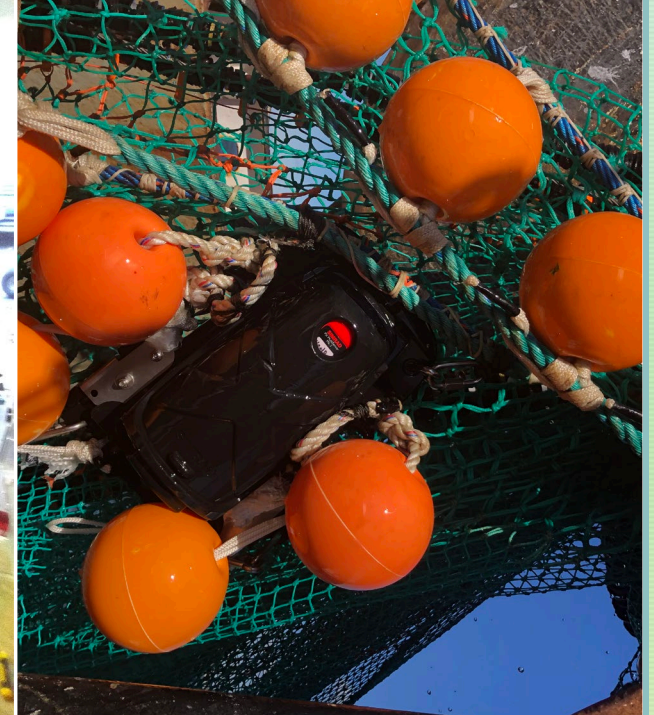


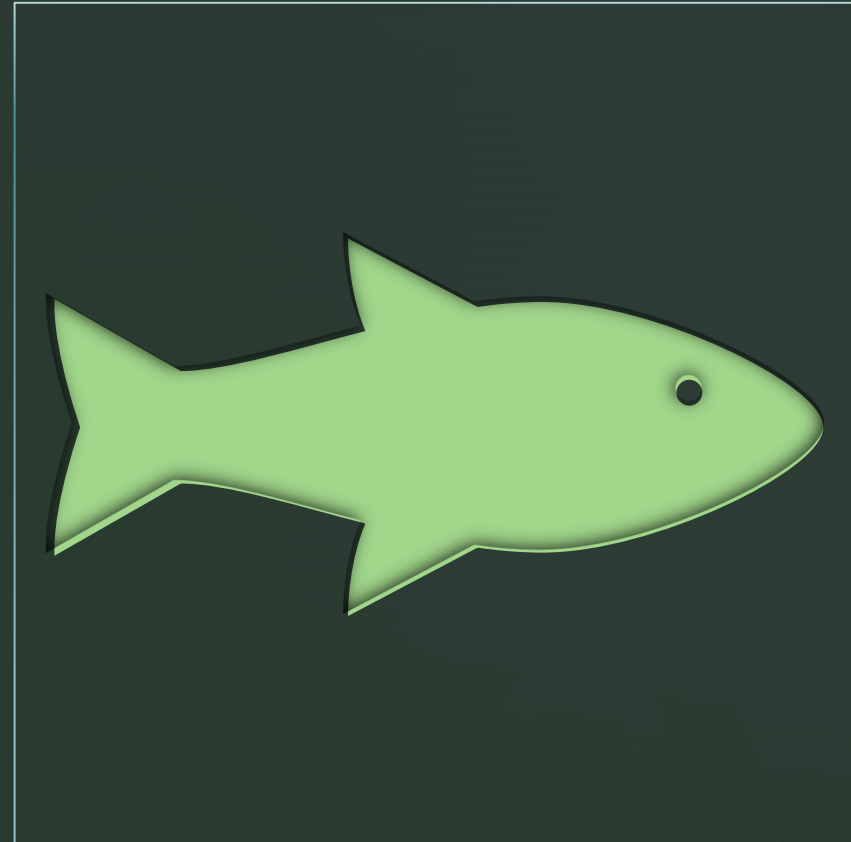
Innovations in Seafood Harvesting

New York
Commercial
Fishermen



Modernization of Commercial Fishing

- Over the last fifty years, human use of marine resources has become more efficient as the understanding of the habits and behavior of the various species available in the ocean increased.
- Fishing technologies have developed naturally over time and fishing gears and practices have become more sophisticated.



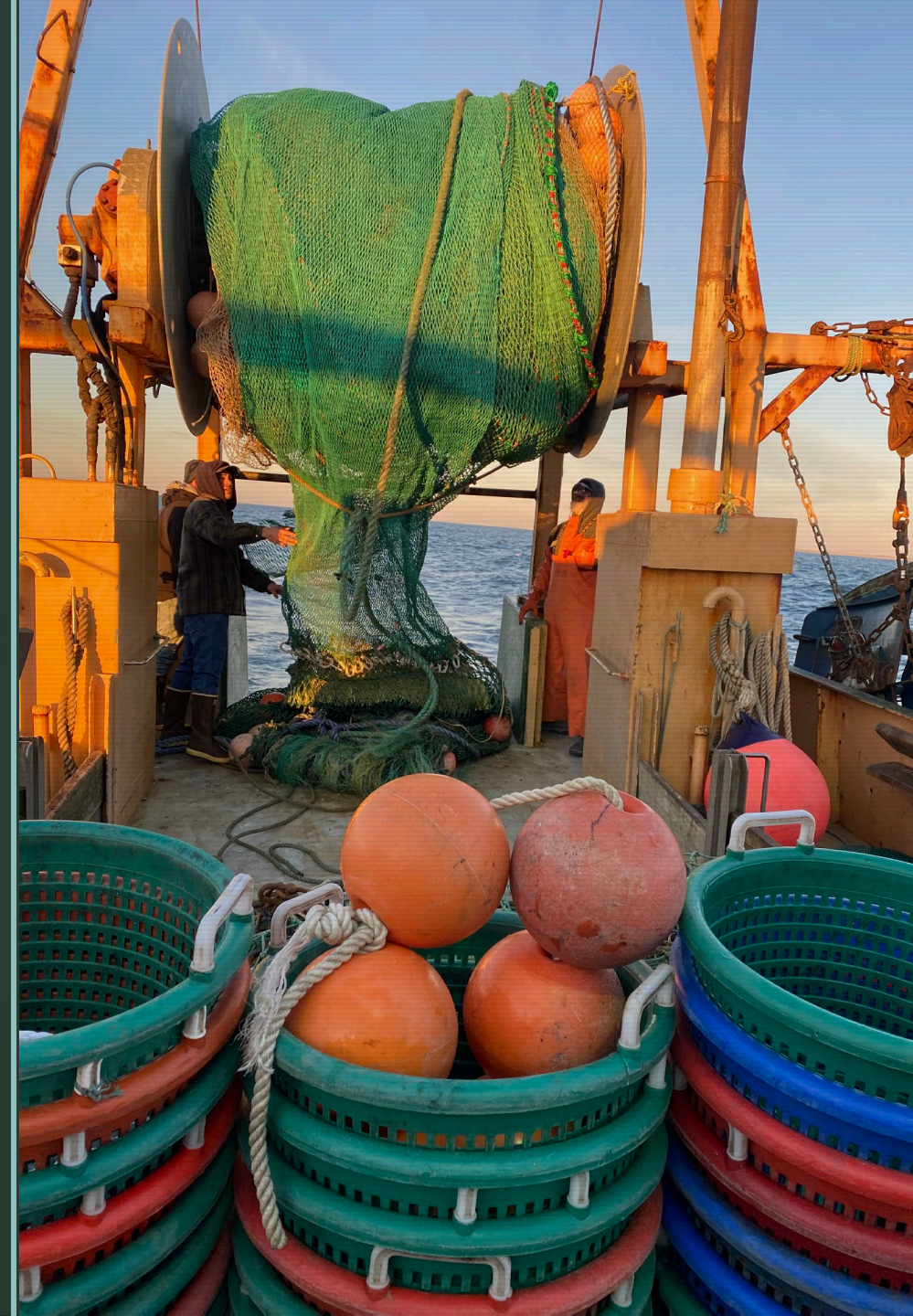
Remaining Vital

- It is important that fishing is conducted while minimizing environmental impact, reducing waste, preserving the biodiversity, maintaining stock abundance, preserving population structure and ensuring fish quality.
- It is equally important to maintain the economic viability of fisheries and developing the working conditions for fishermen.



Many of these innovations

- Optimize efficiency
- Reduce bycatch
- Improve safety
- Improve data collection for fish stock assessment
- Help comply with fishery regulations



Electronics

- GPS
- Fishfinders
- Echo-sounders
- Acoustic cameras
- Camera technology
- Remote monitoring
- Net sensors
- Tow sensors
- Side-scan sonar



Electronic Reporting Systems

Reduce time spent on data entry

Received and used in a timelier fashion for stock assessments

Reduce data errors

Improve recall

Improve overall accuracy

Provide record keeping for fishermen

Match up with other fisheries data reports to confirm catch and sale



Fishing Gear

- Fishermen test and modify gear to improve selectivity and avoid capture of juveniles and undersized specimens of many species, species with closures, species that will trigger accountability measures, etc.
- Gear designs work with behavior and physiology of the fish or marine mammal to avoid capture, or release and repel the non-target individuals.



Examples of Innovative Gear Modifications

- Rope nets/Long wing nets
- Adjustments
 - Head rope/foot rope
 - Ground gear
- Twine/Knotless/Dynema
- Cod end mesh sizes
- Specialized hooks
- Kites
- Grids/Grates



Marketing

- Stagger the landings of fishing vessels to avoid flooding the market with fish and receive highest price
- Appeal to "locavore" movement
- Direct to consumer (Boat to Plate) sales allows consumer to know the direct origin of their food
- Focus on underutilized, less familiar (but just as delicious!) fish
- Traceability - blockchain technology has allowed for more transparency in the seafood supply chain and helps to prevent illegal fishing and seafood fraud.



Vessel Technology



Increased safety features



Use of different materials in boat building and repair



Stabilizer wings



Refrigerated sea water (RSW) tanks



Safety Innovations

- Intensive safety trainings at ports
- Low profile Personal Floatation Devices (PFDs)
- Locator Beacons
- Life Rafts



Overall, innovations in commercial fishing are helping to make the industry more sustainable, efficient, and responsible. By embracing new technologies and practices, commercial fishermen can help to ensure that fish populations are protected for future generations.

Any questions?