



Environmental DNA-based methods for marine targeted surveillance

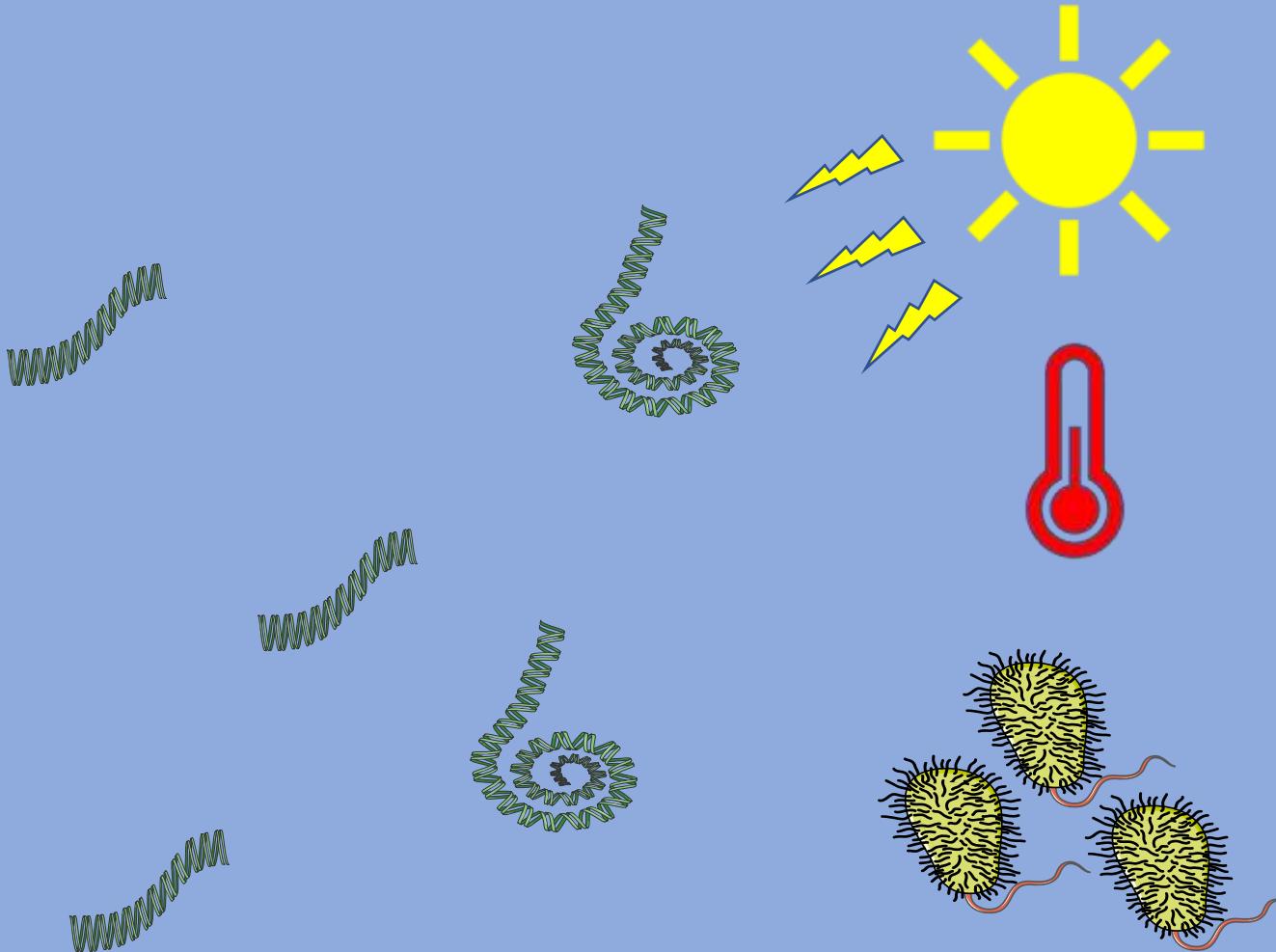
Ulla von Ammon

Susie Wood, Xavier Pochon, François Audrézet, Janie Latchford, Anastasija Zaiko

Environmental DNA



Persistence of eDNA



UV light

Temperature

Microbial activity

eDNA methods developed



Styela clava



Sabella spallanzanii

1. Sampling method?
2. Sampling season?
3. Persistence of eDNA?





Styela clava

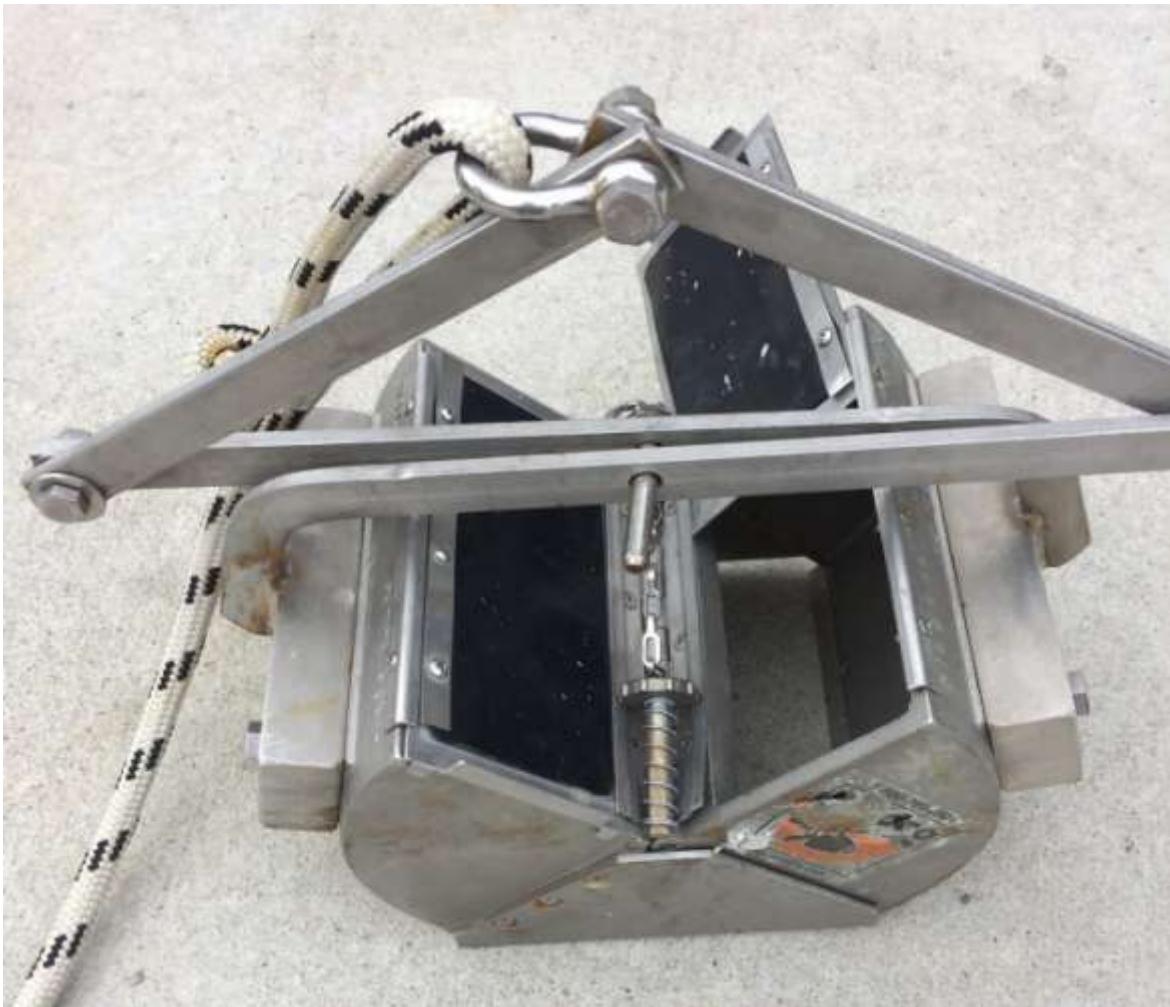


3 sites, 2 weeks, October-April

Q1&2- Methods



Plankton net

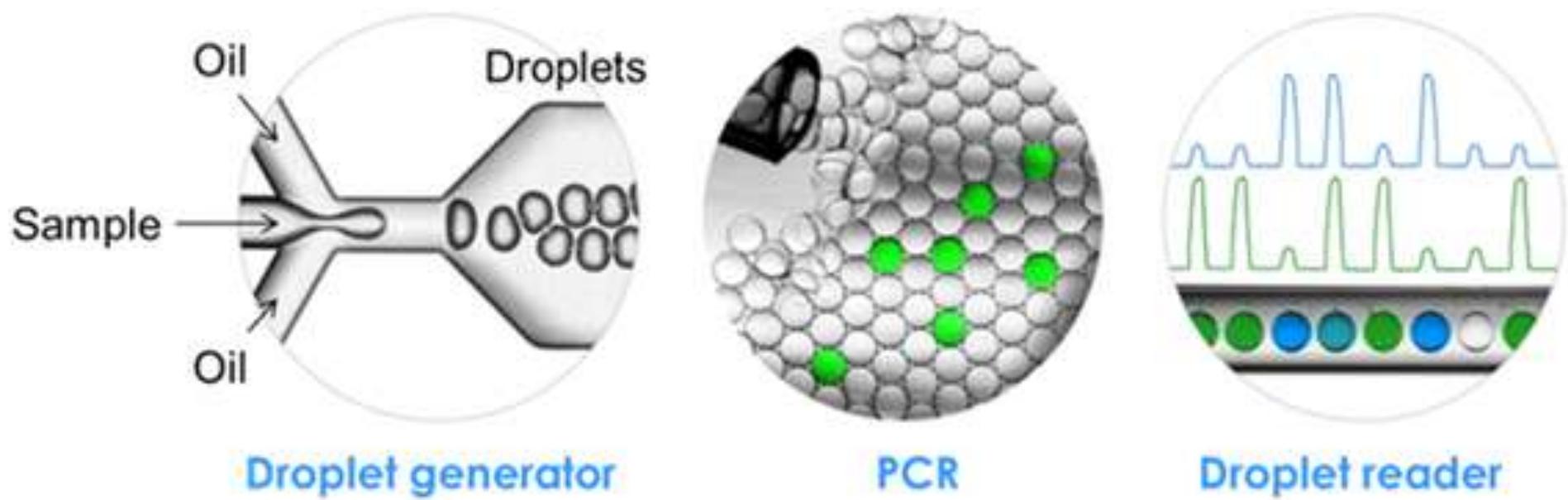


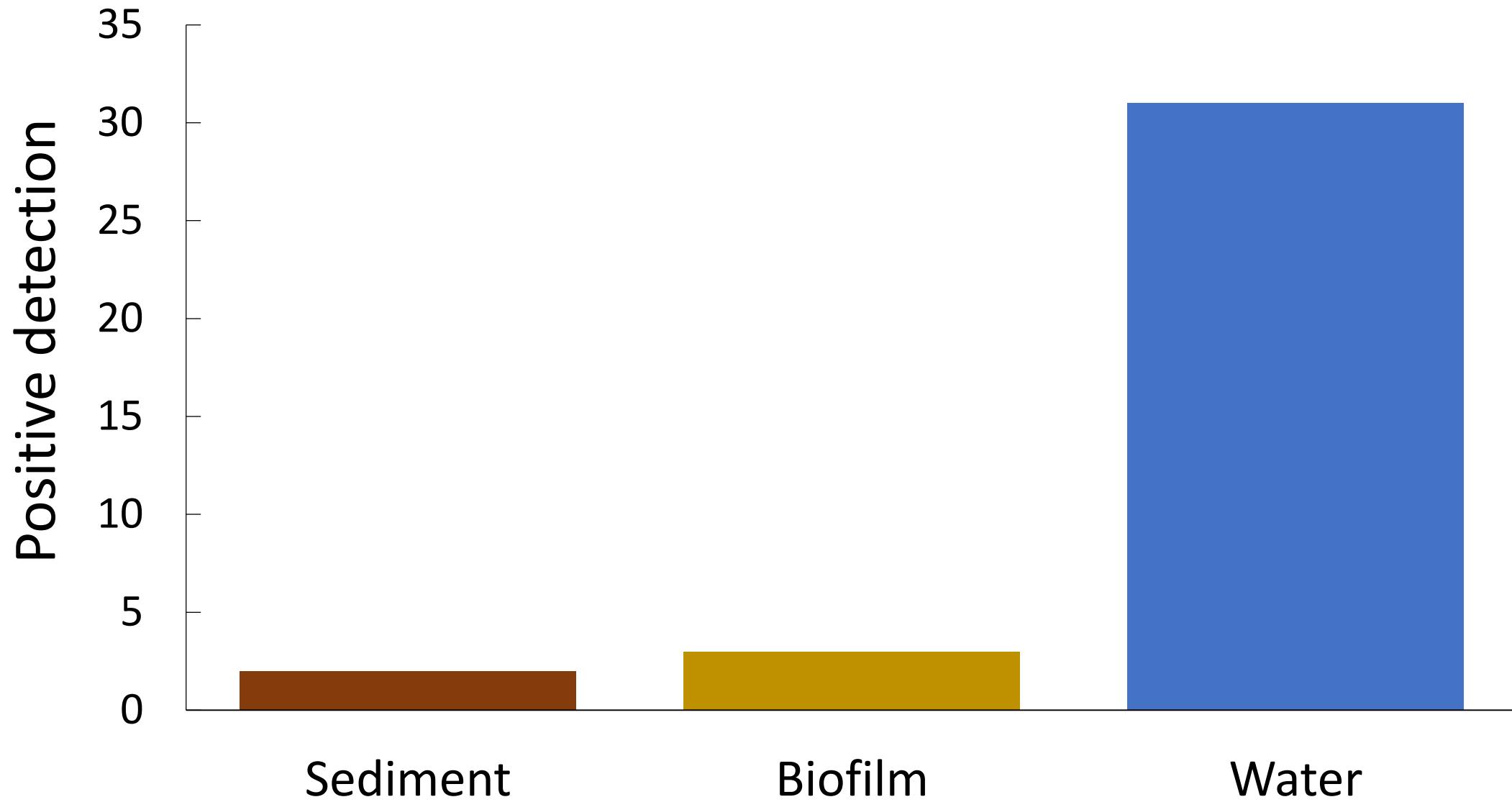
Ponar grab



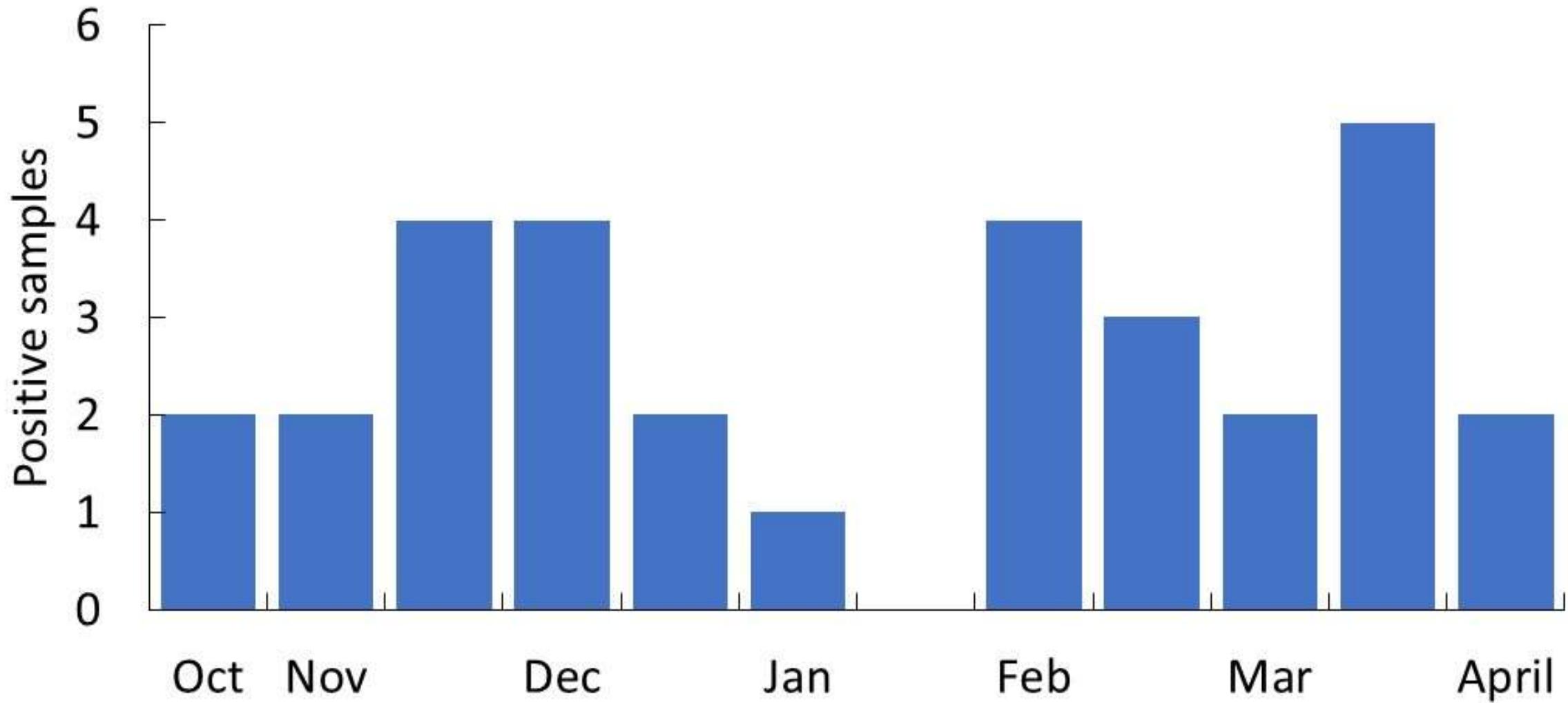
Settlement plates

Droplet digital PCR





Q2- Results



eDNA persistence



Styela clava

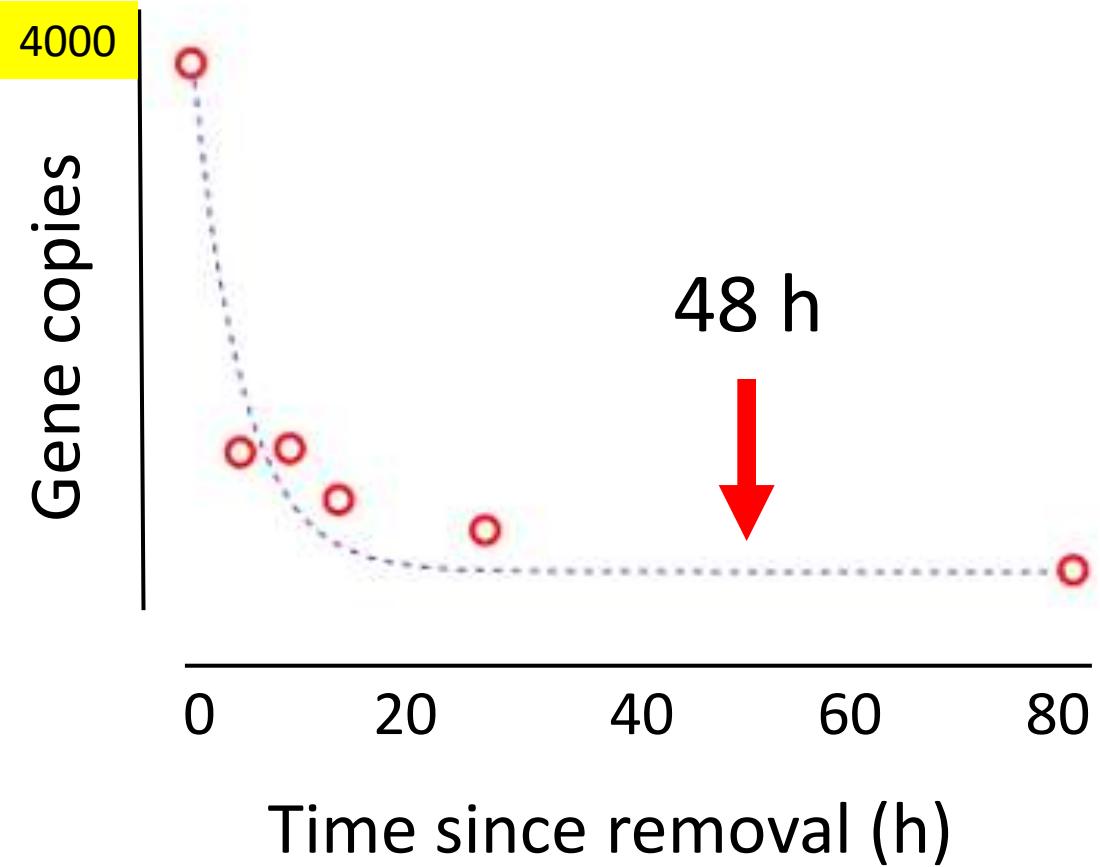
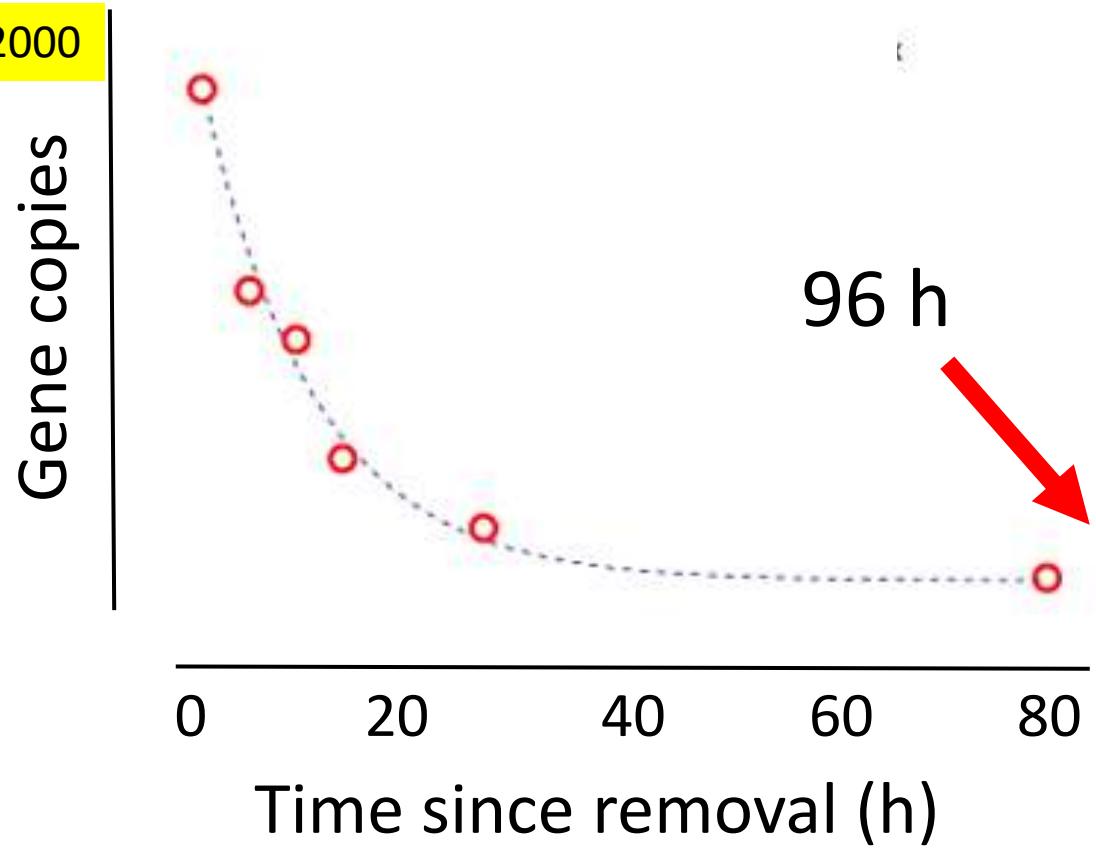


Sabella spallanzanii

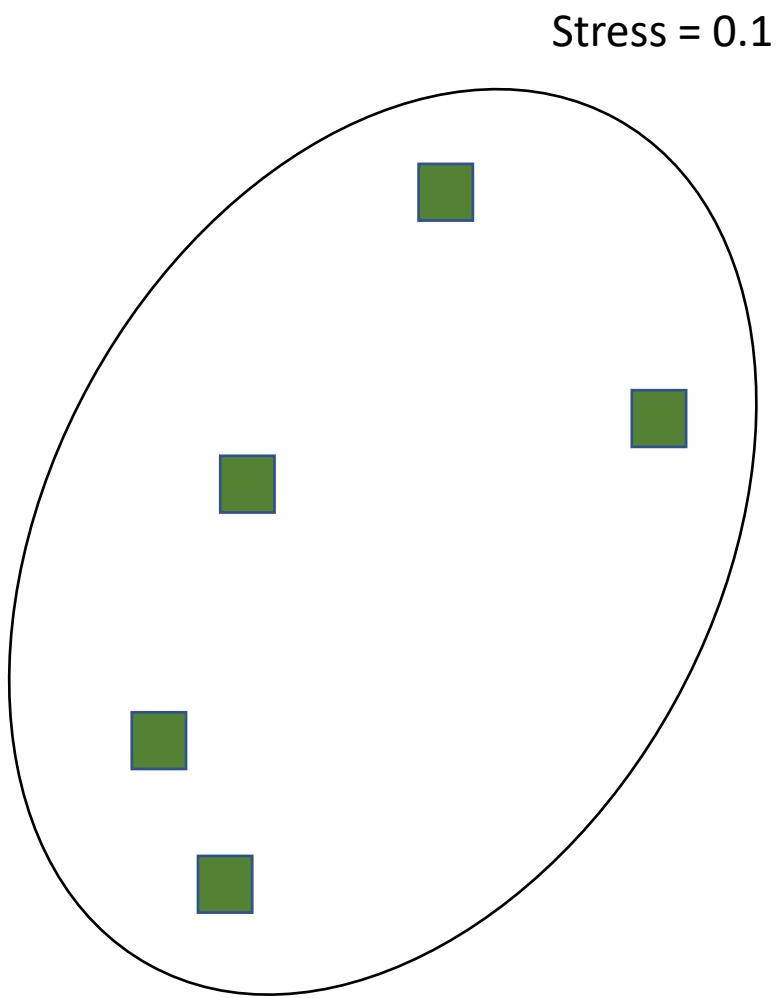
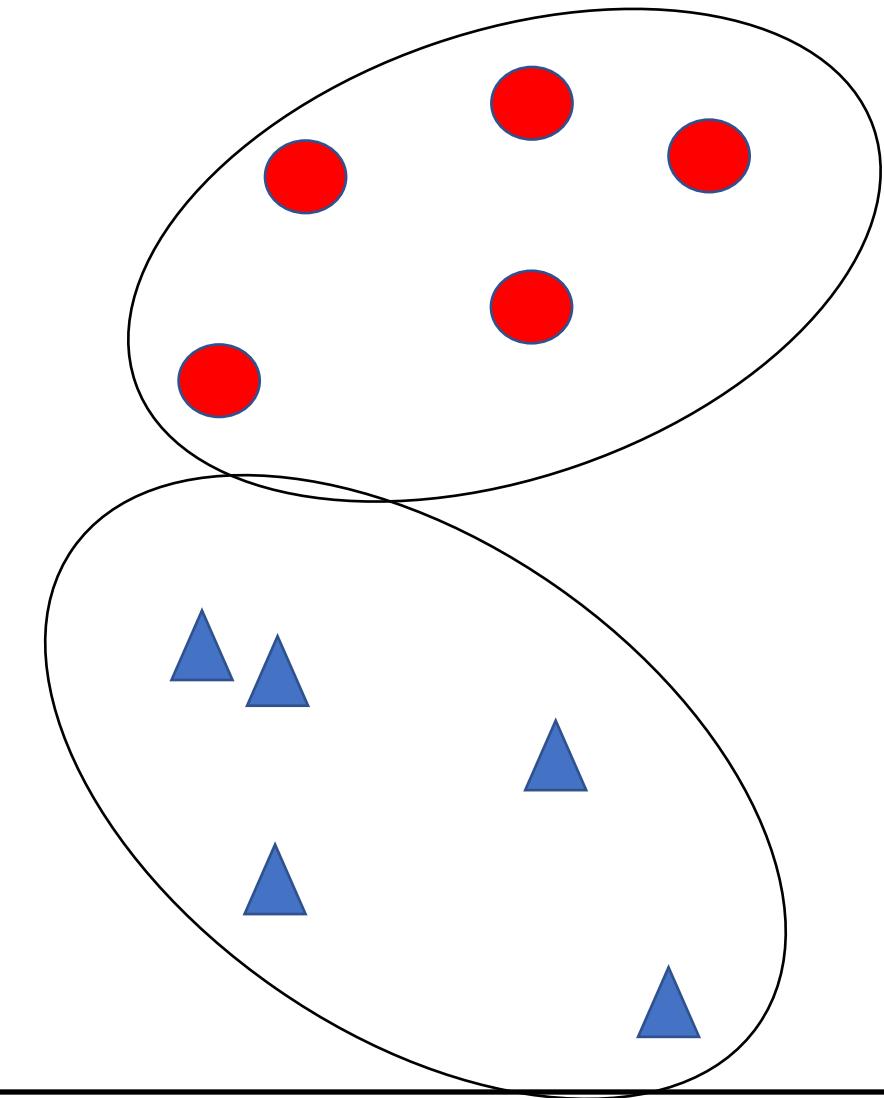
Q3- Methods



Organisms in tanks = 2 days → removed → eDNA measured 21 days

Sabellula*Styela*

Microbial communities



- Styela** (Red circle)
- Combined** (Blue triangle)
- Sabella** (Green square)

1. *Styela* = water samples
2. *Styela* = time of year (Oct-Apr)
3. eDNA persistance *Styela* ≠ *Sabella*



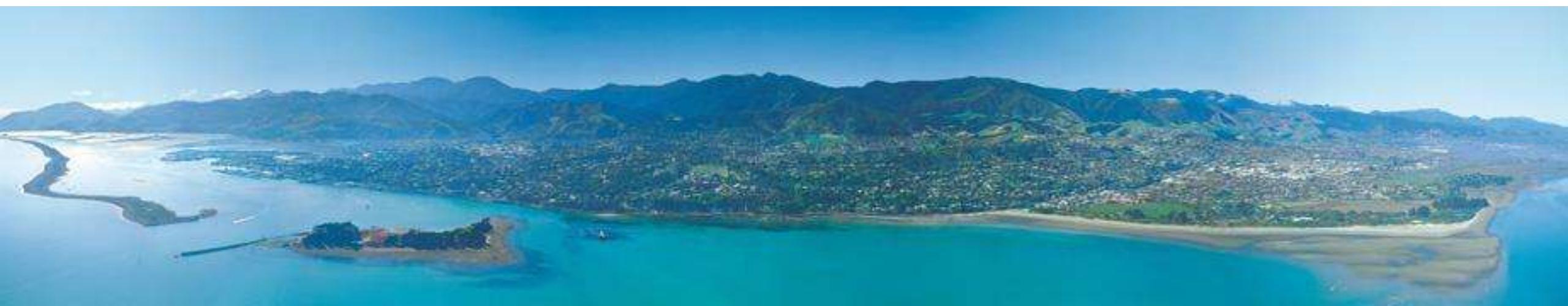
→ ddPCR as rapid and sensitive method for targeted detections

Janet Adamson, Laura Biessy, Oliver Floerl,
Grant Hopkins, Javier Atalah

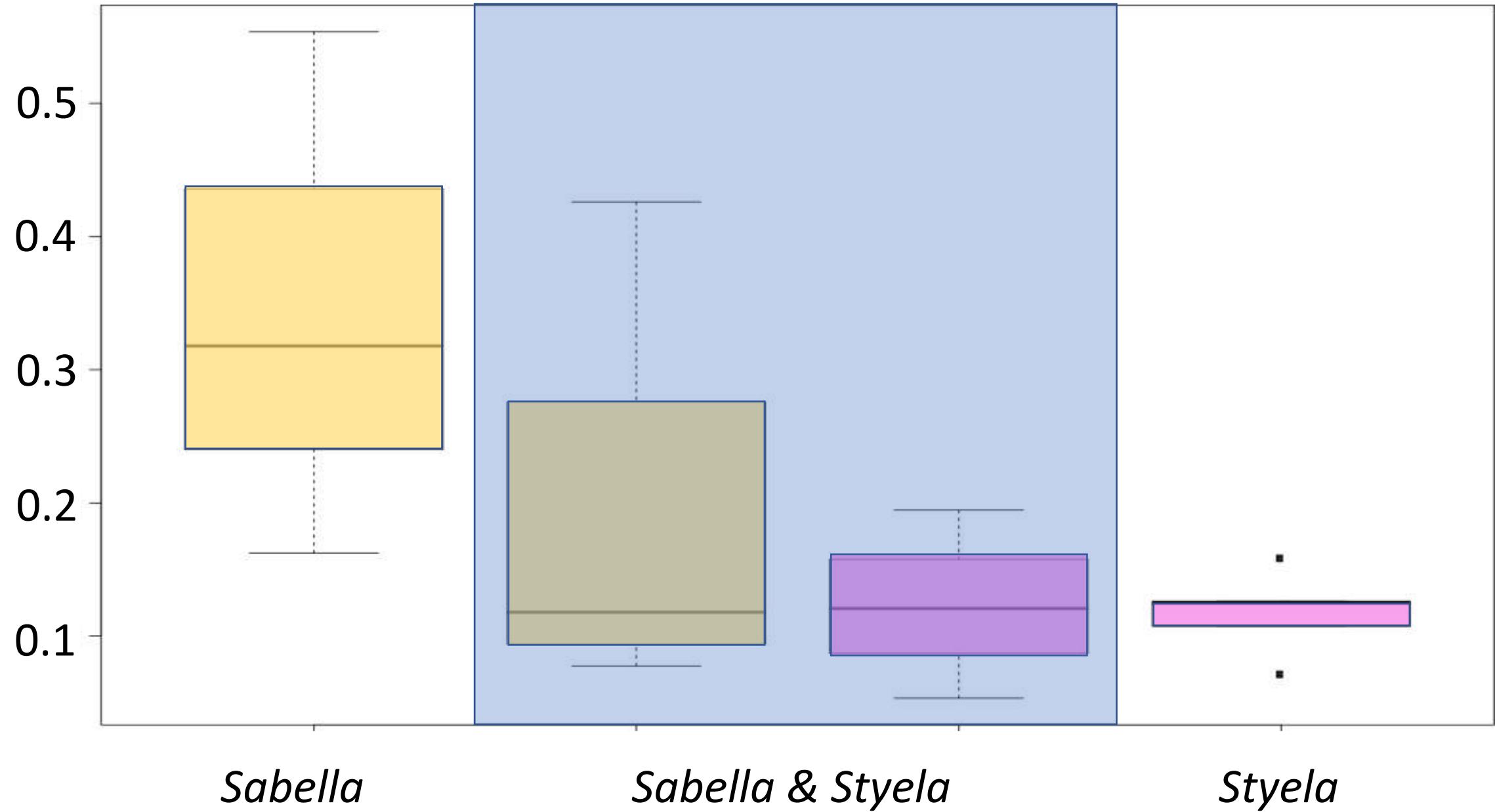
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Decay rate constant





- Day 21
- Biofilm bottom tank
- eDNA detected

