Conducting scientific research projects that support sustainable fisheries, aquaculture, and agriculture

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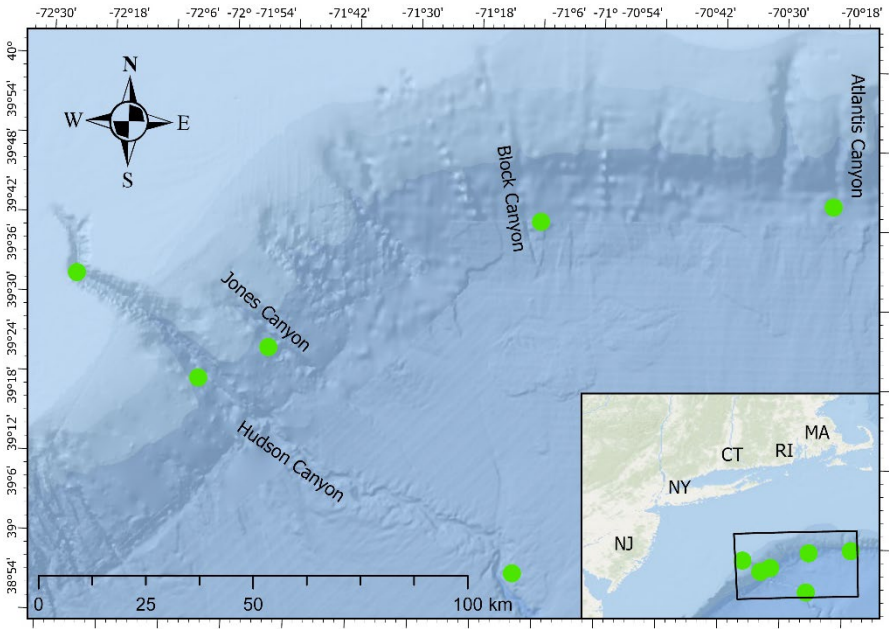
Research Cruise Summary Report
2025

Project Name:	To squidfinity and beyond
Vessel Name:	Kathy Ann
Departure Date:	9/18/2025
Land Date:	9/24/2025
Port:	Barnegat, NJ
Chief Scientist:	Ryan Munnelly
Scientific Crew:	Cassie Tillotson
Report Completed by:	Ryan Munnelly

BACKGROUND



Locations of the 6 areas fished with automatic jigging machines from September 18–23.

CRUISE OBJECTIVES

The main objectives of this exploratory fishing trip were to trial automatic jigging machines in off-shelf waters of the Northwestern Atlantic Ocean and to catch currently unmanaged but marketable squids. Of the unmanaged species known to occupy these waters, the neon flying squid, *Ommastrephes bartamii*, was the primary target species due to its high market value

internationally and past success by Kenneth Thuestad, Malvin Kvilhaug, and Ronald Smolowitz having targeted this species in waters of the Northwest Atlantic during the mid-1990's. An additional objective was to trial fisheries and environmental sampling tools under development by Acbotics Research to facilitate oceanographic and fisheries data collection by commercial fishermen.

OBSERVATIONS & KEY TAKE AWAYS

Neon flying squid were caught at all 6 locations fished along the shelf edge and were the most abundant species caught at 5 of the locations, with Northern shortfin squid, *Illex illecebrosus*, being the second most abundant species. The neon flying squid weighed 2.5 times that of Northern shortfin squid on average, with the largest caught weighing 1.25 lbs. A Japanese commercial squid fisherman accompanying us on the trip provided insight into more effectively targeting higher numbers and larger sizes of neon flying squid, which can potentially reach weights of 10 lbs. in Northwestern Atlantic waters in the spring and early summer.

Results from this trip suggest there is a large stock of neon flying squid in Northwestern Atlantic waters capable of supporting a fishery. Future directions toward development of this fishery will be identification of the spatial and temporal distributions and environmental preferences of neon flying squid as well as other unmanaged species.

A double-drum automatic jigging machine with overhead metal halide lighting begins fishing at sunset.

CFF researchers Ryan Munnelly and Cassie Tillotson catching neon flying squid by rod and reel while operating automatic jigging machines.

Examples of Northern shortfin (top), neon flying (middle), and diamond (bottom) squid.

RESULTS

- Four, double-drum automatic jigging machines were fished for 54 hours during 6 nights of fishing at depths between 600-3000 m at distances of between 150-250 km from shore spanning a distance of 180 km from Hudson Canyon to Atlantis Canyon
- Neon flying squid, Northern shortfin squid (*Illex illecebrosus*), longfin squid (*Doryteuthis pealeii*), and diamond squid were caught, with neon flying squid occurring at all 6 locations and making up 54% of the catch
- All of the equipment trialed on this trip, including the jigging machines and related equipment as well as the fisheries sampling equipment from Acbotics worked aboard a commercial scallop vessel

ADDITIONAL COMMENTS

The success of this exploratory fishing trip was due to contributions from Japanese jigging manufacturing company Hamade, who sponsored the attendance of commercial neon-squid fishing captain Masa-san and automatic jigging machine technician, Ren-san. Huge thanks to Kei-san for coordinating travel arrangements for Masa and Ren and being the point of contact for acquiring equipment and providing technical information during planning. In addition, we thank Viking Village Seafood, Captain Corey Karch and the crew of the F/V Kathy Ann for equipment fabrication, vessel rigging, and assisting with the logistics of using automatic jigging machines aboard their vessel.

We thank Matt Rodriguez from the Commercial Fisheries Research Foundation for assistance at sea. We thank Charlie Quinn, owner of Quinn Fisheries for assistance with planning logistics for equipping commercial scallop vessels to use automatic jigging machines. We thank Captain Paulo Cristelo of Atlantic Shellfish Inc. for providing important and timely information on squid environmental preferences and recommending areas to search for unmanaged squid species while at sea. Finally, we thank Erin Fischell and Sam Fladung of Acbotics Research for their great work prototyping the environmental sensors and fisheries equipment trialed during this trip.