



ELASMOBRANCH TAXON ADVISORY GROUP

ELASMOBRANCH TAG NEWS

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Introduction

By Nuria Baylina and Marion Wille

Finally the 5th issue of the Elasmobranch TAG news is ready and we are happy to present you

again a lot of interesting topics from the aquarium world.

Since the last issue the completion of the second RCP edition was one of the main activities of the Elasmobranch TAG. It has been approved by the EAZA EEP committee and the document is now available on the EAZA and EUAC websites.

In an update of the Aquarium Working Group we learn more about their important contribution within the IUCN SSC Shark Specialist Group. Aquarium activities in *ex-situ* and *in-situ* species conservation will be included in a separate chapter in the next IUCN SSC SSG report in 2024.

We learn interesting news about the evolution of elasmobranch populations in aquariums from a summary of census data on the population of chondrichthyan in aquaria within the European region.

To coordinate a healthy elasmobranch population under human care, the determination of DNA is essential. There is information on the non-invasive collection of samples from *Mustelus* species.

There is news on the status of two highly threatened blue flapper skate species for which a monitoring program has been established.

The Conservation Focus Group provides an update on their work and reports the results of a survey on *in-situ* activities within the aquarium community.

Similarly, the Elasmobranch TAG Veterinary Advisory Group reports the results of a survey on main clinical issues and causes of death in years 2013 to 2019.

According to custom we close the news with some information on interesting conferences, the structure of the Elasmobranch TAG, the species programs and some change within them. At the end you can find the AZA Marine Fish TAG structure and contacts.

We would like to thank for all the valuable and interesting contributions about your important work.

Enjoy the reading!

European Regional Collection Plan nr. 2

By Max Janse, Royal Burgers' Zoo

Preliminary results were already given in the Elasmobranch TAG News of March 2022 (N. 4). Since then the Regional Collection Plan document (RCP) has been finalized and approved by the EAZA EEP committee.

First a short history, where in 2007, the first elasmobranch studbooks were initiated within the

ex situ population in Europe on blue-spotted stingray (*Taeniura lymma*) and zebra shark (*Stegostoma tigrinum*). In 2013 a first RCP workshop was organized which resulted in 9 European studbook and 28 monitoring programs. Followed in 2021 by two online workshops discussing the construction of the second regional collection plan. An RCP consists of a list of (threatened) species with a defined *ex situ* population management level per species recommended within the region. An RCP builds on sustainable elasmobranch populations under human care and work on species conservation planning for *in situ* and *ex situ* collaboration.

Within this second RCP 62 species were included and assessed. Species choice for the RCP was limited to the existing program species of the TAG, a few extra common species within the European *ex situ* population and some highly threatened species (EN or CR) from the European region, which are not kept in the European aquaria but might need attention. All 62 taxa have been discussed individually. However, a few genera have been assessed on genus level since taxonomy issues still need to be resolved (e.g. *Rhinoptera* sp.; *Orectolobus* sp.). Two types of programs have been defined: EAZA *Ex situ* Programmes (EEPs) are population management programs for individual animal species that are managed to have and maintain healthy populations of healthy animals within EAZA and beyond. For each species program a role is defined as direct conservation roles, indirect conservation roles and non-conservation roles. Second type is a Monitoring program (MON-P), where the population of a species is followed by the TAG, or by a species champion. The species champion coordinates the popula-

tion in a less intense level than the EEP coordinator. Still the coordinator is the central person to know of the changes within the population, helps to place offspring, creates new potential breeding pairs and gathers husbandry information of the species.

The RCP resulted in the definition of 27 EEP programs (Table 1), 10 Monitoring programs with a species champion (Table 2) and 13 Monitoring programs ran by the TAG (Table 3).

Aetobatus ocellatus

Carcharhinus melanopterus

Carcharhinus plumbeus

Carcharias taurus

Dasyatis pastinaca

Dipturus batis

Ginglymostoma cirratum

Glaucostegus cemiculus

Heterodontus francisci

Hypanus americanus

Mobula hypostoma

Mustelus sp. (European region)

M. asterias
M. mustelus
M. punctulatus

Myliobatis aquila

Neotrygon orientalis

Potamotrygon leopoldi

Pristis sp.

P. pristis
P. zijsron

Pseudoginglymostoma brevicaudatum

Raja sp. & *Leucoraja* sp. which includes:

R. brachyura
R. clavata
R. microocellata
R. montagui
R. radula
L. circularis
L. melitensis

Raja undulata

Rhina ancylostoma

Rhinobatos rhinobatos

Scyliorhinus stellaris

Sphyrna tiburo

Squatina squatina

Stegostoma tigrinum

Taeniura lymma

Triaenodon obesus

Table 1 List of European elasmobranch EEP programs

Aetomylaeus bovinus

Atelomycterus marmoratus

Galeorhinus galeus

Himantura sp. (whole genus)

H. australis
H. leoparda
H. uarnak
H. undulata

Hydrolagus colliei

Negaprion brevirostris

Orectolobus sp. (whole genus)

O. floridus
O. halei
O. hutchinsi
O. japonicas
O. leptolineatus
O. maculatus
O. ornatus
O. parvimaculatus
O. reticulatus
O. wardi

Pteroplatytrygon violacea

Rhinoptera sp. (whole genus)

R. bonasus
R. brasiliensis
R. javanica
R. jayakari
R. marginata
R. neglecta
R. peli
R. steindachneri

Sphyrna lewini

Table 2 List of European elasmobranch Monitoring programs with a species champion

Carcharhinus amblyrhynchos

Chiloscyllium plagiosum

Chiloscyllium punctatum

Hemiscyllium ocellatum

Heterodontus portusjacksoni

Mobula mobular

Negaprion acutidens

Potamotrygon falkneri

Potamotrygon motoro

Scyliorhinus canicula

Squalus acanthias

Torpedo marmorata

Triakis semifasciata

Table 3 List of European elasmobranch Monitoring programs managed by the TAG

All programs will be officially implemented in 2023. The EEP population will be registered in Species 360 ZIMS for studbooks. A special software package PMx will be used for demographic and genetic analysis to assist with the management of breeding programs. After the registration is finished of the studbook a Long Term Management Plan (LTMP) will be made, where in more detail the genetic and demographic goals of the programs will be linked to

the assigned roles and the situational circumstances of the species. This will also result in developing (non)-breeding and transfer recommendations. Beside the practical application of the program management the LTMP might help in developing strategies for socio-behavioral management, education, veterinary issues, banking, data gathering and research.

For further reading please go to:

Janse, M., Baylina, N., Wille, M., Aparici Plaza, D., van der Meer, R. and Hausen, N. (eds.) 2021. EAZA Elasmobranch Taxon Advisory Group Regional Collection Plan – First Edition. EAZA Executive Office: Amsterdam.

IUCN SSC Shark Specialist Group Aquarium Working Group

By Nuria Baylina, Oceanario de Lisboa

The IUCN SSC SSG Aquarium Working Group was created at the end of 2021 and includes members from 10 aquariums around the globe including two European facilities: Burgers@Zoo and Oceanario de Lisboa.

This year the group has delivered its contribution for the updated edition of the IUCN SSC Shark Specialist Group Global Status report, addressing the role of public aquariums in the conservation of elasmobranch species. This is a very important achievement as this is the first-time a chapter focused on public aquariums conservation work is considered in this report. The report will be published in the first semester of 2024.

To work towards developing the SSG position statement on *ex-situ* elasmobranch release,

rescue and reintroduction, the group conducted a survey to determine the extent of elasmobranch release, rescue, and re-introduction by Aquariums around the world. The Aquarium Working Group and the results of this survey were presented at the International Aquarium Congress, held at Nausicaa, France, last November.

The group continues working towards gathering aquarium life history information for Critically Endangered elasmobranchs to inform conservation action and developing messaging and graphics on elasmobranch conservation for zoo/aquarium activities.



[Link to the Shark Specialist Group Newsletter](#)

[Link to the Global Status Report 2005](#)

Results of the 2016-2021 Elasmobranch TAG Census

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The EAZA Elasmobranch Taxon Advisory Group (TAG) organizes on a regular basis a census of the population of chondrichthyan in aquaria within the European region. The results of the first two censuses over the period of 2006-2010 and 2011-2015 were published in Janse *et al.* (2017). This is the third census done by the TAG over the

period January 1st, 2016, and December 31st, 2021.

Each census period more aquaria are contacted, 103 to 201 to 208 in 2022. Percentage of return for this last census is 60.1 %.

The table below shows increasing number of chondrichthyan species in public aquaria during the three periods. However, more aquaria participated within the census in the later years.

Census period	Shark	Ray	Chimaera	Total species
2006-2010	41	50	1	92
2011-2015	47	53	2	102
2016-2021	57	75	1	133

Table 1 Overview per census period of the number of shark, ray and chimaera species within the European EAZA/EUAC Elasmobranch TAG, data from earlier census see Janse *et al.* (2017)

The total number of chondrichthyan species breeding within the *ex-situ* population increased from over time (Figure 1). The total number of chondrichthyan species breeding is increasing over time up to 55 species in the period 2016-2021.

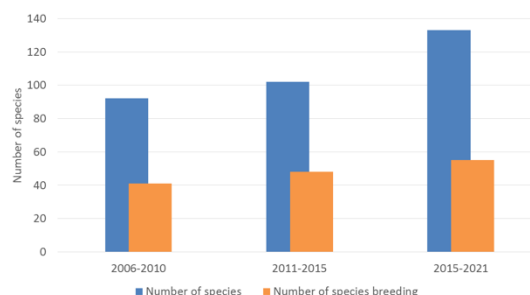


Fig. 1 Number of chondrichthyan species (and successful breeding activity) kept in *ex-situ* European population in the period 2016-2021

Table 2, 3 and 4 give an overview of all sharks, chimaera and ray species kept in the European

public aquaria that participated in the census of 2016-2021. Figures are from December 31st, 2021. Seven species were kept within the census period, but not at the end of the census period, this accounted for the following species: *Heterodontus galeatus*, *Squalus blainville*, *Hypanus sabinus*, *Leucoraja circularis*, *Mobula mobular*, *Potamotrygon henlei* and *Torpedo torpedo*. These species are in the tables, but with a census count of zero.

Species name	# aquaria	Total number
<i>Atelomycterus macleayi</i>	1	2
<i>Atelomycterus marmoratus</i>	9	63
<i>Atelomycterus</i> sp.	1	9
<i>Carcharhinus acronotus</i>	3	3
<i>Carcharhinus amblyrhynchos</i>	4	9
<i>Carcharhinus dussumieri</i>	1	1
<i>Carcharhinus humani</i>	2	2
<i>Carcharhinus leucas</i>	1	1
<i>Carcharhinus limbatus</i>	2	2
<i>Carcharhinus melanopterus</i>	61	272
<i>Carcharhinus plumbeus</i>	25	153
<i>Carcharias taurus</i>	23	70
<i>Cephaloscyllium ventriosum</i>	2	4
<i>Chiloscyllium arabicum</i>	5	15
<i>Chiloscyllium griseum</i>	6	14
<i>Chiloscyllium plagiosum</i>	18	148
<i>Chiloscyllium punctatum</i>	42	214
<i>Chiloscyllium</i> sp.	2	3
<i>Eucrossorhinus dasypogon</i>	2	2
<i>Galeorhinus galeus</i>	2	18
<i>Ginglymostoma cirratum</i>	30	81
<i>Haploblepharus pictus</i>	1	3
<i>Hemiscyllium ocellatum</i>	23	89
<i>Hemiscyllium trispeculare</i>	1	4
<i>Heterodontus francisci</i>	18	64
<i>Heterodontus galeatus</i>	0	0
<i>Heterodontus japonicus</i>	4	8
<i>Heterodontus portusjacksoni</i>	15	32

<i>Heterodontus zebra</i>	4	8
<i>Mustelus asterias</i>	16	73
<i>Mustelus californicus</i>	1	3
<i>Mustelus mustelus</i>	15	47
<i>Mustelus punctulatus</i>	1	2
<i>Nebrius ferrugineus</i>	6	6
<i>Negaprion acutidens</i>	1	1
<i>Negaprion brevirostris</i>	2	3
<i>Orectolobus hutchinsi</i>	3	6
<i>Orectolobus japonicus</i>	1	1
<i>Orectolobus maculatus</i>	7	12
<i>Orectolobus ornatus</i>	2	2
<i>Orectolobus wardi</i>	1	1
<i>Oxynotus centrina</i>	2	5
<i>Poroderma africanum</i>	5	35
<i>Poroderma pantherinum</i>	1	3
<i>Pseudoginglymostoma brevicaudatum</i>	16	62
<i>Scyliorhinus canicula</i>	76	1987
<i>Scyliorhinus stellaris</i>	62	687
<i>Scyliorhinus torazame</i>	1	13
<i>Sphyrna lewini</i>	1	1
<i>Sphyrna tiburo</i>	2	5
<i>Squalus acanthias</i>	4	75
<i>Squalus blainville</i>	0	0
<i>Squatina aculeata</i>	1	1
<i>Squatina squatina</i>	0	0
<i>Stegostoma tigrinum</i>	40	109
<i>Triaenodon obesus</i>	18	35
<i>Triakis scyllium</i>	11	19
<i>Triakis semifasciata</i>	8	44

Table 2 European ex-situ shark population as of 31-12-2021

Species name	# aquaria	Total number
<i>Hydrolagus colliei</i>	2	12

Table 3 European chimaera ex-situ population as of 31-12-2021

Species name	# aquaria	Total number
<i>Aetobatus narinari</i>	3	5
<i>Aetobatus ocellatus</i>	11	61
<i>Aetomylaeus bovinus</i>	3	13
<i>Amblyraja radiata</i>	3	11
<i>Bathytoshia brevicaudata</i>	1	2
<i>Bathytoshia centroura</i>	1	2
<i>Dasyatis chrysonota</i>	1	7
<i>Dasyatis pastinaca</i>	30	280
<i>Dasyatis sp.</i>	2	3
<i>Dipturus batis</i>	1	1
<i>Fontitrygon sp.</i>	1	1
<i>Glaucostegus cemiculus</i>	18	52
<i>Glaucostegus typus</i>	6	7
<i>Gymnura altavela</i>	2	3
<i>Himantura australis</i>	1	1
<i>Himantura leoparda</i>	2	4
<i>Himantura sp.</i>	2	3
<i>Himantura uarnak</i>	15	26
<i>Himantura undulata</i>	3	4
<i>Hypanus americanus</i>	27	152
<i>Hypanus sabinus</i>	0	0
<i>Leucoraja naevus</i>	4	16
<i>Leucoraja circularis</i>	0	0
<i>Mobula birostris</i>	1	1
<i>Mobula hypostoma</i>	2	10
<i>Mobula mobular</i>	0	0
<i>Myliobatis aquila</i>	24	213
<i>Myliobatis californicus</i>	2	5
<i>Neotrygon kuhlii</i>	12	25
<i>Neotrygon orientalis</i>	3	10
<i>Pastinachus sephen</i>	1	1
<i>Pateobatis fai</i>	1	1
<i>Plesiotrygon nana</i>	2	3
<i>Potamotrygon albimaculata</i>	1	4
<i>Potamotrygon bossemani</i>	1	1
<i>Potamotrygon falkneri</i>	1	1
<i>Potamotrygon henlei</i>	0	0
<i>Potamotrygon hystrix</i>	1	1

<i>Potamotrygon jabuti</i>	8	63
<i>Potamotrygon leopoldi</i>	21	106
<i>Potamotrygon motoro</i>	31	163
<i>Potamotrygon orbignyi</i>	1	1
<i>Potamotrygon scobina</i>	1	1
<i>Potamotrygon sp.</i>	4	11
<i>Potamotrygon wallacei</i>	1	2
<i>Pristis pristis</i>	3	4
<i>Pristis zijsron</i>	3	5
<i>Pseudobatos productus</i>	3	3
<i>Pteroplatytrygon violacea</i>	13	47
<i>Raja asterias</i>	3	37
<i>Raja brachyura</i>	16	55
<i>Raja clavata</i>	55	740
<i>Raja maderensis</i>	1	3
<i>Raja microocellata</i>	19	75
<i>Raja miraletus</i>	5	10
<i>Raja montagui</i>	13	27
<i>Raja sp.</i>	1	4
<i>Raja undulata</i>	36	177
<i>Rhina ancylostoma</i>	6	9
<i>Rhinobatos rhinobatos</i>	7	21
<i>Rhinoptera bonasus</i>	17	103
<i>Rhinoptera javanica</i>	6	21
<i>Rhinoptera marginata</i>	4	33
<i>Rhynchobatus australiae</i>	1	1
<i>Rhynchobatus djiddensis</i>	2	3
<i>Rostroraja alba</i>	1	3
<i>Taeniura grabatus</i>	7	22
<i>Taeniura lymma</i>	23	54
<i>Taeniurops meyeri</i>	6	16
<i>Torpedo marmorata</i>	1	1
<i>Torpedo torpedo</i>	0	0
<i>Trygonorrhina fasciata</i>	4	5
<i>Urobatis halleri</i>	4	9
<i>Urobatis jamaicensis</i>	1	2
<i>Urogymnus granulatus</i>	1	2
<i>Urogymnus polylepis</i>	1	4

Table 4 European ex-situ ray species overview as of 31-12-2021

A large variation was seen in the number of chondrichthyan species per aquarium (Figure 2), ranging from 1 to a maximum of 55 species per aquarium. The average number of species per aquarium was 9.6.

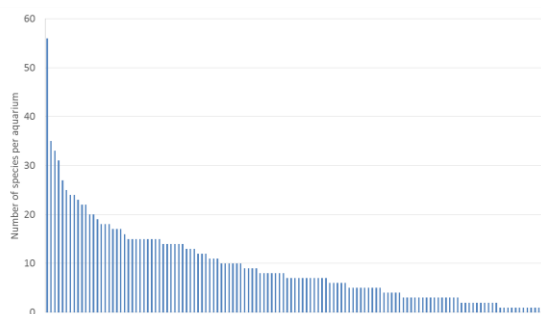


Fig. 2 Number of chondrichthyan species in European aquaria as of 31-12-2021

In six years' time 3025 young sharks, 2988 rays and 67 chimaeras were born within the European aquariums. The survival rate of the young after 3 months varied between the three groups with 76.0%, 59.4% and 19.4%, for respectively sharks, rays and chimaeras.

The larger number of participants on the third census shows the interest in increasing collaboration between aquaria. The Elasmobranch TAG facilitates this collaboration as well as with the different regional zoo and aquarium associations. This census shows new trends in the population development, especially concerning increase in number of species and increase in number of breeding effort. The breeding programs within the EAZA/EUAC Elasmobranch TAG show a clear increase in breeding output, which can also be seen in the results of this census. Collaboration and collaborative breeding programs will increase the knowledge of the species, the breeding results and might lead to further increase of the survival rate of the young. For some species there is a need of manage-

ment against excessive breeding, this will be discussed further within the Elasmobranch TAG to see what options there are. This census gives us insight in the *ex-situ* population which can be used to improve management of these valuable populations.

The authors wish to thank all participants for their data and effort to increasing knowledge and collaboration.

References

Janse, M., Zimmerman, B., Geerlings, L., Brown, C. and Nagelkerke, L.A.J., 2017. Sustainable species management of the elasmobranch populations within European aquariums: a conservation challenge. *J. Zoo Aquarium Res.*, 5(4):172–181.

Taking DNA samples the easy way

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A student at the University of Rostock has tested a new method of genetics sampling on living animals. Usually, such sampling is done by separating tissue. As part of her Master's thesis, which deals with the nomenclature and identification of two *Mustelus* species, the student developed an alternative, more gentle procedure. This method is based on taking samples from the mucus membranes using swab sticks and brushes.

In October 2022, she successfully performed the method on twelve juvenile smoothhound sharks (*Mustelus asterias*) at the Ozeaneum Stralsund. The new method aims to replace the outdated sampling with swab sticks and brushes and allows several tries without endangering their well-being. First the young animals length was taken and their sex determined. Afterwards they were sampled with the swabs and brushes. One was rubbed along the dorsum, and another was rolled in the gill slits. Conventional cotton swabs from the manufacturer "FLOQSwabs" and the brushes from „Heinz Heinrich Medizinalbedarf GmbH“ were used for the sampling. After sampling, the air-dried swabs and brushes were put back into the individual packaging. The swabs were sent to the laboratory in an envelope. The aim was to determine the DNA content in the dorsal and gill mucosa.



Fig.1 Swab sampling of the gills of a Smoothhound shark (*Mustelus asterias*)

The subsequent analysis was carried out in the laboratories of the wildlife genetics SEQ-IT in Kaiserslautern, Germany. The DNA content was measured using a spectrophotometer. The results showed that the DNA content in the gills was on average 20 times higher than on the back.

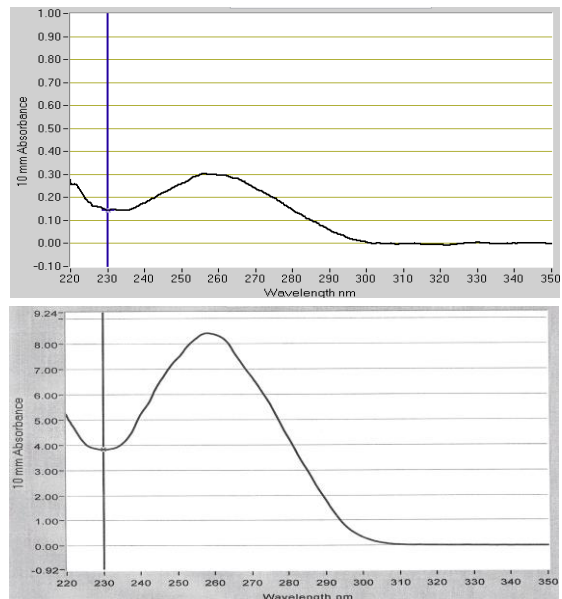


Fig. 2 Comparison of DNA content from gill and dorsal mucus.

Nevertheless, the dorsal samples were also sufficient for genetic analysis. Although the gill samples contained a higher DNA content and had a lower risk of contamination with other individuals, the dorsal samples also proved suitable for detection.

This innovative method revolutionizes research on living animals by avoiding the need for tissue samples and makes it possible to gently sample animals several times. It opens up new possibilities for detailed genetic analyses and the identification of different species and subspecies.

The method also has potential for other scientific fields, where samples from live animals are needed. It represents a significant step forward in the direction of ethical and gentle sampling and ensures the welfare of the animals.

Dipturus batis Monitoring Program

By Mark de Boer, Rotterdam Zoo

In 2021, the EAZA – EUAC started the monitoring program of the *Dipturus batis* species complex. Despite not having an *ex-situ* population, the main role of this program is to be a part of a future headstart program. This program is meant to re-establish the species to part of its range, where the population has been depleted. This role is described in the Regional Collection Plan (RCP) of the EAZA Elasmobranch Taxon Advisory Group (TAG). In addition to this role, roles have also been designated for *ex-situ* research, capacity building, conservation education and monitoring (*in-situ*).

To fulfil the role of *ex-situ* research, a feasibility study has been carried out to investigate whether it is possible for aquariums to house these animals. This research has been elaborated on as Best Practice Guidelines according to the EAZA format, described in the EAZA Population Management Manual, Appendix 4.



Fig 1 Juvenile Flapper Skate

Within European aquariums there is little relevant experience in keeping large bottom dwelling rays in temperate marine systems. To our knowledge, there are six historical records of

flapper skates under human care in aquaria (Scheveningen, Birmingham, Oban and Macduff). However, we believe there should be more historical data and we therefore ask the aquarium community to search for more information on this subject to share.



Fig 2 Flapper Skate at MacDuff Marine Aquarium

IUCN Status

After a revision of the taxonomy of the European skates (Rajidae) in 1920, the flapper skate (*Dipturus intermedius*) and common blue skate (*Dipturus batis*) have been qualified as one species. In 2010, the two species were again recognized as separate species (Iglesias et al. 2010). When it is not clear in this report whether a flapper skate or common blue skate is described, the common skate complex will be referred to.

Common blue skate and flapper skate have most recently been assessed for The IUCN Red List of Threatened Species in 2021. Both species are listed as Critically Endangered under criteria A2bcd.

The 2nd Regional Flapper Skate Working Group meeting

The program coordinator attended the 2nd Regional Flapper Skate Working Group meeting in Galway, Ireland in March 2023. The workshop was co-funded by the Government of Ireland and the European Union (www.eufunds.ie). The attendees at the second Regional Flapper Skate Working Group meeting proposed the Bohermore Declaration as a statement of intent for flapper skate conservation on a regional basis. This highlighted the need to map of the current MPA network and fisheries management measures (overlapped with skate distribution), collaborative action for flapper skate conservation, and prioritise species recovery on a regional scale. The workshop report is being drafted and will be published in due course.

If you have any questions or more data on flapper skates, please contact Mark de Boer, Rotterdam Zoo. m.de.boer@diergaardeblijdorp.nl

Conservation Focus Group Update

By Renaud Herbert, Nausicaa and Nuria Baylina, Oceanário de Lisboa

Today, elasmobranchs are one of the most threatened groups of animals.

The Elasmobranch TAG manages an increasing number of *ex-situ* programs. Following the finalization of its RCP in 2022, many of these programs will evolve into an EEP and new programs appear.

Some institutions are already carrying out *in-situ* actions in different forms. Others would like to but sometimes find themselves helpless.

More and more reintroduction programs are emerging, but do not often follow IUCN recommendations.

Finally, the new EAZA policy, published in 2017, promotes a holistic approach to conservation and encourages its members to develop joint action plans combining *ex-situ* program and *in-situ* conservation action. It is in this context that the Elasmobranch TAG decided in 2021 to set up a group working on this subject: the Conservation Focus Group (CFG)

The objective of this group is to help the institutions participating in the Elasmobranch TAG to take the way of *in-situ* conservation by:

- / collecting and organizing information
- / identifying needs and opportunities
- / matching needs to skills
- / editing guidelines
- / creating a network

In 2022, a first survey was sent out to 75 institutions in Europe in order to establish the interest and perception of aquariums on this subject but also to prioritize the work to be done.

22 establishments answered this survey, half of which are already taking part in *in-situ* actions.

Of these, the majority are involved, both as partners and as supporters of *in-situ* conservation actions.

The main activities carried out are:

- / communication of the *in-situ* actions carried out by other organizations
- / financial support or funding through a dedicated budget
- / participation in field actions (marking, tracking, photo ID)

- / providing data (to scientists and *in-situ* organization)
- / providing biological material (to biobank and labs)
- / education activities with local communities
- / reintroduction actions
- / fundraising
- / linking field organizations and scientists
- / rewilding activities

These institutions have established partnerships, mainly with NGOs and associations but also to a lesser extent with fishing communities and schools.

The other half of the participants in this survey are not currently involved in this sort of program, the majority due to lack of time or not knowing how to go about it. Some do not consider themselves competent enough. Some also highlight a lack of financial means or are more focused on other taxa.

However, the great majority would be interested in participating in *in-situ* conservation programs. All institutions already involved in an *in-situ* program are ready to share their experience and get involved in the Conservation Focus Group. Among the others, only half of them are ready to start working on this process.

Among the actions to be carried out by the group, the main ones are:

1. inventory on the conservation initiatives in European public aquaria on Elasmobranchs
2. facilitate collaboration between *ex-situ* managed species programs within the Elasmobranch TAG and *in-situ* conservation projects

3. develop a list of possible contributions of public aquaria to *in-situ* conservation programs
4. share conservation initiatives results with the TAG participants
5. develop steppingstones for a possible reintroduction program
6. facilitate public aquaria conservation fund initiatives to help fund *in-situ* conservation programs

However, for the last 2 points, aquaria are not unanimous.

The implementation of the new EAZA policy coming to an end, the EAZA field Conservation Standards were approved in October 2022. It is now important for biodiversity and sharks, that we all take this way. Everyone at the size of what they are able to do.

The Elasmobranch TAG Conservation Focus Group will keep developing to support its members.

Click [here](#) for info on this interesting course:



Elasmobranch TAG Veterinary Survey

By Nuno Pereira, Oceanário de Lisboa

The Veterinary Elasmobranch Census was conducted by the EAZA Elasmobranch TAG and its Veterinary Advisory Group, which includes Alexis Lécu (Muséum National d'Histoire Naturelle - Paris Zoo), Daniel Garcia- Párraga (Oceanogràfic Valencia), Nuno Pereira (Oceanario de Lisboa), and Tania Monreal-Pawłowski (International Zoo Veterinary Group). The collected data covered the period from 2013 to 2019 and encompassed more than 30 species from 24 institutions.

The main clinical issues and causes of death have been classified into 27 categories and are described in general terms, as well as specifically for each species.

The data has been broken down into rays and sharks. Cases with a parasitic etiology have been subdivided and analyzed into main parasite groups, infection sites, and hosts.

The general data has also been analyzed in relation to the different institutions, ensuring compliance with data protection laws through anonymization measures.

In the breakdown by species, the main causes of death and clinical problems are analyzed for each species, as shown in the following example that illustrates the casuistic of clinical cases and causes of death for *Mustelus mustelus*, along with other details related to population management. This information is useful for planning the reception of new species, designing species-adapted quarantine protocols, refining differential diagnoses, and implementing

prophylactic measures plus routine health screenings based on the expected casuistic.

Finally, both the general and species-specific data are also valuable in identifying clinical problems or husbandry issues that demand additional attention.

In addition to the veterinary census, the veterinary advisory group is defining blood analytical profiles to establish the parameters to be used in different clinical situations. Alongside the establishment of these parameters, we believe it is important to concentrate efforts on standardizing analytical methods, particularly for blood cell counts. These standardization measures will refine the utilization of blood analyses. Moreover, they will enable robust comparisons between the values obtained in various European institutions.

Available and Wanted

A growing number of *ex situ* programs combined with increasing breeding success within the different species may require an exchange of animals between zoos and aquariums. Information about available or wanted animals can be found on different platforms:

1. EUAC homepage, you need a login

www.euac.org/fish-flash

https://docs.google.com/spreadsheets/d/1M_p01Ud67DtZjOIHldXzdhLyzm4dOuQ1GRjGpLZRKYw/edit#gid=1924390585

2.ZIMS by Species 360 homepage, you need a login

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Choose:

Animal Available Search

Taxonomy: Pisces, Elasmobranchii, Actiniaria,
Scleractinia etc.

Check mark: Include Taxon below

Click Search

3. Overview of current or past species holdings

www.zootierliste.de/en/

Next Meetings

EAZA Annual Conference



Where: Korkeasaari Zoo, Helsinki, Finland

When: September 12-16

EJAC Annual Meeting



Where: Aquário de Porto Pim, Faial, Azores,
Portugal.

When: September 25-29

EEA Annual Meeting



Where: Brighton, UK in-person or online
(depending on registrations)

When: October 18-20

Elasmobranch TAG

Steering Committee

Max Janse (Chair)
Royal Burgers' Zoo Arnhem (NL)
m.janse@burgerszoo.nl

Carlos Taurá
Oceanogràfic Valencia (SP)
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Chris Brown
Sea Life (UK)
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Nicolas Hirel
Planet Ocean World Montpellier (F)
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Nuria Baylina
Oceanário de Lisboa Lisboa (P)
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Nausicaá Boulogne-sur-Mer (F)
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Rune Kristiansen
Kattegatcentret Grenaa (DK)
rk@kattegatcentret.dk

European Ex situ Program (EEP)

Stegostoma tigrinum
Silvia Lavorano, Acquario di Genova

European studbook (ESB)

Aetobatus ocellatus
Jakub Kordas, Wroclow Zoo

Carcharhinus melanopterus
Monica Solda, SeaLife Brighton

Carcharhinus plumbeus
Laura Castellano, Acquario di Genova

Heterodontus francisci
Alex Huiberse, Artis Amsterdam Zoo

Neotrygon kuhlii
Daniel Abed Navandi, Haus des Meeres

Pristis microdon
Pristis zijsron
Ben Jones, The Deep

Taeniura lymma
Nuria Baylina, Oceanário de Lisboa

Monitoring program (MON-P)

Aetomylaeus bovinus
Carlos Taurá, Oceanogràfic Valencia

Atelomycterus marmoratus
Marion Wille, Aquazoo Löbbecke Museum Düsseldorf

Carcharias taurus
James Wright, SeaLife London

Dasyatis pastinaca
Martijn van der Veer, Rotterdam Zoo

Dipturus batis species complex
Mark de Boer, Rotterdam Zoo

Ginglymostoma cirratum
Carlos Taurá, Oceanogràfic Valencia

Glaucostegus cemiculus
Renaud Herbert, Nausicaá

Hemiscyllium ocellatum
Tom Rowe, The Deep

Himantura uarnak
Graham Hill, The Deep

Hydrolagus colliei
Nicolas Hirel, Planet Ocean World

Hypanus americanus
Pete McLean, SeaLife Scheveningen

Mustelus asterias
Mustelus mustelus
Nicole Kube, Meeresmuseum Stralsund

Myliobatis aquila
Aspasia Sterioti, Creteaquarium

Potamotrygon leopoldi
Lena Bockreiss, Tierpark Hellabrunn

Potamotrygon motoro
Javier González, Acuario Zaragoza

Pseudoginglymostoma brevicaudatum
Lilian Csehó, Zoo Budapest

Pteroplatytrygon violacea
Renaud Herbert, Nausicaá

Raja brachyura
Kristina Ydesen, North Sea Oceanarium

Raja clavata
Rune Kristiansen, Kattegatcentret

Raja microocellata
Monique Timmner, Dolfinarium Harderwijk

Raja montagui
Georgia France, Longleat Safari and Adventure Park

Rhina ancylostoma
Oliver Walenciak, Sea Life Oberhausen

Rhinobatos rhinobatos
Renaud Herbert, Nausicaá

Rhinoptera sp.
David Garcia, Sea Life Konstanz

Program changes

By Max Janse, Royal Burgers' Zoo

Of course due to the new RCP the focus within the Elasmobranch TAG is changing and will be changed in the coming year. This way some programs cease to exist. Also some coordinators used this moment to stop with their program coordination to start other activities. We sincerely would like to thank all for their hard work that is done on these programs. Each coordinator that stopped provided all info of the program for the successor or finished the program with a population overview. The following coordinators have stopped:

Monica Solda	<i>Carcharhinus melanopterus</i>
Tom Rowe	<i>Hemiscyllium ocellatum</i>
Lilian Csehó	<i>Pseudoginglymostoma brevice datum</i>
Ron Bernhard	<i>Scyliorhinus stellaris</i>
Chris Smith	<i>Squatina squatina</i>
Isabel Koch	<i>Triakis semifasciata</i>
Pete McLean	<i>Hypanus americanus</i>
Renaud Herbert	<i>Pteroplatytrygon violacea</i>
Monique Timmer	<i>Raja microocellata</i>
Georgia France	<i>Raja montagui</i>
Milena Micic	<i>Torpedo marmorata</i>
Nuria Baylina	<i>Taeniura lymma</i>

For some of the programs new coordinators were found:

Timo Haußecker	<i>Carcharhinus melanopterus</i>	SeaLife Oberhausen
Ana Ferreira	<i>Taeniura lymma</i>	Oceanário de Lisboa
Alex Huijberse	<i>Pseudoginglymostoma brevice datum</i>	Amsterdam Zoo

Due to the increase of work load within the TAG the steering committee of the Elasmobranch TAG is reinforced with two extra members: Carlos Taurá from Oceanographic in Valencia, Spain and Chris Brown, SeaLife, Weymouth, England.

For some species programs vacancies for coordinators exist. For those that are interested please contact Max Janse.

EEP	<i>Dasyatis pastinaca</i>
	<i>Hypanus americanus</i>
	<i>Rhinobatos rhinobatos</i>
	<i>Scyliorhinus stellaris</i>
	<i>Sphyrna tiburo</i>
	<i>Squatina squatina</i>
	<i>Triaenodon obesus</i>
MON-P	<i>Galeorhinus galeus</i>
	<i>Negaprion brevirostris</i>
	<i>Orectolobus</i> sp. (whole genus)
	<i>Pteroplatytrygon violacea</i>

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MARINE FISHES TAG LEADERSHIP



ASSOCIATION
OF ZOOS &
AQUARIUMS

OFFICERS

MFTAG Chair

Paula Branshaw Carlson
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Vice Chair

Christopher Coco
Sr. Director, Zoological Operations
Fishes & Invertebrates
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MFTAG Secretary

Kelli Cadenas
Curator
Sealife Orlando Aquarium
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MFTAG Treasurer

Tim Carpenter
Curator of Fish and Invertebrates
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STEERING COMMITTEE

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Kevin Curlee
Animal Operations Manager
The Seas with Nemo and Friends
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John G. Shedd Aquarium
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Skylar Snowden
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Becca Thomas
Displays Curator
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Rebecca.Thomas3@merlinentertainments.biz

Stacia White
Director of Husbandry
Ripley's Aquarium Myrtle Beach
swhite@ripleys.com

Marcus Zevalkink
General Curator
John Ball Zoo
mzevalkink@jbzoo.org

Current vacancy to be filled by November 2023

ADVISORS

AMPC (formerly WCMC) Liaison:

Dr. Chris Dold
Chief Zoological Officer,
Sea World Parks and Entertainment

Animal Transport Advisor:

Allan Marshall
VP of Internal Relations
Pittsburgh Zoo and Aquarium

Field Conservation Advisor:

Dr. Dennis Thoney

Government Affairs Advisor:

Joe Choromanski
Serviette Group Aquarium Design and Curatorial
Services

Life Support Advisor:

Andy Aiken
Life Support Manager

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National Aquarium

Veterinary Advisor:

Dr. Rob Jones
The Aquarium Vet
Moorabbin
Victoria, Australia

Nutrition Advisor:

Dr. Lisa A. Hoopes
Nutritionist
The Georgia Aquarium

Reproductive Sciences Advisor:

Dr. Linda Penfold
Director
South-East Zoo Alliance for Reproduction and
Conservation (SEZARC)
Yulee, Florida

Education Advisor:

Rachael Bashor
Director of Education
Riverbanks Zoo and Garden

Animal Welfare Advisor:

Allen McDowell
Associate Director
North Carolina Aquarium at Roanoke Island

Mentorship Advisor/RCP Advisor:

Becky Ellsworth
Curator of Shores
The Columbus Zoo and Aquarium

CGF Grant Advisor

Vacant

RCP Advisor:

Jay Hemdal
Aquarium Curator
Toledo Zoo and Aquarium

RCP Advisor/Editor – Pending SC Approval

Jennifer Rawlings
Aquarium Curator
Riverbanks Zoo and Garden

European Liaison:

Nuria Baylina
Curator
Oceanario de Lisboa Aquarium, Portugal

Australian Liaison:

Laura Simmons
Regional Curator Australia/New Zealand
Merlin Entertainments

General Advisors/Past Chairs:

Immediate Past Chair
Beth Firchau

AZA SAFE Shark and Ray SSP Sustainability Project
Coordinator
AZA-FRTRP Project Coordinator-

Past Chair
Doug Warmolts
Vice President of Animal Care
The Columbus Zoo and Aquarium

PROGRAM LEADERS

PL = Program Leader Vice PL = Vice Program
Leader SK = Studbook Keeper

SSP PROGRAMS, AZA Studbooks and TAG Moni-
tored Populations

**Big bellied seahorse - Hippocampus abdominalis
– Signature SSP**

Laurel Johnson (PL/SK)
Aquatic Biologist
Newport Aquarium

**Lined seahorse - Hippocampus erectus - Signa-
ture SSP**

Steven Yong (PL/SK)
Biologist
Steinhart Aquarium

**Spotted eagle ray – Aetobatus narinari – Signature
SSP**

Denise Swider (PL)
Zoological Leader/Curator of Fishes and Birds
Discovery Cove

Becca Thomas (SK)
Displays Curator

Sealife Aquarium Charlotte – Concord

**Zebra shark - Stegostoma fasciatum – Signature
SSP**

Lise Watson (PL)
Asst. Director Animal Operations and Habitats
John G. Shedd Aquarium

Jack Jewell (Vice PL)
General Curator Shark Reef Aquarium
Mandalay Bay

Leah Neal (SK)
Curator, Fishes and Invertebrates – Ocean Voy-
ager and Shark Galleries
Georgia Aquarium

**Sand Tiger shark - Carcharias taurus – Provisional
SSP**

Chris Schreiber (PL)
Director of Animal Care
Florida Aquarium

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Jared Durrett (Vice PL)
Assistant Director of Husbandry
Ripley's Aquarium of the Smokies

Sandi Schaefer-Padgett (SK)
Senior Aquarist
Maritime Aquarium

Blacktip Reef Shark – *Carcharhinus melanopterus* – AZA Studbook
Vacant

Bowmouth Guitarfish – *Rhina ancylostoma* – AZA Studbook
Jen Hazeres (SK)
Senior Biologist
Newport Aquarium

Cownose Ray – *Rhinoptera bonasus* – AZA Studbook
Katherine Allen (SK)
Aquarist II Fishes and Invertebrates
Georgia Aquarium

Epaulette Shark – *Hemiscyllium ocellatum* – AZA Studbook
Aaron Jeskie (SK)
Senior Aquarist
Columbus Zoo and Aquarium

Sawfish – All *Pristis* spp. – AZA Studbook
Stacia White (PL/SK)
Assistant Curator
Ripley's Aquarium Myrtle Beach

Southern Ray – *Hypanus americanus* – AZA Studbook
Alyssa Tillman (SK)
Senior Aquarist
Sea Life Aquarium at Legoland California Resort

Atlantic Ray – *Hypanus sabinus* – TAG Monitored Population
Kellie Glover (SK)
Stingray Keeper
Jacksonville Zoo

Banggai Cardinalfish – *Pteropogon kauderni* – TAG Monitored Population
Vacant

Goliath Grouper – *Epinephelus itajara* – TAG Monitored Population
Laura Wandel (SK)
Associate Curator Birds & Ectotherms
Dallas Zoo

Leafy Seadragon – *Phycodurus eques* – TAG Monitored Population

Jeremy Brodt (SK)
Supervisor, Permanent Galleries
New England Aquarium

Nurse Shark – *Ginglymostoma cirratum* – TAG Monitored Population
Vacant

Sandbar Shark – *Carcharhinus plumbeus* – TAG Monitored Population
Kevin Becker (SK)* (Elected by SC as of 8/24/21)
Assistant Curator Fish and Invertebrates
Adventure Aquarium

Spotted Seahorse - *Hippocampus kuda* – TAG Monitored Population
Vacant