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**Purse seine fishing activity in PNA waters**

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**Paper by the Parties to the Nauru Agreement (PNA) CCMs**

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<sup>1</sup> The same version of this paper was tabled at SC14 as ST-IP-04

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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 2018, including 2019 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.

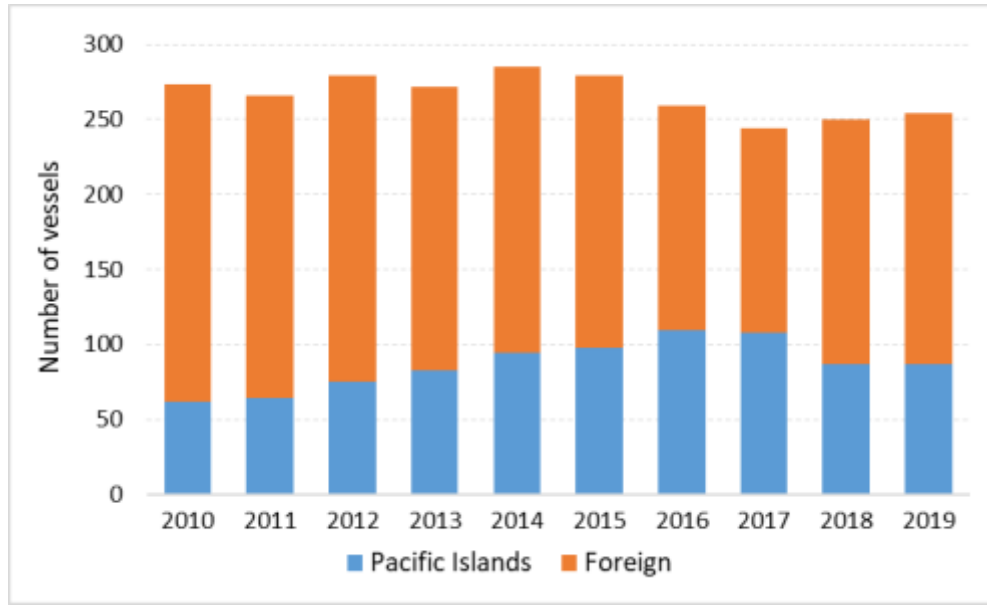
The purse seine fishery in PNA waters has accounted for around 80% of the WCPO purse seine catch from 2010-2018, the balance being taken in the waters of other Commission Members, especially Indonesia and the Philippines, and the high seas.

### 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

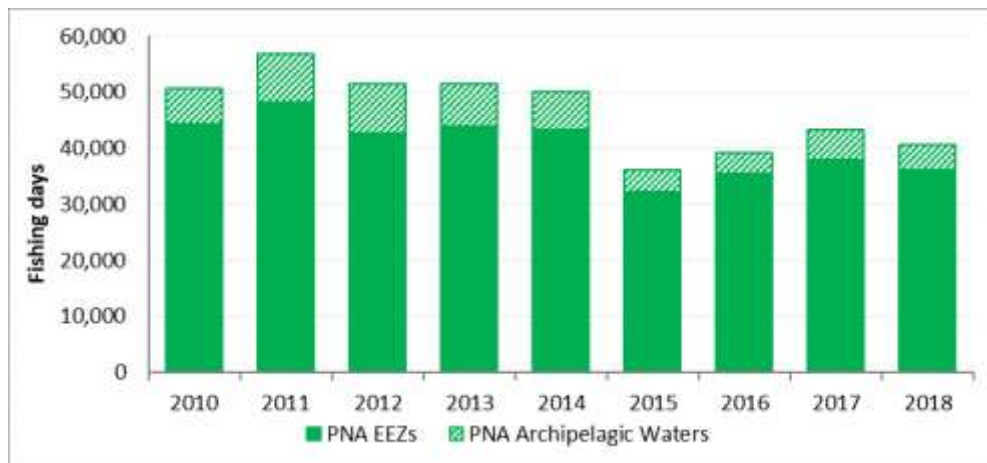


**Figure 1: Annual number of vessels operating in PNA waters.**

(Pacific Islands include foreign flag vessels operating under the FSM Arrangement; the 2019 figure represent the number of vessels operating as at 1July 2019. 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, bringing effort down from the peak in 2011. Effort fell again from 2015 as global prices fell for tuna for canning and vessel day prices increased, and has been relatively stable since 2015.



**Figure 2: Purse seine effort (fishing days) in PNA waters.** (Source: SPC data as at 9 May 2019)

### 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 2018 catch data is complete. In contrast to 2017, Figure 2 and 3 respectively show a decrease of effort in 2018 but a corresponding increase in the catch.

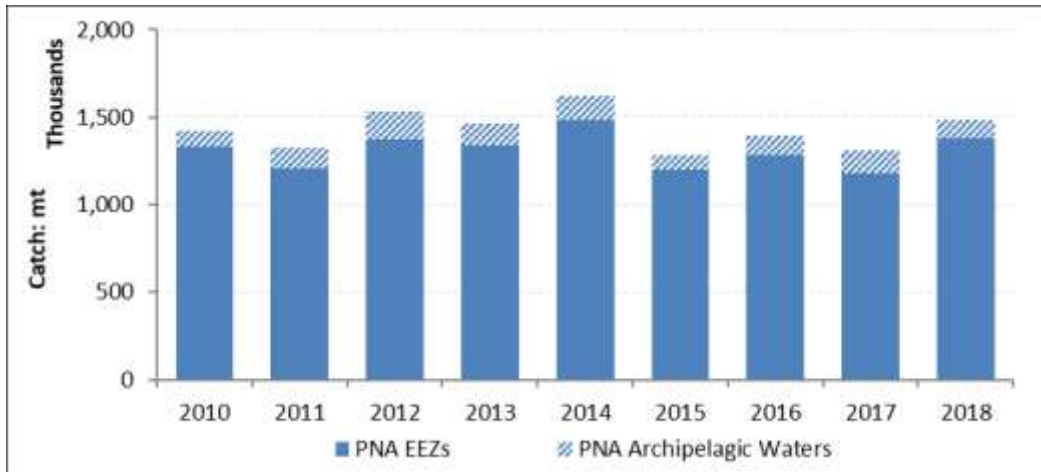


Figure 3: Purse seine catch (mt) in PNA waters. (Source: SPC data as at 9 May 2019)

### Purse Seine Catch Rate in PNA Waters

Figure 4 shows the nominal purse seine catch rate per fishing day in PNA waters from the effort and catch data in the previous figures. 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 2018 CPUE increased to 37 tonnes per day. The catch rates in archipelagic waters (AWs) have generally been lower than catch rates in PNA EEZs but generally steadily increasing over the years.

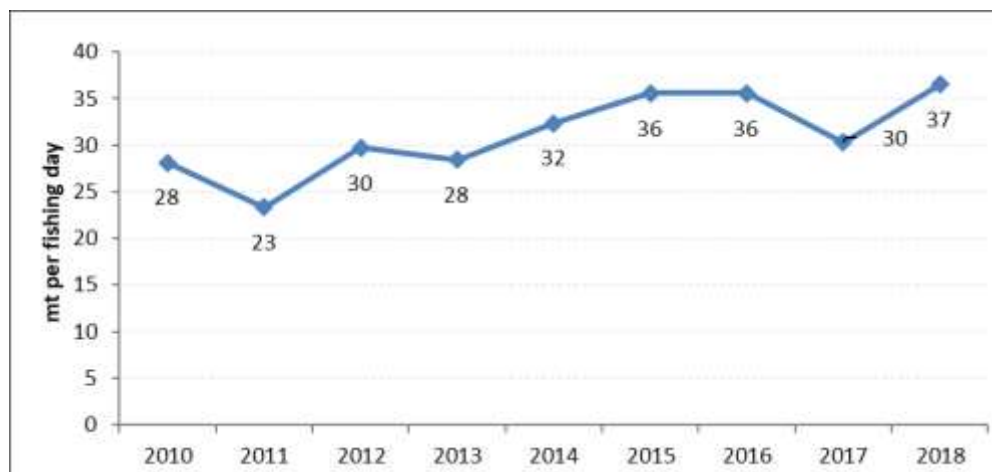
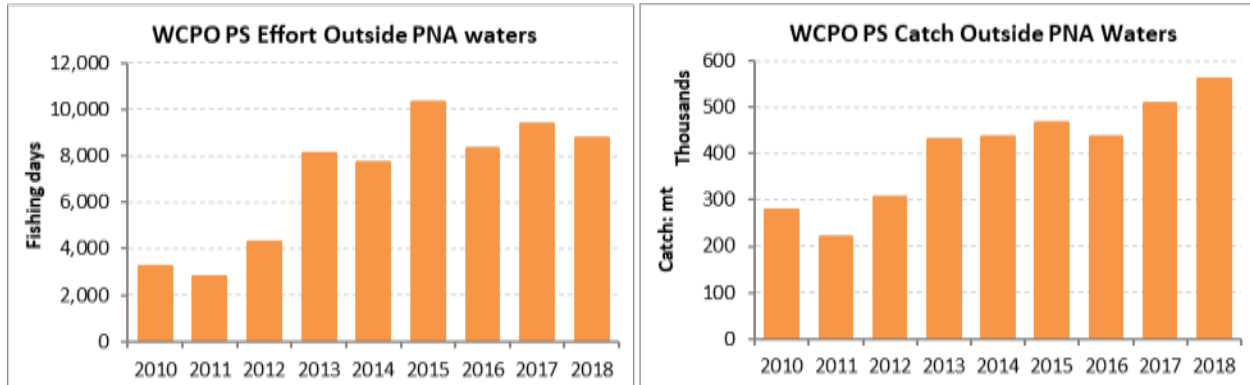


Figure 4: Catch rate (mt per fishing day) in PNA waters (EEZ + AW). (Source: SPC data as at 9 May 2019)

## WCPO Purse Seine Effort 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.

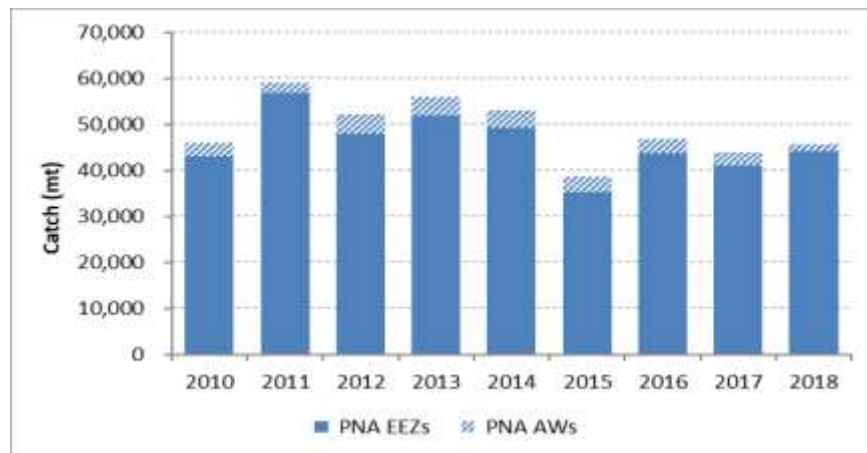


**Figure 5: WCPO purse seine effort and catch, outside PNA waters.**

(Source: SPC data as at 9 May 2019)

## 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.

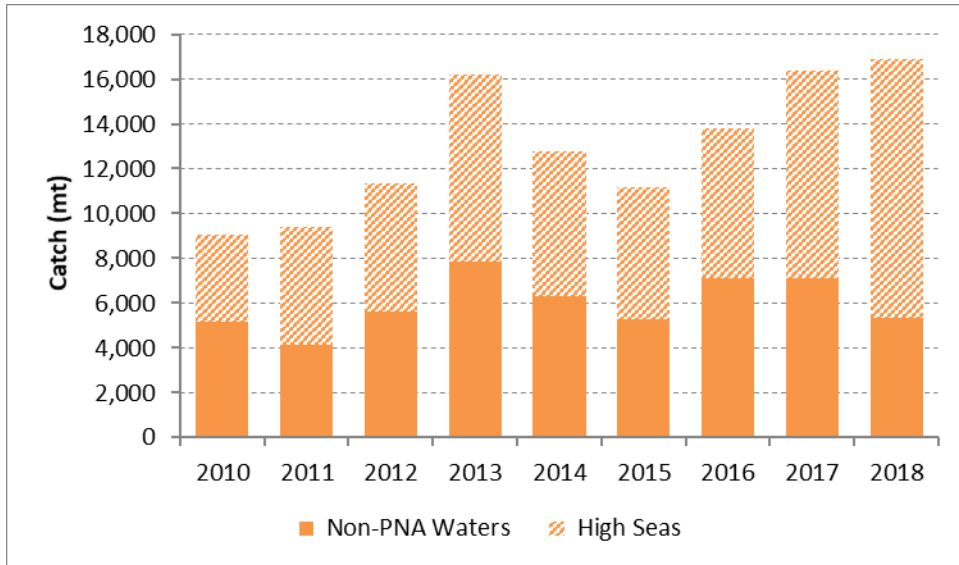


**Figure 6: Purse seine bigeye catch (mt) in PNA waters** (Source: SPC data as at 9 May 2019)

## 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 continue to increase in 2018- an increase of over 50%

since 2015. The high seas bigeye catch increase of 25% in 2018 from that in 2017, is likely to be related to the reduction in the high seas FAD closure to 5 months.



**Figure 7: Purse seine bigeye catch (mt) outside PNA waters**  
(Source: SPC data as at 9 May 2019)

**Table 1: No of vessels operating in PNA EEZs for the period 2010 to 2019**

The Pacific Islands fleet includes foreign flag vessels operating under the FSM Arrangement. The 2019 figures are for vessels operating in PNA EEZs as at July 2019. (Source: PNA VDS Register).

Fleet	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Pacific Islands	62	64	75	83	94	98	109	108	87	87
Foreign	211	202	204	189	191	181	150	136	163	167
<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>250</b>	<b>254</b>

**Table 2: Purse seine effort (logsheet days) in PNA waters.** (Source: SPC data as at 9 May 2019)

Effort (days)	2010	2011	2012	2013	2014	2015	2016	2017	2018
PNA EEZs	44,343	48,193	42,716	43,948	43,279	32,259	35,479	37,896	36,142
PNA AWs	6,266	8,671	8,822	7,632	6,783	3,828	3,688	5,453	4,423
<b>Total</b>	<b>50,610</b>	<b>56,864</b>	<b>51,538</b>	<b>51,579</b>	<b>50,062</b>	<b>36,087</b>	<b>39,167</b>	<b>43,349</b>	<b>40,565</b>

**Table 3: Purse seine catch (mt) in PNA waters.** (Source: SPC data as at 9 May 2019)

Catch (mt)	2010	2011	2012	2013	2014	2015	2016	2017	2018
PNA EEZs	1,334,080	1,210,031	1,373,044	1,337,204	1,485,592	1,201,254	1,285,983	1,179,020	1,377,446
PNA AWs	88,865	117,407	158,504	127,885	134,029	81,794	106,544	135,274	104,738
<b>Total</b>	<b>1,422,946</b>	<b>1,327,438</b>	<b>1,531,548</b>	<b>1,465,089</b>	<b>1,619,621</b>	<b>1,283,049</b>	<b>1,392,527</b>	<b>1,314,294</b>	<b>1,482,184</b>

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

(Source: Same as Tables 2 & 3)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
PS Effort (fishing days)	3,245	2,808	4,312	8,108	7,747	10,331	8,355	9,406	8,751
PS Catch (mt)	279,826	221,790	306,879	430,184	437,326	468,589	436,696	509,054	562,583

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

PS Bigeye Catch	2010	2011	2012	2013	2014	2015	2016	2017	2018
PNA EEZs	43,093	56,794	47,951	51,897	49,310	35,288	43,658	41,059	44,070
PNA AWs	2,905	2,257	4,316	4,132	3,773	3,399	3,121	2,845	1,656
<b>Total PNA</b>	<b>45,998</b>	<b>59,051</b>	<b>52,267</b>	<b>56,029</b>	<b>53,083</b>	<b>38,687</b>	<b>46,779</b>	<b>43,904</b>	<b>45,726</b>

**Table 6: Purse seine bigeye catch (mt) outside PNA waters** (Source: Same as Tables 2 - 5)

PS Bigeye Catch	2010	2011	2012	2013	2014	2015	2016	2017	2018
High Seas	3,875	5,244	5,723	8,334	6,416	5,914	6,734	9,266	11,575
Non-PNA Waters	5,172	4,149	5,638	7,869	6,331	5,284	7,089	7,122	5,337
<b>Tot Outside PNA</b>	<b>9,047</b>	<b>9,393</b>	<b>11,361</b>	<b>16,203</b>	<b>12,746</b>	<b>11,198</b>	<b>13,823</b>	<b>16,388</b>	<b>16,913</b>