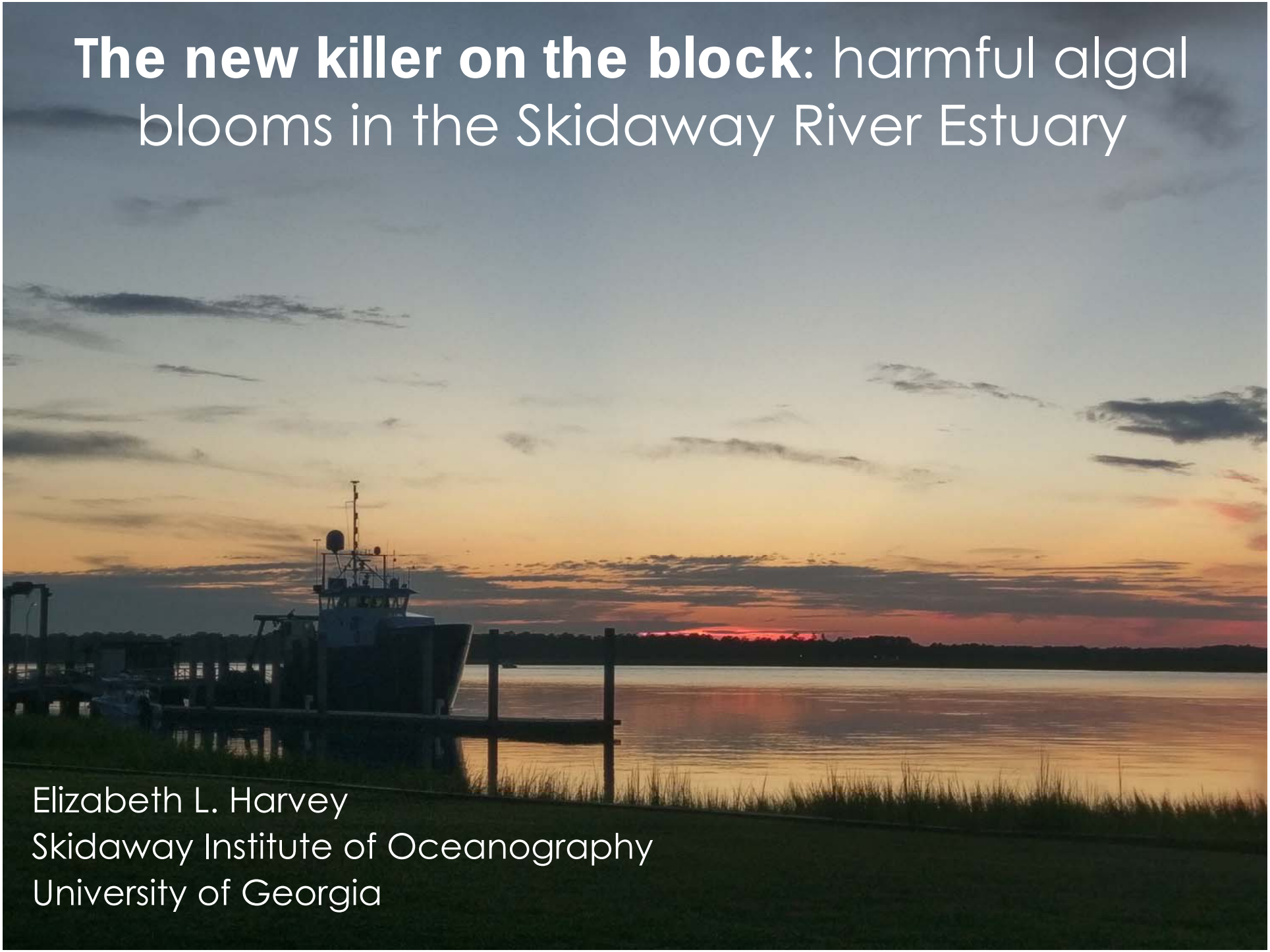
The new killer on the block: harmful algal blooms in the Skidaway River Estuary



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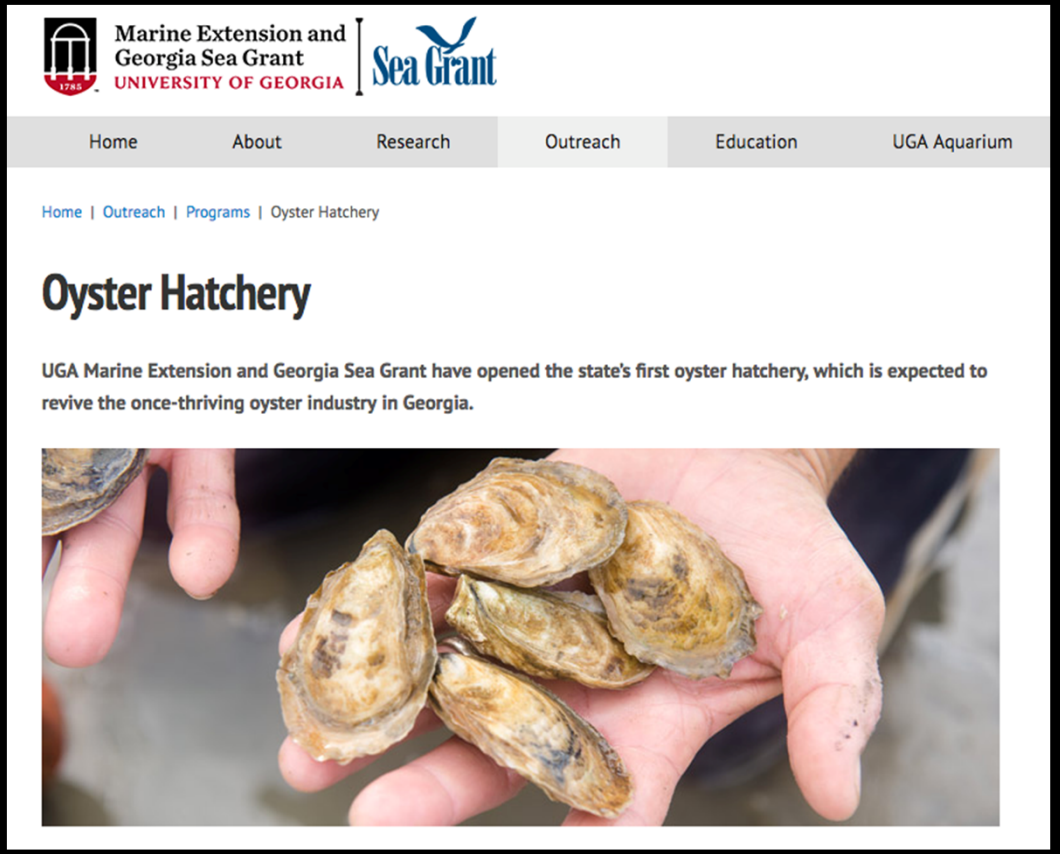
University of Georgia

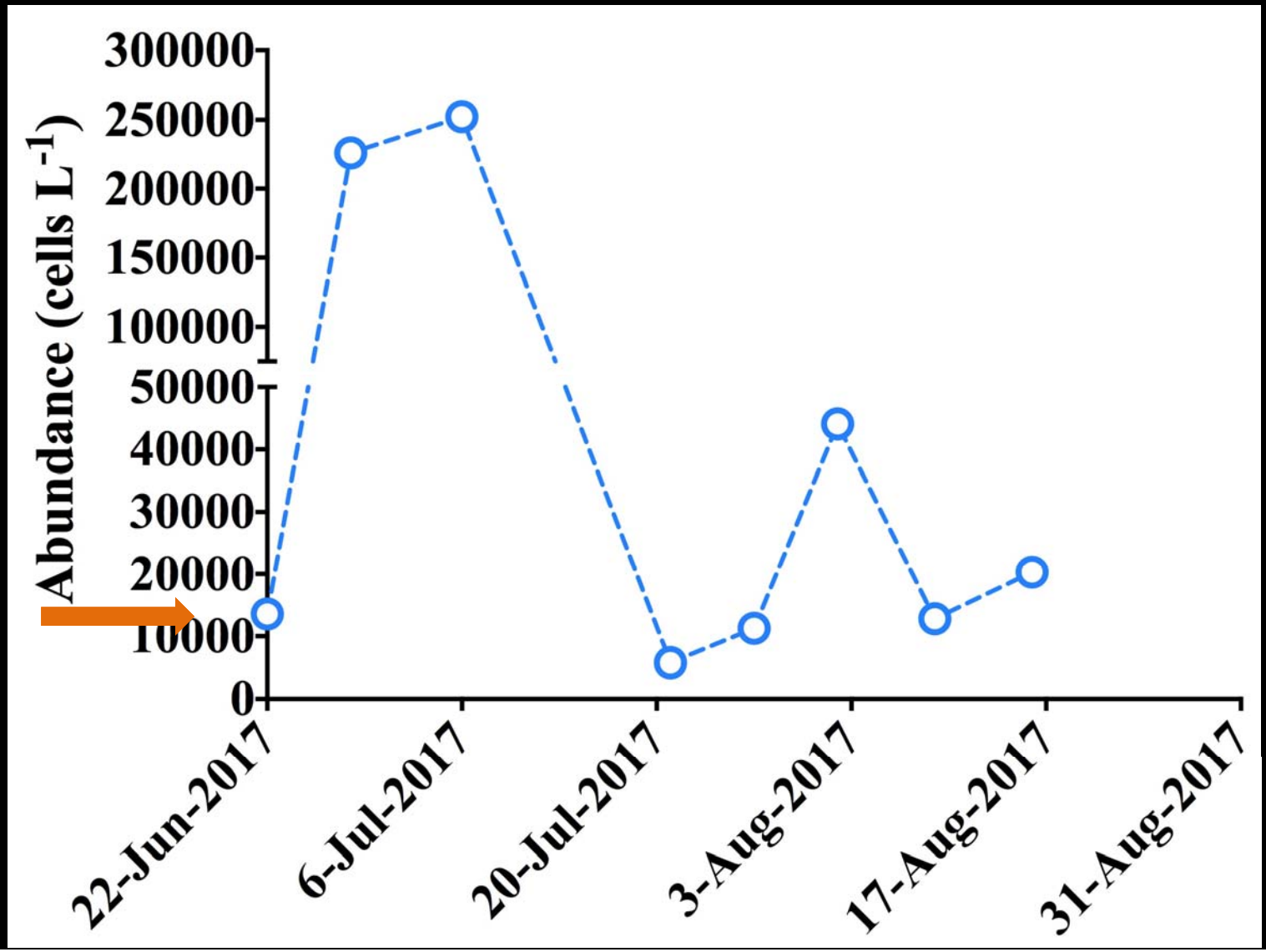
If a HAB happens along the GA coast and no one is there to see it, did it happen?

Hatchery Manager: Justin Manley



Yearly spat production worth $1.6 million

Large bloom of *Akashiwo sanguinea* in 2017

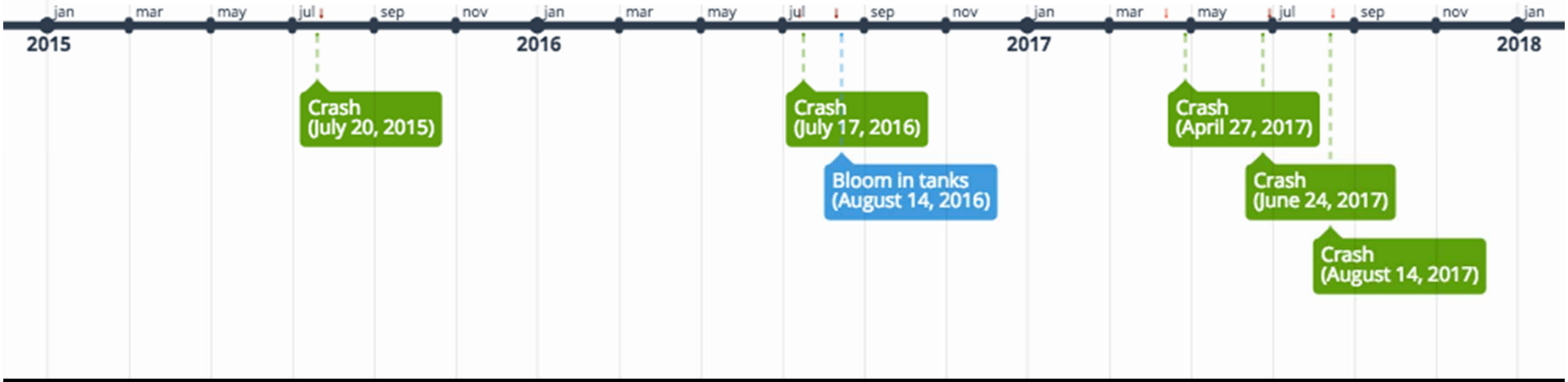


Akashiwo sanguinea (Gymnodinium sanguineum, Gymnodinium splendens)

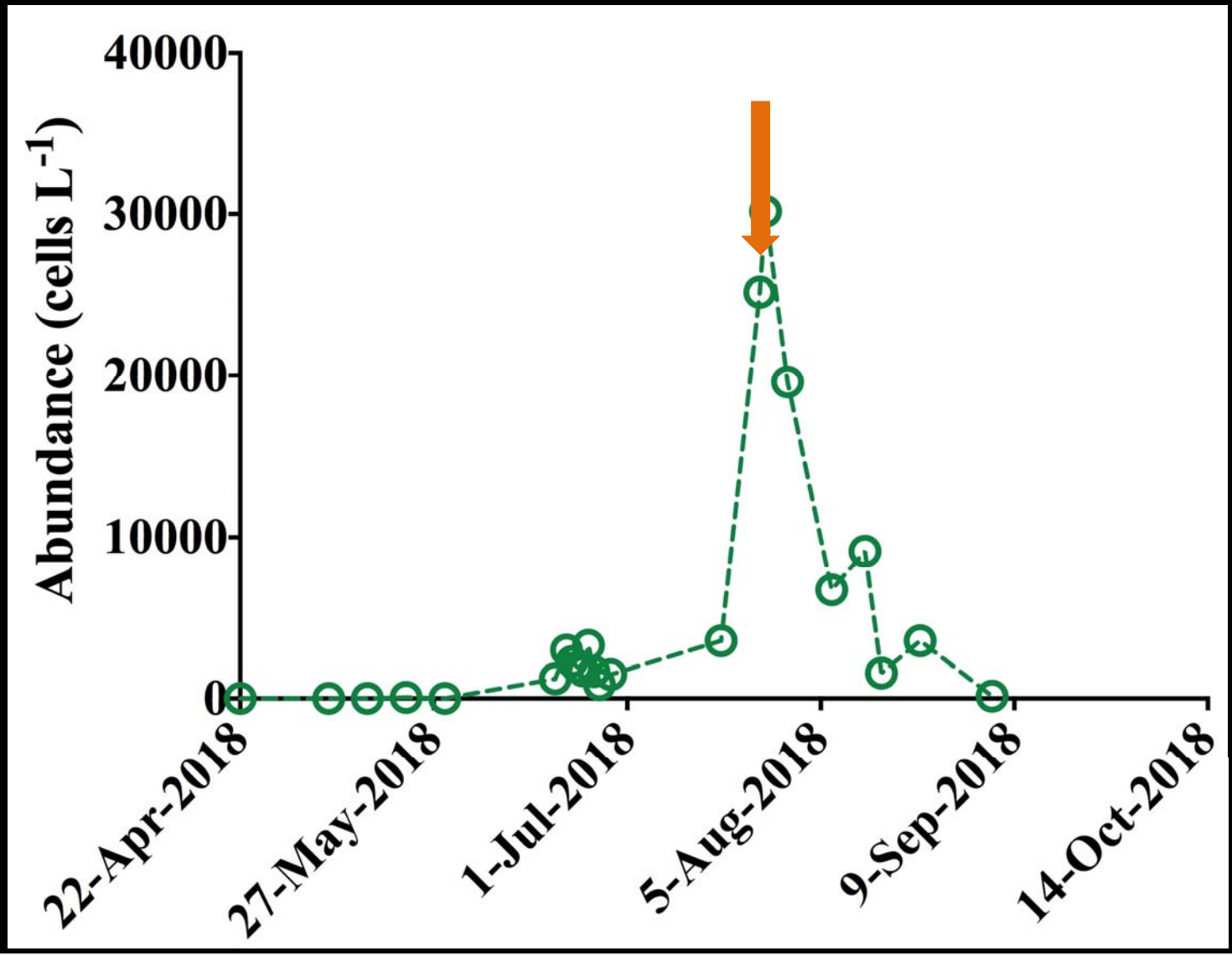
Kudela Lab
Univ. of California Santa Cruz

- Size: 40 – 80 µm
- Distribution: cosmopolitan in temperate to tropical coastal and estuarine waters
- Can form extensive blooms and are associated with fish and seabird kills (Jessup et al. 2009)
- Toxic to oysters (Cardwell et al. 1979)
- Forms resting cysts (Tang and Gobler 2015)
- Susceptible to parasite Amoebophyra sp. (Coats and Park 2002)

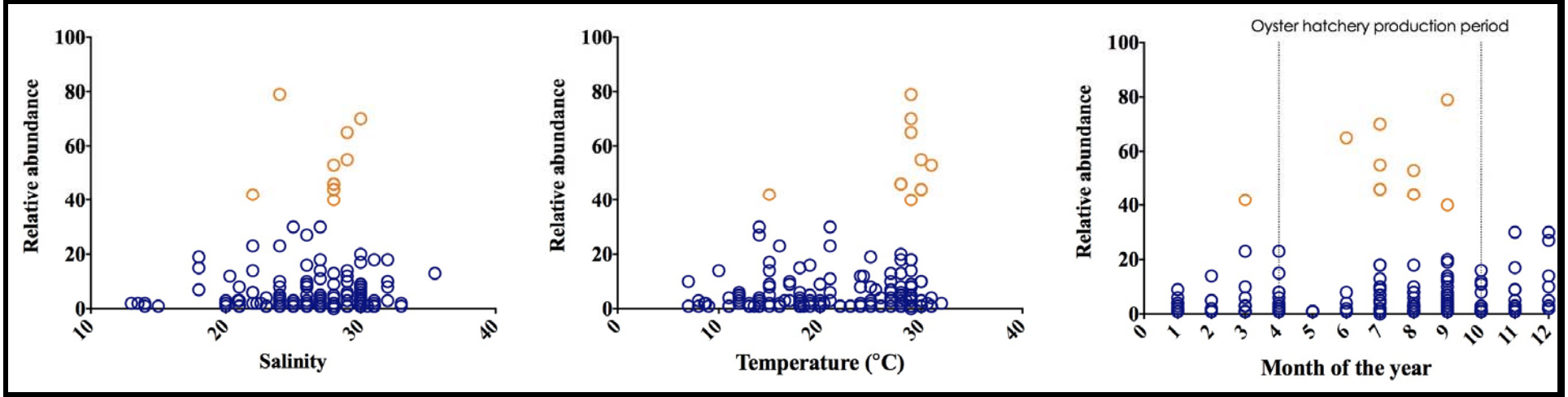
Pattern of mortality in the Shellfish Hatchery and elevated concentrations of *A. sanguinea*
(Thank you Phytoplankton Monitoring Network)



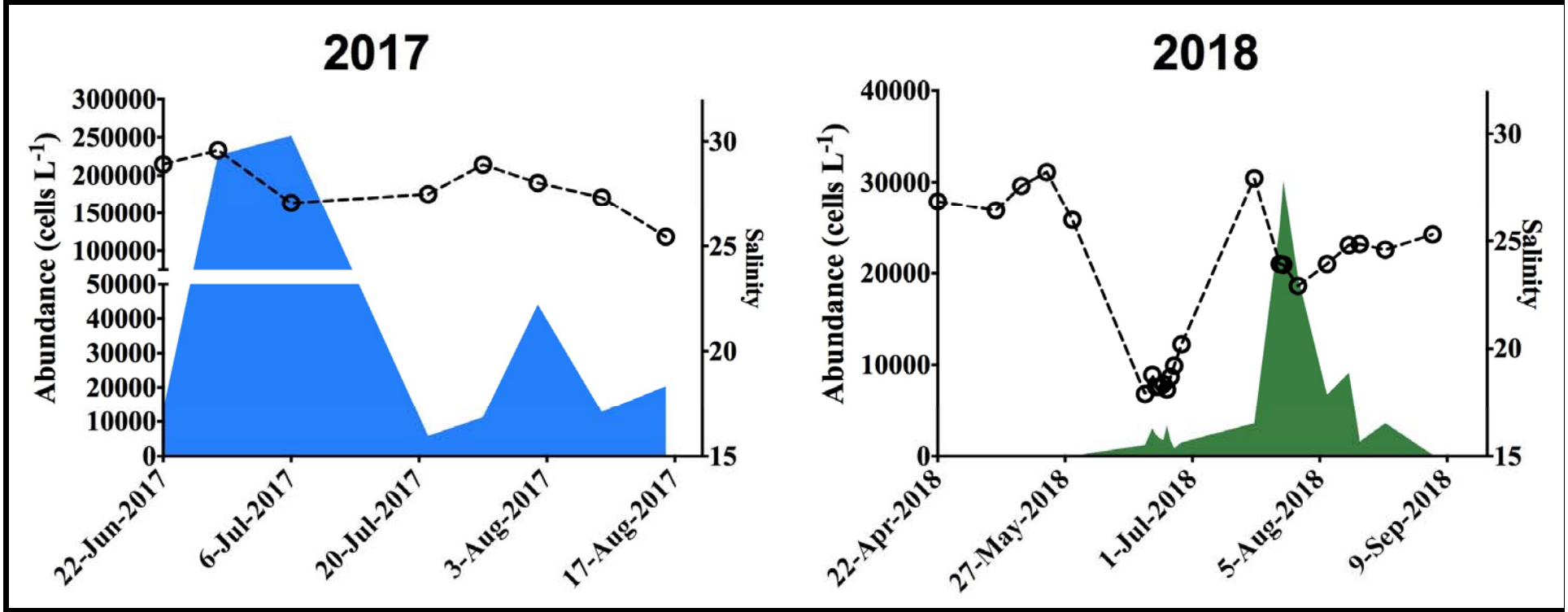
Closer monitoring in 2018 – no July bloom



Blooms seem to occur in the summer, higher temperatures, and salinities above 25
(Phytoplankton Monitoring Network)



Low salinity in 2018 cause of no huge bloom?



Far more questions then answers!

- Bloom perspective
  - How far does the bloom extend?
  - Triggers for bloom formation?
  - Benthic cysts provide seed population for future blooms?
  - What terminates the bloom?

- Oyster perspective
  - What is the mechanisms for toxicity for oyster larvae (toxin vs. nutrition vs. TEP)?
  - Do these blooms influence natural oyster populations?
  - Time of exposure matter?

- Hatchery perspective
  - Can we predict bloom events?
  - Can we modify water preparations in order to decrease mortality?

Maybe not just SkIO dock?