HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON EXEMPTED FISHING PERMITS – PRELIMINARY OR FINAL

At the Council's request, the Highly Migratory Species Management Team (HMSMT) further discussed the Exempted Fishing Permit (EFP) application submitted by the Pfleger Institute of Environmental Research (PIER) (G.3 Attachment 1). The HMSMT recommends the Council endorse PIER's EFP proposal.

The HMSMT reviewed the available literature from fisheries in the Western Pacific and Mediterranean, where gear types using similar forms of alternative terminal tackle (trap lines) were used to target swordfish (see Appendix A). The studies from Japan and the Mediterranean were focused on longline fishing configurations with varied levels of effort per set (see Table 1 of Appendix A) but there is no available research on use of rings on deep-set buoy gear or similar gears. The consensus of the available literature indicates that rings have been used to successfully target swordfish, while reducing interactions with bycatch species in those fisheries (see Table 2 of Appendix A). Data from other regions do not indicate a clear effect on swordfish catch rates when using rings versus hooks. In one study, swordfish catch rates increased, while in another study catch rates decreased. However, multiple studies found a notable increase in the average size of landed swordfish.

Additionally, the HMSMT and HMS Advisory Subpanel discussed a written request by other EFP fishermen to explore use of rings in other currently issued EFPs. The HMSMT generally supports these efforts as well. However, acknowledging that the use of rings was not contemplated in the analyses performed to date for those other EFPs, we encourage the National Marine Fisheries Service to analyze the impacts (or benefits) of using rings holistically so that the analysis can be used to inform potential changes to the operative terms and conditions for existing EFPs. These activities could support an evaluation of tradeoffs in catch performance between different forms of terminal tackle and allow the flexibility to deploy multiple types within a set.

PFMC
03/06/2026

APPENDIX A: Summary of studies on ring gear and non-target species catch.

1. Western Mediterranean Study (Macías et al., 2025)
Assesses the first systematic use of traplines in the Spanish swordfish fishery during 2024.

- **Catch Dynamics:** Trapline sets (**LOSET**) captured fewer swordfish per set than traditional hooks (**TRADSET**) but caught significantly larger and heavier individuals (mean size 132 cm vs. 112 cm).
- **Bycatch Mitigation:** Use of the gear resulted in a **32.22% reduction** in the capture of Endangered, Threatened, and Protected (ETP) species.
- **Selectivity:** The gear is triggered when fish attempt to access artificial bait; the study suggests smaller swordfish often pass through the loops without entanglement.

2. Ligurian Sea Preliminary Data (Garibaldi et al., 2025)
Monitors the rapid adoption of traplines in the Italian fleet following their introduction in 2023.

- Fishers typically used a mixed pattern of one trapline for every two hooks.
- **Efficiency:** Traplines showed higher Catch Per Unit Effort (CPUE) and a lower percentage of undersized swordfish (~5%) compared to hooks (~11%).
- **Bycatch Findings:** Bycatch was generally lower with traplines, with most elasmobranch species caught in lower percentages than with hooks.

3. Innovative Fishing Gear Challenges (Garibaldi et al., 2024)
Highlights the management and scientific hurdles created by the "confidential" spread of traplines since 2021.

- **Rapid Adoption:** Sicilian fishers reportedly copied the gear from Spanish vessels in late 2021, leading to widespread testing across Italian waters by 2022.

4. Japanese "Meka-Ring" Overview (Ochi et al., 2025)
Explores the origins of the gear in the Pacific and its potential implications for bycatch.

- **Origins:** The "Meka-ring" was developed by Japanese fishers in the **mid-2000s** to catch swordfish while targeting diamond squid.
- **Baitless Design:** Unlike Mediterranean versions that sometimes use bait, Japanese rings often use **blinking LED lights** to attract fish without natural bait.
- **Bycatch Impact:** The report states no seabird or marine mammal captures have been observed, and sea turtle bycatch is considered lower than conventional baited hooks.

Table 1: Summary of Fishing Effort and Strategies

Publication	Observed Sets	Total Hooks	Total Traplines	Primary Strategy
Western Mediterranean (2024)	303	531,674	141,600	High-intensity use; average of 2,677 branchlines per set in trapline operations.
Ligurian Sea (2025)	552	415,240	70,863	Mixed system; 1:3 ratio (approx. 350 traplines per 650 hooks).
Italy/Sicily (2024)	Preliminary	Variable	Variable	Rapid expansion; shifted from 100 traps per 1,000 hooks to some vessels using 100% traplines.
Japanese Research (ICCAT)	Pilot Trials	Normal Effort	Low % of lines	Minimalist/Supplemental; traplines used as a small percentage of total branchlines.

Table 2: Non-target species catch summary across literature

Species Category	Species Name	Western Mediterranean (LOSET)	Ligurian Sea (Traplines)	Italy/Sicily (Traplines)	Japanese Research "Meka-Ring"
Elasmobranchs (Sharks/ Rays)	*Prionace glauca* (Blue shark)	29 individuals	0.8% of catch	Reported	Occasional
	P. violacea (Pelagic stingray)	52 individuals	1.5% of catch	Not Reported	Not Reported
	Galeus melastomus (Blackmouth catshark)	7 individuals	Not Reported	Not Reported	Not Reported
	Isurus oxyrinchus (Shortfin mako)	4 individuals	Not Reported	Not Reported	Not Reported
	M. mobular (Devil ray)	0 individuals	0.4% of catch	Not Reported	Not Reported
	Kajikia albida / *Tetrapturus* (Marlins)	Not Reported	Not Reported	Not Reported	Occasional
	Unidentified pelagic sharks	Not Reported	Not Reported	Reported	Not Reported
Bony Fish	*Mola mola* (Ocean sunfish)	2 individuals	6.4% of catch	Reported	Not Reported
	Thunnus thynnus (Bluefin tuna)	Not Reported	1.5% of catch	Reported	Not Reported
	Thunnus obesus (Bigeye tuna)	Not Reported	Not Reported	Not Reported	Occasional
	Thunnus albacares (Yellowfin tuna)	Not Reported	Not Reported	Not Reported	Occasional
Marine Mammals	*Tursiops truncatus* (Bottlenose dolphin)	1 individual	Not Reported	Not Reported	Not Reported
	Stenella coeruleoalba (Striped dolphin)	Not Reported	Not Reported	Reported	Not Reported
Sea Turtles	*Caretta caretta* (Loggerhead turtle)	0 individuals	Not Reported	Not Reported	Reported Lower
Seabirds	All species (Gulls, Shearwaters, etc.)	0 individuals	Not Reported	Not Reported	Zero Reported