Understanding Bioluminescent Bay's Inorganic Carbon Dynamics

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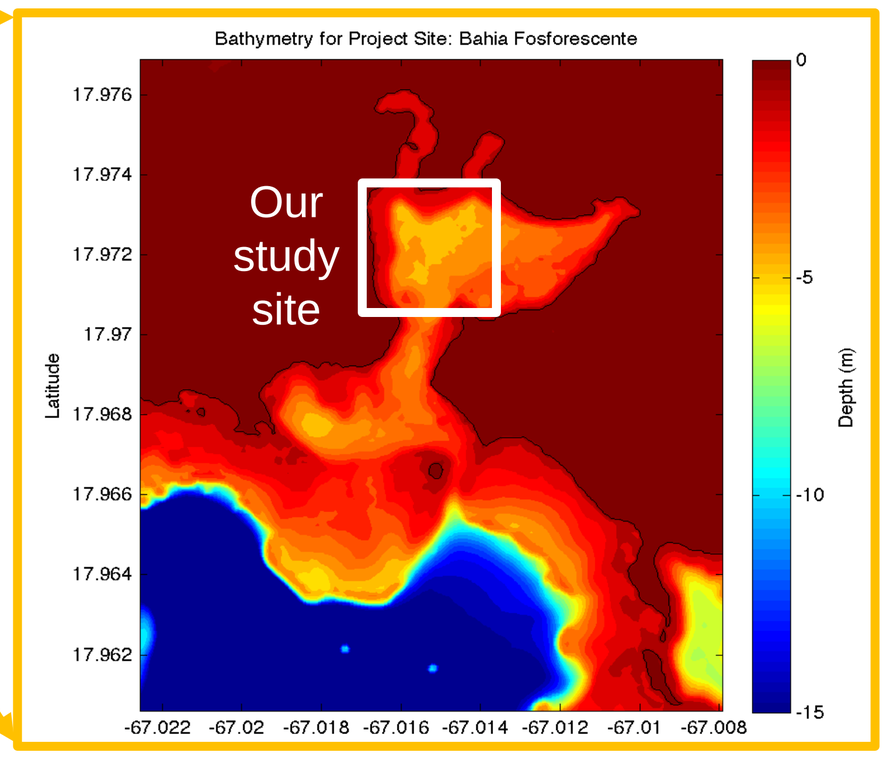
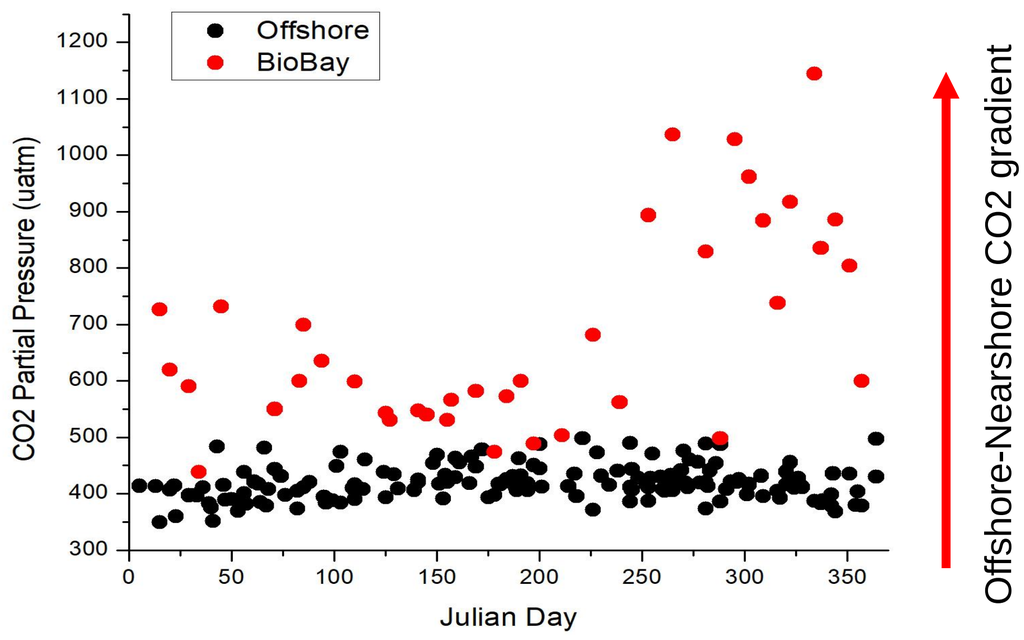
What's the latest news regarding CO_2 dynamics at La Parguera? Take a look at Meléndez et al.: *Corals at the breaking point*





RESEARCH TIMEFRAME: 2014-2018

1. **BioBay** (approx. 9AM): **biology dominated** CO_2 dynamics (higher CO_2!)

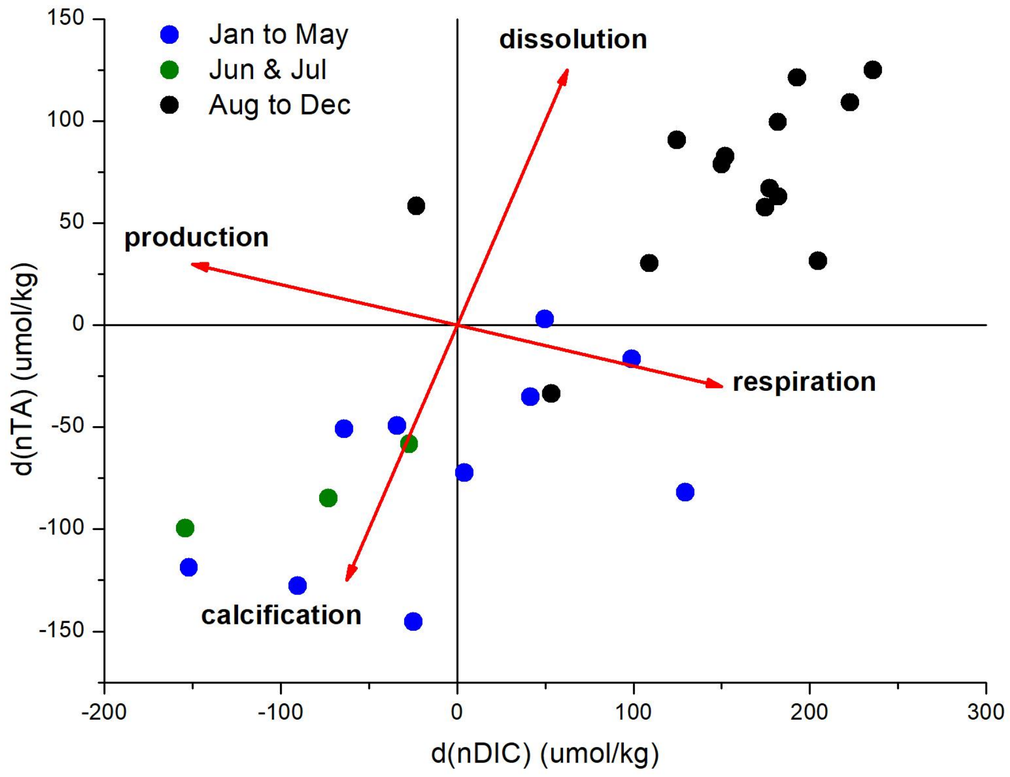
2. **Offshore** (approx. 8AM): **air-sea flux dominated** CO_2 dynamics

Other controls (non-dominant):

- **horizontal mixing**
- **solubility**

Motivation: Hotspot or refugee?

1. High CO_2 concentrations can magnify ocean acidification (hotspot).
2. But, recent evidence suggests otherwise (refugee).
3. Which one is BioBay?



Plot: *normalized TA vs normalized DIC* (difference between BioBay & offshore)

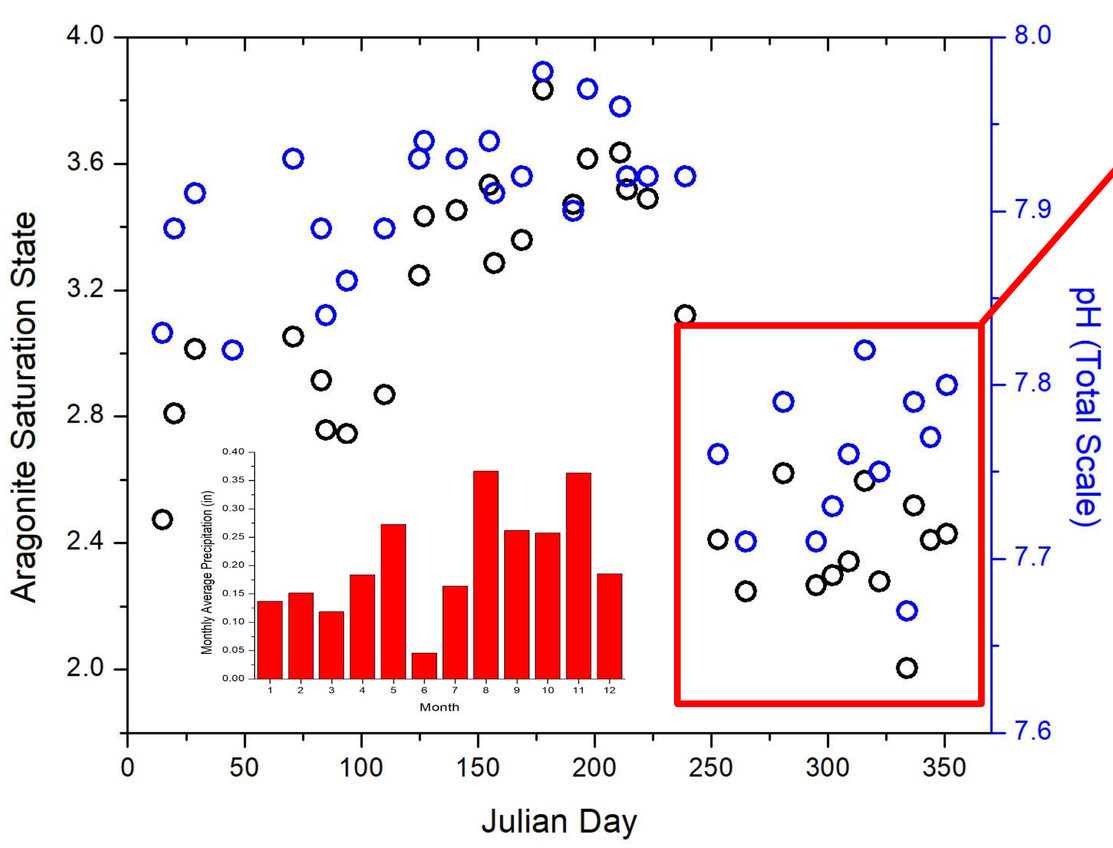
Favorable conditions: dry season (Jan-Jul)

- calcification

Critical conditions: fall rainy season (Aug-Dec)

- dissolution

*Respiration dominates (heterotrophic nature!)



Critical conditions mentioned above backed up by pH & Omega values!

What does this mean?

1.Favorable/unfavorable conditions might fluctuate seasonaly at mangrove ecosystems.
2. Hence, refugee/hotspot status might by controlled by various variables including: seasons, time, latitude, geography, microclimate, others...

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