Elasmobranchs actions in Cyprus: Evaluating the efficacy of circle hooks to reduce elasmobranch bycatch in Cyprus' surface longline fisheries

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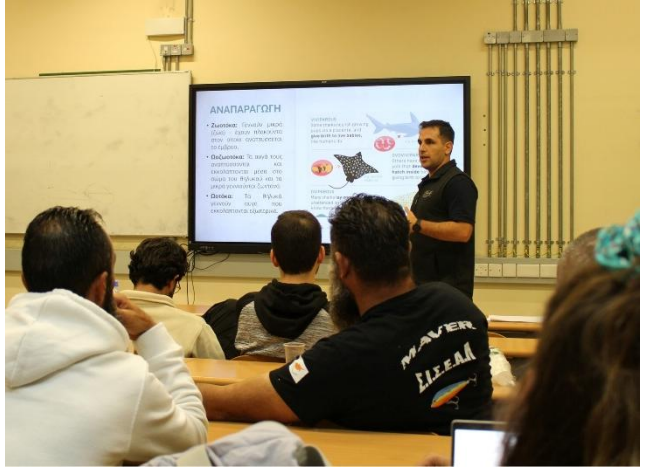
Periklis Kleitou
pkleitou@merresearch.com



Local & national information campaigns

Summary of Outreach and Educational Activities in Greece and Cyprus

- 2 peer-to-peer seminars with university students
- 1 educational event with scouts
- 2 educational workshops with primary schools
- 10 awareness events for Shark Awareness Day (4 held in schools, 6 targeting the general public
- 2 awareness events for the general public during European Researchers' Night
- 2 peer-to-peer training sessions with small-scale fishers
- 2 awareness events specifically for small-scale fishers
- 3 workshops with recreational fishers
- 1 information campaign targeting recreational fishers
- 4 workshops with fisheries stakeholders focused on legislation and conservation awareness
- Participation in conferences and other events

'Shark and Ray Identification Workshops for National Authorities in the Republic of Cyprus'

- Delivered **1 online** and **2 in-person** workshops for national authorities.
- Aimed at strengthening **shark and ray identification skills** among DFMR controllers and scientific observers.
- **45+ participants** from DFMR attended.
- Organised by MER with **Monica Barone (FAO)**, **iSea**, and **DFMR**.
- Sessions improved recognition of threatened species and supported more effective compliance, with active exchange between trainers and controllers.

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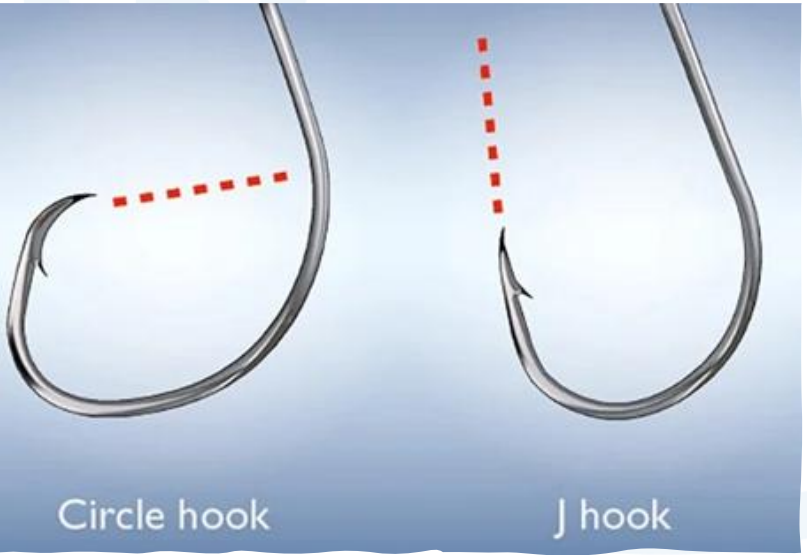
Action E3: Replicability actions in Cyprus

Activity: E.3.2. Replicability of innovative and low impact longline

- ✓ Explored innovative gear modifications to mitigate bycatch and post-release mortality in Cyprus' surface longline fisheries, focusing on the efficacy of circle hooks.

Why circle hooks ?

- ✓ Studies show no significant difference between J hooks and Circle hooks on type of catch, or post mortality rates of bycatch.



Fishing gear modifications to reduce elasmobranch mortality in pelagic and bottom longline fisheries off Northeast Brazil

April 2011

DOI: 10.5343/bms.2012.1031

Conference: International Symposium on Circle Hooks in Research, Management an d Conservation · At: Bethesda, USA

Fábio Hazin · Felipe Carvalho · Jose C Pacheco · Show all 8 authors · André S. Afonso

Fisheries Research

Volume 107, Issues 1–3, January 2011, Pages 39-45

A comparison of circle hook and J hook performance in a western equatorial Atlantic Ocean pelagic longline fishery

J.C. Pacheco [a], D.W. Kerstetter [b], F.H. Hazin [c], Humberto Hazin [a], R.S.S.L. Segundo [c], J.E. Graves [d], F. Carvalho [e, f], P.E. Travassos [b]

- ✓ Studies indicate that circle hooks decrease bycatch by up to 60 % due to their design.
- ✓ Improved post-release survival as they minimize deep hooking which improves

Mitigating effects on target and by-catch species fished by drifting longlines using circle hooks in the South Adriatic Sea (Central Mediterranean)

Pierluigi Carbonara, Giulia Prato, Simone Niedermüller, Sébastien Alfonso, Cosmidano Neglia, Marilena Donnaloia, Giuseppe Lembo, Maria Teresa Spedicato

Are circle hooks effective management measures in the pelagic longline fishery for sharks in the Gulf of Gabès?

Bechir Saidi, Khaled Echwikhi, Samira Enajjar, Sami Karaa, Imed Jribi, Mohamed N. Bradai

First published: 07 March 2020 | https://doi.org/10.1002/aqc.3315 | Citations: 3

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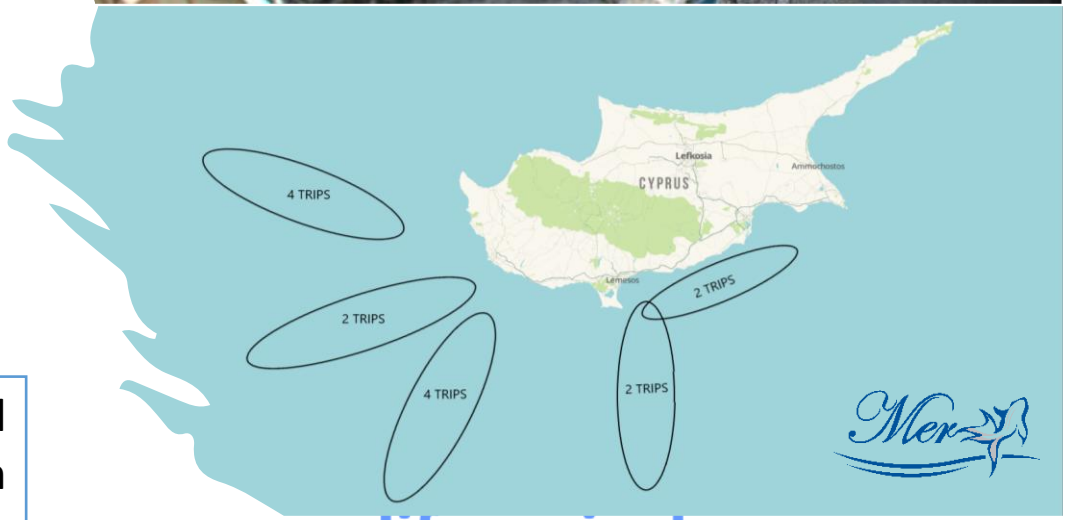
Action E3

Activity: E.3.2. Replicability of innovative and low impact longline

CURRENT SITUATION - CYPRUS

- **Onboard expeditions with** pelagic longlines have been conducted between **19/04/2024 – 0/06/2024**
- **Number of trials**: 14 fishing trials conducted in collaboration with local longline fishers.
- **Trips**: Southeastern **Cyprus**, 35 nm each.
- **Hook types tested**:
  - ✓ **450 J-hooks** and **450 circle hooks** used per trial to compare performance.
- **Bait used**:
  - ✓ **Mackerel** and **artificial squid** to attract both target and non-target species.

AIM: Explore innovative gear modifications to mitigate bycatch and post-release mortality in Cyprus' surface longline fisheries, focusing on the efficacy of circle hooks.



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METHODOLOGY

Size measurements (morphometrics):

- Total Length (TL)
- Fork Length (FL)
- Curved Fork Length (CFL)
- Curved Lower Jaw Fork Length (CLD)

- **Type of hook used**
- **Location of catch**
- **Bait type**
- **State of specimen (Alive / dead)**

- **MiniPAT pop-up tags**: Deployed on sharks greater than 1m in length.
  - ✓ **Purpose**: To track post-release behavior and movement patterns.
  - ✓ **Data logged**: Depth, temperature, and migratory routes, providing insights into survival rates and post-release recovery.
- **Fin clip and muscle biopsy**: Collected from selected specimens for genetic and health assessments.
  - ✓ **Purpose**: To study population genetics, stock identification, and physiological condition of captured species.


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Action E3

Activity: E.3.2. Replicability of innovative and low impact longline

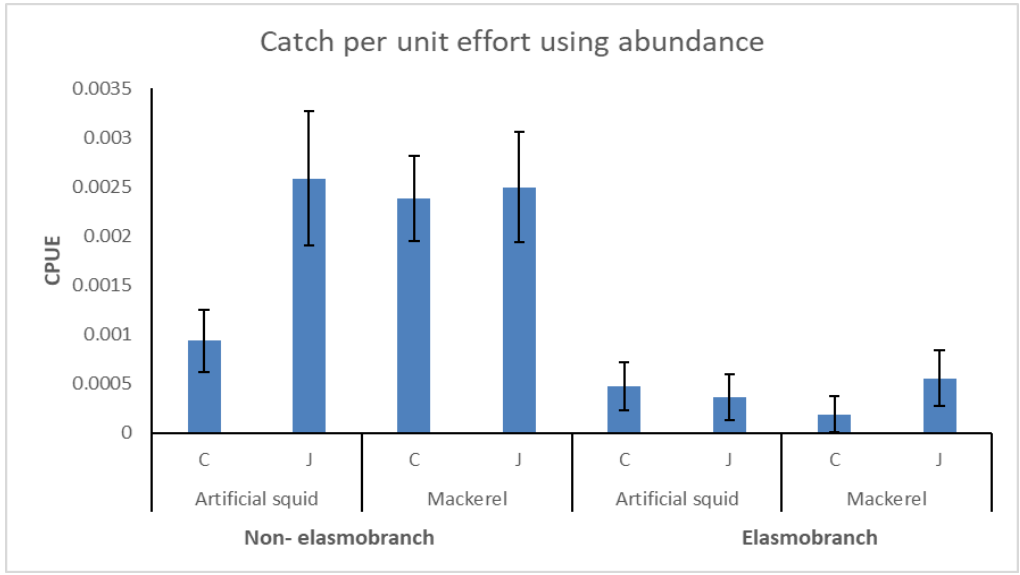
Results

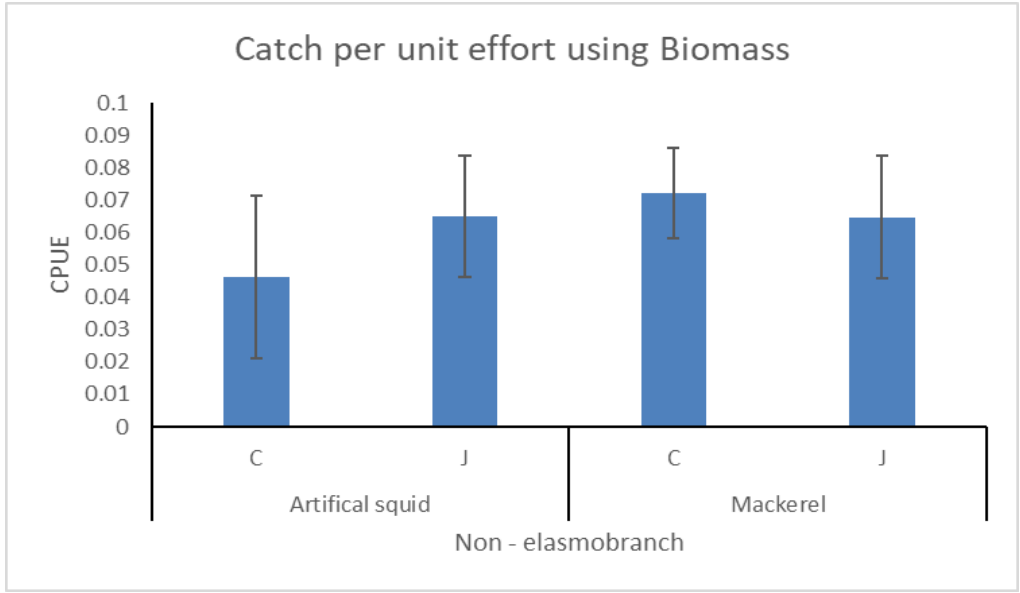
10 Elasmobranch species (6 *A. superciliosus*, 3 *P. glauca*, and 1 *I. oxyrinchus)*

- 40% on Circle hooks
- 60% on J hooks
- 50% on Artificial squid / Mackerel

46 non-elasmobranch species (*36 X. gladius, 2 T. thunnus, 2 C. hippurus, 3 T. belone*

- 58.7% on J hooks
- 41.3% on Circle hooks
- 60.8% on Mackerel
- 39.1% on Artificial squid



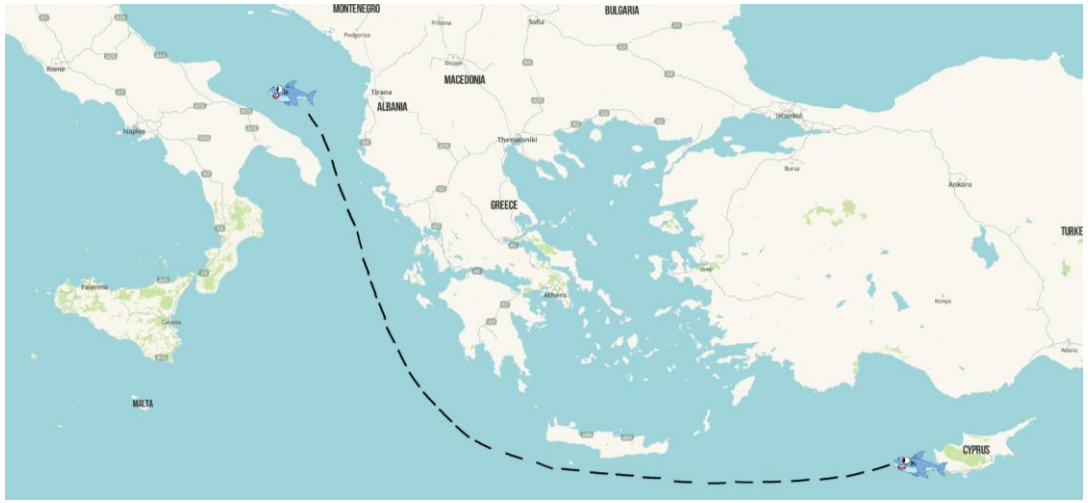


Action E3

Activity: E.3.2. Replicability of innovative and low impact longline

4 sharks were equipped with satellite tags (3 *A. superciliosus* and 1 *I. oxyrinchus*).

I. oxyrinchus in four months traveled from Cyprus to Italy.



Working with fishers to collect more fishery independent data, further evaluating the efficacy of circled hooks and alternative baits

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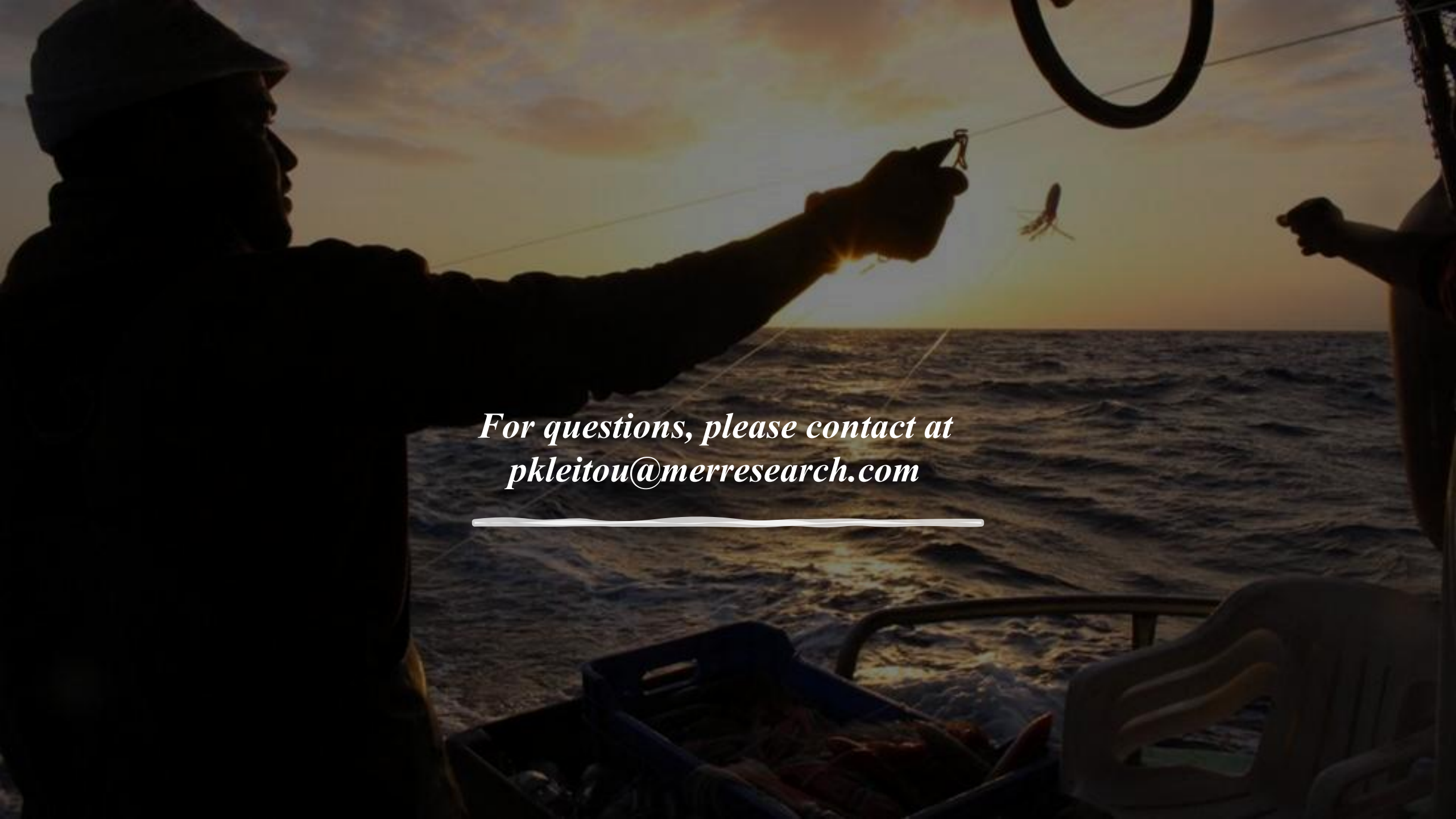

For questions, please contact at
pkleitou@merresearch.com