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**PURSE SEINE FISHING ACTIVITY IN PNA WATERS**

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**WCPFC15 -2018-DP18<sup>1</sup>  
26 November 2018**

**Parties to the Nauru Agreement (PNA)**

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<sup>1</sup> A previous version of this paper was tabled at SC14 as ST-IP-07 and at TCC14 as WCPFC-TCC14-2018-DP01

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## PURSE SEINE FISHING ACTIVITY IN PNA<sup>2</sup> WATERS

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### Introduction

This paper provides information on purse seine activity in the waters of the Parties to the Nauru Agreement (PNA), and in the Western and Central Pacific Ocean (WCPO) outside PNA waters, for the period 2010 to 2017, including 2018 for vessel numbers.

The purposes of the information are:

- a) to improve understanding of the purse seine fishery in PNA waters, and the tropical WCPO more generally; and
- b) to provide indicators of the performance of the PNA purse seine Vessel Day Scheme (VDS) and other purse seine management processes in the WCPO.

The period for the analysis is from 2010. An overall hard limit on fishing effort under the VDS was applied from 2012 in accordance with CMM 2011-01, limiting effort in PNA EEZs to the 2010 level.

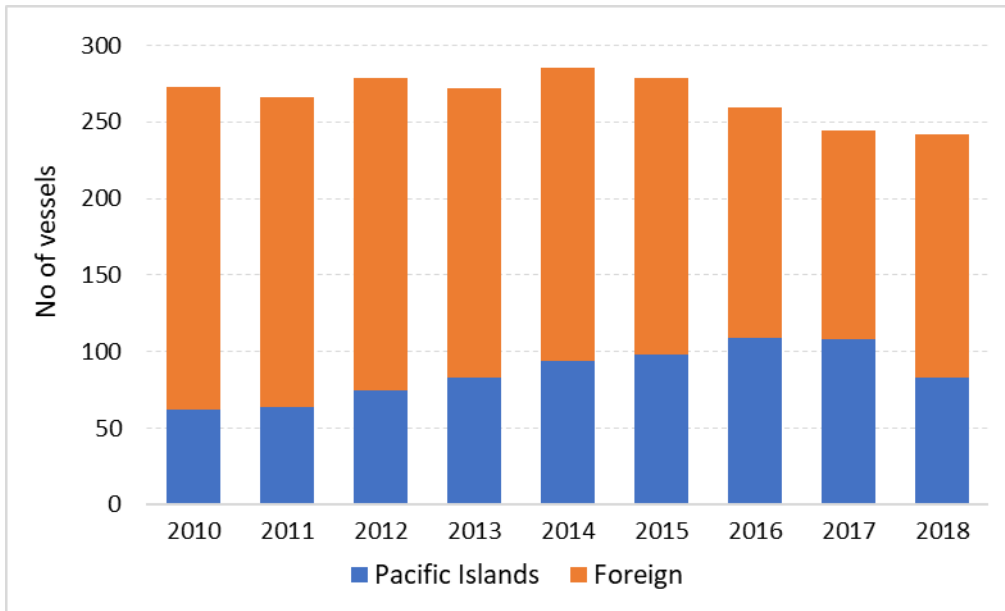
The purse seine fishery in PNA waters has accounted for around 80% of the WCPO purse seine catch from 2010-2017, the balance being taken in the waters of other Commission Members, especially Indonesia and the Philippines, and the high seas.

### Vessel Numbers in PNA Waters

Figure 1 and Table 1 show the number of vessels on the PNA purse seine VDS register since 2010. The fleet, which was quite stable at around 275 vessels from 2010 to 2015, dropped to around 240 vessels in 2017 and 2018. The domestic fleets, including foreign flagged vessels operating under the FSM Arrangement, grew until 2017, when they made up more than 40% of the fleet. However, the number of vessels as at November this year, 2018, show a decrease of 25% in domestic vessels following the tightening of requirements for participation in the FSM Arrangement by some Parties, with a corresponding increase in foreign vessels.

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<sup>2</sup> Parties to the Nauru Agreement plus Tokelau



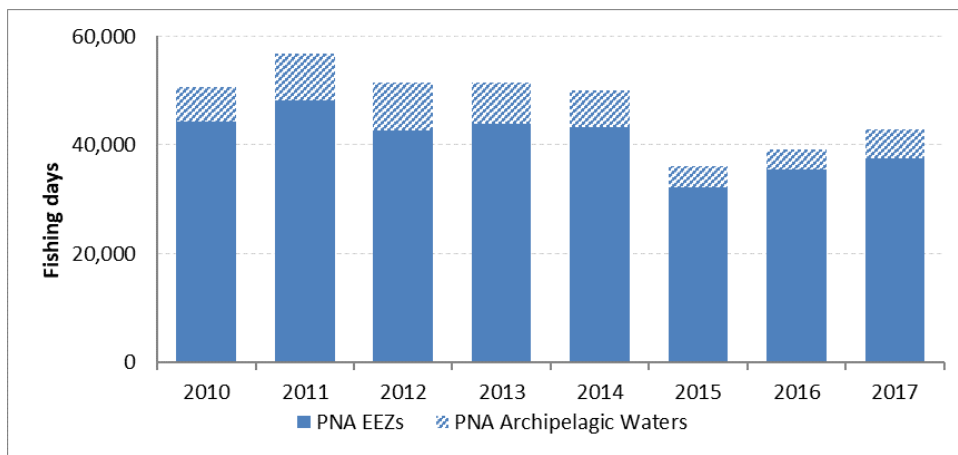
**Figure 1: Annual number of vessels operating in PNA waters.**

(Pacific Islands include foreign flag vessels operating under the FSM Arrangement; the 2018 figure represent the number of vessels operating as at November 2018. Source: PNA VDS Register)

### Purse Seine Fishing Effort in PNA Waters

Figure 2 below and Table 2 show the estimated purse seine fishing effort in PNA waters since 2010, based on logsheets. This data indicates the effectiveness of the VDS in controlling effort since hard limits at the 2010 effort level were applied in 2012. As illustrated by the graph, the logsheet data indicates that effort continued to increase in 2017 after the substantial decline in 2015, which reflects tuna market conditions and increasing vessel day prices.

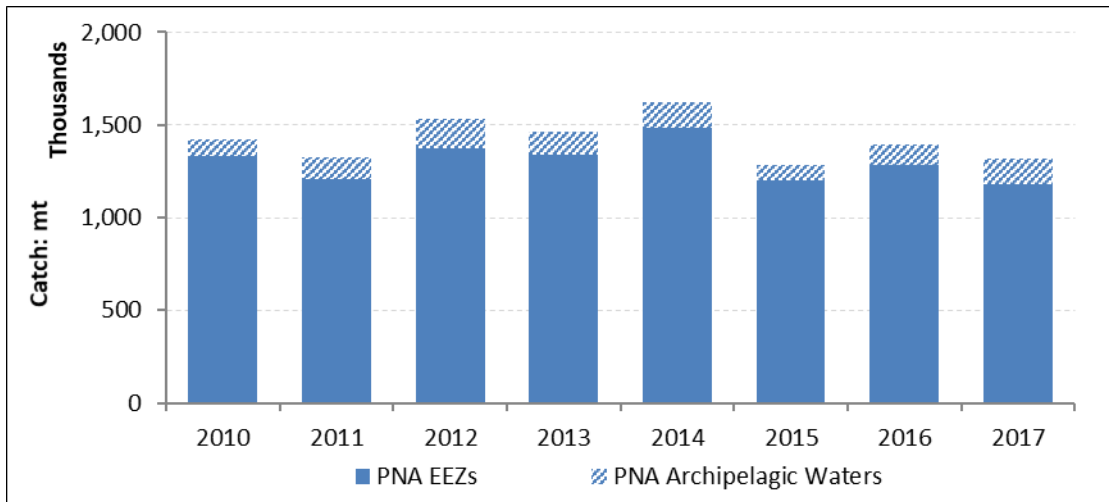
PNA Members are working on improved implementation of electronic catch and effort reporting to improve the timeliness and accuracy of logsheet data.



**Figure 2: Purse seine effort (fishing days) in PNA waters.** (Source: SPC data as at 23 October 2018)

### Purse Seine Catch in PNA Waters

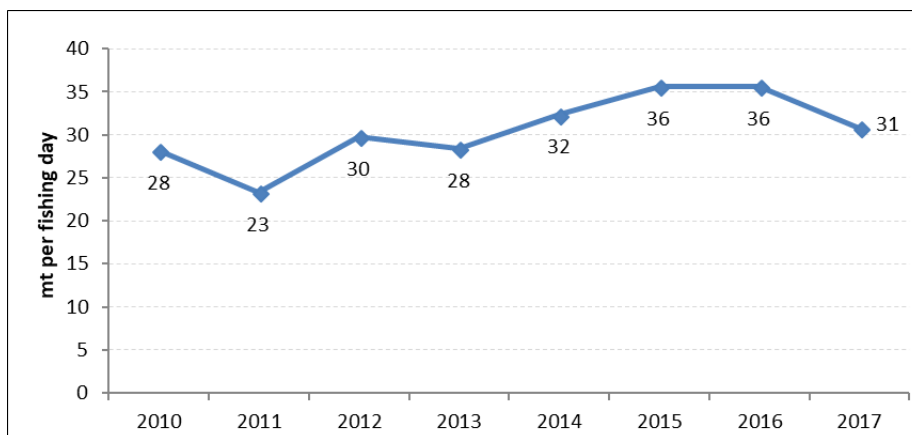
Figure 3 below and Table 3 show the estimated purse seine fishing catch in PNA waters since 2010, based on logsheets. The catch has been relatively stable since 2010. The previous year’s data is usually provisional but implementation of electronic catch and effort reporting by PNA Members has improved the timeliness of catch data such that the 2017 catch data is complete. Although the 2017 effort in Figure 2 continued to increase, there was a slight decrease in the 2017 catch from that in 2016.



**Figure 3: Purse seine catch (mt) in PNA waters.** (Source: SPC data as at 23 October 2018)

### Purse Seine Catch Rate in PNA Waters

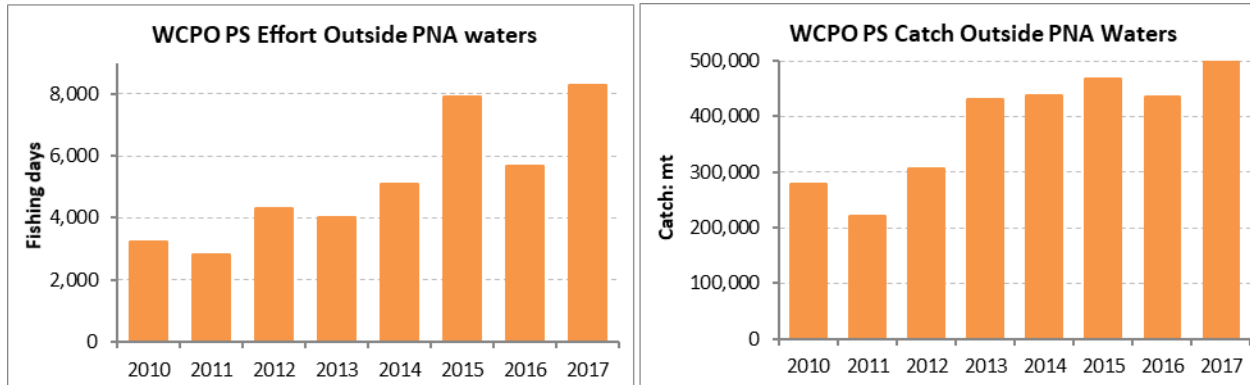
Figure 4 shows the nominal purse seine catch rate per fishing day in PNA waters from the previous effort and catch data. In general, the average catch rate has been around 30 tonnes per day over this period with a dip in 2011 and increases in subsequent years, 2014-16. These could be due to various reasons such as favourable oceanographic conditions, improved stock and vessel efficiency. The 2017 CPUE is back down to 31 tonnes per day. The catch rates in archipelagic waters (AWs) have generally been lower than catch rates in PNA EEZs but steadily increasing over the years.



**Figure 4: Catch rate (mt per fishing day) in PNA waters (EEZ + AW).** (Source: SPC data as at 23 Oct 2018)

### WCPO Purse Seine Effort<sup>3</sup> and Catch, Outside PNA Waters

Figure 5 below and Table 4 show the estimated purse seine fishing effort and catch in the WCPO outside PNA waters since 2010, although the effort data does not include effort in Indonesia and Philippines and Philippine vessels in HSP-1 while the catch data does.

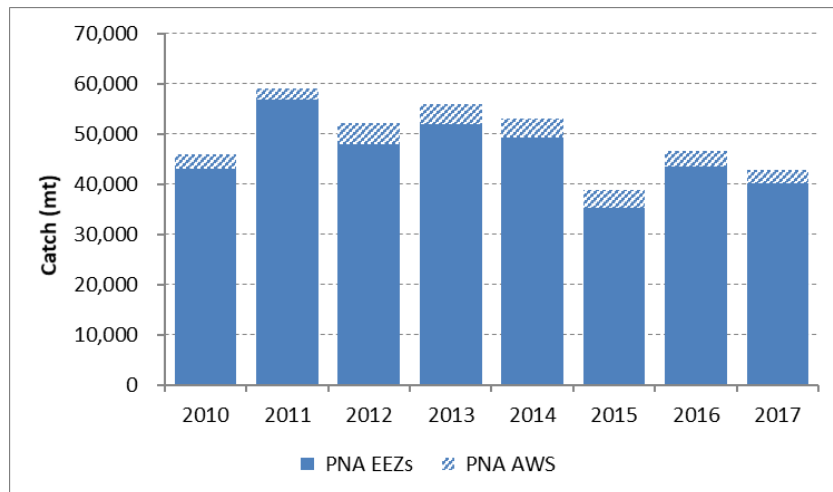


**Figure 5: WCPO purse seine effort and catch, outside PNA waters.**

(Effort excludes fishing in waters of Indonesia and Philippines, and by Philippine vessels under the Special Arrangement in HSP-1. Source: SPC data as at 23 October 2018)

### Purse Seine Bigeye Catch in PNA Waters

The purse seine bigeye catches shown in Figure 6 below and in Table 5, constitute, on average, 3% of the total purse seine catches in PNA waters. It declined from 2011, largely due to the FAD closure, the effect of the VDS in displacing fleets with a high dependence on FADs and its tightening control over PS effort, and has partially bounced back from 2015 with the overall effort increase since then, and probably also reflecting recent favourable conditions for recruitment.

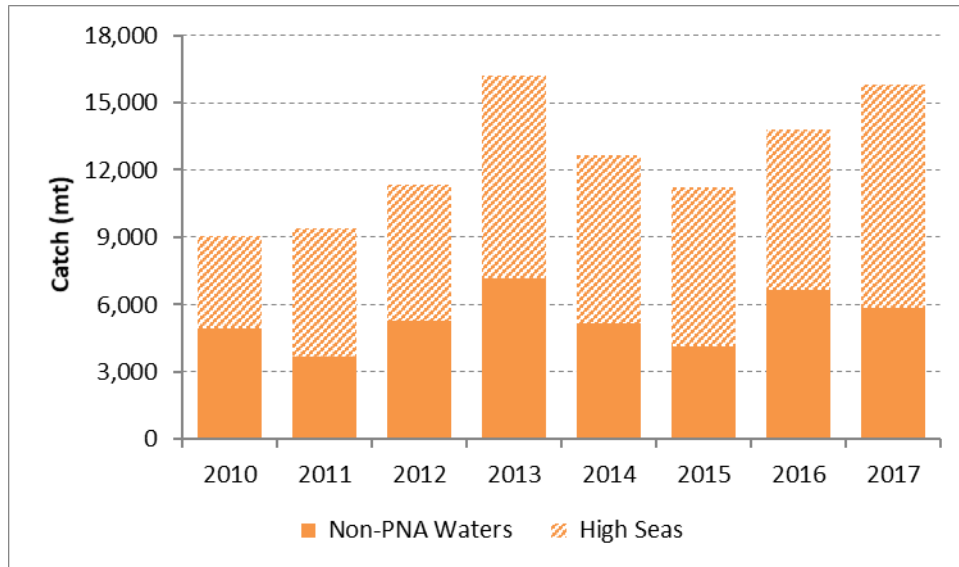


**Figure 6: Purse seine bigeye catch (mt) in PNA waters** (Source: SPC data as at 23 October 2018)

<sup>3</sup>Excludes fishing in Indonesia and Philippines

### Purse Seine Bigeye Catch outside PNA waters

As shown in Figure 7 below and in Table 5, purse seine bigeye catches in the high seas and in other national waters outside PNA waters have increased by over 40% in two years since 2015.



**Figure 7: Purse seine bigeye catch (mt) outside PNA waters** (Source: SPC data as at 23 October 2018)

**Table 1: No of vessels operating in PNA EEZs for the period 2010 to 2017**

The Pacific Islands fleet includes foreign flag vessels operating under the FSM Arrangement. The 2018 figures are for vessels operating in PNA EEZs as at November 2018. (Source: PNA VDS Register).

Fleet	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pacific Islands	62	64	75	83	94	98	109	108	83
Foreign	211	202	204	189	191	181	150	136	159
<b>Total</b>	<b>273</b>	<b>266</b>	<b>279</b>	<b>272</b>	<b>285</b>	<b>279</b>	<b>259</b>	<b>244</b>	<b>242</b>

**Table 2: Purse seine effort (logsheet days) in PNA waters.** (Source: SPC data as at 23 October 2018)

Effort (days)	2010	2011	2012	2013	2014	2015	2016	2017
PNA EEZs	44,343	48,233	42,716	43,948	43,279	32,271	35,486	37,595
PNA AWs	6,266	8,671	8,822	7,632	6,783	3,828	3,677	5,358
<b>Total</b>	<b>50,610</b>	<b>56,904</b>	<b>51,538</b>	<b>51,579</b>	<b>50,062</b>	<b>36,099</b>	<b>39,164</b>	<b>42,953</b>

**Table 3: Purse seine catch (mt) in PNA waters.** (Source: SPC data as at 23 October 2018)

Catch in	2010	2011	2012	2013	2014	2015	2016	2017
PNA EEZs	1,334,080	1,210,024	1,373,044	1,337,204	1,485,592	1,201,254	1,286,221	1,180,315
PNA AWs	88,865	117,409	158,504	127,885	134,029	81,794	106,385	138,259
<b>Total</b>	<b>1,422,946</b>	<b>1,327,433</b>	<b>1,531,548</b>	<b>1,465,089</b>	<b>1,619,621</b>	<b>1,283,049</b>	<b>1,392,605</b>	<b>1,318,574</b>

**Table 4: WCPO purse seine effort (logsheet days) and catch (mt), outside PNA waters**

**Note:** Effort excludes fishing in waters of Indonesia and Philippines, and by Philippine vessels under the Special Arrangement in HSP-1. (Source: Same as Tables 2 & 3)

	2010	2011	2012	2013	2014	2015	2016	2017
PS Effort (fishing days)	3,245	2,809	4,312	4,012	5,082	7,893	5,688	8,268
PS Catch (mt)	279,826	221,795	306,879	430,184	437,326	468,589	436,618	504,846

**Table 5: Purse seine bigeye catch (mt) in, and outside, PNA waters** (Source: Same as Tables 2 - 4)

	2010	2011	2012	2013	2014	2015	2016	2017
PNA EEZs	43,077	56,782	47,936	51,883	49,259	35,350	43,601	40,077
PNA AWS	2,880	2,240	4,316	4,134	3,754	3,404	3,118	2,715
<b>Total PNA</b>	<b>45,957</b>	<b>59,022</b>	<b>52,252</b>	<b>56,017</b>	<b>53,013</b>	<b>38,754</b>	<b>46,719</b>	<b>42,792</b>
Outside PNA	9,037	9,388	11,352	16,191	12,680	11,219	13,817	15,778
High Seas	4,076	5,737	6,078	9,029	7,513	7,092	7,174	9,934
Non-PNA Waters	4,961	3,650	5,274	7,162	5,167	4,127	6,643	5,844