



# The Blue Swimming Crab Bulletin No.9

Actions 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 to maintain the status of the stocks at a level equivalent to a sustainably managed fishery were implemented by the Sri Lanka BSC (SLBSC) fishery improvement project (FIP) in the first half of 2018. Initiatives to improve social responsibility and the equity of supply chains linking these fisheries to international markets for Sri Lankan crab products were also supported by the FIP.

Details of these actions are described in the 9<sup>th</sup> edition of the Sri Lanka **Blue Swimming Crab Bulletin**.

## Improving the biological status of the BSC stocks

The 4<sup>th</sup> annual assessment of BSC stocks in the Palk Bay (PB) and Gulf of Mannar (GoM) was conducted by pelagikos pvt ltd in collaboration with fishing communities and seafood companies in Jaffna, Kilinochchi, Mannar and Puttalam districts in February and March. The assessment was supervised by Fishery Inspectors from the District Fisheries Offices of the Department of Fisheries & Aquatic Resources (DFAR). 6,769 female crabs were measured at nine landing centres in the Palk Bay fishery. 3,974 female crabs were measured at nine landing centres in the Gulf of Mannar fishery. The average size of the crabs measured in the two fisheries was 138 mm (PB) and 131 mm (GoM). The percentage of immature crabs in the catch was 7.4% (PB) and 16.0% (GoM). The status of the stocks was assessed using a length based approach to estimating spawning potential ratio (LBSPR).



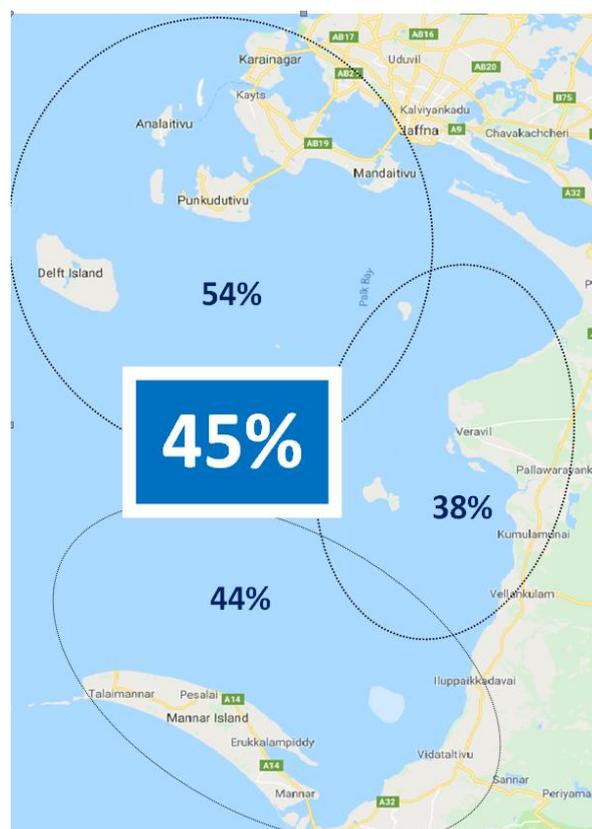
The LBSPR app is freely available in the very wonderful Barefoot Ecologist's [Toolbox](#).

## Palk Bay Assessment 2018

The result of the LBSPR assessment suggests that the status of the BSC stock in the Palk Bay is above the level of a sustainably managed BSC fishery (Target Reference Point SP = 30%); and well above the Limit Reference Point for the fishery (LRP SP = 20%).

The variation in spawning potential between the three districts (see right) is consistent with the behavioural ecology of BSC, the location landing centres and the distances travelled by BSC in each district. Along the eastern shoreline of the Palk Bay, small and medium sized crabs predominate and fishermen fish closer to the shore (< 5 km). Around the islands in the north and towards to tip of Mannar Island in the south, medium and large sized crabs make up most of the catch and fishermen fish up to 15 km from the shore.

The 2018 assessment is consistent with the LBSPR results over the past three years, suggesting that the fishery in the Palk Bay is has been and is currently being managed at a sustainable level.



TRP	2017	2016	2014/15
30%	47% (46% – 49%)	44% (43% – 45%)	32% (31% - 33%)

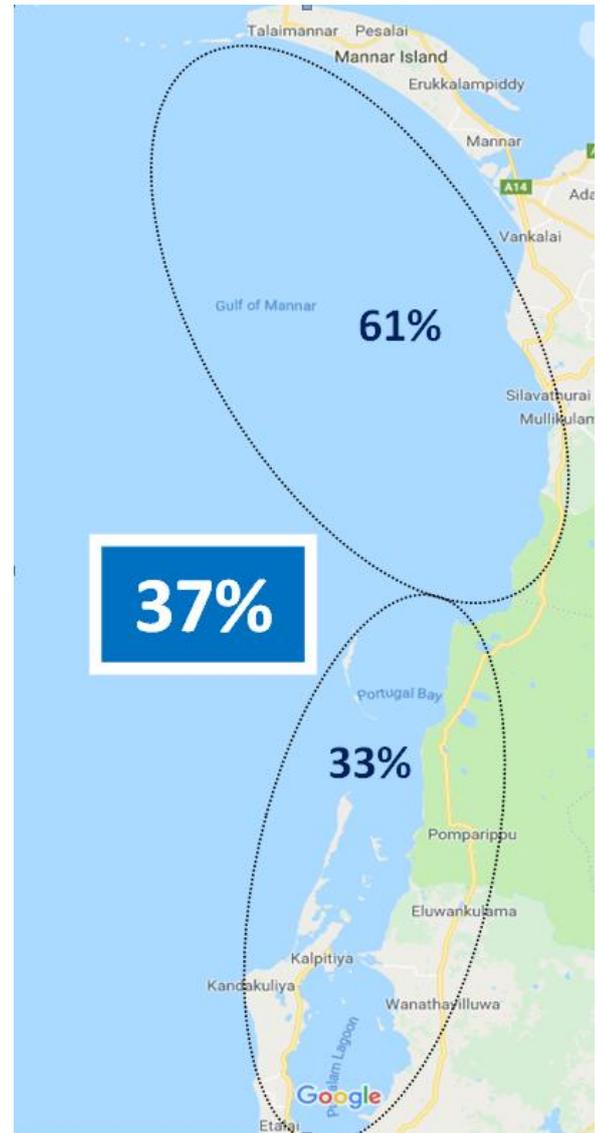
## Gulf of Mannar Assessment 2018

The result of the LBSPR assessment in the Gulf of Mannar also indicates that the status of the BSC stock is above the level of a sustainably managed BSC fishery (TRP SP = 30%); and well above the Limit Reference Point for the fishery (LRP SP = 20%).

Here too variations were observed in the spawning potential estimated between the districts in the fishery. In Puttalam District the lower spawning potential result (33%) reflects the nature of the fishery. BSC fishing takes place almost exclusively in the sheltered, shallow (<5 m), brackish waters of the Puttalam Estuary Complex. The Puttalam Estuary Complex comprises the estuaries of the Mei Oya, Kala Oya and Panparippu Oya, which are enclosed by the a sand spit that extends for more than 35 km north of Kalpitiya, enclosing the Dutch and Portugal bays. The Puttalam Estuary Complex is an ideal nursery habitat for juvenile and maturing small and medium sized crabs. In Mannar District BSC fishing grounds are located 5 – 10 km from the shore, in the open water of the Gulf of Mannar. Here the catch is dominated by medium and large sized crabs.

The 2018 assessment is consistent with the LBSPR results over the past three years. This suggests that the fishery has been and is currently being managed at a sustainable level.

TRP	2017	2016	2014/15
30%	41% (39% – 43%)	46% (42% – 50%)	31% (29% - 33%)



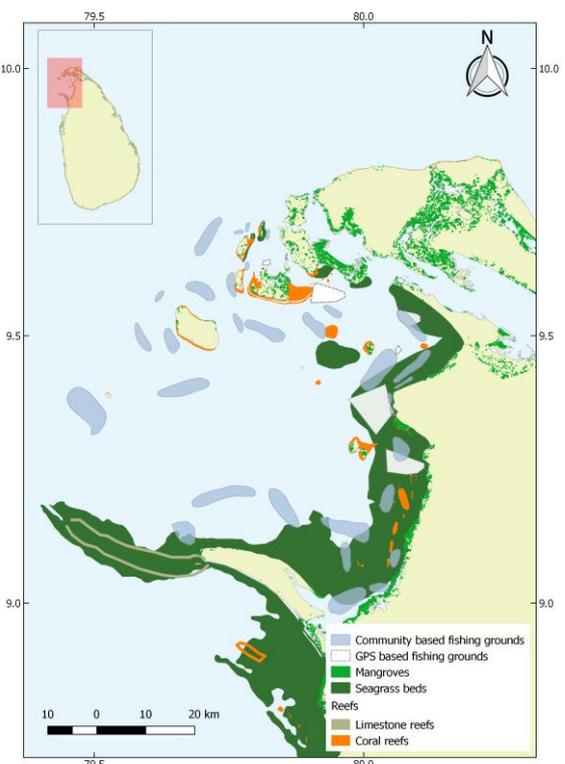
*Improvements to the biological status of the stocks were co-financed Taprobane Seafood Group Pvt Ltd and the National Fisheries Institute Crab Council*

## Improving the ecological status of the fisheries

**Impacts on marine habitats:** Field research to assess the ecological impact of BSC fishing on critical marine habitats in the Palk Bay and Gulf of Mannar continued throughout the first part of 2018. The research began in 2016 as a Final Year undergraduate project, with financial support from [Santa Monica Seafood LLC](#),

New information and data on the location of mangroves, seagrass, limestone reefs, coral reefs and BSC fishing grounds was collected using community-based surveys. The surveys were conducted with more than 70 fishing communities, in 17 Fishery Inspector Divisions, in the four districts that make up the Palk Bay and Gulf of Mannar fisheries. New GPS data was also added using the smartphone 'net finder' app developed by [LKSIM Pvt Ltd](#) in 2016.

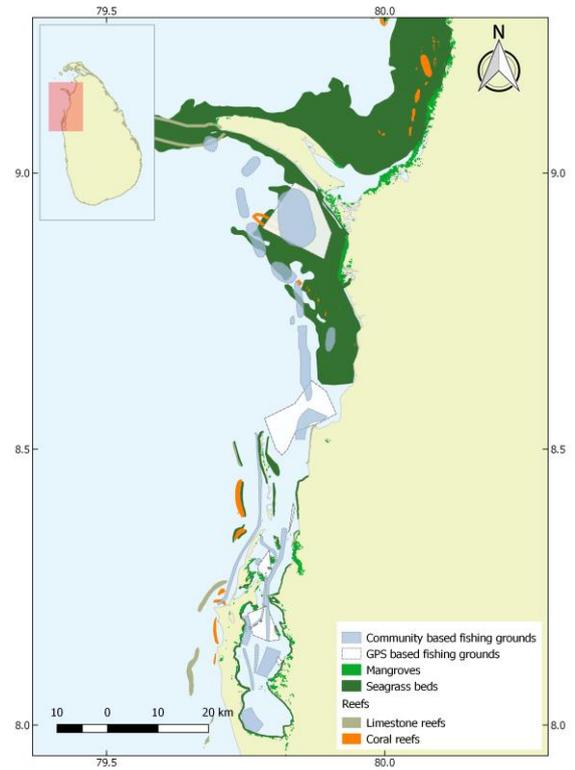
The new GPS data and the digitized community based surveys were added to the digital database of critical marine habitats in the two fisheries. The database was used to assess the ecological impact of BSC fishing on critical marine habitats in the Palk Bay (see right) and Gulf of Mannar (overleaf).



A preliminary analysis of the community based data suggests that 10.8% of critical marine habitats in the Palk Bay and 12.3% of critical marine habitats in the Gulf of Mannar may be impacted by bottom-set crab fishing. The highest level of potential interaction was observed for seagrass beds in the Palk Bay (17.1%) and in the Gulf of Mannar (13.7%). 45% of all seagrass beds in Sri Lanka (342,751 ha) are located in the shallow, nutrient rich waters of the Palk Bay (88,524 ha / 25%) and the Gulf of Mannar (68,452 ha / 20%)

	Palk Bay (ha)			Gulf of Mannar (ha)		
	Total	Impact?	%	Total	Impact?	%
Mangroves	6,732	1	0.0%	1,919	-	0.7%
Seagrass	88,524	10,962	12.4%	68,452	9,364	13.7%
Limestone Reefs	16	0	0.0%	6,001	181	3.0%
Coral Reefs	7,235	69	1.0%	2,598	190	7.3
<b>Marine Habitats</b>	<b>102,507</b>	<b>11,031</b>	<b>10.8%</b>	<b>78,970</b>	<b>9,735</b>	<b>12.3%</b>

*Improvements to the ecological status of the fishery co-financed by Santa Monica Seafood through FishWise's RVSP and NFI Crab Council*



## Improving the management of the SLBSC fisheries

In 2016 a Code of Conduct for BSC fishing was developed with fishing communities to promote the sustainable exploitation of BSC resources. The code endorsed good management measures with the aim of maintaining the status of the BSC stocks at a healthy level; and to minimize the impact on the marine environment and the associated species. The code was endorsed by the Director General, DFAR in February 2017. The first compliance survey was conducted in the both fisheries April / May 2017. A second survey was completed at the beginning of this year. The results suggest that compliance with the code has increased in all districts and in both fisheries overall.

	Compliance		
	2017	2018	%
<b>Palk Bay</b>	<b>92%</b>	<b>97%</b>	<b>+3%</b>
<i>Jaffna</i>	93%	98%	+6%
<i>Kilinochchi</i>	94%	98%	+4%
<i>Mannar</i>	89%	95%	+6%
<b>Gulf of Mannar</b>	<b>85%</b>	<b>94%</b>	<b>+9%</b>
<i>Mannar</i>	91%	99%	+8%
<i>Puttalam</i>	83%	92%	+9%



68 BSC fishermen's representatives from 17 Fishery Inspector (FI) Divisions reviewed, revised and updated the BSC Fishery Management Plans (FMP) for the Palk Bay and Gulf of Mannar at the end of June. Fisheries Inspectors organised meetings with representatives of all BSC fishing communities in their divisions prior to these meetings, to discuss the FMPs and any amendments or changes. The Palk Bay and Gulf of Mannar FMPs were endorsed by fishermen's representatives in district meetings at the end of June. The Assistant Directors in each district have submitted the FMPs to the Director General. The two FMPs will be incorporated in the District Fisheries Management Area proposals currently being formulated by DFAR, later in the year.

**A Regulation for BSC fishermen / A Schedule for exporters:** The draft Regulation for BSC fisheries submitted to the Attorney General's (AG) Department by DFAR last year, returned to DFAR in the early part of this year. The AG's Department proposed a number of changes to the draft Regulation, including formulating a Schedule for BSC exports under the Import, Export and Re-Export Act (2017). The Schedule has since been drafted and submitted to the AG's Department for comment. The Schedule includes a minimum purchasing size for exporters, their suppliers and agents. The AG's Department approved the revised Regulation for BSC fisheries in June. The Regulation sets out the legal provisions for harvesting BSC, as follows

*No person shall*

- a) harvest blue swimming crabs using bottom-set nets with a mesh size of less than 114.3 millimetres (4½”) or a yarn of more than 6 ply;
- b) use rigid or collapsible baited traps to harvest blue swimming crabs.
- c) All persons shall dispose of used, damaged or discarded bottom-set crab nets on land, in an environmentally safe manner.

All persons, agents or companies engaged in harvesting, sale, purchasing, transport, re-sale, manufacture and or export of blue swimming crabs or blue swimming crab products shall provide any information and data about the fishery to Department of Fisheries and Aquatic Resources when requested.

*Improvements to the management of the BSC were co-financed by the National Fisheries Institute Crab Council*



## Improving social responsibility and economic equity

Social responsibility and economic equity are increasingly important components of sustainably managing small scale fisheries. If the financial benefits of sourcing seafood from sustainably managed fisheries are not shared equitably throughout the supply chain, then where is the incentive for small scale fishermen to sustainably exploit the resources? Similarly, if seafood supply chains use child labour, migrant, bonded or slave labour or employees’ working conditions are poor, consumers will not buy seafood simply because it is sustainably sourced. Only Sri Lankan fishermen harvest Sri Lankan BSC. There is no evidence of child labour, migrant, bonded or slave labour in the BSC fishery or in the supply chains for Sri Lankan BSC products.

*Improvements to social responsibility and economic equity in the fishery and supply chains for Sri Lanka BSC were co-financed by Taprobane Seafood Group and NFI Crab Council.*

## SLBSC Fishery / FIP Status Report

Every six months or so, an internal assessment of the fishery is conducted against three international protocols for **sustainably sourced** seafood. At the end of June 2018 the FIP thinks the fisheries...



are at **SFP Stage 6: Independent / International Certification**: The SLBSC fishery has been independently assessed by the Monterey Bay Aquarium’s Seafood Watch Program since 2016 and has been assessed against the Marine Stewardship Council’s (MSC) Fishery Standard (see below)



could score **0.83** against the **MSC’s Fishery Standard (Target ≥ 0.60)**: In November the two fisheries were submitted for ‘pre assessment’ against the MSC Fishery Standard, by a MSC approved Certified Assessment Body. The MSC Pre Assessment was completed and submitted in March. The cost of the ‘pre assessment’ was co-financed by [Verwijs](#) Import Export B.V. and [Taprobane](#) Seafood Pvt Ltd



could score **3.18** against **Seafood Watch’s Criteria of Fisheries (Target ≥ 2.20)**

The Seafood Exporters’ Association of Sri Lanka (SEASL) and other members of the FIP are grateful to the National Fisheries Institute Crab Council (NFI CC) for its continuous and generous support of the FIP since 2013. Members of the FIP are also grateful to Taprobane Seafood Pvt Ltd, Santa Monic Seafoods LLC, FishWise and Verwijs Import Export B.V. for investing in one or more of the sub projects described in this edition of the Sri Lanka **Blue Swimming Crab Bulletin**.



*Soft copies of all nine editions of the Blue Swimming Crab Bulletin are available in English, Sinhala and Tamil. To request copies please email [steve@pelagikos.lk](mailto:steve@pelagikos.lk)*