



# EO to support Barbados Fisheries

Plenary session #1 - Fisheries



## Shelly-Ann Cox

*Fisheries Management Specialist  
Founder and CEO Blue Shell  
Productions  
Barbados, West Indies*

5<sup>th</sup> Symposium | Accra, Ghana | 24 – 28 October 2022

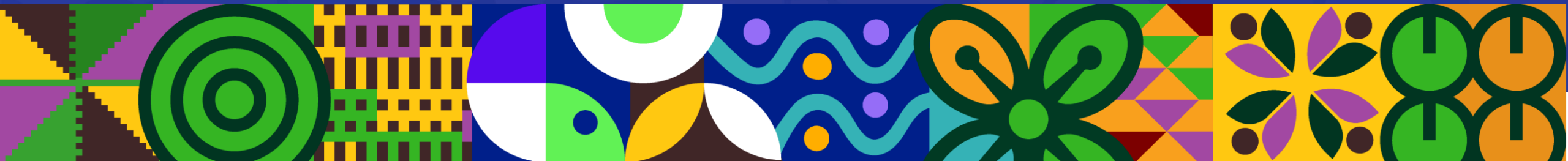


5<sup>th</sup> Symposium | Accra, Ghana | 24 – 28 October 2022



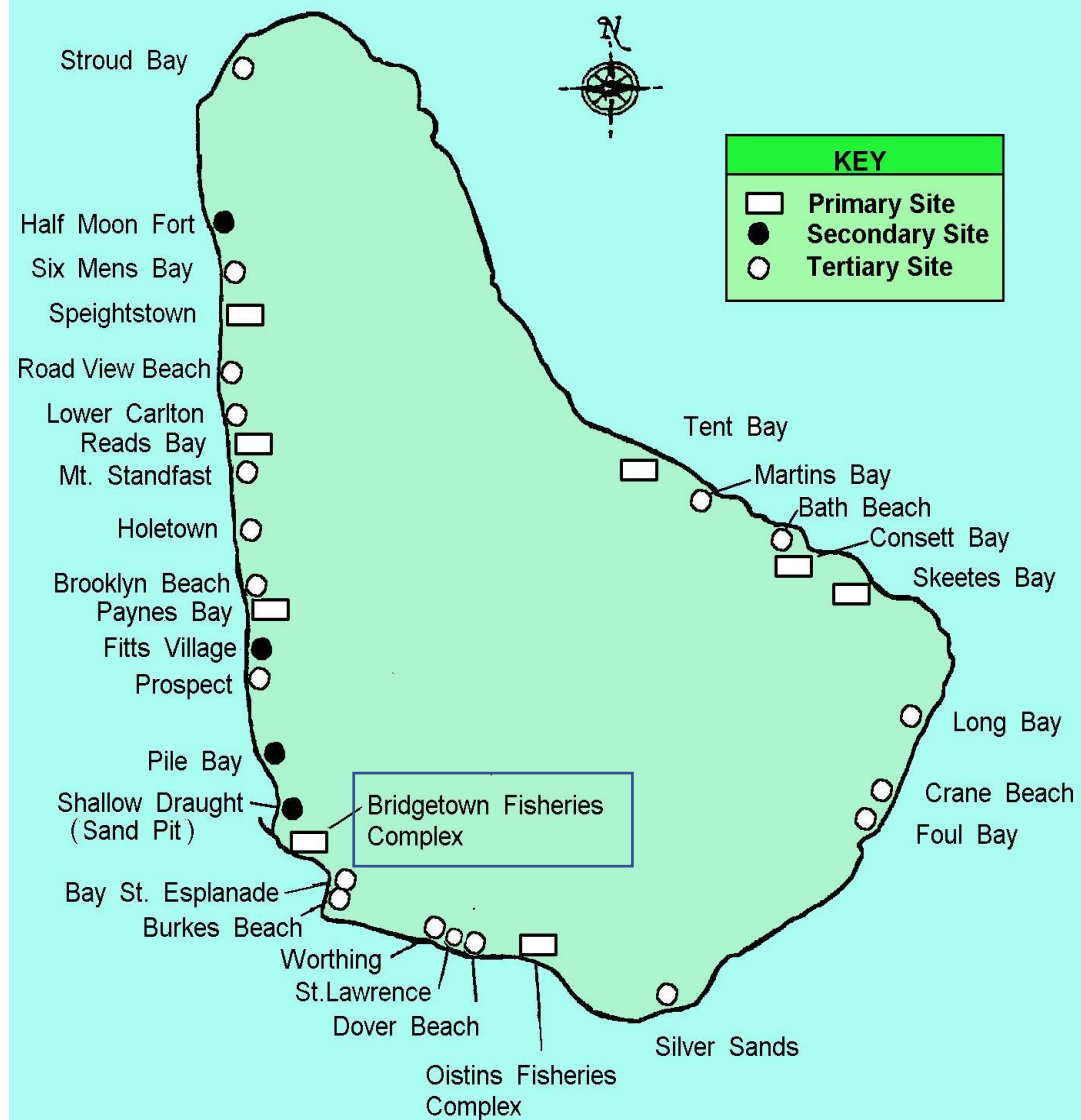
# Earth Observations to support Barbados Fisheries

Dr. Shelly-Ann Cox, Blue Shell Productions



























## Announcement

HEAT STRESS CONDITIONS NOW PREDICTED TO BE AT BLEACHING LEVELS THROUGHOUT THE CARIBBEAN FROM OCTOBER TO DECEMBER.



REPORT CORAL BLEACHING OBSERVATIONS



THE UNSEEN DRIVERS OF CORAL HEALTH: CORAL MICROBIOME: THE HOPE FOR EFFECTIVE CORAL RESTORATION



RETURN ON INVESTMENT FOR MANGROVE AND REEF FLOOD PROTECTION

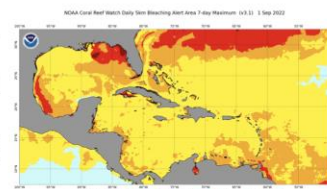


## CARIBBEAN CORAL REEF WATCH



## Notable Observations

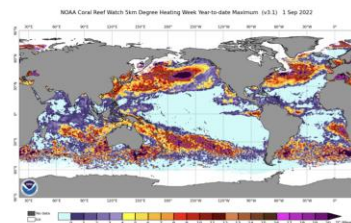
- Entire region currently under bleaching watch or warning conditions.
- Parts of Florida, Northern Bahamas, and Trinidad and Tobago experiencing Alert Level 1 conditions.
- Waters in the region continue to warm entering what are considered the warmest months of the year, in September and October.



[Click here to track current conditions](#)

## Current Global Conditions

- Bleaching Alert Level 1 conditions existing N. Mariana Is., Paracel Is. (China), Al Madinah and Makkah, Gulf of Aqaba, and Egypt.
- Bermuda, Veracruz (Mexico), NW. Hawaiian Is., N. Ryukyu Is., Dongsha, Hong Kong, Hainan Is., W. Persian Gulf, Bahrain, Tabuk (Saudi Arabia), and Northern Vietnam under Alert Level 2.



CARIBBEAN CORAL REEF WATCH

## Alert Level Guide

Alert Level	Interpretation
No Stress	No Thermal Stress
Watch	Low-level thermal stress
Warning	Thermal stress is accumulating
Alert level 1	Bleaching expected
Alert level 2	Widespread bleaching and some mortality expected

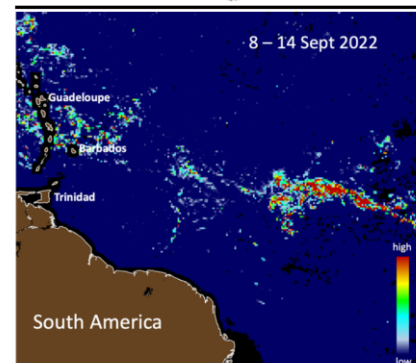
1

# SARGASSUM

## SUB-REGIONAL OUTLOOK BULLETIN

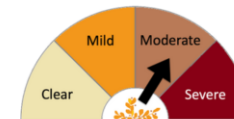


SEPT 2022 | VOL 2 | ISSUE 6



### SARGASSUM INFLUX EVENTS WILL BE MILD TO MODERATE OVER THE NEXT 3 MONTHS (SEPT-NOV 2022)

- The Eastern Caribbean islands experienced moderate to severe sargassum influxes in the third quarter of 2022. [\(Click here to view photos\)](#)
- The level of sargassum arriving is moderate and is expected to decrease in the coming weeks.
- There is 34% more sargassum visible out in the Atlantic than this time last year, more than seen in 2018, the worst year to date.



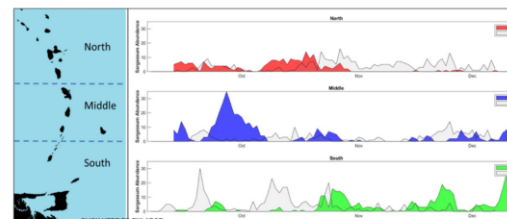
Sargassum abundance intensity level (based on image 8 - 14 September 2022)

Sargassum image sourced from Optical Oceanography Laboratory USF. Click on picture above to access the source image. The map above is a satellite image processed to show sargassum abundance over a 7-day period. Warm colours represent high sargassum abundance. Sargassum Watch System (SaWS) website: <https://optics.marine.usf.edu/projects/saws.html>

## CURRENT OUTLOOK (SEPT-NOV 2022)

Overall, the islands of the Eastern Caribbean can expect mild to severe influxes over the next 3 months. Compared with last year (grey) the northern islands will likely get slightly higher influxes in October, but less for the rest of the year, whilst the middle islands can expect much more in late Sept-Oct than last year.

- Northern islands** are set to receive moderate influxes from now until the end of October, when influxes are expected to decrease to mild levels.
- Middle islands** will experience moderate to severe influxes until early October, when levels are expected drop to mild until December when sargassum will start building up again.



- Southern islands** are expected to receive mild to moderate influxes of sargassum from now through late October and then several moderate peaks through early November to mid December.



# Technology and the Blue Economy

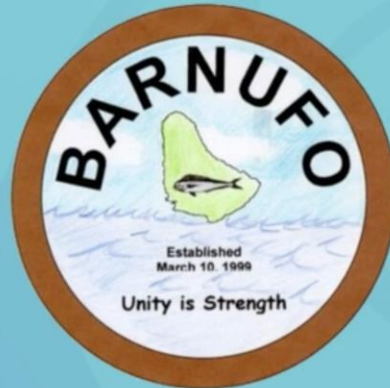




*Blue Shell*  
PRODUCTIONS

# Project **Digifish**

Collaborators



**PELAGIC**  
data systems





Blue Shell  
PRODUCTIONS



30 DEVICES INSTALLED  
ON SMALL SCALE VESSELS IN BARBADOS





*Blue Shell*  
PRODUCTIONS



Solar Powered Unit

Lightweight

Easy to install





M172

REPENT

MARDRESACH

UBC





 Shelly-Ann Cox  
Customer

**FILTER**

 Search

Customers:  
**BARNUFO;**






## DEVICES

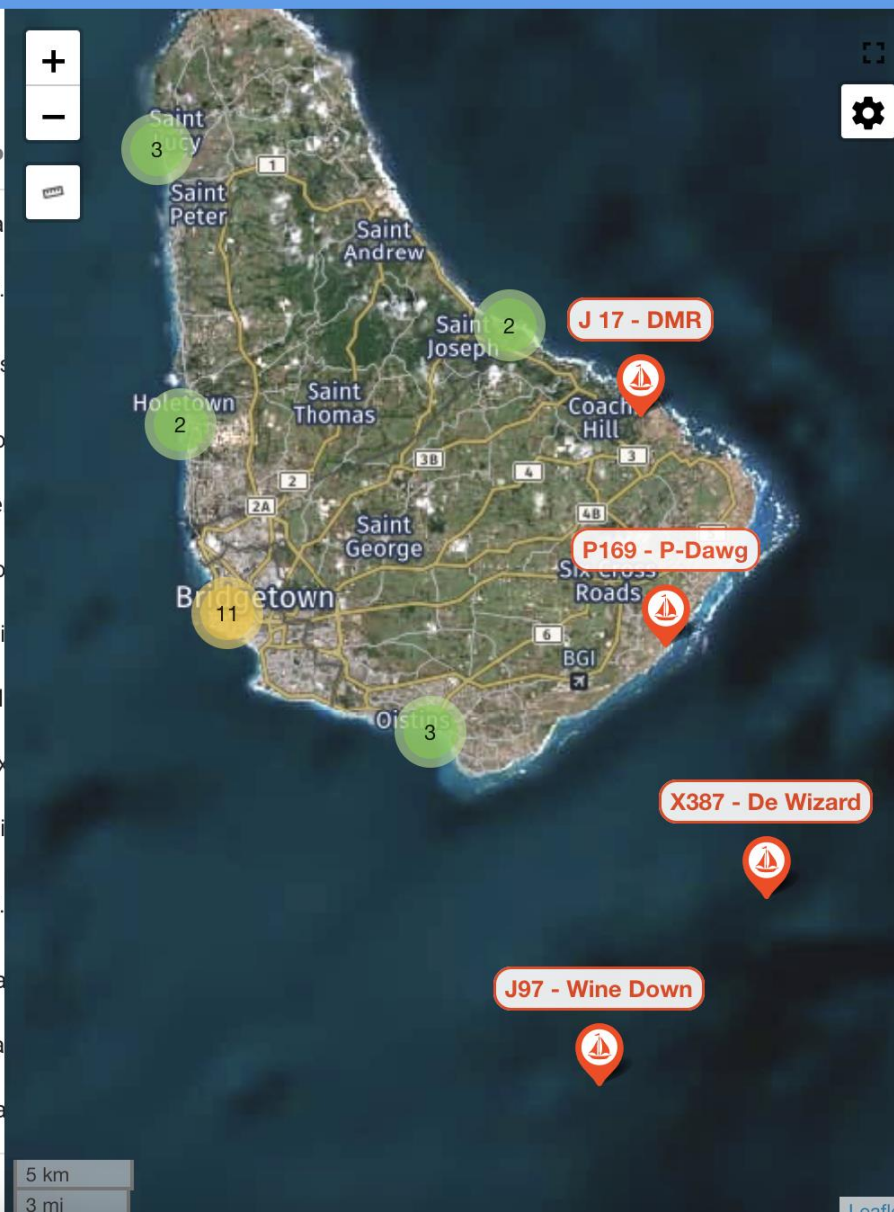
## BOATS

## TRIPS

## ALERTS

MANAGEMENT

Boat	Captain	Battery	Last Seen	IMEI	Entity		
M449 - Pay Day 2	--	Good	<a href="#">2022.09.27 19:50:15</a>	861508039397567	BARNUFO		Sa
P169 - P-Dawg	--	Good	<a href="#">2022.09.27 15:12:47</a>	861508039410154	BARNUFO		St
O49-Harmony old	Ambition			Uninstalled	BARNUFO		Oi
J97 - Wine Down	--	More Sun Needed	<a href="#">2022.09.27 15:55:49</a>	861508039405402	Gary Marshall		Co
O76 - 4 boys	--	Good	<a href="#">2022.01.23 12:17:31</a>	862117029058913	Arley Nicholls		Te
J82 - Both Worlds	--			861508039414552	Allan Bradshaw		Co
P16 - De Boys	Nuff Cash	Good	<a href="#">2022.09.27 22:10:47</a>	861508039386057	BARNUFO		Br
M30 - Brothers	--	Good	<a href="#">2022.09.27 16:36:55</a>	861508039424247	Alvin Chapman		Pil
S43 - Eye in Dat	--	Good	<a href="#">2022.09.27 18:58:52</a>	861508039376082	BARNUFO		Six
M100-Pharoah	--	Good	<a href="#">2022.09.27 14:07:17</a>	861508039416664	Francois 'Joey' Ellis		Br
X476 - Brave Heart 2	--	Good	<a href="#">2022.09.27 10:53:09</a>	861508039413745	William Brewster		St
L122 - Cherika	--	Good	<a href="#">2022.09.27 07:53:35</a>	861508039409073	Dave Jackson		Ha
S7 - Rocky 2	--	Good	<a href="#">2022.09.28 03:07:05</a>	861508039363486	Peter Moore		Pa
L119 - DeHetty	--	More Sun Needed	<a href="#">2018.10.29 04:51:54</a>	861508039403019	BARNUFO		Ha







🔍 Search

MANAGEMENT

Co

BATTERY	Good
TRIPS COUNT	<a href="#">137</a>
IMEI	862117020187430
INSTALL DATE	2022.01.27



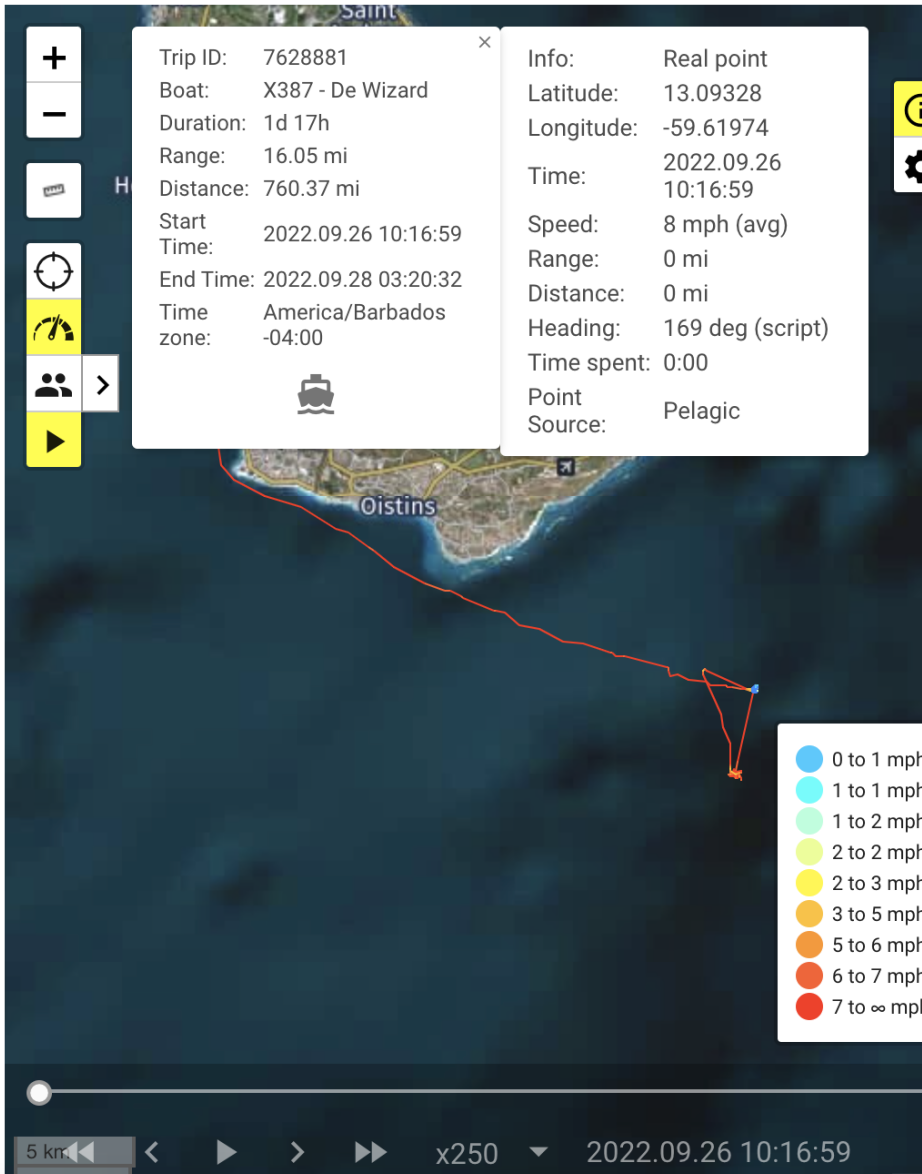
FILTER

Customers:  
**BARNUFO;**

DATE RANGE  
21 - 28 Sep 2022 ▼

- DEVICES
- BOATS
- TRIPS
- ALARMS
- CUSTOMERS

<input type="checkbox"/>	Boat	Captain	Start	End	Duration	Distance	Range
<input checked="" type="checkbox"/>	X387 - De Wizard	--	2022.09.26 10:16:59	2022.09.28 03:20:32	1d 17h	760.37 mi	16.05 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.26 04:53:14	2022.09.26 08:58:45	4h 5m	26.81 mi	8.77 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.25 04:54:06	2022.09.25 08:11:03	3h 16m	22.88 mi	6.22 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.24 08:15:00	2022.09.24 08:44:38	29m 38s	3.55 mi	3.08 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.24 04:41:59	2022.09.24 08:06:01	3h 24m	23.44 mi	7.51 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.23 13:35:57	2022.09.23 17:02:32	3h 26m	22.53 mi	11.84 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.19 11:50:30	2022.09.21 08:11:01	1d 20h	146.5 mi	15.01 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.16 12:39:20	2022.09.17 09:54:32	21h 15m	61.41 mi	9.75 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.14 08:49:01	2022.09.16 06:01:12	1d 21h	100.05 mi	15.94 mi
<input type="checkbox"/>	X387 - De Wizard	--	2022.09.14 05:23:26	2022.09.14 07:47:08	2h 23m	16.18 mi	8.25 mi





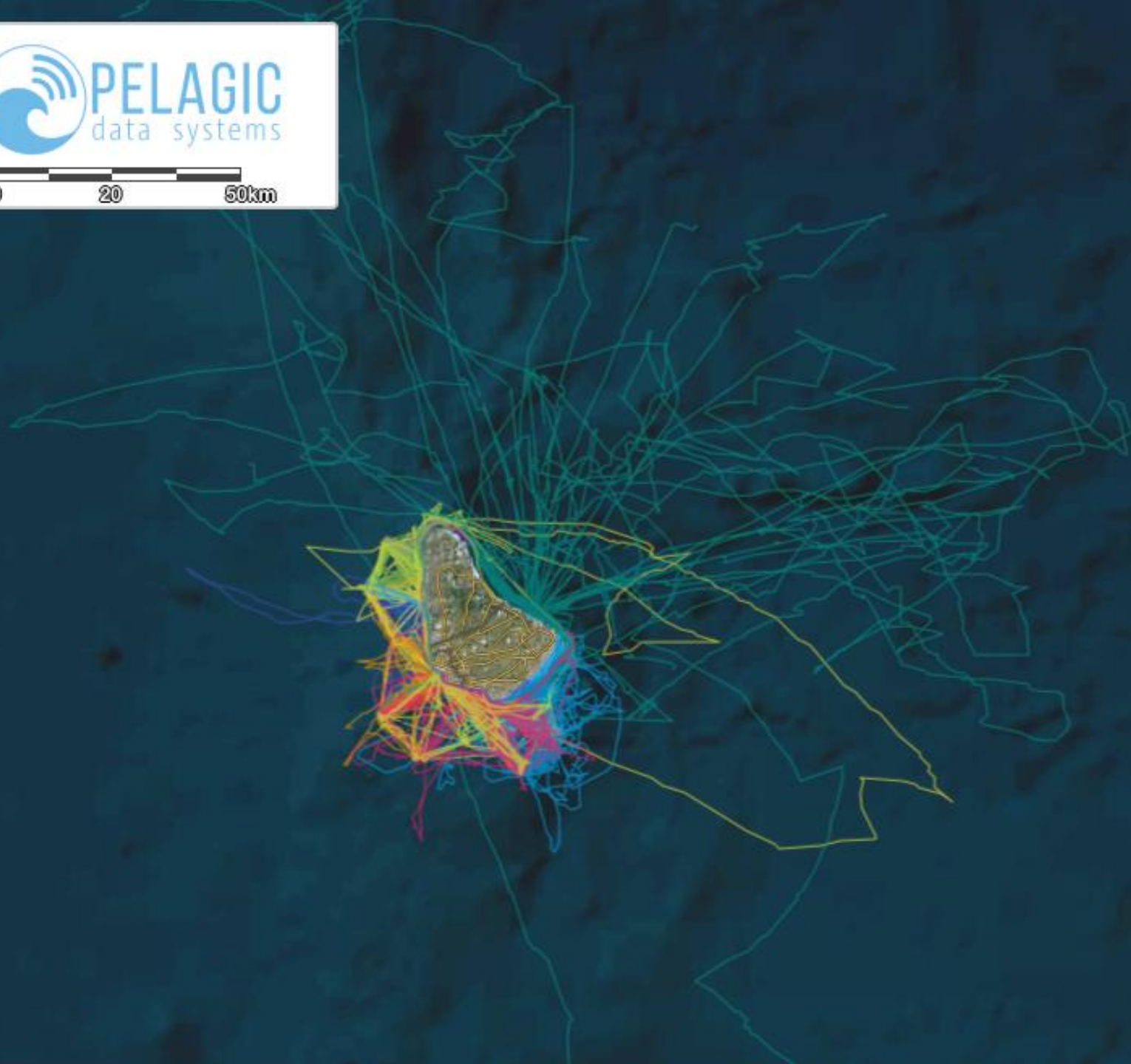
# Trips by Community

01 Jan 2022 - 30 Aug 2022

Trips - 1868



- Paynes Bay
- Pile Bay
- Weston
- Half Moon Fort
- Oistins
- Port St Charles
- Sand Pit
- Conset Bay
- St. Lawrence
- Holetown
- Tent Bay
- Bridgetown
- Six Men's Bay





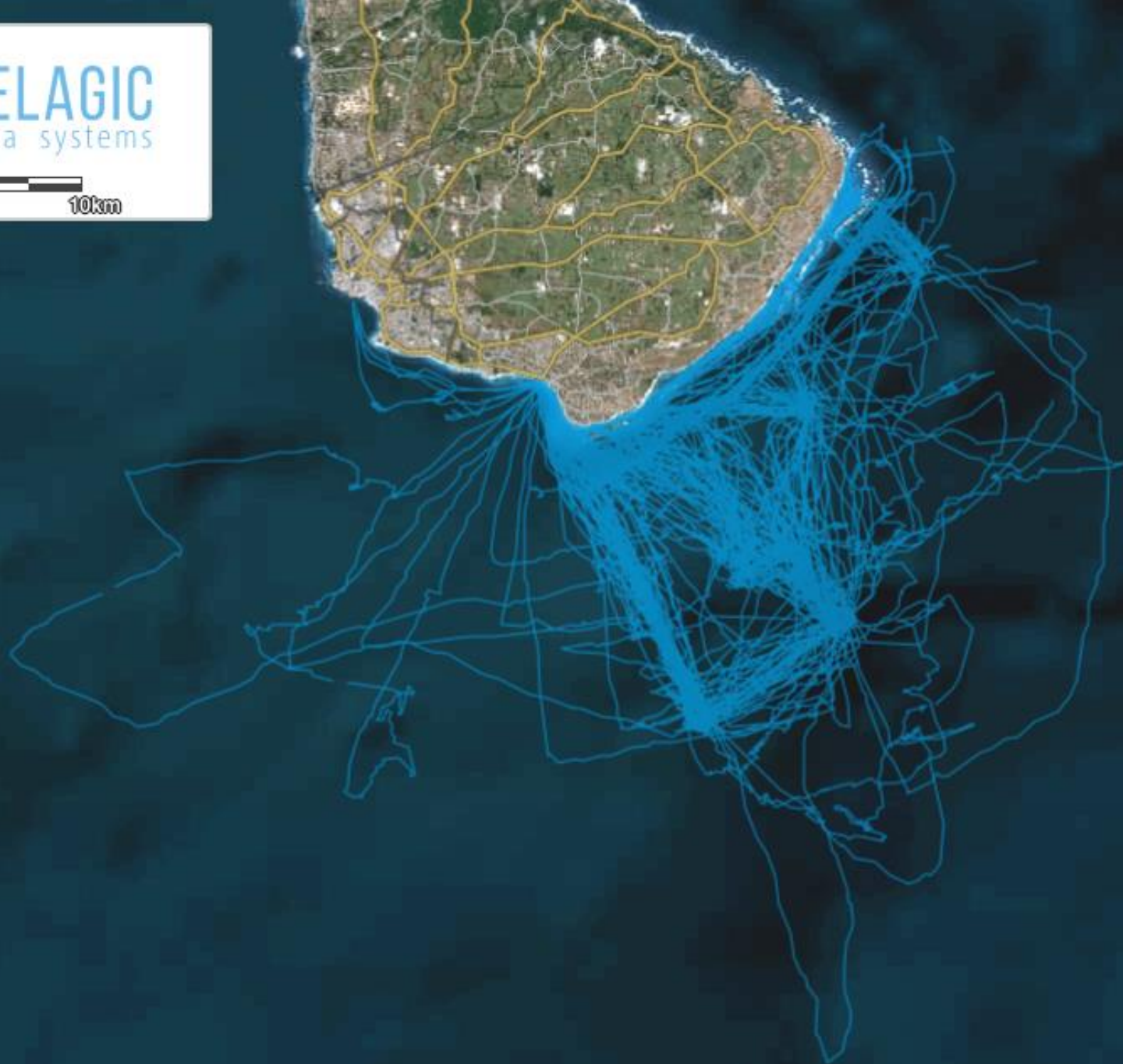
# Oistins Trips

01 Jan 2022 - 30 Aug 2022

Trips - 1868



Oistins





# Trips by Fisher

01 Jan 2022 - 30 Aug 2022

Trips - 1868



- S7 - Rocky 2
- M511 - Bleacher
- M30 - Brothers
- X387 - De Wizard
- L122 - Cherika
- X199 - Lorenza 2
- M201 - Papa Louis
- M172 - Repent
- X188 - Reel Time
- J97 - Wine Down
- X476 - Brave Heart 2
- E135 - #1Guess Star
- L109 - Third time
- S64 - Brad
- O49- Harmony
- P169 - P-Dawg
- O34 - Amalie
- M100- Pharoah
- M449 - Pay Day 2
- X306 - Gracias
- S43 - Eye in Dat
- O80 - Lady Ruth #3
- P16 - De Boys



# Fishing Effort

20 Jan 2022 - 30 Aug 2022

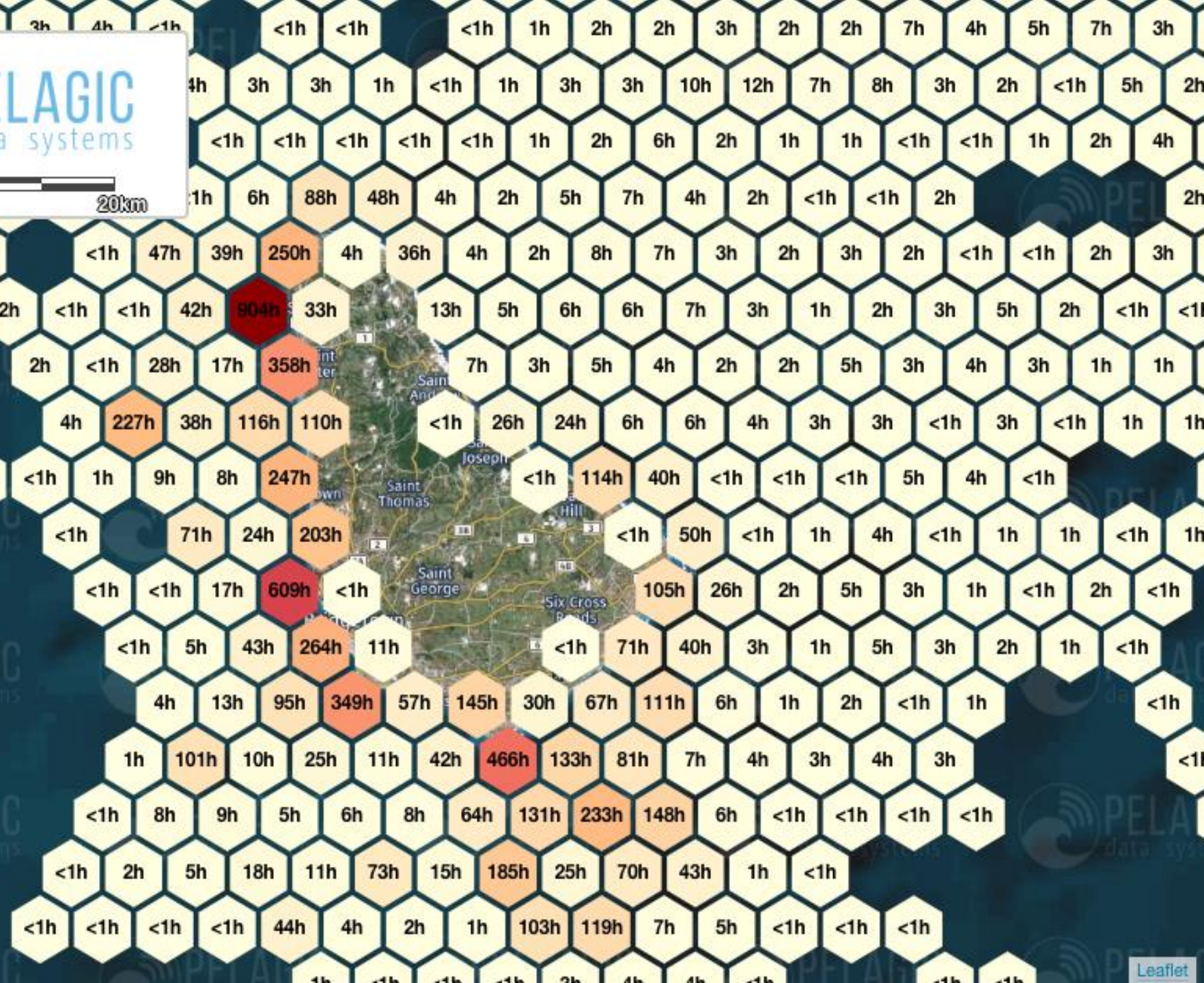
Trips - 1866



## Hours



= 9.9 km<sup>2</sup>



# Future Developments

- Installation of an additional 30 PDS units on small vessels
- Installation of 40 Satellite VMS onboard active longline vessels
- Location data can be integrated with catch and effort data using an e-logbook app to calculate and visualise Catch Per Unit Effort (CPUE)
- Other applications including marine spatial planning, FAD monitoring, turtle conservation and a paper-per-use vessel insurance scheme will be explored
- Satellite imagery to inform smart fishing practices by the longline fleet.



## Excerpt from the Poem 'Sea Fare'

Remember all the ways  
That our practices prioritise sustainability  
Thriving on renewable energy  
Marrying fish and efficiency  
And what horizons could we reach  
And what adventures could we have  
At the intersection of the old ways and the new  
What we could do where innovation  
Isn't a replacement for instinct  
But an extension of the way we already think

(© Cyndi Celeste 2022)





Thank You.  
Medaase.  
Oyiwaladon.