

The Sea Among Us: the Amazing Strait of Georgia

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The Strait of Georgia (hereafter the Strait) is an inland sea lying between Vancouver Island and mainland British Columbia, extending from Quadra and Cortes islands in the north to the Gulf and San Juan islands in the south. The over two million people that inhabit the shores of the Strait, the majority of whom live in the metropolis of Vancouver, bathe in the “myth of easy living,” perpetuated by a mild climate and abundant natural resources. The estimates of marine biodiversity include over 3000 species of invertebrates, 223 fish species, over 350 species of plants, and 11 species of mammals. Then add several dozen species of birds that inhabit the interface between the marine and terrestrial environments. A rich place indeed.

The Sea Among Us is an excellent resource for understanding this amazing area. I would describe it as an “accessible” introductory textbook – full of facts, maps, figures, and photos, but unencumbered by citations at the end of each statement. Rather, there are Chapter Notes at the end of the book, with suggestions for further reading, including some online resources. Indeed, Douglas Bertram (author of the chapter “The Coastal Birds”) lamented that “it was tough to write this chapter without formal citations of the vital research and observations” of others. There are 12 authors (including the editors), each a specialist in her or his field, and their lists of acknowledgements are evidence of wide consultation with colleagues.

Roughly the first three-quarters of the book (seven chapters) lays the scientific foundation for the functioning of the marine ecosystem, followed by three chapters on “The People and Industry.” I found the numerous excellent diagrams and different styles of maps particularly helpful in understanding the geological and physical properties of the Strait. The pages on tides, tidal currents, tidal mixing, and the influence of estuarine circulation and wind, were the best I’ve read, and should be studied by anyone venturing onto or into the waters of the Strait. The following chapters then work up the food chain, from phytoplankton, to zooplankton, to larger invertebrates and marine plants, then fishes, marine mammals, coastal birds and finally, humans.

At 80 pages “The Fishes” is the longest chapter, but also sets the stage for the last chapter on human exploitation of this critical resource. It starts with brief life histories of the jawless, jawed and cartilaginous, and bony fishes. The bulk of the chapter describes the use of five habitats by adult bony fish: tide pools and intertidal areas, estuaries and nearshore habitats, mud and sand bottom at intermediate depths, pelagic areas from the surface to 75 m deep and pelagic areas deeper than 75 m. This includes numerous species lists, augmented by photos and sketches, as well as tables of abundance in different geographical areas. The author

recognizes that these divisions are somewhat arbitrary, but they serve as useful distinctions.

Seals, sea lions, porpoises, dolphins (including the iconic killer whale, or orca, which is the world’s largest dolphin) and baleen whales are all described in the chapter on “Marine Mammals.” Causes of historic declines are discussed, as are current and emerging threats, such as human disturbance, including engine noise, and terrestrial pathogens and contaminants entering the marine environment. “The Coastal Birds” chapter highlights many migratory species that depend on the various habitats found throughout the Strait, which provide a wide range of food sources. The movements of individuals of different species, determined by radio telemetry or band recovery, are mapped and highlight the importance of the Strait as a wintering area. One of the most important food sources is herring eggs – when herring spawn in March nearly all the waterbirds in the Strait travel to those sites to feed. In the late 1990s I had the good fortune to witness such aggregations at Hornby Island. There were birds, such as harlequin ducks (we estimated about 4000 during one scan of the shoreline), feeding on the eggs, while others, such as loons and eagles, were feeding on the adult herring. The banquet also drew in seals, sea lions and orcas, all in a loud cacophonous frenzy.

The current and potential impacts of climate change, predominantly predicted changes in water temperature and sea level, are discussed in many of these chapters. Resulting changes in circulation patterns are expected to alter the timing and location of plankton blooms, which will in turn alter the abundance and distribution of invertebrates and fish, and therefore the predators that feed upon them. There is concern that ecological adaptation will have a hard time to keep up to the rapid changes.

Chapters 8 and 9 provide a short history of “The Pre-Contact Era” and “The Zone of Encounter,” respectively. The term “Coast Salish” refers to the linguistically and culturally related First Nations that inhabit the entire Strait area and beyond. (It is now routine to refer to the Strait of Georgia, Puget Sound, and Haro, Rosario and Juan de Fuca straits, collectively, as the Salish Sea.) Prior to contact with Europeans, it was a densely populated, complex society with an elaborate and thriving maritime economy. The people used clam gardens, numerous types of weirs, fish traps, dip nets and reef nets, and hunted whales in an annual cycle of activities timed by seasonal changes in the ecosystem. That all changed after European contact. While the date of first contact is still controversial, there is no doubt that the search for a quicker way of moving trade goods between Europe and China/India was behind the 18th century explorations that led Spanish and English explorers to the

Strait. This led to the 1780s smallpox catastrophe, which decimated the Coast Salish. The subsequent non-native settlement of the lands surrounding the Strait was actually a “re-settlement” of lands emptied by waves of disease. It is mostly a story of industrial exploitation of natural resources (trees, minerals, and fish), marine transportation, and more recently, recreational activities. Chapter 10 focuses on the history of industrial fishing, which is really a history of our ignorance of the “lim-

its to resiliency” of the various species and their ecosystems.

In the “Afterword,” each author gives their view of the future of the Strait. Despite the litany of abuses in the previous chapters, they share a basic hope for the continued existence of a diverse and resilient Strait ecosystem, inhabited by people who are willing to collaborate and compromise to achieve that goal.

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