



2025-2029

## Conservation Program Plan

By 2035, we have built diverse partnerships to deliver effective action for the conservation and recovery of sharks and rays.



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# Our story so far

SAFE Shark and Ray aims to enable evidence-based support for conservation action for all 1200+ species of sharks and rays; engage action among key collaborators and the public; support science-based shark conservation communication; and create opportunities for direct, impactful, and collaborative support for conservation and recovery of this taxa.

Operating under the International Union for Conservation of Nature (IUCN) One Plan Approach, this program plan integrates ex situ and in situ conservation. It coordinates and maximizes the collective expertise and opportunities of zoo and aquarium professionals working with elasmobranchs in human care, and conducts in situ research and conservation action for the recovery of sharks and rays in the wild.

As one of the original SAFE programs within the Association of Zoos and Aquariums (AZA), SAFE Shark and Ray is entering its ninth year since inception, and has successfully completed its second Conservation Program Plan. As a model and highly visible SAFE program with a broad species focus, the vision statement created during the planning process extends the designated timeframe for this third, five-year plan, as our goal is to remain relevant, intentional, agile, and responsive to conservation needs throughout this Conservation Program Plan and beyond.



## Our Vision

*By 2035, we have built diverse partnerships to deliver effective action for the conservation and recovery of sharks and rays.*

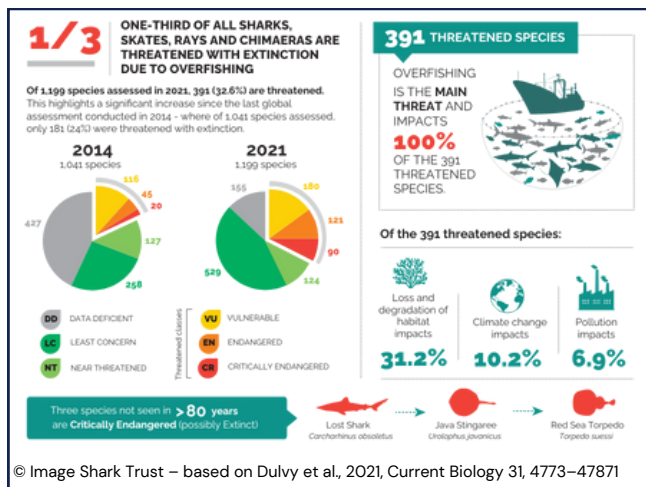
Though global shark conservation has made great strides in recent years, there is much that needs to be done. This team has increased its capabilities, strengths, and opportunities for collaboration and partnership through implementation of our previous conservation program plans.

With a broad species focus, this new 5-year plan capitalizes on where the AZA community is best positioned to produce the most meaningful impacts on the conservation of sharks and rays. We will remain flexible and intentional about focusing on taxa-specific programs, projects, and partnerships that align with objectives outlined in this plan, and work to advance research and conservation for both in situ and ex situ populations. Our plan positions AZA, alongside diverse internal and external stakeholders in global shark conservation, as influential advocates for science-based shark conservation, and empowers and equips our partners to bring their unique strengths to a collaborative effort for elasmobranch conservation and research.

Efficient and effective facilitation of the planning process following the [IUCN Conservation Planning Specialist Group Model](#) ensured that we produced a concrete plan to address the most pressing conservation threats, and maximize all available resources, to safeguard sharks and rays against extinction threats and support efforts to recover populations.

# Conservation Target & Status of Taxa

Sharks and their relatives, skates and rays (*Class: Chondrichthyes, Subclass: Elasmobranchii*), form one of the most fascinating and charismatic groups of marine wildlife. Globally, there are over 1200 species reflecting a huge diversity in biology, behavior and habitat. Though they face anthropogenic challenges common to all wildlife, the overwhelming threats are from destructive fishing practices. Inadequate governance and ineffective fisheries management are depleting populations across the world's ocean.

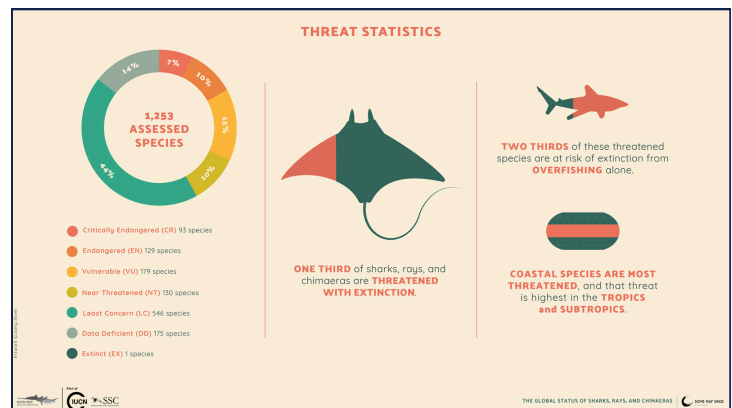


The 2014 [IUCN Red List](#) of Threatened Species for sharks and rays estimated that one-quarter of sharks and rays were at risk of extinction.

A 2021 reassessment, released by the Global Shark Trends Project, increased the percentage to over one-third of species, and listed 90 species listed as critically endangered species.

Since these reports were released, much has happened in the world of shark conservation in the areas of research, policy, and collaboration to address the emerging threats and changing marine ecosystem.

In December 2024, a new [IUCN Global Status of Sharks and Rays Report](#) was released that updated these assessments to 1,253 species assessed, with current data indicating that **2/3 of threatened species are at risk of extinction due to overfishing alone.**





# Conservation Target & Status of Taxa

## *continued*

*This Conservation Program Plan details how we can use AZA institutions' unique position, access and knowledge base to engage in the global collaborative effort to secure a positive future for sharks and rays through a science-based approach to conservation.*

The SAFE Shark and Ray program adopts a holistic approach to the conservation of all 1200+ shark and ray species, supporting and integrating with the goals of science-based conservation. Species-specific initiatives will be encouraged and incorporated into the program, and will be conspicuously linked to the wider goals.

The broad species focus adopted by this program plan necessitates a focus on where the AZA community can best produce a meaningful impact on the conservation of shark and ray species. The target is to establish AZA as an influential advocate for science-based shark conservation.

SAFE Shark and Ray partners are empowered and equipped to bring their unique strengths to this collaborative, while building upon:

- The unique connection with, and influence on, a broad group of non-specialist public audiences to deliver credible communication of shark conservation priorities and solutions.
- The wealth of experience caring for a diversity of sharks in a human-care setting to provide invaluable veterinary skills, techniques and datasets that produce positive outcomes for animals in in situ and ex situ research and conservation.
- The respect and position within wider communities to promote targeted behavior change actions with key stakeholder groups and audiences.



# Threats

## Overfishing

Overfishing is the primary threat for all threatened species and is the only threat for two-thirds of these species. Many species of sharks and rays are targeted for their meat and fins in commercial, artisanal, and subsistence fisheries. Others are caught incidentally in fisheries for bony fishes or other taxa that exhibit faster life histories that enable them to better withstand fishing pressures. While some non-target species are retained in significant numbers for international trade, other incidentally caught species may be kept for their meat for local consumption, or their fins for sale in international markets. Other uses include animal feeds, skins and other body parts made into apparel and accessories, liver oil for pharmaceuticals, and biodiesel fuel.

Shark and ray fisheries operate at local, national, regional and international scales and support complex global markets as well as local community economies. Effective conservation requires coordinated action on a global scale.

### Overfishing is exacerbated by:

#### 1. Lack of Species and Population-Specific Data

Many government agencies and non-governmental organizations are involved in ongoing study of patterns of shark diversity, abundance, threat, and conservation solutions.

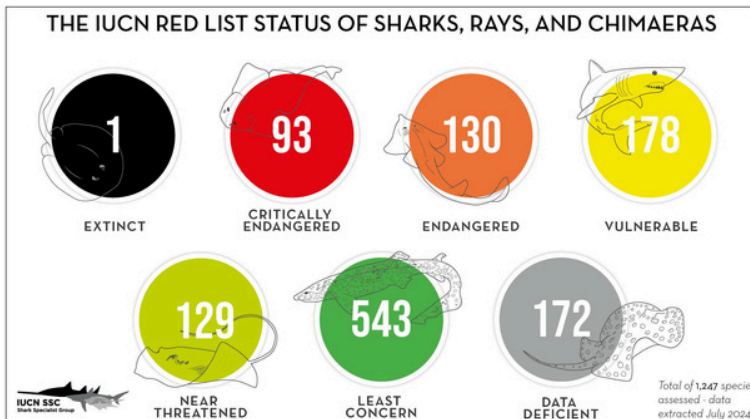
The July 2024 Assessment from the IUCN Red List of Threatened Species identifies that of 1247 species, 172, or 14%, are data deficient.

#### 2. Need for Policy and Legislation

Policy initiatives involving species and habitat protection, fisheries management and trade regulation play a vital role in shark and ray conservation.

However, there is a lack of appropriate policy and legislation for, and implementation of, effective management measures such as population-level take limit quotas, and marine protected areas.

The United States National Oceanic and Atmospheric Administration (NOAA) and international agencies have historically recommended a variety of domestic and international policy and regulatory actions to achieve sustainable shark populations, however adoption and implementation of many of these is still inadequate.



*We have developed a robust area of work to influence conservation policy through our goals, objectives, and actions listed in the **Implementation Strategy***



# Threats

## *continued*



### **3. Habitat Loss and Degradation**

The loss of habitat, such as mangroves and estuaries which are critical nursery areas, to residential and commercial development, agriculture, aquaculture, and natural system modifications, like dams or dredging, worsen the impacts of overfishing in nearly one-fifth of species.

### **4. Climate Change**

Anthropogenic climate change through the burning of fossil fuels threatens 10% of shark and ray species with extinction and exacerbates overfishing and habitat loss through two mechanisms. Effects of climate change are rapidly degrading coral reef ecosystems due to increased sea surface temperatures and subsequent decreases in coral cover from bleaching and disease. Further, many temperate species are declining in the equatorward portion of their range because it is less ecologically suitable due to higher water temperatures.

### **5. Pollution**

Pollution from a wide variety of both point-source and non-point sources can be a non-lethal stressor that compounds other threats.

Effective, science-based, inclusive and accessible communication can be a powerful ally to shark and ray conservation efforts. It's vital to engage a broad cross section of public audiences in the priorities for contemporary conservation and the vital role of science, policy advocacy and sustainable fisheries management. As trusted messengers for conservation solutions for the general public, our program is uniquely situated to capitalize on our massive audiences to influence positive behavior change to benefit elasmobranch conservation.

### **6. Misaligned Public Attitudes**

Media portrayals of sharks are subject to exaggeration and misrepresentation. Negative human/shark interactions, with a focus on a narrow group of species, influence the wider public perception of the taxa. Popular shark documentaries frequently focus on a limited and unrepresentative scope of research methods and professional diversity.

Though the impact of this representation on public attitudes about shark conservation is unproven, it is widely anticipated to be a factor in engaging support for conservation efforts.

Recently, attention has turned to the media portrayal of conservation solutions for sharks and rays. However, research has identified a mismatch between scientists' recommended approaches to shark conservation and the reporting of more values-based campaigns.

*Our focus in this conservation program plan on **"Living with Sharks"** uses proven methodologies from IUCN and current social science research to identify emerging conflicts, engage communities and develop communication strategies around human/shark interactions. These tactics foster coexistence with predatory marine wildlife and prevent the potential roll-backs of shark protection measures.*

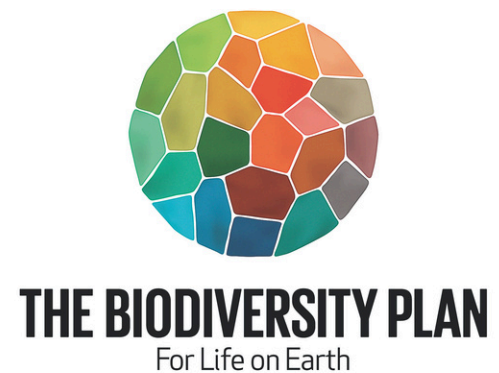
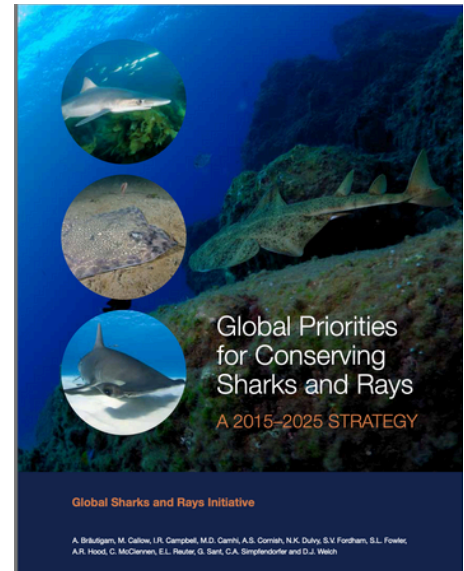
# Recovery Plan

The 2022–2024 SAFE Shark and Ray Conservation Program Plan is aligned with the Global Priorities for Conserving Sharks and Rays: A 2015–2025 Strategy, published by the Global Shark and Ray Initiative (GSRI). While soon to be completed, the Strategy’s goal is stated as, *“By 2025, the conservation status of the world’s sharks and rays has improved – declines have been halted, extinctions have been prevented, and commitments to their conservation have increased globally.”* GSRI’s ambitious goal is yet to be fully realized, and therefore this program plan will continue to align with the 2015–2025 Strategy, where feasible.

Our 2025–2029 SAFE Shark and Ray Conservation Program Plan also aligns with, and complements the strategies of, other international organizations including the [IUCN Species Survival Commission Shark Specialist Group](#), the [Shark Conservation Fund](#), [American Elasmobranch Society](#), and [Save Our Seas Foundation](#).

We will also continue to align this work with the [Kunming–Montreal Global Biodiversity Framework](#) and its goal of halting species extinction by 2030 and achieving recovery by 2050.

Our plan will build on, and further define, existing partnerships and projects; incorporate new and diverse groups of stakeholders as identified through the planning process; and outline specific funding criteria for the life of the plan.



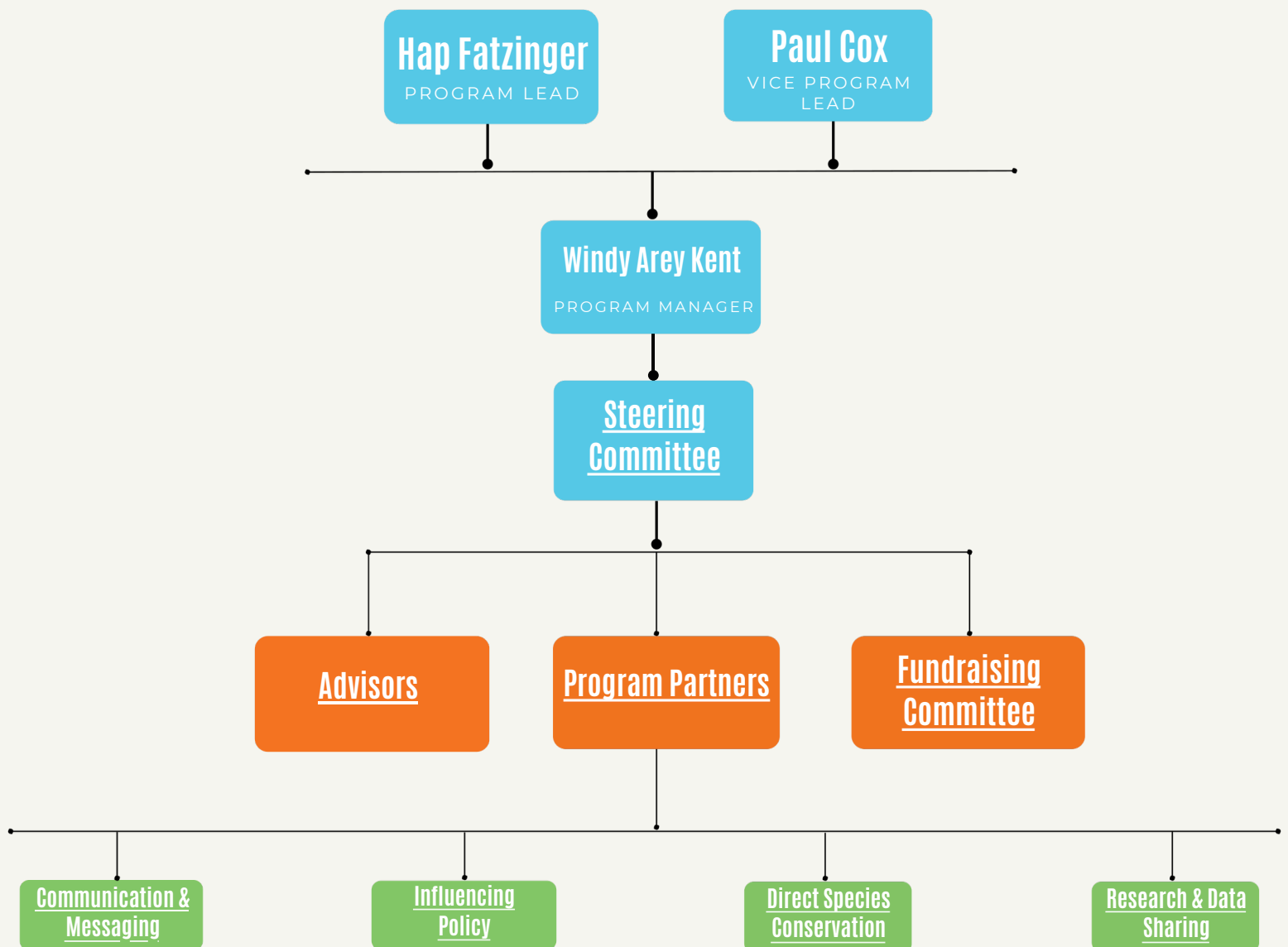
*Our SAFE Program Vision: By 2035, we have built diverse partnerships to deliver effective action for the conservation and recovery of sharks and rays.*



# Operational Structure



## 2025 ORGANIZATIONAL CHART



For the required contact list in each category, **click the hyperlink** in the associated box, or see [Appendix A](#)

# Pillars of Work



## 1

### Research & Data Sharing

- Expanding our networks beyond AZA and SAFE partners to include other zoological associations and in situ researchers
- Creating a structure for monitoring elasmobranch research priorities
- Increasing data sharing for greater impact
- Advancing elasmobranch science, health, and in situ and ex situ care and husbandry

## 2

### Direct Species Conservation Action

- Understand the science and strategies for breeding, reproduction and reintroduction
- Better defining what conservation and recovery looks like for elasmobranchs
- Better coordination and collaboration with other AZA-shark conservation programs to identify species in need and maximize resources

## 3

### Influencing Conservation Policy

- Empowering expertise within zoos and aquariums to advocate for policy and management processes
- Expanding, engaging and aligning with international partners to leverage our influence and impact
- Aligning with partners to address global shark trade and communicate demand issues
- Coordinating global efforts on international fisheries policies

## 4

### Communications & Messaging

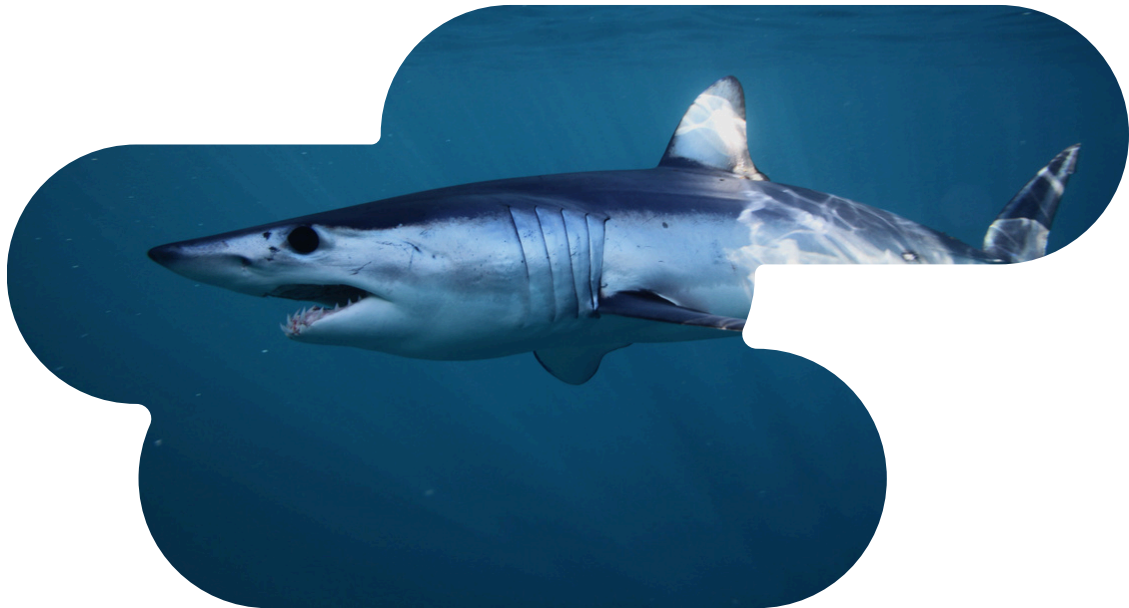
- Expanding audiences and representation, including internationally
- Developing audience-specific messaging and tools
- Promoting collective conservation action for elasmobranchs
- Sharing of best practices to increase communication between partners
- Coexisting with sharks to minimize human/wildlife conflict



# Objectives & Actions

To allow for flexibility within this document, and to enable the reader to easily follow the plan, we have included the Objective and Action Tables in the [Implementation Strategy](#) section.

Our team worked with a diverse group of global participants to develop these objectives and action tables. We followed the IUCN Species Survival Commission [Conservation Planning Specialist Group](#) process and conducted a series of six in-person and virtual workshops from February–August, 2024.



## Plan Reviews

The SAFE Shark and Ray program recommends that in addition to review by the AZA Wildlife Conservation Committee, this Conservation Program Plan receive reviews from the following:

- Aquarium Affairs Committee
- Conservation Education Committee

# Status of Taxa within AZA



Elasmobranchs are common in AZA-accredited facility animal populations because of their continued conservation significance as critical to healthy marine ecosystems globally, and guests' growing fascination with sharks and rays.

Elasmobranchs are under the purview of the Marine Fishes Taxonomic Advisory Group (MFTAG) (all shark and marine ray species) and Freshwater Fish Taxonomic Advisory Group (FFTAG) (freshwater ray species). The 2022–2024 SAFE Shark and Ray Program Plan reported 12 species managed as Species Survival Programs (SSPs) within their respective TAGs. Since then, AZA reimaged SSPs in collaboration with TAGs and the Wildlife Conservation Committee, and decreased the number of species collaboratively managed by both the MFTAG and FFTAG to four programs:

- **zebra shark**, *Stegostoma tigrinum* [Signature SSP]
- **spotted eagle ray**, *Aetobatus narinari* [Signature SSP]
- **sandtiger shark**, *Carcharias taurus* [Provisional SSP]
- **white-blotched river ray**, *Potamotrygon leopoldi* [Provisional SSP]

**ASSOCIATION  
OF ZOOS &  
AQUARIUMS**



**SHARKS & RAYS**  
AZA SAFE PROJECT

Regional Collection Plans (RCP) for both taxon advisory groups are scheduled for publication in late 2024. The most current species data across taxa is below and sourced from the Freshwater Fishes Regional Collection Plan (RCP) in 2017, and the Marine Fishes RCP (2019):

| Representing: | FFTAG                          | MFTAG |
|---------------|--------------------------------|-------|
| Individuals   | 538                            | 4598  |
| Species       | 10 (plus 3 unconfirmed/hybrid) | 99    |
| Orders        | 1                              | 11    |
| Families      | 2                              | 21    |
| Genus         | 3                              | 53    |

Many sharks and rays require advanced husbandry and veterinary care, a sophisticated life support infrastructure, a planned financial investment, and in some cases, complex habitat square footage for successful long-term care. These needs require thoughtful planning and a strong financial commitment. The increase in the number of species illustrates the importance of sharks and rays to the conservation and environmental education missions of AZA member facilities and illustrates continual improvement in husbandry and understanding of species biology.

There are currently 271 unique chondrichthyan species entered in the SAFE Shark and Ray International Census of Chondrichthyans in Human Care (Chondro Census), representing 247 facilities across 55 countries – including AZA facilities. **This represents an 18% increase in facilities participating in the Census since 2020.**



# Conservation & Stakeholder Engagement

Many organizations are committed to working collaboratively with SAFE Shark and Ray to elevate and amplify shark conservation now, and in the future. The SAFE program has benefitted greatly from increased participation from program partners. Over the past 3 years we:

- Increased the number of organizations, NGOs and businesses that became [program partners](#) by **62%**
- Grew the number of partners contributing time and resources to projects and programs
  - **12** organizations in leadership roles for SAFE projects
  - **52+** organizations that are actively engaged in SAFE projects
- Expanded our roster of partner and non-partner organizations contributing financially to SAFE Shark and Ray
  - As of publication, 29 organizations contributed over \$325,000 to the program
- Increased participation in Shark & Ray Awareness Day by **140%** over the three year plan (see next section for details)
- Increased global participation in projects
  - Added **4** Regional Coordinators and **2** Vice Chair positions to the Chondro Census
  - Secured international representation on the [Best Practices for Elasmobranch Handling Events](#) Working Group
  - Garnered international interest from World Association of Zoos and Aquarium colleagues to engage with the [Sustainable Feed Project](#) moving forward
  - Achieved global participation in [Shark & Ray Awareness Day](#)

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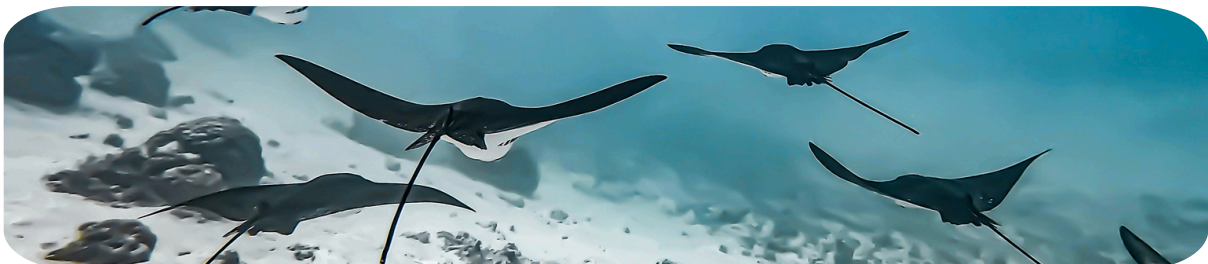
Funding partners

140%

INCREASE in  
participation in Shark  
& Ray Awareness Day

65+

Partners, Contributors  
& Funders



## 2022–2024 SAFE Shark and Ray Conservation Program Plan

# Progress & Success

- Established and funded a full-time **Conservation Program Manager**.
- Successfully **achieved annual fundraising goals** to support projects and personnel, including receiving two AZA Conservation Grant Fund awards; partners hosting numerous fundraising events for SAFE; and support from businesses and individuals.
- Developed a **Best Practices for Elasmobranch Handling Events** resource, which includes digital and printed reference materials with an app prototype rolled out at the 2024 Annual Conference.
- The **Elasmobranch Blood Project** successfully collected 110 samples from partners to establish blood reference intervals for elasmobranchs. Cownose rays are completed and additional species are in progress including whitespotted bamboo sharks, brown banded bamboo sharks, Atlantic stingrays and yellow stingrays.
- Managed, maintained and increased participation in the **International Census for Chondrichthyans in Human Care** and increased volunteers to support the implementation globally.
- In partnership with the Aquarium Conservation Partnership, launched the **Sustainable Feed Project** to assess the sustainability of seafood fed as animal feed in our operations. 55 organizations participated with 10 of those organizations supporting a pilot Business Commitment to “feed sustainable” seafood to animals in our care.
- Worked with the AZA Conservation team to evaluate shark research and conservation project data from the 2021 and 2022 Annual Report on Conservation and Science (ARCS) database, and develop a queryable **list of elasmobranch research projects** in AZA organizations to share broadly with the in situ research community.
- **Hosted a Symposium** at the 2024 annual meeting of the American Elasmobranch Society (AES) titled ‘Contributions of Aquariums to Elasmobranch Research’ highlighting the unique and important elasmobranch research efforts conducted and led by aquariums, and to promote increased collaboration between the field research and aquarium communities.
- Increased support for AZA aquatics community at **CITES Conference of the Parties (COP 19)** by promoting and supporting the inclusion of an AZA Aquatics Expert for the AZA COP team.
- Created social media platforms for SAFE and distributed a monthly newsletter to ~400 subscribers.
- Completed a **formal evaluation of our Messaging Framework** to identify and address barriers to partner integration, and their areas of need, and delivered 5 virtual and in-person training sessions for AZA members focusing on the evaluation outcomes.

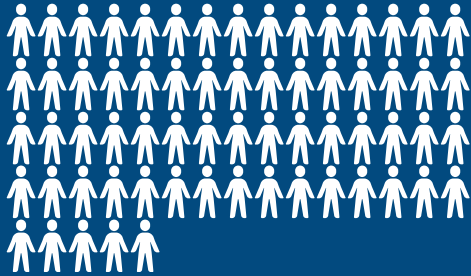
# 2022-2024 SAFE Shark and Ray Conservation Program Plan

## Highlights

*at a glance*

LAUNCHED SAFESHARKS.ORG  
WITH 26,500 UNIQUE  
VISITORS SINCE JUNE 2022!

65



PROGRAM PARTNERS, FUNDERS  
& CONTRIBUTORS



54+

PARTNERS CELEBRATED

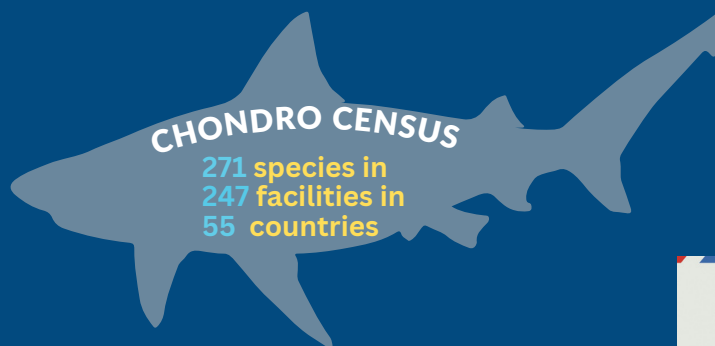


1500+ hours

developing resources for  
ELASMOBRANCH BEST  
PRACTICES IN HANDLING  
& WELFARE

11

SUDS FOR SHARKS  
FUNDRAISERS  
GENERATING  
\$17,500+!



CHONDRO CENSUS

271 species in  
247 facilities in  
55 countries

\$52,643

awarded through the AZA

CONSERVATION  
GRANT FUND

5

Joint policy  
support letters  
delivered



# Public Awareness Activities

A cornerstone of the SAFE Shark and Ray Conservation Program Plan is messaging and communications. Beyond our focus on *what* messaging we share with our partners and stakeholders, we make deliberate and intentional efforts around *how* those messages are shared with our diverse and various audiences.

The [SAFE Shark and Ray Messaging Framework](#) was developed in consultation with a cross-section of the shark science community under the first SAFE Shark and Ray Conservation Program Plan, and links to the priorities outlined by global scientists working on shark research and conservation.

The goals are to:

1. Shift the damaging narrative by unifying conservation messaging around elasmobranchs
2. Incorporate the the latest social science research to create content meaningful for our diverse audiences
3. Maximize the positive impacts for sharks and rays in the wild by engaging audiences in conservation action



The SAFE Shark and Ray 2022–2024 Program Plan’s focus was on implementation and adoption of the Framework within our partner organizations, and evaluating the effectiveness of the tools with partners and social scientists. We have begun training partners on how to incorporate and integrate the Framework to maximize and measure impact with in-person and online audiences.

The focus and goal in the 2025–2029 Conservation Program Plan is to continue to assess, refine and grow the adopters of the Messaging Framework, including internationally. We are identifying and addressing needs and barriers for our partners, as well as how we can best train them to effectively implement the available tools and resources.

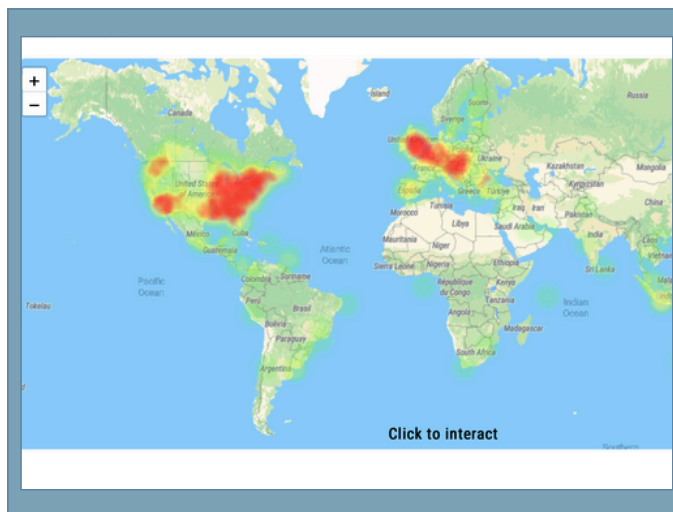
*We will include more international partners, and engage a variety of disciplines within the AZA community to incorporate the Framework including exhibits/design professionals, animal care staff, and social media, public relations and marketing teams.*

# SHARK & RAY 14 JULY AWARENESS DAY

Our signature event, Shark & Ray Awareness Day, occurs annually on **July 14th**. We have seen steady growth in the partners and non-partners engaging their audiences in-person and online, over the 2022–2024 SAFE Shark and Ray Program Plan. Our goal is to continue to grow engagement with audiences over the next 5 years.

Some highlights from the past three years include:

- A **140% increase** in on-site events hosted by partners and non-partner organizations, from 23 events reported in Year 1 to 55 events reported in Year 3.
- **1700 posts** using 2024 Shark & Ray Awareness Day hashtags over a 3-day period on Instagram.
- Exponential increase in Fundraising for SAFE during Shark & Ray Awareness Day with partner and non-partner organizations raising funds for SAFE using our online donation portal.
- **International participation** in an online quiz posted for Shark & Ray Awareness Day in Years 1 and 2.



The 2024 Shark & Ray Awareness Day Toolkit was downloaded from our website **1142 times**  
– A **53% increase over 2023!**



# We thank you for your ongoing support of our program

*We are working collaboratively to coordinate conservation action across zoos, aquariums and a global network of partners to increase knowledge, support research, create a powerful narrative and engage audiences in positive actions for sharks and rays.*



## Acknowledgements

The SAFE team would like to thank each of the following for helping us to create this plan:

- IUCN Conservation Planning Specialist Group, especially Jamie Copsey, for leading us through this planning process
- Katelyn Herman, Windy Arey Kent, Lauren Switters-Bauby, and Ashley Kidd for facilitation support
- The SAFE Steering Committee
- 45+ workshop participants for spending many hours to create this robust plan
- AZA Conservation Team
- Hap Fatzinger and Paul Cox for their leadership through this process and beyond

