



NOAA
FISHERIES
Office of Law Enforcement



ROV Operations

Assistant Director Tim Donovan
OLE, NED

December 1, 2020

Background

- Enforcement receives reports of noncompliant lobster gear offshore.
- Large whales including endangered North Atlantic Right Whales, continue to become entangled in fixed gear every year.
- Lobster vessels are not required to use VMS or even AIS beyond 12nm.
- Liability incurred if gear is damaged when hauling or setting
- Alternative to offshore patrol vessel?



Gear Requirements

- **Weak links**
- **Marked surface gear (permit, boat name etc.)**
- **Vertical line markings**
- **Sinking ground lines**
- **Trap tags**
- **Unobstructed escape vents**
- **Ghost panels**
- **Maximum trap size**
- **Non-stainless hog rings**



ROV – Remotely Operated Vehicle

ROV: underwater robot connected to a ship by a cable. The cable transmits command and control signals between the operator and the ROV, allowing remote navigation of the vehicle.

Typical Features Include

- Onboard camera with live feed
- Sonar
- Manipulator arm
- Lighting



Alternative Solution: ROV

- **An ROV is less invasive. Gear can be inspected subsurface with minimal to no contact.**
- **Any gear configuration or tag violations is recorded on camera and may be used as evidence.**
- **Cost effective as compared to acquiring, staffing and maintaining a 75'-100' lobster boat.**
- **Any floating ground lines can be observed floating in the water column vs. testing at the surface or submitting samples to a lab.**



ROV Field Testing, Cape Cod Bay

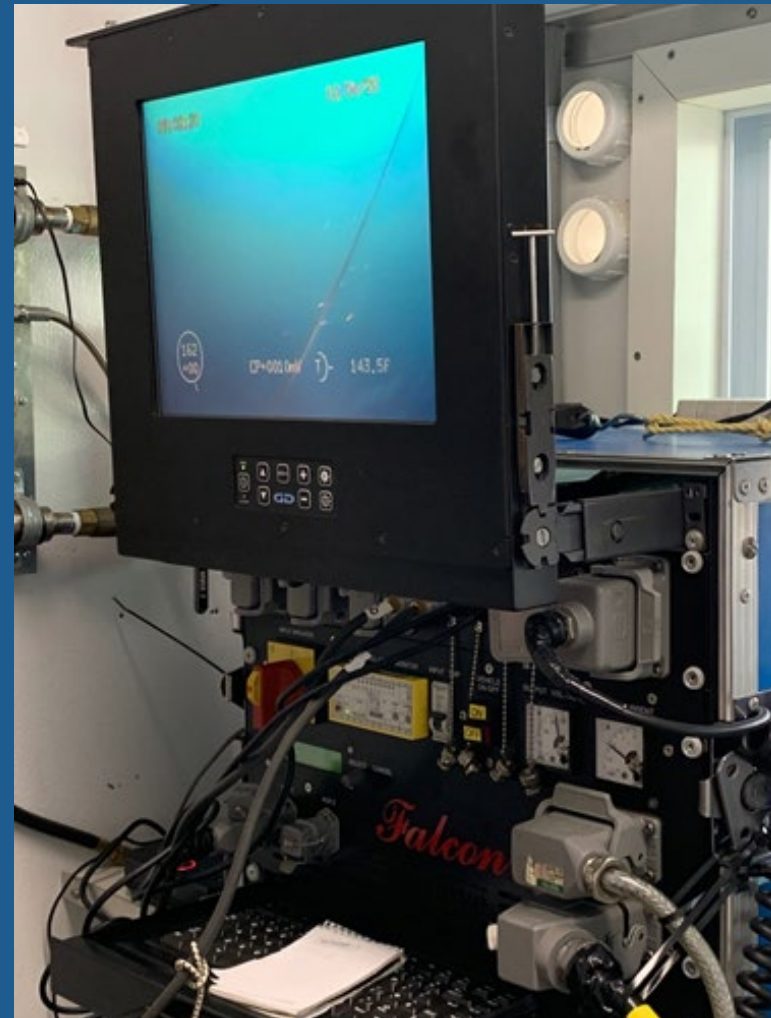


Inspection Steps

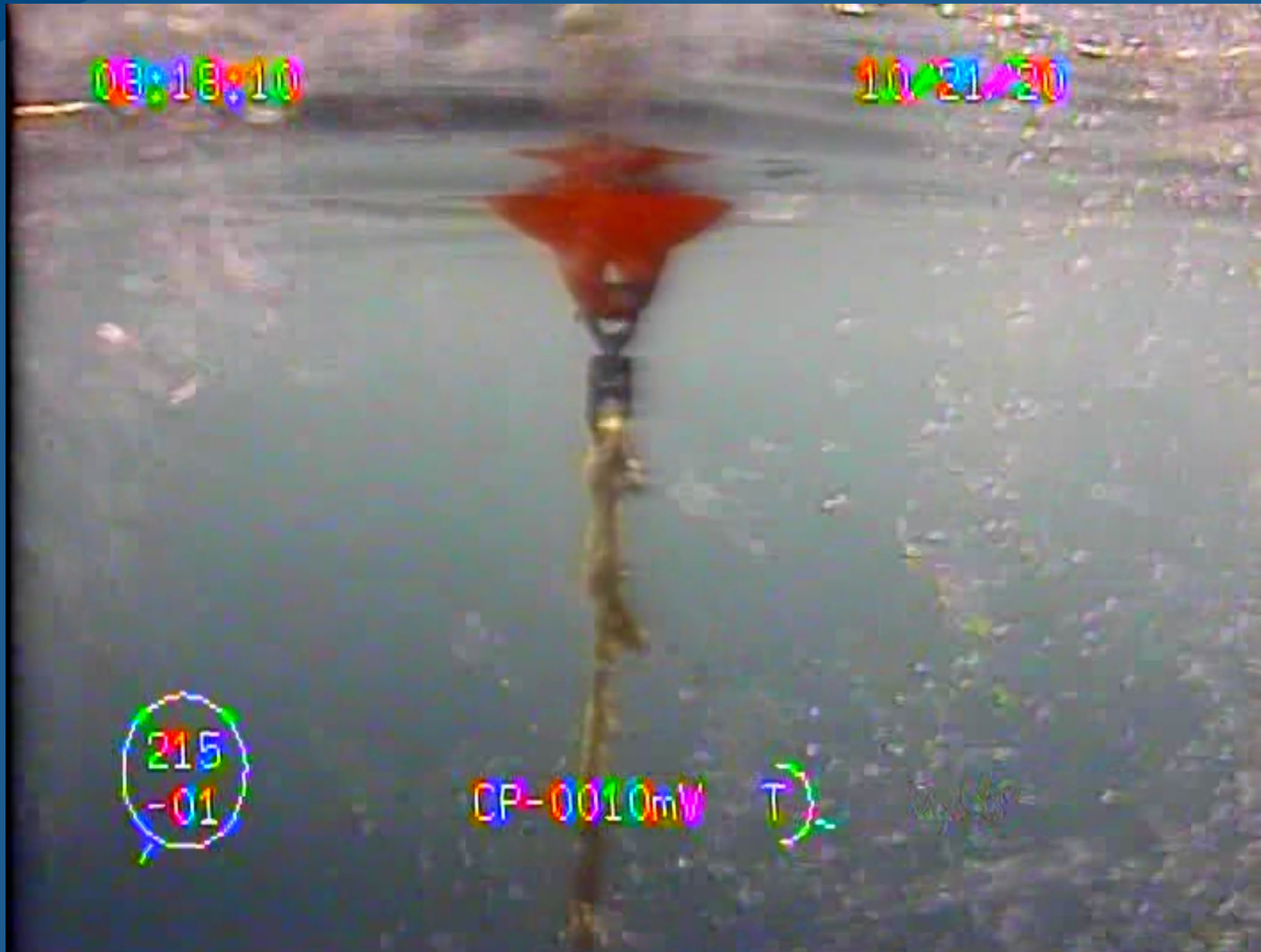
- **Locate surface gear**
- **Position vessel**
- **Deploy ROV to buoy 300' of tether**
- **Attach tether to 700 lbs. clump weight and descend as more tether pays out.**
- **ROV pilot follows end line down to anchor and first trap**
- **Maneuver ROV to next traps in trawl for inspection**
- **Retrieve clump weight and ROV ascends to surface**
- **Retrieve ROV on ship**
- **All data recorded and secured by enforcement**



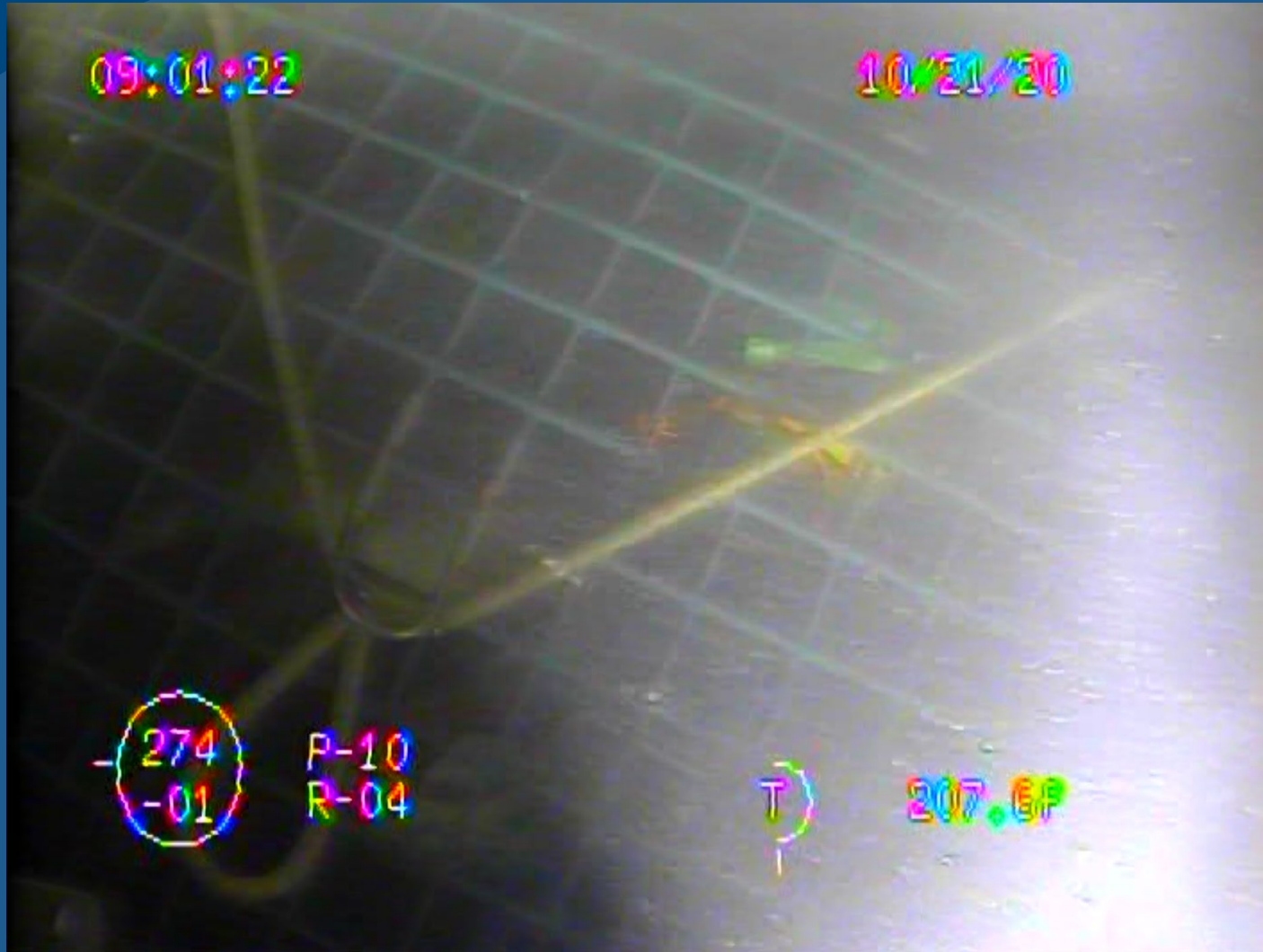
Phase 1 Offshore Operation



Phase 2: Weak Link



Phase 2 Trap at 207 ft. Tags Visible



Moving Forward

- The project served as proof of concept for OLE that while not without challenges, fixed gear can be inspected via ROV's.
- General Counsel Enforcement Section supports the use of ROV's and imagery captured as evidence to support cases.
- Based on observations of the noncompliant gear an investigation was initiated and an enforcement action is pending.
- Future ROV offshore surveys have been authorized and will be conducted in 2021.
- Several lightweight ROV systems have been identified for a possible acquisition in 2021. This will allow deployment from OLE and enforcement partner vessels.
- Knowledge of OLE's subsurface gear inspection operations has already spread to industry as anticipated.

