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Ten Years of Caribbean Spiny Lobster (*Panulirus argus*) Closed Season: Evidence From Antigua and Barbuda's Small-Scale Fishery

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Abstract

Catch and effort and biological data were collected from commercial fishing trips, research trips, at-sea stop and search, and from inspections of processing plants, retailers, and restaurants in Antigua and Barbuda. The objectives were to: 1) appraise the impact of the annual two-month closed season enacted in 2013; and 2) determine trends (catch per unit effort, carapace length, etc.) and status of the fishery. Significant temporal differences existed amongst the mean catch per unit effort ($p < 0.001$) with the catch rates for traps (fish pots) increasing by at least three-fold after the implementation of the closed season. The odds of catching a spiny lobster via traps was also statistically greater (1.7 times more likely) after the implementation of the closed season (OR = 1.7, 95% CI [1.3, 2.1]); note the mean number of traps hauled per trip per vessel size class were not significantly different between the two periods ($p > 0.05$). Mean sizes of lobsters were significantly larger ($p < 0.05$) than the estimate of the size at 50% maturity for females (95.7 mm) and comparable to those over the past two decades. The overall enhancement of the fishery was attributed to the general compliance with the closed season coupled with a catch certification programme that requires exporters to comply with the various management measures (minimum size, closed season, prohibition on moulting and egg-bearing lobsters) as well as provide proof of purchase from authorised sources (i.e., fishers or traders possessing a valid fisher licence and from duly licensed vessels possessing a valid lobster permit). As of 2023, a catch certificate is required for export of any fish (including lobster) or fishery product from Antigua and Barbuda regardless of the destination. The next step in "closing the net" on illegal, unreported, and unregulated (IUU) fishing in the lobster fishery is adapting the catch certification programme for the other major consumer group – local hotels and restaurants.

KEYWORDS: Caribbean spiny lobster, closed season, catch certification, IUU fishing, Antigua and Barbuda

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1. INTRODUCTION

The Caribbean spiny lobster (*Panulirus argus*) fishery of Antigua and Barbuda was valued at US$5.6 million in 2019 and accounted for 21% of the total ex-vessel value of capture production (US$26.7 million). This was equivalent to 460 metric tons (live weight). Commercially, traps (fish pots) and the use of SCUBA with wire snares are the main methods used to target the spiny lobster. Note while this study focuses on the Caribbean spiny lobster, the fishery is multi-species in nature since fishers are targeting both reef fish and spiny lobster to satisfy various market segments (e.g., hotels and restaurants, households, supermarkets, and the processing and export sector). The most common type of traps deployed for lobster is the rectangular box constructed from 38.1 mm hexagonal-mesh chicken wire and braced with "wattle" (stick) or steel. One or two funnel-shaped entrances are usually present, through which spiny lobster and reef fish can enter more easily than exit. Traps are normally hauled every seven days and are typically baited with dried coconut meat (copra) and / or cowhide. Trap-setters range from small pirogues to large fibreglass launches, with the latest equipment (global positioning system, depth sounder, hydraulic, or electric hauler, etc.). Various studies have indicated that the trap fishery for spiny lobster and reef fish was an economically and financially viable undertaking, which generated sufficient revenue to cover the cost of depreciation, the opportunity cost of capital, as well as sufficient funds for reinvestment in addition to employment, income, and foreign exchange earnings (Jeffrey 1990, Horsford 2001, Tietze et al. 2001, Tietze et al. 2005, Horsford 2007).

In 2019, 132 Antiguan-registered vessels fished for both spiny lobster and reef fish, with much of the landings for lobster being consumed locally by the tourism sector. With much of the hotels and restaurants based on the island of Antigua and stay-over visitors at 300,990 (Statistics Division 2023), the 383 fishers employed in the fishery had an easily accessible market offering competitive prices. In contrast, the lobster fishery of Barbuda was export-driven, due to weak local demand since resident population was only 1,810 (Statistics Division 2012). The catastrophic impact of Hurricane Irma in 2017 forced the evacuation of Barbuda's population to Antigua, and it was only in late 2018 that around 75% of the population returned home. At its peak, the fishery in Barbuda supported 118 fishers operating from 54 vessels with 26% of the population directly dependent on the fishery (Horsford 1999). The lobster export sector also offered the highest per capita earnings (Van der Meerin 1998).

The Fisheries Act 2006 and the Fisheries Regulations 2013 are the primary legislative basis for fisheries management and development in Antigua and Barbuda, as of February 2013. These pieces of legislation replaced the Fisheries Act 1983 and the Fisheries Regulations 1990. The new legislation moved the fishery for any species of lobster (including *Panulirus argus*, *Panulirus guttatus, Panulirus laevicauda*, and *Scyllarides* spp.) from an "open access" to a "limited entry" management regime via the requirement for a special permit. The Fisheries Regulations 2013 prohibits the possession or place for sale of: any lobster carrying eggs; any moulting lobster; any lobster that has been speared, hooked, or otherwise impaled; any lobster carrying an intact tar spot (spermatophore); or any undersize Caribbean spiny lobster (*Panulirus argus* whose carapace length is less than 95 mm or weight less than 680 g, or having a tail weighing less than 200 g). It also requires the lobster to be landed whole and prohibits the removal of eggs or spermatophores from any lobster. In 2014, a closed season was implemented for the first time, running from 1st May to 30th June of every year until otherwise declared by the Minister in the *Gazette*. Originally a four-month closed season was proposed that covered the major breeding period (1st May to 31st August) (Horsford et al. 2014), and in line with the harmonised closed season adopted by the Organization of Eastern Caribbean States; however, only two months were agreed to through negotiations with key stakeholders. Over the past decades, there have been a shift to "bottom-up" approaches to fisheries governance (e.g.,

consultative, collaborative, or delegated co-management). In addition to the closed season, a catch certification programme was developed to meet European Council regulations (EC 1005/2008 and EC 1010/2009) which require all fish and fishery products entering the European Union to be certified by the flag State as having been caught legally.

In 1995, a comprehensive data collection programme was established under the Canadian-funded Caribbean Community (CARICOM) Fisheries Resources Assessment and Management Programme. This included a customised Trip Interview Program (TIP), which stored and managed catch and effort, and biological data, and a computerised Licencing and Registration System (LRS) program, which captured data on fishers and vessels. In 2001, the programme was completely revised to improve the quality of biological and catch and effort data (e.g., proper accounting for zero-catch trips) as well as to enhance monitoring of fishing effort. Data from the LRS and TIP databases suggested that "booms" or "busts" in related sectors such as tourism and construction can impact fishing effort due to occupational pluralism (i.e., more than one occupation or source of income) in the sector. Hence, an annual census of active fishing vessels in combination with data from the catch and effort programme was used to provide estimates of fishing effort, active seagoing fishers, and compliance rates with respect to licensing of local fishing vessels (Horsford 2004a). This was critical due to several hurricanes experienced in the 1990s which damaged or destroyed numerous fishing vessels, thereby impacting fishing effort. According to the Centre for Research on the Epidemiology of Disasters, Antigua and Barbuda was ranked globally among the top four countries by land area and population affected by disasters from 1970 through 2002 (International Monetary Fund 2004).

The 2007 report of the Western Central Atlantic Fishery Commission (WECAFC) (Food and Agriculture Organization of the United Nations 2007) listed the stock as fully exploited or stable based on the results of the 2004 and 2006 studies (Horsford 2004b, Horsford and Archibald 2006, Horsford 2008). A comprehensive assessment of the biology, status and management regime conducted in 2013 concluded that the lobster fishery was sustainable at the current level of fishing, since no significant negative trends were detected for mean size of lobster landed or mean catch per unit effort; however greater measures were required to prevent growth overfishing (Horsford et al. 2014). Considering the aforementioned and the limited studies conducted, the specific objectives of this research were to: 1) appraise the impact of the annual two-month closed season enacted in 2013; and 2) assess trends in key fishery performance indicators (catch per unit effort, carapace length, etc.) to determine the overall "health" of the fishery.

2. METHODS

Data used in this research came from Antigua and Barbuda's Fisheries Division catch and effort, lobster biological and fisheries compliance programmes (this includes a registry of breaches of fisheries legislation and a catch certification programme). Catch and effort and / or biological data were collected from commercial fishing trips, research trips, at-sea stop and search, and inspection of processing plants and export facilities. For the biological programme, lobsters were sexed and their development stage logged according to the following criteria: 1) female with no eggs or tar spot (spermatophore); 2) female with tar spot (spermatophore) intact; 3) female with tar spot (spermatophore) eroded; 4) female with orange eggs; 5) female with brown eggs; 6) moulting (soft shell) female; 7) male; and 8) moulting (soft shell) male. The following data were collected for each lobster sample (where possible): carapace length (measured from the front edge of the carapace along the medial dorsal line to the maximum concavity of the rear edge of the carapace); carapace width (measured from the lateral edge of

the carapace at the point of maximum convexity); live weight of intact animal; gear or fishing method used; depth fished; and area fished. The status of biological samples was also recorded (i.e., whether samples were sorted or unsorted). This was done to avoid potential bias due to sorting regarding certain fishery performance indicator (e.g., annual mean carapace length). Live weight was recorded to the nearest 1 g whilst carapace length and width were measured to the nearest 0.1 mm using vernier callipers. Statistical analyses were conducted using Microsoft Excel 365 and IBM SPSS Statistics Version 27. Analysis of variance was used to determine if the following conditions existed: sexual dimorphism (i.e., significant difference in size between the sexes); and significant temporal variability in fishery performance indicators (annual mean catch per unit effort and carapace length). The status of the sex ratio (whether unbiased or biased) before and after the closed season was enacted was determined by the Chi-square Goodness of Fit Test. Odds ratio was used to determine the odds of catching a lobster via traps pre- and post-implementation of the closed season.

3. RESULTS

There was significant temporal variability in the mean catch per unit effort for spiny lobster caught in traps (Figure 1); Welch and Brown-Forsythe F-ratios respectively were: F (17, 219.22) = 5.96, $p < 0.001$ and F (17, 260.29) = 12.05, $p < 0.001$. Note the assumption for the homogeneity of variances was violated hence the use of robust test of equality of means (Welch and Brown-Forsythe). Regarding the relative magnitude of the differences between the mean catch rates, the effect size was "large" (eta-squared = 0.17). Games-Howell post hoc test indicated that mean differences in the catch rates in 2018 and 2019 when compared to those before the closed season was enacted were in general significantly different ($p < 0.05$). However, the catch rate for 2020 (0.4 kg per trap hauled) was comparable to the catch rates in the pre-closed season years ($p > 0.05$). Catch rates for 2018 and 2019 (1.4 kg per trap respectively) increased at least three-fold and at most seven-fold after the implementation of the closed season.

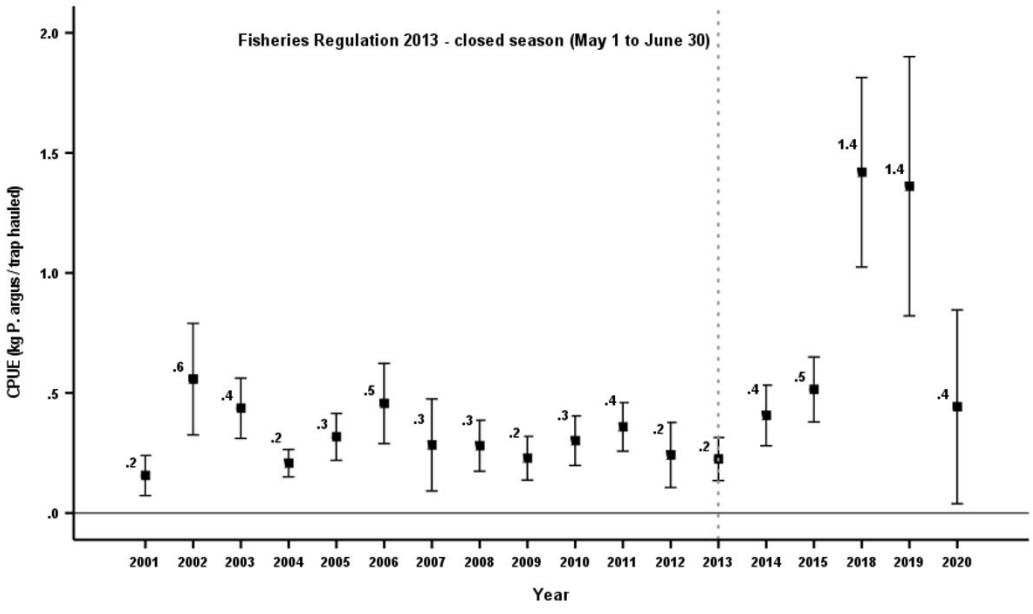

Figure 1. Mean catch per unit effort (CPUE) by year for Caribbean spiny lobster from Antiguan and Barbudan trap-fishing vessels. Error bar is for the 95% confidence interval.

Table 1 examines the association between the two-month closed season and the likelihood of catching a lobster via traps. The odds of catching a Caribbean spiny lobster via traps during a daytrip after the closed season was enacted was 1.7 times that for the pre-closed season period (2001 to 2012). Since the approximate 95% confidence interval for the odds ratio did not include the value 1, then the true odds ratio was significantly different from 1. Therefore, the odds of catching a lobster via traps during the current management period (2013 to 2020) was significantly greater (1.7 times more likely) than under the previous management regime. Note follow-up analysis of variance per vessel size class for other factors that can impact the likelihood of catching a lobster such as the number of traps hauled per daytrip and the length of the soak-time, were in general not significantly different between the two periods ($p > 0.05$).

Table 1. The odds of catching a Caribbean spiny lobster via traps during a daytrip before and after an annual two-month closed season was implemented in Antigua and Barbuda waters as a management regime.

	Risk factor: management regime		
Condition:	Closed season (2013-2020)	No closed season (2001-2012)	Total
Trips where *Panulirus argus* was caught by trap-fishing vessels	317	467	784
Trips where no *Panulirus argus* was caught by trap-fishing vessels	130	318	448
Total	447	785	1,232
	Odds ratio (OR):		1.7
	Lower 95% confidence limit for the odds ratio:		1.3
	Upper 95% confidence limit for the odds ratio:		2.1

There was significant temporal variability in the mean size of lobster landed in Antigua and Barbuda (Figure 2); Welch and Brown-Forsythe F-ratios respectively were: F (17, 518.47) = 11.65, $p < 0.001$ and F (17, 1266.57) = 11.07, $p < 0.001$. Based on the effect size or the strength of association (eta squared = 0.06), the actual different in the annual mean sizes was of a "medium" effect. Games-Howell post hoc test indicated that lobsters landed in 2019 were similar in size to those landed from 2003 ($p > 0.05$) with the exception 2006 and 2011, however they were significantly larger than those landed from 1996 to 2002 ($p < 0.05$). From 1996 to 2004 there were significant increases in the mean size of lobsters landed ($p < 0.05$). In general, lobsters landed during the 1990s, were smaller than those from early 2000s to 2019. In all cases, the mean sizes of lobsters were significantly larger ($p < 0.05$) than the minimum legal size (95.0 mm).

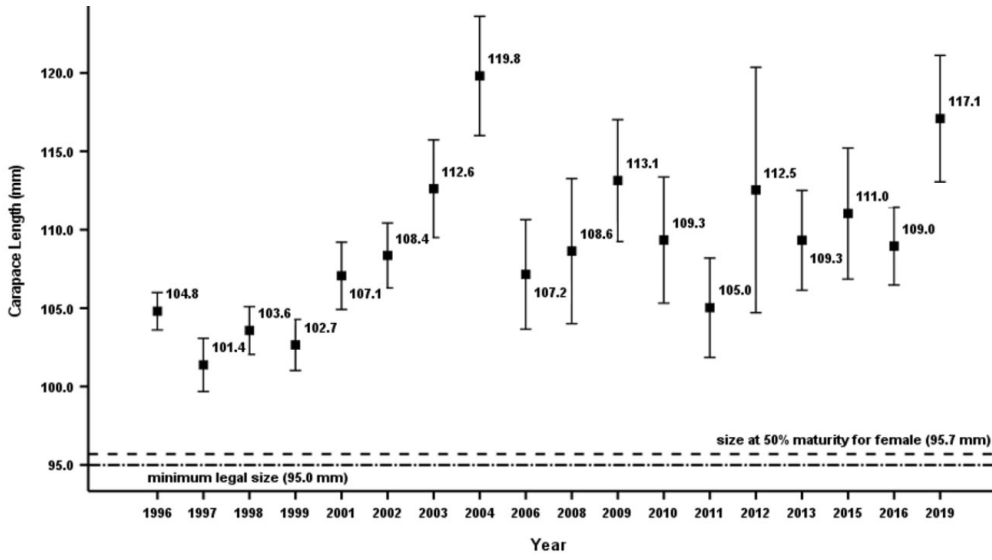

Figure 2. Mean carapace length by year for Caribbean spiny lobster landed from Antigua and Barbuda waters. Error bar is for the 95% confidence interval

Significant sexual dimorphism was detected for carapace length [Welch and Brown-Forsythe *F*-ratios: F (1, 3347.98) = 161.14, $p < 0.001$]. The carapace of male lobsters was 6.8% longer (Figure 3) than their female counterparts. Despite being statistical significance, the actual difference in mean carapace length between the sexes ranged from "small" to "medium" (110.1 mm versus 103.1 mm); the effect size 95% confidence interval, using eta squared ranged from 0.04 to 0.06. Chi-square Goodness of Fit Test for lobsters that were unsorted indicated that the sex ratio was biased in favour of male lobsters before the closed season was implemented, with 54.5% of the total lobsters landed being males; X^2 (1, N = 2765) = 22.78, $p < 0.001$. The sex ratio was further skewed to males after the closed season was implemented, with 62.7% of the total lobster landed being males; X^2 (1, N = 341) = 22.20, $p < 0.001$.

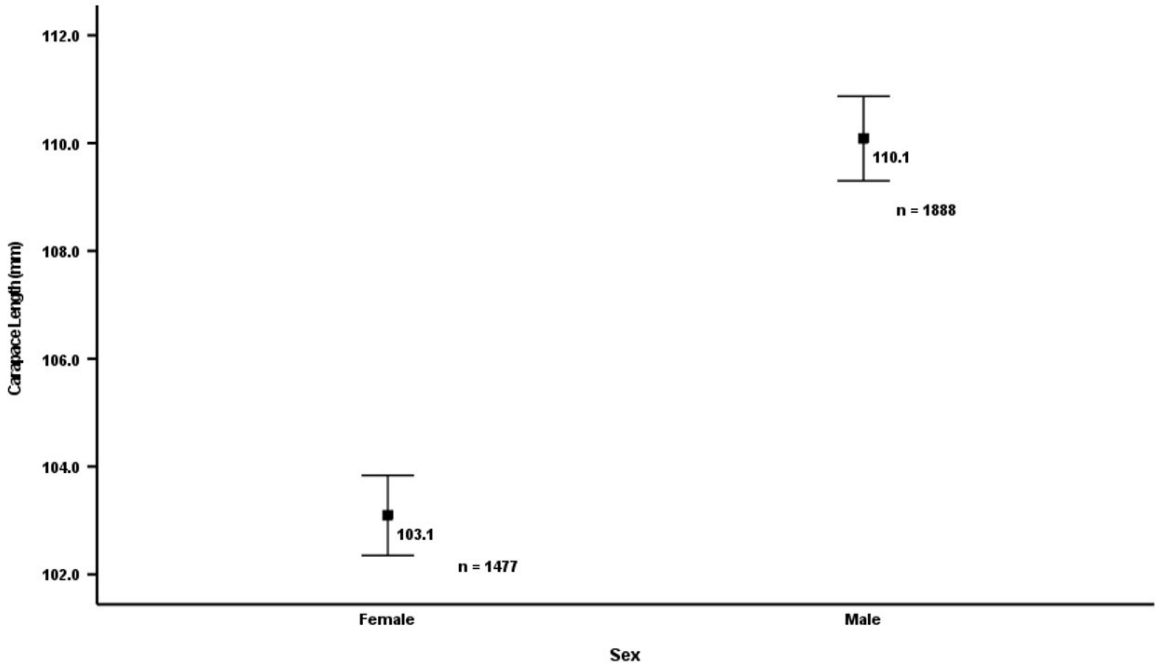

Figure 3. Mean carapace length by sex for Caribbean spiny lobster landed from Antigua and Barbuda waters. Error bar is for the 95% confidence interval and n = sample size.

4. DISCUSSION

There was significant temporal variability in the mean catch rates for spiny lobster caught in traps ($p < 0.001$), with catch rates two generations after the enactment of the closed season at least three-fold and at most seven-fold of that before the closed season (Figure 1). Note, the catch rate for 2020 (0.4 kg per trap hauled) was comparable to the catch rates in the pre-closed season years ($p > 0.05$). This was due to trap fishers changing their daily operations to adjust to the lockdown and restrictions associated with coronavirus (COVID-19) pandemic. These changes included shorter soak-time for traps (less than seven days) and use of more efficient gears (e.g., spear gun) to target reef fish for the local population; there were limited markets for lobsters due to suspension of international flights, closure of borders as well as local hotels. Fishers along with other informal sector workers (e.g., farmers, market vendors, street vendors and private bus operators) were considered as "essential workers", hence they were allowed to operate under limited hours provided certain protocols were in place (social distancing, facemask, etc.). Further evidence for the significant increase in the catch rates was the increase in the likelihood of catching a lobster via traps after the enactment of the closed season (Table

1). The odds of catching a lobster during a daytrip under the current management period (2013 to 2020) was significantly greater (1.7 times more likely) than under the previous management regime without a closed season. Note other factors such as the number of traps hauled per daytrip and the length of the soak-time, in general did not impact the likelihood of catching a lobster per vessel size between the two periods ($p > 0.05$). The benefit of improve catch along with the potential of addressing illegal and unreported intraregional trade, were some of the reasons for Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama, to sign a lobster agreement in 2009 that establish a harmonised annual closed season from 1st March to 30th June (Regulation OSP-02-09), under the auspices of the Central American Fisheries and Aquaculture Organization (OSPESCA). Similarly, the framework for harmonised fisheries regulations in areas such as closed season and minimum size came from a collaboration between the Organization of Eastern Caribbean States (OECS) and the Food and Agriculture Organization of the United Nations (FAO) in 1983 and 1984. This led to the preparation of the draft Harmonised OECS Fisheries Act which all member states have enacted with minor changes as well as harmonised regulations (Chakalall 1992). Currently, four out of the seven founding members of the OECS (Grenada, St. Lucia, St. Vincent and the Grenadines, and Antigua and Barbuda) have annual closed season based in full or in part with the harmonised closed season adopted by the OECS – 1st May to 31st August.

There was significant temporal variability in the mean size of lobster landed in Antigua and Barbuda ($p < 0.001$). From 1996 to 2004 there were significant increases in the mean size of lobsters landed ($p < 0.05$). In general, lobsters landed during the 1990s, were smaller than those from early 2000s to 2019 (Figure 2). This increase in the mean size landed was attributed to the enactment and enforcement of the old fisheries regulations (Fisheries Regulations No. 10 of 1990). The odds of vessel owners / captains being fined, warned, and / or have their catch confiscated during the 2000s was roughly two-times that of the 1990s due to more frequent at-sea stop and search by the Antigua and Barbuda Defence Force Coast Guard and the Fisheries Division (Horsford et al. 2014). In all cases, the mean sizes of lobsters landed were significantly larger ($p < 0.05$) than the minimum legal size (95.0 mm) and the estimate of the size at 50% maturity for females (95.7 mm, Horsford et al. 2014); 95% confidence intervals for the mean sizes generally did not overlap with the 95% confidence interval for the size at maturity (83.3 to 103.9 mm carapace length) (Figure 2). In terms of historical data (August 1972 to August 1973), Peacock (1974) cited 113.6 mm as the mean size for the trap fishery based on central and western portion of the Antigua and Barbuda Shelf. This is statistically comparable in size to most of the lobsters landed after 2002, taking the 95% confidence intervals for the mean carapace lengths into consideration.

Significant sexual dimorphism was detected between the sexes ($p < 0.001$) with the carapace of males 6.8% longer than their female counterparts (Figure 3). This was consistent with earlier study (Horsford et al. 2014), where the carapace of males was 6% longer and 8% wider than those of females. Matthews et al. 2003 highlighted that the longer and wider carapace was the primary reason for the differences between the morphometric relationship in male versus female. One possible consequence of sexual dimorphism is disproportionate targeting of the larger sex, in this case males. Chi-square Goodness of Fit Test indicated that the sex ratio was biased in favour of males before the closed season was implemented, with 54.5% of the lobsters landed being males. Dilrosun (2002) obtained similar results for the island of Saba, which does not have a closed season. Peacock (1974) obtained contrasting results with the sex ratio being equivalent based on research conducted in Antigua from 1972 to 1973. After the closed season was enacted along with new regulations to protect females bearing intact spermatophores (tar-spot), the sex ratio was further skewed, with 62.7% of the lobster landed in Antigua and Barbuda being males. This is in line with the findings for Jamaica which has a well-established closed season; Munro (1983) reported, 56.3% males and 59.2% males for samples from Port Royal Reefs and Pedro Bank respectively. More recently, Kimberlee Cooke-Panton (National

Fisheries Authority, Jamaica, personal communication) reported that males dominated their 2023 lobster survey. The extent to which the differential selection was due to sexual dimorphism and / or fishers' compliance with regulations geared towards protecting berried and spermatophore-bearing females remains to be determined for Antigua and Barbuda. MacDiarmid and Sainte-Marie (2006) suggested that many fisheries have the potential to alter population sex ratio, where one sex may be more vulnerable to capture due to its greater spatial and / or temporal exposure to fishing gear. Regardless of the origin of the skewed sex-ratio, an increase in male landed from 54.5% to 62.7% is cause for concern. Robertson and Butler (2013) observed that in 92% of laboratory trials, females *Panulirus guttatus* chose males larger than themselves, and if females mated with smaller males, then fertilization success was reduced. If this scenario holds true for *Panulirus argus* in the wild, then differential landings in favour of males may have a long-term impact on sperm availability, fertilization success, and ultimately recruitment.

The overall enhancement of the fishery in recent times was attributed to the general compliance with the closed season coupled with a catch certification programme that requires exporters to comply with the various management measures. These include minimum size, closed season, prohibition on moulting, spermatophore-bearing, and "berried" lobsters, as well as providing proof of purchase from authorised sources (i.e., fishers or traders possessing a valid fisher licence and from duly licensed vessels possessing a valid lobster permit). Receiving logs for exporters are subject to inspection and it is the responsibility of the exporter to ensure that their suppliers are authorised. Receiving logs should have the signature of the trader or fisher along with the requisite vessel licence number (including permits) and / or fisher licence number (see Annex). Failure to comply with the requirements can result in the cancellation of the shipment or the removal of the unauthorised portion of the shipment coupled with the relevant fines according to the violations. Note receiving logs are cross-checked with the registries of licensed fishers and vessels (including permits) as well as catch and effort records. In 2012, a third-party audit of the catch certificate scheme concluded that the monitoring, control, and surveillance system was as "good as it can be developed" for artisanal fisheries, and that the system offered safeguards to ensure that Antigua and Barbuda catches are IUU free (Guele 2012). Hence, the incentives for IUU fishing and the risk of IUU products entering the European Union was "low". Notwithstanding, Guele (2012) recommended that: 1) Fisheries Division should strengthen its cooperation with the French overseas department authorities and take the appropriate measures to tackle the incursion of foreign fishing vessels in its EEZ; and 2) Antigua and Barbuda should inform the European Commission on the IUU fishing practice of the fishermen from the French Overseas Departments and substantiate this with documentary proof. Accordingly, the Fisheries Division has used the Form for Submission of Information regarding Sighted Fishing Vessels in Annex XA of Regulation (EC) No 1010/2009 to submit evidence to the EU Directorate-General for Maritime Affairs and Fisheries (DG MARE).

Based on the fact that: 1) no negative trend was detected for the mean catch per unit effort; 2) the mean catch rate increased by at least three-fold; 3) the odds of catching a lobster was statistically greater (1.7 times more likely); and 4) the mean size of lobsters landed was significantly larger than the estimates of the size at 50% maturity, and has increased since the 1990s, one can only conclude that the closed season has enhanced the sustainability of the lobster fishery and improved its overall "health". Notwithstanding, additional research is required to ascertain the reason for the further skewing of the sex ratio to males and its long-term implications. As of 2023, a catch certificate is required for export of any fish (including lobster) or fishery product from Antigua and Barbuda regardless of the destination. Section 8 (2) of the Seafood Regulations 2022 states each shipment of fish and fishery products considered to be one batch shall be issued a health certificate and a catch certificate by the authorised officer which shall accompany the shipment. Based on the success of the European Union catch certificate programme, in addressing IUU regarding international trade and enhancing traceability in the local market, we felt it prudent to expand the programme to all

exports regardless of destination. This is in keeping with the "market-related measures" outlined in the *Antigua and Barbuda Plan of Action to prevent, deter & eliminate IUU Fishing* (Horsford 2010). The goal is to target all the key stakeholders in the value chain – fishers, processors, traders, exporters, retailers, and consumers. The next step in "closing the net" on IUU fishing in the lobster fishery is adapting the catch certification programme for the other major consumer group – local hotels and restaurants. This will involve convincing tourism stakeholders of the benefits of purchasing from approved suppliers (i.e., fishers or traders possessing a valid fisher licence and from duly licenced vessels possessing a valid lobster permit) as well as maintaining records on these suppliers. In the area of fisheries governance, further work is required in developing an adequate regional framework where "bottom-up" approaches to local and national governance can fit into a regional regime for management which is "top-down". To improve the functioning of multi-level governance through more effective and lateral linkages, Winterbottom et al. 2012 recommended that the policy-making process be more collaborative and participatory, by incorporating stakeholders' opinions into the establishment of management measures.

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Annex

LIVE LOBSTER RECEIVING LOG (SPECIMEN)

Name of Establishment: _____

Address of Establishment: _____

Inventory / Batch Code: _____

Date of Receiving (DD/MM/YYYY): _____

Species Identification: _____

Weight of Lobsters (lbs / kg): _____

Price Paid for Lobsters: _____

Name of Fisher / Supplier: _____

Fisher / Supplier Licence No.: _____

Fishing Vessel Name: _____

Fishing Vessel Registration No.: _____

Fishing Vessel Licence No.: _____

Date of Harvest (DD/MM/YYYY):
_____

Location of Fishing Area(s): _____

Storage Location (if stored prior to sale): _____

Condition of Lobsters Prior to Purchase (Organoleptic and Regulatory Compliance Checks, etc.):
_____

_____

Reason for Rejection of Lobsters after Purchase (If applicable, note the numbers of and weight of rejected lobsters):
_____

_____

This is to certify that the lobsters described herein are handled under hygienic conditions on the aforementioned vessel and / or applicable transport and in accordance with the fisheries laws of Antigua and Barbuda:
_____ (Supplier's / Fisher's Signature).

Receiver's Signature: _____

Signature of Reviewer / Manager: _____

Date of Review (DD/MM/YYYY):
_____

Prior to lobster purchase, confirm that the vessel is duly licensed and in possession of a valid lobster permit and fisher or trader possesses a valid fisher licence (i.e., request to see the fisher and vessel licences and check the conditions and validity of the licences).