

Portfolio Data Analytics with Global Fishing Watch

Exploring Fishing Activity in Member Countries of the Sub-Regional Fisheries Commission (CSRP/SRFC) and the Fisheries Committee for the West Central Gulf of Guinea (CPCO/FCWC)

Presented by
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Thanks to Global Fishing Watch.

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This analysis was supported by conversational AI tools to improve conceptualization, code review, and data storytelling. All analysis, decisions, and interpretations were my own.

General Question

How Does Fishing Activity Vary in Member Countries of the Sub-Regional Fisheries Commission (CSRP/SRFC) and the Fisheries Committee for the West Central Gulf of Guinea (CPCO/FCWC) According to Key Parameters?

Parameters analyzed:

- Year and Month
- Flag State
- Gear Type
- Marine Protected Area

Time period considered: 2020–2024

CSRP/SRFC member states: Senegal, Mauritania, The Gambia, Guinea-Bissau, Guinea, Sierra Leone, and Cabo Verde

CPCO/FCWC member states: Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria, and Togo

Specific Questions

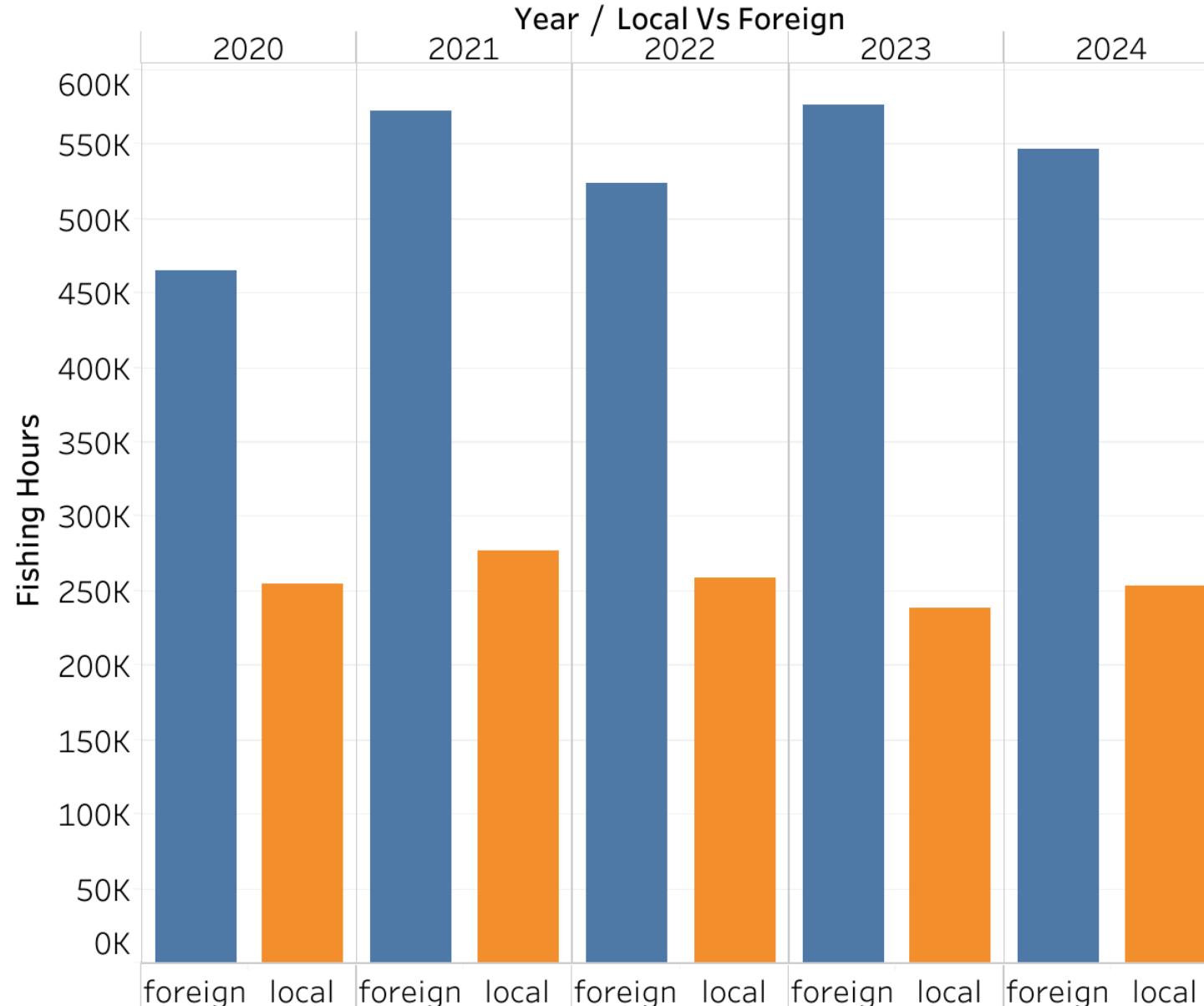
- How does the total number of fishing hours vary by year and by fleet type (local vs. foreign) in the areas covered by the CSRP and the CPCO? How does this variation look for each individual CSRP and CPCO member country?
- Which are the top five flag states with the highest total fishing hours in the CSRP and CPCO regions? Which are the top five flag states in each individual CSRP and CPCO member country?
- How does the total number of fishing hours vary by gear type in the CSRP and CPCO regions? What are the five most commonly used fishing gear types in each CSRP and CPCO country?
- What are the top five most used fishing gear types by the top five flag states with the highest total fishing hours in the CSRP and CPCO regions?
- How does the total number of fishing hours vary by month in the CSRP and CPCO regions? How does this monthly variation appear for each CSRP and CPCO country?
- How do fishing hours using trawler gear vary by month in each CSRP and CPCO country?
- What are the total fishing hours recorded within Marine Protected Areas (MPAs) in the CSRP and CPCO regions?

Total Fishing Hours in CSRP/SRFC Member States by Year and Fleet Type

Aggregated effort from Cabo Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra-Leone

Local Vs Foreign

- foreign
- local



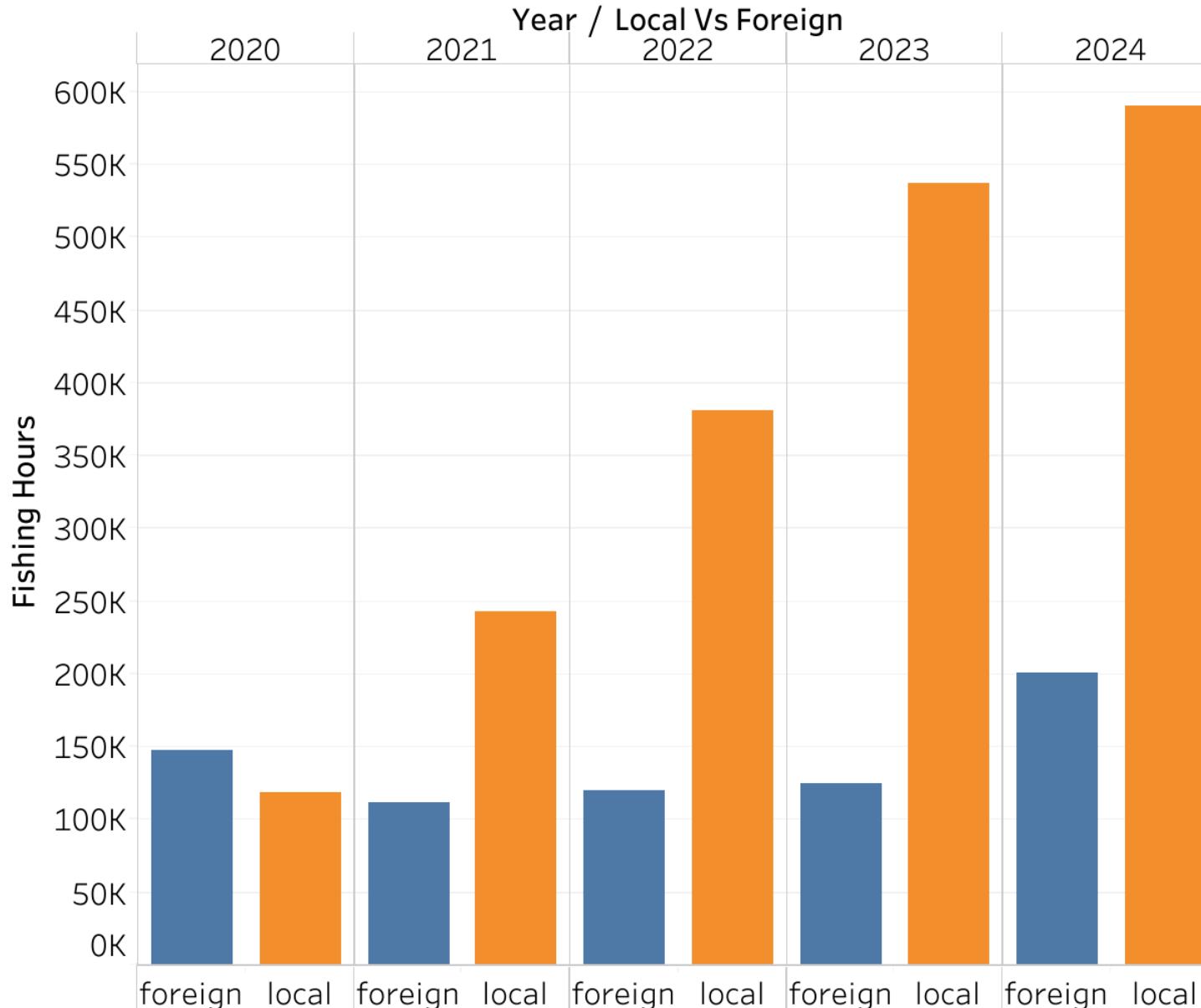
- **Definition:** Local vessels are those flying the flag of a CSRP member state (CPV – Cabo Verde, MRT – Mauritania, SEN – Senegal, GMB – The Gambia, GNB – Guinea-Bissau, GIN – Guinea, and SLE – Sierra Leone). Any vessel with a flag different from these is classified as a foreign vessel.
- **Observation:** Across all five years, fishing activity in the combined CSRP member states is predominantly carried out by foreign vessels—approximately twice as much as by local vessels.

Total Fishing Hours in CPCO/FCWC Member States by Year and Fleet Type

Aggregated effort from Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria, and Togo

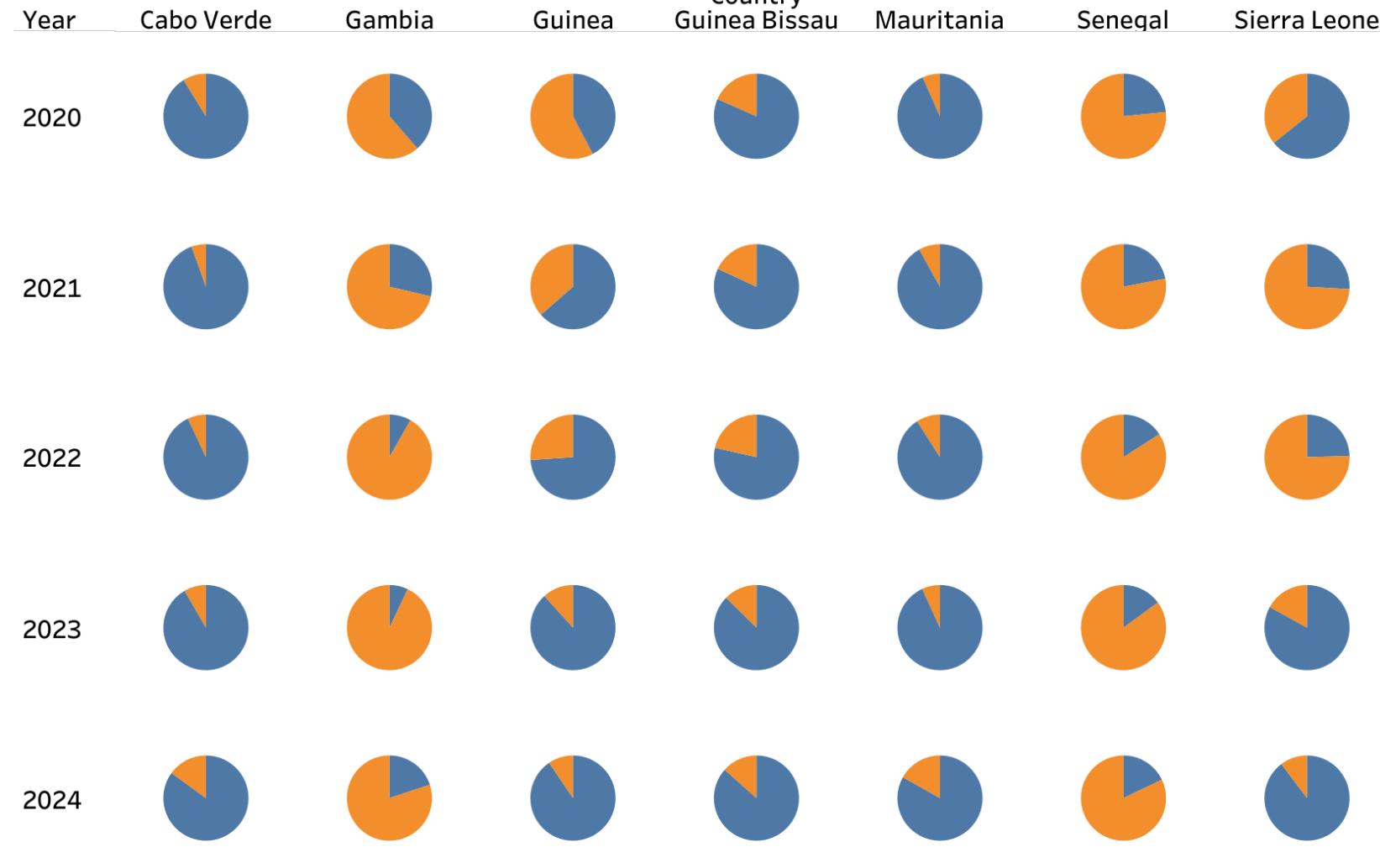
Local Vs Foreign

- foreign
- local



- **Definition:** Local vessels are those flying the flag of a CPCO member state (BEN – Benin, CIV – Côte d'Ivoire, GHA – Ghana, LBR – Liberia, NGA – Nigeria, and TGO – Togo). Any vessel with a flag different from these is classified as a foreign vessel.
- **Observation:** In all years except 2020, fishing activity in the combined CPCO member states is predominantly carried out by local vessels—about 2 to 4 times more than by foreign vessels.

Total Fishing Hours per CSRP/SRFC Country by Year and Fleet Type



Local Vs Foreign

- foreign
- local

When examining fishing hours by member country:

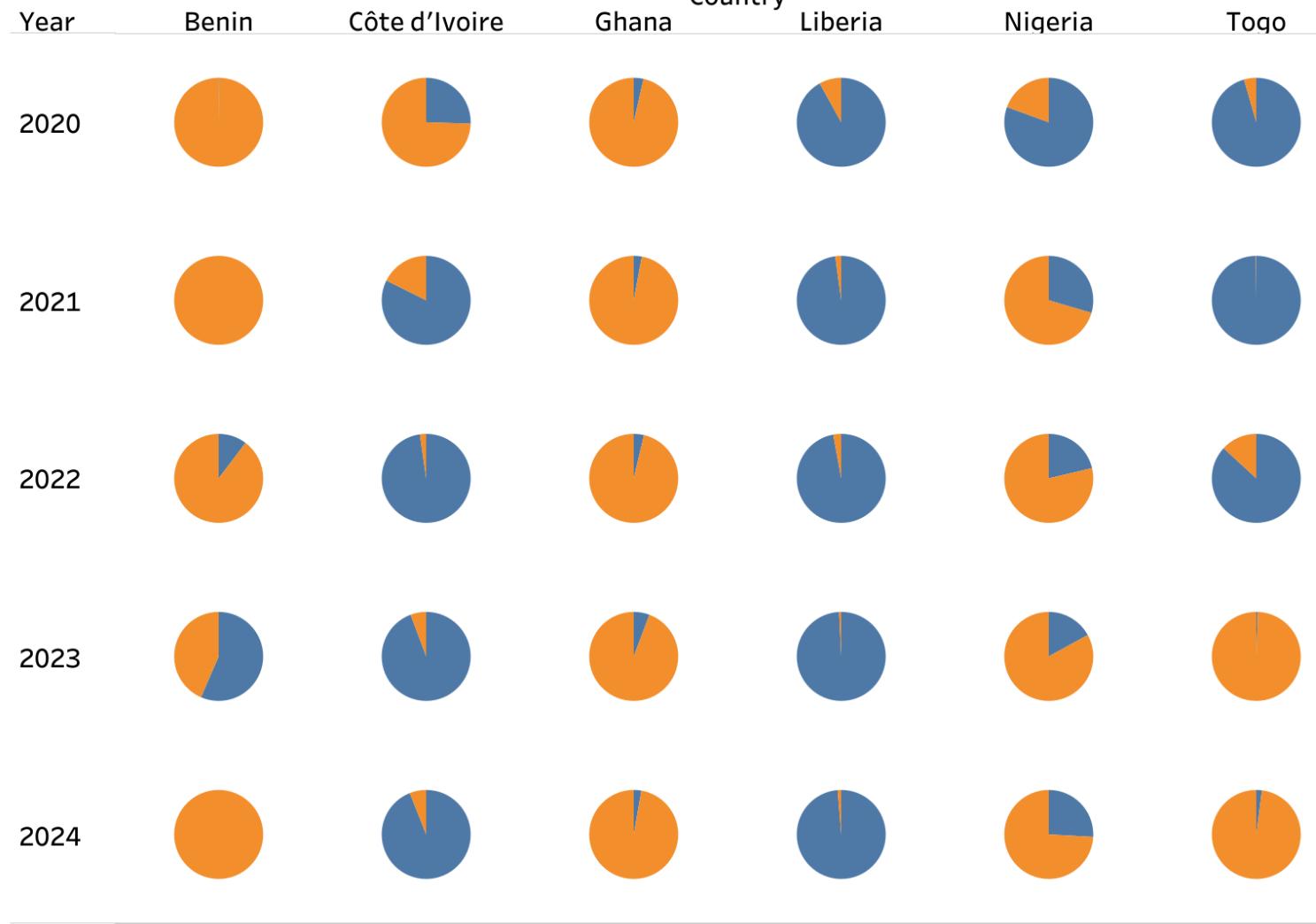
- **Cabo Verde, Guinea-Bissau, and Mauritania:** Foreign vessels account for the majority of fishing activity in all five years, while local vessels contribute less.
- **Gambia and Senegal:** Local vessels account for the majority of fishing activity in all years, with foreign vessels contributing a smaller share.
- **Sierra Leone:** The predominance shifts over time — foreign vessels lead in 2021 and 2022, while local vessels take the lead in 2023 and 2024.
- **Guinea:** Foreign vessels dominate in all years except 2020.

Total Fishing Hours per CPCO/FCWC Country by Year and Fleet Type

Local Vs Foreign

foreign

local



- **Liberia:** Fishing activity is consistently dominated by foreign vessels across all five years, whereas in **Ghana**, local vessels are predominant.
- **Côte d'Ivoire:** Foreign vessels dominate in all years except 2020, while in **Nigeria**, local vessels are mostly in the lead.
- **Benin:** Local vessels predominate in all years except 2023.
- **Togo:** The predominance shifts over time: foreign vessels are more active from 2020 to 2022, while local vessels take the lead in 2023 and 2024.

Top 5 Flag States by Total Fishing hours in CSRP/SRFC Member Countries

Aggregated effort from Cabo Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra-Leone

Year

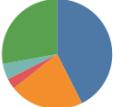
2020



2021



2022



2023



2024



Flag
CHN
ESP
GNB
MRT
SEN

Top 5 Flag States by Total Fishing hours in CPCO/FCWC Member Countries

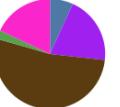
Aggregated effort from Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria, and Togo

Year

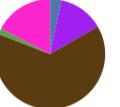
2020



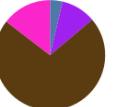
2021



2022



2023



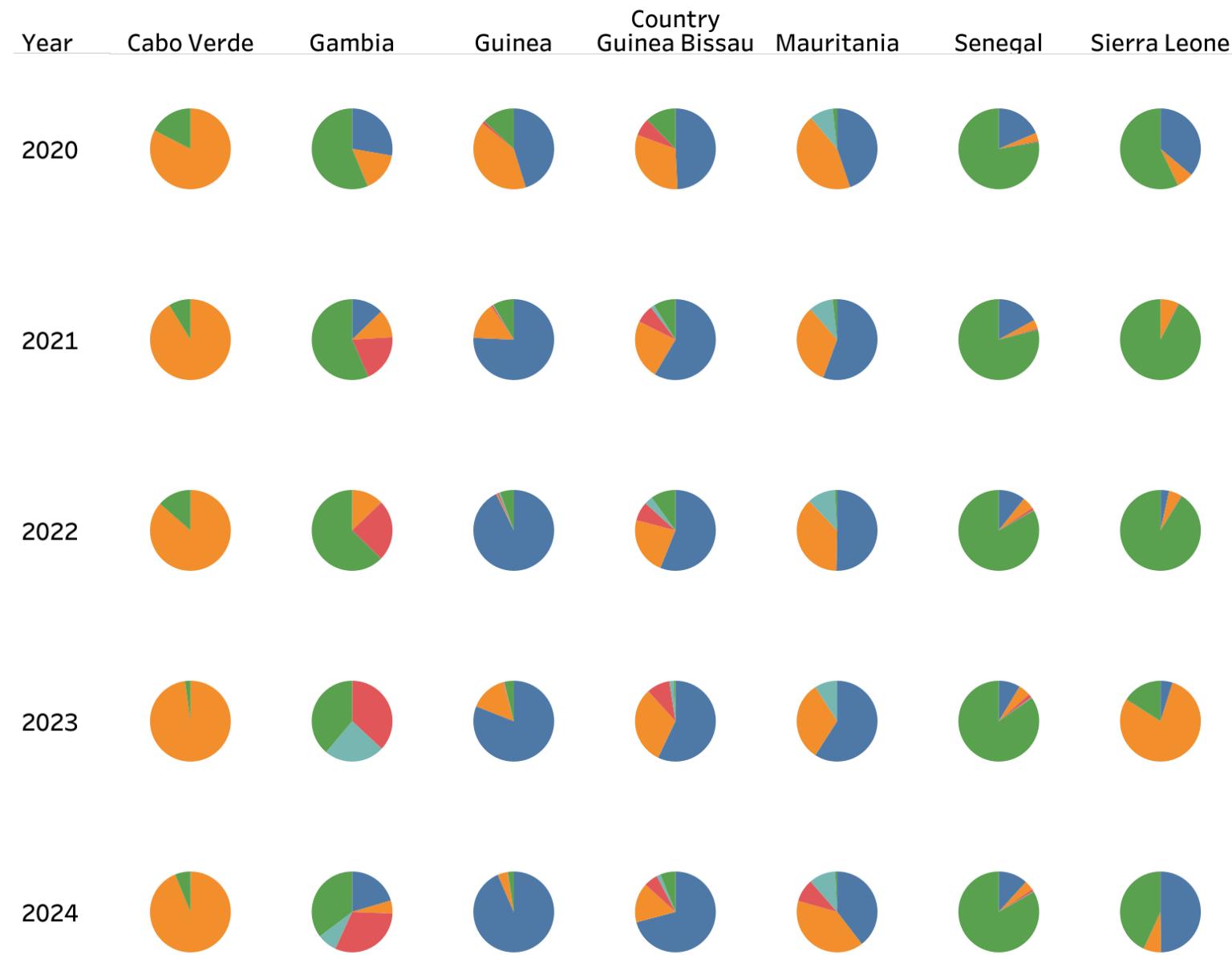
2024



Flag
CHN
GHA
NGA
SEN
UNKNOWN-NGA

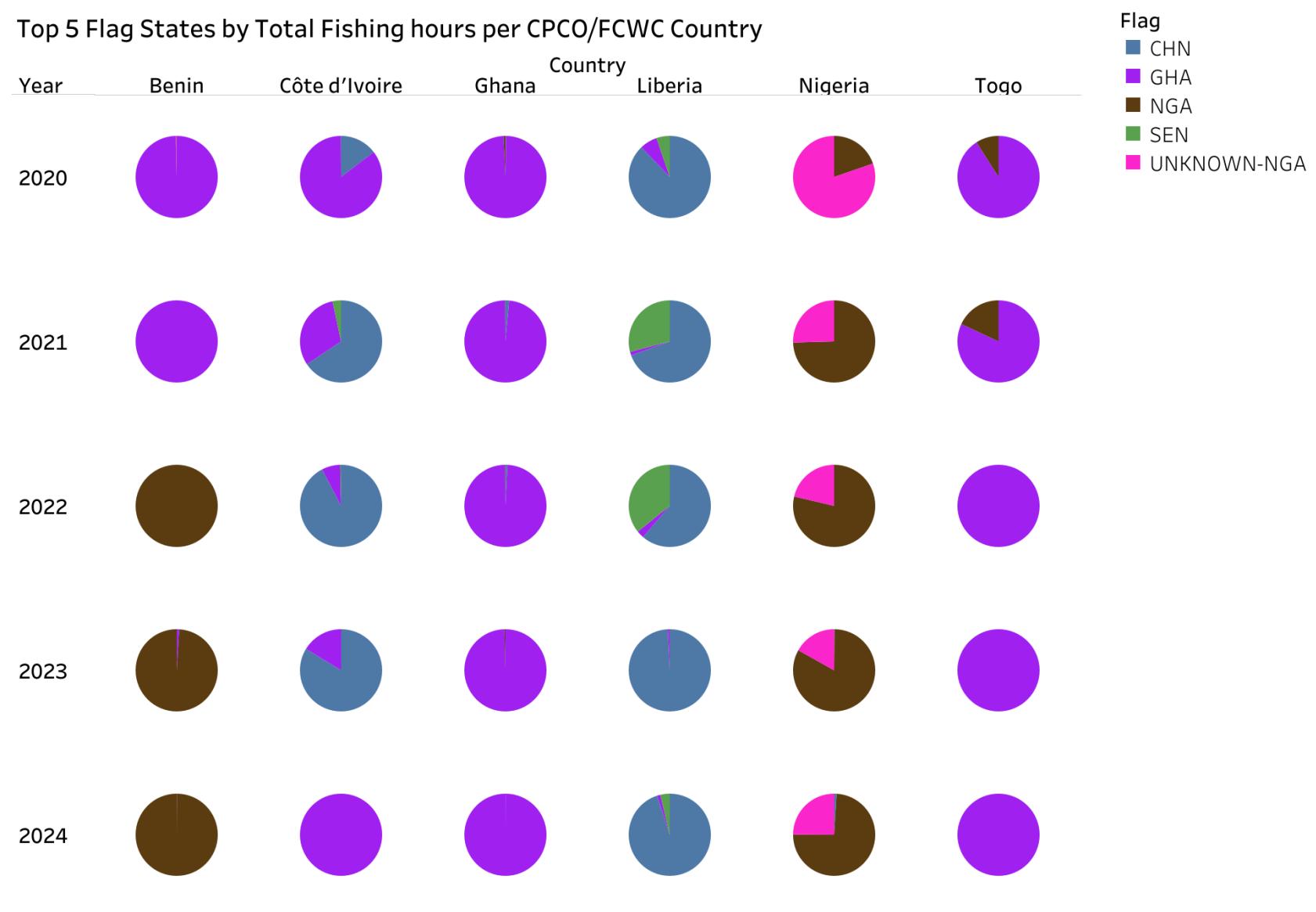
- **Combined CSRP member states:** Fishing is mostly carried out by vessels flagged in **China (CHN)**, **Senegal (SEN)**, **Spain (ESP)**, **Mauritania (MRT)**, and **Guinea-Bissau (GNB)**.
- **Combined CPCO member states:** Fishing is mostly carried out by vessels flagged in **Nigeria (NGA)**, **UNKNOWN-NGA**, **Ghana (GHA)**, **China (CHN)**, and **Senegal (SEN)**.

Top 5 Flag States by Total Fishing hours per CSRP/SRFC Country



Flag
█ CHN
█ ESP
█ GNB
█ MRT
█ SEN

- **Cabo Verde:** Fishing is mostly carried out by vessels flagged in **Spain (ESP)**.
- **Senegal and Gambia:** Fishing is mostly carried out by vessels flagged in **Senegal (SEN)**.
- **Guinea and Guinea-Bissau:** Fishing is mostly carried out by vessels flagged in **China (CHN)**.
- **Mauritania:** Fishing is mostly carried out by vessels flagged in **China (CHN)**, except in 2024 when **Spain (ESP)** accounts for the highest fishing activity.
- **Sierra Leone:** From 2020 to 2022, the flag of **Senegal (SEN)** predominates, while in 2023 and 2024, the flags of **Spain (ESP)** and **China (CHN)** predominate, respectively.

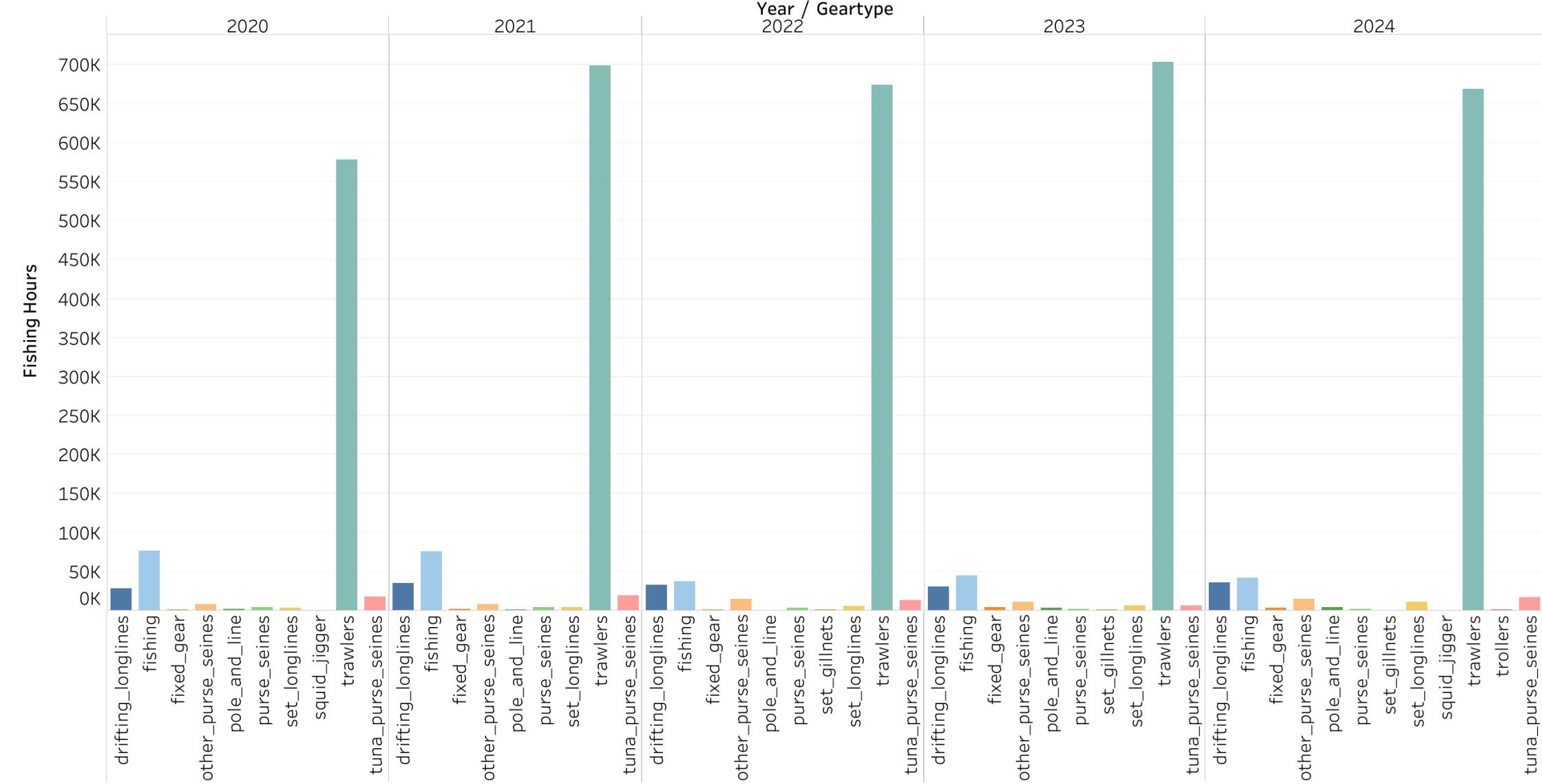


- **Ghana and Togo:** Fishing is mostly carried out by vessels flagged in **Ghana (GHA)**.
- **Liberia:** The flag of **China (CHN)** predominates.
- **Nigeria:** The flag of **Nigeria (NGA)** predominates, except in 2020 when UNKNOWN-NGA predominates.
- **Benin:** From 2020 to 2021, the flag of **Ghana (GHA)** predominates, while from 2022 to 2024, the flag of **Nigeria (NGA)** predominates.
- **Côte d'Ivoire:** From 2021 to 2023, the flag of **China (CHN)** predominates, while in 2020 and 2024, the flag of **Ghana (GHA)** predominates.

Total Fishing Hours in CSRP/SRFC Member Countries per Gear Type

Aggregated effort from Cabo Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra-Leone

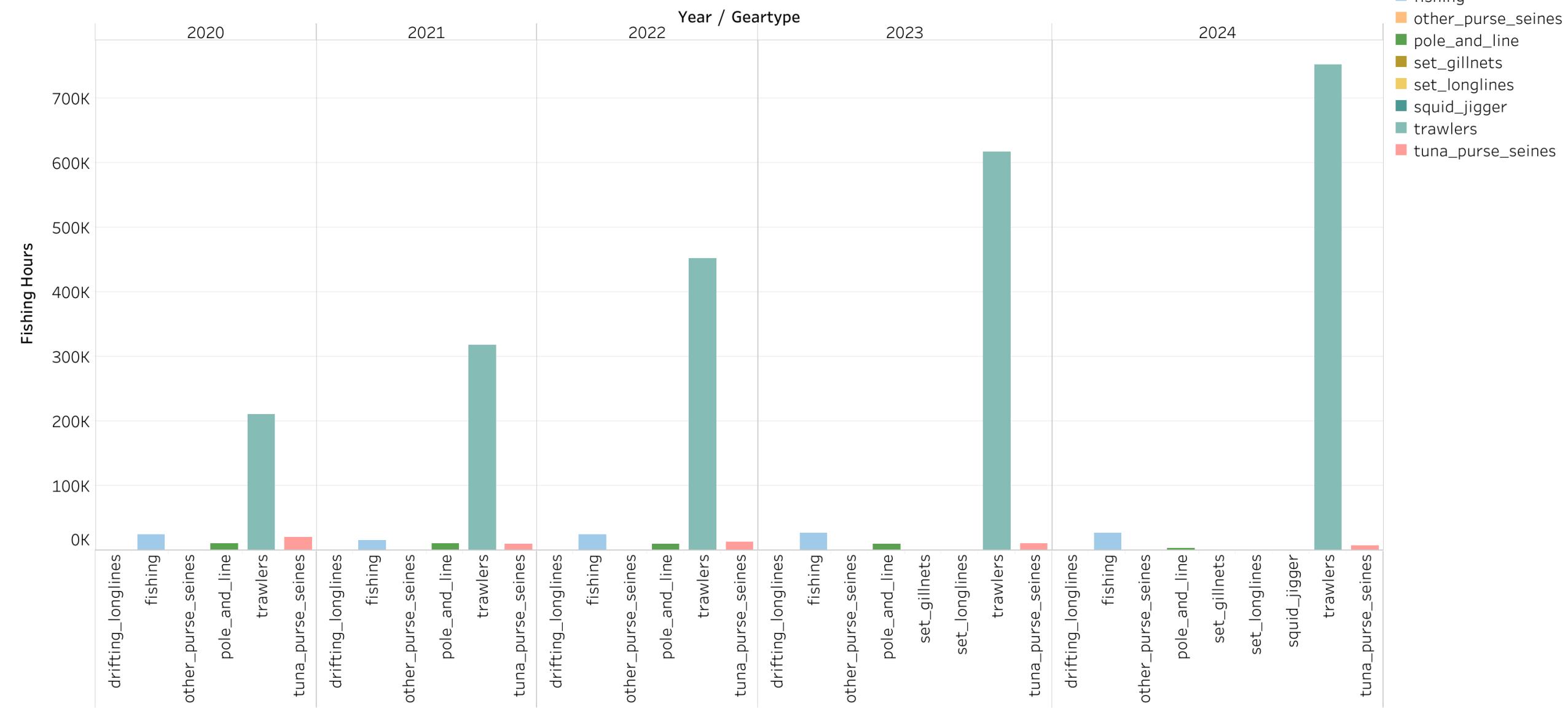
- Gear type**
- drifting_longlines
 - fishing
 - fixed_gear
 - other_purse_seines
 - pole_and_line
 - purse_seines
 - set_longlines
 - squid_jigger
 - trollers
 - tuna_purse_seines



Combined CSRP member countries: Over the five-year period, **trawlers** were by far the most widely used fishing gear.

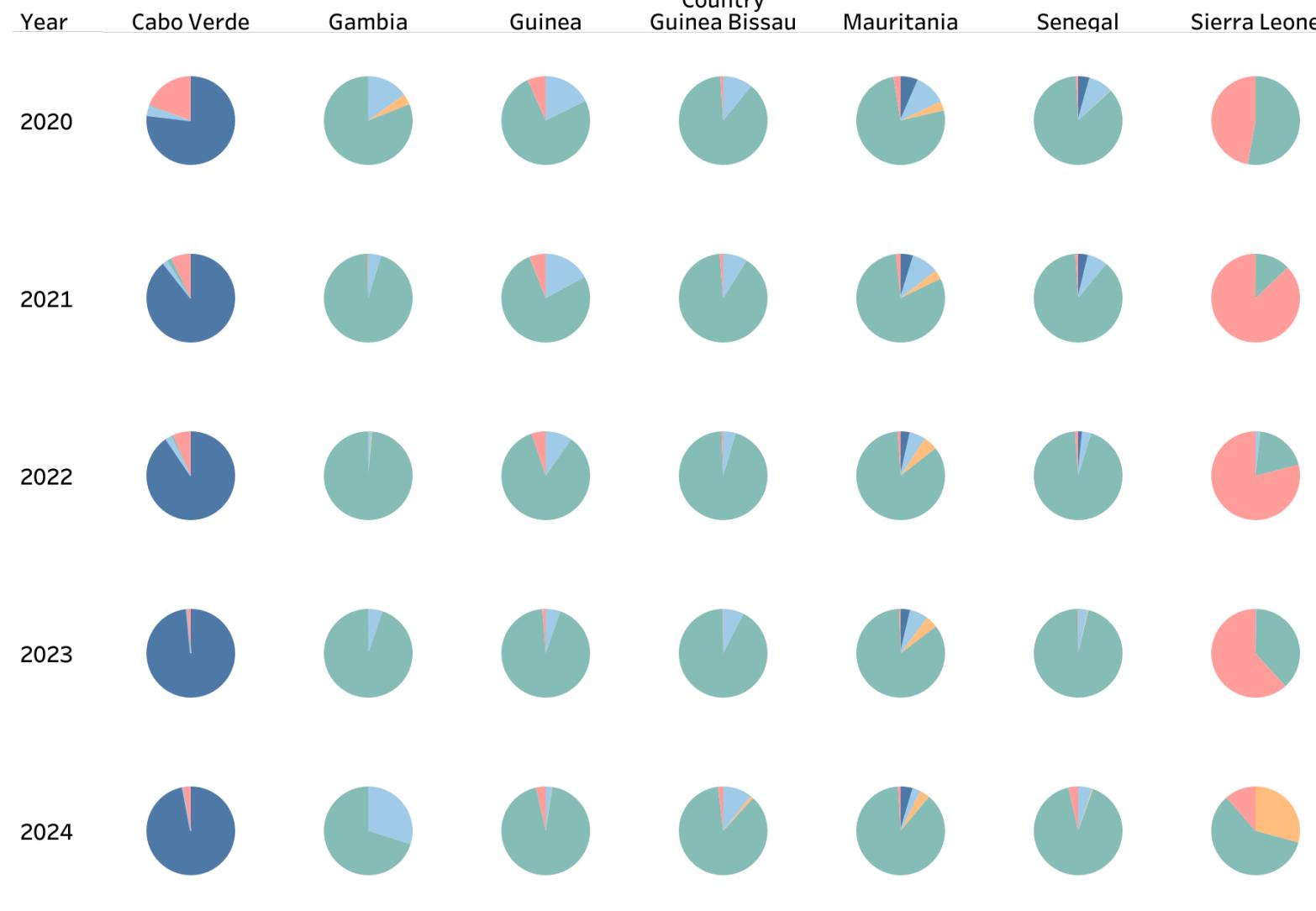
Total Fishing Hours in CPCO/FCWC Member Countries per Gear Type

Aggregated effort from Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria, and Togo



Combined CPCO member countries: Over the five-year period, **trawlers** were by far the most widely used fishing gear, with total fishing effort increasing over the years.

Top 5 Most Used Types of Fishing Gear by Total Fishing Hours per CSRP/SRFC Country



Geartype

- drifting_longlines
- fishing
- other_purse_seines
- trawlers
- tuna_purse_seines

- **Gambia, Guinea, Guinea-Bissau, Mauritania, and Senegal:** Over the five-year period, **trawlers** were by far the most widely used fishing gear.
- **Cabo Verde:** Over the five-year period, **drifting longlines** were by far the most widely used fishing gear.
- **Sierra Leone:** From 2021 to 2023, **tuna purse seines** were the most used fishing gear, while in 2020 and 2024, **trawlers** predominated.

Top 5 Most Used Types of Fishing Gear by Total Fishing Hours per CPCO/FCWC Country



Geartype

- drifting_longlines
- fishing
- pole_and_line
- trawlers
- tuna_purse_seines

- **Nigeria, Togo, Liberia, and Ghana:** Over the five-year period, **trawlers** were the most used fishing gear.
- **Côte d'Ivoire:** **Tuna purse seines** were the most used fishing gear, except in 2020 when **trawlers** predominated.
- **Benin:** In 2020, **pole and line** were the most used fishing gear, in 2021 **tuna purse seines** predominated, and from 2022 to 2024, **trawlers** were by far the most widely used fishing gear.

Top 5 Most Used Types of Fishing Gear by the Top 5 Flag States with Highest Total Fishing Hours in CSRP/SRFC Countries

Aggregated effort from Cabo Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra-Leone

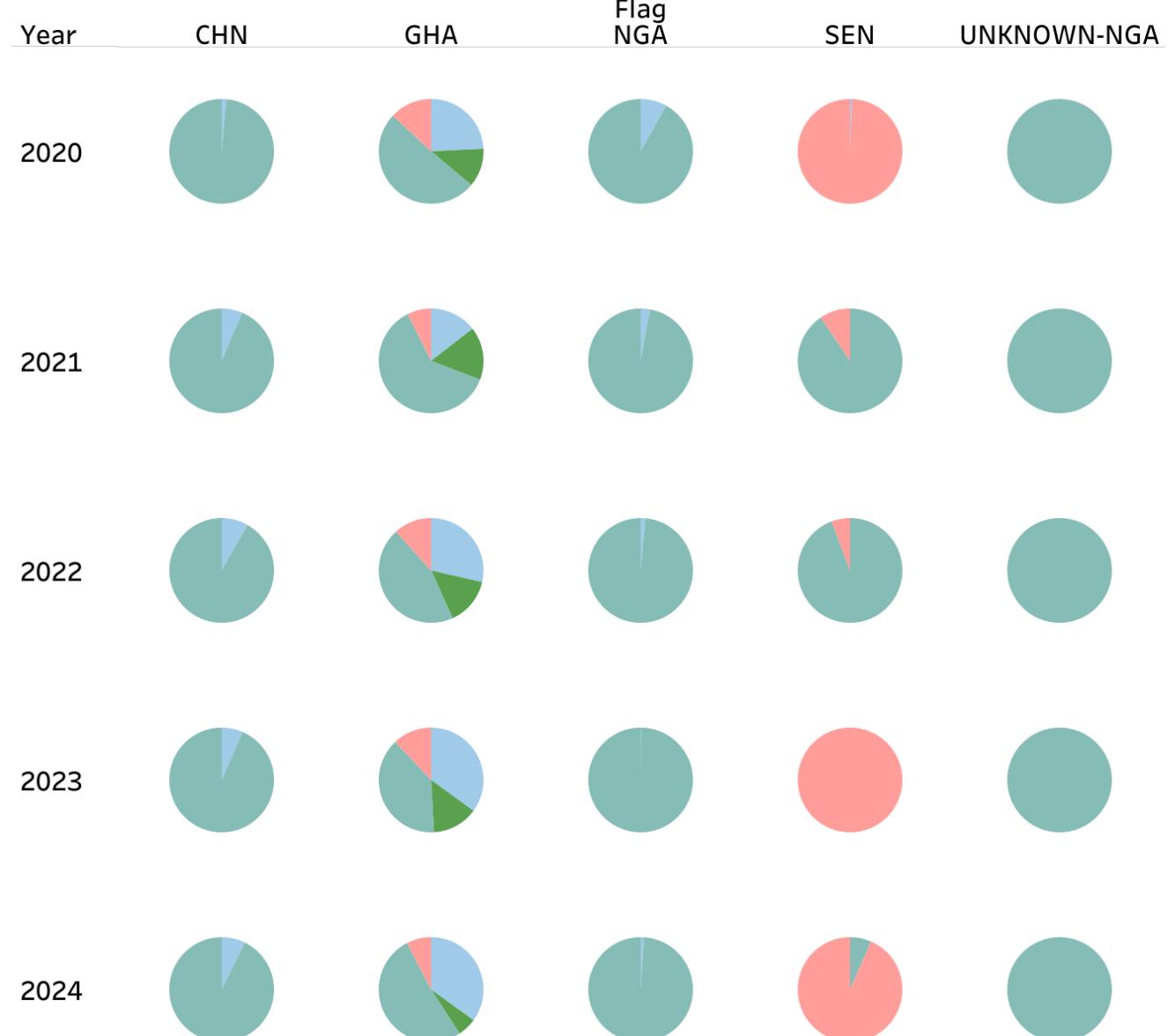


- Geartype
- drifting_longlines
 - fishing
 - other_purse_seines
 - trawlers
 - tuna_purse_seines

Top five flag states in the CSRP area: China (CHN), Spain (ESP), Guinea-Bissau (GNB), Mauritania (MRT), and Senegal (SEN) mainly used **trawlers** as fishing gear over the five-year period.

Top 5 Most Used Types of Fishing Gear by the Top 5 Flag States with Highest Total Fishing Hours in CPCO/FCWC Countries

Aggregated effort from Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria, and Togo

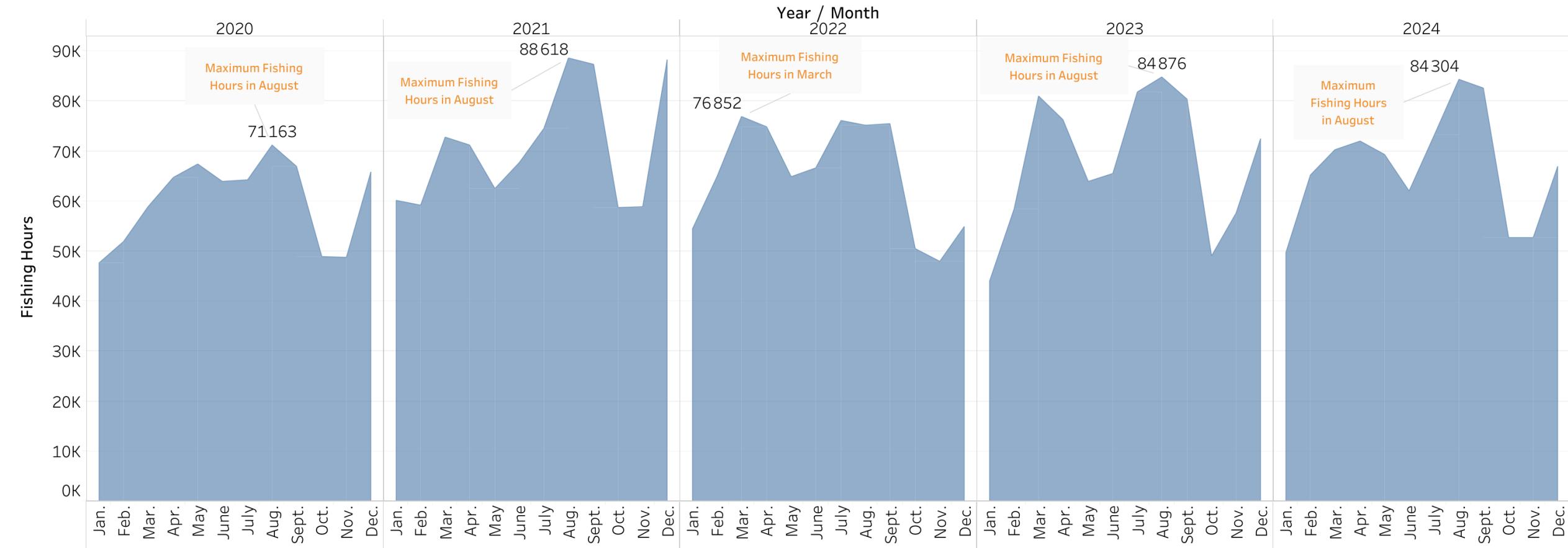


- Geartype
- drifting_longlines
 - fishing
 - pole_and_line
 - trawlers
 - tuna_purse_seines

Top five flag states in the CPCO area: Four flags—**China (CHN)**, **Ghana (GHA)**, **Nigeria (NGA)**, and **UNKNOWN-NGA**—mainly used **trawlers** as fishing gear over the five-year period. The remaining flag, **Senegal (SEN)**, mainly used **trawlers** from 2021 to 2022, while in 2020, 2023, and 2024, **tuna purse seines** were most used.

Total Fishing Hours in CSRP/SRFC Member Countries by Month

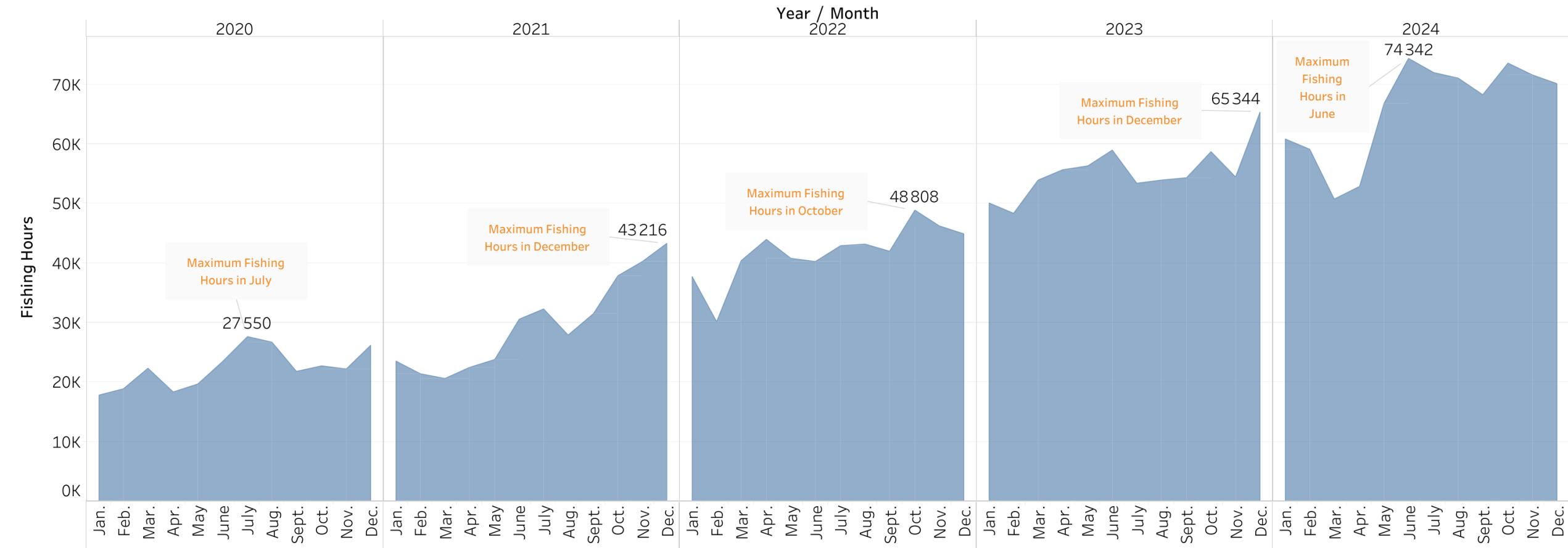
Aggregated effort from Cabo Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra-Leone



CSRP area (2020–2024): Among the months, **August** was often associated with the highest fishing activity.

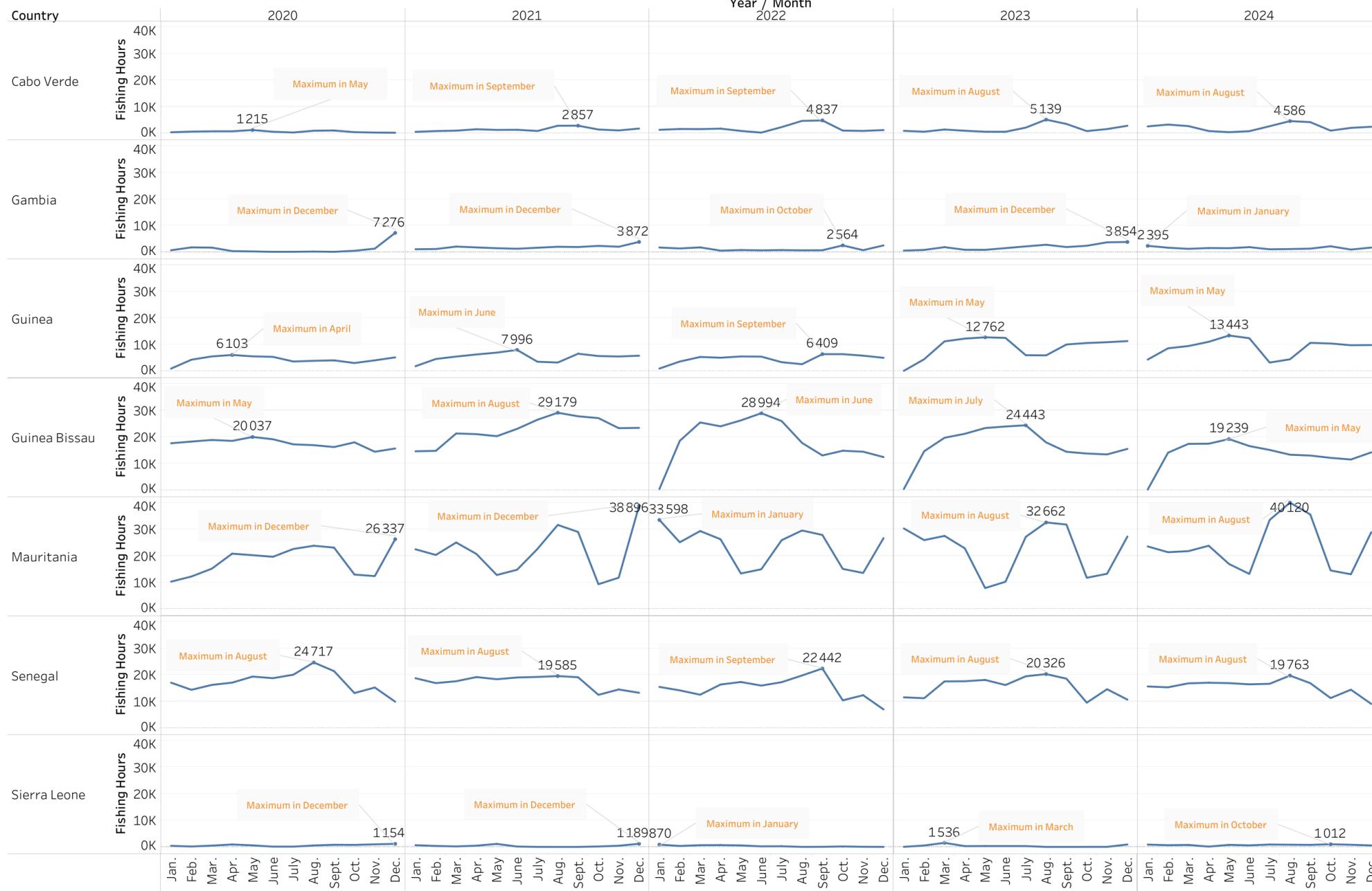
Total Fishing Hours in CPCO/FCWC Member Countries by Month

Aggregated effort from Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria, and Togo



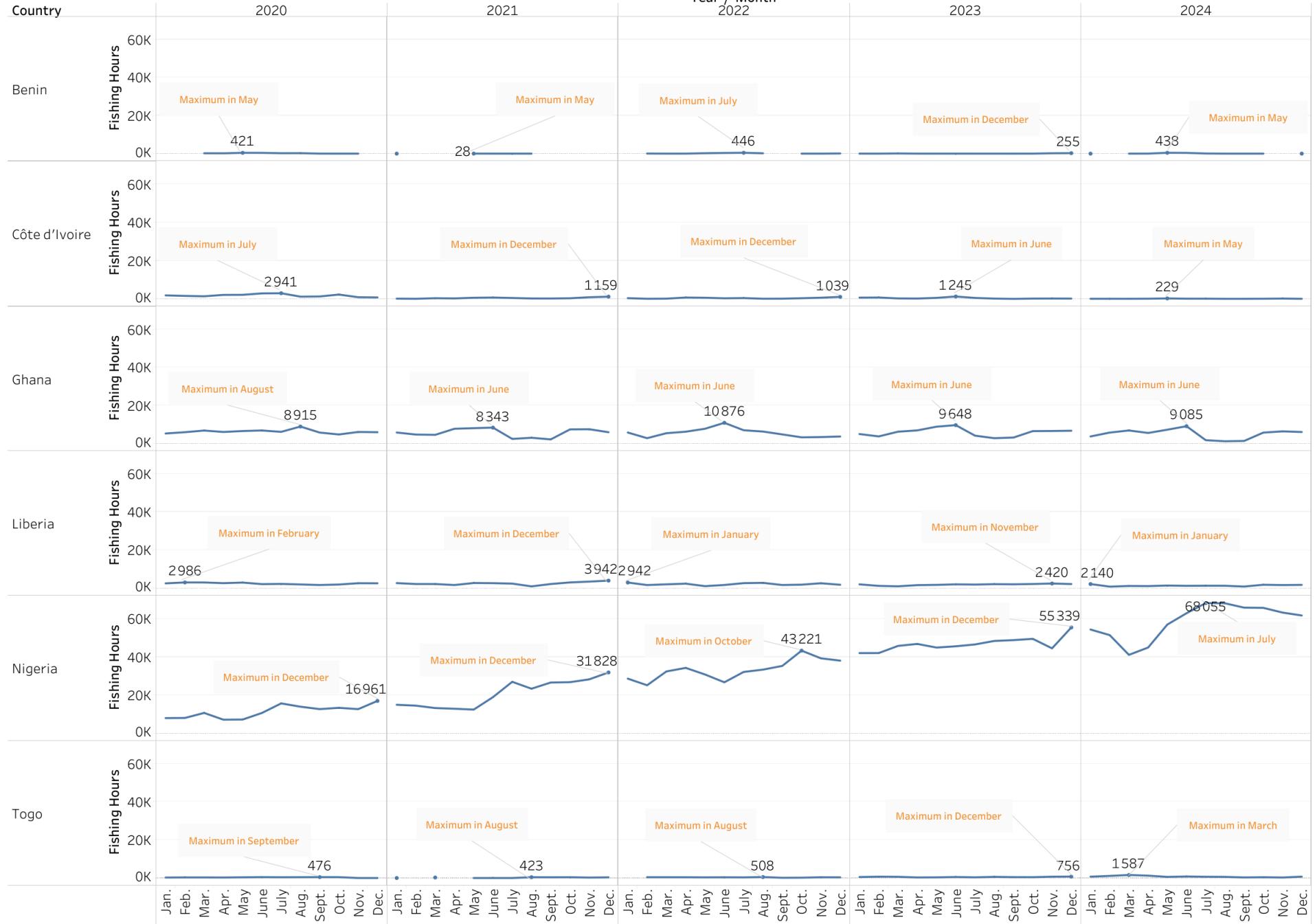
CPCO area (2020–2024): The month with the highest fishing activity generally fell between **June and December**.

Total Fishing Hours per CSRP/SRFC Country by Month



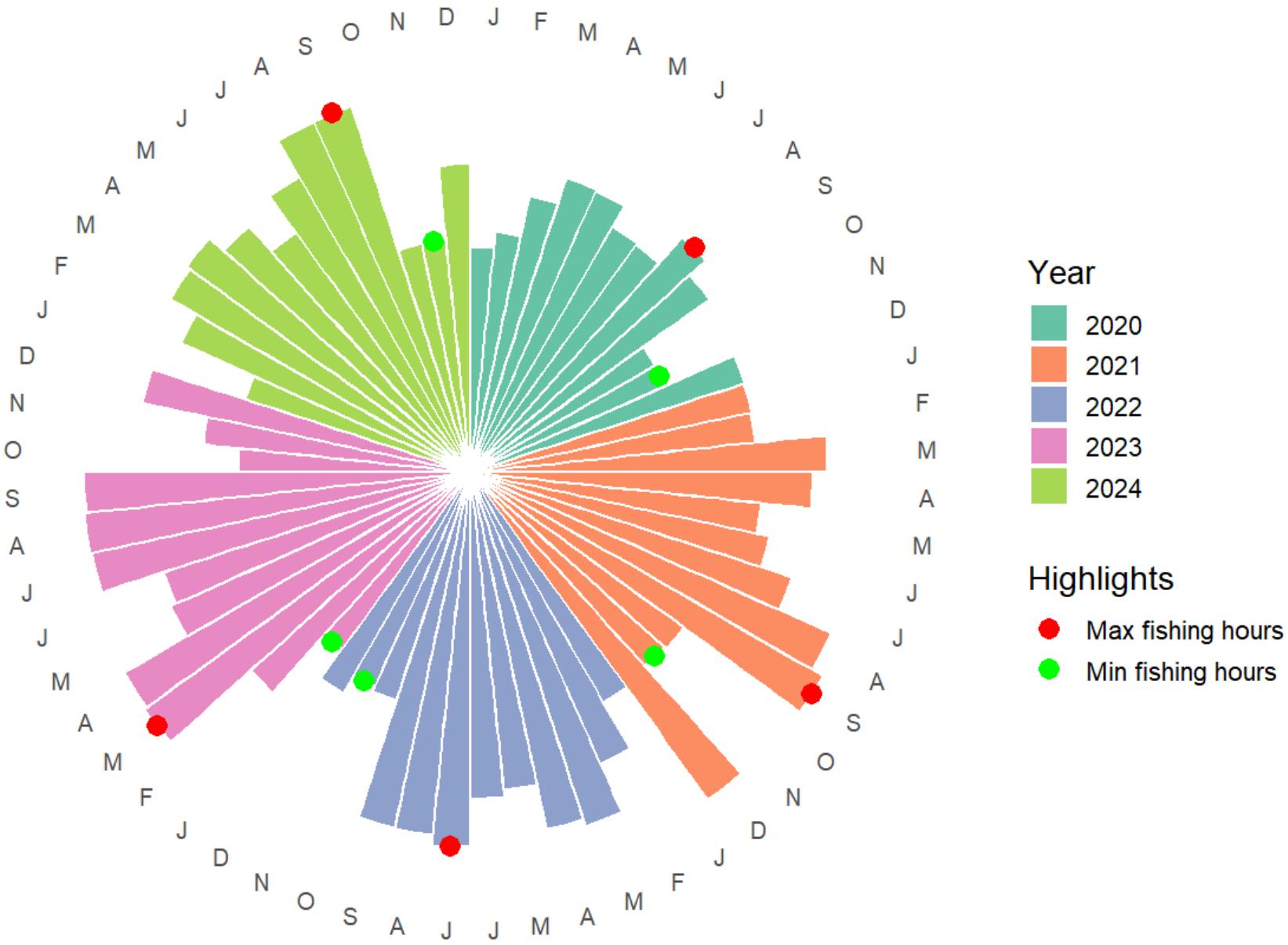
CSRP member countries (2020–2024): In each country, the month with the highest fishing activity varied across the different years, except in **Senegal**, where it was almost always **August**.

Total Fishing Hours per CPCO/FCWC Country by Month



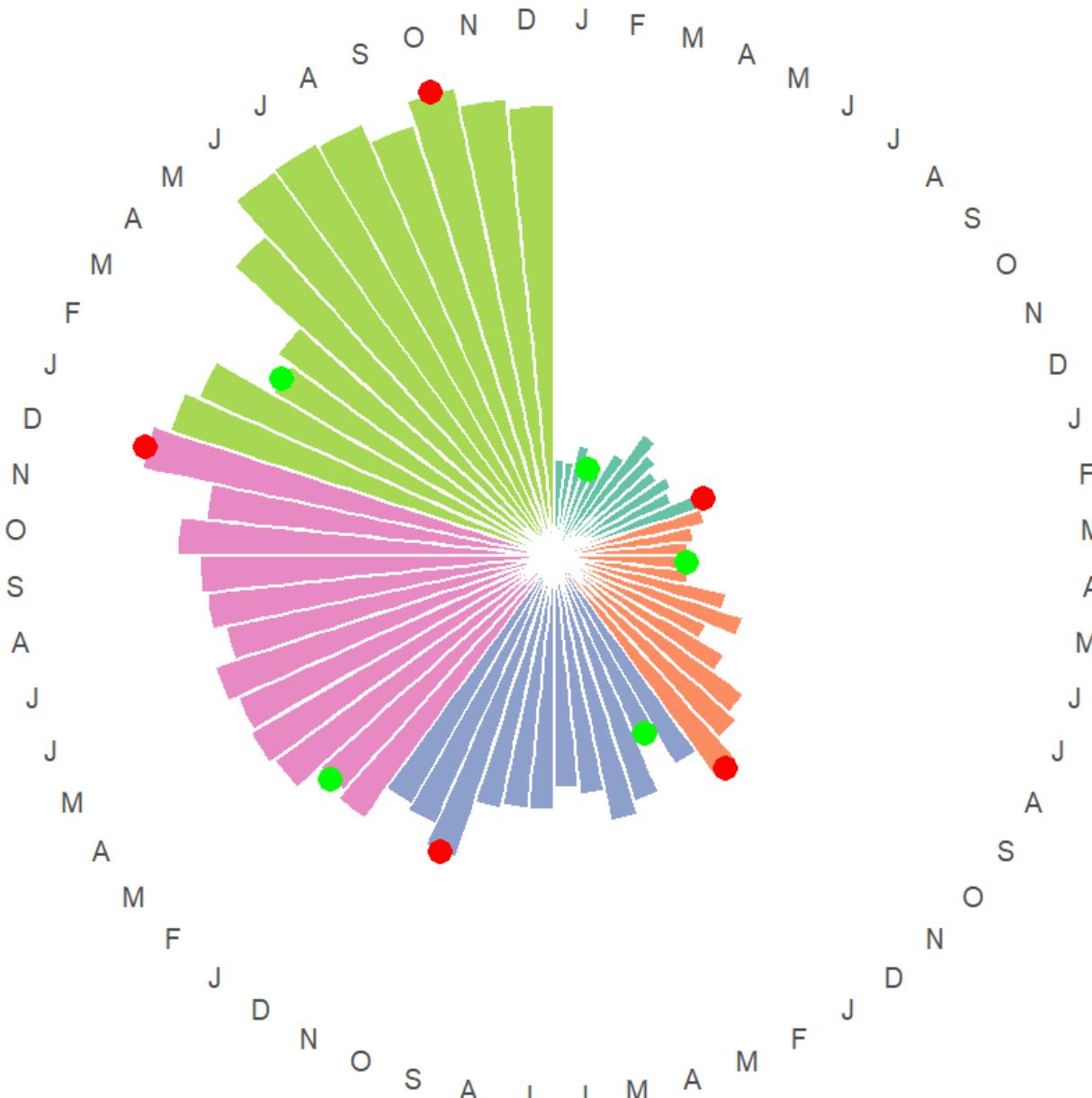
CPCO member countries (2020–2024): In each country, the month with the highest fishing activity varied across the different years, except in **Ghana**, where it was almost always **June**.

Monthly Fishing Hours with Trawlers in CSRP Member Countries (2020–2024)



- CSRP member countries combined (2020–2024): The **maximum trawler fishing activity** generally occurred between **July and September**, except in 2020 when it was **March**. Within this interval, **September** most frequently recorded the **highest trawler fishing hours**.
- Conversely, **November** usually had the **lowest trawler fishing hours**, except in 2023 when **January** recorded the **minimum**.

Monthly Fishing Hours with Trawlers in CPCO Member Countries (2020–2024)



Year

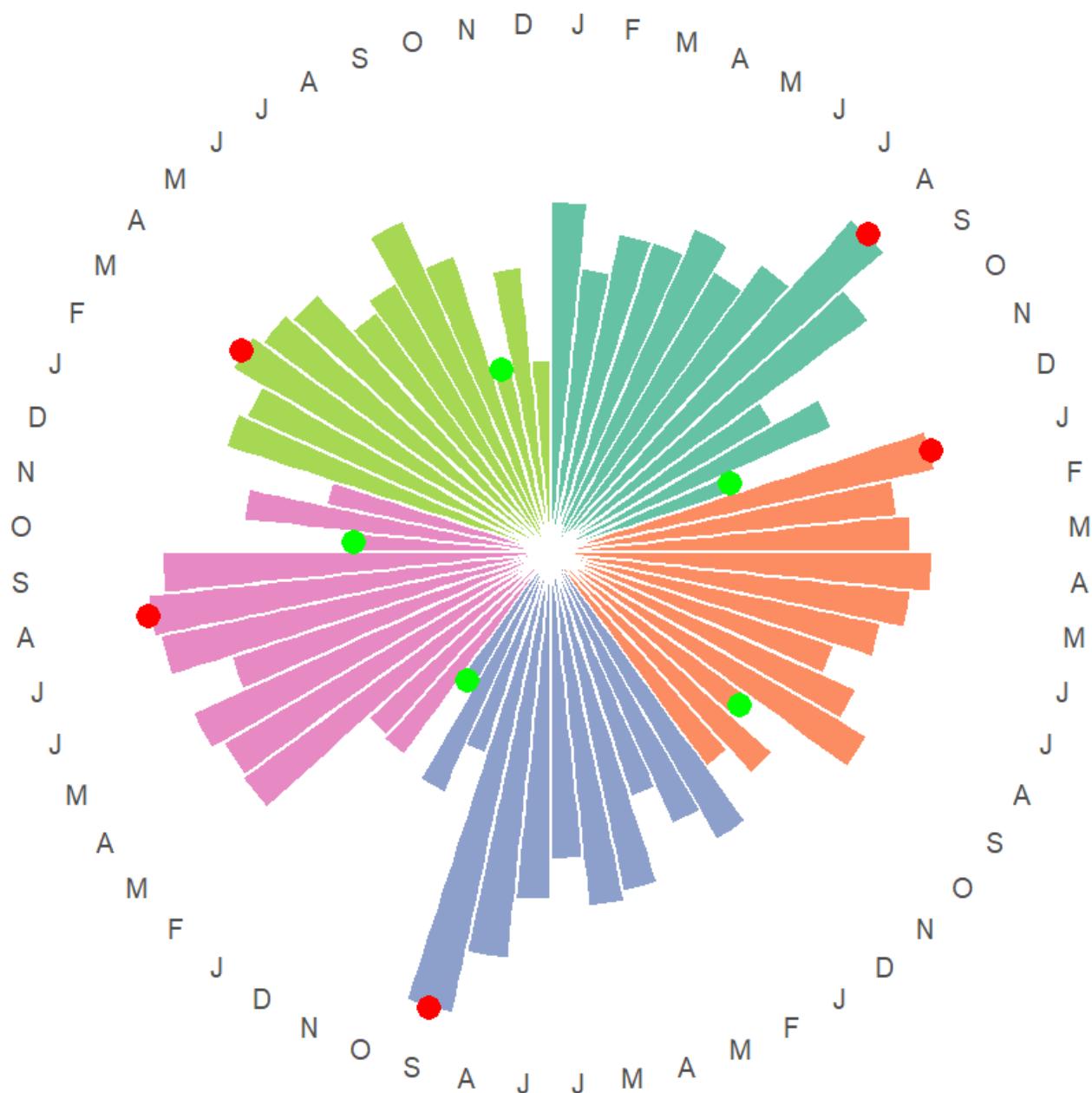
- 2020
- 2021
- 2022
- 2023
- 2024

Highlights

- Max fishing hours
- Min fishing hours

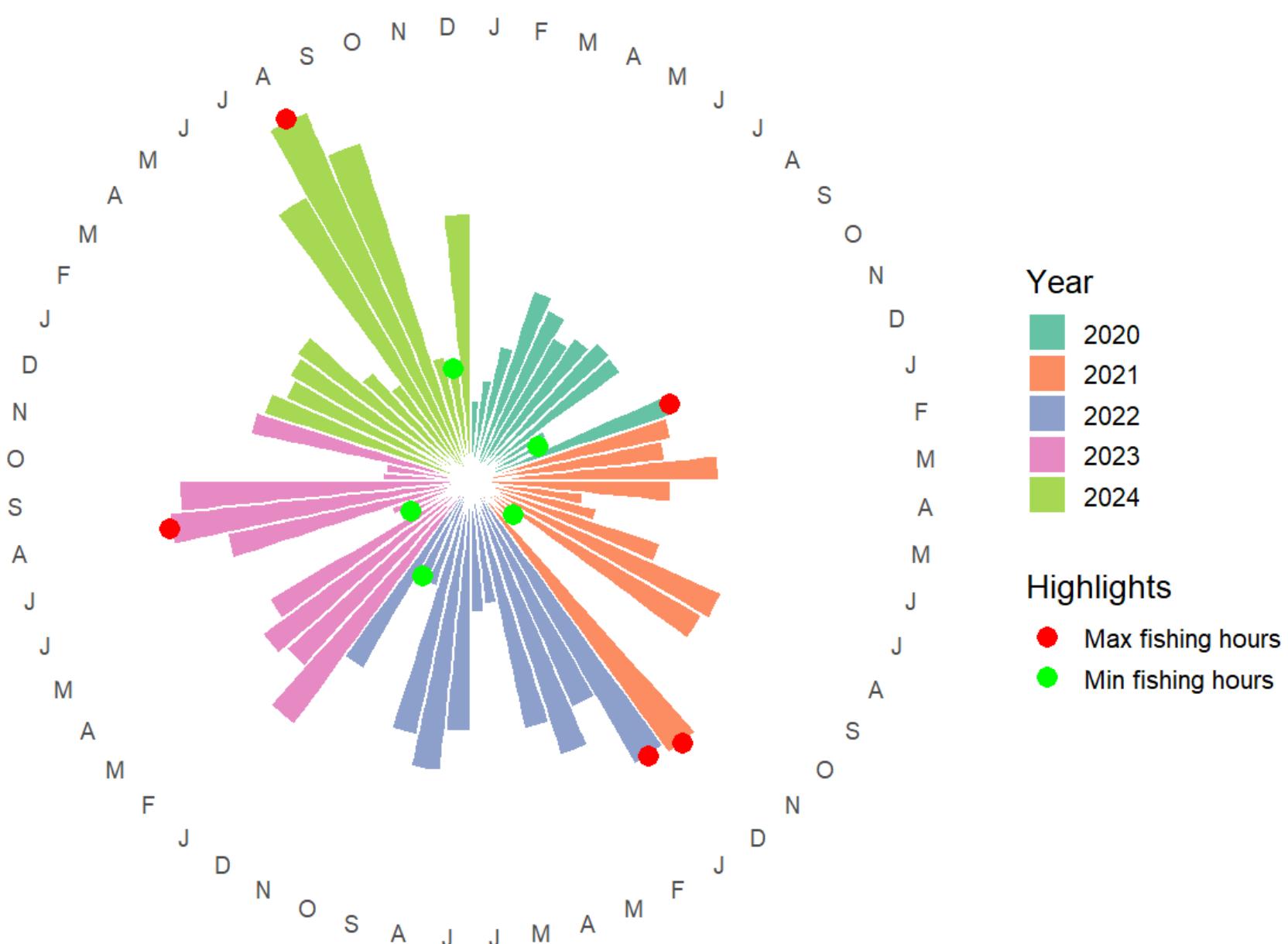
- CPCO member countries combined (2020–2024): The **highest trawler fishing hours** occurred in either **October** or **December**.
- Conversely, the **lowest trawler fishing hours** generally fell between **February and March**.

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Senegal (2020–2024)



- Senegal (2020–2024): The month with the **highest trawler fishing hours** varied from year to year, with **August** occurring most frequently. In 2024, the peak month was **March**.
 - Conversely, the **lowest trawler fishing hours** generally occurred in either **October or December**.
- Year**
- 2020
 - 2021
 - 2022
 - 2023
 - 2024
- Highlights**
- Max fishing hours
 - Min fishing hours

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Mauritania (2020–2024)



- Mauritania (2020–2024): The **highest trawler fishing hours** occurred in **December** or **January** from 2020 to 2022, and in **August** during 2023 and 2024.
- Conversely, **November** generally recorded the **lowest trawler fishing hours**, except in 2023 when **May** had the **minimum**.

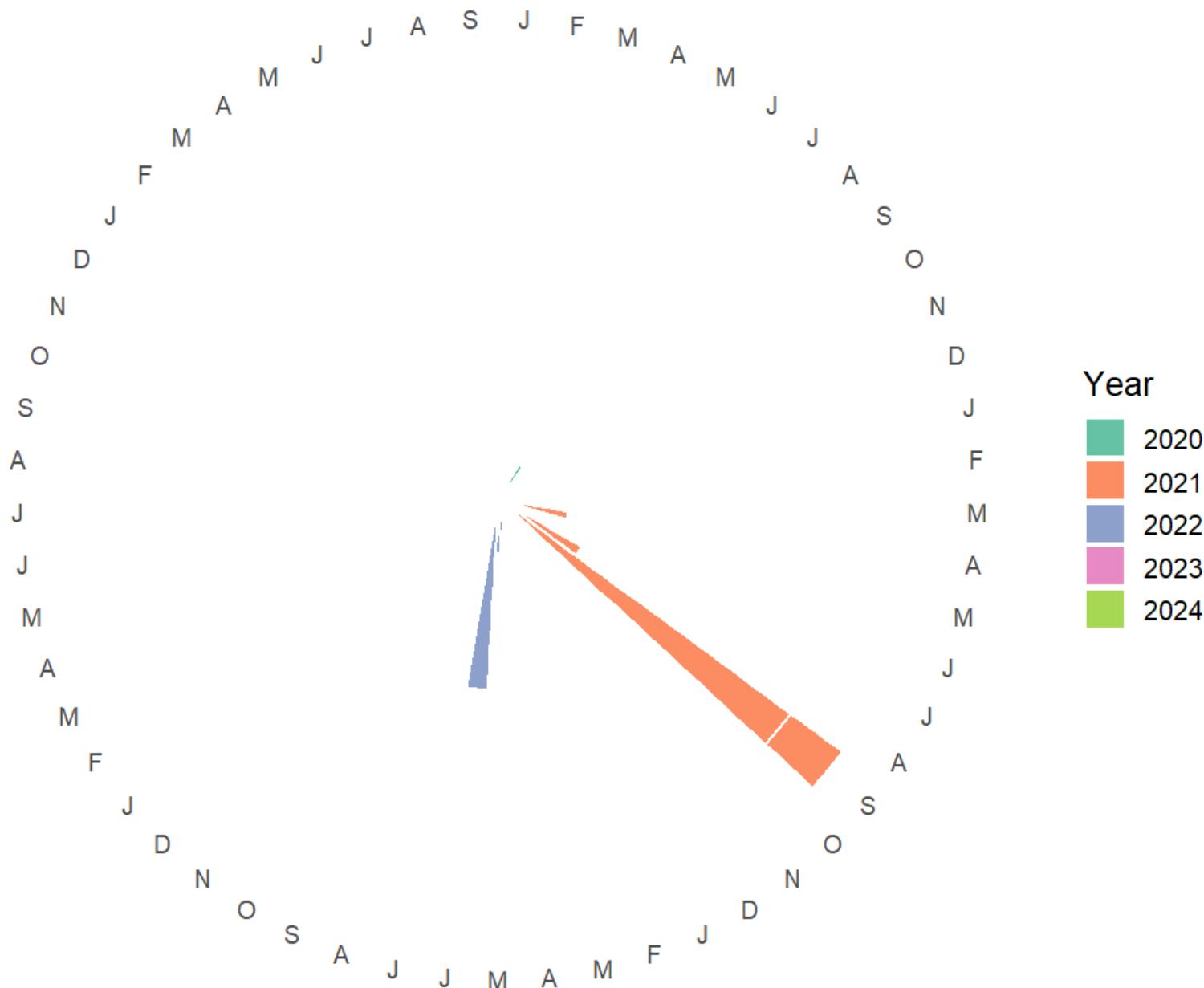
Year

- 2020
- 2021
- 2022
- 2023
- 2024

Highlights

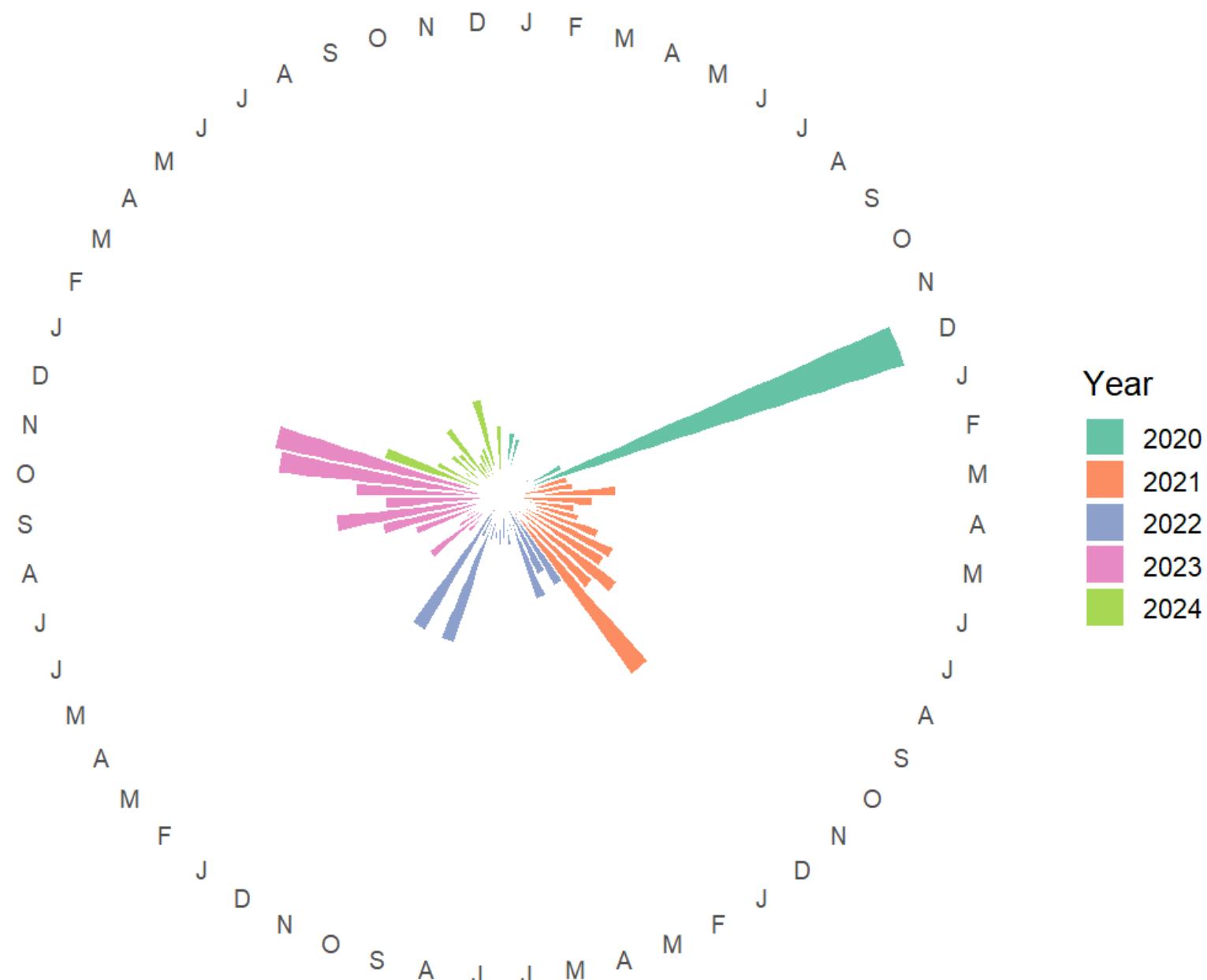
- Max fishing hours
- Min fishing hours

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Cabo Verde (2020–2024)



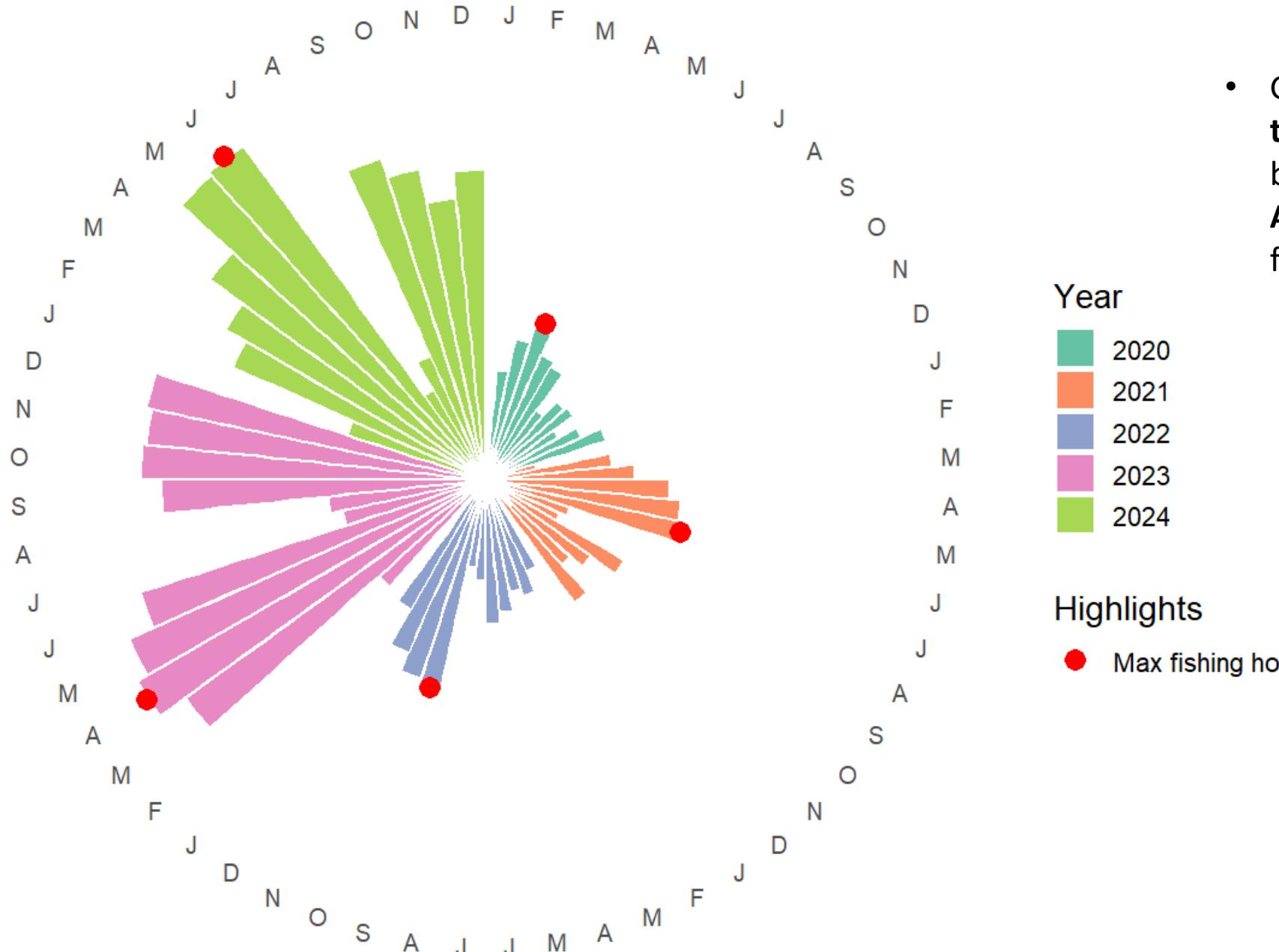
- Cabo Verde (2020–2024): Compared to other CSRP countries, **fishing with trawlers** occurred during very few months, with the majority of months recording **zero fishing hours with trawlers**. As noted earlier, **drifting longlines** were by far the most widely used fishing gear.

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Gambia (2020–2024)



- Gambia (2020–2024): The **highest trawler fishing hours** occurred in **October, December, or January**.

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Guinea (2020–2024)



- Guinea (2020–2024): The **highest trawler fishing hours** occurred between **April and August**, with **April and June** appearing most frequently.

Year

- 2020
- 2021
- 2022
- 2023
- 2024

Highlights

- Max fishing hours

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Guinea Bissau (2020–2024)



- Guinea Bissau (2020–2024): The **highest trawler fishing hours** occurred between **March and August**, with **March and June** most frequently recording the maximum trawler fishing hours.

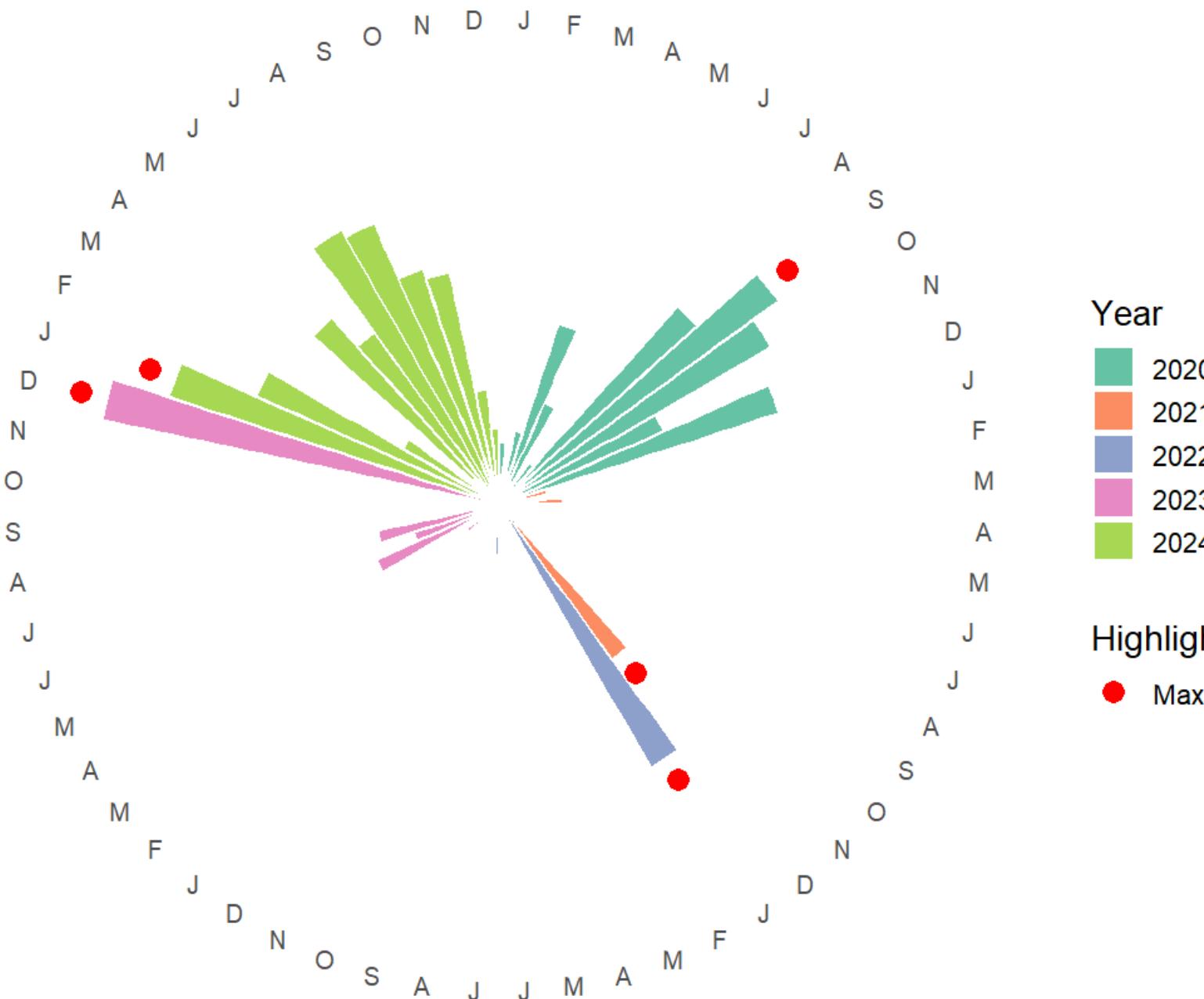
Year

2020
2021
2022
2023
2024

Highlights

- Max fishing hours

Monthly Fishing Hours with Trawlers per CSRP Country, Case of Sierra Leone (2020–2024)



- Sierra Leone (2020–2024): The **highest trawler fishing hours** generally occurred in **December** or **January**, except in 2020 when it was **September**.

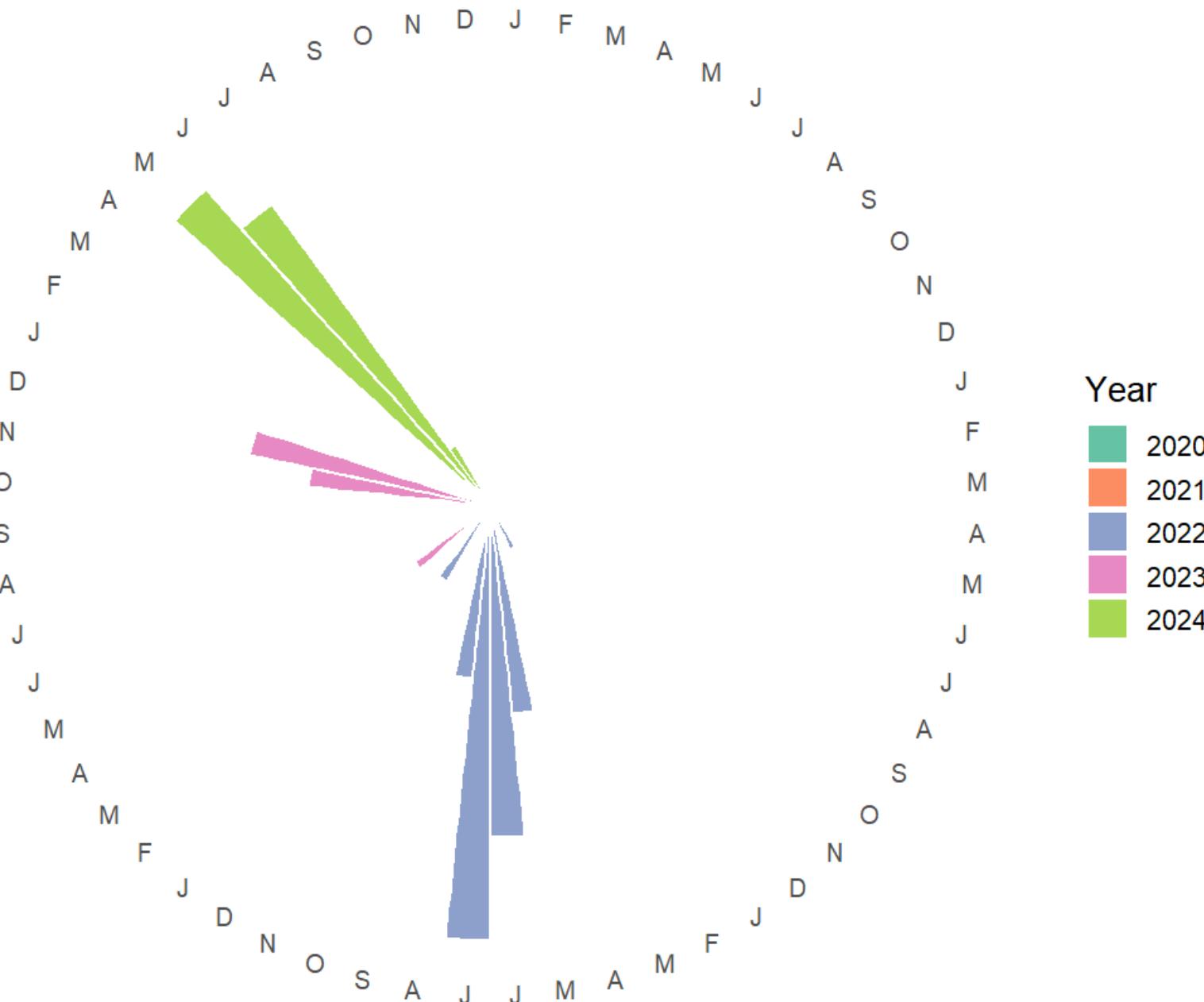
Year

- 2020
- 2021
- 2022
- 2023
- 2024

Highlights

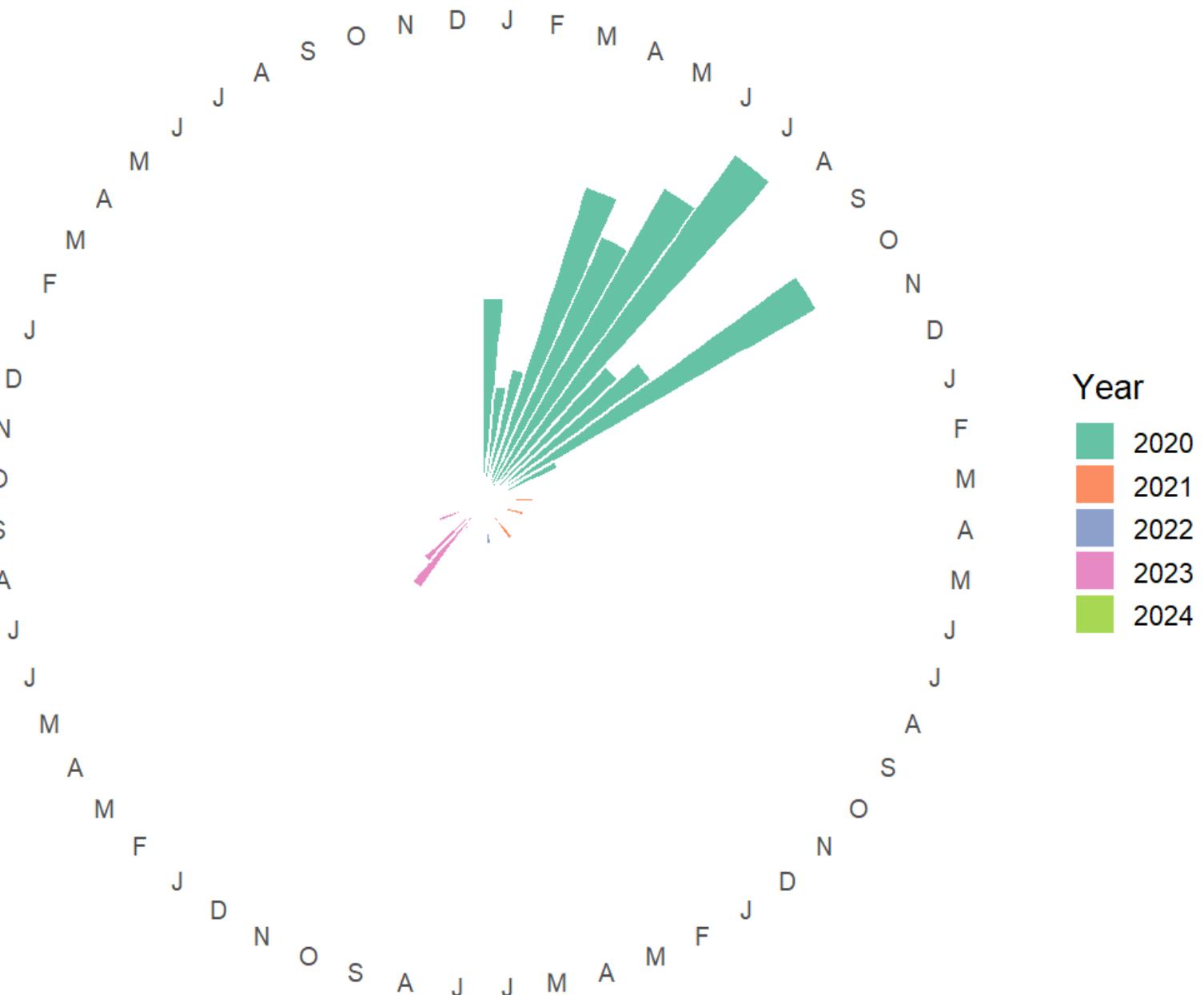
● Max fishing hours

Monthly Fishing Hours with Trawlers per CPCO Country, Case of Benin (2020–2024)



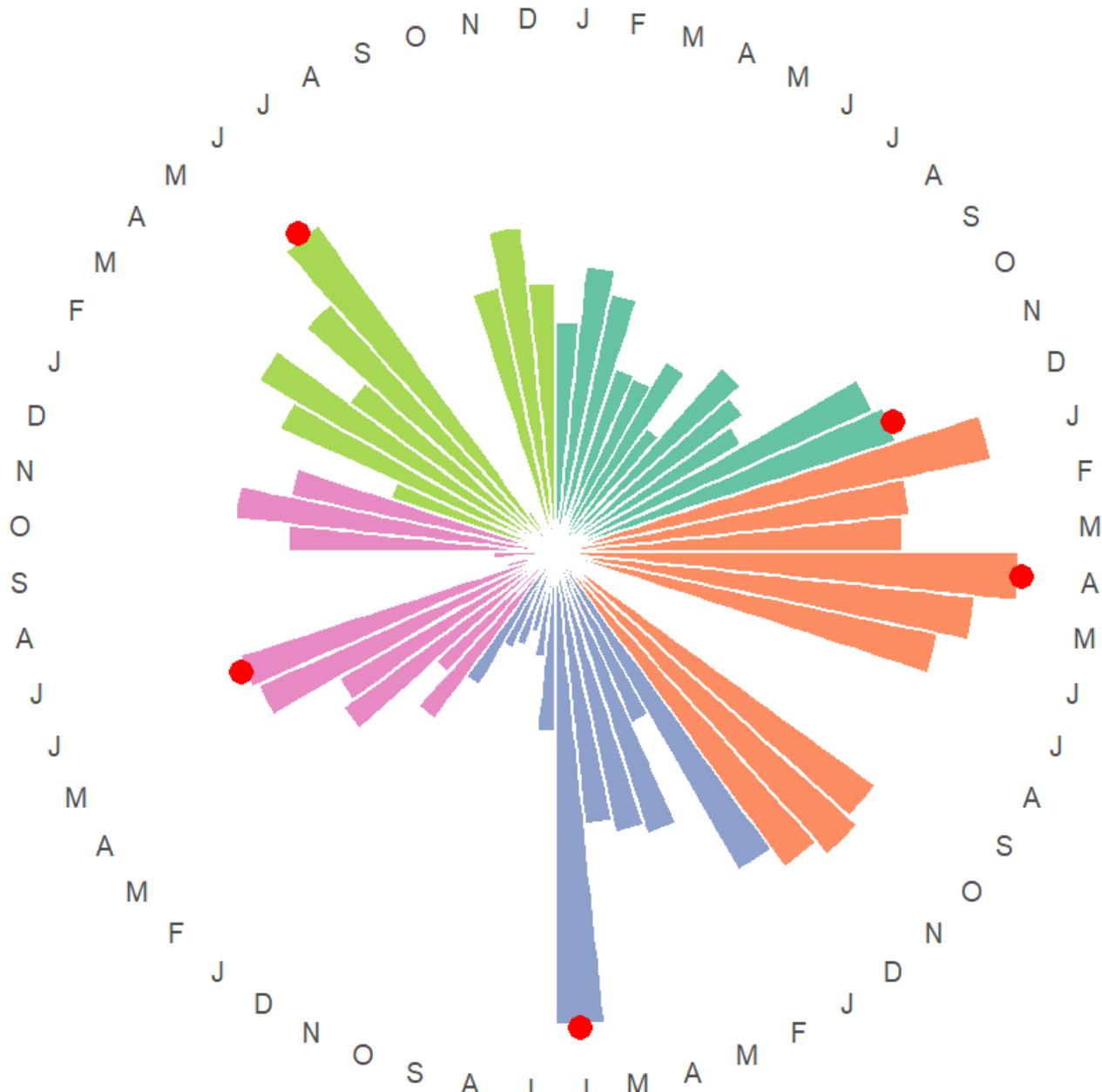
- Benin (2020–2024): **Fishing with trawlers** occurred during very few months, with the majority of months recording **zero fishing hours with trawlers**.

Monthly Fishing Hours with Trawlers per CPCO Country, Case of Côte d'Ivoire (2020–2024)



- Côte d'Ivoire (2020–2024): **Fishing with trawlers** occurred during very few months, with the majority of months recording **zero fishing hours with trawlers**, except in 2020.

Monthly Fishing Hours with Trawlers per CPCO Country, Case of Ghana (2020–2024)



- Ghana (2020–2024): The **highest trawler fishing hours** occurred in **December** in 2020 and **April** in 2021. For the remaining years, **June** consistently recorded the **maximum trawler fishing hours**.

Year

- 2020
- 2021
- 2022
- 2023
- 2024

Highlights

- Max fishing hours

Monthly Fishing Hours with Trawlers per CPCO Country, Case of Liberia (2020–2024)

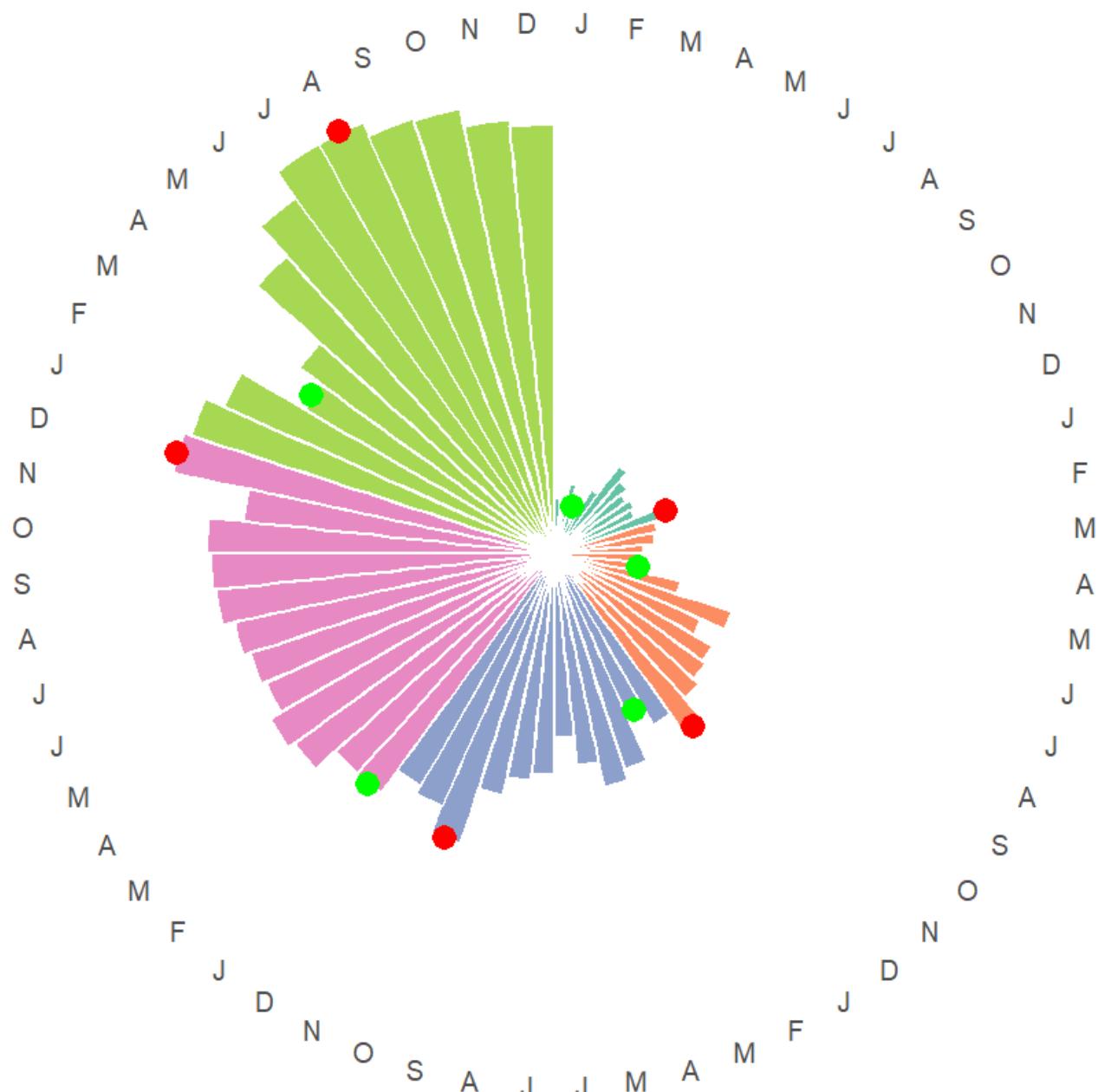


- Liberia (2020–2024): The **highest trawler fishing hours** occurred between **November and January**, except in 2020 when it was **March**.
- The **lowest trawler fishing hours** fell between **May and September** from 2020 to 2022, and in **March and February** for 2023 and 2024, respectively.

Highlights

- Max fishing hours
- Min fishing hours

Monthly Fishing Hours with Trawlers per CPCO Country, Case of Nigeria (2020–2024)



- Nigeria (2020–2024): From 2020 to 2023, the **highest trawler fishing hours** occurred between **October** and **December**, with **December** appearing most frequently. In 2024, the peak month was **August**.
- The month associated with **lowest trawler fishing hours** varied over the five-year period, mostly falling between **January** and **March**.

Year

- 2020
- 2021
- 2022
- 2023
- 2024

Highlights

- Max fishing hours
- Min fishing hours

Monthly Fishing Hours with Trawlers per CPCO Country, Case of Togo (2020–2024)



- Togo (2020–2024): The month associated with **highest trawler fishing hours** varied between **August and December** from 2020 to 2023, and in 2024 the peak month was **March**.

Total Fishing Hours in CSRP/SRFC Marine Protected Areas (MPA)

Country	MPA Name	Year				
		2020	2021	2022	2023	2024
Cabo Verde	Parque Natural de Cruzinha			0	0	0
	Parque Natural do Norte	0	0	0		
	Parque Natural Norte da Ilha do Maio			0		0
	Reserva Natural Baía da Murdeira			0	2	6
	Reserva Natural de Santa Luzia	0	0	0	1	0
	Reserva Natural Tartaruga	0	0	0	0	0
Guinea Bissau	Bolama - Bijagos	10	161	52	43	738
	Ilhas Formosa, Nago & Tchedia (Urok)	0	110	16	12	715
	Joao Vieira and Poilao Marine National Park			0		
	Orango	2	0		0	0
Senegal	Delta du Saloum	0	0		1	0
	Gorée	7512	8952	7830	2016	8919
	Kayar	2	0	0		0
	Saint-Louis	84	2	0	0	20
	Sangomar	0	0		0	3
Sierra Leone	Sierra Leone River Estuary	0			0	
	Yawri Bay				0	

The table presents **MPAs** within the area covered by CSRP that have recorded data in the Global Fishing Watch dataset. Some MPAs have point coordinates appearing in the dataset but are associated with **zero fishing hours**. The MPAs with the **highest fishing hours** are **Gorée** in Senegal, followed by **Bolama-Bijagos** and **Ilhas Formosa, Nago & Tchedia (Urok)** in Guinea Bissau. Among CSRP member countries, MPAs in **Mauritania, Gambia, and Guinea** have no recorded data in the Global Fishing Watch dataset, corresponding to **zero fishing hours**.

Total Fishing Hours in CPCO/FCWC Marine Protected Areas (MPA)

There are **no recorded data** in the Global Fishing Watch dataset for MPAs within the area covered by CPCO, resulting in **zero fishing hours**. MPAs in **Côte d'Ivoire, Liberia, and Nigeria** show **zero fishing activity**. For **Benin, Ghana, and Togo**, no MPAs are listed in the World Database on Protected Areas from the Protected Planet website.