

A seasonal video-trawl survey to assess the population size of yellowtail flounder (*Pleuronectes ferruginea*) and windowpane (*Scophthalmus aquosus*) on Georges Bank.

Kevin D.E. Stokesbury Ph.D., Stephanie L. Merhoff, Amber D. Delargy, and Nicholas M. Calabrese Ph.D.

2026 Scallop Research Share Day

May 12th, 2026

Department of Fisheries Oceanography
School for Marine Science and Technology
University of Massachusetts Dartmouth



The SMAST Video Trawl Survey

Objective: To increase the information on the abundance and distribution of groundfish stocks while reducing mortality of sampled fish.

Short Tow Duration

- Codend never fills

Mortality Associated With Sampling

- Fish don't have to be caught

Violation of Uniform Distribution

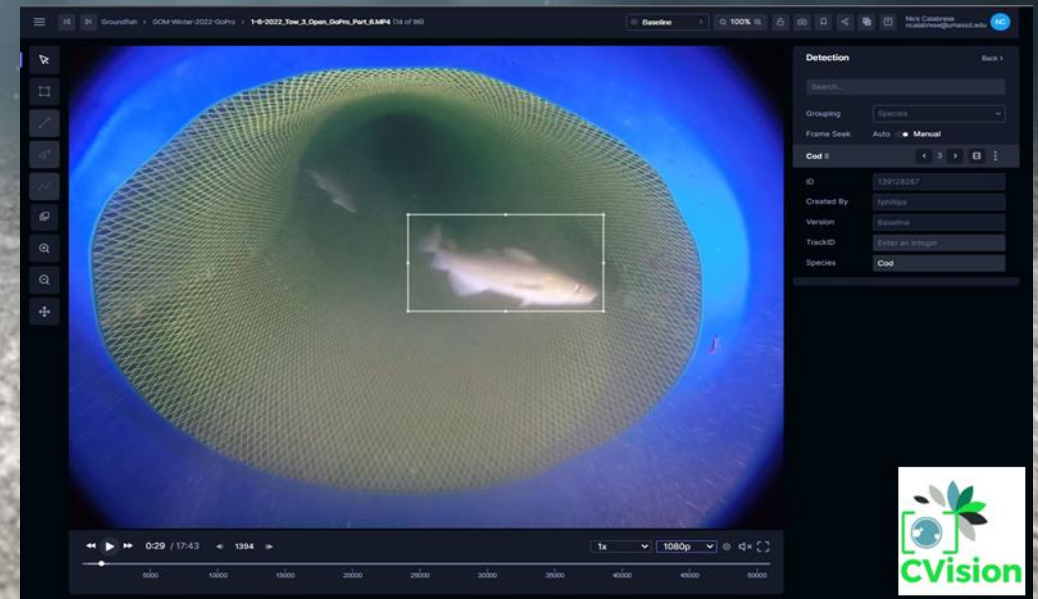
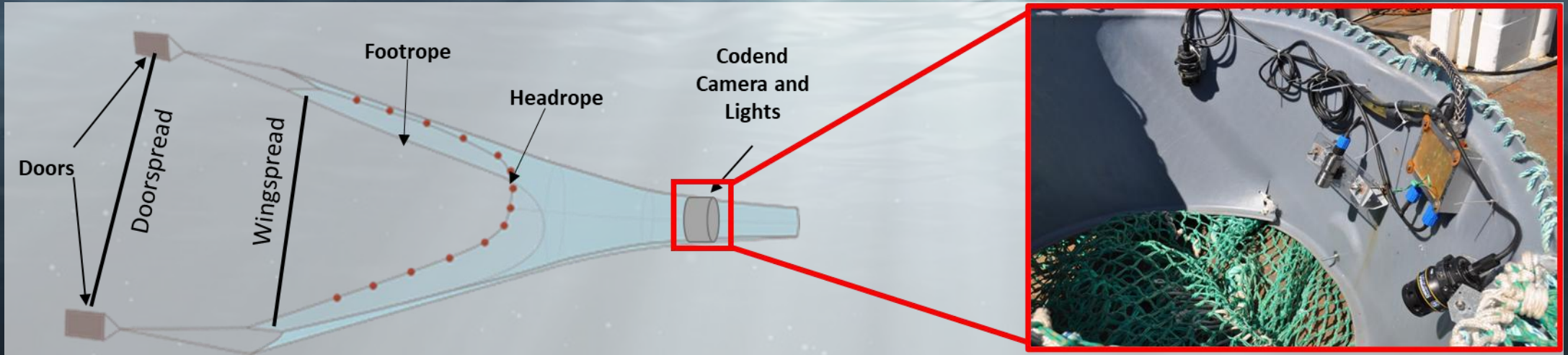
- Survey stratification (Details Later)

Industry Based

- Cooperative survey builds trust



The SMAST Video Trawl Survey



The SMAST Video Trawl Survey

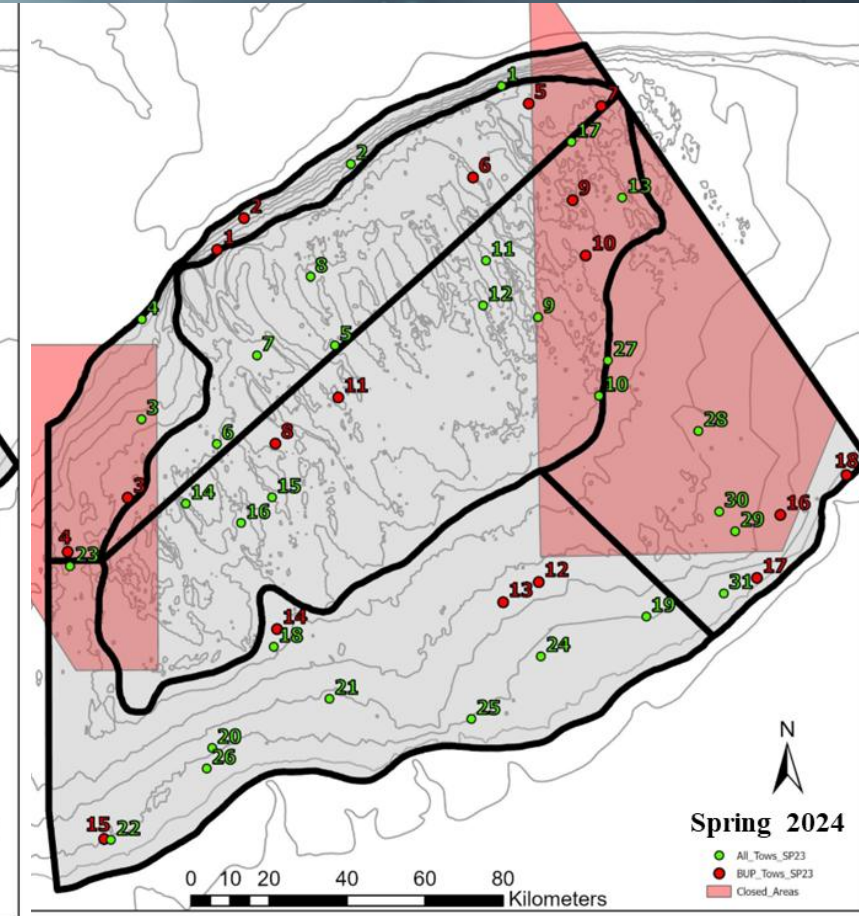
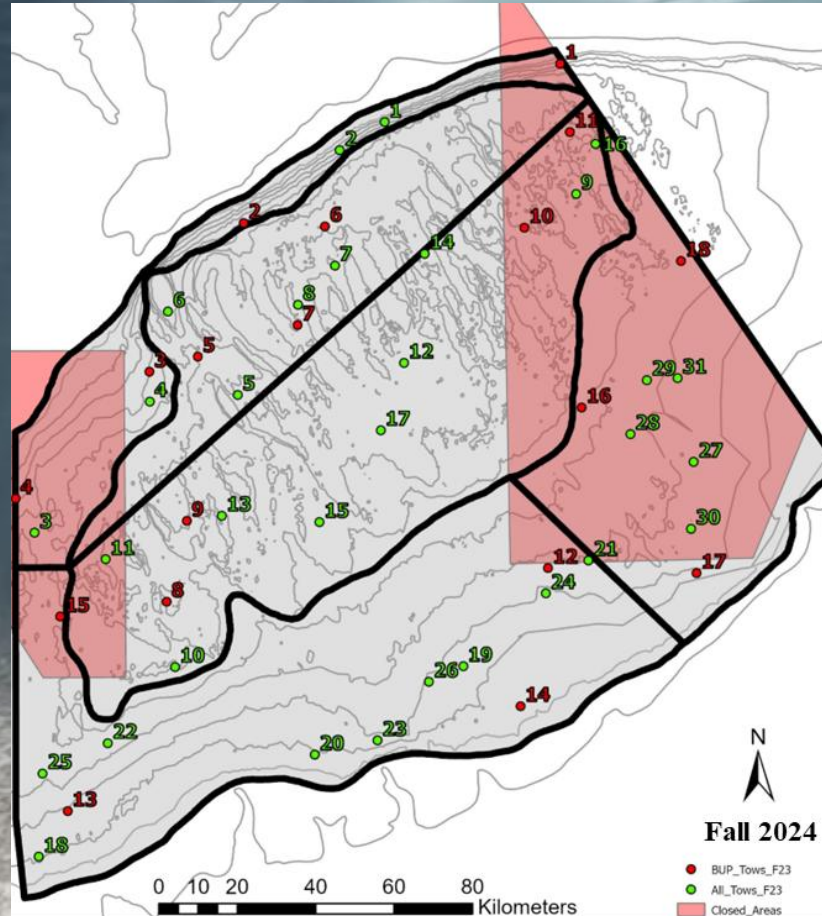
The screenshot displays the Tator web application interface. At the top, there are browser tabs for 'Tator | Annotation', 'Game bar record desktop - Micro...', 'ScreenRecorder Final by Burak U...', and 'How to Capture Video Clips in W...'. The address bar shows the URL: `tatorapp.com/1/annotation/1460602?section=830&quality=720&version=16&lock=0&fill_boxes=1&toggle_text=1`. Below the browser, the application header includes a navigation menu with 'Groundfish > GOM-Winter-2021-GoPro > 1-11-2021_Tow_13_Closed_GoPro_Part_3.MP4 (52 of 153)'. The main content area features a video player showing a green trawl net. To the right of the video is a metadata sidebar for the video file '1-11-2021_Tow_13_Closed_GoPro_P...'. The sidebar contains the following information:

- ID: 1460602
- Created By: ncalabrese
- Entities: 0 Detection
- Entities: 0 Track

At the bottom of the video player, the progress bar shows the video is at 3:49 / 17:43, with a current frame of 6882. The system tray at the bottom left shows 'ScreenRecorder_S...exe'.

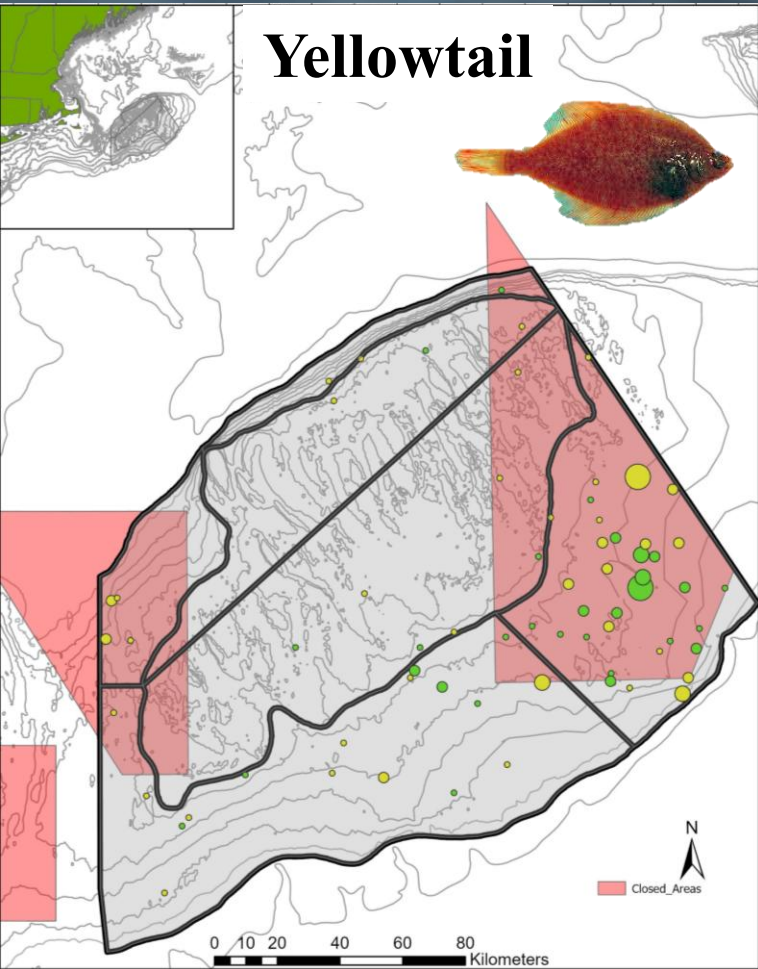
Methods

- EGB stock area <100m
- Stat Areas: 5Zeh 5Zen 5Zej 5Zem
- Four NEFSC survey strata
- 28,117 km²
- Tows allocated by area
- 30 Tows randomly assigned
- 1 Hour open codend tows
- 5 Random closed codend tows
- Stratified mean abundance
- Converted to biomass with closed codend tow data



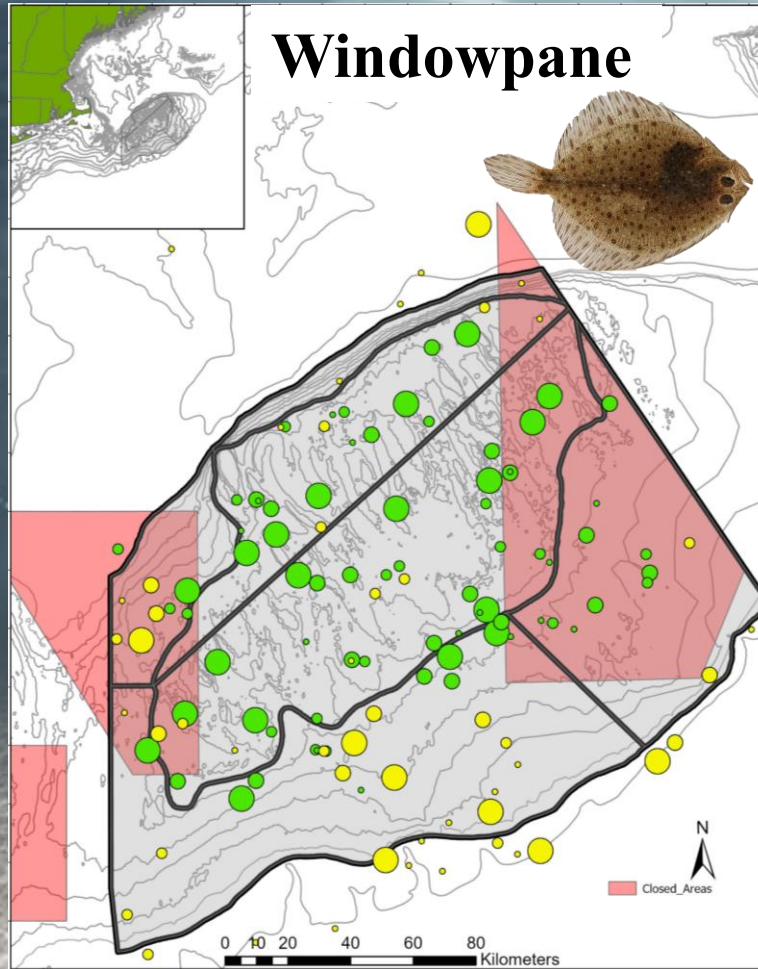
Methods

Yellowtail



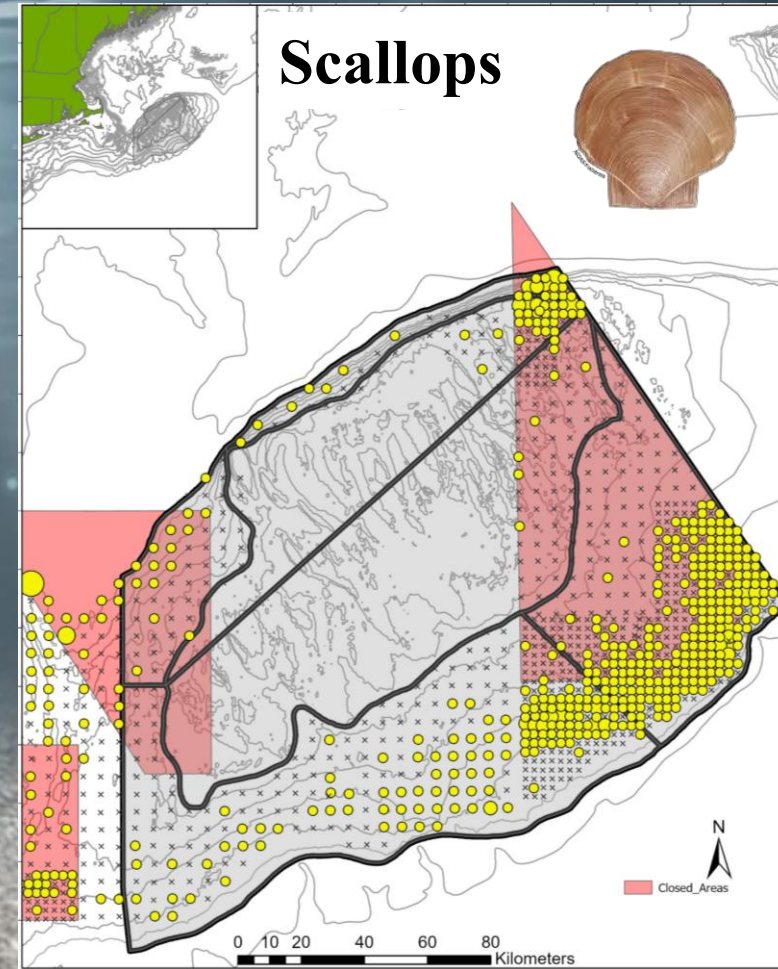
**100% of NEFSC Yellowtail catch
on GB (2017-2024)**

Windowpane



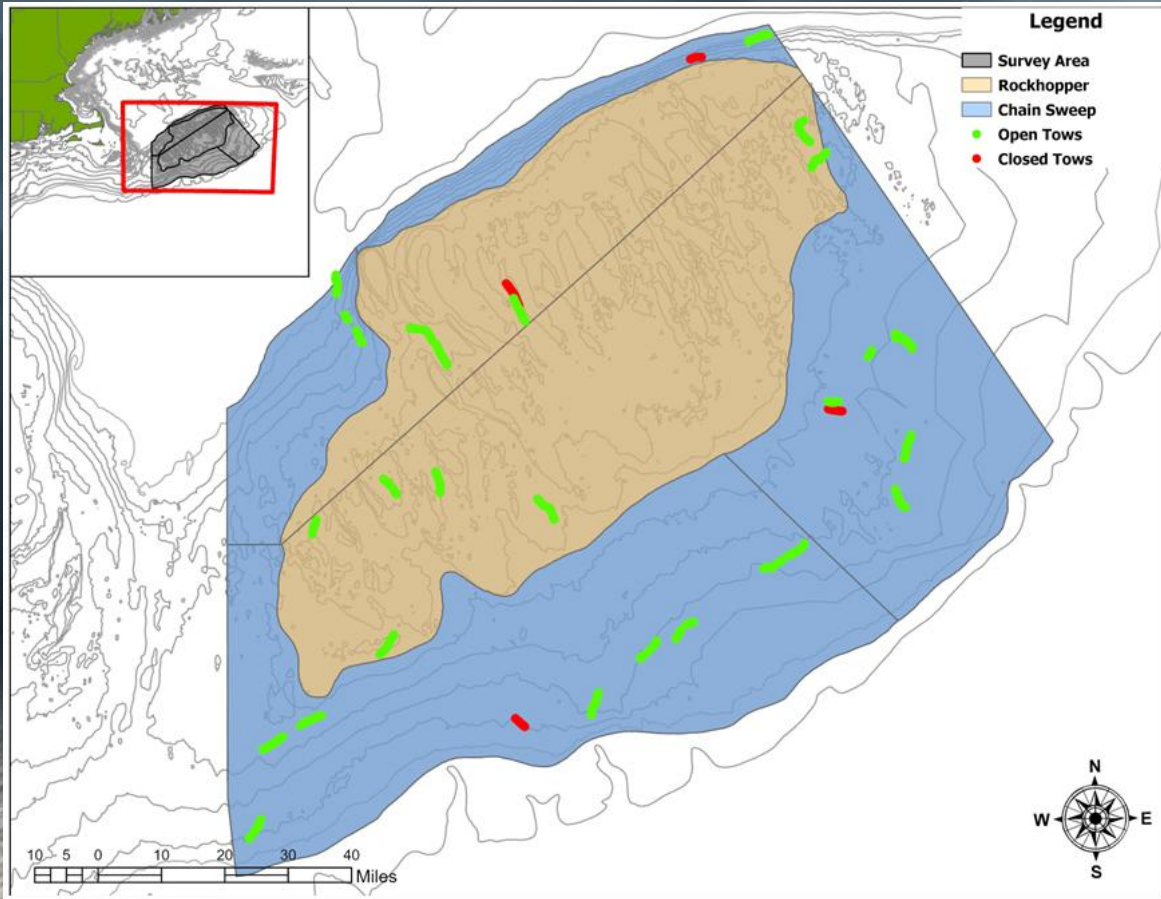
**91% of NEFSC Windowpane catch
on GB (2017-2024)**

Scallops



75 % of GB Scallop Stock (2024)

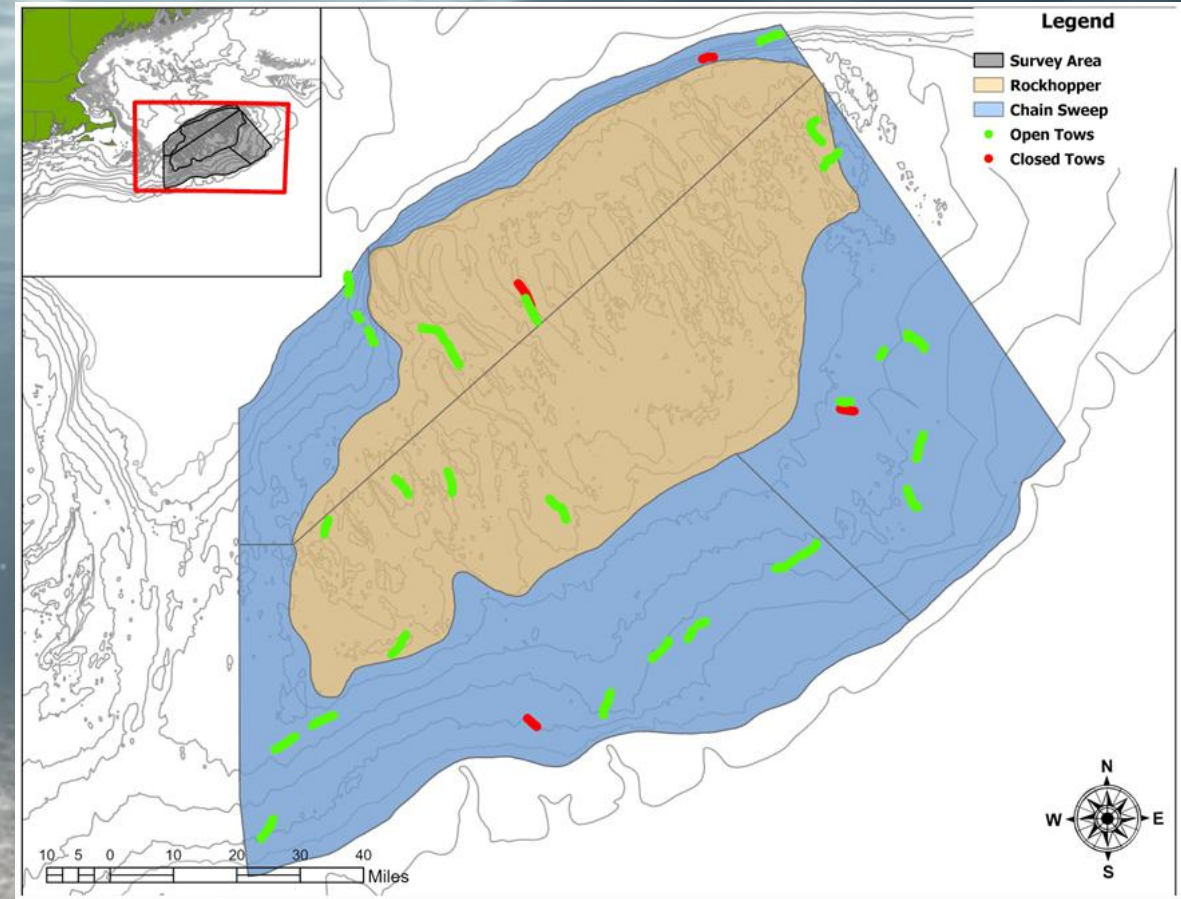
Tows



34 Tows (26 hrs)

Depth: 34-94 m

Temp: 9°-16° C

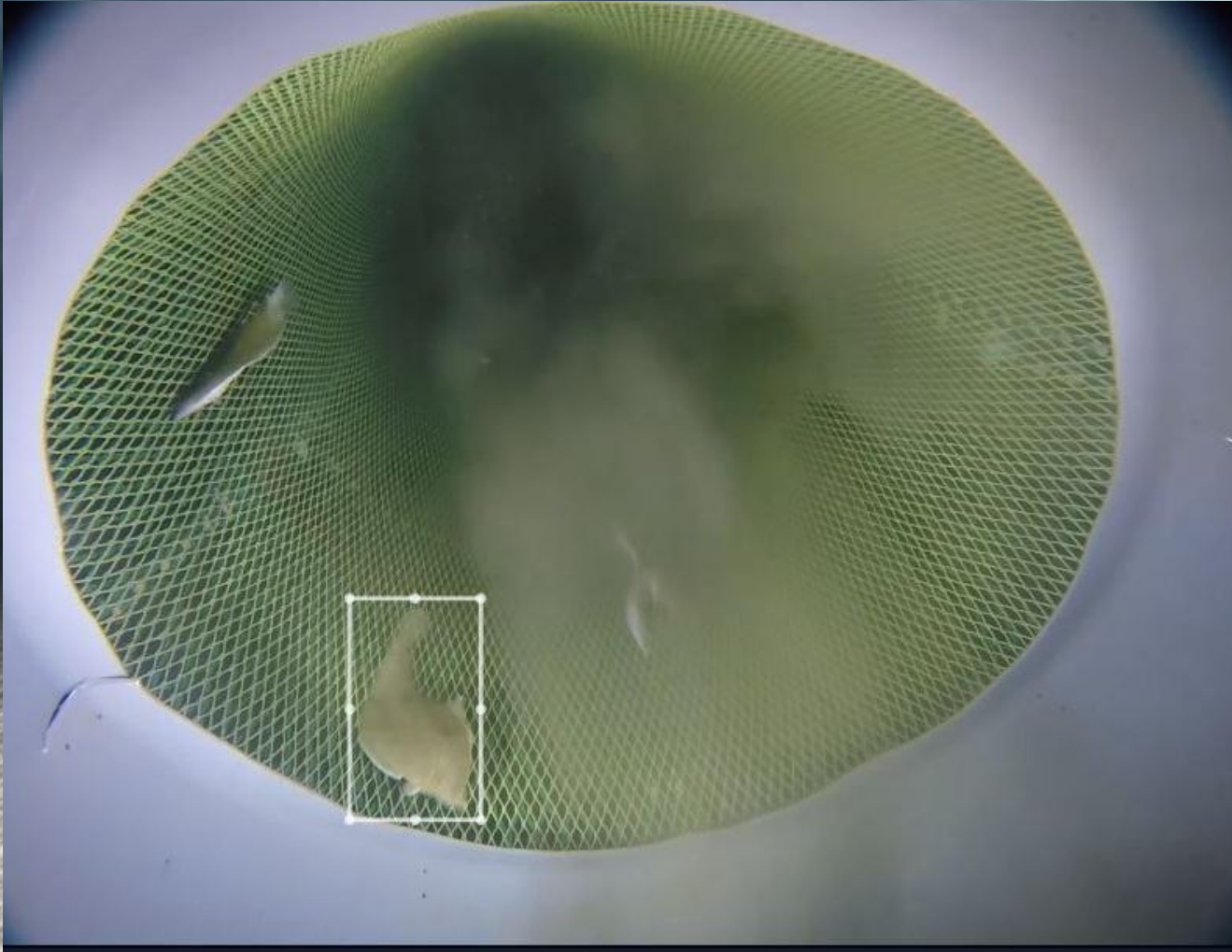


38 Tows (30 hrs)

Depth: 29-108 m

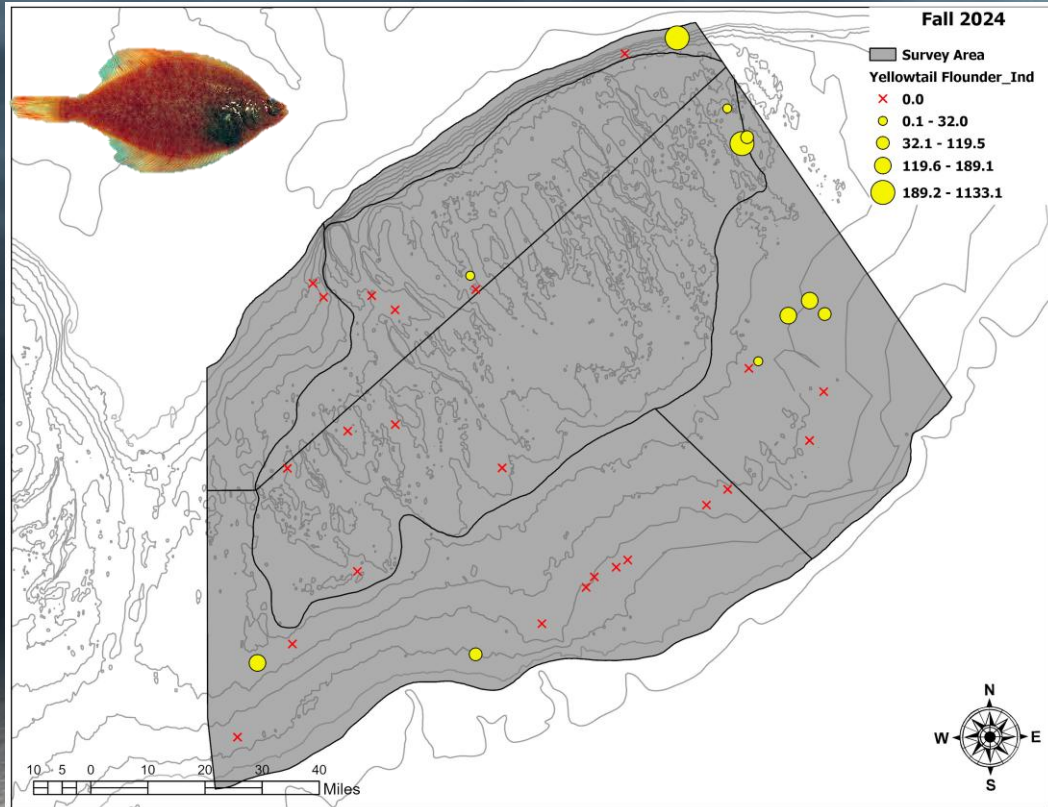
Temp: 5°-9° C

Video Accuracy

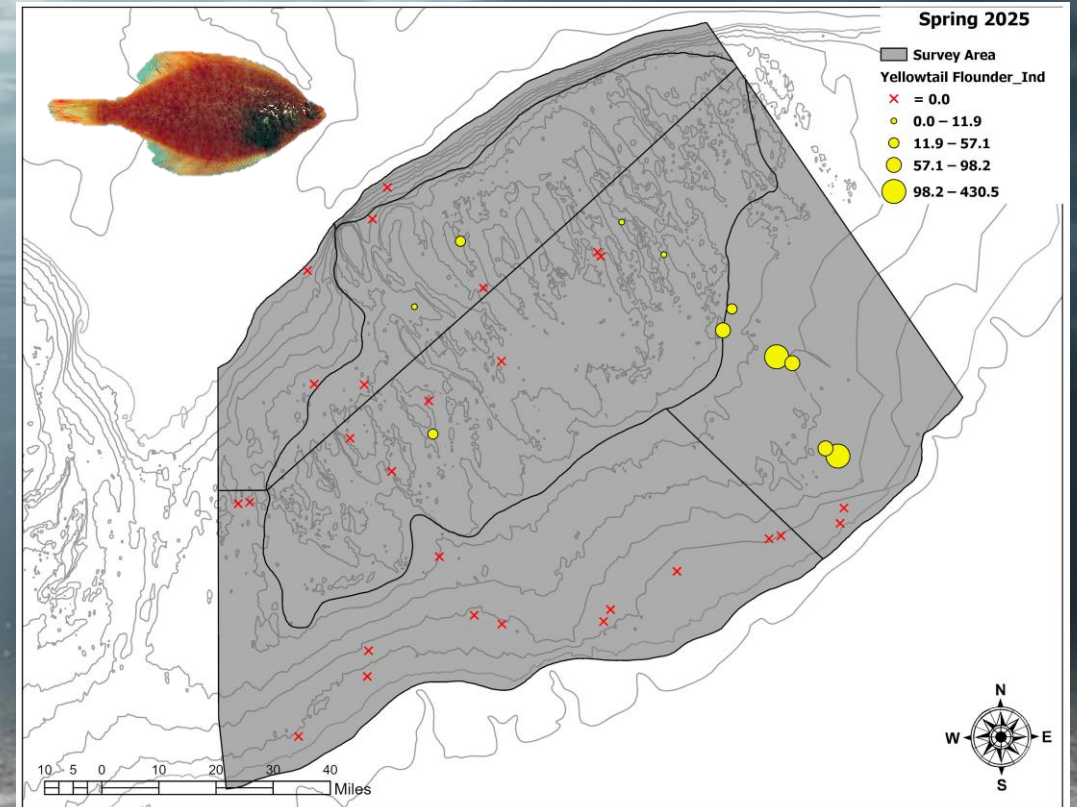


Species	Video	Catch	Percent
Yellowtail	10	12	83%
Windowpane	33	43	77%
Fourspot	209	217	96%
Winter	27	28	96%
Summer	10	9	111%
Witch	11	13	85%
Plaice	1	1	100%
Unidentified	43	-	-

Yellowtail



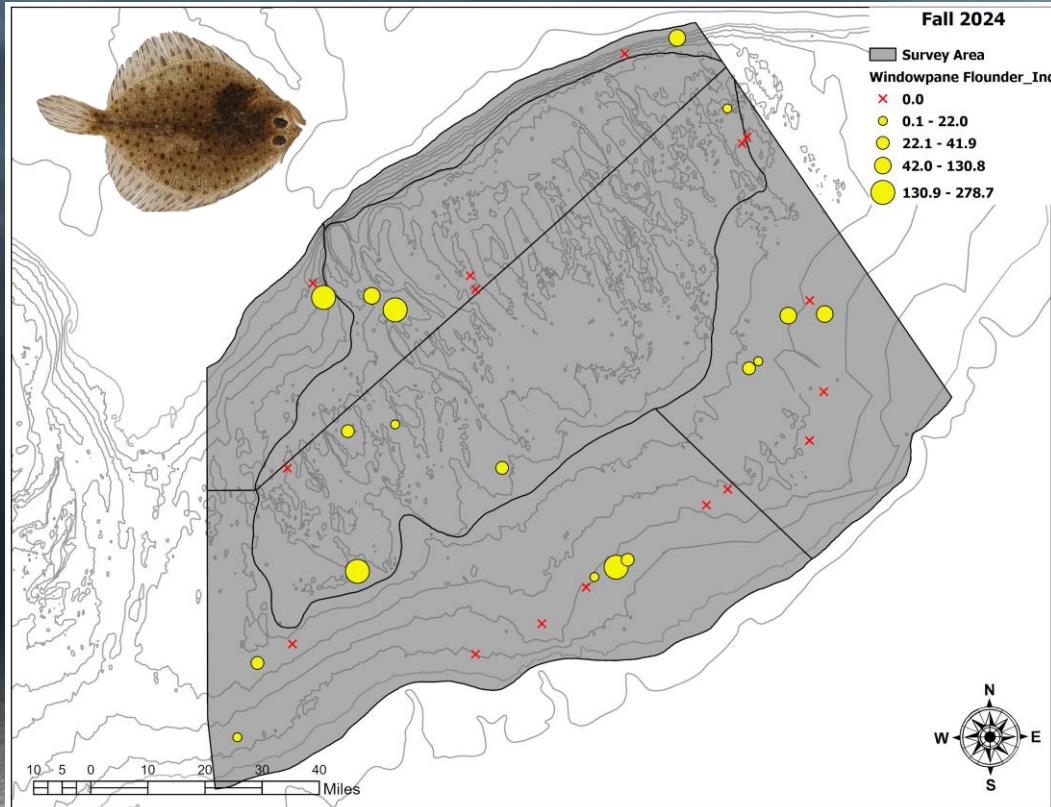
Mean Density = 64 ind/km²
Abundance = 1,622,298
Biomass = 863 MT



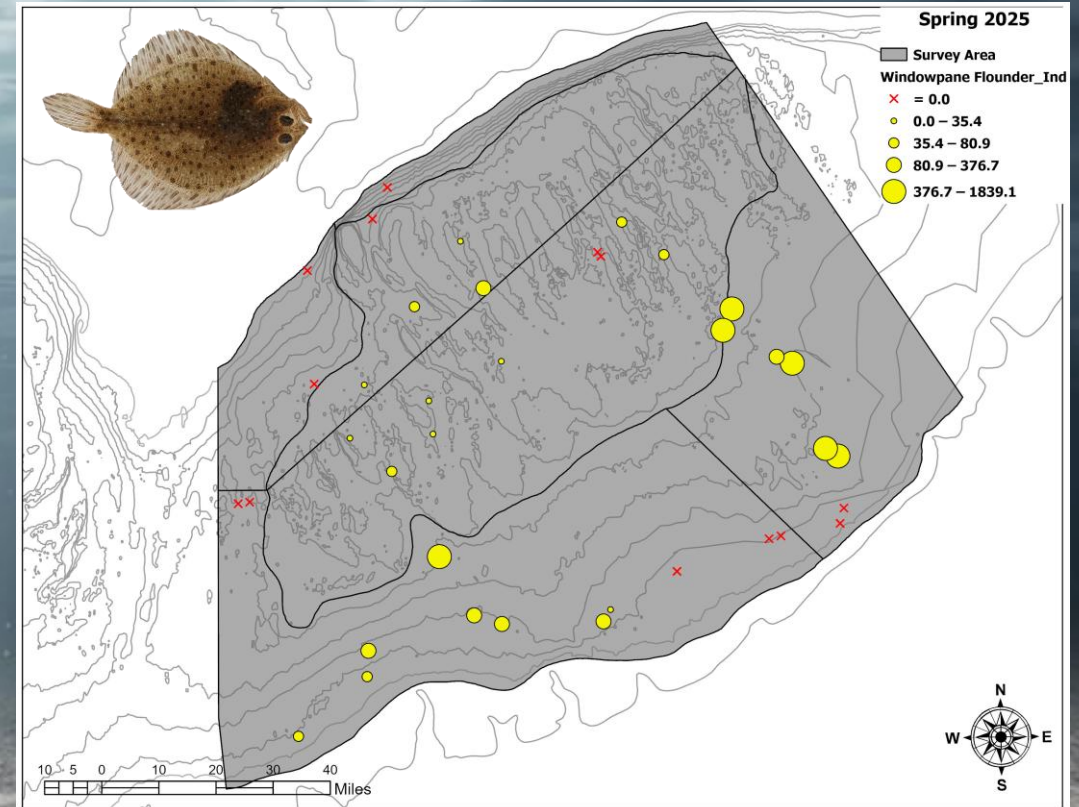
Mean Density = 25 ind/km²
Abundance = 372,779
Biomass = 283 MT

100% Efficiency 2025 Mean Biomass = 573 MT

Windowpane



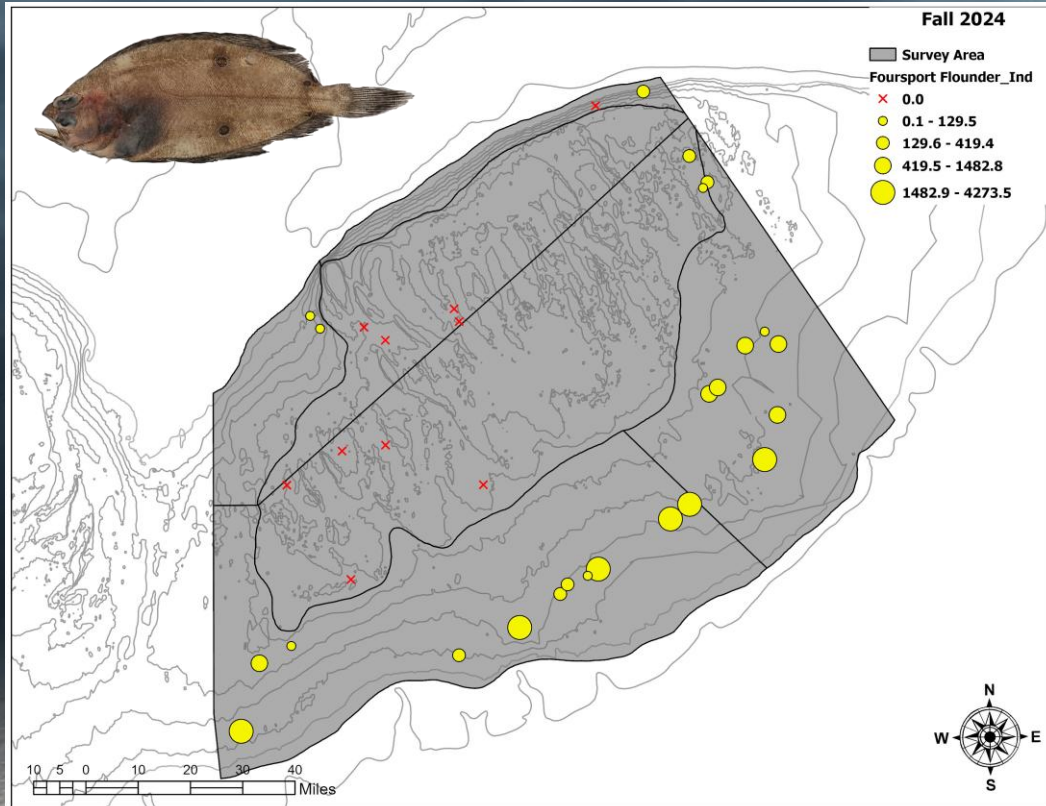
Mean Density = 42 ind/km²
Abundance = 1,110,989
Biomass = 184 MT



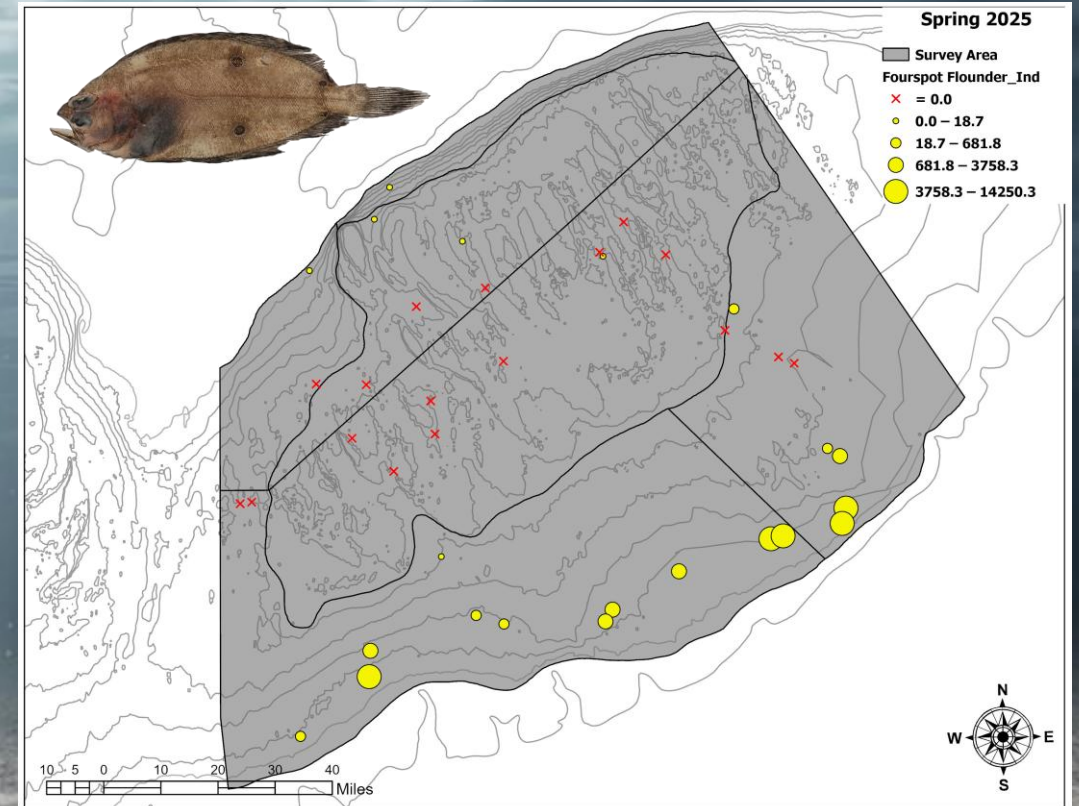
Mean Density = 198 ind/km²
Abundance = 5,657,083
Biomass = 787 MT

100% Efficiency 2025 Mean Biomass = 476 MT

Fourspot



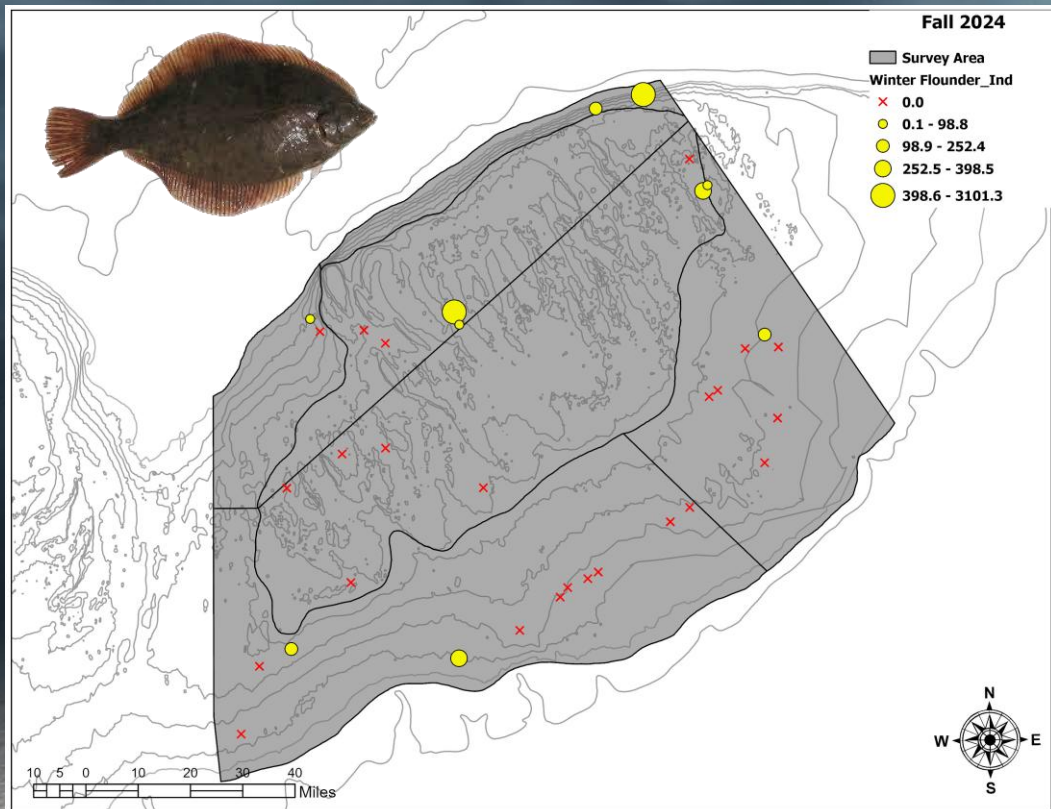
Mean Density = 704 ind/km²
Abundance = 17,740,267
Biomass = 13,920 MT



Mean Density = 1,747 ind/km²
Abundance = 48,393,715
Biomass = 7,423 MT

100% Efficiency 2025 Mean Biomass = 10,672 MT

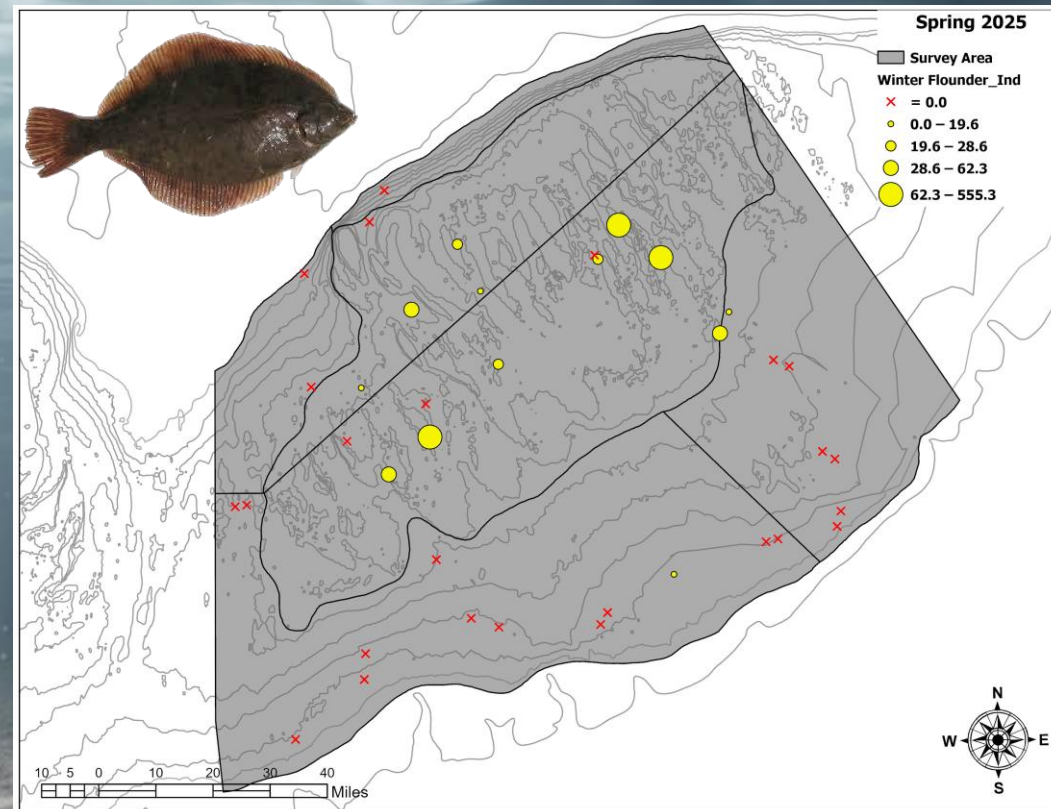
Winter Flounder



Mean Density = 157 ind/km²

Abundance = 4,746,509

Biomass = 3,607 MT



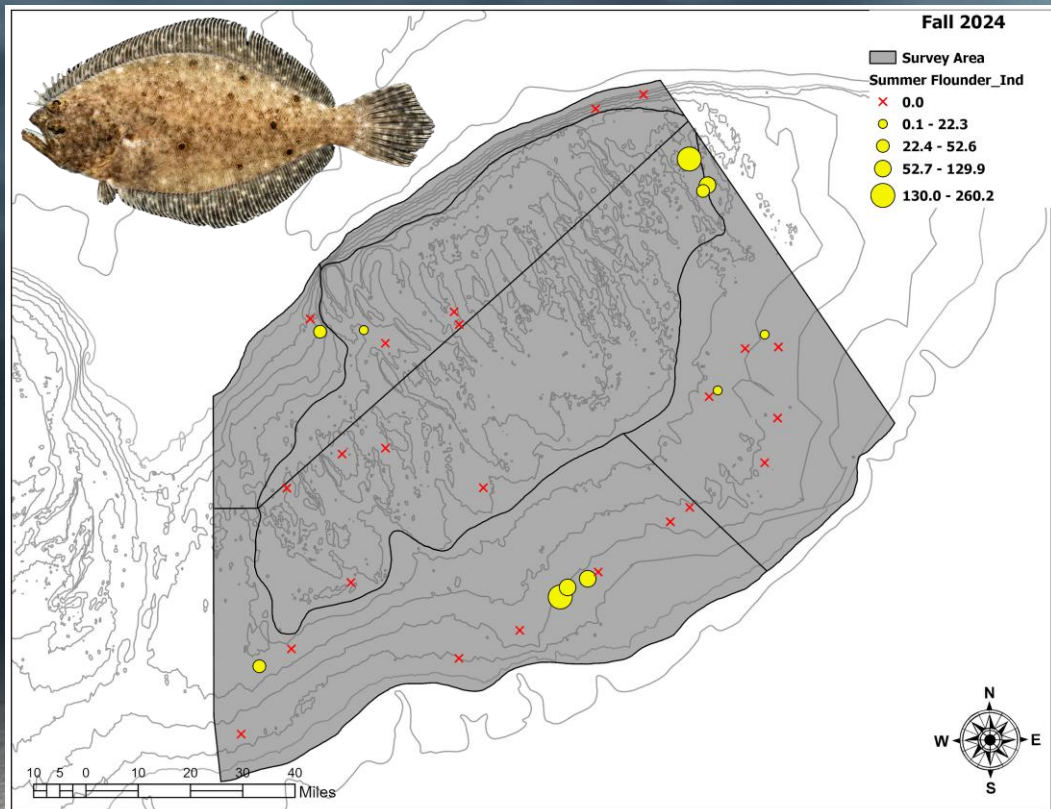
Mean Density = 32 ind/km²

Abundance = 1,212,211

Biomass = 711 MT

100% Efficiency 2025 Mean Biomass = 2,159 MT

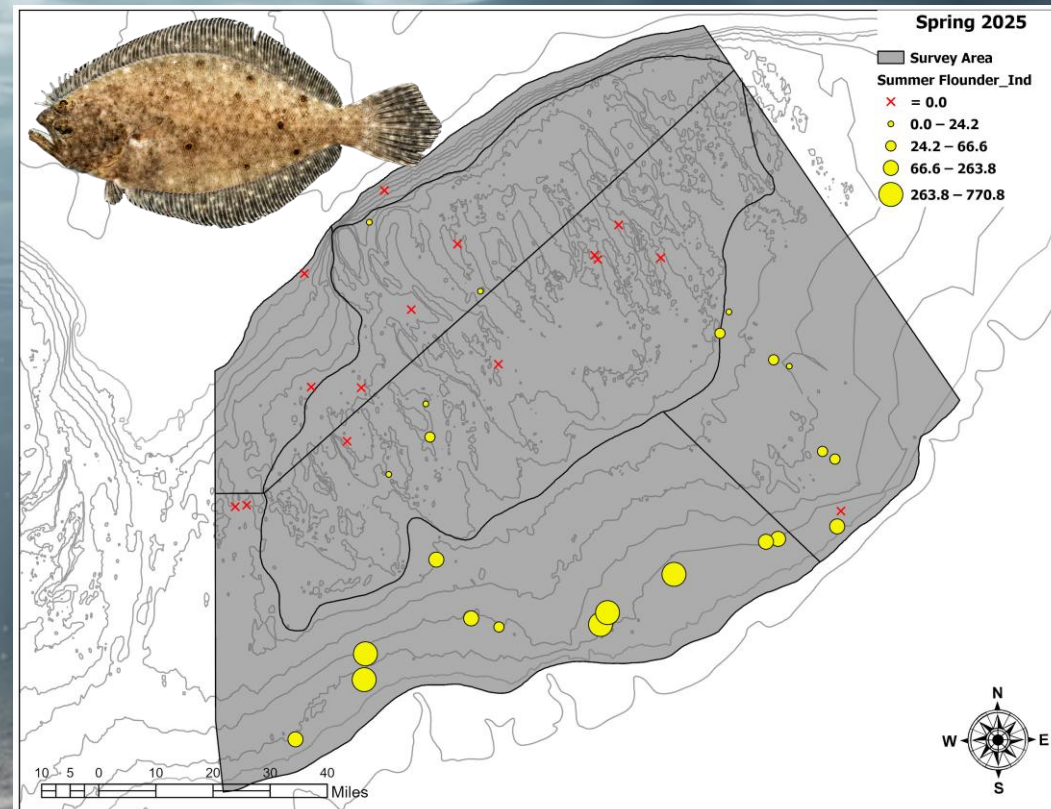
Summer Flounder



Mean Density = 26 ind/km²

Abundance = 666,097

Biomass = 1,133 MT



Mean Density = 88 ind/km²

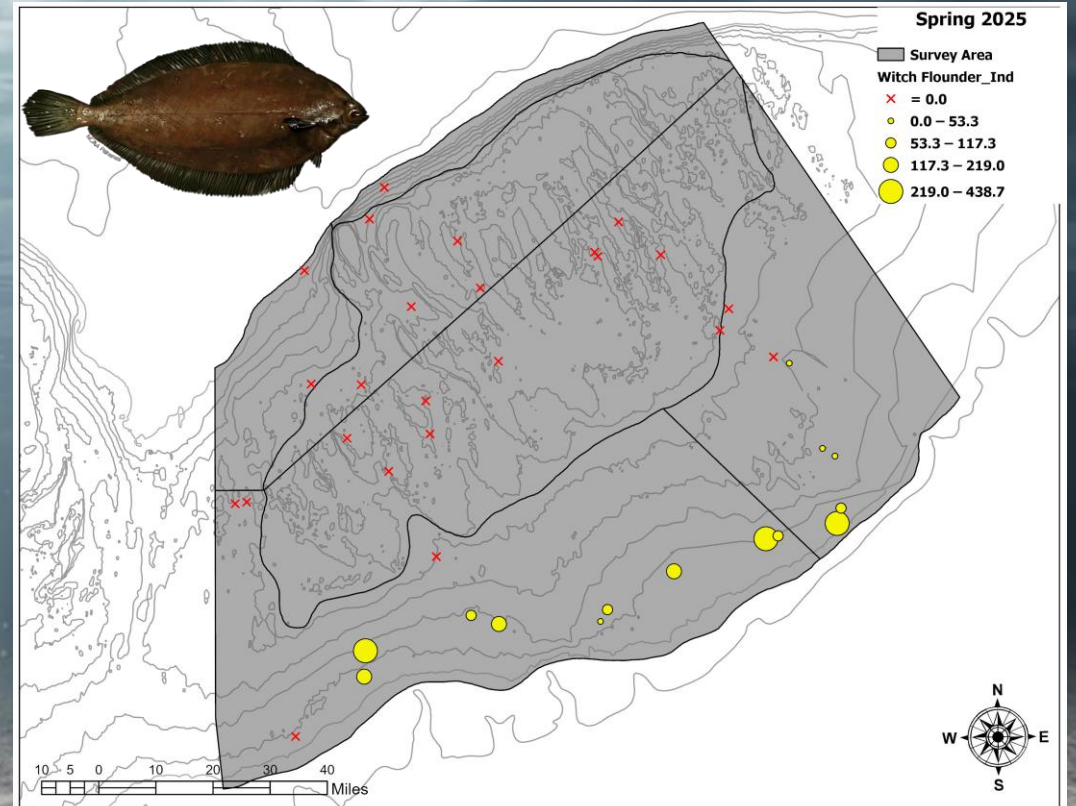
Abundance = 2,464,852

Biomass = 2,387 MT

100% Efficiency 2025 Mean Biomass = 1,760 MT

Witch Flounder

NO FALL CATCH



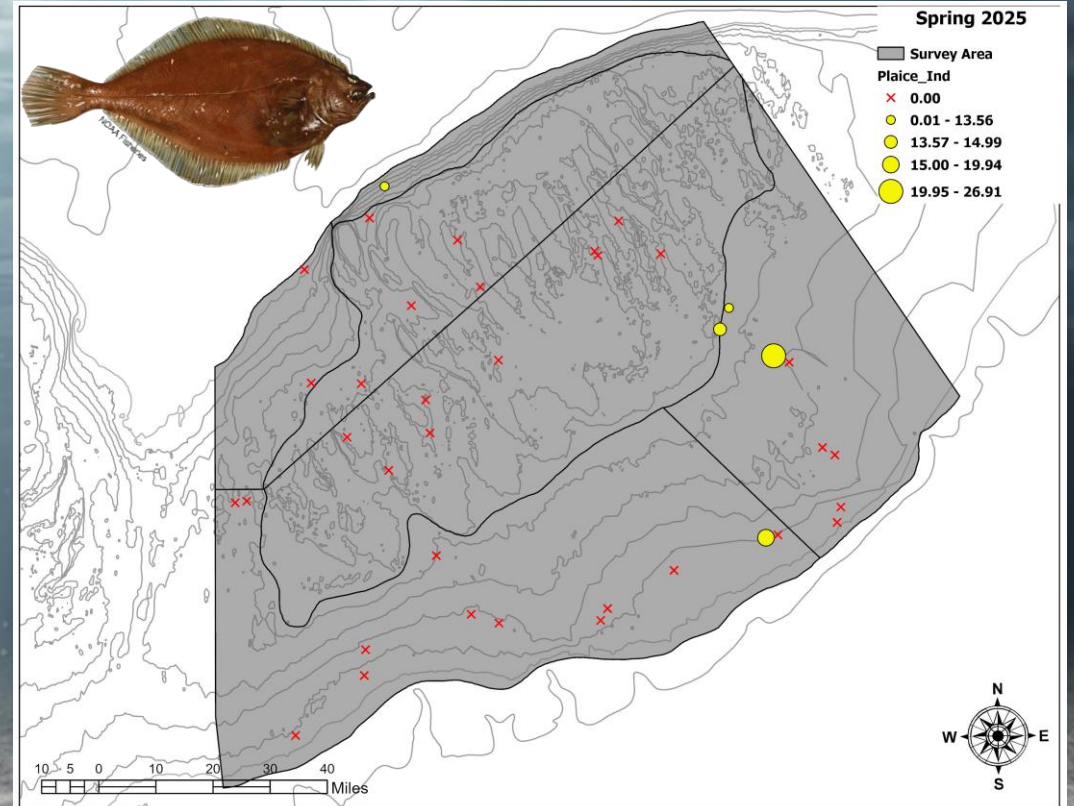
Mean Density = 54 ind/km²

Abundance = 1,513,635

Biomass = 445 MT

American Plaice

NO FALL CATCH

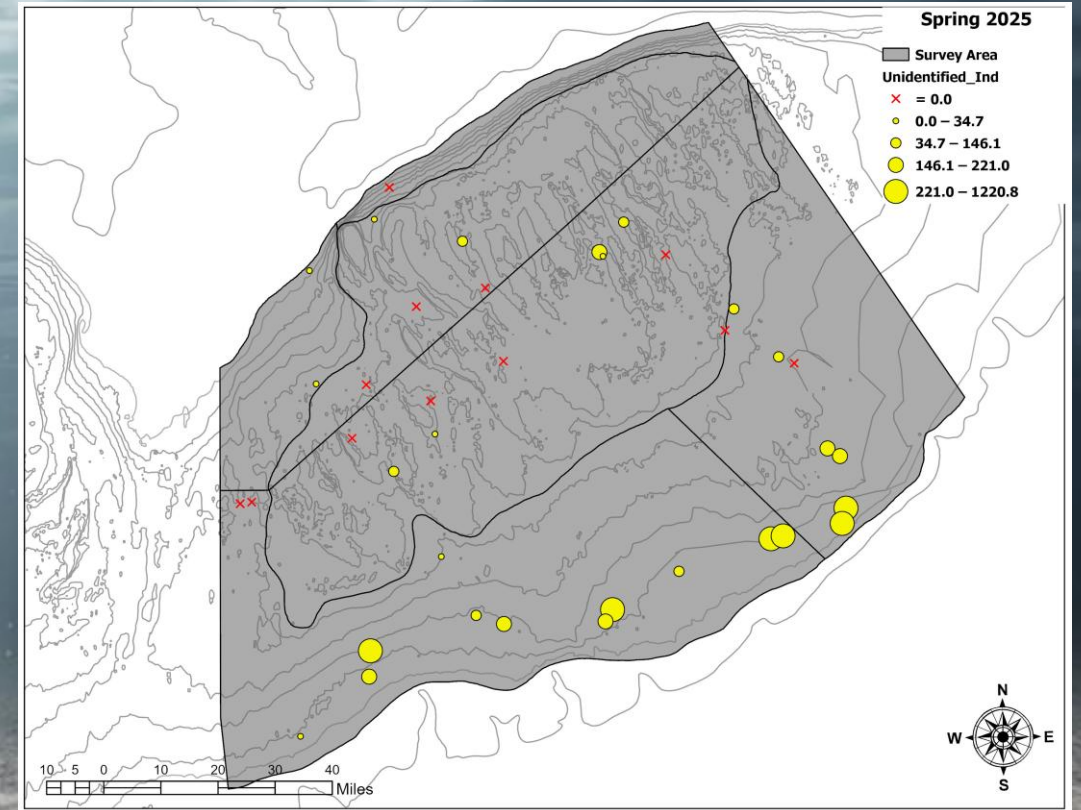
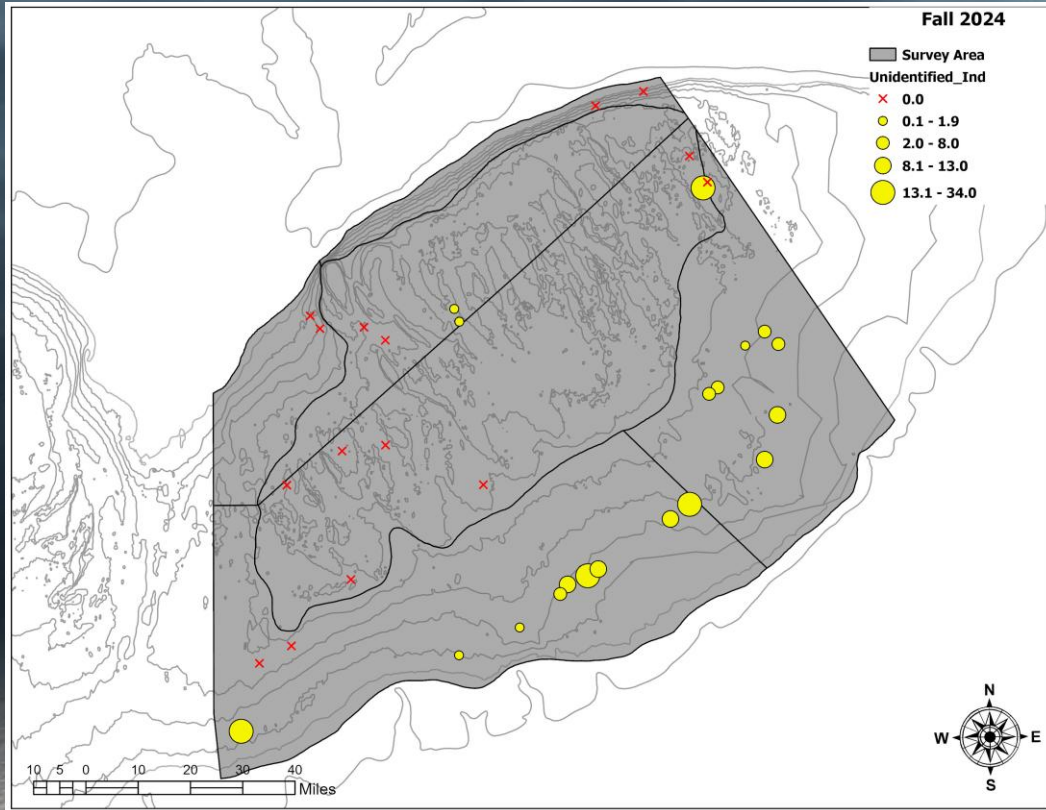


Mean Density = 2 ind/km²

Abundance = 63,926

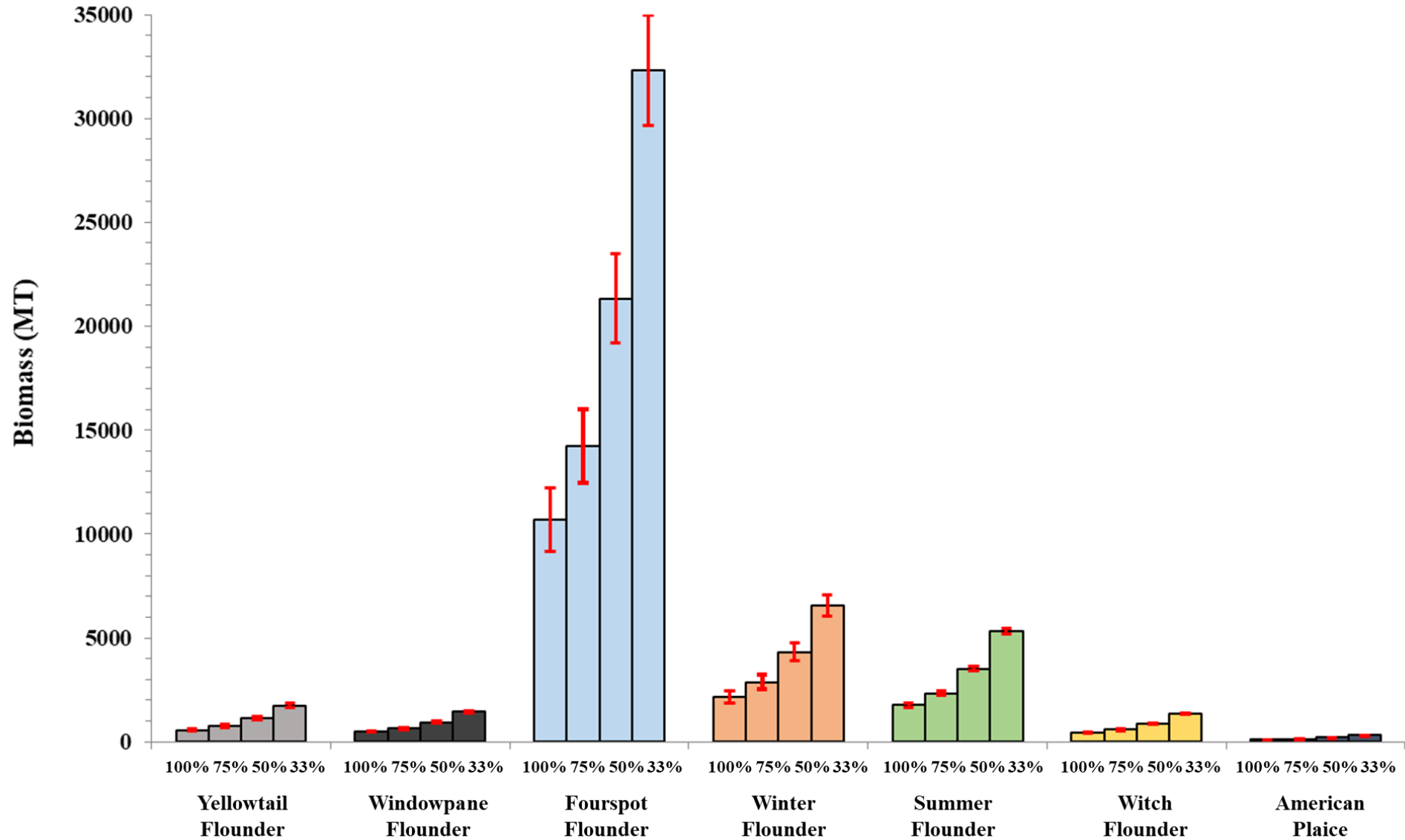
Biomass = 102 MT

Unidentified Flatfish



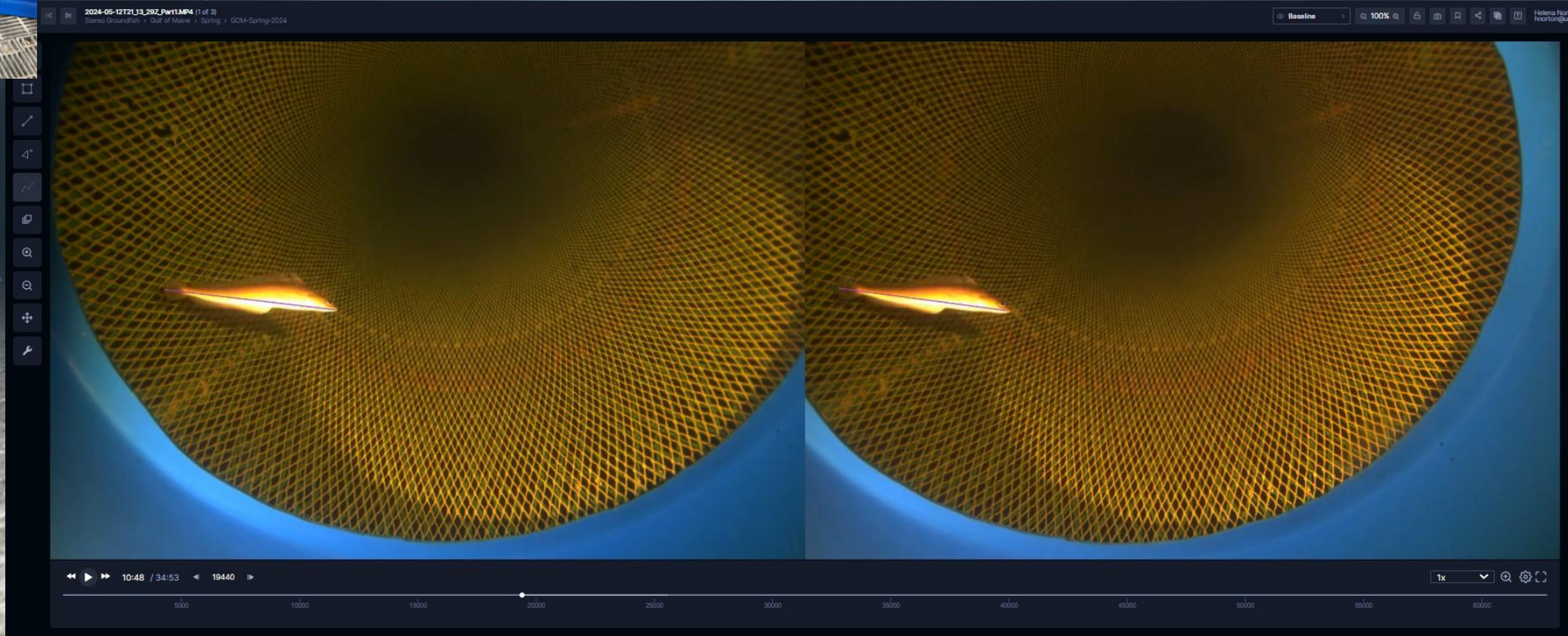
***Most unidentified flatfish occur in deep softer bottom due to sediment suspension and algae in the water column in those areas**

Summary



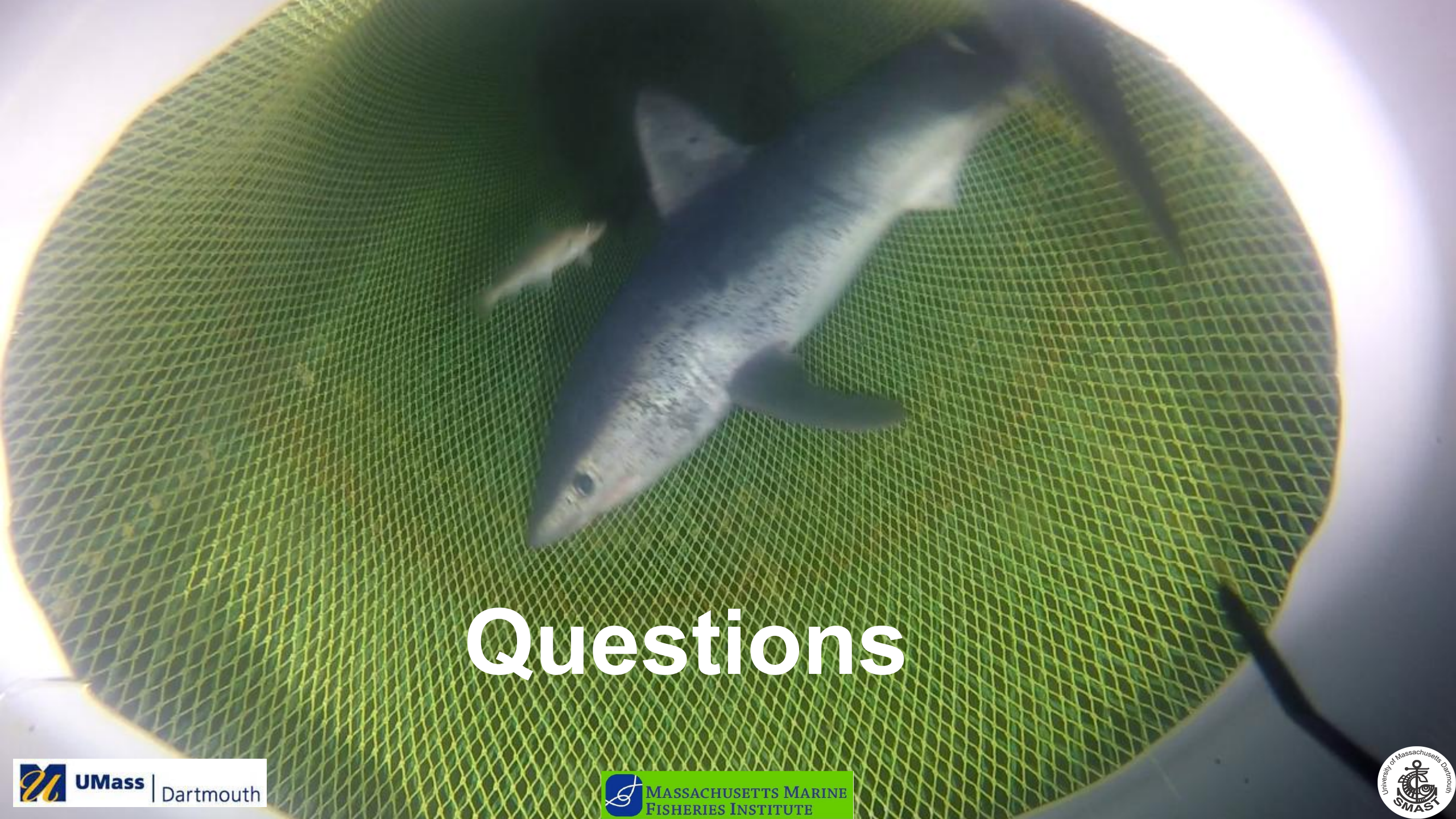
Stereoscopic Camera

***Algorithm training is ongoing**



Sea Robin Migration





Questions