

Spawning monitoring guidelines for Caribbean coral species



Photo credit: B. Mueller

Most of the following slides were extracted and adapted from the webinar *Caribbean Coral Spawning for Research and Restoration*, hosted on TNC's Reef Resilience Network by Kristen Marhaver, Valérie Chamberland and Nicole Fogarty in February 2017. A full version of this webinar is available on the Coral Restoration Consortium's website at: <http://crc.reefresilience.org/working-groups/larval-propagation/>



Caribbean Coral Spawning for Research and Restoration

How to raise larvae and outplant settlers without shedding (a lot of) blood and tears

NOAA / TNC Coral Restoration Webinar
8 February 2017

Hosted by

Kristen Marhaver: CARMABI Foundation, Curacao

Valerie Chamberland: SECORE Int'l & CARMABI Foundation, Curacao

Nicole Fogarty: NOVA Southeastern Univ., Ft. Lauderdale, FL, USA



Monitoring coral spawning - Tools



Restoration **Working Groups** ▾ Resources ▾

What We're Working On

Core working group team members are currently aligning their research on post-settlement survival and developing more specific research questions and targeted experiments. This working group has developed the following resources for other larval propagation restoration practitioners:

- [Coral Spawning Research & Larval Propagation Webinar](#)
- [Coral Spawning Monitoring Guidelines \(.pdf\)](#)
- [Southern Caribbean Coral Spawning Prediction Chart \(.pdf\)](#)
- [Mexican Caribbean Coral Spawning Prediction Chart \(.pdf\)](#)
- [Caribbean Coral Spawning Monitoring Template \(.xlsx\)](#)

crc.reefresilience.org/working-groups/larval-propagation/

Materials presented in this document are all available on the CRC's Larval Propagation Working Group website

Predicting the timing of spawning

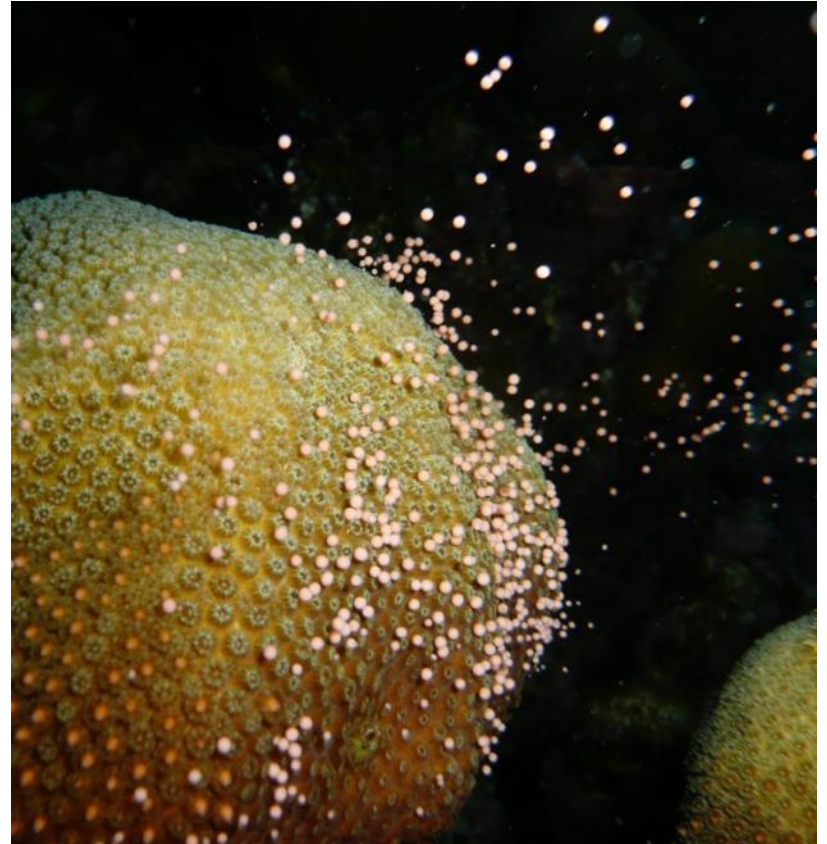


Photo credit: K. Marhaver

Predicting the timing of spawning

MONTH

The month(s) during which corals spawn is dictated by the rate at which sea surface temperature increases

- Most coral species spawn between August and October

NOTE: Spawning occurs about 1 month earlier in the northern Caribbean vs. the southern Caribbean

E.g., Florida *Orbicella* spawn in Aug and Sept, Curacao *Orbicella* spawn in Sept and Oct

- Try to dive one month early and one month late, even if just to watch

DAY & TIME

The date and time at which corals spawn are dictated by the lunar cycle and sunset time, respectively.

- Most coral species spawn a few days following the full moon, for 2 to 3 days in a row
- Most coral species will spawn after sunset during a period of 30-120 minutes



Predicting the timing of spawning

To determine when coral spawning is likeliest:

- Refer to past observations *in your region* whenever possible
- Note month, date of full moon, and timing of sunset
- Use minutes past sunset, not time of day (daylight savings, full moon falls)
- Translate past observations to current year's moon cycle and your location's sunset times
- Use sun/moon data from your precise location, not global sun/moon times
- A good resource to track sunset time and lunar cycle is www.timeanddate.com
- Watch out for time zones and daylight savings time!
- Consult prediction tables for your region, available at <http://crc.reefresilience.org/working-groups/larval-propagation/>

Dive as much as you can with the resources you have!



Timing of spawning: Insider tricks

SPLIT SPAWNING

- When the full moon occurs very early or late in the typical spawning month, expect a split spawning across two separate months
E.g., in Curacao, in 2015, *C. natans* spawned in early October *and* early November

FULL MOON TIMING

- A full moon at 02h00 AM on 2 Sept will *FEEL* like a full moon to the corals on the night of 1 Sept
- If the full moon occurs before ~04h00, we begin diving one day earlier

PREDICTABILITY IS GOING DOWN

- Warmer water can shift spawning earlier or cause split spawns; important to have as much as a “baseline” as possible
- Bleaching causes poor and less synchronized spawning the next year and in some cases for several years
- Smaller coral populations are worse at synchronizing spawning



AVOID HUBRIS: *A. palmata* can spawn on Day 1...or Day 11. Dive early & often!

Caribbean-wide spawning predictions

These are general spawning predictions based on Caribbean-wide data and are tremendously useful if no precise predictions exist for your specific location. Regional predictions are available for the Southern Caribbean, the Dominican Republic, Mexico and the Northern Caribbean at <http://crc.reefresilience.org/working-groups/larval-propagation/>).

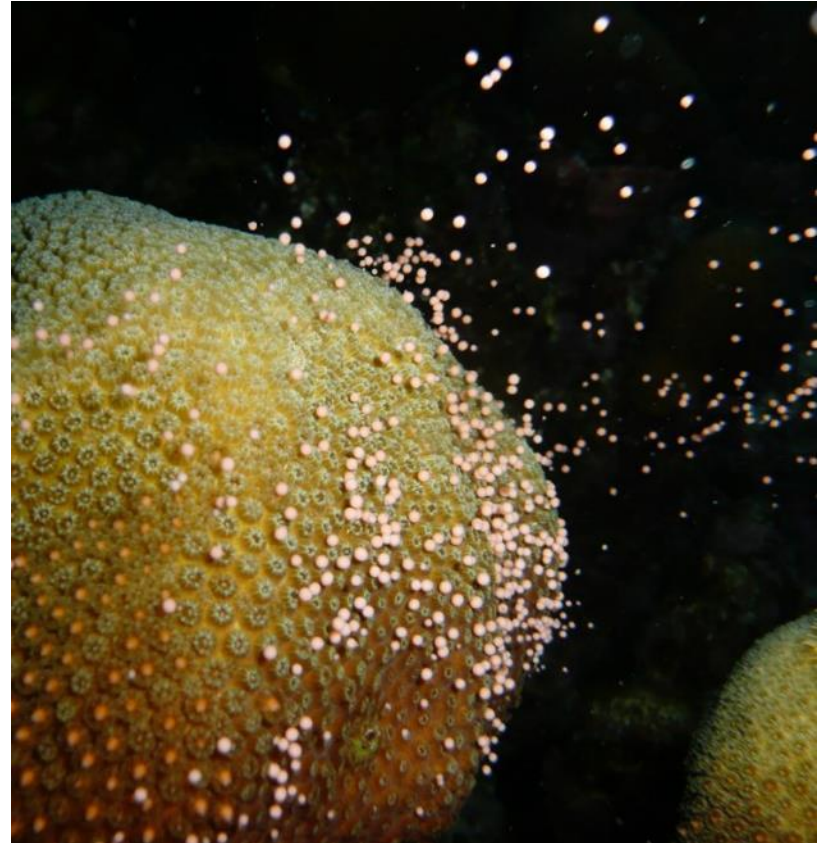


Photo credit: K. Marhaver

Hermaphroditic broadcast spawners



Photo credit: E. Hickerson

Orbicella franksi
DAFM: 5-10; peak 6-8
MAS: 100-250; peak 110-200
August-September-October



Photo credit: K. Marhaver

Orbicella annularis
DAFM: 5-8; peak 6-7
MAS: 150-275; peak 190-250
August-September-October



Photo credit: FGBNMS

Orbicella faveolata
DAFM: 5-9; peak 6-8
MAS: 100-275; peak 175-250
August-September-October

* DAFM = days after full moon; MAS = minutes after sunset

Hermaphroditic broadcast spawners

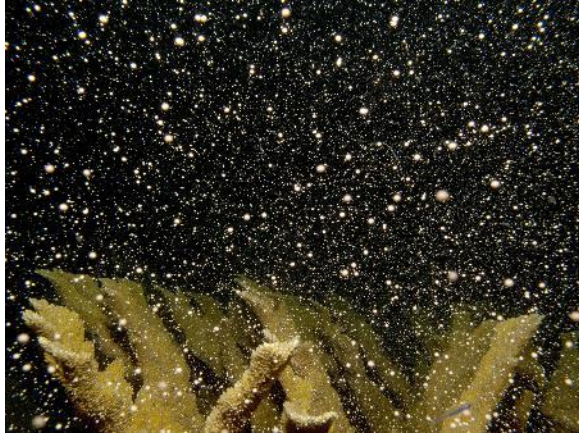


Photo credit: R. Ritson-Williams

Acropora palmata

DAFM: 0-15; peak 3-6
MAS: 90-210; peak 140-190
August



Photo credit: R. Ritson-Williams

Acropora cervicornis

DAFM: 1-15; peak: 2-6
MAS: 125-200; peak 150-190
August

The timing of spawning of *Acropora palmata* is highly unpredictable, especially in the Southern Caribbean.
Dive early and often to observe it.

* DAFM = days after full moon; MAS = minutes after sunset

Hermaphroditic broadcast spawners



Photo credit: Hickerson/FGBNMS

Pseudodiploria strigosa

DAFM: 5-8 ; peak 6-8

MAS: -100-320; peak 100-200

August-September-October



Photo credit: FGBNMS

Colpophyllia natans

DAFM: 6-10; peak 8-9

MAS: 38-170; peak 30-123

August-September-October

Both these species were once or twice also observed spawning in July and August in Curacao. *P. strigosa* spawns both 40-60 min AS and 220-270 min AS on Curacao. It is not clear if this occurs every year, and throughout the Caribbean. **Additional observations are needed during these earlier months and time windows.**

*DAFM = days after full moon; MAS = minutes after sunset

*Note: spawning range includes before sunset, depicted here as a negative number

Hermaphroditic broadcast spawners



Photo credit: E. Muller



Photo credit: E. Muller

Diploria labyrinthiformis

DAFM: 7-13 ; peak 10-12

MBS: 0-65; peak 15-45

May through October

This species is known to spawn multiple consecutive months from May until October in Curacao, Bonaire, Mexico and the Dominican Republic. It is however not known if this occurs across the entire Caribbean region.

Additional observations are needed during these months in other Caribbean locations.

- DAFM = days after full moon; MAS = minutes after sunset
- **Note: *D. labyrinthiformis* spawns before sunset (MBS)**

Gonochoric broadcast spawners



Photo credit: Neely et al. 2013 Coral Reefs 32: 813

***Dendrogyra cylindrus* - males**

DAFM: 2-5; peak 2-4

MAS: 58-134; peak 93-119

August-September



Photo credit: Neely et al. 2013 Coral Reefs 32: 813

***Dendrogyra cylindrus* - females**

DAFM: 1-4; peak 2-3

MAS: 58-142; peak 102-134

August-September

*DAFM = days after full moon; MAS = minutes after sunset

Gonochoric broadcast spawners



Photo credit: B. Holland

Montastraea cavernosa - males

DAFM: 4-9; peak 6-7

MAS: -19-259; peak 62-154

August-September-October



Photo credit: FGBNMS/Schmahl

Montastraea cavernosa - females

DAFM: 4-9; peak 6-7

MAS: -9-245; peak 62-147

August-September-October

This species was also observed spawning in July and August on a few occasions on Curacao. It is not clear if this occurs every year, and throughout the Caribbean. **More observations needed during these earlier months!**

*DAFM = days after full moon; MAS = minutes after sunset

*Note: spawning range includes before sunset, depicted here as a negative number

Gonochoric broadcast spawners



Photo credit: B. Brown

Siderastrea siderea - males

DAFM: 5-7; peak 5-6

MAS: 217-226; peak 217-226

September-October



Photo credit: B. Mueller

Siderastrea siderea - females

DAFM: 5-7; peak 5-6

MAS: 210-231; peak 215-229

September-October

On Curacao, only one mass spawning event was observed for this species since 2015. Such a large reproduction event was never witnessed since then despite extensive monitoring efforts. This species perhaps does not invest in reproduction consistently between years.

Additional observations are needed!

*DAFM = days after full moon; MAS = minutes after sunset

Gonochoric broadcast spawners



Photo credit: K. Marhaver

Dichocoenia stokesii- males

DAFM: 3-?

MAS: 90-170

September-October-November



Photo credit: K. Marhaver

Dichocoenia stokesii - females

DAFM: 3-?

MAS: 90-170

September-October-November

This species is only studied since very recently. Very few data points exist. On Curaçao it was observed spawning more than 20 nights in a row. Note that colonies that are about to spawn display very puffy polyps and inflated mouths and tentacles. **Additional observations needed!**

*DAFM = days after full moon; MAS = minutes after sunset

Gonochoric broadcast spawners



Photo credit: E. Muller

Meandrina meandrites- males

DAFM: 4-?

MAS: 10-70

September-October-November



Photo credit: E. Muller

Meandrina meandrites - females

DAFM: 4-?

MAS: 10-70

September-October-November

This species is only studied since very recently. Very few data points exist. On Curaçao it was observed spawning many different nights between 4 and 20 days following the full moon.

Additional observations needed!

*DAFM = days after full moon; MAS = minutes after sunset

Gonochoric broadcast spawners



Photo credit: E. Muller



Photo credit: E. Muller

Eusmilia fastigiata

DAFM: 5-10

MAS: 75-140?

August-September-October

Only sparse data exists for this species. The time window during which it spawns is especially unclear and might extend much later than 140 min AS. **Additional observations needed!**

*DAFM = days after full moon; MAS = minutes after sunset

Regional spawning prediction calendars



Photo credit: E. Muller

Regional spawning predictions

Remember to use sun/moon data from your precise location



Home | World Clock | Time Zones | Calendar | Weather | Sun & Moon | Timers | Calculators | Apps & API | Free Fun |

[Sun Calculator](#) | [Moon Calculator](#) | [Moon Phases](#) | [Eclipses](#) | [Seasons](#) | [Day and Night Map](#) | [Moon Light Map](#) | [Meteor Showers](#) | [Astronomy Articles](#)

Home / Sun & Moon / Curaçao / Willemstad

Willemstad, Curaçao — Sunrise, Sunset, and Moon Times for Today



Moon: 47.4%

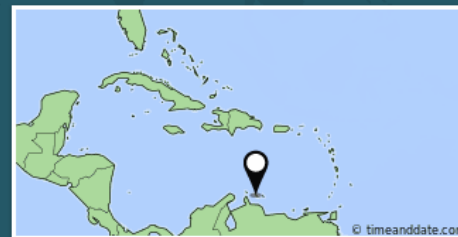
Waning Crescent

Current Time: Jun 6, 2018 at 9:53:56 pm

Sunrise Today: 6:10 am ↗67° East
Sunset Today: 6:58 pm ↙293° Northwest

Moonrise Today: 12:33 am →101° East
Moonset Today: 12:37 pm ←261° West

Daylight Hours: 12 hours, 48 minutes (+13s)



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[Sunrise & Sunset](#)

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[Moon Phases](#)

[Eclipses](#)

[Night Sky](#)

Beta

Regional spawning predictions:

Southern Caribbean

Full version available at: <http://crc.reefresilience.org/working-groups/larval-propagation/>

File name: Coral_Spawning_Predictions_Southern_Caribbean_2019

2019

Coral Spawning Predictions for the Southern Caribbean

June			Days AFM:	10	11	12	13
			Calendar Date:	27-Jun	28-Jun	29-Jun	30-Jun
			Sunset Time:	19:03	19:03	19:04	19:04
Latin name	Common Name	Spawning Window					
<i>Diploria labyrinthiformis</i> *	Grooved Brain Coral	60-0 min BS				17:55-19:10	

*Consecutive monthly spawning events have been observed from May to October in Curaçao, Bonaire, the Dominican Republic, and Mexico. It is unknown if this occurs across the entire region. New observations are encouraged!

July			Days AFM:	0	1	2	3	4	5	6	7	8	9	10	11	12	13
			Calendar Date:	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul
			Sunset Time:	19:04	19:04	19:04	19:04	19:04	19:04	19:03	19:03	19:03	19:03	19:03	19:02	19:02	19:02
Latin name	Common Name	Spawning Window															
<i>Dendrogyra cylindrus</i>	Pillar Coral	105-155 min AS	?	?	?			20:45-21:45									
<i>Montastraea cavernosa</i>	Great Star Coral	15-165 min AS					?	?									
<i>Colpophyllia natans</i>	Boulder Brain Coral	35-110 min AS											19:15-21:55				
<i>Pseudodiploria strigosa</i> (Early group)	Symmetrical Brain Coral	40-60 min AS											19:30-21:00				
<i>Pseudodiploria strigosa</i> (Late group)	Symmetrical Brain Coral	220-270 min AS											19:40-20:05				
<i>Diploria labyrinthiformis</i> *	Grooved Brain Coral	60-0 min BS													17:55-19:05		

August			Days AFM:	0	1	2	3	4	5	6	7	8	9	10	11	12	13
			Calendar Date:	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	26-Jul	27-Jul	28-Jul	29-Jul
			Sunset Time:	18:55	18:55	18:54	18:54	18:53	18:53	18:52	18:52	18:51	18:51	18:50	18:49	18:49	18:48
Latin name	Common Name	Spawning Window															
<i>Acropora palmata</i>	Elkhorn Coral	140-190 min AS				21:10-22:10 (Spawning could happen any of these days. This species is highly unpredictable in the Southern Caribbean)											
<i>Acropora cervicornis</i>	Staghorn Coral	150-190 min AS				21:20-22:10											
<i>Dendrogyra cylindrus</i>	Pillar Coral	105-155 min AS	?					20:35-21:35									
<i>Montastraea cavernosa</i>	Great Star Coral	15-165 min AS					?	?	?								
<i>Colpophyllia natans</i>	Boulder Brain Coral	35-110 min AS											18:50-20:50				
<i>Pseudodiploria strigosa</i> (Early group)	Symmetrical Brain Coral	40-60 min AS											19:30-19:55				
<i>Pseudodiploria strigosa</i> (Late group)	Symmetrical Brain Coral	220-270 min AS											22:25-23:35				
<i>Diploria labyrinthiformis</i> *	Grooved Brain Coral	60-0 min BS													17:45-18:55		

Don't hesitate to dive outside known spawning windows. That is how new cool/weird/useful observations are made!



Regional spawning prediction calendars

Dominican Republic

Full version available at: <http://crc.reefresilience.org/working-groups/larval-propagation/>

File name: [Coral_Spawning_Predictions_Dominican_Republic_2019](#)

PREDICCIÓN DE DESOVES DE CORAL 2019

BAYAHIBE-DOMINICUS SURESTE REPÚBLICA DOMINICANA



MAYO	Días despues de la luna llena	10	11	12
	Fecha	28-may	29-may	30-may
	Atardecer	19:10	19:10	19:10
<i>Diploria labyrinthiformis</i> (inicia de 40-75 minutos antes del atardecer)		18:00-19:00	18:00-19:00	18:00-19:00

JUNIO	Fecha	27-jun	28-jun	29-jun
	Atardecer	19:20	19:20	19:20
		18:00-19:00	18:00-19:00	18:00-19:00
<i>Diploria labyrinthiformis</i> (inicia de 40-75 minutos antes del atardecer)				

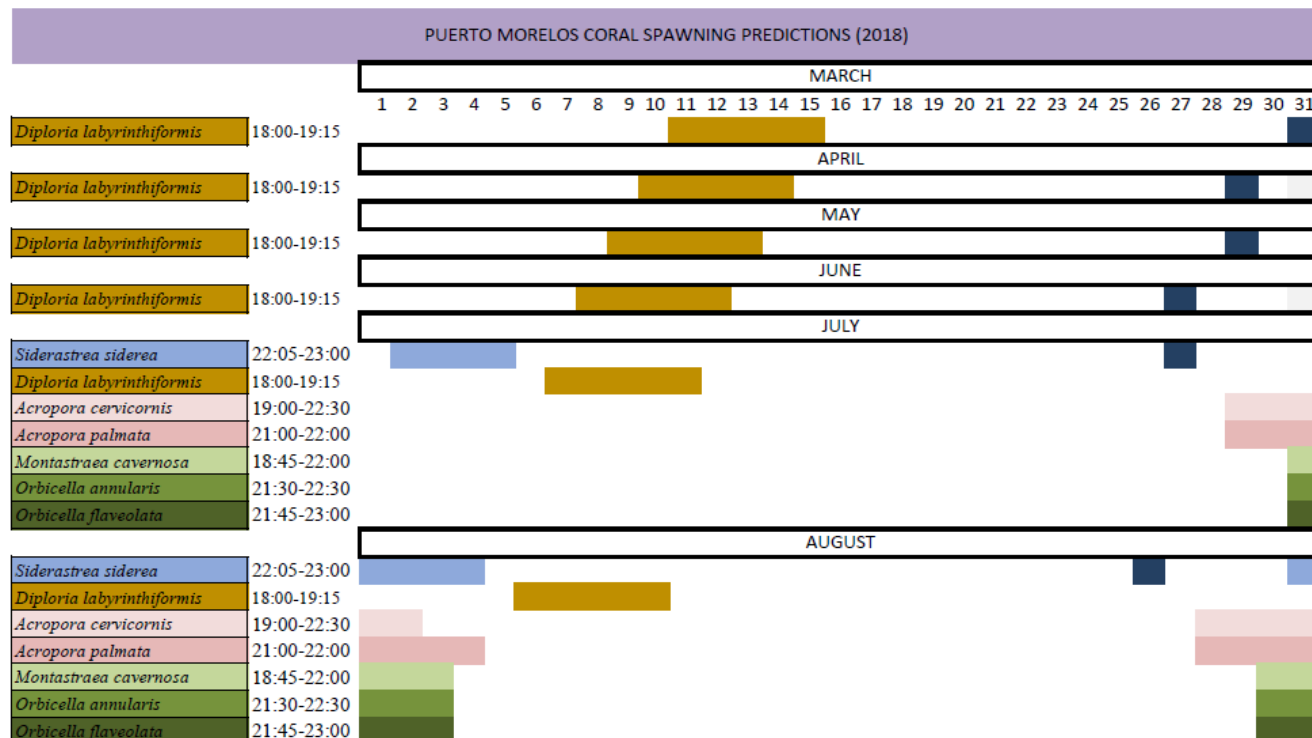
JULIO	Días despues de la luna llena	2	3	4	5	6	7	8	9
	Fecha	18-jul	19-jul	20-jul	21-jul	22-jul	23-jul	24-jul	25-jul
	Atardecer	19:20	19:20	19:20	19:20	19:20	19:20	19:20	19:20
<i>Acropora cervicornis</i> (inicia de 160-190 minutos despues del atardecer)						22:00-23:00	22:00-23:00	22:00-23:00	

Regional spawning prediction calendars

Mexican Caribbean

Full version available at: <http://crc.reefresilience.org/working-groups/larval-propagation/>

File name: n.a.



In preparation for 2019. Will be uploaded to our website shortly

Regional spawning prediction calendars

Northern Caribbean

Full version available at: <http://crc.reefresilience.org/working-groups/larval-propagation/>

File name: [Jordan 2018 Patterns in Caribbean Coral Spawning](#)



Nova Southeastern University
NSUWorks

HCNSO Student Theses and Dissertations

HCNSO Student Work

5-3-2018

Patterns in Caribbean Coral Spawning

Anna C. Jordan

Nova Southeastern University, aj970@nova.edu

Regional spawning predictions: An example

Massive Starlet Coral (*Siderastrea siderea*)

October			Days AFM:	0	1	2	3	4	5	6	7	8
			Calendar Date:	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct
			Sunset Time:	18:17	18:17	18:16	18:16	18:15	18:15	18:14	18:14	18:13
Latin name	Common Name	Spawning Window										
<i>Dendrogyra cylindrus</i>	Pillar Coral	105-155 min AS	?	?	?			20:05-20:55				
<i>Siderastrea siderea</i>	Massive Starlet Coral	210-280 min AS							21:40-23:00			
<i>Montastraea cavernosa</i>	Great Star Coral	15-165 min AS					?				18:25-21:05	
<i>Montastraea/Orbicella annularis</i>	Lobed/Boulder Star Coral	195-250 min AS									21:25-22:30	
<i>Montastraea/Orbicella faveolata</i>	Mountainous Star Coral	195-250 min AS									21:25-22:30	
<i>Montastraea/Orbicella franksi</i>	Boulder Star Coral	90-150 min AS									19:40-20:50	

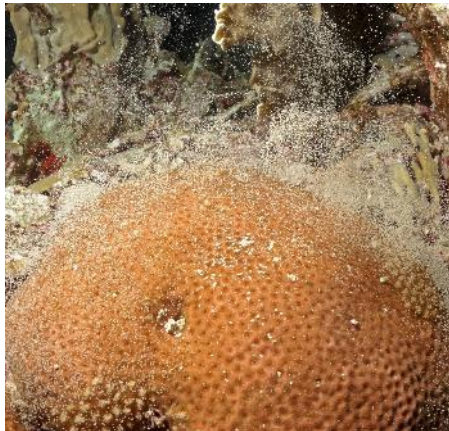


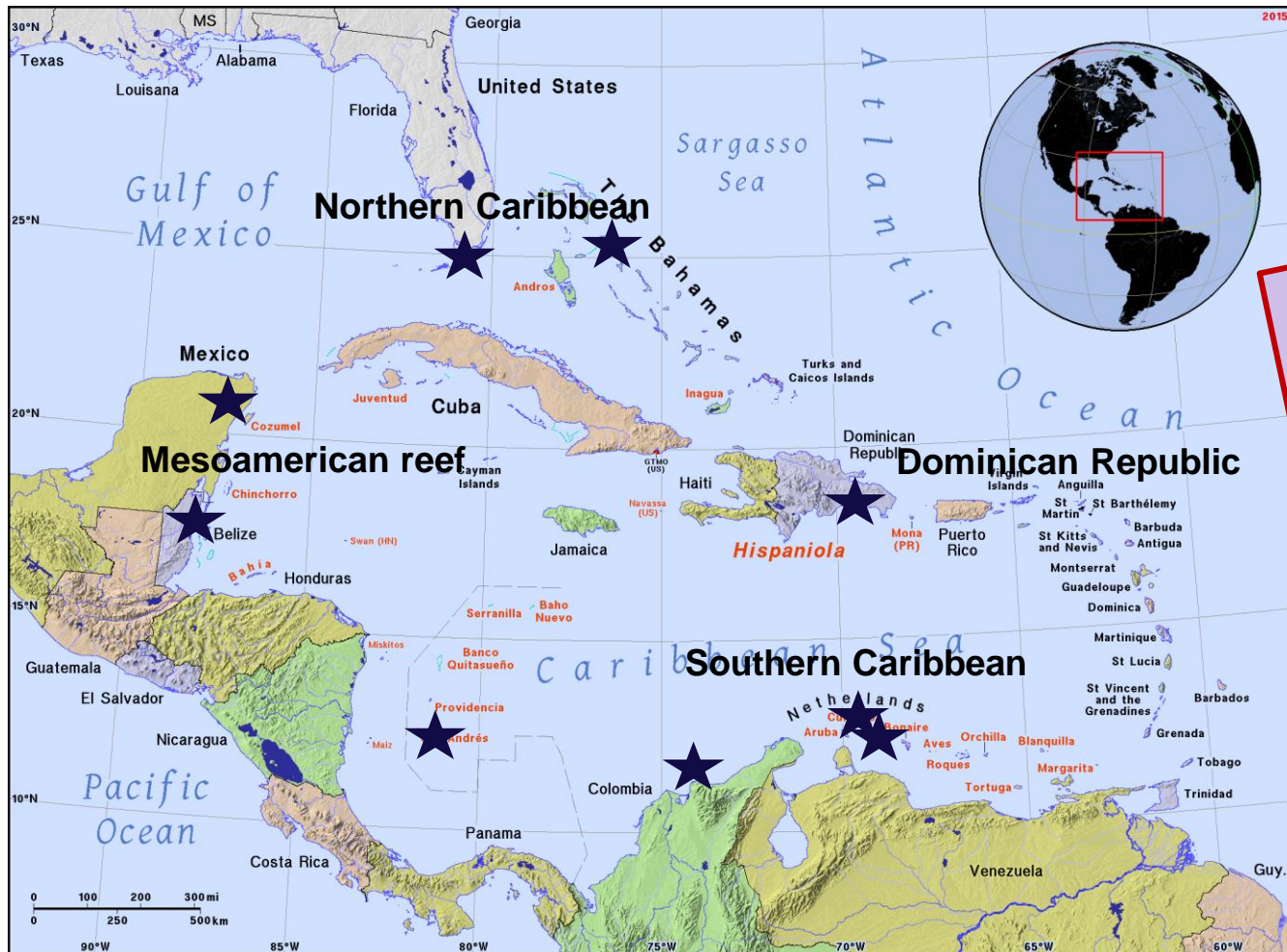
Photo credit: B. Mueller

Prediction:

- Expected between 4-6 days AFM, and likeliest 5 days AFM.
- Likeliest between 210-280 min AS, corresponding to 21:40-23:00 on Curaçao.

To make sure you observe this species:

- Start diving the latest on October 18 until at least October 20th (a day earlier is even better!).
- Be at your monitoring site the latest at 21:25.




We are lacking
 information for
 multiple parts of
 the Caribbean.

We need your help
 to collect new
 spawning
 observations.

Monitoring coral spawning

**Make sure you
have the right
time!**



 Current Local Time in Willemstad, Curaçao

ENLARGE



9:16:16 am AST
Thursday, June 7, 2018

Country:	Curaçao
Lat/Long:	12°06'N / 68°56'W
Currency:	Netherlands Antillean Guilder (ANG)
Languages:	Dutch, Papiamentu, English
Dial Codes:	+599 - See how to dial >



**Time stamps on
your pictures can
help corroborate
some of your notes.**

Data entry - Templates

Full version available at: <http://crc.reefresilience.org/working-groups/larval-propagation/>

File name: **Coral_Spawning_Data_TEMPLATE**

Spawning Monitoring - underwater slate template

Date:	<u>20190921</u>	# of days AFM:*	<u>+7</u>
Country:	<u>Curaçao</u>	Sunset time:*	<u>1823</u>
Site:	<u>Holiday Beach</u>	Focal species monitored:	<u>Cnatans, Mcavernosa</u>
Depth range:	<u>5-10 m</u>	Other species monitored:	<u>Pstrigosa</u>
Area (m ²):	<u>10 x 50 m</u>	Monitoring start:	<u>1850</u>
Observer(s):	<u>Chamberland Villalpando</u>	Monitoring stop:	<u>2025</u>
		Additional notes:	<u>extremely rough sea</u>



Hermaphroditic species	# of colonies monitored	# of colonies that spawned	Time setting started	Time spawning started	Time spawning stopped	Individual spawning times per colony (if available)										
<i>Cnatans</i>	16	10	1915	1915	1940	1915	1915	1921	1924	1924	1928	1933	1934	1935	1937	
<i>Pstrigosa</i>	8	0	.	.	.											
Gonochoric species	# of colonies monitored (total)	# of colonies that spawned	Time setting started	Time spawning started	Time spawning stopped	Individual spawning times per colony (if available)										
<i>Mcavernosa</i> MALE	12	4	.	1905	2020	1905	1908	1948	2019							
<i>Mcavernosa</i> FEMALE		0	.	.	.											
MALE																
FEMALE																
MALE																
FEMALE																
MALE																
FEMALE																

* # days After Full Moon and Sunset times can be found at www.timeanddate.com/astronomy/

* MALE colonies typically spawn earlier than FEMALE colonies

Take pictures!

- Especially if you are not sure which species it is that you are seeing spawn.
- Of your team's underwater slates to save your data.

Data entry - Templates

Full version available at: <http://crc.reefresilience.org/working-groups/larval-propagation/>
File name: **Coral_Spawning_Data_TEMPLATE**

The Coral Restoration Consortium's working group on Larval Propagation is currently compiling coral spawning data in a pre-set format. You can find this template at <http://crc.reefresilience.org/working-groups/larval-propagation/> If you have questions about this spreadsheet please contact Valérie Chamberland at v.chamberland@secore.org

Year	Month	Day	Number of days After Full Moon	Location	Site	GPS coordinates (latitude)	GPS coordinates (longitude)	Depth (in m)	Approximative area monitored (in m)	Observer(s)
2018	July	25	-2	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 50	Evan Culbertson
2018	July	25	-2	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 150	Valérie Chamberland, Evan Culbertson
2018	July	25	-2	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	25	-2	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	26	-1	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 50	Evan Culbertson
2018	July	26	-1	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 150	Valérie Chamberland, Evan Culbertson
2018	July	26	-1	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	26	-1	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	27	0	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 100	Illiana Baums, Evan Culbertson
2018	July	27	0	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 200	Valérie Chamberland, Illiana Baums, Evan Culbertson
2018	July	27	0	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	27	0	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	28	1	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 100	Illiana Baums, Evan Culbertson
2018	July	28	1	Curaçao	Curaçao Sea Aquarium	12° 4'59" N	68° 53'43" W	0-10	20 x 200	Valérie Chamberland, Illiana Baums, Evan Culbertson
2018	July	28	1	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters
2018	July	28	1	Curaçao	CRF nurseries	12° 5'7" N	68° 53'57" W	0-10	10 x 20	Kelly Latijnhouters

Save and share your precious coral spawning observation data (+ and -)!

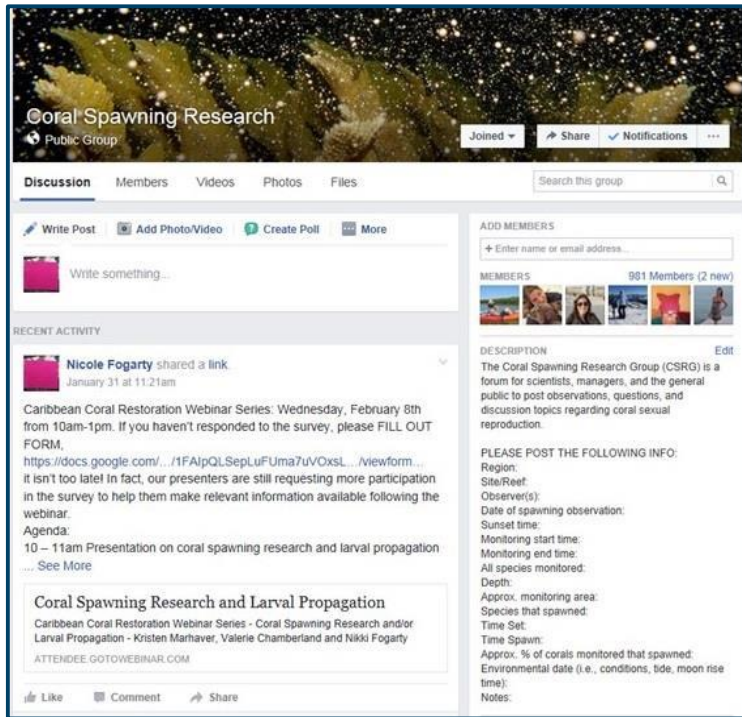
Data points when no spawning occurred are as important as those when spawning was observed!

If you have not sent us your spawning observations from last year(s), please do so at your earliest convenience at v.chamberland@secore.org

Spawning observations: share with our community!

The Coral Spawning Research Group (CSRG) is a Facebook Group for scientists, managers, and the general public to post observations, questions, and discussion topics on coral sexual reproduction.

**Nearly 1500
members!**



Coral Spawning Research
Public Group

Joined ▾ Share ▾ Notifications ▾

Discussion Members Videos Photos Files Search this group

Write Post Add Photo/Video Create Poll More

Write something...

RECENT ACTIVITY

Nicole Fogarty shared a link
January 31 at 11:21am

Caribbean Coral Restoration Webinar Series: Wednesday, February 8th from 10am-1pm. If you haven't responded to the survey, please **FILL OUT FORM**.
<https://docs.google.com/.../1FAIpQLSepLUFUma7uVOxSL.../viewform...>
it isn't too late! In fact, our presenters are still requesting more participation in the survey to help them make relevant information available following the webinar.
Agenda:
10 – 11am Presentation on coral spawning research and larval propagation
... See More

Coral Spawning Research and Larval Propagation
Caribbean Coral Restoration Webinar Series - Coral Spawning Research and/or Larval Propagation - Kristen Marhaver, Valerie Chamberland and Nikki Fogarty
ATTENDEE.GOTOWEBINAR.COM

Like Comment Share

ADD MEMBERS
Enter name or email address...

MEMBERS 981 Members (2 new)

DESCRIPTION Edit
The Coral Spawning Research Group (CSRG) is a forum for scientists, managers, and the general public to post observations, questions, and discussion topics regarding coral sexual reproduction.

PLEASE POST THE FOLLOWING INFO:
Region:
Site/Reef:
Observer(s):
Date of spawning observation:
Sunset time:
Monitoring start time:
Monitoring end time:
All species monitored:
Depth:
Approx. monitoring area:
Species that spawned:
Time Set:
Time Spawn:
Approx. % of corals monitored that spawned:
Environmental data (i.e., conditions, tide, moon rise time):
Notes:

**PLEASE RECORD + SHARE THE FOLLOWING
DETAILS OF YOUR SPAWNING OBSERVATIONS**

Region:

Site/Reef:

Observer(s):

Date of spawning observation:

Sunset time:

Monitoring start time:

Monitoring end time:

All species monitored:

Depth:

Approx. monitoring area:

Species that spawned:

Time Set:

Time Spawn:

Approx. % of corals monitored that spawned:

Environmental data (i.e., conditions, tide, moon
rise time, wind speed):

Notes:

Don't forget!

Any questions? Please ask
v.chamberland@secore.org

Remember to use your
sun/moon data from
your precise location

Make sure you
have the right
time!

If you have not sent us your
spawning observations from
last year(s), please do so at
your earliest convenience at
v.chamberland@secore.org

Dive safely!

Take pictures of coral
spawning, especially if you
are not sure what species it is
that you are seeing spawn.

Your observations
help coral research!
Please report!

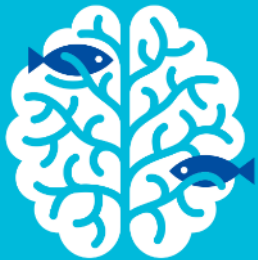
We are lacking information
for multiple parts of the
Caribbean. We need your help
to collect new spawning
observations.

Predictions remain predictions!
Variation exists between years,
regions and sites, and it is best
practice to dive a few days ahead
from the 1st predicted spawning
day, and to start monitoring
colonies at least 15 min before
the predicted spawning time.

Take pictures of your data
sheets after diving to ensure
data is not lost.

Don't hesitate to dive
outside known
spawning windows.
That is how new
cool/weird/useful
observations are
made!

Time stamps on
your pictures can
help corroborate
some of your notes.



Coral
Restoration
Consortium

*The CRC wishes you a Happy
2019 Coral Spawning Season!*