

Progress in addressing key research to inform Mobula rays conservation in the Pacific Ocean

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U.S. Tropical Tuna Purse seine fleet:

Western Pacific Fisheries, Pacific Princess Partnership, Cape Fisheries, GS Fisheries,
Da Silva Sea Encounter corp., AACH Holding

- 1. Study purse seine - Mobula spp interactions and population structure**
- 2. Design and testing of a sorting grid for Mobulas and evaluate post-release mortality**
- 3. Train fishers and observers to identify and sample mobulid rays and educate crew on best safe-handling and release practices for Mobulas.**
- 4. Outreach to fishers, scientists and managers.**

Progress Objective 1: Purse seine - *Mobula* spp interactions and population structure

Both, fishers and scientist on board purse seiners taking samples of mobulas tissue

ID	Vessel	Species	Tissue sample	Mucus sample
PP_01	Pacific Princess	<i>M. mobular</i>	NA	297
PP_02	Pacific Princess	<i>M. mobular</i>	315 / PP_02	285
FR_02	Friesland	<i>M. mobular</i>	FR_02	NA
FR_03	Friesland	<i>M. thurstoni</i>	FR_03	NA
FR_01	Friesland	<i>M. tarapacana</i>	FR_01	NA
CF_01	Cape Finisterre*			

2 simples in transit, one from Pacific Princess and one from Cape Finisterre

Total of 7 samples: Fishers 5 – Scientists 2

Progres Objective 2: Design and test of sorting grids

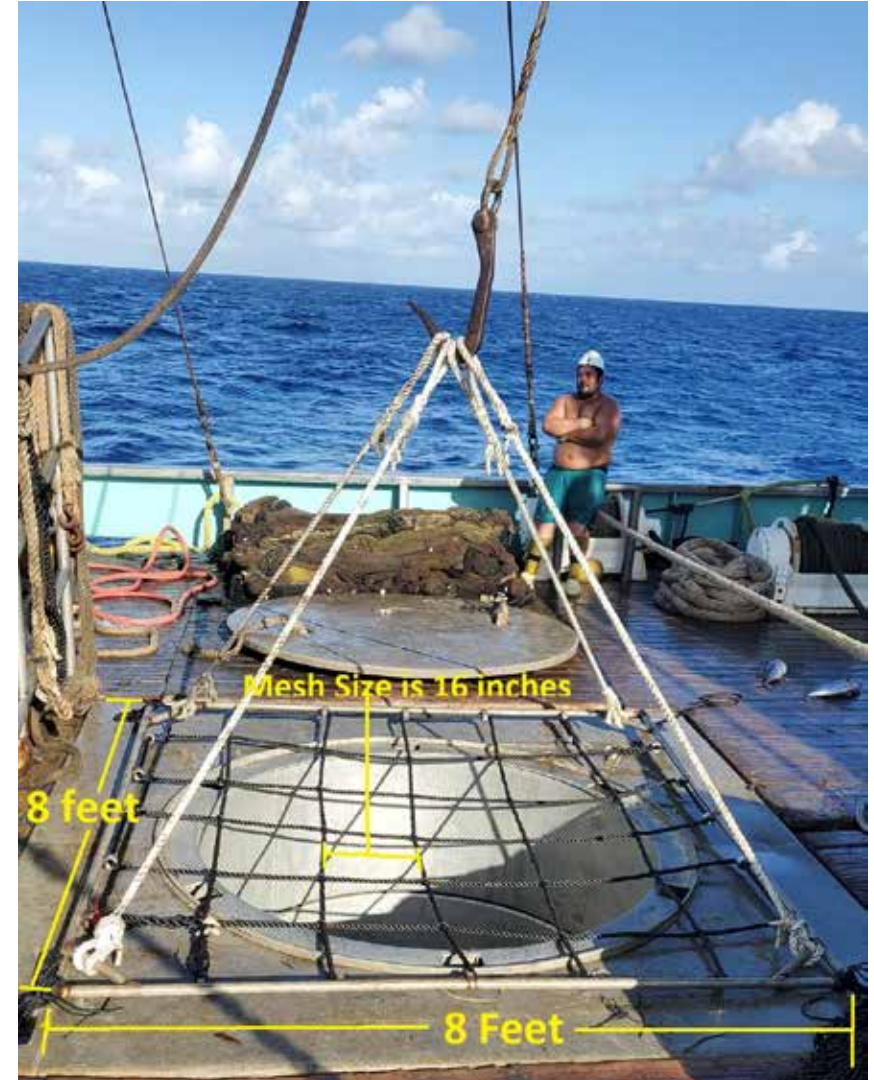
Surveys and calls with fishers



Sorting grid designed by AZTI

Progres Objective 2: Design and test of sorting grids

A sorting grid constructed for each of the
US tropical tuna purse seine vessel





Progress Objective 2: Design and test of sorting grids

Survival assessment of released individuals:

- 3-4 cruises with a scientist on board to tag mobulas:
 - First cruise onboard the Pacific Princess
 - Second on board Cape Finisterre
- Fishers tagging mobulas

ID	Date	Vessel	Time start of set	Brailer number	Duration min. (from brailer to release)	Estimated total catch (tons)	Total No. Brails	Tag Number	Species	Size (cm)	Sex	Method of release
1	6/22/22	Western Pacific	16:30	3	1:05				<i>M. mobular</i>	2	NA	Grid
2	12/1/23	Pacific Princess	6:39	3	1:00	15	7	21P2018	<i>M. mobular</i>	122	NA	stretcher
3	12/1/23	Pacific Princess	5:19	3	1:30	15	7	21P2165	<i>M. mobular</i>	101,6	NA	stretcher
4	11/22/22	Friesland	23:30	3	8:00	25		NA	<i>M. mobular</i>	160	M	Grid
5	8/31/22	Friesland	17:25	5	2:00	12		NA	<i>M. thurstoni</i>	240	F	Grid
6	11/22/22	Friesland	23:30	2	5:00	2		NA	<i>M. tarapacana</i>	190	M	Grid
7	2/14/23	Pacific Princess		4	3:00			21P2008	<i>M. mobular</i>	185	NA	stretcher
8		Cape Finisterre*										

*sample in transit; information not yet in hand

Total of 8 releases: Tagging: Fishers 1 – Scientists 2

Progress Objective 2: Design and test of sorting grids

Leandro Silva Freitas crew member of the Pacific Princess tagged the first mobula that reported data and survived!



Progress Objective 3: Training and educating fishers on mobulas identification and release

During cruises with a scientist on board



Fishers sampling for the Project



Progres Objective 3: Training and educating fishers on mobulas identification and release



Training when in port



Cape Breton PS



Evelina da Rosa



Cape May PS



Pacific Princess PS



Western Pacific PS

And more....

Friesland, Cape Finisterre, Sea encounter, Cape Cod, Capt Vicent Gann, Daniela, Cape Elizabeth, Cape Ferrat

- ü **Sorting grids** have proven to be efficient for fishers, making the maneuver faster, easier and safer, both for fishers and mobulids. Every vessel of the US purse seine fleet has a sorting grid to release mobulas now.
- ü The only **tag that reported** so far was a **survival** of the mobula after the fishing operation
- ü **Interaction is low** and so is tissue sample collection, however awareness raised and more samples are being collected in the second half of the project.
- ü **Education and training to all US tropical PS vessels** was done online, on board and in port.

What is Next?

- ü Field data collection will continue over two more cruises onboard U.S. purse seiners by fishers during their regular fishing operations.
- ü Training and education of fishers will continue throughout the Project.
- ü Species identification is hard: Utilizing the guide currently in development by the IATTC (pers. Comm, M. Hutchinson) will be valuable for this project and in general to improve fisher and observer mobula rays' species identification