

Acoustic Deterrent Systems:

Testing new technologies for Asian carp prevention and control



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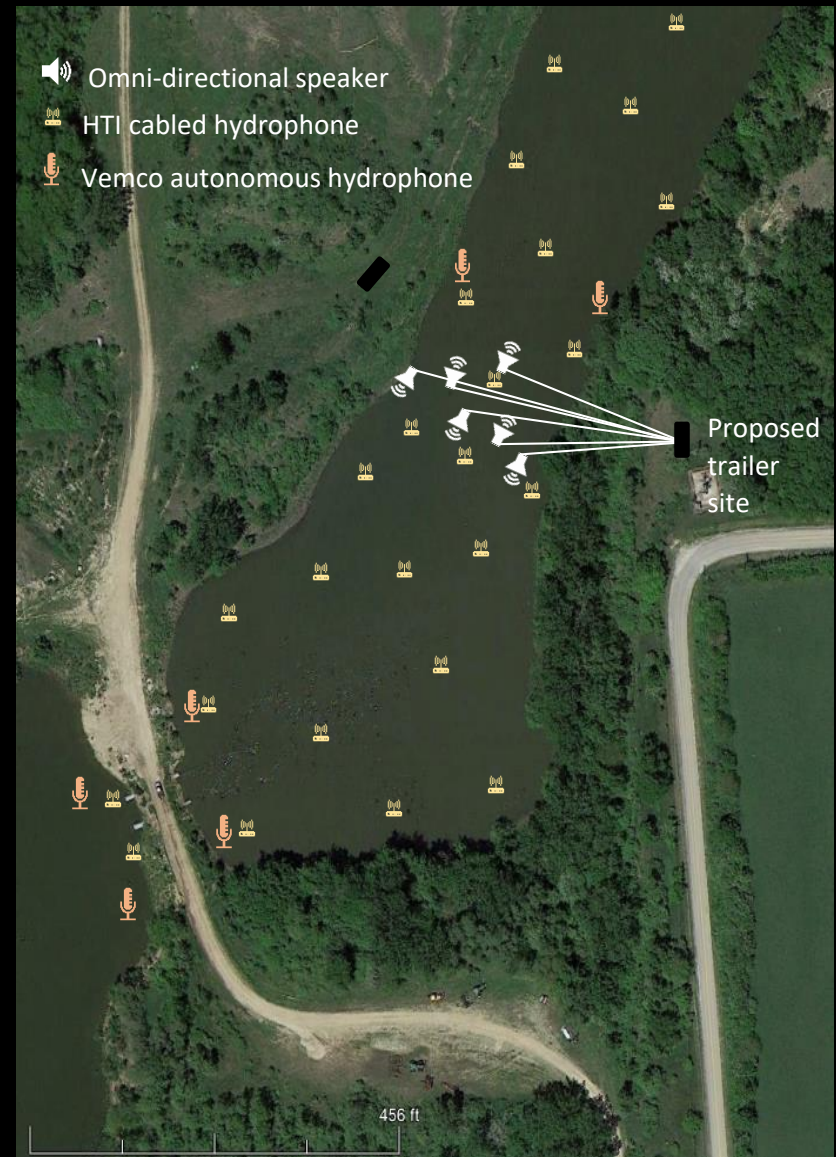
Testing New Acoustic Stimuli

- Tested additional sounds at USGS CERC ponds with USACE ERDC, USGS UMESC & USGS CERC
 - 5 trials in four ponds completed.
 - Data analysis and summary progressing and will be completed by January 2020 with a product in summer 2020.
 - Additional acoustic playbacks are still being screened by USACE ERDC



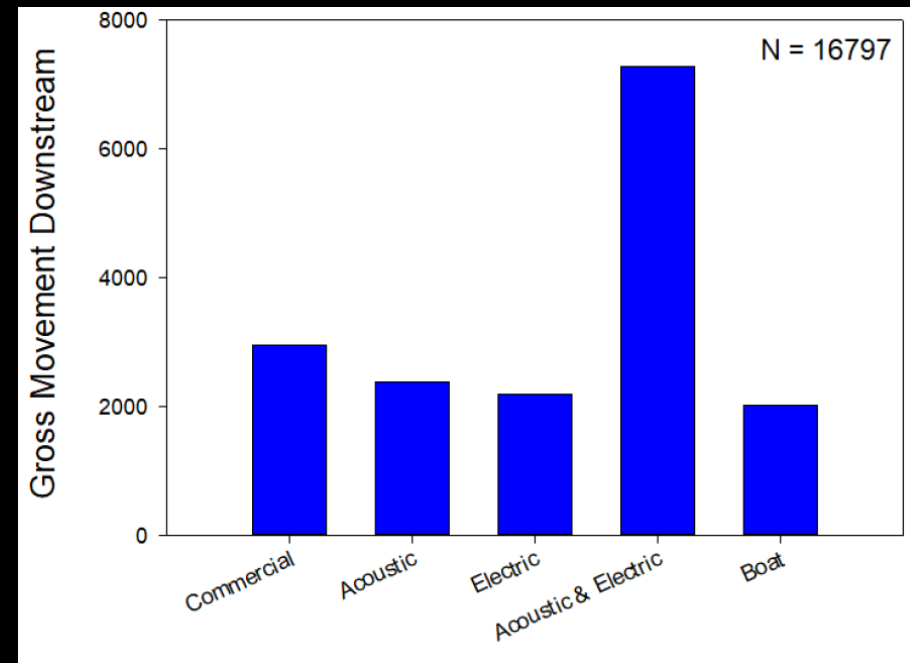
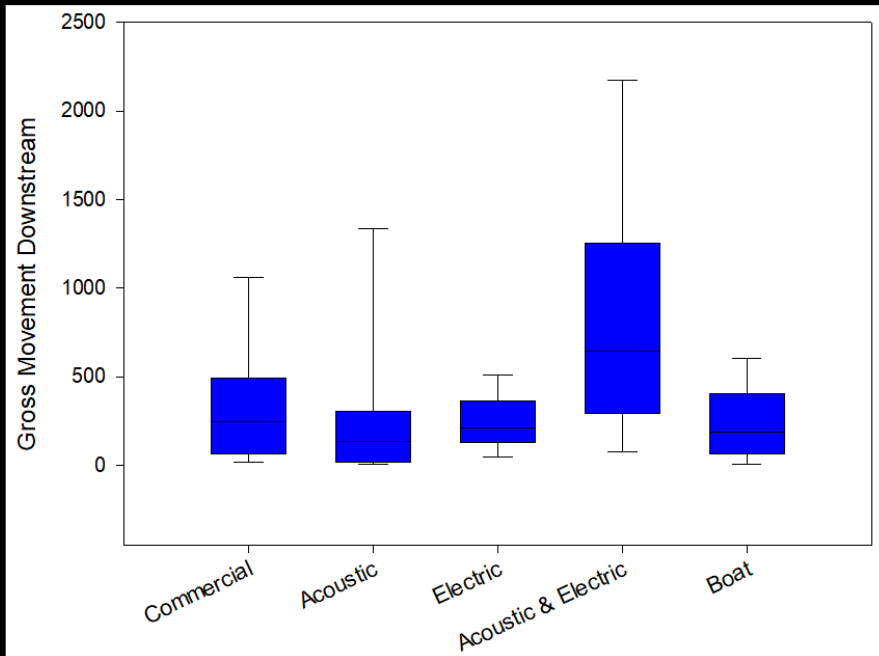
Testing New Acoustic Stimuli

- Study to test new acoustic playbacks in the Wabash River at West Lafayette, IN was cancelled (due to site access issues)
- New study plan developed for Morris, IL has begun.
- Additional silver carp and grass carp tagging and testing will commence in spring 2020 and continue for up to 2 yrs



Herding fish

- Objective: to select and refine stimuli to enhance herding for collection of Asian carps
- Using acoustic and electric stimuli together pushed over 80 – 2,000 fish per trial (over 7,000 fish total)



Large-scale Field Tests Underway

Barkley Lock and Dam



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ABC News is at Kentucky.

August 1

FISH OUT OF WATER: Hundreds of Asian carp seen jumping from Lake Barkley in Kentucky as biologists work to study the invasive species in hopes of slowing its spread.

Wildlife officials used a technique called 'electrofishing' to temporarily stun the fish.

<https://abcn.ws/2K9MurL>

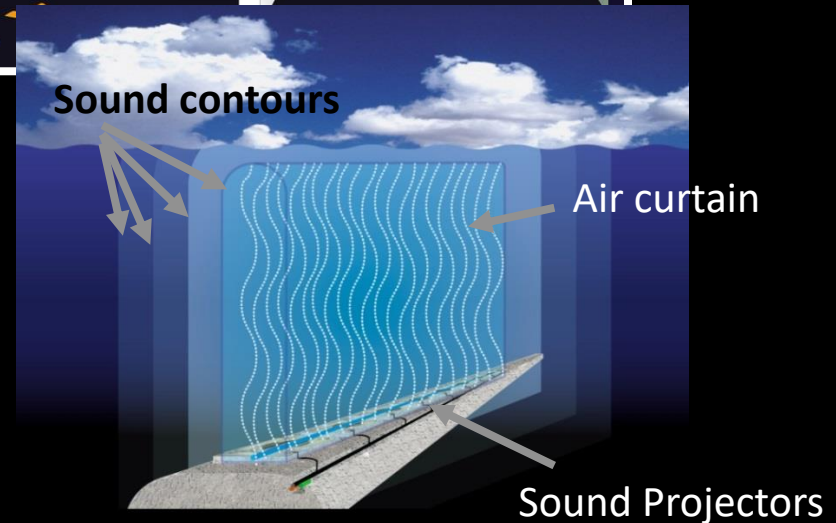
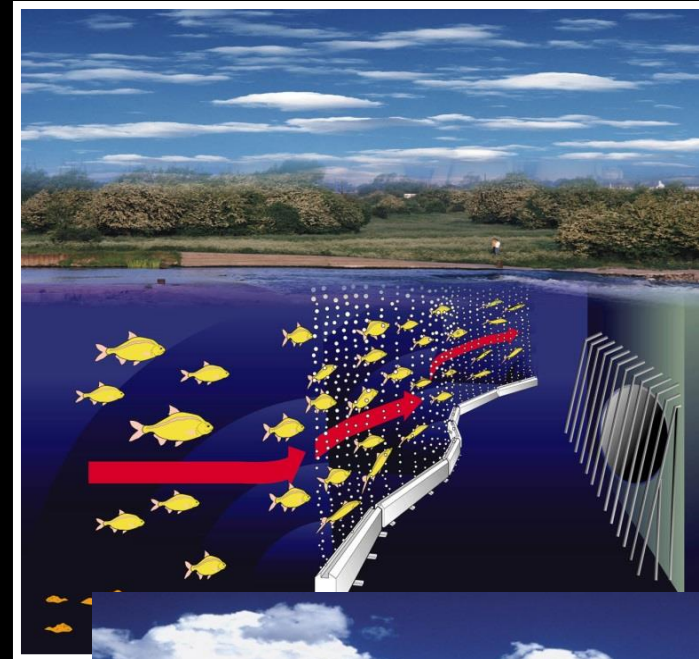
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2.5K Comments 4.7K Shares

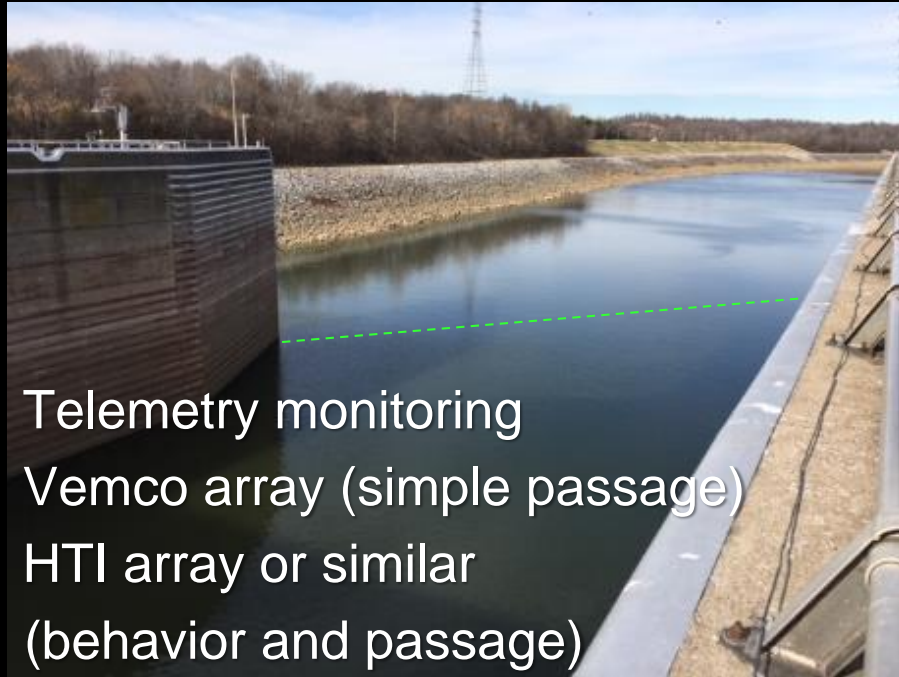


BioAcoustic Fish Fence (BAFF)

- BAFF developed by Fish Guidance Systems (FGS)
- System evaluated by University of Minnesota
- Uses proprietary sound signal that is introduced into a bubble curtain
- Produces a confined 'wall of sound' enabling fish to be *guided* to a bypass or trap
- Utilizes sound projectors, compressed air, and lights



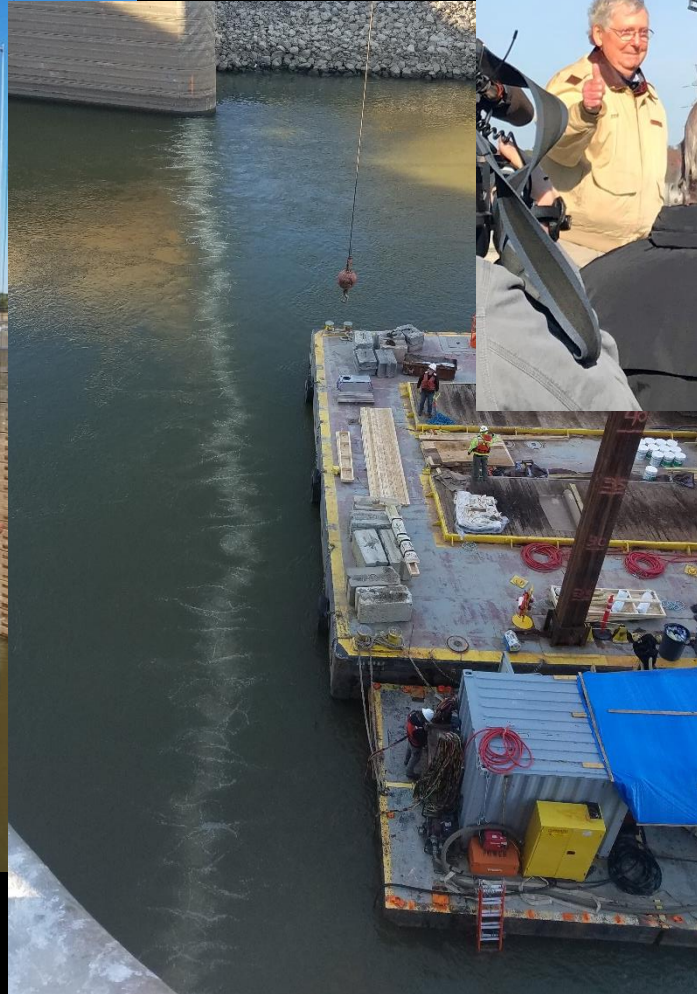
Barkley BAFF Deployment & Evaluation



- Telemetry monitoring
- Vemco array (simple passage)
- HTI array or similar (behavior and passage)
- ARIS and hydroacoustics gear deployed to collect ancillary data
- 150 silver carp already tagged; another 350 tags planned Oct-Feb.



Operation





Surveillance video shows moment storm hit Moors Resort and Marina

By Leanne Fuller Jun 25, 2019

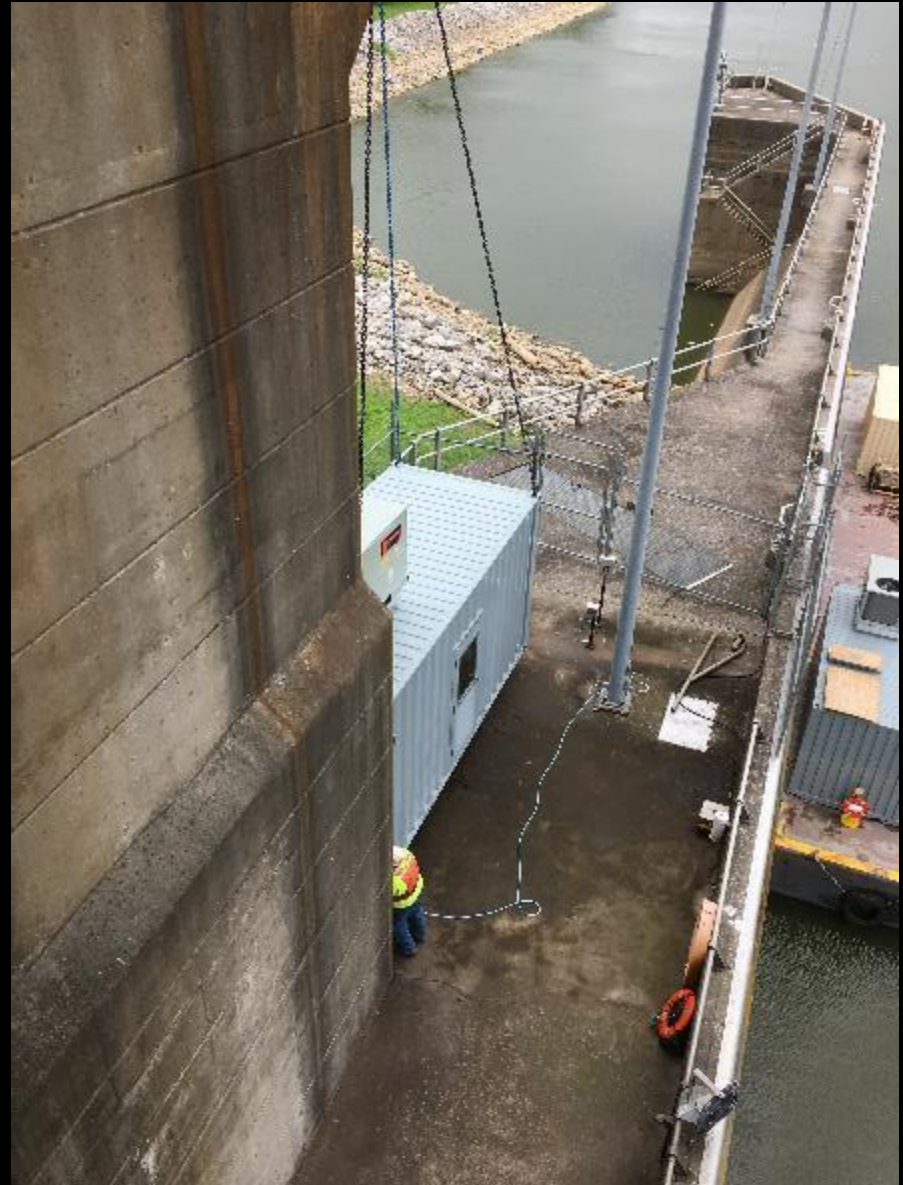


WEATHER

Currently in Paducah
90°F ☀️ Su













Lock and Dam 19

Acoustic Deterrent System (ADS)

- Multi-agency team finalized study plan in September
- Permitting and design/engineering is just beginning.
- Deployment slated for December 2020 – March 2021



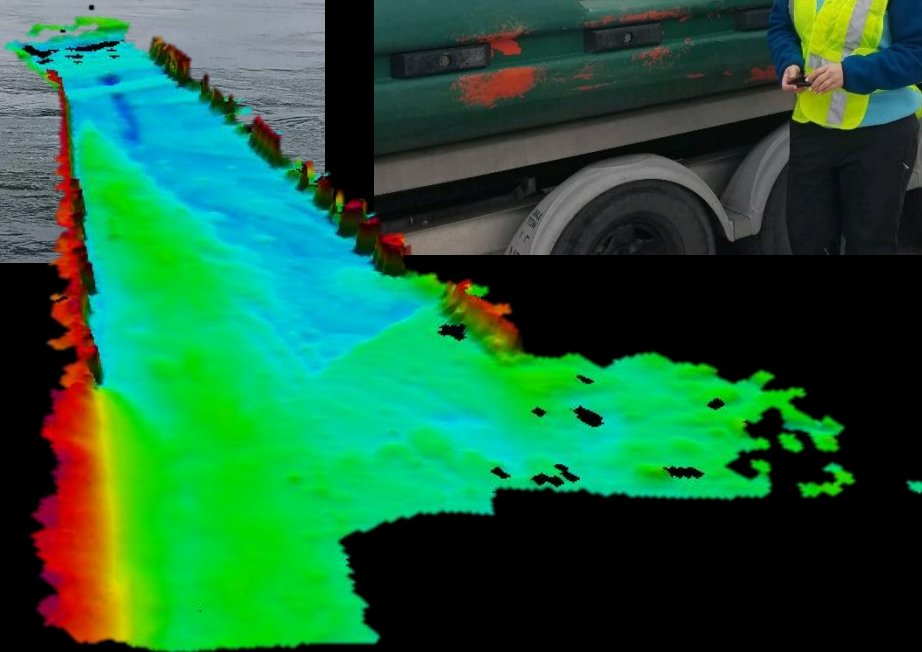
Lock and Dam 19

Acoustic Deterrent System (ADS)

- Acoustic propagation model and preliminary data collection to be completed in 2019.
- 3 years of fish passage data have been collected and summarized to inform deterrent placement and operation

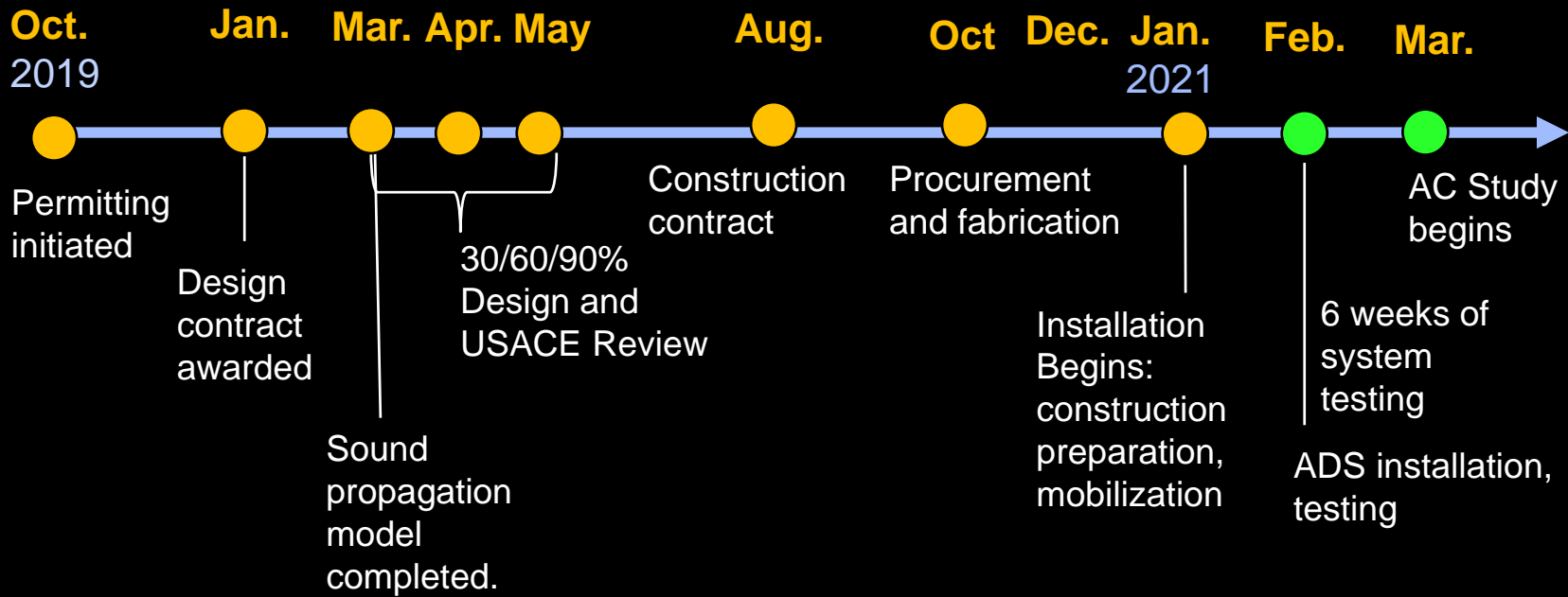


Bathymetry and Acoustic Mapping



LD19 ADS Deployment

Draft Timeline



Questions?

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