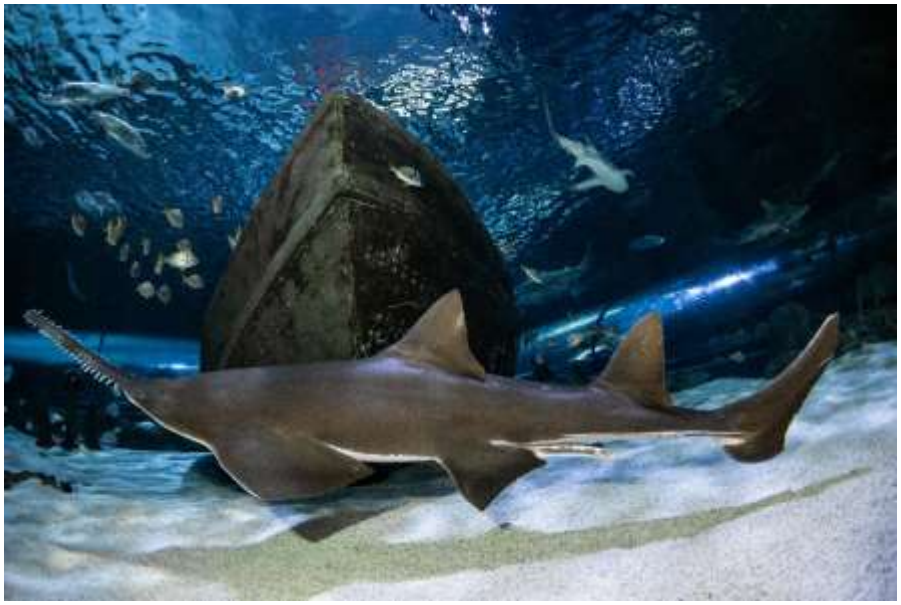
AZA Regional Studbook Publication

Largetooth Sawfish (*Pristis pristis*)

Smalltooth Sawfish (*Pristis pectinata*)

Longcomb Sawfish (*Pristis zijsron*)



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North American Regional Studbook

For Pristiformes species

Largetooth Sawfish *Pristis pristis*
Smalltooth Sawfish *Pristis pectinata*
Longcomb Sawfish *Pristis zijsron*

October 30, 2023

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Living Population

21.22.0 (41) At 14 Institutions

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Taxonomy	Event Type	Date	Location
12	QTW14-00594	ABERDE HK	AQ263	Male	Undetermined	Alive	WILD	WILD	18Y,5M,8D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	May 15, 2006	CAIRNSMAR
												Transfer	Jun 15, 2006	ABERDE HK
2	QTW14-00593	ABERDE HK	UNK	Female	Undetermined	Alive	WILD	WILD	27Y,4M,27D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jun 26, 1997	ABERDE HK
1	MIG12-29710256	BALTIM AQ	504002	Male	Undetermined	Alive	WILD	WILD	20Y,10M,0D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jan 23, 2004	BALTIM AQ
8	MIG12-29710257	BALTIM AQ	504003	Male	Undetermined	Alive	WILD	WILD	20Y,10M,0D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jan 23, 2004	BALTIM AQ
13	SCF16-00187	DALLAS WA	UNK	Male	Undetermined	Alive	WILD	WILD	17Y,0M,8D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Nov 15, 2007	DALLAS WA
17	SCF16-00189	DALLAS WA	UNK	Male	Undetermined	Alive	WILD	WILD	16Y,4M,12D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jul 11, 2008	DALLAS WA
18	SCF16-00188	DALLAS WA	UNK	Female	Undetermined	Alive	WILD	WILD	16Y,4M,12D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jul 11, 2008	DALLAS WA
33	MIG12-29918937	GA AQUAR	E21015	Female	Undetermined	Alive	WILD	WILD	21Y,9M,23D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jan 30, 2003	SHEDD AQ
												Transfer	Nov 03, 2021	GA AQUAR

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Taxonomy	Event Type	Date	Location
42	-	GA AQUAR	UNK	Male	Undetermined	Alive	WILD	WILD	19Y,1M,10D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Oct 13, 2005	GA AQUAR
4	-	GATLINBAQ	GB-PM-99-03-M	Male	Undetermined	Alive	WILD	WILD	25Y,2M,22D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Sep 11, 1999	GATLINBAQ
11	26274565	GATLINBAQ	GB-PM-15-01-F	Female	Undetermined	Alive	WILD	WILD	19Y,2M,8D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Aug 15, 2005	CAIRNSMAR
												Transfer	Sep 15, 2005	LONG B AQ
												Transfer	Nov 09, 2015	GATLINBAQ
10	-	GATLINBAQ	GB-PM-17-01-M	Male	Undetermined	Alive	WILD	WILD	19Y,11M,8D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Dec 15, 2004	GA AQUAR
												Transfer	Nov 08, 2017	GATLINBAQ
5	-	GATLINBAQ	GB-PM-00-01-F	Female	Undetermined	Alive	WILD	WILD	24Y,5M,11D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Undetermined	NASSAU
												Transfer	Jul 12, 2000	GATLINBAQ
7	PHC15-00513	LANDRYSAQ	UNK	Female	Undetermined	Alive	WILD	WILD	21Y,7M,1D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Apr 22, 2003	LANDRYSAQ
49	RNV18-00455	OCEAN VAL	F543	Male	Undetermined	Alive	WILD	WILD	20Y,9M,22D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	PRIVATE
												Wild Capture	Undetermined	PRIVATE
												Transfer	Undetermined	OCEAN VAL
												Transfer	Nov 04, 2004	OCEAN VAL

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Taxonomy	Event Type	Date	Location
48	MIG12-29012385	OCEAN VAL	UNK	Female	Undetermined	Alive	WILD	WILD	23Y,9M,22D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	PRIVATE
												Wild Capture	Undetermined	PRIVATE
												Transfer	Undetermined	GOTEBORGS
												Transfer	May 01, 2001	GOTEBORGS
												Transfer	Jun 25, 2019	OCEAN VAL
34	KVQ18-00299	OCEANJRNY	UNK	Female	Undetermined	Alive	WILD	WILD	21Y,5M,22D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	1 month	OCEANJRNY
29	KVQ18-00300	OCEANJRNY	UNK	Male	Undetermined	Alive	WILD	WILD	22Y,2M,19D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Sep 04, 2002	LANDRYSAQ
												Transfer	Aug 01, 2009	OCEANJRNY
30	KVQ18-00298	OCEANJRNY	UNK	Male	Undetermined	Alive	WILD	WILD	22Y,2M,19D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Sep 04, 2002	LANDRYSAQ
												Transfer	Jun 15, 2005	OCEANJRNY
22	-	ORLANDO	ppec8926m	Male	Undetermined	Alive	WILD	WILD	34Y,11M,22D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	Undetermined
												Wild Capture	Nov 01, 1989	ORLANDO
23	-	ORLANDO	ppec9301f	Female	Undetermined	Alive	WILD	WILD	32Y,1M,4D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	SEA WORLD
												Wild Capture	Undetermined	SEA WORLD
												Transfer	Sep 19, 1993	ORLANDO
56	-	ORLANDO	Undetermined	Male	Jul 11, 2023	Alive	22	23	0Y,3M,12D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Jul 11, 2023	ORLANDO

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Taxonomy	Event Type	Date	Location
57	-	ORLANDO	Undetermined	Female	Jul 11, 2023	Alive	22	23	0Y,3M,12D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Jul 11, 2023	ORLANDO
58	-	ORLANDO	Undetermined	Female	Jul 11, 2023	Alive	22	23	0Y,3M,12D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Jul 11, 2023	ORLANDO
27	-	PARADISL	UNK	Female	Undetermined	Alive	WILD	WILD	24Y,10M,20D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	Undetermined
												Wild Capture	Dec 03, 1999	PARADISL
44	-	PARADISL	UNK	Female	Apr 12, 2012	Alive	25	24	11Y,6M,11D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Apr 12, 2012	PARADISL
25	-	PARADISL	UNK	Male	Undetermined	Alive	WILD	WILD	25Y,10M,8D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	PARADISL
												Wild Capture	Dec 15, 1998	PARADISL
46	-	PARADISL	UNK	Male	Apr 12, 2012	Alive	25	24	11Y,6M,11D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Apr 12, 2012	PARADISL
28	-	PARADISL	UNK	Female	Undetermined	Alive	WILD	WILD	24Y,10M,1D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	PARADISL
												Wild Capture	Dec 22, 1999	PARADISL
45	-	PARADISL	UNK	Male	Apr 12, 2012	Alive	25	24	11Y,6M,11D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Apr 12, 2012	PARADISL
24	-	PARADISL	UNK	Female	Undetermined	Alive	WILD	WILD	28Y,8M,26D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	PARADISL
												Wild Capture	Jan 27, 1996	PARADISL
43	-	PARADISL	UNK	Female	Apr 12, 2012	Alive	25	24	11Y,6M,11D	Captive Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Apr 12, 2012	PARADISL

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Taxonomy	Event Type	Date	Location
32	-	RIPLEYSSC	GB-PZ-02-01-F	Female	Undetermined	Alive	WILD	WILD	22Y,2M,17D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Sep 06, 2002	GATLINBAQ
												Transfer	Aug 13, 2013	RIPLEYCAN
												Transfer	Oct 13, 2022	RIPLEYSSC
31	-	RIPLEYSSC	MB-PZ-02-01-M	Male	Undetermined	Alive	WILD	WILD	22Y,2M,17D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Sep 06, 2002	RIPLEYSSC
												Transfer	Aug 12, 2013	RIPLEYCAN
												Transfer	Oct 13, 2022	RIPLEYSSC
3	-	RIPLEYSSC	MB-PM-99-01-M	Male	Undetermined	Alive	WILD	WILD	25Y,5M,18D	Wild Birth/Hatch	Pristis pristis / Common sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jun 05, 1999	RIPLEYSSC
41	-	SEALIFEMN	UNK	Male	Undetermined	Alive	WILD	WILD	19Y,1M,8D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Oct 15, 2005	SEALIFEMN
40	-	SEALIFEMN	UNK	Female	Undetermined	Alive	WILD	WILD	19Y,1M,8D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Oct 15, 2005	SEALIFEMN
35	-	SHARKREEF	572	Male	Undetermined	Alive	WILD	WILD	21Y,3M,23D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jul 31, 2003	SHARKREEF
37	-	SHARKREEF	573	Female	Undetermined	Alive	WILD	WILD	21Y,3M,23D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jul 31, 2003	SHARKREEF

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Taxonomy	Event Type	Date	Location
36	-	SHARKREEF	571	Male	Undetermined	Alive	WILD	WILD	21Y,3M,23D	Wild Birth/Hatch	Pristis zijsron / Longcomb sawfish	Birth/hatch	Undetermined	CAIRNSMAR
												Wild Capture	Undetermined	CAIRNSMAR
												Transfer	Jul 31, 2003	SHARKREEF
47	-	VERA CRAQ	UNK	Female	Undetermined	Alive	WILD	WILD	8Y,9M,1D	Wild Birth/Hatch	Pristis pectinata / Smalltooth sawfish	Birth/hatch	Undetermined	PRIVATE
												Wild Capture	Jan 22, 2016	PRIVATE
												Transfer	Jan 22, 2016	VERA CRAQ

Population Changes Since Last Publication

Date Range: November 02, 2020 – October 25, 2023

Births 1.2.0 (3) at 1 Institution

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Event Type	Date	Location	Local ID
56	-	ORLANDO	Undetermined	Male	Jul 11, 2023	Alive	22	23	0Y,3M,19D	Captive Birth/Hatch	Birth/hatch	Jul 11, 2023	ORLANDO	Undetermined
57	-	ORLANDO	Undetermined	Female	Jul 11, 2023	Alive	22	23	0Y,3M,19D	Captive Birth/Hatch	Birth/hatch	Jul 11, 2023	ORLANDO	Undetermined
58	-	ORLANDO	Undetermined	Female	Jul 11, 2023	Alive	22	23	0Y,3M,19D	Captive Birth/Hatch	Birth/hatch	Jul 11, 2023	ORLANDO	Undetermined

Transfers 1.2.0 (3) at 2 Institutions

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Event Type	Date	Location	Local ID
31	-	RIPLEYSSC	MB-PZ-02-01-M	Male	Undetermined	Alive	WILD	WILD	22Y,2M,24D	Wild Birth/Hatch	Birth/hatch	Undetermined	CAIRNSMAR	
											Wild Capture	Undetermined	CAIRNSMAR	
											Transfer	Sep 06, 2002	RIPLEYSSC	MB-PZ-02-01-M
											Transfer	Aug 12, 2013	RIPLEYCAN	MB-PZ-02-01-M
											Transfer	Oct 13, 2022	RIPLEYSSC	MB-PZ-02-01-M
32	-	RIPLEYSSC	GB-PZ-02-01-F	Female	Undetermined	Alive	WILD	WILD	22Y,2M,24D	Wild Birth/Hatch	Birth/hatch	Undetermined	CAIRNSMAR	
											Wild Capture	Undetermined	CAIRNSMAR	
											Transfer	Sep 06, 2002	GATLINBAQ	GB-PZ-02-01-F
											Transfer	Aug 13, 2013	RIPLEYCAN	GB-PZ-02-01-F
											Transfer	Oct 13, 2022	RIPLEYSSC	GB-PZ-02-01-F
33	MIG12-29918937	GA AQUAR	E21015	Female	Undetermined	Alive	WILD	WILD	21Y,10M,0D	Wild Birth/Hatch	Birth/hatch	Undetermined	CAIRNSMAR	
											Wild Capture	Undetermined	CAIRNSMAR	
											Transfer	Jan 30, 2003	SHEDD AQ	PZ1
											Transfer	Nov 03, 2021	GA AQUAR	E21015

Deaths 1.0.0 (1) at 1 Institution

Studbook ID	GAN	Current Location	Current Local ID	Sex Type	Hatch Date	Current Status	Sire	Dam	Age	Birth Type	Event Type	Date	Location	Local ID
14	-	GATLINBAQ	GB-PM-17-02-M	Male	Undetermined	Dead	WILD	WILD	14Y,10M,30D	Wild Birth/Hatch	Birth/hatch	Undetermined	CAIRNSMAR	
											Wild Capture	Undetermined	CAIRNSMAR	
											Transfer	Nov 15, 2007	GA AQUAR	UNK
											Transfer	Nov 08, 2017	GATLINBAQ	GB-PM-17-02-M
											Death	Sep 14, 2021	GATLINBAQ	GB-PM-17-02-M

Current Institutions

Institution Name	Mnemonic	Country	State/Province	Species360 Member	ZIMS Institution
Acuario de Veracruz, A.C.	VERA CRAQ	Mexico	Veracruz	NO	NO
Atlantis, Paradise Island	PARADISL	Bahamas		NO	NO
Dallas World Aquarium	DALLAS WA	United States	Texas	YES	YES
Georgia Aquarium	GA AQUAR	United States	Georgia	NO	NO
Landry's Downtown Aquarium - Denver	OCEANJRNY	United States	Colorado	YES	YES
Landry's Downtown Aquarium Houston	LANDRYSAQ	United States	Texas	YES	YES
National Aquarium in Baltimore Inc	BALTIM AQ	United States	Maryland	NO	NO
Ocean Park Corporation	ABERDE HK	Hong Kong		YES	YES
Oceanografic Valencia	OCEAN VAL	Spain	Valencia	YES	YES
Ripley's Aquarium of Myrtle Beach	RIPLEYSSC	United States	South Carolina	NO	NO
Ripley's Aquarium of the Smokies	GATLINBAQ	United States	Tennessee	NO	NO
SEA LIFE Minnesota Aquarium	SEALIFEMN	United States	Minnesota	NO	NO
Sea World Orlando	ORLANDO	United States	Florida	NO	NO
Shark Reef at Mandalay Bay	SHARKREEF	United States	Nevada	NO	NO

Historical Institutions

Institution Name	Mnemonic	Country	State/Province	Species360 Member	ZIMS Institution
Acuario de Veracruz, A.C.	VERA CRAQ	Mexico	Veracruz	NO	NO
Adventure Aquarium	ADVENTURE	United States	New Jersey	NO	NO
Aquarium of the Pacific, Long Beach	LONG B AQ	United States	California	NO	NO
Atlantis, Paradise Island	PARADISL	Bahamas		NO	NO
Audubon Aquarium of the Americas	AQUARAMER	United States	Louisiana	YES	YES
Cairns Marine	CAIRNSMAR	Australia	Queensland	NO	NO
Dallas World Aquarium	DALLAS WA	United States	Texas	YES	YES
Florida Aquarium	TAMPA AQ	United States	Florida	NO	NO
Georgia Aquarium	GA AQUAR	United States	Georgia	NO	NO
John G. Shedd Aquarium	SHEDD AQ	United States	Illinois	NO	NO
Landry's Downtown Aquarium - Denver	OCEANJRNY	United States	Colorado	YES	YES
Landry's Downtown Aquarium Houston	LANDRYSAQ	United States	Texas	YES	YES
National Aquarium in Baltimore Inc	BALTIM AQ	United States	Maryland	NO	NO
Ocean Park Corporation	ABERDE HK	Hong Kong		YES	YES
Oceanografic Valencia	OCEAN VAL	Spain	Valencia	YES	YES
Private Collection	PRIVATE			NO	NO
Ripley's Aquarium of Canada	RIPLEYCAN	Canada	Ontario	NO	NO
Ripley's Aquarium of Myrtle Beach	RIPLEYSSC	United States	South Carolina	NO	NO
Ripley's Aquarium of the Smokies	GATLINBAQ	United States	Tennessee	NO	NO
SEA LIFE Minnesota Aquarium	SEALIFEMN	United States	Minnesota	NO	NO
Sea World Orlando	ORLANDO	United States	Florida	NO	NO

Institution Name	Mnemonic	Country	State/Province	Species360 Member	ZIMS Institution
Sea-Arama Inc.	GALVESTON	United States	Texas	NO	NO
Seafloor Aquarium	NASSAU	Bahamas		NO	NO
SeaWorld San Diego	SEA WORLD	United States	California	NO	NO
Shark Reef at Mandalay Bay	SHARKREEF	United States	Nevada	NO	NO
Six Flags Discovery Kingdom	REDWOOD	United States	California	YES	YES
Six Flags Worlds of Adventure (1989-2004)	AURORA	United States	Ohio	NO	NO
Texas State Aquarium	CORPUS CH	United States	Texas	NO	NO
Universeum Science Center	GOTEBORGS	Sweden	Västra Götalands län [SE-14]	YES	YES
Unknown Location	UNKNOWN			NO	NO

Scope of Studbook

Taxonomy of sawfishes

Historically, sawfish taxonomy has been somewhat enigmatic, but has recently been resolved based upon detailed morphological characters as well as mitochondrial DNA sequences (Faria et al., 2013). There are five extant species of sawfishes in two genera, *Pristis* and *Anoxypristis*. Specifically, they are: the smalltooth sawfish, *Pristis pectinata*, the dwarf sawfish, *Pristis clavata*, the green sawfish, *Pristis zijsron*, the largetooth sawfish, *Pristis pristis*, and the narrow sawfish, *Anoxypristis cuspidata*. This studbook will refer to these throughout.

This studbook is a North American Regional Studbook. All animals in the living population in this studbook are restricted to North America with the exceptions that follow. The animals located at Ocean Park in Hong Kong were included because of their status as an AZA-accredited institution and they currently hold 1.1.0 largetooth sawfish, and therefore the facility has the potential for future breeding. Although Sealife Minnesota is not currently an AZA-accredited institution, the animals housed there were included in this studbook. They currently house 1.1.0 green sawfish, and also have the possibility of future breeding. Oceanografic Valencia currently holds 1.1.0 animals although they are opposite species they are now an AZA accredited facility so are included within the scope of this studbook.

The studbook is current as of 15 August, 2023. Currently there are 41 individuals (21.20.0) listed in this studbook representing three different species. There are 14 (8.6.0) largetooth sawfish, 14 (5.9.0) smalltooth sawfish, and 13 (8.5.0) green sawfish currently in the living population covered by this studbook.

Sawfishes are also currently being maintained in captivity at additional institutions worldwide. There are 33 (19.14.0) largetooth sawfish, 14 (5.9.0) smalltooth sawfish and 21 (11.10.0) green sawfish being held in captivity. European Association of Zoos and Aquaria recently published a studbook for sawfish. The European studbook currently lists 4.2.0 largetooth sawfish and 3.3.0 green sawfish (Duke, 2013, personal communication October, 2017). Australian zoos and Aquariums currently house 6.7.0 largetooth sawfish. There are currently no specimens of smalltooth sawfish residing outside of AZA Institutions. There are two (1.1.0) known specimens of dwarf sawfish, maintained in captivity, and are in the same institution in Japan. There are no known narrow sawfish in captivity

Species Status

Sawfish can be found worldwide in tropical shallow coastal waters, as well as river systems, and therefore can be found in marine, estuarine or freshwater environments (Last and Stevens, 1994, 2009; Dulvy et al., 2014; Harrison and Dulvy 2014). Like other k-selected elasmobranchs, sawfish are slow growing, mature later in life and also produces low numbers of fully-developed offspring. This strategy however makes them susceptible to exploitation from fishing and environmental pressures (Simpfendorfer, 2000, Stevens et al, 2008, Seitz & Poulakis, 2006). Formerly, at least one species of sawfish could be found in 90 countries, but severe declines to local extinctions (extirpations) have occurred in many parts of their range. On a global basis, sawfish have been extirpated in 20 countries, and at least 43 countries have lost at least one species. They are one of the most threatened families of elasmobranch fishes (Dulvy et al. 2014; Harrison and Dulvy, 2014).

The International Union of Conservation of Nature Shark (IUCN) Red List currently lists the narrow sawfish and the dwarf sawfish as Endangered, and three species of sawfish, the smalltooth, largetooth, and green sawfish as Critically Endangered (Simpfendorfer, 2013; Kyne et al., 2013; Carlson et al., 2013). They are all also listed under CITES as Appendix I, as of 2013.

In 2013, NOAA proposed to have five (5) species of sawfish listed under the Endangered Species Act (ESA), including *P. pristis* (formerly *P. pristis, P. microdon, and P. perotteti*), *P. zijsron* and the currently nonlisted populations of *P. pectinata*. In 2014, all five species were listed under the ESA, and took effect in January 2015 (Federal Register, 2014).

In 2014, the International Union of Conservation of Nature Shark Specialist Group published a Global Conservation Strategy (Harrison and Dulvy, 2014). This strategy was created to aide in the recovery of sawfish populations worldwide and to hopefully prevent their extinction. It calls for actions from national or regional governments to protect sawfish and sawfish habitats, as well as actions NGOs, researchers, and even the aquarium industry can accomplish to promote the conservation of sawfish worldwide.

Pristis pristis

Largetooth sawfish occur in distinct subpopulations: the western Atlantic, the eastern Atlantic, the eastern Pacific, and the Indo-west Pacific (Kyne et al., 2013).

The largetooth sawfish (*Pristis pristis*), a euryhaline species, can be found in both saltwater and freshwater environments. One of the last known strongholds is Northern Australia. While this species is very large and easily identifiable, its true numbers in the wild are currently unknown. They can be found in very remote areas of Australia which makes accessing their locations difficult and therefore accurate counts on their populations cannot be done. However, due to human interactions from fishing or habitat destruction their numbers are believed to be decreasing steadily. Fisheries are believed to be the main reason for the decrease in the population as the "large dramatic saw" of this species can easily become entangled in fisheries nets and results in injury or death to that individual (Simpfendorfer, 2000).

This species is listed as Vulnerable under EPBC Act in Australia and is listed as threatened in all territories in which it occurs. *Pristis pristis* populations are continuously being accessed in Australia and the DEWHA (Department of the Water, Heritage, and Arts) established a Freshwater Sawfish Expert Review Committee to review all current research. This Sawfish Committee is to provide independent scientific advice to the DEWHA on the collection and exportation of *P. pristis* from Australian waters. In 2014 a draft recovery plan for Sawfishes and River sharks was published and

open for comments. The purpose of this recovery plan is to ensure the recovery of those species within their ranges. The DEWHA has since changed its name to The Department of the Environment and Energy.

Pristis pectinata

The United States' distinct population segment of the smalltooth sawfish (*Pristis pectinata*) was listed under the U.S. Endangered Species Act (ESA) in April of 2003. After the addition to the ESA the listing recommended a recovery plan be developed and put into effect. In January of 2009 the Smalltooth Sawfish Recovery Plan was published in response. The recovery plan was developed by a group of sawfish scientists and management experts labeled as the Smalltooth Sawfish Recovery Team (SSRT). The ultimate goal of the recovery plan is to "rebuild and assure the long-term viability of the U.S. population of smalltooth sawfish in the wild, allowing initially for reclassification from endangered to threatened status (downlisting) and ultimately recovery and subsequent removal from the List of Endangered and Threatened Wildlife (delisting)." The recovery plan also states a time of 100 years for recovery to occur with this species. There are 3 main objectives in the recovery plan for the strategy to be successful. Minimize human interactions, protect and restore smalltooth sawfish habitats, and to continually monitor sawfish populations for abundances and to determine if sawfish are reoccupying areas which in recent years have been void of sawfish (NMFS, 2009).

The first successful captive birth of any sawfish occurred with *P. pectinata* in Atlantis Paradise Island Bahamas in April 2012. This event produced 2.2.0 pups, a fifth pup was born alive but sustained injuries immediately after birth and died the following day. Atlantis Paradise Island has had at least four other occasions in which sawfish breeding has occurred.
However, those instances resulted in the birth of premature offspring which did not survive. Atlantis' exhibit is an open air, flow through system. This allows the *P. pectinata* to experience the natural fluctuations in lighting and water temperature/salinity that most other facilities do not have the capability of matching. While this species does very well in captivity and can have a long-life span, if captive breeding could continue to occur with Atlantis Resort and with the other institutions that would hopefully allow for additional institutions to care for these animals and would be a huge advantage based on the current listing status of this species.

The smalltooth sawfish is currently the only sawfish species to reproduce within managed care. A second successful captive birth occurred in July 2023 at SeaWorld Orlando. This resulted in the birth of 1.2.0 pups. This birth also occurred in a closed system unlike the open system at Paradise Island.

The smalltooth sawfish is also the first elasmobranch species in which parthenogenesis was documented in the wild (Fields et al., 2015).

Pristis zijsron

The green sawfish (*Pristis zijsron*) was once widely distributed in the northern Indian Ocean to South Africa, and off of Indonesia and northern Australia (Last & Stevens, 1994). This species is found distributed from Shark Bay in Western Australia to Cairns and to be found in coastal environments including estuaries, but it does not appear to venture into freshwater as *P. pristis* (Stevens et al, 2005).

The green sawfish is also listed as Vulnerable under the EPBC Act in Australia and is listed as threatened in all territories or states within its range in Australia. In 2011 a recovery plan was being prepared for P. zijsron and in 2014 a draft recovery plan was published on Australia's Department of the Environment

and Energy website and was open for comments. The purpose of this recovery plan is to ensure the recovery of those species within their ranges.

Overall, there is a small population of these three species currently in captivity, and very few institutions that hold these species contain a breeding pair. Based on the size of the species, and their potentially dangerous rostrum, it makes it difficult to handle and transport these animals between institutions. Their size, which requires them to be in relatively large exhibits, and the cost of importation does not allow for all institutions to be able to possess these species.

While the husbandry needs for this species in captivity is being fulfilled in most aspects, the full requirements for the successful reproduction for all three species in captivity are still unknown. While mature individuals are doing well in captivity much information is still needed to allow for successful fertilization and reproduction, such as; what sex ratio would be the most beneficial, and is fluctuating water temperature and photoperiod going to increase reproductive activity. One future possibility for this species would be to implement artificial insemination or *in vitro* fertilization; however, the need for additional information is still necessary for those possibilities to become successful. The captive birth of the *P. pectinata* pups in Atlantis Paradise Island has produced a wealth of information on the care of newborn sawfish and on prenatal care for the mother. Each additional birth or premature birth will give us more information on the best practices for care for these animals.

While these species are present in very low numbers in captivity, their size and unique appearance with their saw-like rostrum makes them very popular with the public. The conservation message that they present not only with these species, but with all elasmobranchs, makes it even more important that captive breeding become a reality for all three species in the future.

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Data Field Descriptions

Studbook ID – unique number assigned to each individual in the studbook. The studbook number is a permanent number.
GAN – Global Accession Number; unifying "key record" under which all animal data for that individual is tracked.
Current Location – Indicates the current location of a living animal or the last known location of a dead/LTF/released.
Current Local ID – Indicates the individuals local ID identifier at its current holding institution if living, or its local ID identifier at its last known holding institution if dead/LTF/released.
Sex – Male, Female, undetermined
Birth/Hatch Date – This field indicates the date of an animal's birth/hatch. There is a birth/hatch date for every individual. If there is any estimate surrounding this date it will be reflected in this field.
Current Status – Indicates whether the individual is living, dead, released, undetermined (LTF), etc.
Sire/Dam – Numbers reported in this field indicate the Studbook ID of an animal's parents, when those parents are known. "Wild" indicates that an animal was wild caught and its parents are unknown, wild individuals. "UND" indicates that the parentage of that animal is undefined. "MULTX", where X is a number, indicates that there are several possible parents, but the specific parent could not be determined. The possible parents within any given MULT are tracked within ZIMS and will be listed when you expand the 'parent' field for an individual.
Age – If individual is still alive indicates age of individual at time of data export. If individual is no longer alive/tracked in the SB, indicates age at time of death/LTF/release.
Birth/Hatch Type – Indicates whether the individual was born/hatched in the wild or a captive environment. Undetermined indicates the birth/hatch type is not known.
Event Type – This field documents the movements (i.e. transaction) of individual animals from the first location to the current or last known location. This includes Birth/Hatch, Transfer, Death, Go LTF (Lost to Follow up), Return from LTF, and Release.
Date – This field documents the date that any given event occurred. Each event has a date associated with it. If there is any estimate surrounding this date it will be reflected in this field.
Location – This field indicates the location where the event took place. Undetermined indicates that the animal exists or existed, but its location cannot be reliably confirmed.
Local ID – This is the number assigned by the institution in which the event took place. "- "indicates that either an ID was not assigned or no information exists to indicate that an ID was assigned.
House Name – This field indicates the name given to the animal at a specific location. Individuals may be given a different house name each time they move to a different location.

Data Conventions

With the exception of the 2012 birth of 2.2.0 smalltooth sawfish and the 2023 birth of 1.2.0 smalltooth sawfish, all animals currently in the collection are wild caught. Birth dates for the wild caught animals are therefore unknown. Typically, largetooth and green sawfish are caught while relatively small (generally ≤ 1.8 m TL) to allow for easier export from Australia, therefore; all animal birth dates are estimated to be around one (1) year prior to capture. While some individuals of smalltooth sawfish were more than likely over one (1) year of age at the time of capture the estimation was used for all three (3) species.

Many of the capture dates were unknown as well. Capture dates were reverse estimated to be a month prior to the date institutions received animals into their collections. This estimation was used on all three (3) species when exact capture dates were not available.

If the location as well as date and size at capture and acquisition are known, individual institutions may estimate the age based upon size using available scientific information. Although there have been several investigations into the age and growth of pristids, recent studies have documented a relatively high rate of growth at small sizes which slows as it approaches asymptotic size. Please note that although several sound investigations have yielded insight on growth, only a couple are provided here to estimate age at size upon acquisition. Additional updates will more completely reflect the literature. For smalltooth sawfish, the age for smaller animals can be estimated using Simpfendorfer et al. (2008), and Scharer et al (2012). To date, the best age and growth relationships for the other four species is Peverell (2008). The estimated age then is determined from an estimate at the size of acquisition using the derivation from the von Bertalanffy growth function (VBGF), and adding the number of years of captivity. This estimation can be used for all three (3) species using the VBGF (1938) for each species (Simpfendorfer et al., 2008; Peverell, 2009).

The VGBF:

$L_t = L_\infty (1 - e^{-k(t-t_0)})$

Can be rearranged to solve for t (age in years)

$$t = t_0 + \frac{\ln(1 - L_t/L_\infty)}{-k}$$

Using this derivation, estimated size at age is given below for ages 0 to 10 for *Pristis pectinata, P. zijsron,* and *P. pristis.* Note that estimates were derived from limited samples sizes as well as not complete size ranges.

	TL(cm)		
Age	*pectinata*	*zijsron*	*pristis*
0	68.28	67.91	74.40
1	137.75	121.29	117.74

2	198.14	168.64	157.73
3	250.64	210.63	194.66
4	296.28	247.88	228.75
5	335.96	280.91	260.21
6	370.45	310.21	289.26
7	400.44	336.19	316.07
8	426.51	359.24	340.82
9	449.18	379.68	363.67
10	468.88	397.81	384.76

The first planning meeting with the Population Management Center (PMC) for the Sawfish SSP was conducted in May 2016. The first Breeding and Transfer Plan was published February 2, 2017. Transfers of two sawfish that have been made since the 2014 publication of the studbook are products of that plan (White et al. 2017).

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