How Seychelles monitors the biological status of fish populations

The Seychelles Fisheries Authority (SFA) is the national authority mandated to undertake or commission scientific assessments of fisheries resources, including demersal, semi-pelagic and reef fishes, as well as lobsters and sea cucumbers. The Ministry of Fisheries, Agriculture and Blue Economy (MFABE) provides the overarching policy direction and legal frameworks, through the Department of Fisheries.

Artisanal finfish fishery

Biological monitoring approaches vary among species and fishery. Artisanal fisheries are primarily monitored through the SFA Catch Assessment Survey (CAS), an ongoing fishery-dependent monitoring programme implemented by the Fisheries Statistic Department. The survey covers over 39 landing sites across the main islands of Mahé, Praslin and La Digue. It encompasses commercially important species and species groups, including emperor red snapper, green jobfish, brown-spotted grouper, other emperors, snappers and groupers, trevallies, barracudas, rabbitfishes and other trap-associated fishes.

The survey is stratified by geographical area, vessel type and fishing gear. Enumerators collect information on vessel activity, fishing effort, catch, species composition and economic variables. Length frequency information is also collected for tuna and tuna-like species landed by the artisanal fishery. The CAS is supplemented by information from fish processors and exporters.

In addition to the CAS, the SFA Fisheries Research Department conducts biological sampling and species-specific studies. Biometric data (length, weight, catch and information of fishing activity) are collected for key, selected species namely Emperor red snapper, Green jobfish, Brown-spotted grouper, Shoemaker spinefoot, Two-spot red snapper yearly. These data support the estimation of population parameters and are used in the assessment of stock status.

Stock status report

This report provides a comprehensive synthesis of available information to support the determination of stock status in the artisanal fishery. It integrates information from stock assessments, fisheries statistical reports and biological samplings to evaluate the status of exploited fish stocks. Data that were considered included catch, fishing effort, and length frequency, as well as conclusions from stocks were the FAO Weight of Evidence framework had been applied. Additionally, it shows the latest trend in the fishery and include the most recent CPUE standardisation.

In the report, the artisanal fishery is further classed in the report as demersal handline fishery, semi-pelagic handline fishery, Trap fishery, Net fishery, Lobster fishery, Sea cucumber fishery, Spanner crab fishery, Octopus fishery and lastly Sharks and ray's fishery.

The stock status report is produced every 5 years.

The outcome from this report is used in any strategic, fisheries management decisions particularly in relation to species under the Mahe Plateau co-management plan.

Find below the most recent stock status report.

- https://www.sfa.sc/wp-content/uploads/2026/03/Status-Report_seychelles_fish_2025.pdf

Fishery dependent stock assessment of artisanal trap and line fish species

SFA also undertakes formal stock assessments of key species and species groups targeted by the artisanal trap and line fisheries. These assessments primarily utilize catch and effort data from the CAS, fishing location data collected from the vessel monitoring system (VMS) and available biological information such as size-composition data for certain key species.

Appropriate analytical methods are applied to estimate stock condition and assess fishing pressure and identify potential management concerns. These comprehensive analyses are generally conducted every 5 years. However, due to certain challenges, the analysis was not undertaken in 2026 as per the planned schedule.

Find below the latest stock assessment report.

https://www.sfa.sc/wp-content/uploads/2024/08/Assessing-Key-Fish-Stocks-of-Seychelles.pdf

Length-based stock assessment

On an annual basis, length-based stock assessments are undertaken for three key indicator species of the demersal handline fishery, using the length frequency sampling data. The three key species are Green jobfish, Brown-spotted grouper and Emperor red snapper.

The results provide updated scientific information to inform management discussion and decisions under the Mahé Plateau Trap and Line Fishery Co-management Plan.

Find below the most recent length-based stock assessment report.

- https://www.sfa.sc/wp-content/uploads/2026/01/length_based_stock_assessment_2025.pdf

Other artisanal fisheries

For the spanner crab, spiny lobsters and sea cucumber fisheries, information about the fishery is collected through a combination of fishery dependent monitoring and fisheries-independent surveys.

For the fisheries-dependent approach, there is a logbook system for all these fisheries, through which information about the operation of the fishery in terms of catch, effort and geographical area of operation are collected. Additionally, for the spanner crab and spiny lobster fisheries only, there is the biometric landing sampling to collect information from the catch during the open fishing season. For the spanner crab fishery, the sampling target is 5% of the total catch. As for the lobster fishery, the sampling target is 100% of the total catch on Mahe.

As for the sea cucumber fishery, in addition to the logbook system, there are port inspection of the landings which are undertaken by the Monitoring, Control and Surveillance (MCS) department of the SFA.

Fisheries dependent report

From the analysed data, a fisheries report of the respective fishery is produced at the end of each season. The outcomes of these reports are used in the management decisions for the respective fishery, for instance in relation to fishing season (open or closed), introduction of quota or prohibition of harvest of certain species etc.

Find below the most recent fisheries dependent report.

Sea cucumber

- https://www.sfa.sc/wp-content/uploads/2026/08/Report-Sea-Cucumber-fishery-2024-2025.pdf

Spanner crab

- Finalised and will be published on the SFA website soon

Lobster

- Still in progress

Fisheries independent report

The fisheries-independent survey is conducted by the Fisheries Research Department of the SFA by employing rigorous and robust scientific methodology, to ascertain abundance and distribution of spanner crabs, lobster and sea cucumber across various habitat types on the Mahé Plateau and even in the Outer Islands, where applicable. Typically, these are undertaken every 3 to 5 years, depending on any emerging circumstances and a comprehensive report is produced following the completion of the survey.

For the lobster fishery, a fisheries-independent survey known as the Participatory Lobster Monitoring Programme (PLMP) is carried out on annual basis to assess the stock status of lobster at 20 indicator sites around Mahé island.

The findings from these reports contribute to evidence-based decision-making to support the sustainable management of the respective fisheries.

Find below the most recent fisheries-independent reports.

Lobster

- https://www.sfa.sc/wp-content/uploads/2026/01/2025.-PLMP-survey-2025_Final.pdf
- https://www.sfa.sc/wp-content/uploads/2025/01/Lobster-survey-report-2024.pdf
- https://www.sfa.sc/wp-content/uploads/2025/08/Lobster-Comprehensive-Lobster-SurveyCLS_2023_report_Final.pdf

Sea cucumber

- https://www.sfa.sc/wp-content/uploads/2025/11/Seychelles-sea-cucumber-survey-2025-report_Final.pdf

Spanner crab

- https://www.sfa.sc/wp-content/uploads/2024/08/Spanner-crab-survey-report_Final.pdf

The outcomes of all the reports combined is used in the management decisions and also in the design and development of harvest strategy for the fisheries.

Sports and recreational fisheries

No data is collected on the landings from recreational fishery. However, length frequencies sampling is undertaken on key species of interest (demersal species, tuna and tuna-like species) from the Sports fishing competition. Data pertaining to tuna and tuna-like species are submitted to IOTC.

Semi industrial and Industrial fisheries

The data from the semi-industrial and industrial fisheries are collected through logbook system. Length frequencies for these species are also collected by the Fisheries Management department within SFA. The main species of the two fisheries are tuna and tuna-like species. These shared pelagic stocks such as tuna and billfish are assessed and managed by the regional fishery management organisation, Indian Ocean Tuna Commission (IOTC) in the Indian Ocean.

Seychelles is a Contracting Party (CP) to the IOTC, with an obligation to submit catch, effort, size-composition, logbook and other fisheries data to the organisation.

- **IOTC mandate:** 16 tuna and tuna-like species.
- **Associated species:** Other species are also monitored as they are caught and impacted by the IOTC fisheries. These include sharks, cetaceans, marine turtles, seabirds and mobulids.

Detailed information on the status of these stocks can be found on the IOTC website (https://iotc.org/node/3379).

In terms of collaboration, SFA Fisheries Research department have worked and is working in close collaboration with a number of institutions and stakeholders. These include:

- IOTC: Indian Ocean Tuna Commission-Management and conduct assessment for tuna, tuna-like species.
- SIOFA: Southern Indian Ocean Fisheries Agreement –manages a variety of fishery resources including fish, molluscs, crustaceans and other sedentary species within the Agreement Area, but excluding highly migratory species and sedentary species subject to the jurisdiction of coastal States
- SWIOFC: South West Indian Ocean Fisheries Commission – a regional fisheries advisory body established by under the Food and Agriculture Organisation (FAO). As an advisory committee it cannot impose obligations on its members however it assists with the promotion of sustainable use and management of resources in coastal countries of the Western Indian Ocean Region. Some of its function includes providing scientific advice, coordinating research, data collection and sharing and capacity building.
- FAO: Food and Agriculture Organisation – for the reporting and submission of fisheries data
- **Research and technical partnerships**: Institut de Recherche pour le Développment (IRD) in France, Lancaster University in the UK, University of Seychelles (UniSey), The Nature Conservancy (TNC), International climate initiative (IKI), Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Australia, Seychelles Maritime Academy (SMA), United Nations Development Programme (UNDP), Global Environment Facility (GEF), The World Bank, Seychelles Parks and Garden Authority (SPGA), Ministry of Environment, Climate, Energy and Natural Resources, Department of Blue Economy
- **Conservation partnerships:** SFA also works with numerous Non-Governmental Organisations (NGOs) and these include Marine Conservation Society Seychelles (MCSS), Save our Seas Foundation (SOSF), Island Conservation Society (ICS) and

Seychelles Islands Foundation (SIF) on research, monitoring and conservation initiatives.

- **Community participation:** Fishers, boat owners, skippers, divers which directly involved as research collaborators in programmes such as the PLMP and other surveys.

This is consolidated list of the status of fish populations or stocks as per the latest available assessment and data.

Table 1: A consolidated list the status of fish populations

Species / group	Assessed by	Year of Assessment	Fishing mortality	Biomass
Emperor red snapper	SFA	2021	Subject to overfishing	Not overfished
Brown-spotted grouper	SFA	2021	Subject to overfishing	Uncertain
Jobfish (various)	SFA	2021	Subject to overfishing	Not overfished
Emperors (Lethrinidae)	SFA	2021	Subject to overfishing	Overfished
Snappers (Lutjanidae)	SFA	2021	Subject to overfishing	Not overfished
Groupers (Epinephelinae)	SFA	2021	Subject to overfishing	Uncertain
Trevallies (Carangidae)	SFA	2021	Subject to overfishing	Overfished
Kawakawa	SFA	2021	Not subject to overfishing	Not overfished
Barracudas	SFA	2021	Subject to overfishing	Overfished
Spinefoots (Siganus spp.)	SFA	2021	Not subject to overfishing	Uncertain
Other trap fish	SFA	2021	Subject to overfishing	Uncertain
White teatfish (sea cucumber)	SFA	2025	Subject to overfishing	Overfished
Flower teatfish (sea cucumber)	SFA	2025	Subject to overfishing	Overfished
Prickly redfish (sea cucumber)	SFA	2025	Subject to overfishing	Not overfished
Pronghorn spiny lobster	SFA	2024	Uncertain	Not overfished
Long-legged spiny lobster	SFA	2024	Uncertain	Not overfished
Bigeye tuna	IOTC	2024	Subject to overfishing	Overfished
Yellowfin tuna	IOTC	2024	Not subject to overfishing	Not overfished

Skipjack tuna	IOTC	2024	Not subject to overfishing	Not overfished
Albacore	IOTC	2024	Not subject to overfishing	Not overfished
Swordfish	IOTC	2024	Not subject to overfishing	Not overfished
Blue marlin	IOTC	2024	Subject to overfishing	Overfished
Striped marlin	IOTC	2024	Subject to overfishing	Overfished
Black marlin	IOTC	2024	Subject to overfishing	Not overfished
Indo-Pacific sailfish	IOTC	2024	Not subject to overfishing	Not overfished
Blue shark	IOTC	2024	Not subject to overfishing	Not overfished
Shortfin mako shark	IOTC	2024	Subject to overfishing	Overfished
Oceanic whitetip, silky, scalloped hammerhead, bigeye/pelagic thresher, porbeagle sharks	IOTC	2024	Unknown	Unknown

3. A consolidated list of the scientific studies and stock assessments

All the surveys and scientific assessment have been undertaken or commissioned by the SFA.

Scientific surveys or assessment	Species, stock or fishery	Description	Year undertaken/ completed	Frequency	Link
Fishery independent survey-Seychelles sea cucumber survey	Sea cucumber	A fishery independent assessment of the abundance and recovery of sea cucumber stocks undertaken by SFA in close collaboration with sea cucumber fishers, with a focus on the Mahe plateau only, with the aim to provide recommendation for the effective management of the resource.	2025	Every 5 years	https://www.sfa.sc/wp-content/uploads/2025/11/Seychelles-sea-cucumber-survey-2025-report_Final.pdf
Fishery dependent – Seychelles sea cucumber Fishery report	Sea cucumber	A detailed analysis of the catch and effort data for the Sea cucumber fishery during the 2024-2025 fishing season. It outlines the fluctuations in total catch, fishing effort, variations in Catch Per Unit Effort (CPUE), and percentage quota utilization, providing insights into the	2026	Annually	https://www.sfa.sc/wp-content/uploads/2026/08/Report-Sea-Cucumber-fishery-2024-2025.pdf

		fishery's performance and trends over these periods.			
Fishery independent survey-Assessment of Spanner crab (*Ranina ranina*)-Krab Ziraf on Mahé Plateau (Zone 2& 3)	Spanner crab	The aim of this study was to investigate the abundance and spatial distribution of spanner crab (*Ranina ranina*) within the Mahé Plateau, Seychelles.	2022-2023	Every 5 years	https://www.sfa.sc/wp-content/uploads/2024/08/Spanner-crab-survey-report_Final.pdf
Fishery dependent-Spanner crab sampling programme report	Spanner crab	This report presents the results of the fisheries-dependent sampling programme for the open fishing season	2023-2024 (*2024-2025 is in progress*)	Annually	https://www.sfa.sc/wp-content/uploads/2026/10/Spanner-crab-sampling-report-20232024_Final.pdf
Artisanal fishery stock assessment-Assessing key fish stocks of Seychelles' Artisanal Trap and line fishery	Trap and line fisheries in the artisanal sector	The assessment of the stock status of key species in Seychelles' artisanal fisheries by using catch and effort data from the Catch assessment surveys (CAS), fishing location data collected from the vessel monitoring and also biological information such as size-based data for certain key species.	2021	Every 5 years	https://www.sfa.sc/wp-content/uploads/2024/08/Assessing-Key-Fish-Stocks-of-Seychelles.pdf
Stock status-Status report of the Seychelles Fisheries	All fisheries in artisanal sector, including sea cucumber, spiny lobster, spanner crab, octopus and sharks and rays fishery	This report presents the status of fish stock within the Seychelles fisheries, focusing specifically on local stocks in the artisanal fishery and the sea cucumber fishery within the semi-industrial	2025	Every 5 years	https://www.sfa.sc/wp-content/uploads/2026/03/Status-Report_seychelles_fish_2025.pdf

		sector, using several indicators to determine the status including catch trends, catch per unit effort (both standardized and unstandardized) and length frequency data, where available. Additionally, any stock assessments conducted within the past five years were incorporated to give a more comprehensive understanding of the stock status.			
Stock assessment- Stock assessment (length-based) of three key demersal species in the artisanal fishery	3 key demersal species: Green jobfish, Brownspotted grouper and Emperor red snapper	This report presents length-based stock assessments for three key indicator species of the demersal handline fishery; these are *Aprion virescens* (Green jobfsh, zob gri), *Epinephelus chlorostigma* (Brownspotted grouper, vyey makonde) and *Lutjanus sebae* (Emperor red snapper, bourzwa). Additionally Yield-per-Recruit (YPR) analyses were conducted for Emperor red snapper only.	2025	Annually	https://www.sfa.sc/wp-content/uploads/2026/01/length_based_stock_assessment_2025.pdf
Fishery independent survey-Participatory Lobster Monitoring Programme (PLMP)	4 species of spiny lobsters- Pronghorn spiny lobster (*Panulirus penicillatus), Long-legged spiny lobster (Panulirus*	A fishery independent survey undertaken annually to assess stock status at 20 indicator sites around Mahé	2025	Annually	https://www.sfa.sc/wp-content/uploads/2026/01/2025.-PLMP-

survey report Spiny Lobster	*longipes),* Painted spiny lobster *(Panulirus versicolor)* and Ornate spiny lobster (*Panulirus ornatus)*				survey-2025_Final.pdf
Fishery independent survey-Survey of Spiny lobster in Granitic and Coralline Island on Mahé Plateau (Zone 2 & 3)	4 species of spiny lobsters- Pronghorn spiny lobster (*Panulirus penicillatus), Long-legged spiny lobster (Panulirus longipes),* Painted spiny lobster *(Panulirus versicolor)* and Ornate spiny lobster (*Panulirus ornatus)*	This study investigated the abundance and spatial distribution of spiny lobsters around the granitic and coralline islands on the Mahé Plateau, Seychelles. Four surveys conducted from October to November 2023 focused on specific habitats to capture variations in lobster populations	2023	Every 5 years	https://www.sfa.sc/wp-content/uploads/2025/08/Lobster-Comprehensive-Lobster-SurveyCLS_2023_report_Final.pdf
Fishery dependent survey- Report on the Spiny Lobster fishery	4 species of spiny lobsters- Pronghorn spiny lobster (*Panulirus penicillatus), Long-legged spiny lobster (Panulirus longipes),* Painted spiny lobster *(Panulirus versicolor)* and Ornate spiny lobster (*Panulirus ornatus)*	This report presents analyses of the fishery-dependent data collected from the spiny lobster fishery during the 2023 fishing season and compares previous fishing seasons.	2026 (*In progress*)	Following each open fishing season	*Not yet published on the website*

4. Management plans or conservation strategies

Below is a consolidated list of management plans and management measures and conservation strategies that are in place to control, maintain and improve the condition of the fish population.

Fishery or stock	Management instrument	Link between biological status and response
Artisanal finfish fishery (Mahé Plateau)	Mahé Plateau Trap and Line Fishery Co-management Plan and 2021 Regulations	Catch, effort, biological indicators and stock assessment for key demersal species are reviewed to inform measures such as minimum sizes, licensing and gear restrictions.
Sea cucumber fishery	Fishery regulations, licensing system and species-specific quotas	Fishery-independent abundance assessments inform total allowable catches, species quotas and licence conditions. Measures include limited entry, in terms of the number of licences, restriction on the number of the divers, an open and closed season and a quota system.
Spiny lobster fishery	Fishery regulations, management measures and licencing conditions Harvest strategy (still in development)	Fishery independent survey results, catch rates and biological information inform decisions on the open fishing season and its duration. Measures include limited entry through number of licences, minimum size limits and protection of berried females. Catch rates, size indicators, biological information and stock assessment are being used to establish trigger points and predefined management responses.
Spanner crab fishery	Fishery regulations, management measures and licensing conditions Harvest strategy (still in development)	Fishery independent survey results, catch rates, biological information and stock assessment are used in the decision making on the open season and its duration. Measures include limited entry through number of licences, minimum size limits and protection of berried females.

Fishery or stock	Management instrument	Link between biological status and response
		Catch rates, size indicators, biological information and stock assessment are being used to establish trigger points and predefined management responses.
Tuna and tuna-like species	IOTC conservation and management measures	Regional stock assessments determine catch limits, rebuilding measures and other controls. Seychelles implements applicable IOTC measures and contributes national fisheries data.