



The Blue Swimming Crab Bulletin No.2

July to December 2014

Welcome to the second edition of the Seafood Exporters' Association of Sri Lanka's (SEASL) **Blue Swimming Crab Bulletin**. It's been a busy six months, enough for a double issue! The International Organisation for Migration (IOM) successfully completed the first ever fishery stock assessment in Sri Lanka, using length based spawning potential in Puttalam Lagoon. The National Aquatic Resources Research and Development Agency (NARA) began a yearlong study of the population biology of the Sri Lankan blue swimming crab (SLBSC) fishery off the coast of Jaffna, while in Kilinochchi District, the Poonakary Fishermen's Cooperative Society Union (FCSU) commenced a series of SLBSC programmes with the FCSUs in Mannar and Jaffna. The Poonakary FCSU also initiated an assessment of the spawning potential of the blue swimming crab in the Palk Bay. Details of all these activities and more can be found in this edition of the SEASL's **Blue Swimming Crab Bulletin**.



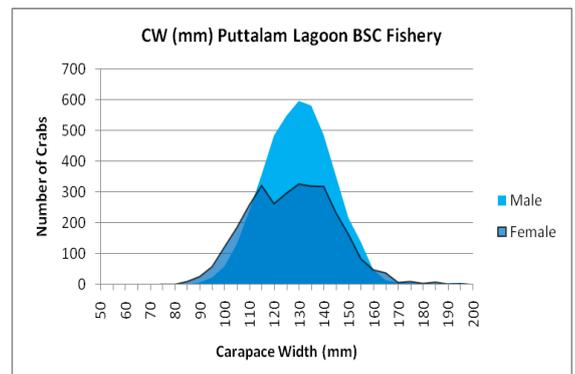
IOM • OIM

Assessing the fishery in Puttalam Lagoon:

Puttalam Lagoon is one of two key fishing grounds for blue swimming crab in Sri Lanka. The International Organisation for Migration (IOM) undertook a series of field activities to promote consultative co-management of the blue swimming crab fishery in Puttalam Lagoon, in association with the SLBSC fishery improvement project (FIP), between June and December.

Crab fishing communities in Palakuda, Anawasala and Baththalanguduwa assisted the IOM and FIP to complete the first ever fishery stock assessment in Sri Lanka, using length based spawning potential (LB SP). Field data was analysed by Dr. Adrian Hordyck and Dr. Jeremy Prince at [Murdoch University](#), in Western Australia. Preliminary results indicate that the LB SP ratio (SPR) for the fishery was 0.46. This is above the Marine Stewardship Council's (MSC) proxy SPR upper Reference Point for Maximum Sustainable Yield (MSY)¹. The ratio of fishing mortality (F) to natural mortality (M) was 1.03. The results suggest that the blue swimming crab fishery in Puttalam Lagoon is current being fished at a sustainable level.

The conclusions of the first ever stock assessment of the BSC fishery in Puttalam Lagoon were discussed with fishing community leaders in November. A series of follow up activities, including action against illegal, monofilament (*thangus*) nets; an effort survey of blue swimming crab fishermen; action against mechanised trawling and a study on the bycatch of blue swimming crabs in the fyke net fishery, were planned for 2015. In December, IOM distributed legal multifilament nylon nets to 33 blue swimming crab fishermen, who agreed to hand over 150 kg of illegal nets to the District Secretary. **IOM's Assisted Voluntary Return and Reintegration programme, Community stabilization through livelihood support and information campaign is funded by the Australian Government Department of Immigration and Border Protection.**



¹J. Prince (2014) A Technical Report on a SPR@Size assessment of the Blue Swimmer Crab fishery in Southeast Sulawesi. Technical Report for IMACS, USAID. Oct. 2014 pp. 30

Understanding and managing the FIP: A comprehensive understanding of the population biology of the Sri Lankan blue swimming crab is fundamental to the development of an effective harvest control strategy for the fishery, complete with harvest control rules and tools. Limit and target reference points based on LB SP necessitate species specific scientific estimates of mortality (M), growth (k), the theoretical maximum length (Linf) and length on 50% and 95% maturity (L₅₀ and L₉₅). Dr. Prince and Dr. Hordyck's preliminary analysis of the Puttalam Lagoon fishery used a series informed assumptions based on estimates of M/k, Linf, L₅₀ and L₉₅ for female blue swimming crab. These assumptions were derived from scientific studies of blue swimming crab populations in south and southeast Asia.



In October, a team of research scientists from the [NARA](#) led by Dr. Sisira Haputhanthri (Principal Scientific Officer) commenced a yearlong scientific study to estimate key parameters of the population biology of the SLBSC population off the coast of Jaffna, in the north of Sri Lanka. NARA's study will provide members, partners and associates of the

fishery improvement project with new data and information on catch and effort; the relationship between crab length (width) and crab weight; crab reproductive biology, including size on maturity, spawning season(s) and fecundity and the food and feeding habits of SLBSC. NARA's final report will also include estimates of key stock assessment parameters including growth, mortality, MSY and the LB SPR. NARA will submit an interim scientific report at the end of March 2015.

In December, the SEASL's fishery improvement project team initiated a survey of fishing effort in partnership with the Puttalam District FSCU. A field visit by the [Environmental Conservation Trust](#) to Puttalam Lagoon was facilitated by the FIP, after which the FIP team met with senior staff at [Verité Research](#) to explore legal provisions and penalties associated with illegal mechanised bottom trawling in Sri Lanka (see right).



At the end of December, the SEASL convened a meeting of the leading Sri Lankan seafood companies, which export SLBSC. Representatives of Alpex Marine (Pvt) Ltd., Ceylon Fresh (Pvt) Ltd., Ceylon Food (Pvt) Ltd., and Taprobane Seafood (Pvt) Ltd., were briefed on the progress of the fishery implement project and the FIP's plans for 2015. Direct and indirect benefits arising from 'sustainably sourced' blue swimming crab products were discussed by the companies, in the context of existing and potential markets for blue swimming crab products, South East Asia and North America.

Ways to incentivise the participation of Sri Lankan seafood companies in the FIP such as branding 'sustainable sourced' Sri Lankan blue swimming crab products were explored. The pros and cons of adopting a logo (see right) for sustainably sourced Sri Lankan blue swimming crab products were considered. The meeting closed with company representatives pledging to support, commercially and financially, the SLBSC fishery improvement project as it moves forward in 2015.

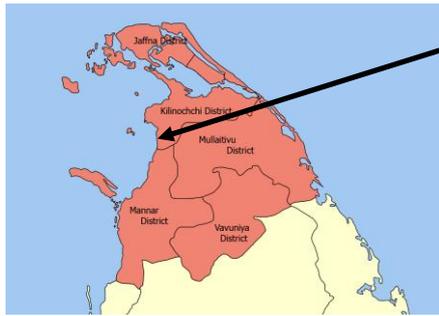


Key FIP documents including the logic model, three development plan, annual plan, budget forecast and performance monitoring and evaluation framework were updated at the end of the year to reflect the actions successfully completed by the members, partners and associates of the FIP in 2014. Copies of all of these documents will be available to download from the SEASL's web site (www.seasl.lk), in order to facilitate independent, third party verification of the status and the achievements of the FIP. *SEASL's implementation, management and performance monitoring of the SLBSC fishery improvement project were made possible by generous core FIP funding from the [National Fisheries Institute Crab Council \(NFI CC\)](#).*



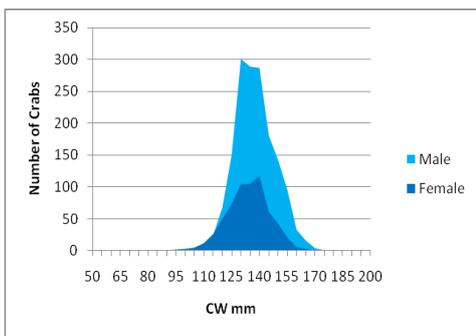
Northern fishing communities implement the FIP:

The Sri Lankan half of the Palk Bay, the other half is in India, is the main fishing ground for blue swimming crab in Sri Lanka. Fishermen in three districts – Mannar, Kilinochchi and Jaffna – harvest crabs throughout the year from the shallow, muddy waters of the bay. In July, the [International Labour Organisation](#)'s Local Empowerment through Economic Development (LEED) project extended its support to the Poonakary Fishermen's Cooperative Society Union (FCSU) to enhance northern fishing communities' engagement in the SLBSC fishery improvement project.



In October, November and December, members of the Irainamathanagar Fishermen's Cooperative Society (FCS) measured, weighed and sexed over 6,000 crabs as part of the Poonakary FCSU's LB SP assessment of the blue swimming crab fishery in the Palk Bay. Preliminary analysis of the field data collected in October, by Dr. Adrian Hordyck and Dr. Jeremy Prince (Murdoch University, Western Australia), indicated that the SPR for the Palk Bay blue swimming crab fishery is 0.31. When the principal LB SP parameters (*i.e.*, M/k, Linf, L₅₀ and L₉₅) were varied to investigate different

sensitivities, the SPR for the fishery ranged from 0.25 to 0.35. F/M equalled 4.02, which indicates relatively high fishing pressure. This result may have been due to the low numbers of larger females (see below) in the October sample (Dr. Adrian Hordyck *pers. comm.*). The SPR for the Palk Bay blue swimming crab fishery is nevertheless above the MSC's lower SPR proxy for MSY (0.3)². The relatively large size at which female crabs enter the fishery (see below) may explain this result, enabling the majority of female crabs to spawn before they are caught. The preliminary data collected by the Poonakary FCSU - analysed by Murdoch University - suggests that the blue swimming crab resource on the Sri Lankan side of the Palk Bay is currently being exploited at a sustainable level.



In December, the Poonakary FCSU organised a series of awareness programmes for FCS leaders from Mannar, Jaffna and Kilinochchi districts. The biology and ecology of blue swimming crabs was explained in relation to prospective fishery management measures. The origins and current status of the SLBSC fishery improvement project were explained and the opportunities and challenges to improving the blue swimming crab fishery were explored. Each workshop concluded with a presentation by fishermen's leaders about the key local issues affecting the crab fishery and the actions needed to address them. [The Poonakary FCSU's involvement in support of the SLBSC fishery improvement project](#)

are financed by the ILO UN's LEED project, which in turn is financed by the Australian Agency for International Development's Australian Community Rehabilitation Programme Phase 3.



The Ministry of Fisheries and Aquatic Resources ([MFAR](#)) submitted a project to the Bay of Bengal Large Marine Ecosystem ([BOBLME](#)) programme in October. In November, the Director General, Department of Fisheries and Aquatic Resources ([DFAR](#)) Mr. Nimal Hettiarrachchi, invited the SEASL's SLBSC FIP Coordinator, as well as officers and staff from the NARA, to discuss the implementation of the DFAR / BOBLME sub project. Under this sub project, DFAR officers and staff will conduct a fishing effort survey of the SLBSC fishery in four districts. Based on the survey results DFAR will formulate a draft fishery management plan in collaboration with other members of the FIP, with technical assistance from Dr. Sewandi Jayakody at the University of Wyamba. The draft fishery management plan will be developed using BOBLME's eco-system approach to fisheries management.

² J. Prince (2014) A Technical Report on a SPR@Size assessment of the Blue Swimmer Crab fishery in Southeast Sulawesi. Technical Report for IMACS, USAID. Oct. 2014 pp. 30



FIP forwards in 2015: The SEASL will continue to drive the SLBSC FIP forwards in 2015, building on the momentum generated by the generous support provided by the NFI CC, IOM, ILO UN and BOBLME this year. The SEASL hopes to extend these successful partnerships and associations, as well as to encourage new organisations / agencies to partner or associate with the FIP in 2015.

1st Quarter SLBSC FIP Targets

- Begin working with the Monterrey Bay Aquarium's **Seafood Watch** Programme
- Identify **retailers and distributors** interested in 'sustainably sourced' SLBSC products
- Conduct **Marine Stewardship Council** technical training (MSC's fishery assessment methodology)
- Complete the Poonakary FSCU's sub project / SEASL **stock assessment** for the Palk Bay fishery
- Lobby & advocate against **mechanised trawling** in SLBSC fishing grounds
- Publish NARA's Mid Term Report on the **population biology** of SLBSC
- Convene the 2nd SLBSC National **Steering Committee** Meeting
- Secure funding - **US\$100,000** - for 2015 / 2016

2nd Quarter SLBSC FIP Targets

- Publish reports & studies**- stock assessment, fishing effort, gillnet selectivity
- Draft a **Harvest Control strategy** for the SLBSC fishery
- Write and submit sub project(s) for **MSC Principle 2: Ecological Impacts** of the SLBSC fishery
- Update **SLBSC FIP documents**

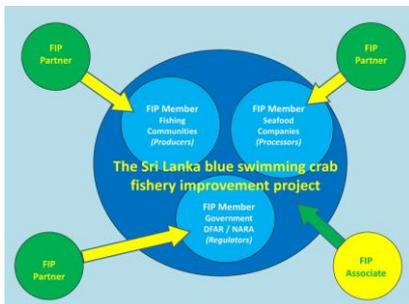
3rd Quarter SLBSC FIP Targets

- Dr. Prince & Dr. Hordyck** in Sri Lanka - technical training on LB spawning potential
- Finalise a **Harvest Control Strategy** with rules and tools for the SLBSC fishery

4th Quarter SLBSC FIP Targets

- Conduct the annual SLBSC **stock assessment** using LB SPR
- Complete a **MSC Assessment** of the SLBSC fishery with a Certified Approval Body
- Update SLBSC fishery improvement **FIP documents**

The FIP in brief: The SLBSC fishery improvement project is an ongoing process to improve the SLBSC fishery initiated by seafood companies (**processors**), in collaboration with government authorities and agencies (**regulators**) and BSC fishing communities (**producers**). Producers, processors and regulators are the **members** of the SLBSC fishery improvement project. **Partners** co-finance members to implement actions to improve the fishery. **Associates** directly implement actions in support of the immediate objectives and long term goal of the SLBSC fishery improvement project. Presently, the immediate objectives (IO) and the long term goal of the SLBSC fishery improvement project are derived from the MSC's fishery assessment methodology:



- (IO1) *the fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and for those populations that are depleted; the fishery is conducted in a manner that demonstrably leads to their recovery;*
- (IO2) *fishing operations allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent & ecologically related species) on which the fishery depends;*
- (IO3) *the fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that necessitate responsible exploitation of the resource, in a manner that is socially & economically equitable.*

The long term goal of the SLBSC FIP is to ensure that the fishery can continue indefinitely at a level that maintains the ecological health and abundance of SLBSC and the diversity, structure and function of the ecosystem / habitats on which it depends, as well as minimising the adverse effects that it causes by means of a consultative co-management system that ensures the sustainable exploitation of the SLBSC resource and maintains the present and future economic and social options and benefits arising from the fishery in an equitable manner.

