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Gerald L. Kooyman
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WEDDELL SEAL

consummate diver

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Preface

In recent years, several fine books have been published that are devoted to comprehensive, life-history accounts of single, terrestrial, mammalian species. The major tools for these studies were notebook, binoculars, and keen observation.

The complexity of the sea and the size of some marine mammals present insurmountable obstacles to comprehensive studies. Underwater visibility in the sea is seldom good enough to see from one end of some of the larger whales to the other; obviously, the observational tools in the sea, as in most natural situations, must be complex. However, there is one place where an unusual set of circumstances has reduced the complexities of such studies and provided us with a window into the underwater world. It is one of the most isolated wildernesses on earth: McMurdo Sound, Antarctica. During most of the year, this is the exclusive kingdom of the Weddell seal. Nowhere else, not even in other parts of Antarctica, is it possible to observe and study Weddell seals or any other sea mammal in such detail as here. Yet, paradoxically, the characteristics that make this place so suitable for scientists to observe seals also make it one of the most difficult places for a sea mammal to survive. What we have learned about the Weddell seals in this area seems to justify this contention. The information obtained at times borders on the sensational. By extrapolation, it also has given us new insight into other marine mammals and how extraordinary their life patterns must be.

It is my goal in this book to give the lay public, undergraduate and graduate students, and my peers a comprehensive description of

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some of the remarkable characteristics and habits of this species; and to do it within a single work. This has not been done before. In my effort to satisfy such a broad audience, I hope that the book will not seem overly detailed in some cases, or so simple in others that readers will lose interest in the whole. If my objective is achieved, then I feel that not only will the public's world be enlarged, but some part of my debt to Weddell seals will be repaid.

I am indebted to many for assisting in the work, and for giving advice and support. Financial aid that made the various studies possible has come from the Division of Polar Programs of the National Science Foundation and from the Heart and Lung Institute of the National Institutes of Health. The former is also responsible for a tremendous logistic program, which makes all field projects possible. The people who have helped me over the more than fifteen years of my fascination with Weddell seals are too numerous to acknowledge individually. Some are mentioned in the book. To the others, I say that omission does not reflect any less gratitude on my part. I must make two exceptions: Dr. George A. Llano, who at the inception of my research said it was possible, and Professor Albert R. Mead, who was willing to extend the Arizona horizon to Antarctica.

G. K.

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*To vivacious, enthusiastic Melba:
Always present in spirit,
but for whom Antarctica has been
a vicarious experience*

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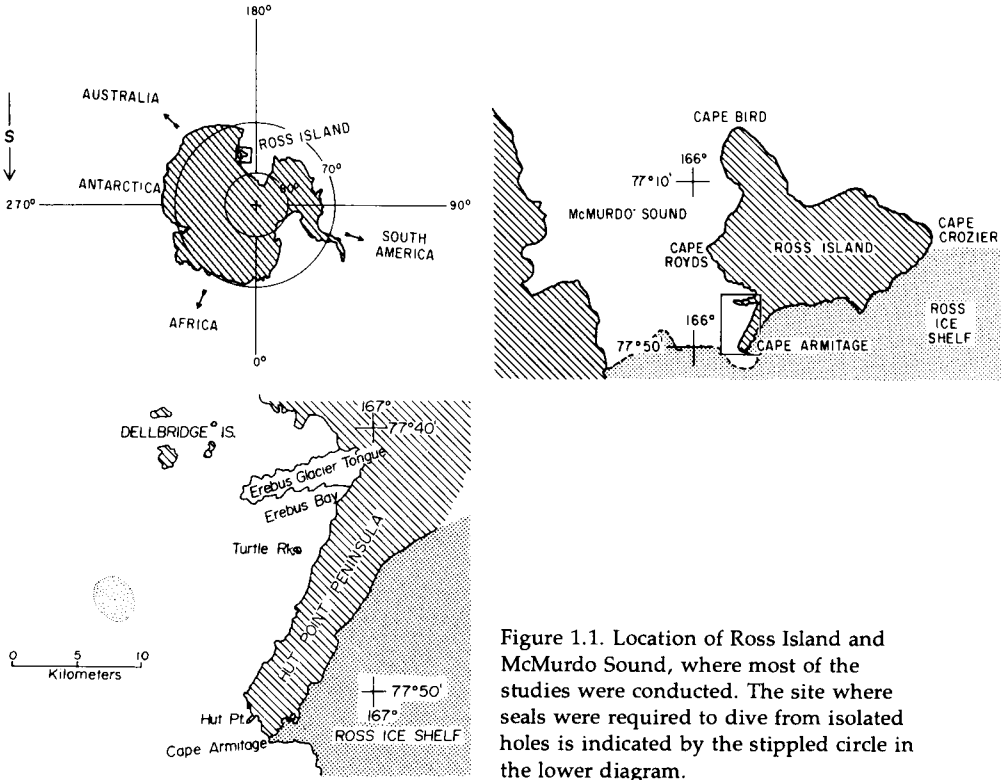


Figure 1.1. Location of Ross Island and McMurdo Sound, where most of the studies were conducted. The site where seals were required to dive from isolated holes is indicated by the stippled circle in the lower diagram.



Figure 1.2. Aerial photograph of the eastern shore of McMurdo Sound taken from a helicopter at 3,000 m and facing north. The prominent peak is Mount Erebus, an active volcano approximately 4,000 m high. (Photograph by Dan Costa, taken January 1979.)