

SEYCHELLES FISHING AUTHORITY TECHNICAL REPORT

REPORT ON THE SPINY LOBSTER FISHERY

Lobster Survey Report 2019



SFA/R&D/083

Lobster Survey Report 2019

November 2019
SFA Fisheries Research Section

1. Introduction.

The spiny lobster fishery has been conventionally managed by seasonal closures and limited access (license-limited) regulations implemented by the Seychelles Fishing Authority. This is because fishers primarily target coastal and shallow water stocks, whose abundance is limited, therefore depletion occurs rapidly when fishing pressure is too high. Over the past, assessments of fisheries dependent data have shown several significant declines in the coastal stocks when too many licenses are allocated or when the fishery remains open for 3 to 4 consecutive seasons. Consequently, the stock status is determined by assessing both fisheries dependent and independent (surveys) data. Results obtained are provided to managers with advice on whether the fishery should be opened or remain closed.

The lobster fishery remained closed for two consecutive seasons (2017-2018 and 2018-2019) to allow the stocks to recover (**Figure 1**). In October 2019, as part of the Participatory Lobster Monitoring Programme (PLMP) a fisheries independent survey was carried out to assess the effectiveness of the closure at 20 sites around Mahé. The main aim of this paper is to present information on several stock indicators based on data collected during the survey. Moreover, it provides several recommendations and advice to managers on whether the 2019-2020 fishing season should be opened or remain closed.

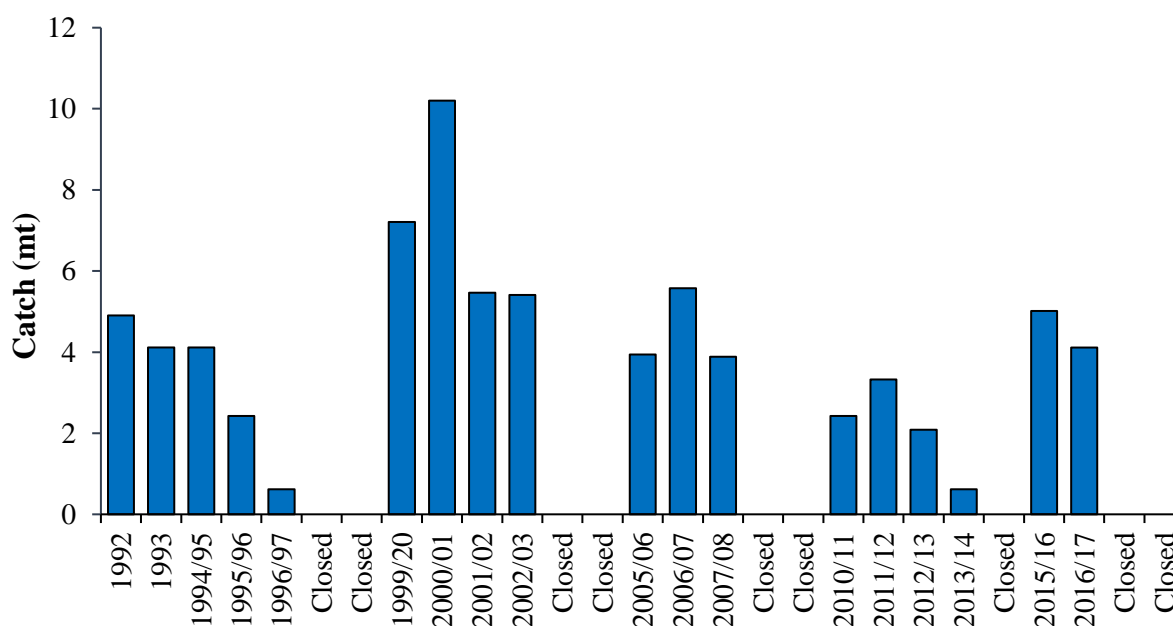


Figure 1. Overview of the catches from the lobster fishery from 1992 to 2019.

2. Fisheries independent survey.

2.1. Total catch.

The total catch of lobsters for the 20 sites surveyed during the PLMP survey is shown in **Figure 2**. In 2019, 114.8 kg of lobsters were caught as opposed to 77.4 kg in 2018 translating into a

48% increment. An increased in the catch for all three common caught species can be observed, with *P. longipes*, *P. penicillatus* and *P. versicolor* showing a surplus of 48%, 49% and 37% respectively in 2019 (**Figure 2**).

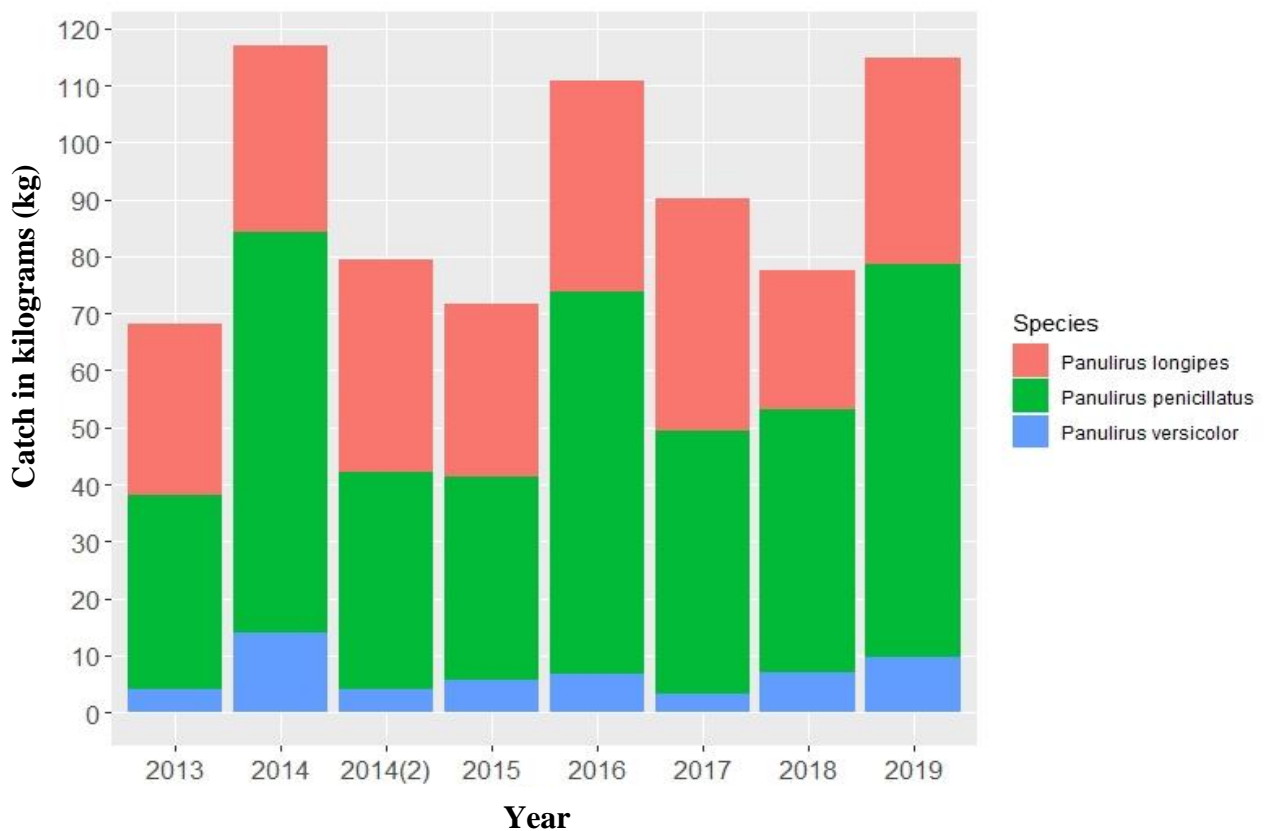


Figure 2. Total catch by species in kilograms for the twenty survey sites from 2013 to 2019.

3. Abundance and biomass indicators.

3.1. All lobsters caught.

The average catch per unit effort (CPUE) in kg/menhour and no/menhour at the survey sites shows a similar pattern over the survey period from 2013 to 2016 (**Figure 3**). In 2016, the CPUE increased by 35% (kg/menhour) and 30% (no/menhour) compared to 2015 values. A 25% decline was observed in the CPUE in kg/menhour whilst the CPUE in no/menhour remained relatively stable in 2017. Further declines in CPUE were observed in 2018. In contrast, in 2019 a 13% increase was observed for both measures of CPUE. This indicates that the biomass of lobsters has increased slightly; this is mostly attributed to a surge in the abundance of lobsters.

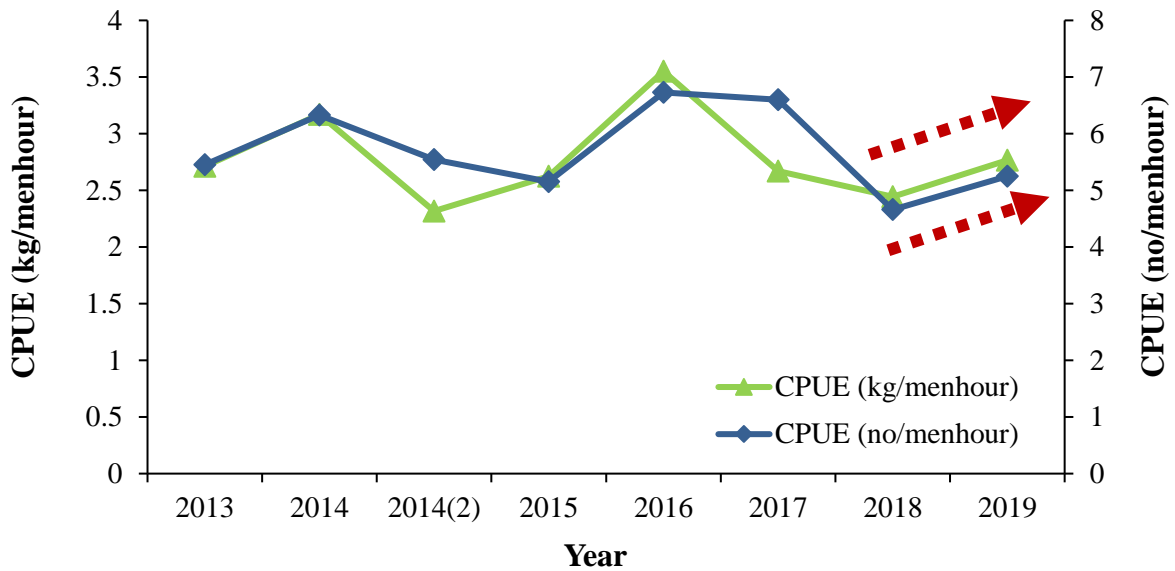


Figure 3. Average catch per unit effort at survey sites in kilogram/menhour and numbers/menhour for all lobsters caught. Red arrow highlights increasing trends.

3.2. Legal sized lobsters (>7.5 cm Carapace Length).

The average CPUE for legal sized lobsters caught varied over the survey periods. From the second survey in 2014 to 2016, an increasing trend can be observed in both measures of CPUE (**Figure 4**). In 2017, a decline of 39% (kg/menhour) and 31% (no/menhour) was observed in both measures of CPUE compared to 2016. However, 2018 CPUE data for legal sized lobsters presented an increase of 16% (kg/menhour) and 5% (no/menhour) in comparison to 2017. Further increases in CPUE was observed in 2019. A 13% and 8% increase for kg/menhour and no/menhour was recorded.

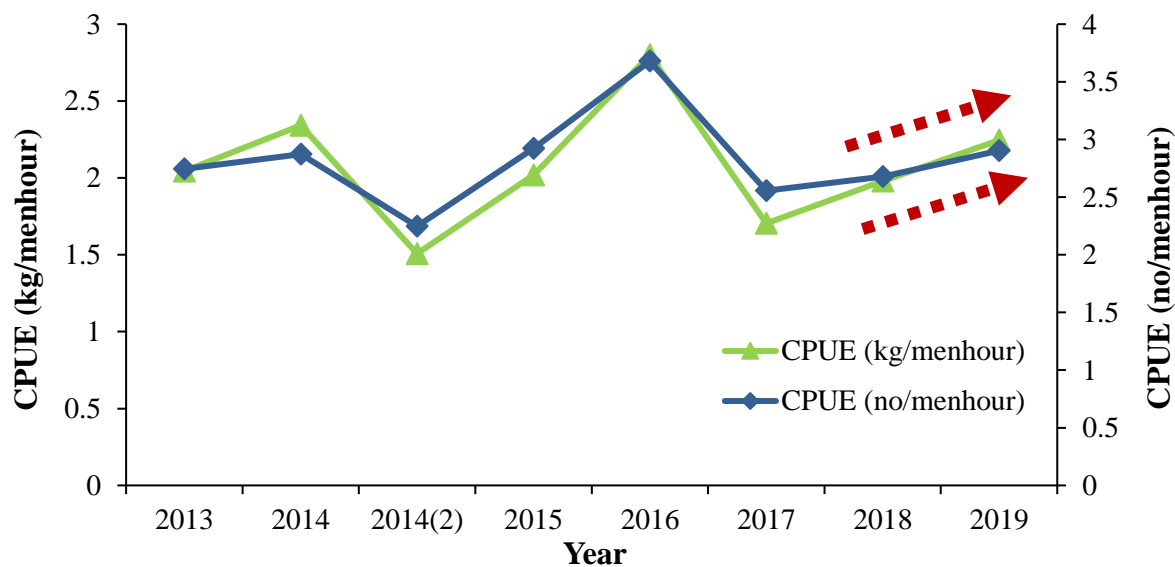


Figure 4. Average catch per unit effort for legal sized lobsters caught. Red arrow highlights increasing trend.

4. Length based indicators.

The average sizes of *P. penicillatus* caught during the surveys are shown in **Figure 5**. A decrease in the average size, by about 1 cm, can be observed for both males and females between the year 2016 and 2017. However, in 2018 females and males showed an increased average size of 1.3 cm and 1.5 cm respectively. Results obtained in 2019 shows further increases in the average size of both females (0.3 cm) and males (0.8 cm) compared to 2018.

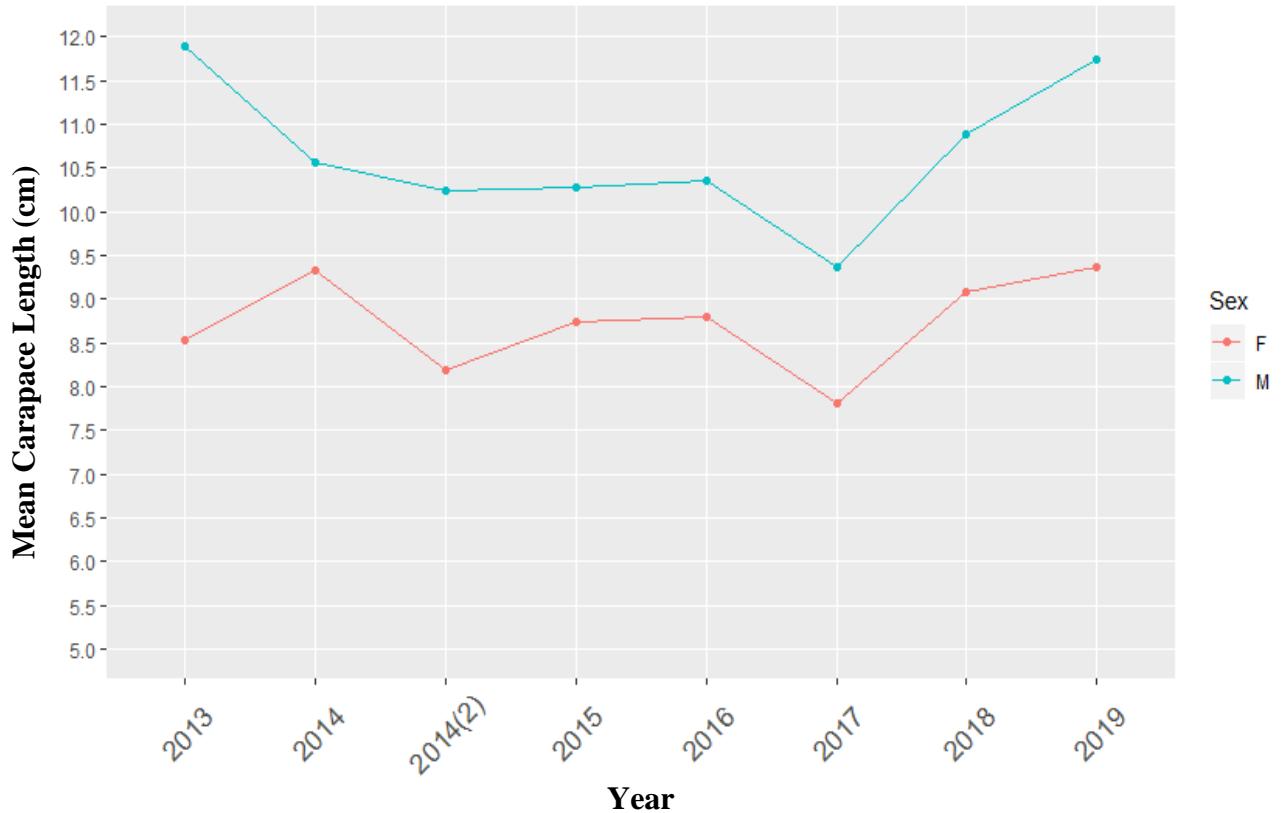


Figure 5. Average sizes of *P. penicillatus* caught during the surveys between sexes (M = males and F= females) from 2013 to 2019.

Similarly, a decreasing trend can also be observed in the average size of *P. longipes* surveyed between 2016 and 2017. However, the magnitude of the decline is minute compared to *P. penicillatus*. The average size of males decreased by 0.3 cm and females decreased by 0.5 cm. In 2018, the average size of males remained stable whilst that of females increased by 0.4 cm. For 2019 the average size increased by 0.2 cm for males and by 0.4 cm for females (**Figure 6**).

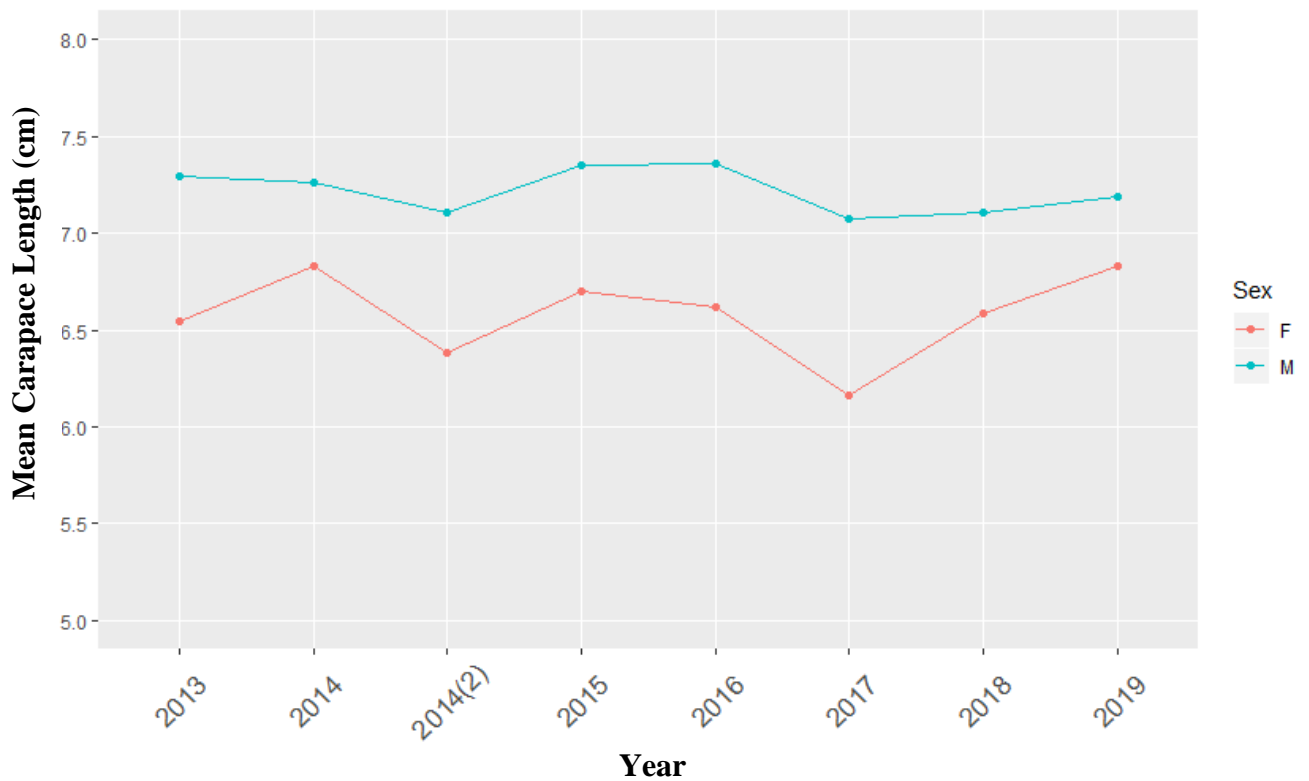


Figure 6. Average sizes of *P. longipes* caught during the surveys between sexes (M = males and F= females) from 2013 to 2019.

5. Conclusion.

The CPUE data indicates that the overall relative abundance and biomass of lobsters decreased from 2017 to 2018. However, in 2019 CPUE data shows an increase in the relative abundance and biomass of all lobsters caught during the PLMP survey. Similarly, an increasing trend was observed in the relative abundance and biomass of legal-size lobsters (more than 7.5 cm carapace length). Furthermore, increase in the average size data for the main species caught can be observed. Overall, these results indicate that the two-year closure has allowed the stock to recover slightly.

6. Recommendations.

Based on the analysis of the fisheries independent information collected, the Research Section proposes the following recommendations with regards to the lobster fishery:

- **It is recommended that the fishery be opened for a three-month period for the 2019-2020 season.**
- **It is recommended that the number of licences be capped at 16 (10 licenses allocated for Mahé residents, 4 for Praslin and 2 for La Digue). Issuance of licenses should be done on a ‘first come, first serve basis’ as has always been the case.**

- **It is strongly recommended that a compliance bond of SCR 5000 is maintained to ensure that licensees return their logbook and receipt books at the end of the fishing season.**
- **It is recommended that the annual PLMP survey is carried out in 2020 to continuously evaluate and monitor the status of lobster stock.**
- **It is recommended that monitoring, control and surveillance is strengthened to discourage illegal fishing activities during the closed period.**
- **It is recommended that an education and awareness campaign is set up to educate the public on the regulations of this fishery.**