



# The Blue Swimming Crab

## Bulletin No.10

The Sri Lankan blue swimming crab (SLBSC) fishery improvement project (FIP) was initiated by the National Fisheries Institute Crab Council (NFI CC) in May and officially launched by the Minister of Fisheries and Aquatic Resources Development in November 2013. The SLBSC FIP is a tripartite initiative that brings together producers (fishermen), processors (seafood companies) and regulators (government agencies) to improve the biological and ecological status of blue swimming crab (BSC) fisheries in the Palk Bay and the Gulf of Mannar and introduce management measures that will maintain this status at a level equivalent to a sustainably managed fishery: now and in the future.

After five years of hard work the members of the FIP finally achieved their immediate objective this year. The Monterey Bay Aquarium Seafood Watch program recommended the BSC fisheries in the Palk Bay and the Gulf of Mannar to consumers as a **GOOD ALTERNATIVE** on the 19<sup>th</sup> of December 2018



<b>Country</b>	Sri Lanka	
<b>Fishing Area</b>	Eastern Indian Ocean	
<b>Gear</b>	Gillnets & entangling nets (unspecified)	
<b>Fisheries</b>	Palk Bay	Gulf of Mannar
<b>SW Rating</b>	<b>GOOD ALTERNATIVE</b>	<b>GOOD ALTERNATIVE</b>
<b>SW Score</b>	<b>2.337</b>	<b>2.208</b>

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The blue swimming crab fisheries in the Palk Bay and the Gulf of Mannar are the first and second fisheries in Sri Lanka and the **ONLY** blue swimming crabs in Asia to achieve this recommendation. Copies of the Monterey Bay Aquarium Seafood Watch program's assessment reports can be downloaded from the Seafood Watch web site (<https://www.seafoodwatch.org/seafood-recommendations>)



Blue swimming crab

*Portunus pelagicus*



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Sri Lanka

Set gillnets

December 19, 2018

Seafood Watch Consulting Researcher



Seafood Watch Recommendation 2018 South and South East Asian Blue Swimming Crab Fisheries

<b>GOOD ALTERNATIVE</b>	<b>Sri Lanka</b>
<b>AVOID</b>	<b>China India Indonesia Philippines Thailand Vietnam</b>

## SW Criterion 1 - Impacts on the species under assessment

	Palk Bay	Gulf of Mannar
Target Species Score	3.32	2.64

The status of blue swimming crab stocks in each fishery has been assessed every year since 2015, using a length based approach to calculating spawning potential (LBSP). The LBSP app developed by Dr. Jeremy Prince and Dr. Adrian Hordyk is freely available in Barefoot Ecologist's [Toolbox](#).

More than 34,000 female blue swimming crabs have been measured by members of the fishing communities in collaboration with local crab manufacturers and their agents. Stock status data collection is supervised by the district staff of the Department of Fisheries and Aquatic Resources.



BSC Fishery	TRP	2014/15	2016	2017	2018
Palk Bay	30%	32%	44%	47%	45%
Gulf of Mannar		31%	46%	41%	37%

The results of the LBSP assessments (see left) suggest that the status of BSC stocks in the Palk Bay and the Gulf of Mannar fisheries has been above the Target Reference Point (30%) for a sustainably managed BSC fishery in each of the past four years.

## SW Criterion 2 - Impacts on other capture species

	Palk Bay	Gulf of Mannar
Other Species Score	1.00	1.00

Several undergraduates from Uva Wellesa University and Ocean University have completed their final year dissertations by studying the ecological impact of the BSC fisheries on other capture species over the past five years. Another eight studies have been completed by FIP up to December 2017. The results reveal that bottom-set crab nets catch more than 150 other species. By weight other capture species contributed 30% of the catch in the Palk Bay and 55% of the catch in the Gulf of Mannar fisheries. Out of this 15% and 47% were sold or consumed in the Palk Bay and Gulf of Mannar fisheries respectively. Less than 15% of the total catch was discarded in both fisheries.



The majority of other capture species were caught in very low numbers. In the Palk Bay the commonest other capture species were cuttlefish (3.89%), chocolate-ship seastar (3.4%) and the pale-edged stingray (2.9%). In the Gulf of Mannar the in the commonest other capture species were the blue-spotted stingray (15.8% left), the pale-edged stingray (15.3% far left) and the spiral melongena (9.0%). In the Gulf of Mannar BSC fishermen use larger mesh nets to target both BSC and small rays. No turtles, indo-pacific humpbacked dolphins or dugongs were observed in the bottom-set nets of blue swimming crab fishermen.

### SW Criterion 3 - Management effectiveness

	Palk Bay	Gulf of Mannar
Management Score	3.00	3.00

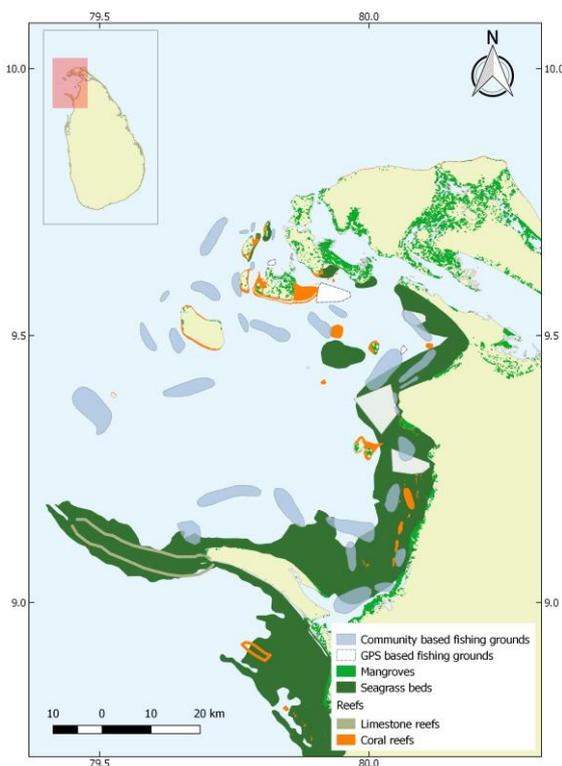
Since the end of the civil conflict in Sri Lanka in 2009 to 2016, the blue swimming crab fisheries in the Palk Bay and Gulf of Mannar have been ‘managed’ by the seafood industry and Sri Lankan through market demand for medium (>150 g) and large (>200g) sized crabs and fishermen using 4½” (114.13 mm) mesh net to catch medium and large sized crabs. In 2017 a Code of Conduct for Responsible Crab Fishing was introduced by the FIP, based on **best practices** identified by fishermen and the Sri Lankan seafood industry. In 2018 steps were taken to formalise the best practices set out in the Code of Conduct. A regulation for BSC fishing and a schedule for purchasing, processing and exporting blue swimming crabs were formulated and approved by all stakeholders. The regulation and export schedule will become law in 2019.

To further improve the Department of Fisheries and Aquatic Resource’s management of the two fisheries new fisheries management areas have been proposed in each district (see right). Steps to form fisheries management committees in each Fishery Inspector Division - under the authority of Assistant Director Fisheries in each district - are already underway. Management plans for the BSS fisheries in the Palk Bay and Gulf of Mannar have been introduced and became operational in 2018.



### SW Criterion 4 - Impacts on the habitat and ecosystem

	Palk Bay	Gulf of Mannar
Habitats & Ecosystem Score	3.00	3.00



Sri Lanka is an island in the tropics richly endowed with a high diversity of both terrestrial and marine habitats. Mangrove forests, seagrass beds, rocky reefs and coral reefs are common around the entire island, including in the Palk Bay and Gulf of Mannar. Field research begun as another undergraduate project in 2016 enabled the FIP to build a Geographic Information System to map the potential interaction between BSC fishing and critical marine habitats in each fishery. The GIS combines secondary data on marine habitats, with GPS tracking data and community based mapping of fishing grounds and marine habitats. The estimated potential interaction of the fisheries was <0.1% and <1% for mangroves, 11.4% and 16.7% for seagrass and 7.67% and 5.5% for rocky and coral reefs in the Palk Bay and Gulf of Mannar fisheries respectively. The level of potential interaction between the bottom-set crab net fisheries and critical marine habitats in each fishery is well below the 50% threshold for moderate ecological concern.

## Co-financing the Sri Lankan Blue Swimming Crab FIP (2013 – 2018)

	2013	2014	2015	2016	2017	2018	Total
Direct Investment	\$13,000	\$105,000	\$112,500	\$83,000	\$86,000	\$49,000	\$448,500

The SLBSC FIP is a US\$ 450,000.00 direct investment. The National Fisheries Institute Crab Council co-financed the core cost of the FIP each year (48%). These funds were contributed through Taprobane Seafood Group (TSG), the only Corporate Member of the FIP. TSG (3%) and Chicken of the Sea Frozen Foods (4%) also contributed directly to the FIP. The International Labour Organisation of the United Nations' *Local Empowerment through Economic Development* project contributed 25% of the total direct investment. These funds provided by the Australian government's Department for Aid and Trade - supported cooperative development in the Palk Bay fishery. The International Organisation for Migration (6%), Santa Monica Seafood through Fishwise's Responsible Sourcing Vendors Programme (4%), the Bay of Bengal Large Marine Ecosystem programme (4%), The Asia Foundation (3%) and Ceylon Fresh (<1%) also invested directly in the FIP over the last six years.

At least the same amount again (US\$450,00.00) has been indirectly invested in the FIP (i.e. staff time, traveling, meetings, technical assistance, support and enthusiasms) by the officers and staff of the Department of Fisheries & Aquatic Resources, Taprobane Seafood Group, Uva Wellesa University, Ocean University, University of Colombo and pelagikos pvt ltd since 2013. The MBA Seafood Watch program's audited the fishery **free of charge** from 2017.

The Seafood Exporters' Association of Sri Lanka, fishing communities and the government of Sri Lanka are extremely grateful to all those who contributed to improving Sri Lanka's blue swimming crab fisheries, resulting in a **GOOD ALTERNATIVE** recommendation by Seafood Watch in December 2018.



## Moving from Good Alternative to Best Choice by 2021

The FIP's new objective is to further improve the Sri Lanka's BSC fisheries, moving both fisheries from a Yellow (>2.20 - GOOD ALTERNATIVE) rating, to a Green (>3.20 - BEST CHOICE) rating by the end of 2021. To do achieve this, the members of the FIP now need to

- Criterion 1** *maintain or improve the status of the stock in each fishery*
- Criterion 2** *collect and submit more data on the impact of the fishery on other capture species*
- Criterion 3** *gazette and implement the regulation, export schedule, fisheries management areas and establish the fisheries committees under the Assistant Directors in each district*
- Criterion 4** *verify the potential interactions between BSC fishing grounds and marine habitats and introduce measures to further reduce the potential for interaction.*