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Summary of status and trends of main SIOFA fish stocks fisheries

The SIOFA Secretariat

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Abstract	
<p>This paper aims to provide SC8 key information on the status and trends of main SIOFA fisheries, as reported in the Overview of SIOFA Fisheries 2023. This information could be also considered in the Workshop on harvest strategy pre-assessment (WSHSPA-2023).</p>	

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Background

The SIOFA SC Chair asked the Secretariat to compile an information paper extracting the catch trends from the main fisheries of SIOFA, as listed in the Overview of SIOFA Fisheries 2023 ([SC-08-14](#)).

Aims

This paper aims to provide SC8 key information on the status and trends of main SIOFA fisheries, as reported in the Overview of SIOFA Fisheries 2023. This information could be also considered in the Workshop on harvest strategy pre-assessment (WSHSPA-2023).

Summary of status and trends of main SIOFA fish stocks

Alfonsinos (ALF, *Beryx* spp.)

The most common species of alfonsinos caught in the SIOFA area is splendid alfonsino (BYS, *Beryx splendens*), but sometimes catch of another species (alfonsino, BXD, *Beryx decadactylus*) or not identified to the species level (ALF, *Beryx* spp.) are also reported. The data on all alfonsinos has been aggregated, and is presented here, at the highest taxonomical resolution.

Alfonsinos are long-lived, late-maturing, benthopelagic fishes found at a depth range of 25–1300 m, but more commonly at 400–600 m. Alfonsinos have a global distribution, excluding the north-eastern Pacific and the Mediterranean, and are often aggregating around underwater topographic features (particularly during spawning). Further information on alfonsinos and their fishery in the SIOFA area are provided in a relative Fisheries Summary.

Catches of alfonsino have been increasing over the last years but are overall within the historical average (Figure 16a). Effort has decreased in recent years, from higher values in 2013–2017 (Figure 16a). Alfonsinos are mostly caught in the western SIOFA area, mainly subareas 2, 3a, 3b and 4 (Figure 16b).

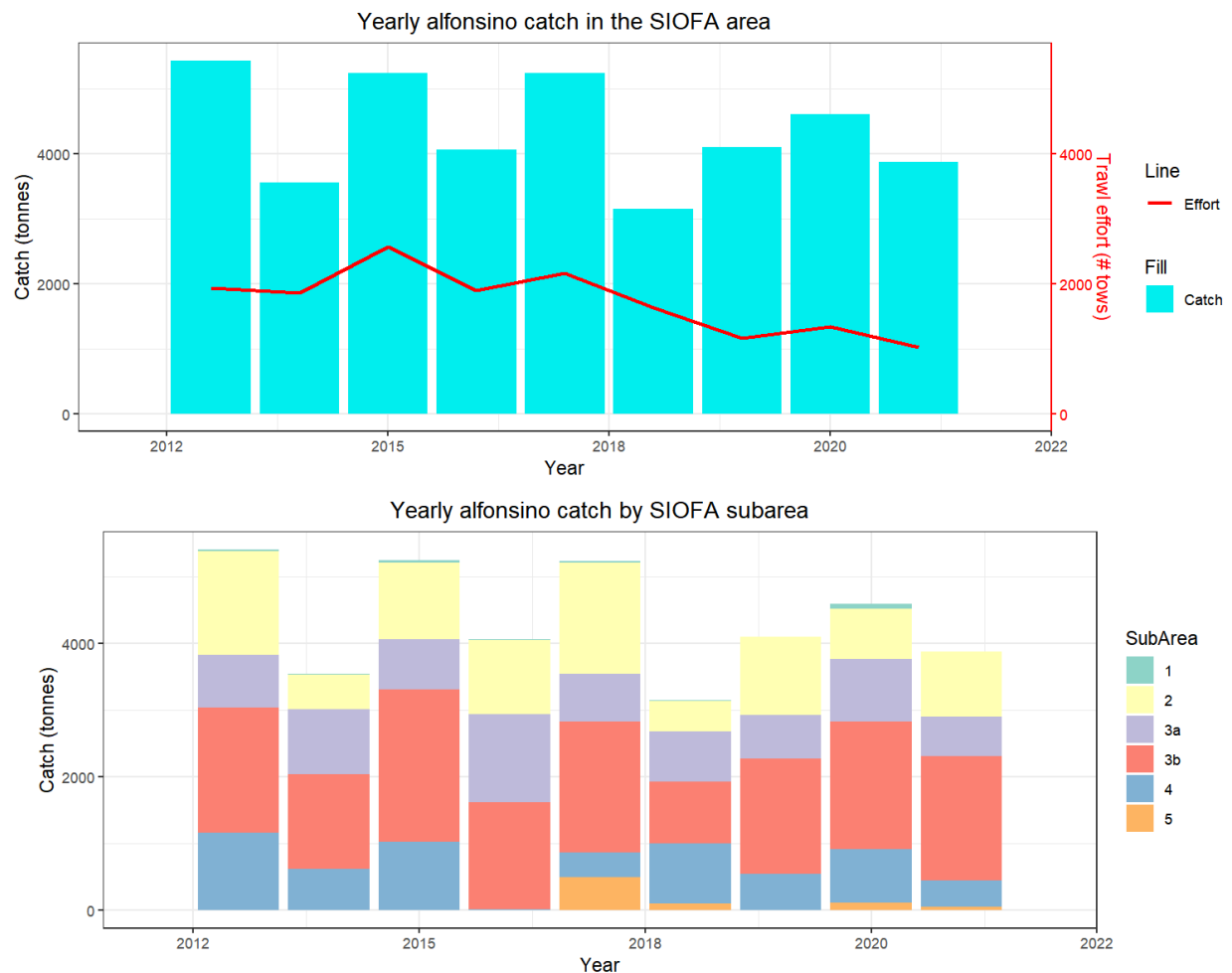


Figure 16a and b – Yearly alfonsino catch (tonnes) and effort (number of trawls) in the SIOFA area (upper panel, a) and in different SIOFA subareas (lower panel, b) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Recent years have seen lower levels of effort with higher catches (Figure 16a), so unstandardised catches per units of effort (CPUEs) have been rising correspondingly (Figure 17).

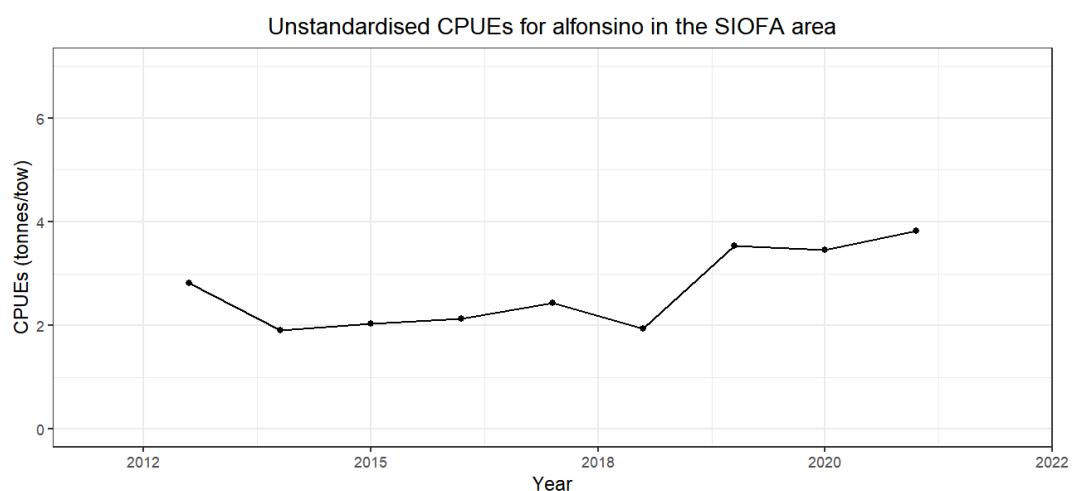


Figure 17 – Unstandardised catches per unit of effort (CPUEs) of alfonsino in the SIOFA area (tonnes/tow) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Orange roughy (*ORY, Hoplostethus atlanticus*)

The only species of slimehead caught in the SIOFA area is orange roughy (*ORY, Hoplostethus atlanticus*).

Orange roughy is a long-lived, late-maturing, bathypelagic species found at a depth range of 180–1809 m, but more commonly at 400–900 m. Orange roughy is present in all oceans, and is often found both around underwater topographic features and plateaus. Spawning and non-spawning aggregations are known. Further information on orange roughy and its fishery in the SIOFA area are provided in a relative Fisheries Summary.

Catches of orange roughy have been increasing over the last years, but are overall within the historical average (Figure 18a). Effort has decreased in recent years, from higher values in 2015–2018 (Figure 18a). Orange roughy is mostly caught in the western SIOFA area, mainly subareas 2 and 3a (Figure 18b).

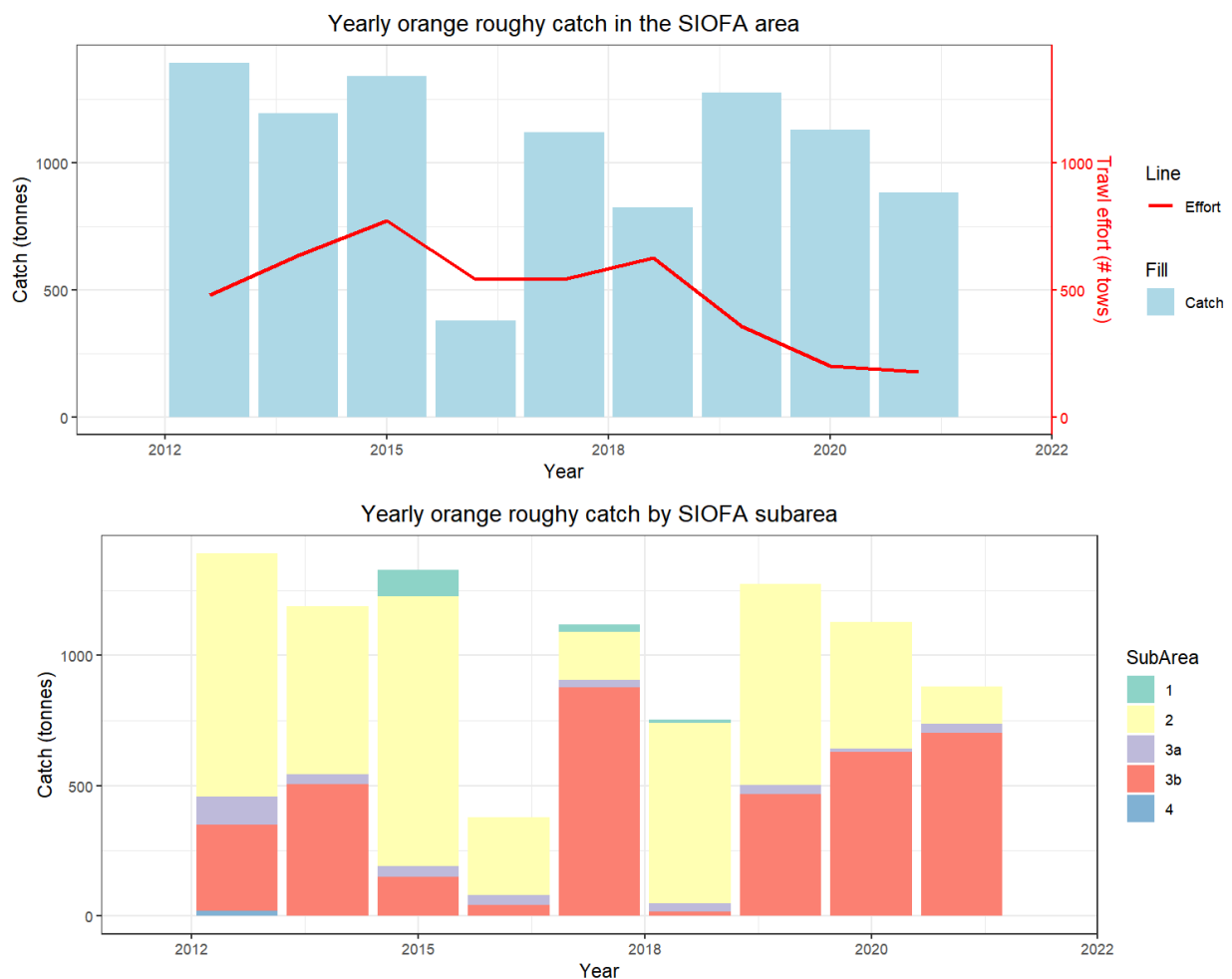


Figure 18a and b – Yearly orange roughy catch (tonnes) and effort (number of trawls) in the SIOFA area (upper panel, a) and in different SIOFA subareas (lower panel, b) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021). Values of the figure in panel a are provided in Table A.1 and values of the figure in panel b are provided in Table A.2 (both in Appendix A).

Recent years have seen lower levels of effort with higher catches (Figure 18a), so unstandardised catches per units of effort (CPUEs) have been rising correspondingly (Figure 19).

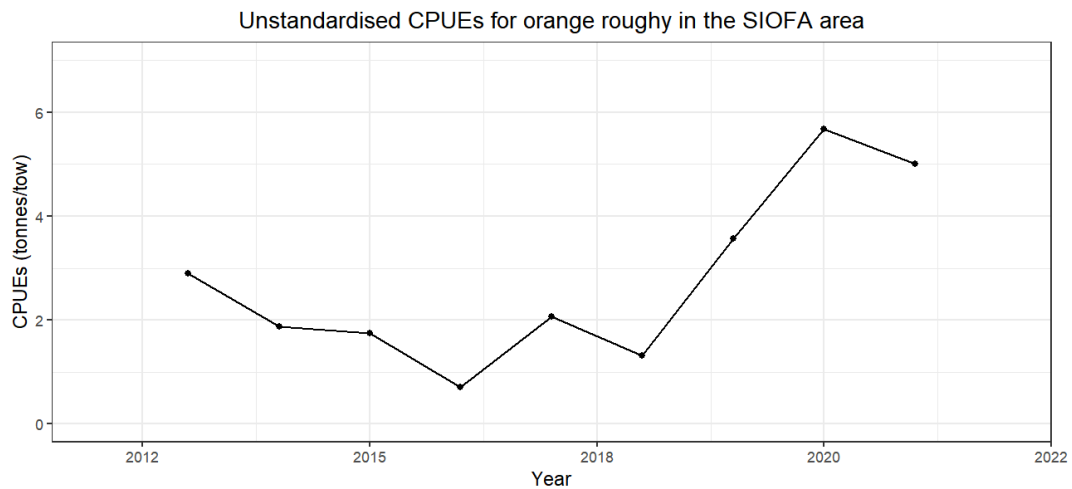


Figure 19 – Unstandardised catches per unit of effort (CPUEs) of orange roughy in the SIOFA area (tonnes/tow) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Toothfish (TOT, *Dissostichus eleginoides* and *Dissostichus mawsoni*)

Patagonian toothfish (TOP, *Dissostichus eleginoides*) is the main species of toothfish caught in the SIOFA area. However, few Antarctic toothfish (TOA, *Dissostichus mawsoni*) have been captured in 2021.

Toothfish are long-lived, late-maturing, large demersal fishes often found at depths greater than 1000 m. Patagonian toothfish is present in waters near the Antarctic, approximately east of southern America to New Zealand. Antarctic toothfish is present in waters near the Antarctic, approximately east of New Zealand to southern America. Further information on toothfish and its fishery in the SIOFA area are provided in a relative Fisheries Summary.

Catches of toothfish have been decreasing over the last years, and effort has also decreased in recent years, from higher values in 2018 (Figure 20a). Catches of Antarctic toothfish come from the southern SIOFA area, mainly subareas 7 and 3b (Figure 20b).

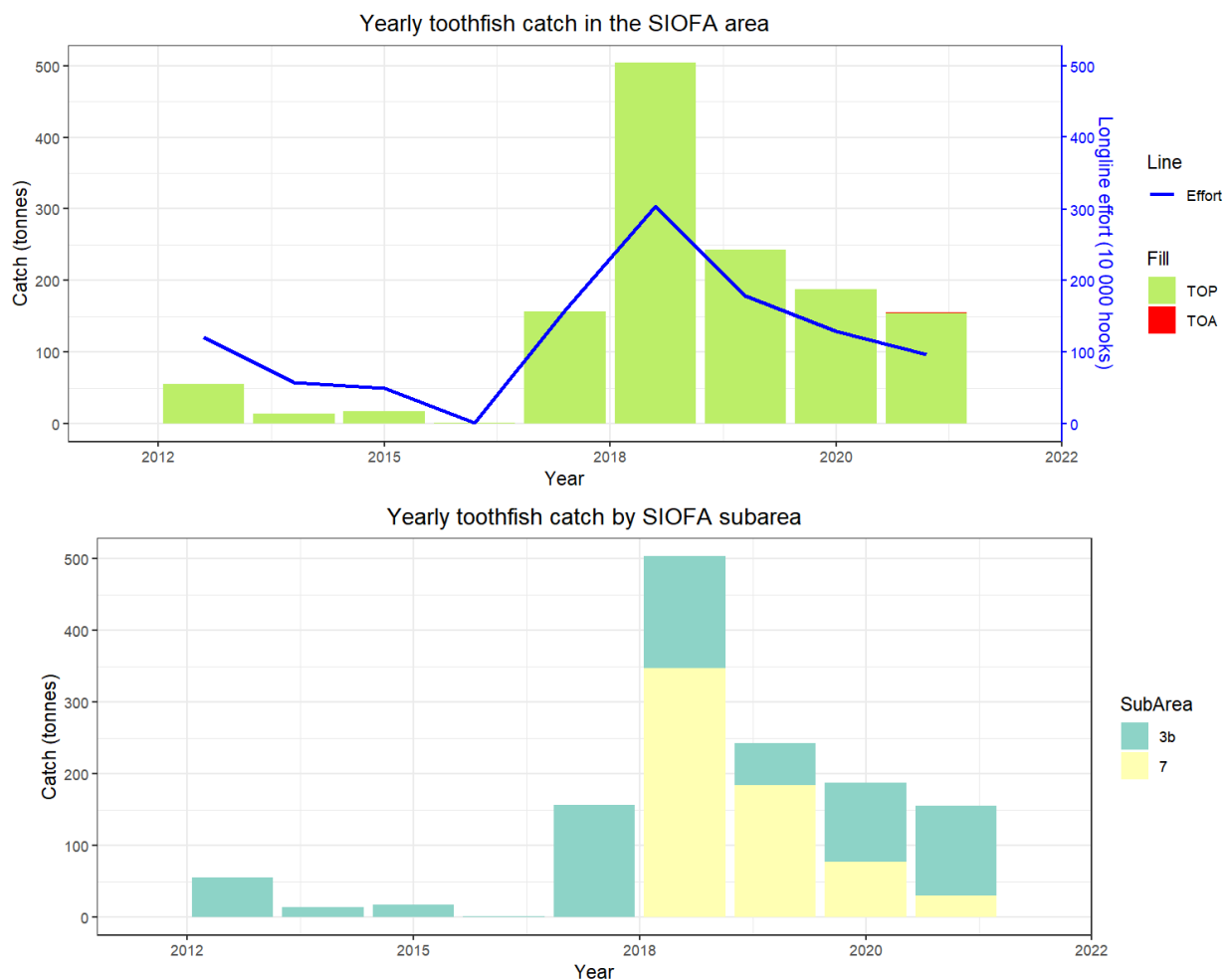


Figure 20a and b – Yearly toothfish catch (tonnes) and effort (10 thousand hooks) in the SIOFA area (upper panel, a) and in different SIOFA subareas (lower panel, b) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021). Note that the subareas are larger than the toothfish assessment areas.

Unstandardised catches per units of effort (CPUEs) have been slightly rising in recent years (Figure 21).

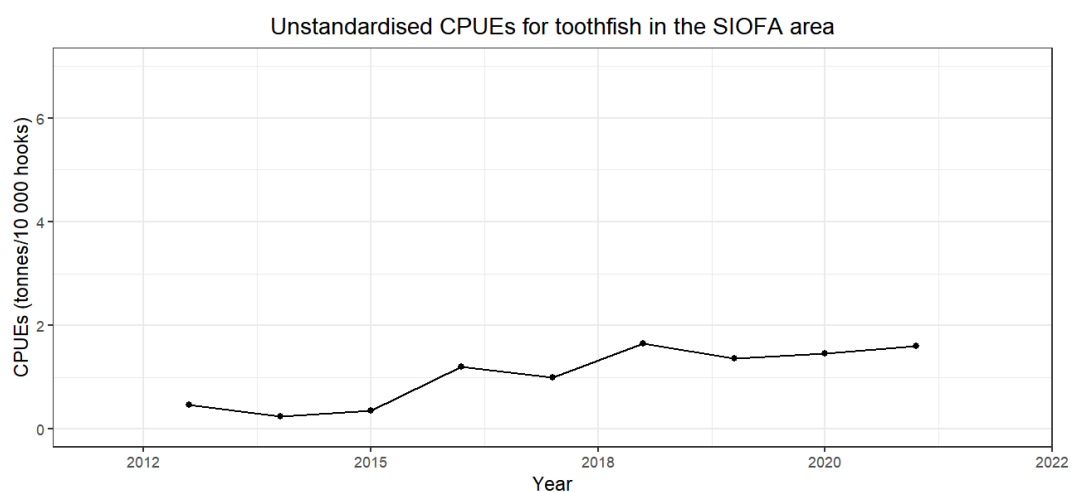


Figure 21 – Unstandardised catches per unit of effort (CPUEs) of toothfish in the SIOFA area (tonnes/10 thousand hooks) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Hapuka (HAU, *Polyprion* spp.)

Hapuka is a taxa of groupers that includes both the hapuku wreckfish (WHA, *Polyprion oxygeneios*) and wreckfish (WRF, *Polyprion americanus*) species, as well as catch not identified to the species level (HAU, *Polyprion* spp.). All three taxa have been recorded in catches from the SIOFA area.

Hapuka are large, long-lived, late-maturing, demersal groupers often found at depths of 50–854 m. Hapuka are found on rough grounds and seamounts off the shelf, with a circumglobal distribution in southern oceans. Further information on hapuka and their fishery in the SIOFA area are provided in a relative Fisheries Summary.

Catches of hapuka have significantly increased in 2019 and especially 2020, and effort has also correspondingly increased (Figure 19a). The yearly catch composition was relatively variable, but hapuku wreckfish was the most commonly caught species in the last years (Figure 22a). Hapuka are caught in the western SIOFA area, mainly subareas 2, 3a and 3b (Figure 22b).

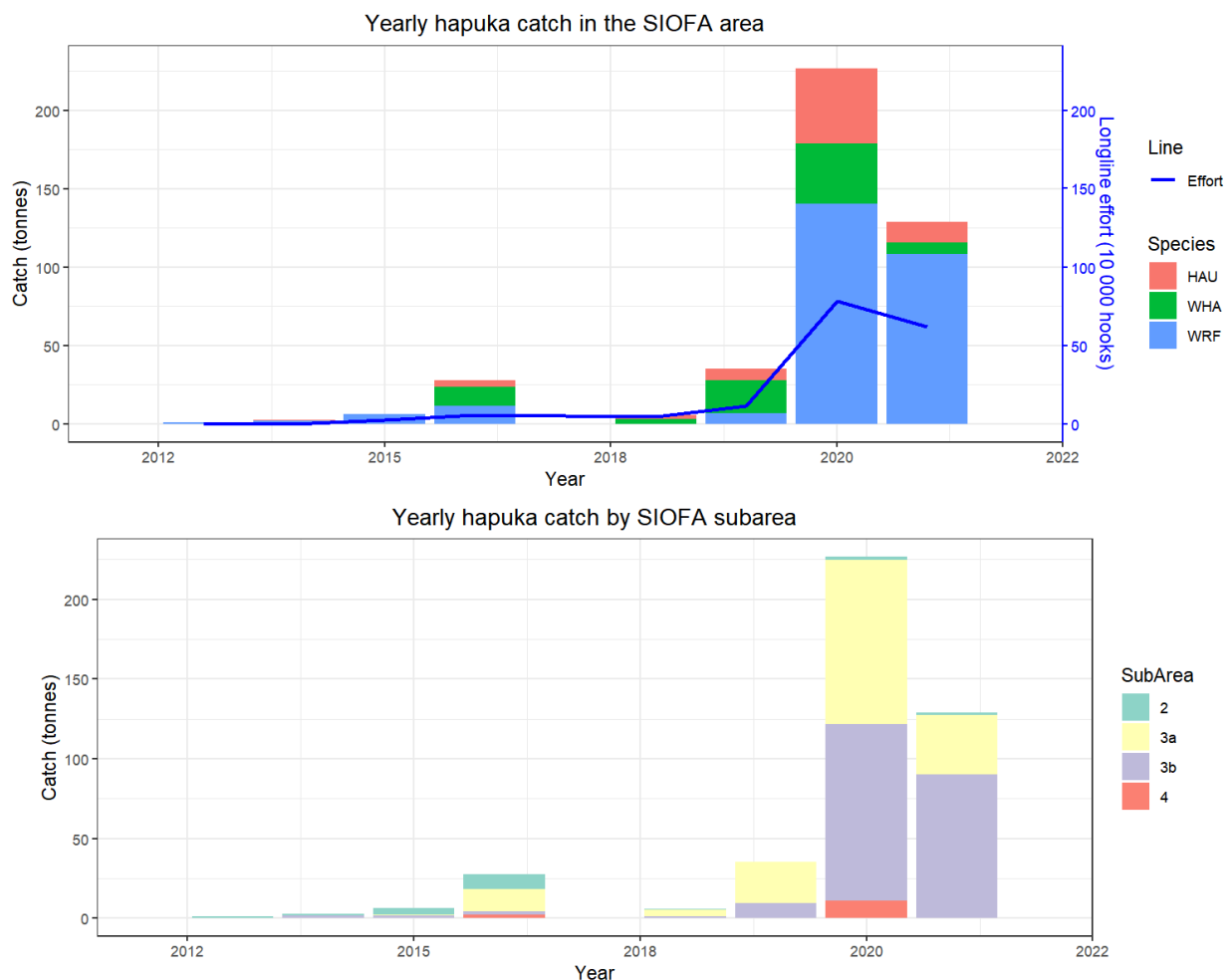


Figure 22a and b – Yearly hapuka catch (tonnes) and effort (10 thousand hooks) in the SIOFA area (upper panel, a) and in different SIOFA subareas (lower panel, b) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Recent years have seen higher levels of effort with higher catches (Figure 22a), with unstandardised catches per units of effort (CPUEs) remaining relatively stable (Figure 23).

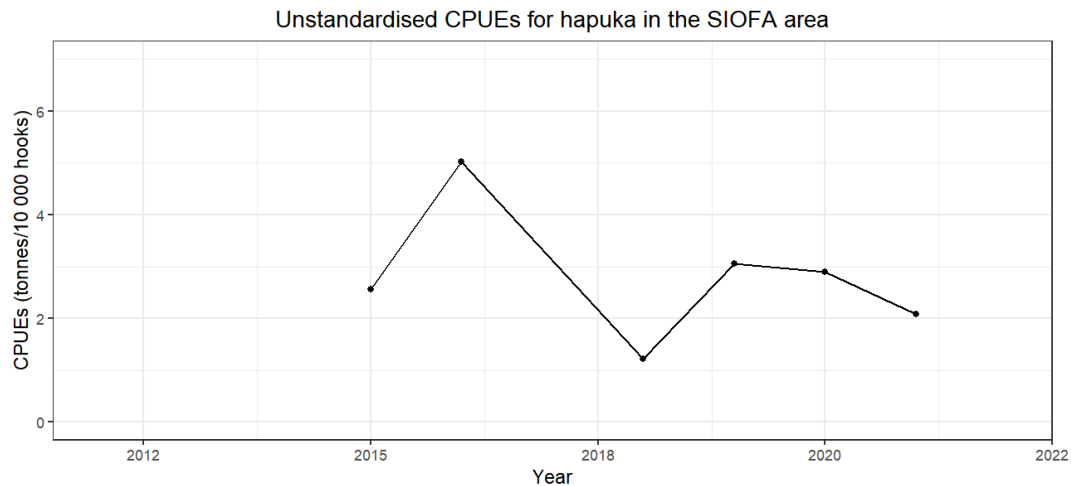


Figure 23 – Unstandardised catches per unit of effort (CPUEs) of hapuka in the SIOFA area (tonnes/10 thousand hooks) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Oilfish (OIL, *Ruvettus pretiosus* and LEC, *Lepidocybium flavobrunneum*)

Oilfish include both oilfish (OIL, *Ruvettus pretiosus*) and escolar (LEC, *Lepidocybium flavobrunneum*) two species of the Gempylidae family.

Oilfish are benthopelagic, found at a depth range of 100–800 m in subtropical waters of all oceans, and mainly fished with longlines. Note that almost all catch and effort is produced by Chinese Taipei from its pelagic longline fishery, but a small amount of bycatch is also reported by other CCPs from other gears.

Both oilfish and escolar can grow to over 2 metres in length and over 50 kg, but average sizes measured in the SIOFA area are around 27 kg (see section 10). Despite having very high levels of indigestible wax esters in their flesh (which is likely at the root of the ban on sales in countries like Japan or Italy), these species are sought after in several countries and fished in relatively significant amounts in the SIOFA area. Further information on oilfish and their fishery in the SIOFA area are provided in a relative Fisheries Summary.

Catches of oilfish in the SIOFA area were first reported in 2013, but at very low levels (Figure 24a). Effort was only reported starting in 2015, and has progressively increased since, with catches increasing and then stabilizing at levels higher than the other main SIOFA species (Figure 24a). Oilfish are mainly caught in the western SIOFA area, particularly in subareas 1 and 3b (Figure 24b).

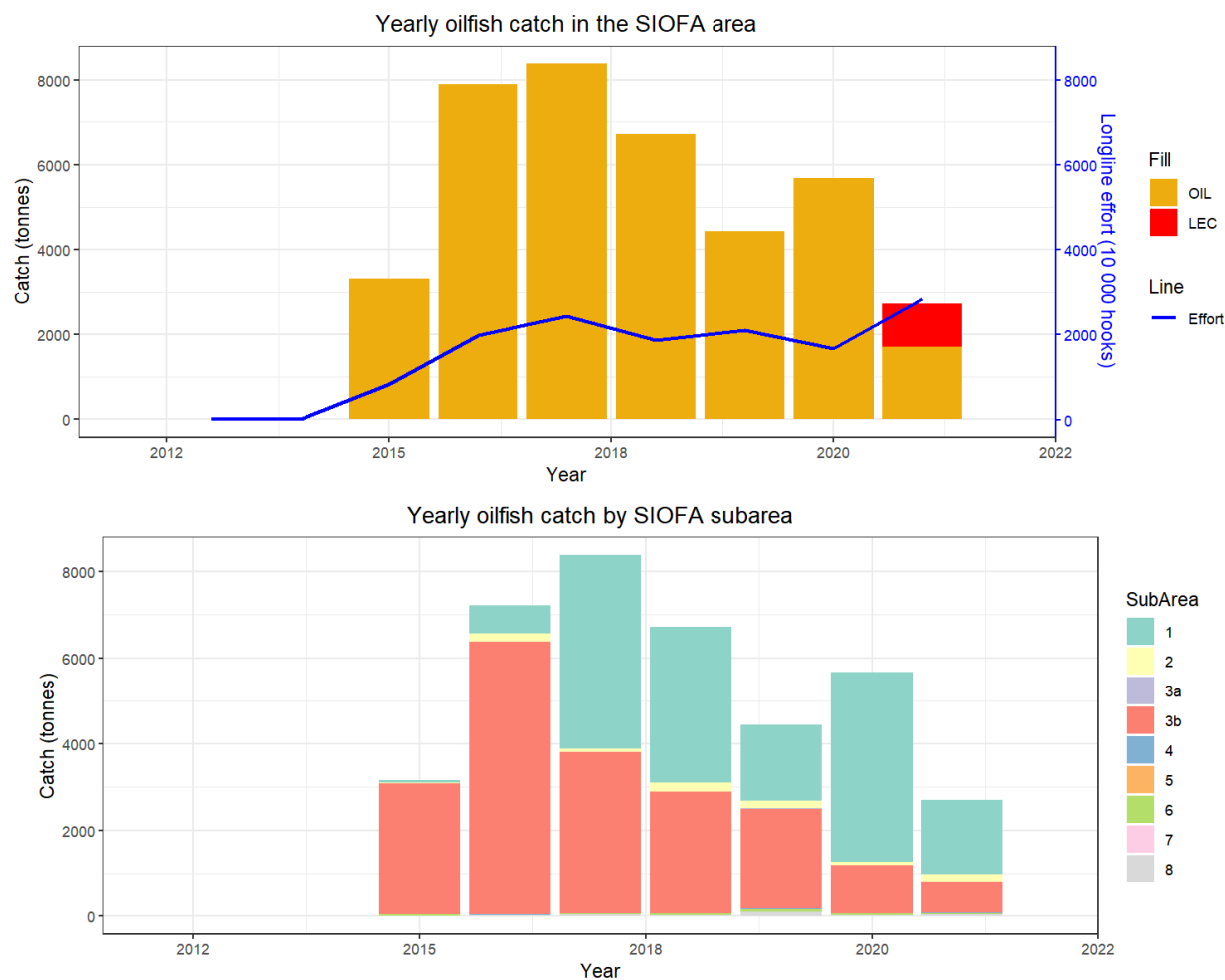


Figure 24a and b – Yearly oilfish catch (tonnes) and effort (10 thousand hooks) in the SIOFA area (upper panel, a) and in different SIOFA subareas (lower panel, b) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).

Effort has been relatively stable in recent years, with slightly declining catches (Figure 24a), such that unstandardised catches per units of effort (CPUE) are slightly declining (Figure 25). In 2021 effort increased and catches decreased, leading to a marked decline of CPUE. Unstandardised CPUEs cannot be considered a reliable index of abundance. Standardised CPUEs have not been produced for these species.

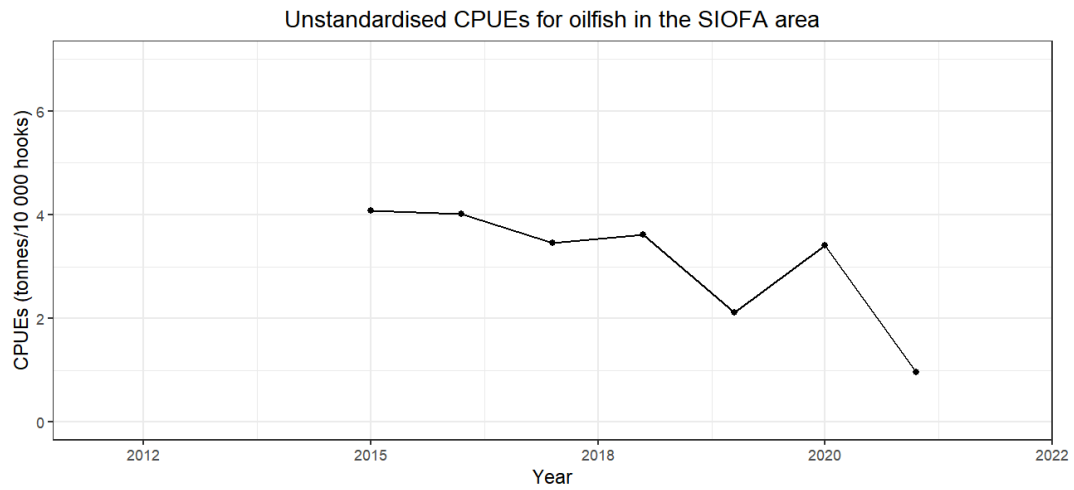


Figure 25 – Unstandardised catches per unit of effort (CPUEs) of oilfish in the SIOFA area (tonnes/10 thousand hooks) (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2021).