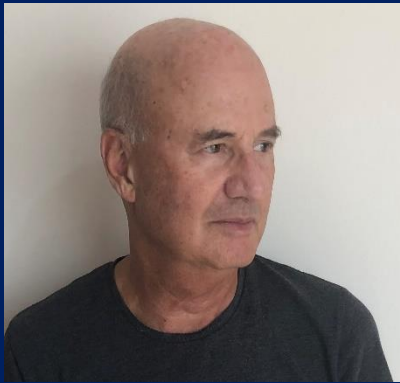


# OLRAC: Bycatch Avoidance Software Solution for the USA Northeast Atlantic Scallop Fisheries



Presented by: Dr Amos Barkai



# USA North East Atlantic Sea Scallop Fisheries

## Mixed Species Fisheries

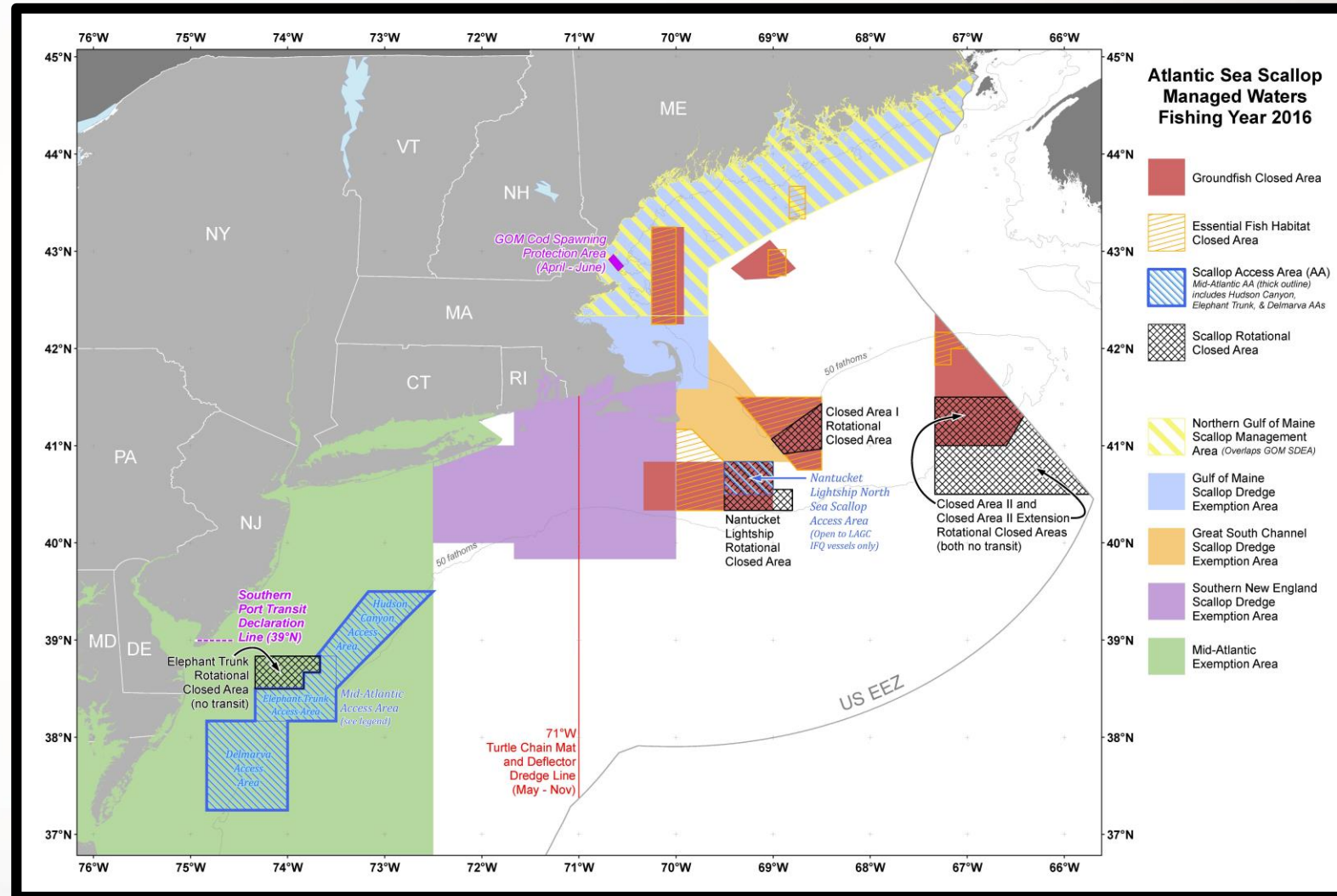
Limited access to rotationally closed areas



Main Fishery - Scallop



Main Bycatch – Yellow Tail Flounder

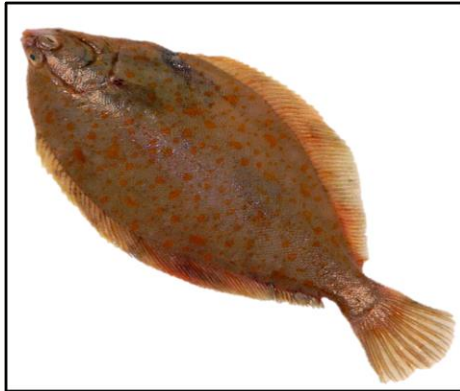




# The Problem



Scallop Highest Meat  
Growth Period



Yellow Tail Flounder  
Peak Spawning Season



Yellow Tail Flounder is  
a protected species



Yellow Tail Flounder  
85% Discard Mortality

Annual  
Loss?

≈

1.7M lb  
Scallop Meat

≈

\$ 11.8  
Million



**Initial intention: To make use of onboard observers in order to mark high Yellow tail Flounder bycatch areas and to warn fishers to avoid them.  
However, this method was found to be:**

reduce bycatch in sea scallop fishery

Slow to obtain and report  
bycatch data

Slow to digitise and  
prepare Data for Further  
Analysis

Bycatch distribution data  
were not available in real  
time and yellow tail  
flounder was fished out in  
great quantities

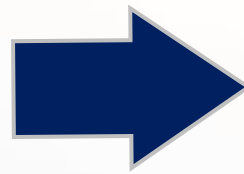
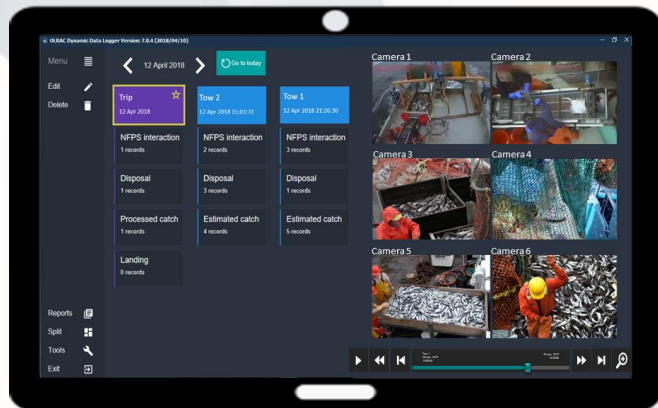


# Alternative Approach

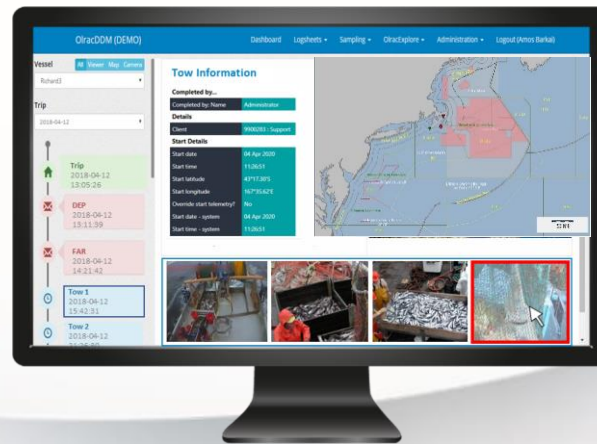
CFARM (the scallop fishery scientific consulting group) contracted OLSPS ([www.olsps.com](http://www.olsps.com)), to customize its Olrac Commercial Fishing eLog, to provide it with a real-time bycatch avoidance solution.

## The Olrac Commercial Fishing eLog

### OlracDDL VESSEL UNIT



### OlracDDM SHORE UNIT





# OLSPS TEAM

40 friendly  
staff  
members

highly skilled  
technical team of  
33 data scientists,  
mathematicians  
and software  
engineers



over 250 years  
of collective  
experience

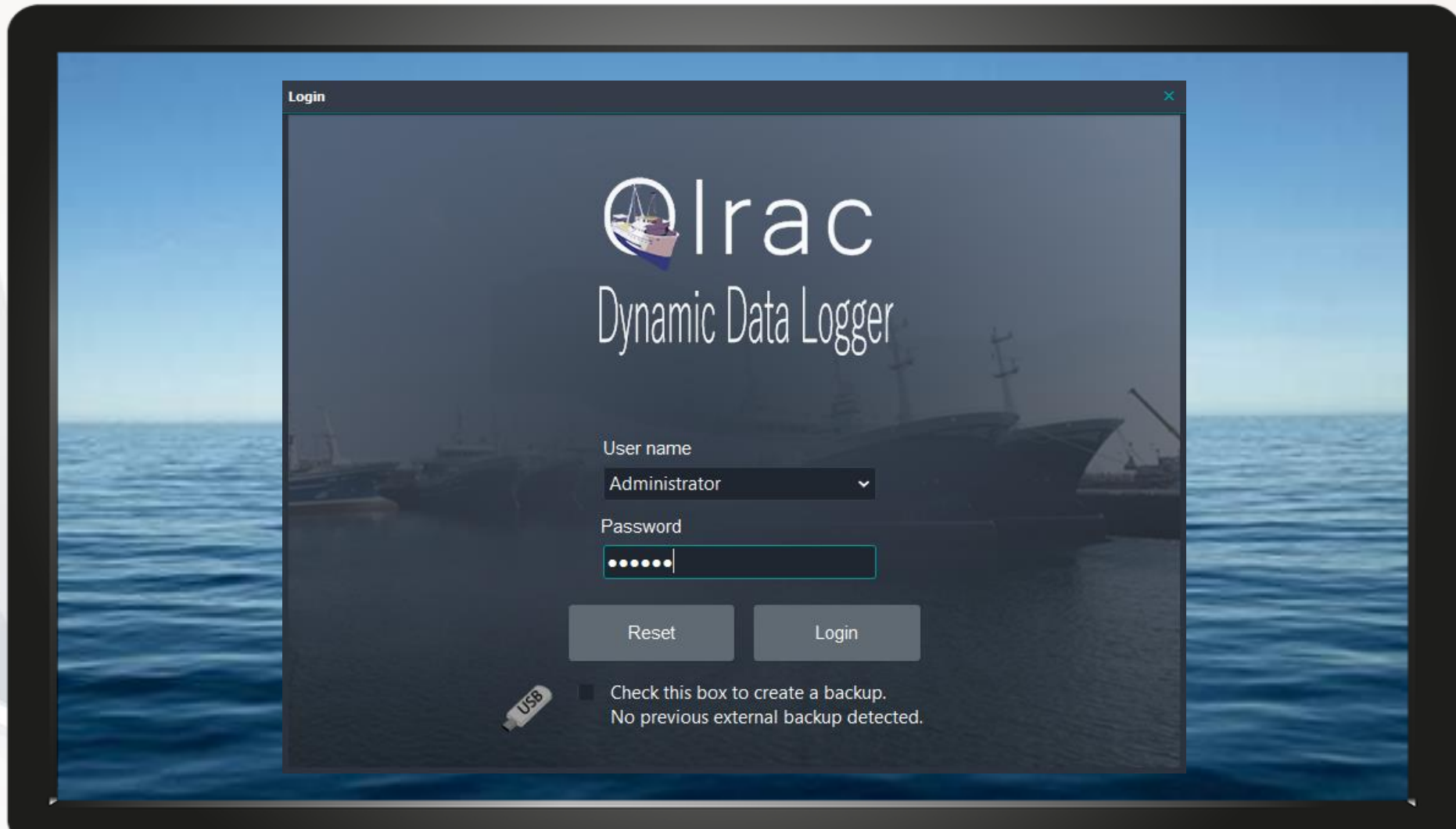
Qualifications  
include: 4 PhDs, 8  
masters degrees,  
other graduates  
including a number  
of engineering and  
honours degrees

# The Olrac Electronic Reporting System Overview





# Vessel Unit Overview





# Dashboard With GIS (Mapper) View

OLRAC Dynamic Data Logger Version: 7.0.4 (2018/04/10)

Menu ☰ < 12 April 2018 > ↻ Go to today

OlracDDL 🔴 End Shift 🟢 Start Shot

+ Landing + Trip Wildlife Interaction Edit...

Trip 1 ★ 04w 01d 15h  
Start: 11 Mar 2021

Shift ★ 04w 01d 15h  
11 Mar 2021 20:24

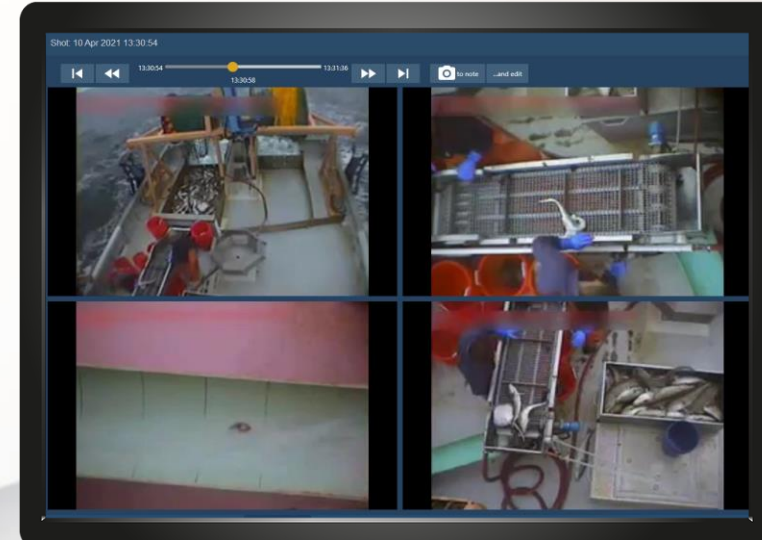
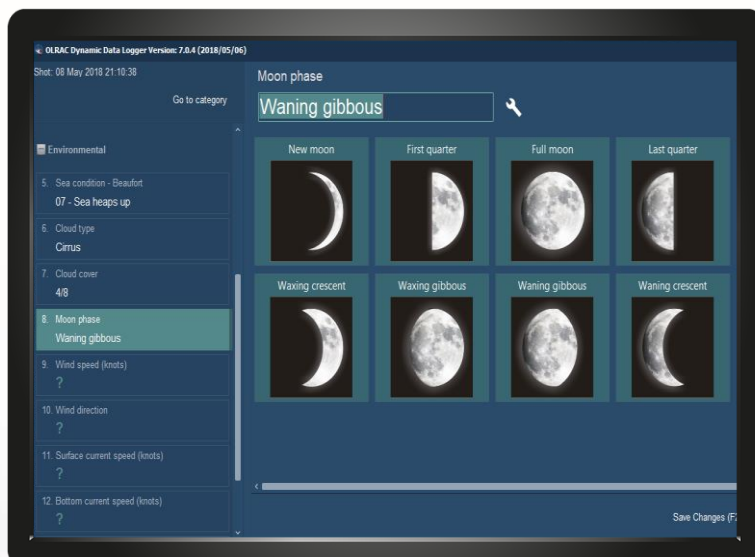
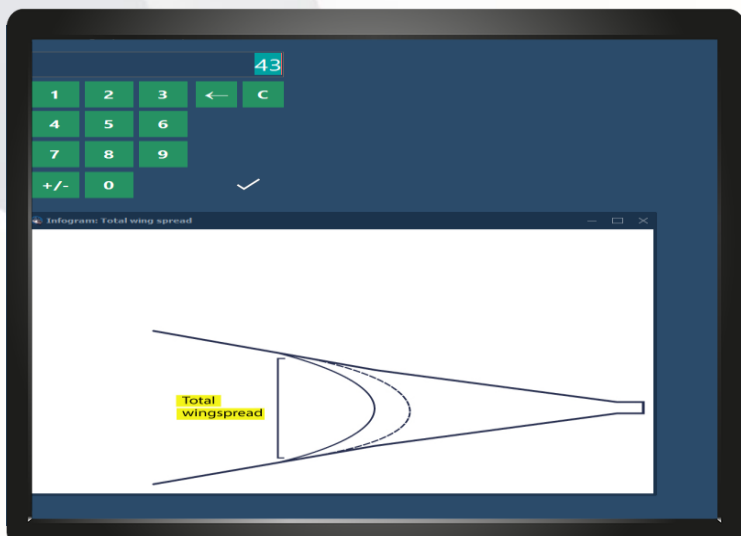
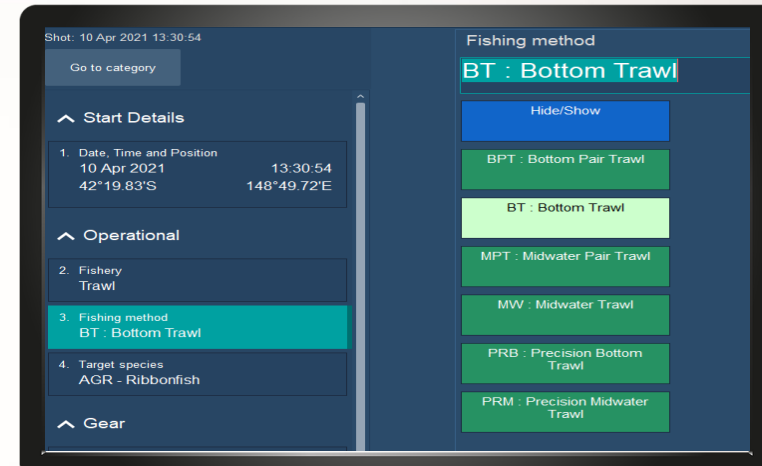
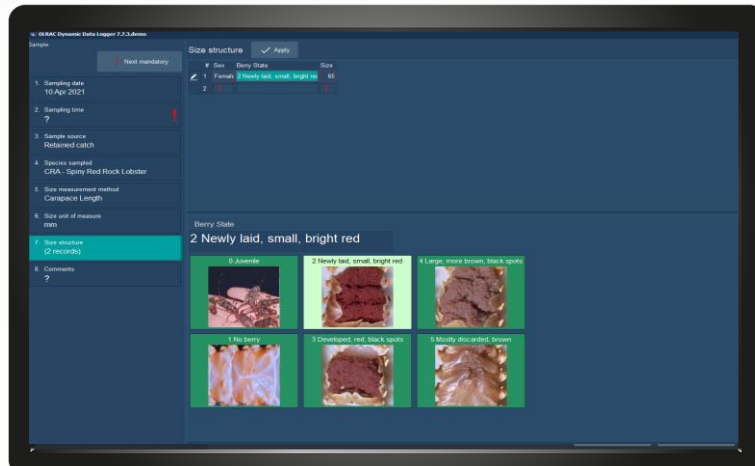
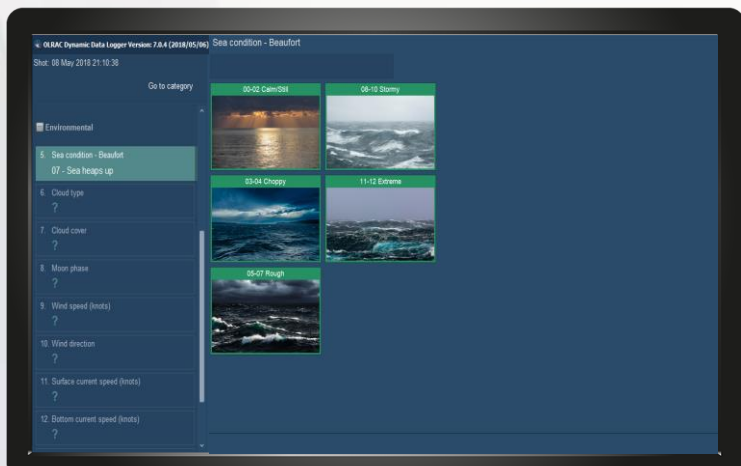
Shot 1  
11 Mar 2021 20:25

Almaco jack  
11 Mar 2021 20:29

MPA WARNING: MA5

100 NM

# OlracDDL Data Entry Options





# Added value utilities

## Automatic Onboard Stock Calculator

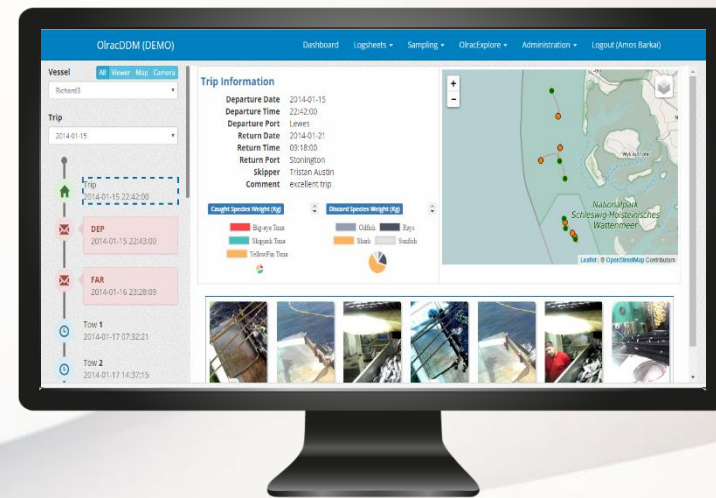
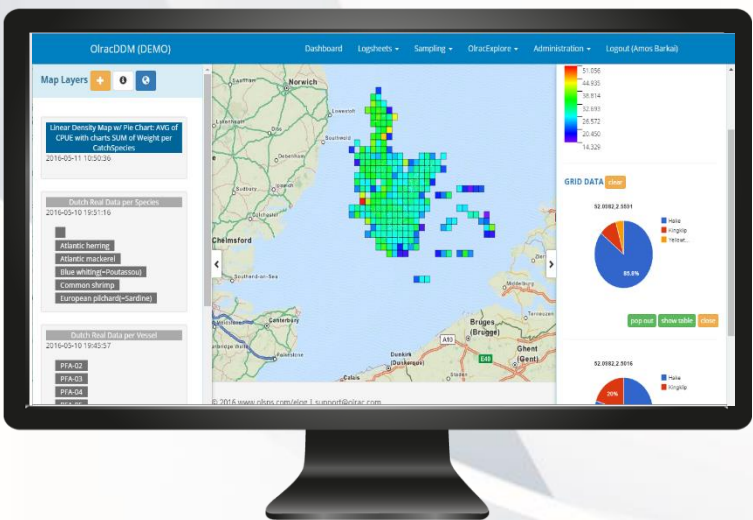
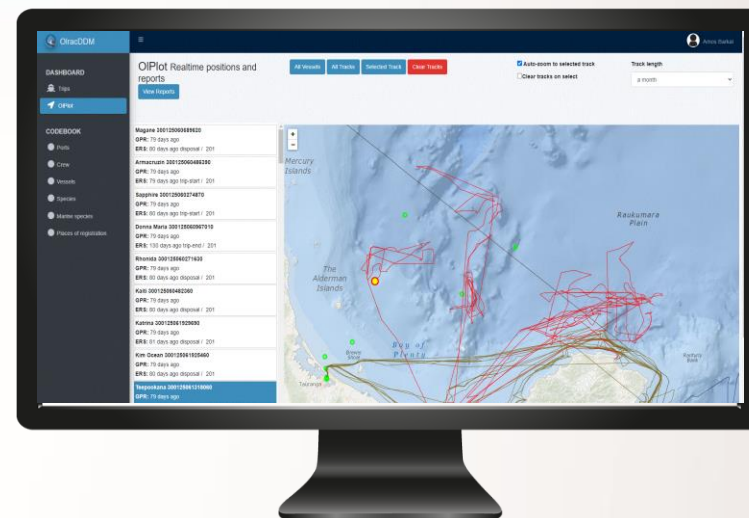
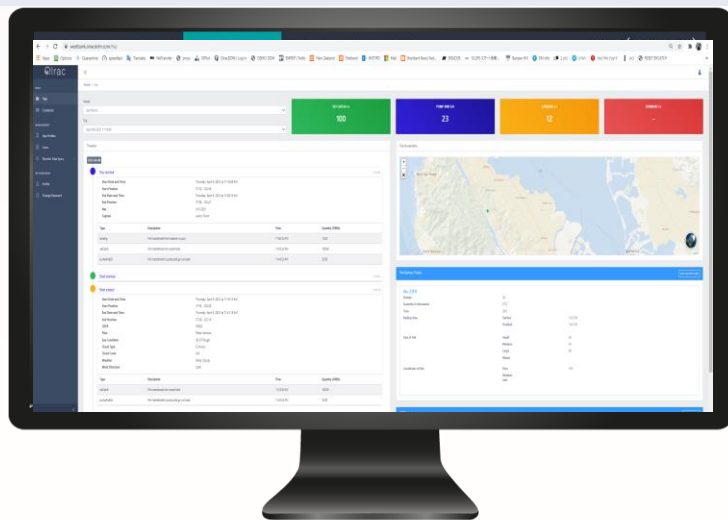
The screenshot shows the 'Automatic Onboard Stock Calculator' interface. On the left, a sidebar lists 'Processed catch' with 5 records. The main area features a table with columns: #, Side, Species, Product, Disposition, Bushel Yield, Quantity Unit, Quantity Caught, and Weight Unit. The first row is highlighted, showing 'Starboard', 'Scallop', 'Shell On', 'Kept, Disposition Unknown', '300', 'Unshucked', '138', and 'Pounds'. Below the table, a search box contains 'Scallop', and a 'Hide/Show' button is visible. At the bottom, there are 'Save Changes (F2)' and 'Cancel (Esc)' buttons.

#	Side	Species	Product	Disposition	Bushel Yield	Quantity Unit	Quantity Caught	Weight Unit
1	Starboard	Scallop	Shell On	Kept, Disposition Unknown	300	Unshucked	138	Pounds
2	Stern	Monkfish	Round	Kept, Disposition Unknown		Individual	24	Pounds
3	Port	Flounder, S	Round	Kept, Disposition Unknown		Individual	30	Pounds
4	Starboard	Flounder, W	Round	Kept, Disposition Unknown		Individual	45	Pounds
5	Stern	Flounder, Y	Round	Kept, Disposition Unknown		Individual	39	Pounds

## GIS-Based Data Analyser

The screenshot shows the 'GIS-Based Data Analyser' interface. The main view is a map of the North Pacific Ocean with a heatmap overlay. The heatmap shows varying intensities of colors (blue, green, yellow, red) across the region, indicating different levels of activity or catch. On the left, there are several data panels: 'Catches, Estimated - Hauls (1741)', 'Catches, Estimated - Shots (2128)', 'Disposals - Hauls (557)', 'Disposals - Shots (1066)', 'Disposals - Trips (313)', 'Hauls (465)', 'NFPs - Shots (14)', 'Shots (533)', and 'Trips (25)'. An 'Interactive Filters' panel is open, showing filters for Species (Hoki, Ling, Garward, Red Cod, Barracouta, Rough Skate, Giant Stargazer, Sea Perch), MoonPhase (New moon, Waxing crescent, First quarter, Waxing gibbous, Full moon, Waning gibbous, Last quarter, Waning crescent), and StartShotDateMonth (January, February, March, April, May, June, July, August, September, October, November, December). The interface includes navigation controls like 'Zoom to Map', 'Tweak View', and 'Export'.

# OlracDDM: Web-Based Shore Unit

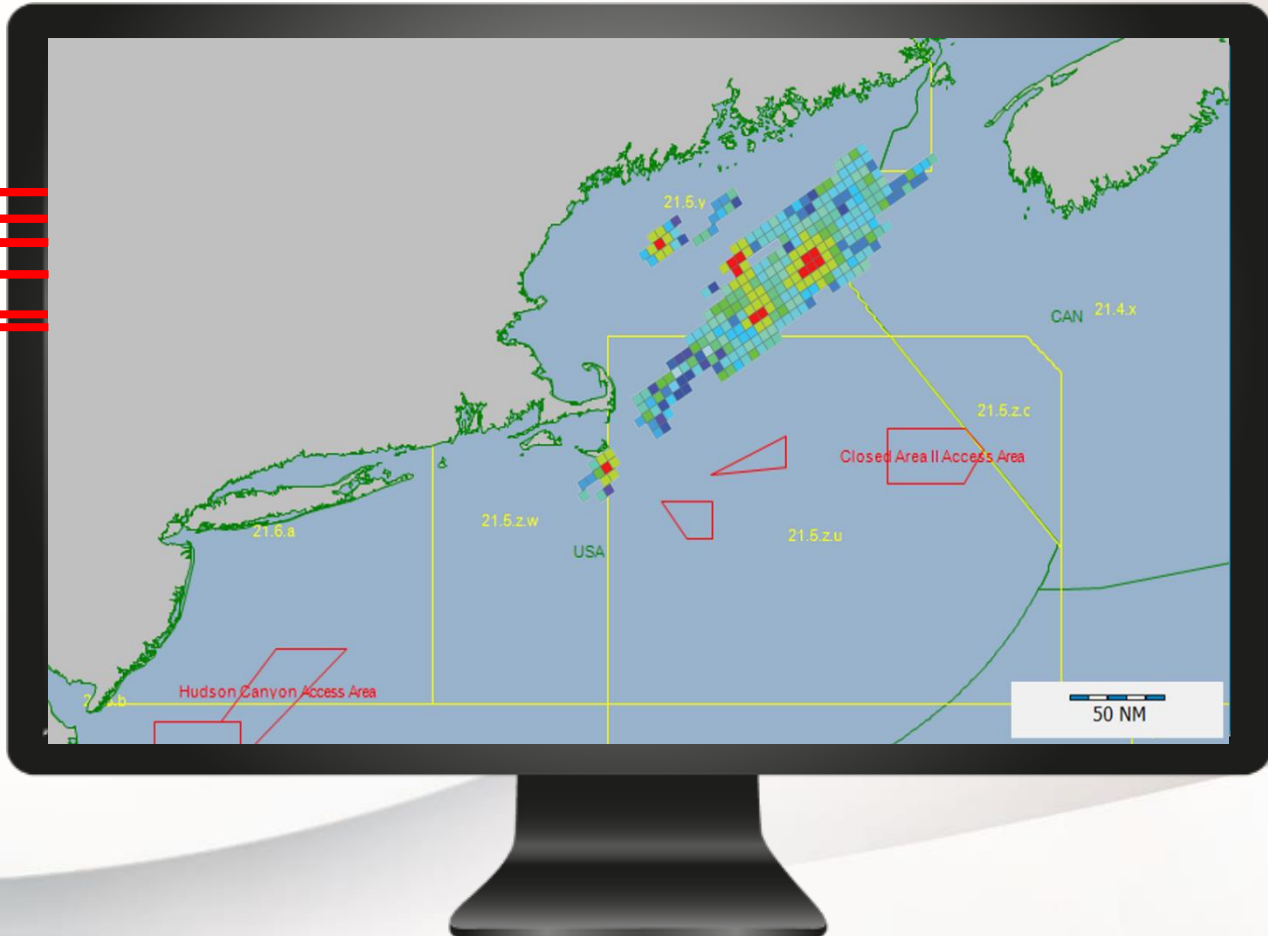
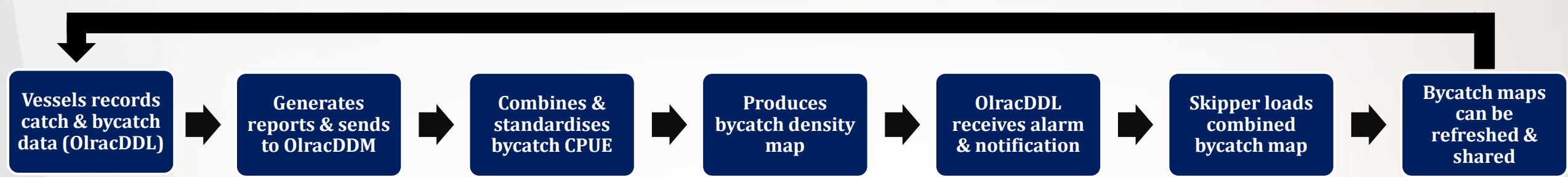




# The Olrac Electronic Logbook Solution



# The Olrac Bycatch Avoidance Application





# Advantages Of The Olrac Electronic Bycatch Avoidance Solution

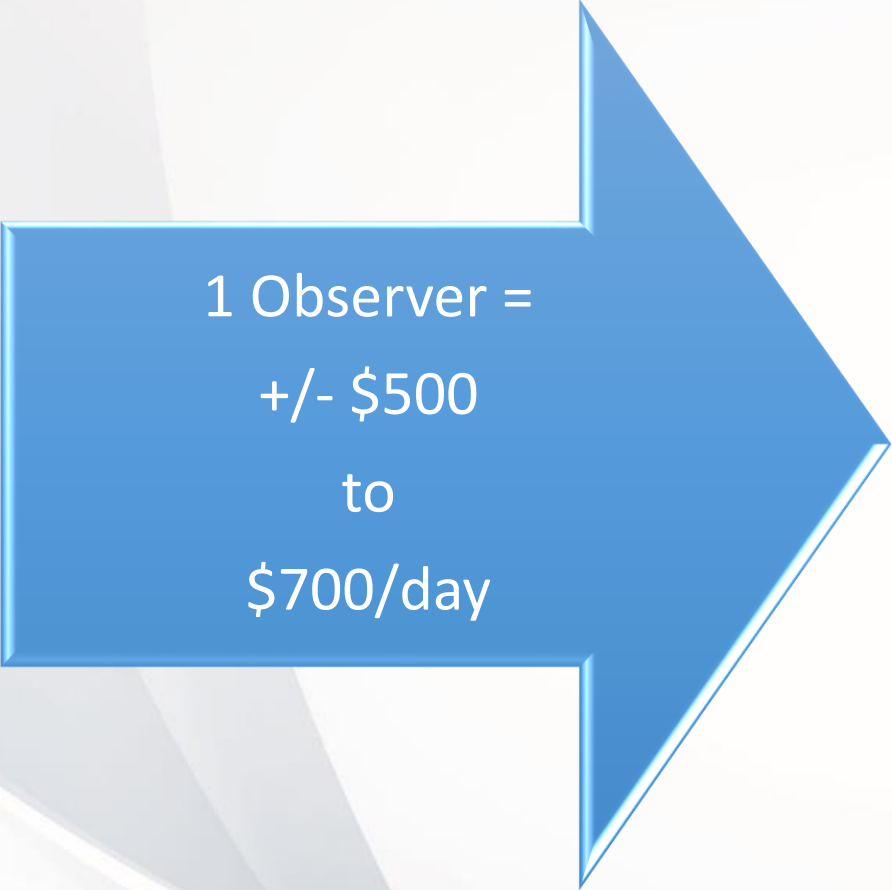


- Enhance fishing efficiencies:
  - Vessel bycatch can be shared amongst fleet
  - Scallop hotspots are NOT shared amongst fleet to maintain confidentiality
- Money saved by:
  - Directing vessels away from high bycatch areas
    - Saves steaming time
    - Reduces unproductive fishing effort
    - Prevents choke species from prematurely closing fishing season

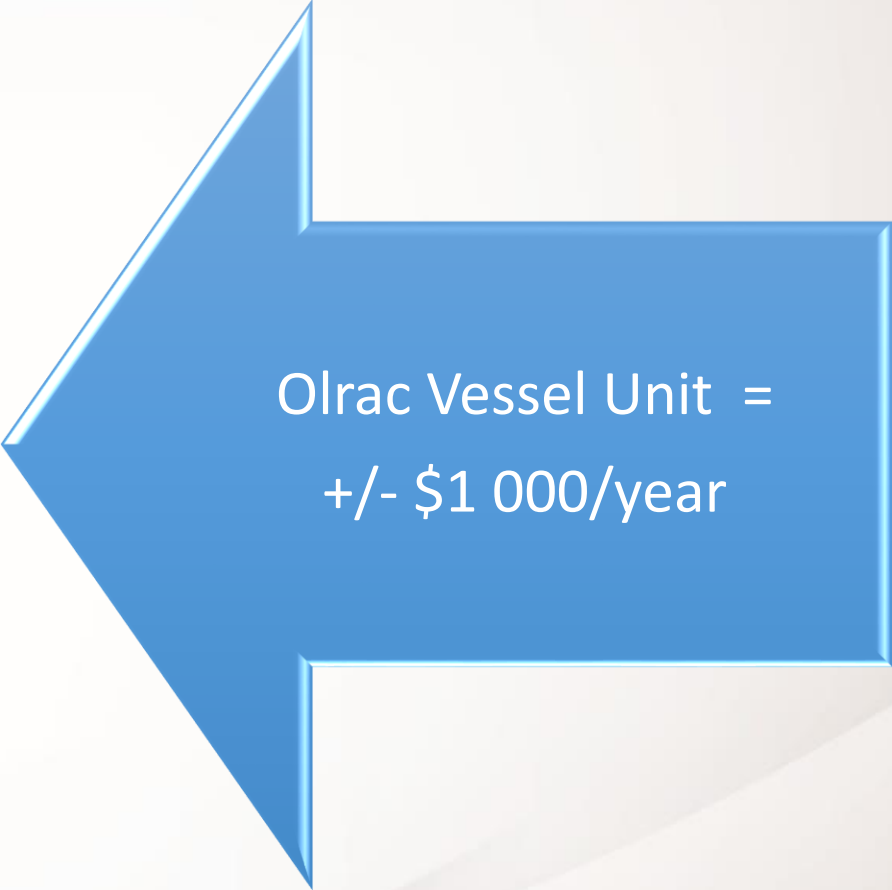
# eVTR (eCompliance) Certified And Ready



# Olrac vs. Observers?



1 Observer =  
+/- \$500  
to  
\$700/day



Olrac Vessel Unit =  
+/- \$1 000/year

In addition to the real time issue presented above, cost saving alone is huge!



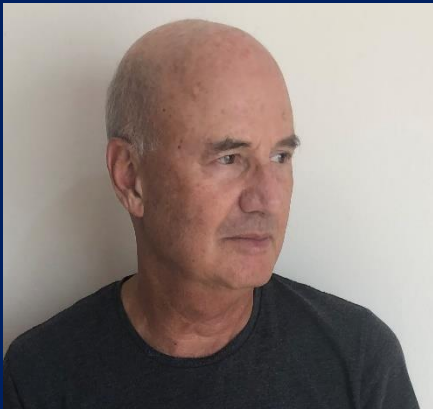
# Conclusion

- Successful deployment and integration of Olrac bycatch avoidance solution within the limited access scallop fishery.
- Olrac solution successfully identified and communicated areas of high bycatch rates to 15 participating scallop fishing vessels.
- System allows for transparency not currently available within the government-controlled system



Thank you!

I will now answer any questions



For further information on Olrac Solutions  
Please visit [www.olsps.com](http://www.olsps.com)  
Contact me at [amos@olsps.com](mailto:amos@olsps.com)



Reduce bycatch and increase catch yield