

Challenges and Characteristics of Blue Shark (*Prionace glauca*)

By: Charles Coc, Fisheries Scientist & Data Officer

Throughout history, sharks have been unjustly stigmatized as one of the most vicious and menacing creatures of the sea, largely due to poor education and the perpetuation of negative stereotypes in movies such as the “Jaws” franchise. However, statistical data reveals that the likelihood of being struck by lightning far outweighs the chances of being bitten by a shark. Fortunately, through increased education and dedicated shark research, the public’s perception of these fascinating creatures is gradually shifting, as we come to understand their vital role in the ecosystem. With over 500 known shark species inhabiting waters worldwide, it is crucial to recognize the threats they face and the significance of managing and protecting these predators.

To start, the blue shark (*Prionace glauca*) is currently one of the most heavily targeted shark species, facing a multitude

Figure 1: Blue Shark (*Prionace glauca*)



Photo courtesy of Talk Sea Fishing

of challenges in its battle for survival. With a total length of 380 cm, this large oceanic pelagic shark inhabits tropical temperate waters, ranging from the surface to depths of up to 1,000 meters. Like many other sharks, the *P. glauca* is viviparous, giving birth to live young. Remarkably, it boasts the highest population growth rates among pelagic sharks, displaying early maturity and large

litter sizes, averaging at 35 pups (ranging from 20-50 pups). In terms of diet, *P. glauca* primarily feeds on pelagic fish species such as mackerel, swordfish, and squids, as documented by Rigby et al. (2019).

Furthermore, as a result of reaching sexual maturity at approximately five years old, the population of this species has managed to endure the rigorous pressures imposed by human activities thus far. In addition to being sought after due to their fins and the growing demand for fin soup in certain cultures, they also frequently become unintended

victims of bycatch. This accidental capture not only harms individual sharks, but also contributes to the overall decline of their populations. Consequently, alarming concerns arise from the fact that in 2019, the International Union for Conservation of Nature (IUCN) changed the blue shark's status from Lower Risk to Near Threatened, indicating that without close monitoring and sustainable fishing practices, the population may regress to Vulnerable or even Endangered status.

Considering these threats, conducting stock assessments is of paramount importance and would provide updated information on the shark's population, including their abundance, size distribution, age structure and reproductive patterns. This information is crucial for understanding the status of the species' population and formulating effective conservation strategies. By monitoring the health and stability of sharks' stocks, policy makers, scientists and other stakeholders can make informed decisions regarding fishing quotas, protected areas, and other conservation measures to ensure the long-term survival of the species (Motivarrash et al., 2020). For instance, based on insights gained from the 2023 blue shark assessment, Belize is presently engaged in the development of an electronic Non-Detrimental Finding (d-NDF) report. This report aims to facilitate the sustainable harvest of blue sharks from the Atlantic Ocean.

Figure 2: Blue Shark anatomy

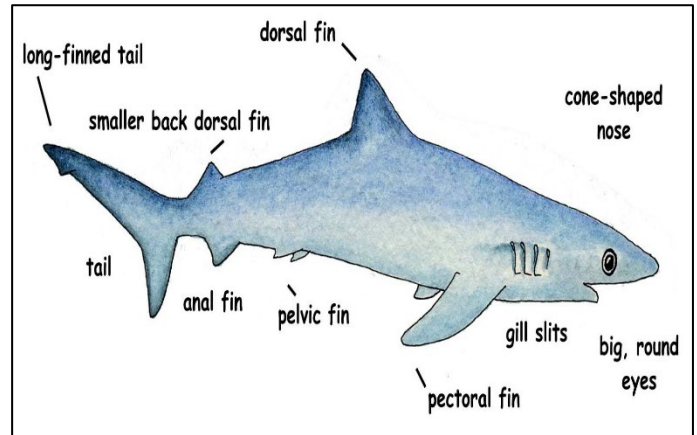


Photo courtesy of ExploringNature.org

In conclusion, sharks such as *P. glauca*, face numerous threats that jeopardize their existence. Overfishing, demand for fins, fisheries bycatch, habitat and prey loss, and human disturbances all contribute to their dwindling populations. However, through improved education and research, society is gradually recognizing the importance of sharks in controlling populations of prey species, maintaining, and stabilizing the importance of sharks in controlling populations of prey species, maintaining, and stabilizing the food chain, thus maintaining a healthy marine ecosystem.

Visit the Science Corner below to complete our blue shark crossword puzzle.

References

Rigby, C., et al. (2019). *Prionace glauca*. The IUCN Red List of Threatened Species 2019: e.T39381A2915850. <http://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T39381A2915850.en>

Motivarash, Y., Fofandi, D., Dabhi, R., Makrani, R., & Tanna, P. (2020). Importance of sharks in ocean ecosystem. *Journal of Entomology and Zoology Studies*, 8(1), 611–613. <http://www.entomjournal.com>



Belize attends successful Annual Meeting of IATTC

By: Delice Pinkard – Compliance and Enforcement Manager

The 101st Ordinary meeting of the Inter-American Tropical Tuna Commission (IATTC) along with its subsidiary meetings was held in Greater Victoria, Vancouver Island, British Columbia from July 31st to August 11th. A senior delegation from the Belize High Seas Fisheries Unit under the Ministry of Finance participated in these meetings.

Prior to the commencement of the 101st Ordinary Meeting, the 46th Meeting of the Parties to the Agreement on the International Dolphin Conservation Program (AIDCP) and the meeting of the subsidiary bodies of the AIDCP, including the International Review Panel was convened. These were followed by the meetings of the subsidiary bodies of the IATTC including the Committee on Administration and Finance, the Compliance Committee, and the Permanent Working Group on Fleet Capacity. These Committees presented several recommendations to the Commission which were considered and adopted.



Among the many scientific matters discussed, the Scientific Advisory Committee (SAC) notified the Commission that the yellowfin, bigeye, and skipjack tuna stocks in the EPO continue to be in good condition. Although they could not

be fully explained, there were clear trends showing an increase in yellowfin captures in recent years. Different theories were taken into consideration, ranging from El Nino-related environmental changes to a change in bigeye targeting due to decreased fishing demands. The 2024 stock assessments on these species will allow the SAC to investigate fishing strategies to help guide the discussions for the adoption of new measures next year.

During the plenary session, twenty proposals were presented on different conservation and management measures based on recommendations by the Secretariat and scientific staff. Of these twenty proposals, an unprecedented twelve were successfully adopted. The adopted proposals aimed at



L-R Delice Pinkard, Valarie Lanza

addressing various conservation challenges, such as reducing fishing capacity, climate change, FADs, harvest control rules, stricter catch limits and improving compliance with regulations. These measures demonstrate the commitment of the IATTC to sustainable fisheries management and the protection of the marine resources in the region.

For more information on adopted resolutions please see the link below.

<https://www.iattc.org/en-US/resolution/type/IATTC?CategorySelected=&SubCategorySelected=&FreeText=&DateYear=&IsActive=0&page=1&type=IAT>



Belize attends its first Scientific Meeting of the SPRFMO

A Belize delegation from the Belize High Seas Fisheries Unit attended the 11th Scientific Committee Meeting of the South Pacific Regional Fisheries Management Organization (SPRFMO) which was held in Panama City from 11-16 September.

The aim and purpose of the scientific meeting of the SPRFMO are to promote scientific collaboration, facilitate knowledge exchange, assess the status of fish stocks, address emerging issues, and support evidence-based decision-making for the sustainable management of fisheries resources in the South Pacific region.



L-R – Charles Coc (Fisheries Scientist & Data Officer), Ernie Howe (Fisheries Officer)

The Belize delegation actively participated in the discussions and presentations showcasing its commitment to sustainable fisheries management. Belize's attendance reflects its dedication to collaborating with other countries in the region to address common challenges and promote effective conservation measures.

The importance of a VMS to the High Seas Fishing Sector

By: Ian Constantino-Monitoring Officer

For nations like Belize, which have an official authority in charge of managing its commercial fishing vessels operating on the high seas, we must guarantee and demonstrate that our fleet's seagoing operations are carried out in accordance with the various policies and procedures enforced by the Regional Fisheries Management Organizations to which we subscribe. While these regulations may vary depending on the organization, location and species managed, they ensure that our fishing activities are sustainable and adhere to international standards. By complying with these policies, we contribute to the conservation of marine resources and promote responsible fishing practices not only on the high seas but also within our jurisdictional waters.

The oceans are home to thousands of fishing vessels involved in many different forms of fishing activities, therefore being able to monitor their activities 24/7 is critical for effective fisheries management and conservation efforts. Additionally, real time monitoring can help to detect illegal fishing activities, protecting marine ecosystems and maintaining the balance of oceanic biodiversity. Fishing vessels such as super purse seiners and mega longliners haul in mass volumes of catch daily in addition to other fisheries related activities, so it is crucial for fisheries authorities to be able to determine the exact locations where these activities take place. Having a monitoring system in place provides fisheries authorities with the ability to review and analyze the activities of these vessels, which includes their entry and exit into the EEZ of other states, port calls, outer road transshipments, inter alia.



Although emerging technologies like electronic monitoring systems seem to offer potential for more sophisticated monitoring, the traditional vessel monitoring systems will continue to offer fisheries authorities the most fundamental and important monitoring and surveillance tools. The VMS is like the human heart in the sense that it provides crucial information and plays a vital role in ensuring the health and safety of the fishing industry. Just as the heart monitors and regulates blood flow, the fishing vessel monitoring system tracks and monitors the movement and activities of fishing vessels, helping to prevent illegal fishing practices and protect marine resources.

THE SCIENCE

By Charles Coc – Fisheries Scientist and Data Officer

Blue Shark Crossword Puzzle

Let's test your knowledge about the Blue Shark. Help us solve this crossword puzzle.

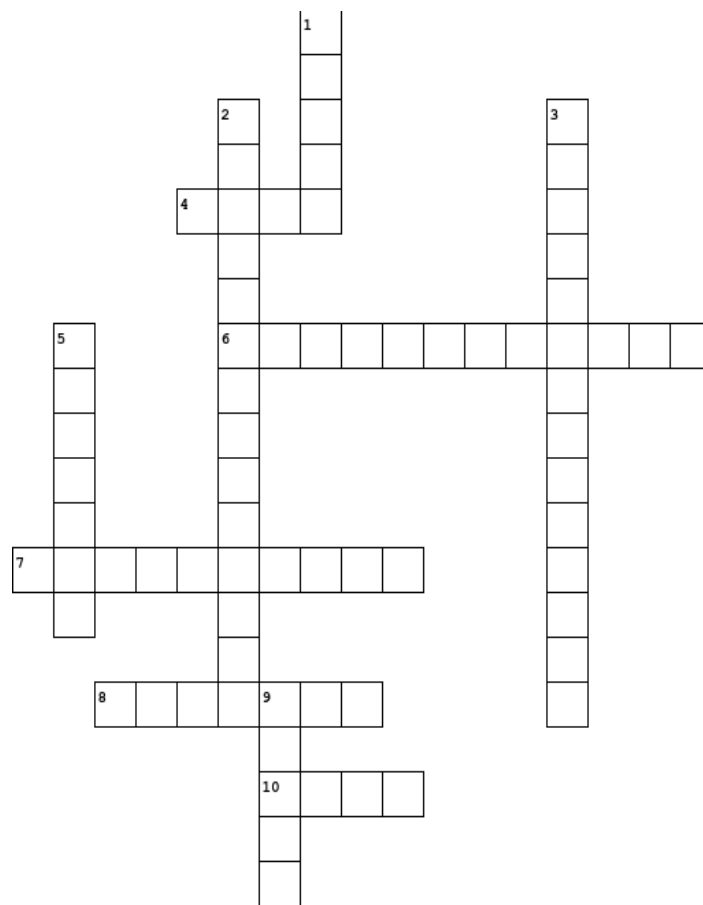


Photo Courtesy Delice Pinkard

In my duties as a monitoring officer, in Belize's only Fisheries Monitoring Center, I have come to appreciate the critical role that effective monitoring plays in the sustainable management of our marine resources. Through my work, I have witnessed firsthand the positive impact that proper monitoring and enforcement can have on preserving fish stocks and protecting vulnerable species. Additionally, I have gained a deep understanding of some of the challenges faced by vessel owners and operators and the importance of engaging with them to promote responsible fishing practices.

Across

- 4. Main ingredient in shark soup
- 6. Top of the food chain
- 7. Giving birth to live young
- 8. Unintended catches
- 10. Electronic report by CITES to sustainably harvest sharks

Down

- 1. Used by fishes to breathe
- 2. Blue shark's scientific name
- 3. Family to which blue sharks belong
- 5. Blue sharks scale
- 9. Jagged, serrated, sharp and used for chewing



Hip Hip Hooray!

By: Robert Robinson – Deputy Director



The month of September is a time of jubilation and celebration for Belizeans at home and abroad.

September 21st, 2023, will mark the 42nd anniversary of Belize Independence; and if this is not reason enough to celebrate, the historic battle of St. George's Caye which took place from September 3-10th 1798, is commemorated on September 10th in tribute of the British Settlers who defended their settlement against the invasion of Spanish *conquistadores*.

While Belize's road to independence was a peaceful one, it was a lengthy struggle which is a testament to resilience and determination of its people. The Anglo-Guatemalan territorial dispute, now before the International Court of Justice (ICJ) for adjudication, began in 19th century, and casted a significant shadow over Belize's path to independence. Nonetheless, the momentum for an independent Belize began to rise in the 20th Century with key milestones along the way.

In 1954, the first political party, the People's United Party was formed by the Rt. Hon. George Cadle Price, whom is regarded as the 'Father of the Nation' because of his pivotal role in Belize's quest for independence. Price and the PUP were dedicated to self-determination and began to advocate for Belizean sovereignty. The turning point came in 1964 when the United Nations passed a resolution recognizing Belize as a self-governing territory under British protection. This resolution gave Belize a taste of autonomy, and the path to



full independence was set in motion. Negotiations between the British government, the PUP, and other stakeholders intensified in the following years. The 1980s saw significant progress, with a constitutional conference in London in 1980 leading to the adoption of a new constitution for Belize.

On September 21, 1981, after intense negotiations with the British government and following a constitutional conference in London in 1980, Belize achieved its long-awaited independence. It was a momentous day when the Union Jack (the British Flag) was lowered for the first time, and Belize's new national flag, featuring two men of different ethnic backgrounds holding up a shield, was raised. George Price became the nation's first Prime Minister, and Belize joined the community of sovereign nations.



Belize's path to independence is a remarkable story of a nation's determination to chart its destiny. Despite the hurdles it faced, Belize succeeded in gaining sovereignty and securing its place in the global community. Today, as Belize celebrates the 42nd under the theme "Hope Ignited! Hands United; Vision Renewed" it stands as a proud independent nation, celebrating its rich cultural heritage and looking forward to a brighter future. **Long live Belize.**



Best Wishes, Daisy!

By: Robert Robinson – Deputy Director



Far too often, we neglect to recognize the people who are instrumental in facilitating collaboration in support of our work. This short tribute is dedicated to one such individual who has worked diligently to foster bilateral cooperation between Belize and Taiwan in matters relating to high seas fisheries management and policy.

Daisy Wang served as First Secretary at the Embassy of the Republic of China (Taiwan) where her exemplary contributions, like her predecessors, has forged an enduring friendship among our teams. Daisy, your professionalism, and warm spirit have been a source of inspiration to us all.

As Daisy embarks on a new chapter in her career, we extend our heartfelt gratitude for her outstanding service and wish her every success in her future endeavors. While we will miss her presence here in Belize, we are confident that her expertise and dedication will continue to benefit the course of fisheries management on a broader scale.

Please join us in thanking Daisy for her exceptional contributions and let us continue working together to advance our shared vision for sustainable fisheries in the high seas.

