SEYCHELLES FISHING AUTHORITY

TECHNICAL REPORT

REPORT ON THE SPINY LOBSTER FISHERY

Lobster Survey Report 2018

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Lobster Survey Report 2018

SFA Fisheries Research Section

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Introduction

The spiny lobster fishery has traditionally been managed as a seasonal and limited access (license-limited) fishery. This is due to the fact that fishers only exploit the shallow water and coastal stocks which, limited in size, deplete rapidly when exploited. There have been several collapses of these coastal stocks in the past when too many licenses have been allowed, or when the fishery has been opened for more than 3 or 4 consecutive seasons. Consequently, the Seychelles Fishing Authority (SFA) assesses the status of the stock using fisheries dependent and fisheries independent (surveys) data and provides managers with advice on whether the fishery should be opened or remains closed.

The lobster fishery remained closed for the 2017-2018 season following the opening of the fishery for two consecutive season (2015-2016 and 2016-2017) (Fig. 1). In October 2018, as part of the Participatory Lobster Monitoring Programme (PLMP) a fisheries independent survey was carried out to assess the long-term recovery of the stocks 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 2018-2019 fishing season should be opened or remain closed.

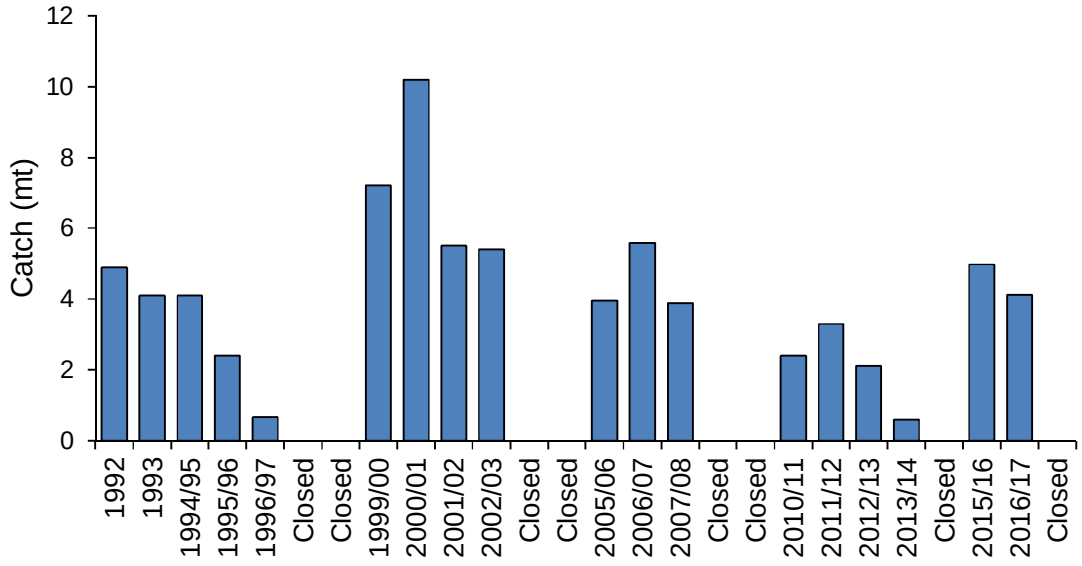

Figure 1. Overview of the catches from the lobster fishery from 1992 to 2018.

Fisheries independent survey

Total catch

The total catch of lobsters for the 20 sites surveyed during the PLMP survey is shown in Figure 2. In 2018, the total catch of lobsters was 77.4 kg, which is a 14% decrease from 2017 when the total catch was 90.3 kg. A decline of 40% was observed in the catches of *P. longipes* in

2018 compared to 2017. In contrast, catches of *P. penicillatus* remained stable at 46.1 kg. Moreover, catches of *P. versicolor* increased by 92% to 6.9 kg (Fig. 2).

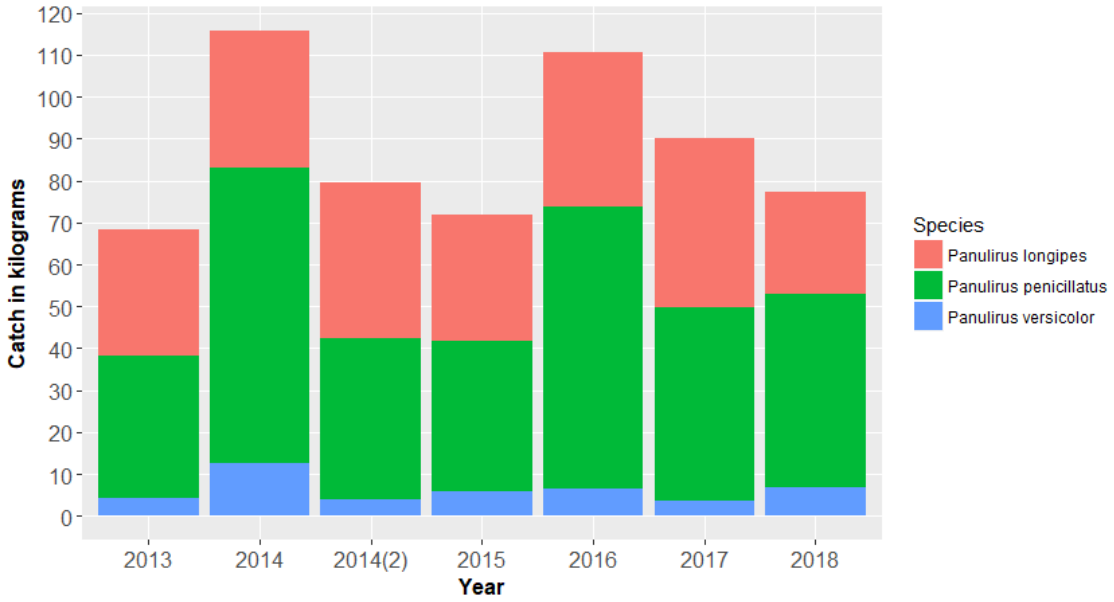

Figure 2. Total catch by species in kilograms for the twenty survey sites from 2013 to 2017.

Abundance and biomass indicators

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 (Fig. 3). In 2016, the CPUE increased by 35% (kg/menhour) and 30% (no/menhour) compared to 2015 values. In contrast, in 2017 a decline of 25% was observed in the CPUE in kg/menhour whilst the CPUE in no/menhour remained relatively stable. In 2018, the CPUE decreased by 8% (kg/menhour) and 29% (no/menhour) compared to 2017. This indicates that the biomass of lobsters has declined slightly; this is mostly attributed to a decline in the abundance of lobsters.

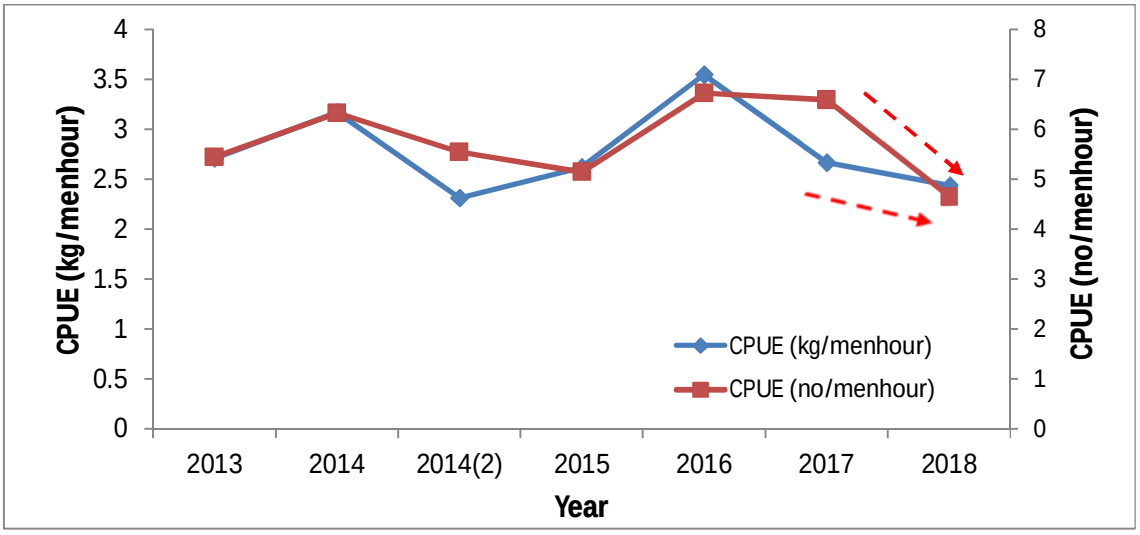

Figure 3. Average catch per unit effort at survey sites in kilogram/menhour and numbers/menhour for all lobsters caught. Red arrow highlights trend

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 (Fig. 4). However, in 2017, a decline in both measures of CPUE was observed. Compared to the survey in 2016, the CPUE in 2017 declined by 39% (kg/menhour) and 30% (no/menhour). In contrast, in 2018, an increase of 43% (kg/menhour) and 82% (no/menhour) can be observed in the CPUE for legal sized lobsters compared to 2017 levels.

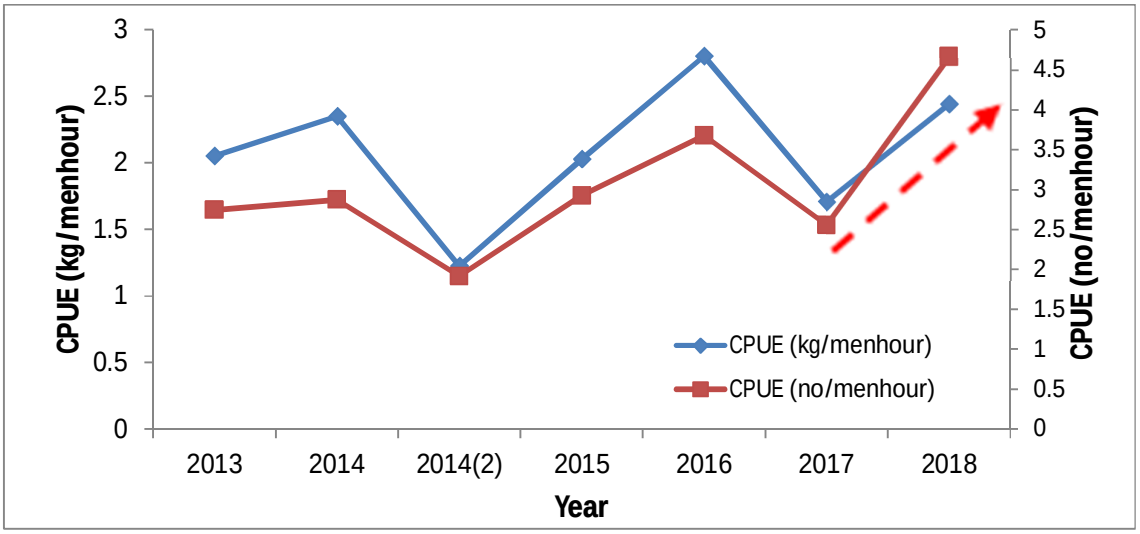

Figure 4. Average catch per unit effort for legal sized lobsters caught. Red arrow highlights declining trend

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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. In contrast, in 2018, the average size increased by 1.3 cm and 1.5 cm for females and males respectively.

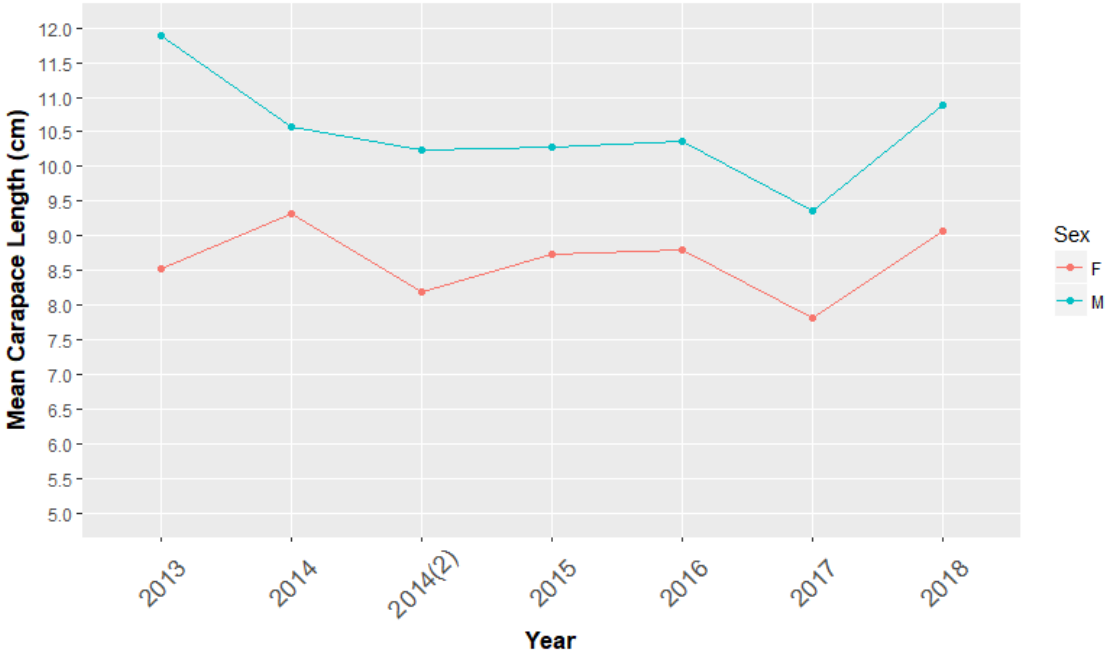

Figure 5. Average sizes of *P. penicillatus* caught during the surveys from 2013 to 2018.

Similarly, a decrease can also be observed in the average size of *P. longipes* surveyed between 2016 and 2017. However, the magnitude of the decline is smaller compared to *P. penicillatus.* The average size of males decreased by 3 mm whilst females decreased by 5 mm. In 2018, the average size of males remained stable whilst that of females increased by 4 mm (Fig. 6).

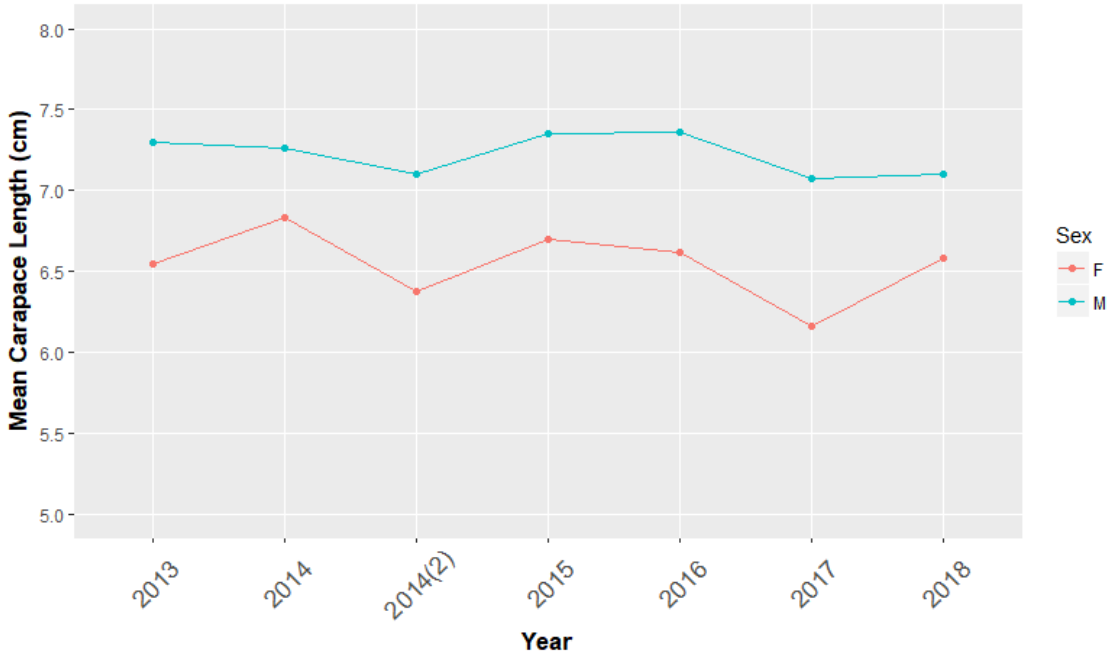

Figure 6. Average sizes of *P. longipes* caught during the surveys from 2013 to 2018.

Conclusion

The CPUE data indicates that the overall relative abundance and biomass of lobsters increased from 2014 to 2016. **However, in 2018 the relative abundance and biomass has declined**. In contrast, the **abundance and biomass of legal sized lobsters has increased in 2018, indicating that the one year closure has allowed this component of the stock to recover slightly**. Similarly, the average size of the species targeted has increased contributing to the increase in biomass. Therefore, the observed decline in overall relative abundance and biomass can be attributed to **lower numbers of smaller lobsters (below 7.5 cm CL) which is a cause of concern for the long-term sustainability of the stock**. A decline in smaller individuals will have consequences in the number of lobsters that are recruited into the fishery in future.

Recommendations

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

- **It is recommended that the fishery remains closed for the 2018-2019 season to allow for an increase in the number of juveniles**
- **It is recommended that the annual PLMP survey is carried out in 2019 to re-evaluate the recovery of the lobster stock**
- **It is highly recommended that monitoring, control and surveillance is strengthened to discourage illegal fishing activities during the closed period**