



Impacts on Non – Target Species in Blue Swimming Crab fishery

Progress report to the fisheryprogress.org

Gulf of Mannar fishery



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This report contains updated information, data and analysis on the impact of Blue Swimming Crab fisheries on Non – Target species (NTS) in the Gulf of Mannar done by the Sri Lankan Blue Swimming Crab (SLBSC) Fishery Improvement Project (FIP). The information and data that has been collected by local researchers and analysed by pelagikos to assess the impact of BSC fishing on NTS is presented for the BSC fishery in the Gulf of Mannar.

To understand the ecological impact on non – target species in Gulf of Mannar fishery, 10 studies were conducted initially over the time period of June 2016 and September 2019. Data were collected from four (04) landing centers in Puttalam District (Janasavipura, Bathalangunduwa, Sinnakudieruppu and Pookulam) and two (02) landing centers in Mannar District. (Thalvupadu and Vankalai. The mesh size used by the fishermen in the landing centers were between 4 ½” – 6”. (Table 01).

Table 01. Non -Target studies completed in the Gulf of Mannar 2016 – 2019

Period	District		Landing Centre	Mesh
2016 J/J/A	Puttalam	1.	Janasavipura	4½”
2016 Aug	Puttalam	2.	Janasavipura	4½
2016 Oct	Puttalam	3.	Baththalangunduwa	5” & 6”
2017 Jan	Puttalam	4.	Baththalangunduwa	5” & 6”
2017 Mar	Mannar	5.	Thalvupadu	4½” & 5”
2018 J/J/A	Puttalam	6.	Sinnakudieruppu	4½”
2019 Mar	Puttalam	7.	Pookulam	5” & 6”
2019 Mar	Puttalam	8.	Baththalangunduwa	5” & 6”
2019 Sept	Mannar	9.	Thalupadu	4½” & 5”
2019 Sept	Mannar	10.	Vankalai	4½” & 5”

The weight and number of each non-target species was recorded from BSC vessels at selected landing sites, under the data collection. The weight of the BSC catch also recorded for each vessel. Weight percentage of each NTS is then be calculated from the total catch.

Data were collected from 10 landing centers over 104 days and total samples collected was 857. On average details of 8.2 catches were collected every day. Total catch (BSC + NTS) were recorded as 17,873.8 kg over the study period which include 43% of BSC catch. 57% of the catch was non -target species and among them 80% was Retained (Table 02). There were no non-target studies done after 2019 due to the COVID pandemic and the economic crisis of Sri Lanka. In 2023 studies were re- initiated with the newly recruited students. Four (04) new studies were conducted in 2023 over 26 days. 209 net samples were observed with average of 8.0 per day. Totally 2,153.9 kg of total catch (BSC+ NTS) was recorded over the study period with 52% Blue Swimming Crab catch. Non -target species were recorded as 48% and among them 58% were retained. Over the entire study period in Gulf of Mannar from 2016 – 2023,14 landing sites were observed during 130 days and the total number of samples collected were 1,066. The total catch recorded was 20,027.8 kg and the total BSC Catch was 8,864.3 kg (44%). Total NTS recorded was 11, 163.5 kg (56%). Among total NTS 78% of the catch were retained. The average total catch was 18.8 kg which include average BSC catch 8.3 kg and average NTS 10.5 kg (Table 02).



Table 02: Summary of the non-Target studies done in Gulf of Mannar 2016 -2023

	2016 -2019		2023		2016 -2023
LANDING CENTERS	10		04		14
NO. DAYS	104		26		130
NO. SAMPLES / NET SETS	857		209		1,066
AV. SAMPLES / DAY	8.2		8.0		8.2
TOTAL CATCH (KG)	17,873.88		2,153.90		20,027.8
TOTAL BSC CATCH (KG)	7,741.34	43%	1,122.94	52%	8,864.3 44%
TOTAL NTS CATCH (KG)	10,132.54	57%	1,030.96	48%	11,163.5 56%
RETAINED (KG)	8,058.81		594.21		8,653.0 78%
DISCARDED (KG)	2,073.73		436.75		2,510.5 22%
AVERAGE TC KG/ SET	20.9		10.3		18.8
AV. BSC	9.0		5.4		8.3
AV. NTS	11.8		4.9		10.5
AV. RETAINED	9.4		2.8		8.1
AV. DISCARDED	2.4		2.1		2.4

Non- target studies done in 2023 observed two (02) landing sites in Puttalam District (Janasavipura and Bathalangunduwa) and two (02) landing sites in Mannar District (Thalvupadu and Vankalei). The highest total catch was recorded from Bathalangunduwa (757.5 kg) in Puttalam District and lowest was recorded from Vankalei (332.0 kg) in Mannar District. The BSC catch was ranged from 64.0 % in Janasavipura to 41.0% in Bathalangunduwa. The Highest non -target species percentage recorded from Bathalangunduwa as 59.0%. (Table 03).

Totally 180 different types of non-target species were recoded from Gulf of Mannar fishery during the study period. It includes 93 fin fish, 32 crustaceans, 36 molluscs, 15 echinodermata species, 04 cnidaria and 01 reptile species. Those species will be further analyse to identify MAIN SPECIES such as primary species, secondary species and ETP/OOS species.



Table 03: Summary of the non -target studies done in Gulf of Mannar in 2023

	MANNAR		PUTTLAM		MANNAR		PUTTALAM	
	Thalvupadu		Janasavipura		Vankalei		Bathalangunduwa	
TIME PERIOD	2023 June/July		2023 July		2023 July		2023 November	
NO. DAYS	7		8		6		5	
NO. SAMPLES / NET SETS	49		65		50		45	
AV. SAMPLES / DAY	7.0		8.1		8.3		9.0	
TOTAL CATCH	505.65		558.81		332.00		757.50	
TOTAL BSC CATCH	290.30	57.4%	357.65	64.0%	164.50	49.5%	310.49	41.0%
TOTAL NTS CATCH	215.35	42.6%	201.09	36.0%	167.50	50.5%	447.01	59.0%
RETAINED	151.23	70.2%	125.04	62.2%	75.27	44.9%	242.67	54.3%
DISCARDED	64.13	29.8%	76.05	37.8%	92.23	55.1%	204.34	45.7%
AVERAGE TC	10.32		8.60		6.64		16.83	
AV. BSC	5.92		5.50		3.29		6.90	
AV. NTS	4.39		3.09		3.35		9.93	
AV. RETAINED	3.09		1.92		1.51		5.39	
AV. DISCARDED	1.31		1.17		1.84		4.54	