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Marine Ecosystem Assessment of the Southern Ocean

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Steven L. Chown holds a Professorship in Biological Sciences at Monash University, Melbourne, Australia. He was Head of Biological Sciences from 2013 to mid-2017. During this time, he reshaped the School with 16 new academic appointments and ca. AU$50 M of new investment. Prior to that he established and was inaugural Director of the influential South African National Centre of Excellence for Invasion Biology (2004-2012). His work covers macrophysiology, community ecology, biogeography and conservation biology. A key part of his research concerns the biological impacts of the major global change drivers, with a significant focus on the Antarctic region. He has published widely, including many scientific papers and several scientific and popular books. His work is supported by the Australian Research Council, the Australian Antarctic Science Program, and the Wellcome Trust. He has been Chair of both the Australian and South African National Committees for Antarctic Research, and a Delegate of both countries to the Scientific Committee on Antarctic Research (SCAR). For many years he has represented SCAR at the Antarctic Treaty Consultative Meetings. Currently he is President of SCAR. Steven is the inaugural recipient of the Tinker-Muse Prize for science and policy in Antarctica. He has also received the SCAR Medal for Excellence in Antarctic Research.

Looking forward – assessments, change and the global arena

The Paris Agreement has changed views on how much can be done to improve the way humans interact with our world. The Sustainable Development Goals have had a similar effect. Despite these very best global efforts, reports continue to highlight declining quality of ecosystems, increasing threats to species, and growing greenhouse gas emissions. Closer consideration of key regions and systems reveals, however, that much needs to be done to develop a clearer picture of status, trends, pressures, and the impacts of mitigation responses. For the Southern Ocean and Antarctica, which comprise nearly a third of the globe, and contribute significantly to global biodiversity, ecosystems services, and sea level rise, this is especially true. The next several decades are a crucial time for determining whether change accelerates, along with its influences on the services that support global wellbeing, or can be retarded. How policy decisions play out in Antarctica and the Southern Ocean, how nations are in turn affected by these southern polar outcomes, and the nature of the feedbacks, will influence both livelihoods and the future of the Antarctic region. Science is the only means available to develop the reliable knowledge needed to inform decision-making and reveal its consequences. Providing the best understanding of the Antarctic region and its global role, estimates of confidence in specific knowledge areas, and practicable approaches to address knowledge gaps or improve confidence are significant modern challenges for the science community. The community of scientists that constitutes the Scientific Committee on Antarctic Research (SCAR) has an important role to play in facilitating work to address these challenges. SCAR has already commenced doing so. Over the next few years it will further deliver this agenda and convey outcomes to a wide suite of decision-making bodies in keeping with its status as a committee of the International Council for Science.