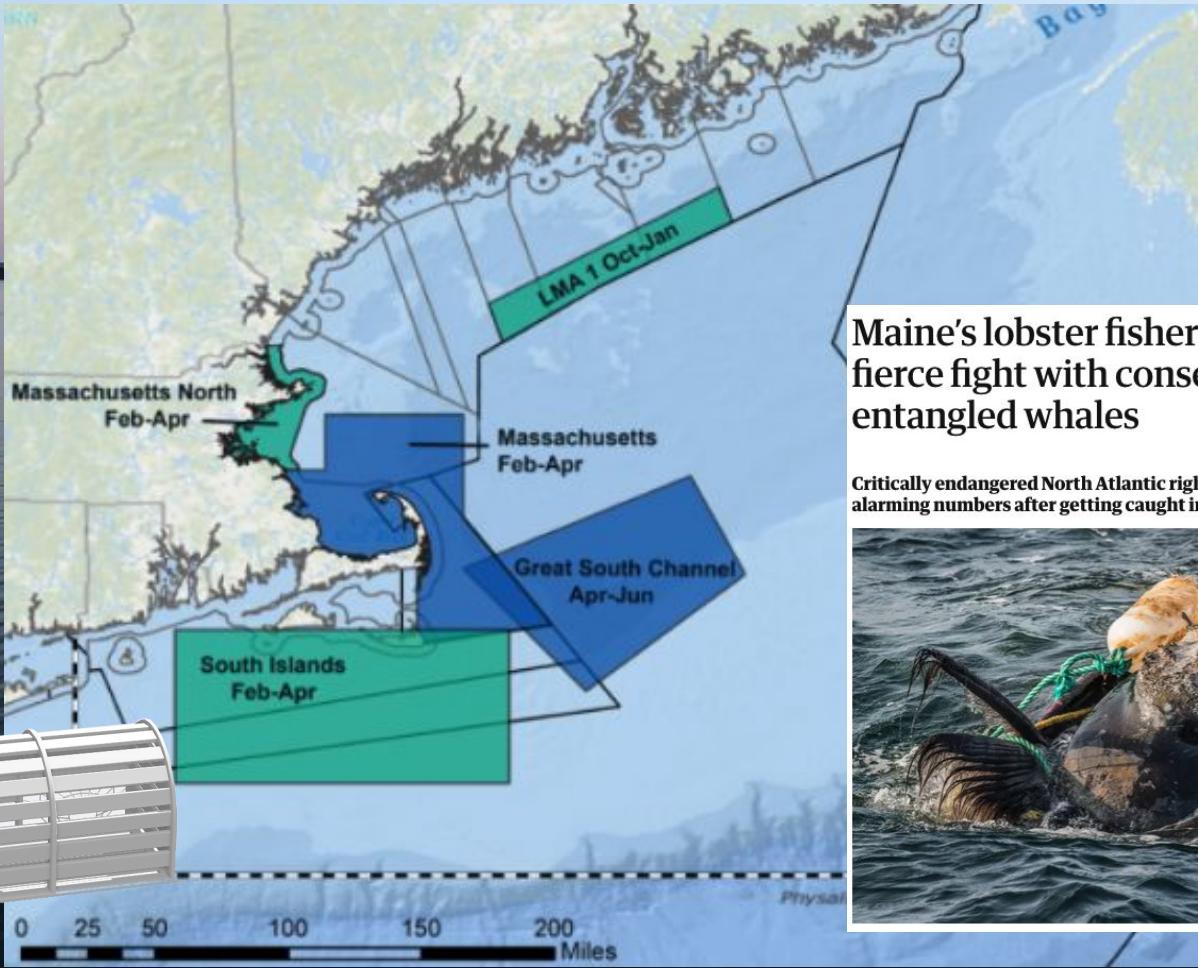
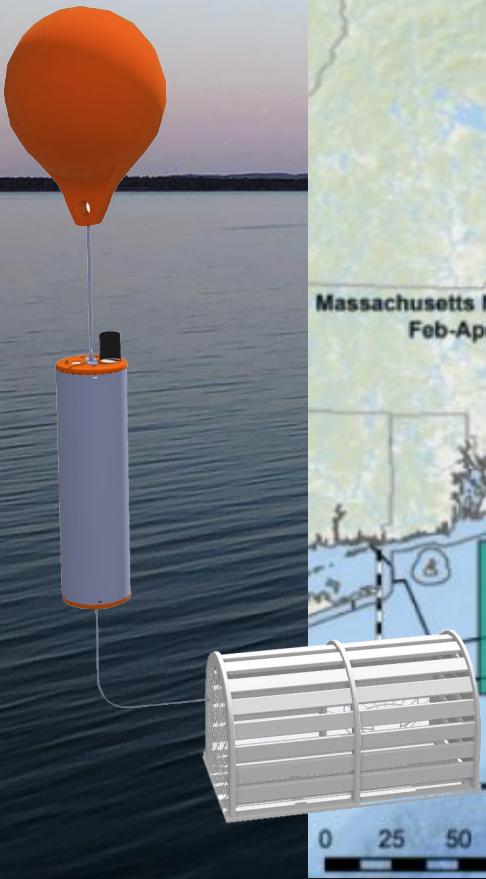




AQUATIC ARTHROPOD TRAPPING WITH COMPUTER VISION

Sb FULLER



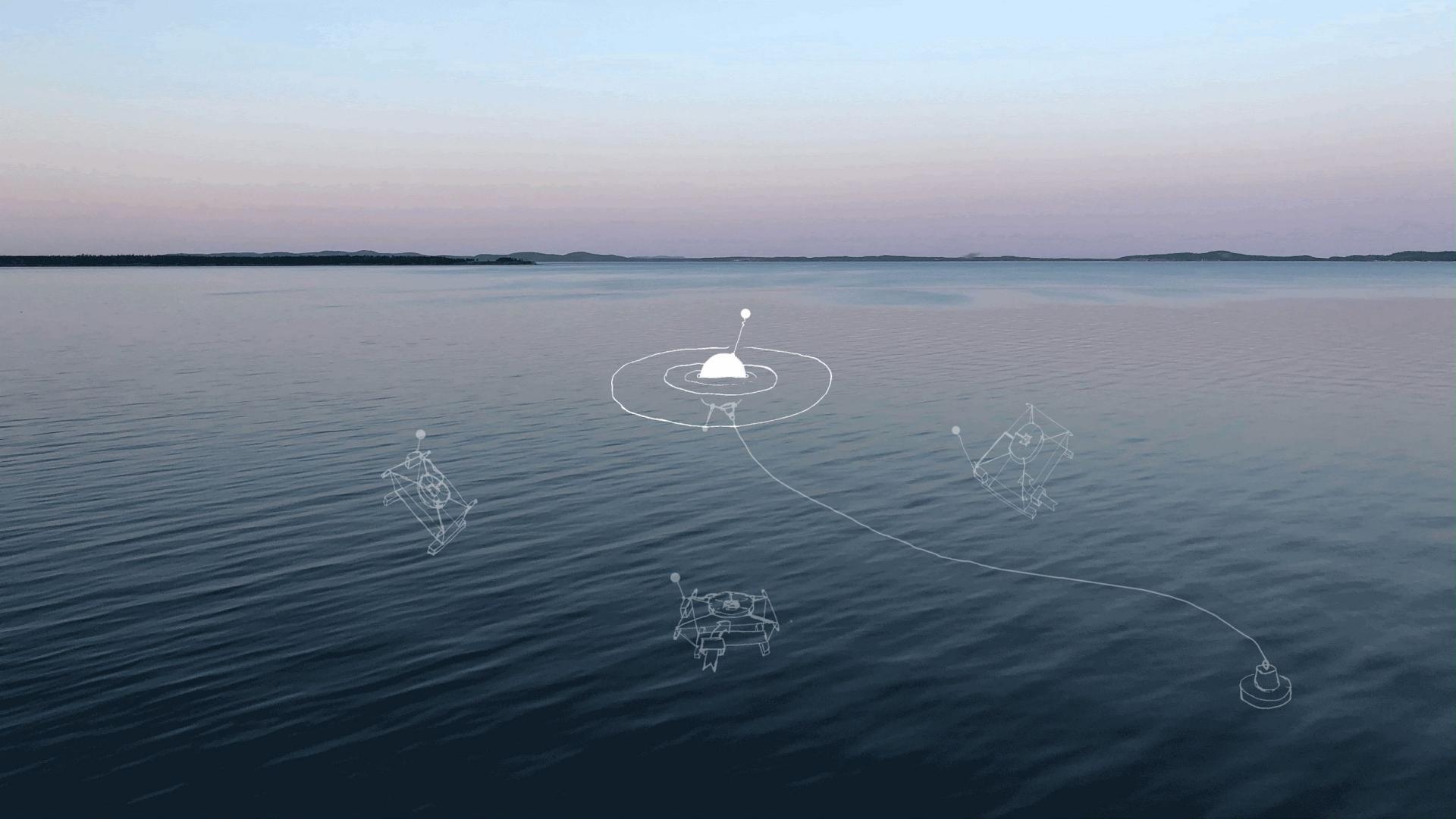


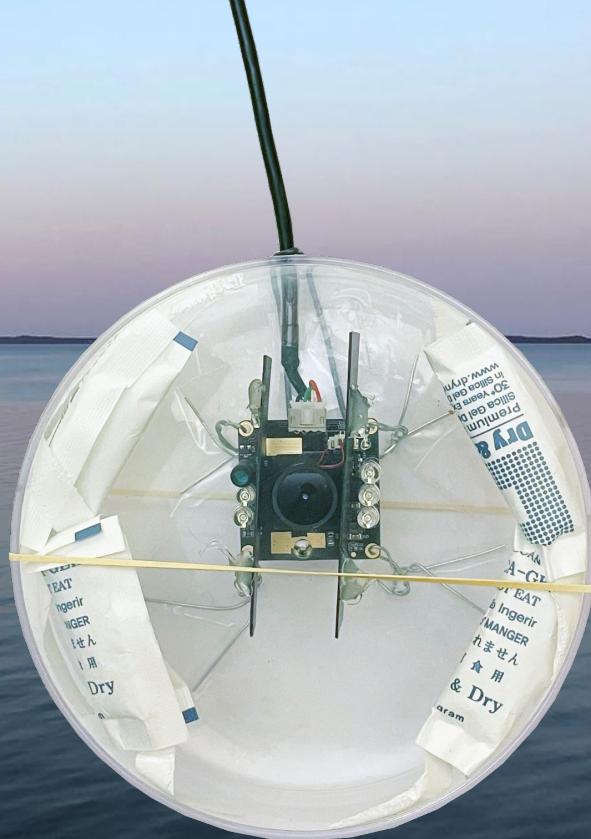
Maine's lobster fishers caught up in fierce fight with conservationists over entangled whales

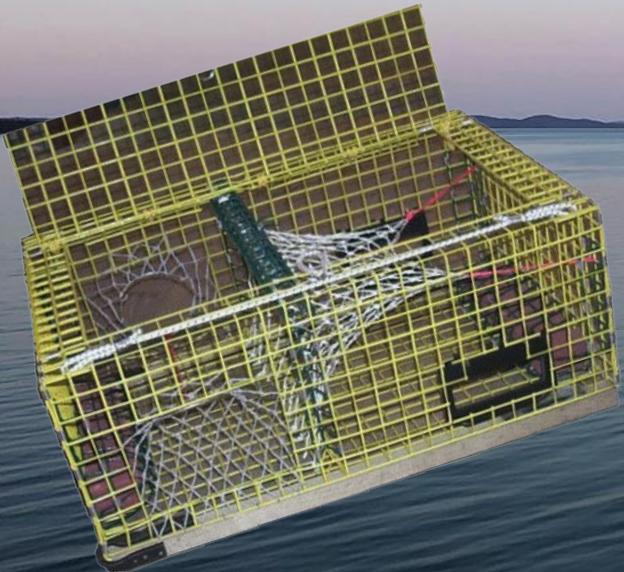
Critically endangered North Atlantic right whales are dying in alarming numbers after getting caught in lobster trap ropes

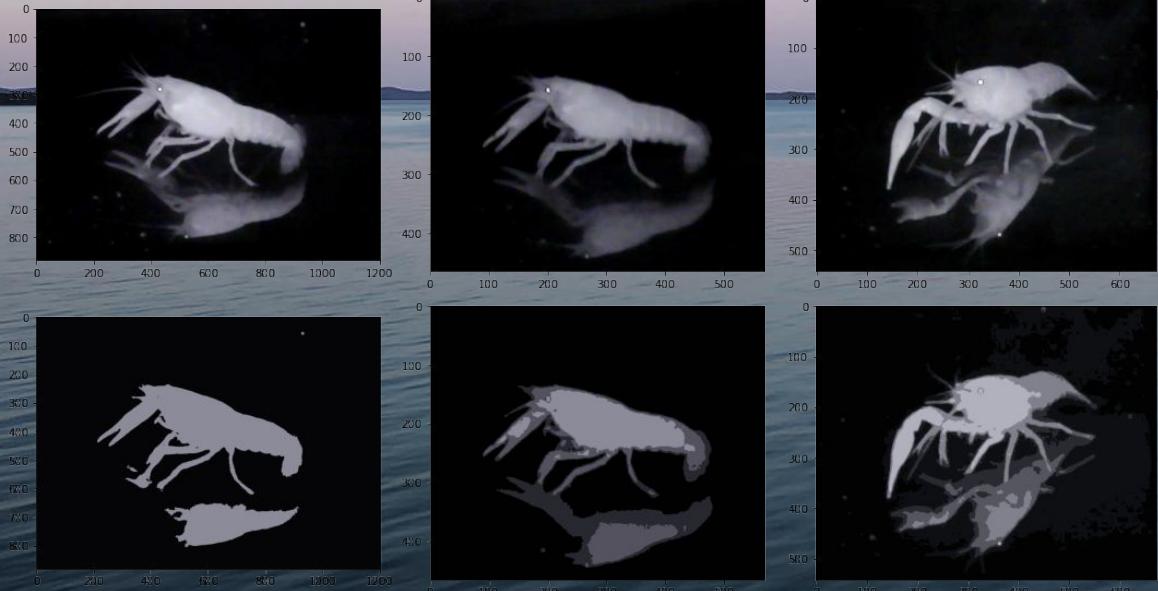


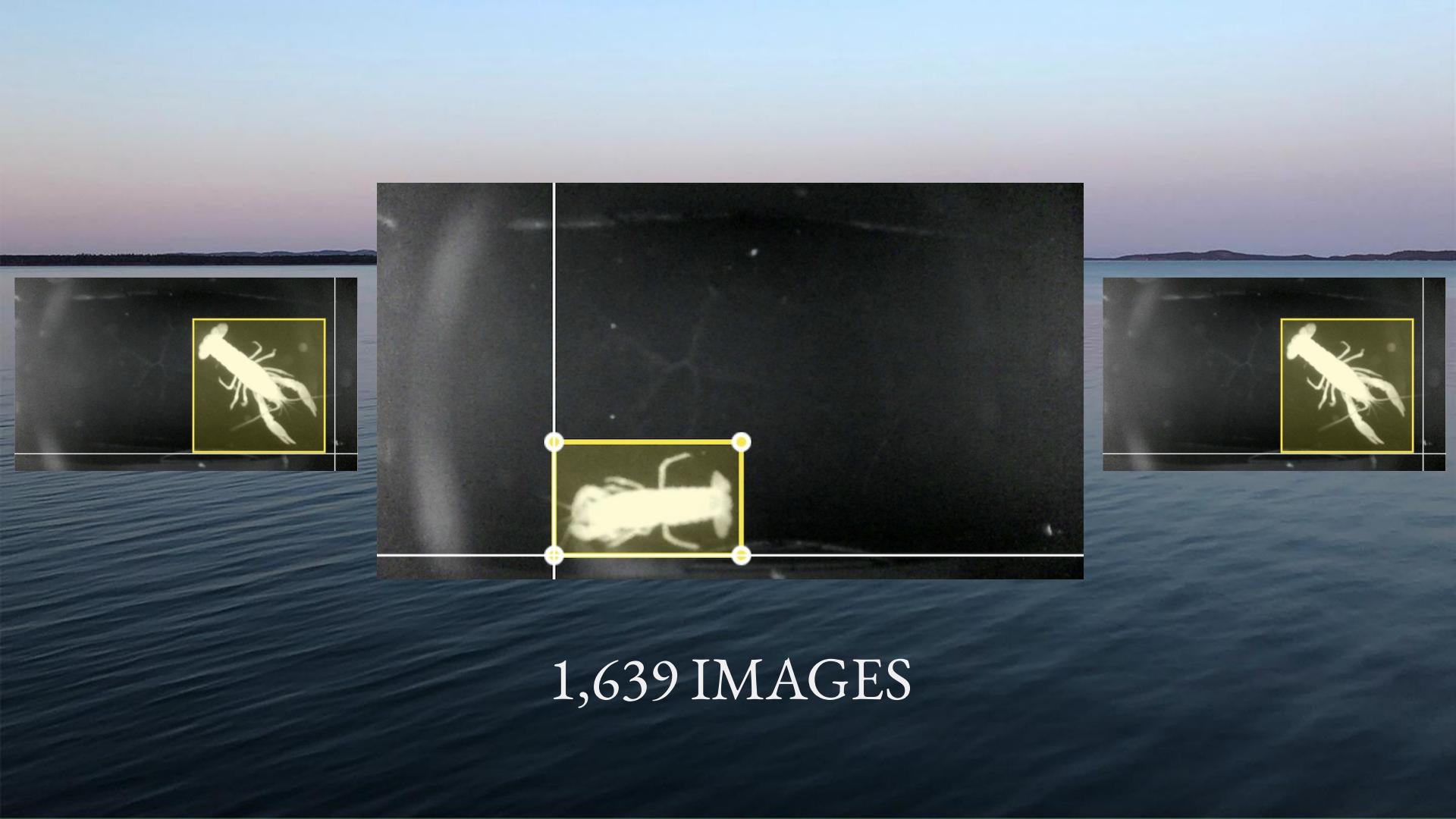




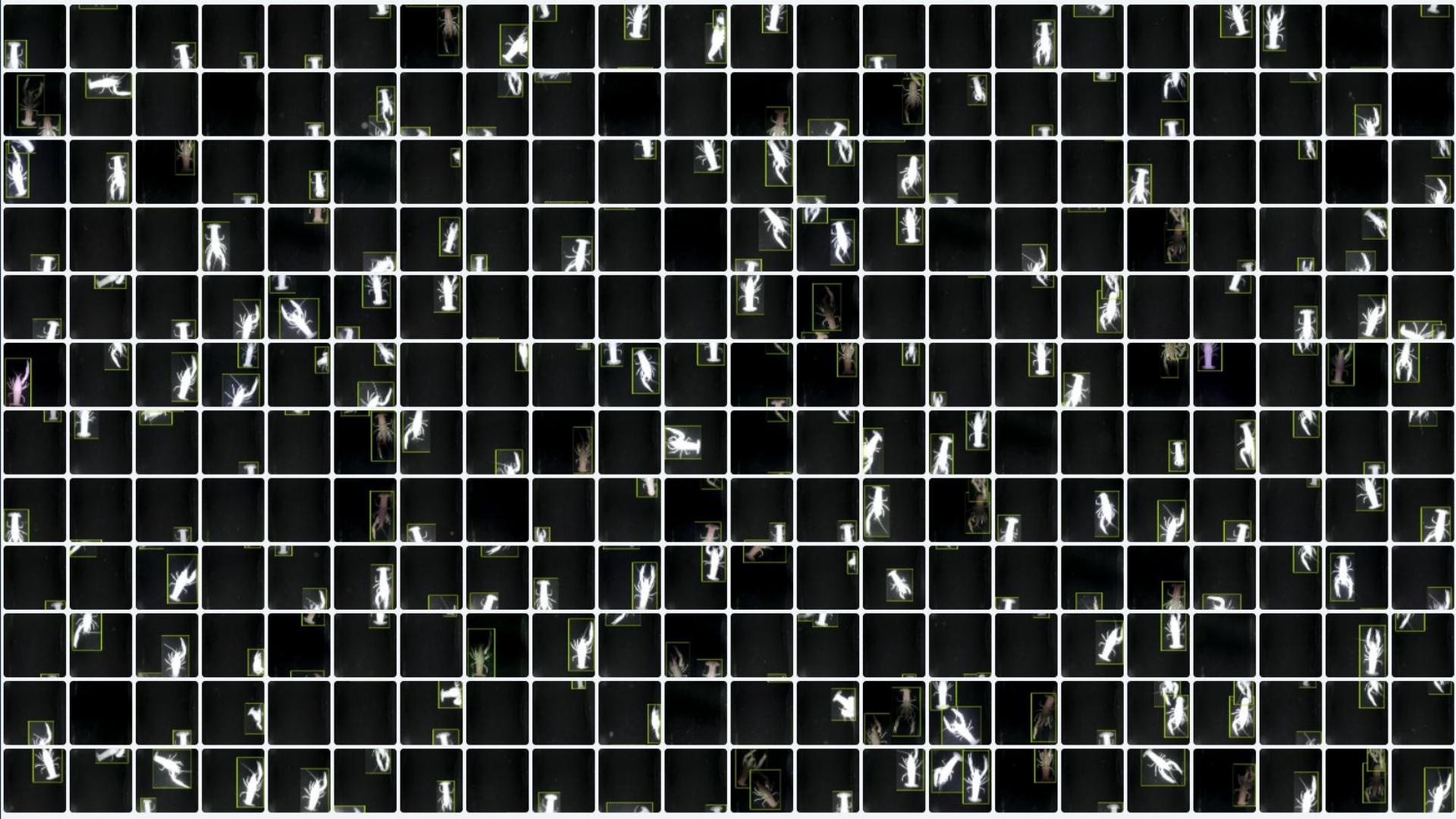


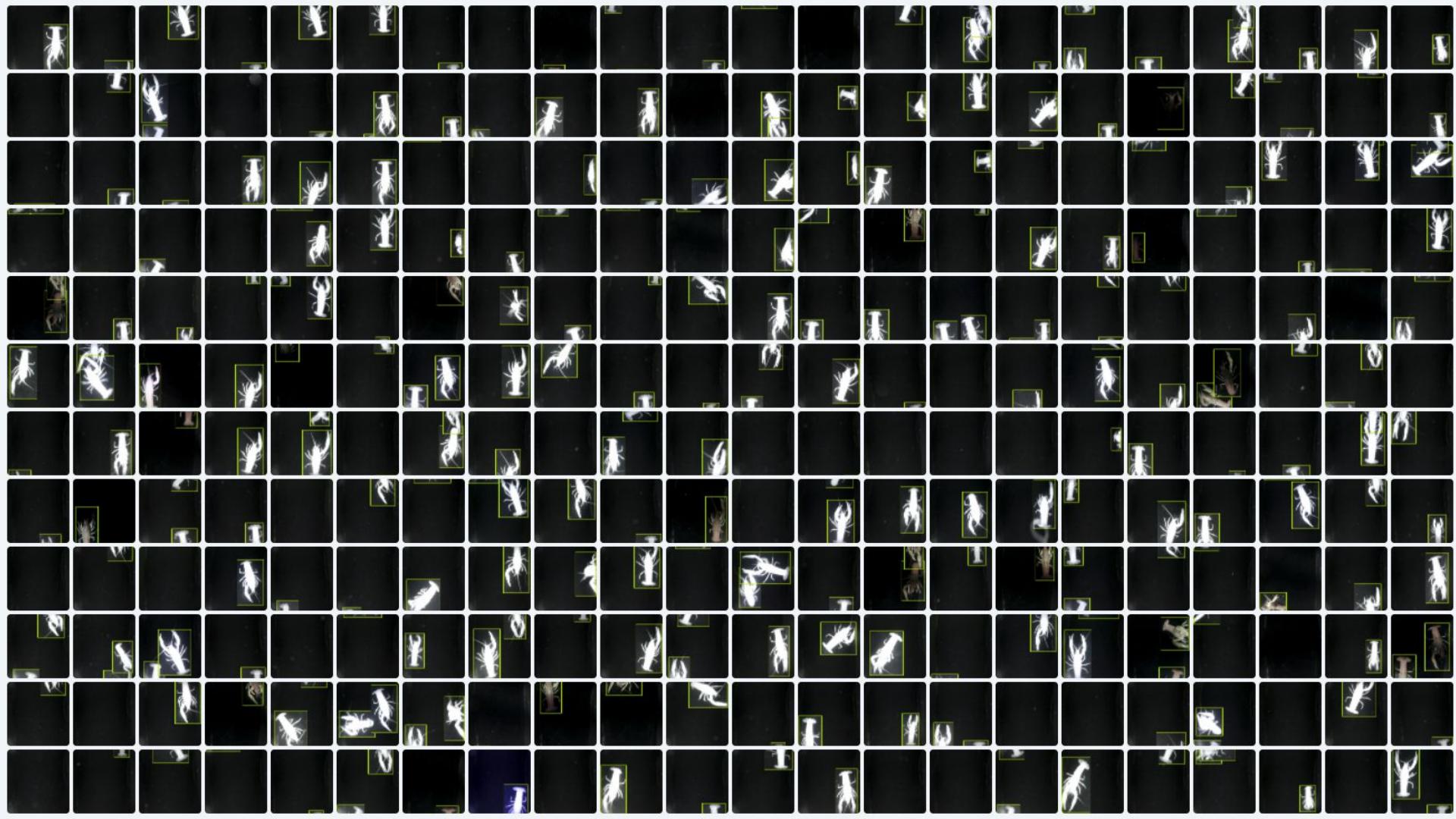


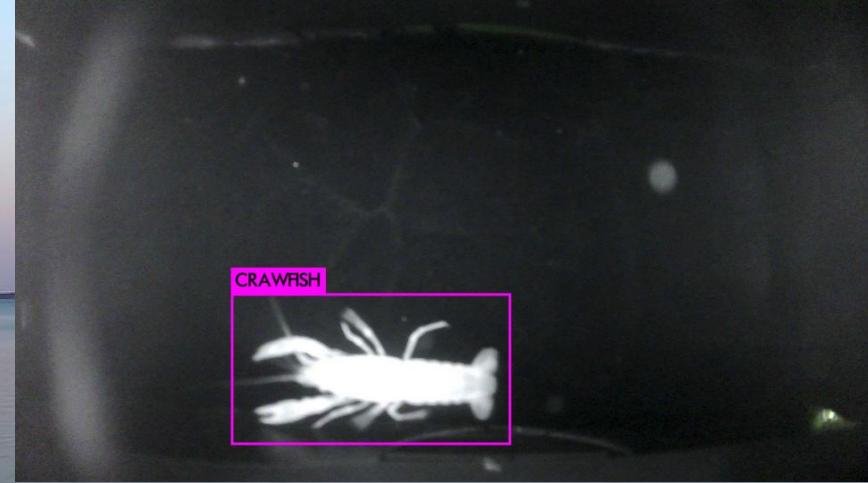
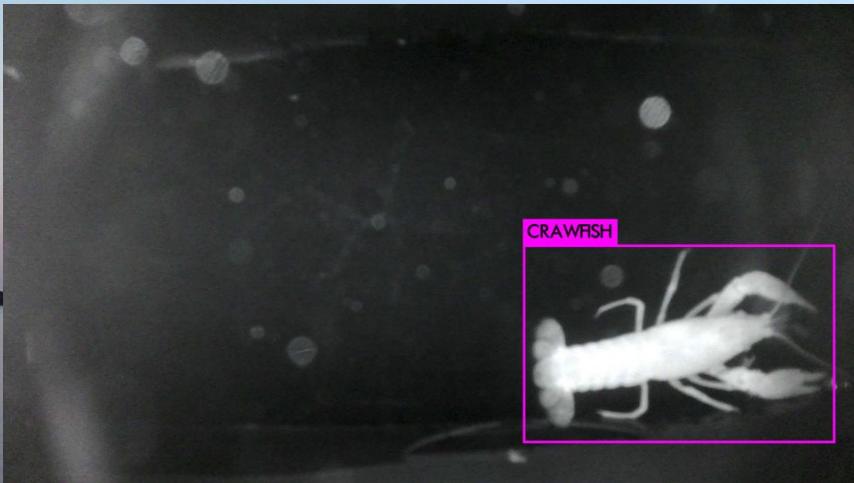


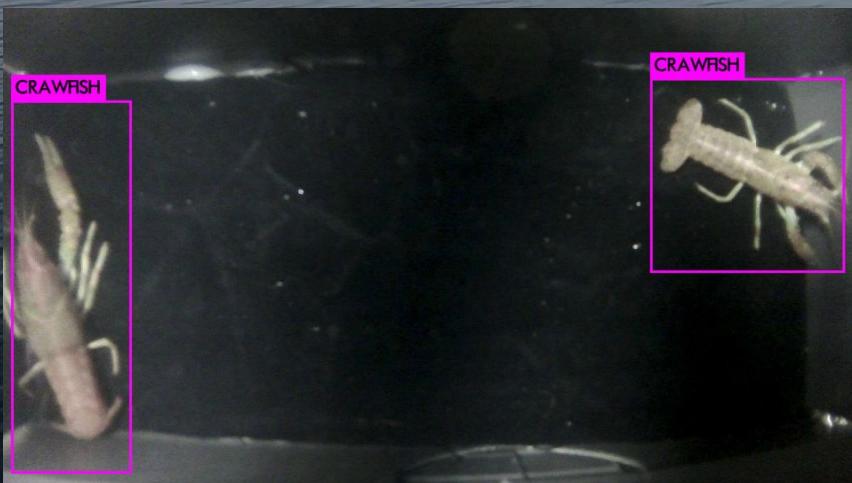
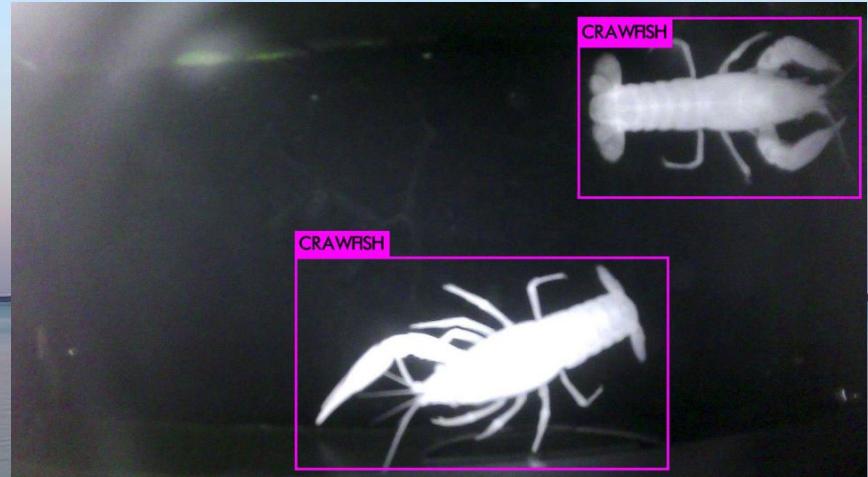
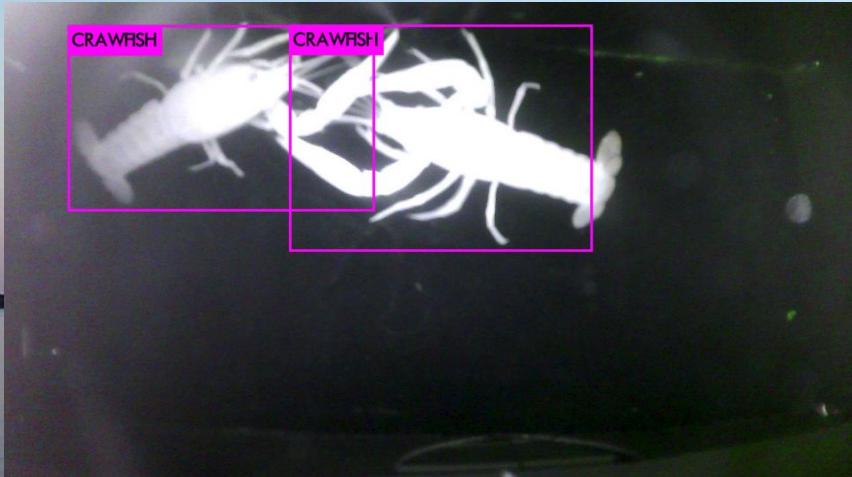


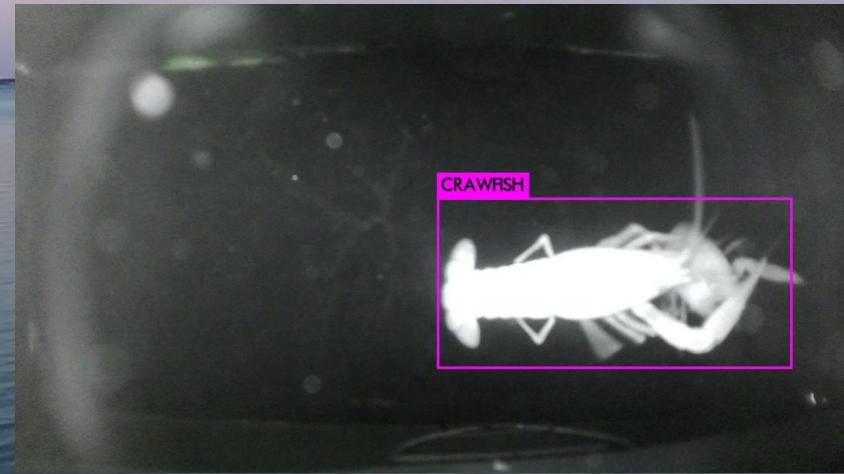
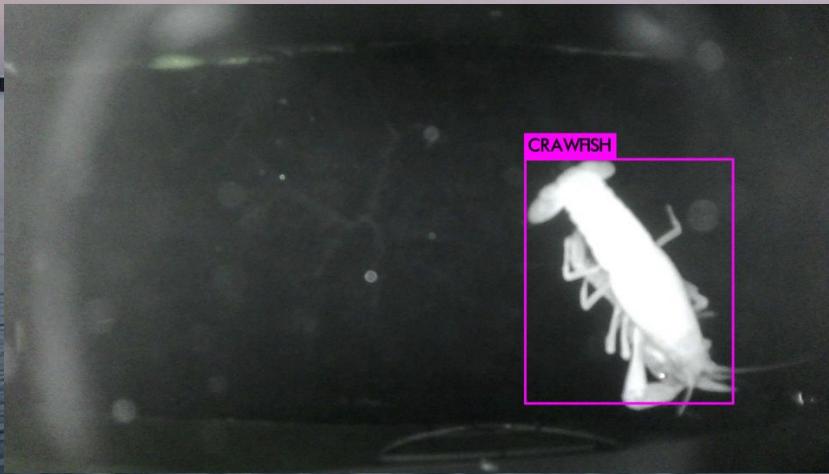
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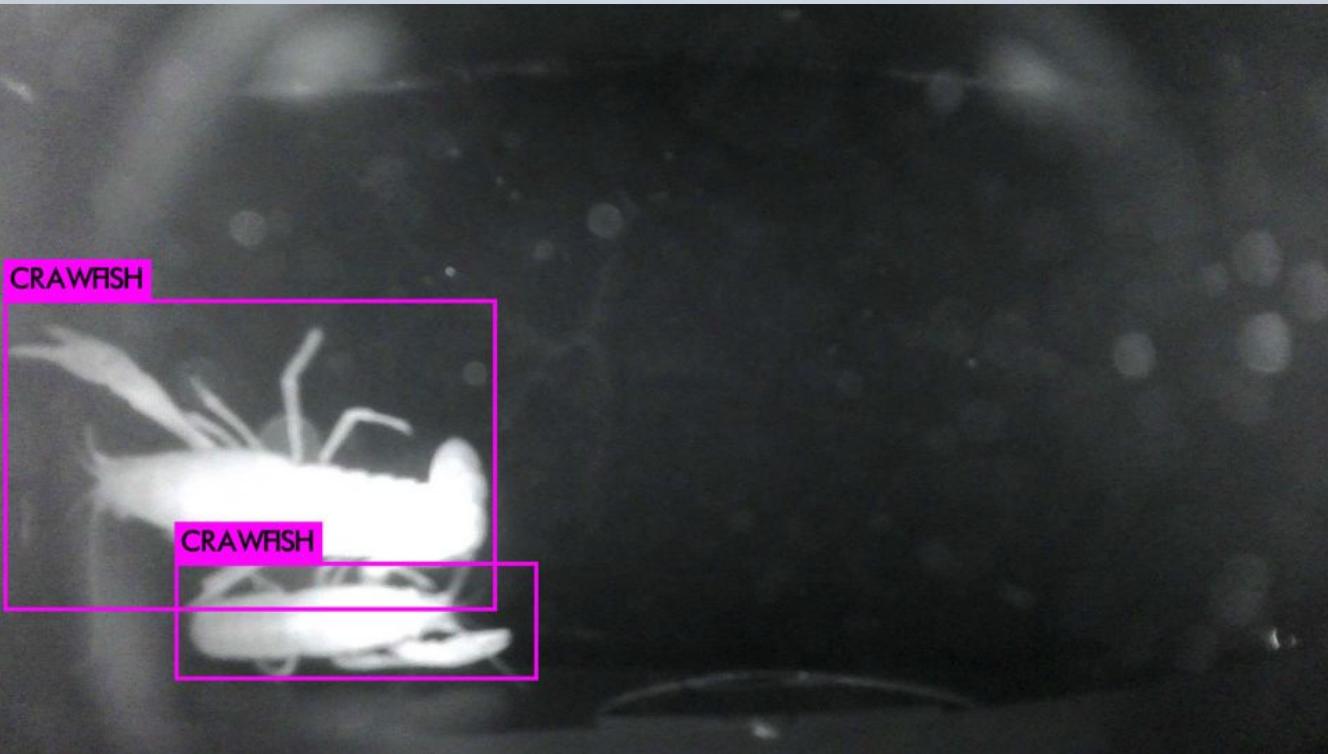










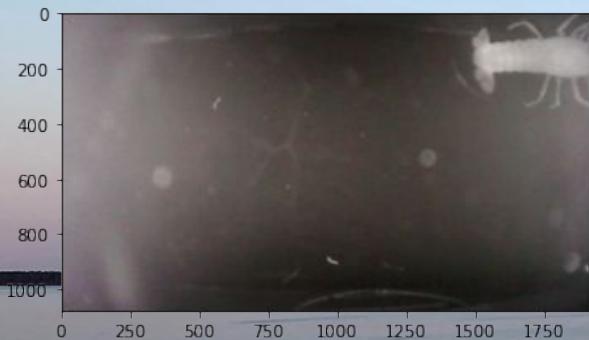




mAP 99.36%

RECALL 99%+

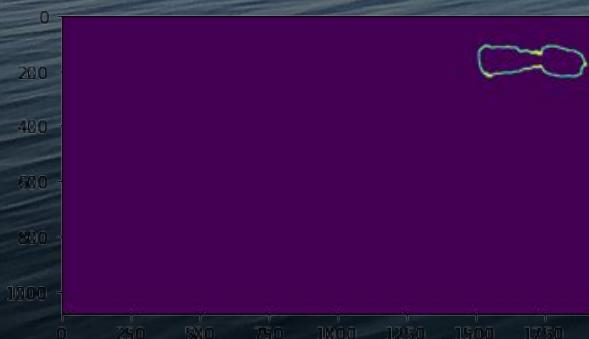
IoU 87.22%

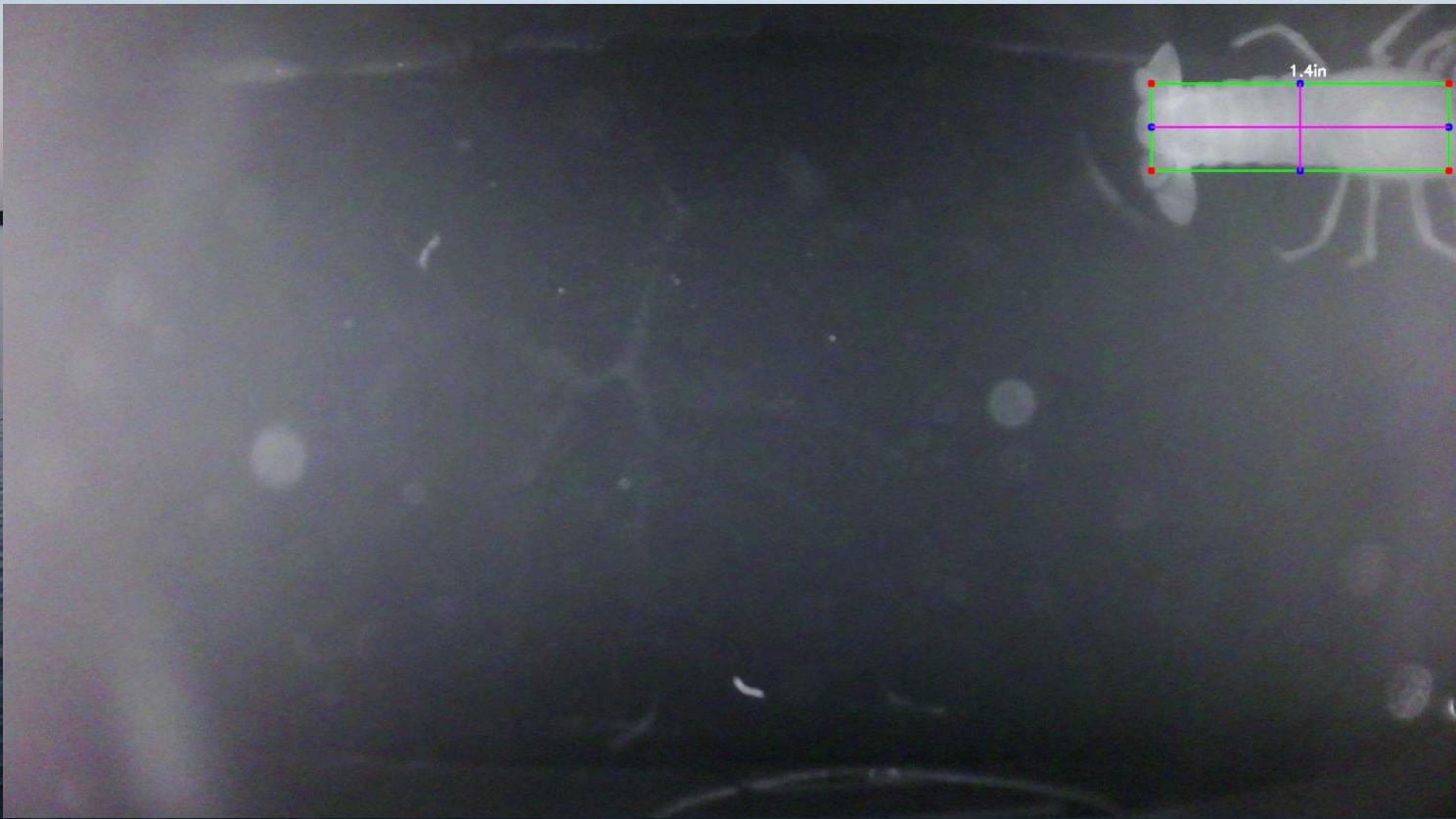


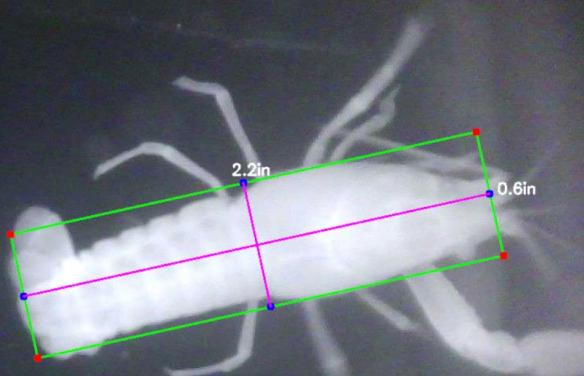
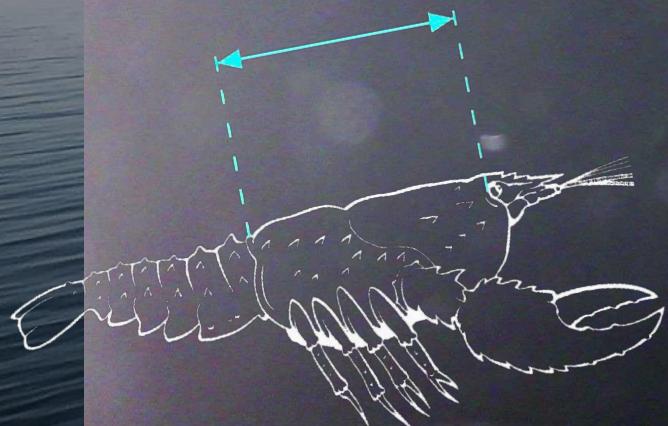
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THRESHOLD:
88

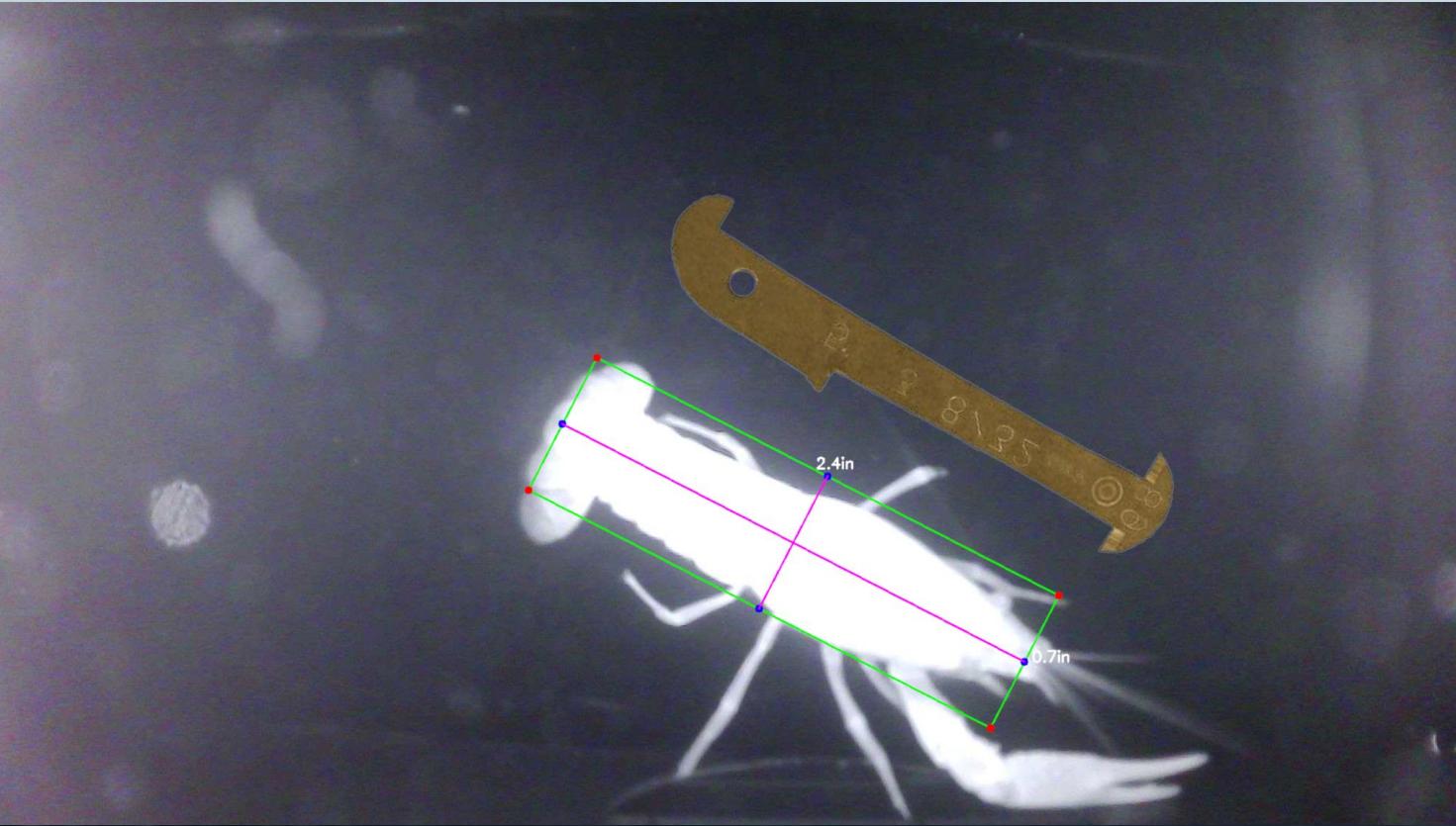
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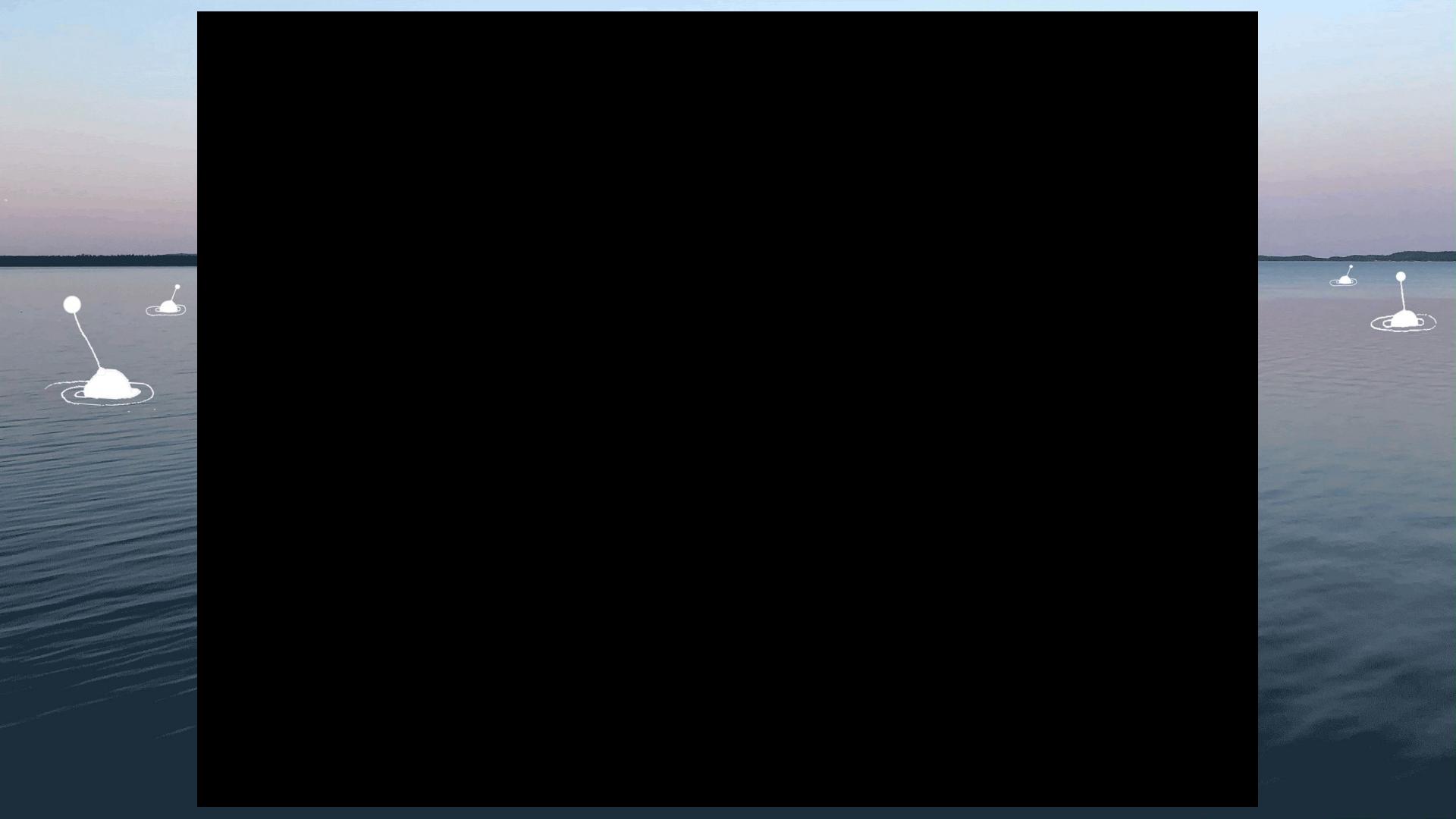
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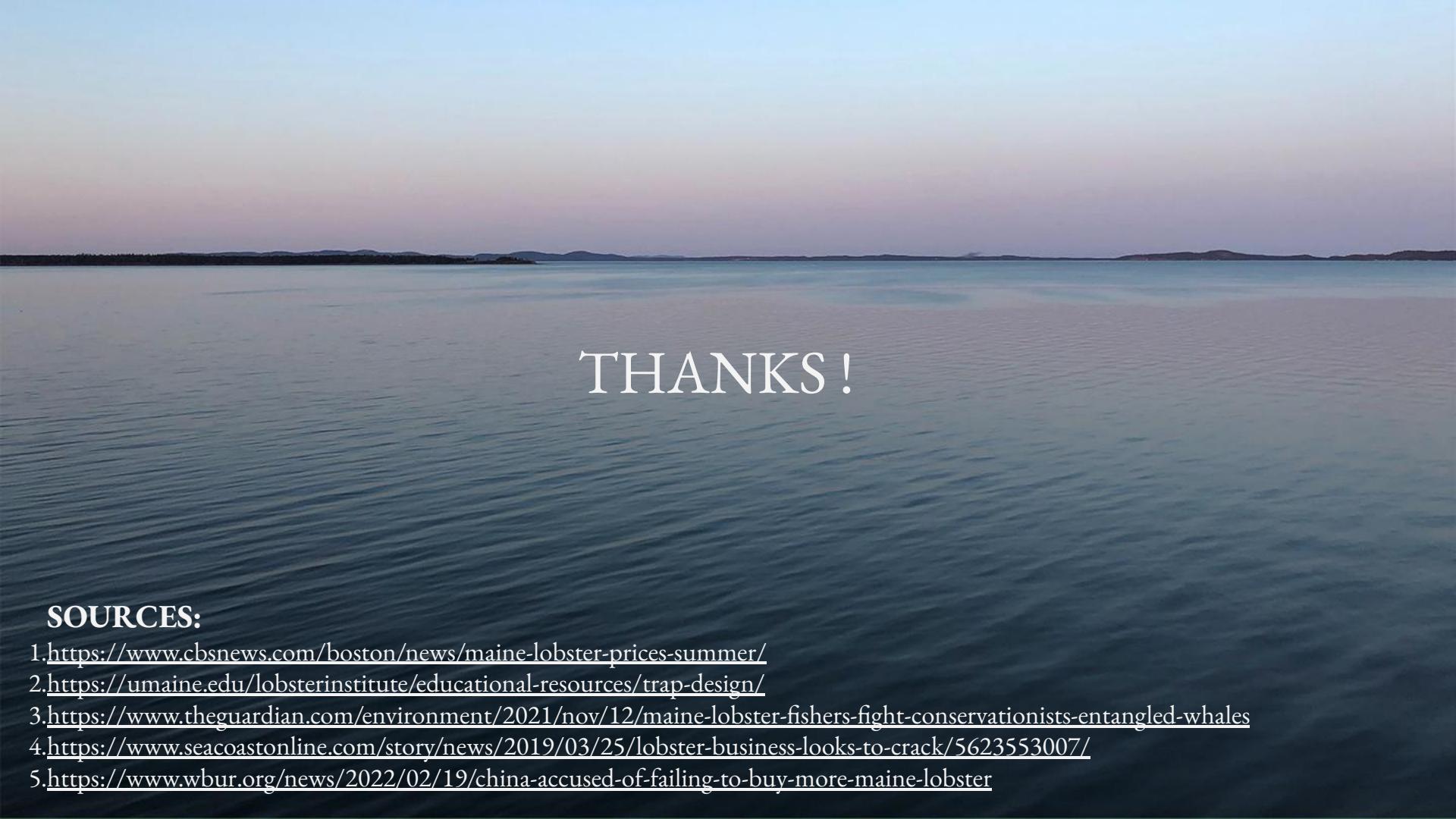


CURRENT CONCLUSIONS:

1. First round models perform exceptionally well.
2. Aquatic arthropods are uniquely visible to CV in low light.
3. CV can improve old and new trap usability.
4. Remote sensing is the future of sustainable trapping practices.

CHANGES FOR THE FUTURE:

1. Multiple cameras.
2. Retrain with polygons.
3. Tune box to carapace ratio.
4. Relocate infrared LEDs.



THANKS !

SOURCES:

- 1.<https://www.cbsnews.com/boston/news/maine-lobster-prices-summer/>
- 2.<https://umaine.edu/lobsterinstitute/educational-resources/trap-design/>
- 3.<https://www.theguardian.com/environment/2021/nov/12/maine-lobster-fishers-fight-conservationists-entangled-whales>
- 4.<https://www.seacoastonline.com/story/news/2019/03/25/lobster-business-looks-to-crack/5623553007/>
- 5.<https://www.wbur.org/news/2022/02/19/china-accused-of-failing-to-buy-more-maine-lobster>