



Fishing Gear Swap Program

as a Part of Preventive and Mitigation Measures for Marine Mammals

December 2025



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SUMMARY

The blue swimming crab fishery is spread throughout Indonesia, with several key producing areas including Fisheries Management Area (FMA) 571, 711, 712, 713, 714, and 715. FMA 712 holds the highest proportion of blue swimming crab production, with a share exceeding 60%, encompassing several key blue swimming crab-producing provinces, including Lampung, Banten, West Java, Central Java, East Java, and South Kalimantan. The blue swimming crab fishery is a small-scale fishery involving fishermen with vessels <5 GT using traps and gillnets. Although traps and gillnets are considered quite selective, improving the use of environmentally friendly fishing gear is still necessary. One way is by replacing gillnets with traps, given the latter's greater selective fishing activity.

Based on data collected by APRI which has been submitted to the National Commission for Fish Stock Assessment and the Ministry of Marine Affairs and Fisheries, showing that in general blue swimming crab production is in 13 provinces (production above 2%) with the main blue swimming crab producing provinces being in (a) North Sumatera; (d) Lampung; (g) West Java; (h) Central Java; (i) East Java; (k) South Sulawesi with production >4% of each province. Other provinces with production of 2-4% include (b) Kepulauan Riau; (c) Kepulauan Bangka Belitung; (e) Banten; (f) DK Jakarta; (j) South Kalimantan; (l) Southeast Sulawesi; and (m) North Sulawesi. Meanwhile, other provinces only contribute a small portion of blue swimming crab production in Indonesia.

As much as 75% of blue swimming crab fishermen are use traps, while 25% use gillnets. The 10 provinces with the highest gillnet usage are West Java, followed by East Java, Lampung, Central Java, Banten, South Kalimantan, North Sumatera, Kepulauan Bangka Belitung, South Sumatera, and South Sulawesi. These results were then used as the basis for a fishing gear swap program carried out by APRI, its members, the government, and other parties. From October to December 2025, the fishing gear swap program was implemented in 12 provinces and 25 districts/cities in collaboration between APRI, its members, the government, the blue swimming crab supply chain, and fisher communities. This fishing gear swap program has provided more than fifty thousand (>50,000) of traps to be distributed to thousands of blue swimming crab fishermen throughout Indonesia through. Most of the main blue swimming crab production provinces (around 77%) have been covered by this program, thus reducing the impact of fisheries on the environment and preventing interactions with other species, especially marine mammals.

This program will continue to be carried out so that the scope of fishing gear swap can be optimal in mitigating and preventing the risk of interaction and entanglement of marine mammals. This program is also accompanied by awareness regarding marine mammals and how to mitigate them, as well as collaboration in order to optimize the registration of small fishing vessels. Collaboration between stakeholders will continue to be carried out so that fisheries management, especially in relation to marine mammal protection, can be optimal.

INTRODUCTION

The blue swimming crab fishery is spread throughout Indonesia, with several key producing areas including Fisheries Management Area (FMA) 571, 711, 712, 713, 714, and 715. FMA 712 holds the highest proportion of blue swimming crab production, with a share exceeding 60%, encompassing several key blue swimming crab-producing provinces, including Lampung, Banten, West Java, Central Java, East Java, and South Kalimantan. The blue swimming crab fishery is a small-scale fishery involving small-scale fishermen with vessels <5 GT using traps and gillnets.

Based on data collection conducted by the government, the Indonesian Blue Swimming Crab Association/Asosiasi Pengelolaan Rajungan Indonesia (APRI), and other parties, both fishing gears are quite selective, although traps are better. Both traps and gillnets are passive fishing gear placed on the bottom of the waters, so fishing activities tend not to have a significant negative impact on environmental conditions. Although traps and gillnets are considered quite selective, improving the use of environmentally friendly fishing gear is still necessary. One way is by replacing gillnets with traps, given the latter's greater selective fishing activity.

The switch from gillnets to traps is intended to make blue swimming crab fishing more selective and more environmentally friendly, particularly with regard to interactions with other species, including vulnerable and protected biota, such as marine mammals. The Ministry of Marine Affairs and Fisheries, through the Directorate for Strengthening the Competitiveness of Marine and Fishery Products, has issued a letter numbered B.3004/DJPDSKP/PDS.320/IX/2025, urging people not to use gillnets and recommending traps for blue swimming crab fishing. Furthermore, all blue swimming crab factories that are members of the Indonesian Blue Swimming Crab Association/Asosiasi Pengelolaan Rajungan Indonesia (APRI) have agreed to use traps for blue swimming crab fishing, which will be processed and exported. This demonstrates the concern and attention of all parties towards marine mammal protection.

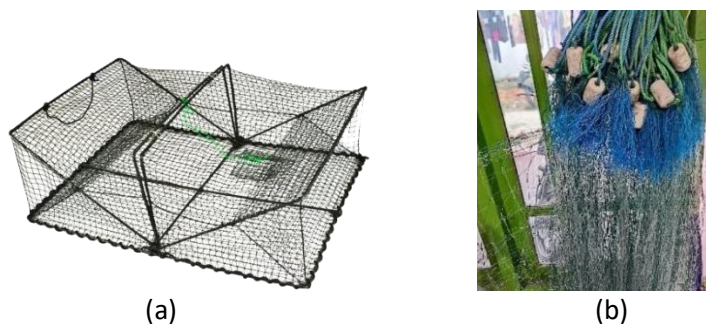


Fig 1. Blue swimming crab fishing gear: (a) traps; (b) gillnets

Marine mammals themselves are included in the protected biota based on the Regulation of the Minister of Environment and Forestry Number P.20/MENLHK/SETJEN/KUM.1/6/2018. In addition to implementing regulations, efforts to protect marine mammals are also continuously carried out through various activities and programs, one of which is by reducing the impact of fishing activities through a program to replace gillnet fishing gear with traps. This effort is carried out jointly through good collaboration between APRI, the central, provincial, and regional governments, supply chains, and fisher community. This effort is one of the steps in mitigating and protecting marine mammals, reducing the impact of fisheries on the ecosystem, and improving sustainable blue swimming crab fishing processes.

BLUE SWIMMING CRAB PRODUCTION

Blue swimming crab fishing activities are distributed across various locations in Indonesia. Blue Swimming crab itself is a marine biota that lives in water depths of 0-60 meters (Radifa et al., 2020), with a fairly high salinity of around 30 ppt (Ikhwanuddin et al., 2012; Firdaus et al., 2020), with temperatures ranging from 28-30 °C (Firdaus et al., 2020). Blue swimming crab fishing activities are carried out in inland waters and generally carried out in sea waters 2-10 miles from the coastline. Indonesia is divided into 11 Fisheries Management Areas (FMA), where at least 6 of them are blue swimming crab producing areas, namely FMA 571, 711, 712, 713, 714, 715. FMA 712 is recorded as the main blue swimming crab producer covering 60% of the blue swimming crab catches. Several provinces in FMA 712 include Lampung, Banten, West Java, Central Java, East Java, Central Kalimantan, and South Kalimantan. The government continuously collects data on blue swimming crab catches, particularly through the implementation of fishing logbooks and data collection through enumerators. In addition, APRI and other parties such as NGOs and others also continuously collect data in various regions in Indonesia. APRI itself places field staff in several locations to collect data on blue swimming crab catches, covering data on catches, biology, bycatch, habitat and ecosystems, socio-economics, and others. In addition, it also collaborates with fisheries extension workers to provide assistance to fishermen and other supply chain members in implementing sustainable fisheries. APRI and its members also continuously collect data on blue swimming crab production to obtain data on blue swimming crab catch locations in each region, which is used to map blue swimming crab producing locations in Indonesia.



Fig 2. Blue swimming crab production percentage map based on provinces (Source: APRI Data to National Committee for Fish Stock Assessment, 2025)

Based on data collected by APRI which has been submitted to the National Commission for Fish Stock Assessment and the Ministry of Marine Affairs and Fisheries, it shows that in general blue swimming crab production is in 13 provinces (production above 2%) with the main blue swimming crab producing provinces being in (a) North Sumatera; (d) Lampung; (g) West Java; (h) Central Java; (i) East Java; (k) South Sulawesi with production >4% of each province. Other provinces with production of 2-4% include (b) Kepulauan Riau; (c) Kepulauan Bangka Belitung; (e) Banten; (f) DK Jakarta; (j) South Kalimantan; (l) Southeast Sulawesi; and (m) North Sulawesi. Meanwhile, other provinces only contribute a small portion of blue swimming crab production in Indonesia.

FISHING GEAR SWAP PROGRAM DISTRIBUTION

The fishing gear swap program was carried out in various locations in Indonesia based on the mapping of blue swimming crab production (Figure 2) and data collection/survey of blue swimming crab fishing gear through questionnaires by fishermen with a sampling period of September-October 2025. Questionnaires were distributed in each supply chain at blue swimming crab producing locations to map the composition of fishing gear used by fishermen (Figure 3).

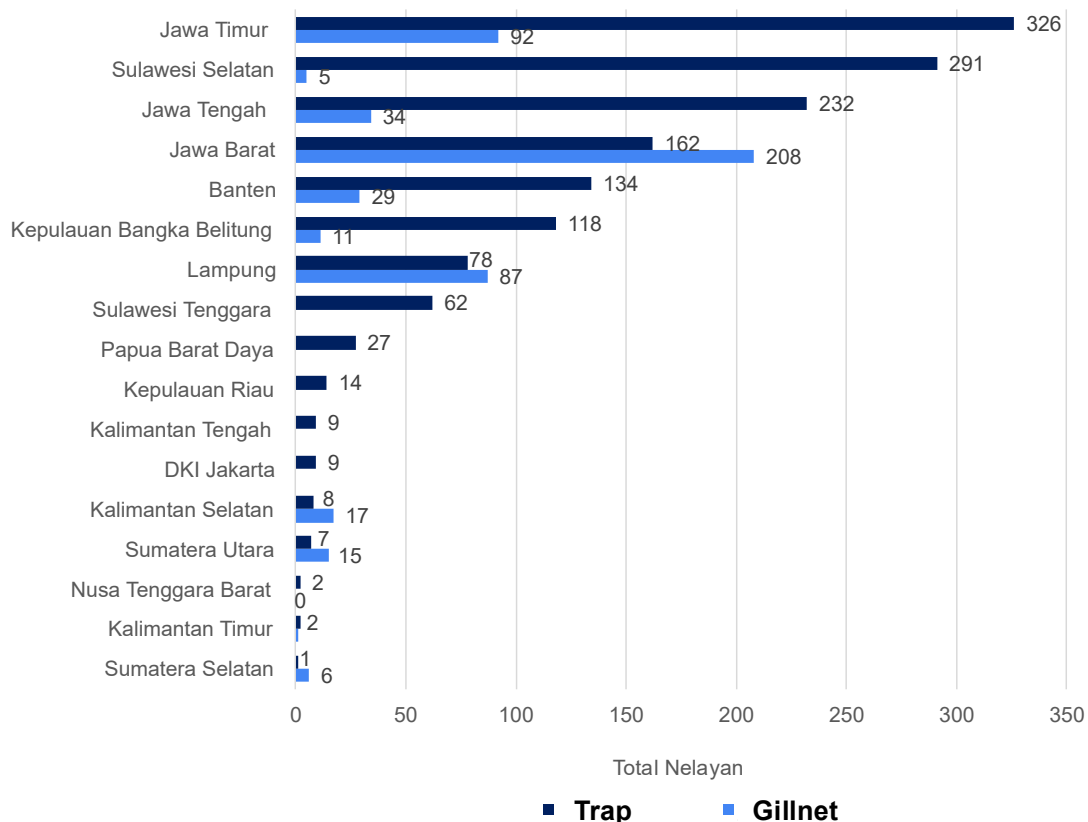


Fig 3. Blue swimming crab fishermen composition that using traps and gillnets in various provinces in Indonesia

Based on the sampling conducted, 75% of blue swimming crab fishermen use traps, while 25% use gillnets. The 10 provinces with the highest gillnet usage are West Java, followed by East Java, Lampung, Central Java, Banten, South Kalimantan, North Sumatera, Kepulauan Bangka Belitung, South Sumatera, and South Sulawesi. These results were then used as the basis for a fishing gear swap program carried out by APRI, its members, the government, and other parties. From October to December 2025, the fishing gear swap program was implemented in 12 provinces and 25 districts/cities in collaboration between APRI, its members, the government, the blue swimming crab supply chain, and fisher communities (Figure 4).

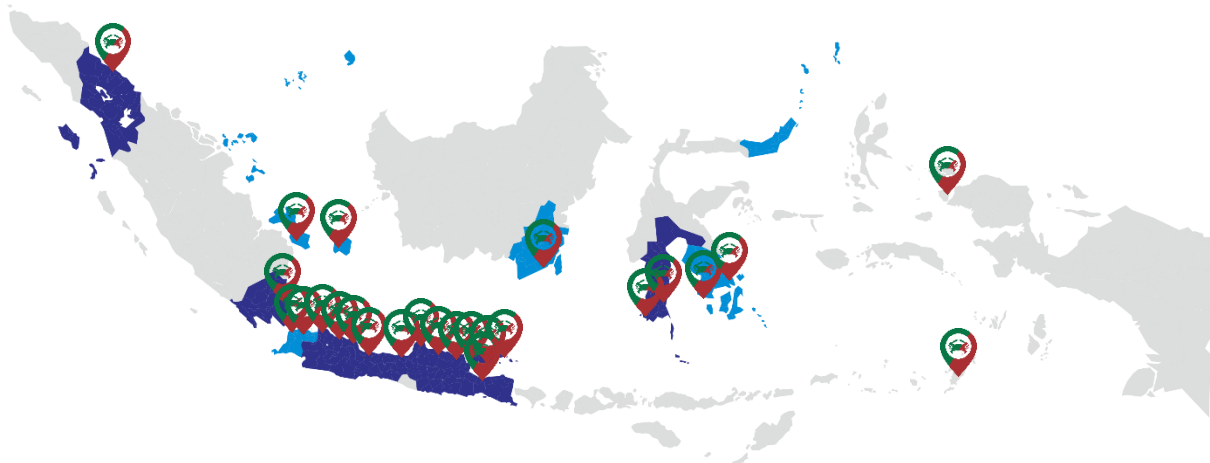


Fig 4. Distribution of fishing gear swap program (marked by green-red pin) overlaid with blue swimming crab production distribution map

A total of 12 provinces and 25 districts/cities have implemented a fishing gear swap program, with most of the locations being the main blue swimming crab production areas, including North Sumatera, Lampung, West Java, Central Java, East Java, and South Sulawesi. This fishing gear swap program has provided more than fifty thousand (>50,000) of traps to be distributed to thousands of blue swimming crab fishermen throughout Indonesia through collaboration between APRI and its members, the government, the crab supply chain, and the fisher communities. Most of the main blue swimming crab production provinces (around 77%) have been covered by this program, thus reducing the impact of fisheries on the environment and preventing interactions with other species, especially marine mammals. APRI and its members, together with the government, the supply chain, and fisher communities will continue to implement the fishing gear swap program continuously to prevent interactions between fisheries and protected biota, especially marine mammals. A detailed comparison of blue swimming crab production provinces with the fishing gear swap program can be seen in Table 1.

Table 1. Comparison between production provinces and fishing gear swap programs

No	Province	Production	Fishing Gear Swap Program	District/City
1	North Sumatera			Serdang Bedagai
2	Kepulauan Riau			
3	Kepulauan Bangka Belitung			Bangka, Belitung
4	Lampung			Lampung Timur
5	Banten			Serang, Tangerang
6	DK Jakarta			
7	West Java			Bekasi, Indramayu, Cirebon
8	Central Java			Brebes, Demak, Rembang
9	East Java			Lamongan, Gresik, Pasuruan, Bangkalan, Pamekasan, Sumenep
10	South Kalimantan			Tanah Bumbu
11	South Sulawesi			Takalar, Bone
12	Southeast Sulawesi			Bombana, Konawe Selatan
13	North Sulawesi			
14	Maluku			Kepulauan Tanimbar
15	Southwest Papua			Raja Ampat

Notes:

- Production <2%
- Production 2-4%
- Production >4%
- Already implemented fishing gear swap program

IMPLEMENTATION OF PROGRAM

1. North Sumatera Province

The fishing gear swap program in North Sumatera Province was carried out in December 2025, namely in Serdang Bedagai District.



2. Kepulauan Bangka Belitung Province

The fishing gear swap program in Kepulauan Bangka Belitung Province carried out in October 2025, namely in Bangka District and Belitung District.



3. Lampung Province

The fishing gear swap program in Lampung Province was carried out in October 2025, namely in Lampung Timur District.



4. Banten Province

The fishing gear swap program in Banten Province was carried out in December 2025, namely in Serang City and Tangerang District.

Serang City



Tangerang District



5. West Java Province

The fishing gear swap program in West Java Province was carried out in November-December 2025, namely in Bekasi District, Indramayu District, and Cirebon District.

Bekasi District



Indramayu District



Cirebon District





6. Central Java Province

The fishing gear swap program in Central Java Province was carried out in October-December 2025, namely in Brebes District, Demak District, and Rembang District.

Brebes District



Demak District



Rembang District

Handover of Gillnets by Fishermen to APRI and the Government



Handover of Traps to Fishermen





7. East Java Province

The fishing gear swap program in East Java Province was carried out in October-December 2025, namely in Lamongan District, Gresik District, Pasuruan District, Bangkalan District, Pamekasan District, and Sumenep District.

Lamongan District

Handover of Gillnets by Fishermen to APRI and the Government



Handover of Traps to Fishermen



Gresik District





Pasuruan District



Bangkalan District
Handover of Gillnets by Fishermen



Handover of Traps to Fishermen



Pamekasan District





Sumenep District



8. South Kalimantan Province

The fishing gear swap program in South Kalimantan Province was carried out in October 2025, namely in Tanah Bumbu District.



9. South Sulawesi Province

The fishing gear swap program in South Sulawesi Province was carried out in December 2025, namely in Takalar District and Bone District.

Takalar District



Bone District



10. Southeast Sulawesi Province

The fishing gear swap program in Southeast Sulawesi Province was carried out in December 2025, namely in Bombana District and Konawe Selatan District.

Bombana District



Konawe Selatan District



11. Maluku Province

The fishing gear swap program in Maluku Province was carried out in December 2025, namely in the Kepulauan Tanimbar District.



12. Southwest Papua Province

The fishing gear swap program in Southwest Papua Province was carried out in December 2025, namely in Raja Ampat District.



ACKNOWLEDGEMENTS

The program to replace gillnet fishing gear with traps for blue swimming crab fishermen is a collaborative program between APRI, APRI members, the government, the supply chain, and fisher community in order to reduce the negative impact of fisheries on the environment, specifically to prevent the interaction of fishing gear with protected species, especially marine mammals. This program funded by APRI and the members, and will continue to be carried out so that the scope of fishing gear swap can be optimal in mitigating and preventing the risk of interaction and entanglement of marine mammals. This program is also accompanied by awareness regarding marine mammals and how to mitigate them, as well as collaboration in order to optimize the registration of small fishing vessels. Collaboration between stakeholders will continue to be carried out so that fisheries management, especially in relation to marine mammal protection, can be optimal.

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