

**FIELD INCLUSIVE WEEK:  
FINDING  
SUCCESS  
THROUGH  
FAILURE**

Taylor Saucier



# Field Inclusive, Inc.

*Amplifying and Supporting Marginalized and Historically Excluded Biologists  
and Researchers*

# AGENDA

Who Am I?

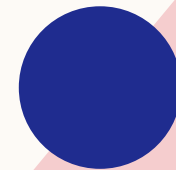
My Career Path

Background

Fieldwork Failures

Research Failures

Conclusion



# WHO AM I?





Leslie



Mango



Peggy

# WHO AM I?



# MY CAREER PATH



**MAY 2020**

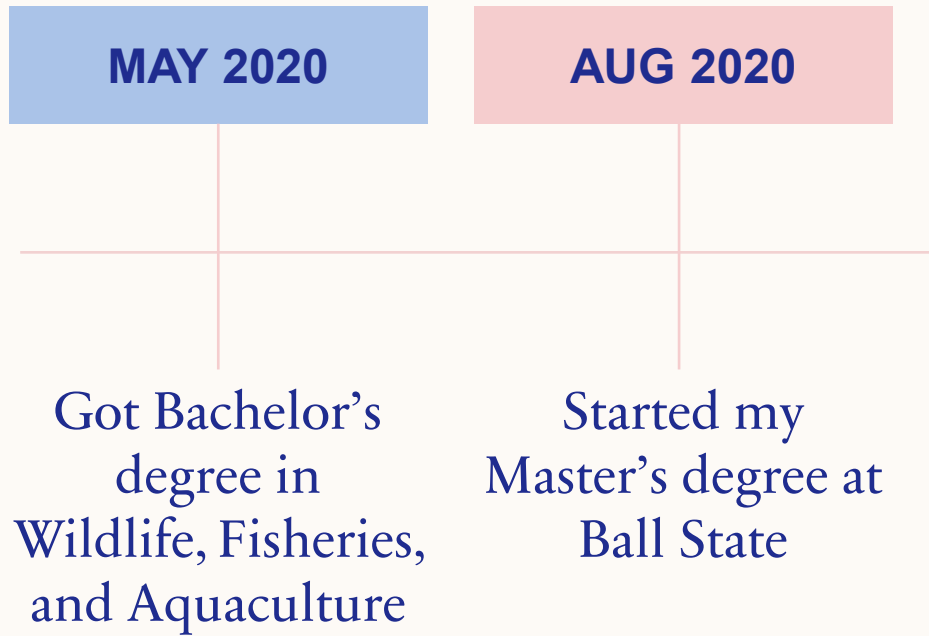
Got Bachelor's  
degree in  
Wildlife, Fisheries,  
and Aquaculture



**MISSISSIPPI STATE**  
**UNIVERSITY™**



# MY CAREER PATH



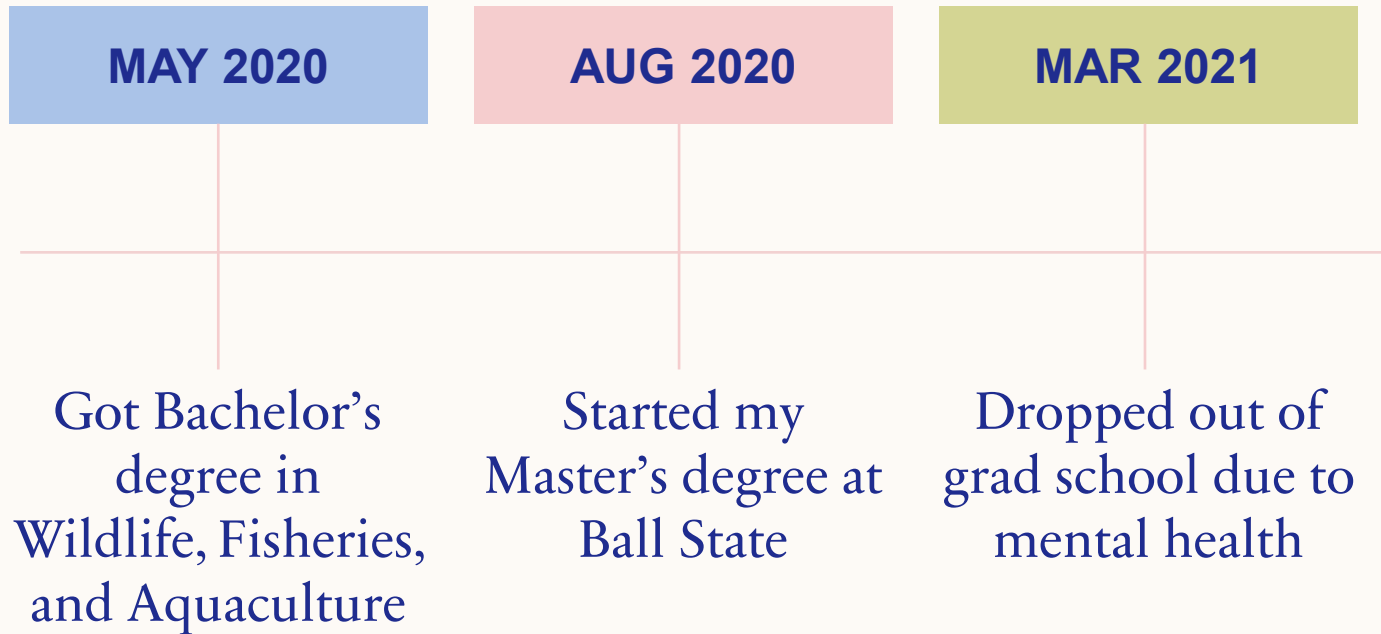


BALL STATE  

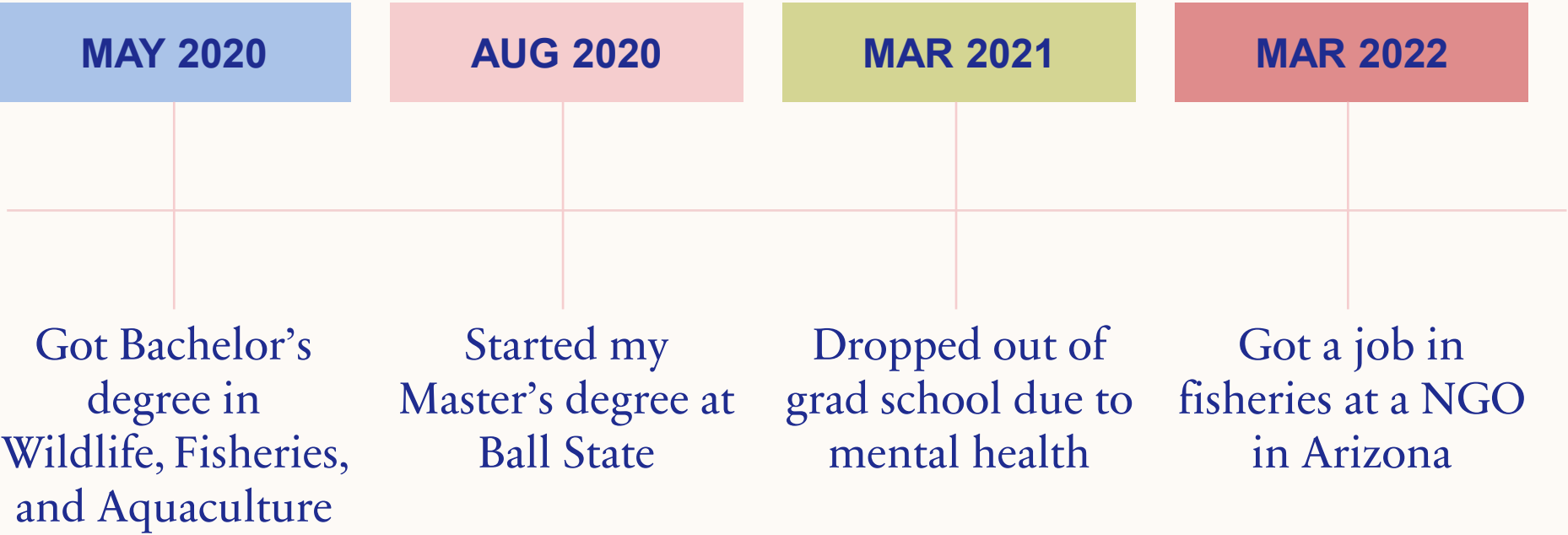
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UNIVERSITY.®

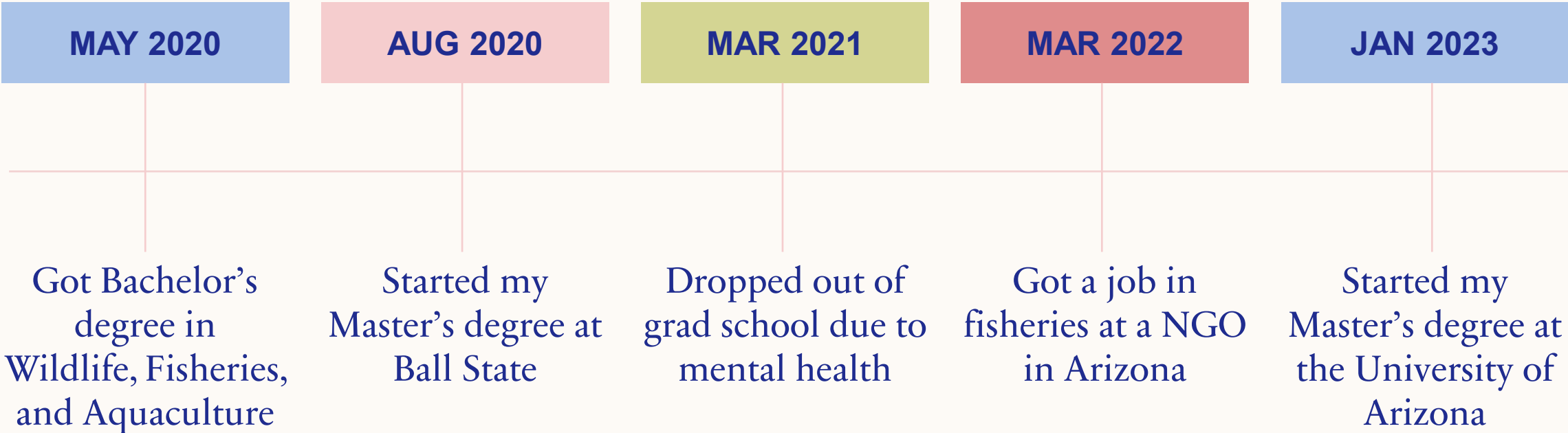
# MY CAREER PATH



# MY CAREER PATH



# MY CAREER PATH







**“MISTAKES ARE A FACT OF  
LIFE. IT IS THE RESPONSE  
TO ERROR THAT COUNTS.”**

Nikki Giovanni

# FIELDWORK IS...

Fun

Tiring

Essential

Dangerous



# FAILURES ARE INEVITABLE

- Science is full of trial-and-error
- Field work is no exception
- Failures in the field can lead to danger



# **FIELDWORK FAILURES**

1

Lost in the Desert

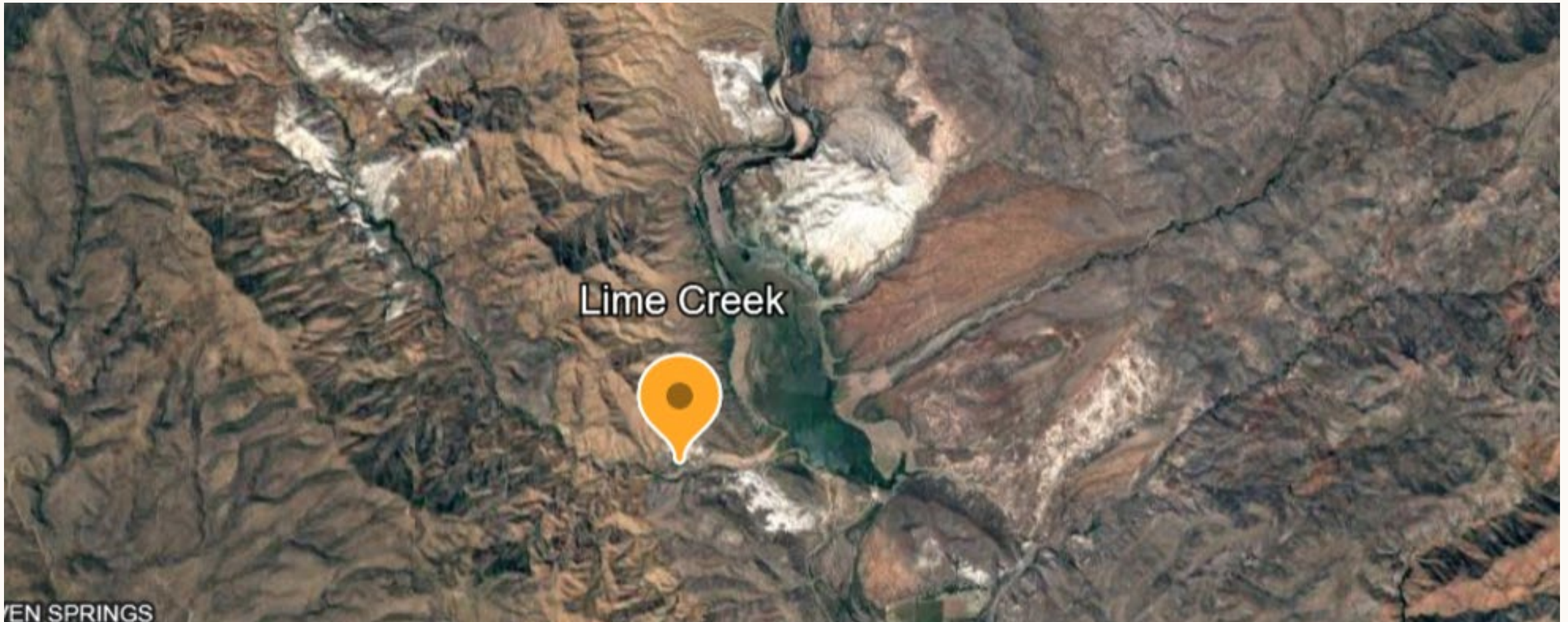
# ARIZONA



# NORTH OF PHOENIX



# NEAR HORSESHOE RESERVOIR



# LIME CREEK



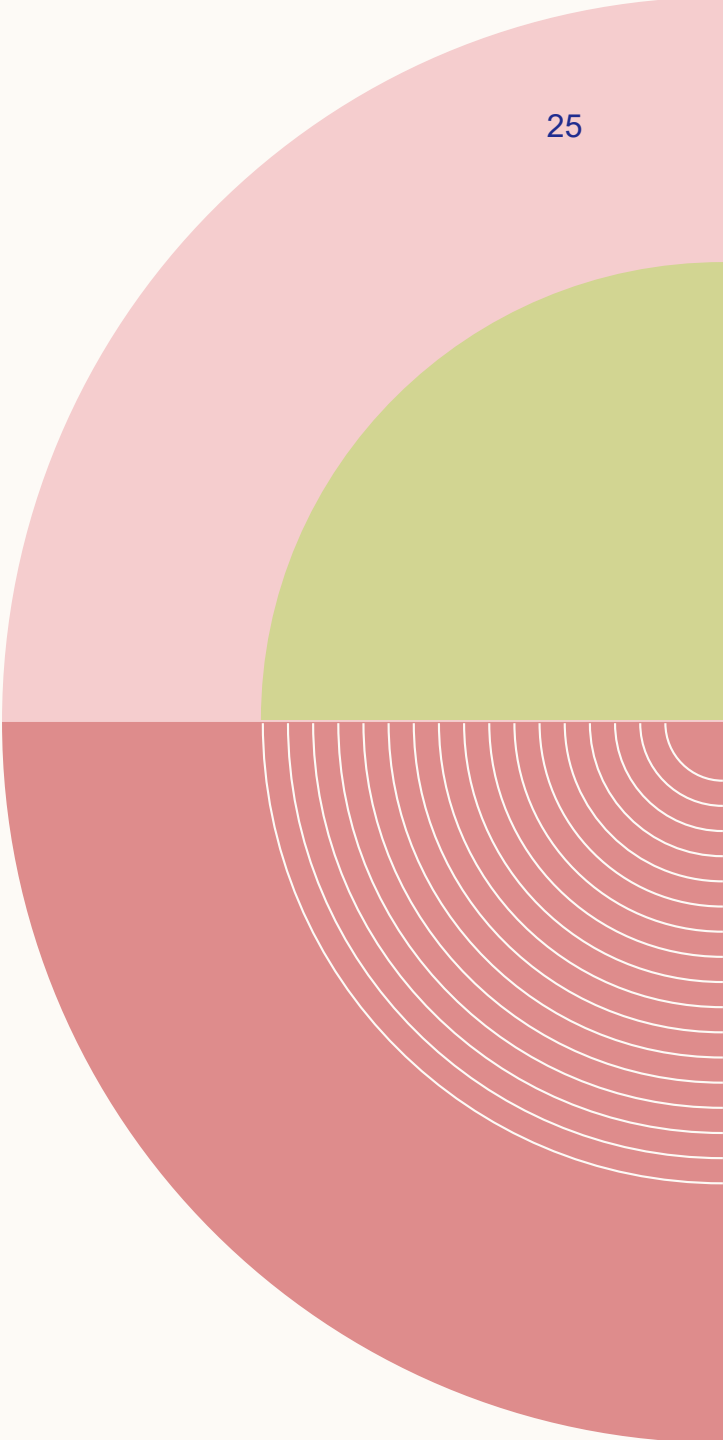
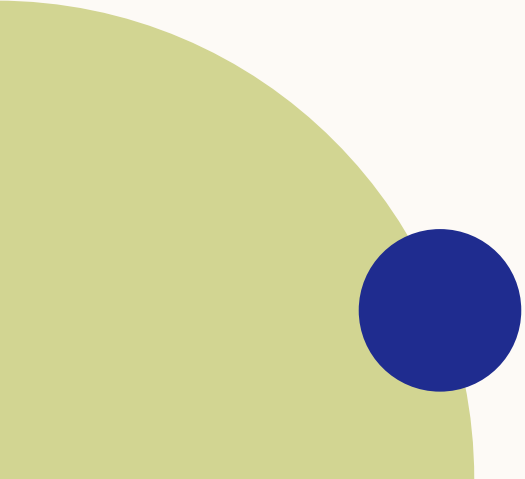
# WINDING MOUNTAINOUS DIRT ROADS







Finding Success Through Failure

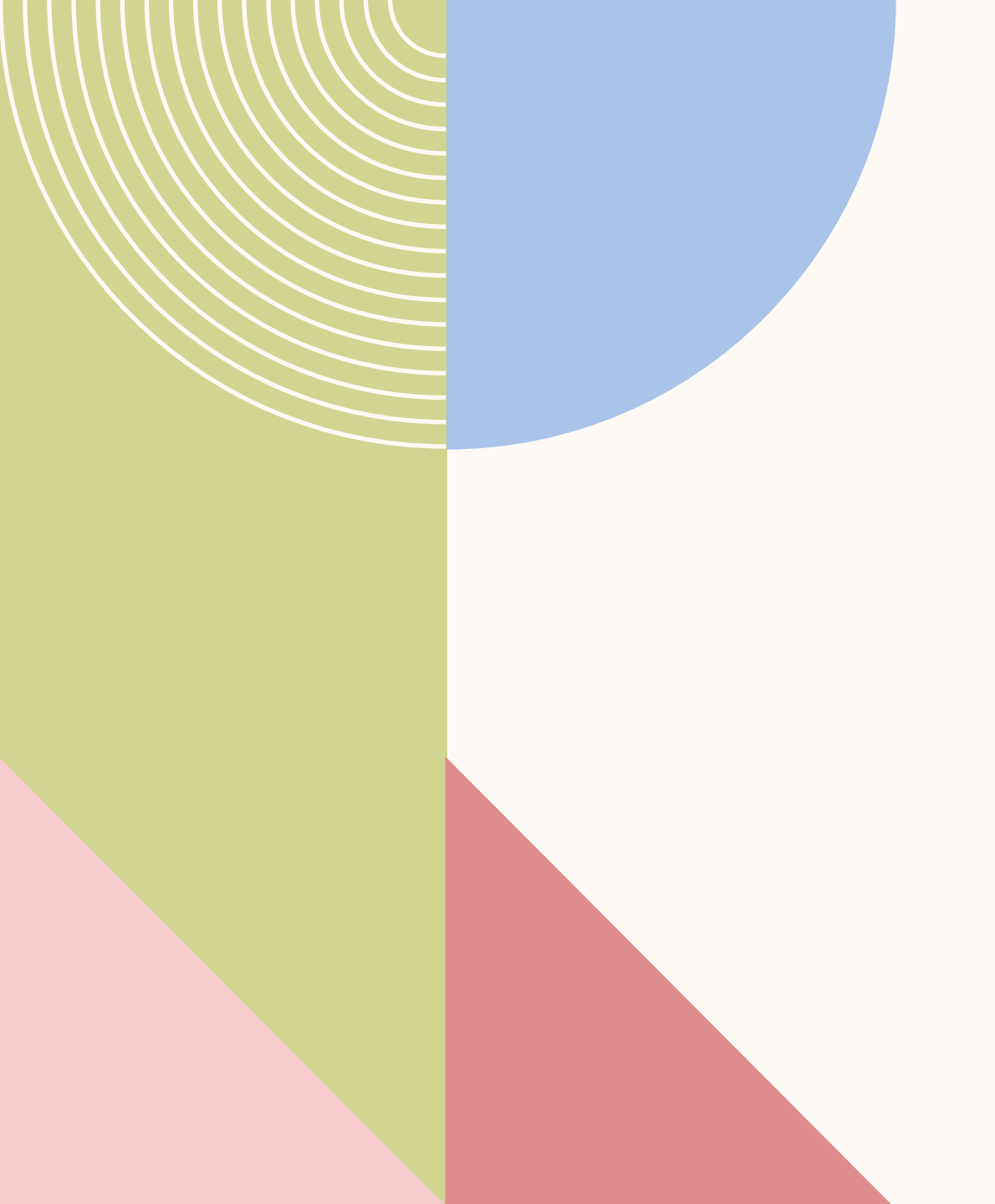


Finding Success Through Failure



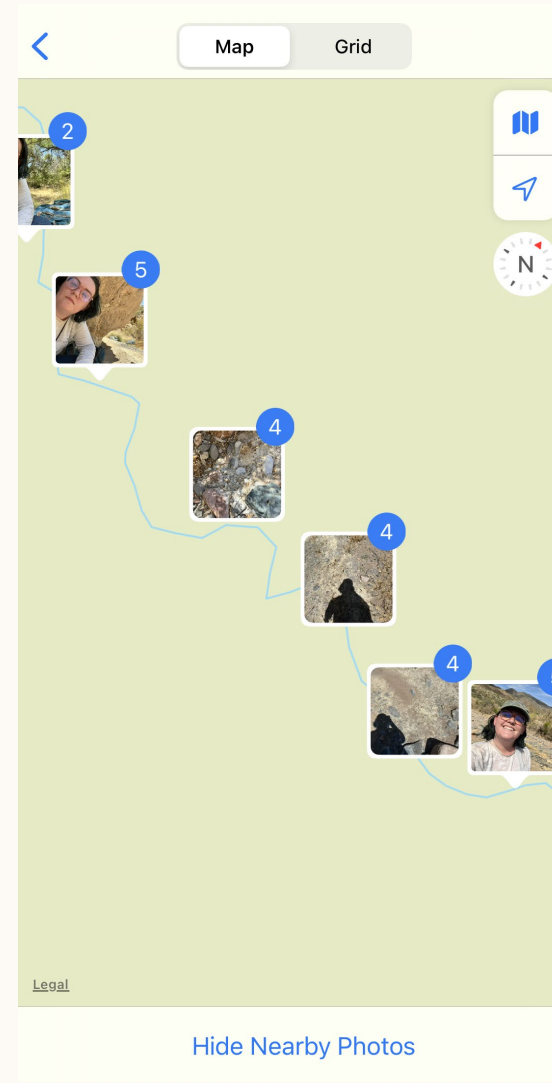
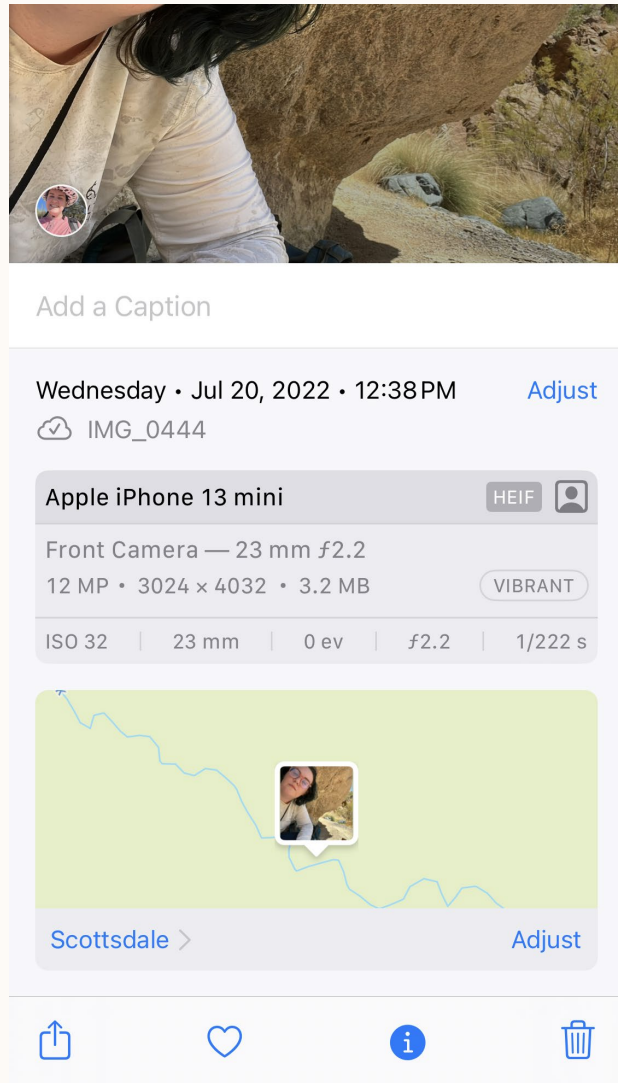








# Finding Success Through Failure



# I SURVIVED!





# LESSONS LEARNED

**PRE-  
HYDRATE**

**MORE  
FLUIDS**

**BUDDY  
SYSTEM**

**SAFETY  
FIRST**

**GPS  
DEVICES**

# LESSONS LEARNED

## PRE-HYDRATE

Start hydrating the day before you go into the field

## MORE FLUIDS

## BUDDY SYSTEM

## SAFETY FIRST

## GPS DEVICES

# LESSONS LEARNED

**PRE-  
HYDRATE**

**MORE  
FLUIDS**

**BUDDY  
SYSTEM**

**SAFETY  
FIRST**

**GPS  
DEVICES**

Bring more hydrating fluids than you think you will need

# LESSONS LEARNED

**PRE-  
HYDRATE**

**MORE  
FLUIDS**

**BUDDY  
SYSTEM**

**SAFETY  
FIRST**

**GPS  
DEVICES**

Don't leave  
anyone by  
themselves if  
possible

# LESSONS LEARNED

**PRE-  
HYDRATE**

**MORE  
FLUIDS**

**BUDDY  
SYSTEM**

**SAFETY  
FIRST**

**GPS  
DEVICES**

Safety is  
more  
important  
than getting  
the work  
done

# LESSONS LEARNED

**PRE-  
HYDRATE**

**MORE  
FLUIDS**

**BUDDY  
SYSTEM**

**SAFETY  
FIRST**

**GPS  
DEVICES**

Bring more  
than one GPS  
device



# **FIELDWORK FAILURES**

2

Overboard

Finding Success Through Failure







# **GAS CAP OVERBOARD**

- Co-worker was experienced swimmer and volunteered to get it
- It was hot outside (>100F)
- But the water was cold (~60F)





# LESSONS LEARNED

- Prioritize safety
- Weigh your options carefully before making decisions



# **FIELDWORK FAILURES**

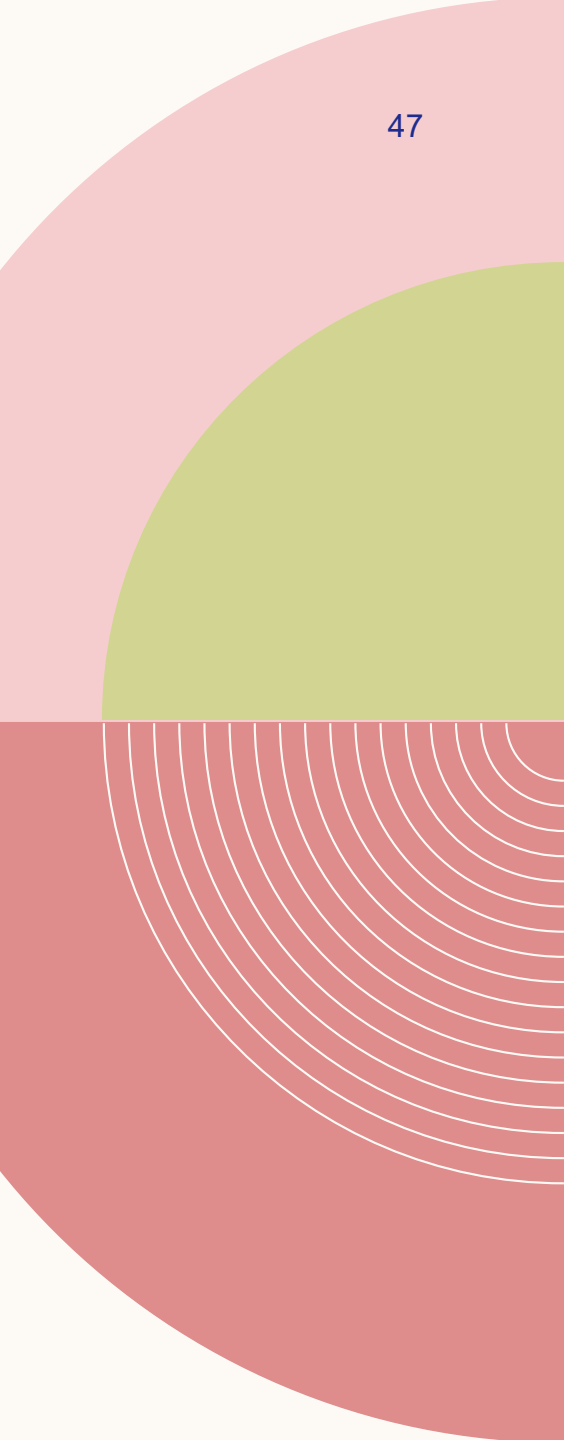
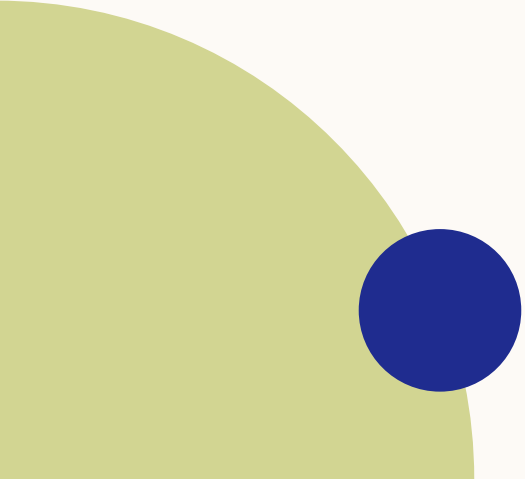
3

Out of Gas (Sorta)

# BOATS

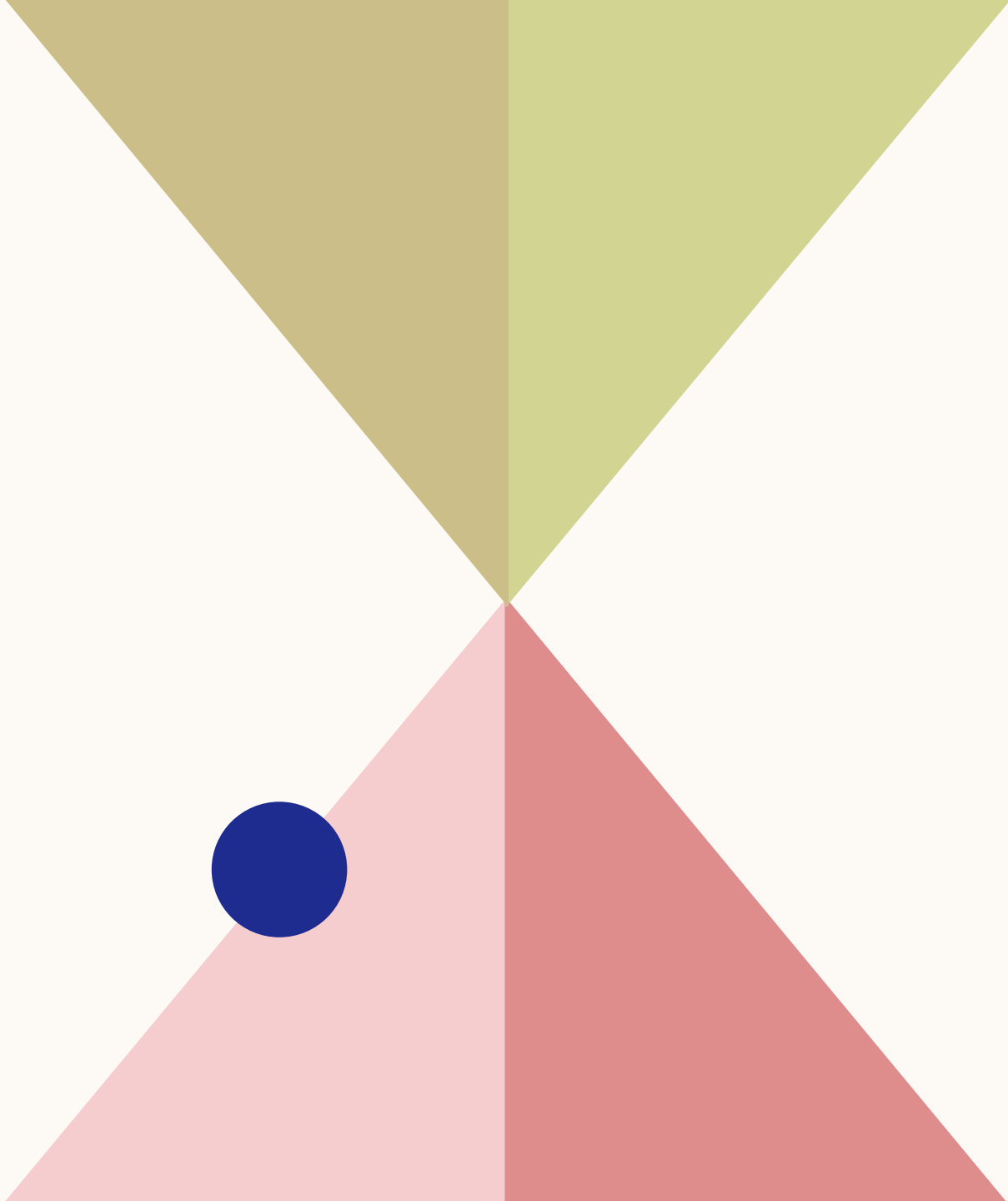
- I didn't grow up driving boats
- Learned on the job
- Lots of new skills:
  - Trailering,
  - Launching
  - Driving

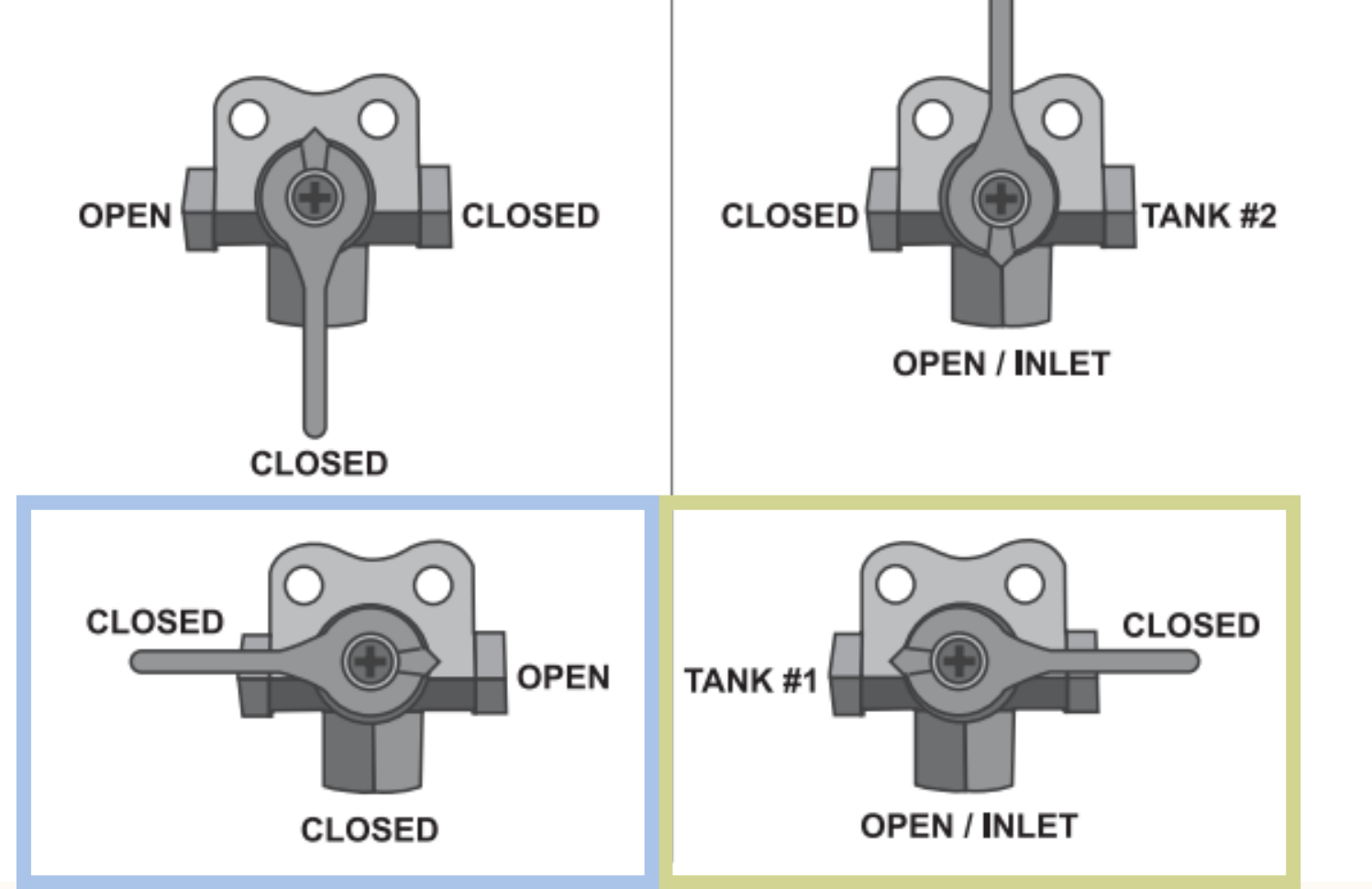
Finding Success Through Failure









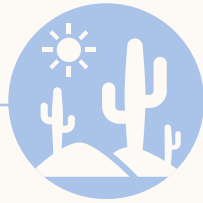


- Flagged down a recreational boater
- Got towed back to the marina
- Finally got the engine primed and running

# LESSONS LEARNED

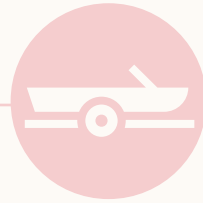
- Get proper training
- Know your equipment

# CONCLUSIONS



## LOST IN THE DESERT

- Pre-hydrate
- More fluids
- Buddy system
- Safety first
- GPS devices




## OVERBOARD

- Safety first
- Weigh your options



## OUT OF GAS (SORTA)

- Proper training
- Know your equipment



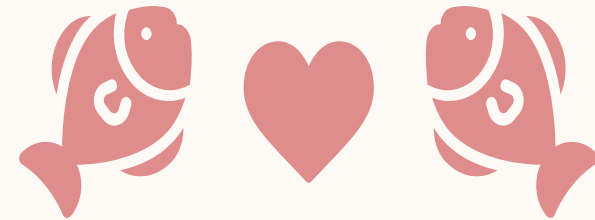
**FAILURES IN  
RESEARCH**

# RESEARCH GOALS



## Survival

Can we keep these fish alive in captivity?

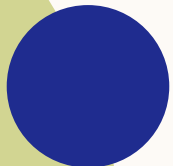


## Reproduction

Can we get these fish to spawn in captivity?

# SONORA SUCKER

- Medium-sized fish in Catostomidae
- Generalist omnivore
- Occurs in streams
- Utilizes riffles and pools
- Least concern
- Non-game species
- Little research exists

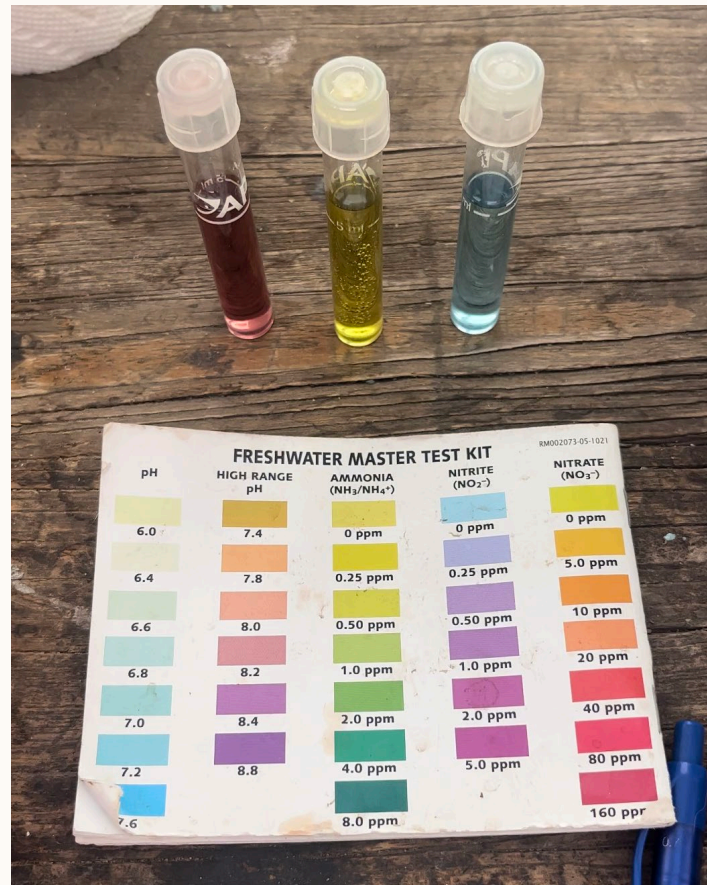




# SET UP

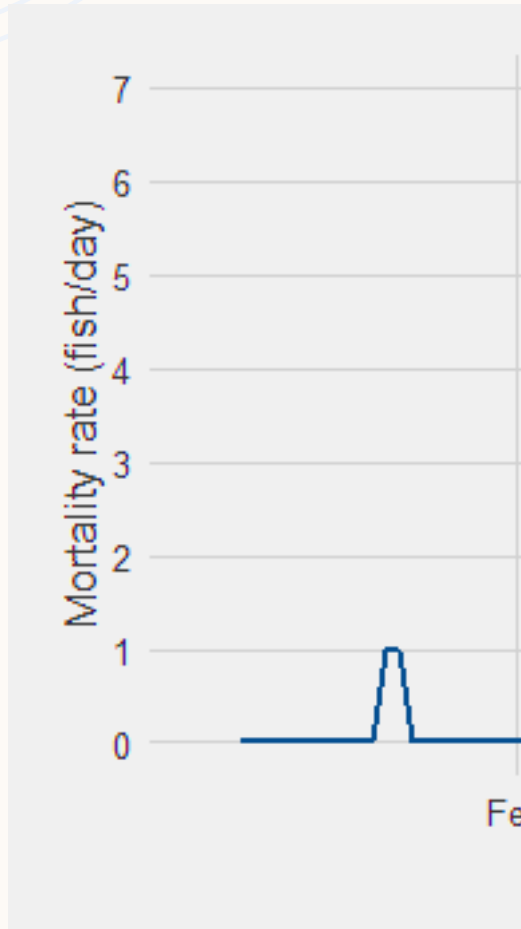


# DAILY CHECKS



- Water Quality:
  - Dissolved Oxygen (DO)
  - Temperature (°C)
  - pH
  - Ammonia (NH<sub>3</sub>/NH<sub>4</sub><sup>+</sup>)
  - Nitrite (NO<sub>2</sub><sup>-</sup>)
- Survival Checks

# MORTALITIES



# FISH CONDITION



# CAUSE? AEROMONAS



- Swabbed the hemorrhaging spot on a live fish
- Brought in 1 moribund fish and 1 dead fish for testing
- Lab confirmed *Aeromonas hydrophila*

# STRESSORS (OR FAILURES)



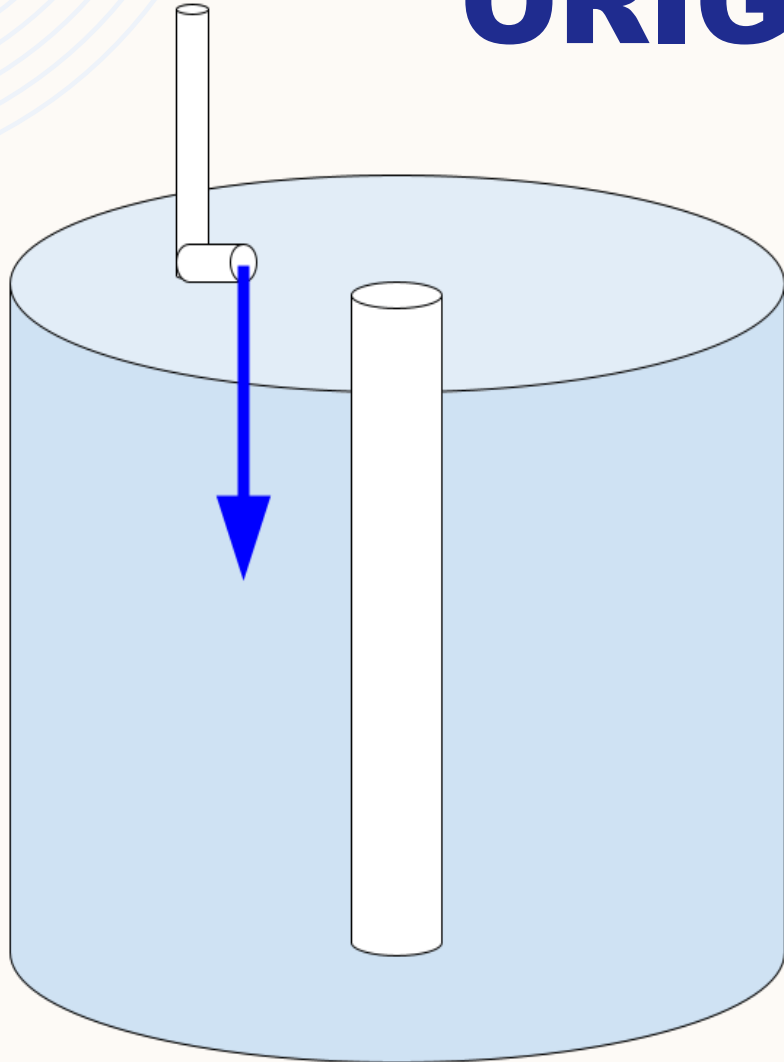
Aeromonas is widely found in aquaculture but can cause significant mortality with predisposing stressors

POTENTIAL STRESSOR:

**FLOW**

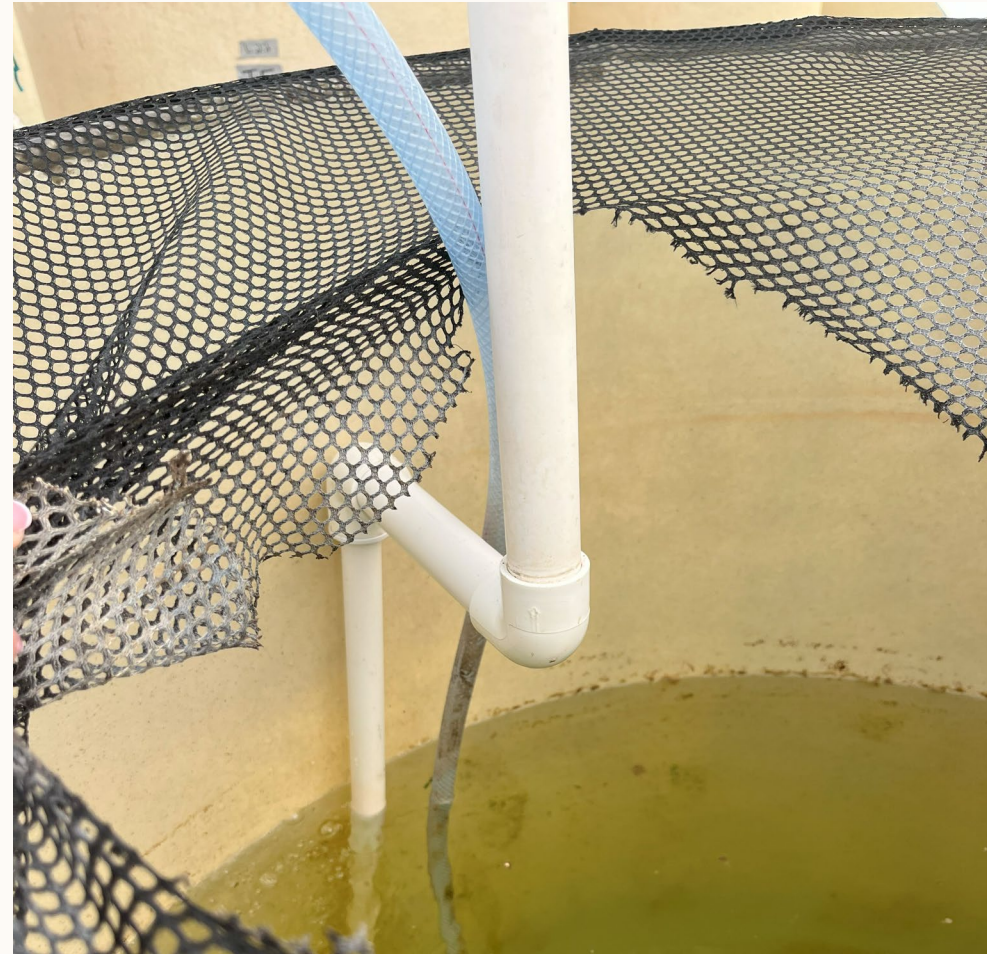
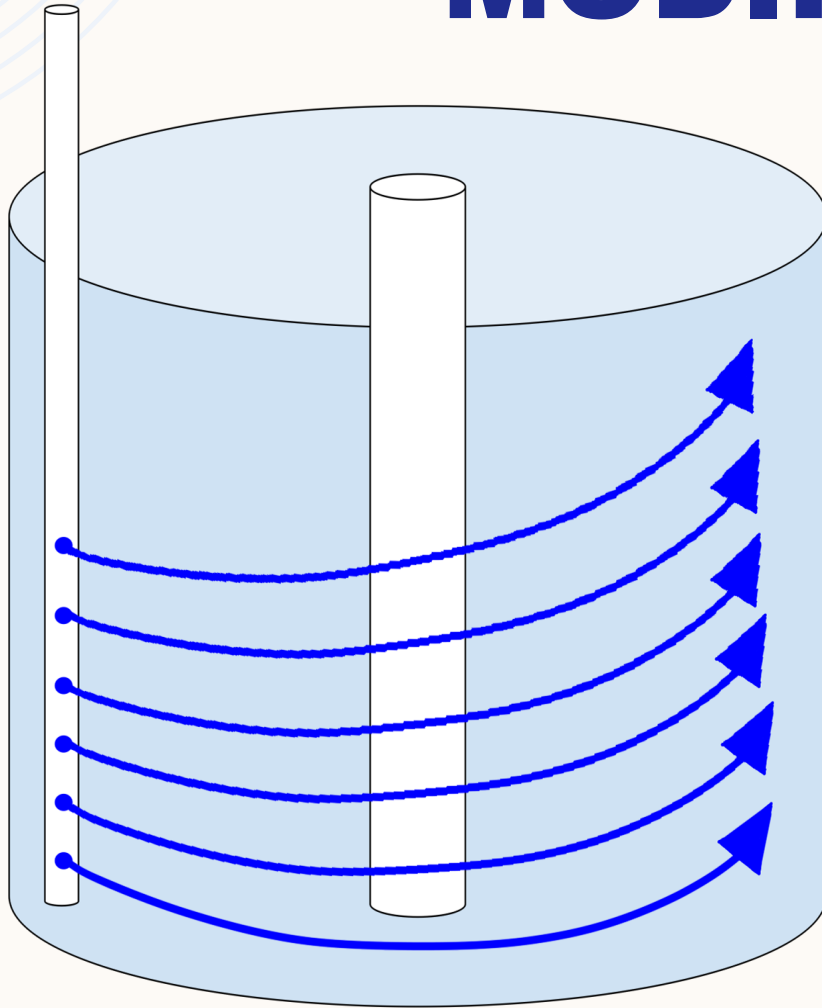


# ORIGINAL INFLOW





# MODIFIED INFLOW



POTENTIAL STRESSOR:

# FIBERGLASS



# IRRITATION FROM FIBERGLASS TANKS

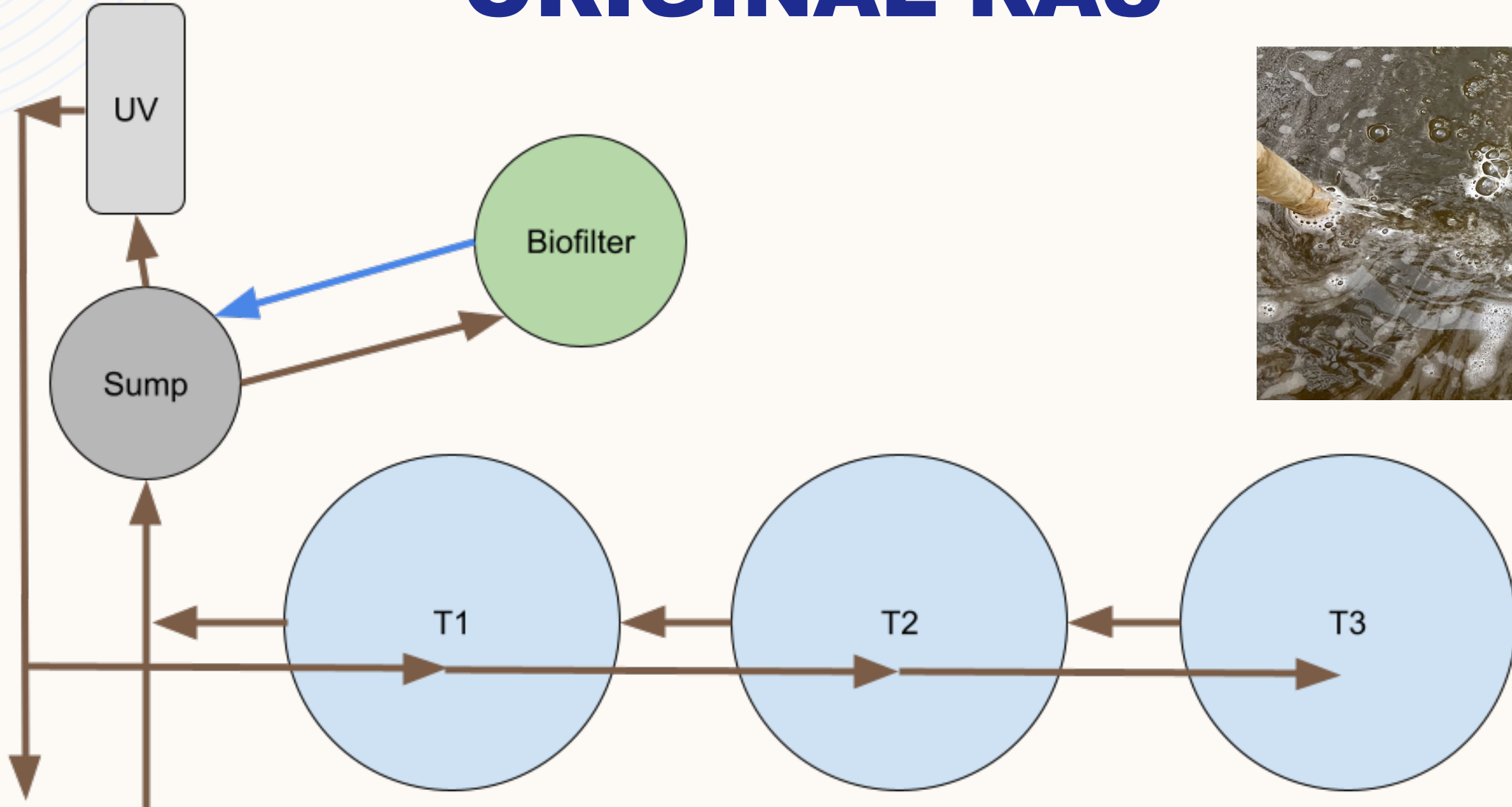


POTENTIAL STRESSOR:

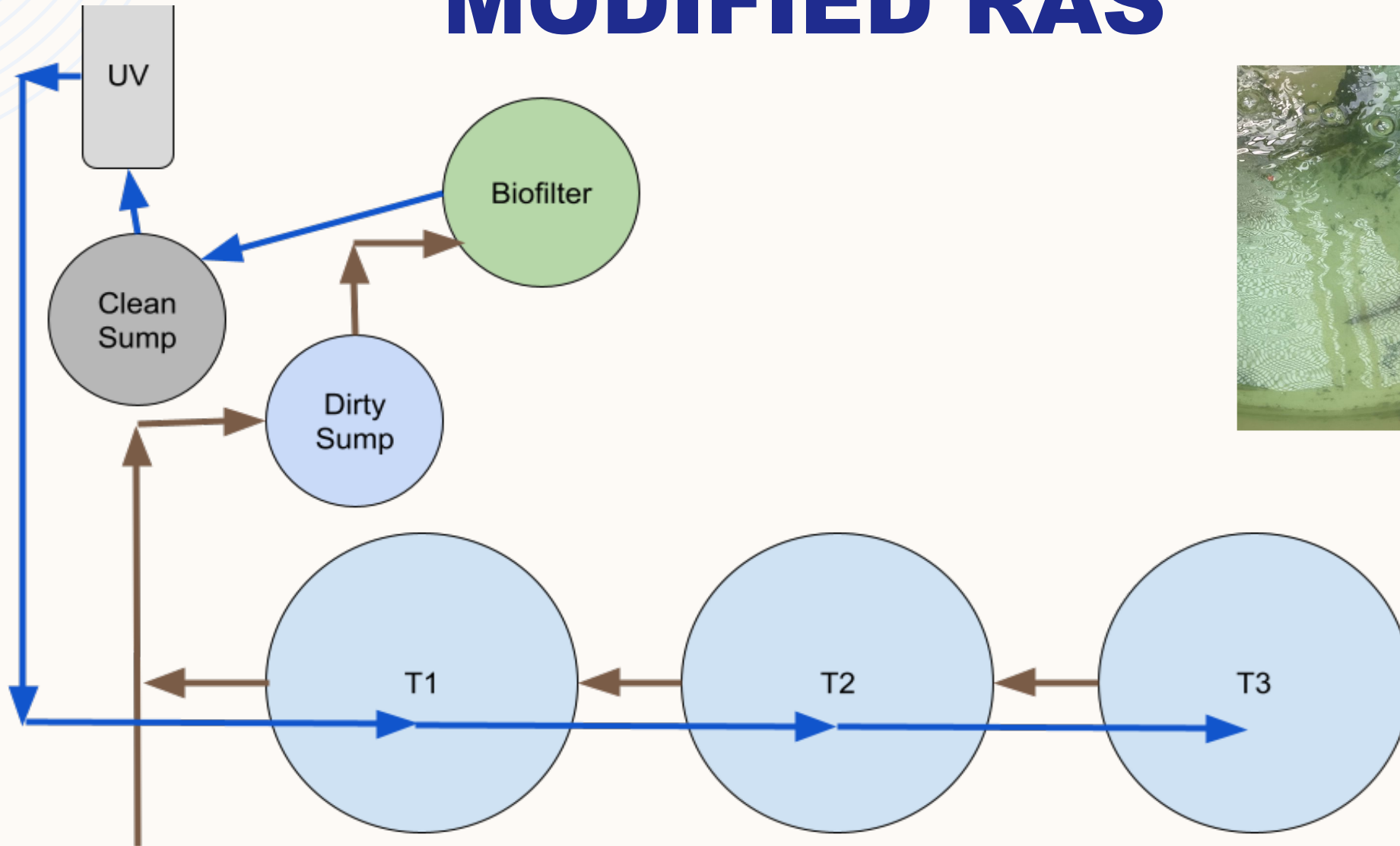
**WATER QUALITY**



# ORIGINAL RAS



# MODIFIED RAS



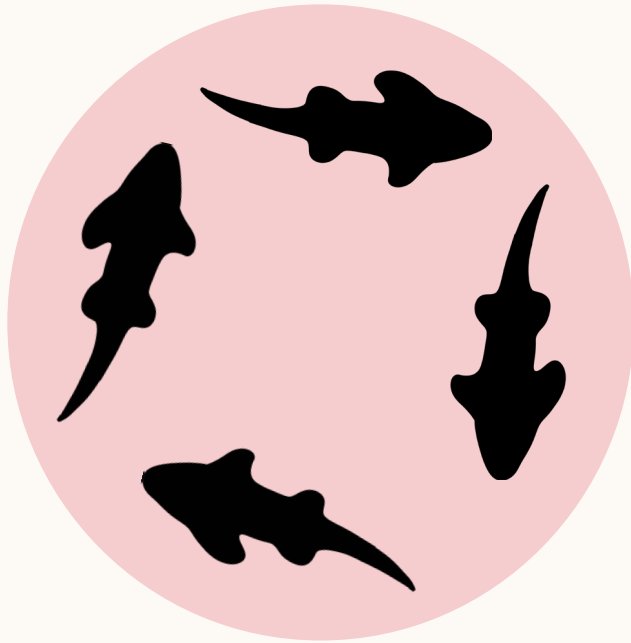
POTENTIAL STRESSOR:

**DENSITY**

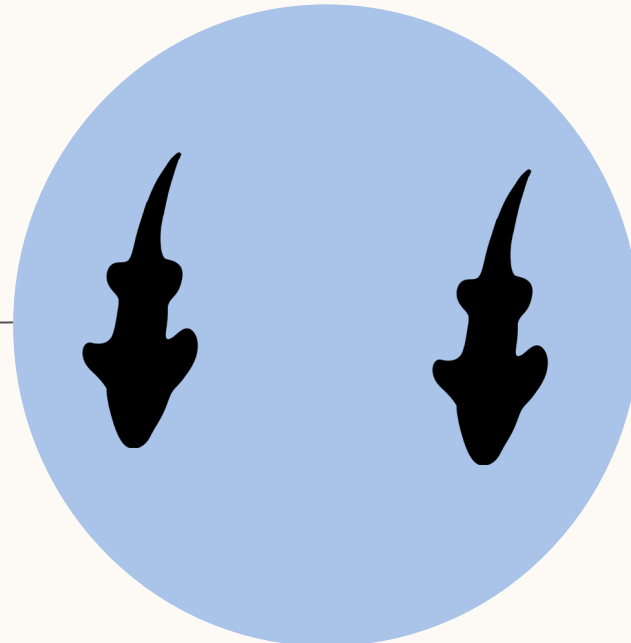


# DENSITY

3-4 fish/tank



1-2 fish/tank





POTENTIAL STRESSOR:

**FEEDING**



# FEEDING ISSUE

Fish wouldn't eat anything we fed them until...

How mobile are fish populations? Diel movement, population turnover, and site fidelity in suckers

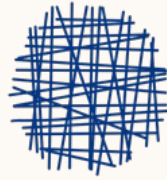
I started feeding them at night

# LESSONS LEARNED



## Linear Flow

Replicate  
stream flow in  
tanks



## Fiberglass

Seal fiberglass  
tanks with  
epoxy for  
demersal  
species



## Water Quality

Make sure  
existing  
systems are  
designed well



## Density

Focus on the  
surface area  
not total  
volume for  
demersal  
species

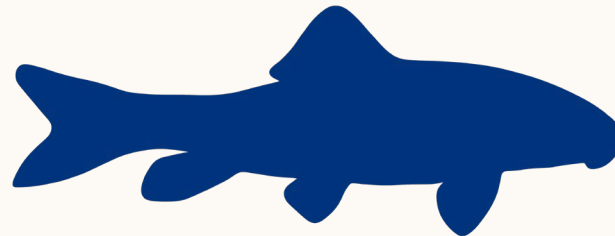


## Feeding Time

Feed at times  
inline with  
species natural  
behavior

# FAILURES INTO OPPORTUNITIES

- Presented at the AFS National meeting
- Made lots of connections
- Got insight into possible solutions
- Learned new things

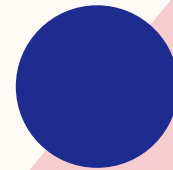




# **CONCLUSIONS**

# **FAILURES ARE...**

- inevitable
- not inherently a bad thing
- opportunities to learn



# THANK YOU

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