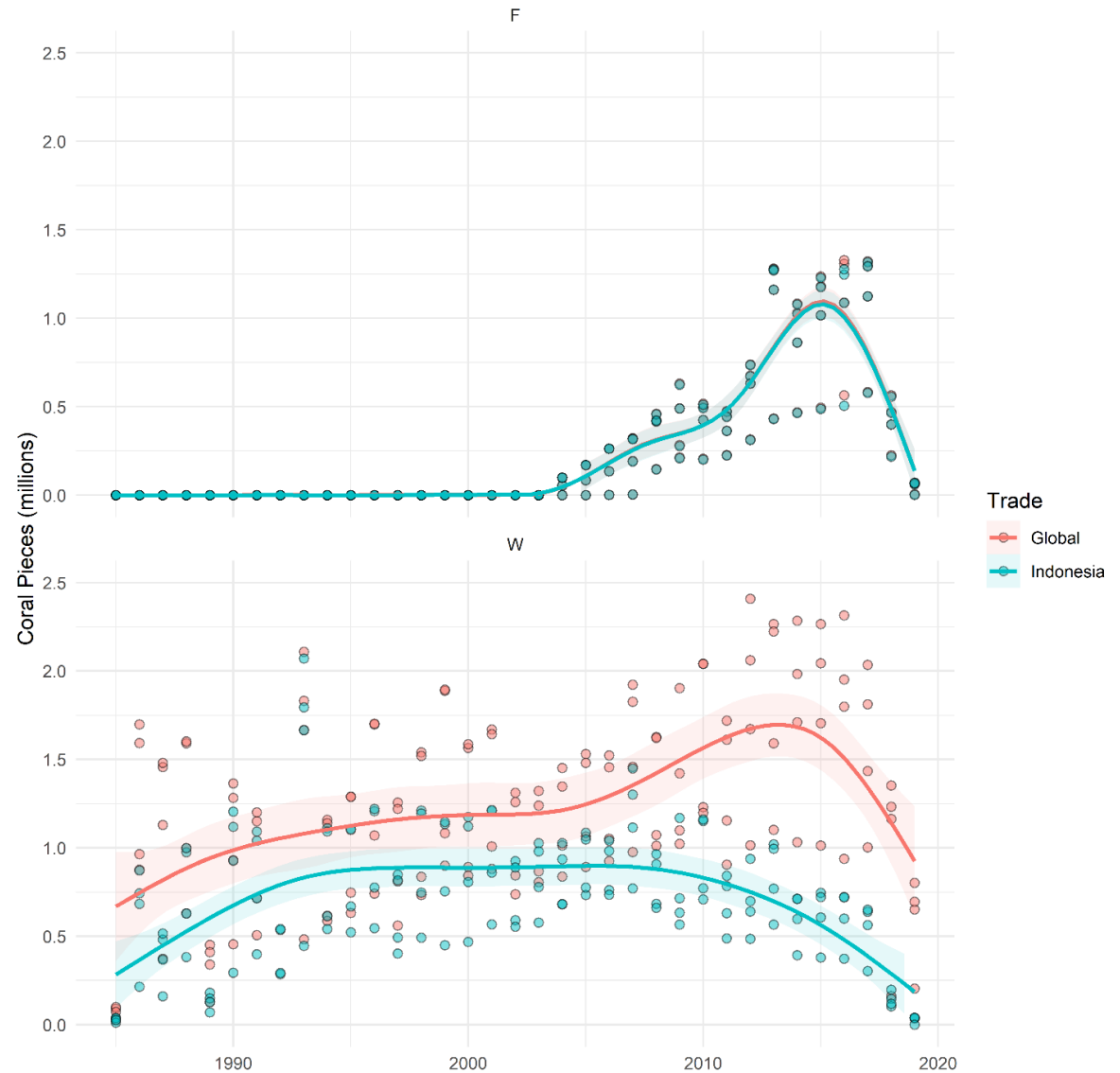
Developing practical tools for monitoring trade in CITES-listed stony corals



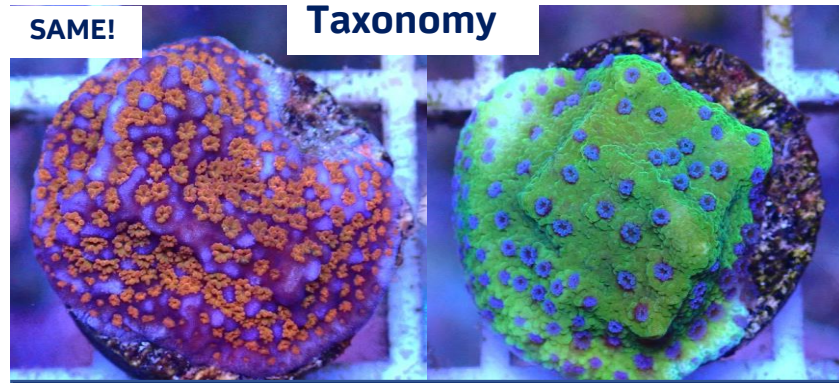
Dr Joanna Murray



Global trade in stony corals



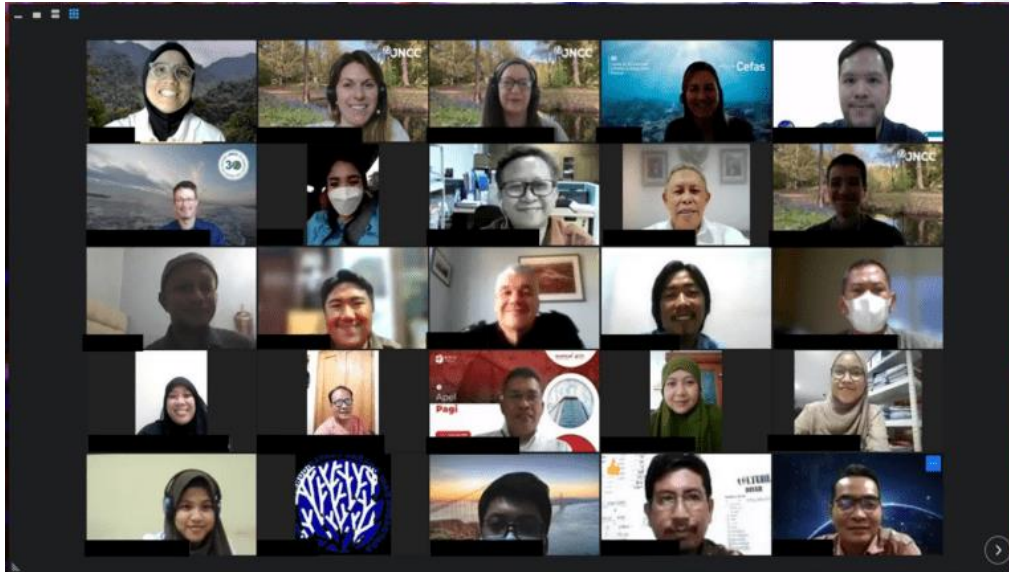
Challenges with enforcement



Our approach

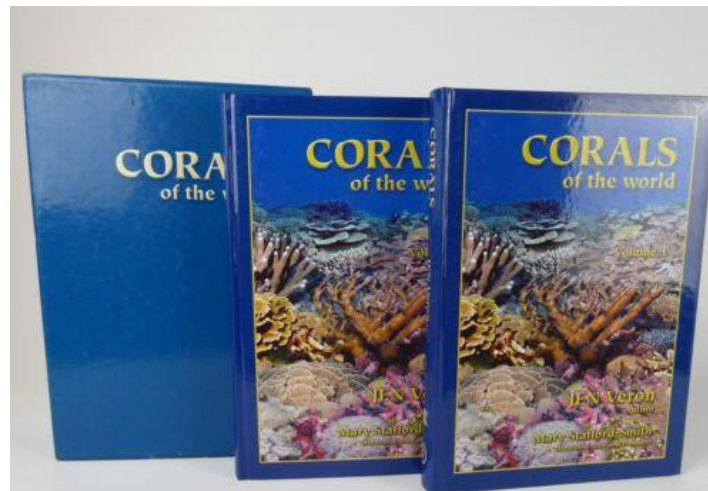


<https://tinyurl.com/marinescienceblog>



Trade in live coral: how we are developing tools to improve tracking of the most traded marine animals

Joanna Murray, 17 February 2022 - *International, Vulnerable species*



Process

1. Identify taxa in trade

CITES WILDLIFE
TRADEVIEW



SCAN ME

2. Develop groupings



3. Develop genus page content

Euphyllia

MEDIUM GROWTH
8-12 months to culture

HIGH EXPORT LEVELS
Over 500,000 pieces
Global data 2010-2019

\$3 \$400
UK IMPORT PRICE PER PIECE OR POLYP
OVER \$100

CORALLITE FEATURES

What is a polyp?	CORALLITE SHAPE	TENTACLES	MOUTH
	FLABELLO-MEANDROID PHACELOID Varied across species (see page 22)	VARIED Varied (see page 22)	OBSCURED Obscured mouth

DEFINING FEATURES*

Mouth and skeleton obstructed by fleshy polyp tentacles.

Tentacle shape is used to identify to species level for this genus.

*Euphyllia needs to be identified to species level (see page 22)

LOOK-ALIKES

Long tentacles obscuring mouth and the rest of the polyp is unique to Euphyllia. Heliofungia looks similar to E. globescens. Hammer-shaped tentacles look similar to but are longer than Physogyra and Pterogyra's bubble vesicles.

E. globescens	E. ancora	Physogyra	Pterogyra	Heliofungia
		Page 33	Page 35	Page 23

21

4. Review, adapt and launch





Context pages

Introduction

Stony corals are traded internationally, typically as live specimens for the aquarium market and dead pieces for the curio trade. Other coral products including rocks, fragments, and sand are also traded as they form important components of a home or public reef aquariums.

✗ UNIDENTIFIABLE TO GENUS LEVEL

Coral rock is hard consolidated material, >30 mm in diameter, formed of fragments of dead coral and which may also contain cemented sand, coralline algae and other sedimentary rocks.

Live rock tends to be large pieces (greater than 1 kg) that harbour live specimens of non-CITES listed invertebrates and coralline algae and are therefore shipped 'wet'. Clean coral rock is left to dry out prior to transportation so that it is free from live resident species and is shipped dry. Trade in coral rock where the genus cannot be readily determined is currently reported as 'Raw' coral at the higher Order level as 'Scleractinia' and in kg.

Substrate is the term given to smaller pieces of coral rock that can be used to transport attached invertebrates (species not included in the CITES Appendices), such as soft corals or sea anemones transported in water in the same way as live corals. Coral rock is not identifiable to the level of genus but is recognisable as Scleractinia. The definition excludes specimens defined as dead coral.

Coral fragments (including gravel and rubble) are unconsolidated fragments of broken finger-like dead coral and other material between 2 and 30 mm, measured in any direction.


Coral sand is material consisting entirely or in part of finely crushed fragments of dead coral no larger than 2 mm in diameter and which may also contain, amongst other things, the remains of Foraminifera, mollusc and crustacean shell, and coralline algae. Not identifiable to genus level.

✓ IDENTIFIABLE TO GENUS LEVEL

Dead coral pieces of coral that are dead when exported, but that may have been alive when collected, and in which the structure of corallites (the skeleton of the individual polyp) is still intact and visible. Some countries prohibit the export of this product (e.g. Indonesia).

Live coral includes coral pieces that are transported in water and should be identified to species or genus level.

Mariculture

Mariculture is the propagation of corals, usually in 'nurseries' on the sea floor. Small pieces of wild-collected coral can be detached from the parent, or new individuals can 'bud' from the parent to produce new individuals which are then allowed to grow. The newly grown individuals can then be fragmented, creating a source or 'mother' stock for maricultured corals that are traded under Source Code 'F*'.


A piece of coral is removed from a wild colony to become the 'mother' stock. Fragments are then removed from the 'mother' stock and attached to artificial bases (usually made of concrete), along with an identifier tag.

In Indonesia, the collection of mother stock is regulated through a permit and quota system.



The small, mounted frag platforms or tables in Indonesia are allowed to grow until they

In Indonesia, coral farms are audits; a feasibility audit before the produce a new species, and a monitor ongoing

! Indonesian tag properties

Properties of and information included on Indonesian tags for maricultured corals:

- Made from strong, tamper-proof material
- Tag shape can vary as they are developed by companies
- Code should be simple enough to be understood by all

Inspection office code	Export company code	Propagation year	Species code	Propagation sequence code					
01	04	06	Actsp.	02					
1	2	3	4	5	6	7	8	9	10

*for information on Source Codes see page 8

CITES

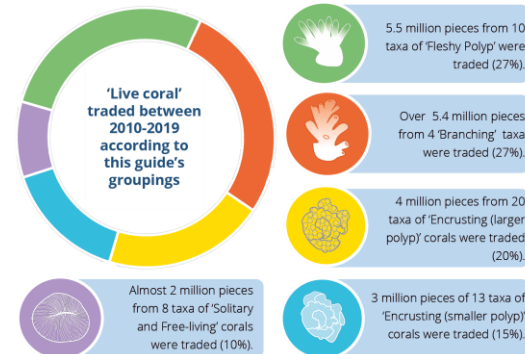


CITES is an international agreement between governments. Its aim is to make sure that international trade in specimens of species listed in its Appendices are regulated appropriately, so as not to threaten their survival in the wild. Trade must be legal, sustainable, and traceable.

! How can we calculate how much coral is traded?

Each Party (States and regional economic integration organizations) is required to submit an annual report on its CITES trade, containing a summary of information on; the number and type of permits and certificates granted, the States with which such trade occurred, the quantities and types of specimens, and the names of species as included in CITES Appendices I, II and III (CITES.org).

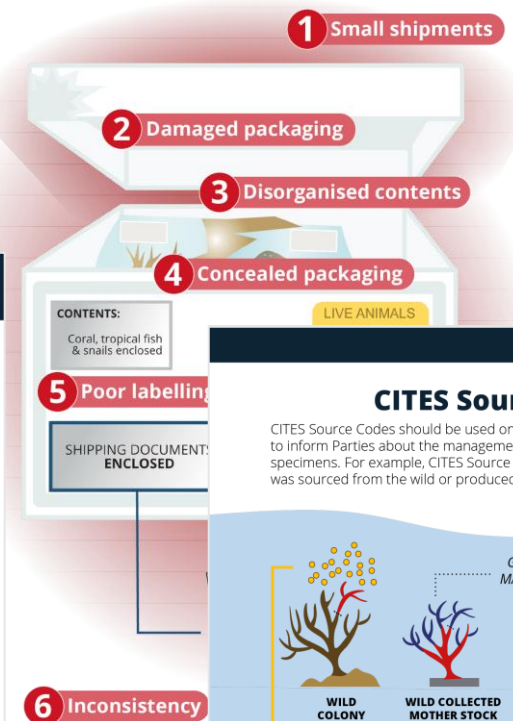
Trade data submitted to CITES by the Parties are entered into the CITES Trade Database managed by UNEP-WCMC. This enables monitoring of the levels of international trade in all taxa included in the CITES Appendices.



Trade data for stony corals including where they came from can be easily explored using the **CITES Wildlife TradeView tool** <https://tradeview.cites.org/en/taxon>.

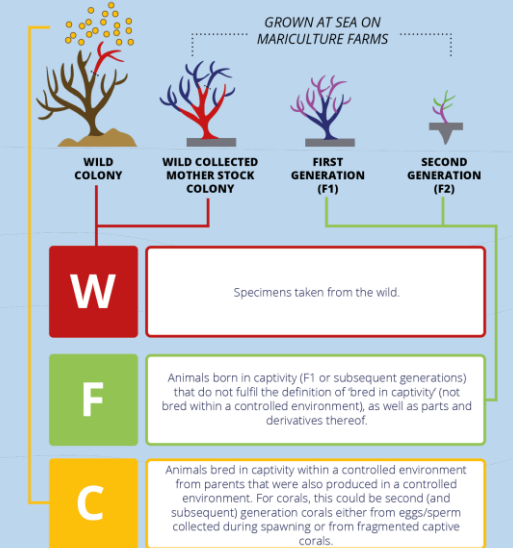


Shipments: Red flags



CITES Source Codes

CITES Source Codes should be used on all CITES permits and certificates, to inform Parties about the management system used to produce the specimens. For example, CITES Source Codes indicate whether a specimen was sourced from the wild or produced in captivity.





Watchlist



Watch list taxa may be subject to current or previous trade suspensions or other restrictions, or they may be slow-growing, have a high value, or are traded in high volumes.

Catalaphyllia



SLOW GROWTH

 >12 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$8 UK IMPORT PRICE \$38
\$21-\$99

Duncanopsammia



NOT CULTURED

 Not currently maricultured in Indonesia

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$4 UK IMPORT PRICE \$500
>\$100

Euphyllia



MEDIUM GROWTH

 8-12 months to culture

HIGH EXPORT LEVELS
 Over 500,000 pieces
 Global data 2010-2019

\$3 UK IMPORT PRICE \$400
>\$100

Heliofungia



MEDIUM GROWTH

 8-12 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$9 UK IMPORT PRICE \$44
\$21-\$99

Plerogyra



SLOW GROWTH

 >12 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$10 UK IMPORT PRICE \$21
\$21-\$99

Blastomussa



MEDIUM GROWTH

 8-12 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$2 UK IMPORT PRICE \$40
\$21-\$99

Hydnophora



FAST GROWTH

 3-6 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$6 UK IMPORT PRICE \$18
\$2-\$20

Acanthophyllia



NOT CULTURED

 Not currently maricultured in Indonesia

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$8 UK IMPORT PRICE \$270
>\$100

Cynarina



SLOW GROWTH

 >12 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$9 UK IMPORT PRICE \$80
\$21-\$99

Scolymia



MEDIUM GROWTH

 8-12 months to culture

MEDIUM EXPORT LEVELS
 100-500,000 pieces
 Global data 2010-2019

\$8 UK IMPORT PRICE \$200
>\$100

Trachyphyllia



SLOW GROWTH

 >12 months to culture

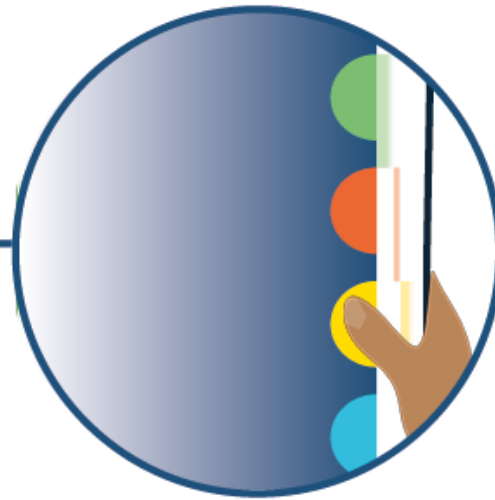
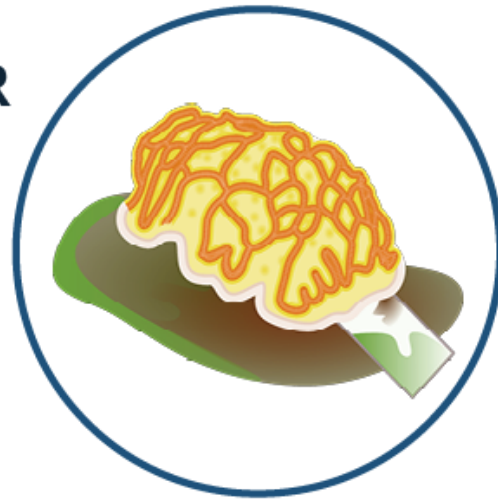
HIGH EXPORT LEVELS
 Over 500,000 pieces
 Global data 2010-2019

\$2 UK IMPORT PRICE \$70
\$21-\$99

How to use this guide



OR



Check packing list & look up genus
(use contents)

Look at shape
(use page 15)

Use thumb tabs to navigate to correct chapter

Identify the coral accurately & quickly

From the packing list

CITES CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

PEREMPTORIAN LINDUNGAN HAYATI DAN KEKAYAAN BIODIVERSITAS
DIREKTORAT JENJANG KONSERVASI SUMBER DAYA ALAM DAN EKOSISTEM
MINISTERI LINGKUNGAN DAN KEBUMAHKANDUAN
SPECIFICITY GENERAL OF BIODIVERSITY NATURAL RESOURCES CONSERVATION

Alamat: Jl. Geger Muktadipati Blok 18 L17 JI Geger Muktadipati Jakarta 15270 Telp. 602-21-579227, 574851-54 (Kantor Pusat) 574851-54 (Kantor Lapangan)

No. 03526/IV/SATS-LN-2019

CV. MULIA ABADI - Jl. Demak Timur 2 No.15 Kel. Gubukin, Kec. Bubutan, Kota Surabaya, Prov. Jawa Timur

SHANGHAI KING WIND IMPORT AND EXPORT CO. LTD. SF No. 19 Lane 688 Dongdangting Road Shanghai 200092, Tel. +86-21-50051533 Fax: +86-21-50054506 CHINA

21 Juni 2019

Tanjung Perak

No.	Nama spesies (Show the name, Indonesia, Country)	Jumlah (Quantity)	Kategori dan keterangan lain tentang spesies (Category and other description of specimens)	Apresiasi (Value)	Jumlah yang telah diekspor (Quota used)	Saldo ekspor (Quota left)
1	Dalbergia latifolia ; Sonokeling; Rosewood	25.0000 CIM	Post Beam, E2E	(A)	19.360 /	(2019)
TOTAL		25.0000 (Twenty five)				

Security Stamp No. 1759254. Issued in lieu of the unused permit No. 03039/IV/SATS-LN-2019. * Artificially propagated specimen, no quota allocated.

Signature: M. MARDIANA



CONTEXT PAGES

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Global trade of live coral	9 - 10



FLESHY POLYPS

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ENCRUSTING (smaller polyps)

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Pachyseris	101 - 102
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From looking at shape



Coral grouping by chapter

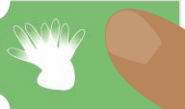
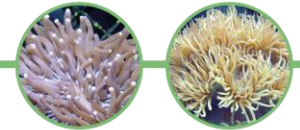
This simple key will help beginners categorise coral groups and lead the user to the correct chapter more quickly and efficiently. These chapters reflect forms seen in trade and may not be consistent with traditional taxonomic groupings of wild corals. This simplification aims to improve the use of the guide in practical, time limited trade inspections.



Large fleshy tentacles and polyps are visible?

YES

FLESHY POLYPS



NO



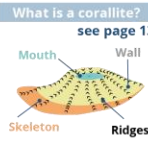
Are there branches or finger-like structures and a narrow stem attachment to the base?

YES

BRANCHING



NO

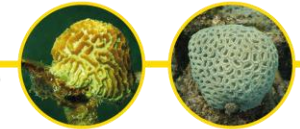


What is a corallite?
see page 13

Is the coral encrusting with corallites larger than 10 mm?

YES

ENCRUSTING (LARGER POLYPS)



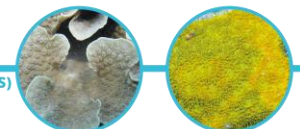
NO



Is the coral solitary (single polyp) or free-living?

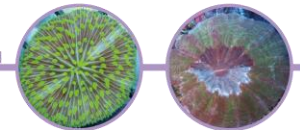
NO

ENCRUSTING (SMALLER POLYPS)



YES

SOLITARY and FREE-LIVING



! Colour should not be used for identification

The colour of coral in the wild and trade varies and cannot be used as a reliable characteristic for identification/differentiation between taxa.

! Coral groupings in this guide are not taxonomic

The grouping of corals in this guide is not based on scientific taxonomy, but by the shapes recognisable in trade. Where a genus of coral has multiple growth morphologies, a key is provided at the start of each chapter to help you find the correct page for the coral you are identifying.

i

False Mariculture



Detecting false mariculture

- 1 Growing edge**
Healthy growing edge established on the artificial base, no fresh cuts or glue present.
- 2 Artificial base properties**
Artificial base and mariculture tag has biofouling of marine life e.g., calcareous algae.
- 3 Established growth**
No cut polyps, healthy growth onto the artificial base (e.g., *Goniopora*) or from the canopy (e.g., *Euphyllia*).

! Biofouling of artificial base and no new cuts

✓ SIGN OF TRUE MARICULTURE



This *Goniopora* has a healthy growing edge, biofouling on the artificial base and cement.

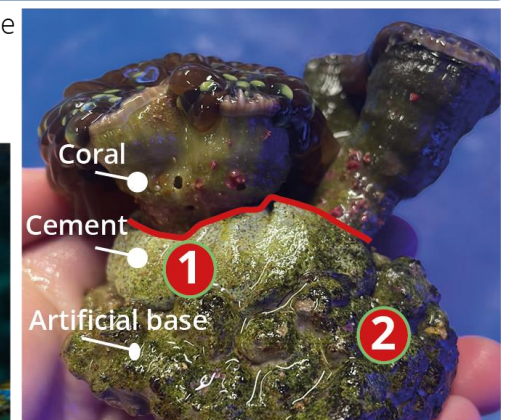
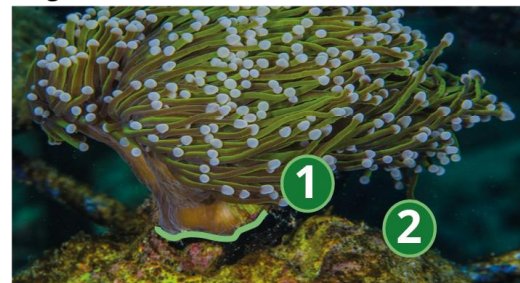
✗ SIGN OF FALSE MARICULTURE



Freshly cut *Goniopora* to demonstrate how false mariculture may appear. Clean, white, sharp edge visible.

! *Maricultured Euphyllia* is hard to distinguish

Euphyllia should have tissue growth on the external of the stem, biofouled artificial base and no new cement (often green tinge).



Overview



! Be aware of retracted tentacles

A colony with completely retracted tentacles may look like one of the other coral shape groups. Fleshy polyps may be retracted in transit and not be visible (see below).



Euphyllia



Heliofungia



Catalaphyllia



Duncanopsammia



Tabastraea



Physogyra



Plerogyra



Alveopora



Goniopora

Euphyllia



LOOK-ALIKES

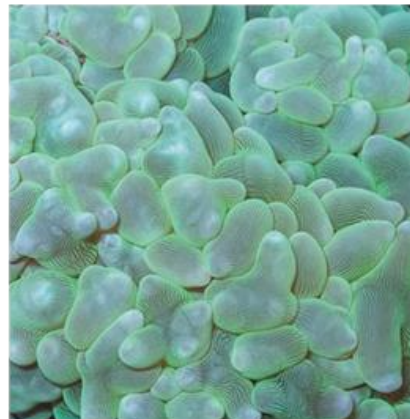
Long tentacles obscuring mouth and the rest of the polyp is unique to *Euphyllia*. *Heliofungia* looks similar to *E. glabrescens*. Hammer-shaped tentacles look similar to but are longer than *Physogyra* and *Plerogyra*'s bubble vesicles.



E. glabrescens



E. ancora



Physogyra



Plerogyra




Heliofungia

Identifying to species*



CHECK SPECIES




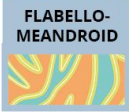
E. ancora




Tentacle tips are hammer- or horse-shoe shaped.

HIGH EXPORT LEVELS
Over 500,000 pieces
Global data 2010-2019

FLABELLO-MEANDROID




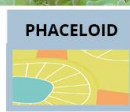
E. paraancora




Polyps have tentacles similar to those of *E. ancora*, with hammer-shaped or irregular triangular-shaped ends.

MEDIUM EXPORT LEVELS
100-500,000 pieces
Global data 2010-2019

PHACELOID





E. divisa




Polyps have large rod-shaped tentacles, with smaller branches ending in white knob-like tips.

MEDIUM EXPORT LEVELS
100-500,000 pieces
Global data 2010-2019

FLABELLO-MEANDROID





E. paradivisa




Polyps are similar to *E. divisa* with branched tentacles, but *E. paradivisa* has more secondary branching.

LOW EXPORT LEVELS
Under 100,000 pieces
Global data 2010-2019

PHACELOID





E. glabrescens




Polyps with long rod-shaped tentacles, with white knob-like tips.

HIGH EXPORT LEVELS
Over 500,000 pieces
Global data 2010-2019

OVAL





E. cristata



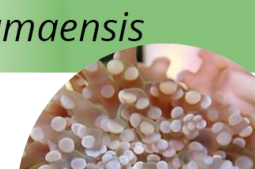
Polyps with short rod-shaped tentacles, similar to those of *E. glabrescens*, but shorter, ends with light tips.

MEDIUM EXPORT LEVELS
100-500,000 pieces
Global data 2010-2019

PHACELOID




E. yaeyamaensis



Tentacles are short and fat, covered with short uniform sub-branches, each ending in knob-like tips.

LOW EXPORT LEVELS
Under 100,000 pieces
Global data 2010-2019

OVAL



i Taxonomic changes

CITES permits must reflect current CITES nomenclature, details can be found: www.speciesplus.net
Taxonomy of corals is complex and may be subject to change. For accepted scientific names see: www.marinespecies.org.

* Only required for a handful of corals, the rest are identified to genus only.

Supporting better enforcement

Coral guide supporting identification of legal corals at export and import.

Currently being produced in Bahasa with training events planned for Indonesia and the UK.

Guide being used by staff at the borders.



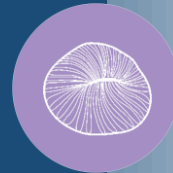
Project Partners

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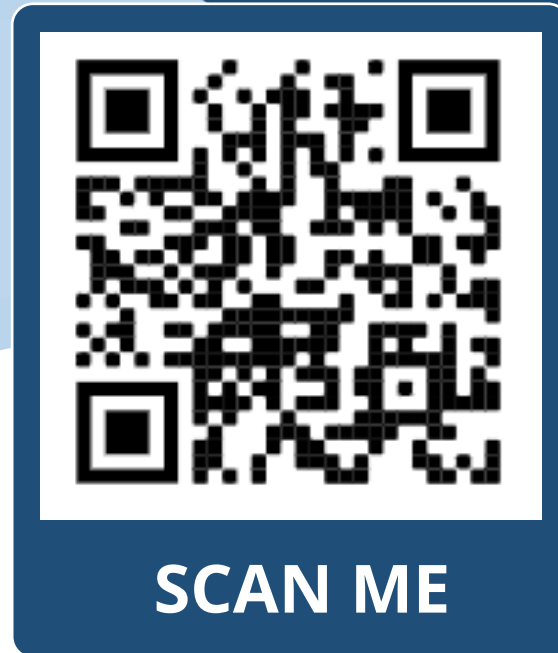
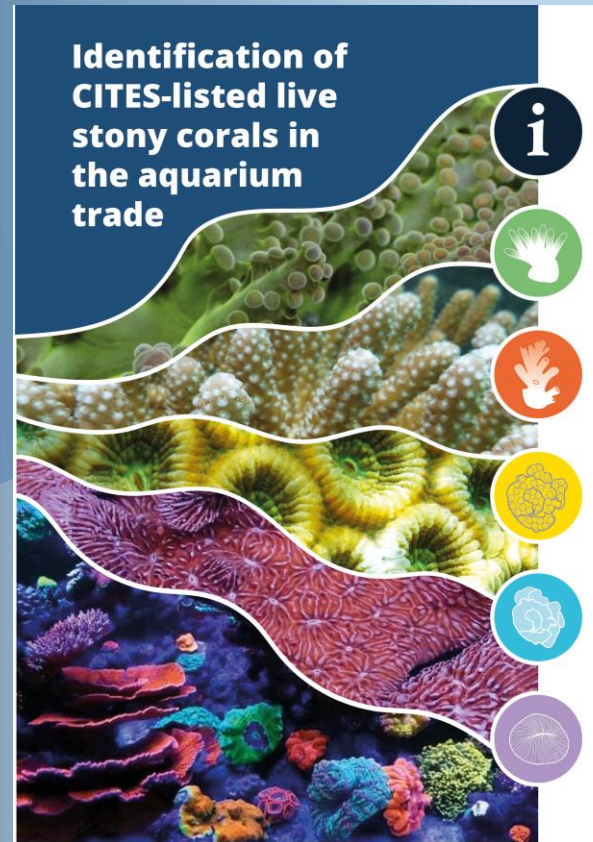
Photography credits: Adriel Prayoga (LINI), Gayatri Reksodihardjo-Lilley (LINI), Laura Carlin (EcoMarines), Yayasan Terumbu Karang Indonesia (TERANGI), The Indonesia Coral Reefs Working Group (ICRWG), Dr Suharsono, CV Cahaya Baru, CV Vivaria Marine, PT Aneka Tirtasurya, Dr Benjamin Cowburn (Cefas), Prof Dr Bert W. Hoeksema (Naturalis), Dr Beginer Subhan, Border Force, City of London, Dr Peter Coxhead.

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Funded by  UK Government



TERANGI



SCAN ME

<https://tinyurl.com/IDguideCITESstonycorals>

Request a guide from **Joanna Murray**
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