



The Blue Swimming Crab Bulletin No. 13

The Sri Lanka blue swimming crab (BSC) fishery improvement project (FIP) was initiated by the National Fisheries Institute Crab Council (NFI CC) and the Seafood Exporters' Association of Sri Lanka (SEASL) in May 2013. The FIP was officially launched by the Minister of Fisheries in November. The FIP is a tripartite initiative that brings together fishermen, seafood companies and government agencies to improve the biological and ecological status and the management of BSC fisheries in the Palk Bay and the Gulf of Mannar. The FIP also works to ensure that supply chains for blue swimming crab products are equitable and responsible. The FIP's goal is to achieve a level equivalent to an unconditional pass of the Marine Stewardship Council's Fishery Standard, by December 2020.

Certification / eco-recommendation / progress

In March the BSC fisheries in the Palk Bay and the Gulf of Mannar became the first fisheries in Sri Lanka and only BSC fisheries in South and South East Asia to achieve a level equivalent to an **UNCONDITIONAL PASS** against the Marine Stewardship Council's (MSC) Fisheries Standard (SG = 0.85). The MSC approved pre-assessment report (2018) and the updated assessment (2020) was prepared by Control Union (UK) Ltd. The pre-assessment and update was co-financed by Verwijs Import Export B.V. The two fisheries are still the only fisheries in Sri Lanka and the only BSC fisheries in South and Southeast Asia to be recommended as a **GOOD ALTERNATIVE** by the Monterey Bay Aquarium's Seafood Watch programme. The FIP's progress is rated '**A – ADVANCED PROGRESS**' by fisheryprogress.org.

 Marine Stewardship Council approved pre-assessment report (2018 / 2020)

P	Component	Performance Indicator	Actual Scoring Category			
			2014	FIP 5 years	2018	2020
1	Outcome	1.1.1 Stock status	<60		≥80	≥80
		1.1.2 Stock re-building plan			---	---
	Management	1.2.1 Harvest Strategy	<60		<60	60-79
		1.2.2 Harvest control rules and tools	<60		<60	60-79
		1.2.3 Information and monitoring	<60		60-79	60-79
	1.2.4 Assessment of stock status	<60		60-79	60-79	
2	Primary species	2.1.1 Outcome	<60		≥80	≥80
		2.1.2 Management	<60		≥80	≥80
		2.1.3 Information	<60		≥80	≥80
	Secondary species	2.2.1 Outcome	<60		≥80	≥80
		2.2.2 Management	<60		<60	≥80
		2.2.3 Information	<60		≥80	≥80
ETP species	2.3.1 Outcome	<60		≥80	≥80	
	2.3.2 Management	<60		≥80	≥80	
	2.3.3 Information	<60		≥80	≥80	
Habitats	2.4.1 Outcome	<60		<60	≥80	
	2.4.2 Management			---	60-79	
	2.4.3 Information	<60		<60	≥80	
Ecosystem	2.5.1 Outcome	<60		≥80	≥80	
	2.5.2 Management	<60		≥80	≥80	
	2.5.3 Information	<60		≥80	≥80	
3	Governance and Policy	3.1.1 Legal and customary framework	≥80		≥80	≥80
		3.1.2 Consultation, roles and responsibilities	≥80		≥80	≥80
		3.1.3 Long term objectives	≥80		≥80	≥80
	Fishery specific management system	3.2.1 Fishery specific objectives	<60		≥80	≥80
		3.2.2 Decision making processes	<60		60-79	60-79
		3.2.3 Compliance and enforcement	<60		<60	60-79
		3.2.4 Management performance evaluation	<60		60-79	60-79
Total number of PIs equal to or greater than 80			03		16	19
Total number of PIs 60 - 79			00		04	08
Total number of PIs less than 60			23		06	00
Overall BMT Index			0.11		0.69	0.85

Monterey Bay Aquarium Seafood Watch

GOOD ALTERNATIVE	Type	Method	Location
	Crab, Blue Swimming Blue Manna Crab, Flower Crab, Horse Crab, Kani, Sand Crab, Swimming Crab	Gillnets and entangling nets (unspecified)	Sri Lanka - Eastern Indian Ocean: Palk Bay
	Crab, Blue Swimming Blue Manna Crab, Flower Crab, Horse Crab, Kani, Sand Crab, Swimming Crab	Gillnets and entangling nets (unspecified)	Sri Lanka - Eastern Indian Ocean: Gulf of Mannar

FISHERYPROGRESS.ORG

FIP at a Glance

FISHERY STATUS ⓘ FIP is addressing 28 of 28 indicators

Current Status:



Starting Evaluation: November 01, 2013



FIP PROGRESS

Progress Rating ⓘ

A

ADVANCED PROGRESS

Actions Complete



Next Update Due ⓘ

NOV 2020

Target End Date

DEC 2021

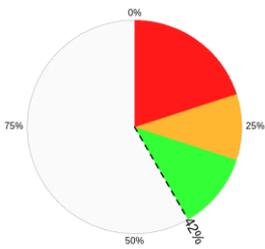
● Complete ● Incomplete

Improving the biological status of the BSC stocks

Length-based spawning potential: Dr. Jeremy Prince published a paper in the Journal of Marine Sciences in May in which he describes using a length-based approach to spawning potential ratio (LB-SPR) to assess the status of BSC stocks in Indonesia and Sri Lanka. In the paper Dr. Prince demonstrates the technical feasibility and financial viability of using length measurements (*carapace width* - see right) and the LB-SPR method to assess the stock status of data-poor Asian BSC fisheries. The paper also explains how LB-SPR are being used to successfully inform discussions about sustainable fishing practices using size selectivity in Indonesia and Sri Lanka.



Size selectivity: Size selectivity is one management control that can be used by fisheries managers in small-scale, tropical fisheries where there are large numbers of fishermen and boats. The paper notes that the majority of BSC caught using baited traps and trawl nets in Indonesia are very small (100 mm / 80 g). The LB-SP results for Indonesia were less than 20%, indicating unsustainable levels of fishing. In contrast the average size of BSC harvested in Sri Lanka was 140 mm (130 g). The LB-SP results for Sri Lanka's BSC fisheries were above 30% - the Target Reference Point for a sustainably managed BSC fishery. In Sri Lanka medium (130 g) and large (200g) BSC are caught using 4½" bottom-set crab. Mesh-size is a key management control that contributes to sustainable BSC fisheries in Sri Lanka.



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Size on maturity: Another management control that will help fisheries managers achieve a sustainable BSC fishery is to limit the number of immature BSC in the catch. Female crabs begin to mature at around 80 mm (40g); but at 80 mm (40g) only a very small number of crabs (5%) will be mature. At 100 mm (70 g) roughly half of the females crab caught (50%) will be mature. A very small number of female crabs (5%) will not achieve maturity until they reach a size of 130 mm (140 g). Fisheries managers can use the size at which most females crabs (90%) are likely to be mature as the minimum size in the catch, to achieve a sustainably managed BSC fishery. In Sri Lanka 90% of female BSC are mature at 118 mm (100g).

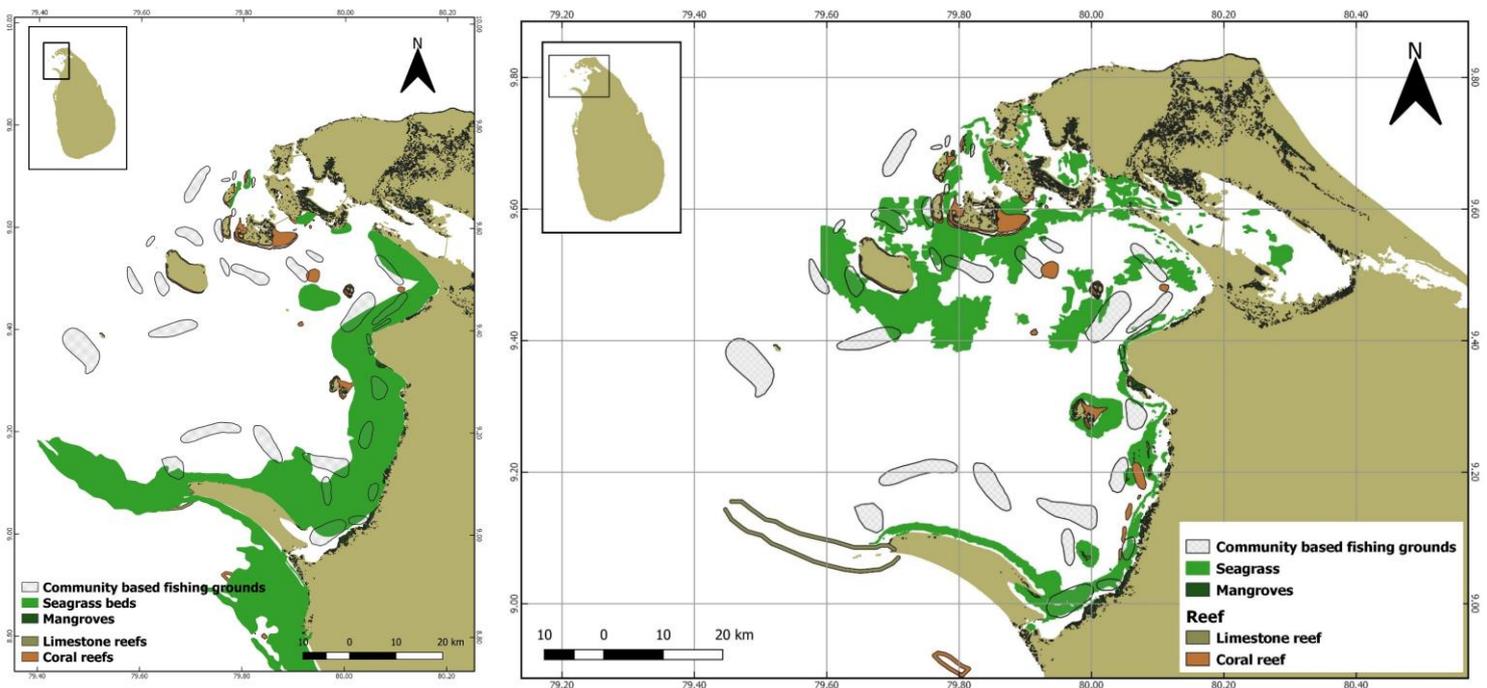
Research by the National Aquatic Resources, Research and Development Agency (NARA) in 2015 highlights the importance of not catching crabs until they have matured (see immature crab image below left). According to NARA a small female crab ($\approx 120g$) will on average spawn more than 440,000 eggs; a large size female crab ($\approx 230g$) will spawn more than 750,000 eggs, while a very large female crab ($\approx 390g$) may spawn more than 1,700,000 eggs. Sri Lanka's BSC fisheries sustainable now and will continue to be in the future if fishermen and seafood companies let very small and small crabs mature, by harvesting mainly medium and large size crabs.



Improving the ecological status of the BSC fisheries

Ecological impacts on non-target species: Research conducted by undergraduate students between 2015 and 2019 suggests that the ecological impact of BSC fishing on non-target species is a **low conservation concern** in the Palk Bay and a **medium conservation concern** in the Gulf of Mannar (see BSC Bulletin No. 12 for details).

Ecological impacts on marine habitats: The FIP published a report on the ecological impact of BSC fishing on marine habitats in the Palk Bay in 2019. This report was updated in June to incorporate geographic information system data for seagrass published by Dahanayaka and Pahalawattarachchi (2017). According to the 2019 report, 10,962 hectares of seagrass beds in the Palk Bay were potentially impacted by BSC fishing based on fishing ground data derived from community mapping. This was equivalent to 12.72% of the seagrass beds in the Palk Bay. The updated analysis suggests that the area of seagrass beds potentially impacted by BSC fishing is 7,958 hectares or 10% of the seagrass beds in the Palk Bay.



Improving the management of the fisheries

Fishery Specific Management Systems: The impact of the COVID19 global pandemic in Sri Lanka in March meant the FIP was unable to discuss the key issues affecting BSC fisheries and other small-scale fisheries in Jaffna, Kilinochchi, Mannar and Puttalam districts senior officers (see right) until the end of May.

In June the Director General (DG), Department of Fisheries and Aquatic Resources convened a meeting of senior officers to discuss the results of the 2019 annual stock assessment; the FIP's proposal to reduce the harvest of very small (<99 g) crabs fisheries; the declaration of district level Fishery Management Areas; the introduction of a regulation for BSC fishing and an export schedule for BSC products. A team of senior official was appointed by the DG to formulate a regulation for BSC fishing in consultation with the NARA. The regulation will address the issue of fishermen harvesting and manufacturers purchasing very small (< 99 g) crabs and the need for an export schedule for BSC products. The draft regulation will be made available to fishermen and seafood manufactures in July.

Key issues affecting BSC fishermen

Illegal fishing by Tamil Nadu trawlers in Sri Lankan waters

Declining catches of fishermen in the Puttalam estuary

Illegal trawl net fishing by Jaffna and Mannar boat owners

FIP proposal to reduce harvest of very small (<99 g) crabs

Proposal to improve prices in all landing centres

Declaration of district level Fishery Management Areas

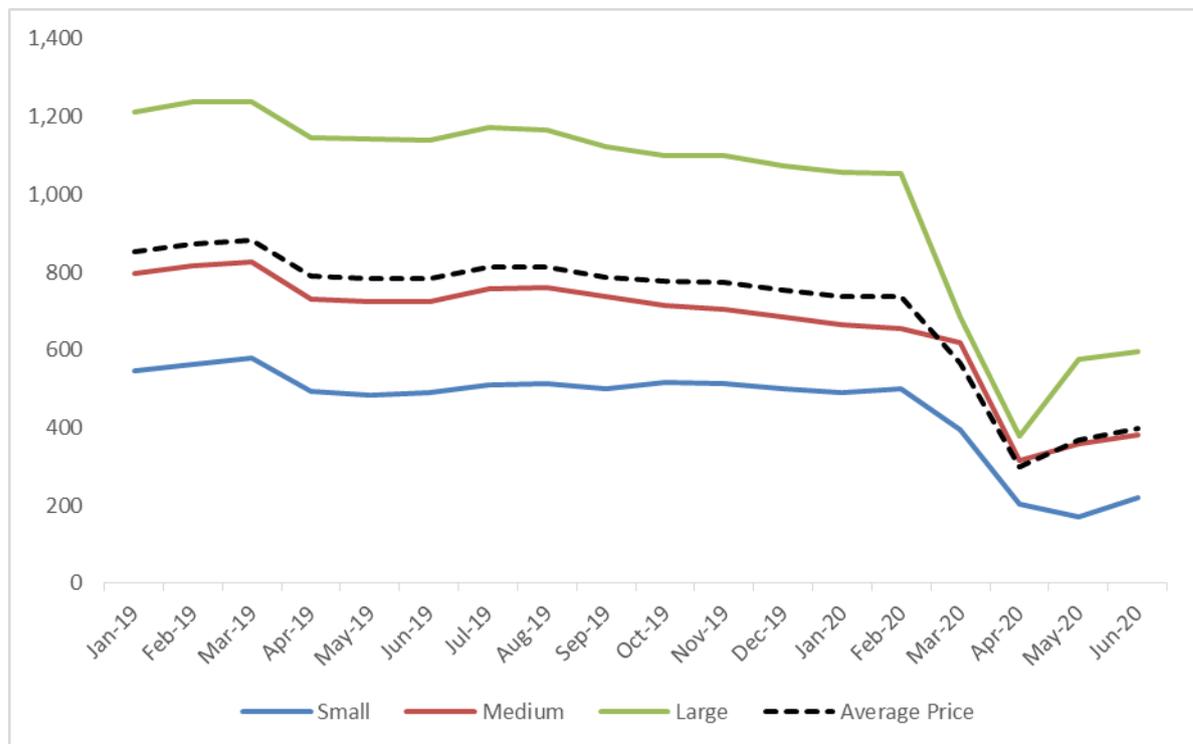
Introduction of a regulation of BSC fishing

Introduction of an export schedule for BSC products

Improving economic equity and social responsibility

Economic Equity: The average beach price for BSC in the Palk Bay fishery decreased by 14% between January 2019 - when the fishery was eco-recommended as a **Good Alternative** by the Monterrey Bay Aquarium Seafood Watch programme – and January 2020. According to US importers, a lack of consumer demand for Seafood Watch **eco-recommended** BSC products in North American markets for sustainably sourced seafood meant that Sri Lankan manufactures were not able to obtain a premium price for '**eco-recommended**' Sri Lankan BSC products.

COVID19: The global COVID19 pandemic caused beach prices to fall 59% between January and April 2020 due to lack of demand from importers for BSC products in North America and Europe. Beach prices began to recovery in May. By the end of June, prices paid by manufactures for eco-recommended Sri Lankan BSC recovered by 13% were only (-46%). The beach prices paid in June 2020 were 49% less compared to beach prices paid in June 2019.



Social Responsibility: A pilot programme to recycle plastic BSC fishing nets and other plastic items with fishing communities in Kilinochchi district commenced in December 2019. The results of the pilot programme suggested it would not be viable to collect plastic items and plastic fishing nets due to low volumes of nets, the remote locations of landing centres, the time involved and the existence of other plastic recyclers.

The Corporate Members of the Seafood Exporters' Association of Sri Lanka (SEASL) - **Taprobane Seafood Group Pvt Ltd** and **CM Blue Crab Pvt Ltd** - the Department of Fisheries and Aquatic Resources and BSC fishing communities are grateful to the **National Fisheries Institute Crab Council (NFI CC)** for its continuous and generous support of the FIP since 2013. The members of the FIP are also grateful to **Direct Seafood Asia / Harbor Seafood** and **Verwijs Import Export B.V.** for co-financing one or more of the actions described in this edition of the **Sri Lanka Blue Swimming Crab Bulletin**.

