

## Foreword

We have come a long way since our perception of sharks was shaped by films featuring World War II pilots downed in the Pacific and circled by ominous fins. Now, the images that come to mind are finless, bleeding shark carcasses being thrown overboard from fishing vessels or, more abstractly, plunging graphs documenting the decline of shark abundance throughout the world's oceans.

This important book will further change our perspective from sharks as menace to humans to sharks as yet another group of species that are being severely depleted by our ever-expanding fishing activities. Indeed, several pelagic sharks are threatened with endangerment and have already been added to the World Conservation Union's (IUCN) Red List of Threatened Species. And one species, the white shark of man-eating lore, has recently been listed on CITES, the international treaty that monitors and controls trade in endangered species. Other sharks will follow if we do not quickly change our ways, notably by developing gears and fishing methods that, when targeting tuna and other fish, will spare sharks that are often the unintended bycatch.

Approaches will also have to be found to deal with the shark fin soup issue: There are simply not enough fins on presently living and future sharks to feed the growing demand for a dish whose bland taste belies its bitter nature. In the meantime, we must improve our understanding of these fascinating animals – their movements, life histories, and distributions, their growth and mortality, and their behavior, perhaps one of the keys to designing more selective fishing gear.

I had the pleasure of serving as keynote speaker at the International Pelagic Shark Workshop, held at the beautiful Asilomar oceanfront retreat in Pacific Grove, California, in February 2000, which eventually led to this book. Using then current knowledge, as incorporated in FishBase, the online encyclopedia of fishes, I presented a review of shark growth and natural mortality patterns that, I suggested, were regular enough to allow inferences on the life-history parameters of well-studied species to be applied to understudied species, via their maximum size and taxonomic affinities. By implication, this suggested that we should concentrate our research on other aspects of shark fisheries biology, such as mapping their catches, including the bycatch of various tuna fisheries and the catch of illegal fisheries.

This book, introduced through the reviews of shark biodiversity, biology, and reproduction in Part I, shows that I was both a bit wrong, and a little bit right. I was wrong, in part, because the contributions in Part II – devoted to the growth, mortality, reproduction, and other aspects of the biology of 11 species of open ocean sharks – offer a wealth of new information, which will considerably improve our ability to make inferences about

lesser-known species. The first three chapters in Part IV further enhance our understanding of pelagic sharks by providing specific and comparative life-history parameters for these species. Taken together, these contributions confirm that pelagic elasmobranchs, despite their wide distribution and the spectacular transoceanic migrations that some have exhibited, are extremely vulnerable to fishing, and that there is a critical need for protection of pelagic sharks and rays.

I was a little bit right because, as Part III demonstrates, our knowledge of shark catches is scandalously limited. Although species-specific catch and discard data for pelagic sharks are still incomplete, the catch and bycatch studies herein begin to fill the information gap, especially as they cover not only the much-studied Atlantic, but also the Pacific and the often neglected Indian Ocean.

The contributions in Part IV focus on methods to improve our understanding of pelagic sharks. They present a diverse set of tools, including demographic parameter analysis, genetic techniques, tagging methods and data analysis, and mathematical models for assessing stock structure, movements, and status. These contributions were included in the book because they are particularly useful for addressing the unique data constraints and life-history modes exhibited by pelagic sharks. The contributions in Part V confront the conservation and management outlook for pelagic sharks, and will be extremely useful to scientists, managers, and conservationists in government agencies, fishery groups, and nongovernmental organizations who are working to stop the widespread decline of pelagic shark populations. Yet I suspect one ingredient needs to be added to this mix: more public information and involvement.

Pelagic sharks are wildlife, and they “belong” to everybody if they “belong” to anybody. Ultimately, it will be public revulsion at the sight of finned carcasses, of dead sharks entangled in drift nets, and of other needless killing that will determine the fate of sharks, just as strong public sentiment eventually forced governments to protect the great whales. An informed public is needed to stoke the political will to implement effective pelagic shark management. This book puts sound science in the hands of those who are responsible for ensuring that fishing is sustainable and that our oceans continue to support the life that they have spawned and nurtured for millions of years, including the lives of these beautiful animals.

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