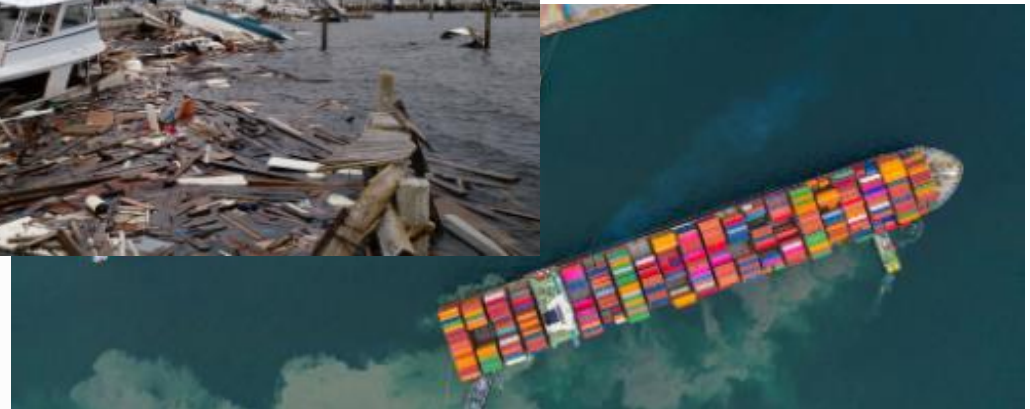


# One Integrated Marine Debris Observing System for a Clean Ocean

Satellite Activity of Ocean Decade Laboratory :  
A Clean Ocean



## Extremes events and monitoring





## - Cascading



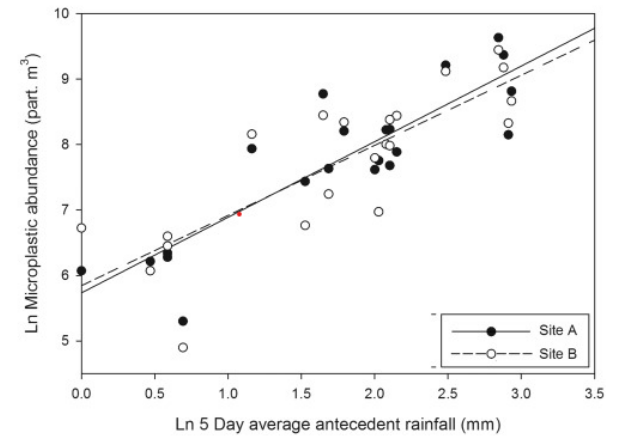
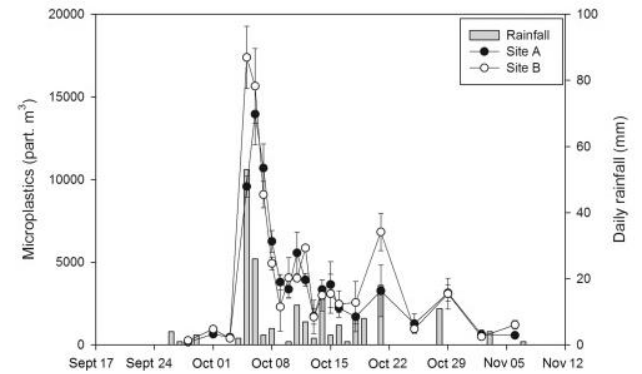
# flooding



OUEDS/WADIs, <https://www.webdo.tn>



## Hitchcock, 2020







France/ Normandy



Lebanon



1996,Spain/ la Coruna

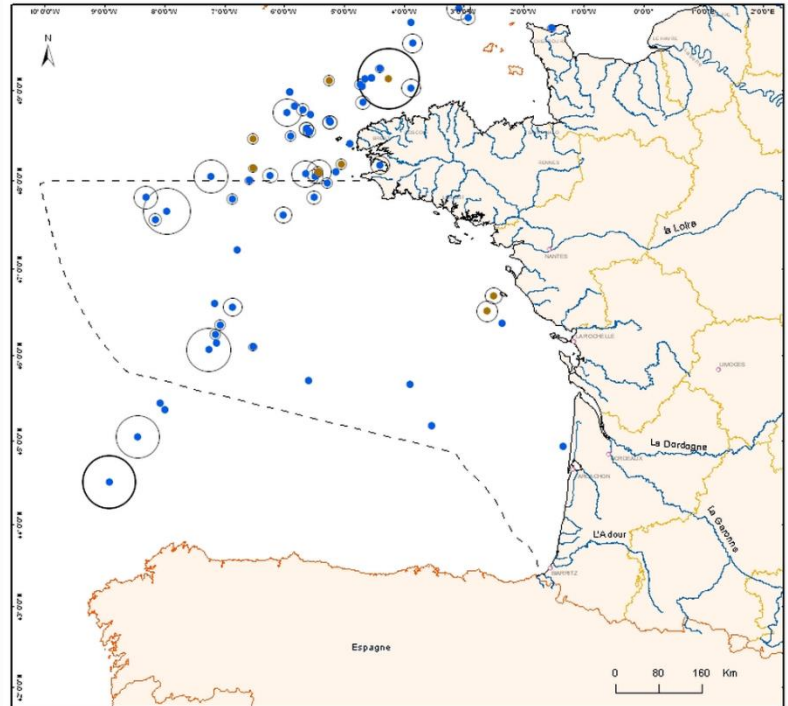


## Coastal Discharges



# Accidental events/containers

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# Hurricanes



Noaa

## Removing Hurricane Debris from Florida's Coral Reefs



<https://www.weathernationtv.com>



Mexico 2021/<https://fr.123rf.com>



# Natural events/ tsunami

REPORT

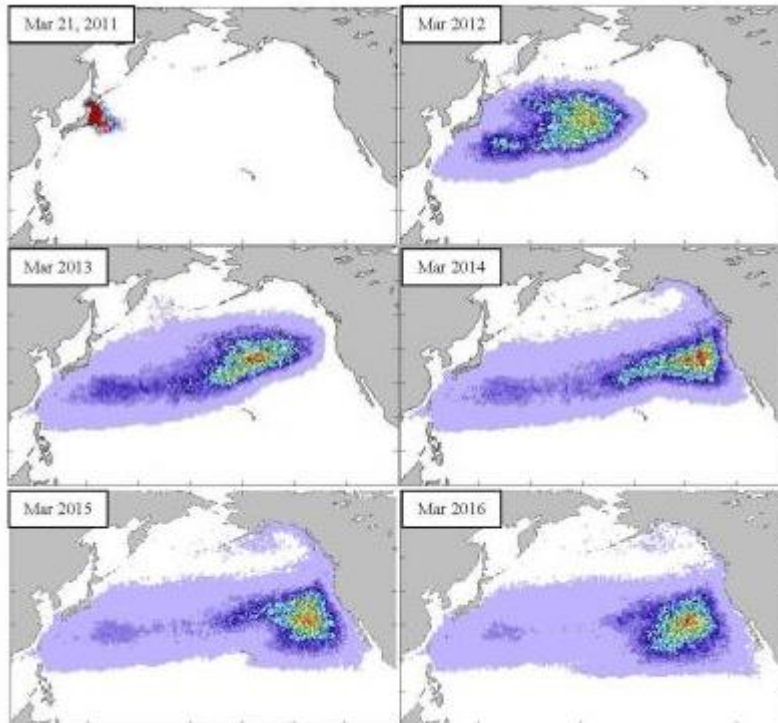
## Tsunami-driven rafting: Transoceanic species dispersal and implications for marine biogeography

James T. Carlton<sup>1,2\*</sup>, John W. Chapman<sup>3</sup>, Jonathan B. Geller<sup>4</sup>, Jessica A. Miller<sup>3</sup>, Deborah A. Carlton<sup>1</sup>, Mega...

\* See all authors and affiliations

Science 29 Sep 2017  
Vol. 357, Issue 6358, pp. 1402-1406  
DOI: 10.1126/science.aao1498

Univ. Hawaii



#5 millions tons of debris at sea (MoEJ), 70% Bottom/ 30% floating  
A 110 km long area/ 1 month with navigation forbidden

<https://www.env.go.jp/en/focus/docs/files/20120901-57.pdf>

# Monitoring the impacts of extreme events on plastic pollution?

- **Cascading:** inventory/mapping of high accumulation areas in the deep sea
  - **Flooding:** evaluation/ prediction of inputs / dispersion
  - **Mapping coastal discharge**
  - **Lost containers:** satellite detection / visual & tagging
  - **Hurricanes:** estimation of fluxes/ Dispersion of debris at sea
  - **Tsunamis:** Dispersion of debris at sea
  - **A regular monitoring of species rafted by plastic /microplastics is needed**
- 

## Take home messages:

- **Extreme events may bring annually more plastic than regular inputs**
- **Satellite may help to monitor the impact of plastic pollution**

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Thank you