



# Marine Fishes Taxon Advisory Group SSP Designation Addendum for Existing Regional Collection Plans 2022-2027

The following document serves as an addendum to existing Regional Collection Plans (RCPs; published in 2022 and earlier) to update the status of the Taxon Advisory Group's (TAG) Species Survival Plan (SSP) programs after completing the SSP Assessment process and moving programs into the new SSP Framework as of January 2023. The SSP designations outlined here supersede any previous designations and remain valid until the TAG publishes their next RCP, between the years of 2023 and 2027.

The TAG used the standardized AZA SSP Assessment process to identify appropriate SSP designations for the species under its purview. This process is presented and described at [AZA SSP Reimagination Resources](#). The assessments were completed from May 17 through September 26, 2022. Only those programs that met the initial criteria of 15 institutions were asked to complete the assessments. The assessments were forwarded to the MFTAG Chair on October 15, 2022 and since the MFTAG was in the process of electing new Steering Committee members the TAG chose to wait until that process was completed to have a full slate of Steering Committee members who could evaluate the assessments. A virtual meeting was held on December 2, 2022 and the evaluation was completed at that time. The results of the evaluation were forwarded to MFTAG APM liaison, Chris Dold on January 13, 2023.

## Program Management Update

The table below lists all of the SSPs approved in the current RCP, the new designation (Signature SSP, Provisional SSP, TAG-Monitored, Other), the previous designation (Red/Yellow/Green SSP), and contact information for the SSP Coordinator or Species Monitor assigned to that population, if relevant. If a population is no longer going to be actively monitored, they will be designated as 'unmonitored' in the last column.

**Table 1: Animal Program Management Update Table**

Common Name (Scientific Name)	New 2022 SSP Program Designation	Previous SSP Program Designation	Contact (Name, Email)
Spotted eagle ray ( <i>Aetobatus narinari</i> )	Signature SSP	Yellow SSP	Denise Swider denise.swider@discoverycove.com
Sandtiger shark ( <i>Carcharias taurus</i> )	Provisional SSP	Yellow SSP	Chris Schreiber cschreiber@flaquarium.org
Blacktip reef shark ( <i>Carcharhinus melanopterus</i> )	AZA Studbook	Yellow SSP	Sarah Hoback shoback@newportaquarium.com
Big bellied seahorse ( <i>Hippocampus abdominalis</i> )	Signature SSP	Yellow SSP	Laurel Johnson ljohnson@newportaquarium.com
Lined seahorse ( <i>Hippocampus erectus</i> )	Signature SSP	Yellow SSP	Steven Yong syong@calacademy.org
Smalltooth sawfish ( <i>Pristis pectinata</i> )	AZA Studbook	Red SSP	Stacia White swhite@ripleys.com
argetooth sawfish ( <i>Pristis pristis</i> )	AZA Studbook	Red SSP	Stacia White swhite@ripleys.com
Green sawfish ( <i>Pristis zijsron</i> )	AZA Studbook	Red SSP	Stacia White swhite@ripleys.com
Bowmouth guitarfish ( <i>Rhina ancylostoma</i> )	AZA Studbook	Red SSP	Jen Hazeres jhazeres@newportaquarium.com
Zebra shark ( <i>Stegastoma tigrinum</i> )	Signature SSP	Yellow SSP	Jack Jewell (interim coordinator) jjewell@mandalaybay.com
Sandbar shark ( <i>Carcharhinus plumbeus</i> )	TAG Monitored	Candidate program	Kevin Becker kbecker@adventureaquarium.com
Goliath grouper ( <i>Ephinephelus itajara</i> )	TAG Monitored	Candidate program	Laura Wandel laura.wandel@dallaszoo.org
Nurse Shark ( <i>Ginglymostoma cirratum</i> )	TAG Monitored	Candidate program	Rachel Parmer rparmer@moodygardens.org
Epaulette Shark	AZA Studbook	Candidate program	Program leadership vacant

( <i>Hemiscyllium ocellatum</i> )			
Spotted seahorse ( <i>Hippocampus kuda</i> )	TAG Monitored	Candidate program	Program leadership vacant
Southern stingray ( <i>Hypanus americanus</i> )	TAG Monitored	Candidate program	Alyssa Tillman alyssa.tyillman@sealifeus.com
Atlantic stingray ( <i>Hypanus sabinus</i> )	TAG Monitored	Candidate program	Kelli Glover kglover@jacksonvillezoo.org
Leafy seadragon <i>Phycodurus eques</i>	TAG Monitored	Candidate program	Jeremy Brodt jbrodt@neaq.org
Banggai cardinalfish <i>Pterapogon kaudernii</i>	TAG Monitored	Candidate program	Program leadership vacant
Cownose Ray <i>Rhinoptera bonasus</i>	AZA Studbook	Candidate program, published studbook	Katherine Allen <a href="mailto:Kaallen@georgiaaquarium.org">Kaallen@georgiaaquarium.org</a>

### SSP Assessment Results

Below are the outcomes of the SSP Assessments across the genetic, demographic, space & interest, and husbandry criteria for current SSPs within the TAG. The scores shown for each species have been agreed upon by the TAG and the APMC liaison, and reviewed by the full APMC.

Type relevant information into the cells. Hover over column divider lines to make columns wider, until you see two small parallel vertical lines, and then click+drag; however, text is automatically set to wrap so you should avoid making columns wider if possible. To add rows, hover mouse over the outside of the left side of the table and click the + symbol that appears. To delete rows, hover mouse over the outside of the left side of the table and left click, an option for deleting (and other options) will appear. Under the genetics, demography, space & interest, and husbandry columns, each species should have either a +, -, or neutral in the cell. **Designation** will have the following possible values: Secure SSP, Signature SSP, Provisional SSP, Studbook-only, TAG-monitored, Phase Out, or No Program.

**Table 2: SSP Assessment Results Summary Table**

Species	Genetics	Demography	Space & Interest	Husbandry	Designation
Spotted eagle ray ( <i>Aetobatus narinari</i> )	+	+	+	+	Signature SSP
Sandtiger shark ( <i>Carcharias taurus</i> )	+	-	+ or Neutral	+	Provisional SSP
Blacktip reef shark ( <i>Carcharhinus melanopterus</i> )	*	*	*	*	*

Big bellied seahorse ( <i>Hippocampus abdominalis</i> )	+	+	+	Neutral	Signature SSP
Lined seahorse ( <i>Hippocampus erectus</i> )	+	+	+	Neutral	Signature SSP
Smalltooth sawfish ( <i>Pristis pectinata</i> )	*	*	*	*	AZA Studbook
Large tooth sawfish ( <i>Pristis pristis</i> )	*	*	*	*	AZA Studbook
Green sawfish ( <i>Pristis zijsron</i> )	*	*	*	*	AZA Studbook
Bowmouth guitarfish <i>Rhina ancylostoma</i>	*	*	*	*	AZA Studbook
Zebra shark <i>Stegastoma tigrinum</i>	+	+	Neutral	+	Signature SSP

### Additional Explanation for SSP Assessment Results

The **Spotted eagle ray** population is slowly growing due to recent births that were not included in the last Breeding and Transfer Plan. Lambda was 1.004 in the most recent Breeding and Transfer plan published in 2021. Average births exceed average deaths as well. In addition, they do have space for additional animals to accommodate future growth. Their target population in the last RCP was 80. The program is currently at 60 animals total and births occurring frequently. There are currently 17-18 AZA facilities participating in this program, and interest is strong for this popular species. Potential founders are available if needed.

The **Sandtiger shark program** represents one of the larger programs within the MFTAG in terms of the number of AZA facilities housing this species (35). Mean kinship cannot be counted at this time and all of the animals are considered founders. The population has not been managed based upon mean kinship as a result. Demography is considered a negative. The number of facilities has decreased less than 20% and space is available. They have also recently added a new facility as the Newport Aquarium recently acquired three animals.

The **Zebra shark program** is also a strong program with a large number of AZA facility members (29 currently). The lambda is 1.029 and shows growth. Although they have lost a few facilities, they are still at less than 20% decrease and since the assessment was completed, they gained one new facility. The target population in the last RCP was 108, their new target population is 130. We have listed the space and interest as neutral in the evaluation. More current space information will be available with the upcoming breeding and transfer plan process. The last one was completed in 2020.

### Big Bellied and Lined Seahorse programs-

The most recent B&T plan for Big bellied seahorses was completed in November and a draft is pending. The numbers reflected in this assessment are from the 2019 B&T plan. The lambda reported in that plan was 1.107 showing positive growth. That program is also popular amongst MFTAG stakeholders and now has 27 AZA institutions participating.

The Lined seahorse program in its last B&T plan in 2020 reported 57 AZA institutions and a lambda of 1.024 over the last five years showing positive growth.

Genetic diversity, mean kinship and median life expectancy are not available for these programs. Due to high fecundity in these species, both programs ask stakeholders to report only those animals that survive past 4 months after birth.

In the case of the Big bellied seahorses, imports have not occurred in the past two years so any growth has been due to breeding.

In the case of the Lined seahorse program. Wild caught founders are available and needed and breeding is encouraged for those facilities that have the space and resources.

Both of these programs were impacted by Covid shut downs and a number of facilities stopped breeding and/or did not transfer animals during that time.

**Black tip reef shark program** – This program just recently completed its first B&T plan which recently completed its 30day draft posting. Once the final plan is completed the assessment will be performed and results will be shared at that time. This is a popular program amongst MFTAG stakeholders and there are 37 AZA institutions represented. The 5 year lambda reported in the draft plan was 0.986. Mean kinship was reported at 0.0338

**Sawfish programs** – All three species currently published in one studbook. No single species is represented at 15 AZA facilities, and therefore the programs were not assessed. Breeding has occurred in only one species and only once at one AZA facility, and import and/or wild collection is restricted due to their ESA and CITES I listings. This program has published studbooks and B&T plans previously and the MFTAG would like them to remain as AZA studbooks.

**Bowmouth guitarfish** program – This program is represented by only 9 AZA facilities. Although there is growing interest and a recently published B&T plan, this program was not assessed and will remain as an AZA Studbook.

#### **Candidate programs:**

The **Cownose Ray program** has a published studbook and is awaiting the opportunity to schedule a planning meeting. This is a hugely popular program amongst MFTAG stakeholders with breeding occurring regularly. This is expected to be at least a Provisional SSP in the future, but the MFTAG would like to list it as an AZA studbook in this addendum.

The **Epauvette shark studbook** is currently being constructed in ZIMS and should be published by the middle of 2023. The MFTAG would like to list it as an AZA Studbook or TAG monitored program in this addendum.

The **Sandbark shark, Southern Ray, Atlantic Ray, and Nurse shark programs** are all popular species with large representation within AZA collections. Data has been collected by the program leadership and studbook publications are expected in the near future. The MFTAG would like to list these programs as TAG monitored until their studbooks are published and breeding and transfer plans can be scheduled.

The **Banggai cardinalfish** program is also a popular species with regular breeding and transfer of animals amongst stakeholders. Data has been collected, but a studbook has not been published. The leadership of this program is currently vacant. The MFTAG would like to list this program as TAG Monitored and re-evaluate based upon survey outcomes in the 2024 RCP.

The **Goliath grouper program** represents a large number of AZA facilities, but breeding has not been reported. Data has been collected for several years, but a studbook has not been published. The MFTAG

would like to list this program as TAG monitored and re-evaluate based upon space survey outcomes in the 2024 RCP.

The **Leafy seadragon program** has been collecting data for many years, but there has been no breeding and import of animals has been restricted due to Covid since 2019. It is believed that animals will be available for import in 2023. The MFTAG would like to list this program at TAG monitored and re-evaluate based upon space survey outcomes in the 2024 RCP.

The **Spotted seahorse program** has been collecting data for the past several years, but a studbook has not been published. The program leadership is currently vacant. The MFTAG would like to list this program at TAG monitored and re-evaluate based on space survey outcomes in the 2024 RCP.

**Further resources outlining the overall SSP Assessment Process can be found at [AZA SSP Reimagination Resources](#) and in the following documents:**  
**[AZA SSP Assessment Criteria Flowchart](#)**  
**[AZA SSP Assessment Form](#) and [How to fill out the AZA SSP Assessment](#)**  
**[AZA TAG Evaluation of the SSP Assessments](#)**